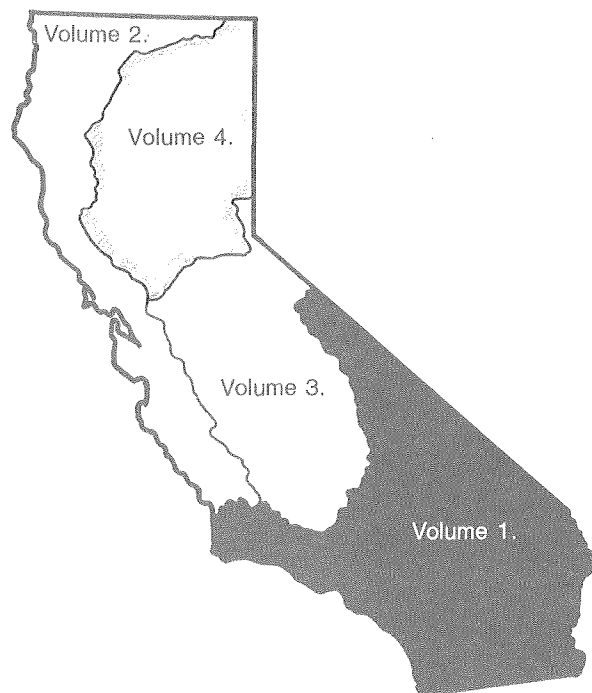


Water Resources Data California Water Year 1990

Volume 1. Southern Great Basin from Mexican Border to Mono Lake Basin, and Pacific Slope Basins from Tijuana River to Santa Maria River



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-90-1
Prepared in cooperation with the California Department of
Water Resources and with other agencies

CALENDAR FOR WATER YEAR 1990

1989

OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23
29	30	31					26	27	28	29	30			24	25	26	27	28	29	30
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1990

JANUARY							FEBRUARY							MARCH						
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22	23	24	25	26	27	28	20	21	22	23	24	25	26	17	18	19	20	21	22	23
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JULY							AUGUST							SEPTEMBER						
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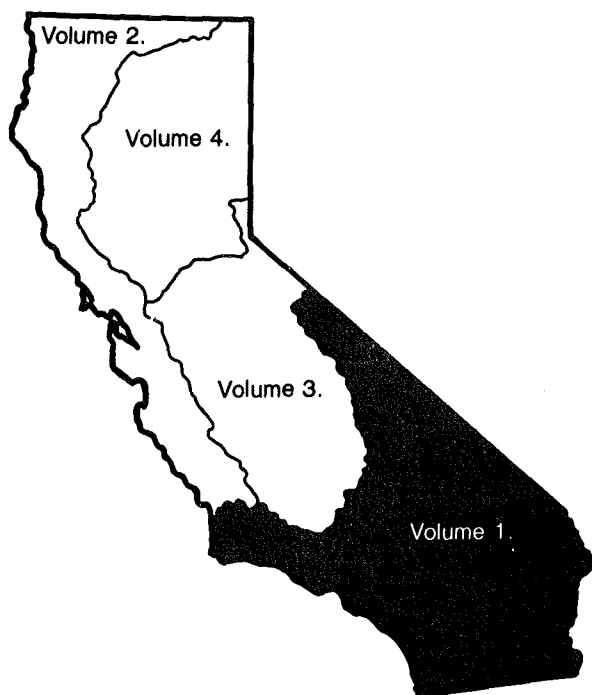


Water Resources Data California

Water Year 1990

**Volume 1. Southern Great Basin from Mexican Border
to Mono Lake Basin, and Pacific Slope Basins
from Tijuana River to Santa Maria River**

by J.C. Bowers, R.M. Jensen, and E.B. Hoffman



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-90-1

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

U.S. DEPARTMENT OF THE INTERIOR

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

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

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

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16. Abstract (Limit: 200 words) Water resources data for the 1990 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 1 contains discharge records for 157 streamflow-gaging stations, 16 crest-stage partial-record streamflow stations, and 2 miscellaneous measurement stations; stage and contents records for 16 lakes and reservoirs; water-quality records for 19 streamflow-gaging stations, 2 partial-record stations; and precipitation records for 13 stations. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in California.			
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WATER RESOURCES DIVISION

E. Jerre McClelland, Assistant District Chief for Hydrologic Data
Kenneth W. Lee, Chief, Northern California Operations

Jeffrey Agajanian, Hydrologic Technician
James B. Baker, Editorial Assistant
Paul A. Buchanan, Hydrologic Technician
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SURFACE-WATER AND WATER-QUALITY STATIONS
IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

IX

[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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IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

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WATER RESOURCES DATA -- CALIFORNIA, WATER YEAR 1990

VOLUME 1--SOUTHERN GREAT BASIN FROM MEXICAN BORDER TO MONO LAKE BASIN,
AND PACIFIC SLOPE BASINS FROM TIJUANA RIVER TO SANTA MARIA RIVER

By J.C. Bowers, R.M. Jensen, and E.B. Hoffman

INTRODUCTION

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

This volume of the report includes records on surface water in the State. Specifically, it contains (1) discharge records for 157 streamflow-gaging stations, 16 crest-stage partial-record streamflow stations, and 2 miscellaneous measurement stations; (2) stage and contents records for 16 lakes and reservoirs; (3) water-quality records for 19 streamflow-gaging stations and 2 partial-record stations; and (4) precipitation records for 13 stations. Records included for stream stages are only a small fraction of those obtained during the water year.

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

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

Publications similar to this report are published annually by the U.S. Geological Survey for all States. Each report has an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report CA-90-1." 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 the back of the title page or by telephone (916) 978-4668.

COOPERATION

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

California Department of Boating and Water Ways, William H. Ivers, Director.
 California Department of Water Resources, David N. Kennedy, Director.
 Carpinteria County Water District, Robert R. Lieberknecht, General Manager/Secretary.
 Casitas Municipal Water District, Orville Lee Horn, General Manager.
 Coachella Valley Water District, Thomas E. Levy, General Manager-Chief Engineer.
 Crestline-Lake Arrowhead Water Agency, Roxanne M. Holmes, General Manager.
 Desert Water Agency, Jack H. Oberle, General Manager.
 Goleta Water District, Jane Turner, General Manager-Secretary.
 Imperial Irrigation District, Charles L. Shreves, General Manager.
 Los Angeles Department of Water and Power, Thomas A. Tidemanson, Director.
 Mojave Water Agency, Jon D. Edson, General Manager.
 Mono County, Energy Management Department, Daniel Lyster, Director.
 Montecito Water District, C. Charles Evans, General Manager-Chief Engineer.
 Orange County Water District, William R. Mills, Jr., General Manager.
 Rancho California Water District, John F. Hennigar, General Manager.
 Riverside County Flood Control and Water Conservation District, Kenneth L. Edwards, Chief Engineer.
 San Bernardino Valley Municipal Water District, G. Louis Fletcher, General Manager.
 San Bernardino Environmental Public Works Agency-Flood Control District, Robert W. Corchero, Acting Chief, WRD.
 San Diego, City of, Milon Mills, Jr., Water Utilities Director.
 San Diego County Department of Public Works, Granville M. Bowman, Director.
 Santa Barbara, City of, Department of Public Works, David H. Johnson, Director.
 Santa Barbara County Flood Control and Water Conservation District, Phillip Demery, Flood Control Engineer-Manager.
 Santa Barbara County Water Agency, Phil Overeynder, Manager.
 Santa Maria Valley Water Conservation District, Maurice F. Twitchell, Secretary.
 United Water Conservation District, Frederick J. Glentke, General Manager.
 Ventura County Public Works Agency, C.J. Nowark, Director Flood Control and Water Resources.

Assistance in the form of funds or services was given by the Vandenberg Air Force Base, U.S. Air Force; Corps of Engineers, U.S. Army; Bureau of Land Management, Bureau of Reclamation, U.S. Department of the Interior; U.S. Department of Justice; Camp Pendleton Marine Corps Base, Marine Corps, and China Lake Naval Weapons Center, U.S. Navy.

The following organizations aided in collecting records: California Department of Water Resources, Southern California Edison Co., and United Water Conservation District.

SUMMARY OF HYDROLOGIC CONDITIONS

Surface Water

As is common in California, streamflow varied greatly in the 1990 water year--month by month and regionally. The variations are related to differences in precipitation, temperature, topography, and geology. Runoff during the 1990 water year in the area covered by this volume was 24 percent of the 1951-80 median (based on seven representative streamflow records). Total runoff, in percent of median, at selected stations in California is shown in figure 1. Runoff ranged from 102 percent of median in Borrego Palm Creek near Borrego Springs (station 10255810) to 1 percent in Santa Cruz Creek near Santa Ynez (station 11124500). In figure 2, monthly mean discharge in the 1990 water year is compared to the 1951-80 median, maximum, and minimum monthly mean discharge at four representative gaging stations. In addition, a comparison of monthly precipitation for the 1990 water year and the long-term average also is shown in figure 2. Few streams exceeded the peak discharge bases, none had peaks of record. Annual departure from the 1951-80 mean discharge at four selected gaging stations is shown in figure 3. A comparison of 1990 peak discharge to peaks for period of record at selected stations are shown in table 1.

Table 1. Comparison of peak discharge for 1990 water year with those for period of record for selected stations

Station No.	Station name	Peak discharge (ft ³ /s)	1990 water year	Peak discharge (ft ³ /s)	Period of record (water year)
10255810	Borrego Palm Creek near Borrego Springs	35	July 15	2,640	1979
11055800	City Creek near Highland	175	Feb. 17	7,000	1969
11098000	Arroyo Seco near Pasadena	163	Feb. 17	8,620	1938
11111500	Sespe Creek near Wheeler Springs	38	Jan. 13	11,600	1983

Several reservoirs were far below normal storage. Total reservoir storage in the Santa Ynez River basin was about 30 percent of capacity, and Cachuma reached its lowest level since initial filling in 1958. A summary of storage in all the major reservoirs in the area covered by this volume is shown in table 2. Storage in selected reservoirs for water years 1988-90 is shown in figure 4.



Figure 1. Runoff, in percent of median, for the 1990 water year.

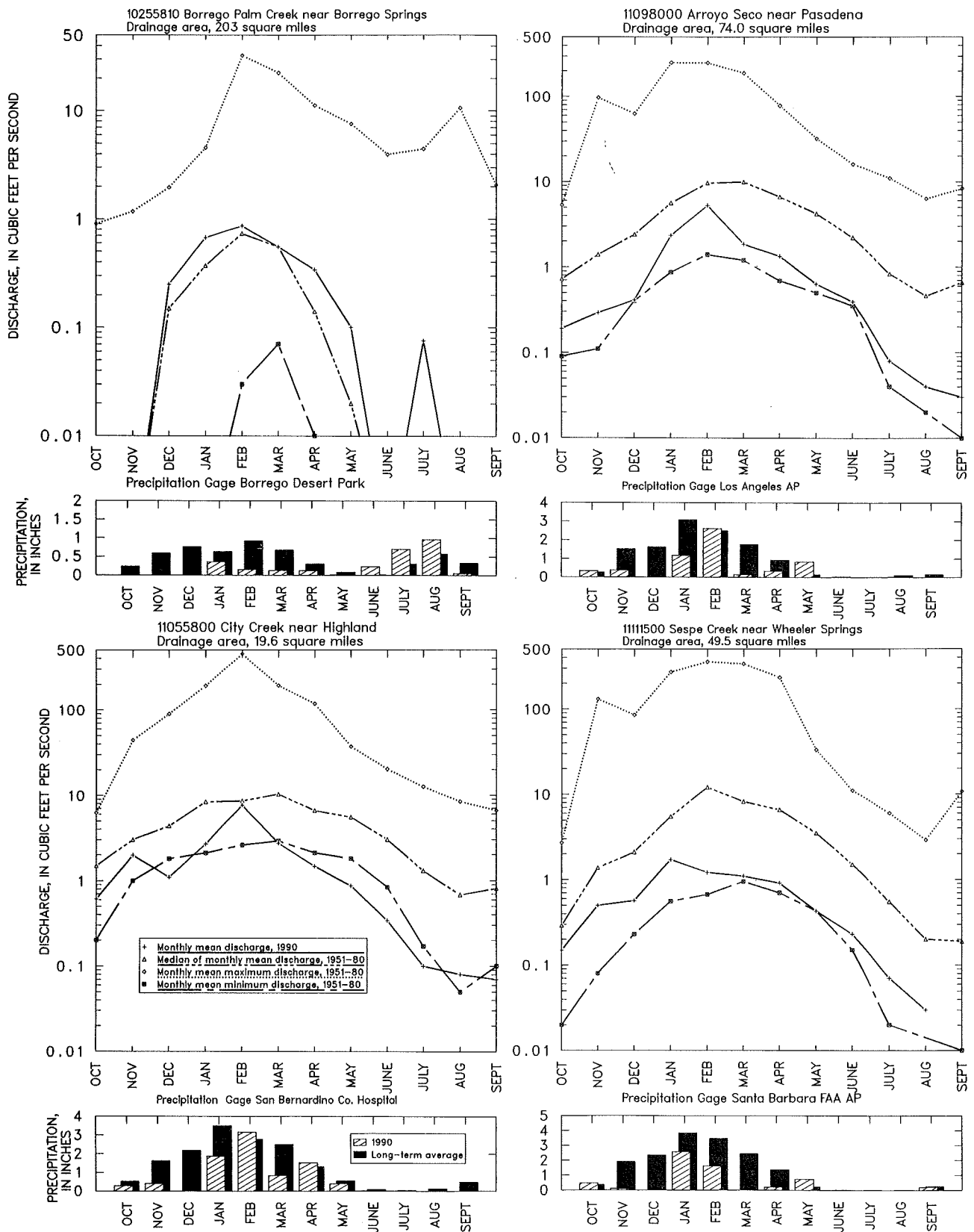


Figure 2. Discharge and precipitation during water year 1990 and long-term statistics at four representative gaging stations. Precipitation data from National Oceanic and Atmospheric Administration, 1990, Climatological data, annual report: vol. 94.

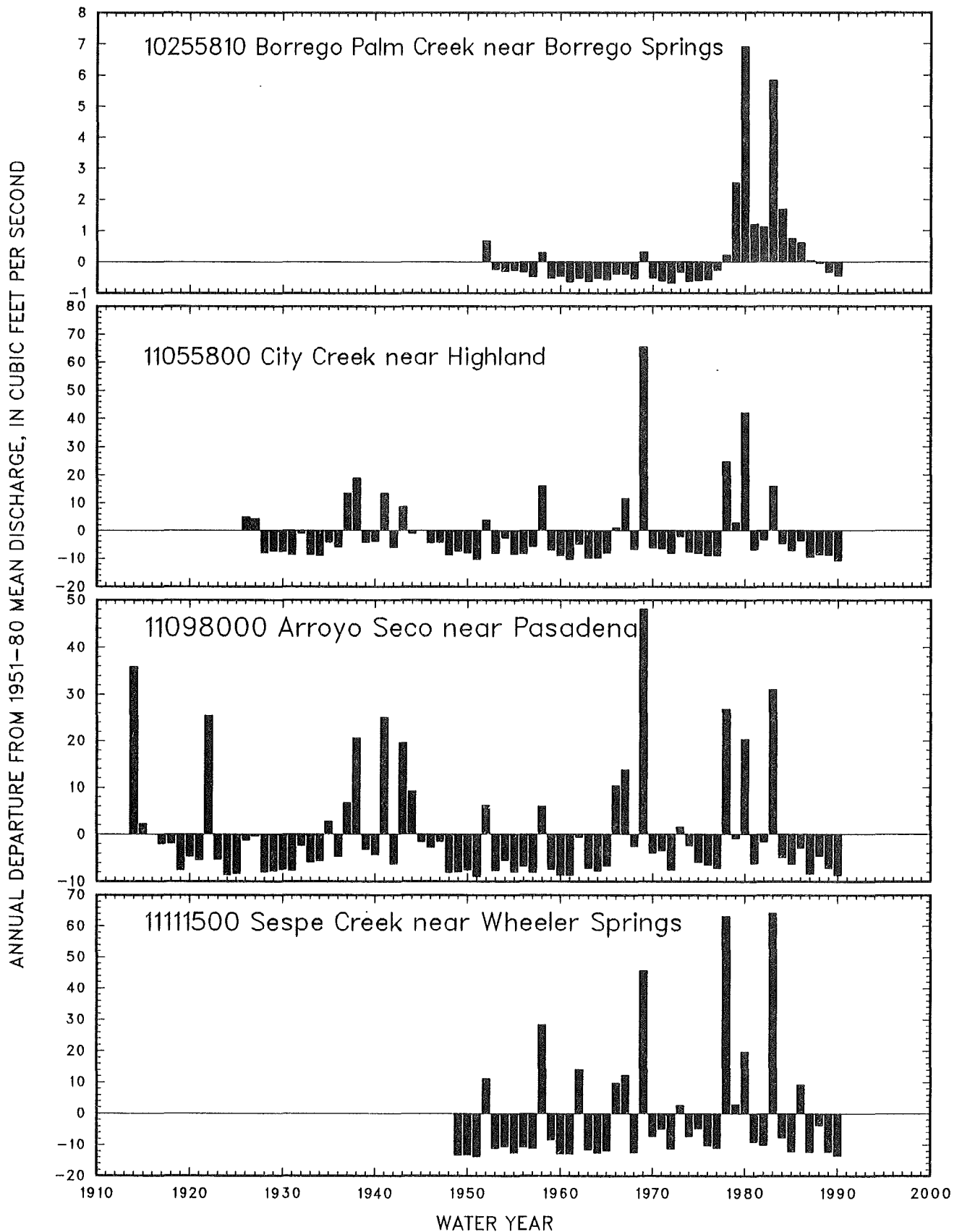


Figure 3. Annual departure from 1951-80 mean discharge for period of record at selected gaging stations.

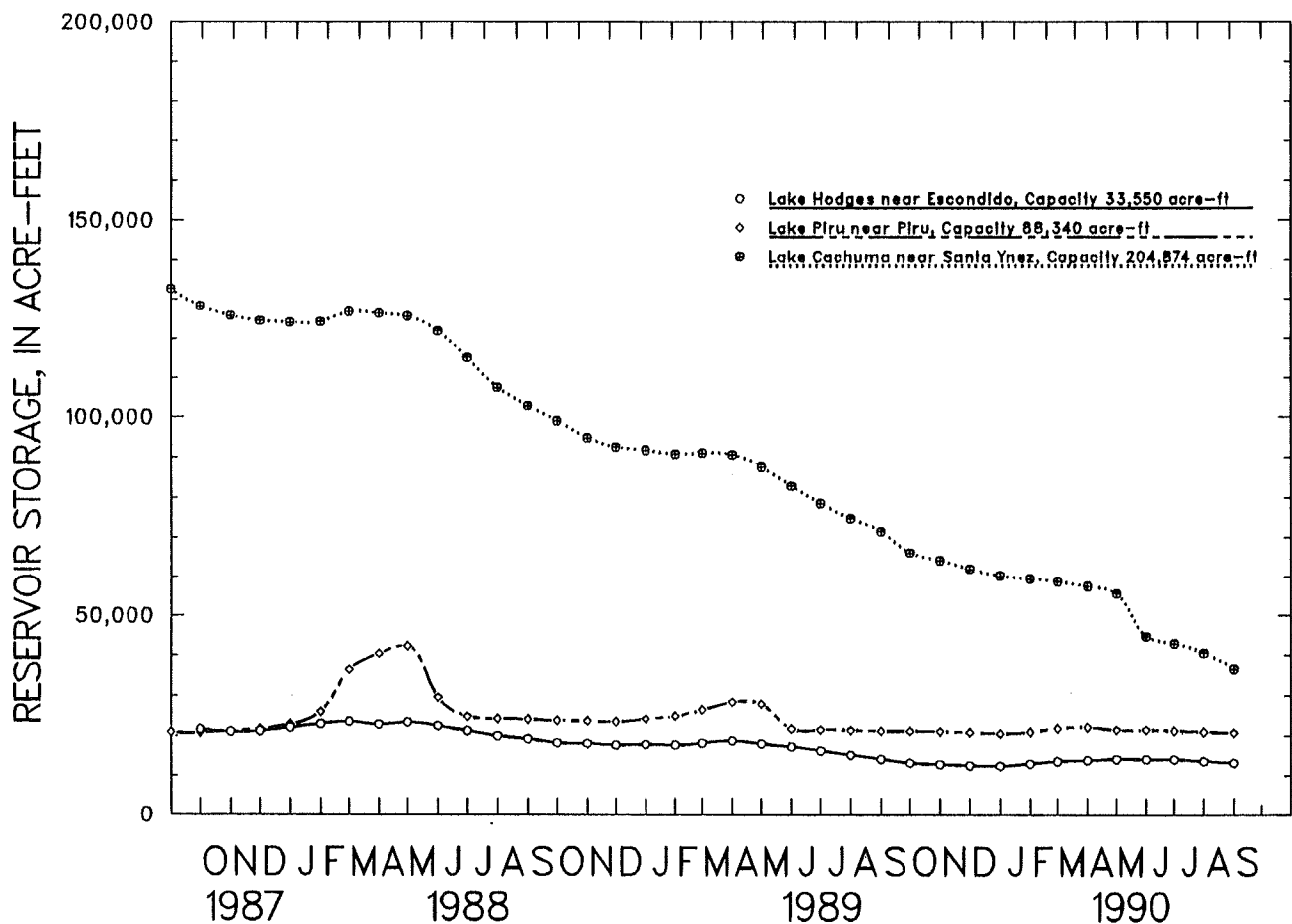


Figure 4. Storage in selected reservoirs, water years 1988-90.

Table 2. Summary of storage in major reservoirs

[Data from California Department of Water Resources, 1990, Drought conditions in California: 68 p. Values are in thousands of acre-feet]

Area	Number of reservoirs	Long-term average	1977	1986	1987	1988	1989	1990
South Lahontan	8	311	165	356	263	219	200	204
South Coastal	29	1,171	865	1,406	1,297	1,298	1,117	1,227

There were no significant region-wide storms during the water year. Monthly precipitation and streamflow were below normal. Precipitation in the area (based on eight gages) was only 47 percent of the long-term average. Precipitation ranged from 92 percent of normal at Daggett to 36 percent at Santa Barbara.

Water Quality

Water samples collected at four NASQAN stations reported in this volume were analyzed for water-quality constituents during the 1990 water year. Specific conductance varied from 967 microsiemens in the Los Angeles River at Long Beach (station 11103000) to 3,760 microsiemens in the Alamo River at Drop No. 3, near Calipatria (station 10254670). Median dissolved-solids concentrations for samples collected from the Los Angeles River at Long Beach and San Luis Rey River at Oceanside (station 11042000) were slightly larger in the 1990 water year than in 1989; whereas, median dissolved-solids concentrations in 1990 from the Santa Ana River below Prado Dam (station 11074000) and Alamo River at Drop No. 3, near Calipatria were slightly smaller than in 1989. The monthly mean dissolved-solids concentrations during water year 1990 are compared with long-term mean dissolved-solids concentrations at two selected stations (fig. 5).

The largest densities of fecal-coliform and fecal-streptococci bacteria were determined from water samples collected from the Santa Ana River below Prado Dam (K13,000 colonies per 100 milliliters) and from Alamo River at Drop No. 3, near Calipatria (15,000 colonies per 100 milliliters), respectively.

Chemical-constituent concentrations in excess of U.S. Environmental Protection Agency (EPA) water-quality criteria were detected in water samples collected from several stations and are listed below.

Station No.	Station name	Water-quality constituent exceeding EPA water-quality criteria
10254670	Alamo River at Drop No. 3, near Calipatria	Sulfate, chloride
11042000	San Luis Rey River at Oceanside	Sulfate, chloride, manganese
11074000	Santa Ana River below Prado Dam	Manganese, mercury
11103000	Los Angeles River at Long Beach	pH
11136800	Cuyama River below Buckhorn Canyon, near Santa Maria	Sulfate
345727120375401	Green Canyon Creek at Main Street, near Guadalupe	Nitrate

Suspended-sediment discharge and concentrations were monitored periodically at 10 stations in the area included in this volume.

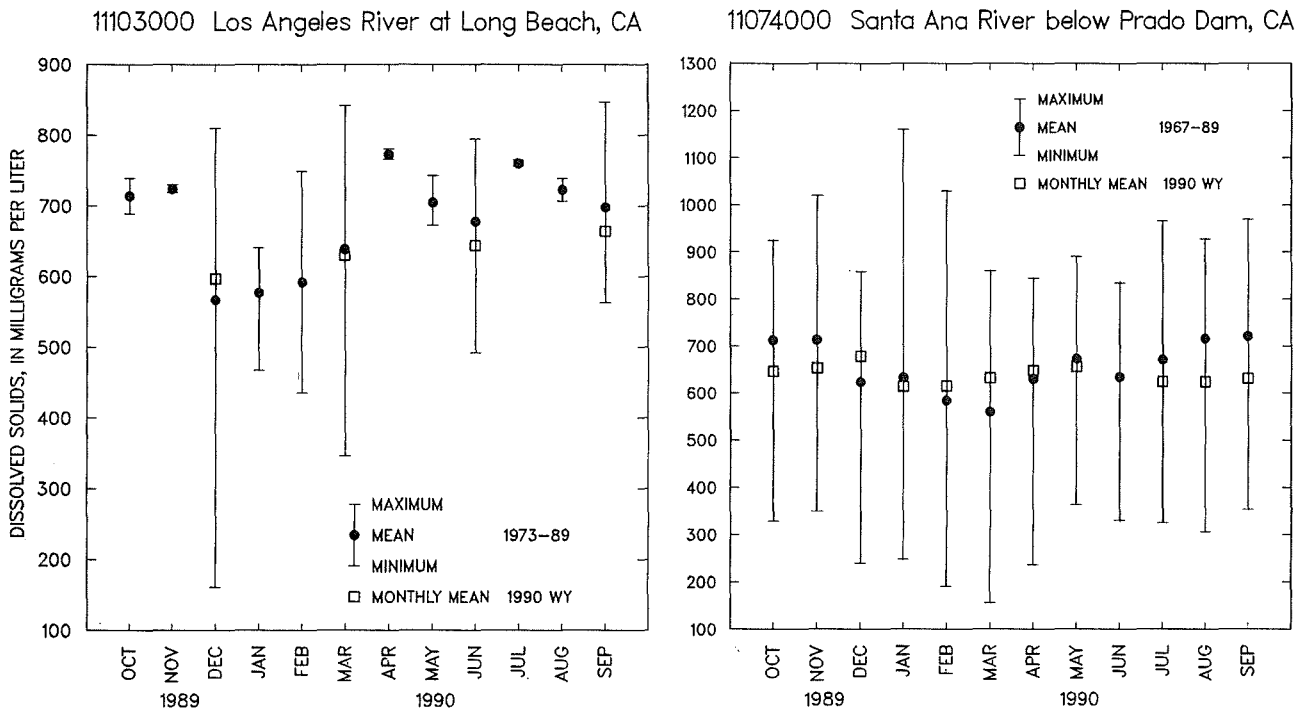


Figure 5. Comparison of monthly mean dissolved-solids concentrations during water year 1990 with long-term mean dissolved-solids concentrations at two selected stations.

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 drainage basins 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.

EXPLANATION OF THE RECORDS

The surface-water records published in this report are for the 1990 water year that began October 1, 1989, and ended September 30, 1990. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and contents data for lakes and reservoirs, and water-quality data for surface water. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

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

Downstream Order System

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports has been in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream 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 11078000, which appears just to the left of the station name, includes the two-digit part number "11" plus the six-digit downstream-order number "078000." The part number designates the major river basin; for example, part "11" is the Pacific Slope Basins in California.

Latitude-Longitude System

The identification numbers for miscellaneous surface-water sites are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude; the next seven digits denote degrees, minutes, and seconds of longitude; and the last two digits (assigned sequentially) identify the other sites within a 1-second grid (fig. 6). This site-identification number, once assigned, is a pure number and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description.

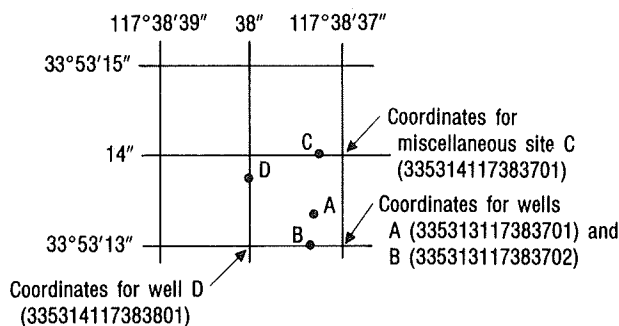


Figure 6. System for numbering miscellaneous sites (latitude and longitude).

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 7 through 17.

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

For some gaging stations, there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following 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 with 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, measured 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 measured 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 various types of data and measurement frequencies.

Classification of Records

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

A careful distinction needs to be made between "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. 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 7 through 17.

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. 21 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.

Water Temperature

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

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

Sediment

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

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

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

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

Cross-Sectional Data

Cross-sectional surveys of water temperature, pH, specific conductance, dissolved oxygen, and suspended sediment are done at all NASQAN and Hydrologic Bench-mark stations during various seasons and surface-water discharges. Documentation of cross-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's National Water-Quality Laboratory in Arvada, Colorado. Methods used in analyzing sediment samples and computing sediment records are given in Techniques of Water-Resources Investigations, Book 5, Chapter C1; methods used by the 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 recorder, sediment pumping sampler, or other sampling device is in operation at a station.

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

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

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

REVISIONS.--If errors in water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, 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.

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 various 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 ± 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 ± 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.

Bacteria--Continued

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 $35^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$ on KF streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 milligrams per liter of sample.

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

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

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

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

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

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

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

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

Bottom material: See Bed material.

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

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

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

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

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

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

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

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

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

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

Cubic foot per second (ft^3/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, $\mu\text{g/g}$) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Milligrams of carbon per area or volume per unit time [$\text{mg C}/(\text{m}^2/\text{time})$ for periphyton and macrophytes and $\text{mg C}/(\text{m}^3/\text{time})$ 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 [$\text{mg O}_2/(\text{m}^2/\text{time})$ for periphyton and macrophytes and $\text{mg O}_2/(\text{m}^3/\text{time})$ 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.

Sediment--Continued

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 dissolved-solids concentration 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--Continued

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

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

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

Kingdom.....Animal
Phylum.....Arthropoda
Class.....Insecta
Order.....Ephemeroptera
Family.....Ephemeridae
Genus.....Hexagenia
Species.....Hexagenia limbata

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, 1990, is called the "1990 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-D2. Application of seismic-refraction techniques to hydrologic studies, by F.P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 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.
- 2-F1. Application of drilling, coring, and sampling techniques to test holes and wells, by Eugene Shuter and Warren E. Teasdale: USGS--TWRI Book 2, Chapter F1. 1990. 97 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-A12. Fluorometric procedures for dye tracing, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS--TWRI Book 3, Chapter A12. 1986. 41 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-A16. Measurement of discharge using tracers, by F.A. Kilpatrick and E.D. Cobb: USGS--TWRI Book 3, Chapter A16. 1985. 52 pages.
- 3-A17. Acoustic velocity meter systems, by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.
- 3-A18. Determination of stream reaeration coefficients by use of tracers, by F.A. Kilpatrick, R.E. Rathbun, N. Yotsukura, G.W. Parker, and L.L. DeLong: USGS--TWRI Book 3, Chapter A18. 1990. 52 pages.

- 3-A19. Levels of streamflow gaging stations, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A19. 1990. 27 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-B4. Regression modeling of ground-water flow, by Richard L. Cooley and Richard L. Naff: USGS--TWRI: Book 3, Chapter B4. 1990. 232 pages.
- 3-B5. Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction, by O.L. Franke, T.E. Reilly, and G.D. Bennett: USGS--TWRI Book 3, Chapter B5. 1987. 15 pages.
- 3-B6. The principle of superposition and its application in ground-water hydraulics, by T.E. Reilly, O.L. Franke, and G.D. Bennett: USGS--TWRI Book 3, Chapter B6. 1987. 28 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. Ehlike, 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.
- 6-A1. A modular three-dimensional finite-difference ground-water flow model, by M.G. McDonald and A.W. Harbaugh: USGS--TWRI Book 6, Chapter A1. 1988. 586 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 or converted to partial-record stations. Daily records were collected and are stored in WATSTORE for the period of record shown for each station.

Station No.	Station name	Drainage area (mi ²)	Period of record
09424050	CHEMEHUEVI WASH TRIBUTARY NEAR NEEDLES	2.04	1960-62
09428530	ARCH CREEK NEAR EARP	1.52	1961-71
10250600	WILDROSE CREEK NEAR WILDROSE STATION	23.7	1961-73, 1975
10250800	DARWIN CREEK NEAR DARWIN	173	1963-89
10251000	BIG DIP CREEK NEAR STOVEPIPE WELLS	.95	1963-69
10251100	SALT CREEK NEAR STOVEPIPE WELLS	--	1974-88
10251300	AMARGOSA RIVER AT TECOPA	3,090	1962-72, 1974-83
10251350	HORSETHIEF CREEK NEAR TECOPA	3.06	1961-70
10252300	CHINA SPRING CREEK NEAR MOUNTAIN PASS	.94	1961-72
10252330	WHEATON WASH NEAR MOUNTAIN PASS	10.2	1965-68
10253080	SUNFLOWER WASH NEAR ESSEX	3.04	1963-70
10253320	QUAIL WASH NEAR JOSHUA TREE	100	1964-71
10253350	FORTYNINE PALMS CREEK NEAR 29 PALMS	8.55	1963-71
10253540	CORN SPRINGS WASH NEAR DESERT CENTER	24.1	1964-71
10253600	EAGLE CREEK AT EAGLE MOUNTAIN	7.74	1961-66
10255200	MYER CREEK TRIBUTARY NEAR JACUMBA	.11	1966-70
10255700	SAN FELIPE CREEK NEAR JULIAN	89.2	1958-83
10255800	COYOTE CREEK NEAR BORREGO SPRINGS	144	1951-83
10255820	YAQUI PASS WASH NEAR BORREGO	.041	1965-69
10255850	VALLECITO CREEK NEAR JULIAN	39.7	1964-83
10256000	WHITEWATER RIVER AT WHITE WATER	57.5	1949-80
10256050	WHITEWATER MUNICIPAL WEST COMPANY DIVERSION AT WHITE WATER	--	1966-70, 1971-73, 1975-81
10256200	SAN GORGONIO RIVER NEAR BANNING	14.8	1975-81
10256300	SAN GORGONIO RIVER AT BANNING	44.2	1981-82
10256400	SAN GORGONIO RIVER NEAR WHITE WATER	154	1966-73, 1975-79
10257500	FALLS CREEK NEAR WHITE WATER	4.14	1922-27, 1928-31
10257710	CHINO CANYON CREEK NEAR PALM SPRINGS	3.88	1975-85
10257800	LONG CREEK NEAR DESERT HOT SPRINGS	19.6	1963-71
10258030	TAHQUITZ CREEK AT PALM SPRINGS	--	1983
10258100	PALM CANYON CREEK TRIBUTARY NEAR ANZA	.47	1967-73
10259600	COTTONWOOD WASH NEAR COTTONWOOD SPRING	.71	1960-72
10259920	WASTEWAY NO. 1 NEAR MECCA	--	1966-81
10260200	PIPES CREEK NEAR YUCCA VALLEY	15.1	1958-71
10260400	CUSHENBURY CREEK NEAR LUCERNE VALLEY	6.36	1957-71
10260820	WEST FORK MOJAVE RIVER BELOW SILVERWOOD LAKE	34.0	1981-83
10261900	MOJAVE RIVER AT WILD CROSSING, NEAR HELENDALE	957	1966-70
10264500	LITTLE ROCK CREEK NEAR PALMDALE	78.0	1968
10264590	COTTONWOOD CREEK NEAR ROSAMOND	35.7	1965-72
10264710	GOLER GULCH NEAR RANDSBURG	41.3	1966-72
10264740	CACHE CREEK NEAR MOJAVE	96.5	1965-72
10264750	PINE TREE CREEK NEAR MOJAVE	33.5	1958-79
10264770	COTTONWOOD CREEK NEAR CANTIL	163	1966-72
10264870	LITTLE LAKE CREEK NEAR LITTLE LAKE	8.60	1964-68
10264878	NINEMILE CREEK NEAR BROWN	10.4	1962-71
10265200	CONVICT CREEK NEAR MAMMOTH LAKES	18.2	1925-78
10265500	OWENS RIVER NEAR ROUND VALLEY	425	1909-23, 1928-40
10265700	ROCK CREEK AT LITTLE ROUND VALLEY, NEAR BISHOP	35.8	1925-78
10267000	PINE CREEK DIVISION BOX NEAR BISHOP	36.4	1922-79
10268000	OWENS RIVER AT PLEASANT VALLEY, NEAR BISHOP	583	1918-40
10268700	SILVER CANYON CREEK NEAR LAWS	19.7	1930-78
10276000	BIG PINE CREEK NEAR BIG PINE	39.0	1921-78
10276002	GIROUX DITCH LOWER BELOW BIG PINE	--	1975-78
10276500	TINEMAHA CREEK NEAR BIG PINE	27.3	1907-11
10277000	BIRCH CREEK NEAR BIG PINE	11.7	1907-11
10277400	OWENS RIVER BELOW TINEMAHA DAM, NEAR BIG PINE	1,964	1975-84
10277500	OWENS RIVER NEAR BIG PINE	1,976	1912-75
10278000	TABOOSE CREEK NEAR ABERDEEN	11.2	1906-11
10278500	GOODALE CREEK NEAR ABERDEEN	11.2	1906-11
10281500	OAK CREEK NEAR INDEPENDENCE	24.1	1906-11
10281800	INDEPENDENCE CREEK BELOW PI CANYON CREEK, NEAR INDEPENDENCE	18.1	1923-78
10282000	INDEPENDENCE CREEK NEAR INDEPENDENCE	18.8	1907-11
10282480	MAZOURKA CREEK NEAR INDEPENDENCE	15.6	1961-72
10284800	INYO CREEK NEAR LONE PINE	1.54	1968-73
10285500	TUTTLE CREEK NEAR LONE PINE	14.0	1909-11
10285700	OWENS RIVER AT KEELER BRIDGE, NEAR LONE PINE	2,604	1961-79
10286000	COTTONWOOD CREEK NEAR OLANCHA	40.1	1906-11, 1914-18, 1920-38, 1960-78
10286001	COTTONWOOD CREEK PENSTOCK WEIR, NEAR LONE PINE	--	1906-11, 1914-18, 1919-78
10286002	COTTONWOOD CREEK DIVERSION TO POWERHOUSE	--	1939-50, 1974, 1975-78

DISCONTINUED GAGING STATIONS--Continued

Station No.	Station name	Drainage area (mi ²)	Period of record
10287400	RUSH CREEK ABOVE GRANT LAKE, NEAR JUNE LAKE	51.3	1937-79
10287900	LEE VINING CREEK NEAR LEE VINING	34.9	1935-79
10290000	SUMMERS CREEK NEAR BRIDGEPORT	8.26	1954-59
11010900	WILSON CREEK TRIBUTARY NEAR DULZURA	.61	1968-73
11011900	POTRERO CREEK TRIBUTARY NEAR BARRETT JUNCTION	.78	1966-68
11012100	MILLER CREEK NEAR LIVE OAK SPRINGS	1.00	1962-64
11013000	TIJUANA RIVER NEAR DULZURA	481	1937-90
11013600	JAMUL CREEK AT LEE VALLEY, NEAR JAMUL	2.26	1985, 1987-88
11013700	JAMUL CREEK TRIBUTARY NEAR JAMUL	2.47	1973
11014700	TELEGRAPH CANYON CREEK AT CHULA VISTA	6.23	1973
11014850	JAPACHA CREEK NEAR DESCANSO	2.40	1965-67
11016000	SWEETWATER RIVER NEAR DEHESH	112	1913-16
11021500	SAN VICENTE CREEK NEAR FOSTER	66.0	1942
11022000	SAN VICENTE CREEK AT SAN VICENTE DAM, AT FOSTER	74.2	1937-41
11023200	SAN CLEMENTE CANYON CREEK AT MIRAMAR NAVAL AIR STATION	5.60	1973
11023250	POWAY CREEK NEAR POWAY	7.92	1970-75, 1978-87
11023310	RATTLESNAKE CREEK AT POWAY	8.13	1970-89
11023315	POWAY CREEK TRIBUTARY AT OAK KNOLL ROAD, NEAR POWAY	.93	1972-75
11023318	POMERADO CREEK AT GLENOAK ROAD, NEAR POWAY	2.43	1970-75
11023320	POMERADO CREEK AT POWAY ROAD, NEAR POWAY	4.14	1971-75
11023325	BEELER CREEK AT POMERADO ROAD, NEAR POWAY	5.46	1970-89
11023400	CARROLL CREEK NEAR LA JOLLA	15.8	1985-86
11023450	CARMEL CREEK NEAR DEL MAR	1.11	1985-86
11023500	SANTA YSABEL CREEK NEAR SANTA YSABEL	12.5	1914
11024500	BLACK CANYON CREEK NEAR MESA GRANDE	15.3	1914, 1923-24
11026000	SANTA YSABEL CREEK NEAR SAN PASQUAL	128	1957-80
11027000	GUEJITO CREEK NEAR SAN PASQUAL	22.5	1947-82
11027500	GUEJITO CREEK AT SAN PASQUAL	27.7	1915, 1917, 1947-56
11029000	SAN DIEGUITO RIVER NEAR SAN PASQUAL	249	1956-65
11029500	SAN DIEGUITO RIVER AT BERNARDO	269	1912-15
11030500	SAN DIEGUITO RIVER NEAR DEL MAR	338	1984-89
11030730	ESCONDIDO CREEK NEAR OLIVEHAIN	64.6	1973
11031000	SAN LUIS REY RIVER NEAR WARNER SPRINGS	33.6	1913-15
11031500	AGUA CALIENTE CREEK NEAR WARNER SPRINGS	19.0	1961-87
11033000	WEST FORK SAN LUIS REY RIVER NEAR WARNER SPRINGS	25.5	1913-15, 1957-86
11035000	SAN LUIS REY RIVER AT LAKE HENSHAW, NEAR MESA GRANDE	206	1912-22
11037650	PAUMA VALLEY WATER COMPANY DIVERSION NEAR PAUMA VALLEY	--	1966-70, 1972-81
11037700	PAUMA CREEK NEAR PAUMA VALLEY	11.0	1965-81
11037701	PAUMA CREEK AND DIVERSION NEAR PAUMA VALLEY	11.0	1965-81
11038500	SAN LUIS REY RIVER NEAR PALA	317	1909-11, 1913-15
11039100	SAN LUIS REY RIVER TRIBUTARY NEAR PALA	1.01	1966-73
11040000	SAN LUIS REY RIVER AT MONSERATE NARROWS, NEAR PALA	373	1938-41, 1947-86
11040200	KEYS CREEK TRIBUTARY AT VALLEY CENTER	7.65	1970-82
11040500	SAN LUIS REY RIVER AT BONSALE	456	1912-15, 1984
11040700	SAN LUIS REY RIVER BELOW MOOSA CANYON, NEAR BONSALE	499	1985
11041000	SAN LUIS REY RIVER NEAR BONSALE	513	1930-80
11042520	TEMECULA CREEK AT NIGGER CANYON, NEAR TEMECULA	320	1923-48
11042600	TEMECULA CREEK BELOW VAIL DAM	320	1978
11044500	SANTA MARGARITA RIVER NEAR FALLBROOK	644	1925-80
11044600	SANTA MARGARITA RIVER TRIBUTARY NEAR FALLBROOK	.52	1962-65
11045000	SANTA MARGARITA RIVER NEAR DE LUZ STATION	705	1925-26
11046100	LAS FLORES CREEK NEAR OCEANSIDE	26.6	1952-67, 1970-79
11046200	SAN ONOFRE CREEK NEAR SAN ONOFRE	34.6	1951-67
11046250	SAN ONOFRE CREEK AT SAN ONOFRE	42.2	1947-67, 1989
11046300	SAN MATEO CREEK NEAR SAN CLEMENTE	80.8	1953-67
11046310	SAN MATEO CREEK NEAR SAN ONOFRE	91.9	1951-52
11046350	CRISTIANITOS CREEK NEAR SAN CLEMENTE	29.0	1951-67
11046370	SAN MATEO CREEK AT SAN ONOFRE	132	1947-67, 1984-85
11046500	SAN JUAN CREEK NEAR SAN JUAN CAPISTRANO	106	1929-71, 1973, 1981-82
11046501	SAN JUAN CREEK NEAR SAN JUAN CAPISTRANO PLUS CANAL	117	1955-71
11047200	OSO CREEK AT CROWN VALLEY PARKWAY, NEAR MISSION VIEJO	14.0	1970-81
11047300	ARROYO TRABUCO AT SAN JUAN CAPISTRANO	54.1	1973-77, 1984-89
11047500	ALISO CREEK AT EL TORO	7.92	1931-80
11047700	ALISO CREEK AT SOUTH LAGUNA	34.4	1982-87
11048000	PETERS CANYON WASH LINE ROAD, NEAR SANTA ANITA	92.0	1931-40
11048555	SAN DIEGO CREEK AT CAMPUS DRIVE, NEAR IRVINE	--	1978-79, 1983-85
11049600	GREENSPOT PIPELINE NEAR MENTONE	--	1972-73
11051600	SANTA ANA RIVER SPREADING DIVERSION NEAR MENTONE	213	1952-77
11054000	MILL CREEK NEAR YUCAIPA	42.4	1948-86
11054600	CRAFTON NEAR MENTONE	--	1972-79
11055000	MILL CREEK NEAR MENTONE	50.5	1939-65
11056000	SANTA ANA RIVER NEAR SAN BERNARDINO	306	1929-37, 1955-61
11056500	LITTLE SAN GORGONIO CREEK NEAR BEAUMONT	1.74	1949-85
11057490	SAN TIMOTEO CREEK AT LOMA LINDA	125	1979-80

DISCONTINUED GAGING STATIONS--Continued

Station No.	Station name	Drainage area (mi ²)	Period of record
11058600	WATERMAN CANYON CREEK NEAR ARROWHEAD SPRINGS	4.65	1912-14, 1920-85
11059000	WARM CREEK FLOODWAY AT SAN BERNARDINO	75.1	1961-81
11059100	SAN BERNARDINO WATER QUALITY CONTROL PLANT AT SAN BERNARDINO	--	1973-82
11060300	LYTLE CREEK AT CHANNEL, AT SAN BERNARDINO	--	1929-30, 1932-57
11060500	MEEKS AND DALEY CANAL NEAR COLTON	--	1921-81
11062200	FONTANA UNION WATER CO. LYTLE CREEK RETURN FLOW CHANNEL NEAR FONTANA	--	1973-80
11062810	WEST SAN BERNARDINO COUNTY WATER DISTRICT RIALTO DIVERSION NEAR FONTANA	--	1981
11063000	CAJON CREEK NEAR KEENBROOK	40.6	1920-71, 1978-83
11064000	LYTLE CREEK AT FOOTHILL BOULEVARD, NEAR RIALTO	--	1929-57
11065800	WARM CREEK NEAR COLTON	198	1921-61
11065801	WARM CREEK NEAR COLTON PLUS DIVERSION	259	1920-61
11066050	SANTA ANA RIVER AT COLTON	740	1962-66
11066100	LYTLE CREEK WEST CHANNEL AT COLTON	--	1929-45
11066440	SANTA ANA RIVER AT MISSION BOULEVARD, AT RIVERSIDE	808	1971-82
11066478	RIVERSIDE WATER QUALITY CONTROL PLANT WEIR NO. 1	--	1973-81
11066479	RIVERSIDE WATER QUALITY CONTROL PLANT WEIR NO. 2	--	1973-81
11066480	RIVERSIDE WATER QUALITY CONTROL PLANT AT RIVERSIDE NARROWS, NEAR ARLINGTON	--	1966-82
11066500	SANTA ANA RIVER AT RIVERSIDE NARROWS, NEAR ARLINGTON	853	1929-73
11066550	SHEEHAN DIVERSION AT RIVERSIDE NARROWS, NEAR ARLINGTON	--	1964-65, 1967-68
11066950	DAY CREEK DIVERSION NEAR ETIWANDA	--	1966-69, 1971
11067000	DAY CREEK NEAR ETIWANDA	4.56	1929-72
11068000	SANTA ANA RIVER AT AUBURNDALE BRIDGE, NEAR CORONA	1,010	1961-68
11069200	LAKE HEMET WATER CO. UPPER CANAL NEAR SAN JACINTO	--	1966-69, 1972-83, 1985-90
11069300	SOUTH FORK SAN JACINTO RIVER TRIBUTARY NEAR VALLE VISTA	2.20	1962-67
11069501	SAN JACINTO RIVER NEAR SAN JACINTO PLUS CANALS	141	1949-81, 1983-89
11070000	BAUTISTA CREEK NEAR HEMET	39.6	1948-69
11070050	BAUTISTA CREEK AT VALLE VISTA	48.5	1970-87
11070232	EAST FORK PIGEON PASS CREEK AT HEACOCK STREET, NEAR SUNNYMEAD	.48	1970-75
11070375	SAN JACINTO RIVER AT RAILROAD CROSSING WEIR, NEAR ELSINORE	562	1952-82, 1984
11070465	SALT CREEK AT MURRIETA ROAD, NEAR SUN CITY	--	1984
11070475	SALT CREEK AT RAILROAD CROSSING RESERVOIR, NEAR ELSINORE	122	1970-78
11072000	TEMESCAL CREEK NEAR CORONA	164	1929-80
11072200	TEMESCAL CREEK AT CORONA	249	1968-74, 1980-81
11073000	SAN ANTONIO CREEK NEAR CLAREMONT	16.5	1917-72
11073200	SAN ANTONIO CREEK BELOW SAN ANTONIO DAM	26.9	1963-81
11073440	CHINO CREEK NEAR CHINO	107	1968-69
11073470	CUCAMONGA CREEK NEAR UPLAND	9.68	1929-75
11073500	CHINO CREEK NEAR PRADO	218	1929-40
11074500	SANTA ANA RIVER AT COUNTY LINE, BELOW PRADO DAM	1,510	1919-42, 1945-60
11075620	SANTA ANA RIVER SPREADING DIVERSION BELOW IMPERIAL HIGHWAY, NEAR ANAHEIM	--	1974-86
11075730	CARBON CREEK AT OLINDA	19.7	1931-38
11075740	CARBON CREEK NEAR YORBA LINDA	20.1	1950-61
11077000	SANTIAGO CREEK NEAR VILLA PARK	84.6	1921-63
11077001	SANTIAGO CREEK PLUS DIVERSION NEAR VILLA PARK	83.8	1921-31
11078100	SANTA ANA RIVER AT ADAMS AVENUE, NEAR COSTA MESA	1,701	1974-77
11078110	RUBIO WASH AT GLENDON WAY	--	1973-75
11078120	COMPTON CREEK AT 120TH STREET	--	1974-75
11078130	ARCADIA WASH AT GRAND AVENUE	--	1974-75
11078140	EATON WASH AT LOFTAS DRIVE	--	1974-75
11078150	LIMEKILN CREEK ABOVE ALISO CREEK	--	1973-74
11078170	PUDDINGSTONE CREEK BELOW PUDDINGSTONE DAM	--	1974
11078190	SANTA FE DIVERSION CHANNEL	--	1974
11078191	WEST FORK SAN GABRIEL RIVER BELOW COGSWELL DAM	--	1975
11080000	EAST FORK SAN GABRIEL RIVER AT CAMP BONITA	58.2	1928-32
11080500	EAST FORK SAN GABRIEL RIVER NEAR CAMP BONITA	84.6	1933-79
11081000	BEAR CREEK NEAR CAMP RINCON	28.2	1930-36
11081500	NORTH FORK SAN GABRIEL RIVER AT CAMP RINCON	18.6	1930-36
11082000	WEST FORK SAN GABRIEL RIVER AT CAMP RINCON	104	1928-78
11083500	SAN GABRIEL RIVER NEAR AZUSA	214	1894, 1896-1959, 1961-66
11084000	ROGERS CREEK NEAR AZUSA	6.64	1918-62
11084500	FISH CREEK NEAR DUARTE	6.36	1916-79
11085019	SAN GABRIEL RIVER BELOW VALLEY BOULEVARD	--	1973-74
11086000	DALTON CREEK NEAR GLENDORA	7.24	1913-62
11086300	SAN DIMAS CREEK BELOW SAN DIMAS DAM	16.3	1957-78
11086400	SAN DIMAS CREEK NEAR SAN DIMAS	18.3	1917-56
11086500	LITTLE DALTON CREEK NEAR GLENDORA	2.72	1939-68, 1970-71
11086990	SAN JOSE CREEK NEAR EL MONTE	87.8	1965-78
11087100	RIO HONDO CREEK AT WHITTIER NARROWS DAM	--	1966-70
11087195	SAN JOSE CREEK NEAR WHITTIER	88.7	1929-64
11087500	SAN GABRIEL RIVER AT PICO	447	1929-78
11088000	SAN GABRIEL RIVER AT SPRING STREET, NEAR LOS ALAMITOS	472	1937-51, 1953-79
11089000	BREA CREEK AT FULLERTON	23.6	1931-69

DISCONTINUED GAGING STATIONS--Continued

Station No.	Station name	Drainage area (mi ²)	Period of record
11090000	FULLERTON CREEK AT FULLERTON	7.50	1936-64
11090200	FULLERTON CREEK AT RICHMAN AVENUE, AT FULLERTON	12.1	1960-77, 1979-81
11090500	COYOTE CREEK NEAR ARTESIA	120	1930-63
11090700	COYOTE CREEK AT LOS ALAMITOS	150	1964-79
11092450	LOS ANGELES RIVER AT SEPULVEDA DAM	158	1932-79
11093000	PACOIMA CREEK NEAR SAN FERNANDO	28.3	1917-79
11093490	NORTH FORK MILL CREEK NEAR LANADA	5.80	1966-73
11093500	MILL CREEK NEAR COLBY RANCH	21.7	1931-34
11094000	BIG TUJUNGA CREEK BELOW MILL CREEK, NEAR COLBY RANCH (FORMERLY TUJUNGA CREEK)	64.9	1948-71
11094500	BIG TUJUNGA CREEK NEAR COLBY RANCH (FORMERLY TUJUNGA CREEK)	67.5	1931-50
11095000	FOX CREEK NEAR COLBY RANCH	9.22	1931-37
11095500	BIG TUJUNGA CREEK NEAR SUNLAND (FORMERLY TUJUNGA CREEK)	106	1917-77
11096000	HAINES CREEK NEAR TUJUNGA	1.26	1917-34, 1936-61
11096500	LITTLE TUJUNGA CREEK NEAR SAN FERNANDO	21.1	1929-73
11097500	LOS ANGELES RIVER AT LOS ANGELES	514	1930-79
11098500	LOS ANGELES RIVER NEAR DOWNEY	599	1928-78
11099500	SAWPIT CREEK NEAR MONROVIA	5.21	1916-61
11100000	SANTA ANITA CREEK NEAR SIERRA MADRE	9.71	1917-70
11100500	LITTLE SANTA ANITA CREEK NEAR SIERRA MADRE	1.84	1916-62, 1979
11101000	EATON CREEK NEAR PASADENA	6.47	1918-66
11101380	ALHAMBRA WASH AT KLINGERMANN STREET, NEAR MONTEBELLO	15.2	1976-79
11101500	RIO HONDO NEAR MONTEBELLO	116	1929-78
11102000	MISSION CREEK NEAR MONTEBELLO	4.16	1930-77, 1983
11102500	RIO HONDO NEAR DOWNEY	143	1928-79
11103500	BALLONA CREEK NEAR CULVER CITY	89.5	1928-78
11106000	CALLEGUAS CREEK AT CAMARILLO	168	1929-31, 1955-58
11106400	CONEJO CREEK ABOVE HIGHWAY 101, NEAR CAMARILLO	64	1973-83
11106500	CONEJO CREEK NEAR CAMARILLO	69	1928-31
11107000	HONDA BARRANCA NEAR SOMIS	2.5	1955-63
11107500	BEARDSLEY WASH NEAR SOMIS	13	1954-58
11107745	SANTA CLARA RIVER ABOVE RAILROAD STATION, NEAR LANG	157	1950-68, 1970-77
11107860	BOUQUET CREEK NEAR SAUGUS	51.6	1971-73, 1975, 1977
11107922	SOUTH FORK SANTA CLARA RIVER AT SAUGUS	43.4	1976-77
11108000	SANTA CLARA RIVER NEAR SAUGUS	411	1930-55
11108145	CASTAIC CREEK NEAR SAUGUS	184	1947-76
11109000	SANTA CLARA RIVER NEAR PIRU	645	1928-32
11109100	PIRU CREEK BELOW THORN MEADOWS, NEAR STAUFFER	22.5	1972-78
11109200	MIDDLE FORK LOCKWOOD CREEK NEAR STAUFFER	5.50	1972-78
11109250	LOCKWOOD CREEK AT GORGE, NEAR STAUFFER	58.7	1972-81
11110000	PIRU CREEK NEAR PIRU	437	1912-13, 1928-56, 1969-75
11112500	FILLMORE IRRIGATION COMPANY CANAL NEAR FILLMORE	--	1940-51, 1972-83
11113900	SATICOY DIVERSION NEAR SATICOY	--	1969-81, 1983-87
11114500	MATILIJIA CREEK ABOVE RESERVOIR, NEAR MATILIJIA HOT SPRINGS	50.7	1948-69
11115500	MATILIJIA CREEK AT MATILIJIA HOT SPRINGS	54.6	1928-88
11116000	NORTH FORK MATILIJIA CREEK AT MATILIJIA HOT SPRINGS	15.6	1929-32, 1934-73, 1974-83
11116500	VENTURA RIVER NEAR OJAI	70.7	1912-14, 1922-24, 1983-84
11116550	VENTURA RIVER NEAR MEINERS OAKS	76.4	1959-79, 1981-82, 1984-88
11117000	SAN ANTONIO CREEK NEAR OJAI	33.7	1928-32
11117600	COYOTE CREEK NEAR OAK VIEW	13.2	1959-88
11117800	SANTA ANA CREEK NEAR OAK VIEW	9.11	1959-88
11118000	COYOTE CREEK NEAR VENTURA	41.2	1928-32, 1934-58, 1970-82
11118400	VENTURA RIVER DIVERSION NEAR VENTURA	--	1970-83, 1988-90
11118501	VENTURA RIVER NEAR VENTURA PLUS DIVERSION	188	1939-89
11119660	SAN YSIDRO CREEK AT MONTECITO	3.07	1980-83
11119700	SYCAMORE CREEK AT SANTA BARBARA	3.41	1971-72, 1980
11119760	VICTORIA STREET DRAIN AT OLIVOS, AT SANTA BARBARA	0.625	1970-77, 1979
11119900	ATASCADERO CREEK AT PUENTE ROAD, NEAR GOLETA	3.86	1971-72
11120520	SAN PEDRO CREEK AT GOLETA	3.21	1971-72
11120550	GAVIOTA CREEK NEAR GAVIOTA	18.8	1967-86
11120600	JALAMA CREEK NEAR LOMPOC	20.5	1966-82
11120700	CANADA HONDA CREEK NEAR LOMPOC	3.09	1959-62
11120800	CANADA HONDA CREEK NEAR POINT ARGUELLO	8.47	1959-62
11124000	SANTA CRUZ CREEK ABOVE STUKE CANYON	64.9	1947-52
11125000	CACHUMA CREEK NEAR SANTA YNEZ	23.8	1951-62
11126000	SANTA YNEZ RIVER NEAR SANTA YNEZ	422	1929-31, 1933-76
11126500	SANTA AGUEDA CREEK NEAR SANTA YNEZ	55.8	1941-71, 1977-78
11127000	SAN LUCAS CREEK NEAR SANTA YNEZ	3.2	1953-54
11127500	ZANJA DE COTA NEAR SANTA YNEZ	13.8	1955-61
11128000	SANTA YNEZ RIVER AT GRAND AVENUE, NEAR SANTA YNEZ	513	1955-65, 1989

DISCONTINUED GAGING STATIONS--Continued

Station No.	Station name	Drainage area (mi ²)	Period of record
11128400	ALISAL CREEK NEAR SOLVANG	12.3	1955, 1957-72
11129000	NOJOQUI CREEK NEAR BUELLTON	15.1	1953-54
11129500	SANTA YNEZ RIVER AT BUELLTON	611	1955-59
11130000	ZACA CREEK AT BUELLTON	39.4	1941-63
11130500	SANTA YNEZ RIVER NEAR BUELLTON	668	1952-74
11131000	SANTA YNEZ RIVER AT SANTA ROSA DAM SITE, NEAR BUELLTON	700	1955-64
11131500	SANTA YNEZ RIVER AT COOPERS EAST FORK, NEAR LOMPOC	708	1955-76
11132000	SANTA YNEZ RIVER BELOW SANTA RITA CREEK, NEAR LOMPOC	733	1955-62
11134000	SANTA YNEZ RIVER AT H STREET, NEAR LOMPOC	815	1947-62
11134500	SANTA YNEZ RIVER AT 13 STREET, NEAR LOMPOC	820	1955-75
11135000	SANTA YNEZ RIVER AT PINE CANYON, NEAR LOMPOC	884	1941-46, 1964-83
11135500	SANTA YNEZ RIVER AT BARRIER, NEAR SURF	895	1947-65
11136000	SAN ANTONIO CREEK AT HARRIS	93.7	1941-55
11136050	SAN ANTONIO CREEK ABOVE BARKA SLOUGH, NEAR ORCUTT	114	1985-87
11136150	SAN ANTONIO CREEK TRIBUTARY NEAR CASMALIA	.28	1947-70
11136400	WAGON ROAD CREEK NEAR STAUFFER	17.9	1972-78
11136480	REYES CREEK NEAR VENTUCOPA	4.62	1972-78
11136500	CUYAMA RIVER NEAR VENTUCOPA	89.9	1945-58
11136650	ALISO CANYON CREEK NEAR NEW CUYAMA	16.1	1964-72
11137000	CUYAMA RIVER NEAR SANTA MARIA	904	1930-62
11137400	ALAMO CREEK NEAR NIPOMO	83.3	1959-78
11137900	HUASNA RIVER NEAR ARROYO GRANDE	10.3	1959-86
11138100	CUYAMA RIVER BELOW TWITCHELL DAM	1,132	1959-83
11139000	LA BREA CREEK NEAR SISQUOC	93.6	1944-73
11139350	FOXED CREEK NEAR SISQUOC	16.8	1966-73
11139500	TEPUSQUET CREEK NEAR SISQUOC	28.7	1944-87
11140800	BLOSSER DITCH NEAR DONOVAN ROAD, AT SANTA MARIA	--	1972-76

DISCONTINUED LAKES AND RESERVOIRS

The following continuous-record lake stations in California have been discontinued. Daily records were collected and are stored in WATSTORE for the period of record shown for each location.

Station No.	Station name	Drainage area (mi ²)	Period of record
11117900	LAKE CASITAS NEAR CASITAS SPRINGS	38.6	1986-87

DISCONTINUED WATER-QUALITY STATIONS

The following continuous water-quality stations in California have been discontinued. Daily records were collected and are stored in WATSTORE for the period of record shown for each location.

Station No.	Station name	Drainage area (mi ²)	Type of record	Period of record
10254970	NEW RIVER AT INTERNATIONAL BOUNDARY, AT CALEXICO	--	C	1973-81
10256000	WHITWATER RIVER AT WHITE WATER	57.5	S	1972
10261500	MOJAVE RIVER AT LOWER NARROWS, NEAR VICTORVILLE	511	C	1975-82
10265150	HOT CREEK NEAR CASA DIABLO HOT SPRINGS	--	C,T	1983-88
10277400	OWENS RIVER BELOW TINEMAH DAH, NEAR BIG PINE	1,964	C,T	1975-81
11013500	TIJUANA RIVER NEAR NESTOR	1,695	T,S	1970-71, 1976, 1978
11022500	SAN DIEGO RIVER NEAR SANTEE	377	T,S	1970-78
11023000	SAN DIEGO RIVER AT FASHION VALLEY, AT SAN DIEGO	429	S	1984
11030500	SAN DIEGUITO RIVER NEAR DEL MAR	338	S	1984
11042000	SAN LUIS REY RIVER AT PRIORY, NEAR OCEANSIDE	557	S	1969-78, 1984
11046000	SANTA MARGARITA RIVER AT YSIDORA	723	S	1969-71, 1973-74, 1978
11046250	SAN ONOFRE CREEK AT SAN ONOFRE	42.2	S	1982-83, 1988-89
11046370	SAN MATEO CREEK AT SAN ONOFRE	132	S	1984
11046500	SAN JUAN CREEK NEAR SAN JUAN CAPISTRANO	106	T,S	1967-68, 1971, 1982

DISCONTINUED WATER-QUALITY STATIONS--Continued

Station No.	Station name	Drainage area (mi ²)	Type of record	Period of record
11046530	SAN JUAN CREEK AT LA NOVIA STREET BRIDGE, AT SAN JUAN CAPISTRANO	109	S	1987-88
11046550	SAN JUAN CREEK AT SAN JUAN CAPISTRANO	117	T,S	1972-82, 1987
11047000	ARROYO TRABUCO NEAR SAN JUAN CAPISTRANO	35.7	T,S	1967, 1978
11047300	ARROYO TRABUCO AT SAN JUAN CAPISTRANO	54.1	S	1971-77, 1984
11048500	SAN DIEGO CREEK AT CULVER DRIVE, NEAR IRVINE	41.8	T,S	1972-85
11048530	EL MODENA IRVINE CHANNEL NEAR IRVINE	--	T,S	1975-79
11048540	PETERS CANYON WASH AT BARRANCA ROAD, NEAR IRVINE	--	T,S	1975-79, 1983-85
11048550	SAN DIEGO CREEK AT LANE ROAD, NEAR IRVINE	--	T,S	1972-76
11048555	SAN DIEGO CREEK AT CAMPUS DRIVE, NEAR IRVINE	--	T,S	1972-76, 1978-79, 1983-85
11051500	SANTA ANA RIVER NEAR MENTONE	210	T,S	1982-89
11056200	SANTA ANA RIVER AT WATERMAN AVENUE, AT SAN BERNARDINO	339	T,S	1977, 1979
11057000	SAN TIMOTEO CREEK NEAR REDLANDS	118	T,S	1977-78
11057500	SAN TIMOTEO CREEK NEAR LOMA LINDA	125	S	1980
11059100	SAN BERNARDINO WATER QUALITY CONTROL PLANT AT SAN BERNARDINO	--	C	1973-75, 1977-80
11059300	SANTA ANA RIVER AT E STREET, NEAR SAN BERNARDINO	541	C,S	1968-72, 1983
11066460	SANTA ANA RIVER AT MWD CROSSING, NEAR ARLINGTON	852	C	1969-78
11066480	RIVERSIDE WATER QUALITY CONTROL PLANT AT RIVERSIDE NARROWS, NEAR ARLINGTON	--	C	1970-80, 1982
11066500	SANTA ANA RIVER AT RIVERSIDE NARROWS, NEAR ARLINGTON	853	C,T	1968-69
11067890	SANTA ANA RIVER AT PRADO PARK, NEAR CORONA	1,010	T,S	1976-80
11068000	SANTA ANA RIVER AT AUBURNDALE BRIDGE, NEAR CORONA	1,010	C,T	1968
11074000	SANTA ANA RIVER BELOW PRADO DAM	1,490	S	1973-82
11075600	SANTA ANA RIVER AT IMPERIAL HIGHWAY, NEAR ANAHEIM	1,544	T,S	1973-77, 1979
11075620	SANTA ANA RIVER SPREADING DIVERSION BELOW IMPERIAL HIGHWAY, NEAR ANAHEIM	--	C,T	1974-85
11075755	SANTA ANA RIVER AT BALL ROAD, AT ANAHEIM	1,587	T,S	1977-80
11075760	SANTA ANA RIVER NEAR KATELLA AVENUE, AT ORANGE	1,593	T,S	1974-76
11078000	SANTA ANA RIVER AT SANTA ANA	1,700	S	1968-88
11078100	SANTA ANA RIVER AT ADAMS AVENUE, NEAR COSTA MESA	1,701	T,S	1974-76
11102250	MISSION CREEK BELOW WHITTIER NARROWS DAM	--	C	1956-70
11103000	LOS ANGELES RIVER AT LONG BEACH	827	C	1980-84
11103010	LOS ANGELES RIVER AT WILLOW STREET BRIDGE, AT LONG BEACH	831	C,T	1974-75, 1981
11104000	TOPANGA CREEK AT TOPANGA BEACH	18.0	WQ,S	1982-88
11104400	MALIBU CREEK AT CORNELL	37.6	WQ,S	1983-88
11105410	COLD CREEK AT PIUMA ROAD, NEAR MONTE NIDO	7.73	WQ,S	1982-84, 1986, 1987, 1988
11105500	MALIBU CREEK AT CRATER CAMP, NEAR CALABASAS	105	WQ,S	1982-88
11105850	ARROYO SIMI NEAR SIMI	70.6	T,S	1970-71, 1974-78
11106550	CALLEGUAS CREEK AT CAMARILLO STATE HOSPITAL	248	T,S	1970-78
11108500	SANTA CLARA RIVER AT LOS ANGELES-VENTURA COUNTY LINE	625	C,S	1969-81
11109550	PIRU CREEK ABOVE FRENCHMANS FLAT	308	C	1972-80
11109600	PIRU CREEK ABOVE LAKE PIRU	372	C,T	1971-80
11109800	PIRU CREEK BELOW SANTA FELICIA DAM	425	C	1969-70, 1974-80
11110000	PIRU CREEK NEAR PIRU	437	C,T	1970-71
11110500	HOPPER CREEK NEAR PIRU	23.6	T,S	1977-78
11113000	SESPE CREEK NEAR FILLMORE	251	C,S	1967-78
11113500	SANTA PAULA CREEK NEAR SANTA PAULA	38.4	C	1969-80
11113900	SATICOY DIVERSION NEAR SATICOY	--	C,T	1969-71, 1982-87
11113910	SANTA CLARA RIVER AT DIVERSION, NEAR SATICOY	--	C	1971
11114000	SANTA CLARA RIVER AT MONTALVO	1,594	S	1968-81, 1984-85
11117500	SAN ANTONIO CREEK AT CASITAS SPRINGS	51.2	T,S	1977-78
11118500	VENTURA RIVER NEAR VENTURA	188	S	1969-86
11120000	ATASCADERO CREEK NEAR GOLETA	18.9	S	1982
11120510	SAN JOSE CREEK AT GOLETA	9.42	S	1982-85
11120530	TECOLOTITO CREEK NEAR GOLETA	4.42	S	1982
11120600	JALAMA CREEK NEAR LOMPOC	20.5	T	1981-83
11120900	CANADA HONDA CREEK AT PT ARGUELLO	--	T	1981-83
11141000	SANTA MARIA RIVER AT GUADALUPE	1,741	T,S	1969-70

TYPE OF RECORD: WQ (WATER QUALITY); C (CONDUCTIVITY); T (TEMPERATURE); S (SEDIMENT).

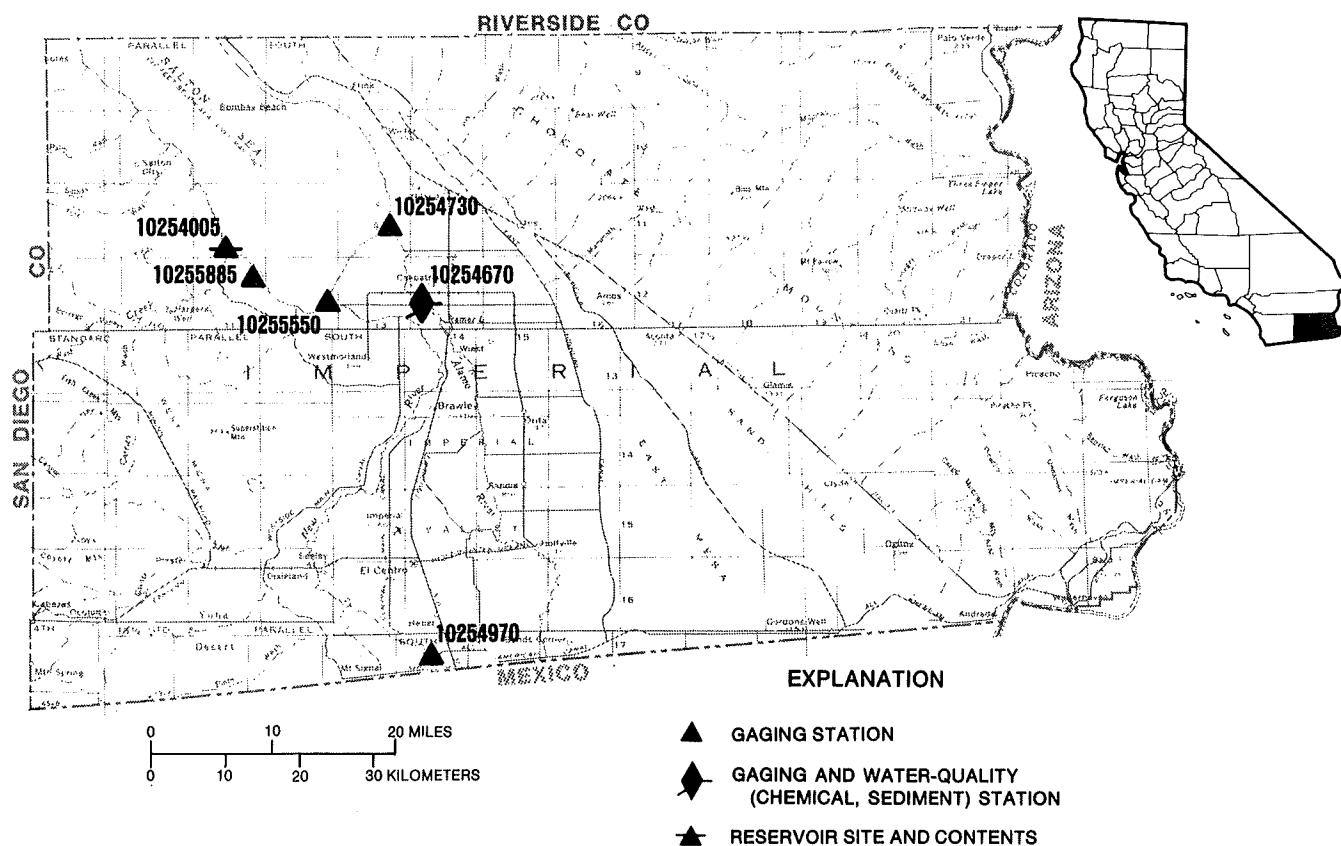


Figure 7. Location of discharge and water-quality stations in Imperial County.

EXPLANATION



GAGING STATION

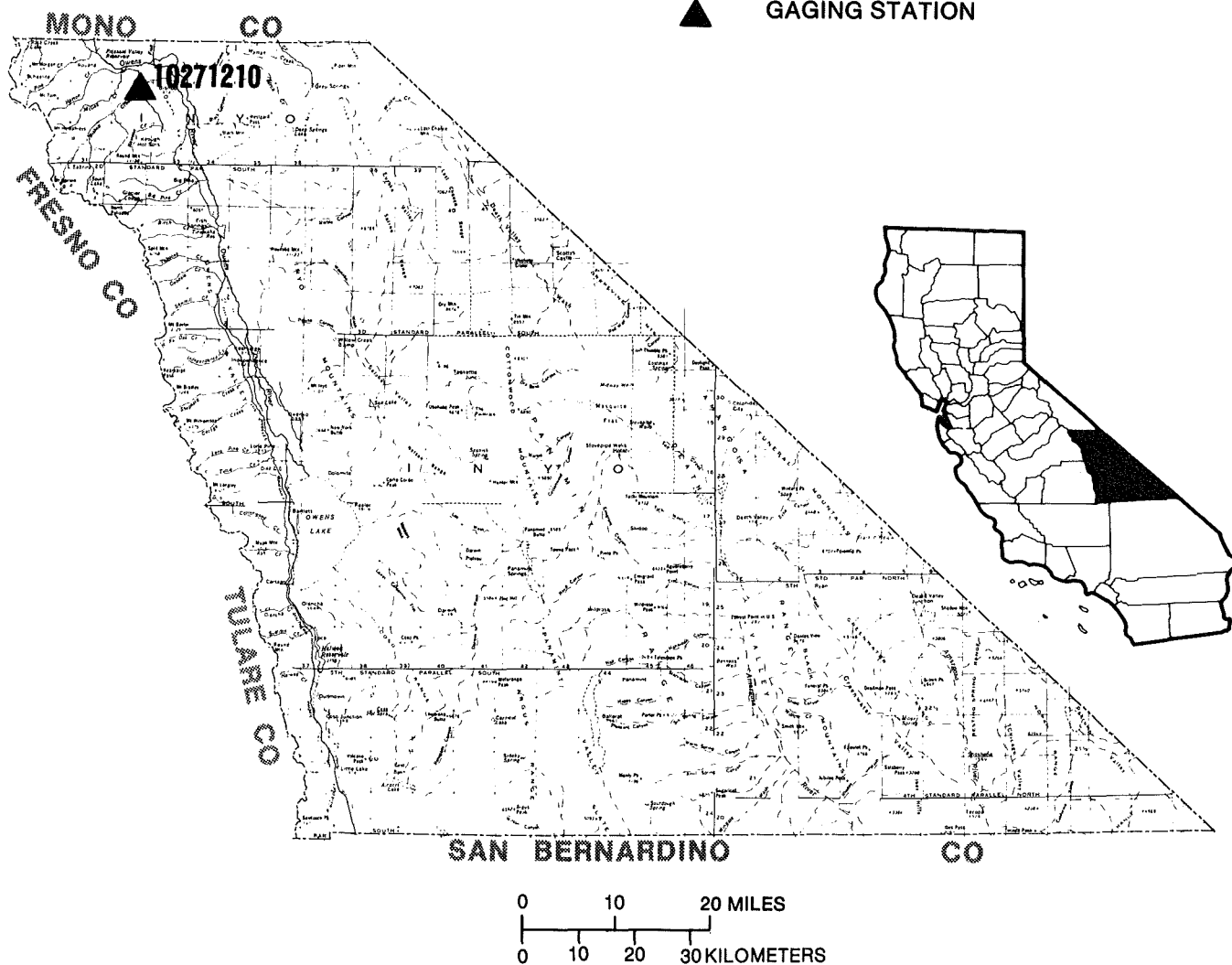


Figure 8. Location of discharge station in Inyo County.

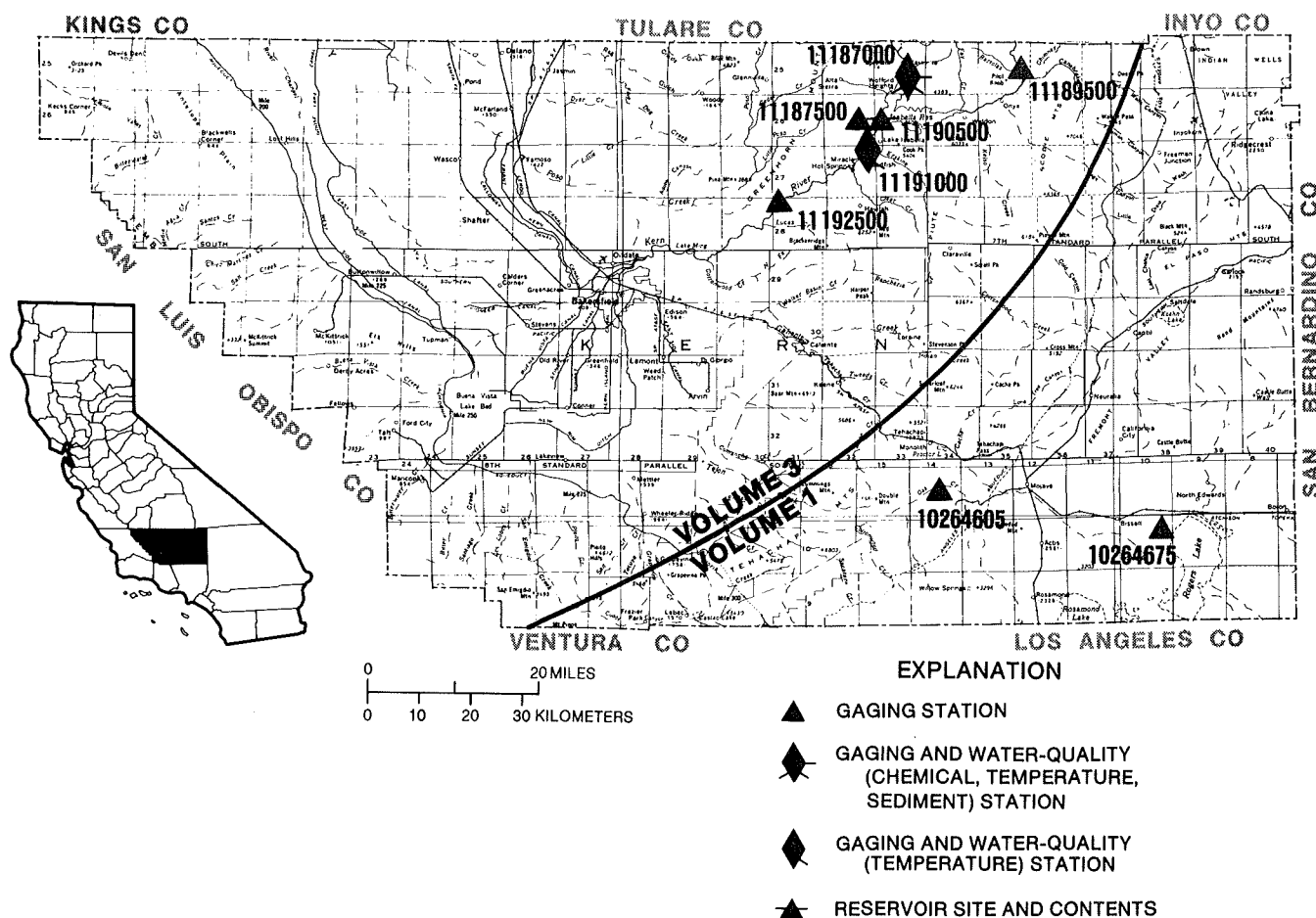


Figure 9. Location of discharge and water-quality stations in Kern County.
 (NOTE: Records for stations 11187000 through 11192500 published in volume 3.)

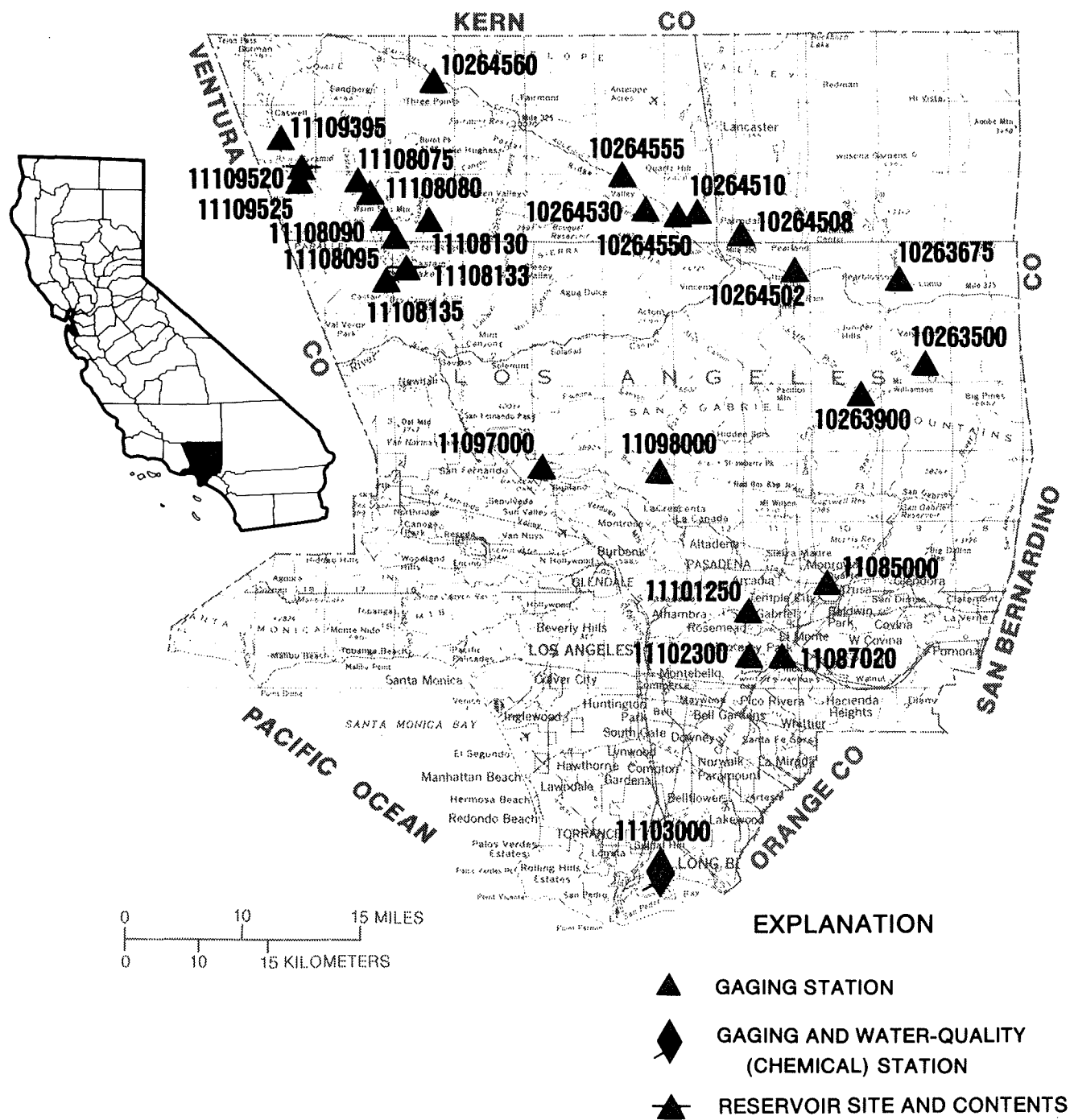
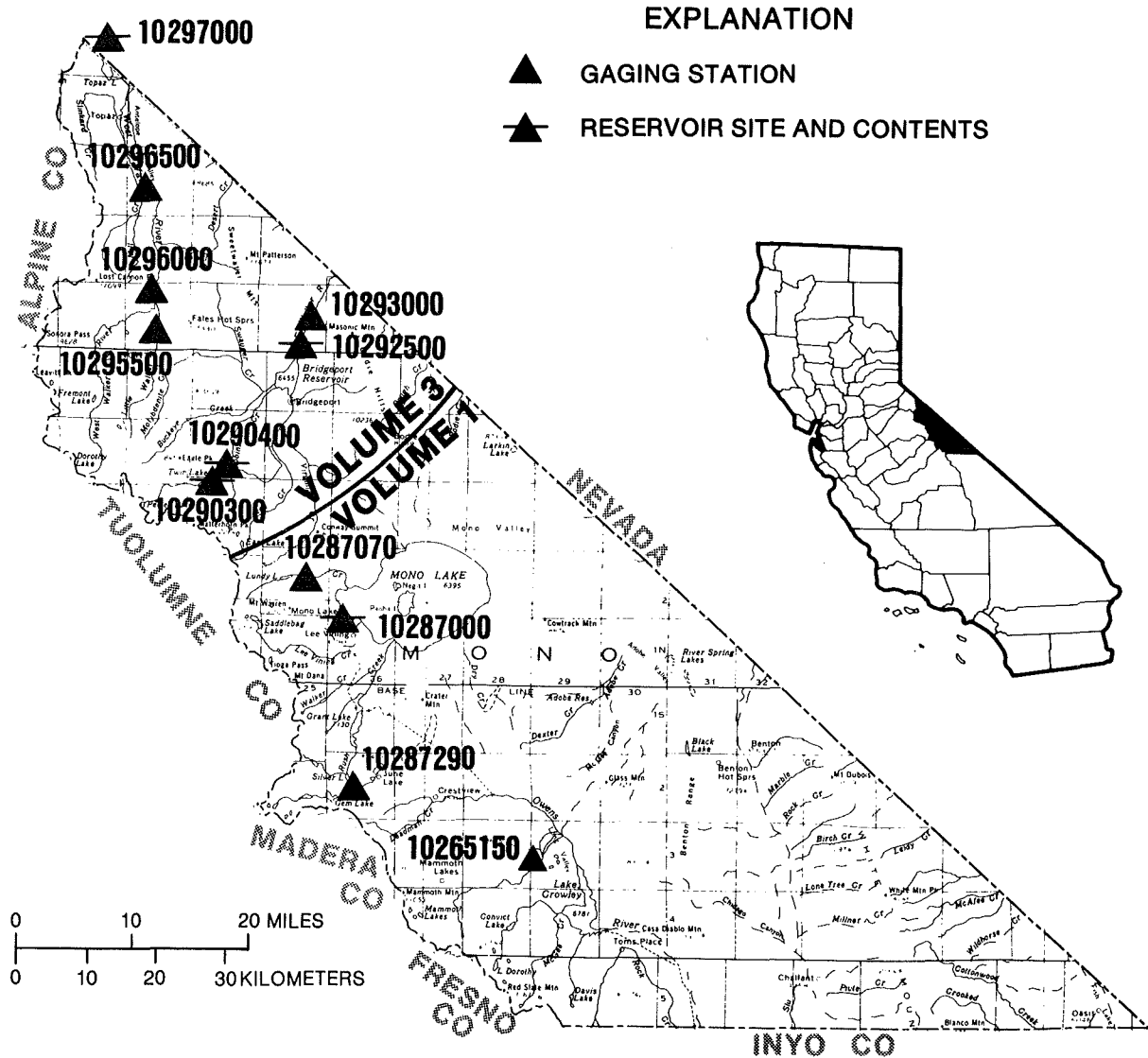


Figure 10. Location of discharge and water-quality stations in Los Angeles County.



EXPLANATION

- ▲ GAGING STATION
- ◆ GAGING AND WATER-QUALITY (SEDIMENT) STATION
- ▼ WATER-QUALITY (SEDIMENT) STATION

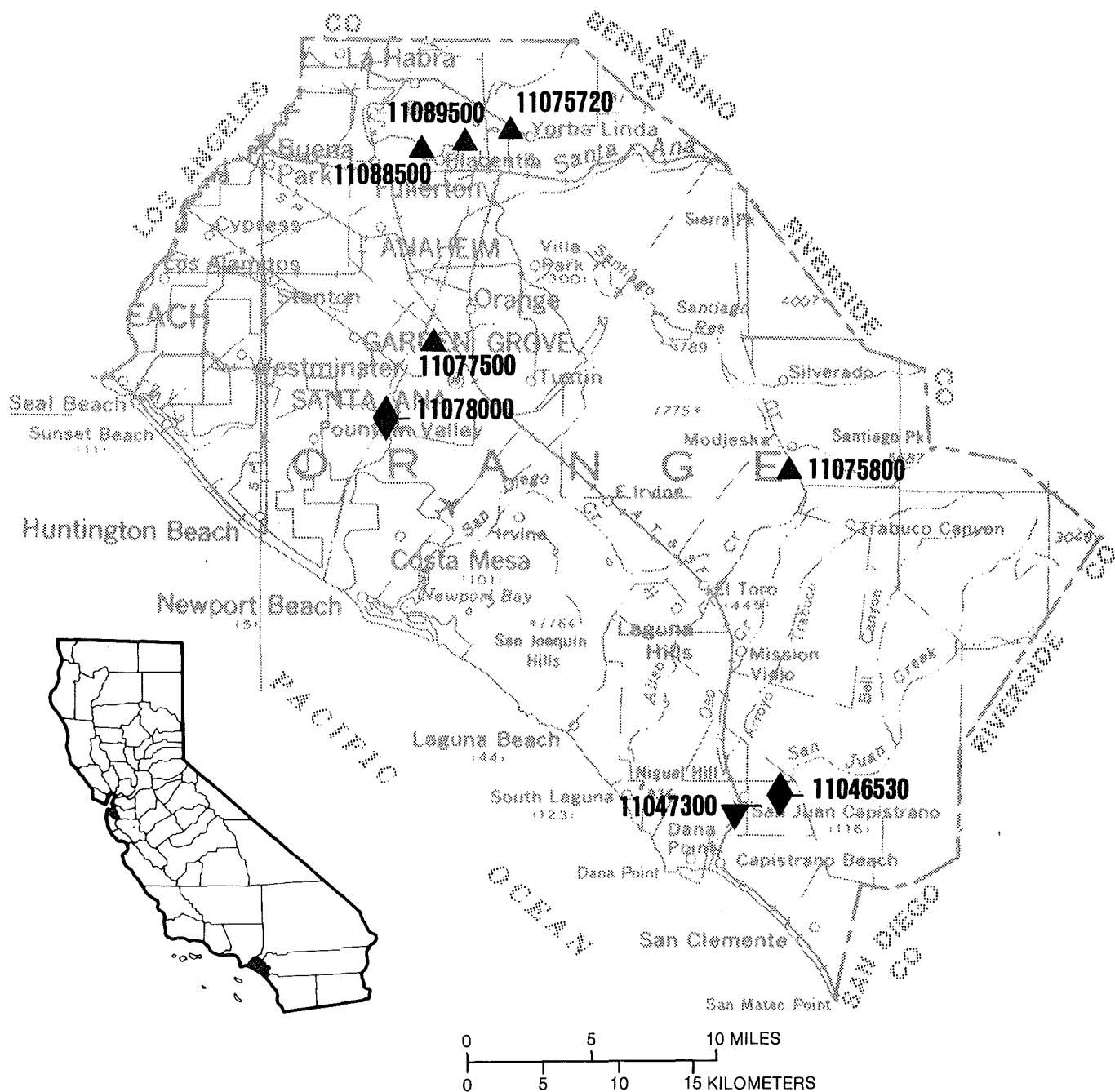


Figure 12. Location of discharge and water-quality stations in Orange County.

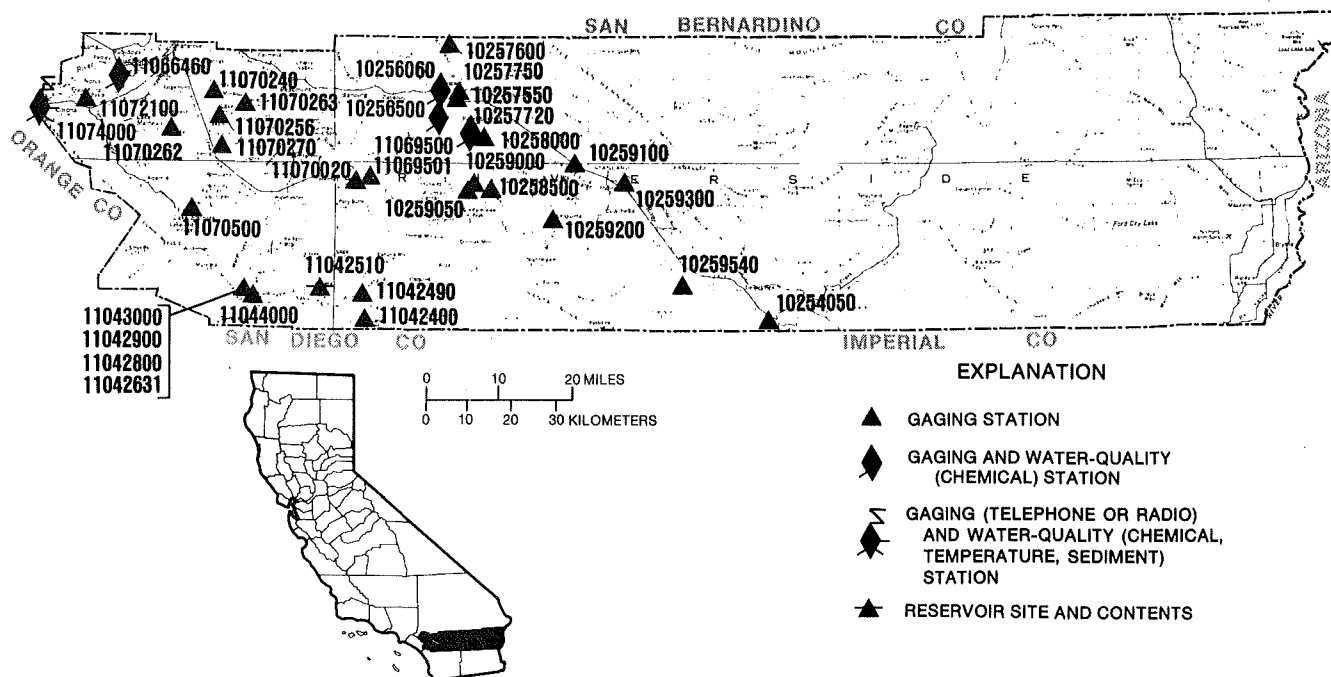


Figure 13. Location of discharge and water-quality stations in Riverside County.

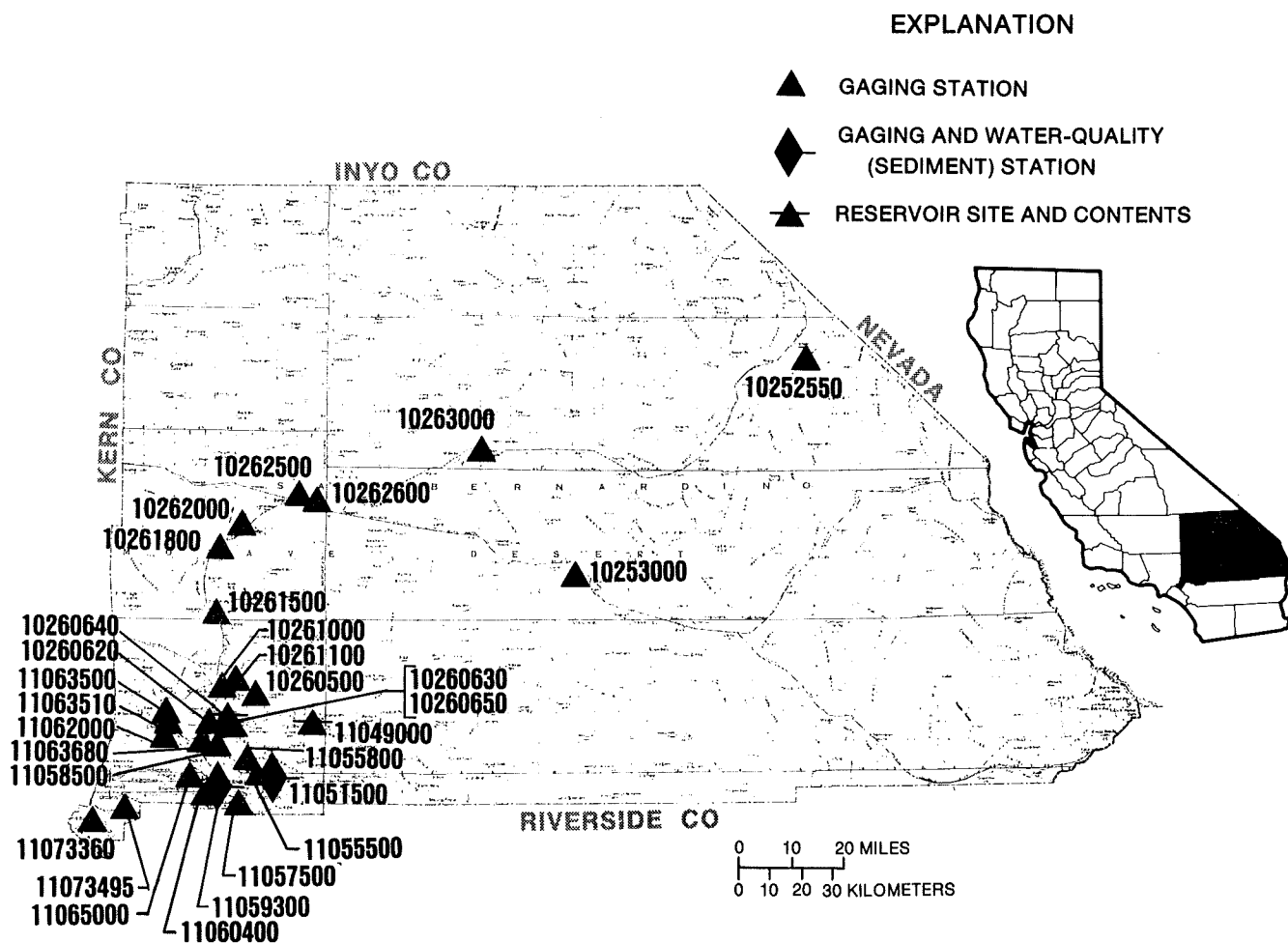


Figure 14. Location of discharge and water-quality stations in San Bernardino County.

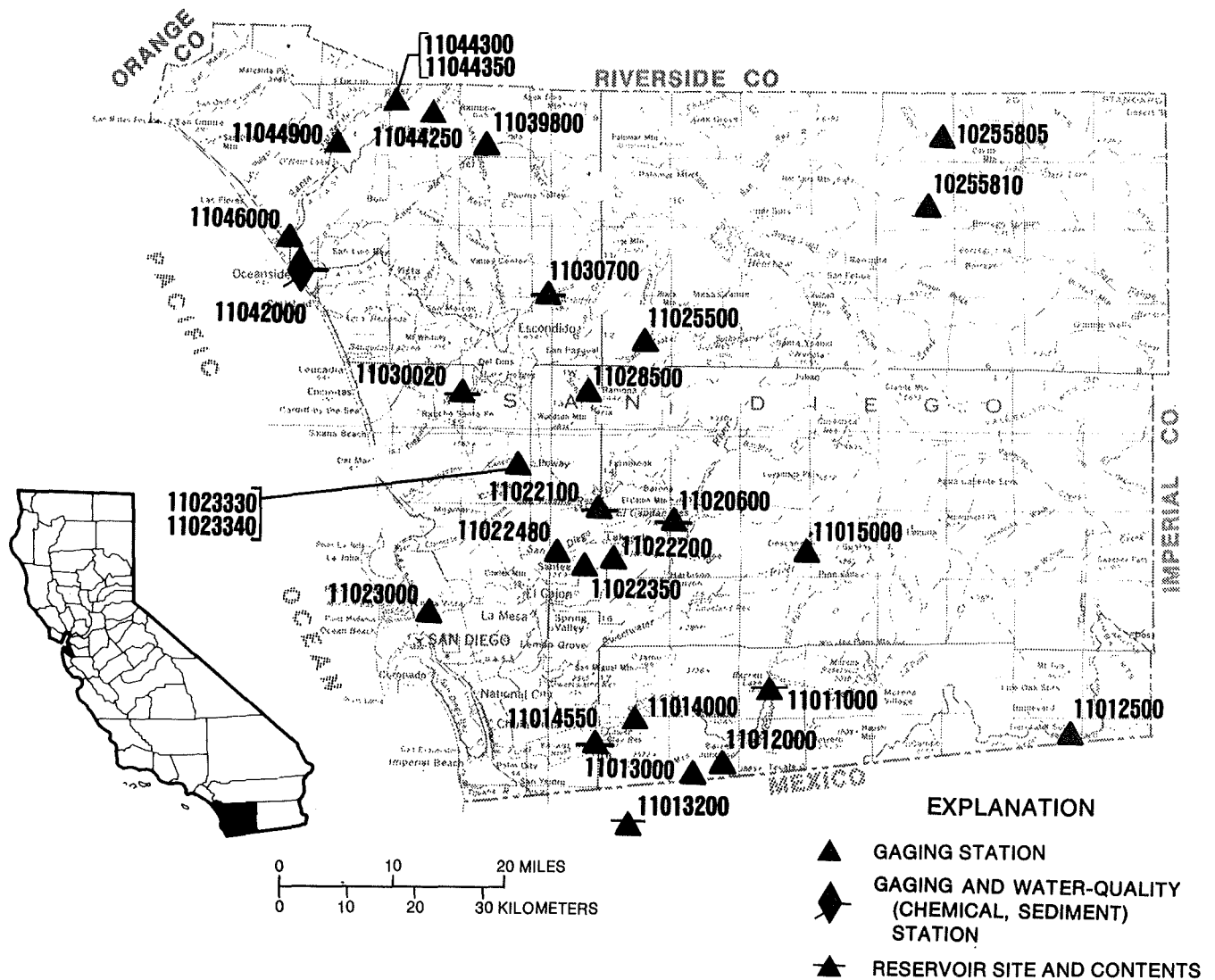


Figure 15. Location of discharge and water-quality stations in San Diego County.

EXPLANATION

- ▲ GAGING STATION
- ◆ GAGING AND WATER-QUALITY (CHEMICAL) STATION
- ◆ GAGING AND WATER-QUALITY (SEDIMENT) STATION
- ▲ RESERVOIR SITE AND CONTENTS

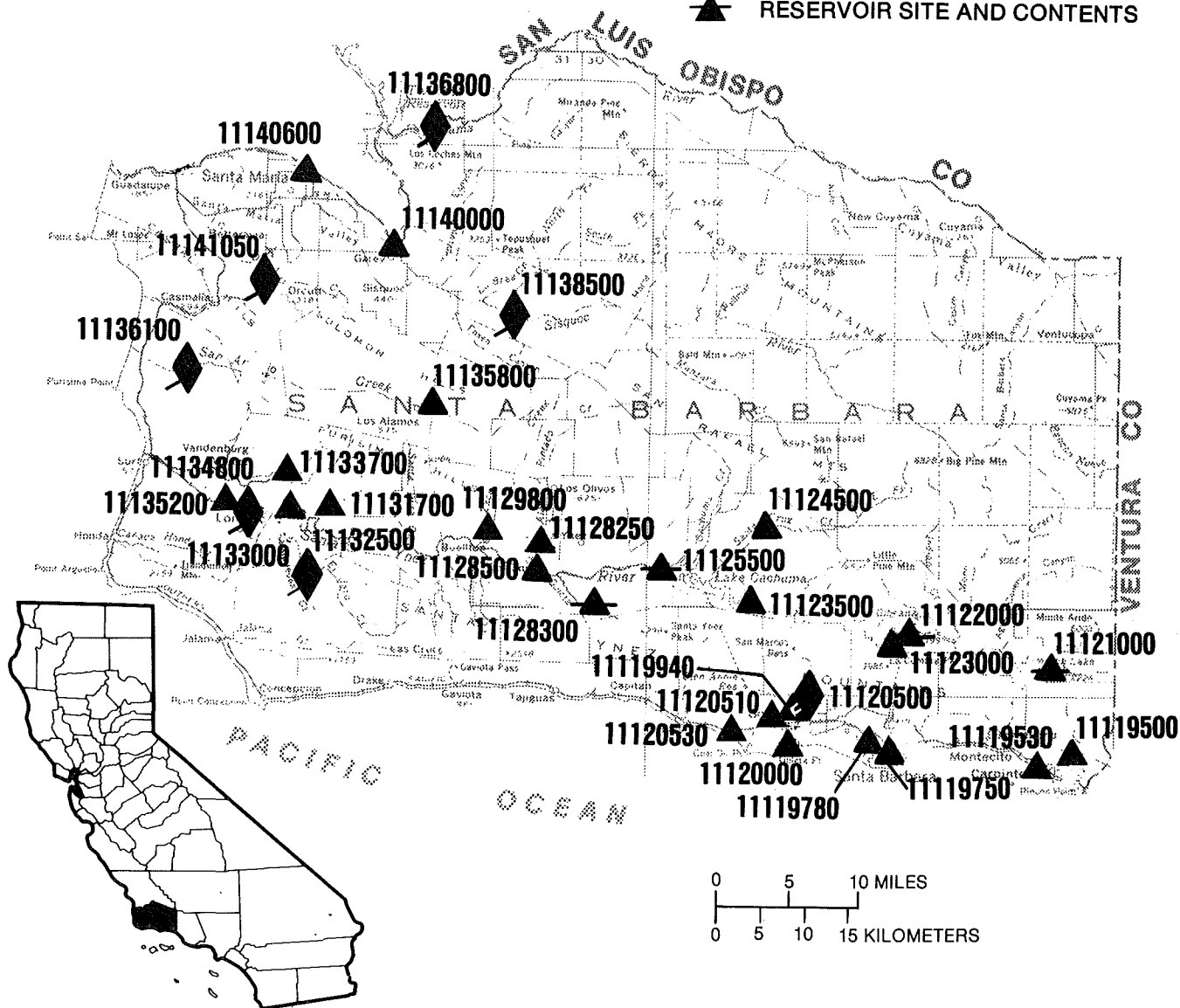


Figure 16. Location of discharge and water-quality stations in Santa Barbara County.

EXPLANATION

- ▲ GAGING STATION
- ◆ GAGING AND WATER-QUALITY (SEDIMENT) STATION
- ▲ RESERVOIR SITE AND CONTENTS

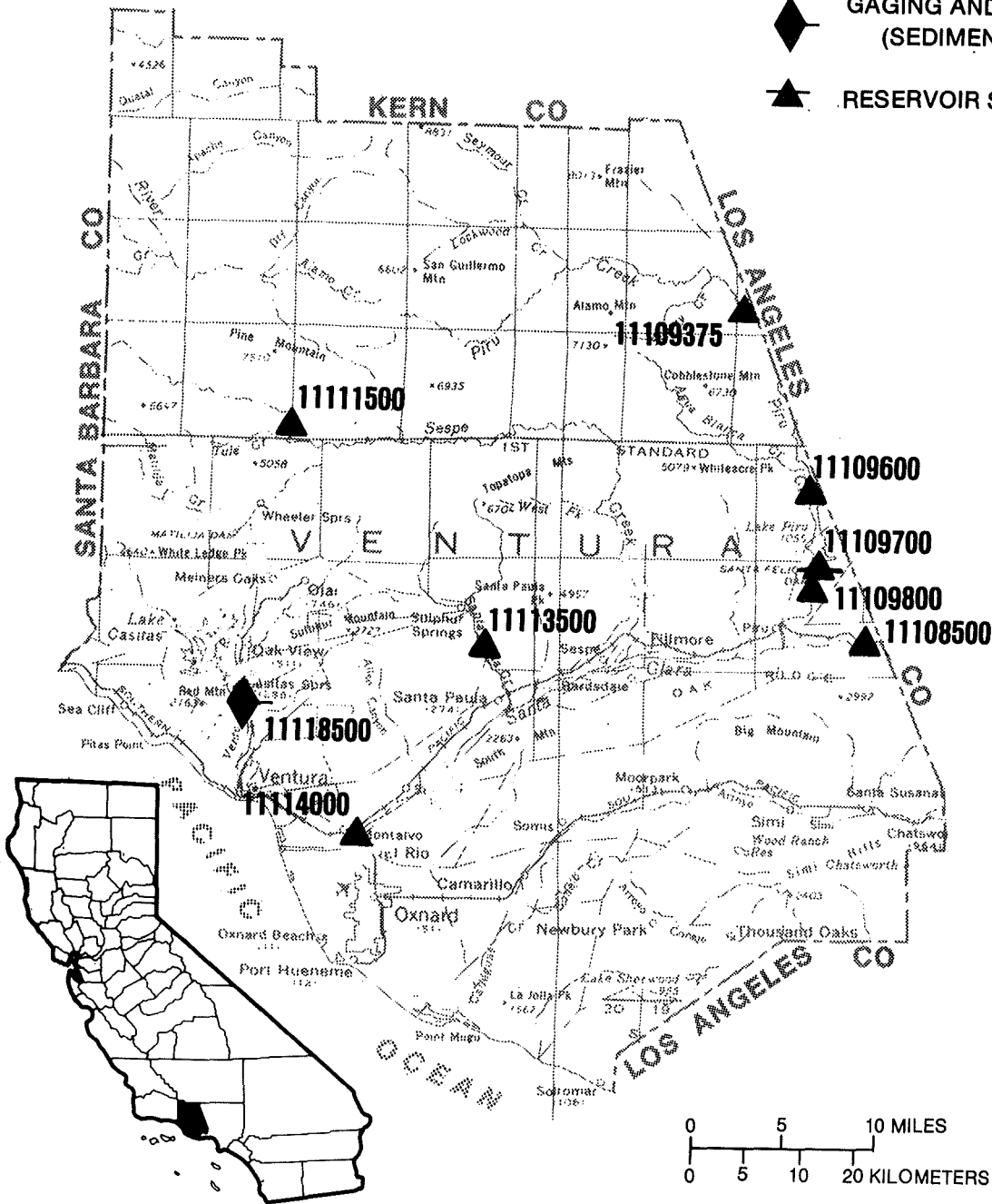


Figure 17. Location of discharge and water-quality stations in Ventura County.

GAGING STATION AND WATER-QUALITY RECORDS

Remark Codes

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

PRINTED OUTPUTREMARK

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

NOTE: In March 1989, the National Water-Quality Laboratory discovered a bias in the turbidimetric method for sulfate analysis, indicating that values less than 75 mg/L have a median positive bias of 2 mg/L greater than the true value for the period between 1982 and 1989. Sulfate values in this report have not been corrected for this bias.

BRISTOL LAKE BASIN

10252550 CARUTHERS CREEK NEAR IVANPAH, CA

LOCATION.--Lat 35°14'33", long 115°17'58", in NW 1/4 NE 1/4 sec.6, T.13 N., R.16 E., San Bernardino County, Hydrologic Unit 15030102, on left bank 6.6 mi south of Ivanpah.

DRAINAGE AREA.--1.13 mi².

PERIOD OF RECORD.--October 1963 to September 1981, May 1982 to current year.

REVISED RECORDS.--WDR CA-82-1: 1979(M).

GAGE.--Water-stage recorder. Elevation of gage is 5,640 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--26 years (water years 1964-81, 1983-90), 0.11 ft³/s, 80 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 814 ft³/s, Aug. 12, 1979, gage height, 5.75 ft, from rating curve extended above 2.5 ft³/s on basis of slope-conveyance studies; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10 ft³/s and maximum (*), from rating curve extended above 2.5 ft³/s on basis of slope-conveyance studies:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 14	2400	*114	*3.02	Sept. 3	2300	38	2.15

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.3
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.1
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.8	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.2	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.0	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.00
18	.00	.00	.00	.00	e.05	.00	.00	.00	.00	.11	.00	.00
19	.00	.00	.00	.00	e.03	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	e.02	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	e.01	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.00	9.31	0.00	2.54
MEAN	.000	.000	.000	.000	.004	.000	.000	.000	.000	.30	.000	.085
MAX	.00	.00	.00	.00	.05	.00	.00	.00	.00	3.2	.00	1.3
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.2	.00	.00	.00	.00	18	.00	5.0

CAL YR 1989 TOTAL 2.29 MEAN .006 MAX 1.7 MIN .00 AC-FT 4.5
WTR YR 1990 TOTAL 11.96 MEAN .033 MAX 3.2 MIN .00 AC-FT 24

e Estimated.

10254005 SALTON SEA NEAR WESTMORLAND. CA

LOCATION.--Lat 33°11'33", long 115°49'59", in SE 1/4 SW 1/4 sec.21, T.11 S., R.11 E., Imperial County, Hydrologic Unit 18100200, on western shore at Sandy Beach and 15.5 mi northwest of Westmorland.

DRAINAGE AREA.--8,360 mi², approximately.

PERIOD OF RECORD.--November 1904 to current year. Records prior to 1932 are published in WSP 735. Monthend elevations only prior to October 1987.

REVISED RECORDS.--WDR CA-87-1: 1980-85.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. See WSP 1734 for history of changes prior to Mar. 2, 1956.

REMARKS.--Bottom of sea is 277.7 ft below NGVD. See WSP 300, 735, and 918 for condensed history of Salton Sea.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 195.9 ft below NGVD, in February and March 1907; minimum since 1906, 251.6 ft below NGVD in November 1924.

EXTREMES FOR CURRENT YEAR.--Maximum daily elevation, 227.7 ft below NGVD, Apr. 14-28, May 4-10; minimum, 228.7 ft below NGVD, Oct. 25 to Nov. 10.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

INFLOW TO SALTON SEA

Salton Sea, located near the northwest corner of Imperial County, is a closed basin consisting of approximately 8,360 mi². The following table shows monthly and annual inflow to the Salton Sea from the Imperial and Coachella Valleys, in acre-feet, for the water year October 1989 to September 1990 and the annual inflow for the calendar year January to December 1989. Inflow from Imperial Valley is the sum of flows in Alamo River near Niland (station 10254730), New River near Westmorland (station 10255550), San Felipe Creek near Westmorland (station 10255885), and 36 drains. Drain inflow provided by Imperial Irrigation District. Inflow from Coachella Valley is the sum of flows in Salt Creek near Mecca (station 10254050), Whitewater River near Mecca (station 10259540), and 24 drains. Drain inflow provided by Coachella Valley County Water District. Ungaged drains and natural runoff are not included in totals.

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Inflow from												
Imperial Valley	110400	88480	81520	80780	84030	114900	115500	113600	94500	92650	96640	89480
Coachella Valley	8140	7900	8010	7660	8940	9770	9960	10310	9100	8800	9300	8180
TOTAL CAL YR 1989	1,273,530 ac-ft											
TOTAL WTR YR 1990	1,268,550 ac-ft											

The following table lists the monthly and annual flows, in acre-feet, of the Alamo River and New River (station 10254970) at the United States-Mexico international boundary. Data for Alamo River provided by Imperial Irrigation District.

FLOW FROM MEXICO AT INTERNATIONAL BOUNDARY

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Alamo River	135	130	157	163	154	189	185	166	156	163	152	129
New River	11330	10590	11080	13980	11900	12530	11390	10860	10710	9900	12090	10510
CAL YR 1989: Alamo River	1,880 ac-ft				WTR YR 1990:				1,880 ac-ft			
CAL YR 1989: New River	158,700 ac-ft				WTR YR 1990:				136,900 ac-ft			

SALTON SEA BASIN

10254050 SALT CREEK NEAR MECCA, CA

LOCATION.--Lat 33°26'49", long 115°50'33", in SE 1/4 SW 1/4 sec.28, T.8 S., R.11 E., Riverside County, Hydrologic Unit 18100200, on pier of Southern Pacific railroad bridge, 0.3 mi upstream from mouth, and 16 mi southeast of Mecca.

DRAINAGE AREA.--269 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 230 ft below National Geodetic Vertical Datum of 1929, from topographic map. Prior to Dec. 21, 1984, at same site, at datum 2.50 ft lower.

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

AVERAGE DISCHARGE.--29 years, 6.92 ft³/s, 5,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,900 ft³/s, Sept. 24, 1976, gage height, 16.8 ft, present datum, from floodmarks, from rating curve extended above 20 ft³/s on basis of contracted-opening measurement of peak flow; maximum gage height, 19.4 ft, present datum, Mar. 2, 1983 (backwater from Salton Sea and channel vegetation); minimum daily, 0.06 ft³/s, Nov. 1, 4, 5, 9, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,080 ft³/s, June 9, gage height, 8.95 ft, from rating curve extended above 5 ft³/s; minimum daily, 0.51 ft³/s, July 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	2.0	3.2	3.9	4.1	4.2	3.4	1.5	1.3	.78	.57	1.0
2	1.5	2.0	3.4	3.9	4.0	4.2	3.5	1.6	1.2	.74	.58	1.1
3	1.7	2.0	3.4	4.2	4.0	4.2	3.4	1.7	1.1	.68	.57	1.1
4	2.0	2.0	3.5	4.1	4.0	4.3	3.4	1.7	1.1	.62	.58	1.2
5	1.6	2.2	3.6	3.9	4.2	4.2	3.4	1.7	1.1	.59	.56	1.3
6	1.5	2.0	3.7	4.1	4.3	3.9	3.4	1.5	.94	.60	.73	1.7
7	1.9	2.1	3.7	4.1	4.2	3.8	3.4	1.5	.85	.66	.69	1.3
8	1.5	2.2	3.6	4.1	4.3	3.8	3.3	1.5	.89	.67	.61	1.3
9	1.1	2.2	3.7	4.2	4.3	3.9	3.2	1.5	105	.65	.63	1.3
10	1.1	2.2	3.8	4.1	4.1	3.9	2.9	1.6	42	.64	.62	1.2
11	1.1	2.2	3.9	4.2	4.2	3.9	2.8	1.9	9.2	.69	.63	1.2
12	1.2	2.3	3.9	4.3	4.4	3.8	2.6	1.8	2.7	.68	.65	1.2
13	1.2	2.4	3.8	4.4	4.4	3.8	2.5	1.8	1.9	.65	.69	1.3
14	1.3	2.4	4.0	4.5	4.4	3.7	2.5	1.9	1.6	.68	.73	1.4
15	1.4	2.5	4.2	4.4	4.3	3.8	2.5	1.9	1.4	.73	1.2	1.5
16	1.5	2.3	4.3	4.3	4.1	3.9	2.5	1.8	1.3	.73	.96	1.6
17	1.6	2.4	4.4	4.3	4.2	3.7	2.4	1.8	1.3	.75	.95	1.5
18	1.7	2.4	4.3	4.5	4.5	3.8	2.3	1.8	1.3	.74	.93	1.4
19	1.5	2.2	4.3	4.3	4.5	3.8	2.4	1.6	1.2	.69	.89	1.4
20	1.6	2.2	4.3	4.2	4.3	3.8	2.4	1.7	1.1	.64	.85	1.5
21	1.9	2.4	4.2	4.1	4.3	3.8	2.4	1.7	1.0	.66	.82	1.5
22	1.8	2.7	4.1	4.1	4.4	3.8	2.4	1.7	1.0	.67	.84	1.6
23	1.7	2.8	4.1	4.1	4.4	3.7	2.4	1.6	.95	.65	.88	1.6
24	1.6	2.9	3.9	3.9	4.2	3.6	2.4	1.5	.95	.61	.90	1.6
25	1.6	3.1	4.0	3.9	4.3	3.5	2.2	1.5	.98	.59	.96	1.6
26	1.6	3.2	4.0	3.9	4.3	3.5	2.0	1.4	.94	.51	.97	1.6
27	1.5	3.1	3.9	4.0	4.3	3.5	1.9	1.4	.83	.54	.99	1.6
28	1.6	3.0	4.0	4.1	4.2	3.5	1.9	1.4	.75	.60	1.1	1.6
29	1.8	3.0	4.0	3.9	---	3.5	1.8	1.4	.68	.61	1.1	1.6
30	1.8	2.9	4.1	3.9	---	3.4	1.6	1.4	.74	.58	1.1	1.7
31	1.8	---	4.1	4.0	---	3.4	---	1.4	---	.57	1.0	---
TOTAL	48.2	73.3	121.4	127.9	119.2	117.6	79.2	50.2	187.30	20.20	25.28	42.5
MEAN	1.55	2.44	3.92	4.13	4.26	3.79	2.64	1.62	6.24	.65	.82	1.42
MAX	2.0	3.2	4.4	4.5	4.5	4.3	3.5	1.9	105	.78	1.2	1.7
MIN	1.1	2.0	3.2	3.9	4.0	3.4	1.6	1.4	.68	.51	.56	1.0
AC-FT	96	145	241	254	236	233	157	100	372	40	50	84

CAL YR 1989 TOTAL 894.81 MEAN 2.45 MAX 20 MIN .18 AC-FT 1770
WTR YR 1990 TOTAL 1012.28 MEAN 2.77 MAX 105 MIN .51 AC-FT 2010

10254670 ALAMO RIVER AT DROP NO. 3, NEAR CALIPATRIA, CA
(National stream-quality accounting network station)

LOCATION.--Lat 33°06'16", long 115°32'39", on line between secs.19 and 20, T.12 S., R.14 E., Imperial County, Hydrologic Unit 18100200, on right bank 2.2 mi southeast of Calipatria.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1979 to current year. Records prior to October 1979 in files of the Imperial Irrigation District.

GAGE.--Water-stage recorder and broad-crested weir. Elevation of gage is 185 ft below National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records excellent. Flow is mainly return from irrigated areas.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,940 ft³/s, Mar. 3, 1983, gage height, 5.95 ft, from rating curve extended above 1,000 ft³/s; maximum gage height, 7.06 ft, Oct. 10, 1986 (backwater from debris); minimum daily, 259 ft³/s, Jan. 2, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,080 ft³/s, Aug. 15, gage height, 2.54 ft; minimum daily, 387 ft³/s, Dec. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	825	746	711	450	638	839	863	936	764	678	602	661
2	840	773	754	403	638	859	795	938	776	678	638	644
3	821	759	720	455	620	800	761	966	765	678	618	656
4	848	760	745	477	646	755	781	980	767	678	610	806
5	881	787	735	526	632	724	807	967	765	678	587	767
6	891	788	791	561	647	692	840	949	762	652	658	775
7	912	841	710	573	664	682	874	962	780	650	676	651
8	909	810	691	529	682	720	870	936	777	638	681	638
9	939	785	699	506	748	783	870	904	792	636	655	586
10	958	777	669	531	732	826	945	894	825	636	648	564
11	953	745	628	539	695	854	951	926	850	636	607	582
12	986	762	631	541	558	906	961	962	828	636	630	616
13	1010	709	664	532	550	880	986	957	784	636	668	639
14	965	762	645	483	559	865	957	945	681	737	679	694
15	897	770	699	522	583	845	969	933	644	735	886	704
16	881	737	713	546	633	842	948	945	657	730	868	799
17	848	728	669	595	664	948	960	974	644	738	692	780
18	821	748	631	646	649	947	940	943	641	720	643	738
19	821	733	624	628	630	846	956	935	665	712	636	742
20	817	735	615	630	614	845	976	931	705	644	616	787
21	823	739	635	595	671	839	992	896	785	605	620	798
22	834	690	626	549	663	879	964	911	780	602	650	791
23	814	685	595	589	703	918	937	908	763	602	704	829
24	811	646	551	614	731	902	926	865	768	590	750	832
25	804	669	449	626	775	899	922	813	724	554	722	887
26	769	658	387	650	780	919	944	782	708	547	730	849
27	760	624	471	641	844	948	974	760	681	547	779	851
28	798	615	525	625	840	924	972	755	678	586	791	891
29	767	642	555	573	---	891	965	823	678	631	753	891
30	781	675	553	572	---	922	888	780	678	644	718	915
31	771	---	540	626	---	993	---	761	---	604	671	---
TOTAL	26555	21898	19631	17333	18789	26492	27494	27937	22115	20038	21186	22363
MEAN	857	730	633	559	671	855	916	901	737	646	683	745
MAX	1010	841	791	650	844	993	992	980	850	738	886	915
MIN	760	615	387	403	550	682	761	755	641	547	587	564
AC-FT	52670	43430	38940	34380	37270	52550	54530	55410	43870	39750	42020	44360

CAL YR 1989 TOTAL 274103 MEAN 751 MAX 1110 MIN 315 AC-FT 543700
WTR YR 1990 TOTAL 271831 MEAN 745 MAX 1010 MIN 387 AC-FT 539200

SALTON SEA BASIN

10254670 ALAMO RIVER AT DROP NO. 3, NEAR CALIPATRIA, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-70, 1975-77, 1979 to current year.

CHEMICAL DATA: Water years 1969-70, 1975-77, 1979 to current year.

BIOLOGICAL DATA: Water years 1979-81.

SPECIFIC CONDUCTANCE: Water years 1969-70, 1975-77, 1979-84.

WATER TEMPERATURE: Water years 1969-70, 1975-77, 1979-84.

SEDIMENT DATA: Water years 1979 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: March 1981 to September 1984.

WATER TEMPERATURE: March 1981 to September 1984.

INSTRUMENTATION.--Water-quality monitor from March 1981 to September 1984.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED SATUR-ATION	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCOCI, FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CaCO3)
DEC 12...	1215	636	3760	8.1	11.0	230	770	10.7	97	5800	K13000	960
MAR 28...	0850	899	3140	7.9	17.5	200	760	8.6	91	K200	15000	780
JUN 27...	0840	678	3180	7.8	29.0	27	760	5.9	78	K820	K1100	750
SEP 26...	0815	851	3360	7.9	25.0	130	765	7.2	88	--	1800	800

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3	CAR- BONATE WATER DIS IT FIELD (MG/L AS CO3	ALKA- LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
DEC 12...	200	110	560	56	8	9.9	288	0	236	1000	600
MAR 28...	170	86	400	52	6	11	259	0	212	750	460
JUN 27...	160	85	410	54	7	11	273	0	224	850	490
SEP 26...	160	96	430	54	7	10	251	0	206	790	480

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)
DEC 12...	0.50	12	2680	2680	3.64	0.440	9.90	1.40	1.30	2.2	0.530
MAR 28...	0.30	12	2250	2060	3.06	0.570	7.60	1.90	1.80	3.6	0.770
JUN 27...	0.60	13	2120	2180	2.88	0.940	5.10	0.780	0.730	2.6	0.730
SEP 26...	0.20	13	2290	2140	3.11	0.480	6.90	0.520	0.520	1.7	0.250

10254670 ALAMO RIVER AT DROP NO. 3, NEAR CALIPATRIA, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)	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)
DEC 12...	0.180	0.130	20	4	<100	10	<1.0	<1	<1	6	30
MAR 28...	0.600	0.540	10	5	<100	<10	<1.0	<1	<1	3	20
JUN 27...	0.410	0.370	<10	6	<100	<10	<1.0	1	<1	4	30
SEP 26...	0.200	0.220	<10	5	<100	<10	<1.0	<1	1	2	30

DATE	LEAD, DIS-SOLVED (UG/L AS PB)	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)
DEC 12...	<1	170	30	<0.1	16	2	10	<1.0	3500	12	20
MAR 28...	<1	140	20	0.1	12	2	8	<1.0	2900	14	<10
JUN 27...	<1	160	10	0.1	15	1	7	<1.0	2800	18	<10
SEP 26...	<1	160	<10	0.1	13	2	7	<1.0	3000	19	<10

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DEPTH AT SAMPLE LOC- ATION, TOTAL (FEET)	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAR 28...*	1325	7.60	14.0	3030	7.9	20.0	760	9.1	101	707	82
MAR 28...*	1330	10.5	24.0	3010	7.9	19.5	760	9.0	99	1040	58
MAR 28...*	1336	10.4	36.0	3020	7.9	19.0	760	9.0	98	956	64
MAR 28...*	1345	10.0	44.0	3040	7.9	19.0	760	8.9	97	1040	57
MAR 28...*	1350	6.70	53.0	3070	7.9	19.0	760	8.8	96	902	57
SEP 26...*	1245	7.30	14.0	3350	8.0	26.0	765	7.3	91	590	76
SEP 26...*	1300	8.00	23.0	3360	8.0	27.0	765	7.4	94	569	73
SEP 26...*	1311	9.30	34.0	3330	8.0	26.0	765	7.4	92	669	62
SEP 26...*	1325	7.50	42.0	3340	8.0	26.0	765	7.4	92	718	60
SEP 26...*	1335	6.90	53.0	3410	8.0	26.0	765	7.4	92	632	71

* Instantaneous streamflow at the time of cross-sectional measurement: Mar. 28, 948 ft³/s,
Sept. 26, 851 ft³/s.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 12...	1215	636	11.0	527	905	83
MAR 28...	0850	899	17.5	911	2210	68
MAR 28...	1335	948	19.0	928	2380	67
JUN 27...	0840	678	29.0	396	725	81
SEP 26...	0815	851	25.0	568	1310	70
SEP 26...	1310	851	26.0	636	1460	68

SALTON SEA BASIN

10254730 ALAMO RIVER NEAR NILAND, CA

LOCATION.--Lat 33°11'56", long 115°35'46", in SW 1/4 NW 1/4 sec.23, T.11 S., R.13 E., Imperial County, Hydrologic Unit 18100200, on left bank 1.0 mi upstream from mouth and 4.5 mi southwest of Niland.

PERIOD OF RECORD.--January 1943 to September 1960 (monthly discharge only, published in WSP 1743), October 1960 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 220 ft below National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1986, at site 0.4 mi downstream at different datum.

REMARKS.--Records fair. Discharge mainly represents seepage and return flow from irrigated areas.

COOPERATION.--Gage-height record was provided by Imperial Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,500 ft³/s, Aug. 17, 1977, estimated by Imperial Irrigation District; minimum daily, 288 ft³/s, Jan 2, 1966, Dec. 15, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1,420 ft³/s, Oct. 13; minimum daily, 392 ft³/s, Dec. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1070	818	818	494	755	1030	1040	1070	875	818	865	663
2	1110	865	836	420	782	1100	904	1070	836	800	884	612
3	997	836	800	444	704	1070	875	1070	782	846	875	637
4	955	846	836	450	688	965	904	1090	800	836	809	833
5	1040	875	846	501	746	976	924	1060	764	755	764	745
6	1120	884	904	542	782	904	965	1030	764	729	934	864
7	1190	986	827	631	782	827	1010	1040	800	800	955	683
8	1100	945	773	585	865	865	1050	1060	782	696	944	644
9	1220	904	790	556	894	914	1020	976	846	721	875	587
10	1280	894	729	623	924	986	1100	1120	924	746	836	569
11	1270	836	696	639	865	1120	1140	1040	1010	738	782	600
12	1270	818	655	680	713	1130	1160	1100	976	755	809	625
13	1420	773	729	663	746	1110	1180	1140	944	827	904	650
14	1290	800	688	585	809	1060	1140	1160	924	894	924	717
15	1120	865	764	616	672	1040	1230	1140	836	855	1260	710
16	1050	846	800	631	721	997	1210	1130	755	914	1160	856
17	1010	827	738	721	782	1120	1140	1190	696	924	864	833
18	924	846	655	782	790	1170	1180	1180	713	914	788	818
19	924	818	631	729	713	1140	1140	1260	764	924	773	788
20	934	818	655	773	704	1020	1180	1160	773	855	703	818
21	976	827	696	704	755	986	1230	1020	846	800	717	880
22	955	782	713	639	746	1020	1220	1030	846	914	759	856
23	924	773	655	663	809	1130	1130	1050	827	809	773	963
24	945	688	600	738	836	1130	1090	1010	827	773	825	963
25	965	764	468	746	865	1110	1030	944	818	782	773	1050
26	846	764	392	809	904	1130	1050	955	818	755	781	988
27	865	704	494	827	986	1230	1090	875	818	800	825	1100
28	904	729	608	746	1030	1130	1090	865	800	855	880	1090
29	904	704	672	680	---	1120	e1080	934	800	914	856	1070
30	875	746	655	663	---	1070	e1080	924	809	894	781	1130
31	846	---	647	764	---	1240	---	884	---	865	703	---
TOTAL	32299	24581	21770	20044	22368	32840	32582	32577	24773	25508	26381	24342
MEAN	1042	819	702	647	799	1059	1086	1051	826	823	851	811
MAX	1420	986	904	827	1030	1240	1230	1260	1010	924	1260	1130
MIN	846	688	392	420	672	827	875	865	696	696	703	569
AC-FT	64070	48760	43180	39760	44370	65140	64630	64620	49140	50600	52330	48280

CAL YR 1989 TOTAL 310890 MEAN 852 MAX 1420 MIN 319 AC-FT 616700
WTR YR 1990 TOTAL 320065 MEAN 877 MAX 1420 MIN 392 AC-FT 634800

e Estimated.

SALTON SEA BASIN

10255550 NEW RIVER NEAR WESTMORLAND. CA

LOCATION.--Lat 33°06'17", long 115°39'49", in SW 1/4 SW 1/4 sec.19, T.12 S., R.13 E., Imperial County, Hydrologic Unit 18100200, on right bank 3.5 mi upstream from mouth, and 5.2 mi northwest of Westmorland.

PERIOD OF RECORD.--January 1943 to September 1960 (monthly discharge only, published in WSP 1734), October 1960 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 220 ft below National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records excellent. Discharge mainly represents seepage and return flow from irrigated areas.

COOPERATION.--Gage heights were provided by Imperial Irrigation District for the following dates: Oct. 1 to Jan. 3, May 3 to June 26, July 1 to Aug. 29, and Sept. 10-30.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 3,000 ft³/s, Aug. 17, 18, 1977, estimated by Imperial Irrigation District; minimum daily, 293 ft³/s, Jan. 6, 1967.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 749 ft³/s, Mar. 26; minimum daily, 453 ft³/s, Dec. 26.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

10255805 COYOTE CREEK BELOW BOX CANYON, NEAR BORREGO SPRINGS, CA

LOCATION.--Lat 33°21'54", long 116°24'57", in SW 1/4 NW 1/4 sec.25, T.9 S., R.5 E., San Diego County, Hydrologic Unit 18100200, in Anza-Borrego Desert State Park, on right bank 0.9 mi downstream from Box Canyon, 1.4 mi northwest of Rancho De Anza, and 7.8 mi northwest of Borrego Springs.

DRAINAGE AREA.--154 mi².

PERIOD OF RECORD.--October 1983 to current year. Published as Coyote Creek near Borrego Springs (station 10255800) water years 1984-86. Records for Coyote Creek near Borrego Springs prior to October 1983 not equivalent because of difference in drainage areas.

GAGE.--Water-stage recorder. Elevation of gage is 1,100 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--7 years, 2.91 ft³/s, 2,110 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 67 ft³/s, Feb. 15, 1986, gage height, 2.39 ft; maximum gage height, 2.83 ft, Aug. 27, 1986; minimum daily, 0.28 ft³/s, June 21, 1989.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Aug. 6	0030	*15	3.39				

Minimum daily, 0.35 ft³/s, Oct. 14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.41	.41	.56	.60	.62	.70	.69	1.0	.95	1.0	1.1	1.5
2	.42	.41	.56	.63	.59	.70	.69	1.0	.93	1.0	1.1	1.5
3	.43	.41	.55	.64	.61	.72	.68	.99	.88	1.0	1.1	1.5
4	.44	.41	.57	.66	.62	.71	.69	.98	.86	1.0	1.1	1.7
5	.45	.41	.60	.65	.62	.74	1.3	.96	.86	1.0	1.1	1.7
6	.44	.41	.58	.64	.62	.73	1.1	.94	.88	1.0	3.0	2.3
7	.42	.43	.59	.64	.62	.72	1.1	.94	.92	1.0	e1.3	1.4
8	.41	.45	.60	.63	.64	.73	1.1	.97	.93	1.1	e1.2	1.4
9	.39	.47	.60	.57	.66	.71	1.1	.94	1.0	1.1	e1.1	1.4
10	.37	.48	.58	.56	.65	.76	1.0	.96	2.1	1.1	e1.0	1.4
11	.36	.42	.58	.57	.64	.76	1.0	.94	1.4	1.1	e1.2	1.4
12	.36	.39	.61	.58	.66	.76	.99	.94	1.1	1.1	e1.2	1.4
13	.36	.42	.62	.58	.67	.77	.96	.94	1.1	1.1	e1.2	1.5
14	.35	.41	.60	.58	.70	.76	.98	.94	1.1	1.1	e1.2	1.4
15	.36	.44	.60	.61	.70	.76	1.0	.97	1.2	1.7	e1.2	1.4
16	.36	.44	.58	.62	.70	.76	1.1	.98	1.1	1.7	e1.2	1.4
17	.36	.44	.61	.63	.71	.72	1.1	.99	1.1	.95	e1.0	1.4
18	.37	.44	.58	.62	.71	.69	1.1	.97	1.1	.92	e1.3	1.4
19	.39	.45	.58	.64	.70	.72	1.1	.97	1.1	1.1	e1.3	1.4
20	.38	.46	.62	.66	.70	.69	1.1	.98	1.1	1.3	e1.2	1.4
21	.38	.47	.63	.66	.70	.68	1.1	.98	1.0	1.2	e1.1	1.5
22	.38	.46	.64	.65	.69	.67	1.1	.98	1.0	1.2	e1.1	1.4
23	.38	.47	.66	.63	.68	.66	1.2	.98	1.0	1.2	e1.0	1.4
24	.40	.48	.65	.63	.68	.66	1.1	.97	.99	1.1	e1.2	1.4
25	.41	.49	.66	.62	.67	.66	1.1	1.0	.96	1.1	e1.3	1.4
26	.41	.50	.64	.63	.69	.68	1.1	1.0	.94	1.1	e1.2	1.4
27	.41	.51	.65	.62	.70	.69	1.1	1.0	.94	1.1	e1.4	1.4
28	.41	.54	.61	.63	.70	.70	1.0	1.0	.97	1.1	1.4	1.4
29	.41	.56	.62	.61	---	.71	1.1	1.0	1.0	1.1	1.4	1.5
30	.42	.56	.61	.61	---	.72	1.0	1.0	1.0	1.1	1.4	1.4
31	.42	---	.59	.63	---	.69	---	1.0	---	1.1	1.4	---
TOTAL	12.26	13.64	18.73	19.23	18.65	22.13	30.78	30.21	31.51	34.77	39.0	44.1
MEAN	.40	.45	.60	.62	.67	.71	1.03	.97	1.05	1.12	1.26	1.47
MAX	.45	.56	.66	.66	.71	.77	1.3	1.0	2.1	1.7	3.0	2.3
MIN	.35	.39	.55	.56	.59	.66	.68	.94	.86	.92	1.0	1.4
AC-FT	24	27	37	38	37	44	61	60	63	69	77	87

CAL YR 1989 TOTAL 409.68 MEAN 1.12 MAX 5.0 MIN .28 AC-FT 813
WTR YR 1990 TOTAL 315.01 MEAN .86 MAX 3.0 MIN .35 AC-FT 625

e Estimated.

10255810 BORREGO PALM CREEK NEAR BORREGO SPRINGS, CA

LOCATION.--Lat 33°16'44", long 116°25'45", in Anza-Borrego Desert State Park, San Diego County, Hydrologic Unit 18100200, on left bank 3.3 mi northwest of Borrego Springs.

DRAINAGE AREA.--21.8 mi².

PERIOD OF RECORD.--October 1950 to current year. Prior to October 1960, published as Palm Canyon Creek near Borrego Springs. Monthly discharge only for October to November 1950, published in WSP 1734.

REVISED RECORDS.--WSP 2128: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,200 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--40 years, 0.94 ft³/s, 681 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,640 ft³/s, Aug. 16, 1979, gage height, 9.8 ft, from floodmarks, on basis of slope-area measurement of peak flow; no flow for many days in most years.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
July 15	1715	*35	*3.73				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.06	.39	.76	.63	e.51	.21	e.02	.00	.00	.00
2	.00	.00	.08	1.1	.76	.63	e.29	.22	.01	.00	.00	.00
3	.00	.00	.11	.84	.63	.61	.41	.22	.00	.00	.00	.00
4	.00	.00	.16	.61	.66	.64	.44	.20	.00	.00	.00	.00
5	.00	.00	.16	.52	.72	.70	.46	.18	.00	.00	.00	.00
6	.00	.00	.16	.52	.67	.67	.41	.18	.00	.00	.00	.00
7	.00	.00	.16	.51	.64	.55	.35	.17	.00	.00	.00	.00
8	.00	.00	.16	.48	.63	.54	.44	.16	.00	.00	.00	.00
9	.00	.00	.17	.45	.60	.51	.47	.15	.00	.00	.00	.00
10	.00	.00	.17	.43	.57	.51	.40	.16	.00	.00	.00	.00
11	.00	.00	.19	.42	.54	.75	.34	.15	.00	.00	.00	.00
12	.00	.00	.21	.42	.55	.88	e.32	.12	.00	.00	.00	.00
13	.00	.00	.21	.44	.55	.87	e.32	.11	.00	.00	.00	.00
14	.00	.00	.23	.79	.62	.78	e.32	.10	.00	.00	.00	.00
15	.00	.00	.24	.85	.58	.68	e.32	.10	.00	2.3	.00	.00
16	.00	.00	.30	.67	.55	.56	e.32	.09	.00	.01	.00	.00
17	.00	.00	.38	2.2	.65	.51	e.32	.07	.00	.00	.00	.00
18	.00	.00	.38	1.1	2.5	.47	e.50	.07	.00	.00	.00	.00
19	.00	.00	.31	.82	2.5	.44	e.32	.08	.00	.00	.00	.00
20	.00	.00	.33	.72	1.5	.40	e.35	.07	.00	.00	.00	.00
21	.00	.00	.35	.67	1.3	.38	e.32	.06	.00	.00	.00	.00
22	.00	.00	.33	.63	1.1	.36	e.32	.05	.00	.00	.00	.00
23	.00	.00	.32	.64	.95	.34	e.32	.04	.00	.00	.00	.00
24	.00	.00	.30	.62	.82	.33	e.29	.04	.00	.00	.00	.00
25	.00	.00	.30	.58	.74	.34	e.29	e.05	.00	.00	.00	.00
26	.00	.00	.29	.58	.74	.35	e.26	e.04	.00	.00	.00	.00
27	.00	.00	.31	.55	.67	.41	e.24	e.03	.00	.00	.00	.00
28	.00	.00	.30	.51	.63	.49	e.24	e.03	.00	.00	.00	.00
29	.00	.00	.40	.50	---	.58	e.21	e.03	.00	.00	.00	.00
30	.00	.03	.41	.50	---	.57	e.21	e.02	.00	.00	.00	.00
31	.00	---	.39	.79	---	.60	---	e.02	---	.00	.00	---
TOTAL	0.00	0.03	7.87	20.85	24.13	17.08	10.31	3.22	0.03	2.31	0.00	0.00
MEAN	.000	.001	.25	.67	.86	.55	.34	.10	.001	.075	.000	.000
MAX	.00	.03	.41	2.2	2.5	.88	.51	.22	.02	2.3	.00	.00
MIN	.00	.00	.06	.39	.54	.33	.21	.02	.00	.00	.00	.00
AC-FT	.00	.06	16	41	48	34	20	6.4	.06	4.6	.00	.00

CAL YR 1989 TOTAL 114.94 MEAN .31 MAX 3.7 MIN .00 AC-FT 228
WTR YR 1990 TOTAL 85.83 MEAN .24 MAX 2.5 MIN .00 AC-FT 170

e Estimated.

10255885 SAN FELIPE CREEK NEAR WESTMORLAND, CA

LOCATION.--Lat 33°07'26", long 115°51'08", in NW 1/4 SW 1/4 sec.17, T.12 S., R.11 E., Imperial County, Hydrologic Unit 18100200, on left bank 320 ft downstream from bridge on State Highway 86, 14.6 mi northwest of Westmorland, and 4.2 mi upstream from mouth.

DRAINAGE AREA.--1,693 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 190 ft below National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 10, 1976, at site on left bank 320 ft downstream from bridge on State Highway 86 at different datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No regulation upstream from station. Diversion and pumping for domestic use and irrigation in Borrego Valley 25 mi upstream.

AVERAGE DISCHARGE.--29 years (water years 1962-90), 7.39 ft³/s, 5,350 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100,000 ft³/s, Sept. 10, 1976, gage height, 19.0 ft, site and datum then in use, from rating curve extended above 500 ft³/s on basis of contracted-opening and flow-over-road measurement of peak flow; no flow for many days during most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s, and maximum (*) from rating curve extended above 820 ft³/s on basis of slope-area measurement at gage height 15.0 ft, from floodmark:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 9	2015	*8,310	*13.32	Sept. 3	Unknown	Unknown	Unknown
Aug. 15	0215	382	6.89				

No flow June 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.25	.56	.71	1.0	1.2	1.0	.80	.27	.14	.08	.03	.09
2	.30	.50	.71	1.2	.95	1.0	.80	.29	.24	.07	.03	.09
3	.29	.53	.71	1.0	1.1	.97	.76	.31	.22	.07	.04	e100
4	.32	.56	.75	1.0	1.2	1.2	1.8	.30	.20	.05	.05	e.09
5	.40	.56	.80	1.0	1.2	1.3	3.4	.29	.08	.06	.05	e.1
6	.38	.65	.80	1.1	1.2	1.4	.73	.30	.07	.06	.05	e.1
7	.38	.71	.72	1.1	1.2	1.6	.72	.30	.10	.08	16	e.1
8	.42	.71	.71	1.1	1.2	1.5	.80	.26	.19	.08	5.3	e.08
9	.44	.63	.75	1.1	1.2	1.6	.71	.30	1340	.08	1.6	e.08
10	.44	.63	.80	1.1	1.2	1.5	.59	.39	e458	.08	1.0	e.09
11	.44	.63	.83	1.1	1.2	1.8	.56	.20	e33	.08	.95	e.09
12	.44	.63	.80	1.1	1.2	.84	.56	.27	e5.0	.08	.91	e.1
13	.44	.67	.88	1.2	1.0	.90	.46	.33	.05	.08	1.0	e.1
14	.41	.71	.96	1.2	.94	.99	.45	.27	.04	.08	5.5	e.1
15	.34	.71	.89	1.2	1.1	.93	.40	.19	.04	.08	51	e.08
16	.41	.64	.89	1.2	1.2	.94	.38	.23	.04	.08	1.0	e.08
17	.44	.67	.89	1.4	1.3	.89	.45	.26	.05	.08	.31	e.09
18	.44	.71	.89	1.2	1.1	.89	.53	.15	.04	.06	.17	e.09
19	.39	.64	.89	1.2	1.0	.89	.51	.15	.03	.05	.07	e.1
20	.41	.67	.89	1.2	1.2	.80	.41	.20	.03	.06	.06	e.1
21	.40	.71	.94	1.2	1.1	.85	.41	.25	.03	.07	.08	e.1
22	.46	.71	.91	1.2	1.1	.80	1.7	.21	.02	.06	.09	e.08
23	.50	.71	.89	1.2	1.1	.80	.34	.16	.02	.06	.10	e.08
24	.44	.76	.94	1.2	1.1	.80	.32	.19	.03	.05	.06	e.08
25	.42	.80	1.0	1.1	1.1	.79	.32	.19	.02	.04	.07	e.09
26	.38	.72	1.0	1.2	1.1	.76	.34	.10	.02	.03	.08	e.09
27	.47	.67	1.0	1.2	1.1	.74	.30	.09	.00	.03	.12	e.09
28	.50	.57	1.0	1.2	1.0	.65	.21	.12	.04	.03	.14	e.1
29	.50	.60	1.0	1.2	---	.71	.16	.19	.08	.03	.10	e.08
30	.50	.67	1.0	1.3	---	.82	.23	.22	.10	.03	.08	e.08
31	.53	---	1.0	1.2	---	.80	---	.15	---	.03	.08	---
TOTAL	12.88	19.64	26.95	35.9	31.59	31.46	20.15	7.13	1837.92	1.90	86.12	102.62
MEAN	.42	.65	.87	1.16	1.13	1.01	.67	.23	61.3	.061	2.78	3.42
MAX	.53	.80	1.0	1.4	1.3	1.8	3.4	.39	1340	.08	51	100
MIN	.25	.50	.71	1.0	.94	.65	.16	.09	.00	.03	.03	.08
AC-FT	26	39	53	71	63	62	40	14	3650	3.8	171	204

CAL YR 1989 TOTAL 2645.07 MEAN 7.25 MAX 1510 MIN .14 AC-FT 5250
WTR YR 1990 TOTAL 2214.26 MEAN 6.07 MAX 1340 MIN .00 AC-FT 4390

e Estimated.

SALTON SEA BASIN

10256060 WHITEWATER RIVER AT WHITE WATER CUTOFF, AT WHITE WATER, CA

LOCATION.--Lat 33°55'31", long 116°38'07", in NE 1/4 SE 1/4 sec.11, T.3 S., R.3 E., Riverside County, Hydrologic Unit 18100200, on center pier of White Water Cutoff (old Highway 99) bridge, 0.1 mi east of White Water, 0.75 mi downstream from Metropolitan Water District's Colorado River Aqueduct turnout, and 2.0 mi upstream from San Geronio River.

DRAINAGE AREA.--59.1 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1985 to current year. Discharge measurements for the period October 1984 to September 1985 available in files of the U.S. Geological Survey. Discharge measurements only, October 1987 to September 1988.

GAGE.--Water-stage recorder and concrete rectangular weir. Elevation of gage is 1,360 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor. At times, imported water is released to the Whitewater River from the Colorado River Aqueduct at a point 0.75 mi upstream. Water is diverted out of the basin 16.5 mi upstream to powerplants in the San Geronio River basin and then to an area north of Banning for irrigation. For records of releases and diversions see Whitewater River at Windy Point, near White Water (station 10257550).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,020 ft³/s, Feb. 15, 1986, gage height, 11.97 ft, from rating curve extended above 900 ft³/s; no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 552 ft³/s, Jan. 14; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.0	409	1.3	2.9	.48	e84	.23	.00	.00	.00	.00	.00
2	e1.9	e407	1.3	3.9	.43	e80	.21	.00	.00	.00	.00	.00
3	e1.9	372	2.1	2.1	.45	e76	.23	.00	.00	.00	.00	.00
4	e1.7	357	1.5	1.1	.45	e73	.32	.00	.00	.00	.00	.00
5	e1.4	356	.70	.89	.44	e50	.34	.00	.00	.00	.00	.29
6	e1.4	e339	.84	.82	.44	e79	.29	.00	.00	.00	.00	.33
7	e1.4	e306	1.9	.83	.37	e107	.30	.00	.00	.00	.00	.00
8	e1.2	e381	2.2	1.1	.39	e104	.28	.00	.00	.00	.00	.00
9	e.80	e358	2.3	237	.33	e91	.26	.00	.00	.00	.00	.00
10	.00	356	.52	168	.34	e70	.18	.00	.00	.00	.00	.00
11	.00	356	1.1	122	.32	e41	.25	.00	.00	.00	.00	.00
12	.00	349	2.4	367	.40	e27	.27	.00	.00	.00	4.2	.00
13	.00	328	2.3	426	.36	e46	.29	.00	.00	.00	.70	.00
14	.00	231	2.2	e552	.45	e67	.27	.00	.00	.00	.00	.00
15	.00	.55	2.4	e506	.45	e86	.31	.00	.00	.00	.00	.00
16	.00	.08	2.7	e506	.45	e101	.09	.00	.00	.00	.00	.00
17	.00	.00	1.0	e494	e9.2	e97	.00	.00	.00	.00	.00	.00
18	.00	.89	.86	e491	e14	96	.00	.00	.00	.00	.00	.00
19	.00	.40	.57	e491	e12	65	.00	.00	.00	.00	.00	.00
20	.00	.00	.39	e476	e11	.24	.00	.00	.00	.00	.00	.00
21	.00	.00	.37	e94	e92	.19	.00	.00	.00	.00	.00	.00
22	.00	.02	1.7	.62	e108	.18	.00	.00	.00	.00	.00	.00
23	.00	.18	2.4	.53	103	.20	.00	.00	.00	.00	.00	.00
24	.00	.17	1.8	.53	e106	.22	.00	.00	.00	.00	.00	e20
25	.00	.22	1.6	.51	e103	.20	.00	.00	.00	.00	.00	e120
26	.00	.55	1.5	.44	e96	.17	.00	.00	.00	.00	.00	e110
27	.00	2.1	1.5	1.8	e92	.12	.00	.00	.00	.00	.00	e110
28	.00	2.0	1.1	.43	e87	.13	.00	.00	.00	.00	.00	e113
29	.00	1.3	1.8	.39	---	.19	.00	.00	.00	.00	.00	113
30	163	.67	2.9	.46	---	.21	.00	.00	.00	.00	.00	114
31	422	---	2.8	.47	---	.20	---	.01	---	.00	.00	---
TOTAL	598.70	4914.13	50.05	4949.82	839.75	1442.25	4.12	0.01	0.00	0.00	4.90	700.62
MEAN	19.3	164	1.61	160	30.0	46.5	.14	.000	.000	.000	.16	23.4
MAX	422	409	2.9	552	108	107	.34	.01	.00	.00	4.2	120
MIN	.00	.00	.37	.39	.32	.12	.00	.00	.00	.00	.00	.00
AC-FT	1190	9750	99	9820	1670	2860	8.2	.02	.00	.00	9.7	1390

CAL YR 1989 TOTAL 6571.47 MEAN 18.2 MAX 422 MIN .00 AC-FT 13040
WTR YR 1990 TOTAL 13504.35 MEAN 37.1 MAX 552 MIN .00 AC-FT 26800

e Estimated.

10256060 WHITEWATER RIVER AT WHITE WATER CUTOFF, AT WHITE WATER, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1972-76, 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

		DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	
MAR 07...	1100	110	932	8.5	14.0	290	150	72	27	
DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3)	ALKA- LINITY WAT DIS TOT IT 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)
MAR 07...	85	38	2	3.8	169	0	138	230	70	0.20
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)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	
MAR 07...	9.0	612	581	0.83	0.220	<0.010	120	<3	<1	

10256500 SNOW CREEK NEAR WHITE WATER, CA

LOCATION.--Lat 33°52'14", long 116°40'49", in NW 1/4 NW 1/4 sec.33, T.3 S., R.3 E., Riverside County, Hydrologic Unit 18100200, on left bank at upstream side of Desert Water Agency diversion dam, 0.1 mi downstream from East Fork, and 4.4 mi southwest of White Water.

DRAINAGE AREA.--10.9 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July to December 1921, May 1922 to February 1927, December 1927 to September 1931, October 1959 to current year. Yearly discharges for 1929-31, published in WSP 1314. Discharge records for Snow Creek diversion (station 10256550) since October 1978, and those for creek only October 1978 through September 1988 available in files of the U.S. Geological Survey.

REVISED RECORDS.--WDR CA-89-1: Drainage area.

GAGE.--Water-stage recorder and broad-crested weir on creek, water-stage recorder and weir on diversion.

Elevation of gage is 2,000 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to October 1931, at various sites within 500 ft of present site at different datums. October 1959 to Oct. 6, 1970, at site 40 ft upstream at present datum. Oct. 6, 1970, to Oct. 25, 1978, at site 290 ft upstream from diversion at present datum. Gage moved to present site 10 ft downstream from diversion Oct. 25, 1978.

REMARKS.--Records fair. No regulation upstream from station. Diversion 10 ft upstream, generally taking most of the base flow. For combined record of creek and diversion (station 10256501), see following pages. Published record prior to 1989 represents entire flow from basin (combined creek plus diversion prior to March 1927 and October 1978 to September 1988; creek only, upstream from diversion, December 1927 to September 1931 and October 1959 to September 1978). Both creek only and combined flow published beginning October 1989.

COOPERATION.--Records for diversion were provided by Desert Water Agency.

AVERAGE DISCHARGE.--Combined creek and diversion: 38 years (water years 1923-26, 1929-31, 1960-90), 9.45 ft³/s, 6,850 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (Combined creek and diversion).-- Maximum discharge, 13,000 ft³/s, Jan. 25, 1969, gage height, 13.8 ft, from floodmarks, site and datum then in use, from rating curve extended above 55 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 2.1 ft³/s, June 23-27, Sept. 5-11, 1961.

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

Date	Time	Creek only Discharge (ft ³ /s)	Gage height (ft)	Combined creek and diversion Discharge (ft ³ /s)
Jan. 14	0730	*23	*2.94	*23

Creek only: Minimum daily, 0.06 ft³/s, June 24.

Combined creek and diversion: Minimum daily, 2.8 ft³/s, July 12, 15-17.

REVISIONS.--Daily discharge records for the 1980 water year published as combined total flow of Snow Creek and diversion, were actually the creek only data. The combined discharge table for Snow Creek and diversion for the 1980 water year supersedes the table published as combined in the report for 1980 and is shown on the following page.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MEAN VALUES											
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.38	.81	1.0	3.7	4.5	2.1	5.4	5.0	1.0	.95	1.8	1.2
2	.47	.77	1.0	4.5	4.2	3.3	5.3	2.4	.90	.88	1.7	1.9
3	.53	.75	1.0	4.0	4.1	5.6	5.1	2.1	.76	.66	1.2	1.4
4	.50	.77	.99	2.7	4.1	6.4	5.2	2.0	.66	.70	1.1	3.7
5	.51	.75	.90	1.4	4.2	6.5	3.4	2.0	.60	.71	1.1	7.1
6	.52	.83	.93	1.2	4.2	5.0	2.8	2.2	.68	.72	5.3	9.8
7	.52	.84	1.0	1.2	4.1	5.4	2.9	1.8	.71	.79	5.4	6.7
8	.48	.83	1.0	1.2	4.1	5.4	3.2	3.0	.63	.82	5.5	6.2
9	.44	.77	.97	1.2	4.1	5.4	4.2	5.6	2.4	.79	5.5	6.1
10	.37	.83	.99	1.2	4.1	5.3	5.4	5.5	4.5	1.7	5.9	3.9
11	.31	.85	.97	1.2	3.9	5.3	4.0	5.2	2.2	2.9	6.2	2.6
12	.35	.77	.98	2.0	3.9	5.3	3.1	5.1	.64	2.8	5.9	2.6
13	.42	.82	1.0	4.0	3.9	3.1	3.5	4.9	.51	3.0	4.8	2.5
14	.52	.83	1.0	13	3.8	2.0	4.0	4.9	.47	2.9	5.9	2.6
15	.70	.83	1.1	7.2	3.8	1.9	4.5	4.7	.49	2.8	4.6	2.5
16	.46	.83	1.1	5.3	3.8	1.8	5.6	2.5	.45	2.8	5.5	2.5
17	.43	.79	1.0	6.6	7.5	1.8	8.0	1.0	.36	2.8	5.5	2.0
18	.50	.86	1.0	5.4	11	1.8	5.2	1.0	.28	1.6	5.5	1.9
19	.51	.77	1.0	4.9	7.7	1.8	3.2	.97	.19	.67	5.4	2.2
20	.48	.77	1.0	4.7	4.4	1.8	4.4	1.0	.15	.75	3.4	1.9
21	1.6	.84	1.0	4.5	2.7	2.0	6.5	.93	.13	.69	1.1	2.1
22	3.9	.84	1.0	4.4	2.6	2.5	6.5	.88	.11	.67	.81	2.2
23	4.0	.84	1.0	4.4	2.5	3.1	6.4	.94	.09	.66	.89	2.3
24	3.4	.84	1.0	4.2	2.4	3.5	4.4	1.1	.06	.62	.99	2.1
25	3.5	.88	1.0	4.2	2.4	3.6	2.8	1.0	.31	.64	1.0	1.9
26	2.2	1.0	1.0	4.2	2.5	3.2	2.6	.89	.97	.64	1.0	1.8
27	.84	1.0	1.1	4.0	2.4	3.0	2.7	.82	.91	1.5	.99	1.9
28	.82	1.0	1.1	3.9	2.2	3.5	2.9	4.5	.94	1.6	.96	2.2
29	.81	1.0	2.8	2.4	---	5.9	3.2	7.5	1.0	1.7	.95	3.9
30	.83	1.0	3.7	2.2	---	4.8	4.7	4.3	1.0	1.7	.84	5.8
31	.84	---	3.7	5.1	---	5.4	---	1.4	---	1.6	.90	---
TOTAL	32.14	25.31	38.33	120.1	115.1	117.5	131.1	87.13	24.10	43.76	97.63	97.5
MEAN	1.04	.84	1.24	3.87	4.11	3.79	4.37	2.81	.80	1.41	3.15	3.25
MAX	4.0	1.0	3.7	13	11	6.5	8.0	7.5	4.5	3.0	6.2	9.8
MIN	.31	.75	.90	1.2	2.2	1.8	2.6	.82	.06	.62	.81	1.2
AC-FT	64	50	76	238	228	233	260	173	48	87	194	193

CAL YR 1989 TOTAL 818.53 MEAN 2.24 MAX 31 MIN .06 AC-FT 1620

WTR YR 1990 TOTAL 929.70 MEAN 2.55 MAX 13 MIN .06 AC-FT 1840

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COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF SNOW CREEK
AND DIVERSION, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
(NOT PREVIOUSLY PUBLISHED)
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.5	6.5	6.0	6.6	73	89	24	29	24	25	13	8.9
2	5.9	6.5	6.0	6.5	51	104	22	32	24	22	12	8.9
3	6.0	5.9	6.1	6.5	42	206	21	29	24	19	12	8.9
4	5.7	5.1	6.1	6.5	38	111	20	30	23	18	11	8.5
5	5.5	4.7	5.7	6.2	38	55	20	32	25	17	11	11
6	5.5	4.7	5.9	6.0	40	105	20	38	25	17	11	8.1
7	5.5	4.7	6.1	6.4	35	65	20	36	24	17	11	8.1
8	5.5	5.4	5.9	6.1	29	50	20	32	22	17	11	8.1
9	5.4	5.9	5.8	35	25	43	20	30	24	16	10	8.5
10	5.4	6.1	5.8	39	22	43	22	51	26	16	11	10
11	5.4	6.1	5.8	149	20	40	25	43	26	15	11	8.4
12	5.4	5.9	5.8	78	18	35	24	36	26	15	10	8.9
13	5.4	5.9	5.9	45	22	32	22	31	23	15	10	8.9
14	5.4	5.9	5.9	72	215	29	21	28	21	15	10	8.9
15	5.9	5.9	5.9	43	348	27	21	28	21	15	9.4	8.8
16	5.9	5.8	5.9	26	405	24	22	27	21	15	9.7	8.5
17	5.9	5.6	5.9	19	393	21	26	31	22	15	9.5	8.3
18	5.9	5.9	5.9	19	537	22	29	34	22	14	9.5	7.7
19	5.7	5.9	5.9	16	533	22	31	36	21	13	9.6	6.7
20	85	5.8	5.9	14	407	18	33	39	21	13	9.5	6.6
21	18	5.7	6.0	13	484	17	33	40	20	13	9.4	6.4
22	9.9	5.7	6.5	12	267	17	30	36	20	14	9.3	6.4
23	6.9	5.6	6.1	11	202	15	29	34	20	15	9.1	6.4
24	7.7	5.6	6.1	11	171	15	27	31	20	15	9.2	6.4
25	7.3	5.6	6.0	10	150	14	23	28	18	15	9.1	6.4
26	7.3	5.7	6.0	9.9	134	16	22	26	18	17	9.1	6.6
27	6.8	6.2	5.7	9.2	119	20	26	25	21	19	9.2	6.7
28	6.4	6.3	6.6	23	107	24	28	24	24	18	9.2	6.7
29	6.3	6.3	6.6	476	99	24	29	24	27	15	8.8	6.7
30	6.2	6.1	6.6	167	---	24	29	24	26	14	8.8	6.9
31	6.5	---	6.6	104	---	24	---	24	---	14	8.9	---
TOTAL	281.1	173.0	187.0	1451.9	5024	1351	739	988	679	498	311.3	236.3
MEAN	9.07	5.77	6.03	46.8	173	43.6	24.6	31.9	22.6	16.1	10.0	7.88
MAX	85	6.5	6.6	476	537	206	33	51	27	25	13	11
MIN	5.4	4.7	5.7	6.0	18	14	20	24	18	13	8.8	6.4
AC-FT	558	343	371	2880	9970	2680	1470	1960	1350	988	617	469
CAL YR 1979	TOTAL	6071.5	MEAN	16.6	MAX	366	MIN	4.7	AC-FT	12040		
WTR YR 1980	TOTAL	11919.6	MEAN	32.6	MAX	537	MIN	4.7	AC-FT	23640		

SALTON SEA BASIN

10256501 SNOW CREEK NEAR WHITE WATER, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF SNOW CREEK
AND DIVERSION, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	3.8	3.9	3.7	4.5	5.2	5.4	8.5	5.0	3.2	4.8	4.4
2	3.6	3.8	3.8	4.5	4.2	6.5	5.3	5.8	4.9	3.2	4.7	5.1
3	3.6	3.7	3.8	4.0	4.1	5.6	5.1	5.5	4.7	3.4	4.4	4.6
4	3.6	3.8	3.8	6.0	4.1	6.4	5.2	5.4	4.6	3.3	4.3	6.9
5	3.5	3.7	3.7	4.3	4.2	6.5	6.3	5.4	4.5	3.3	4.3	7.1
6	3.5	3.8	4.0	4.3	4.2	8.1	5.7	5.6	4.6	3.3	5.3	9.8
7	3.5	3.8	4.0	4.3	4.1	5.4	5.8	5.2	4.4	3.4	5.4	6.7
8	3.5	3.8	4.0	4.3	4.1	5.4	6.1	7.1	4.3	3.4	5.5	6.2
9	3.4	3.8	4.0	4.3	4.1	5.4	7.1	5.6	6.0	3.4	5.5	6.1
10	3.4	3.8	4.0	4.3	4.1	5.3	8.3	5.5	4.5	4.4	5.9	7.1
11	3.5	3.8	4.0	4.4	3.9	5.3	6.9	5.2	6.4	2.9	6.2	5.8
12	3.5	3.8	4.0	5.4	3.9	5.3	6.0	5.1	4.6	2.8	5.9	5.8
13	3.6	3.8	4.0	4.0	3.9	6.2	6.4	4.9	4.5	3.0	8.0	5.7
14	3.7	3.8	3.9	13	3.8	5.1	6.9	4.9	4.5	2.9	5.9	5.6
15	3.7	3.8	4.0	7.2	3.8	5.0	7.4	4.7	4.5	2.8	4.6	5.5
16	3.8	3.8	4.0	5.3	3.8	4.8	8.5	6.5	4.4	2.8	5.5	5.5
17	3.6	3.9	3.9	6.6	7.5	4.7	8.0	5.0	4.3	2.8	5.5	5.0
18	3.7	3.7	4.0	5.4	11	4.7	8.8	4.9	4.2	4.4	5.5	4.9
19	3.6	3.9	4.0	4.9	7.7	4.8	6.8	4.9	4.1	3.5	5.4	5.6
20	3.6	3.8	4.0	4.7	7.5	4.9	7.9	4.9	3.9	3.6	6.6	5.2
21	4.7	3.8	4.0	4.5	5.7	5.1	6.5	4.7	3.9	3.5	4.3	5.4
22	3.9	3.9	4.0	4.4	5.6	5.6	6.5	4.7	3.9	3.4	4.4	5.4
23	4.0	3.8	4.0	4.4	5.5	6.1	6.4	4.7	3.7	3.3	4.2	5.5
24	3.4	3.8	4.0	4.2	5.3	6.5	8.3	4.9	3.7	3.2	4.4	5.4
25	3.5	3.9	4.0	4.2	5.3	6.6	6.1	4.7	3.6	3.2	4.4	5.1
26	5.7	3.6	3.9	4.2	5.4	6.2	5.9	4.5	3.3	3.4	4.3	5.0
27	3.9	4.0	4.0	4.0	5.3	6.1	5.9	4.4	3.2	4.5	4.4	5.1
28	4.0	3.7	4.0	3.9	5.2	6.6	6.1	4.5	3.2	4.6	4.4	5.4
29	3.9	3.9	5.4	4.9	---	5.9	6.4	7.5	3.3	4.7	4.1	7.1
30	3.9	3.9	3.7	4.7	---	7.8	7.9	7.9	3.3	4.7	4.1	9.0
31	3.8	---	3.7	5.1	---	5.4	---	4.8	---	4.6	4.3	---
TOTAL	116.0	114.2	123.5	153.4	141.8	178.5	199.9	167.9	128.0	108.9	156.5	177.0
MEAN	3.74	3.81	3.98	4.95	5.06	5.76	6.66	5.42	4.27	3.51	5.05	5.90
MAX	5.7	4.0	5.4	13	11	8.1	8.8	8.5	6.4	4.7	8.0	9.8
MIN	3.4	3.6	3.7	3.7	3.8	4.7	5.1	4.4	3.2	2.8	4.1	4.4
AC-FT	230	227	245	304	281	354	397	333	254	216	310	351
CAL YR 1989	TOTAL 1863.6	MEAN 5.11	MAX 33	MIN 3.0	AC-FT 3700							
WTR YR 1990	TOTAL 1765.6	MEAN 4.84	MAX 13	MIN 2.8	AC-FT 3500							

e Estimated.

10256500 SNOW CREEK NEAR WHITE WATER, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1972-76, 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)
MAR 08...	1200	5.4	106	8.2	12.0	35	0	12	1.1
DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA- LINITY WAT DIS TOT IT 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)
MAR 08...	9.1	35	0.7	1.8	68	56	1.5	2.4	<0.10
DATE	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, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAR 08...	19	81	80	0.11	<0.100	<0.010	<10	9	<1

SALTON SEA BASIN

10257550 WHITEWATER RIVER AT WINDY POINT, NEAR WHITE WATER, CA

LOCATION.--Lat 33°53'56", long 116°37'13", in SW 1/4 NE 1/4 sec.24, T.3 S., R.3 E., Riverside County, Hydrologic Unit 18100200, on right bank 200 ft north of Highway 111, 2.0 mi southeast of White Water, and 3.8 mi east of the junction of Highway 111 and Interstate 10.

DRAINAGE AREA.--264 mi².

PERIOD OF RECORD.--October 1984 to September 1987, October 1989 to September 1990. Discharge measurements only, October 1987 to September 1989. Discharge measurements for the period July 1982 to September 1984 available in files of the U.S. Geological Survey.

REVISED RECORDS.--WDR CA-88-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 1,040 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair. Imported water is released to the Whitewater River from the Colorado River Aqueduct at a point 2.75 mi upstream for ground-water recharge in the upper Coachella Valley. Water is diverted out of the basin 18.5 mi upstream to powerplants in the San Geronio River basin and then to an area north of Banning for irrigation.

COOPERATION.--Records of diversion out of basin were provided by Southern California Edison Co. Records of Colorado River Aqueduct releases were provided by Coachella Valley Water District (from Metropolitan Water District's monthly reports).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,190 ft³/s, Nov. 22, 1986, gage height, 4.33 ft; no flow for several days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 592 ft³/s, Oct. 31, gage height, 5.32 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e3.0	261	.00	.00	.00	194	.00	.00	.00	.00	.00	1.1
2	e2.7	360	.00	.00	.00	187	.00	.00	.00	.00	.00	2.7
3	e2.4	352	.00	.00	.00	180	.00	.00	.00	.00	.00	.54
4	e2.3	337	.00	.00	.00	175	.00	.00	.00	.00	.00	.34
5	.08	327	.00	.00	.00	165	.00	.00	.00	.00	.00	3.4
6	.00	326	.00	.00	.00	189	.00	.00	.00	.00	.00	9.3
7	.05	336	.00	.00	.00	187	.00	.00	.00	.00	.00	5.9
8	.00	356	.00	.00	.00	185	.00	.00	.00	.00	.00	4.6
9	.00	371	.00	218	.00	182	.00	.00	.00	.00	.00	3.7
10	.38	365	.00	204	.00	177	.00	.00	1.2	.00	.00	3.8
11	.00	349	.00	146	.00	179	.00	.00	1.6	.00	.00	4.2
12	.00	340	.00	327	.00	184	.00	.00	.00	.00	.00	5.8
13	.00	315	.00	405	.00	178	.00	.00	.00	.00	3.5	4.5
14	.00	215	.00	459	.00	181	.00	.00	.00	.00	5.5	4.5
15	.00	.00	.00	400	.00	176	.00	.00	.00	2.6	5.6	4.7
16	.00	.00	.00	386	.38	187	.00	.00	.00	1.2	3.8	4.6
17	.41	.00	.00	419	7.2	183	.25	.00	.00	.00	4.3	4.2
18	.00	.00	.00	420	8.9	178	2.2	.00	.00	.00	2.9	4.0
19	.00	.00	.00	425	7.0	120	.00	.00	.00	.00	2.1	4.5
20	.00	.00	.00	404	6.1	.00	.00	.00	.00	.00	3.4	6.1
21	.01	.00	.00	146	60	.00	.00	.00	.00	.00	4.2	4.9
22	3.2	.00	.00	.00	144	.00	.00	.00	.00	.00	4.4	4.9
23	6.0	.00	.00	.00	199	.00	.00	.00	.00	.00	2.6	3.0
24	5.2	.00	.00	.00	200	.00	.00	.00	.00	.00	2.1	38
25	5.1	.00	.00	.00	199	.00	.00	.00	.00	.00	1.0	182
26	5.5	.00	.00	.00	198	.00	.00	.00	.00	.00	1.3	126
27	5.3	.00	.00	.00	196	.00	.00	.00	.00	.00	2.8	157
28	5.5	.00	.00	.00	181	.00	.00	.00	.00	.00	3.2	177
29	4.6	.00	.00	.00	---	.00	.00	.00	.00	.00	2.1	214
30	35	.00	.00	.00	---	.00	.00	.00	.00	.00	.55	216
31	111	---	.00	.00	---	.00	---	.00	---	.00	.80	---
TOTAL	197.73	4610.00	0.00	4359.00	1416.58	3387.00	2.45	0.00	2.80	3.80	56.15	1205.28
MEAN	6.38	154	.000	141	50.6	109	.082	.000	.093	.12	1.81	40.2
MAX	111	371	.00	459	200	194	2.2	.00	1.6	2.6	5.6	216
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.34
AC-FT	392	9140	.00	8650	2810	6720	4.9	.00	5.6	7.5	111	2390
a	769	11710	0	10510	2890	8420	0	0	0	0	0	1880
b	55	57	66	76	71	65	78	67	53	44	41	37

WTR YR 1990 TOTAL 15240.79 MEAN 41.8 MAX 459 MIN .00 AC-FT 30230

e Estimated.

a Discharge, in acre-feet, of imported water released to river 2.75 mi upstream.

b Discharge, in acre-feet, diverted out of basin 18.5 mi upstream.

10257600 MISSION CREEK NEAR DESERT HOT SPRINGS, CA

LOCATION.--Lat 34°00'40", long 116°37'38", in NE 1/4 SW 1/4 sec.12, T.2 S., R.3 E., Riverside County, Hydrologic Unit 18100200, in Mission Creek Indian Reservation, 0.6 mi downstream from West Fork, and 6.8 mi northwest of Desert Hot Springs.

DRAINAGE AREA.--35.7 mi².

PERIOD OF RECORD.--October 1967 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,400 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records poor. Slight regulation of low flow by two small dams with a combined capacity of about 3 acre-ft, 2 mi upstream from station.

AVERAGE DISCHARGE.--23 years, 3.26 ft³/s, 2,360 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,750 ft³/s, Aug. 17, 1983, gage height, 3.33 ft on basis of slope-conveyance study of peak flow; maximum gage height, 6.40 ft, Jan. 25, 1969; no flow for many days in most years.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 6	0245	*0.74	*1.54				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
MEAN	.002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.002
MAX	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.1

CAL YR 1989 TOTAL 1.33 MEAN .004 MAX .62 MIN .00 AC-FT 2.6
WTR YR 1990 TOTAL 0.11 MEAN .000 MAX .06 MIN .00 AC-FT .2

SALTON SEA BASIN

10257720 CHINO CANYON CREEK BELOW TRAMWAY, NEAR PALM SPRINGS, CA

LOCATION.--Lat 35°50'39", long 116°36'16", in NW 1/4 NE 1/4 sec.7, T.4 S., R.4 E., Riverside County, Hydrologic Unit 18100200, on left bank 0.5 mi downstream from tram building, 3.5 mi west of Highway 111 on road leading to Palm Springs aerial tramway, and 5.5 mi west of Palm Springs.

DRAINAGE AREA.--4.71 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1986 to current year.

REVISED RECORDS.--WDR CA-89-1: 1987(M).

GAGE.--Water-stage recorder. Elevation of gage is 2,100 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records poor. Two small diversions 2 mi upstream, one for city of Palm Springs and one for Palm Springs aerial tramway.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62 ft³/s, Aug. 9, 1989, gage height, 9.95 ft, from rating curve extended above 2.0 ft³/s on basis of critical depth computation; no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1.6 ft³/s, June 10, gage height, 8.81 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.35	.70	.43	.35	.35	.34	.20	.20	.02	.00	.00	.00
2	.35	.70	.43	.41	.35	.28	.18	.14	.02	.00	.00	.00
3	.35	.65	.43	.43	.35	.23	.20	.10	.02	.00	.00	.00
4	.44	.60	.43	.39	.44	.23	.21	.08	.01	.00	.00	.00
5	.53	.60	.43	.35	.45	.23	.15	.07	.01	.00	.00	.00
6	.57	.60	.43	.35	.35	.27	.16	.07	.01	.00	.00	.00
7	.60	.60	.43	.35	.35	.35	.17	.07	.01	.00	.00	.00
8	.69	.60	.43	.35	.33	.35	.19	.07	.01	.00	.00	.00
9	.70	.60	.43	.35	.29	.35	.16	.07	.02	.00	.00	.00
10	.70	.60	.43	.35	.29	.35	.16	.09	.29	.00	.00	.00
11	.70	.55	.43	.35	.29	.45	.14	.09	.03	.00	.00	.00
12	.76	.51	.43	.35	.29	.45	.13	.08	.03	.00	.00	.00
13	.81	.51	.43	.33	.29	.43	.12	.06	.02	.00	.00	.00
14	.77	.51	.43	.42	.32	.35	.11	.06	.02	.00	.00	.00
15	.70	.51	.43	.37	.35	.35	.13	.06	.02	.00	.00	.00
16	.70	.51	.43	.43	.35	.35	.18	.05	.02	.00	.00	.00
17	.67	.51	.43	.91	.48	.35	.22	.04	.02	.00	.00	.00
18	.60	.51	.43	.50	.49	.32	.22	.06	.01	.00	.00	.00
19	.60	.51	.39	.43	.45	.29	.19	.06	.02	.00	.00	.00
20	.60	.51	.35	.43	.35	.29	.23	.06	.01	.00	.00	.00
21	.60	.48	.35	.43	.35	.28	.19	.04	.01	.00	.00	.00
22	.66	.43	.35	.41	.35	.24	.16	.03	.00	.00	.00	.00
23	.67	.43	.35	.43	.35	.22	.19	.04	.01	.00	.00	.00
24	.60	.43	.35	.40	.35	.24	.27	.04	.00	.00	.00	.00
25	.60	.43	.35	.43	.35	.21	.23	.04	.00	.00	.00	.00
26	.70	.43	.35	.43	.35	.21	.15	.04	.00	.00	.00	.00
27	.70	.39	.35	.43	.35	.22	.11	.03	.00	.00	.00	.00
28	.70	.40	.35	.43	.35	.25	.12	.09	.00	.00	.00	.00
29	.70	.43	.35	.45	---	.29	.10	.04	.00	.00	.00	.00
30	.70	.43	.35	.43	---	.25	.22	.03	.00	.00	.00	.00
31	.70	---	.35	.49	---	.27	---	.02	---	.00	.00	---
TOTAL	19.52	15.67	12.33	12.96	10.01	9.29	5.19	2.02	0.64	0.00	0.00	0.00
MEAN	.63	.52	.40	.42	.36	.30	.17	.065	.021	.000	.000	.000
MAX	.81	.70	.43	.91	.49	.45	.27	.20	.29	.00	.00	.00
MIN	.35	.39	.35	.33	.29	.21	.10	.02	.00	.00	.00	.00
AC-FT	39	31	24	26	20	18	10	4.0	1.3	.00	.00	.00

CAL YR 1989 TOTAL 95.71 MEAN .26 MAX 1.7 MIN .00 AC-FT 190

WTR YR 1990 TOTAL 87.63 MEAN .24 MAX .91 MIN .00 AC-FT 174

10257720 CHINO CANYON CREEK BELOW TRAMWAY, NEAR PALM SPRINGS, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1987 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (MG/L AS CACO3)	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	
MAR 09...	1315	0.51	202	8.5	16.0	77	0	27	2.4	
DATE	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCC3	CAR- BONATE WATER DIS IT FIELD MG/L AS AS CO3)	ALKA- LINITY WAT DIS TOT IT 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)
MAR 09...	11	22	0.5	4.9	125	0	102	5.6	3.7	<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)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	
MAR 09...	17	129	133	0.18	<0.100	<0.010	20	7	<1	

10258000 TAHQUITZ CREEK NEAR PALM SPRINGS, CA

LOCATION.--Lat 33°48'18", long 116°33'30", in SW 1/4 SW 1/4 sec.22, T.4 S., R.4 E., Riverside County, Hydrologic Unit 18100200, 2.2 mi southwest of Palm Springs and 7 mi upstream from mouth.

DRAINAGE AREA.--16.9 mi².

PERIOD OF RECORD.--October 1947 to September 1982, October 1983 to current year.

REVISED RECORDS.--WDR CA-88-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 762.5 ft above National Geodetic Vertical Datum of 1929 (levels by Riverside County Flood Control District). Prior to Aug. 25, 1970, at datum 2.00 ft higher.

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

AVERAGE DISCHARGE.--42 years (water years 1948-82, 1984-90), 4.96 ft³/s, 3,590 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,900 ft³/s, Nov. 22, 1965, Jan. 25, 1969, gage height, 12.34 ft, from rating curve extended above 70 ft³/s on basis of slope-area measurements at gage heights 10.45 and 12.34 ft; maximum gage height, 15.78 ft, Sept. 7, 1981, from debris wave produced by thunderstorm following a brushfire; no flow for parts of most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 85 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 15	0545	*7.1	*4.16				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.20	.34	.26	.66	1.1	1.0	.07	.00	.00	.00
2	.00	.00	.23	.40	.37	.65	1.1	.93	.02	.00	.00	.00
3	.00	.00	.24	.33	.71	.59	1.1	.77	.01	.00	.00	.00
4	.00	.00	.23	.35	.74	.59	1.2	.67	.00	.00	.00	.00
5	.00	.00	.28	.34	.45	.59	1.2	.36	.00	.00	.00	.00
6	.00	.04	.27	.35	.45	.60	1.1	1.3	.00	.00	.00	.00
7	.00	.06	.22	.33	.41	.57	1.1	2.3	.00	.00	.00	.00
8	.00	.03	.20	.34	.39	.56	1.2	.23	.00	.00	.00	.00
9	.00	.04	.20	.33	.41	.54	1.1	.06	.00	.00	.00	.00
10	.00	.05	.23	.33	.40	.51	1.0	.06	.01	.00	.00	.00
11	.00	.08	.23	.32	.41	.52	.94	.07	.00	.00	.00	.00
12	.00	.10	.24	.32	.42	.54	3.0	.08	.00	.00	.00	.00
13	.00	.10	.25	.18	.44	.58	6.6	.09	.00	.00	.00	.00
14	.00	.11	.26	.22	.41	.54	6.8	.10	.00	.00	.00	.00
15	.00	.06	.27	.60	.40	.51	4.9	.11	.00	.00	.00	.00
16	.00	.06	.27	.48	.47	.43	2.4	.11	.00	.00	.00	.00
17	.00	.11	.28	.92	.67	.41	2.5	.10	.00	.00	.00	.00
18	.00	.16	.27	.66	1.5	.42	2.3	.08	.00	.00	.00	.00
19	.00	.14	.28	.49	1.1	.41	1.1	.07	.00	.00	.00	.00
20	.00	.14	.28	.40	.86	.35	1.0	.10	.00	.00	.00	.00
21	.00	.15	.28	.41	.77	.35	.93	.12	.00	.00	.00	.00
22	.00	.17	.28	.36	.69	.36	.76	.12	.00	.00	.00	.00
23	.00	.18	.29	.34	.67	.57	.60	.10	.00	.00	.00	.00
24	.00	.20	.26	.31	.67	1.2	.54	.10	.00	.00	.00	.00
25	.00	.21	.27	.38	.67	1.5	.56	.09	.00	.00	.00	.00
26	.00	.23	.28	.48	.66	1.5	.51	.11	.00	.00	.00	.00
27	.00	.25	.27	.29	.66	1.5	.41	.13	.00	.00	.00	.00
28	.00	.30	.28	.10	.66	1.5	.55	.16	.00	.00	.00	.00
29	.00	.31	.18	.10	---	1.5	.64	.13	.00	.00	.00	.00
30	.00	.30	.25	.10	---	1.4	.88	.11	.00	.00	.00	.00
31	.00	---	.32	.14	---	1.3	---	.09	---	.00	.00	---
TOTAL	0.00	3.58	7.89	11.04	16.72	23.25	49.12	9.85	0.11	0.00	0.00	0.00
MEAN	.000	.12	.25	.36	.60	.75	1.64	.32	.004	.000	.000	.000
MAX	.00	.31	.32	.92	1.5	1.5	6.8	2.3	.07	.00	.00	.00
MIN	.00	.00	.18	.10	.26	.35	.41	.06	.00	.00	.00	.00
AC-FT	.00	7.1	16	22	33	46	97	20	.2	.00	.00	.00

CAL YR 1989 TOTAL 339.44 MEAN .93 MAX 7.9 MIN .00 AC-FT 673
WTR YR 1990 TOTAL 121.56 MEAN .33 MAX 6.8 MIN .00 AC-FT 241

10258500 PALM CANYON CREEK NEAR PALM SPRINGS, CA

LOCATION.--Lat 33°44'42", long 116°32'05", in SW 1/4 SE 1/4 sec.11, T.5 S., R.4 E., Riverside County, Hydrologic Unit 18100200, on right bank 0.8 mi upstream from Murray Canyon Creek, and 6 mi south of Palm Springs.

DRAINAGE AREA.--93.1 mi².

PERIOD OF RECORD.--January 1930 to January 1942, October 1947 to current year.

REVISED RECORDS.--WDR CA-88-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 700 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Jan. 14, 1942, at datum 0.2 ft higher.

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

AVERAGE DISCHARGE.--54 years (water years 1931-41, 1948-90), 5.03 ft³/s, 3,640 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,000 ft³/s, Feb. 21, 1980, gage height, 7.29 ft, from rating curve extended above 650 ft³/s on basis of slope-area measurement at gage height 6.38 ft; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.--No flow for 1990 water year.

10259000 ANDREAS CREEK NEAR PALM SPRINGS, CA

LOCATION.--Lat 33°45'36", long 116°32'57", in SE 1/4 SE 1/4 sec.3, T.5 S., R.4 E., Riverside County, Hydrologic Unit 18100200, on left bank at U.S. Bureau of Indian Affairs diversion dam, 1.1 mi upstream from mouth, and 5.1 mi south of Palm Springs.

DRAINAGE AREA.--8.65 mi².

PERIOD OF RECORD.--October 1948 to current year.

REVISED RECORDS.--WDR CA-88-1: Drainage area.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 800 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Mar. 25, 1949, reference point at same site at different datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No regulation upstream from station. One small diversion for domestic use about 1 mi upstream from station.

AVERAGE DISCHARGE.--42 years, 2.94 ft³/s, 2,130 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,960 ft³/s, Aug. 31, 1954, gage height, 7.11 ft, from rating curve extended above 80 ft³/s on basis of slope-area measurement of peak flow; no flow at times in some years.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	2215	*8.0	*2.65				

Minimum daily, 0.52 ft³/s, Aug. 6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.82	1.1	1.3	1.5	1.7	1.8	1.8	1.5	1.1	.71	.56	.59
2	.90	1.1	1.3	1.8	1.6	1.8	1.8	1.4	1.1	.67	.66	.83
3	.96	1.1	1.3	1.6	1.6	1.8	1.7	1.3	1.0	.59	.72	.84
4	.93	1.1	1.3	1.6	1.7	1.8	1.7	1.3	.92	.59	.65	.85
5	.91	1.2	1.4	1.6	1.6	1.8	1.7	e1.3	.92	.56	.59	.97
6	.93	1.2	1.4	1.6	1.7	1.8	1.7	e1.3	.93	.55	.52	.88
7	.90	1.2	1.4	1.6	1.7	1.8	1.7	e1.2	.95	.65	.54	.76
8	.88	1.2	1.5	1.6	1.6	1.8	1.7	1.2	.93	.72	.63	.69
9	.85	1.1	1.5	1.6	1.6	1.7	1.6	1.2	1.1	.68	.58	.65
10	.86	1.1	1.4	1.5	1.6	1.7	1.5	1.3	1.8	.73	.61	.59
11	.86	1.1	1.4	1.5	1.6	1.8	1.5	1.3	1.2	.88	.73	.55
12	.88	1.2	1.5	1.5	1.6	1.8	1.5	1.3	1.1	.70	.75	.59
13	.92	1.2	1.5	1.6	1.6	1.8	1.5	1.3	1.0	.96	.76	.61
14	.93	1.2	1.5	2.7	1.6	1.8	1.5	1.3	1.0	.94	.78	.66
15	.96	1.2	1.5	1.9	1.6	1.8	1.5	1.3	1.1	.86	.84	.72
16	.99	1.2	1.5	1.8	1.6	1.8	1.6	1.2	1.1	.86	.78	.69
17	.94	1.2	1.5	2.4	3.1	1.8	1.8	1.2	1.0	.78	.73	.66
18	.93	1.2	1.5	1.9	3.2	1.7	1.7	1.2	.97	.67	.70	.69
19	.94	1.2	1.5	1.8	2.3	1.7	1.6	1.2	.89	.59	.67	.75
20	.96	1.2	1.5	1.7	2.0	1.7	1.6	1.3	.85	.69	.67	.76
21	1.1	1.3	1.5	1.7	1.9	1.8	1.6	1.2	.82	.74	.66	.78
22	1.5	1.2	1.5	1.7	1.9	1.8	1.5	1.1	.80	.70	.64	.84
23	1.2	1.2	1.5	1.7	1.9	1.8	1.5	1.1	.78	.68	.63	.86
24	1.1	1.3	1.5	1.6	1.8	1.8	1.5	1.1	.74	.69	.65	.83
25	1.2	1.3	1.9	1.6	1.8	1.8	1.5	1.1	.72	.62	.66	.79
26	1.2	1.3	1.8	1.6	1.8	1.8	1.4	1.1	.69	.60	.66	.77
27	1.2	1.3	1.5	1.6	1.8	1.8	1.4	1.1	.67	.59	.66	.76
28	1.1	1.3	1.5	1.6	1.8	1.8	1.3	1.4	.64	.55	.64	.80
29	1.1	1.3	1.6	1.6	---	1.8	1.4	1.3	.73	.57	.61	.85
30	1.2	1.3	1.6	1.6	---	1.8	1.5	1.2	.77	.55	.58	.85
31	1.2	---	1.5	2.0	---	1.8	---	1.1	---	.55	.56	---
TOTAL	31.35	36.1	46.1	53.1	51.3	55.3	47.3	38.4	28.32	21.22	20.42	22.46
MEAN	1.01	1.20	1.49	1.71	1.83	1.78	1.58	1.24	.94	.68	.66	.75
MAX	1.5	1.3	1.9	2.7	3.2	1.8	1.8	1.5	1.8	.96	.84	.97
MIN	.82	1.1	1.3	1.5	1.6	1.7	1.3	1.1	.64	.55	.52	.55
AC-FT	62	72	91	105	102	110	94	76	56	42	41	45

CAL YR 1989 TOTAL 527.21 MEAN 1.44 MAX 4.8 MIN .61 AC-FT 1050
WTR YR 1990 TOTAL 451.37 MEAN 1.24 MAX 3.2 MIN .52 AC-FT 895

e Estimated.

10259050 PALM CANYON WASH NEAR CATHEDRAL CITY, CA

LOCATION.--Lat 33°47'49", long 116°28'44", in SE 1/4 NE 1/4 sec.29, T.5 S., R.4 E., Riverside County, Hydrologic Unit 18100200, on right bank 500 ft downstream from Golf Club Drive, 0.4 mi upstream from Whitewater River, and 1.5 mi northeast of Cathedral City.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--January 1988 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 330 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor. No regulation upstream from station. Two diversions for domestic use upstream from station on Andreas Creek.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 850 ft³/s, Aug. 10, 1989, gage height, 3.85 ft, from rating curve based on critical-depth computations; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--No flow for the 1990 water year.

10259100 WHITEWATER RIVER AT RANCHO MIRAGE, CA

LOCATION.--Lat 33°44'58", long 116°25'19", in NW 1/4 SW 1/4 sec.12, T.5 S., R.5 E., Riverside County, Hydrologic Unit 18100200, on right bank 0.2 mi upstream from Magnesia Spring Canyon storm channel and 2.7 mi northwest of the intersection of Highways 111 and 74.

DRAINAGE AREA.--588 mi².

PERIOD OF RECORD.--March 1989 to current year.

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

REMARKS.--No estimated daily discharges. Records fair. No regulation upstream from station. Water diverted from tributary streams for municipal supply in vicinity of Palm Springs. Water from the Colorado River basin is imported for ground-water recharge and irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 330 ft³/s, Aug. 10, 1989, gage height, 3.09 ft, from floodmarks; no flow many days in 1989-90.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1.6 ft³/s, Jan. 17, gage height, 1.06 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.38	.25	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.21	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.41	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.63	0.21	0.38	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.021	.007	.012	.016	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.41	.21	.38	.25	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	1.2	.4	.8	.9	.00	.00	.00	.00	.00	.00	.00

WTR YR 1990 TOTAL 1.67 MEAN .005 MAX .41 MIN .00 AC-FT 3.3

SALTON SEA BASIN

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10259200 DEEP CREEK NEAR PALM DESERT, CA

LOCATION.--Lat 33°37'52", long 116°23'29", in NE 1/4 SE 1/4 sec.19, T.6 S., R.6 E., Riverside County, Hydrologic Unit 18100200, on left bank 500 ft downstream from unnamed tributary and 6.3 mi south of Palm Desert.

DRAINAGE AREA.--30.6 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 1,440 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--28 years, 2.11 ft³/s, 1,530 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,100 ft³/s, Sept. 10, 1976, gage height, 7.84 ft, from rating curve extended above 40 ft³/s on basis of slope-area measurement at gage heights 2.68, 5.15, and 7.84 ft; maximum gage height, 10.27 ft, Aug. 14, 1984 (backwater from debris); no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20 ft³/s and maximum (*), from rating curve extended above 40 ft³/s on basis of slope-area measurements at gage heights 2.68, 5.15, and 7.84 ft:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 4	1430	*0.43	*1.95				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.08	.02	.01	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.08	.02	.01	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.08	.02	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.10	.02	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.07	.02	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.07	.01	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.08	.01	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.08	.01	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.08	.01	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.08	.01	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.08	.01	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.07	.01	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.06	.01	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.06	.01	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.07	.01	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.06	.01	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.07	.01	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.02	.06	.01	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.10	.06	.01	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.10	.05	.01	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.09	.05	.01	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.08	.04	.01	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.08	.04	.01	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.07	.04	.01	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.06	.04	.01	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.06	.04	.01	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.07	.03	.01	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.08	.03	.01	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.08	.02	.01	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.08	.02	.01	.00	.00	.00	.00
31	.00	---	.00	.00	---	.08	---	.01	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	1.05	1.79	0.36	0.02	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.000	.034	.060	.012	.001	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.10	.10	.02	.01	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.02	.01	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	2.1	3.6	.7	.04	.00	.00	.00

CAL YR 1989 TOTAL 27.69 MEAN .076 MAX 2.6 MIN .00 AC-FT 55
WTR YR 1990 TOTAL 3.22 MEAN .009 MAX .10 MIN .00 AC-FT 6.4

SALTON SEA BASIN

10259300 WHITEWATER RIVER AT INDIO, CA

LOCATION.--Lat 33°44'14", long 116°14'07", in SE 1/4 NE 1/4 sec.15, T.5 S., R.7 E., Riverside County, Hydrologic Unit 18100200, on right bank of concrete drop structure, 1,000 ft upstream from Monroe Street bridge, and 1.7 mi northwest of Indio.

DRAINAGE AREA.--1,073 mi².

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

GAGE.--Water-stage recorder and crest-stage gage. Concrete control since Oct. 1, 1979. Elevation of gage is 0 ft National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1979, water-stage recorder at site 0.5 mi upstream at different datum. Oct. 1, 1979, to Feb. 17, 1983, at datum 1.03 ft lower.

REMARKS.--No estimated daily discharges. No regulation upstream from station. Water diverted from tributary streams for municipal supply in vicinity of Palm Springs. Water from the Colorado River basin is imported for ground-water recharge and irrigation.

AVERAGE DISCHARGE.--24 years, 2.87 ft³/s, 2,080 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,400 ft³/s, Jan. 25, 1969, gage height, 14.41 ft, site and datum then in use, from rating curve extended above 1,300 ft³/s on basis of slope-area measurement at gage height 15.3 ft for flood of Nov. 22, 1965; no flow all or most of each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 2 or 3, 1938, reached a discharge of 29,000 ft³/s on basis of slope-area measurement, at site 5.0 mi upstream. Flood of Nov. 22, 1965, reached a stage of 15.3 ft, from floodmark, at site and datum used prior to Oct. 1, 1979, discharge 14,100 ft³/s on basis of slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--No flow for the 1990 water year.

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LOCATION.--Lat 33°31'29", long 116°04'36", in NW 1/4 NW 1/4 sec.32, T.7 S., R.9 E., Riverside County, Hydrologic Unit 18100200, on left bank 1.6 mi upstream from mouth at Salton Sea and 3.3 mi south of Mecca.

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

GAGE.--Water-stage recorder. Datum of gage is 221.00 ft below National Geodetic Vertical Datum of 1929 (levels by Coachella Valley Water District). Oct. 1, 1960, to Mar. 22, 1967, at site 1.3 mi downstream and Mar. 23, 1967, to July 22, 1970, at site 0.7 mi downstream at different datums.

COOPERATION.--Eight discharge measurements were provided by Coachella Valley Water District.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,500 ft³/s, Jan. 25, 1969, estimated; minimum daily, 37 ft³/s, Nov. 25-29, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 162 ft³/s, July 22; gage height, 5.87 ft; minimum daily, 68 ft³/s, Jan. 3, 4, 9.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	76	84	78	70	81	93	92	91	86	72	84	91
2	78	79	77	70	79	94	88	96	83	72	87	94
3	79	82	77	68	82	90	89	89	87	76	93	94
4	76	85	80	68	85	92	95	96	88	77	96	90
5	77	86	79	69	83	87	96	98	84	77	95	87
6	78	84	80	74	84	86	96	101	84	77	90	90
7	80	79	75	73	84	85	103	98	81	77	91	93
8	82	78	77	72	84	85	100	95	81	76	92	87
9	82	75	76	68	85	90	96	93	85	77	91	84
10	84	72	75	72	87	89	96	96	86	79	90	81
11	83	74	73	73	94	93	102	88	81	83	89	84
12	85	75	75	74	92	90	103	91	77	81	84	86
13	84	76	83	74	92	86	99	91	75	81	84	83
14	88	76	84	74	93	89	108	94	74	88	87	82
15	87	74	82	78	91	91	107	96	74	88	89	86
16	88	77	81	74	95	91	107	97	79	87	90	85
17	89	77	80	74	98	97	103	97	75	87	89	83
18	85	79	78	73	98	105	104	95	73	86	86	80
19	86	77	75	75	94	99	109	95	71	87	87	82
20	94	76	75	73	94	96	107	91	72	87	84	83
21	90	76	79	73	95	98	108	88	71	100	83	85
22	88	76	77	74	92	95	102	91	72	142	84	88
23	86	79	77	74	94	97	109	90	73	91	85	81
24	85	81	76	72	94	101	100	89	75	87	85	78
25	83	84	71	72	98	107	93	89	75	87	85	78
26	81	80	70	75	95	98	96	89	73	86	84	80
27	80	76	70	76	99	97	92	91	73	91	81	79
28	82	74	74	74	109	93	97	91	71	94	82	80
29	89	80	74	76	---	90	96	87	69	98	94	80
30	94	82	73	78	---	87	91	85	75	97	93	76
31	85	---	72	82	---	89	---	88	---	97	89	---
TOTAL	2604	2353	2373	2272	2551	2880	2984	2866	2323	2685	2723	2530
MEAN	84.0	78.4	76.5	73.3	91.1	92.9	99.5	92.5	77.4	86.6	87.8	84.3
MAX	94	86	84	82	109	107	109	101	88	142	96	94
MIN	76	72	70	68	79	85	88	85	69	72	81	76
AC-FT	5170	4670	4710	4510	5060	5710	5920	5680	4610	5330	5400	5020
CAL YR 1989	TOTAL 33081											
WTR YR 1990	TOTAL 31144											
	MEAN 90.6											
	MAX 200											
	MIN 70											

MOJAVE RIVER BASIN

10260500 DEEP CREEK NEAR HESPERIA, CA

LOCATION.--Lat 34°20'28", long 117°13'39", in NE 1/4 SE 1/4 sec.18, T.3 N., R.3 W., San Bernardino County, Hydrologic Unit 18090208, on right bank 0.5 mi upstream from confluence with West Fork Mojave River at Mojave River Forks Dam, 7 mi southeast of Hesperia, and 11 mi downstream from Lake Arrowhead.

DRAINAGE AREA.--134 mi².

PERIOD OF RECORD.--October 1904 to September 1922, October 1929 to current year. Prior to January 1930, monthly discharge only, published in WSP 1314.

GAGE.--Water-stage recorder. Broad-crested weir since December 1938. Elevation of gage is 3,050 ft above National Geodetic Vertical Datum of 1929, from topographic map. See WSP 1314 for history of changes prior to Dec. 10, 1938.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Slight regulation by Lake Arrowhead, capacity, 48,000 acre-ft, used principally for recreation.

AVERAGE DISCHARGE.--79 years, 68.4 ft³/s, 49,560 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 46,600 ft³/s, Mar. 2, 1938, gage height unknown, on basis of slope-area measurement of peak flow; maximum gage height, 23.81 ft, Feb. 10, 1978 (backwater from Mojave River Forks Reservoir); no flow July 17, 18, 1961.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Mar. 4	0900	*87	*2.13				

Minimum daily, 0.10 ft³/s, Aug. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.92	2.6	3.7	3.3	11	46	25	13	e3.8	.27	.10	.28
2	1.0	2.6	3.7	4.0	8.7	48	25	13	e3.7	.13	.10	.27
3	1.1	2.9	3.8	4.8	7.8	47	27	11	e3.7	e.11	.14	.30
4	1.1	2.9	3.6	4.2	7.5	71	29	9.9	e3.6	e.22	.18	.31
5	1.1	2.9	3.5	3.2	8.4	60	31	9.1	e3.4	e.38	.21	.34
6	1.2	3.0	3.5	3.2	8.0	46	31	e8.6	e3.3	.35	e.22	.36
7	1.3	3.2	3.5	3.2	8.4	33	29	e8.3	e3.3	.37	e.27	.35
8	1.3	3.0	3.4	3.3	8.5	31	29	e8.0	e3.1	.31	e.27	.28
9	1.3	3.0	3.4	3.3	8.0	32	29	e7.3	e3.2	.23	e.32	.26
10	1.2	3.0	3.4	3.4	7.2	35	26	e6.4	e3.1	.25	.35	.25
11	1.2	3.0	3.4	3.4	7.5	42	24	6.6	e2.6	.28	.49	.24
12	1.5	3.1	3.3	3.4	8.2	39	23	6.8	e2.5	.35	.76	.21
13	1.6	3.1	3.4	4.8	11	27	22	6.5	e2.4	.39	.69	.21
14	1.5	3.1	3.4	31	11	24	21	6.3	e2.3	.41	.59	.25
15	1.5	3.0	3.4	28	9.6	22	19	6.0	e2.3	.40	.40	.26
16	1.6	2.9	3.5	15	9.0	26	18	5.7	e2.2	.38	.39	.28
17	1.5	2.9	3.6	13	15	30	23	5.7	e2.1	.36	.43	.29
18	1.5	3.0	3.6	12	53	38	22	5.5	e2.0	.39	.43	.33
19	1.5	2.9	3.5	9.5	24	48	19	5.5	e1.8	.39	.48	.41
20	1.7	2.8	3.4	8.5	18	52	17	5.7	e1.6	.43	.47	.68
21	1.9	2.8	3.1	8.0	19	54	16	5.8	1.3	.41	.56	.42
22	2.5	2.9	3.2	7.7	19	60	15	5.7	1.1	.41	.62	.48
23	2.6	2.9	3.2	7.4	23	61	14	5.3	.86	.47	.68	.51
24	3.7	3.8	3.2	7.3	27	61	14	4.8	.73	.48	.76	.50
25	3.9	3.8	3.2	7.4	31	56	14	4.7	.64	.53	.87	.50
26	3.4	3.9	3.3	7.4	36	49	13	4.7	.54	.61	.96	.47
27	4.3	3.8	3.2	7.4	37	45	12	e4.6	.43	.72	1.0	.48
28	3.4	3.7	3.3	7.1	41	41	11	e4.8	.51	.73	1.0	.52
29	3.0	3.8	3.3	6.6	---	34	11	e4.7	.35	.61	.90	.59
30	2.8	3.8	3.3	6.5	---	30	11	e4.5	.31	.36	.87	.63
31	2.7	---	3.3	8.1	---	27	---	e4.0	---	.12	.61	---
TOTAL	60.82	94.1	105.6	245.4	482.8	1315	620	208.5	62.77	11.85	16.12	11.26
MEAN	1.96	3.14	3.41	7.92	17.2	42.4	20.7	6.73	2.09	.38	.52	.38
MAX	4.3	3.9	3.8	31	53	71	31	13	3.8	.73	1.0	.68
MIN	.92	2.6	3.1	3.2	7.2	22	11	4.0	.31	.11	.10	.21
AC-FT	121	187	209	487	958	2610	1230	414	125	24	32	22

CAL YR 1989 TOTAL 3550.55 MEAN 9.73 MAX 304 MIN .14 AC-FT 7040
WTR YR 1990 TOTAL 3234.22 MEAN 8.86 MAX 71 MIN .10 AC-FT 6420

e Estimated.

10260620 HOUSTON CREEK ABOVE LAKE GREGORY, AT CRESTLINE, CA

LOCATION.--Lat 34°14'33", long 117°16'48", in NE 1/4 SE 1/4 sec.22, T.2 N., R.4 W., San Bernardino County, Hydrologic Unit 18090208, on left bank 0.1 mi east of Wildrose Road, 0.1 mi southeast of intersection of Lake Gregory and Wildrose Roads, and 0.3 mi east of Crestline.

DRAINAGE AREA.--0.35 mi².

PERIOD OF RECORD.--March 1979 to current year.

REVISED RECORDS.--WDR CA-82-1: 1980-81(M).

GAGE.--Water-stage recorder. Elevation of gage is 4,540 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records poor. No regulation upstream from station.

AVERAGE DISCHARGE.--11 years, 0.61 ft³/s, 442 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 295 ft³/s, Feb. 19, 1980, gage height, 7.40 ft, from rating curve extended above 70 ft³/s on basis of slope-conveyance study at gage height 7.40 ft; no flow for many days in some years.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	1700	*52	*6.06				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.02	.03	.09	.28	.61	.15	.16	.07	.04	.01	.00
2	.02	.00	.04	.14	.18	.57	.15	.15	.07	.04	.01	.01
3	.00	.02	.03	.01	.16	.50	.15	.15	.07	.04	.00	.01
4	.01	.02	.03	.01	.16	.47	.18	.15	.06	.04	.00	.00
5	.00	.03	.02	.02	.21	1.3	.12	.15	.06	.03	.00	.01
6	.00	.03	.00	.02	.14	.50	.12	.15	.05	.03	.01	.00
7	.00	.03	.00	.02	.10	.42	.12	.14	.05	.03	.11	.00
8	.00	.03	.01	.01	.09	.39	.12	.15	.05	.03	.01	.00
9	.00	.02	.02	.01	.08	.37	.11	.17	.06	.03	.00	.00
10	.00	.02	.00	.01	.10	.45	.12	.18	.05	.04	.01	.00
11	.00	.02	.01	.02	.12	1.5	.12	.18	.05	.04	.00	.00
12	.00	.01	.02	.03	.13	.37	.11	.17	.06	.03	.01	.00
13	.00	.02	.02	3.3	.12	.39	.11	.15	.07	.03	.02	.00
14	.00	.01	.03	3.1	.13	.30	.12	.15	.07	.03	.01	.00
15	.00	.02	.03	.04	.10	.29	.12	.15	.09	.03	.02	.00
16	.01	.02	.03	.11	.11	.25	2.1	.15	.08	.03	.01	.00
17	.02	.01	.00	.04	7.5	.23	.46	.15	.08	.03	.02	.00
18	.03	.01	.01	.03	1.0	.22	.32	.17	.07	.02	.02	.00
19	.02	.01	.02	.05	.41	.20	.27	.19	.07	.02	.02	.00
20	.02	.02	.03	.04	.34	.18	.24	.19	.05	.02	.01	.00
21	.12	.02	.04	.03	.39	.19	.21	.19	.05	.02	.01	.00
22	1.7	.03	.03	.05	.65	.17	.18	.19	.05	.04	.01	.00
23	.02	.02	.03	.05	.72	.15	.48	.19	.05	.05	.01	.00
24	.03	.02	.03	.05	.70	.15	.20	.17	.04	.05	.02	.00
25	3.1	.03	.03	.04	.78	.15	.15	.15	.04	.05	.02	.00
26	.03	.73	.03	.05	.68	.16	.12	.16	.04	.04	.01	.00
27	.01	.03	.04	.05	.65	.16	.10	.18	.04	.01	.01	.00
28	.01	.04	.05	.05	.58	.30	.09	1.6	.04	.01	.01	.00
29	.01	.04	.03	.07	---	.17	.09	.14	.04	.01	.01	.00
30	.02	.03	.04	1.3	---	.15	.26	.09	.04	.01	.00	.00
31	.02	---	.04	.74	---	.15	---	.09	---	.00	.00	---
TOTAL	5.21	1.36	0.77	9.58	16.61	11.41	7.19	6.35	1.71	0.92	0.41	0.03
MEAN	.17	.045	.025	.31	.59	.37	.24	.20	.057	.030	.013	.001
MAX	3.1	.73	.05	3.3	7.5	1.5	2.1	1.6	.09	.05	.11	.01
MIN	.00	.00	.00	.01	.08	.15	.09	.09	.04	.00	.00	.00
AC-FT	10	2.7	1.5	19	33	23	14	13	3.4	1.8	.8	.06

CAL YR 1989 TOTAL 78.20 MEAN .21 MAX 16 MIN .00 AC-FT 155
WTR YR 1990 TOTAL 61.55 MEAN .17 MAX 7.5 MIN .00 AC-FT 122

MOJAVE RIVER BASIN

10260630 ABONDIGAS CREEK ABOVE LAKE GREGORY, AT CRESTLINE, CA

LOCATION.--Lat 34°14'16", long 117°15'51", in SW 1/4 SE 1/4 sec.23, T.2 N., R.4 W., San Bernardino County, Hydrologic Unit 18090208, on right bank 400 ft south of east gate for San Moritz Park, and 1.4 mi east of Crestline.

DRAINAGE AREA.--1.15 mi².

PERIOD OF RECORD.--March 1979 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,540 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1983, at site 200 ft upstream at datum 5.78 ft higher.

REMARKS.--Records poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--11 years, 1.06 ft³/s, 768 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 580 ft³/s, Feb. 27, 1983, gage height, 6.32 ft, site and datum then in use, from rating curve extended above 94 ft³/s on basis of field estimate of peak flow; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Apr. 17	1800	*24	*6.20				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	e.11	.00	e.40	1.2	e.22	.28	.04	.00	.00	.00
2	.00	.00	e.05	.00	e.10	1.3	e.25	.19	.03	.00	.00	.00
3	.00	.00	e.25	.00	e.10	1.3	e.29	e.20	.03	.00	.00	.00
4	.00	.00	e.07	.00	e.15	1.2	e.20	e.20	.02	.00	.00	.00
5	.00	.00	e.04	.00	e.10	1.7	e.19	e.20	.02	.00	.00	.00
6	.00	.00	.01	.00	e.10	.98	e.18	e.20	.01	.00	.00	.00
7	.00	.08	.00	.00	e.10	.79	e.18	e.20	.01	.00	.00	.00
8	.00	.05	.00	.00	e.10	.72	e.17	e.20	.01	.00	.00	.00
9	.00	.00	.00	.00	e.10	.67	.17	e.20	.01	.00	.00	.00
10	.00	.00	.00	.00	e.10	.65	.22	e.20	.04	.00	.00	.00
11	.00	.00	.00	.00	e.10	2.0	.25	e.20	.05	.00	.00	.00
12	.00	.00	.00	.00	e.10	.60	.27	e.20	.03	.00	.00	.00
13	.00	.00	.00	1.5	e.10	.49	.30	e.20	.05	.00	.00	.00
14	.00	.00	.00	2.1	e.10	.49	.22	e.20	.06	.00	.00	.00
15	.00	.00	.00	.21	e.20	.54	.42	e.20	.06	.00	.00	.00
16	.00	.00	.00	.28	e.10	.53	2.0	e.20	.03	.00	.00	.00
17	.00	.00	.00	.78	5.2	.43	2.3	e.20	.02	.00	.00	.00
18	.00	.00	.00	.14	3.0	.44	.76	e.20	.02	.00	.00	.00
19	.00	.00	.00	.13	.84	e.42	.49	e.20	.01	.00	.00	.00
20	.00	.00	.00	.15	.57	e.40	.35	e.20	.00	.00	.00	.00
21	.00	.00	.00	.20	.60	e.36	.34	e.20	.00	.00	.00	.00
22	.70	.00	.00	.18	.79	e.32	.32	e.20	.00	.00	.00	.00
23	.09	.00	.00	.12	.98	e.30	.46	e.20	.00	.00	.00	.00
24	.00	.00	.00	.09	1.2	e.28	.39	e.20	.00	.00	.00	.00
25	e1.5	.00	.00	.09	1.7	e.27	.23	e.20	.00	.00	.00	.00
26	e.00	.41	.00	.08	2.0	.24	.19	e.20	.00	.00	.00	.00
27	e.00	.06	.00	.09	e1.6	.22	.19	e.30	.00	.00	.00	.00
28	e.00	.00	.00	.09	1.4	.26	.19	2.3	.00	.00	.00	.00
29	e.00	.00	.00	.09	---	.24	.21	.19	.00	.00	.00	.00
30	e.00	.01	.00	.55	---	.22	.27	.06	.00	.00	.00	.00
31	.06	---	.00	e.70	---	e.21	---	.05	---	.00	.00	---
TOTAL	2.35	0.61	0.53	7.57	21.93	19.77	12.22	8.17	0.55	0.00	0.00	0.00
MEAN	.076	.020	.017	.24	.78	.64	.41	.26	.018	.000	.000	.000
MAX	1.5	.41	.25	2.1	5.2	2.0	2.3	2.3	.06	.00	.00	.00
MIN	.00	.00	.00	.00	.10	.21	.17	.05	.00	.00	.00	.00
AC-FT	4.7	1.2	1.1	15	43	39	24	16	1.1	.00	.00	.00

CAL YR 1989 TOTAL 111.80 MEAN .31 MAX 17 MIN .00 AC-FT 222
WTR YR 1990 TOTAL 73.70 MEAN .20 MAX 5.2 MIN .00 AC-FT 146

e Estimated.

10260640 LAKE GREGORY AT CRESTLINE, CA

LOCATION.--Lat 34°14'35", long 117°16'22", in NW 1/4 SW 1/4 sec.23, T.2 N., R.4 W., San Bernardino County, Hydrologic Unit 18090208, in boathouse on north side of Lake Gregory, 0.8 mi east of Lake Gregory Drive, and 0.9 mi east of Crestline.

DRAINAGE AREA.--2.66 mi².

PERIOD OF RECORD.--August 1978 to current year. Records for September 1966 through November 1971 in files of California Department of Water Resources.

GAGE.--Water-stage recorder. Datum of gage is 0.00 ft, based on map from land survey of 1892; approximately 7 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Lake is formed by earth-type dam. Dam was completed to a height of 90 ft in 1938. Capacity is 2,070 acre-ft below spillway elevation, 4,517.0 ft. Water is released from lake to Houston Creek for eventual water supply and recreational use in Silverwood Lake, 4.5 mi downstream. Spillway elevation is raised by addition of flashboards to accommodate summer recreational use.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents recorded, 2,360 acre-ft, Jan. 29, 1980, elevation, 4,520.33 ft; minimum, 1,920 acre-ft, Nov. 7, 1984, elevation, 4,515.22 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents recorded, 2,170 acre-ft, May 28 to June 3, elevation, 4,518.08 ft; minimum, 1,940 acre-ft, Oct. 16-21, elevation, 4,515.43 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on surveys by California Department of Water Resources in 1892 and 1936)

4,505	1,200	4,520	2,330
4,510	1,520	4,525	2,850
4,515	1,900		

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1960	1980	1970	1960	2090	2100	2110	2160	2170	2130	2060	2010
2	1960	1980	1970	1970	2090	2100	2110	2160	2170	2120	2060	2010
3	1960	1980	1970	1970	2090	2100	2110	2160	2160	2120	2060	2010
4	1960	1980	1970	1970	2090	2100	2110	2160	2160	2120	2050	2010
5	1960	1980	1970	1960	2090	2100	2110	2160	2160	2120	2050	2010
6	1960	1980	1970	1960	2090	2100	2110	2160	2160	2110	2050	2000
7	1950	1980	1970	1960	2090	2100	2110	2160	2160	2110	2050	2000
8	1950	1980	1970	1960	2090	2090	2110	2160	2160	2110	2050	2000
9	1950	1980	1970	1960	2090	2090	2110	2160	2160	2110	2050	2000
10	1950	1980	1970	1960	2090	2090	2110	2160	2160	2110	2050	2000
11	1950	1980	1960	1960	2090	2100	2110	2160	2160	2110	2050	2000
12	1950	1970	1960	1960	2090	2100	2120	2160	2160	2100	2050	1990
13	1950	1970	1960	2010	2090	2100	2120	2160	2150	2100	2050	1990
14	1950	1970	1960	2040	2090	2100	2110	2160	2150	2100	2050	1990
15	1950	1970	1960	2050	2090	2090	2110	2160	2150	2100	2040	1990
16	1940	1970	1960	2060	2090	2090	2140	2160	2150	2100	2040	1980
17	1940	1970	1960	2070	2140	2090	2150	2150	2150	2100	2040	1980
18	1940	1970	1960	2070	2120	2090	2150	2150	2150	2100	2040	1980
19	1940	1970	1960	2080	2110	2090	2150	2150	2150	2090	2030	1980
20	1940	1970	1960	2080	2100	2090	2150	2150	2150	2090	2030	1980
21	1940	1970	1960	2080	2100	2090	2150	2150	2150	2090	2030	1980
22	1960	1970	1960	2080	2100	2090	2150	2150	2140	2090	2030	1970
23	1960	1970	1960	2080	2100	2090	2160	2150	2140	2080	2030	1970
24	1960	1970	1960	2080	2100	2090	2160	2150	2140	2080	2020	1970
25	1990	1970	1960	2080	2100	2090	2160	2150	2140	2070	2020	1970
26	1990	1980	1960	2080	2100	2100	2160	2150	2140	2070	2020	1970
27	1990	1970	1960	2080	2100	2100	2160	2150	2140	2070	2020	1970
28	1990	1970	1960	2080	2100	2100	2160	2170	2130	2070	2020	1970
29	1990	1970	1960	2080	---	2100	2160	2170	2130	2070	2020	1970
30	1980	1970	1960	2100	---	2100	2160	2170	2130	2060	2010	1960
31	1980	---	1960	2100	---	2100	---	2170	---	2060	2010	---
MAX	1990	1980	1970	2100	2140	2100	2160	2170	2170	2130	2060	2010
MIN	1940	1970	1960	1960	2090	2090	2110	2150	2130	2060	2010	1960
a	4515.94	4515.79	4515.66	4517.30	4517.36	4517.38	4518.05	4518.08	4517.66	4516.88	4516.27	4515.71
b	+20	-10	-10	+140	0	0	+60	+10	-40	-70	-50	-50

CAL YR 1989 b -130
WTR YR 1990 b 0

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

MOJAVE RIVER BASIN

10260650 HOUSTON CREEK BELOW LAKE GREGORY, AT CRESTLINE, CA

LOCATION.--Lat 34°14'54", long 117°16'05", in NE 1/4 NW 1/4 sec.23, T.2 N., R.4 W., San Bernardino County, Hydrologic Unit 18090208, on left bank of channel on Camp Switzerland campgrounds, 0.2 mi downstream from Lake Gregory spillway, 0.5 mi east of the intersection of Lake Gregory Road and Lake Gregory Drive, and 1.2 mi northeast of Crestline.

DRAINAGE AREA.--2.68 mi².

PERIOD OF RECORD.--March 1979 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 4,440 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair. Flow regulated by Lake Gregory (station 10260640) 0.2 mi upstream, usable capacity, 2,070 acre-ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 570 ft³/s, Jan. 29, 1980, gage height, 7.31 ft, from rating curve extended above 180 ft³/s on basis of velocity-area study of peak flow; no flow for several days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 53 ft³/s, Feb. 17, gage height, 6.19 ft; no flow, Oct. 1, 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.07	.12	.05	5.1	4.1	e.09	.10	.08	.04	.03	.04
2	.00	.06	.09	.09	3.7	4.2	e.09	.09	.09	.04	.03	.04
3	.01	.06	.07	.04	.47	4.2	e.09	.09	.09	.04	.03	.02
4	.02	.06	.06	.04	.80	4.9	e.08	.09	.09	.04	.03	.02
5	.03	.05	.04	.04	.87	6.8	e.08	.09	.09	.04	.03	.02
6	.03	.05	.04	.04	.99	5.3	e.08	.09	.07	.04	.03	.02
7	.03	.05	.05	.04	.94	4.2	e.08	.09	.07	.04	.07	.02
8	.03	.06	.05	.04	.79	3.7	e.07	.08	.07	.04	.05	.02
9	.02	.06	.05	.04	.74	3.1	e.07	.08	.07	.04	.03	.02
10	.02	.06	.04	.04	.69	3.1	.07	.09	.07	.04	.02	.02
11	.03	.06	.04	.04	.71	6.9	.07	.09	.07	.04	.02	.01
12	.03	.06	.04	.04	1.0	5.5	.11	.09	.05	.04	.02	.01
13	.04	.06	.04	.36	1.2	4.4	.08	.08	.06	.03	.02	.02
14	.06	.06	.04	.54	.72	3.6	.08	.09	.06	.03	.02	.02
15	.06	.05	.04	.16	.73	3.1	.08	.09	.06	.04	.02	.02
16	.04	.04	.04	.15	1.4	2.9	.31	.09	.06	.04	.03	.02
17	.04	.04	.04	.12	18	2.7	.13	.09	.06	.04	.03	.02
18	.04	.06	.04	.13	28	2.5	.10	.10	.06	.04	.03	.02
19	.04	.06	.04	.13	9.6	2.3	.09	.11	.05	.04	.03	.03
20	.04	.06	.04	.13	5.8	2.1	.09	.11	.05	.04	.03	.03
21	.07	.08	.04	.12	4.3	2.1	.09	.10	.05	.04	.03	.03
22	.34	.06	.04	.13	3.8	1.9	.09	.09	.05	.03	.03	.03
23	.18	.07	.04	.14	4.0	e.10	.10	.09	.07	.03	.04	.03
24	.15	.06	.04	.13	4.0	e.10	.09	.09	.07	.03	.04	.03
25	.52	.06	.04	.14	4.1	e.09	.09	.09	.07	.03	.04	.03
26	.14	.16	.03	.16	4.3	e.09	.09	.09	.07	.03	.04	.02
27	.09	.12	.03	.18	4.1	e.09	.09	.10	.05	.03	.03	.03
28	.07	.12	.04	.22	4.0	e.09	.13	.29	.05	.03	.04	.03
29	.06	.12	.04	.22	---	e.09	.14	.10	.05	.03	.04	.04
30	.07	.12	.04	.74	---	e.10	.11	.09	.05	.03	.04	.04
31	.06	---	.04	4.5	---	e.10	---	.08	---	.03	.03	---
TOTAL	2.36	2.10	1.43	8.94	114.65	84.45	2.96	3.04	1.95	1.12	1.00	0.75
MEAN	.076	.070	.046	.29	4.09	2.72	.099	.098	.065	.036	.032	.025
MAX	.52	.16	.12	4.5	28	6.9	.31	.29	.09	.04	.07	.04
MIN	.00	.04	.03	.04	.47	.09	.07	.08	.05	.03	.02	.01
AC-FT	4.7	4.2	2.8	18	227	168	5.9	6.0	3.9	2.2	2.0	1.5

CAL YR 1989 TOTAL 279.28 MEAN .77 MAX 59 MIN .00 AC-FT 554
WTR YR 1990 TOTAL 224.75 MEAN .62 MAX 28 MIN .00 AC-FT 446

e Estimated.

10261000 WEST FORK MOJAVE RIVER NEAR HESPERIA, CA

LOCATION.--Lat 34°20'20", long 117°15'25", in NW 1/4 NW 1/4 sec.24, T.3 N., R.4 W., San Bernardino County, Hydrologic Unit 18090208, on left bank on upstream wingwall of concrete double box culvert on Arrowhead Lake Road, 0.1 mi northeast of junction with State Highway 174, 4.5 mi downstream from Cedar Springs Dam, and 6.5 mi southeast of Hesperia.

DRAINAGE AREA.--70.3 mi².

PERIOD OF RECORD.--October 1904 to September 1922, October 1929 to September 1971, October 1974 to current year.

REVISED RECORDS.--WDR CA-84-1: 1983.

GAGE.--Water-stage recorder. Elevation of gage is 3,040 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 30, 1922, nonrecording gage or water-stage recorder 1.6 mi downstream at different datum. June 30, 1922, to September 1971, water-stage recorder 1.5 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Since 1972 regulated by Silverwood Lake (holding basin for imported water), total capacity, 78,000 acre-ft, 4.5 mi upstream, which releases all natural inflow as soon as possible after a storm.

AVERAGE DISCHARGE.--60 years (water years 1905-22, 1930-71), 39.4 ft³/s, 28,550 acre-ft/yr; 16 years (water years 1975-90), 40.0 ft³/s, 28,980 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,100 ft³/s, Mar. 2, 1938, gage height unknown, on basis of slope-area measurement of peak flow; no flow for several months in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 66 ft³/s, Feb. 21, gage height, 0.91 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	4.9	13	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	5.5	13	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	5.7	13	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	6.2	14	.00	.00	.00	.00	.02
5	.00	.00	.00	.00	.00	7.9	14	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	6.2	14	.00	.00	.00	.00	.01
7	.00	.00	.00	.00	.00	6.8	12	.00	.00	.00	.00	.02
8	.00	.00	.00	.00	.00	7.1	12	.00	.00	.00	.00	.02
9	.00	.00	.00	.00	.00	7.4	12	.00	.00	.00	.01	.00
10	.00	.00	.00	.00	.00	8.0	12	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	9.4	12	.00	.00	.00	.00	.02
12	.00	.00	.00	.00	.00	8.5	12	.00	.00	.00	.00	.02
13	.00	.00	.00	.00	.00	8.0	10	.00	.00	.00	.01	.02
14	.00	.00	.00	.00	.00	8.2	9.5	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	8.5	11	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	8.6	13	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	2.2	9.5	13	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	12	9.1	6.0	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	7.1	8.4	4.0	.00	.01	.00	.00	.00
20	.00	.00	.00	.00	57	8.7	2.9	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	64	9.3	2.3	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	26	9.0	2.1	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	5.9	8.8	2.0	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	4.7	8.9	1.4	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	4.7	8.2	.18	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	4.7	7.6	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	4.2	7.7	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	4.5	12	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	13	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	13	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	13	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	197.00	263.1	230.38	0.00	0.01	0.00	0.02	0.13
MEAN	.000	.000	.000	.000	7.04	8.49	7.68	.000	.000	.000	.001	.004
MAX	.00	.00	.00	.00	64	13	14	.00	.01	.00	.01	.02
MIN	.00	.00	.00	.00	.00	4.9	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	391	522	457	.00	.02	.00	.04	.3

CAL YR 1989 TOTAL 1649.84 MEAN 4.52 MAX 275 MIN .00 AC-FT 3270
WTR YR 1990 TOTAL 690.64 MEAN 1.89 MAX 64 MIN .00 AC-FT 1370

MOJAVE RIVER BASIN

10261100 MOJAVE RIVER BELOW MOJAVE RIVER FORKS RESERVOIR, NEAR HESPERIA, CA

LOCATION.--Lat 34°21'17", long 117°14'40", in NE 1/4 NE 1/4 sec.13, T.3 N., R.4 W., San Bernardino County, Hydrologic Unit 18090208, on left bank 0.8 mi downstream from Mojave River Forks Reservoir, 6.2 mi downstream from Silverwood Lake on West Fork Mojave River, 6.5 mi southeast of Hesperia, and 12.2 mi downstream from Lake Arrowhead on Deep Creek (East Fork Mojave River).

DRAINAGE AREA.--211 mi².

PERIOD OF RECORD.--October 1971 to September 1974, October 1980 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 3,000 ft above National Geodetic Vertical Datum of 1929, from topographic map. October 1971 to September 1974, water-stage recorder at site 0.8 mi upstream on reservoir outlet channel at different datum.

REMARKS.--Records poor. Flow partially regulated by Lake Arrowhead, capacity, 48,000 acre-ft, used principally for recreation; Silverwood Lake, capacity, 78,000 acre-ft, used for the storage and distribution of imported water and recreation; and Mojave River Forks Reservoir, capacity, 89,700 acre-ft, used for flood control. Silverwood Reservoir releases all natural inflow to the West Fork Mojave River as soon as possible after a storm. Sewage effluent from Lake Arrowhead area is released above gage at times.

AVERAGE DISCHARGE.--13 years (water years 1972-74, 1981-90), 62.1 ft³/s, 44,990 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 11,700 ft³/s, Mar. 2, 1983, on basis of flood routing; no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 107 ft³/s, Feb. 21, gage height, 1.40 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	.00	.00	.00	6.6	51	26	1.8	.00	.00	.00	.00
2	e.00	.00	.00	.00	5.4	54	27	1.6	.00	.00	.00	.00
3	e.00	.00	.00	.00	4.6	53	28	1.1	.00	.00	.00	.00
4	.00	.00	.00	.00	4.4	e73	27	.85	.00	.00	.00	.00
5	.00	.00	.00	.00	5.0	e60	25	.57	.00	.00	.00	.00
6	.00	.00	.00	.00	e5.0	e50	26	.37	.00	.00	.00	.00
7	.00	.00	.00	.00	e5.1	e45	28	.05	.00	.00	.00	.00
8	.00	.00	.00	.00	e5.2	e38	29	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	e5.3	36	29	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	e5.4	38	33	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	e5.5	43	32	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	e5.6	45	31	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	e5.7	30	26	.00	.00	.00	.00	.00
14	.00	.00	.00	.93	e5.8	24	22	.00	.00	.00	.00	.00
15	.00	.00	.00	17	5.8	25	21	.00	.00	.00	.00	.00
16	.00	.00	.00	8.9	4.4	26	22	.00	.00	.00	.00	.00
17	.00	.00	.00	7.6	9.0	28	24	.00	.00	.00	.00	.00
18	.00	.00	.00	7.0	61	33	22	.00	.00	.00	.00	.00
19	.00	.00	.00	5.3	35	43	14	.00	.00	.00	.00	.00
20	.00	.00	.00	4.2	74	48	8.3	.00	.00	.00	.00	.00
21	.00	.00	.00	3.7	104	52	6.7	.00	.00	.00	.00	.00
22	.00	.00	.00	3.4	71	59	5.6	.00	.00	.00	.00	.00
23	.00	.00	.00	3.2	32	61	5.0	.00	.00	.00	.00	.00
24	.00	.00	.00	3.1	34	62	4.2	.00	.00	.00	.00	.00
25	.00	.00	.00	3.3	38	59	3.7	.00	.00	.00	.00	.00
26	.00	.00	.00	3.5	43	51	3.2	.00	.00	.00	.00	.00
27	.00	.00	.00	3.5	43	45	2.4	.00	.00	.00	.00	.00
28	.00	.00	.00	3.5	45	44	2.1	.00	.00	.00	.00	.00
29	.00	.00	.00	3.5	---	39	1.7	.00	.00	.00	.00	.00
30	.00	.00	.00	3.5	---	32	1.5	.00	.00	.00	.00	.00
31	.00	---	.00	4.1	---	28	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	89.23	673.8	1375	536.4	6.34	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	2.88	24.1	44.4	17.9	.20	.000	.000	.000	.000
MAX	.00	.00	.00	17	104	73	33	1.8	.00	.00	.00	.00
MIN	.00	.00	.00	.00	4.4	24	1.5	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	177	1340	2730	1060	13	.00	.00	.00	.00

CAL YR 1989 TOTAL 5064.96 MEAN 13.9 MAX 596 MIN .00 AC-FT 10050
WTR YR 1990 TOTAL 2680.77 MEAN 7.34 MAX 104 MIN .00 AC-FT 5320

e Estimated.

10261500 MOJAVE RIVER AT LOWER NARROWS, NEAR VICTORVILLE, CA

LOCATION.--Lat 34°34'23", long 117°19'11", in SW 1/4 SE 1/4 sec.29, T.6 N., R.4 W., San Bernardino County, Hydrologic Unit 18090208, on left bank 650 ft upstream from bridge on county road (formerly U.S. Highway 66), 0.6 mi downstream from Atchison, Topeka, & Santa Fe Railway bridge, 3 mi northwest of Victorville, 17.8 mi downstream from Mojave River Forks Reservoir, 24 mi downstream from Silverwood Lake on the West Fork Mojave River, and 30 mi downstream from Lake Arrowhead on Deep Creek (East Fork Mojave River).

DRAINAGE AREA.--513 mi².

PERIOD OF RECORD.--February 1899 to September 1906, October 1930 to current year. Monthly discharge only for January to September 1906, October, November 1930, published in WSP 1314. Prior to October 1936, published as "at Victorville" and as "near Victorville" in 1937.

GAGE.--Water-stage recorder. Datum of gage is 2,643.01 ft above National Geodetic Vertical Datum of 1929. See WSP 1314 for history of gage changes prior to Mar. 28, 1938. Mar. 28, 1938, to Apr. 14, 1966, at site 350 ft upstream at datum 5.00 ft higher; Apr. 15, 1966, to July 17, 1969, at site 350 ft upstream at datum 3.00 ft higher.

REMARKS.--Records poor. Regulation by Lake Arrowhead, capacity, 48,000 acre-ft used principally for recreation, since 1922; Silverwood Lake, capacity, 78,000 acre-ft used for storage and distribution of imported water and recreation, since 1971; and Mojave River Forks Reservoir, capacity, 89,700 acre-ft, since 1971. Diversions and pumping for irrigation of about 5,000 acres and Mojave State Fish Hatchery upstream from station. During the year no imported water was released from Silverwood Lake into the West Fork Mojave River, only natural inflow.

AVERAGE DISCHARGE.--67 years (water years 1900-06, 1931-90), 75.2 ft³/s, 54,480 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,600 ft³/s, Mar. 2, 1938, gage height, 23.7 ft, present datum, from rating curve extended above 10,000 ft³/s on basis of slope-area measurement of peak flow; minimum daily, 1.6 ft³/s, July 25 to Aug. 5, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 8,870 ft³/s, Aug. 6, gage height, 8.30 ft; minimum daily, 1.6 ft³/s, July 25 to Aug. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.2	16	13	15	21	20	12	9.7	9.2	e3.4	e1.6	e2.6
2	9.3	20	13	16	21	21	11	9.7	9.2	e3.4	e1.6	e2.6
3	10	19	14	16	21	16	11	9.3	9.2	e3.2	e1.6	e2.6
4	10	15	15	16	23	15	11	9.2	9.2	e3.0	e1.6	e2.6
5	8.7	15	15	16	29	15	12	9.2	9.1	e3.0	e1.6	e2.4
6	7.4	14	18	16	26	15	12	9.2	8.4	e2.8	373	e2.4
7	6.2	14	18	16	24	15	12	8.6	8.4	e2.8	68	e2.4
8	6.1	13	17	16	24	14	12	8.7	8.4	e2.8	e7.0	e2.4
9	6.4	13	19	16	24	13	12	8.8	8.4	e2.8	e6.0	e2.3
10	6.2	16	21	16	23	12	12	8.8	8.4	e2.8	e5.5	e2.3
11	9.3	17	20	16	23	11	11	8.8	8.0	e2.8	e5.0	e2.3
12	14	21	20	16	22	11	11	8.8	7.4	e2.6	e4.5	e2.2
13	14	24	19	16	21	10	11	8.8	7.2	e2.6	e4.0	e2.2
14	14	23	19	17	21	9.7	11	8.8	7.0	e2.6	e3.5	e2.2
15	14	22	19	17	21	9.7	12	8.8	7.0	e2.4	e3.2	e2.2
16	14	20	19	17	21	11	12	8.5	7.0	e2.4	e3.0	e2.3
17	14	19	18	28	24	11	12	8.5	6.6	e2.2	e3.0	e2.3
18	14	19	17	24	27	11	12	8.0	6.0	e2.2	e3.0	e2.3
19	14	19	17	24	22	12	11	7.4	6.2	e2.2	e3.0	e2.3
20	14	19	16	24	21	12	11	8.0	5.1	e2.0	e3.0	e2.5
21	14	19	16	21	20	12	12	7.6	4.8	e2.0	e2.9	e2.8
22	15	18	15	22	18	12	12	7.2	4.5	e1.8	e2.9	e3.0
23	13	17	15	22	18	12	12	6.8	4.1	e1.8	e2.9	e3.5
24	13	15	15	22	18	11	13	6.4	e4.0	e1.8	e2.9	e4.0
25	9.7	15	15	22	18	11	13	6.4	e4.0	e1.6	e2.9	e4.5
26	11	15	14	22	18	11	13	6.2	e4.0	e1.6	e2.8	e4.8
27	11	14	14	22	18	11	12	6.4	e3.8	e1.6	e2.8	e4.8
28	14	14	16	22	19	11	11	21	e3.8	e1.6	e2.9	e4.8
29	13	14	15	22	---	12	9.7	18	e3.6	e1.6	e2.9	e4.8
30	13	13	15	21	---	12	9.7	10	e3.6	e1.6	e2.8	e4.8
31	15	---	15	21	---	12	---	9.2	---	e1.6	e2.8	---
TOTAL	355.5	512	512	597	606	391.4	348.4	280.8	195.6	72.6	534.2	89.2
MEAN	11.5	17.1	16.5	19.3	21.6	12.6	11.6	9.06	6.52	2.34	17.2	2.97
MAX	15	24	21	28	29	21	13	21	9.2	3.4	373	4.8
MIN	6.1	13	13	15	18	9.7	9.7	6.2	3.6	1.6	1.6	2.2
AC-FT	705	1020	1020	1180	1200	776	691	557	388	144	1060	177

CAL YR 1989 TOTAL 5215.3 MEAN 14.3 MAX 35 MIN 2.0 AC-FT 10340
WTR YR 1990 TOTAL 4494.7 MEAN 12.3 MAX 373 MIN 1.6 AC-FT 8920

e Estimated.

MOJAVE RIVER BASIN

10262000 MOJAVE RIVER NEAR HODGE, CA

LOCATION.--Lat 34°50'09", long 117°11'27", in SE 1/4 SE 1/4 sec.28, T.9 N., R.3 W., San Bernardino County, Hydrologic Unit 18090208, at county bridge 1.5 mi north of Hodge, 10.9 mi southwest of Barstow, 42 mi downstream from Mojave River Forks Reservoir, 48 mi downstream from Silverwood Lake on West Fork Mojave River, and 54 mi downstream from Lake Arrowhead on Deep Creek (East Fork Mojave River).

DRAINAGE AREA.--1,091 mi².

PERIOD OF RECORD.--October 1930 to September 1932, October 1970 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,260 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1970, at different datum.

REMARKS.--No estimated daily discharges. Regulation by Lake Arrowhead, capacity 48,000 acre-ft, used principally for recreation; Silverwood Lake, capacity, 78,000 acre-ft, used for storage and distribution of imported water and recreation; and Mojave River Forks Reservoir, capacity 89,700 acre-ft. Diversion and pumping for irrigation of about 12,000 acres upstream from station.

AVERAGE DISCHARGE.--22 years (water years 1931-32, 1971-90), 36.3 ft³/s, 26,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft³/s, Feb. 10, 1978, gage height, 8.80 ft, on basis of slope-area measurement of peak flow; no flow for all or most of each year.

EXTREMES FOR CURRENT YEAR.--No flow for 1990 water year.

10262500 MOJAVE RIVER AT BARSTOW, CA

LOCATION.--Lat 34°54'25", long 117°01'19", in SW 1/4 SW 1/4 sec.31, T.10 N., R.1 W., San Bernardino County, Hydrologic Unit 18090208, on left bank 75 ft upstream from bridge on U.S. Highway 91 at Barstow, 54 mi downstream from Mojave River Forks Reservoir, 60 mi downstream from Silverwood Lake on West Fork Mojave River, and 66 mi downstream from Lake Arrowhead on Deep Creek (East Fork Mojave River).

DRAINAGE AREA.--1,291 mi².

PERIOD OF RECORD.--October 1930 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,089.34 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Regulation by Lake Arrowhead, capacity, 48,000 acre-ft, used principally for recreation; Silverwood Lake, capacity, 78,000 acre-ft, used for storage and distribution of imported water and recreation; and Mojave River Forks Reservoir, capacity, 89,700 acre-ft. Diversions and pumping for irrigation of about 15,000 acres upstream from station.

AVERAGE DISCHARGE.--60 years, 23.5 ft³/s, 17,020 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 64,300 ft³/s, Mar. 3, 1938, gage height, 8.60 ft on basis of slope-area measurement of peak flow; no flow for all or most of each year.

EXTREMES FOR CURRENT YEAR.--No flow for 1990 water year.

10263000 MOJAVE RIVER AT AFTON, CA

LOCATION.--Lat 35°02'14", long 116°23'00", in NW 1/4 SE 1/4 sec.18, T.11 N., R.6 E., San Bernardino County, Hydrologic Unit 18090208, on downstream end of right pier of Union Pacific Railroad bridge, 0.3 mi west of Afton, and 63 mi east of Barstow.

DRAINAGE AREA.--2,121 mi².

PERIOD OF RECORD.--October 1929 to September 1932, October 1952 to current year. Records for water year 1930 incomplete; yearly estimate published in WSP 1314. Records for water years 1979 and 1980 incomplete; discharge measurements only were published at that time.

GAGE.--Water-stage recorder. Datum of gage is 1,398.15 ft above National Geodetic Vertical Datum of 1929. Dec. 21, 1929, to Sept. 30, 1932, at site 1.7 mi downstream at different datum; October 1952 to May 1978, at datum 2 ft higher.

REMARKS.--Records poor. Natural flow affected by ground-water withdrawals, diversions, municipal use, and storage in reservoirs 100 mi upstream. For description of upstream reservoirs see Mojave River at Barstow (station 10262500).

AVERAGE DISCHARGE.--39 years (water years 1930-32, 1953-78, 1981-90), 6.10 ft³/s, 4,420 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,000 ft³/s, Jan. 26, 1969, gage height, 12.40 ft (present datum), from rating curve extended above 3,200 ft³/s on basis of slope-area measurement of peak flow; no flow at times during many years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2.0 ft³/s, estimated, Nov. 29 to Dec. 4; minimum daily, 0.09 ft³/s, for several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.25	e.68	e2.0	e1.2	.70	.90	1.4	.69	.41	e.32	.15	.10
2	e.26	e.72	e2.0	e1.2	.61	.89	1.4	.68	.40	e.32	.12	.10
3	e.28	e.74	e2.0	e1.2	.60	.92	1.4	.58	e.40	e.32	.13	.12
4	e.29	e.77	e2.0	e1.1	.61	.97	1.5	.58	e.40	e.32	.12	.13
5	e.30	e.80	e1.9	1.1	.66	.97	1.7	.59	e.40	e.32	.10	.15
6	e.30	e.84	e1.9	1.1	.69	.95	1.8	.58	e.38	e.30	.13	.14
7	e.31	e.88	e1.9	e1.1	.74	.97	1.8	.59	e.38	e.30	.14	.12
8	e.32	e.92	e1.9	1.1	.66	1.1	1.7	.53	e.38	e.30	.16	.11
9	e.33	e.96	e1.9	1.0	.60	1.1	1.7	.54	e.36	e.30	.13	.09
10	e.34	e1.0	e1.9	.98	.60	1.1	1.8	.56	.34	e.30	.09	.09
11	e.35	e1.0	e1.9	.87	.64	1.1	1.8	.58	e.34	e.30	.10	.09
12	e.36	e1.1	e1.9	.79	.69	1.1	1.7	.74	e.34	e.30	.10	.09
13	e.37	e1.2	e1.8	.78	.74	1.1	1.8	.73	e.34	e.30	.10	.10
14	e.38	e1.2	e1.8	.76	.63	1.1	1.7	.71	e.34	e.30	.11	.09
15	e.39	e1.3	e1.8	.76	.66	1.2	1.5	.64	e.34	e.30	.12	.09
16	e.40	e1.3	e1.7	.74	.70	1.2	1.5	.63	e.34	e.30	.12	.09
17	e.41	e1.4	e1.7	.75	.77	1.4	1.5	.65	e.34	e.28	.13	.09
18	e.43	e1.4	e1.7	.66	.78	1.4	1.4	.53	e.34	e.26	.13	.09
19	e.44	e1.5	e1.6	.67	.74	1.4	1.5	.52	e.34	e.24	.09	.10
20	e.45	e1.7	e1.6	.74	.78	1.5	1.7	.57	e.34	.24	.10	.11
21	e.47	e1.7	e1.6	.74	.88	1.5	1.6	.58	e.32	.21	.10	.13
22	e.49	e1.7	e1.5	.75	.82	1.5	1.4	.52	e.32	.18	.10	.12
23	e.51	e1.7	e1.5	.79	.74	1.4	1.3	.47	e.32	.17	.10	.19
24	e.53	e1.8	e1.4	.74	.75	1.4	1.3	.46	e.32	.10	.10	.16
25	e.54	e1.8	e1.4	.66	.80	1.3	1.3	.47	e.32	.09	.10	.17
26	e.56	e1.8	e1.3	.64	.86	1.2	1.3	.39	e.32	.12	.11	.17
27	e.58	e1.9	e1.3	.61	.85	1.3	1.2	.35	e.32	.14	.12	.17
28	e.60	e1.9	e1.3	.61	.87	1.4	1.1	.49	e.32	.14	.12	.19
29	e.62	e2.0	e1.2	.63	---	1.3	.94	.49	e.32	.15	.11	.21
30	e.64	e2.0	e1.2	.68	---	1.3	.75	.55	e.32	.14	.10	.22
31	e.66	---	e1.2	.74	---	1.3	---	.42	---	.14	.10	---
TOTAL	13.16	39.71	51.8	26.19	20.17	37.27	44.49	17.41	10.45	7.50	3.53	3.82
MEAN	.42	1.32	1.67	.84	.72	1.20	1.48	.56	.35	.24	.11	.13
MAX	.66	2.0	2.0	1.2	.88	1.5	1.8	.74	.41	.32	.16	.22
MIN	.25	.68	1.2	.61	.60	.89	.75	.35	.32	.09	.09	.09
AC-FT	26	79	103	52	40	74	88	35	21	15	7.0	7.6

CAL YR 1989 TOTAL 256.05 MEAN .70 MAX 2.0 MIN .25 AC-FT 508
WTR YR 1990 TOTAL 275.50 MEAN .75 MAX 2.0 MIN .09 AC-FT 546

e Estimated.

10263500 BIG ROCK CREEK NEAR VALYERMO, CA

LOCATION.--Lat 34°25'15", long 117°50'19", in SE 1/4 NE 1/4 sec.20, T.4 N., R.9 W., Los Angeles County, Hydrologic Unit 18090206, on left bank 0.1 mi upstream from Punchbowl Canyon and 1.9 mi southeast of Valyermo.

DRAINAGE AREA.--22.9 mi².

PERIOD OF RECORD.--January 1923 to current year. Monthly discharge only for June 1938 to January 1939, published in WSP 1314. Prior to October 1954, published as Rock Creek near Valyermo.

REVISED RECORDS.--WSP 1314: 1938-39. WSP 1564: 1932, 1937, 1939(M). WSP 1927: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 4,050 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to May 4, 1938, at same site at different datums. May 4, 1938, to Jan. 26, 1939, at site 0.2 mi downstream (below Punchbowl Canyon) at different datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--67 years (water years 1924-90), 17.2 ft³/s, 12,460 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,300 ft³/s, Mar. 2, 1938, gage height unknown, on basis of slope-area measurement of peak flow; minimum daily, 0.70 ft³/s, Nov. 5, 1951.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	1500	*29	*2.40				

Minimum daily, 1.3 ft³/s, Oct. 19, 20, 28, 29.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.7	1.4	2.7	2.0	2.9	5.6	6.9	6.3	3.9	e2.5	1.9	e1.6
2	1.7	1.4	2.6	2.3	3.1	5.8	6.7	6.1	3.9	e2.5	1.9	e1.6
3	e1.7	1.4	2.7	2.4	3.0	5.8	6.9	5.7	3.8	e2.5	2.0	1.6
4	e1.6	1.4	2.7	2.4	3.4	6.1	6.9	5.7	3.7	e2.4	2.0	1.7
5	e1.6	1.4	2.5	2.4	3.5	6.5	7.4	6.3	3.7	e2.4	2.1	1.7
6	e1.6	1.6	2.5	2.4	3.5	6.4	7.5	5.9	3.6	e2.4	2.2	1.8
7	e1.6	1.6	2.5	2.4	3.6	6.2	7.4	5.1	3.6	e2.4	2.4	1.7
8	e1.6	1.6	2.3	2.4	3.6	6.2	6.9	5.0	4.1	e2.4	2.4	e1.7
9	1.6	1.7	2.4	2.3	3.6	6.0	6.6	4.9	5.1	2.4	2.3	e1.8
10	1.6	1.7	2.4	2.3	3.6	6.4	6.4	5.0	4.1	e2.4	e2.2	e1.8
11	1.6	1.7	2.4	2.3	3.6	6.9	6.5	5.2	3.0	e2.3	e2.1	1.9
12	1.6	1.6	2.4	2.3	3.6	6.8	6.8	5.2	3.0	2.3	e2.0	1.7
13	1.5	1.7	2.4	4.4	3.6	6.9	6.3	4.9	3.1	e2.4	e2.0	1.8
14	1.5	1.7	2.4	11	3.7	6.9	5.9	4.6	3.3	e2.4	e2.0	e1.8
15	1.6	1.7	2.4	3.9	3.9	6.9	6.4	4.6	3.3	e2.4	e1.9	e1.7
16	1.5	1.7	2.4	3.5	4.3	6.9	7.1	4.6	3.2	2.3	e1.8	1.7
17	1.5	1.6	2.4	3.4	14	6.9	7.1	4.5	2.9	2.4	e1.8	e1.7
18	1.4	1.6	2.4	3.2	9.1	6.8	6.5	4.5	2.6	2.4	e1.8	e1.7
19	1.3	1.7	2.3	3.1	7.6	6.9	6.1	4.6	2.6	2.4	e1.8	1.7
20	1.3	1.7	2.3	2.9	6.8	6.9	5.9	4.5	e2.6	2.3	e1.7	1.7
21	1.5	1.7	2.3	2.9	6.5	6.8	5.8	4.3	e2.6	2.3	e1.7	1.8
22	1.5	1.7	2.3	2.7	6.4	7.0	5.8	4.2	e2.6	2.4	e1.7	1.8
23	1.4	1.6	2.2	2.7	5.9	6.9	5.9	4.2	e2.6	2.6	e1.7	1.8
24	1.4	1.7	2.2	2.7	5.8	6.7	5.9	4.2	e2.6	2.6	e1.7	1.7
25	1.4	2.0	2.2	2.7	5.5	6.6	5.7	4.0	e2.6	2.6	e1.7	1.7
26	1.5	3.3	1.9	2.7	5.5	6.7	5.5	4.1	e2.5	2.5	e1.7	1.7
27	1.4	3.2	1.9	2.7	5.8	6.6	5.6	3.9	e2.5	2.3	e1.7	1.8
28	1.3	3.2	2.2	2.7	5.7	6.7	5.8	4.3	e2.5	e2.1	e1.7	1.8
29	1.3	3.0	2.3	2.7	---	6.9	5.9	4.1	e2.5	e1.9	e1.7	1.9
30	1.4	2.7	2.2	2.9	---	6.7	6.4	4.0	e2.5	1.8	e1.7	1.9
31	1.4	---	1.9	2.9	---	6.9	---	4.0	---	1.8	e1.6	---
TOTAL	46.6	56.0	72.7	93.6	141.1	204.3	192.5	148.5	94.6	72.8	58.9	52.3
MEAN	1.50	1.87	2.35	3.02	5.04	6.59	6.42	4.79	3.15	2.35	1.90	1.74
MAX	1.7	3.3	2.7	11	14	7.0	7.5	6.3	5.1	2.6	2.4	1.9
MIN	1.3	1.4	1.9	2.0	2.9	5.6	5.5	3.9	2.5	1.8	1.6	1.6
AC-FT	92	111	144	186	280	405	382	295	188	144	117	104

CAL YR 1989 TOTAL 2339.5 MEAN 6.41 MAX 29 MIN 1.3 AC-FT 4640
WTR YR 1990 TOTAL 1233.9 MEAN 3.38 MAX 14 MIN 1.3 AC-FT 2450

e Estimated.

ANTELOPE VALLEY

10263675 BIG ROCK CREEK WASH AT HIGHWAY 138, NEAR LLANO, CA

LOCATION.--Lat 34°30'21", long 117°50'45", in NE 1/4 SW 1/4 sec.20, T.5 N., R.9 W., Los Angeles County, Hydrologic Unit 18090206, between two major channels of Big Rock Creek, at State Highway 138 crossing, and 1.6 mi west of Llano.

DRAINAGE AREA.--53.1 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1988 to current year.

GAGE.--Two water-stage recorders (one on each of two main channels), four crest-stage gages (two on each channel), and box culvert control (each channel). Elevation of gage is 3,160 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Low flows affected by diversion for municipal supply 3 mi upstream. Storm runoff unaffected.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38 ft³/s, Feb. 8, 1989, from rating curve extended above 4.3 ft³/s on basis of culvert computations (east channel) and rating curve based on culvert computations (west channel); no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--No flow for 1990 water year.

10263675 BIG ROCK CREEK WASH AT HIGHWAY 138, NEAR LLANO, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--February 1989 to current year.

INSTRUMENTATION.--Recording tipping-bucket rain gage since Feb. 27, 1989.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 0.52 in, Sept. 19, 1989; no rainfall for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 0.39 in, Apr. 30; no rainfall for many days.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.17	.00	.02	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.22	.00	.09	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.11	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.06	.16	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.10	.01	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.01	---	.00	.39	.00	.00	.00	.00	.00
31	.00	---	.00	.01	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.66	0.41	0.05	0.48	0.09	0.00	0.00	0.24	0.00

WTR YR 1990 TOTAL 1.93

10264502 PEACH TREE CREEK NEAR LITTLEROCK, CA

LOCATION.--Lat 34°31'34", long 117°59'58", in NW 1/4 NE 1/4 sec.14, T.5 N., R.11 W., Los Angeles County, Hydrologic Unit 18090206, 150 ft northeast of junction of Zinney Road and Avenue U-3, and 1.1 mi northwest of Littlerock.

DRAINAGE AREA.--0.04 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1988 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and broad-crested weir. Elevation of gage is 2,850 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3.8 ft³/s, Aug. 10, 1990, gage height, 0.81 ft, from rating curve extended above 0.16 ft³/s on basis of critical-depth computations; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1.5 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 2	0155	2.0	0.70	Aug. 7	1630	2.9	0.76
Feb. 4	1025	1.6	.67	Aug. 10	1600	*3.8	*.81
May 28	1015	2.1	.71				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.04	.00	.01	.00	.00	.00	.00	.01
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.01	.06	.00	.00	.00	.00	.00	.00	.01
18	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.01
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
25	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
26	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.01
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
28	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.01
29	.00	.00	.00	.00	---	.00	.00	.00	.01	.00	.00	.01
30	.00	.01	.00	.01	---	.00	.03	.00	.00	.00	.00	.02
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.02	0.00	0.13	0.14	0.00	0.04	0.05	0.01	0.02	0.09	0.20
MEAN	.000	.001	.000	.004	.005	.000	.001	.002	.000	.001	.003	.007
MAX	.00	.01	.00	.05	.06	.00	.03	.05	.01	.01	.06	.03
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.04	.00	.3	.3	.00	.08	.1	.02	.04	.2	.4

CAL YR 1989 TOTAL 1.04 MEAN .003 MAX .15 MIN .00 AC-FT 2.1
WTR YR 1990 TOTAL 0.70 MEAN .002 MAX .06 MIN .00 AC-FT 1.4

10264502 PEACH TREE CREEK NEAR LITTLEROCK, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--February 1989 to current year.

INSTRUMENTATION.--Recording tipping-bucket rain gage since Feb. 14, 1989.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 0.47 in, Sept. 19, 1989; no rainfall for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 0.30 in, May 28 and Aug. 10; no rainfall for many days.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.25	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.19	.00	.03	.00	.00	.00	.00	.00
5	.00	.00	.00	.01	.00	.02	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.30	.00
11	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.01	.27	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.11	.12	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.30	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.05	---	.00	.12	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.02	0.00	0.67	0.66	0.02	0.15	0.30	0.00	0.00	0.47	0.00

WTR YR 1990 TOTAL 2.29

ANTELOPE VALLEY

10264508 SOMERSET CREEK AT PALMDALE, CA

LOCATION.--Lat 34°34'07", long 118°05'06", in NE 1/4 NW 1/4 sec.31, T.6 N., R.11 W., Los Angeles County, Hydrologic Unit 18090206, on left bank, 100 ft south of the terminus of Westview Drive, 0.1 mi west of 25th Street East, 0.1 mi south of Avenue R-4, and 1.5 mi southeast of Palmdale.

DRAINAGE AREA.--Indeterminate, but less than 0.50 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February 1989 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and weir control. Elevation of gage is 2,640 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good except for estimated daily discharges, which are poor. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2.8 ft³/s, Feb. 9, Sept. 19, 1989, gage height, 0.85 ft, from rating curve extended above 0.09 ft³/s on basis of weir and critical-depth computations; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2.5 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 4	0850	*1.6	*0.79				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.01	.01	.00	.00	.00	.01	.00	.02	.01	.01	.01
2	.01	.00	.01	e.05	.00	.00	.00	.01	.03	.00	.01	.00
3	.01	.00	.01	e.01	.00	.00	.00	.01	.03	.00	.00	.00
4	.02	.00	.01	.00	.11	.00	.01	.00	.02	.00	.01	.00
5	.02	.01	.01	.00	.00	.01	.00	.00	.02	.00	.01	.01
6	.01	.00	.01	.00	.00	.00	.00	.00	.02	.00	.01	.01
7	.01	.00	.02	.00	.00	.00	.00	.00	.02	.00	.02	.00
8	.01	.01	.01	.00	.00	.00	.01	.00	.01	.00	.01	.00
9	.01	.01	.01	.00	.00	.00	.01	.00	.03	.00	.01	.01
10	.00	.01	.00	.00	.00	.00	.01	.00	.01	.00	.01	.00
11	.00	.01	.00	.00	.00	.01	.01	.00	.01	.01	.01	.00
12	.00	.01	.00	.00	.00	.00	.01	.01	.01	.01	.01	.00
13	.00	.01	.00	.07	.00	.00	.01	.01	.01	.00	.01	.00
14	.00	.00	.00	.04	.00	.00	.01	.01	.01	.01	.00	.01
15	.00	.00	.00	.00	.01	.01	.01	.02	.00	.01	.00	.00
16	.00	.00	.00	.02	.00	.01	.01	.02	.00	.01	.00	.00
17	.00	.00	.00	.01	.07	.01	.01	.02	.00	.01	.00	.00
18	.01	.00	.00	.00	.06	.01	.01	.02	.00	.01	.00	.00
19	.01	.01	.00	.00	.01	.00	.01	.01	.00	.01	.01	.00
20	.01	.00	.00	.00	.00	.00	.01	.02	.00	.01	.02	.00
21	.01	.00	.00	.00	.00	.00	.01	.01	.00	.02	.02	.00
22	.02	.00	.00	.00	.00	.00	.00	.00	.01	.01	.02	.00
23	.02	.00	.00	.00	.00	.00	.00	.02	.01	.01	.01	.00
24	.01	.00	.00	.00	.00	.00	.00	.02	.01	.01	.01	.00
25	.02	.00	.00	.00	.00	.01	.00	.02	.01	.00	.01	.00
26	.01	.03	.00	.00	.00	.00	.00	.02	.01	.01	.01	.00
27	.02	.01	.00	.00	.01	.01	.01	.01	.00	.00	.01	.00
28	.02	.01	.00	.01	.01	.00	.00	.04	.01	.01	.00	.00
29	.02	.01	.00	.00	---	.00	.00	.02	.01	.01	.01	.00
30	.02	.01	.00	.01	---	.01	.01	.02	.00	.01	.01	.00
31	.02	---	.00	.00	---	.01	---	.02	---	.01	.00	---
TOTAL	0.33	0.16	0.10	0.22	0.28	0.10	0.18	0.36	0.32	0.20	0.27	0.05
MEAN	.011	.005	.003	.007	.010	.003	.006	.012	.011	.006	.009	.002
MAX	.02	.03	.02	.07	.11	.01	.01	.04	.03	.02	.02	.01
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.7	.3	.2	.4	.6	.2	.4	.7	.6	.4	.5	.1

WTR YR 1990 TOTAL 2.57 MEAN .007 MAX .11 MIN .00 AC-FT 5.1

e Estimated.

PRECIPITATION RECORDS

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 0.37 in, Feb. 4; no rainfall for many days.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
2	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.37	.00	.02	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00
10	.01	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.26	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.03	.30	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.06	.08	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
22	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.03	---	.00	.05	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.02	0.16	0.00	0.78	0.95	0.12	0.09	0.13	0.08	0.00	0.08	0.00

WTR YR 1990 TOTAL 2.41

ANTELOPE VALLEY

10264510 INN CREEK AT PALMDALE, CA

LOCATION.--Lat 34°34'51", long 118°08'05", in SW 1/4 NE 1/4 sec.27, T.6 N., R.12 W., Los Angeles County, Hydrologic Unit 18090206, on left bank 100 ft north of Camino Real Avenue, 0.1 mi south of Elizabeth Lake Road, and 1 mi west of Palmdale.

DRAINAGE AREA.--0.03 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1988 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and culvert control. Elevation of gage is 2,700 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6.0 ft³/s, Mar. 5, 1990, gage height, 6.53 ft, from rating curve extended above 0.09 ft³/s on basis of culvert computations; no flow for many days each year.EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3.5 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 14	0005	5.1	6.42	Mar. 5	0130	*6.0	*6.53

No flow for many days.

EXTREMES FOR 1989 WATER YEAR (NOT PREVIOUSLY PUBLISHED).--Peak discharges greater than base discharge of 3.5 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec. 21	0030	3.8	6.22	Sept. 19	0635	*4.3	*6.31

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

(NOT PREVIOUSLY PUBLISHED)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	.00	.14	.00	.00	.00	.00	e.04	e.05	e.02	e.02
2	---	---	.00	.00	.00	.00	.00	.00	e.04	e.04	e.02	e.02
3	---	---	.00	.35	.00	.00	.00	.00	e.05	e.04	e.02	e.02
4	---	---	.00	e.20	.01	.00	.00	.00	e.04	e.04	e.02	e.02
5	---	---	.00	.00	.00	.00	.00	.00	e.04	e.04	e.02	e.02
6	---	---	.00	.30	.00	.00	.00	.00	e.03	e.03	e.02	e.01
7	---	---	.00	.05	.00	.00	.00	.00	e.03	e.03	e.02	e.01
8	---	---	.00	.02	.00	.00	.00	.00	e.04	e.03	e.02	e.01
9	---	---	.00	.00	.08	.00	.00	.00	e.04	e.03	e.02	e.02
10	---	---	.00	.00	.04	.00	.00	e.01	e.04	e.04	e.02	e.02
11	---	---	.00	.00	.00	.00	.00	e.20	e.03	e.04	e.01	e.02
12	---	---	.00	.00	.00	.00	.00	e.04	e.05	e.04	e.01	e.02
13	---	---	.01	.00	.00	.00	.00	e.04	e.04	e.04	e.01	e.02
14	---	---	.04	.00	.00	.00	.00	e.03	e.04	e.04	e.02	e.02
15	---	---	.11	.00	.00	.00	.00	e.10	e.04	e.03	e.02	e.02
16	---	---	.43	.00	.00	.00	.00	e.04	e.05	e.03	e.02	.03
17	---	---	.06	.00	.00	.00	.00	e.03	e.04	e.03	e.02	.04
18	---	---	.09	.00	.00	.00	.00	e.03	e.03	e.04	e.01	.05
19	---	---	.07	.00	.00	.00	.00	e.04	e.05	e.04	e.01	.23
20	---	---	.16	.00	.00	.00	.00	e.01	e.05	e.04	e.01	.05
21	---	---	.20	.00	.00	.00	.00	e.03	e.04	e.03	e.01	.04
22	---	---	e.02	.00	.00	.00	.00	e.04	e.04	e.03	e.01	.04
23	---	---	.00	.00	.00	.00	.00	e.04	e.04	e.04	e.01	.04
24	---	---	.00	.00	.00	.00	.00	e.04	e.05	e.04	e.01	.04
25	---	---	.10	.00	.00	e.15	.00	e.03	e.05	e.04	e.01	.03
26	---	---	.00	.00	.00	.00	.00	e.04	e.04	e.04	e.01	.03
27	---	---	.00	.00	.00	.00	.00	e.03	e.04	e.03	e.02	.04
28	---	---	.00	.00	.00	.00	.00	e.04	e.04	e.03	e.02	.04
29	---	---	.00	.00	---	.00	.00	e.03	e.05	e.03	e.02	.05
30	---	---	.00	.00	---	.00	.00	e.03	e.05	e.03	e.02	.07
31	---	---	.18	.00	---	.00	---	e.04	---	e.03	e.02	---
TOTAL	---	---	1.47	1.06	0.13	0.15	0.00	0.96	1.25	1.11	0.50	1.09
MEAN	---	---	.049	.034	.005	.005	.000	.031	.042	.036	.016	.036
MAX	---	---	.43	.35	.08	.15	.00	.20	.05	.05	.02	.23
MIN	---	---	.00	.00	.00	.00	.00	.00	.03	.03	.01	.01
AC-FT	---	---	2.9	2.1	.3	.3	.00	1.9	2.5	2.2	1.0	2.2

e Estimated.

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DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.12	.03	.00	.00	.00	.00	.00	.04	.02	.04	.10
2	.07	.16	.02	.05	.01	.00	.00	.00	.02	.01	.04	.11
3	.09	.16	.03	.01	.01	.00	.00	.00	.01	.01	.05	.09
4	.09	.16	.04	.01	.18	.01	.00	.00	.01	.01	.05	.10
5	.10	.13	.02	.01	.00	.09	.00	.01	.01	.01	.06	.09
6	.08	.14	.02	.00	.00	.01	.00	.01	.01	.01	.07	.08
7	.07	.18	.04	.00	.00	.01	.00	.01	.01	.01	.10	.07
8	.06	.13	.06	.00	.02	.01	.00	.01	.02	.01	.08	.06
9	.06	.09	.02	.00	.01	.00	.00	.01	.02	.01	.06	.06
10	.05	.06	.01	.01	.01	.03	.00	.03	.02	.01	.06	.06
11	.04	.06	.01	.01	.00	.01	.00	.04	.02	.01	.07	.06
12	.03	.07	.02	.00	.00	.01	.00	.05	.01	.01	.05	.05
13	.02	.08	.02	.15	.00	.01	.01	.05	.02	.02	.05	.05
14	.02	.07	.05	.10	.01	.01	.00	.06	.03	.02	.06	.04
15	.04	.07	.07	.01	.02	.00	.00	.06	.04	.02	.08	.05
16	.04	.08	.00	.06	.00	.01	.00	.04	.03	.03	.06	.09
17	.04	.06	.01	.08	.28	.01	.00	.01	.02	.03	.06	.03
18	.04	.07	.01	.02	.14	.01	.00	.01	.03	.03	.07	.04
19	.00	.06	.01	.01	.07	.00	.01	.01	.05	.02	.07	.05
20	.00	.05	.01	.01	.01	.00	.00	.01	.03	.03	.09	.06
21	.00	.04	.01	.01	.00	.00	.00	.01	.01	.03	.07	.05
22	.02	.06	.01	.01	.00	.00	.00	.01	.02	.03	.08	.05
23	.04	.05	.02	.01	.00	.01	.00	.01	.02	.04	.06	.05
24	.04	.02	.02	.01	.00	.00	.00	.01	.01	.04	.05	.06
25	.04	.03	.03	.01	.00	.00	.00	.01	.02	.05	.07	.07
26	.07	.10	.01	.00	.00	.00	.00	.01	.02	.04	.08	.06
27	.08	.03	.01	.01	.00	.00	.00	.01	.02	.06	.08	.06
28	.08	.02	.01	.01	.00	.00	.00	.04	.03	.06	.06	.05
29	.07	.03	.01	.01	---	.00	.00	.02	.03	.05	.06	.00
30	.08	.02	.01	.02	---	.00	.01	.02	.02	.04	.08	.01
31	.08	---	.01	.01	---	.00	---	.03	---	.04	.09	---
TOTAL	1.62	2.40	0.65	0.65	0.77	0.24	0.03	0.60	0.65	0.81	2.05	1.80
MEAN	.052	.080	.021	.021	.027	.008	.001	.019	.022	.026	.066	.060
MAX	.10	.18	.07	.15	.28	.09	.01	.06	.05	.06	.10	.11
MIN	.00	.02	.00	.00	.00	.00	.00	.00	.01	.01	.04	.00
AC-FT	3.2	4.8	1.3	1.3	1.5	.5	.06	1.2	1.3	1.6	4.1	3.6
CAL YR 1989	TOTAL	10.92	MEAN .030	MAX .35	MIN .00	AC-FT 22						
WTR YR 1990	TOTAL	12.27	MEAN .034	MAX .28	MIN .00	AC-FT 24						

ANTELOPE VALLEY

10264510 INN CREEK AT PALMDALE, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--February 1989 to current year.

INSTRUMENTATION.--Recording tipping-bucket rain gage since Feb. 28, 1989.

REMARKS.--Periods of missing record due to rain gage malfunctions.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 0.31 in, Feb. 4; no rainfall for many days.

EXTREMES FOR 1989 WATER YEAR (NOT PREVIOUSLY PUBLISHED).--Maximum daily rainfall during period February to September, 0.12 in, Sept. 19; no rainfall for many days.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

SUM VALUES
(NOT PREVIOUSLY PUBLISHED)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
2	---	---	---	---	---	.01	.00	.00	.00	.00	.00	.00
3	---	---	---	---	---	.00	.00	.00	.04	.00	.00	.00
4	---	---	---	---	---	.00	.00	.00	.01	.00	.00	.00
5	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
6	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
7	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
8	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
9	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
10	---	---	---	---	---	.00	.00	.08	.00	.00	.00	.00
11	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
12	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
13	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
14	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
15	---	---	---	---	---	.00	.00	.04	.00	.00	.00	.00
16	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.04
17	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.04
18	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.05
19	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.12
20	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
21	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
22	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
23	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
24	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
25	---	---	---	---	---	.08	.00	.00	.00	.00	.00	.00
26	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
27	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
28	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
29	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
30	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
31	---	---	---	---	---	.00	---	.00	---	.00	.00	---
TOTAL	---	---	---	---	---	0.09	0.00	0.12	0.05	0.00	0.00	0.25

ANTELOPE VALLEY

95

10264510 INN CREEK AT PALMDALE, CA--Continued

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	---	.00	---	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	---	.31	.00	.03	.00	.00	.00	.00	.00
5	.00	.00	.00	---	.00	.17	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.01	.00
8	.00	.00	.00	---	---	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	---	---	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	---	---	.08	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	---	---	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	---	---	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	---	---	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	---	---	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	---	---	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	---	---	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	---	---	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	---	---	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	---	---	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
22	.06	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
26	.00	.14	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	---	.00	.00	.09	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.05	---	.01	.05	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.06	0.14	0.00	---	---	---	0.08	0.09	0.00	0.00	0.01	0.00

ANTELOPE VALLEY

10264530 PINE CREEK NEAR PALMDALE, CA

LOCATION.--Lat 34°36'09", long 118°14'48", in SE 1/4 SW 1/4 sec.15, T.6 N., R.13 W., Los Angeles County, Hydrologic Unit 18090206, on left bank at culvert on Elizabeth Lake Road and 7.5 mi northwest of Palmdale.

DRAINAGE AREA.--1.78 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1958 to September 1973, October 1977 to September 1988 (crest-stage partial-record station), October 1988 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and culvert control. Elevation of gage is 3,010 ft above National Geodetic Vertical Datum of 1929, from topographic map. October 1958 to September 1973, October 1977 to September 1988, crest-stage gage at same site.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69 ft³/s, Feb. 25, 1969, gage height, 15.33 ft; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5.0 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 13	0530	*0.61	*10.41				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.01	.12	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.01	0.00	0.17	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.005	.007	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.01	.00	.13	.12	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.02	.00	.3	.4	.00	.00	.00	.00	.00	.00	.00

CAL YR 1989 TOTAL 0.25 MEAN .001 MAX .05 MIN .00 AC-FT .5
WTR YR 1990 TOTAL 0.37 MEAN .001 MAX .13 MIN .00 AC-FT .7

ANTELOPE VALLEY

97

10264530 PINE CREEK NEAR PALMDALE, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--January 1989 to current year.

INSTRUMENTATION.--Recording tipping-bucket rain gage since Feb. 22, 1989. Supplemental weight-driven recording rain gage since Jan. 23, 1989.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 1.50 in, Feb. 4, 1989; no rainfall for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 1.42 in, Feb. 17; no rainfall for many days.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.19	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.39	.00	.01	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	1.37	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.32	.13	.00	.07	.00	.00	.00	.00	.00
17	.00	.00	.00	.12	1.42	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.07	.29	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.33	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.29	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.01
30	.00	.00	.00	.10	---	.00	.06	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.15	0.33	0.00	2.24	2.24	0.22	0.14	0.29	0.00	0.00	0.02	0.01

WTR YR 1990 TOTAL 5.64

10264550 CITY RANCH CREEK NEAR PALMDALE, CA

LOCATION.--Lat 34°35'00", long 118°10'36", in SE 1/4 NW 1/4 sec.29, T.6 N., R.12 W., Los Angeles County, Hydrologic Unit 18090206, on right bank at culvert on Elizabeth Lake Road and 3 mi west of Palmdale.

DRAINAGE AREA.--0.39 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1988 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and culvert control. Elevation of gage is 2,760 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1.6 ft³/s, Dec. 20, 1988, gage height, 3.19 ft, from rating curve based on culvert computations; maximum gage height, 3.29 ft, Feb. 18, 1990; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5.0 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 18	1650	*1.2	*3.29				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.08	0.01	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.003	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.05	.01	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.2	.02	.00	.00	.00	.00	.00	.00

CAL YR 1989 TOTAL 0.02 MEAN .000 MAX .02 MIN .00 AC-FT .04
WTR YR 1990 TOTAL 0.09 MEAN .000 MAX .05 MIN .00 AC-FT .2

10264550 CITY RANCH CREEK NEAR PALMDALE, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--February 1989 to current year.

INSTRUMENTATION.--Recording tipping-bucket rain gage since Feb. 23, 1989.

REMARKS.--Rainfall record for period Dec. 14, 1989, to Jan. 3, 1990 based on non-recording gages.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 0.90 in, Feb. 17, 1990; no rainfall for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 0.90 in, Feb. 17; no rainfall for many days.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.22	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.34	.00	.02	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.56	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.27	.02	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.06	.90	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.07	.20	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.05	---	.01	.05	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.08	0.23	0.00	1.29	1.56	0.27	0.07	0.06	0.00	0.00	0.03	0.00

CAL YR 1989 TOTAL 0.78

WTR YR 1990 TOTAL 3.59

ANTELOPE VALLEY

10264555 ESTATES CREEK NEAR QUARTZ HILL, CA

LOCATION.--Lat 34°38'19", long 118°14'52", in SE 1/4 NW 1/4 sec.3, T.6 N., R.13 W., Los Angeles County, Hydrologic Unit 18090206, on right bank 30 ft north of Avenue M-8, 0.7 mi west of 60th Street West, and 2 mi southwest of Quartz Hill.

DRAINAGE AREA.--0.11 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1989 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and weir control. Elevation of gage is 2,700 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8.6 ft³/s, Feb. 14, 1990, gage height, 4.58 ft, from rating curve extended above 0.20 ft³/s on basis of weir computations; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2.0 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 2	0040	2.9	4.33	Feb. 14	1235	*8.6	*4.58

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.02	.00	.00	.00	.00	.01	.00	.01	.03	.01	.01
2	.02	.03	.00	.20	.00	.00	.03	.01	.01	.04	.01	.01
3	.00	.02	.00	.00	.00	.00	.00	.00	.00	.02	.01	.01
4	.01	.03	.02	.00	.01	.00	.01	.00	.00	.00	.01	.00
5	.02	.02	.00	.00	.00	.01	.00	.00	.00	.01	.02	.01
6	.02	.02	.00	.00	.00	.00	.01	.00	.01	.01	.01	.01
7	.01	.00	.00	.00	.00	.00	.00	.01	.01	.01	.03	.01
8	.01	.01	.00	.00	.00	.00	.00	.00	.01	.02	.06	.01
9	.01	.01	.00	.00	.00	.00	.00	.00	.01	.02	.01	.01
10	.00	.02	.00	.00	.00	.01	.00	.00	.01	.02	.03	.01
11	.01	.02	.00	.00	.00	.01	.02	.00	.01	.00	.03	.01
12	.02	.01	.00	.00	.00	.00	.04	.05	.01	.01	.03	.01
13	.02	.01	.00	.34	.00	.00	.00	.00	.01	.04	.02	.01
14	.02	.00	.00	.09	.47	.00	.00	.00	.01	.01	.01	.01
15	.02	.01	.01	.00	.00	.00	.00	.00	.01	.01	.01	.01
16	.02	.01	.00	.05	.00	.00	.00	.00	.01	.01	.01	.01
17	.00	.01	.00	.01	.09	.00	.00	.00	.01	.01	.04	.01
18	.02	.01	.00	.00	.01	.00	.00	.01	.02	.01	.06	.00
19	.03	.02	.00	.00	.00	.00	.00	.01	.03	.01	.01	.00
20	.02	.01	.00	.00	.00	.00	.00	.01	.03	.01	.00	.00
21	.02	.00	.00	.00	.00	.00	.00	.01	.04	.01	.01	.01
22	.06	.00	.00	.00	.00	.00	.00	.01	.02	.00	.02	.00
23	.02	.00	.00	.00	.00	.00	.00	.01	.03	.00	.04	.02
24	.00	.00	.00	.00	.00	.00	.00	.01	.03	.01	.04	.00
25	.01	.00	.00	.00	.00	.00	.00	.01	.04	.02	.02	.01
26	.02	.00	.00	.01	.00	.00	.01	.01	.08	.01	.01	.00
27	.02	.00	.00	.00	.00	.00	.00	.01	.02	.01	.01	.01
28	.03	.00	.00	.00	.00	.00	.00	.04	.03	.01	.01	.01
29	.02	.00	.00	.00	---	.00	.00	.01	.02	.01	.01	.01
30	.02	.00	.00	.00	---	.00	.01	.01	.02	.01	.01	.01
31	.00	---	.00	.00	---	.01	---	.01	---	.01	.01	---
TOTAL	0.51	0.29	0.03	0.70	0.58	0.04	0.14	0.24	0.55	0.40	0.61	0.24
MEAN	.016	.010	.001	.023	.021	.001	.005	.008	.018	.013	.020	.008
MAX	.06	.03	.02	.34	.47	.01	.04	.05	.08	.04	.06	.02
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	1.0	.6	.06	1.4	1.2	.08	.3	.5	1.1	.8	1.2	.5

WTR YR 1990 TOTAL 4.33 MEAN .012 MAX .47 MIN .00 AC-FT 8.6

ANTELOPE VALLEY

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10264555 ESTATES CREEK NEAR QUARTZ HILL, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--May 1989 to current year.

INSTRUMENTATION.--Recording tipping-bucket rain gage since May 1, 1989.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 0.82 in, Jan. 13, 1990; no rainfall for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 0.82 in, Jan. 13; no rainfall for many days.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.33	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.82	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.26	.11	.00	.01	.00	.00	.00	.00	.00
17	.00	.00	.00	.02	.56	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.06	.18	.00	.00	.00	.00	.03	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.02	.04	.00
30	.00	.00	.00	.01	---	.01	.05	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.08	---
TOTAL	0.11	0.17	0.00	1.39	1.18	0.12	0.06	0.17	0.00	0.07	0.12	0.00

WTR YR 1990 TOTAL 3.39

ANTELOPE VALLEY

10264605 JOSHUA CREEK NEAR MOJAVE, CA

LOCATION.--Lat 35°00'45", long 118°20'40", in SE 1/4 SE 1/4 sec.27, T.11 N., R.14 W., Kern County, Hydrologic Unit 18090206, on right bank at culvert on Tehachapi-Willow Springs Road, 10 mi southwest of Mojave.

DRAINAGE AREA.--3.83 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1958 to September 1973 (annual maximum only), October 1988 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and culvert control. Elevation of gage is 3,820 ft above National Geodetic Vertical Datum of 1929, from topographic map. October 1958 to September 1973, nonrecording gage at same site at different datum.

REMARKS.--No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,540 ft³/s, Aug. 16, 1965, gage height unknown, on basis of slope-area measurement of peak flow; no flow for all or most of each year.

EXTREMES FOR CURRENT YEAR.--No flow for 1990 water year.

10264605 JOSHUA CREEK NEAR MOJAVE, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--February 1989 to current year.

INSTRUMENTATION.--Tipping-bucket rain gage since Feb. 22, 1989.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 1.01 in, Jan. 13, 1990; no rainfall for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 1.01 in, Jan. 13; no rainfall for many days.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.04	.05	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.62	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.06	.00	.01	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	1.01	.00	.00	.00	.00	.00	.03	.00	.00
14	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.08	.02	.00	.01	.00	.00	.00	.00	.00
17	.00	.00	.00	.01	.26	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
22	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.03	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.06	0.10	0.00	1.22	0.32	0.11	0.06	0.18	0.00	0.03	0.64	0.06

WTR YR 1990 TOTAL 2.78

ANTELOPE VALLEY

10264675 ROGERS LAKE TRIBUTARY AT EDWARDS AIR FORCE BASE, CA

LOCATION.--Lat 34°58'06", long 117°53'29", in NE 1/4 NW 1/4 sec.13, T.10 N., R.10 W., Kern County, Hydrologic Unit 18090206, on right bank at culvert on U.S. Government Railroad, 330 ft east of Rosamond Boulevard, and 0.75 mi west of Rogers Lake.

DRAINAGE AREA.--1.73 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1988 to current year.

GAGE.--Water-stage recorder, crest-stage gage, and culvert control. Elevation of gage is 2,340 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. No regulation or diversion upstream from station. Inflow can occur from artificial ditch 10 ft upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11 ft³/s, Apr. 14, 1989, gage height, 4.81 ft, from rating curve on basis of culvert computations; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--No flow for 1990 water year.

10264675 ROGERS LAKE TRIBUTARY AT EDWARDS AIR FORCE BASE, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--January 1989 to current year.

INSTRUMENTATION.--Recording tipping-bucket rain gage since Feb. 21, 1989. Supplemental weight-driven recording rain gage since Jan. 13, 1989.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily rainfall, 0.36 in, Jan. 13, 1990; no rainfall for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 0.36 in, Jan. 13; no rainfall for many days.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.19	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.36	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.06	.08	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.22	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.02
30	.00	.00	.00	.00	---	.00	.07	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.01	0.00	0.81	0.27	0.00	0.07	0.00	0.00	0.00	0.00	0.02

WTR YR 1990 TOTAL 1.18

10265150 HOT CREEK AT FLUME, NEAR MAMMOTH, CA

LOCATION.--Lat 37°40'08", long 118°49'00", in SW 1/4 SE 1/4 sec.19, T.3 S., R.29 E., Mono County, Hydrologic Unit 18090102, on right bank 2.6 mi north of Whitmore Hot Springs and 8.4 mi east of Mammoth.

DRAINAGE AREA.--68.3 mi².

PERIOD OF RECORD.--October 1989 to September 1990. Daily discharges for 1986 published in Water-Resources Investigations Report 89-4033 as "Hot Creek Flume."

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 6,950 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Minor diversions for domestic and agricultural use upstream from station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 80 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
June 11	1115	*60	*1.35				

Minimum daily, 33 ft³/s, several days in September.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	39	42	37	36	38	40	38	39	41	40	38	37
2	39	45	37	36	38	40	39	38	42	41	38	37
3	39	42	37	36	38	42	39	38	42	41	38	37
4	39	40	37	36	38	42	38	38	42	41	38	38
5	39	41	38	36	37	40	38	38	42	39	37	38
6	39	42	38	36	38	39	39	37	43	39	40	37
7	38	43	38	37	37	40	39	38	47	38	40	37
8	38	42	38	38	36	40	39	38	46	38	39	36
9	39	41	38	38	37	40	39	38	50	38	40	35
10	40	40	38	38	38	39	38	39	52	38	40	35
11	42	39	37	38	38	38	38	39	57	38	39	35
12	42	39	37	38	38	38	36	36	56	38	39	34
13	41	39	38	38	38	39	36	37	50	39	39	34
14	37	39	38	37	38	39	36	37	45	41	40	33
15	37	39	38	38	38	39	35	37	49	41	39	33
16	37	39	38	38	38	38	34	37	47	40	38	33
17	37	39	37	38	38	38	34	39	42	38	38	33
18	37	38	37	38	37	39	34	39	43	38	39	33
19	37	38	37	38	37	39	35	39	43	38	40	34
20	37	38	37	38	38	39	35	39	44	36	40	34
21	37	40	37	37	39	40	36	39	42	37	40	34
22	38	39	37	38	39	40	35	39	41	37	39	34
23	38	38	37	38	39	40	35	39	41	37	38	34
24	39	38	37	38	39	40	35	42	41	37	38	34
25	40	39	37	38	39	40	35	42	42	36	38	34
26	39	37	36	38	40	39	35	42	42	37	38	33
27	39	36	37	38	40	39	38	44	42	37	38	33
28	40	37	36	38	40	39	38	46	42	37	38	33
29	39	37	37	38	---	38	37	46	40	38	37	33
30	38	37	35	38	---	38	39	46	40	38	37	33
31	39	---	36	38	---	38	---	44	---	38	37	---
TOTAL	1199	1183	1152	1163	1068	1219	1102	1229	1336	1189	1197	1038
MEAN	38.7	39.4	37.2	37.5	38.1	39.3	36.7	39.6	44.5	38.4	38.6	34.6
MAX	42	45	38	38	40	42	39	46	57	41	40	38
MIN	37	36	35	36	36	38	34	36	40	36	37	33
AC-FT	2380	2350	2280	2310	2120	2420	2190	2440	2650	2360	2370	2060

WTR YR 1990 TOTAL 14075 MEAN 38.6 MAX 57 MIN 33 AC-FT 27920

10271210 BISHOP CREEK BELOW POWERPLANT NO. 6, NEAR BISHOP, CA

LOCATION.--Lat 37°20'59", long 118°27'41", in SE 1/4 SE 1/4 sec.9, T.7 S., R.32 E., Inyo County, Hydrologic Unit 18090102, below powerplant No. 6 tailrace, and 3.6 mi west of Bishop.

DRAINAGE AREA.--104 mi², natural flow.

PERIOD OF RECORD.--October 1936 to current year. Monthly and yearly mean discharge prior to October 1969, published in WSP 2127.

GAGE.--Water-stage recorder on creek, and Venturi meter on powerplant conduit.

REMARKS.--Flow regulated for power development by South Lake, Lake Sabrina, and Intake No. 2 Reservoir, combined capacity, 20,660 acre-ft, and five powerplants. Records for "ACTUAL FLOW" include Bishop Creek above powerplant No. 6 tailrace and Bishop Creek powerplant No. 6 conduit. Records for "NATURAL FLOW" include "ACTUAL FLOW" of Bishop Creek below powerplant No. 6, Abelour ditch near Bishop, minus Birch-McGee diversion to Bishop Creek powerplant near Bishop, and the change in contents and evaporation for South Lake, Lake Sabrina, and Intake No. 2 Reservoir.

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

AVERAGE DISCHARGE (ACTUAL FLOW).--55 years, 102 ft³/s, 73,900 acre-ft/yr.
(NATURAL FLOW).--55 years, 106 ft³/s, 76,800 acre-ft/yr.

EXTREMES (ACTUAL FLOW) FOR PERIOD OF RECORD (SINCE 1970).--Maximum daily discharge, 1,070 ft³/s, Sept. 26, 1982; minimum daily, 32 ft³/s, Dec. 19, 1977.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	92	53	42	42	43	43	52	91	91	82	81	80
2	91	47	41	42	43	45	53	93	91	85	81	81
3	91	47	41	42	43	52	49	93	91	86	82	81
4	92	47	42	41	43	53	e54	94	92	84	82	80
5	90	46	43	39	43	53	55	94	90	83	81	80
6	93	47	44	38	43	51	57	94	92	83	81	81
7	87	47	43	39	43	50	57	93	91	83	81	81
8	87	47	46	40	42	51	59	90	90	83	81	80
9	88	47	43	43	43	51	58	92	92	82	81	76
10	89	45	42	42	42	51	59	92	94	93	82	80
11	90	46	42	41	42	50	59	92	90	81	81	79
12	89	46	42	41	42	51	55	91	88	82	82	80
13	88	45	42	44	42	51	62	89	91	82	80	80
14	87	46	43	47	44	51	78	91	93	81	81	81
15	88	46	43	45	41	51	76	90	91	85	81	81
16	81	46	42	43	41	52	71	90	93	87	81	82
17	70	44	41	43	40	51	73	91	90	92	82	81
18	76	45	43	43	41	53	74	90	90	88	81	81
19	77	43	43	43	42	55	74	90	90	85	83	81
20	70	43	43	43	42	54	75	91	90	83	81	81
21	69	41	39	43	42	55	71	89	90	81	82	81
22	69	45	42	43	42	54	71	91	84	82	80	81
23	69	44	41	43	42	57	71	91	85	82	82	83
24	69	42	43	43	41	57	73	93	85	82	81	80
25	69	42	42	43	45	57	73	91	84	82	79	81
26	68	43	42	43	43	59	70	90	83	81	81	77
27	68	44	43	43	43	54	71	90	83	81	81	75
28	69	44	41	43	43	50	73	91	84	81	81	76
29	71	41	42	43	---	46	80	91	83	81	81	74
30	68	40	42	43	---	50	80	90	82	81	81	66
31	64	---	43	43	---	48	---	90	---	81	81	---
TOTAL	2469	1349	1311	1314	1186	1606	1983	2828	2663	2585	2516	2381
MEAN	79.6	45.0	42.3	42.4	42.4	51.8	66.1	91.2	88.8	83.4	81.2	79.4
MAX	93	53	46	47	45	59	80	94	94	93	83	83
MIN	64	40	39	38	40	43	49	89	82	81	79	66
AC-FT	4900	2680	2600	2610	2350	3190	3930	5610	5280	5130	4990	4720
a	2800	2240	2030	2240	2040	2270	4050	6290	9050	7490	3740	2660

CAL YR 1989 TOTAL 27826 MEAN 76.2 MAX 117 MIN 39 AC-FT 55190 a 48130
WTR YR 1990 TOTAL 24191 MEAN 66.3 MAX 94 MIN 38 AC-FT 47980 a 46900

e Estimated.

a Computed "NATURAL FLOW", in acre-feet.

LOCATION.--Lat 37°58'46", long 119°08'11", in NW 1/4 sec.5, T.2 N., R.26 E., Mono County, Hydrologic Unit 18090101, on west bank 1 mi south of town of Mono Lake.

PERIOD OF RECORD.--June 1912 to current year. Records prior to September 1934, published in WSP 765.

GAGE.--Nonrecording gage or reference point. Gage readings have been reduced to elevations above National Geodetic Vertical Datum of 1929. Gage heights prior to October 1944 are converted to elevations above NGVD in WSP 1314.

REMARKS.--Since 1941 water is diverted out of Mono Lake basin via Mono tunnel, capacity, 200 ft³/s.

COOPERATION.--Elevations were provided by city of Los Angeles, Department of Water and Power.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation observed, 6,428.1 ft, July 18, 1919, present datum; minimum observed, 6,372.00 ft, Dec. 17, 30, 1981.

ELEVATION, IN FEET, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	6376.00	---	---	---	---
2	---	---	---	6375.40	---	---	---	---	---	---	---	---
3	6375.40	---	---	---	---	---	6376.00	---	---	6375.80	---	---
4	---	---	6375.30	6375.40	---	---	---	---	6375.90	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	6375.40
6	---	---	---	---	6375.60	6375.80	---	---	---	---	6375.70	---
7	---	6375.30	---	---	---	---	---	6376.00	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	6375.40	---	---	6376.00	---	---	6375.80	---	---
10	6375.40	---	---	---	---	---	---	---	---	---	---	6375.30
11	---	---	6375.30	---	---	---	---	---	6375.90	---	---	---
12	---	---	---	---	---	6375.90	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	6375.60	---
14	---	6375.30	---	---	---	---	---	6376.00	---	---	---	---
15	---	---	---	---	6375.60	---	---	---	---	---	---	---
16	6375.40	---	---	6375.50	---	---	6376.00	---	---	6375.80	---	---
17	---	---	---	---	---	---	---	---	---	---	---	6375.20
18	---	---	6375.30	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	6375.90	---	---	6375.90	---	---	---
20	---	---	---	---	---	---	---	---	---	---	6375.60	---
21	---	---	---	---	6375.70	---	---	6376.00	---	---	---	---
22	---	6375.30	---	6375.60	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	6376.00	---	---	6375.80	---	---
24	---	---	---	---	---	---	---	---	---	---	---	6375.20
25	---	---	---	---	---	---	---	---	6375.90	---	---	---
26	6375.30	---	6375.40	---	---	---	---	---	---	---	---	---
27	---	6375.30	---	---	6375.80	6376.00	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	6375.40	---
29	---	---	---	---	---	---	---	6376.00	---	---	---	---
30	6375.30	---	---	---	---	---	---	---	---	6375.80	---	---
31	---	---	---	6375.60	---	---	---	---	---	---	---	---

10287070 MILL CREEK BELOW LUNDY LAKE, NEAR MONO LAKE, CA

LOCATION.--Lat 38°01'58", long 119°12'53", in SE 1/4 NE 1/4 sec.16, T.2 N., R.25 E., Mono County, Hydrologic Unit 18090101, Inyo National Forest, at road crossing 1,500 ft downstream from Lundy Lake Dam, and 4.9 mi northwest of Mono Lake Post Office.

DRAINAGE AREA.--18.1 mi².

PERIOD OF RECORD.--October 1942 to current year. Monthly and yearly mean discharges prior to October 1969, published in WSP 2127.

GAGE.--Water-stage recorder and Parshall flume on creek. Elevation of gage is 7,760 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated for power development by Lundy Lake, capacity, 3,820 acre-ft. Records for "ACTUAL FLOW" include Mill Creek, Lundy powerplant tailrace, and Upper Conway ditch. Records for "NATURAL FLOW" are computed as the "ACTUAL FLOW" plus change in contents and evaporation for Lundy Lake.

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

AVERAGE DISCHARGE (ACTUAL FLOW).--49 years, 28.8 ft³/s, 20,870 acre-ft/yr.
(NATURAL FLOW).--49 years, 30.0 ft³/s, 21,740 acre-ft/yr.

EXTREMES (ACTUAL FLOW) FOR PERIOD OF RECORD (SINCE 1970).--Maximum daily discharge, 229 ft³/s, June 22, 1983; no flow for many days in 1971 and 1974.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	8.6	8.3	6.5	6.4	8.9	11	28	14	34	17	9.8
2	9.0	8.6	8.3	6.5	6.5	11	11	28	14	31	17	9.9
3	9.1	8.6	8.3	6.5	6.5	11	11	28	14	30	17	9.9
4	9.1	8.3	8.3	6.5	6.5	11	11	28	17	29	17	10
5	9.1	8.1	8.3	6.7	6.5	11	11	28	19	28	17	10
6	9.2	8.2	8.3	6.9	6.5	11	12	28	19	27	17	10
7	9.2	8.3	8.0	6.3	6.4	11	12	28	22	25	16	10
8	9.2	8.3	7.9	6.0	6.4	11	12	28	24	23	15	10
9	9.2	8.3	7.8	6.4	6.4	11	12	28	24	24	15	10
10	9.2	8.3	7.7	6.4	6.4	11	12	28	24	24	14	10
11	9.2	8.3	7.7	6.4	6.4	11	12	28	30	23	14	10
12	9.1	8.3	7.7	6.4	6.4	11	12	28	33	21	14	10
13	8.8	8.3	7.7	6.4	6.3	11	22	28	32	19	14	10
14	8.8	8.3	7.6	6.4	6.2	11	30	25	31	19	14	10
15	9.0	8.3	7.5	6.4	6.2	11	30	23	32	19	14	10
16	9.0	8.3	7.4	6.4	6.2	11	29	23	32	19	14	10
17	9.8	8.3	7.2	6.4	6.2	11	29	23	31	19	14	10
18	10	8.3	7.0	6.4	6.3	11	29	23	31	19	14	9.6
19	11	8.3	6.8	6.4	6.4	11	29	22	31	18	14	9.7
20	8.6	8.3	6.7	6.4	6.4	11	28	22	31	17	15	7.9
21	8.6	8.3	6.7	6.4	6.5	11	29	22	25	17	15	6.2
22	8.6	8.3	6.7	6.4	6.5	11	29	21	22	17	15	6.2
23	8.6	8.3	6.7	6.4	6.5	11	28	21	22	17	12	6.2
24	8.6	8.3	6.7	6.4	6.5	11	28	21	22	17	10	6.4
25	8.6	8.3	6.7	6.4	6.5	11	28	22	28	17	10	6.2
26	8.6	8.3	6.7	6.4	6.4	11	28	21	33	17	10	6.1
27	8.6	8.3	6.7	6.4	6.4	11	28	22	32	17	11	6.1
28	8.6	8.3	6.7	6.4	6.4	11	28	22	32	17	12	5.7
29	8.6	8.3	6.6	6.4	---	13	28	22	32	17	12	5.5
30	8.6	8.3	6.5	6.4	---	11	28	22	33	17	11	5.5
31	8.6	---	6.5	6.4	---	11	---	17	---	18	9.8	---
TOTAL	279.2	249.6	227.7	199.1	179.2	340.9	647	758	786	656	430.8	256.9
MEAN	9.01	8.32	7.35	6.42	6.40	11.0	21.6	24.5	26.2	21.2	13.9	8.56
MAX	11	8.6	8.3	6.9	6.5	13	30	28	33	34	17	10
MIN	8.6	8.1	6.5	6.0	6.2	8.9	11	17	14	17	9.8	5.5
AC-FT	554	495	452	395	355	676	1280	1500	1560	1300	854	510
a	570	471	439	371	364	472	805	1410	2080	1300	639	422

CAL YR 1989 TOTAL 7518.0 MEAN 20.6 MAX 68 MIN 5.4 AC-FT 14910 a 15490
WTR YR 1990 TOTAL 5010.4 MEAN 13.7 MAX 34 MIN 5.5 AC-FT 9940 a 9340

a Computed "NATURAL FLOW", in acre-feet.

MONO LAKE BASIN

10287290 RUSH CREEK BELOW AGNEW LAKE, NEAR JUNE LAKE, CA

LOCATION.--Lat 37°45'32", long 119°07'47", in NE 1/4 SW 1/4 sec.20, T.2 S., R.26 E., Mono County, Hydrologic Unit 18090101, Inyo National Forest, 500 ft downstream from Agnew Lake Dam, and 3.4 mi southwest of town of June Lake.

DRAINAGE AREA.--23.3 mi².

PERIOD OF RECORD.--October 1951 to current year. Monthly and yearly mean discharges prior to October 1969, published in WSP 2127.

GAGE.--Water-stage recorder and Parshall flume on creek. Elevation of gage is 8,480 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Flow regulated for power development by Waugh, Gem, and Agnew Lakes, combined capacity, 23,420 acre-ft, and Rush Creek powerplant. "ACTUAL FLOW" is total flow of Rush Creek below Agnew Lake and Rush Creek powerplant tailrace. "NATURAL FLOW" is the sum of "ACTUAL FLOW," change in contents, and evaporation for Waugh, Gem, and Agnew Lakes.

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

AVERAGE DISCHARGE (ACTUAL FLOW).--39 years, 55.6 ft³/s, 40,280 acre-ft/yr.
(NATURAL FLOW).--39 years, 59.6 ft³/s, 43,180 acre-ft/yr.

EXTREMES (ACTUAL FLOW) FOR PERIOD OF RECORD (SINCE 1970).--Maximum daily discharge, 421 ft³/s, July 15, 1978; minimum daily, 0.90 ft³/s, Aug. 31 to Sept. 2, 1976.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33	41	31	42	41	26	89	32	31	31	35	35
2	32	54	32	42	42	26	89	32	32	32	35	35
3	24	52	32	42	43	26	89	32	33	31	34	33
4	29	36	18	43	43	26	89	31	31	34	33	33
5	24	33	10	42	43	26	90	31	33	24	34	33
6	34	31	10	41	42	36	84	31	31	24	34	33
7	31	30	10	40	43	42	87	31	32	34	33	38
8	31	31	10	40	43	31	78	31	32	34	34	33
9	31	30	10	41	42	41	68	23	31	25	34	34
10	31	30	10	41	42	41	91	14	31	44	32	33
11	31	30	10	41	42	41	90	28	31	35	36	33
12	31	30	10	42	42	42	90	31	31	35	33	e33
13	31	30	10	42	42	42	90	32	31	35	34	e33
14	31	30	10	43	42	41	86	32	31	34	29	e34
15	31	30	10	42	42	32	91	32	31	34	29	35
16	31	32	10	41	42	40	46	32	31	34	29	35
17	31	29	18	41	42	40	31	31	31	28	27	34
18	31	30	42	42	42	41	36	31	31	28	34	34
19	31	30	41	42	42	70	33	31	31	35	34	34
20	31	30	41	42	42	86	40	31	31	35	34	34
21	31	29	41	41	41	85	31	30	31	35	35	34
22	31	31	45	41	41	88	31	26	31	35	28	33
23	33	31	42	41	41	88	31	31	31	35	29	33
24	37	30	42	41	41	87	31	31	31	35	30	33
25	37	32	43	41	41	87	31	31	31	34	34	34
26	37	31	43	41	32	82	31	31	31	34	33	34
27	37	31	43	41	25	89	30	31	31	34	28	34
28	37	32	43	41	25	89	31	31	31	34	28	34
29	32	31	43	42	---	79	31	31	31	34	34	35
30	31	31	43	42	---	76	31	31	31	34	35	35
31	37	---	42	42	---	89	---	31	---	34	35	---
TOTAL	990	978	845	1286	1131	1735	1796	934	937	1024	1006	1018
MEAN	31.9	32.6	27.3	41.5	40.4	56.0	59.9	30.1	31.2	33.0	32.5	33.9
MAX	37	54	45	43	43	89	91	32	33	44	36	38
MIN	24	29	10	40	25	26	30	14	31	24	27	33
AC-FT	1960	1940	1680	2550	2240	3440	3560	1850	1860	2030	2000	2020
a	607	522	299	327	362	788	4341	6160	6075	3568	575	106

CAL YR 1989 TOTAL 15019.6 MEAN 41.1 MAX 92 MIN 9.4 AC-FT 29790 a 30740
WTR YR 1990 TOTAL 13680 MEAN 37.5 MAX 91 MIN 10 AC-FT 27130 a 23730

e Estimated.

a Computed "NATURAL FLOW", in acre-feet.

PACIFIC SLOPE BASINS IN CALIFORNIA

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TIJUANA RIVER BASIN

11011000 BARRETT LAKE NEAR DULZURA, CA

LOCATION.--Lat 32°30'46", long 116°40'11", in NW 1/4 NW 1/4 sec.22, T.17 S., R.3 E., San Diego County, Hydrologic Unit 18070305, on Barrett Dam outlet tower, 7.2 mi downstream from Morena Reservoir, and 7.0 mi northeast of Dulzura.

DRAINAGE AREA.--245 mi².

PERIOD OF RECORD.--October 1960 to September 1966 (monthend contents only, published in WSP 1928), published as Cottonwood Creek at Barrett Dam. October 1986 to current year (October 1986 to June 1988, monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by city of San Diego). Prior to July 6, 1988, nonrecording gage. Prior to September 1966, at datum 1,446.12 ft higher.

REMARKS.--Reservoir is formed by gravity-concrete and masonry dam built in 1922. Total capacity at top of flash gates on spillway, 44,760 acre-ft, elevation, 1,615.00 ft. Capacity at permanent spillway level, 37,950 acre-ft, elevation, 1,607.00 ft. Dead storage below lowest outlet, 719 acre-ft, elevation, 1,505.00 ft. Water from Barrett Lake is diverted out of basin to Lower Otay Lake (station 11014550) by Dulzura conduit for municipal use.

COOPERATION.--Reservoir daily elevations for period July 25 to Aug. 28 were provided by city of San Diego.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 22,110 acre-ft, Oct. 1, 1986, elevation, 1,584.38 ft; minimum, 4,710 acre-ft, Nov. 22, 1988, elevation, 1,538.84 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 11,400 acre-ft, Apr. 10, elevation, 1,562.02 ft; minimum, 5,490 acre-ft, Sept. 30, elevation, 1,542.49 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table dated Mar. 27, 1956)

1,530	3,140	1,560	10,600	1,590	25,600
1,540	4,960	1,570	14,600	1,600	32,500
1,550	7,420	1,580	19,600	1,615	44,800

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9980	9040	7790	6560	6690	6780	11300	10500	9250	8120	7370	6570
2	9980	8990	7760	6590	6690	6780	11300	10500	9210	8070	7330	6530
3	9970	8940	7740	6590	6690	6780	11300	10500	9170	8030	7300	6500
4	9970	8900	7710	6590	6700	6790	11400	10400	9110	7990	7260	6460
5	9980	8850	7670	6590	6700	6790	11400	10400	9070	7970	7220	6420
6	9900	8800	7620	6590	6700	6790	11400	10300	9020	7960	7180	6380
7	9870	8760	7570	6600	6710	6790	11400	10300	8980	7940	7150	6340
8	9860	8710	7510	6600	6710	6790	11400	10200	8940	7900	7110	6300
9	9860	8670	7460	6600	6710	6840	11400	10200	8900	7860	7070	6260
10	9860	8630	7400	6610	6710	7200	11300	10100	8870	7830	7040	6220
11	9860	8590	7360	6610	6710	7520	11300	10100	8830	7790	7000	6180
12	9860	8540	7340	6610	6720	7790	11300	10100	8790	7750	6960	6150
13	9850	8500	7330	6610	6720	8080	11200	10000	8740	7710	6930	6110
14	9850	8450	7290	6630	6710	8370	11200	9980	8700	7670	6890	6080
15	9840	8400	7230	6630	6720	8650	11200	9940	8650	7620	6880	6040
16	9830	8350	7180	6640	6720	8940	11100	9900	8610	7590	6880	6010
17	9780	8300	7130	6670	6740	9240	11100	9850	8560	7570	6880	5970
18	9730	8250	7080	6670	6750	9520	11000	9820	8520	7570	6870	5930
19	9680	8200	7030	6670	6750	9800	11000	9770	8480	7550	6870	5890
20	9630	8140	6980	6670	6760	10100	11000	9740	8440	7550	6860	5850
21	9580	8090	6930	6670	6760	10300	10900	9700	8390	7550	6860	5810
22	9540	8040	6880	6680	6770	10600	10900	9660	8350	7550	6850	5770
23	9490	7990	6840	6670	6770	10700	10800	9620	8310	7560	6850	5730
24	9440	7940	6790	6680	6770	10900	10800	9580	8260	7560	6850	5690
25	9390	7890	6750	6670	6770	11000	10800	9540	8220	7540	6830	5650
26	e9370	7850	6700	6670	6770	11200	10700	9490	8190	7540	6810	5630
27	e9320	7820	6660	6670	6780	11300	10700	9440	8180	7530	6780	5590
28	e9270	7830	6620	6670	6780	11300	10600	9420	8160	7520	6750	5560
29	e9220	7820	6570	6670	---	11300	10600	9380	8150	7480	6670	5520
30	e9170	7810	6560	6670	---	11300	10600	9340	8150	7450	6640	5490
31	9090	---	6560	6690	---	11300	---	9290	---	7410	6610	---
MAX	9980	9040	7790	6690	6780	11300	11400	10500	9250	8120	7370	6570
MIN	9090	7810	6560	6560	6690	6780	10600	9290	8150	7410	6610	5490
a	1555.57	1551.38	1546.83	1547.39	1547.63	1561.81	1559.88	1556.31	1552.50	1550.02	1547.04	1542.49
b	-910	-1280	-1250	+130	+90	+4520	-700	-1310	-1140	-740	-800	-1120

CAL YR 1989 MAX 15200 MIN 6320 b +280

WTR YR 1990 MAX 11400 MIN 5490 b -4510

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

TIJUANA RIVER BASIN

11012000 COTTONWOOD CREEK ABOVE TECATE CREEK, NEAR DULZURA, CA

LOCATION.--Lat 32°34'30", long 116°45'11", in NW 1/4 SW 1/4 sec.26, T.18 S., R.2 E., San Diego County, Hydrologic Unit 18070305, on right bank 0.8 mi upstream from confluence with Tecate Creek, 5.1 mi south of Dulzura, and 11.3 mi downstream from Barrett Lake.

DRAINAGE AREA.--310 mi².

PERIOD OF RECORD.--October 1936 to current year.

GAGE.--Water-stage recorder. Datum of gage is 569.40 ft above National Geodetic Vertical Datum of 1929 (levels by International Boundary and Water Commission).

REMARKS.--No estimated daily discharges. Records fair. Flow regulated by Morena Reservoir, capacity, 50,210 acre-ft, and Barrett Lake (station 11011000), capacity, 44,760 acre-ft. Water diverted from Barrett Lake through San Diego and Dulzura conduits to Lower Otay Lake (station 11014550).

AVERAGE DISCHARGE.--54 years, 13.9 ft³/s, 10,070 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s, Feb. 21, 1980, gage height, 11.15 ft, from rating curve extended above 8,700 ft³/s; no flow for part of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.26 ft³/s, Mar. 11, gage height, 3.04 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.03	.01	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.02	.02	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.02	.01	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.16	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.11	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.02	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.02	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.01	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.14	0.75	0.04	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.005	.024	.001	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.06	.16	.02	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.3	1.5	.08	.00	.00	.00	.00	.00

CAL YR 1989 TOTAL 25.72 MEAN .070 MAX 1.3 MIN .00 AC-FT 51
WTR YR 1990 TOTAL 0.93 MEAN .003 MAX .16 MIN .00 AC-FT 1.8

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LOCATION.--Lat 32°35'28", long 116°31'29", in NE 1/4 SE 1/4 sec.24, T.18 S., R.4 E., San Diego County, Hydrologic Unit 18070305, on left bank just upstream from bridge on State Highway 94 and 3.5 mi southwest of Campo.

PERIOD OF RECORD.--October 1936 to current year.

GAGE.--Water-stage recorder and broad-crested weir. Datum of gage is 2,178.92 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 1, 1954, at datum 1 ft higher.

REMARKS.--No estimated daily discharges. Records fair. Peaks are attenuated by small conservation reservoir 1 mi upstream since August 1956. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 895 ft³/s, Mar. 24, 1983, gage height, 5.39 ft, from rating curve extended above 340 ft³/s; no flow for part of most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.92 ft³/s, Jan. 14, gage height, 1.47 ft; no flow for many days.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.06	.23	.23	.21	.16	.18	.12	.03	.00	.00	.00
2	.00	.06	.23	.31	.16	.17	.13	.11	.03	.00	.00	.00
3	.00	.06	.23	.23	.14	.18	.13	.08	.02	.00	.00	.00
4	.00	.06	.24	.22	.21	.19	.15	.06	.02	.00	.00	.00
5	.00	.07	.24	.21	.19	.23	.17	.04	.01	.00	.00	.00
6	.00	.08	.26	.18	.16	.20	.16	.03	.01	.00	.00	.00
7	.00	.09	.27	.19	.15	.19	.14	.03	.01	.00	.00	.00
8	.00	.09	.24	.20	.18	.20	.13	.02	.01	.00	.00	.00
9	.00	.07	.22	.20	.16	.21	.13	.02	.01	.00	.00	.00
10	.00	.07	.22	.18	.15	.23	.11	.02	.01	.00	.00	.00
11	.00	.08	.22	.18	.14	.32	.10	.06	.02	.00	.00	.00
12	.00	.08	.22	.18	.14	.25	.09	.06	.01	.00	.00	.00
13	.00	.09	.24	.18	.15	.24	.09	.04	.01	.00	.00	.00
14	.00	.10	.23	.31	.17	.20	.10	.04	.01	.00	.00	.00
15	.00	.09	.25	.20	.17	.19	.10	.04	.01	.00	.00	.00
16	.01	.10	.26	.22	.17	.17	.13	.03	.00	.00	.00	.00
17	.02	.10	.27	.36	.22	.19	.18	.03	.00	.00	.00	.00
18	.02	.10	.27	.25	.35	.18	.23	.03	.00	.00	.00	.00
19	.01	.11	.25	.21	.24	.17	.19	.03	.00	.00	.00	.00
20	.03	.12	.25	.18	.17	.18	.19	.04	.00	.00	.00	.00
21	.06	.14	.25	.17	.15	.17	.20	.05	.00	.00	.00	.00
22	.07	.16	.22	.16	.14	.17	.21	.04	.00	.00	.00	.00
23	.07	.17	.21	.17	.14	.17	.26	.04	.00	.00	.00	.00
24	.07	.20	.19	.14	.13	.16	.39	.04	.00	.00	.00	.00
25	.09	.22	.20	.13	.13	.15	.24	.04	.00	.00	.00	.00
26	.08	.24	.21	.14	.14	.14	.20	.04	.00	.00	.00	.00
27	.07	.23	.22	.14	.15	.15	.15	.04	.00	.00	.00	.00
28	.07	.20	.24	.13	.15	.22	.11	.06	.00	.00	.00	.00
29	.06	.20	.26	.14	---	.22	.11	.06	.00	.00	.00	.00
30	.06	.21	.24	.15	---	.17	.11	.04	.00	.00	.00	.00
31	.06	---	.22	.31	---	.21	---	.04	---	.00	.00	---
TOTAL	0.85	3.65	7.30	6.20	4.76	5.98	4.81	1.42	0.22	0.00	0.00	0.00
MEAN	.027	.12	.24	.20	.17	.19	.16	.046	.007	.000	.000	.000
MAX	.09	.24	.27	.36	.35	.32	.39	.12	.03	.00	.00	.00
MIN	.00	.06	.19	.13	.13	.14	.09	.02	.00	.00	.00	.00
AC-FT	1.7	7.2	14	12	9.4	12	9.5	2.8	.4	.00	.00	.00
CAL YR 1989	TOTAL 71.16		MEAN .19	MAX 2.9	MIN .00	AC-FT 141						
WTR YR 1990	TOTAL 35.19		MEAN .096	MAX .39	MIN .00	AC-FT 70						

TIJUANA RIVER BASIN

11013000 TIJUANA RIVER NEAR DULZURA, CA

LOCATION.--Lat 32°33'56", long 116°46'27", in E 1/2 sec.33, T.18 S., R.2 E., San Diego County, Hydrologic Unit 18070305, on left bank 0.5 mi downstream from confluence of Cottonwood and Tecate Creeks, 5.5 mi south of Dulzura, and 12.8 mi downstream from Barrett Lake.

DRAINAGE AREA.--481 mi², of which 70 mi² are in Mexico.

PERIOD OF RECORD.--October 1936 to September 1990 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 542.42 ft above National Geodetic Vertical Datum of 1929 (levels by International Boundary and Water Commission). Prior to Sept. 19, 1939, at datum 2.00 ft higher.

REMARKS.--Records poor. Flow regulated by Morena Reservoir, capacity, 50,210 acre-ft and Barrett Lake (station 11011000). Water diverted from Barrett Lake through San Diego and Dulzura conduits to Lower Otay Lake (station 11014550).

AVERAGE DISCHARGE.--54 years, 23.9 ft³/s, 17,320 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft³/s, Mar. 3, 1983, gage height, 7.03 ft, from rating curve extended above 3,500 ft³/s; maximum gage height, 11.19 ft, Feb. 18, 1980; no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 31 ft³/s, Feb. 18, gage height, 2.32 ft; minimum daily, 0.67 ft³/s, June 30 to July 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.8	e1.9	2.2	e2.4	e3.0	e2.3	e2.4	e1.5	e1.1	e.67	e1.1	e1.2
2	e2.5	e1.9	1.8	e2.1	e2.5	e2.5	e2.4	e1.6	e.93	e.67	e1.1	e1.2
3	e2.3	e1.9	2.3	e2.2	e2.5	e2.6	e2.4	e1.4	e.91	e.67	e1.1	e1.2
4	e2.1	e1.9	1.9	e2.4	e2.7	e2.9	e2.3	e1.4	e.86	e.67	e1.1	e1.2
5	e2.0	e1.9	2.7	e2.3	e2.6	e3.1	e2.2	e1.4	e.83	e.68	e1.1	e1.2
6	e1.8	e1.9	3.0	e2.3	e2.4	e2.9	e2.1	e1.3	e.81	e.68	e1.1	e1.2
7	e1.8	e1.9	2.9	e2.5	e2.3	e2.8	e1.9	e1.3	e.78	e.69	e1.1	e1.2
8	e1.8	e1.9	2.5	e2.4	e2.1	e2.8	e1.7	e1.3	e.77	e.69	e1.1	e1.2
9	e1.8	e1.9	1.9	e2.3	e2.2	e2.9	e1.6	e1.5	e.76	e.70	e1.1	e1.2
10	e1.8	e1.9	3.2	e2.4	e2.2	e3.0	e1.5	e1.7	e.75	e.70	e1.1	e1.2
11	e1.8	e1.9	2.2	e2.3	e2.3	e4.4	e1.4	e1.5	e.75	e.72	e1.1	e1.2
12	e1.8	e1.9	2.7	e2.3	e2.4	e3.8	e1.3	e1.3	e.74	e.74	e1.1	e1.2
13	e1.8	e1.9	1.7	e2.8	e2.5	e3.4	e1.3	e1.2	e.73	e.76	e1.2	e1.2
14	e1.8	e1.9	1.6	e4.8	e2.6	e3.2	e1.4	e1.1	e.72	e.79	e1.2	e1.2
15	e1.8	e1.9	e1.9	e3.3	e2.4	e3.0	e1.6	e1.0	e.71	e.81	e1.2	e1.2
16	e1.8	e1.9	e2.1	e4.0	e2.6	e2.7	e1.9	e.90	e.71	e.84	e1.2	e1.2
17	e1.8	e1.9	e2.1	e5.8	e3.5	e2.6	e2.1	e.90	e.70	e.86	e1.2	e1.2
18	e1.8	e1.9	e2.1	e3.7	e5.0	e2.5	2.8	e.90	e.70	e.89	e1.2	e1.2
19	e1.9	e2.0	e2.1	e3.2	e3.2	e2.5	1.7	e1.0	e.70	e.91	e1.2	e1.2
20	e1.9	e2.0	e2.1	e3.0	e2.5	e2.4	2.0	e1.2	e.70	e.94	e1.2	e1.2
21	e2.5	e2.0	e2.1	e2.7	e2.0	e2.3	1.8	e1.3	e.69	e.97	e1.2	e1.2
22	e1.8	2.0	e2.2	e2.5	e1.9	e2.2	1.4	e1.1	e.68	e.99	e1.2	e1.2
23	e1.8	2.3	e2.2	e2.4	e1.9	e2.2	e2.0	e1.1	e.68	e1.0	e1.2	e1.2
24	e1.8	1.7	e2.2	e2.3	e1.9	e2.1	e3.5	e1.1	e.68	e1.1	e1.2	e1.2
25	e1.8	2.3	e2.2	e2.3	e1.9	e2.0	e2.1	e1.1	e.68	e1.1	e1.2	e1.2
26	e1.8	2.8	e2.2	e2.3	e1.9	e2.3	e1.9	e1.2	e.68	e1.1	e1.2	e1.2
27	e1.8	1.3	e2.2	e2.3	e2.1	e3.0	e1.8	e1.7	e.68	e1.1	e1.2	e1.2
28	e1.8	2.0	e2.6	e2.3	e2.2	e2.9	e1.7	e2.0	e.68	e1.1	e1.2	e1.2
29	e1.8	2.3	e2.4	e2.4	---	e2.6	e1.6	e1.4	e.68	e1.1	e1.2	e1.2
30	e1.8	2.5	e2.2	e2.5	---	e2.5	e1.5	e1.3	e.67	e1.1	e1.2	e1.2
31	e1.8	---	e2.2	e5.0	---	e2.5	---	e1.2	---	e1.1	e1.2	---
TOTAL	59.4	59.4	69.7	87.5	69.3	84.9	57.3	39.90	22.46	26.84	36.0	36.0
MEAN	1.92	1.98	2.25	2.82	2.47	2.74	1.91	1.29	.75	.87	1.16	1.20
MAX	2.8	2.8	3.2	5.8	5.0	4.4	3.5	2.0	1.1	1.1	1.2	1.2
MIN	1.8	1.3	1.6	2.1	1.9	2.0	1.3	.90	.67	.67	1.1	1.2
AC-FT	118	118	138	174	137	168	114	79	45	53	71	71

CAL YR 1989 TOTAL 907.65 MEAN 2.49 MAX 27 MIN .59 AC-FT 1800
WTR YR 1990 TOTAL 648.70 MEAN 1.78 MAX 5.8 MIN .67 AC-FT 1290

e Estimated.

11013200 RODRIGUEZ RESERVOIR AT RODRIGUEZ DAM, BAJA CALIFORNIA, MEXICO

LOCATION.--Lat 32°26'40", long 116°54'25", Baja California, Mexico, Hydrologic Unit 18070305, at Rodriguez Dam on Rio de las Palmas, 0.2 mi upstream from Arroyo Matanuco, and 10 mi southeast of Tijuana.

DRAINAGE AREA.--977 mi², of which 10 mi² are in the United States.

PERIOD OF RECORD.--April 1937 to current year. Published with Tijuana River near Nestor (station 11013500), October 1953 to September 1957. Monthend contents for April 1937 to September 1950 published in WSP 1315-B and for October 1950 to September 1960 in WSP 1735.

REVISED RECORDS.--WSP 1928: Drainage area.

GAGE.--Nonrecording gage read once daily. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by National Irrigation Commission, Mexico).

REMARKS.--Reservoir is formed by thin-shell concrete-arch dam completed in 1936; storage began in 1937. Capacity table is based on surveys made in 1927. Maximum capacity at crest of spillway gates, 111,070 acre-ft, elevation 410.10 ft; at spillway lip, 74,580 acre-ft, elevation, 380.08 ft; and at outlet, 1,650 acre-ft, elevation 267.39 ft, not usable. Reservoir stores water for irrigation of 3,000 acres on both banks 0.5 to 5.5 mi downstream and municipal supply for city of Tijuana. Since August 1972, Colorado River water diverted through Otay aqueduct into the reservoir for Tijuana emergency use; during May and June of the current year a total of 323 acre-ft was imported.

COOPERATION.--Records were provided by Ministry of Hydraulic Resources, Government of Mexico, through International Boundary and Water Commission, United States section.

EXTREMES FOR PERIOD OF RECORD.--Reservoir spilled during March 1938, September 1940, February to May 1941, March 1942, February and March 1944, January to July 1980, April 1983; reservoir dry Apr. 2, 1964, to Apr. 9, 1965, Aug. 21 to Nov. 22, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum monthend contents observed, 3,150 acre-ft, Oct. 31, Feb. 28; minimum monthend contents observed, 2,460 acre-ft, Sept. 30.

MONTHEND CONTENTS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

Date	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	3,220	--
Oct. 31.....	3,150	-70
Nov. 30.....	--	--
Dec. 31.....	3,080	--
CAL YR 1989.....	--	-810
Jan. 31.....	3,130	+50
Feb. 28.....	3,150	+20
Mar. 31.....	3,130	-20
Apr. 30.....	3,070	-60
May 31.....	2,980	-90
June 30.....	2,810	-170
July 31.....	2,720	-90
Aug. 31.....	2,590	-130
Sept. 30.....	2,460	-130
WTR YR 1990.....	--	-760

11014000 JAMUL CREEK NEAR JAMUL, CA

LOCATION.--Lat 32°38'15", long 116°53'00", in NW 1/4 NE 1/4 sec.4, T.18 S., R.1 E., San Diego County, Hydrologic Unit 18070304, on right bank 300 ft upstream from Otay Road crossing at upper end of Lower Otay Lake, 1.4 mi downstream from Dulzura Creek, and 5.5 mi south of Jamul.

DRAINAGE AREA.--70.2 mi².

PERIOD OF RECORD.--April 1940 to September 1978, October 1985 to current year.

REVISED RECORDS.--WDR CA-73-1: Drainage area.

GAGE.--Water-stage recorder and broad-crested weir control with low-water venturi-type flume. Datum of gage is 511.64 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1951, at datum 1.00 ft higher.

REMARKS.--Records good except for discharges below 0.5 ft³/s, which are fair. No regulation upstream from station. Water is diverted from Cottonwood Creek at Barrett Lake (station 11011000) via San Diego and Dulzura conduit into Dulzura Creek, a tributary to Jamul Creek, and is included in discharge for this station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,000 ft³/s, Dec. 1, 1947, gage height, 6.42 ft, present datum, from rating curve extended above 1,200 ft³/s; no flow for many days most years.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 18	0330	*25	1.94	May 24	1500	(a)	*2.09

(a) Backwater from swimmer's dam.

Minimum daily, 0.13 ft³/s, Apr. 8.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	20	2.1	3.6	1.1	.19	.67	18	20	6.5	10	13
2	2.0	20	8.4	4.0	1.0	.15	.33	18	19	12	11	13
3	1.6	20	10	2.5	1.0	.17	.26	18	18	14	12	13
4	1.3	20	11	2.0	1.1	.19	.57	18	17	14	12	13
5	1.1	20	13	1.7	1.0	.21	.17	17	17	14	12	13
6	5.3	20	22	1.5	.96	.19	.15	16	17	4.3	12	13
7	17	21	23	1.4	.64	.20	.14	16	17	4.2	12	13
8	6.3	21	23	1.3	.58	.19	.13	16	17	10	12	13
9	2.0	20	24	1.3	.58	.19	.15	16	17	12	12	13
10	1.3	20	24	1.3	.34	.17	.20	17	19	15	12	12
11	1.0	20	24	1.1	.32	.41	.20	17	18	15	12	13
12	.84	20	12	1.1	.32	.23	4.0	17	18	15	12	12
13	.84	20	9.7	1.1	.28	.19	9.0	16	18	16	12	12
14	.72	20	12	1.3	.25	.19	12	16	18	15	12	12
15	.58	20	23	1.2	.25	.19	14	17	18	15	5.8	12
16	.52	23	24	1.4	.25	.16	15	17	20	15	1.6	12
17	4.8	24	24	5.9	.35	.16	16	17	20	5.4	1.0	12
18	14	24	24	3.4	2.3	.21	17	17	19	2.5	e.80	14
19	17	24	24	2.1	.99	.25	17	17	19	e1.1	e.80	15
20	19	24	24	1.7	.46	.27	17	17	19	e1.0	e.30	15
21	20	24	24	1.4	.27	.32	17	17	19	e.80	e.20	15
22	20	24	24	1.3	.24	.35	16	17	18	e.80	e.20	15
23	20	24	23	1.2	.19	.39	17	17	18	e.60	e.20	15
24	21	24	23	1.1	.19	.41	17	17	17	e.60	e.20	15
25	21	24	23	1.0	.22	.44	17	17	16	e.30	e.20	15
26	21	24	23	1.0	.25	.58	17	18	15	e.30	e1.9	15
27	21	24	23	.86	.22	.74	17	19	4.4	e.30	3.9	15
28	21	7.8	23	.84	.19	.96	17	20	2.1	e.30	7.0	15
29	21	3.4	23	.65	---	1.1	17	19	1.3	e2.2	8.3	15
30	21	2.3	20	.58	---	.91	17	19	.91	5.4	9.2	14
31	21	---	6.3	1.3	---	.76	---	20	---	8.3	12	---
TOTAL	327.90	602.5	596.5	52.13	15.84	11.07	292.97	538	476.71	226.90	218.60	407
MEAN	10.6	20.1	19.2	1.68	.57	.36	9.77	17.4	15.9	7.32	7.05	13.6
MAX	21	24	24	5.9	2.3	1.1	17	20	20	16	12	15
MIN	.52	2.3	2.1	.58	.19	.15	.13	16	.91	.30	.20	12
AC-FT	650	1200	1180	103	31	22	581	1070	946	450	434	807

CAL YR 1989 TOTAL 6645.12 MEAN 18.2 MAX 31 MIN .32 AC-FT 13180
WTR YR 1990 TOTAL 3766.12 MEAN 10.3 MAX 24 MIN .13 AC-FT 7470

e Estimated.

11014550 LOWER OTAY LAKE NEAR CHULA VISTA, CA

LOCATION.--Lat 32°36'33", long 116°55'38", in NE 1/4 NE 1/4 sec.13, T.18 S., R.1 E., San Diego County, Hydrologic Unit 18070304, on right bank, 30 ft west of right end of Savage Dam on Otay River, and 9.0 mi east of Chula Vista.

DRAINAGE AREA.--99.0 mi².

PERIOD OF RECORD.--October 1945 to September 1959 (published with Otay River at Savage Dam, station 11014500), October 1972 to current year. Prior to October 1987 monthend contents only. Monthend gage heights October 1936 to September 1945, in files of San Diego County Department of Sanitation and Flood Control.

REVISED RECORD.--WDR CA-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by county of San Diego). October 1972 to current year, supplementary water-stage recorder for flood warning only, on right bank 30 ft upstream from dam at datum 397.20 ft higher.

REMARKS.--Reservoir is formed by gravity section concrete and masonry dam, built in 1919. Maximum capacity at top of spillway gates, 56,520 acre-ft, elevation, 490.70 ft. Capacity at permanent spillway level, 49,510 acre-ft, elevation, 484.70 ft. Dead storage below lowest outlet, 1,150 acre-ft, elevation, 395.05 ft. Dulzura conduit carries water from Barrett Lake (station 11011000) to Dulzura Creek, where water is carried to the reservoir by Jamul Creek (station 11014000). Reservoir storage includes supplemental Colorado River water. Small diversions for local use near reservoir. Water used for municipal supply by city of San Diego.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 51,860 acre-ft, spilling, Mar. 3, 1983, elevation, 486.78 ft; minimum observed, 3,160 acre-ft, Dec. 31, 1951, elevation, 407.56 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 41,170 acre-ft, June 25, 26, elevation, 476.65 ft; minimum, 38,030 acre-ft, Apr. 12, 13, 15, elevation, 473.30 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey dated Apr. 3, 1956)

430	10,090	445	17,340	470	35,100
435	12,250	450	20,280	480	44,500
440	14,460	460	27,060	489	54,460

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40440	40570	40100	39750	39450	39050	38120	38380	39840	41010	40180	40020
2	40420	40530	40030	39810	39430	39010	38130	38440	39900	41000	40170	39990
3	40390	40510	39990	39760	39440	38980	38100	38500	39940	40990	40160	39940
4	40370	40480	39930	39680	39440	38950	38100	38540	39950	40990	40150	39900
5	40350	40470	39920	39630	39430	38930	38100	38590	39980	41010	40140	39850
6	40330	40460	39920	39650	39420	38900	38080	38580	40020	41010	40110	39810
7	40360	40450	39950	39650	39420	38880	38080	38580	40050	41000	40110	39740
8	40350	40430	39950	39640	39420	38830	38090	38620	40080	41040	40110	39710
9	40320	40410	39940	39610	39410	38790	38060	38650	40160	41050	40110	39660
10	40280	40370	39900	39560	39390	38770	38060	38700	40330	41040	40100	39610
11	40260	40350	39880	39510	39350	38750	38050	38770	40440	41020	40100	39550
12	40250	40330	39840	39480	39330	38770	38030	38840	40530	41020	40090	39510
13	40210	40280	39800	39480	39270	38750	38030	38920	40610	40990	40080	39460
14	40210	40270	39770	39510	39240	38750	38040	38960	40660	40950	40050	39430
15	40200	40250	39740	39530	39200	38730	38030	39020	40710	40950	40100	39390
16	40180	40250	39740	39590	39150	38690	38040	39060	40780	40940	40150	39360
17	40160	40230	39730	39670	39160	38620	38070	39080	40840	40900	40150	39320
18	40180	40250	39710	39650	39160	38580	38090	39130	40910	40850	40160	39290
19	40190	40240	39700	39650	39150	38520	38120	39150	40970	40800	40180	39340
20	40210	40220	39710	39660	39130	38520	38140	39220	41020	40720	40180	39370
21	40260	40210	39690	39670	39110	38510	38150	39260	41050	40670	40170	39430
22	40320	40220	39690	39660	39130	38490	38180	39290	41080	40640	40160	39440
23	40350	40210	39690	39650	39160	38430	38210	39310	41120	40610	40150	39470
24	40390	40220	39670	39630	39140	38390	38260	39340	41150	40530	40150	39480
25	40450	40240	39660	39610	39120	38360	38270	39370	41170	40480	40160	39460
26	40480	40250	39670	39570	39110	38300	38290	39420	41150	40420	40160	39480
27	40510	40260	39670	39540	39090	38240	38320	39480	41090	40380	40170	39490
28	40540	40240	39710	39470	39080	38210	38310	39550	41040	40330	40180	39500
29	40580	40190	39710	39420	---	38180	38320	39630	40990	40300	40150	39430
30	40600	40140	39740	39410	---	38180	38340	39700	41010	40260	40120	39370
31	40560	---	39750	39450	---	38150	---	39770	---	40210	40060	---
MAX	40600	40570	40100	39810	39450	39050	38340	39770	41170	41050	40180	40020
MIN	40160	40140	39660	39410	39080	38150	38030	38380	39840	40210	40050	39290
a	476.01	475.56	475.15	474.83	474.43	473.44	473.64	475.17	476.48	475.64	475.48	474.74
b	+100	-420	-390	-300	-370	-930	+190	+1430	+1240	-800	-150	-690
CAL YR 1989	MAX 41320	MIN 39620	b -230									
WTR YR 1990	MAX 41170	MIN 38030	b -1090									

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

SWEETWATER RIVER BASIN

11015000 SWEETWATER RIVER NEAR DESCANSO, CA

LOCATION.--Lat 32°50'05", long 116°37'20", in NW 1/4 SE 1/4 sec.25, T.15 S., R.3 E., San Diego County, Hydrologic Unit 18070304, near right bank at Los Terrenitos Road bridge, 0.7 mi downstream from unnamed tributary, and 1.3 mi south of Descanso.

DRAINAGE AREA.--45.4 mi².

PERIOD OF RECORD.--October 1905 to September 1927 (monthly discharge only for some months, published in WSP 1315-B), October 1956 to current year. Prior to October 1927, records unadjusted for diversion. October 1956 to September 1977, both unadjusted records and combined records of river plus diversion (station 11015001) were published. No diversion since November 1976.

REVISED RECORD.--WSP 1315-B: 1922(M). WDR CA-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,269.24 ft above National Geodetic Vertical Datum of 1929. Prior to June 25, 1927, nonrecording gages at several sites and datums, upstream about 0.1 mi. Diversion gage at site 0.3 mi upstream, October 1956 to September 1984, at different datum.

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

AVERAGE DISCHARGE.--34 years (water years 1957-90), 8.35 ft³/s, 6,050 acre-ft/yr, adjusted for periods of diversion.

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 11,200 ft³/s, Feb. 16, 1927, gage height, 13.2 ft, from floodmarks, site and datum then in use, on basis of slope-area measurement of peak flow; no flow many days in most years.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 18	1945	*5.2	*4.59				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.15	.15	.28	.14	.05	.00	.00	.00
2	.00	.00	.00	.00	.09	.15	.27	.14	.04	.00	.00	.00
3	.00	.00	.00	.00	.08	.15	.24	.12	.03	.00	.00	.00
4	.00	.00	.00	.00	.20	.15	.33	.11	.02	.00	.00	.00
5	.00	.00	.00	.00	.15	.19	.27	.10	.01	.00	.00	.00
6	.00	.00	.00	.00	.10	.16	.27	.08	.00	.00	.00	.00
7	.00	.00	.00	.00	.10	.13	.24	.08	.00	.00	.00	.00
8	.00	.00	.00	.00	.12	.11	.22	.07	.00	.00	.00	.00
9	.00	.00	.00	.00	.10	.11	.21	.07	.07	.00	.00	.00
10	.00	.00	.00	.00	.09	.12	.18	.08	.08	.00	.00	.00
11	.00	.00	.00	.00	.08	.48	.17	.10	.05	.00	.00	.00
12	.00	.00	.00	.00	.08	.26	.17	.09	.03	.00	.00	.00
13	.00	.00	.00	.00	.07	.26	.15	.07	.03	.00	.00	.00
14	.00	.00	.00	.00	.07	.20	.15	.07	.03	.00	.00	.00
15	.00	.00	.00	.00	.07	.17	.14	.07	.03	.00	.00	.00
16	.00	.00	.00	.01	.07	.15	.14	.06	.03	.00	.00	.00
17	.00	.00	.00	.28	.19	.15	.25	.06	.02	.00	.00	.00
18	.00	.00	.00	.05	1.7	.15	.25	.06	.01	.00	.00	.00
19	.00	.00	.00	.02	.86	.13	.21	.06	.00	.00	.00	.00
20	.00	.00	.00	.00	.37	.13	.17	.06	.00	.00	.00	.00
21	.00	.00	.00	.00	.27	.13	.15	.05	.00	.00	.00	.00
22	.00	.00	.00	.00	.22	.13	.15	.04	.00	.00	.00	.00
23	.00	.00	.00	.00	.18	.13	.25	.04	.00	.00	.00	.00
24	.00	.00	.00	.00	.15	.13	.44	.04	.00	.00	.00	.00
25	.00	.00	.00	.00	.15	.13	.23	.03	.00	.00	.00	.00
26	.00	.00	.00	.00	.15	.13	.17	.04	.00	.00	.00	.00
27	.00	.00	.00	.00	.15	.13	.15	.04	.00	.00	.00	.00
28	.00	.00	.00	.00	.15	.72	.14	.09	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.69	.15	.07	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.35	.15	.06	.00	.00	.00	.00
31	.00	---	.00	.15	---	.29	---	.06	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.51	6.16	6.46	6.29	2.25	0.53	0.00	0.00	0.00
MEAN	.000	.000	.000	.016	.22	.21	.21	.073	.018	.000	.000	.000
MAX	.00	.00	.00	.28	1.7	.72	.44	.14	.08	.00	.00	.00
MIN	.00	.00	.00	.00	.07	.11	.14	.03	.00	.00	.00	.00
AC-FT	.00	.00	.00	1.0	12	13	12	4.5	1.1	.00	.00	.00

CAL YR 1989 TOTAL 100.99 MEAN .28 MAX 5.2 MIN .00 AC-FT 200
WTR YR 1990 TOTAL 22.20 MEAN .061 MAX 1.7 MIN .00 AC-FT 44

11020600 EL CAPITAN LAKE NEAR LAKESIDE, CA

LOCATION.--Lat 32°52'56", long 116°48'30", in SE 1/4 NE 1/4 sec.7, T.15 S., R.2 E., San Diego County, Hydrologic Unit 18070304, on left bank 100 ft upstream from El Capitan Dam on San Diego River and 7.0 mi east of Lakeside.

DRAINAGE AREA.--188 mi².

PERIOD OF RECORD.--October 1936 to September 1966 (published with San Diego River at El Capitan Dam, station 11020500), October 1972 to current year. Monthend contents only October 1972 to September 1987. October 1936 to September 1945, published in WSP 1315-B, not equivalent owing to exclusion of greater part of flow released from Cuyamaca Reservoir.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by city of San Diego). Prior to October 1987, nonrecording gage at same site.

REMARKS.--Reservoir is formed by hydraulic fill-rock embankment, completed in 1935. Capacity of reservoir at spillway level, 112,810 acre-ft, elevation, 750.00 ft. Dead storage below lowest outlet, 59 acre-ft, elevation, 574.00 ft. Reservoir storage includes supplemental Colorado River water. No significant diversion upstream from reservoir. Inflow partly regulated by Cuyamaca Reservoir, capacity, 11,760 acre-ft. Water is released as required for municipal use and irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 114,500 acre-ft, spilling, Mar. 7, 1980, elevation, 751.09 ft; minimum observed, 2,252 acre-ft, May 1, 1957, elevation, 606.28 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 57,020 acre-ft, May 22, 23, 24, elevation, 706.47 ft; minimum, 43,550 acre-ft, Nov. 14, elevation, 692.05 ft.

Capacity table (elevation in feet, and contents, in acre-feet)
(Based on table dated May 25, 1956)

600	1,450	640	11,310	700	50,730
610	2,820	650	15,530	720	71,790
620	4,940	660	20,650	740	97,790
630	7,820	680	33,780	753	117,550

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	44160	44950	44440	46420	49330	51600	54140	56470	56650	e55100	54290	50560
2	44130	44840	44520	46550	49430	51690	54250	56540	56630	e55070	54250	50480
3	44070	44750	44590	46620	49550	51770	54310	56630	e56600	54950	54220	50390
4	44040	44650	44680	46660	49640	51780	54400	56730	e56540	54900	54200	50270
5	44010	44550	44730	46740	49770	51780	54470	56810	e56490	54860	54140	50120
6	43970	44420	44800	46830	49850	51860	54570	56850	e56440	54830	54150	49950
7	43940	44300	44880	46900	49940	51900	54670	56820	e56390	54780	54090	49840
8	43890	44210	44950	46990	50030	51990	54750	56830	e56330	54760	53950	49680
9	43860	44120	44980	47090	50140	52060	54860	56860	e56280	54770	53820	49550
10	43840	44040	45030	47150	50250	52170	54980	56870	e56230	54810	53740	49420
11	43870	43920	45090	47230	50350	52270	55080	56880	e56170	54810	53690	49270
12	43930	43800	45150	47300	50430	52370	55130	56920	e56120	54800	53650	49110
13	43990	43670	45240	47400	50490	52470	55180	56960	e56070	54770	53490	48950
14	44050	43550	45320	47560	50550	52570	55270	56970	e56010	54760	53290	48810
15	44110	43580	45400	47660	50650	52700	55360	56910	e55960	54720	53180	48680
16	44170	43640	45420	47780	50730	52790	55440	56890	e55910	54710	53010	48520
17	44230	43650	45460	47960	50870	52890	55540	56910	e55850	54690	52840	48390
18	44220	43750	45490	48080	51010	52980	55650	56920	e55800	54680	52700	48250
19	44200	43790	45530	48140	51110	53110	55710	56920	e55750	54670	52520	48130
20	44230	43840	45580	48250	51130	53190	55760	56940	e55690	54640	52330	48010
21	44310	43880	45630	48320	51150	53220	55810	56980	e55640	54620	52170	47890
22	44390	43920	45710	48420	51120	53250	55890	57020	e55590	54590	52000	47760
23	44460	43950	45810	48510	51170	53300	55950	57020	e55530	54570	51820	47650
24	44520	44000	45880	48580	51260	53390	56020	57020	e55480	54510	51670	47520
25	44580	44050	45960	48680	51360	53460	56120	56940	e55430	54490	51490	47410
26	44660	44100	45990	48760	51390	53570	56200	56870	e55370	54470	51320	47270
27	44730	44180	46030	48840	51500	53630	56260	56810	e55320	54450	51220	47150
28	44790	44220	46100	48950	51540	53750	56320	56770	e55270	54420	51100	47090
29	44850	44300	46180	49020	---	53850	56370	56740	e55210	54400	50940	47080
30	44940	44380	46280	49120	---	53960	56390	56670	e55160	54400	50830	47070
31	44970	---	46370	49230	---	54060	---	56710	---	54350	50690	---
MAX	44970	44950	46370	49230	51540	54060	56390	57020	56650	55100	54290	50560
MIN	43840	43550	44440	46420	49330	51600	54140	56470	55160	54350	50690	47070
a	693.68	693.00	695.27	698.40	700.87	703.48	705.84	706.16	704.61	703.78	699.97	696.05
b	+760	-590	+1990	+2860	+2310	+2520	+2330	+320	-1550	-810	-3660	-3620
CAL YR 1989	MAX 49850	MIN 42670	b +3780									
WTR YR 1990	MAX 57020	MIN 43550	b +2860									

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11022100 SAN VICENTE RESERVOIR NEAR LAKESIDE, CA

LOCATION.--Lat 32°54'45", long 116°55'25", in SW 1/4 NW 1/4 sec.31, T.14 S., R.1 E., San Diego County, Hydrologic Unit 18070304, at outlet tower near center of upstream face of San Vicente Dam on San Vicente Creek and 3.6 mi north of Lakeside.

DRAINAGE AREA.--74.2 mi².

PERIOD OF RECORD.--October 1946 to September 1961 (published with San Vicente Creek at San Vicente Dam, at Foster, station 11022000), October 1972 to current year. Monthend contents only October 1972 to September 1987.

REVISED RECORDS.--WSP 1928: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by county of San Diego). October 1972 to current year, supplementary water-stage recorder used for flood warning only, at same site at datum 560 ft higher. Prior to October 1987, nonrecording gage at same site.

REMARKS.--Reservoir is formed by concrete-gravity dam, constructed in 1941-43 by city of San Diego; storage began during construction period. Capacity of reservoir at spillway level, 90,230 acre-ft, elevation, 650 ft. Dead storage below lowest outlet, 350 acre-ft, elevation, 493.0 ft. Reservoir storage includes supplemental water from the San Diego River, Santa Ysabel Creek, and Colorado River basins. No diversion upstream from reservoir. Water is released as required for municipal use.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 94,200 acre-ft, spilling, Feb. 21, 1980, elevation, 653.54 ft; minimum observed, 12,390 acre-ft, Nov. 1, 1947, elevation, 549.22 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 83,010 acre-ft, June 28, elevation 643.15 ft; minimum, 75,000 acre-ft, Oct. 3, elevation, 635.22 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by city of San Diego, dated Feb. 18, 1944)

610	51,870	640	79,800
620	60,610	650	90,230
630	69,920	654	94,600

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75040	75350	75150	75530	75950	76060	76850	77640	79670	82930	82370	81760
2	75020	75320	75180	75650	75970	76050	76880	77650	79810	82910	82360	81740
3	75000	75310	75190	75670	75970	76080	76880	77680	79920	82890	82330	81730
4	75020	75290	75200	75670	76000	76050	76900	77700	80010	82880	82320	81720
5	75090	75270	75200	75680	76000	76050	76920	77690	80140	82900	82320	81700
6	75160	75270	75210	75700	76000	76050	76970	77680	80260	82870	82300	81680
7	75230	75260	75210	75730	75990	76050	77020	77670	80320	82850	82270	81660
8	75300	75250	75220	75720	76010	76070	77100	77680	80360	82830	82260	81640
9	75370	75240	75210	75720	76010	76100	77150	77680	80500	82800	82240	81630
10	75440	75220	75200	75720	76010	76130	77170	77720	80750	82790	82220	81600
11	75460	75200	75200	75720	76000	76210	77180	77800	80950	82770	82210	81540
12	75460	75200	75190	75720	76000	76280	77190	77890	81140	82750	82180	81440
13	75460	75190	75190	75750	76000	76360	77190	77970	81340	82740	82150	81390
14	75460	75180	75200	75830	75990	76430	77190	78030	81520	82720	82130	81350
15	75440	75180	75200	75840	75980	76490	77190	78040	81660	82700	82110	81310
16	75440	75190	75200	75870	75980	76490	77180	78070	81810	82690	82090	81250
17	75430	75180	75200	75950	76020	76540	77220	78120	81960	82670	82070	81200
18	75470	75160	75190	75950	76060	76570	77240	78150	82100	82660	82050	81160
19	75490	75150	75180	75950	76070	76600	77260	78160	82230	82630	82030	81070
20	75480	75150	75180	75940	76070	76610	77300	78220	82350	82610	82010	81020
21	75480	75130	75170	75930	76070	76600	77340	78280	82460	82590	81990	80980
22	75480	75120	75180	75930	76070	76590	77350	78330	82590	82570	81960	80910
23	75470	75120	75210	75920	76060	76580	77370	78360	82710	82560	81950	80920
24	75470	75110	75240	75900	76070	76580	77420	78400	82840	82560	81920	80890
25	75460	75100	75260	75900	76060	76570	77500	78470	82950	82550	81900	80840
26	75460	75120	75290	75900	76050	76570	77530	78600	83000	82530	81880	80750
27	75440	75110	75330	75900	76060	76570	77550	78740	83000	82490	81860	80690
28	75430	75090	75370	75900	76050	76660	77560	78940	82980	82470	81840	80590
29	75400	75120	75410	75900	---	76710	77580	79120	82970	82450	81820	80420
30	75380	75140	75470	75890	---	76780	77590	79330	82950	82420	81810	80330
31	75380	---	75500	75930	---	76810	---	79510	---	82400	81790	---
MAX	75490	75350	75500	75950	76070	76810	77590	79510	83000	82930	82370	81760
MIN	75000	75090	75150	75530	75950	76050	76850	77640	79670	82400	81790	80330
a	635.61	635.37	635.74	636.17	636.29	637.06	637.83	639.72	643.09	642.56	641.96	640.53
b	+320	-240	+360	+430	+120	+760	+780	+1920	+3440	-550	-610	-1460

CAL YR 1989 MAX 75500 MIN 70090 b +2520
WTR YR 1990 MAX 83000 MIN 75000 b +5270

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

11022200 LOS COCHES CREEK NEAR LAKESIDE, CA

LOCATION.--Lat 32°50'10", long 116°53'58", in Mission San Diego Grant, San Diego County, Hydrologic Unit 18070304, on upstream right bank side of bridge on Old Highway 8, 2.7 mi upstream from mouth, and 1.9 mi southeast of Lakeside.

DRAINAGE AREA.--12.2 mi².

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

REVISED RECORDS.--WDR CA-86-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 560 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--7 years, 1.15 ft³/s, 833 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 470 ft³/s, Dec. 18, 1984, gage height, 7.20 ft from floodmarks; minimum daily, 0.07 ft³/s, July 11, 12, 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 14	0530	*99	*4.68	Jan. 17	0345	55	3.99

Minimum daily, 0.08 ft³/s, Oct. 19-21, Sept. 11, 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.21	.24	.29	.38	.84	.63	.68	.50	.50	.35	.28	.24
2	.23	.23	.28	6.9	.61	.65	.66	.47	.50	.34	.26	.24
3	.23	.23	.26	.69	.57	.62	.62	.47	.48	.35	.27	.24
4	.24	.23	.27	.56	4.1	.62	.63	.46	.43	.34	.29	.24
5	.23	.26	.28	.53	.91	.88	.69	.42	.44	.33	.28	.24
6	.22	.25	.28	.48	.67	.63	.62	.38	.45	.34	.30	.21
7	.23	.26	.27	.47	.64	.63	.62	.38	.47	.34	.26	.12
8	.21	.28	.28	.47	.77	.62	.60	.40	.47	.34	.25	.11
9	.21	.25	.27	.47	.60	.62	.57	.47	2.3	.35	.25	.15
10	.21	.25	.29	.45	.59	.62	.54	.48	3.8	.35	.24	.10
11	.21	.25	.31	.44	.60	1.3	.53	.52	.80	.33	.24	.08
12	.21	.26	.29	.45	.60	.73	.50	.50	.61	.32	.25	.08
13	.23	.27	.31	.70	.59	.78	.49	.47	.61	.32	.34	.12
14	.19	.28	.32	16	.57	.65	.49	.45	.58	.33	.32	.14
15	.15	.27	.29	.96	.57	.63	.46	.46	.56	.31	.33	.14
16	.18	.27	.30	.98	.57	.61	.44	.46	.53	.31	.30	.16
17	.14	.27	.31	13	4.2	.59	.71	.43	.52	.31	.29	.17
18	.12	.28	.32	.98	5.6	.58	.59	1.3	.51	.29	.27	.16
19	.08	.24	.34	.74	1.4	.77	.54	.49	.50	.28	.26	.20
20	.08	.21	.33	.70	.88	.77	.55	.50	.48	.28	.26	.21
21	.08	.22	.34	.64	.86	.66	.54	.48	.47	.29	.25	.22
22	.21	.26	.35	.61	.74	.65	.53	.47	.46	.28	.25	.24
23	.28	.29	.34	.58	.70	.69	.74	.48	.46	.28	.26	.23
24	.18	.31	.33	.56	.65	.64	.67	.48	.43	.27	.26	.22
25	.69	.32	.32	.54	.63	.62	.54	.45	.40	.28	.26	.23
26	.38	.43	.32	.52	.63	.62	.49	.44	.38	.29	.27	.23
27	.37	.41	.32	.51	.63	.63	.47	.44	.36	.30	.26	.23
28	.30	.32	.40	.50	.63	4.3	.45	1.4	.36	.28	.24	.23
29	.28	.31	.41	.50	---	1.2	.45	.60	.39	.27	.23	.23
30	.26	.30	.39	.50	---	.76	.47	.55	.39	.28	.24	.22
31	.27	---	.37	4.4	---	.71	---	.54	---	.26	.24	---
TOTAL	7.11	8.25	9.78	56.21	31.35	25.41	16.88	16.34	19.64	9.59	8.30	5.63
MEAN	.23	.27	.32	1.81	1.12	.82	.56	.53	.65	.31	.27	.19
MAX	.69	.43	.41	.16	5.6	4.3	.74	1.4	3.8	.35	.34	.24
MIN	.08	.21	.26	.38	.57	.58	.44	.38	.36	.26	.23	.08
AC-FT	14	16	19	111	62	50	33	32	39	19	16	11

CAL YR 1989 TOTAL 152.87 MEAN .42 MAX 5.5 MIN .08 AC-FT 303
WTR YR 1990 TOTAL 214.49 MEAN .59 MAX 16 MIN .08 AC-FT 425

11022350 FORESTER CREEK AT EL CAJON, CA

LOCATION.--Lat 32°49'16", long 116°58'32", in Mission San Diego Grant, San Diego County, Hydrologic Unit 18070304, on right bank at downstream side of bridge on Billy Mitchell Drive, 0.8 mi upstream from unnamed tributary, and 3.6 mi upstream from mouth.

DRAINAGE AREA.--21.3 mi².

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

REVISED RECORDS.--WDR CA-89-1: 1984-86, 1988(M).

GAGE.--Water-stage recorder. Elevation of gage is 370 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--7 years, 5.31 ft³/s, 3,850 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,510 ft³/s, Dec. 4, 1987, gage height, 9.31 ft, from rating curve extended above 900 ft³/s on basis of step-backwater computation; minimum daily, 0.23 ft³/s, May 31, 1990.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft³/s and maximum (*), from rating curve extended above 900 ft³/s on basis of step-backwater computation:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 14	0430	1,640	8.29	June 9	1030	*1,730	*8.40
Jan. 17	0230	963	7.19				

Minimum daily, 0.23 ft³/s, May 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	.44	.84	.62	3.0	1.2	2.1	.75	.34	.57	.48	.50
2	1.1	.46	.80	99	1.2	1.2	1.5	.80	.29	.55	.38	.43
3	1.1	.55	.76	.99	.86	1.2	1.4	.63	.37	.56	.46	.44
4	1.1	.53	.86	.69	23	1.2	12	.53	.47	.52	.45	.47
5	.84	.55	.87	.70	1.3	11	10	.55	.49	.61	.43	.51
6	.92	.65	.93	.66	1.1	1.1	1.2	.59	.69	.72	.64	.42
7	.87	.68	.88	.58	1.1	1.1	1.2	.51	.61	.78	.57	.32
8	.85	.72	.90	.77	10	1.2	1.2	.52	.66	.73	.69	.34
9	.92	.68	.86	.86	1.7	1.2	1.2	.60	49	.95	.90	.60
10	.76	.64	.91	.83	1.5	1.1	1.2	.76	65	.94	.96	.47
11	.63	.68	2.8	.81	1.5	21	1.4	.80	1.3	.98	1.3	.52
12	.66	.70	.76	.79	1.6	1.8	1.4	.75	1.0	.97	1.5	.61
13	.77	.79	.84	7.4	1.6	1.8	1.4	.77	.83	1.9	1.2	.63
14	.63	.63	1.2	134	1.4	1.1	1.3	.66	.76	.73	1.1	.56
15	.66	.65	.84	3.2	1.4	1.1	1.4	.68	.84	.71	.86	.68
16	.78	.66	.86	9.1	1.4	1.1	1.4	.83	.91	.83	.87	.60
17	.67	.71	.77	95	90	1.2	4.3	.85	1.0	.88	.91	.64
18	.80	.61	.77	1.5	24	1.2	1.4	.87	1.1	.89	.73	.59
19	.91	.66	.79	1.2	8.9	1.3	1.2	.91	.83	.92	.66	.95
20	1.1	.64	.80	.92	1.3	1.3	1.4	.88	.99	.79	.69	.57
21	34	.56	.79	.89	1.2	1.3	1.2	.84	1.0	.68	.76	.66
22	4.4	.65	.81	.97	1.1	1.2	1.1	.85	.92	.70	.68	.54
23	.59	.55	.77	.88	1.1	1.2	12	.87	.82	.74	.62	.58
24	.45	.55	.69	.93	1.1	1.3	2.2	.58	.79	.75	.58	.74
25	13	.64	.83	.93	1.3	1.2	.90	.56	.66	.75	.68	.73
26	.48	6.2	.71	1.0	1.2	1.4	.91	.36	.80	.67	.57	.80
27	.44	.85	.84	.94	1.1	1.3	.81	.44	.73	.48	.63	.67
28	.45	.74	17	.80	1.1	12	.92	31	.66	.43	.55	.67
29	.38	.82	1.1	1.1	---	3.7	.94	.58	.69	.40	.59	.68
30	.44	.83	.68	1.3	---	1.4	.79	.35	.70	.38	.53	.64
31	.46	---	.60	83	---	1.3	---	.23	---	.47	.45	---
TOTAL	72.96	25.02	43.86	452.36	187.06	81.7	71.37	50.90	135.25	22.98	22.42	17.56
MEAN	2.35	.83	1.41	14.6	6.68	2.64	2.38	1.64	4.51	.74	.72	.59
MAX	34	6.2	17	134	90	21	12	31	65	1.9	1.5	.95
MIN	.38	.44	.60	.58	.86	1.1	.79	.23	.29	.38	.38	.32
AC-FT	145	50	87	897	371	162	142	101	268	46	44	35

CAL YR 1989 TOTAL 692.09 MEAN 1.90 MAX 70 MIN .38 AC-FT 1370
WTR YR 1990 TOTAL 1183.44 MEAN 3.24 MAX 134 MIN .23 AC-FT 2350

11022480 SAN DIEGO RIVER AT MAST ROAD, NEAR SANTEE, CA

LOCATION.--Lat 32°49'29", long 117°03'17", in Mission San Diego Grant, San Diego County, Hydrologic Unit 18070304, near left bank at Mast Road bridge, 0.7 mi upstream from Old Mission Dam site, 2.8 mi west of Santee, and 14.2 mi downstream from El Capitan Lake.

DRAINAGE AREA.--368 mi².

PERIOD OF RECORD.--May 1912 to December 1915, April 1916 to current year. Monthly discharge only for some periods and yearly estimates only for 1924-25, published in WSP-1315-B. Prior to September 1981 published as "near Santee".

GAGE.--Water-stage recorder. Elevation of gage is 300 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Nov. 10, 1920, nonrecording gage at site 0.7 mi downstream at different datum. Nov. 10, 1920, to Jan. 19, 1982, at site 2.6 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records fair below 10 ft³/s, poor above. Flow regulated by Cuyamaca Reservoir, capacity, 11,540 acre-ft, El Capitan Lake (station 11020600), and San Vicente Reservoir (station 11022100). Diversions by city of San Diego for municipal supply and by Helix Irrigation District. AVERAGE DISCHARGE represents flow to ocean during period of record, regardless of upstream development.

AVERAGE DISCHARGE.--77 years (water years 1913-15, 1917-90), 24.8 ft³/s, 17,970 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,400 ft³/s, Feb. 16, 1927, gage height, 18.1 ft, from floodmarks, on basis of slope-area measurement of peak flow; no flow for many days some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 70,200 ft³/s, Jan. 27, 1916, gage height, 25.1 ft, from floodmarks, based on slope-conveyance computation of peak flow, site and datum then in use; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 793 ft³/s, Jan. 14, gage height, 8.39 ft, from rating curve extended above 200 ft³/s; minimum daily, 0.40 ft³/s, July 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	2.3	2.9	4.0	13	7.1	7.4	4.0	2.7	1.8	.50	.64
2	1.5	2.3	3.0	130	9.8	6.9	8.3	4.0	2.8	1.7	.54	.70
3	1.3	2.4	2.6	14	8.8	6.7	7.4	3.9	2.7	1.5	.54	.68
4	1.2	2.3	3.1	10	30	6.4	23	3.7	2.6	1.3	.55	.66
5	1.2	2.0	3.9	8.3	11	14	20	2.9	2.1	1.1	.55	.63
6	1.2	2.3	3.6	8.0	8.7	6.3	10	2.4	1.9	1.1	.53	.65
7	1.1	2.3	3.5	7.6	8.6	5.9	8.7	2.1	2.1	1.1	.60	.55
8	1.4	2.2	3.3	7.4	16	5.9	8.0	2.1	1.8	1.0	.55	.49
9	1.3	2.1	3.0	7.2	9.0	5.8	7.2	2.0	40	1.0	.55	.51
10	1.3	2.3	3.1	7.1	8.3	6.0	6.9	2.0	76	1.1	.54	.55
11	1.2	2.5	4.4	6.6	8.0	26	6.5	2.1	8.3	1.0	.50	.53
12	1.3	2.6	3.7	6.6	7.7	7.2	6.2	2.1	6.8	.98	.51	.51
13	1.3	2.6	2.9	13	7.5	7.3	6.0	2.0	6.4	1.0	.58	.54
14	1.4	2.6	3.7	196	7.2	6.2	5.5	2.1	6.1	1.8	.76	.63
15	1.2	2.1	3.0	25	7.1	6.2	5.2	2.6	5.7	.87	.87	.64
16	1.2	2.3	2.9	22	6.9	6.1	4.7	2.7	5.4	.76	.76	.67
17	1.2	2.7	2.9	170	42	6.1	6.2	2.8	5.0	.76	.68	.68
18	1.2	3.1	3.0	28	91	6.1	6.5	2.7	4.8	.74	.75	.63
19	1.2	2.8	3.1	22	25	6.2	4.9	2.4	4.4	.67	.67	.70
20	1.2	3.4	2.9	18	12	6.3	4.8	1.9	3.2	.63	.58	.76
21	26	3.9	2.9	16	11	6.7	4.8	1.7	2.8	.60	.57	.65
22	6.5	3.5	3.0	14	10	6.3	4.1	1.6	2.5	.59	.61	.66
23	2.9	3.3	3.1	13	9.6	6.2	5.7	1.6	2.3	.57	.61	.72
24	2.4	3.0	3.0	12	9.1	5.8	15	1.7	2.2	.59	.62	.75
25	13	2.7	3.0	10	8.5	5.0	5.3	1.6	2.0	.58	.61	.74
26	3.6	5.8	3.0	10	8.0	6.6	4.9	1.6	2.0	.56	.64	.71
27	2.5	4.8	2.9	9.3	7.9	6.5	4.4	1.5	2.0	.53	.62	.76
28	2.3	3.5	12	8.7	7.7	16	3.2	34	1.9	.48	.59	.76
29	2.3	3.1	8.0	8.5	---	13	3.0	6.3	1.9	.46	.56	.79
30	2.0	3.0	4.0	8.1	---	8.0	3.3	4.0	1.9	.44	.59	.79
31	2.2	---	4.0	87	---	7.7	---	3.5	---	.40	.62	---
TOTAL	91.1	85.8	113.4	907.4	409.4	242.5	217.1	111.6	212.3	27.71	18.75	19.68
MEAN	2.94	2.86	3.66	29.3	14.6	7.82	7.24	3.60	7.08	.89	.60	.66
MAX	26	5.8	12	196	91	26	23	34	76	1.8	.87	.79
MIN	1.1	2.0	2.6	4.0	6.9	5.0	3.0	1.5	1.8	.40	.50	.49
AC-FT	181	170	225	1800	812	481	431	221	421	55	37	39

CAL YR 1989 TOTAL 1631.92 MEAN 4.47 MAX 81 MIN .48 AC-FT 3240
WTR YR 1990 TOTAL 2456.74 MEAN 6.73 MAX 196 MIN .40 AC-FT 4870

11023000 SAN DIEGO RIVER AT FASHION VALLEY, AT SAN DIEGO, CA

LOCATION.--Lat 32°45'54", long 117°10'04", in Mission San Diego Grant, San Diego County, Hydrologic Unit 18070304, on left bank 2.6 mi upstream from mouth, 500 ft upstream from Fashion Valley road crossing, 0.4 mi downstream from unnamed tributary, and 26.4 mi downstream from El Capitan Lake.

DRAINAGE AREA.--429 mi².

PERIOD OF RECORD.--October 1912 to January 1916 published as San Diego River at San Diego (monthly discharge only, published in WSP 1315-B), January 1982 to current year. Records published October 1912 to January 1916, not equivalent because of construction of El Capitan and San Vicente Reservoirs completed in 1935 and 1943.

GAGE.--Water-stage recorder. Elevation of gage is 20 ft above National Geodetic Vertical Datum of 1929, from topographic map. See WSP 1315-B for history of changes for period October 1912 to January 1916.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Cuyamaca Reservoir, capacity, 11,540 acre-ft; El Capitan Lake (station 11020600), and San Vicente Reservoir (station 11022100). Diversions by city of San Diego for municipal supply and by Helix Irrigation District.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 75,000 ft³/s, Jan. 27, 1916, gage height, 19.3 ft, estimated on basis of upstream station, San Diego River near Santee; no flow at times during most years. Maximum discharge recorded since storage began in El Capitan Lake and San Vicente Reservoir, 8,280 ft³/s, Mar. 2, 1983, gage height, 13.11 ft, from rating curve extended above 5,800 ft³/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 812 ft³/s, Jan. 14, gage height, 8.88 ft; no flow Oct. 1-21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.54	2.6	8.2	90	11	13	5.5	7.5	1.3	.53	.35
2	.00	.40	3.0	126	43	11	11	4.8	5.6	1.3	.53	.42
3	.00	.31	2.8	98	24	11	9.6	4.2	4.1	1.2	.52	.50
4	.00	.26	2.8	47	37	10	94	4.2	3.5	1.1	.39	.64
5	.00	.25	2.8	25	46	13	44	4.7	2.8	1.2	.39	.65
6	.00	.23	2.8	16	29	13	28	4.9	2.4	1.1	.45	.54
7	.00	.19	2.7	13	18	13	20	4.5	2.3	.96	.35	.44
8	.00	.17	2.8	12	12	11	13	3.6	2.0	.99	.30	.46
9	.00	.12	2.8	11	10	9.4	11	3.0	33	1.1	.29	.49
10	.00	.07	3.3	9.8	13	9.4	8.8	2.8	151	1.1	.35	.56
11	.00	.13	3.6	7.7	11	44	7.8	2.6	109	.73	.38	.48
12	.00	.16	3.4	7.4	9.6	33	7.1	2.5	40	.53	.54	.38
13	.00	.17	3.5	10	8.3	23	6.9	2.5	16	.41	.71	.34
14	.00	.28	3.6	406	7.1	14	6.6	2.5	10	.35	.82	.28
15	.00	.30	3.5	194	6.3	11	6.1	2.5	7.2	.38	.88	.27
16	.00	.22	4.9	61	6.1	9.8	4.9	2.3	5.7	.40	.86	.48
17	.00	.17	5.1	295	15	9.2	32	2.3	5.3	.40	.79	.43
18	.00	.18	4.3	155	172	9.4	29	2.1	4.9	.43	.77	.35
19	.00	.28	3.6	63	96	9.0	10	1.8	4.1	.35	.79	.31
20	.00	.55	3.5	41	28	7.7	7.6	1.8	3.6	.30	.89	.32
21	.00	.70	3.1	32	18	7.1	6.7	1.9	3.4	.31	.81	.31
22	.05	.59	2.7	25	19	7.2	5.9	1.8	3.2	.40	.75	.30
23	.35	.59	3.0	21	18	7.6	10	1.7	3.2	.52	.65	.35
24	.26	.84	3.2	17	16	8.2	28	1.7	2.9	.47	.51	.37
25	3.7	1.3	3.3	16	14	8.8	13	1.7	2.6	.47	.48	.30
26	1.6	2.9	3.3	14	13	8.6	12	1.6	2.2	.45	.49	.27
27	6.3	4.6	3.3	13	12	7.9	8.8	1.6	1.7	.33	.53	.24
28	3.3	3.9	16	12	13	26	7.4	48	1.3	.34	.57	.26
29	1.7	2.8	33	11	---	49	7.2	45	1.2	.43	.44	.32
30	1.3	2.8	11	9.5	---	29	6.5	19	1.2	.50	.39	.71
31	.81	---	8.5	107	---	19	---	12	---	.52	.35	---
TOTAL	19.37	26.00	157.8	1883.6	804.4	460.3	475.9	201.1	442.9	20.37	17.50	12.12
MEAN	.62	.87	5.09	60.8	28.7	14.8	15.9	6.49	14.8	.66	.56	.40
MAX	6.3	4.6	33	406	172	49	94	48	151	1.3	.89	.71
MIN	.00	.07	2.6	7.4	6.1	7.1	4.9	1.6	1.2	.30	.29	.24
AC-FT	38	52	313	3740	1600	913	944	399	878	40	35	24

CAL YR 1989 TOTAL 2475.68 MEAN 6.78 MAX 206 MIN .00 AC-FT 4910
WTR YR 1990 TOTAL 4521.36 MEAN 12.4 MAX 406 MIN .00 AC-FT 8970

11023330 LOS PENASQUITOS CREEK BELOW POWAY CREEK, NEAR POWAY, CA

LOCATION.--Lat 32°56'58", long 117°04'08", in NE 1/4 NE 1/4 sec.22, T.14 S., R.2 W., San Diego County, Hydrologic Unit 18070304, on right bank 10 ft upstream from concrete ford on Cobblestone Creek Road, 0.2 mi downstream from confluence of Poway and Pomerado Creeks, and 2.0 mi southwest of Poway.

DRAINAGE AREA.--31.2 mi².

PERIOD OF RECORD.--October 1970 to current year.

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 fair. Flow partly regulated by small conservation reservoirs.

AVERAGE DISCHARGE.--20 years, 5.83 ft³/s, 4,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,990 ft³/s, Feb. 21, 1980, gage height, 11.11 ft, from rating curve extended above 300 ft³/s on basis of slope-area measurements at gage heights 9.58 and 11.11 ft; no flow at times during some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 2	0300	301	5.57	Feb. 17	2000	457	8.02
Jan. 14	0400	339	5.69	June 10	0615	201	5.19
Jan. 17	0230	*794	*6.77				

Minimum daily, 0.23 ft³/s, May 18.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.41	.62	.47	.99	1.6	1.3	1.2	.53	.64	.53	1.0	.70
2	.47	.58	.52	41	1.1	1.3	1.2	.40	.66	.52	1.0	.65
3	.44	.67	.39	1.1	1.0	1.4	1.0	.35	.62	.52	.96	.63
4	.46	.69	.34	.61	12	1.4	14	.37	.63	.52	1.1	.64
5	.48	.72	.35	.56	2.5	2.3	2.0	.41	.64	.50	1.2	.56
6	.51	.74	.27	.55	1.4	1.4	1.0	.31	.64	.48	1.4	.54
7	.49	.78	.30	.50	1.1	1.3	.97	.34	.70	.46	1.0	.49
8	.53	.79	.36	.51	1.3	1.4	.93	.43	.75	.40	.93	.46
9	.61	.82	.35	.52	1.2	1.3	.81	.38	3.5	.46	.86	.39
10	.62	.82	.36	.56	1.0	1.4	.91	.55	51	.41	.82	.37
11	.64	.82	.39	.56	1.0	7.3	.94	.54	1.3	.37	.81	.39
12	.63	.81	.34	.59	1.0	1.9	.91	.60	.67	.38	.79	.40
13	.63	.83	.35	1.5	1.0	1.5	1.1	.58	.56	.45	.84	.47
14	.66	.82	.35	59	1.0	1.1	.97	.64	.54	.44	.88	.43
15	.65	.84	.36	1.9	.95	1.1	.91	.67	.68	.40	.90	.46
16	.62	.80	.42	1.3	.97	.97	1.1	.29	.75	.41	.87	.45
17	.57	.75	.43	89	44	.97	5.0	.27	.83	.49	.86	.44
18	.55	.76	.44	1.8	15	.93	1.1	.23	.85	.54	.85	.44
19	.55	.76	.45	1.2	3.8	1.0	.89	.30	.87	.54	.80	.46
20	.53	.84	.44	1.0	1.4	1.1	.81	.28	.97	.54	.73	.52
21	.60	.82	.48	.93	1.2	1.0	.82	.30	1.1	.52	.71	.47
22	2.0	.84	.46	.93	1.1	1.1	.77	.35	1.1	.51	.69	.48
23	.88	.86	.49	.95	1.0	1.4	2.7	.35	1.0	.55	.76	.46
24	.80	.89	.47	1.0	1.1	1.1	2.1	.37	1.0	.53	.76	.49
25	2.2	.91	.49	.95	1.2	1.1	.72	.37	1.1	.66	.73	.65
26	.75	2.4	.53	.93	1.2	1.1	.69	.41	1.1	.64	.74	.62
27	.61	1.0	.55	.96	1.3	1.0	.60	.46	.96	.69	.75	.55
28	.62	.64	1.9	.93	1.3	18	.62	11	.74	.74	.74	.51
29	.62	.58	1.1	1.0	---	1.7	.57	1.2	.61	.79	.73	.51
30	.61	.54	1.0	.98	---	1.1	.53	.63	.59	.86	.71	.50
31	.60	---	.97	18	---	1.0	---	.62	---	.94	.69	---
TOTAL	21.34	24.74	16.12	232.31	103.72	61.97	47.87	24.53	77.10	16.79	26.61	15.13
MEAN	.69	.82	.52	7.49	3.70	2.00	1.60	.79	2.57	.54	.86	.50
MAX	2.2	2.4	1.9	89	44	18	14	11	51	.94	1.4	.70
MIN	.41	.54	.27	.50	.95	.93	.53	.23	.54	.37	.69	.37
AC-FT	42	49	32	461	206	123	95	49	153	33	53	30

CAL YR 1989 TOTAL 300.49 MEAN .82 MAX 14 MIN .24 AC-FT 596
WTR YR 1990 TOTAL 668.23 MEAN 1.83 MAX 89 MIN .23 AC-FT 1330

LOS PENASQUITOS CREEK BASIN

11023340 LOS PENASQUITOS CREEK NEAR POWAY, CA

LOCATION.--Lat 32°56'35", long 117°07'15", in Los Penasquitos Grant, San Diego County, Hydrologic Unit 18070304, on left bank 1.0 mi downstream from Cypress Creek and 5.5 mi southwest of Poway.

DRAINAGE AREA.--42.1 mi².

PERIOD OF RECORD.--October 1964 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 260 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow partly regulated by several conservation reservoirs upstream from station. Pumping from wells along stream for irrigation. Flow augmented by reclaimed water from Poway area.

AVERAGE DISCHARGE.--26 years, 7.84 ft³/s, 5,680 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,750 ft³/s, Feb. 21, 1980, gage height, 10.26 ft, from rating curve extended above 1,400 ft³/s; no flow at times in 1968, 1972, and 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 17	0445	*558	*4.58				

Minimum daily, 0.64 ft³/s, July 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.88	1.2	1.3	1.9	4.6	2.3	2.5	2.1	1.5	.98	.76	.89
2	1.2	1.5	1.5	53	3.1	2.3	3.0	1.9	1.5	1.0	.87	.93
3	1.4	1.5	1.5	6.0	2.5	2.3	2.4	1.8	1.3	1.0	.95	.88
4	1.1	1.7	1.4	2.2	23	2.5	28	1.8	1.0	.96	.99	.91
5	1.1	1.5	1.4	1.9	13	5.9	10	1.7	1.0	.89	1.1	.90
6	1.1	1.6	1.5	1.7	3.2	3.3	4.0	1.6	1.1	.82	1.2	.81
7	1.1	1.7	1.4	1.7	2.5	2.6	2.8	1.4	1.1	.82	1.3	.84
8	1.1	1.6	1.1	1.6	2.5	2.5	2.5	1.7	1.1	.81	1.1	1.0
9	1.4	1.5	1.2	1.6	2.5	2.7	2.3	1.4	5.2	.81	1.0	.87
10	1.5	1.4	1.2	1.8	2.2	2.6	2.2	.98	59	.85	1.1	.74
11	1.4	1.3	1.2	2.0	2.1	18	2.3	1.1	7.3	.79	1.2	.69
12	1.3	1.3	1.2	1.8	2.1	5.5	2.2	1.1	2.6	.64	1.0	.69
13	1.4	1.5	1.2	2.7	2.1	6.6	2.1	1.1	1.8	.75	.96	.69
14	1.4	1.5	1.2	63	2.0	2.5	2.8	1.0	1.4	.95	1.1	.79
15	1.6	1.4	1.2	8.5	2.0	2.2	2.4	1.1	1.3	.83	1.2	.88
16	1.5	1.5	1.3	4.2	1.9	2.2	2.7	1.1	1.5	.77	1.2	.92
17	1.5	1.3	1.3	115	32	2.6	21	.99	1.5	.78	1.1	.92
18	1.4	1.2	1.5	7.0	74	2.5	6.0	.96	1.5	.77	1.1	.97
19	1.3	1.3	1.7	3.6	20	2.4	3.0	.91	1.4	.76	1.1	.98
20	1.5	1.2	1.4	2.7	4.6	2.5	2.6	.95	1.3	.78	.85	1.0
21	1.3	1.3	1.3	2.3	3.3	2.5	2.4	1.0	1.3	.77	.80	1.1
22	5.9	1.3	1.4	2.1	3.0	2.4	2.4	1.0	1.3	.73	.87	1.1
23	2.8	1.3	1.3	2.1	2.5	3.0	3.1	1.1	1.3	.85	.83	1.1
24	1.6	2.1	1.4	2.1	2.5	2.8	10	1.0	1.2	.94	.88	1.0
25	9.1	1.5	1.3	2.0	2.4	2.3	3.1	1.0	1.1	.86	.93	1.1
26	3.2	5.2	1.4	1.9	2.4	2.2	2.5	.94	1.1	1.0	.84	1.2
27	1.6	4.4	1.4	1.9	2.3	2.2	2.3	1.0	1.0	.84	.86	1.2
28	1.2	1.8	2.6	1.9	2.3	41	2.4	21	.89	.77	.86	1.1
29	1.3	1.3	3.2	1.9	---	8.8	2.3	6.8	.83	.74	.77	1.0
30	.93	1.3	2.0	2.3	---	3.6	2.2	2.1	.89	.70	.79	1.7
31	.95	---	1.8	38	---	2.8	---	1.6	---	.71	.83	---
TOTAL	56.06	50.2	45.8	342.4	222.6	149.6	139.5	65.23	106.31	25.67	30.44	28.90
MEAN	1.81	1.67	1.48	11.0	7.95	4.83	4.65	2.10	3.54	.83	.98	.96
MAX	9.1	5.2	3.2	115	74	41	28	21	59	1.0	1.3	1.7
MIN	.88	1.2	1.1	1.6	1.9	2.2	2.1	.91	.83	.64	.76	.69
AC-FT	111	100	91	679	442	297	277	129	211	51	60	57

CAL YR 1989 TOTAL 766.96 MEAN 2.10 MAX 36 MIN .17 AC-FT 1520
WTR YR 1990 TOTAL 1262.71 MEAN 3.46 MAX 115 MIN .64 AC-FT 2500

11025500 SANTA YSABEL CREEK NEAR RAMONA, CA

LOCATION.--Lat 33°06'25", long 116°51'55", in NW 1/4 NE 1/4 sec.27, T.12 S., R.1 E., San Diego County, Hydrologic Unit 18070304, on left bank 1.6 mi downstream from Temescal Creek, 4.5 mi north of Ramona, and 5.0 mi downstream from Lake Sutherland.

DRAINAGE AREA.--112 mi².

PERIOD OF RECORD.--February 1912 to February 1923 (monthly discharge only for February 1912, published in WSP 1315-B), October 1943 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 847.88 ft above National Geodetic Vertical Datum of 1929 (levels by city of San Diego Water Department). See WSP 1315-B for history of changes prior to Feb. 3, 1923.

REMARKS.--No estimated daily discharges. Records fair. Flow regulated by Lake Sutherland, capacity, 29,680 acre-ft, since July 1954. Some small diversions upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,400 ft³/s, Jan. 27, 1916, gage height, 14.0 ft, datum then in use, from rating curve extended above 1,500 ft³/s on basis of slope-conveyance study of peak flow; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1.3 ft³/s, Jan. 17, gage height, 1.99 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.02	.01	.10	.17	.17	.13	.02	.00	.00	.00
2	.00	.00	.02	.06	.08	.17	.22	.13	.02	.00	.01	.00
3	.00	.00	.02	.02	.07	.18	.24	.13	.02	.00	.01	.00
4	.00	.00	.02	.02	.09	.23	.24	.13	.02	.00	.01	.00
5	.00	.00	.02	.02	.07	.22	.29	.12	.02	.00	.01	.00
6	.00	.01	.02	.01	.07	.20	.38	.11	.02	.00	.01	.00
7	.00	.01	.02	.01	.07	.20	.38	.11	.01	.00	.01	.00
8	.00	.00	.01	.02	.08	.20	.32	.10	.01	.00	.01	.00
9	.00	.00	.01	.02	.07	.20	.28	.09	.02	.00	.01	.00
10	.00	.00	.01	.03	.07	.22	.23	.10	.02	.00	.01	.00
11	.00	.00	.02	.02	.07	.23	.19	.09	.03	.00	.01	.00
12	.00	.00	.03	.03	.07	.32	.17	.08	.02	.00	.01	.00
13	.01	.00	.03	.03	.09	.32	.16	.07	.02	.00	.01	.00
14	.01	.00	.03	.12	.07	.28	.16	.06	.01	.01	.03	.00
15	.01	.00	.05	.05	.07	.30	.15	.06	.01	.00	.03	.00
16	.01	.01	.05	.05	.07	.26	.15	.05	.01	.00	.02	.00
17	.01	.01	.05	.23	.15	.24	.17	.05	.01	.01	.01	.01
18	.00	.01	.06	.11	.20	.22	.17	.05	.01	.01	.01	.01
19	.00	.02	.05	.08	.18	.20	.18	.05	.01	.01	.01	.01
20	.00	.01	.02	.07	.16	.20	.20	.04	.01	.00	.01	.00
21	.01	.01	.02	.07	.24	.20	.21	.04	.01	.00	.00	.00
22	.01	.01	.02	.07	.20	.20	.20	.04	.00	.00	.00	.00
23	.00	.01	.03	.07	.17	.20	.22	.03	.01	.00	.01	.00
24	.00	.02	.04	.07	.15	.20	.27	.03	.01	.00	.01	.00
25	.00	.02	.04	.07	.14	.20	.19	.04	.00	.00	.01	.00
26	.00	.03	.04	.07	.17	.20	.18	.04	.00	.00	.01	.00
27	.00	.02	.04	.06	.17	.20	.16	.04	.00	.00	.00	.00
28	.00	.01	.00	.05	.17	.20	.15	.05	.00	.00	.01	.00
29	.00	.02	.00	.05	---	.21	.15	.04	.00	.00	.00	.00
30	.00	.02	.00	.05	---	.18	.15	.03	.00	.00	.00	.00
31	.00	---	.01	.12	---	.17	---	.02	---	.00	.00	---
TOTAL	0.07	0.25	0.80	1.76	3.31	6.72	6.33	2.15	0.35	0.04	0.29	0.03
MEAN	.002	.008	.026	.057	.12	.22	.21	.069	.012	.001	.009	.001
MAX	.01	.03	.06	.23	.24	.32	.38	.13	.03	.01	.03	.01
MIN	.00	.00	.00	.01	.07	.17	.15	.02	.00	.00	.00	.00
AC-FT	.1	.5	1.6	3.5	6.6	13	13	4.3	.7	.08	.6	.06

CAL YR 1989 TOTAL 191.53 MEAN .52 MAX 15 MIN .00 AC-FT 380
WTR YR 1990 TOTAL 22.10 MEAN .061 MAX .38 MIN .00 AC-FT 44

SAN DIEGUITO RIVER BASIN

11028500 SANTA MARIA CREEK NEAR RAMONA, CA

LOCATION.--Lat 33°03'08", long 116°56'41", in SE 1/4 SE 1/4 sec.11, T.13 S., R.1 W., San Diego County, Hydrologic Unit 18070304, on left bank 3.8 mi northwest of Ramona, 3.1 mi northwest of Jensen's, and 4.6 mi upstream from mouth.

DRAINAGE AREA.--57.6 mi².

PERIOD OF RECORD.--December 1912 to September 1920, October 1946 to current year.

REVISED RECORDS.--WSP 1928: Drainage area.

GAGE.--Water-stage recorder. Concrete control since October 1946. Datum of gage is 1,294.44 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1946, at same site, at datum 1.78 ft lower.

REMARKS.--No estimated daily discharges. Records good. No regulation upstream from station. Land application of treated sewage effluent upstream from the gage beginning December 1972 contributes to low flows. The daily rate of application averaged 1.6 acre-ft during the 1990 water year.

AVERAGE DISCHARGE.--51 years (water years 1914-20, 1947-90), 5.78 ft³/s, 4,190 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,200 ft³/s, Feb. 21, 1980, gage height, 14.39 ft, from rating curve extended above 130 ft³/s on basis of slope-area measurement at gage height 4.56 ft and slope-conveyance study at gage height 14.39 ft; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 17	0215	*13	*1.61				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.02	.07	.11	.26	.42	.13	.28	.16	.00	.00	.00
2	.00	.02	.04	.79	.19	.63	.14	.26	.03	.00	.00	.00
3	.00	.04	.04	.12	.14	.22	.34	.12	.01	.00	.00	.00
4	.03	.02	.04	.07	.46	.22	.86	.16	.00	.00	.00	.00
5	.09	.02	.04	.18	.22	.39	.79	.11	.00	.00	.00	.00
6	.09	.02	.04	.07	.16	.83	.42	.07	.00	.00	.00	.00
7	.04	.03	.05	.08	.15	.74	.62	.09	.00	.00	.00	.00
8	.03	.02	.06	.15	.28	.57	.35	.08	.00	.00	.00	.00
9	.04	.03	.08	.29	.53	1.1	.30	.10	.00	.00	.00	.00
10	.03	.04	.10	.25	.19	1.2	.28	.11	.10	.00	.00	.00
11	.02	.05	.06	.27	.16	1.0	.06	.14	.05	.00	.00	.00
12	.01	.07	.05	.22	.14	.52	.06	.10	.09	.00	.00	.00
13	.00	.07	.12	.53	.14	.42	.09	.07	.21	.00	.00	.00
14	.01	.06	.08	1.7	.24	.34	.09	.04	.23	.00	.00	.00
15	.00	.03	.11	.25	.13	.21	.10	.03	.04	.00	.00	.00
16	.00	.04	.34	.27	.13	.24	.09	.02	.04	.00	.00	.00
17	.00	.08	.17	1.9	1.3	.29	.37	.02	.03	.00	.00	.00
18	.00	.05	.13	.28	1.1	.13	.47	.01	.02	.00	.00	.00
19	.09	.03	.13	.17	.39	.24	.49	.01	.01	.00	.00	.00
20	.10	.04	.12	.14	.40	.22	.72	.00	.00	.00	.00	.00
21	.12	.04	.11	.11	1.2	.14	1.0	.00	.00	.00	.00	.00
22	.29	.06	.13	.26	.78	.59	.32	.00	.00	.00	.00	.00
23	.04	.04	.11	.37	.65	.38	.16	.00	.00	.00	.00	.00
24	.02	.05	.12	.25	1.1	.53	.27	.00	.00	.00	.00	.00
25	.04	.05	.09	.18	.99	.68	.12	.00	.00	.00	.00	.00
26	.04	.08	.10	.40	.25	.58	.07	.00	.00	.00	.00	.00
27	.02	.05	.22	.23	.19	.15	.08	.00	.00	.00	.00	.00
28	.02	.03	.14	.19	.45	.41	.15	.06	.00	.00	.00	.00
29	.02	.04	.42	.19	---	.29	.09	.24	.00	.00	.00	.00
30	.01	.10	.38	.20	---	.16	.11	.16	.00	.00	.00	.00
31	.02	---	.12	.75	---	.11	---	.13	---	.00	.00	---
TOTAL	1.23	1.32	3.81	10.97	12.32	13.95	9.14	2.41	1.02	0.00	0.00	0.00
MEAN	.040	.044	.12	.35	.44	.45	.30	.078	.034	.000	.000	.000
MAX	.29	.10	.42	1.9	1.3	1.2	1.0	.28	.23	.00	.00	.00
MIN	.00	.02	.04	.07	.13	.11	.06	.00	.00	.00	.00	.00
AC-FT	2.4	2.6	7.6	22	24	28	18	4.8	2.0	.00	.00	.00

CAL YR 1989 TOTAL 88.85 MEAN .24 MAX 2.8 MIN .00 AC-FT 176
WTR YR 1990 TOTAL 56.17 MEAN .15 MAX 1.9 MIN .00 AC-FT 111

SAN DIEGUITO RIVER BASIN

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11030020 LAKE HODGES NEAR ESCONDIDO, CA

LOCATION.--Lat 33°02'46", long 117°07'39", in SE 1/4 NW 1/4 sec.18, T.13 S., R.2 W., San Diego County, Hydrologic Unit 18070304, 300 ft upstream from right upstream end of Hodges Dam on San Dieguito River, 6.4 mi southwest of Escondido, and 20 mi southwest of Sutherland Reservoir.

DRAINAGE AREA.--303 mi².

PERIOD OF RECORD.--October 1945 to September 1968 (published with San Dieguito River at Lake Hodges, station 11030000), October 1972 to current year. Monthend contents only October 1972 to September 1987. Monthend gage heights, February 1919 to September 1945, in files of San Diego County Department of Sanitation and Flood Control.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by county of San Diego). Prior to Oct. 1, 1972, nonrecording gage at site 800 ft upstream on right bank at same datum. October 1972 to current year, supplementary water-stage recorder used for flood warning only, on left upstream face of dam at datum 200 feet higher.

REMARKS.--Reservoir is formed by multiple-arch reinforced concrete dam, constructed in 1917-19. Storage began in February 1919. Capacity of reservoir at spillway level, 33,550 acre-ft, elevation, 315.0 ft. Dead storage below lowest outlet, 1,160 acre-ft, elevation 254.0 ft, included in these records. Reservoir can be drawn down below lowest outlet by pumping. Water drawn from Lake Hodges passes through a conduit to San Dieguito re-regulating reservoir, from which it is released as required for municipal use. Diversions for irrigation upstream from Lake Hodges.

COOPERATION.--Reservoir daily elevation and contents for the period Oct. 1 to Jan 30 were provided by the city of San Diego.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 41,620 acre-ft, spilling, Feb. 21, 1980, elevation, 321.50 ft; minimum observed, 114 acre-ft, Oct. 31, 1965, elevation, 235.80 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 14,250 acre-ft, Apr. 21, elevation, 293.90 ft; minimum, 12,280 acre-ft, Dec. 27-31, elevation 290.60 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by city of San Diego, dated July 1, 1953)

280	7,340	300	18,530
285	9,440	305	22,780
290	11,950	310	27,780
295	14,950	315	33,550

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13100	12740	12450	e12340	12910	13520	13780	14100	14020	13990	13550	13110
2	13080	12720	e12450	12400	12940	13530	13790	14100	14010	13980	13550	13080
3	13040	12690	e12450	12460	12950	13540	13300	14130	14010	13960	13540	13080
4	13010	12640	12440	12460	13020	13560	13880	14130	14000	13950	13520	13060
5	12980	12640	12440	12480	13050	13570	13920	14130	14000	13940	13520	13050
6	12920	12640	12440	e12480	13070	13580	13930	14120	13990	13930	13540	13040
7	e12910	12620	12430	e12490	13090	13590	13960	14110	13970	13920	13510	13020
8	e12910	12610	12420	12500	13110	13590	13980	14100	13970	13900	13480	13000
9	12900	12590	e12420	12500	13130	13600	13990	14100	14000	13890	13480	12980
10	12810	e12570	e12410	12500	13150	13610	14010	14080	14150	13880	13470	12950
11	12800	e12560	12410	12500	13170	13650	14030	14080	14180	13850	13460	12930
12	12780	e12550	12400	12510	13190	13660	14030	14080	14170	13840	13450	12910
13	12780	12530	12380	e12510	13190	13670	14050	14070	14160	13820	13430	12890
14	e12780	12510	12370	e12620	13330	13680	14060	14060	14150	13800	13430	12870
15	e12770	12500	12380	12700	13340	13690	14060	14060	14150	13770	13420	12850
16	12770	12500	e12370	12720	13350	13690	14080	14050	14140	13750	13420	12830
17	12770	12490	e12360	12920	13440	13690	14200	14050	14130	13730	13400	12810
18	12770	e12490	12340	e12910	13420	13700	14230	14040	14130	13710	13390	12800
19	12740	e12480	12340	e12890	13430	13710	14230	14030	14120	13690	13370	12790
20	12750	12480	12340	e12870	13430	13710	14230	14020	14110	13680	13350	12780
21	e12760	12460	12330	e12860	13430	13710	14230	14010	14110	13650	13330	12770
22	e12770	12460	12320	e12840	13450	13710	14100	14010	14100	13630	13320	12760
23	12770	e12460	e12310	e12830	13470	13720	14090	14010	14090	13610	13300	12760
24	12780	e12460	e12310	e12810	13470	13730	14060	14000	14080	13590	13280	12750
25	12790	e12450	e12300	e12790	13490	13730	14050	13990	14070	13570	13250	12740
26	12790	e12490	12300	e12770	13490	13730	14070	13980	14060	13570	13240	12730
27	12780	12510	12280	e12760	13510	13730	14060	13980	14050	13560	13210	12710
28	e12780	12500	12280	e12740	13520	13760	14070	14020	14030	13560	13190	12700
29	e12770	e12480	12280	e12730	---	13760	14080	14030	14010	13550	13170	12680
30	12760	12450	e12280	e12720	---	13770	14100	14030	14000	13550	13150	12680
31	12750	---	12280	12880	---	13780	---	14030	---	13550	13130	---
MAX	13100	12740	12450	12920	13520	13780	14230	14130	14180	13990	13550	13110
MIN	12740	12450	12280	12340	12910	13520	13780	13980	13970	13550	13130	12680
a	291.42	290.90	290.60	291.64	292.24	293.15	293.23	293.55	293.56	293.04	292.07	291.29
b	-400	-300	-170	+600	+640	+260	+320	-70	-30	-450	-420	-450

CAL YR 1989 MAX 18770 MIN 12280 b -5550
WTR YR 1990 MAX 14230 MIN 12280 b -470

e Estimated.

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

ESCONDIDO CREEK BASIN

11030700 LAKE WOHLFORD NEAR ESCONDIDO, CA

LOCATION.--Lat 33°09'59", long 117°00'14", in NW 1/4 NE 1/4 sec.5, T.12 S., R.1 W., San Diego County, Hydrologic Unit 18070303, near left abutment of Lake Wohlford Dam, 4.7 mi southeast of Valley Center Post Office, and 5.7 mi northeast of Escondido.

DRAINAGE AREA.--7.96 mi².

PERIOD OF RECORD.--October 1972 to current year. October 1933 to September 1972 in files of San Diego County Department of Sanitation and Flood Control.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by city of Escondido Engineering Department). Since October 1972, supplementary water-stage recorder for flood warning only, at same site at different datum.

REMARKS.--Reservoir is formed by earthfill dam riprapped upstream and downstream, with concrete spillway anchored to natural rock. Dam was completed in 1932. Capacity at spillway level, 6,940 acre-ft, elevation, 1,480.0 ft. Dead storage below lowest outlet, 131 acre-ft, elevation, 1,420 ft. Reservoir storage includes supplemental water diverted from the San Luis Rey River via Escondido Mutual Water Co.'s canal to Lake Wohlford Reservoir. Stored water is released for municipal use by Vista Irrigation District and city of Escondido.

COOPERATION.--Reservoir daily elevation for the period Oct. 12 to Feb. 2, Apr. 26 to May 3, and July 1-31, were provided by city of Escondido.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 7,140 acre-ft, Feb. 21, 1980, elevation, 1,480.9 ft; minimum, 1,050 acre-ft, Dec. 23-25, 1978, elevation, 1,440.6 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 6,480 acre-ft, July 22-24, elevation, 1,477.90 ft; minimum, 2,170 acre-ft, Nov. 30 to Dec. 5, elevation, 1,452.30 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table provided by city of Escondido, dated March 1955)

1,440	1,000	1,455	2,510	1,470	4,910
1,445	1,410	1,460	3,220	1,475	5,880
1,450	1,910	1,465	4,020	1,481	7,160

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3040	2890	2170	2290	2550	2620	2740	2840	4990	6040	6380	6040
2	3030	2850	2170	2270	2560	2620	2740	2840	5090	6080	6370	6050
3	3010	2790	2170	2370	2560	2620	2740	2820	5180	6100	6370	6050
4	3000	2710	2170	2380	2570	2620	2750	2850	5270	6120	6370	6060
5	2990	2700	2170	2400	2570	2620	2760	2910	5330	6140	6360	6060
6	2970	2700	2180	2400	2580	2620	2760	2960	5410	6170	6360	6060
7	2960	2680	2200	2410	2590	2620	2760	3020	5480	6190	6330	6070
8	2940	2640	2200	2420	2590	2620	2760	3080	5540	6210	6290	6070
9	2930	2580	2210	2420	2590	2620	2760	3130	5600	6230	6280	6070
10	2920	2530	2210	2430	2600	2620	2760	3190	5670	6250	6270	6060
11	2900	2490	2220	2430	2600	2620	2760	3250	5720	6250	6270	6040
12	2900	2430	2220	2430	2600	2620	2760	3300	5780	6250	6270	6030
13	2880	2370	2230	2420	2600	2620	2760	3360	5830	6270	6260	6020
14	2760	2310	2230	2430	2600	2630	2760	3420	5880	6290	6250	6010
15	2750	2270	2240	2430	2600	2650	2760	3470	5870	6330	6240	6010
16	2740	2210	2260	2430	2600	2650	2760	3540	5850	6360	6230	6000
17	2720	2180	2270	2430	2600	2650	2770	3590	5820	6360	6210	6000
18	2710	2180	2270	2500	2600	2650	2770	3690	5800	6400	6200	6000
19	2700	2180	2270	2510	2600	2660	2780	3780	5780	6400	6200	5990
20	2700	2180	2280	2530	2600	2660	2780	3880	5790	6460	6190	6000
21	2700	2180	2280	2510	2610	2660	2780	3980	5810	6460	6180	6010
22	2700	2180	2280	2510	2610	2660	2780	4070	5840	6480	6180	6030
23	2700	2180	2280	2530	2620	2650	2780	4170	5870	6480	6160	6050
24	2700	2180	2290	2540	2620	2650	2790	4260	5900	6480	6150	6060
25	2720	2180	2310	2540	2620	2650	2820	4350	5930	6460	6140	6080
26	2760	2180	2320	2540	2620	2650	2840	4440	5950	6460	6130	6080
27	2790	2180	2310	2540	2630	2660	2840	4540	5970	6440	6120	6090
28	2840	2180	2330	2540	2620	2700	2840	4640	5980	6420	6100	6100
29	2850	2180	2360	2540	---	2730	2840	4690	6000	6420	6070	6120
30	2880	2170	2310	2550	---	2730	2840	4790	6030	6400	6040	6150
31	2900	---	2290	2550	---	2740	---	4890	---	6380	6040	---
MAX	3040	2890	2360	2550	2630	2740	2840	4890	6030	6480	6380	6150
MIN	2700	2170	2170	2270	2550	2620	2740	2820	4990	6040	6040	5990
a	1457.90	1452.30	1453.30	1455.30	1455.84	1456.70	1457.40	1469.91	1475.75	1477.43	1475.81	1476.32
b	-150	-730	+120	+260	+70	+120	+100	+2050	+1140	+350	-340	+110

CAL YR 1989 MAX 6420 MIN 2170 b -60
WTR YR 1990 MAX 6480 MIN 2170 b -3100

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

11039800 SAN LUIS REY RIVER AT COUSER CANYON BRIDGE, NEAR PALA, CA

LOCATION.--Lat 33°20'26", long 117°07'50", in NW 1/4 NE 1/4 sec.6, T.10 S., R.2 W., in San Diego County, Hydrologic Unit 18070303, on left bank 10 ft upstream from bridge on Couser Canyon Road, 6.5 mi northeast of Bonsall, and 27 mi downstream from Lake Henshaw.

DRAINAGE AREA.--364 mi².

PERIOD OF RECORD.--October 1986 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 280 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Flow regulated by Lake Henshaw, capacity, 194,300 acre-ft. Several small diversions upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 179 ft³/s, Jan. 18, 1988, gage height, 3.34 ft, from rating curve extended above 12 ft³/s; no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--No flow for the 1990 water year.

SAN LUIS REY RIVER BASIN

11042000 SAN LUIS REY RIVER AT OCEANSIDE, CA
(National stream-quality accounting network station)

LOCATION.--Lat 33°13'05", long 117°22'34", in SE 1/4 SW 1/4 sec.13, T.11 S., R.5 W., San Diego County, Hydrologic Unit 18070303, on right bank 1.9 mi upstream from bridge on Interstate Highway 5, 2.4 mi upstream from mouth, and 1.9 mi northeast of Oceanside.

DRAINAGE AREA.--557 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1912 to September 1914 (published as "near Oceanside"), January 1916, October 1929 to January 1942, October 1946 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 20 ft above National Geodetic Vertical Datum of 1929, from topographic map. April 1912 to September 1914, nonrecording gage at site 0.4 mi downstream at different datum. January 1916, nonrecording gage 1.4 mi downstream at different datum. Prior to Oct. 1, 1978, at datum 10.00 ft lower. Prior to Nov. 9, 1981, at site 0.8 mi downstream at different datum.

REMARKS.--Records poor. Flow regulated by Lake Henshaw, capacity, 194,300 acre-ft since 1923. Several diversions for irrigation and domestic use upstream from station. AVERAGE DISCHARGE represents flow to ocean during period of record regardless of upstream development.

AVERAGE DISCHARGE.--58 years (water years 1913-14, 1930-41, 1947-90), 34.3 ft³/s, 24,850 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,600 ft³/s, Jan. 27, 1916, from hydrograph based on discharge measurements; no flow for several months in some years. Since regulation by Lake Henshaw in 1923, maximum discharge, 25,000 ft³/s, Feb. 21, 1980, gage height, 14.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 51 ft³/s, Feb. 18, gage height, 13.31 ft; minimum daily, 2.0 ft³/s, Oct. 18-21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	2.4	3.3	6.5	20	26	19	14	12	8.6	4.2	2.9
2	2.5	2.4	3.3	9.5	18	26	18	14	11	8.4	4.3	3.0
3	2.3	2.4	3.2	10	17	25	18	13	11	9.7	4.1	3.0
4	2.4	2.4	3.2	9.0	19	25	23	13	11	7.9	4.2	3.0
5	2.4	2.4	3.5	8.2	20	25	22	13	11	7.6	3.9	3.0
6	2.5	2.4	3.8	7.9	20	24	20	12	10	7.3	4.0	3.0
7	2.5	2.4	3.8	7.8	19	24	19	12	9.9	7.5	3.8	2.9
8	2.4	2.4	3.8	8.0	20	24	19	12	9.6	7.0	3.3	2.8
9	2.3	2.4	3.8	8.1	20	24	19	12	10	6.5	3.8	2.8
10	2.3	2.6	4.1	8.5	19	24	19	11	16	6.5	4.0	2.7
11	2.3	2.8	4.5	8.8	19	24	19	11	15	6.3	4.1	2.7
12	2.2	2.9	4.5	9.3	18	25	18	11	13	5.9	4.0	2.7
13	2.2	2.9	4.5	9.5	18	25	18	11	11	5.7	3.7	2.7
14	2.3	2.9	4.5	13	18	25	17	11	11	5.8	4.0	2.5
15	2.3	2.9	4.5	12	18	25	17	11	10	5.8	4.1	2.5
16	2.3	2.9	5.0	12	18	24	17	10	9.6	5.6	3.8	2.5
17	e2.3	2.9	5.1	20	23	24	20	10	9.6	5.5	3.6	2.5
18	2.0	3.0	5.2	19	44	24	20	9.8	10	5.3	3.8	2.5
19	2.0	2.9	5.3	17	44	23	19	9.8	9.7	5.2	3.4	2.4
20	2.0	2.9	5.3	17	42	22	18	9.2	9.9	5.2	3.2	2.5
21	2.0	2.9	5.3	18	40	22	17	9.2	9.5	5.2	3.2	2.4
22	3.1	2.9	5.5	18	36	22	17	9.2	9.3	4.8	3.2	2.4
23	2.8	2.9	5.5	18	33	21	17	9.3	9.5	4.9	3.1	2.4
24	2.5	3.0	5.6	18	31	21	17	9.3	9.3	4.7	3.1	2.3
25	2.5	3.3	5.8	17	29	21	16	9.1	9.0	4.5	3.0	2.3
26	2.4	3.7	6.1	17	28	21	16	8.8	9.0	4.5	3.0	2.3
27	2.4	4.4	6.1	16	27	20	16	8.3	8.9	4.5	3.0	2.2
28	2.4	3.8	6.2	16	27	20	16	15	8.5	4.8	3.0	2.1
29	2.4	3.8	6.5	16	---	20	15	19	8.1	4.5	2.9	2.1
30	2.4	3.4	6.5	15	---	19	14	15	8.2	4.4	2.9	2.2
31	2.4	---	6.2	20	---	19	---	13	---	4.3	2.9	---
TOTAL	73.4	87.3	149.5	410.1	705	714	540	355.1	309.6	184.4	110.6	77.3
MEAN	2.37	2.91	4.82	13.2	25.2	23.0	18.0	11.5	10.3	5.95	3.57	2.58
MAX	3.1	4.4	6.5	20	44	26	23	19	16	9.7	4.3	3.0
MIN	2.0	2.4	3.2	6.5	17	19	14	8.3	8.1	4.3	2.9	2.1
AC-FT	146	173	297	813	1400	1420	1070	704	614	366	219	153

CAL YR 1989 TOTAL 4591.5 MEAN 12.6 MAX 44 MIN 2.0 AC-FT 9110
WTR YR 1990 TOTAL 3716.3 MEAN 10.2 MAX 44 MIN 2.0 AC-FT 7370

e Estimated.

11042000 SAN LUIS REY RIVER AT OCEANSIDE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

CHEMICAL DATA: Water years 1978 to current year.

BIOLOGICAL DATA: Water years 1978-81.

SPECIFIC CONDUCTANCE: Water years 1978-81.

WATER TEMPERATURE: Water years 1971-81.

SEDIMENT DATA: Water years 1969 to current year.

PERIOD OF DAILY RECORD.--

SUSPENDED-SEDIMENT DISCHARGE: October 1968 to September 1978, December 1983 to September 1984.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	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. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)
NOV												
13...	1345	2.7	2560	7.9	17.0	1.5	760	5.9	62	K40	280	790
JAN												
18...	1430	19	1970	8.0	11.0	3.0	760	8.6	79	K28	250	580
MAR												
29...	1100	21	2200	7.9	17.0	2.5	760	6.7	70	K22	48	740
MAY												
30...	1030	16	1920	7.8	20.0	4.5	760	5.7	63	41	K4500	530
JUL												
16...	1015	5.9	2390	7.8	23.5	5.5	760	5.2	62	35	160	740
SEP												
27...	1230	2.2	2570	7.9	20.0	2.0	760	7.1	79	31	K2700	770

DATE	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
NOV											
13...	180	82	260	41	4	12	318	0	261	480	470
JAN											
18...	130	62	190	41	3	9.0	246	0	202	350	320
MAR											
29...	160	82	210	38	3	7.4	294	0	241	410	360
MAY											
30...	110	62	190	43	4	7.0	254	0	208	330	330
JUL											
16...	150	88	240	41	4	7.9	290	0	238	480	440
SEP											
27...	160	89	250	41	4	9.0	288	0	236	450	440

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											
13...	0.40	19	1690	1660	2.30	<0.010	0.150	0.050	0.070	0.50	0.280
JAN											
18...	0.20	15	1300	1200	1.77	<0.010	1.40	0.020	0.040	0.90	0.160
MAR											
29...	0.30	23	1540	1400	2.09	0.020	1.10	0.040	0.030	0.70	0.190
MAY											
30...	0.20	10	1290	1170	1.75	0.020	0.300	0.010	0.030	0.60	0.200
JUL											
16...	0.50	14	1630	1560	2.22	<0.010	0.100	0.060	0.040	0.50	0.360
SEP											
27...	0.40	18	1640	1560	2.23	<0.010	0.200	0.020	0.020	0.40	0.210

SAN LUIS REY RIVER BASIN

11042000 SAN LUIS REY RIVER AT OCEANSIDE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 13...	0.220	0.200	10	<1	<100	<10	<1.0	1	<1	<1	30
JAN 18...	0.140	0.150	--	--	--	--	--	--	--	--	--
MAR 29...	0.100	0.120	10	1	<100	<10	<1.0	<1	<1	1	30
MAY 30...	0.200	0.150	<10	1	63	<0.5	<1.0	<1	<3	2	23
JUL 16...	0.310	0.300	--	--	--	--	--	--	--	--	--
SEP 27...	0.270	0.220	<10	<1	<100	<10	<1.0	<1	<1	1	20

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 13...	<1	<10	90	<0.1	6	1	<1	<1.0	1000	12	<10
JAN 18...	--	--	--	--	--	--	--	--	--	--	--
MAR 29...	<1	<10	80	0.1	10	1	<1	<1.0	700	10	<10
MAY 30...	1	9	250	0.2	<10	<1	<1	<1.0	600	<6	5
JUL 16...	--	--	--	--	--	--	--	--	--	--	--
SEP 27...	<1	<10	160	<0.1	7	1	<1	<1.0	780	20	<10

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DEPTH AT SAMPLE LOC- ATION, TOTAL (FEET)	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAY											
30...*	1530	0.54	2.00	1900	7.7	21.0	760	5.8	66	28	76
30...*	1540	0.22	14.0	1910	7.7	22.0	760	6.4	74	--	--
30...*	1546	0.72	37.0	1920	7.8	23.0	760	6.8	80	14	75
30...*	1550	0.50	79.0	1920	7.7	22.0	760	6.3	73	29	76
30...*	1600	1.40	158	1920	7.8	22.5	760	7.4	86	37	62
SEP											
27...*	1706	0.30	37.0	2540	8.0	20.5	760	7.2	81	12	58
27...*	1710	0.62	158	2570	7.9	21.5	760	7.2	82	18	79

* Instantaneous streamflow at time of cross-sectional measurements: May 30, 15 ft³/s;
Sept. 27, 2.1 ft³/s.

11042000 SAN LUIS REY RIVER AT OCEANSIDE, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT						
12...	1215	2.1	19.0	24	0.14	--
NOV						
13...	1345	2.7	17.0	85	0.62	31
JAN						
18...	1430	19	11.0	17	0.87	58
FEB						
14...	1450	19	14.5	25	1.3	--
21...	0930	40	13.0	12	1.3	--
MAR						
29...	1100	21	17.0	21	1.2	67
APR						
25...	1615	15	24.5	20	0.81	80
MAY						
30...	1030	16	20.0	22	0.95	72
30...	1545	15	22.5	31	1.3	63
JUN						
15...	1745	10	23.0	31	0.84	60
JUL						
16...	1015	5.9	23.5	14	0.22	76
AUG						
20...	1600	3.4	24.0	13	0.12	80
SEP						
27...	1230	2.2	20.0	8	0.05	68
27...	1705	2.1	20.5	15	0.08	68

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

		NUMBER OF SAM- PLING POINTS (COUNT)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	
DATE	TIME							
FEB								
14...	1455	1	19	14.5	5	13	39	
14...	1500	1	19	14.5	3	9	26	
14...	1505	1	19	14.5	1	2	8	
14...	1515	1	19	14.5	2	9	29	
14...	1520	1	19	14.5	10	20	33	
		BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM
DATE								
FEB								
14...	65	77	91	99	100	--	--	
14...	50	62	70	78	86	97	100	
14...	29	50	72	87	94	100	--	
14...	55	66	70	73	77	90	100	
14...	56	75	86	90	90	93	100	

SANTA MARGARITA RIVER BASIN

11042400 TEMECULA CREEK NEAR AGUANGA, CA

LOCATION.--Lat 33°27'33", long 116°55'22", in SW 1/4 SW 1/4 sec.19, T.8 S., R.1 E., Riverside County, Hydrologic Unit 18070302, on right bank 1.6 mi downstream from Long Canyon and 3.5 mi northwest of Aguanga.

DRAINAGE AREA.--131 mi².

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

REVISED RECORDS.--WDR CA-58-1: 1958(M). WDR CA-79-1: 1979(M). WDR CA-80-1: 1980(M). WDR CA-86-1: 1986(M).

GAGE.--Water-stage recorder. Elevation of gage is 1,590 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records good. No regulation upstream from station. Pumping upstream from station for irrigation of less than 1,000 acres.

AVERAGE DISCHARGE.--33 years, 6.63 ft³/s, 4,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,200 ft³/s, Feb. 21, 1980, gage height, 12.0 ft, from floodmarks, from rating curve extended above 1,200 ft³/s; no flow for several days in most years.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	2030	*297	*3.13	May 28	1545	123	2.49

Minimum daily, 0.20 ft³/s, Sept. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.64	.97	1.3	1.5	2.2	2.4	1.9	1.3	e1.5	.27	.27	.39
2	.78	.95	1.3	2.0	2.4	2.5	2.0	1.2	e1.0	.29	.28	.26
3	.73	1.0	1.1	2.2	2.2	2.4	1.8	1.3	e.70	.29	.32	.26
4	.73	1.1	1.2	1.8	2.2	2.4	1.9	1.1	e.50	.27	.32	.26
5	.74	1.2	1.2	1.9	2.5	2.6	2.2	.98	e.42	.26	.35	e.26
6	.70	1.2	1.2	1.9	2.2	2.3	2.0	.86	.42	.28	.34	e.35
7	.75	1.3	1.3	1.8	2.1	2.2	2.0	.88	.44	.34	.40	e.29
8	.71	1.3	1.3	1.7	2.1	2.2	2.0	.82	.51	.30	.37	e.30
9	.67	1.2	1.3	1.7	2.0	2.2	1.9	.77	.73	.28	.33	e.26
10	.60	1.1	1.2	1.6	1.9	2.2	1.6	.87	1.3	.33	2.2	e.23
11	.59	1.1	1.3	1.6	1.9	2.7	1.6	1.0	1.3	.28	1.2	e.22
12	.64	1.2	1.3	1.6	1.9	2.7	1.5	1.0	1.1	.26	.51	e.24
13	.70	1.2	1.5	1.6	1.8	2.4	1.5	.96	.96	.27	.47	e.25
14	.93	1.3	1.5	1.1	1.9	2.2	1.5	1.0	.88	.28	.52	e.22
15	1.0	1.2	1.6	3.8	2.0	2.2	1.5	1.0	.92	.30	.57	e.20
16	1.1	1.2	1.5	2.9	1.9	2.1	1.6	1.1	.93	.30	.58	e.23
17	1.0	1.3	1.5	6.8	34	2.1	2.3	.76	.80	.34	.50	e.26
18	.68	1.2	1.6	3.6	41	2.0	2.4	.60	.66	.29	.49	e.28
19	.67	1.1	1.6	2.8	18	2.0	2.0	.58	.56	.30	.33	e.30
20	.78	1.2	1.6	2.5	8.9	1.9	1.9	.81	.55	.31	.31	e.28
21	1.0	1.2	1.5	2.3	6.6	1.9	1.8	.75	.46	.33	.30	e.28
22	1.3	1.3	1.2	2.3	6.0	1.8	1.8	.68	.40	.33	.31	e.28
23	1.3	1.3	1.2	2.4	4.1	1.9	1.6	.62	.38	.29	.31	e.28
24	1.3	1.4	1.3	2.2	3.1	1.8	1.6	.61	.34	.29	.30	e.27
25	1.2	1.4	1.3	1.9	2.8	1.8	1.4	.62	.32	.29	.28	e.27
26	1.2	1.4	1.4	1.4	2.7	1.8	1.4	.67	.30	.28	.28	e.26
27	1.1	1.3	1.2	1.4	2.6	1.8	1.3	.65	.29	.27	.27	e.26
28	1.1	1.2	1.2	1.6	2.5	1.9	1.4	12	.29	.28	.26	e.26
29	1.1	1.3	1.5	1.6	---	2.0	1.4	4.1	.29	.28	.28	e.30
30	1.1	1.4	1.5	1.6	---	1.9	1.3	2.4	.29	.27	.26	e.28
31	1.0	---	1.4	2.1	---	1.9	---	2.0	---	.26	.29	---
TOTAL	27.84	36.52	42.1	77.1	165.5	66.2	52.1	43.99	19.54	9.01	13.80	8.08
MEAN	.90	1.22	1.36	2.49	5.91	2.14	1.74	1.42	.65	.29	.45	.27
MAX	1.3	1.4	1.6	11	41	2.7	2.4	12	1.5	.34	2.2	.39
MIN	.59	.95	1.1	1.4	1.8	1.8	1.3	.58	.29	.26	.26	.20
AC-FT	55	72	84	153	328	131	103	87	39	18	27	16

CAL YR 1989 TOTAL 525.27 MEAN 1.44 MAX 9.6 MIN .29 AC-FT 1040
WTR YR 1990 TOTAL 561.78 MEAN 1.54 MAX 41 MIN .20 AC-FT 1110

e Estimated.

11042490 WILSON CREEK ABOVE VAIL LAKE, NEAR RADEC, CA

LOCATION.--Lat 33°29'12", long 116°54'37", in SE 1/4 SE 1/4 sec.7, T.8 S., R.1 E., Riverside County, Hydrologic Unit 18070302, on right bank 1.7 mi north of Radec and 3.9 mi northwest of Aguanga.

DRAINAGE AREA.--122 mi².

PERIOD OF RECORD.--October 1989 to September 1990.

GAGE.--Water-stage recorder. Elevation of gage is 1,630 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No regulation upstream from station. Pumping and diversion upstream from station for local irrigation.

EXTREMES FOR CURRENT YEAR.--No flow for the 1990 water year.

SANTA MARGARITA RIVER BASIN

11042510 VAIL LAKE NEAR TEMECULA, CA

LOCATION.--Lat 33°29'44", long 116°58'33", in Pauba Grant, Riverside County, Hydrologic Unit 18070302, near center of Vail Dam on Temecula Creek, 0.2 mi downstream from Arroyo Seco, and 10 mi east of Temecula.

DRAINAGE AREA.--320 mi².

PERIOD OF RECORD.--October 1960 to September 1985 (monthend contents only). Prior to October 1977, published with Temecula Creek at Vail Dam. October 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by the U.S. Bureau of Reclamation). June 4, 1969 to September 1985, nonrecording gage.

REMARKS.--Reservoir is formed by concrete arch-type dam, completed in June 1949. Total capacity, 49,370 acre-ft between elevations 1,352.5 ft, bottom of lowest outlet, and 1,470 ft, crest of spillway, all of which is available for release. There had been no spill from Nov. 13, 1948, date of closure, to Feb. 20, 1980, when a peak spill of about 8,000 ft³/s occurred (from theoretical discharge curve). Water is released down Temecula Creek for diversion about 1 mi downstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 52,670 acre-ft, Feb. 21, 1980, elevation, 1,473.0 ft, from highwater mark; minimum 1,038 acre-ft, Oct. 31, 1960, elevation, 1,379.44 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 18,820 acre-ft, Apr. 12, elevation, 1,434.05 ft; minimum, 17,430 acre-ft, Sept. 30, elevation, 1,431.78 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table dated Dec. 22, 1953)

1,390	2,400	1,420	11,400	1,450	30,420
1,400	4,530	1,430	16,390	1,460	39,280
1,410	7,560	1,440	22,780	1,475	54,940

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18390	18240	18120	18110	18390	18720	18780	18770	18600	18340	17960	17690
2	18380	18230	18110	18150	18400	18730	18790	18760	18600	18320	17950	17690
3	18370	18220	18110	18150	18400	18730	18790	18760	18590	18300	17940	17680
4	18370	18220	18110	18160	18400	18740	18790	18760	18590	18290	17930	17670
5	18360	18210	18100	18160	18410	18740	18790	18750	18580	18270	17910	17660
6	18350	18210	18100	18160	18410	18750	18800	18740	18560	18260	17920	17660
7	18350	18210	18100	18160	18410	18750	18810	18730	18560	18250	17910	17650
8	18350	18210	18100	18170	18410	18750	18810	18730	18560	18240	17910	17640
9	18340	18210	18100	18170	18420	18750	18810	18710	18550	18230	17910	17630
10	18330	18210	18100	18180	18430	18760	18810	18700	18550	18230	17920	17620
11	18320	18210	18080	18180	18440	18760	18810	18700	18550	18240	17920	17610
12	18320	18190	18080	18180	18440	18760	18810	18690	18540	18220	17920	17590
13	18320	18190	18080	18180	18440	18770	18810	18690	18530	18220	17900	17580
14	18310	18190	18080	18220	18440	18770	18810	18680	18510	18210	17890	17570
15	18310	18190	18080	18240	18440	18780	18810	18680	18510	18200	17890	17560
16	18300	18190	18080	18250	18440	18780	18800	18680	18500	18180	17880	17540
17	18300	18190	18080	18340	18480	18780	18800	18660	18490	18180	17860	17530
18	18290	18180	18080	18350	18580	18780	18810	18660	18480	18170	17850	17520
19	18290	18180	18080	18350	18630	18790	18810	18640	18480	18160	17850	17520
20	18280	18180	18090	18350	18660	18790	18810	18640	18470	18140	17830	17500
21	18280	18180	18090	18360	18680	18790	18810	18640	18460	18130	17820	17500
22	18280	18160	18100	18360	18690	18790	18810	18630	18450	18120	17810	17490
23	18290	18170	18100	18370	18700	18790	18800	18630	18430	18100	17790	17490
24	18290	18170	18100	18330	18710	18790	18800	18620	18430	18090	17790	17470
25	18290	18170	18100	18370	18710	18790	18790	18600	18420	18070	17770	17470
26	18290	18170	18100	18370	18710	18790	18790	18600	18410	18050	17760	17460
27	18280	18150	18100	18350	18710	18780	18790	18590	18400	18040	17750	17460
28	18270	18110	18110	18360	18720	18780	18790	18590	18370	18020	17740	17440
29	18260	18110	18110	18360	---	18780	18770	18610	18370	18000	17730	17440
30	18250	18120	18110	18360	---	18780	18770	18610	18350	17990	17720	17430
31	18240	---	18110	18390	---	18780	---	18610	---	17980	17710	---
MAX	18390	18240	18120	18390	18720	18790	18810	18770	18600	18340	17960	17690
MIN	18240	18110	18080	18110	18390	18720	18770	18590	18350	17980	17710	17430
a	1433.12	1432.92	1432.90	1433.36	1433.69	1433.98	1433.97	1433.71	1433.30	1432.69	1432.24	1431.78
b	-160	-120	-10	+280	+330	+60	-10	-160	-260	-370	-270	-280

CAL YR 1989 MAX 19950 MIN 18080 b -1280
WTR YR 1990 MAX 18810 MIN 17430 b -970

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

SANTA MARGARITA RIVER BASIN

139

11042631 PECHANGA CREEK NEAR TEMECULA, CA

LOCATION.--Lat 33°28'06", long 117°07'40", in Temecula Grant, Riverside County, Hydrologic Unit 18070302, on left bank on upstream side of Highway S-16 bridge, 0.4 mi upstream from Temecula Creek, and 2.1 mi southeast of Temecula.

DRAINAGE AREA.--13.8 mi².

PERIOD OF RECORD.--October 1987 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,010 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27 ft³/s, Jan. 17, 1988, gage height, 4.09 ft; no flow most of each year.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 19	1315	*6.0	*3.89				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.56	.47	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.30	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.87	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.028	.017	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.56	.47	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	1.7	.9	.00	.00	.00	.00	.00	.00	.00

CAL YR 1989 TOTAL 1.15 MEAN .003 MAX .77 MIN .00 AC-FT 2.3
WTR YR 1990 TOTAL 1.34 MEAN .004 MAX .56 MIN .00 AC-FT 2.7

SANTA MARGARITA RIVER BASIN

11042800 WARM SPRINGS CREEK NEAR MURRIETA, CA

LOCATION.--Lat 33°31'56", long 117°10'34", in Temecula Grant, Riverside County, Hydrologic Unit 18070302, on left bank at upstream end of Jefferson Road bridge, 0.6 mi upstream from its confluence with Murrieta Creek, and 2.8 mi southeast of Murrieta.

DRAINAGE AREA.--55.4 mi².

PERIOD OF RECORD.--October 1987 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,040 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor. Indeterminate stage-discharge relation at the gage during the 1990 water year. Rancho California Water District can discharge into creek from automated pump, approximately 0.1 mi upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 91 ft³/s, Dec. 24, 1988, gage height, 4.65 ft; maximum gage height, 4.91 ft, Jan. 17, 1988; no flow for many days each year.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	Unknown	*e65	Unknown				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00
4	.00	.00	.00	.00	e1.5	.00	.00	.00	.00	.00	.00	e.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	e2.1	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	e7.5	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	e6.2	e12	.00	e3.7	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	e2.1	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	e2.1	.00	.00	e.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	e.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	e.00	.00
31	.00	---	.00	e1.4	---	.00	---	.00	---	.00	e.00	---
TOTAL	0.00	0.00	0.00	17.20	15.60	0.00	3.70	2.10	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.55	.56	.000	.12	.068	.000	.000	.000	.000
MAX	.00	.00	.00	7.5	12	.00	3.7	2.1	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	34	31	.00	7.3	4.2	.00	.00	.00	.00

CAL YR 1989 TOTAL 2.93 MEAN .008 MAX 2.6 MIN .00 AC-FT 5.8
WTR YR 1990 TOTAL 38.60 MEAN .11 MAX 12 MIN .00 AC-FT 77

e Estimated.

SANTA MARGARITA RIVER BASIN

141

11042900 SANTA GERTRUDIS CREEK NEAR TEMECULA, CA

LOCATION.--Lat 33°31'32", long 117°09'36", in Temecula Grant, Riverside County, Hydrologic Unit 18070302, on left bank 1.0 mi upstream from Murrieta Creek, 1.5 mi downstream from Tualota Creek, and 2.2 mi northeast of Temecula.

DRAINAGE AREA.--92.8 mi².

PERIOD OF RECORD.--October 1987 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,045 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor. Indeterminate stage-discharge relation at the gage during the 1990 water year. No regulation upstream from station. Flow less than 1 ft³/s from local landscape irrigation runoff at times bypasses station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 126 ft³/s, Jan. 17, 1988, gage height, 4.54 ft; no flow most of each year.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 17	0015	*e48	*4.84				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	e.05	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	e.09	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	e.33	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	e.12	.00	.00	e.30	.00	.00	.00	.00	.00
17	.00	.00	.00	e.72	e.13	.00	e.04	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	e.31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	e.05	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.31	0.00	0.00	1.31	0.13	0.00	0.39	0.00	0.00	0.00	0.00	0.00
MEAN	.010	.000	.000	.042	.005	.000	.013	.000	.000	.000	.000	.000
MAX	.31	.00	.00	.72	.13	.00	.30	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.6	.00	.00	2.6	.3	.00	.8	.00	.00	.00	.00	.00

CAL YR 1989 TOTAL 61.64 MEAN .17 MAX 14 MIN .00 AC-FT 122
WTR YR 1990 TOTAL 2.14 MEAN .006 MAX .72 MIN .00 AC-FT 4.2

e Estimated.

SANTA MARGARITA RIVER BASIN

11043000 MURRIETA CREEK AT TEMECULA, CA

LOCATION.--Lat 33°28'47", long 117°08'35", in Temecula Grant, Riverside County, Hydrologic Unit 18070302, on right bank 0.4 mi upstream from confluence with Temecula Creek, 1.0 mi south of Temecula, and 12 mi downstream from Skinner Reservoir on Tualota Creek.

DRAINAGE AREA.--222 mi².

PERIOD OF RECORD.--October 1924 to current year. Prior to September 1930 monthly discharges only, published in WSP 1315-B.

GAGE.--Water-stage recorder. Concrete control since Aug. 30, 1981. Elevation of gage is 970 ft above National Geodetic Vertical Datum of 1929, from topographic map. See WSP 1735 for history of changes prior to Dec. 16, 1938.

REMARKS.--Records fair except for Jan. 1 to Apr. 30 and estimated daily discharges, which are poor. Low flow regulated since 1974 by Skinner Reservoir, capacity, 43,800 acre-ft. Pumping upstream from station for irrigation of about 2,500 acres. Rancho California Water District can discharge into creek, approximately 0.1 mi upstream, to supplement low flow. There were varying amounts of backwater caused by beaver dams throughout the year.

AVERAGE DISCHARGE.--66 years, 10.7 ft³/s, 7,750 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,800 ft³/s, Feb. 21, 1980, gage height, 13.70 ft, on basis of slope-area measurement of peak flow; no flow for many days during 1989 and 1990.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 14	0630	304	4.77	Feb. 17	2015	*880	*6.24
Jan. 17	0745	197	4.35				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	.00	.00	.06	.82	.09	.03	e2.2	e3.0	e1.5	e.83	e2.6
2	3.3	.00	.00	.15	.09	.10	.02	e2.8	e2.7	e1.8	e.79	e2.8
3	3.3	.00	.00	.04	.13	.21	.02	e2.8	e2.9	e2.4	e.76	e3.2
4	3.3	.00	.00	.02	5.5	.20	.51	e2.9	e2.9	e2.5	e.77	e3.2
5	3.3	.00	.00	.00	11	.30	.12	e2.6	e3.1	e2.7	e.77	e3.0
6	3.3	.00	.00	.00	.25	.13	.03	e2.6	e3.1	e2.6	e.85	e3.0
7	3.3	.00	.00	.00	.12	.13	.04	e2.7	e3.5	e1.9	e.86	e2.9
8	3.3	.00	.00	.00	.08	.12	.04	e2.5	e3.8	e1.2	e.82	e3.0
9	3.1	.00	.00	.00	.09	.11	.04	e2.2	e4.0	e1.4	e.92	e3.1
10	3.1	.00	.00	.00	.06	.08	.04	e2.9	e3.8	e1.8	e.97	e2.9
11	3.1	.00	.00	.00	.07	.66	.02	e2.6	e3.5	e1.9	e.99	e2.8
12	3.1	.00	.00	.00	.07	.13	.03	e2.4	e3.2	e2.0	e1.1	e2.8
13	3.1	.00	.00	.00	.06	.06	.04	e2.4	e3.5	e1.1	e1.0	e3.2
14	3.1	.00	.00	77	.06	.06	.25	e2.3	e3.2	e1.1	e1.1	e2.9
15	3.1	.00	.00	4.7	.06	.05	.20	e2.3	e3.2	e1.1	e1.0	e2.7
16	3.1	.00	.00	.06	.06	.04	1.4	e2.2	e2.7	e1.1	e.97	e3.0
17	3.1	.00	.00	78	172	.02	45	e2.4	e2.9	e1.1	e1.2	e2.9
18	3.1	.00	.00	8.3	61	.02	1.9	e2.3	e2.8	e1.1	e1.3	e2.9
19	1.8	.00	.00	.06	4.1	.02	.18	e2.4	e2.9	e1.1	e1.2	e2.8
20	1.3	.00	.00	.00	.44	.02	.14	e2.4	e2.9	e1.1	e2.1	e2.8
21	3.1	.00	.00	.01	.23	.02	.13	e2.4	e2.6	e1.1	e2.8	e3.0
22	3.1	.00	.00	.00	.15	.02	.10	e2.4	e2.4	e.98	e2.7	e2.9
23	3.1	.00	.00	.00	.13	.02	.08	e2.3	e2.3	e.79	e2.5	e3.0
24	3.1	.00	.00	.00	.08	.02	.10	e2.4	e2.3	e.84	e3.1	e2.7
25	3.1	.00	.00	.00	.10	.02	.06	e2.2	e2.1	e.81	e3.0	e2.7
26	3.1	.00	.00	.00	.06	.03	.07	e2.1	e2.4	e.79	e3.0	e2.7
27	2.8	.00	.00	.00	.06	.06	.08	e2.0	e2.3	e.82	e3.0	e2.8
28	1.9	.00	.00	.00	.05	.04	.09	e8.2	e1.9	e.82	e2.9	e2.9
29	1.9	.00	.00	.00	---	.04	.12	e14	e1.9	e.80	e2.5	e3.1
30	1.3	.00	.00	.02	---	.04	.36	e5.3	e1.5	e.85	e2.3	e3.1
31	.00	---	.00	11	---	.03	---	e3.3	---	e.77	e2.1	---
TOTAL	86.90	0.00	0.00	179.42	256.92	2.89	51.24	96.5	85.3	41.87	50.20	87.4
MEAN	2.80	.000	.000	5.79	9.18	.093	1.71	3.11	2.84	1.35	1.62	2.91
MAX	3.3	.00	.00	78	172	.66	45	14	4.0	2.7	3.1	3.2
MIN	.00	.00	.00	.00	.05	.02	.02	2.0	1.5	.77	.76	2.6
AC-FT	172	.00	.00	356	510	5.7	102	191	169	83	100	173

CAL YR 1989 TOTAL 576.38 MEAN 1.58 MAX 35 MIN .00 AC-FT 1140
WTR YR 1990 TOTAL 938.64 MEAN 2.57 MAX 172 MIN .00 AC-FT 1860

e Estimated.

11044000 SANTA MARGARITA RIVER NEAR TEMECULA, CA

LOCATION.--Lat 33°28'26", long 117°08'29", in Temecula Grant, Riverside County, Hydrologic Unit 18070302, on left bank at upper end of Temecula Canyon, 0.1 mi downstream from confluence of Murrieta and Temecula Creeks, 1.4 mi south of Temecula, 10 mi downstream from Vail Dam, and about 12 mi downstream from Skinner Reservoir.

DRAINAGE AREA.--588 mi².

PERIOD OF RECORD.--January 1923 to current year. Prior to October 1952, published as Temecula Creek at Railroad Canyon, near Temecula.

GAGE.--Water-stage recorder and crest-stage gage. Concrete control since Nov. 3, 1966; buried by sand Nov. 19, 1985, and was ineffective as a low-water control. Elevation of gage is 950 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Nov. 3, 1966, at site 100 ft downstream at same datum.

REMARKS.--Records poor. Flow partly regulated since November 1948 by Vail Lake (station 11042510) on Temecula Creek, and since 1974 by Skinner Reservoir on Tualota Creek which is tributary to Murrieta Creek. Rancho California Water District can discharge into Murrieta Creek, approximately 0.1 mi upstream, to supplement low flow.

AVERAGE DISCHARGE.--25 years (water years 1924-48), unregulated, 28.2 ft³/s, 20,420 acre-ft/yr; 42 years (water years 1949-90), 14.4 ft³/s, 10,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,000 ft³/s, Feb. 16, 1927, gage height, 14.6 ft, at site then in use, from rating curve extended above 10,000 ft³/s; minimum daily, 0.16 ft³/s, Mar. 31, Apr. 1, 11, 1988. Since partial regulation by Vail Lake and Skinner Reservoir, maximum discharge 22,000 ft³/s, Feb. 21, 1980, gage height, 16.5 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,800 ft³/s, Feb. 17, gage height, 8.34 ft; minimum daily, 0.42 ft³/s, Nov. 17-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e5.2	e1.0	e.48	e.52	.88	1.5	.79	2.2	3.4	2.8	1.0	3.8
2	e5.2	e.54	e.48	e2.5	.51	1.2	.80	4.4	3.4	2.8	1.0	3.9
3	e5.2	e.54	e.48	e.70	.58	1.2	.78	4.3	3.5	2.8	1.1	4.0
4	e5.2	e.54	e.48	e.64	2.5	1.1	1.7	4.3	3.6	2.8	1.0	3.9
5	e5.2	e.54	e.48	e.62	4.0	1.2	1.2	4.1	3.6	2.8	1.0	3.7
6	e5.2	e.54	e.50	e.60	1.0	.99	.82	4.0	3.9	2.8	1.1	3.6
7	e5.2	e.54	e.50	e.60	.79	.96	.84	4.0	4.1	2.8	1.2	3.6
8	e5.2	e.54	e.50	e.60	.83	.96	.75	4.0	4.1	2.9	1.2	3.5
9	e5.2	e.54	e.50	e.60	.73	.96	.77	4.0	4.9	2.7	1.3	3.4
10	e5.2	e.54	e.50	e.60	.77	.96	.71	3.8	5.0	2.6	1.3	3.3
11	e5.2	e.54	e.50	e.60	.80	1.5	.74	3.6	4.8	2.5	1.6	3.2
12	e5.2	e.54	e.50	e.60	.80	1.0	.73	3.5	4.3	2.0	1.3	3.1
13	e5.2	e.54	e.50	e1.0	.83	.96	.75	3.5	4.2	1.0	1.5	3.1
14	e5.2	e.54	e.50	e130	.85	.96	.80	3.6	4.1	1.1	1.8	3.3
15	e5.2	e.54	e.50	e20	.80	.96	.80	3.5	4.3	1.2	1.6	3.6
16	e5.2	e.54	e.50	e3.0	.78	1.0	3.2	3.4	4.1	1.2	1.4	3.5
17	e5.2	e.42	e.50	e100	324	1.4	53	3.7	4.3	1.1	1.5	3.4
18	e4.0	e.42	e.50	10	122	1.4	2.6	3.4	3.9	1.1	1.7	3.3
19	e3.6	e.42	e.52	3.6	6.6	.94	1.1	3.4	3.5	1.1	1.6	3.3
20	e3.6	e.42	e.52	3.0	e4.5	.90	1.0	3.5	3.6	1.2	2.3	3.3
21	e3.6	e.42	e.52	2.6	2.3	.93	.96	3.5	3.7	1.2	2.9	3.3
22	e3.6	e.42	e.52	2.4	1.4	.92	.96	3.5	3.6	1.3	3.0	3.2
23	e3.6	e.42	e.52	2.1	1.3	.92	1.0	3.5	3.5	1.3	3.0	3.3
24	e3.6	e.42	e.52	1.8	1.4	.88	.98	3.6	3.5	1.4	3.2	3.4
25	e3.6	e.42	e.52	1.6	1.4	.90	.90	3.6	3.1	1.3	3.3	3.5
26	e3.6	e.42	e.52	1.3	1.5	.92	.88	3.7	3.0	1.4	3.7	3.4
27	e3.6	e.42	e.52	1.1	1.5	.90	.84	3.8	2.9	1.3	3.8	4.4
28	e3.6	e.42	e.52	.95	1.6	.90	.87	17	2.9	1.3	4.1	5.1
29	e3.6	e.42	e.52	.78	---	.89	.95	20	2.9	1.1	3.9	5.3
30	e3.6	e.42	e.52	.73	---	.85	1.0	4.2	2.8	1.2	3.8	5.0
31	e2.0	---	e.52	6.7	---	.82	---	3.6	---	1.0	3.8	---
TOTAL	137.6	14.98	15.66	301.84	486.95	31.88	83.22	144.2	112.5	55.1	66.0	109.7
MEAN	4.44	.50	.51	9.74	17.4	1.03	2.77	4.65	3.75	1.78	2.13	3.66
MAX	5.2	1.0	.52	130	324	1.5	53	20	5.0	2.9	4.1	5.3
MIN	2.0	.42	.48	.52	.51	.82	.71	2.2	2.8	1.0	1.0	3.1
AC-FT	273	30	31	599	966	63	165	286	223	109	131	218

CAL YR 1989 TOTAL 842.50 MEAN 2.31 MAX 32 MIN .20 AC-FT 1670
WTR YR 1990 TOTAL 1559.63 MEAN 4.27 MAX 324 MIN .42 AC-FT 3090

e Estimated.

SANTA MARGARITA RIVER BASIN

11044250 RAINBOW CREEK NEAR FALLBROOK, CA

LOCATION.--Lat 33°24'27", long 117°12'00", NW 1/4 SE 1/4 sec.9, T.9 S., R.3 W., San Diego County, Hydrologic Unit 18070302, on left bank 1.0 mi upstream of the confluence with Santa Margarita River and 3.4 mi northeast of Fallbrook.

DRAINAGE AREA.--10.3 mi².

PERIOD OF RECORD.--November 1989 to September 1990.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 540 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair. No regulation upstream from station.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	2015	*72	*4.11				

Minimum daily, 0.23 ft³/s, Nov. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	e.75	.80	3.1	1.8	1.3	1.1	1.2	1.2	e1.2	.38	e.35
2	---	e.70	.52	5.9	.95	1.2	1.3	1.2	1.2	e1.2	.43	e.34
3	---	e.80	.51	3.6	.99	1.4	1.3	1.1	1.4	e1.2	.44	e.33
4	---	e.75	.92	.84	2.1	1.2	4.3	1.2	1.5	e1.2	.40	e.33
5	---	e.70	.54	.96	1.3	1.5	1.2	1.3	1.5	e1.2	.50	.33
6	---	e.70	.76	1.3	.81	1.3	.80	1.4	1.5	e1.1	.50	.38
7	---	.75	.48	1.6	1.1	1.3	.72	1.4	1.2	e1.1	.51	.32
8	---	.73	.45	1.6	1.2	1.5	1.1	1.2	1.4	e1.1	.40	.35
9	---	.44	.85	1.7	.98	1.3	.94	1.4	3.4	e1.1	.47	.39
10	---	.45	.65	1.6	1.0	1.0	1.5	1.2	4.6	e1.1	.45	.40
11	---	1.1	.51	1.4	1.1	4.4	1.5	1.3	1.2	1.0	.42	.80
12	---	.64	1.2	1.7	1.5	1.0	1.5	1.1	1.3	.79	.50	.77
13	---	.61	.47	2.5	.98	1.0	1.4	1.2	1.3	.94	.48	.80
14	---	.65	.51	8.4	.98	1.0	1.6	1.2	1.2	.96	.40	.78
15	---	.97	.50	2.4	1.0	1.1	1.5	1.0	.89	.92	.45	.80
16	---	.63	.62	3.1	1.2	1.1	2.0	1.3	1.6	.88	.33	.89
17	---	.67	.90	12	17	1.3	4.5	1.4	1.7	.83	.38	.68
18	---	.38	.46	2.5	8.7	1.1	.88	1.2	1.2	.85	.37	.59
19	---	.85	.28	.93	3.1	1.1	1.3	1.4	1.7	.93	.30	.67
20	---	1.0	.44	1.3	1.6	1.1	1.2	1.3	1.4	.81	.32	.48
21	---	.72	.60	1.2	1.4	1.6	1.2	1.3	1.2	.91	.33	.64
22	---	.50	.48	1.1	1.3	1.5	1.4	1.3	1.4	1.0	.27	.57
23	---	.78	.70	1.3	1.5	1.6	1.3	1.4	e1.4	.97	.41	.34
24	---	.60	1.0	1.4	1.5	1.4	1.1	1.2	e1.4	.78	.48	.58
25	---	.84	1.1	1.7	1.4	1.4	1.4	1.3	e1.4	.70	e.40	.46
26	---	.77	1.1	1.9	1.3	1.4	1.4	1.5	e1.4	.71	e.39	.44
27	---	.30	1.3	1.5	1.3	1.3	1.3	1.4	e1.3	.44	e.38	.40
28	---	.23	2.0	1.8	1.3	1.4	1.4	6.4	e1.3	.52	e.38	.53
29	---	.51	2.8	1.7	---	.82	1.2	.91	e1.3	.59	e.37	.49
30	---	1.1	2.4	1.8	---	.97	.86	.61	e1.3	.59	e.36	.31
31	---	---	2.2	5.7	---	1.3	---	1.1	---	.37	e.35	---
TOTAL	---	20.62	28.05	79.53	60.39	41.89	44.20	43.42	45.79	27.99	12.55	15.54
MEAN	---	.69	.90	2.57	2.16	1.35	1.47	1.40	1.53	.90	.40	.52
MAX	---	1.1	2.8	12	17	4.4	4.5	6.4	4.6	1.2	.51	.89
MIN	---	.23	.28	.84	.81	.82	.72	.61	.89	.37	.27	.31
AC-FT	---	41	56	158	120	83	88	86	91	56	25	31

e Estimated.

SANTA MARGARITA RIVER BASIN

145

11044300 SANTA MARGARITA RIVER AT FALLBROOK PUBLIC UTILITY DISTRICT SUMP, NEAR FALLBROOK, CA

LOCATION.--Lat 33°24'49", long 117°14'25", in NW 1/4 NW 1/4 sec.7, T.9 S., R.4 W., San Diego County, Hydrologic Unit 18070302, on left bank 0.3 mi upstream of confluence with Sandia Creek and 2.9 mi north of Fallbrook.

DRAINAGE AREA.--620 mi².

PERIOD OF RECORD.--October 1989 to September 1990.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 330 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor. Flow partly regulated since November 1948 by Vail Lake (station 11042510) on Temecula Creek, and since 1974 by Skinner Reservoir on Tualota Creek which is tributary to Murrieta Creek.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 924 ft³/s, Feb. 18, gage height, 4.24 ft; no flow Aug. 1-4, 12-14.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e6.9	5.8	e1.7	e3.6	3.4	e2.8	e1.9	6.0	5.8	4.5	.00	1.2
2	e6.9	4.5	e1.7	11	e1.5	e2.4	e2.1	6.2	5.8	4.5	.00	1.2
3	e6.9	4.5	e1.7	7.6	e1.6	2.0	e2.1	e5.4	5.8	4.5	.00	1.2
4	e6.9	5.8	1.7	e1.4	e4.6	1.7	e6.1	e5.5	5.8	4.5	.00	1.2
5	e6.9	5.8	1.7	e1.6	12	2.5	e2.4	e5.4	3.4	4.5	.05	.70
6	e6.9	2.2	1.7	e1.9	4.7	4.0	e1.6	e5.4	4.5	4.5	.14	.70
7	e6.9	2.8	1.2	e2.2	1.7	2.9	e1.6	e5.4	4.5	4.5	.35	.50
8	e6.9	e2.2	1.7	e2.2	e2.0	2.5	e1.8	e5.4	4.5	4.5	.50	.35
9	e6.9	e2.2	2.8	e2.3	1.4	e2.3	e1.7	5.8	4.5	4.5	.50	.35
10	e6.9	e2.2	e1.1	e2.2	1.3	e2.0	e2.1	4.5	20	4.5	.50	.19
11	e6.9	e2.2	e1.0	3.4	e2.3	5.5	e2.1	4.5	7.6	3.4	.50	.26
12	e6.9	e2.2	e1.7	5.8	e2.6	3.6	e2.1	4.5	4.5	1.7	.00	.50
13	e6.9	e2.2	e1.0	14	e3.4	2.7	e2.0	4.5	3.4	.70	.00	.35
14	e6.9	e2.2	e1.0	e140	e10	3.0	e2.3	4.5	4.5	1.2	.00	.94
15	e6.9	e2.2	e1.0	62	4.1	2.4	e2.2	4.5	4.5	.94	.05	1.2
16	e6.9	e2.2	e1.1	38	3.8	e2.1	e5.1	4.5	4.5	1.8	.19	1.2
17	e6.7	e1.7	e1.4	116	e337	e2.7	e60	4.5	4.5	1.7	.50	2.2
18	e6.5	e1.7	e1.0	24	184	e2.5	8.6	4.5	3.4	1.7	.35	1.7
19	e6.5	e1.7	e.80	7.6	21	e2.0	e2.4	4.5	7.6	.94	.19	1.7
20	e6.5	e1.7	e1.0	e4.4	9.6	e2.0	e2.3	4.5	7.6	.35	.26	2.2
21	e6.5	e1.7	e1.1	e4.9	4.3	e2.5	e2.2	4.5	7.6	.35	.35	2.2
22	e6.5	e1.7	e1.0	e3.5	2.7	e2.1	e2.4	4.5	4.5	.50	.50	2.8
23	e6.5	e1.7	2.2	e3.5	3.2	e2.5	e2.3	4.5	11	.94	.94	2.2
24	e6.5	e1.7	2.2	e3.2	3.1	e2.3	1.7	4.5	7.6	1.2	1.7	1.7
25	e6.5	e1.7	3.4	e3.4	2.6	e2.3	1.7	4.5	4.5	.94	3.4	1.7
26	7.6	e1.7	e1.6	e3.2	3.1	1.7	2.1	4.5	4.5	.94	4.5	1.2
27	7.6	e1.7	e1.8	e2.6	2.7	e2.1	e2.3	4.5	4.5	.30	4.5	1.2
28	5.8	e1.7	e2.5	e2.8	e3.5	2.4	1.4	26	4.5	.35	4.5	.94
29	7.6	e1.7	e2.3	e2.5	---	2.0	3.0	27	4.5	.19	4.5	1.2
30	4.5	e1.7	e2.7	2.2	---	e1.8	3.6	4.5	4.5	.19	1.2	1.7
31	5.8	---	e2.7	17	---	e2.1	---	5.8	---	.14	.70	---
TOTAL	208.0	75.0	51.50	500.0	637.2	77.4	135.2	194.8	174.4	65.47	30.87	36.68
MEAN	6.71	2.50	1.66	16.1	22.8	2.50	4.51	6.28	5.81	2.11	1.00	1.22
MAX	7.6	5.8	3.4	140	337	5.5	60	27	20	4.5	4.5	2.8
MIN	4.5	1.7	.80	1.4	1.3	1.7	1.4	4.5	3.4	.14	.00	.19
AC-FT	413	149	102	992	1260	154	268	386	346	130	61	73

WTR YR 1990 TOTAL 2186.52 MEAN 5.99 MAX 337 MIN .00 AC-FT 4340

e Estimated.

SANTA MARGARITA RIVER BASIN

11044350 SANDIA CREEK NEAR FALLBROOK, CA

LOCATION.--Lat 33°25'03", long 117°14'47", SE 1/4 SE 1/4 sec.1, T.9 S., R.4 W., San Diego County, Hydrologic Unit 18070302, on left bank 0.4 mi north of intersection of Sandia and Rock Mountain Roads, 0.2 mi upstream of the confluence with Santa Margarita River, and 3.3 mi north of Fallbrook.

DRAINAGE AREA.--21.4 mi².

PERIOD OF RECORD.--October 1989 to September 1990.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 330 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair. No regulation or diversion upstream from station.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 14	0630	55	2.26	Feb. 17	2000	*275	*3.40

Minimum daily, 0.15 ft³/s, Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.40	1.9	e1.2	e4.8	4.9	5.6	3.2	3.7	3.3	.61	.46	.26
2	e.50	1.2	e1.2	e4.0	3.9	5.6	3.5	3.7	2.8	.76	.48	.19
3	e.45	1.4	e1.6	2.4	3.5	5.6	3.6	3.4	2.2	.96	.50	.25
4	e.50	.88	e1.2	2.1	4.1	5.4	9.1	3.2	2.3	.90	.35	.37
5	e.60	.84	1.2	2.4	4.8	5.1	8.1	2.9	2.2	.65	.25	.40
6	e.80	1.1	1.1	2.4	4.5	4.7	5.4	2.4	2.0	.66	.35	.43
7	e1.0	1.7	1.1	2.2	4.3	5.0	5.0	2.6	2.0	.60	.36	.38
8	e1.5	2.4	1.3	2.5	4.1	4.9	4.8	2.8	1.8	.59	.58	.31
9	e1.4	3.5	1.3	2.9	4.1	4.9	4.5	2.7	2.7	.61	.53	.19
10	e1.2	e1.7	2.1	2.5	3.6	4.6	3.9	2.6	4.0	.62	.44	.30
11	e1.0	e1.3	1.0	2.5	3.7	5.8	3.7	2.8	4.0	.50	.33	.23
12	e.90	e1.2	1.7	2.4	3.9	3.7	3.7	2.7	3.3	.53	.18	.16
13	e.80	e1.3	1.8	3.2	3.3	4.5	3.3	2.5	2.9	.60	.55	.15
14	e.70	e1.6	1.9	14	3.8	4.5	3.2	2.4	2.9	.44	.77	.30
15	e.60	e1.3	2.0	6.1	3.5	4.1	3.5	2.4	2.8	.41	.77	.35
16	e.70	e1.4	2.0	4.7	3.3	3.9	4.0	2.3	2.4	.52	.70	.25
17	e.80	e1.1	2.8	11	65	4.0	15	2.3	2.1	.49	.54	.33
18	e1.0	e1.7	3.1	6.1	26	4.0	7.5	2.2	2.1	.53	.43	.45
19	e1.4	e1.8	2.0	4.7	14	4.3	6.2	1.9	2.0	.52	.39	.55
20	e1.1	e1.3	1.2	4.2	9.7	3.7	5.4	2.0	1.8	.52	.65	.59
21	e1.0	e1.2	2.0	3.9	8.0	3.6	5.1	2.3	1.6	.31	.71	.55
22	e1.6	e1.5	2.0	3.7	8.9	3.6	4.4	2.1	1.6	.40	.59	.28
23	e1.9	e1.3	1.9	3.4	7.1	3.8	4.2	2.1	1.3	.55	.66	.31
24	e1.8	e1.6	3.2	3.3	6.1	3.5	4.5	2.1	1.1	.57	.66	.50
25	e1.7	e1.5	2.4	3.0	5.6	4.2	4.3	1.9	1.1	.46	.48	.58
26	1.6	e.92	1.9	2.7	5.5	3.3	4.0	1.8	1.0	.57	.56	.90
27	1.6	e.84	2.3	2.5	5.4	3.2	3.6	1.9	.72	.45	.51	1.1
28	1.5	e1.3	2.5	2.2	5.1	3.2	3.5	7.9	.84	.27	.55	1.1
29	1.2	e1.8	2.8	2.5	---	3.6	3.6	6.3	.81	.23	.50	.81
30	1.2	e1.5	e2.5	2.8	---	3.6	4.0	4.2	.73	.47	.47	.65
31	1.4	---	e2.1	6.0	---	3.1	---	3.6	---	.41	.41	---
TOTAL	33.85	44.08	58.4	123.1	229.7	132.6	147.8	89.7	62.40	16.71	15.71	13.22
MEAN	1.09	1.47	1.88	3.97	8.20	4.28	4.93	2.89	2.08	.54	.51	.44
MAX	1.9	3.5	3.2	14	65	5.8	15	7.9	4.0	.96	.77	1.1
MIN	.40	.84	1.0	2.1	3.3	3.1	3.2	1.8	.72	.23	.18	.15
AC-FT	67	87	116	244	456	263	293	178	124	33	31	26

WTR YR 1990 TOTAL 967.27 MEAN 2.65 MAX 65 MIN .15 AC-FT 1920

e Estimated.

11044900 DE LUZ CREEK NEAR FALLBROOK, CA

LOCATION.--Lat 33°22'12", long 117°19'15", NW 1/4 NE 1/4 sec.29, T.9 S., R.4 W., San Diego County, Hydrologic Unit 18070302, on left bank 0.65 mi upstream from mouth and 4.2 mi west of Fallbrook.

DRAINAGE AREA.--47.5 mi².

PERIOD OF RECORD.--February 1951 to September 1965, October 1989 to September 1990. Prior to December 1958, at site 750 ft upstream at same datum.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 150 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,800 ft³/s, Apr. 1, 1958, gage height, 9.95 ft, site and datum then in use, from rating curve extended above 450 ft³/s; no flow for all or part of most years.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	2215	*e110	2.26				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.61	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.24	.20	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.80	.05	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	1.1	.40	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	1.3	.88	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	1.3	.68	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	1.5	.64	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	1.6	.57	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	1.6	.49	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	1.7	.42	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	2.0	.37	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	1.6	.28	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	1.3	.05	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	1.5	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	1.6	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	1.6	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	e15	1.6	.76	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	e10	1.5	.46	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	1.4	.38	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	1.4	.44	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	1.2	.48	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	1.2	.50	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	1.2	.58	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	1.0	.68	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.97	.54	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.94	.49	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.97	.32	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.95	.08	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.95	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.84	.19	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.74	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	25.00	37.60	11.54	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.89	1.21	.38	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	15	2.0	.88	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	50	75	23	.00	.00	.00	.00	.00

WTR YR 1990 TOTAL 74.14 MEAN .20 MAX 15 MIN .00 AC-FT 147

e Estimated.

11046000 SANTA MARGARITA RIVER AT YSIDORA, CA

LOCATION.--Lat 33°18'40", long 117°20'47", in NW 1/4 NW 1/4 sec.18, T.10 S., R.4 W., San Diego County, Hydrologic Unit 18070302, on Camp Joseph H. Pendleton Naval Reservation, on right bank upstream side of Basilone Road Bridge, 7.9 mi upstream from mouth, and 5.2 mi upstream from Ysidora.

DRAINAGE AREA.--723 mi².

REVISED RECORDS.--WDR CA-87-1: Drainage area.

PERIOD OF RECORD.--February 1923 to current year. Low-flow records not equivalent prior to Dec. 10, 1980, due to installation of conservation ponds above downstream site.

GAGE.--Water-stage recorder. Elevation of gage is 75 ft above National Geodetic Vertical Datum of 1929, from topographic map. February 1923 to Feb. 16, 1927 at site 4.4 mi downstream at different datum (destroyed by flood). Feb. 17, 1927, to Feb. 1, 1931, no gage in operation; records based on discharge measurements. Feb. 2, 1931 to Feb. 24, 1970 at site 5.4 mi downstream at different datum; Feb. 25, 1970 to Dec. 10, 1980 at site 6.2 mi downstream at different datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Flow partly regulated by Vail Lake (station 11042510) since November 1948. Diversions for irrigation on Rancho California (formerly Santa Margarita Ranch and Pauba Ranch).

AVERAGE DISCHARGE.--57 years (water years 1924-80, prior to installation of conservation ponds), 34.1 ft³/s, 24,710 acre-ft/yr; 10 years (water years 1981-90), 29.2 ft³/s, 21,160 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,600 ft³/s, Feb. 16, 1927, gage height, 18.00 ft, site and datum then in use, on basis of slope-area measurement of peak flow; maximum gage height, 18.80 ft, Feb. 18, 1980, site and datum then in use, possibly affected by tide; no flow for all or part of most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 897 ft³/s, Feb. 18, gage height, 6.24 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	1.0	3.5	4.8	8.6	9.1	7.7	3.7	.00	.00
2	.00	.00	.00	1.0	e2.0	3.8	8.4	8.8	9.4	3.3	.00	.00
3	.00	.00	.00	e.50	e1.0	3.4	7.1	7.7	9.4	3.6	.00	.00
4	.00	.00	.00	e.15	e.50	3.2	8.1	7.0	7.5	3.5	.00	.00
5	.00	.00	.00	e.05	e.15	3.4	7.3	7.2	7.5	3.1	.00	.00
6	.00	e1.5	.00	.00	e.00	2.9	7.5	6.7	6.7	2.2	.00	.00
7	.00	e3.5	.00	.00	e.00	2.7	8.0	6.5	6.3	1.3	.00	.00
8	.00	e14	.00	.00	e.00	3.0	8.0	5.8	6.3	1.7	.00	.00
9	.00	e18	.00	.00	e.00	3.9	8.0	5.6	6.5	1.6	.00	.00
10	.00	e18	.00	.00	e.10	4.2	7.5	5.2	7.2	1.2	.00	.00
11	.00	e22	.00	.00	e.30	5.2	7.4	6.0	7.0	.48	.00	.00
12	.00	e22	.00	.00	e.65	5.6	7.3	5.4	6.0	.08	.00	.00
13	.00	e12	.00	.00	e.70	5.3	6.8	5.8	6.0	.00	.00	.00
14	.00	e12	.00	.00	.81	5.8	6.9	6.5	6.0	.00	.00	.00
15	.00	e6.0	.00	11	.51	5.8	6.4	6.0	6.7	.00	.00	.00
16	.00	4.2	.00	16	.22	6.3	6.2	5.6	6.8	.00	.00	.00
17	.00	3.1	.00	10	1.9	6.9	6.2	5.0	7.2	.00	.00	.00
18	.00	1.8	.00	62	272	6.9	13	4.8	6.3	.00	.00	.00
19	.00	1.4	.00	26	101	6.2	11	5.0	6.6	.00	.00	.00
20	.00	1.3	.00	13	33	6.9	10	5.4	5.9	.00	.00	.00
21	.00	1.4	.00	13	13	6.5	15	4.8	5.4	.00	.00	.00
22	.00	1.4	.00	11	10	7.3	14	4.8	5.6	.00	.00	.00
23	.00	1.2	.00	10	7.0	7.7	12	4.2	5.5	.00	.00	.00
24	.00	e.40	.00	9.1	6.1	9.5	10	4.0	5.7	.00	.00	.00
25	.00	e.30	.00	8.0	6.2	8.6	9.3	4.0	6.1	.00	.00	.00
26	.00	e.84	.00	6.7	5.3	6.2	11	3.9	5.7	.00	.00	.00
27	.00	e.20	.00	6.1	5.8	4.7	8.8	3.8	4.7	.00	.00	.00
28	.00	e.04	.00	5.3	5.2	6.6	8.8	5.1	4.8	.00	.00	.00
29	.00	.00	.00	5.1	---	8.9	8.5	4.6	4.3	.00	.00	.00
30	.00	.00	.00	4.3	---	9.6	7.7	4.4	4.9	.00	.00	.00
31	.00	---	e.40	4.0	---	8.3	---	5.7	---	.00	.00	---
TOTAL	0.00	146.58	0.40	223.30	476.94	180.1	264.8	174.4	191.7	25.76	0.00	0.00
MEAN	.000	4.89	.013	7.20	17.0	5.81	8.83	5.63	6.39	.83	.000	.000
MAX	.00	22	.40	62	272	9.6	15	9.1	9.4	3.7	.00	.00
MIN	.00	.00	.00	.00	.00	2.7	6.2	3.8	4.3	.00	.00	.00
AC-FT	.00	291	.8	443	946	357	525	346	380	51	.00	.00

CAL YR 1989 TOTAL 1259.81 MEAN 3.45 MAX 35 MIN .00 AC-FT 2500
WTR YR 1990 TOTAL 1683.98 MEAN 4.61 MAX 272 MIN .00 AC-FT 3340

e Estimated.

11046530 SAN JUAN CREEK AT LA NOVIA STREET BRIDGE, AT SAN JUAN CAPISTRANO, CA

LOCATION.--Lat 33°30'09", long 117°38'50", in NW 1/4 SE 1/4 sec.6, T.8 S., R.8 W., Orange County, Hydrologic Unit 18070301, on right bank 20 ft downstream from La Novia Street bridge, 1.3 mi upstream from Arroyo Trabuco Creek, and 0.8 mi east of San Juan Capistrano.

DRAINAGE AREA.--109 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1985 to current year. October 1985 to September 1986, published as San Juan Creek at San Juan Capistrano.

GAGE.--Water-stage recorder. Elevation of gage is 100 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No regulation upstream from station. Capistrano Water Co. diverts water 2.0 mi upstream. Various amounts of diverted water reach station as irrigation return flow.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 778 ft³/s, Dec. 17, 1988, gage height, 13.58 ft, from rating curve extended above 30 ft³/s; no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 25, 1969, reached a discharge of 22,400 ft³/s, at site 1.9 mi upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft³/s and maximum (*), from rating curve extended above 30 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	1730	*399	*13.96				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.95	.37	.04	e1.0	.09	.00	.00
2	.00	.00	.00	.00	.00	.95	.32	.03	e.75	.06	.00	.00
3	.00	.00	.00	e.00	.00	.95	.19	.00	e.70	.00	.00	.00
4	.00	.00	.00	e.00	.00	.87	.68	.00	e.60	.00	.00	.00
5	.00	.00	.00	e.00	.00	1.0	.37	.00	e.60	.00	.00	.00
6	.00	.00	.00	e.00	.00	.83	.23	.00	e.60	.00	.00	.00
7	.00	.00	.00	e.00	.00	.88	.19	.00	e.60	.00	.00	.00
8	.00	.00	.00	e.00	.00	.95	.18	.00	e.55	.00	.00	.00
9	.00	.00	.00	e.00	.00	.92	.14	e.00	e.50	.00	.00	.00
10	.00	.00	.00	e.00	.00	.73	.11	e.00	e.45	.00	.00	.00
11	.00	.00	.00	e.00	.00	.87	.08	e.00	e.40	.00	.00	.00
12	.00	.00	.00	e.00	.00	.73	.08	e.00	.40	.00	.00	.00
13	.00	.00	.00	e.00	.00	.52	.08	e.00	.40	.00	.00	.00
14	.00	.00	.00	e3.5	.00	.52	.08	e.00	.47	.00	.00	.00
15	.00	.00	.00	e5.0	.00	.50	.09	e.00	.53	.00	.00	.00
16	.00	.00	.00	e2.0	.00	.48	.21	e.00	.55	.00	.00	.00
17	.00	.00	.00	e2.5	e137	.41	.97	e.00	.79	.00	.00	.00
18	.00	.00	.00	2.6	33	.31	.40	e.00	.65	.00	.00	.00
19	.00	.00	.00	.12	3.2	.30	.32	e.00	.59	.00	.00	.00
20	.00	.00	.00	.00	1.8	.30	.30	e.00	.63	.00	.00	.00
21	.00	.00	.00	.00	1.6	.31	.31	e.00	.62	.00	.00	.00
22	.00	.00	.00	.00	1.4	.30	.21	e.00	.55	.00	.00	.00
23	.00	.00	.00	.00	1.3	.30	.25	e.00	.46	.00	.00	.00
24	.00	.00	.00	.00	1.2	.25	.33	e.00	.40	.00	.00	.00
25	.00	.00	.00	.00	1.1	.24	.15	e.00	.27	.00	.00	.00
26	.00	.00	.00	.00	1.0	.24	.09	e.00	.14	.00	.00	.00
27	.00	.00	.00	.00	1.0	.25	.06	e.00	.09	.00	.00	.00
28	.00	.00	.00	.00	1.0	.33	.03	e10	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.34	.03	e5.0	.04	.00	.00	.00
30	.00	.00	.00	.00	---	.24	.05	e2.0	.01	.00	.00	.00
31	.00	---	.00	.00	---	.34	---	e1.0	---	.00	.00	---
TOTAL	0.00	0.00	0.00	15.72	184.60	17.11	6.90	18.07	14.34	0.15	0.00	0.00
MEAN	.000	.000	.000	.51	6.59	.55	.23	.58	.48	.005	.000	.000
MAX	.00	.00	.00	5.0	137	1.0	.97	10	1.0	.09	.00	.00
MIN	.00	.00	.00	.00	.00	.24	.03	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	31	366	34	14	36	28	.3	.00	.00

CAL YR 1989 TOTAL 85.59 MEAN .23 MAX 5.0 MIN .00 AC-FT 170
WTR YR 1990 TOTAL 258.89 MEAN .70 MAX 137 MIN .00 AC-FT 510

e Estimated.

SAN JUAN CREEK BASIN

11046530 SAN JUAN CREEK AT LA NOVIA STREET BRIDGE, AT SAN JUAN CAPISTRANO, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1986 to current year (prior to 1986 published as 11046550 San Juan Creek at San Juan Capistrano).

WATER TEMPERATURE: Water years 1986-88.

SEDIMENT DATA: Water years 1986 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1985 to September 1988.

SUSPENDED-SEDIMENT DISCHARGE: October 1985 to September 1988.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
JAN						
17...	1135	0.58	12.5	35	0.05	--
MAR						
09...	1140	1.0	15.0	6	0.02	--
APR						
25...	1215	0.15	21.5	4	0.00	58
MAY						
28...	1650	4.4	19.0	58	0.69	97
JUN						
11...	1130	0.38	23.5	9	0.01	55

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	NUMBER OF SAM- PLING POINTS (COUNT)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	BED MAT. SIEVE DIAM. % FINER THAN .062 MM	BED MAT. SIEVE DIAM. % FINER THAN .125 MM	BED MAT. SIEVE DIAM. % FINER THAN .250 MM	BED MAT. SIEVE DIAM. % FINER THAN .500 MM
MAY							
23...	1150	1	0.0	1	2	6	27
23...	1155	1	0.0	1	1	3	12
23...	1200	1	0.0	1	3	12	25
23...	1205	1	0.0	1	2	2	5
23...	1210	1	0.0	2	3	4	6

DATE	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
MAY							
23...	53	74	86	95	100	--	--
23...	28	36	42	52	72	100	--
23...	37	45	50	56	66	80	100
23...	11	17	23	28	36	60	100
23...	12	21	32	46	66	89	100

11047300 ARROYO TRABUCO AT SAN JUAN CAPISTRANO, CA

LOCATION.--Lat 33°29'54", long 117°39'54", on line between secs.1 and 12, T.8 S., R.8 W., Orange County, Hydrologic Unit 18070301, on left bank 30 ft downstream from Del Obispo Street bridge in San Juan Capistrano.

DRAINAGE AREA.--54.1 mi².

PERIOD OF RECORD.--Water years 1971-78, December 1983 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1970 to September 1977, December 1983 to September 1984.

SUSPENDED-SEDIMENT DISCHARGE: October 1970 to September 1977, December 1983 to September 1984.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (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	
OCT									
11...	1730	4.3	24.5	22	0.26	--	--	--	
JAN									
02...	1330	56	12.5	1900	287	34	42	51	
17...	1350	40	13.0	627	68	--	--	--	
FEB									
13...	1150	1.7	18.0	14	0.06	--	--	--	
MAR									
09...	1300	3.4	17.0	37	0.34	--	--	--	
APR									
25...	1340	2.2	28.5	4	0.02	--	--	--	
MAY									
23...	1320	4.0	26.5	9	0.10	--	--	--	
28...	1830	16	20.5	742	32	57	60	71	
JUN									
11...	1340	6.2	31.0	42	0.70	--	--	--	
AUG									
22...	1340	3.4	30.5	24	0.22	--	--	--	
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	SED. SUSP. SIEVE DIAM. % FINER THAN 2.00 MM
OCT									
11...	--	--	--	--	--	--	--	--	--
JAN									
02...	63	78	90	97	98	100	--	--	--
17...	--	--	84	88	93	98	100	--	--
FEB									
13...	--	--	--	--	--	--	--	--	--
MAR									
09...	--	--	--	--	--	--	--	--	--
APR									
25...	--	--	52	--	--	--	--	--	--
MAY									
23...	--	--	84	--	--	--	--	--	--
28...	76	88	91	92	93	96	99	100	--
JUN									
11...	--	--	94	--	--	--	--	--	--
AUG									
22...	--	--	57	--	--	--	--	--	--

SAN JUAN CREEK BASIN

11047300 ARROYO TRABUCO AT SAN JUAN CAPISTRANO, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	NUMBER OF SAM- PLING POINTS (COUNT)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	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
FEB								
13...	1215	1	1.7	18.0	5	14	39	85
13...	1220	1	1.7	18.0	1	2	3	8
13...	1225	1	1.7	18.0	--	--	2	12
13...	1230	1	1.7	18.0	13	28	50	65

DATE	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 64.0 MM
FEB							
13...	97	99	100	--	--	--	--
13...	19	25	32	42	61	92	100
13...	26	40	51	60	75	89	100
13...	75	83	89	93	96	100	--

PARTICLE-SIZE DISTRIBUTION OF BEDLOAD, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	SAM- PLING METHOD, CODES	SAMPLER TYPE (CODE)	BAG MESH SIZE BEDLOAD SAMPLER (MM)	START- ING TIME (2400 HOURS)	END- ING TIME (2400 HOURS)	NUMBER OF SAM- PLING POINTS (COUNT)	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)
JAN										
02...	1345	1000	1130	0.250	1340	1350	27	2.00	50	12.5
17...	1400	1000	1130	0.250	1355	1410	27	1.00	35	13.0
17...	1415	1000	1130	0.250	1410	1425	27	1.00	35	13.0
MAY										
28...	1840	1000	1130	0.250	1835	1845	14	7.00	14	20.5
28...	1850	1000	1130	0.250	1845	1855	14	7.00	14	20.5
JUN										
11...	1355	1000	1130	0.250	1350	1400	18	4.50	5.7	31.0
11...	1410	1000	1130	0.250	1405	1415	18	4.50	5.7	31.0

DATE	SEDI- MENT DIS- CHARGE, BEDLOAD (TONS/ DAY)	SED. BEDLOAD SIEVE DIAM. % FINER THAN .250 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN .500 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 1.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 2.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 4.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 8.00 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 16.0 MM	SED. BEDLOAD SIEVE DIAM. % FINER THAN 32.0 MM
JAN									
02...	42	1	19	50	70	82	92	98	100
17...	26	1	23	64	86	95	99	100	--
17...	26	2	36	77	92	97	99	99	100
MAY									
28...	62	1	16	51	76	91	98	100	--
28...	62	1	12	46	78	94	99	100	--
JUN									
11...	6.8	1	22	61	84	95	100	--	--
11...	6.8	1	14	53	81	94	100	--	--

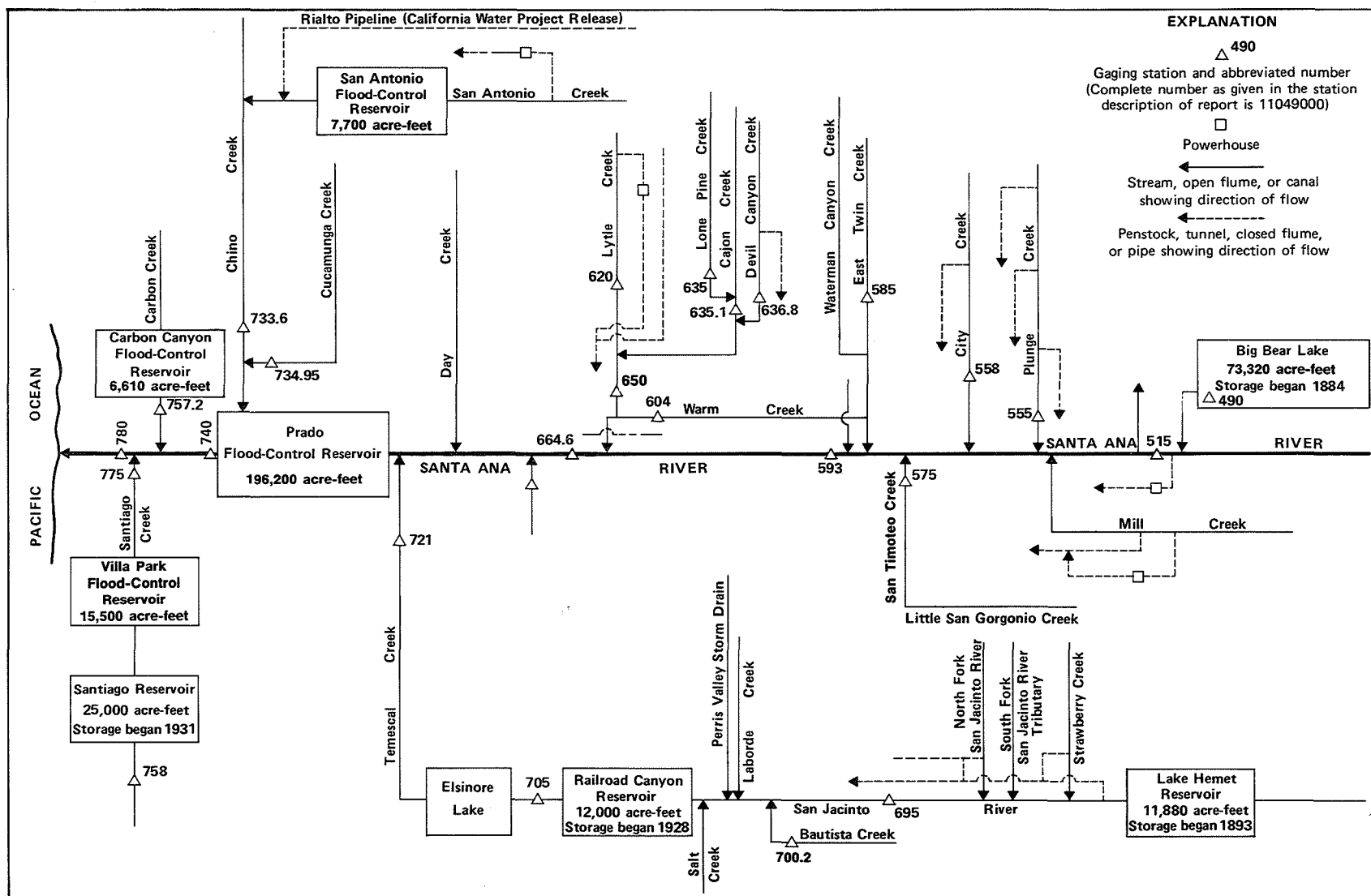


Figure 18. Diversions and storage in Santa Ana River basin.

SANTA ANA RIVER BASIN

11049000 BIG BEAR LAKE NEAR BIG BEAR LAKE, CA

LOCATION.--Lat 34°14'33", long 116°58'33", in SW 1/4 sec.22, T.2 N., R.1 W., San Bernardino County, Hydrologic Unit 18070203, at Big Bear Lake Dam on Bear Creek, 4 mi west of town of Big Bear Lake, and 7.5 mi upstream from mouth.

DRAINAGE AREA.--38.9 mi², excludes Baldwin Lake drainage included in reports prior to 1983.

PERIOD OF RECORD.--October 1950 to current year. February 1884 to September 1950 in files of Bear Valley Mutual Water Co.

REVISED RECORDS.--WDR CA-83-1: Drainage area.

GAGE.--Nonrecording gage. Datum of gage is 6,670.9 ft above National Geodetic Vertical Datum of 1929 (levels by Bear Valley Mutual Water Co.). Prior to 1912 at old dam 200 ft upstream at same datum; spillway at gage height, 52.4 ft.

REMARKS.--Lake is formed by multiple-arch concrete dam, completed in 1912, replacing existing lower dam built in 1884; storage began in spring of 1884. Capacity (based on July 1977 resurvey; present capacity table put into use August 1977), 73,320 acre-ft at elevation 6,743.3 ft, top of dam. No dead storage. Water used for irrigation only. Between November 1989 and April 1990, 709 acre-ft were pumped from the lake for making snow. There were no releases for irrigation. See schematic diagram of Santa Ana River basin.

COOPERATION.--Record of contents was provided by Big Bear Municipal Water District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents unknown, lake spilled in 1969, 1970, 1980, 1983; minimum contents observed, 530 acre-ft, Nov. 24, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum contents unknown, lake spilled in 1916, 1917, 1922, 1923, 1938, 1939; lake dry October, November 1898, August to November 1899, October, November 1904.

EXTREMES FOR CURRENT YEAR.--Maximum contents observed, 43,540 acre-ft, Apr. 9; minimum contents observed, 37,880 acre-ft, Sept. 24.

MONTHEND CONTENTS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

Date	Contents (acre-feet)	Change in Contents (acre-feet)
Sept. 30.....	42,940	--
Oct. 31.....	41,890	-1,050
Nov. 30.....	41,420	-470
Dec. 31.....	40,830	-590
CAL YR 1989.....	--	-6,480
Jan. 31.....	a41,180	+350
Feb. 28.....	a41,180	0
Mar. 31.....	43,300	+2,120
Apr. 30.....	43,300	0
May 31.....	42,590	-710
June 30.....	41,540	-1,050
July 31.....	40,140	-1,400
Aug. 31.....	39,000	-1,140
Sept. 30.....	37,880	-1,120
WTR YR 1990.....	--	-5,060

a Ice effect.

11051500 SANTA ANA RIVER NEAR MENTONE, CA

LOCATION.--Lat 34°06'30", long 117°05'59", in SW 1/4 SW 1/4 sec.4, T.1 S., R.2 W., San Bernardino County, Hydrologic Unit 18070203, on right bank near mouth of canyon, 1.6 mi upstream from Mill Creek, 3.2 mi northeast of Mentone, and 16 mi downstream from Big Bear Lake.

DRAINAGE AREA.--210 mi², including area tributary to Baldwin Lake at head of Bear Valley.

PERIOD OF RECORD.--July 1896 to current year. Prior to October 1914, records for river only not equivalent owing to Greenspot pipeline diversion between sites and exclusion of discharge from Warm Springs Canyon. Monthly discharge only for January 1910, January and February 1916 published in WSP 1315-B.

GAGE.--Three water-stage recorders. Main gage on right bank of river, canal gage on powerhouse diversion, and since 1970, supplementary gage on left bank of river. Elevation of the main and supplementary gages is 1,950 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 2, 1917, nonrecording gages at several sites within 1.5 mi upstream at various datums. Sept. 3, 1917, to May 27, 1969, water-stage recorder at site 0.2 mi upstream at different datum. Canal gage at different datum.

REMARKS.--No estimated daily discharges. Records fair. Flow partly regulated by Big Bear Lake (station 11049000). For records of combined discharge of Santa Ana River and Southern California Edison Co.'s canal below powerplant No. 2, which diverts upstream from station, see following page. Prior to Oct. 1, 1952, and since Apr. 26, 1976, Bear Valley Mutual Water Co. pumps water into channel above canal gage. See schematic diagram of Santa Ana River basin.

AVERAGE DISCHARGE.--River only: 76 years (water years 1915-90), 35.2 ft³/s, 25,500 acre-ft/yr.

Combined river and canal: 94 years, 81.5 ft³/s, 59,050 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 52,300 ft³/s, Mar. 2, 1938, gage height, 14.3 ft, site and datum then in use, on basis of slope-area measurement of peak flow; no flow at times in some years.

Combined river and canal: Maximum discharge, 52,300 ft³/s, Mar. 2, 1938; minimum daily, 5.3 ft³/s, July 22, 1990.

EXTREMES OUTSIDE PERIOD OF RECORD.--Combined river and canal: Flood of Feb. 23, 1891, 53,700 ft³/s, from notes provided by F. C. Finkle, consulting engineer, Los Angeles.

EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 142 ft³/s, Feb. 17, gage height, 7.10 ft; no flow for many days.

Combined river and canal: Maximum discharge, 205 ft³/s, Feb. 17; minimum daily, 5.3 ft³/s, July 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	1.6	.11	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	1.3	.07	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.34	.05	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.26	.03	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.27	.02	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.33	.01	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	3.1	.30	.02	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.90	.31	.02	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.29	.01	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.29	.01	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.04	.28	.01	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.03	.19	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.01	.17	.00	.00	.00	.00	.00
14	.00	.00	.00	10	.00	1.6	.16	.00	.00	.00	.00	.00
15	.00	.00	.00	14	.00	.55	.16	.00	.00	.00	.00	.00
16	.00	.00	.00	4.5	.00	.00	.27	.00	.00	.00	.00	.00
17	.00	.00	.00	.05	26	.00	1.3	.00	.00	.00	.00	.00
18	.00	.00	.00	1.1	36	.00	.85	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	14	.00	.31	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	6.3	.00	.26	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	1.4	.00	.22	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.47	.00	.26	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.15	.00	.24	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.27	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.25	.10	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	1.1	.08	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	1.6	.11	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	1.3	.13	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	5.6	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	29.65	84.32	16.08	10.95	0.36	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.96	3.01	.52	.36	.012	.000	.000	.000	.000
MAX	.00	.00	.00	14	36	5.6	1.6	.11	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	59	167	32	22	.7	.00	.00	.00	.00

CAL YR 1989 TOTAL 1103.12 MEAN 3.02 MAX 134 MIN .00 AC-FT 2190

WTR YR 1990 TOTAL 141.36 MEAN .39 MAX 36 MIN .00 AC-FT 280

SANTA ANA RIVER BASIN

11051501 SANTA ANA RIVER NEAR MENTONE, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF SANTA ANA RIVER AND SOUTHERN
CALIFORNIA EDISON CO.'S CANAL NEAR MENTONE, CA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	15	17	19	23	33	27	27	21	11	8.4	9.1
2	14	15	17	20	21	33	26	25	19	10	9.1	9.0
3	15	15	17	17	20	33	26	24	18	9.7	9.3	9.0
4	14	15	17	16	22	34	27	22	17	9.7	9.2	9.1
5	13	15	17	18	21	37	27	22	17	9.6	9.3	9.5
6	14	15	17	19	21	34	27	21	17	9.4	9.5	10
7	14	16	18	20	21	22	27	21	16	9.3	10	9.5
8	13	16	18	20	21	20	27	21	16	9.5	11	8.4
9	13	16	19	20	20	29	26	21	17	8.7	10	8.0
10	13	16	19	19	20	30	25	22	20	8.6	11	7.9
11	13	15	17	19	20	35	27	24	19	9.4	13	8.1
12	13	15	17	19	21	33	29	23	17	9.2	12	7.6
13	13	16	18	22	21	31	29	22	17	10	10	7.8
14	13	16	18	19	21	29	30	23	17	13	9.8	9.0
15	14	16	18	23	18	33	30	23	18	11	10	9.0
16	14	16	18	26	18	32	32	22	17	11	9.7	9.0
17	13	15	18	26	61	32	32	21	16	10	9.2	9.4
18	13	15	18	20	65	32	32	21	16	9.6	9.4	10
19	13	15	13	22	36	33	30	22	15	9.0	11	11
20	14	16	18	22	34	33	29	22	14	8.4	10	11
21	15	16	18	22	34	33	29	21	13	7.4	10	11
22	16	16	18	23	35	34	28	20	13	5.3	10	11
23	16	16	17	23	35	34	29	20	13	8.4	9.9	11
24	16	17	18	23	34	33	30	20	12	8.8	10	11
25	18	17	18	23	34	33	27	20	12	9.4	10	11
26	17	19	18	22	33	31	26	19	11	9.8	10	10
27	17	18	18	22	33	30	25	18	11	9.6	9.8	11
28	17	16	18	21	33	30	25	24	11	9.3	9.1	11
29	16	17	19	21	---	31	26	25	11	9.2	9.1	12
30	16	17	18	22	---	28	28	23	11	8.8	9.2	12
31	16	---	19	25	---	32	---	21	---	8.1	9.2	---
TOTAL	450	478	548	653	796	977	838	680	462	290.2	307.2	292.4
MEAN	14.5	15.9	17.7	21.1	28.4	31.5	27.9	21.9	15.4	9.36	9.91	9.75
MAX	18	19	19	26	65	37	32	27	21	13	13	12
MIN	13	15	13	16	18	20	25	18	11	5.3	8.4	7.6
AC-FT	893	948	1090	1300	1580	1940	1660	1350	916	576	609	580

CAL YR 1989 TOTAL 8914.7 MEAN 24.4 MAX 155 MIN 9.7 AC-FT 17680
WTR YR 1990 TOTAL 6771.8 MEAN 18.6 MAX 65 MIN 5.3 AC-FT 13430

11055500 PLUNGE CREEK NEAR EAST HIGHLANDS, CA

LOCATION.--Lat 34°07'06", long 117°08'27", in NE 1/4 NE 1/4 sec.1, T.1 S., R.3 W., San Bernardino County, Hydrologic Unit 18070203, on left bank at mouth of canyon at crossing of North Fork ditch siphon, and 1.8 mi northeast of East Highlands.

DRAINAGE AREA.--16.9 mi².

PERIOD OF RECORD.--January 1919 to current year; combined records of creek and diversions, March 1951 to current year.

GAGE.--Water-stage recorder on creek. Since March 1951 water-stage recorder and weir on upper diversion; water-stage recorder and concrete-lined canal on middle diversion; crest-stage gage and sharp-crested weir on lower diversion. Elevation of creek gage is 1,590 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1969, creek gage at datum 4.00 ft higher. Diversions all at different datums.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No regulation upstream from station. Diversion from Alder Creek to Upper Plunge Creek area was active 1904-67. Diversions for irrigation are made at sites 0.5, 1.0, and 2.5 mi upstream from station. Water has been diverted upstream from station for irrigation during entire period of record. Combined discharge of Plunge Creek and upper, middle, and lower diversions is given on following page. No flow in lower diversion since May 29, 1966. See schematic diagram of Santa Ana River basin.

AVERAGE DISCHARGE.--Creek only: 71 years, 6.59 ft³/s, 4,774 acre-ft/yr.

Combined creek and diversions: 39 years, 8.41 ft³/s, 6,090 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Creek only: Maximum discharge, 5,340 ft³/s, Mar. 2, 1938, on basis of slope-area measurement of peak flow; no flow at times in some years.

Combined creek and diversions: Maximum discharge, 4,770 ft³/s, Dec. 6, 1966; no flow Nov. 12, 1964,

Sept. 29, 1965, Aug. 4, 1987, and several days in November 1988.

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

Date	Time	Creek only Discharge (ft ³ /s)	Gage height (ft)	Combined creek and diversions Discharge (ft ³ /s)
Feb. 17	2015	*498	*4.59	*498

Creek only: No flow for many days.

Combined creek and diversions: Minimum daily, 0.09 ft³/s, Oct. 1.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	.08	.20	.41	2.9	6.9	3.2	e.89	e.15	.00	e.00	.01
2	.11	.08	.18	.81	2.3	6.5	2.7	e.79	e.10	.00	e.00	.00
3	.34	.07	.20	.62	2.1	6.2	2.3	e.76	e.09	.00	.00	.00
4	.30	.07	.17	.50	2.5	6.3	1.5	e.63	e.06	.00	.00	.07
5	.21	.07	.15	.49	2.4	6.9	1.2	e.66	e.05	.00	.00	.08
6	.25	.09	.11	.53	2.2	6.0	1.1	e1.1	.03	.00	.00	.04
7	.17	.12	.25	.58	2.1	5.7	1.1	e1.1	.03	.00	.00	.00
8	.07	.15	.20	.58	1.9	5.6	1.0	e1.1	.02	.00	.00	.00
9	.14	.11	.13	.58	1.9	5.7	e1.0	e1.1	.04	.00	.00	.00
10	.22	.07	.13	.58	1.8	5.6	e.90	e1.1	.13	.00	.00	.00
11	.26	.06	.13	.58	1.9	7.5	e.87	e1.0	.12	.00	.00	.00
12	.24	.06	.13	.58	2.0	6.6	e.80	e1.1	.09	.00	.00	.00
13	.34	.07	.18	.78	2.1	6.4	e.76	e1.2	.08	.00	.00	.00
14	.29	.07	.19	6.6	2.4	6.5	e.77	e1.1	.19	.00	.00	.00
15	.24	.06	.23	2.5	2.2	6.8	e.81	e.40	.37	.00	.00	.00
16	.17	.06	.26	3.3	2.2	6.7	e1.2	e.28	.06	.00	.00	.00
17	.11	.06	.28	6.4	89	6.4	e1.8	e.26	.05	.00	.00	.00
18	.06	.06	.29	3.5	51	6.4	e2.4	e.24	.04	.00	.00	.00
19	.05	.06	.34	2.2	19	6.3	e1.3	e.22	.02	.00	.00	.00
20	.06	.07	.37	2.2	8.5	6.0	e1.0	e.20	.00	.00	.00	.00
21	.09	.11	.41	2.0	2.9	6.0	e.90	e.20	.00	.00	.00	.00
22	.12	.17	.38	1.9	2.5	6.0	e.90	e.20	.00	.00	.00	.00
23	.42	.24	.41	1.7	5.3	5.8	e1.0	e.19	.00	.00	.00	.00
24	.35	.30	.40	1.6	9.3	5.8	e1.6	e.21	.00	.00	.00	.00
25	.89	.40	.37	1.6	8.4	5.9	e.90	e.22	.00	.00	.00	.00
26	.81	.87	.37	1.6	7.9	5.8	e.88	e.25	.00	.00	.00	.00
27	.67	.77	.32	1.5	7.3	5.7	e.85	e.35	.00	.00	.06	.00
28	.30	.38	.31	1.5	7.3	6.1	e.80	e.45	.00	.00	.09	.00
29	.13	.24	.38	1.5	---	6.0	e.84	e.25	.00	.00	.07	.00
30	.10	.20	.42	1.7	---	4.7	e.89	e.20	.00	.00	e.02	.00
31	.09	---	.41	4.8	---	3.3	---	e.20	---	.00	.02	---
TOTAL	7.69	5.22	8.30	55.72	253.3	188.1	37.27	17.95	1.72	0.00	0.26	0.20
MEAN	.25	.17	.27	1.80	9.05	6.07	1.24	.58	.057	.000	.008	.007
MAX	.89	.87	.42	6.6	89	7.5	3.2	1.2	.37	.00	.09	.08
MIN	.05	.06	.11	.41	1.8	3.3	.76	.19	.00	.00	.00	.00
AC-FT	15	10	16	111	502	373	74	36	3.4	.00	.5	.4

CAL YR 1989 TOTAL 731.06 MEAN 2.00 MAX 131 MIN .00 AC-FT 1450
WTR YR 1990 TOTAL 575.73 MEAN 1.58 MAX 89 MIN .00 AC-FT 1140

e Estimated.

SANTA ANA RIVER BASIN

11055501 PLUNGE CREEK NEAR EAST HIGHLANDS, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF PLUNGE CREEK AND
DIVERSIONS NEAR EAST HIGHLANDS, CA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.09	e.88	e.82	1.3	2.9	6.9	4.3	e3.9	e2.3	.66	e.38	.45
2	e.11	e.83	e.82	1.9	2.3	6.5	3.9	e3.6	e2.1	.65	e.21	.43
3	e.56	e.77	e.86	1.6	2.1	6.2	4.8	e3.5	e1.7	e.65	.23	.42
4	e.81	e.73	e.83	1.5	2.5	6.3	4.8	e3.1	e1.7	e.65	.43	.49
5	e.71	e.72	e.82	1.4	2.4	6.9	4.3	e3.6	e1.5	e.59	.42	.51
6	e.69	e.72	e.79	1.5	2.2	6.0	4.3	e4.5	1.4	.59	.44	.48
7	e.62	e.73	e.95	1.5	2.1	5.7	4.3	e4.4	1.4	.61	.46	.44
8	e.53	e.77	e.90	1.5	1.9	5.6	4.2	e4.4	1.5	.64	.53	.42
9	e.61	e.86	e.85	1.5	1.9	5.7	e4.1	e4.5	1.5	.55	.50	.42
10	e.72	e.72	e.85	1.5	1.8	5.6	e3.8	e4.7	2.1	.68	.46	.41
11	e.77	e.66	e.87	1.5	1.9	7.5	e3.7	e4.1	2.4	.69	.44	.40
12	e.76	e.64	e.87	1.5	2.0	6.6	e3.6	e3.7	2.1	.63	.42	.40
13	e.89	e.66	1.1	1.8	2.1	6.4	e3.5	e3.6	2.1	.63	.43	.41
14	e.93	e.63	1.1	6.9	2.4	6.5	e3.4	e3.5	2.0	.66	.48	.41
15	e.95	e.68	1.1	2.5	2.2	6.8	e3.4	e2.9	2.2	.61	.58	.40
16	e.82	e.64	1.1	3.3	2.2	6.7	e4.2	e2.6	1.8	.60	.58	.40
17	e.74	e.72	1.2	6.4	89	6.4	e5.3	e2.3	1.5	.51	.55	.40
18	.67	e.69	1.2	3.5	51	6.4	e5.5	e2.1	1.4	.54	.54	.63
19	.65	e.68	1.2	2.2	19	6.3	e4.4	e2.1	1.2	.49	.56	.53
20	.75	e.70	1.2	2.2	8.5	6.0	e4.0	e2.3	1.2	.43	.55	.58
21	.91	e.77	1.3	2.0	2.9	6.0	e3.9	e2.4	1.1	.48	.52	.54
22	.98	e.84	1.2	1.9	2.5	6.0	e3.7	e2.1	1.0	.52	.49	.50
23	1.3	e.89	1.2	1.7	5.3	5.8	e4.1	e1.9	.94	.51	.50	.49
24	1.1	e1.0	1.2	1.6	9.3	5.8	e5.1	e2.0	.71	.50	.53	.49
25	1.6	e1.2	1.2	1.6	8.4	5.9	e3.9	e2.0	.55	.53	.55	.47
26	1.4	e1.7	1.2	1.6	7.9	5.8	e3.7	e2.0	.59	.52	.54	.48
27	1.5	e1.6	1.2	1.5	7.3	5.7	e3.5	e2.1	.62	.51	.56	.49
28	1.2	e1.2	1.3	1.5	7.3	6.1	e3.5	e2.9	.61	.42	.57	.52
29	1.0	e1.1	1.3	1.5	---	6.0	e3.6	e3.3	.61	.44	.54	.50
30	e.90	e1.0	1.4	1.7	---	5.3	e3.9	e2.9	.71	.38	e.48	.47
31	e.88	---	1.3	4.8	---	4.5	---	e2.5	---	.42	.47	---
TOTAL	26.15	25.73	33.23	68.4	253.3	189.9	122.7	95.5	42.54	17.29	14.94	13.98
MEAN	.84	.86	1.07	2.21	9.05	6.13	4.09	3.08	1.42	.56	.48	.47
MAX	1.6	1.7	1.4	6.9	89	7.5	5.5	4.7	2.4	.69	.58	.63
MIN	.09	.63	.79	1.3	1.8	4.5	3.4	1.9	.55	.38	.21	.40
AC-FT	52	51	66	136	502	377	243	189	84	34	30	28

CAL YR 1989 TOTAL 1021.50 MEAN 2.80 MAX 131 MIN .09 AC-FT 2030
WTR YR 1990 TOTAL 903.66 MEAN 2.48 MAX 89 MIN .09 AC-FT 1790

e Estimated.

11055800 CITY CREEK NEAR HIGHLAND, CA

LOCATION.--Lat 34°08'38", long 117°11'16", in SW 1/4 NW 1/4 sec.27, T.1 N., R.3 W., San Bernardino County, Hydrologic Unit 18070203, on right bank 0.6 mi upstream from Highland Avenue and 1.5 mi northeast of Highland. DRAINAGE AREA.--19.6 mi².

PERIOD OF RECORD.--October 1919 to current year; combined records of creek and City Creek Water Co.'s canal, June 1924 to September 1986, October 1988 to current year.

GAGE.--Water-stage recorder on creek; water-stage recorder on canal. Elevation of creek gage is 1,580 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Mar. 1, 1939, at site 0.2 mi downstream at different datum. Canal gage at different datum.

REMARKS.--Records fair. No regulation upstream from station. City Creek Water Co.'s canal diverted from a site 0.5 mi upstream from station for irrigation throughout period of record until Sept. 30, 1986, and resumed diversion on Mar. 31, 1989. See schematic diagram of Santa Ana River basin. Combined discharge of City Creek and canal is given on following page.

AVERAGE DISCHARGE.--Creek only: 71 years, 9.40 ft³/s, 6,810 acre-ft/yr.

Combined creek and canal: 64 years (water years 1925-86, 1989-90), 11.1 ft³/s, 8,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Creek only: Maximum discharge, 7,000 ft³/s, Feb. 25, 1969, gage height, 9.39 ft, from rating curve extended above 580 ft³/s on basis of slope-area measurement at gage height 8.82 ft; no flow for many days in some years.

Combined creek and canal: Maximum discharge, 7,000 ft³/s, Feb. 25, 1969; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

Date	Time	Creek only Discharge (ft ³ /s)	Gage height (ft)	Combined creek and canal Discharge (ft ³ /s)
Feb. 17	1900	*175	*4.93	*185

Creek only: Minimum daily, 0.03 ft³/s, Sept. 2-6.

Combined creek and canal: Minimum daily, 0.03 ft³/s, Sept. 2-6.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	1.3	2.4	.86	4.3	3.1	3.7	1.3	.16	.11	.10	.04
2	.17	1.2	2.3	2.0	3.5	3.0	2.4	1.0	.14	.12	.12	.03
3	.21	1.2	2.1	1.3	3.1	2.8	1.3	1.1	.11	.11	.13	.03
4	.29	1.2	2.0	1.0	2.7	2.7	1.4	.83	.10	.09	.14	.03
5	.24	1.4	1.7	.98	1.2	3.4	1.4	.93	.11	.08	.13	.03
6	.25	1.5	1.5	.93	1.1	2.5	1.4	1.7	.09	.09	.12	.03
7	.24	1.8	1.4	.93	1.0	2.1	1.4	1.6	.09	.07	.12	.04
8	.19	1.8	1.2	.93	1.0	1.9	1.4	1.6	.10	.08	.12	.04
9	.18	1.6	1.1	.90	1.0	1.8	1.3	1.7	.10	.09	.12	.04
10	.18	1.5	1.1	1.1	.78	1.9	1.1	2.0	.19	.07	.12	.04
11	.19	1.5	1.2	1.3	.57	3.8	.97	1.5	.68	.07	.10	.05
12	.19	1.6	1.2	1.3	.57	3.2	.89	.90	.62	.09	.07	.04
13	.22	1.8	1.3	2.6	.57	2.6	.85	2.0	.58	.09	.07	.04
14	.29	2.0	1.2	10	.62	2.5	.87	2.1	.64	.09	.07	.05
15	.41	1.8	1.1	3.7	.52	2.4	.91	2.3	.78	.09	.07	.05
16	.54	1.7	1.0	3.5	.50	2.3	1.4	1.2	.85	.09	.07	.05
17	.39	1.7	1.0	9.3	43	2.2	2.2	.18	.71	.09	.07	.05
18	.26	1.7	.97	4.5	55	2.0	3.0	.13	.72	.09	.07	.06
19	.24	1.8	1.0	3.5	21	1.9	1.8	.10	.60	.11	.07	.06
20	.31	2.0	.96	3.0	11	1.8	1.5	.11	.46	.11	.07	.07
21	.48	2.2	.88	2.8	9.3	1.6	1.3	.12	.39	.09	.06	.08
22	1.2	2.3	.81	2.6	9.0	1.5	1.2	.12	.36	.10	.06	.09
23	1.6	2.4	.67	2.5	9.4	1.4	1.5	.11	.30	.12	.06	.09
24	1.1	2.5	.45	2.3	8.9	2.0	2.3	.09	.25	.10	.06	.09
25	2.1	3.0	.49	2.2	8.2	3.3	1.3	.09	.25	.09	.06	.11
26	1.5	4.1	.46	2.1	7.8	3.5	1.1	.08	.21	.12	.05	.12
27	1.2	3.1	.47	2.0	5.4	3.7	.98	.07	.18	.12	.04	.12
28	1.1	2.7	.50	1.9	3.4	4.8	.90	.92	.16	.11	.04	.12
29	1.1	2.6	.78	1.9	---	5.0	1.0	.56	.15	.11	.04	.14
30	1.2	2.4	1.0	2.0	---	4.0	1.2	.21	.13	.12	.04	.14
31	1.2	---	.83	6.8	---	3.7	---	.17	---	.11	.04	---
TOTAL	18.92	59.4	35.07	82.73	214.43	84.4	43.97	26.82	10.21	3.02	2.50	1.97
MEAN	.61	1.98	1.13	2.67	7.66	2.72	1.47	.87	.34	.097	.081	.066
MAX	2.1	4.1	2.4	10	55	5.0	3.7	2.3	.85	.12	.14	.14
MIN	.15	1.2	.45	.86	.50	1.4	.85	.07	.09	.07	.04	.03
AC-FT	38	118	70	164	425	167	87	53	20	6.0	5.0	3.9

CAL YR 1989 TOTAL 1058.67 MEAN 2.90 MAX 117 MIN .01 AC-FT 2100
WTR YR 1990 TOTAL 583.44 MEAN 1.60 MAX 55 MIN .03 AC-FT 1160

SANTA ANA RIVER BASIN

11055801 CITY CREEK NEAR HIGHLAND, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF CITY CREEK AND CITY CREEK
WATER CO.'S CANAL NEAR HIGHLAND, CA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	1.4	2.7	1.1	4.3	7.4	3.7	3.0	2.0	.18	.10	.04
2	.17	1.3	2.5	3.0	3.5	6.8	3.1	2.8	1.4	.19	.12	.03
3	.21	1.3	2.4	1.8	3.1	6.2	2.5	2.9	1.0	.16	.13	.03
4	.29	1.3	2.3	1.3	3.5	6.1	2.7	2.5	.74	.14	.14	.03
5	.24	1.5	1.9	1.3	3.1	e8.5	2.8	2.1	.61	.13	.13	.03
6	.25	1.8	1.7	1.2	2.7	6.1	2.7	1.8	.58	.13	.12	.03
7	.24	2.2	1.7	1.2	2.4	5.2	2.6	1.7	.59	.11	.12	.04
8	.19	2.1	1.6	1.2	2.3	4.7	2.7	1.7	.49	.13	.12	.04
9	.18	1.7	1.4	1.1	2.2	4.4	2.5	1.9	.47	.09	.12	.04
10	.18	1.6	1.3	1.2	2.1	4.3	2.2	2.2	1.1	.07	.15	.04
11	.19	1.5	1.4	1.3	2.1	e9.7	2.0	2.3	1.6	.07	.14	.05
12	.19	1.7	1.6	1.3	2.1	e8.4	1.9	2.0	1.2	.09	.10	.04
13	.22	1.9	1.9	2.6	2.1	6.7	1.7	2.1	1.1	.09	.10	.04
14	.29	2.2	1.6	10	2.5	6.4	1.7	2.2	1.2	.09	.13	.05
15	.41	1.9	1.3	3.7	2.2	6.2	1.9	2.4	1.4	.09	.17	.05
16	.54	1.7	1.2	3.5	2.1	6.1	e3.4	2.0	1.6	.09	.18	.05
17	.39	1.7	1.2	9.3	50	5.7	e6.2	1.3	1.1	.09	.13	.05
18	.26	1.7	1.3	4.5	61	5.2	e7.2	1.2	1.1	.09	.12	.06
19	.24	1.9	1.5	3.5	23	4.8	4.1	1.3	.93	.11	.13	.06
20	.31	2.0	1.4	3.0	12	4.6	3.3	1.5	.74	.11	.13	.07
21	.48	2.2	1.3	2.8	10	4.1	2.8	1.3	.62	.09	.11	.08
22	1.2	2.4	1.2	2.6	9.8	3.8	2.7	1.1	.57	.10	.10	.09
23	1.6	2.5	1.1	2.5	10	3.6	3.2	.85	.47	.12	.11	.09
24	1.1	2.7	.85	2.3	9.4	3.4	5.0	.81	.40	.10	.13	.09
25	3.5	3.2	.85	2.2	8.6	3.6	2.9	.80	.36	.09	.15	.11
26	2.5	5.7	.80	2.1	8.2	3.6	2.4	.79	.32	.12	.12	.12
27	1.5	4.0	.82	2.0	8.1	3.7	2.2	.82	.27	.12	.09	.12
28	1.3	3.1	.90	1.9	7.9	4.8	2.0	e6.1	.23	.11	.08	.12
29	1.3	3.0	1.2	1.9	---	5.0	2.4	e6.4	.22	.11	.04	.14
30	1.4	2.8	1.3	2.0	---	4.0	2.9	3.0	.20	.12	.04	.14
31	1.4	---	1.1	6.9	---	3.7	---	2.4	---	.11	.04	---
TOTAL	22.42	66.0	45.32	86.3	260.3	166.8	89.4	65.27	24.61	3.44	3.59	1.97
MEAN	.72	2.20	1.46	2.78	9.30	5.38	2.98	2.11	.82	.11	.12	.066
MAX	3.5	5.7	2.7	10	61	9.7	7.2	6.4	2.0	.19	.18	.14
MIN	.15	1.3	.80	1.1	2.1	3.4	1.7	.79	.20	.07	.04	.03
AC-FT	44	131	90	171	516	331	177	129	49	6.8	7.1	3.9

CAL YR 1989 TOTAL 1168.90 MEAN 3.20 MAX 117 MIN .01 AC-FT 2320
WTR YR 1990 TOTAL 835.42 MEAN 2.29 MAX 61 MIN .03 AC-FT 1660

e Estimated.

11057500 SAN TIMOTEO CREEK NEAR LOMA LINDA, CA

LOCATION.--Lat 34°03'46", long 117°16'16", in NE 1/4 NW 1/4 sec.26, T.1 S., R.4 W., San Bernardino County, Hydrologic Unit 18070203, on left bank 200 ft upstream from Redlands Boulevard bridge, and 0.6 mi northwest of Loma Linda.

DRAINAGE AREA.--125 mi².

PERIOD OF RECORD.--October 1954 to September 1965, February 1968 to October 1973, April 1979 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,030 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to April 1979, water-stage recorders at site 0.2 mi downstream at different datum.

REMARKS.--No estimated daily discharges. Records poor. No regulation upstream from station. Natural flow affected by pumping and return flow from irrigated areas. See schematic diagram of Santa Ana River basin.

AVERAGE DISCHARGE.--27 years (1955-65, 1969-73, 1980-90), 2.61 ft³/s, 1,890 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s, Feb. 25, 1969, gage height, 8.2 ft, from floodmark, from rating curve extended above 2,100 ft³/s on basis of slope-conveyance study of peak flow, at site and datum then in use; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	1815	*254	*4.67				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.40	.16	2.2	.87	.04	.98	2.0	.86	.82	.00	.09
2	.66	.55	.35	7.1	.09	.00	1.1	1.8	.12	.55	.02	.33
3	.63	.28	.31	3.1	.39	.00	.40	.67	.00	.29	.39	.00
4	.65	.50	1.0	2.3	4.0	.01	2.6	.11	.00	.01	.25	.00
5	.51	.39	.95	2.0	.66	.75	.32	.16	.00	.00	.00	.00
6	.38	1.0	.45	1.4	.31	.00	.38	.01	.06	.00	.00	1.7
7	.01	.05	.02	.94	.32	.00	.37	.56	.11	.00	.00	.03
8	.38	.60	.35	2.3	.31	.00	.28	.94	.00	.00	.00	.00
9	.64	1.9	.36	2.0	.51	.00	.06	.87	.37	.00	.00	.00
10	.18	.39	.60	1.8	.30	.00	.00	.05	.55	3.5	.00	.05
11	.37	.98	.73	1.4	.26	1.2	.00	.21	.32	.01	.00	.02
12	.94	.25	.91	1.0	.18	2.5	.00	.81	.40	.00	.00	.00
13	2.0	1.4	1.8	4.2	.37	1.3	.38	1.7	.86	.22	.30	.39
14	1.4	.90	.94	14	1.8	.58	.87	.53	.31	.12	.38	.18
15	.02	.03	.41	.61	1.1	.04	.52	.17	.11	.00	.05	.03
16	.00	.00	.37	4.1	1.3	.29	3.2	.30	.14	.00	.00	.04
17	.00	.04	.74	21	62	.03	1.2	.30	.00	.00	.03	.19
18	1.0	.30	1.4	.13	22	.00	.08	.00	.00	.00	.00	.07
19	.00	.01	.83	.05	2.7	.00	.03	.00	.00	.18	.01	.15
20	.00	.00	.57	.05	1.1	.00	.00	.00	.00	.46	.02	.00
21	.00	.11	.78	.04	.36	.00	.16	.02	.13	.00	.00	.02
22	1.5	.26	1.1	.03	.37	.11	.20	.39	.71	.00	.00	.00
23	1.5	.50	1.6	.02	.31	1.2	1.4	.34	.24	.00	.00	.00
24	.89	1.1	2.4	.01	.09	.18	.71	.09	.01	.03	.00	.00
25	.76	.24	1.6	.01	.25	.00	.84	.00	.18	.00	.00	.02
26	.93	4.3	1.6	.01	.08	.05	.77	.00	.10	.00	.00	.02
27	1.2	1.0	1.9	.01	.24	.10	.30	.00	.49	.00	.00	.00
28	.90	1.1	1.8	.01	.03	1.5	.27	5.5	.23	.52	.00	1.8
29	1.5	1.5	3.0	.01	---	.41	.19	1.1	.32	.18	.00	1.9
30	.85	1.4	2.1	2.8	---	.17	1.6	.27	.44	.00	.01	1.7
31	.53	---	2.2	2.1	---	.34	---	.83	---	.00	.00	---
TOTAL	20.38	21.48	33.33	76.73	102.30	10.80	19.21	19.73	7.06	6.89	1.46	8.73
MEAN	.66	.72	1.08	2.48	3.65	.35	.64	.64	.24	.22	.047	.29
MAX	2.0	4.3	3.0	21	62	2.5	3.2	5.5	.86	3.5	.39	1.9
MIN	.00	.00	.02	.01	.03	.00	.00	.00	.00	.00	.00	.00
AC-FT	40	43	66	152	203	21	38	39	14	14	2.9	17

CAL YR 1989 TOTAL 720.68 MEAN 1.97 MAX 114 MIN .00 AC-FT 1430
WTR YR 1990 TOTAL 328.10 MEAN .90 MAX 62 MIN .00 AC-FT 651

SANTA ANA RIVER BASIN

11058500 EAST TWIN CREEK NEAR ARROWHEAD SPRINGS, CA

LOCATION.--Lat 34°10'45", long 117°15'53", in NE 1/4 NE 1/4 sec.14, T.1 N., R.4 W., San Bernardino County, Hydrologic Unit 18070203, on right bank 1,000 ft upstream from Del Rosa Water Co.'s diversion, 0.5 mi south of Arrowhead Springs, and 1.0 mi downstream from Strawberry Creek.

DRAINAGE AREA.--8.80 mi².

PERIOD OF RECORD.--December 1919 to current year. Prior to October 1952, published as Strawberry Creek near Arrowhead Springs.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 1,590 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor. No regulation upstream from station. One small diversion for domestic use upstream from station. See schematic diagram of Santa Ana River basin.

AVERAGE DISCHARGE.--70 years (water years 1921-90), 4.78 ft³/s, 3,460 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,710 ft³/s, Jan. 29, 1980, gage height, 8.35 ft, on basis of slope-area measurement of peak flow; no flow at times in 1929, 1931-35.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft³/s and maximum (*), from rating curve extended above 120 ft³/s on basis of slope-area measurement at gage height 8.35 ft:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	1930	176	3.49	May 28	1615	58	2.74
Apr. 17	1815	*330	*4.06				

Minimum daily, 0.10 ft³/s, Nov. 15.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.40	.69	.70	.60	1.5	2.2	2.1	15	e.98	1.1	.67	.71
2	e.40	.33	.83	1.4	1.1	1.9	1.9	23	e.95	1.1	.58	.71
3	e.42	.70	.98	.92	1.2	1.7	1.7	30	e.95	1.1	.58	.71
4	e.44	.67	.80	.78	1.6	1.7	1.8	40	e.95	1.1	.57	.70
5	e.46	.73	.35	.77	1.6	2.6	1.7	39	1.2	1.2	.59	.72
6	e.47	.83	.30	.72	1.3	2.0	1.7	36	1.3	1.2	.56	.72
7	.90	.89	.32	.72	1.1	1.7	1.7	e8.0	1.2	1.2	.59	.71
8	1.2	.85	.40	.72	1.0	1.5	1.8	e4.0	.93	1.2	.64	.71
9	.98	.46	.42	.68	.94	1.5	1.7	e2.5	1.0	1.2	.67	.72
10	.51	.35	.47	.62	.89	1.4	1.4	e3.0	1.3	1.2	.73	.67
11	.26	.47	.49	.61	.83	3.1	1.2	e2.1	1.3	1.1	.81	.67
12	.67	.50	.56	.60	.81	2.7	1.2	e1.9	1.2	e1.0	.95	.66
13	1.2	.63	.55	3.0	.94	2.5	.92	e1.8	1.3	e1.0	.97	.66
14	1.2	.40	.51	8.9	1.1	2.5	1.1	e1.7	1.4	e.95	.88	.66
15	1.0	.10	.53	2.0	1.0	2.5	1.2	e1.6	1.6	e.90	.86	.66
16	.60	.24	.53	2.9	1.0	2.4	4.7	e1.5	1.5	e.90	.80	.65
17	.32	.73	.56	8.1	37	2.3	22	e1.5	1.4	e.85	.75	.68
18	.85	.64	.60	3.1	39	2.5	10	e1.4	1.4	e.82	.81	.70
19	1.0	.66	.57	2.1	14	2.6	4.8	e1.4	1.3	e.80	.86	.77
20	.95	.71	.53	1.8	8.7	2.6	4.3	e1.3	1.2	e.77	.86	.74
21	.90	.76	.50	1.6	6.5	2.6	4.4	e1.2	1.3	e.74	.80	.74
22	1.5	.66	.45	1.5	4.8	2.4	4.5	e1.2	1.3	.69	.72	.73
23	.53	.49	.44	1.4	3.8	2.3	5.9	e1.1	1.2	.71	.80	.74
24	.36	.57	.49	1.2	3.3	2.2	7.4	e1.1	1.2	.72	.77	.74
25	2.1	.57	.42	1.1	2.9	2.1	6.3	e1.0	1.1	.77	.75	.70
26	.63	1.2	.41	.99	2.8	2.0	6.6	e1.0	1.1	.78	.72	.68
27	.35	.45	.32	.89	2.5	2.0	9.3	e1.0	1.0	.71	.69	.67
28	.28	.34	.39	.96	2.5	3.1	10	e7.0	1.1	.73	.72	.66
29	.76	.33	.54	1.0	---	2.7	9.3	e3.0	1.1	.73	.72	.66
30	.80	.31	.53	1.2	---	2.3	9.4	e1.5	1.1	.71	.72	.65
31	.66	---	.46	2.3	---	2.1	---	e1.0	---	.73	.72	---
TOTAL	23.10	17.26	15.95	55.18	145.71	69.7	142.02	236.8	35.86	28.71	22.86	20.90
MEAN	.75	.58	.51	1.78	5.20	2.25	4.73	7.64	1.20	.93	.74	.70
MAX	2.1	1.2	.98	8.9	39	3.1	22	40	1.6	1.2	.97	.77
MIN	.26	.10	.30	.60	.81	1.4	.92	1.0	.93	.69	.56	.65
AC-FT	46	34	32	109	289	138	282	470	71	57	45	41

CAL YR 1989 TOTAL 587.72 MEAN 1.61 MAX 52 MIN .10 AC-FT 1170
WTR YR 1990 TOTAL 814.05 MEAN 2.23 MAX 40 MIN .10 AC-FT 1610

e Estimated.

11059300 SANTA ANA RIVER AT E STREET, NEAR SAN BERNARDINO, CA

LOCATION.--Lat 34°03'54", long 117°17'58", in San Bernardino Grant, San Bernardino County, Hydrologic Unit 18070203, on left bank, 0.4 mi downstream from E Street bridge, 0.4 mi upstream from Warm Creek, 1.2 mi downstream from San Timoteo Creek, 2.8 mi south of San Bernardino, and 26 mi downstream from Big Bear Lake.

DRAINAGE AREA.--541 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1939 to September 1954, October 1966 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 940 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Nov. 10, 1950, water-stage recorder on right bank 0.4 mi upstream at datum 964.50 ft above NGVD. Nov. 11, 1950, to Sept. 30, 1954, water-stage recorder on both banks 0.4 mi upstream at datum 964.50 ft above NGVD. Oct. 1, 1966, to Sept. 30, 1976, water-stage recorder on right bank 0.4 mi upstream at datum 954.50 ft above NGVD. Oct. 1, 1976, to Sept. 30, 1977, gage was removed for channel construction. Oct. 1, 1977, to Jan. 28, 1981, water-stage recorder on right bank 0.5 mi upstream at elevation 950 ft above NGVD, from topographic map.

REMARKS.--Records fair except discharges above 200 ft³/s, which are poor. Flow partly regulated by Big Bear Lake (station 11049000). Natural flow of stream affected by ground-water withdrawals and diversion for domestic use and irrigation upstream from station. Effluent from sewage reclamation plant 1.0 mi upstream has caused sustained flow past gage since 1967. See schematic diagram of Santa Ana River basin.

AVERAGE DISCHARGE.--15 years (water years 1940-54), 12.5 ft³/s, 9,050 acre-ft/yr; 24 years (water years 1967-90), 91.5 ft³/s, 66,290 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,000 ft³/s, Feb. 25, 1969, gage height, 11.9 ft, site and datum then in use; maximum gage height, 16.50 ft, Jan. 23, 1943, site and datum then in use, discharge uncertain, but was probably less than 8,000 ft³/s; no flow for many days prior to 1967, minimum daily since 1967, 7.0 ft³/s, Mar. 29, 1971.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	1830	*1,600	*5.80				

Minimum daily, 28 ft³/s, Oct. 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34	36	39	50	54	39	44	41	39	36	35	35
2	34	36	39	81	46	44	45	39	37	37	36	34
3	38	37	38	47	43	43	43	38	36	36	36	38
4	38	37	40	45	86	43	61	38	37	35	35	37
5	41	38	44	45	49	48	46	37	37	35	34	38
6	39	37	42	43	44	45	45	37	37	36	35	40
7	39	36	41	42	44	43	47	38	37	36	35	38
8	38	36	40	41	42	42	44	38	37	36	36	36
9	36	37	40	43	43	42	44	38	36	37	37	36
10	37	37	41	42	43	42	43	37	37	55	36	37
11	37	36	41	41	43	e67	42	37	39	41	34	36
12	37	36	41	40	43	e57	42	37	38	35	34	36
13	37	36	42	56	42	46	43	38	37	36	36	36
14	38	36	41	147	41	45	44	38	37	35	36	37
15	38	36	40	54	42	43	43	37	36	34	35	37
16	37	36	42	68	42	47	121	38	37	36	35	35
17	38	36	41	159	359	43	55	38	36	34	35	36
18	37	36	41	47	327	43	49	37	37	33	35	36
19	36	37	41	49	61	48	42	38	38	33	35	36
20	36	35	41	47	45	48	40	37	37	34	36	35
21	28	36	44	46	44	47	40	38	37	34	35	35
22	40	40	44	44	46	48	40	37	37	33	35	36
23	39	41	42	43	46	44	46	38	36	34	36	35
24	40	36	45	44	35	44	51	37	35	33	35	37
25	36	37	40	42	38	43	41	37	37	32	35	36
26	38	61	48	42	38	44	40	36	36	32	35	36
27	37	43	43	44	36	44	40	36	36	33	36	36
28	37	41	41	42	38	58	39	77	35	32	36	37
29	37	42	42	41	---	49	38	42	36	31	36	39
30	35	40	44	43	---	43	42	38	36	33	35	36
31	35	---	46	84	---	44	---	39	---	34	35	---
TOTAL	1147	1144	1294	1702	1860	1426	1400	1211	1103	1091	1095	1092
MEAN	37.0	38.1	41.7	54.9	66.4	46.0	46.7	39.1	36.8	35.2	35.3	36.4
MAX	41	61	48	159	359	67	121	77	39	55	37	40
MIN	28	35	38	40	35	39	38	36	35	31	34	34
AC-FT	2280	2270	2570	3380	3690	2830	2780	2400	2190	2160	2170	2170

CAL YR 1989 TOTAL 15139 MEAN 41.5 MAX 421 MIN 25 AC-FT 30030
WTR YR 1990 TOTAL 15565 MEAN 42.6 MAX 359 MIN 28 AC-FT 30870

e Estimated.

11059300 SANTA ANA RIVER AT E STREET, NEAR SAN BERNARDINO, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983-86, 1988 to current year.

WATER TEMPERATURE: November 1982 to September 1983.

SEDIMENT DATA: Water years 1983-86, 1988 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: November 1982 to September 1983.

SUSPENDED-SEDIMENT DISCHARGE: October 1982 to September 1983.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
OCT							
03...	1205	46	28.0	2	0.25	--	--
27...	1120	49	26.0	2	0.26	--	--
NOV							
22...	1155	49	25.0	6	0.79	--	--
DEC							
04...	1100	56	23.0	8	1.2	--	--
14...	1140	51	22.0	4	0.55	--	--
JAN							
03...	1020	59	19.5	25	4.0	--	--
17...	1100	140	12.0	2410	911	53	73
FEB							
02...	1030	62	18.0	52	8.7	--	--
MAR							
02...	1200	51	21.0	29	4.0	--	--
APR							
02...	1620	57	25.0	12	1.8	--	--
MAY							
08...	0950	50	26.0	13	1.7	--	--
JUN							
15...	1100	48	25.0	4	0.52	--	--
JUL							
03...	0915	38	27.5	6	0.62	--	--
AUG							
06...	0940	36	29.0	9	0.88	--	--
21...	0910	29	27.5	4	0.31	--	--
SEP							
30...	0930	36	27.0	3	0.29	--	--

DATE	SED. SUSP. FALL DIAM. % FINER THAN .008 MM	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
OCT							
03...	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--
NOV							
22...	--	--	--	59	--	--	--
DEC							
04...	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--
JAN							
03...	--	--	--	--	--	--	--
17...	88	94	96	96	96	98	100
FEB							
02...	--	--	--	--	--	--	--
MAR							
02...	--	--	--	--	--	--	--
APR							
02...	--	--	--	--	--	--	--
MAY							
08...	--	--	--	--	--	--	--
JUN							
15...	--	--	--	--	--	--	--
JUL							
03...	--	--	--	--	--	--	--
AUG							
06...	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--
SEP							
30...	--	--	--	--	--	--	--

11060400 WARM CREEK NEAR SAN BERNARDINO, CA

LOCATION.--Lat 34°04'42", long 117°17'58", in San Bernardino Grant, San Bernardino County, Hydrologic Unit 18070203, on left bank 0.2 mi downstream from Interstate Highway 215 bridge and 2.0 mi southwest of San Bernardino.

DRAINAGE AREA.--11.0 mi².

PERIOD OF RECORD.--February 1964 to September 1972, October 1974 to current year.

REVISED RECORDS.--WDR CA-83-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 960 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1974, at site 0.1 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records good. Natural channel prior to October 1972; concrete-lined channel since October 1974. Possible regulation at high flows by flood-control gates on Warm Creek Floodway, 3.0 mi upstream. See schematic diagram of Santa Ana River basin.

AVERAGE DISCHARGE.--8 years (water years 1965-72), 1.61 ft³/s, 1,170 acre-ft/yr; 16 years (water years 1975-90), 19.4 ft³/s, 14,060 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s, estimated, Mar. 1, 1978, gage height, unknown; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,060 ft³/s, Feb. 17, gage height, 2.45 ft, from rating curve extended above 420 ft³/s on basis of step-backwater analysis; minimum daily, 2.9 ft³/s, Sept. 9, 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.3	7.8	7.5	13	12	12	22	11	6.8	5.5	4.8	3.0
2	5.3	7.7	6.8	28	10	12	20	11	7.5	5.2	4.8	3.1
3	5.8	7.2	7.8	9.7	11	12	20	12	8.4	5.2	4.6	3.1
4	6.0	7.7	8.5	10	22	12	32	12	7.8	5.2	4.6	3.5
5	5.8	8.6	7.2	11	11	15	17	10	7.6	5.2	4.6	3.0
6	5.7	8.7	7.0	11	11	16	16	9.8	7.8	5.1	4.6	3.0
7	6.0	7.9	7.7	11	11	14	15	9.6	7.8	4.8	4.7	3.1
8	6.0	9.1	7.2	11	12	17	13	9.2	7.2	4.6	4.7	3.0
9	6.7	9.6	6.8	11	14	18	13	8.9	6.8	4.6	4.8	2.9
10	6.8	9.6	6.8	12	14	13	12	8.7	6.8	4.6	4.7	2.9
11	7.2	9.6	6.7	13	15	28	12	8.5	7.0	4.7	4.7	3.0
12	7.8	11	6.6	13	15	15	11	8.0	6.8	4.6	4.6	3.0
13	8.1	11	7.5	35	16	11	9.8	7.9	6.8	4.6	4.6	3.0
14	9.2	11	9.2	65	17	12	9.6	7.8	6.8	5.0	4.5	3.0
15	9.1	12	10	9.8	16	12	9.6	7.7	6.8	4.9	4.3	3.0
16	8.9	13	10	48	16	12	40	7.5	6.8	4.6	4.1	3.0
17	9.0	19	11	48	298	13	11	7.2	6.8	4.8	4.1	3.0
18	8.7	24	11	7.7	94	14	12	7.1	6.6	5.0	4.1	3.0
19	9.4	25	11	7.4	12	16	8.5	7.2	6.6	4.9	4.0	3.2
20	9.6	25	11	7.6	10	18	11	6.8	6.8	4.6	4.0	3.3
21	9.8	24	11	7.9	9.7	20	9.7	6.8	6.8	4.7	4.0	3.2
22	22	22	13	8.4	10	22	7.6	6.9	6.7	5.0	4.0	3.1
23	7.8	22	10	8.7	10	25	15	7.1	6.6	5.2	4.0	3.0
24	7.3	23	11	8.8	10	28	8.4	6.9	6.5	5.2	4.0	3.1
25	8.0	23	11	9.4	11	32	7.9	7.1	6.8	5.2	4.0	3.2
26	6.8	36	11	10	12	34	8.4	6.6	6.6	5.1	4.0	3.3
27	6.8	8.7	12	11	12	34	8.7	6.4	6.2	5.1	3.9	3.5
28	6.8	7.9	12	11	12	42	9.4	23	6.2	4.6	3.2	3.4
29	6.8	7.8	12	12	---	21	9.5	6.5	6.0	4.6	3.1	3.8
30	7.2	8.1	10	26	---	22	15	6.4	6.0	4.6	3.1	3.5
31	7.8	---	11	23	---	21	---	6.7	---	4.9	3.0	---
TOTAL	243.5	427.0	291.3	518.4	723.7	593	414.1	268.3	206.7	151.9	130.2	94.2
MEAN	7.85	14.2	9.40	16.7	25.8	19.1	13.8	8.65	6.89	4.90	4.20	3.14
MAX	22	36	13	65	298	42	40	23	8.4	5.5	4.8	3.8
MIN	5.3	7.2	6.6	7.4	9.7	11	7.6	6.4	6.0	4.6	3.0	2.9
AC-FT	483	847	578	1030	1440	1180	821	532	410	301	258	187

CAL YR 1989 TOTAL 4709.2 MEAN 12.9 MAX 257 MIN 4.6 AC-FT 9340
WTR YR 1990 TOTAL 4062.3 MEAN 11.1 MAX 298 MIN 2.9 AC-FT 8060

SANTA ANA RIVER BASIN

11062000 LYTLE CREEK NEAR FONTANA, CA

LOCATION.--Lat 34°12'44", long 117°27'26", in NW 1/4 SE 1/4 sec.36, T.2 N., R.6 W., San Bernardino County, Hydrologic Unit 18070203, on right bank 75 ft upstream from highway culvert crossing, 0.7 mi upstream from right tributary, 2.3 mi downstream from Lytle Creek conduit, and 8 mi north of Fontana.

DRAINAGE AREA.--46.6 mi².

PERIOD OF RECORD.--October 1918 to current year. Combined records of Lytle Creek and diversions, October 1898 to December 1899, October 1904 to current year (published as "at mouth of canyon near Rialto" 1898-99, as "near San Bernardino" 1904-18, and as Lytle Creek and Fontana pipeline near Fontana 1919-31). Monthly discharge only for some periods published in WSP 1315-B.

REVISED RECORDS.--WDR CA-83-1: Drainage area.

GAGE.--Water-stage recorder on creek. Elevation of gage is 2,380 ft above National Geodetic Vertical Datum of 1929, from topographic map. October 1918 to Mar. 21, 1938, at site 1 mi downstream at different datum. Mar. 22, 1938, to Nov. 20, 1963, at site 75 ft downstream at datum 4.58 ft lower. Water-stage recorders and sharp-crested weirs on conduit since June 3, 1949, and infiltration line since Oct. 1, 1971.

REMARKS.--Records poor. Indeterminate stage-discharge relation at the creek gage since 1988. Record of combined discharge estimated on basis of records of upstream diversions, periodic measurements of discharge at the creek, and hydrographic comparison with nearby stations. Record of discharge in the creek estimated by subtracting diversions from the record of combined discharge. No regulation upstream from station. Southern California Edison Co.'s Lytle Creek conduit diverts 2.3 mi upstream for power development and Fontana Union Water Co. collects water from an infiltration line upstream for irrigation and domestic use. See schematic diagram of Santa Ana River basin. For records of combined discharge of Lytle Creek and diversions, see following page.

AVERAGE DISCHARGE.--Creek only: 72 years, 17.6 ft³/s, 12,750 acre-ft/yr.

Combined creek and diversions: 87 years (water years 1899, 1905-90), 44.3 ft³/s, 32,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Creek only: Maximum discharge, 35,900 ft³/s, Jan. 25, 1969, gage height, 15.0 ft, from floodmark, from rating curve extended above 570 ft³/s on basis of slope-area measurements at gage heights 10.78 and 15.0 ft; no flow at times most years.

Combined creek and diversions: Maximum discharge, 35,900 ft³/s, Jan. 25, 1969; minimum daily, 0.12 ft³/s, June 21, 22, 1976.

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)	Discharge (ft ³ /s)
Feb. 17	Unknown	Unknown	Unknown	Unknown

Creek only: No flow for many days.

Combined creek and diversions: Minimum daily, 2.6 ft³/s, Nov. 28.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	e.00	e.00	e.00	e.09	e.06	e.00	e.00	e.00	e.00	e.00	e.00
2	e.00	e.00	e.00	e.00	e.09	e.05	e.00	e.00	e.00	e.00	e.00	e.00
3	e.00	e.00	e.00	e.00	e.08	e.04	e.00	e.00	e.00	e.00	e.00	e.00
4	e.00	e.00	e.00	e.00	e.08	e.03	e.00	e.00	e.00	e.00	e.00	e.00
5	e.00	e.00	e.00	e.00	e.08	e.03	e.00	e.00	e.00	e.00	e.00	e.00
6	e.00	e.00	e.00	e.00	e.00	e.02	e.00	e.00	e.00	e.00	e.00	e.00
7	e.00	e.00	e.00	e.00	e.00	e.02	e.00	e.00	e.00	e.00	e.00	e.00
8	e.00	e.00	e.00	e.00	e.00	e.01	e.00	e.00	e.00	e.00	e.00	e.00
9	e.00	e.00	e.00	e.00	e.00	e.01	e.00	e.00	e.00	e.00	e.00	e.00
10	e.00	e.00	e.00	e.00	e.00	e.01	e.00	e.00	e.00	e.00	e.00	e.00
11	e.00	e.00	e.00	e.00	e.00	e.00	e.00	e.00	e.00	e.00	e.00	e.00
12	e.00	e.00	e.00	e.00	e.00	e.00	e.00	e.00	e.00	e.00	e.00	e.00
13	e.00	e.00	e.00	e.14	e.00	e.00	e.00	e.00	e.00	e.00	e.00	e.00
14	e.00	e.00	e.00	e.20	e.00	e.00	e.00	e.00	e.00	e.00	e.00	e.00
15	e.00	e.00	e.00	e.7.0	e.00	e.00	e.00	e.00	e.00	e.00	e.00	e.00
16	e.00	e.00	e.00	e.2.0	e.00	e.00	e.00	e.00	e.00	e.00	e.00	e.00
17	e.00	e.00	e.00	e.14	e.70	e.00	e.00	e.00	e.00	e.00	e.00	e.00
18	e.00	e.00	e.00	e.5.0	e.25	e.00	e.00	e.00	e.00	e.00	e.00	e.00
19	e.00	e.00	e.00	e.2.0	e.1.0	e.00	e.00	e.00	e.00	e.00	e.00	e.00
20	e.00	e.00	e.00	e.30	e.20	e.00	e.00	e.00	e.00	e.00	e.00	e.00
21	e.00	e.00	e.00	e.18	e.16	e.00	e.00	e.00	e.00	e.00	e.00	e.00
22	e.00	e.00	e.00	e.14	e.14	e.00	e.00	e.00	e.00	e.00	e.00	e.00
23	e.00	e.00	e.00	e.12	e.13	e.00	e.00	e.00	e.00	e.00	e.00	e.00
24	e.00	e.00	e.00	e.10	e.12	e.00	e.00	e.00	e.00	e.00	e.00	e.00
25	e.00	e.00	e.00	e.10	e.10	e.00	e.00	e.00	e.00	e.00	e.00	e.00
26	e.00	e.00	e.00	e.09	e.09	e.00	e.00	e.00	e.00	e.00	e.00	e.00
27	e.00	e.00	e.00	e.09	e.09	e.00	e.00	e.00	e.00	e.00	e.00	e.00
28	e.00	e.00	e.00	e.09	e.07	e.00	e.00	e.00	e.00	e.00	e.00	e.00
29	e.00	e.00	e.00	e.09	---	e.00	e.00	e.00	e.00	e.00	e.00	e.00
30	e.00	e.00	e.00	e.09	---	e.00	e.00	e.00	e.00	e.00	e.00	e.00
31	e.00	---	e.00	e.09	---	e.00	---	e.00	---	e.00	e.00	---
TOTAL	0.00	0.00	0.00	65.48	97.52	0.28	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	2.11	3.48	.009	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	20	70	.06	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	130	193	.6	.00	.00	.00	.00	.00	.00

CAL YR 1989 TOTAL 401.25 MEAN 1.10 MAX 40 MIN .00 AC-FT 796
WTR YR 1990 TOTAL 163.28 MEAN .45 MAX 70 MIN .00 AC-FT 324

e Estimated.

11062001 LYTLE CREEK NEAR FONTANA, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF LYTLE CREEK,
SOUTHERN CALIFORNIA EDISON CO.'S LYTLE CREEK CONDUIT, AND FONTANA UNION WATER CO.'S
INFILTRATION LINE DIVERSIONS, NEAR FONTANA, CA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e10	e11	e4.0	e12	e16	e21	e16	e13	e11	e8.9	e7.0	e6.7
2	e10	e11	e4.5	e13	e16	e21	e16	e13	e10	e8.6	e6.8	e7.0
3	e10	e11	e4.9	e12	e15	e21	e16	e13	e10	e7.6	e6.9	e6.8
4	e9.8	e11	e5.3	e12	e16	e21	e16	e12	e10	e7.8	e7.5	e6.8
5	e8.9	e11	e5.5	e12	e16	e21	e16	e12	e9.9	e8.0	e7.4	e6.3
6	e8.8	e11	e5.8	e12	e14	e21	e15	e12	e9.8	e7.4	e7.6	e5.8
7	e8.9	e11	e6.0	e12	e14	e20	e16	e12	e9.4	e8.2	e6.1	e6.0
8	e9.5	e11	e6.2	e12	e14	e20	e15	e12	e9.5	e8.3	e7.0	e6.9
9	e9.7	e11	e9.7	e12	e14	e19	e15	e12	e9.9	e7.7	e7.3	e6.8
10	e9.4	e11	e14	e12	e14	e19	e14	e12	e11	e6.9	e6.5	e7.0
11	e9.4	e11	e14	e12	e14	e19	e14	e12	e10	e7.3	e6.9	e5.4
12	e9.5	e11	e14	e12	e14	e19	e14	e12	e9.4	e7.4	e7.2	e5.7
13	e9.5	e11	e14	e24	e13	e18	e14	e12	e9.8	e7.0	e6.9	e5.8
14	e11	e11	e13	e23	e14	e18	e15	e12	e9.8	e6.6	e6.5	e5.7
15	e11	e11	e13	e16	e14	e17	e15	e12	e10	e7.5	e7.3	e6.0
16	e11	e11	e13	e23	e14	e17	e16	e11	e9.8	e7.1	e7.1	e6.1
17	e10	e11	e13	e36	e83	e17	e16	e11	e9.5	e6.8	e6.9	e6.3
18	e10	e11	e13	e25	e43	e17	e15	e12	e9.0	e7.4	e6.8	e6.3
19	e10	e11	e13	e22	e25	e16	e15	e12	e8.7	e7.3	e7.5	e6.5
20	e10	e11	e13	e19	e23	e16	e15	e11	e9.1	e7.0	e7.4	e6.5
21	e11	e11	e13	e18	e21	e16	e15	e11	e8.7	e7.1	e7.2	e6.5
22	e12	e11	e12	e17	e21	e16	e14	e11	e8.8	e7.0	e6.5	e6.5
23	e11	e11	e12	e16	e21	e17	e15	e11	e8.9	e6.7	e6.9	e6.7
24	e11	e12	e13	e16	e22	e17	e14	e10	e8.8	e6.5	e7.4	e7.0
25	e12	e12	e12	e15	e22	e17	e13	e10	e8.5	e7.5	e7.0	e6.7
26	e11	e12	e12	e16	e22	e17	e13	e11	e8.5	e8.1	e7.0	e6.6
27	e11	e6.9	e12	e16	e21	e17	e12	e11	e8.6	e7.2	e7.0	e6.9
28	e11	e2.6	e12	e17	e21	e17	e12	e9.0	e8.8	e6.8	e6.6	e6.6
29	e11	e2.9	e12	e16	---	e17	e13	e6.9	e8.6	e7.7	e6.6	e6.4
30	e11	e3.5	e12	e16	---	e16	e14	e11	e8.5	e6.9	e6.6	e6.6
31	e11	---	e12	e16	---	e16	---	e11	---	e6.5	e6.9	---
TOTAL	319.4	304.9	332.9	512	577	561	439	352.9	282.3	228.8	216.3	192.9
MEAN	10.3	10.2	10.7	16.5	20.6	18.1	14.6	11.4	9.41	7.38	6.98	6.43
MAX	12	12	14	36	83	21	16	13	11	8.9	7.6	7.0
MIN	8.8	2.6	4.0	12	13	16	12	6.9	8.5	6.5	6.1	5.4
AC-FT	634	605	660	1020	1140	1110	871	700	560	454	429	383
CAL YR 1989	TOTAL 5789.2 MEAN 15.9 MAX 50 MIN 2.6 AC-FT 11480											
WTR YR 1990	TOTAL 4319.4 MEAN 11.8 MAX 83 MIN 2.6 AC-FT 8570											

e Estimated.

SANTA ANA RIVER BASIN

11063500 LONE PINE CREEK NEAR KEENBROOK, CA

LOCATION.--Lat 34°15'59", long 117°27'47", in SE 1/4 SW 1/4 sec.12, T.2 N., R.6 W., San Bernardino County, Hydrologic Unit 18070203, on right bank 50 ft upstream from the Atchison, Topeka, & Santa Fe Railway Co. bridge, 150 ft upstream from confluence with Cajon Creek, and 1.1 mi north of Keenbrook.

DRAINAGE AREA.--15.1 mi².

PERIOD OF RECORD.--December 1919 to September 1938, June 1949 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 2,605.92 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 2, 1938, water-stage recorder (destroyed by flood), and Mar. 2 to Sept. 30, 1938, nonrecording gage at same site at datum 0.98 ft higher.

REMARKS.--Records fair. No regulation or diversion upstream from station. See schematic diagram of Santa Ana River basin.

AVERAGE DISCHARGE.--59 years (water years 1921-38, 1950-90), 1.79 ft³/s, 1,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,180 ft³/s, Mar. 2, 1938, gage height unknown, on basis of slope-area measurement of peak flow; no flow Aug. 6-8, Sept. 29, 30, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 80 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	1545	*41	*2.09				

Minimum daily, 0.07 ft³/s, for several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.18	.10	.14	.28	.20	.14	.14	.10	e.10	e.10	.12	.09
2	.20	.10	.14	.29	.20	.14	.13	.10	e.10	e.10	.13	.09
3	.14	.11	.14	.28	.20	.14	.10	.10	e.10	e.10	.14	.09
4	.10	.14	.14	.28	.23	.14	.13	.10	e.10	e.10	.13	.09
5	.09	.14	.14	.28	.20	.14	.14	.09	e.10	e.10	.12	.09
6	.09	.15	.14	.28	.20	.14	.14	.09	e.10	e.10	.13	.09
7	.10	.14	.11	.28	.20	.14	.14	.09	e.10	e.10	.12	.08
8	.09	.14	.10	.28	.23	.14	.14	.10	e.10	e.10	.10	.08
9	.10	.16	.12	.28	.28	.14	.12	.10	e.10	e.10	.07	.09
10	.10	.20	.14	.28	.28	.14	.10	.10	e.10	e.10	.08	.10
11	.10	.20	.14	.28	.28	.15	.10	.10	e.10	e.10	.08	.10
12	.07	.19	.14	.28	.28	.14	.10	.10	e.10	e.10	.08	.10
13	.07	.14	.15	.61	.28	.14	.10	.10	e.10	e.10	.09	.10
14	.10	.14	.20	.35	.28	.14	.10	.11	e.10	.11	.10	.10
15	.10	.16	.20	.15	.28	.14	.10	.12	e.10	.12	.10	.10
16	.08	.18	.20	.22	.31	.12	.10	.10	e.10	.12	.10	.10
17	.07	.18	.20	.30	7.5	.12	.10	.10	e.10	.11	.09	.10
18	.07	.18	.20	.18	.17	.10	.10	.10	e.10	.12	.10	.10
19	.07	.14	.26	.14	.13	.10	.10	e.10	e.10	.11	.10	.10
20	.07	.14	.24	.14	.10	.10	.10	e.10	e.10	.09	.10	.10
21	.10	.18	.20	.14	.10	.10	.10	e.10	e.10	.10	.10	.10
22	.12	.20	.20	.14	.10	.10	.10	e.10	e.10	.10	.10	.10
23	.11	.20	.23	.14	.10	.10	.10	e.10	e.10	.12	.10	.10
24	.13	.20	.23	.20	.10	.10	.10	e.10	e.10	.14	.10	.10
25	.14	.15	.28	.20	.10	.14	.10	e.10	e.10	.14	.10	.10
26	.14	.15	.28	.20	.10	.13	.10	e.10	e.10	.14	.11	.10
27	.14	.14	.28	.20	.10	.14	.10	e.10	e.10	.13	.09	.10
28	.14	.14	.28	.20	.10	.14	.10	e.10	e.10	.13	.10	.10
29	.10	.14	.30	.20	---	.14	.10	e.10	e.10	.12	.09	.11
30	.10	.14	.38	.20	---	.14	.10	e.10	e.10	.12	.09	.12
31	.10	---	.28	.20	---	.14	---	e.10	---	.10	.09	---
TOTAL	3.31	4.67	6.18	7.48	12.63	4.02	3.28	3.10	3.00	3.42	3.15	2.92
MEAN	.11	.16	.20	.24	.45	.13	.11	.10	.10	.11	.10	.097
MAX	.20	.20	.38	.61	7.5	.15	.14	.12	.10	.14	.14	.12
MIN	.07	.10	.10	.14	.10	.10	.10	.09	.10	.09	.07	.08
AC-FT	6.6	9.3	12	15	25	8.0	6.5	6.1	6.0	6.8	6.2	5.8

CAL YR 1989 TOTAL 100.46 MEAN .28 MAX .59 MIN .07 AC-FT 199
WTR YR 1990 TOTAL 57.16 MEAN .16 MAX 7.5 MIN .07 AC-FT 113

e Estimated.

SANTA ANA RIVER BASIN

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11063510 CAJON CREEK BELOW LONE PINE CREEK, NEAR KEENBROOK, CA

LOCATION.--Lat 34°16'04", long 117°27'58", in NW 1/4 NW 1/4 sec.13, T.2 N., R.6 W., San Bernardino County, Hydrologic Unit 18070203, on left bank 0.25 mi downstream from Lone Pine Creek and 0.95 mi north of Keenbrook.

DRAINAGE AREA.--56.5 mi².

PERIOD OF RECORD.--October 1971 to September 1977, October 1983 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 2,600 ft above National Geodetic Vertical Datum of 1929, from topographic map. Oct. 1, 1971, to Sept. 30, 1977, at site 0.25 mi upstream at abandoned diversion dam at different datum.

REMARKS.--Records fair. Concrete control installed Oct. 1, 1987. No regulation or diversion upstream from station. See schematic diagram of Santa Ana River basin.

AVERAGE DISCHARGE.--13 years (water years 1972-77, 1984-90), 7.46 ft³/s, 5,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,780 ft³/s, Feb. 11, 1973, gage height, 13.50 ft, site and datum then in use; minimum daily, 1.7 ft³/s, Sept. 5, 6, 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s and maximum (*), from rating curve extended above 30 ft³/s on basis of slope-area measurement of peak flow at gage height 6.02 ft:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	1615	*191	*5.03				

Minimum daily, 1.8 ft³/s, for several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	3.5	3.7	4.0	3.1	5.1	5.3	4.7	1.8	e2.0	2.2	1.8
2	2.8	3.5	3.7	4.3	3.1	5.0	5.3	4.8	1.8	e2.0	2.2	1.8
3	3.2	3.4	3.7	4.1	3.1	4.8	5.2	4.6	1.9	e2.0	2.2	1.8
4	3.3	3.4	3.7	4.1	3.4	4.6	5.5	4.6	e2.0	e2.0	2.0	1.8
5	3.3	3.4	3.6	4.1	3.1	5.1	5.3	3.8	e2.0	e2.0	1.8	1.8
6	3.3	3.5	e3.7	4.0	3.0	4.6	5.4	3.9	e2.0	e2.0	1.8	1.8
7	3.2	3.4	e3.7	4.1	2.8	4.4	5.3	4.1	e2.0	e2.0	1.9	1.8
8	3.2	3.4	e3.7	4.1	2.8	4.2	5.3	5.3	e2.0	e2.0	1.9	1.8
9	3.2	3.4	e3.7	4.0	2.8	4.1	5.1	6.5	e2.0	e2.0	2.0	1.9
10	3.2	3.4	e3.7	4.0	2.8	4.1	4.4	6.9	e2.0	e2.0	2.0	2.0
11	3.2	3.4	e3.7	4.0	2.8	5.7	7.5	7.0	e2.0	e2.0	2.0	2.0
12	3.2	3.5	e3.7	4.1	2.8	4.8	12	6.7	e2.0	e2.0	2.1	2.0
13	3.3	3.5	e3.7	9.5	2.8	4.6	9.4	6.8	e2.0	e2.0	2.2	2.0
14	3.5	3.6	3.6	13	2.8	4.5	5.1	7.0	e2.0	e2.0	2.2	2.0
15	3.4	3.5	3.7	3.8	2.8	4.3	5.1	11	e2.0	e2.0	2.4	2.0
16	3.3	3.6	3.7	5.3	3.0	4.1	5.4	7.4	e2.0	e2.0	2.3	2.0
17	3.2	3.5	3.8	8.4	62	4.0	5.3	6.2	e2.0	e2.0	2.3	2.0
18	3.2	3.4	3.8	4.0	27	4.3	5.3	19	e2.0	e2.0	2.3	2.1
19	3.2	3.5	3.8	3.6	12	3.4	5.3	12	e2.0	e2.0	2.3	2.1
20	3.4	3.6	3.8	3.5	9.3	3.2	5.3	3.2	e2.0	e2.0	2.3	2.1
21	3.5	3.5	3.8	3.5	8.2	3.2	5.2	3.5	e2.0	e2.0	2.3	2.1
22	4.2	3.6	3.8	3.3	7.5	3.3	5.2	3.4	e2.0	e2.0	2.2	2.1
23	3.7	3.6	3.9	3.1	7.5	3.4	5.2	3.5	e2.0	e2.0	2.2	2.1
24	3.7	3.5	4.0	3.1	7.2	3.3	4.4	3.1	e2.0	e2.0	2.3	2.1
25	3.7	3.7	4.0	3.1	6.6	2.2	4.4	2.8	e2.0	e2.0	2.3	2.1
26	3.6	3.9	4.0	3.0	6.1	2.7	4.5	2.7	e2.0	2.4	2.2	2.1
27	3.6	3.6	4.1	3.0	5.6	5.3	4.6	2.6	e2.0	2.4	2.2	2.1
28	3.6	3.8	4.1	3.0	5.2	5.4	4.7	2.6	e2.0	2.4	2.0	2.2
29	3.5	3.7	4.1	2.8	---	5.3	4.9	2.4	e2.0	2.3	1.8	2.2
30	3.6	3.7	4.1	2.9	---	5.3	5.1	2.3	e2.0	2.1	1.9	2.1
31	3.5	---	4.0	2.9	---	5.3	---	2.6	---	2.1	1.9	---
TOTAL	104.3	106.0	118.1	133.7	211.2	133.6	166.0	167.0	59.5	63.7	65.7	59.8
MEAN	3.36	3.53	3.81	4.31	7.54	4.31	5.53	5.39	1.98	2.05	2.12	1.99
MAX	4.2	3.9	4.1	13	62	5.7	12	19	2.0	2.4	2.4	2.2
MIN	2.5	3.4	3.6	2.8	2.8	2.2	4.4	2.3	1.8	2.0	1.8	1.8
AC-FT	207	210	234	265	419	265	329	331	118	126	130	119

CAL YR 1989 TOTAL 1421.5 MEAN 3.89 MAX 20 MIN 1.7 AC-FT 2820
WTR YR 1990 TOTAL 1388.6 MEAN 3.80 MAX 62 MIN 1.8 AC-FT 2750

e Estimated.

11063680 DEVIL CANYON CREEK NEAR SAN BERNARDINO, CA

LOCATION.--Lat 34°12'30", long 117°19'50", in Muscupiabe Grant, San Bernardino County, Hydrologic Unit 18070203, on left bank 0.6 mi downstream from confluence of East and West Forks and 7.5 mi northwest of San Bernardino.

DRAINAGE AREA.--5.49 mi².

PERIOD OF RECORD.--November 1911 to September 1912, October 1913 to September 1914, December 1919 to current year. Monthly figures only for January 1914, published in WSP 1315-B.

GAGE.--Water-stage recorder on creek; flowmeter on diversion. Elevation of gage is 2,080 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to December 1919, nonrecording gage at site 0.5 mi downstream at different datum. December 1919 to July 1969, at site 0.4 mi downstream at different datum. July 1969 to September 1972, present gage used as supplementary gage. Oct. 1, 1973, to Feb. 25, 1974, supplementary gage at site 0.5 mi downstream at different datum.

REMARKS.--Records good. No regulation upstream from station. City of San Bernardino diverts upstream from station for municipal supply. See schematic diagram of Santa Ana River basin. Records given below are for creek only unless otherwise indicated.

COOPERATION.--Records of diversion were provided by city of San Bernardino.

AVERAGE DISCHARGE.--Creek only: 71 years (water years 1914, 1921-90), 2.23 ft³/s, 1,620 acre-ft/yr.

Combined creek and diversion: 57 years (water years 1914, 1935-90), 4.16 ft³/s, 3,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (1913-14 AND SINCE 1919).--Maximum discharge, 3,720 ft³/s, Jan. 25, 1969, gage height, 5.40 ft, site and datum then in use, on basis of slope-area measurement of peak flow; no flow at times in some years.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	1800	*96	*5.83				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.96	1.0	.09	.83	1.8	e.50	.00	.00	1.4	.00	.00	.00
2	1.0	.04	.07	2.0	1.7	e.38	.00	.00	1.5	.00	.00	.00
3	.76	.08	.08	.95	.78	.16	.00	.00	.00	.00	.00	.00
4	.08	.11	1.4	.06	.97	.15	1.8	.00	.38	.00	.00	.00
5	.09	.11	.95	.60	.78	2.0	1.4	.00	.00	.00	.00	.00
6	.09	.09	.09	.75	.12	1.2	2.1	.00	.00	.00	.00	.00
7	.20	.07	.36	.06	1.1	1.1	3.4	.00	.00	.00	.00	.00
8	.81	.08	.10	.05	1.4	1.3	1.6	.00	.00	.00	.00	.00
9	.88	.11	.09	.54	.62	3.1	.00	.00	.47	.00	.00	.00
10	.42	.10	.25	1.5	.11	3.1	.00	.00	1.7	.00	.00	.00
11	.08	.08	2.0	1.2	.55	4.2	.00	.00	1.1	.00	.00	.00
12	.07	.08	2.3	1.7	.59	3.7	.00	.00	.00	.06	.00	.00
13	.08	.10	.09	3.8	.60	3.6	.14	.00	.03	.13	.00	.00
14	.09	.10	.08	4.8	.75	3.4	.00	.00	1.1	.00	.00	.00
15	.06	.11	.16	2.4	.10	3.3	.00	.00	.86	.00	.00	.00
16	.06	.37	.10	2.6	.11	3.3	1.6	.00	1.2	.00	.00	.00
17	.06	.07	.09	3.8	19	3.1	2.6	.00	.00	.00	.00	.00
18	.06	.01	.08	2.9	9.2	3.1	3.2	.00	.00	.00	.00	.00
19	.09	.08	.08	2.4	6.2	1.1	3.0	.00	.00	.00	.00	.00
20	.09	.04	.08	2.4	5.3	.08	2.5	.00	.00	.00	.00	.00
21	.97	.00	.08	2.4	4.2	.08	2.1	.00	.00	.00	.00	.00
22	1.8	.02	.08	1.6	4.1	.00	.04	.00	.00	.00	.00	.00
23	1.6	.03	.08	.32	4.1	.00	3.2	.00	.00	.00	.00	.00
24	1.3	.05	.07	2.0	3.8	.00	3.9	.00	.00	.00	.00	.00
25	3.3	.09	.06	1.4	3.5	.00	.72	.00	.00	.00	.00	.00
26	1.2	2.1	.08	.98	3.4	.00	.07	.00	.00	.00	.00	.00
27	.10	.62	.08	.27	e1.5	.00	.00	.00	.00	.00	.00	.00
28	.08	1.4	.23	.05	e.60	1.9	.00	2.8	.00	.00	.00	.00
29	1.6	2.3	1.5	.13	---	2.3	.00	2.7	.00	.00	.00	.00
30	1.9	1.5	1.6	.50	---	.00	.00	1.6	.00	.00	.00	.04
31	1.7	---	1.7	2.1	---	.00	---	.14	---	.00	.00	---
TOTAL	21.58	10.94	14.10	47.09	76.98	46.15	33.37	7.24	9.74	0.19	0.00	0.04
MEAN	.70	.36	.45	1.52	2.75	1.49	1.11	.23	.32	.006	.000	.001
MAX	3.3	2.3	2.3	4.8	19	4.2	3.9	2.8	1.7	.13	.00	.04
MIN	.06	.00	.06	.05	.10	.00	.00	.00	.00	.00	.00	.00
AC-FT	43	22	28	93	153	92	66	14	19	.4	.00	.08
a	75	66	123	147	193	176	154	131	97	63	50	47

CAL YR 1989 TOTAL 385.91 MEAN 1.06 MAX 48 MIN .00 AC-FT 765 a 1690

WTR YR 1990 TOTAL 267.42 MEAN .73 MAX 19 MIN .00 AC-FT 530 a 1320

e Estimated.

a Combined discharge, in acre-feet, of Devil Canyon Creek and city of San Bernardino diversion.

SANTA ANA RIVER BASIN

171

11065000 LYTLE CREEK AT COLTON, CA

LOCATION.--Lat 34°04'44", long 117°18'17", in San Bernardino Grant, San Bernardino County, Hydrologic Unit 18070203, on right bank 400 ft downstream from Colton Avenue, 1,930 ft upstream from outlet end of channel, and 1.3 mi northeast of Colton.

DRAINAGE AREA.--186 mi².

PERIOD OF RECORD.--October 1957 to September 1983, October 1984 to current year.

REVISED RECORDS.--WDR CA-83-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 974.67 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Records fair except discharges less than 5.0 ft³/s, which are poor. Flow partly regulated by Lytle Creek spreading grounds 3.2 mi upstream. Diversions upstream from station for irrigation, power development, domestic use, and ground-water replenishment. See schematic diagram of Santa Ana River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft³/s, Mar. 4, 1978, gage height, 14.8 ft, from rating curve extended above 4,200 ft³/s on basis of discharge for design flood at gage height 21.4 ft; no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 766 ft³/s, Feb. 17, gage height, 2.72 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.65	.55	1.1	.00	2.4	1.2	.96	1.5	1.0	.00	.00	.00
2	.62	.54	.86	6.2	1.9	1.1	.92	1.4	.92	.00	.00	.00
3	.53	.42	.57	1.7	1.6	1.1	.85	1.3	.92	.00	.00	.00
4	.50	.17	.46	1.4	6.3	.96	6.6	1.2	.84	.00	.00	.00
5	.36	.13	.27	1.2	2.1	.92	1.1	1.1	.76	.00	.00	.00
6	.32	.17	.22	1.0	1.7	.83	.92	1.1	.76	.00	.00	.00
7	.28	.13	.20	.92	1.5	.76	.92	1.0	.71	.00	.00	.00
8	.20	.10	.14	.76	1.4	.71	.88	.92	.62	.00	.00	.00
9	.20	.03	.10	.66	1.2	.62	.76	.92	.62	.00	.00	.00
10	.12	.00	.04	.58	1.0	.62	.76	.87	.62	.00	.00	.00
11	.10	.00	.02	.37	.92	4.0	.72	.76	.62	.00	.00	.00
12	.10	.00	.00	.32	.92	2.2	.62	.76	.52	.00	.00	.00
13	.00	.00	.00	8.8	.76	1.7	.62	.67	.50	.00	.00	.00
14	.00	.00	.00	29	.71	1.4	.62	.62	.42	.00	.00	.00
15	.00	.00	.00	1.6	.57	1.3	.59	.62	.32	.00	.00	.00
16	.00	.00	.00	16	.50	1.1	2.8	.52	.28	.00	.00	.00
17	.93	.00	.00	73	302	1.0	1.3	.50	.20	.00	.00	.00
18	1.5	.00	.00	4.5	103	.92	1.2	.45	.20	.00	.00	.00
19	1.3	.00	.00	3.6	7.1	.88	1.1	.32	.20	.00	.00	.00
20	1.3	.00	.00	2.8	4.9	.81	1.0	.32	.20	.00	.00	.00
21	1.2	.00	.00	2.2	3.8	.76	.81	.27	.20	.00	.00	.00
22	4.8	.00	.00	1.8	3.0	.71	.84	.20	.17	.00	.00	.00
23	1.8	.00	.00	1.6	2.3	.62	3.0	.20	.10	.00	.00	.00
24	1.6	.00	.00	1.4	1.9	.62	1.5	.15	.10	.00	.00	.00
25	1.7	.00	.00	1.2	1.6	.62	1.2	.10	.06	.00	.00	.00
26	1.5	8.3	.00	1.1	1.5	.53	1.1	.10	.00	.00	.00	.00
27	1.4	3.9	.00	.98	1.4	.50	1.1	.10	.00	.00	.00	.00
28	1.2	2.8	.00	.85	1.2	1.4	1.0	7.1	.00	.00	.00	.00
29	.95	2.0	.00	.76	---	1.3	.92	1.3	.00	.00	.00	.00
30	.86	1.5	.00	14	---	1.1	7.4	1.2	.00	.00	.00	.00
31	.66	---	.00	8.2	---	1.1	---	1.1	---	.00	.00	---
TOTAL	26.68	20.74	3.98	188.50	459.18	33.39	44.11	28.67	11.86	0.00	0.00	0.00
MEAN	.86	.69	.13	6.08	16.4	1.08	1.47	.92	.40	.000	.000	.000
MAX	4.8	8.3	1.1	73	302	4.0	7.4	7.1	1.0	.00	.00	.00
MIN	.00	.00	.00	.00	.50	.50	.59	.10	.00	.00	.00	.00
AC-FT	53	41	7.9	374	911	66	87	57	24	.00	.00	.00

CAL YR 1989 TOTAL 512.55 MEAN 1.40 MAX 289 MIN .00 AC-FT 1020
WTR YR 1990 TOTAL 817.11 MEAN 2.24 MAX 302 MIN .00 AC-FT 1620

SANTA ANA RIVER BASIN

11066460 SANTA ANA RIVER AT MWD CROSSING, NEAR ARLINGTON, CA

LOCATION.--Lat 33°58'07", long 117°26'51", in NE 1/4 SW 1/4 sec.30, T.2 S., R.5 W., Riverside County, Hydrologic Unit 18070203, on right bank at MWD pipeline crossing, 0.8 mi downstream from Union Pacific Railroad bridge, 1.1 mi upstream from bridge on Van Buren Boulevard, and 3.3 mi north of Arlington.

DRAINAGE AREA.--852 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1970 to current year.

REVISED RECORDS.--WDR CA-83-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 685 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 1, 1984, water-stage recorder at site 300 ft upstream on left bank at different datum.

REMARKS.--Records poor. Flow partly regulated by Big Bear Lake (station 11049000). Natural streamflow affected by ground-water withdrawals, diversions for irrigation, and return flows from irrigated areas. The records at this station are equivalent to those that were collected at Santa Ana River at Riverside Narrows, near Arlington minus the flow at Riverside Water Quality Control Plant at Riverside Narrows, near Arlington.

AVERAGE DISCHARGE.--20 years (water years 1971-90), 113 ft³/s, 81,870 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,200 ft³/s, Mar. 2, 1983, gage height, 15.38 ft, site and datum then in use, from rating curve extended above 5,100 ft³/s on basis of area-velocity study; maximum gage height, 20.23 ft, Mar. 4, 1978; minimum daily, 15 ft³/s, Sept. 7, 8, 1980.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1927, 100,000 ft³/s, Mar. 2, 1938, on basis of slope-area measurement at site 1.1 mi downstream. Flood of Jan. 22, 1862, 320,000 ft³/s, on basis of slope-conveyance study at site 8.2 mi upstream. Stage at that site was 5 ft higher than that of Mar. 2, 1938.

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. 17	2245	*2,980	*11.46				

Minimum daily, 46 ft³/s, July 23.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	57	73	85	e80	105	72	106	99	76	58	52	57
2	59	71	86	e130	94	73	106	90	75	58	55	54
3	60	73	85	e110	85	76	105	84	68	54	54	53
4	64	73	83	e87	166	75	131	77	70	52	55	54
5	64	73	87	94	120	82	121	69	64	51	52	57
6	63	75	86	90	92	77	100	74	63	57	53	55
7	64	80	84	90	90	76	95	72	69	52	56	59
8	58	78	e84	93	86	77	91	74	64	50	56	56
9	58	77	e76	89	87	88	87	73	69	49	59	52
10	65	77	e76	85	86	81	81	73	70	52	59	50
11	67	80	e76	86	86	127	75	78	72	62	55	53
12	70	72	e76	88	86	93	77	73	66	49	56	51
13	71	78	e77	123	88	104	75	75	65	52	58	51
14	72	89	e78	333	91	89	76	76	71	52	64	50
15	70	83	e79	127	85	87	73	75	72	49	61	53
16	68	83	e80	108	88	89	98	77	71	51	59	52
17	68	81	e80	434	870	92	151	75	70	53	59	53
18	64	78	e80	126	553	82	103	76	65	52	60	51
19	62	79	e80	91	187	80	87	77	66	50	60	51
20	63	78	e81	85	107	84	86	80	66	49	59	54
21	66	75	e82	85	e85	84	87	76	67	48	61	52
22	103	72	e82	87	e80	88	76	76	63	49	59	52
23	94	70	e83	84	e75	79	83	81	63	46	55	52
24	82	66	e84	84	74	80	107	81	63	49	57	53
25	84	67	e84	85	74	88	86	75	62	51	59	52
26	80	126	e83	84	79	89	82	76	62	52	58	53
27	78	128	e81	83	72	90	84	73	63	54	57	54
28	78	90	e80	84	74	95	77	127	60	51	55	53
29	69	82	e80	98	---	112	78	114	61	49	53	53
30	74	88	e78	96	---	99	94	85	60	49	56	52
31	76	---	e76	174	---	104	---	82	---	49	56	---
TOTAL	2171	2415	2512	3593	3865	2712	2778	2493	1996	1599	1768	1592
MEAN	70.0	80.5	81.0	116	138	87.5	92.6	80.4	66.5	51.6	57.0	53.1
MAX	103	128	87	434	870	127	151	127	76	62	64	59
MIN	57	66	76	80	72	72	73	69	60	46	52	50
AC-FT	4310	4790	4980	7130	7670	5380	5510	4940	3960	3170	3510	3160

CAL YR 1989 TOTAL 28663 MEAN 78.5 MAX 1120 MIN 45 AC-FT 56850
WTR YR 1990 TOTAL 29494 MEAN 80.8 MAX 870 MIN 46 AC-FT 58500

e Estimated.

11066460 SANTA ANA RIVER AT MWD CROSSING, NEAR ARLINGTON, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1970 to current year.

SPECIFIC CONDUCTANCE: Water years 1970-78.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT					
02...	1145	64	936	21.0	515
NOV					
22...	1230	69	952	17.5	594
DEC					
04...	1415	67	952	16.5	589
JAN					
04...	1030	84	934	12.5	567
18...	1015	109	760	13.0	485
FEB					
06...	1200	80	946	15.5	591
13...	1345	70	970	17.5	613
MAR					
05...	1145	81	915	17.5	581
20...	1000	77	978	19.5	608
APR					
11...	1100	71	950	20.0	590
25...	1035	79	930	19.0	568
MAY					
14...	1030	73	927	19.0	564
23...	1030	76	949	21.0	576
JUN					
13...	0945	67	937	19.5	579
JUL					
09...	1000	58	935	21.5	575
AUG					
02...	0950	61	929	21.0	578
20...	0930	62	923	20.0	578
SEP					
04...	1015	61	919	22.0	517
19...	1000	60	916	21.0	570

SANTA ANA RIVER BASIN

11069500 SAN JACINTO RIVER NEAR SAN JACINTO, CA

LOCATION.--Lat 33°44'10", long 116°49'26", in NE 1/4 SE 1/4 sec.13, T.5 S., R.1 E., Riverside County, Hydrologic Unit 18070202, on right bank 350 ft upstream from bridge on State Highway 74, 1 mi downstream from North Fork San Jacinto River, 8.3 mi southeast of San Jacinto, and 9 mi downstream from Lake Hemet.

DRAINAGE AREA.--141 mi².

PERIOD OF RECORD.--October 1920 to February 1927, March 1927 to current year. Records for Oct. 1, 1969, to Sept. 30, 1980, equivalent to prior records if lower diversion is deducted from flow past station. Records for the 1981 water year are from the auxiliary gage below the lower diversion and are equivalent to records for March 1927 to Sept. 30, 1969. Combined records of river and diversion, October 1948 to current year. Monthly discharge only for October 1920 and July to September 1926, published in WSP 1315-B.

GAGE.--Water-stage recorder on river; water-stage recorder on upper canal. Datum of river gage is 1,982.75 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). See WSP 1735 for history of changes prior to Jan. 23, 1948. Oct. 1, 1969, to Sept. 30, 1980, at site 350 ft upstream at same datum. Canal gage at different datum.

REMARKS.--Records poor. Flow partly regulated by Lake Hemet. Lake Hemet Municipal Water District's upper canal diverts 4.0 mi upstream from station. Lake Hemet Municipal Water District imported 53.7 acre-ft during the 1990 water year. One small diversion for domestic use upstream from station. Diversion upstream from station began prior to 1920. Records of downstream diversion are available at Lake Hemet Municipal Water District. See schematic diagram of Santa Ana River basin. Combined records are equivalent for period of record. For records of combined daily discharge of San Jacinto River and diversion, see following page.

AVERAGE DISCHARGE.--River only: 58 years (water years 1921-26, 1928-69, 1981-90), 18.0 ft³/s, 13,040 acre-ft/yr; 11 years (water years 1970-80), 29.0 ft³/s, 21,010 acre-ft/yr. Combined river and diversion: 41 years (water years 1949-80, 1982-90), 24.3 ft³/s, 17,610 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 45,000 ft³/s, Feb. 16, 1927 on basis of slope-area measurement of peak flow; no flow for several months in some years. Combined river and diversion: Maximum discharge, 17,300 ft³/s, Feb. 21, 1980; no flow at times in 1951, 1952, 1957, 1976, 1990.

EXTREMES FOR CURRENT YEAR.--Combined river and diversion: Peak discharges greater than base discharge of 500 ft³/s and maximum (*), from rating curve extended above 1,500 ft³/s:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 5	2000	*514	*4.60				

No flow Nov. 29 to Dec. 4.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.27	.65	.33	.21	.08	.00	.00	.00	.00
2	.00	.00	.00	.74	1.0	.59	.22	.07	.00	.00	.00	.00
3	.00	.00	.00	.83	.86	.63	.20	.06	.00	.00	.00	.00
4	.00	.00	.00	.58	1.3	2.7	.17	.05	.00	.00	.00	.00
5	.00	.00	.12	.50	.75	1.8	.23	.05	.00	.00	.00	e23
6	.00	.00	.00	.41	e.36	.85	.20	.04	.00	.00	.00	e.20
7	.00	.00	.00	.38	e.17	.31	.24	.04	.00	.00	.00	e.00
8	.00	.00	.00	.38	e.11	.23	.19	.03	.00	.00	.00	e.00
9	.00	.00	.00	.53	.10	.21	.19	.03	.00	.00	.00	e.00
10	.00	.00	.00	.70	.10	.21	.16	.03	.00	.00	3.9	e.00
11	.00	.00	.00	.73	.10	.72	.13	.05	.00	.00	3.7	e.00
12	.00	.00	.00	.68	.10	.69	.14	.04	.00	.00	3.6	e.00
13	.00	.00	.00	.69	.10	.39	.12	.05	.00	13	.20	e.00
14	.00	.00	.00	8.9	.10	.29	.12	.04	.00	2.1	.03	e.00
15	.00	.00	.00	6.9	.10	.22	.12	.04	.00	.20	.02	e.00
16	.00	.00	.00	4.3	.10	.20	.16	.04	.00	.00	.03	e.00
17	.00	.00	.00	7.9	.23	.18	.74	.04	.00	.00	.00	e.00
18	.00	.00	.00	4.6	2.8	.18	.43	.04	.00	.00	.00	e.00
19	.00	.00	.00	3.6	.87	.17	.12	.04	.00	.00	.00	e.00
20	.00	.00	.01	2.3	.46	.20	.09	.03	.00	.00	.00	e.00
21	.00	.00	.11	2.0	.31	.22	.07	.02	.00	.00	.00	e.00
22	.00	.00	.12	1.7	.27	.17	.10	.01	.00	.00	.00	e.00
23	.00	.00	.13	1.8	.21	.20	.09	.00	.00	.00	.00	e.00
24	.00	.00	.12	1.8	.21	.21	.12	.00	.00	.00	.00	e.00
25	.00	.00	.12	2.0	.19	.25	.08	.00	.00	.00	.00	e.00
26	.00	.00	.12	2.0	.27	.16	.07	.00	.00	.00	.00	e.00
27	.00	.00	.12	2.0	.37	.17	.06	.00	.00	.00	.00	e.00
28	.00	.00	.24	2.0	.43	.26	.06	.00	.00	.00	.00	e.00
29	.00	.00	.44	2.0	---	.95	.08	.00	.00	.00	.00	e.00
30	.00	.00	.45	1.7	---	.57	.10	.00	.00	.00	.00	e.00
31	.00	---	.37	3.0	---	.35	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	2.47	67.92	12.62	14.61	5.01	0.92	0.00	15.30	11.48	23.20
MEAN	.000	.000	.080	2.19	.45	.47	.17	.030	.000	.49	.37	.77
MAX	.00	.00	.45	8.9	2.8	2.7	.74	.08	.00	13	3.9	23
MIN	.00	.00	.00	.27	.10	.16	.06	.00	.00	.00	.00	.00
AC-FT	.00	.00	4.9	135	25	29	9.9	1.8	.00	30	23	46

CAL YR 1989 TOTAL 936.33 MEAN 2.57 MAX 161 MIN .00 AC-FT 1860
WTR YR 1990 TOTAL 153.53 MEAN .42 MAX 23 MIN .00 AC-FT 305

e Estimated.

11069501 SAN JACINTO RIVER NEAR SAN JACINTO, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF SAN JACINTO RIVER AND LAKE HEMET
WATER CO.'S UPPER CANAL, NEAR SAN JACINTO, CA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	3.5	.00	1.6	2.0	6.1	3.0	2.3	4.2	6.2	.13	.33
2	4.1	4.0	.00	2.3	1.1	6.4	2.9	1.5	3.4	9.1	.13	.79
3	4.1	3.9	.00	1.9	1.1	6.3	2.7	1.2	3.6	5.7	.13	.28
4	3.8	4.1	.00	1.2	2.0	8.2	2.6	.95	2.2	4.1	.13	.04
5	3.6	4.4	.32	.95	1.2	7.1	3.0	.71	5.0	4.0	.13	23
6	3.9	4.5	1.7	.76	.76	5.7	2.8	.49	5.8	4.2	.13	.55
7	3.7	4.2	1.3	.66	.57	4.2	3.0	.33	5.7	4.1	1.6	3.6
8	3.7	2.1	1.1	.62	.45	3.7	2.6	.26	4.1	3.3	1.7	7.8
9	3.7	1.8	1.5	.62	.33	3.4	2.5	2.3	2.4	1.6	1.9	8.2
10	3.8	2.1	1.6	.70	.14	3.5	2.1	4.7	2.1	.81	6.1	7.2
11	3.8	1.8	.58	.73	.14	5.5	1.7	5.4	5.3	2.0	5.2	6.6
12	3.8	1.8	.02	.68	.22	4.8	1.6	2.4	5.0	2.0	3.7	7.4
13	3.9	2.1	.18	.69	.53	3.4	1.6	2.0	4.0	16	3.5	7.7
14	4.1	.96	.20	8.9	.87	2.9	1.7	2.0	3.9	4.7	5.2	7.6
15	4.2	1.6	.16	6.9	.26	2.5	1.6	1.9	3.9	1.1	5.3	7.6
16	3.9	1.7	.92	4.3	.21	2.6	2.0	1.8	2.3	.28	5.3	7.6
17	3.7	1.2	1.4	7.9	1.2	2.5	5.8	3.5	2.7	.53	5.3	5.9
18	3.6	.77	1.4	4.6	9.1	2.9	4.8	6.1	1.6	1.2	4.0	7.8
19	3.6	1.0	1.3	3.6	5.9	3.6	3.7	4.9	1.0	1.1	3.5	8.5
20	3.4	.60	.93	2.3	4.1	3.8	3.2	2.9	1.3	1.5	3.3	8.5
21	3.7	.81	.87	2.0	3.6	4.0	3.2	2.4	1.3	2.9	4.0	7.7
22	3.9	.80	.80	1.7	3.6	4.1	3.1	2.0	1.4	2.5	4.8	7.8
23	4.0	.94	.75	1.8	3.8	3.9	2.4	3.9	2.7	4.1	2.0	7.5
24	4.1	.55	.65	1.8	3.9	4.1	2.9	4.6	2.6	4.8	.08	7.7
25	4.7	1.4	.59	2.0	4.6	4.1	2.0	5.7	2.6	4.7	.08	7.5
26	4.2	1.5	.51	2.0	5.7	3.1	1.7	4.4	2.9	3.2	.08	7.5
27	4.0	.58	.72	2.0	6.1	2.8	1.4	3.4	3.2	.73	.08	7.6
28	2.0	.18	1.9	2.0	5.9	3.2	1.1	4.6	7.1	.14	.27	7.5
29	1.3	.00	2.2	2.0	---	5.1	1.4	5.6	6.7	.14	.53	7.5
30	.04	.00	2.1	1.7	---	3.9	1.6	5.4	6.3	.14	.31	7.5
31	.93	---	1.9	5.5	---	3.5	---	5.1	---	.13	.07	---
TOTAL	109.07	54.89	27.60	76.41	69.38	130.9	75.7	94.74	106.3	97.00	68.68	202.79
MEAN	3.52	1.83	.89	2.46	2.48	4.22	2.52	3.06	3.54	3.13	2.22	6.76
MAX	4.7	4.5	2.2	8.9	9.1	8.2	5.8	6.1	7.1	16	6.1	23
MIN	.04	.00	.00	.62	.14	2.5	1.1	.26	1.0	.13	.07	.04
AC-FT	216	109	55	152	138	260	150	188	211	192	136	402
CAL YR 1989	TOTAL 2185.47 MEAN 5.99 MAX 166 MIN .00 AC-FT 4330											
WTR YR 1990	TOTAL 1113.46 MEAN 3.05 MAX 23 MIN .00 AC-FT 2210											

11070020 BAUTISTA CREEK AT HEAD OF FLOOD CONTROL CHANNEL, NEAR HEMET, CA

LOCATION.--Lat 33°42'42", long 116°52'04", in NW 1/4 NE 1/4 sec.27, T.5 S., R.1 E., Riverside County, Hydrologic Unit 18070202, on right bank at the head of the concrete lined flood channel, 3.7 mi upstream from the mouth, and 3.0 mi southeast of Valle Vista.

DRAINAGE AREA.--47.6 mi².

PERIOD OF RECORD.--October 1987 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,080 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. No regulation upstream from station. Sand and gravel operations upstream from station may cause peak attenuation. Minor diversion upstream from station for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28 ft³/s, Jan. 17, Apr. 20, 1988, gage height, 11.12 ft; no flow many days each year.

EXTREMES FOR CURRENT YEAR.--No flow for the 1990 water year.

11070240 SUNNYMEAD CHANNEL AT ALESSANDRO BOULEVARD, NEAR SUNNYMEAD, CA

LOCATION.--Lat 33°55'02", long 117°14'34", in SW 1/4 SW 1/4 sec.7, T.3 S., R.3 W., Riverside County, Hydrologic Unit 18070202, on left bank 1.6 mi south of Sunnymead.

DRAINAGE AREA.--13.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1989 to September 1990. Discharge records for the period January 1970 to June 1975 available in U.S. Geological Survey Open-File Report 79-1256.

GAGE.--Water-stage recorder. Elevation of gage is 1,570 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except discharges below 5.0 ft³/s and estimated daily discharges, which are poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 561 ft³/s, Feb 17, gage height, 7.47 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	e.02	.00	.05	.12	.00	.10	.00	.00	.01	.34	.01
2	e.00	e.01	.00	9.2	.00	.00	.01	.00	.00	.02	.00	.01
3	e.00	e.00	.01	.00	.00	.00	.00	.00	.00	.04	.00	.00
4	e.01	e.00	.00	.00	11	.00	6.4	.00	.00	.01	.00	.02
5	e.00	e.00	.01	e.00	.39	2.5	.08	.00	.00	.04	.00	.00
6	e.00	e.00	.02	e.00	.00	.00	.00	.00	.00	.03	.00	.01
7	e.00	e.01	.01	e.00	.00	.00	.00	.00	.00	.12	.00	.01
8	e.00	e.00	.03	e.00	.00	.00	.00	.00	.00	.03	.01	.01
9	e.01	.02	.02	e.00	.00	.00	.00	.00	1.3	.03	.00	.01
10	e.02	.05	.01	e.00	.00	.00	.00	.00	.03	.51	.00	.03
11	e.01	.03	.01	e.00	.00	3.5	.00	.00	.00	.03	.00	.11
12	e.01	.04	.01	e.00	.00	2.1	.00	.00	.00	.03	.00	.13
13	e.00	.05	.04	e.00	.00	.02	.00	.00	.00	.03	.00	.03
14	e.00	.04	.04	e13	.32	.01	.00	.00	.00	.54	.00	.03
15	e.00	.04	.02	e.10	.00	.07	e.00	.00	.00	.21	.00	.06
16	e.00	.04	.06	e.00	.00	.00	e.20	.00	.00	.01	.00	.03
17	e.01	.05	.02	e12	77	.00	2.3	.00	.00	.01	.00	.03
18	e.00	.06	.01	e.10	33	.00	.01	.00	.00	.02	.00	.01
19	e.00	.05	.00	.00	7.0	.01	.00	.00	.00	.02	.00	.01
20	e.00	.04	.00	.00	1.0	.01	.00	.00	.00	.03	.00	.02
21	e.50	.03	.00	.00	.00	.00	.00	.00	.00	.06	.00	.06
22	e.60	.07	.00	.00	.00	.00	.00	.00	.00	.05	.00	.03
23	e.01	.06	.00	.00	.00	.01	1.7	.00	.00	.04	.00	.04
24	e.00	.06	.00	.00	.00	.01	.04	.00	.00	.01	.00	.01
25	e.45	.05	.00	.00	.00	.04	.00	.00	.00	.01	.00	.01
26	e.02	1.4	.00	.00	.00	.05	.00	.00	.00	.01	.00	.01
27	e.01	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00
28	e.00	.00	2.8	.00	.01	.79	.00	9.8	.00	.00	.00	.01
29	e.00	.00	.01	.00	---	.00	.03	.07	.00	.00	.00	.01
30	e.00	.01	.01	1.6	---	.00	.10	.01	.00	.00	.00	.02
31	e.01	---	.00	1.0	---	.00	---	.01	---	.00	.01	---
TOTAL	1.67	2.23	3.14	37.05	129.84	9.22	10.97	9.89	1.33	1.95	0.36	0.77
MEAN	.054	.074	.10	1.20	4.64	.30	.37	.32	.044	.063	.012	.026
MAX	.60	1.4	2.8	13	77	3.5	6.4	9.8	1.3	.54	.34	.13
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	3.3	4.4	6.2	73	258	18	22	20	2.6	3.9	.7	1.5

WTR YR 1990 TOTAL 208.42 MEAN .57 MAX 77 MIN .00 AC-FT 413

e Estimated.

11070240 SUNNYMEAD CHANNEL AT ALESSANDRO BOULEVARD, NEAR SUNNYMEAD, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--January 1970 to June 1975, March to September 1990. Precipitation records for the period January 1970 to June 1975 available in U.S. Geological Open File Report 79-1256.

INSTRUMENTATION.--Recording tipping-bucket rain gage since Mar. 5, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 0.47 in, May 28; no rainfall for many days.

RAINFALL ACCUMULATED (INCHES) WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
2	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
3	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
4	---	---	---	---	---	---	.14	.00	.00	.00	.00	.00
5	---	---	---	---	---	.14	.00	.00	.00	.00	.00	.00
6	---	---	---	---	---	.00	.05	.00	.00	.00	.00	.00
7	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
8	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
9	---	---	---	---	---	.00	.00	.00	.19	.00	.00	.00
10	---	---	---	---	---	.00	.00	.00	.04	.00	.00	.00
11	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
12	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
13	---	---	---	---	---	.00	.00	.00	.00	.01	.00	.00
14	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
15	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
16	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
17	---	---	---	---	---	.00	.39	.00	.00	.00	.00	.00
18	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
19	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
20	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
21	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
22	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
23	---	---	---	---	---	.00	.11	.00	.00	.00	.00	.00
24	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
25	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
26	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
27	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
28	---	---	---	---	---	.00	.00	.47	.00	.00	.00	.00
29	---	---	---	---	---	.00	.03	.00	.00	.00	.00	.00
30	---	---	---	---	---	.00	.02	.00	.00	.00	.00	.00
31	---	---	---	---	---	.00	---	.00	---	.00	.00	---
TOTAL	---	---	---	---	---	---	0.74	0.47	0.23	0.01	0.00	0.00

11070256 PERRIS VALLEY STORM DRAIN AT NANDINO AVENUE, NEAR MARCH AIR FORCE BASE, CA

LOCATION.--Lat 33°52'01", long 117°12'43", in SE 1/4 NE 1/4 sec.32, T.3 S., R.3 W., Riverside County, Hydrologic Unit 18070202, on right bank 3.5 mi southeast of March Air Force Base.

DRAINAGE AREA.--50.6 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1989 to September 1990. Records for January 1970 to September 1975, available in files of the Geological Survey.

GAGE.--Water-stage recorder, crest-stage gage, and broad-crested weir. Elevation of gage is 1,445 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No regulation or diversion upstream from station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 764 ft³/s, Feb. 17, gage height, 4.10 ft, from rating curve extended above 46 ft³/s on basis of critical-depth computation; no flow Oct. 27, Jan. 5, 20, 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.35	.35	.34	.05	.31	.16	.25	.33	.11	.49	.62	.60
2	e.37	.34	.44	20	.33	.18	.25	.20	.12	.50	.49	.50
3	e.40	.47	1.7	.55	.20	.25	.23	.27	.10	.55	.66	.56
4	e.40	.50	3.7	.14	27	.21	12	.19	.15	.55	.77	.61
5	e.40	.52	.59	.00	3.8	5.0	.42	.11	.22	.50	.75	.57
6	e.40	.69	.60	.21	.17	.82	.26	.28	.32	.54	.81	.62
7	e.37	.56	.44	.27	.14	.77	.21	.25	.33	.70	.77	.61
8	e.37	.43	.44	.26	.19	1.7	.22	.17	.35	.56	.86	.52
9	e.37	.36	.62	.29	.17	.85	.24	.28	4.3	.59	.59	.52
10	e.35	.54	.55	.32	.23	.20	.25	.24	4.1	.64	.77	.56
11	e.35	.53	.45	.23	.19	4.0	.25	.27	.41	.57	.79	.59
12	.35	.50	.35	.28	.25	3.0	.25	.20	.16	.60	.74	.58
13	.37	.52	.71	15	.19	.83	.22	.20	.28	1.1	.77	.63
14	.38	.53	.51	35	.37	.11	.25	.30	.19	2.1	.79	.64
15	.37	.61	.58	1.1	.05	.10	.25	.30	.34	1.3	.69	.63
16	.36	.30	.50	.92	.26	.13	2.3	.25	.41	.87	.79	.65
17	.40	.40	.44	39	130	.16	2.4	.29	.38	.69	.89	.57
18	.45	.50	.46	2.0	56	.16	.32	.19	.33	.76	.97	.71
19	.45	.53	.63	.08	15	.42	.22	.13	.40	.65	.95	.58
20	.45	.56	.60	.00	1.1	.38	.20	.11	.39	.63	.75	.64
21	1.2	.54	.50	.00	.49	.29	.33	.12	.40	.75	.72	.56
22	1.7	.42	.50	.01	.52	.29	.23	.16	.51	.85	.99	.52
23	.52	.40	.50	.13	.45	.22	1.6	.16	.44	.64	.67	.62
24	.33	.45	.52	.17	.35	.23	.81	.12	.38	.88	.58	.51
25	1.7	.45	.62	.08	.30	.29	.31	.19	.42	.66	.65	.51
26	.13	2.2	.45	.11	.16	.29	.28	.20	.47	.55	.60	.48
27	.00	.34	.45	.24	.21	.24	.29	.20	.47	.52	.58	.49
28	.08	.45	4.5	.13	.19	.68	.29	32	.58	.58	.60	.50
29	.23	.66	.70	.16	---	.31	.29	1.8	.60	.53	.48	.48
30	.22	.38	.29	.94	---	.25	.92	.25	.48	.58	.65	.51
31	.34	---	.16	6.0	---	.25	---	.18	---	.64	.54	---
TOTAL	14.16	16.03	23.84	123.67	238.62	22.77	26.34	39.94	18.14	22.07	22.28	17.07
MEAN	.46	.53	.77	3.99	8.52	.73	.88	1.29	.60	.71	.72	.57
MAX	1.7	2.2	4.5	39	130	5.0	12	32	4.3	2.1	.99	.71
MIN	.00	.30	.16	.00	.05	.10	.20	.11	.10	.49	.48	.48
AC-FT	28	32	47	245	473	45	52	79	36	44	44	34

WTR YR 1990 TOTAL 584.93 MEAN 1.60 MAX 130 MIN .00 AC-FT 1160

e Estimated.

11070256 PERRIS VALLEY STORM DRAIN AT NANDINO AVENUE, NEAR MARCH AIR FORCE BASE, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--October 1989 to September 1990.

INSTRUMENTATION.--Recording tipping-bucket rain gage since Oct. 12, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 0.98 in, Feb. 17; no rainfall for many days.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	.00	.00	.01	---	.00	.00	.00	.00	.00	.00	.00
2	---	.00	.00	.30	---	.00	.00	.00	.00	.00	.00	.00
3	---	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
4	---	.00	.00	.00	---	.00	.25	.00	.00	.00	.00	.00
5	---	.00	.00	.00	---	.10	.00	.00	.00	.00	.00	.00
6	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	---	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00
10	---	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00
11	---	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.18	.00	.01	.00	.00	.00	.00	.00	.00
14	.01	.00	.00	.32	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.18	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.09	.00	.00	.08	.00	.00	.00	.00	.00
17	.00	.00	.00	.27	.98	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	---	.21	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00	.00
21	.03	.00	.00	---	.00	.00	.00	.00	.00	.00	.00	.00
22	.06	.00	.00	---	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	---	.00	.00	.03	.00	.00	.00	.00	.00
24	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00	.00
25	.03	.00	.00	---	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.01	.00	---	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.44	.13	---	.00	.05	.00	.70	.00	.00	.00	.00
29	.00	.00	.00	---	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	---	---	.00	.02	.00	.00	.00	.00	.00
31	.00	---	.00	---	---	.00	---	.00	---	.00	.00	---
TOTAL	---	0.45	0.13	---	---	0.31	0.38	0.70	0.17	0.00	0.00	0.00

11070262 PERRIS VALLEY STORM DRAIN LATERAL "B" NEAR MARCH AIR FORCE BASE, CA

LOCATION.--Lat 33°51'32", long 117°13'32", in NE 1/4 NE 1/4 sec.6, T.4 S., R.3 W., Riverside County, Hydrologic Unit 18070202, on right bank 0.5 mi southeast of March Air Force Base.

DRAINAGE AREA.--10.6 mi².

PERIOD OF RECORD.--October 1989 to September 1990. October 1969 to July 1975, published as "near March Field" in U.S. Geological Survey Open-File Report 79-1256.

GAGE.--Water-stage recorder. Elevation of gage is 1,470 ft above National Geodetic Vertical Datum of 1929, from topographic map. November 1969 to July 1975, at same site at different datum.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 27 ft³/s, Dec. 11, gage height, 2.43 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.45	.00	.16	.19	.26	.32	.17	1.1	.60	.11
2	.00	.00	.40	.00	.44	.17	.31	.44	.42	.98	.78	.05
3	.00	.00	.05	.00	.37	.39	.33	.40	.46	1.0	.74	.08
4	.00	.00	.32	.00	.36	1.3	.27	.41	.39	.90	.37	.11
5	.00	.00	.45	.38	.01	.00	.01	.43	.46	1.0	.53	.13
6	.00	.00	.46	.48	.00	.15	.00	.40	.51	.99	.12	.00
7	.00	.00	.50	.11	.00	.25	.00	.24	.54	.89	.32	.00
8	.04	.00	.47	.43	.00	.22	.00	.52	.46	1.3	.22	.01
9	.00	.00	.58	.47	.22	.19	.23	.46	.44	1.5	.41	.06
10	.00	.00	4.0	.42	.32	.16	.35	.49	.16	1.4	.27	.15
11	.00	.00	8.4	.37	.27	.00	.42	.50	.00	.99	.17	.22
12	.00	.00	.05	.40	.38	.17	.45	.46	.18	.27	.10	.22
13	.00	.00	.12	.00	.40	.18	.42	.45	.53	1.1	.15	.28
14	.00	.56	.26	.73	.05	.00	.44	.45	.49	1.4	.22	.30
15	.00	.60	.32	.00	.35	.17	.19	.45	.52	1.1	.26	.44
16	.00	.67	.29	.00	.25	.20	.32	.34	.49	1.2	.26	.73
17	.00	.70	.16	2.5	5.3	.17	.10	.48	.48	1.4	.37	.64
18	.00	.53	.28	.32	2.3	.00	.39	.41	.49	1.3	.41	.50
19	.00	.28	.24	.00	.73	.13	.35	.35	.68	1.3	.04	.56
20	.00	.44	.23	.00	.30	.14	.56	.27	.43	1.5	.29	.56
21	.00	.42	.16	.00	.00	.16	.44	.36	.66	1.5	.02	.58
22	.00	.54	.28	.00	.00	.11	.01	.55	.69	1.0	.00	.46
23	.00	.06	.22	.00	.14	.17	.27	.60	.66	.91	.05	.29
24	.00	.18	.00	.00	.00	.20	.37	.59	.69	1.2	.00	.24
25	.00	.40	.00	.20	.00	.13	.49	.42	.44	.99	.09	.24
26	.00	.02	.18	.30	.17	.19	.49	.35	.58	.95	.06	.22
27	.00	.49	.27	.05	.22	.24	.50	.40	.69	.87	.12	.34
28	.00	.43	.39	.00	.13	.28	.47	1.1	.85	.92	.10	.30
29	.00	.34	.06	.28	---	.21	.29	.18	.96	.86	.08	.25
30	.00	.15	.00	.39	---	.15	.32	.00	1.1	.89	.22	.26
31	.00	---	.00	.17	---	.26	---	.00	---	.68	.12	---
TOTAL	0.04	6.81	19.59	8.00	12.87	6.28	9.05	12.82	15.62	33.39	7.49	8.33
MEAN	.001	.23	.63	.26	.46	.20	.30	.41	.52	1.08	.24	.28
MAX	.04	.70	8.4	2.5	5.3	1.3	.56	1.1	1.1	1.5	.78	.73
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.27	.00	.00
AC-FT	.08	14	39	16	26	12	18	25	31	66	15	17

WTR YR 1990 TOTAL 140.29 MEAN .38 MAX 8.4 MIN .00 AC-FT 278

SANTA ANA RIVER BASIN

11070263 UNNAMED CREEK TRIBUTARY TO PERRIS RESERVOIR NEAR MORENO VALLEY, CA

LOCATION.--Lat 33°52'53", long 117°10'10", in NW 1/4 SW 1/4 sec.26, T.3 S., R.3 W., Riverside County, Hydrologic Unit 18070202, on left bank 2.0 mi south of Moreno Valley.

DRAINAGE AREA.--0.46 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1989 to September 1990.

GAGE.--Water-stage recorder. Elevation of gage is 1,680 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.40 ft³/s, Feb. 17, gage height, 1.04 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	e.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00
5	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	e.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
10	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.01	.00	.00	.01	.00	.00	.00	.00
17	.00	.00	.00	e.01	.11	.00	.00	.05	.00	.00	.00	.00
18	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.01	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.01	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.03	0.17	0.00	0.00	0.09	0.01	0.00	0.00	0.00
MEAN	.000	.000	.000	.001	.006	.000	.000	.003	.000	.000	.000	.000
MAX	.00	.00	.00	.01	.11	.00	.00	.05	.01	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.06	.3	.00	.00	.2	.02	.00	.00	.00

WTR YR 1990 TOTAL 0.30 MEAN .001 MAX .11 MIN .00 AC-FT .6

e Estimated.

11070263 UNNAMED CREEK TRIBUTARY TO PERRIS RESERVOIR NEAR MORENO VALLEY, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--February to September 1990.

INSTRUMENTATION.--Recording tipping-bucket rain gage since Feb. 18, 1990.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 0.59 in, May 28; no rainfall for many days.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
2	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
3	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
4	---	---	---	---	---	.00	.13	.00	.00	.00	.00	.00
5	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
6	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
7	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
8	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
9	---	---	---	---	---	.00	.00	.00	.20	.00	.00	.00
10	---	---	---	---	---	.00	.00	.00	.02	.00	.00	.00
11	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
12	---	---	---	---	---	.01	.00	.00	.00	.00	.00	.00
13	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
14	---	---	---	---	---	.00	.00	.00	.00	.01	.00	.00
15	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
16	---	---	---	---	---	.00	.01	.00	.00	.00	.00	.00
17	---	---	---	---	---	.00	.01	.00	.00	.00	.00	.00
18	---	---	---	---	.01	.00	.00	.00	.00	.00	.00	.00
19	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
20	---	---	---	---	.07	.00	.00	.00	.00	.00	.00	.00
21	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
22	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
23	---	---	---	---	.00	.00	.08	.00	.00	.00	.00	.00
24	---	---	---	---	.00	.00	.01	.00	.00	.00	.00	.00
25	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
26	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
27	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
28	---	---	---	---	.00	.03	.00	.59	.00	.00	.00	.00
29	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
30	---	---	---	---	---	.00	.06	.00	.00	.00	.00	.00
31	---	---	---	---	---	.00	---	.00	---	.00	.00	---
TOTAL	---	---	---	---	---	0.04	0.30	0.59	0.22	0.01	0.00	0.00

SANTA ANA RIVER BASIN

11070270 PERRIS VALLEY STORM DRAIN AT NUEVO ROAD, NEAR PERRIS, CA

LOCATION.--Lat 33°48'04", long 117°12'19", in SW 1/4 SW 1/4 sec.21, T.4 S., R.3 W., Riverside County, Hydrologic Unit 18070202, on right bank 1.9 mi northeast of Perris, and 2.0 mi upstream from San Jacinto River.

DRAINAGE AREA.--93.3 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1969 to September 1975, October 1989 to September 1990.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,410 ft above National Geodetic Vertical Datum of 1929, from topographic map. October 1969 to September 1975, at same site at different datum.

REMARKS.--Records fair. Some regulation by percolation basins upstream from station. Some pumping for irrigation upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,090 ft³/s, Feb. 17, 1990, gage height, 4.49 ft, from rating curve extended above 190 ft³/s on basis of culvert computation; no flow for many days in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 25, 1969, reached a discharge of 4,840 ft³/s, gage height, 6.7 ft, from floodmarks, on basis of slope-area measurement by Riverside County Flood Control District.

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. 17	1930	*1,090	*4.49				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	e.00	.00	.00	.20	.00	.00	.04	.00	.00	.00	.00
2	e.00	e.00	.00	17	.08	.00	.00	.00	.00	.00	.00	.00
3	e.00	e.00	.00	.58	.00	.00	.00	.00	.00	.00	.00	.00
4	e.00	e.00	.09	.00	27	.00	11	.00	.00	.00	.00	.00
5	e.00	e.00	.04	.00	7.2	2.5	3.3	.00	.00	.00	.00	.00
6	e.00	e.00	.00	.00	.35	.42	.16	.00	.00	.00	.00	.00
7	e.00	e.00	.00	.00	.08	.48	.02	.00	.00	.00	.00	.00
8	e.00	e.00	.00	.00	.00	1.4	.00	.00	.00	.00	.00	.00
9	e.00	e.00	.00	.00	.00	.77	.00	.00	.01	.00	.00	.00
10	e.00	e.00	.00	.00	.00	.54	.00	.00	2.2	.00	.00	.00
11	e.00	e.00	.00	.00	.00	3.7	.00	.00	.06	.00	.00	.00
12	e.00	e.00	.00	.00	.00	.62	.00	.00	.00	.00	.00	.00
13	e.00	e.00	.00	3.8	.00	5.1	.00	.00	.00	.00	.00	.00
14	e.00	e.00	.00	37	.00	.25	.00	.00	.00	.00	.00	.00
15	e.00	e.00	.00	.65	.00	.07	.00	.00	.00	.00	.00	.00
16	e.00	e.00	.00	.52	.00	.00	.00	.00	.00	.00	.00	.00
17	e.00	e.00	.00	49	178	1.5	.00	.00	.00	.00	.00	.00
18	e.00	e.00	.00	6.9	74	.14	1.4	.00	.00	.00	.00	.00
19	e.00	e.00	.00	.61	21	.01	.00	.00	.00	.00	.00	.00
20	e.00	e.00	.00	.13	2.1	.00	.00	.00	.00	.00	.00	.00
21	e.00	e.00	.00	.00	.14	3.1	.00	.00	.00	.00	.00	.00
22	e.00	e.00	.00	.00	.00	1.0	.00	.00	.00	.00	.00	.00
23	e.00	e.00	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00
24	e.00	e.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00
25	e.00	e.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
26	e.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	e.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	e.00	e.00	.00	.00	.00	.00	.00	29	.00	.00	.00	.00
29	e.00	.00	.73	.00	---	.00	.00	3.8	.00	.00	.00	.00
30	e.00	.00	.00	.00	---	.00	.01	.07	.00	.00	.00	.00
31	e.00	---	.00	5.3	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.86	121.49	310.15	21.67	16.01	32.91	2.27	0.00	0.00	0.00
MEAN	.000	.000	.028	3.92	11.1	.70	.53	1.06	.076	.000	.000	.000
MAX	.00	.00	.73	49	178	5.1	11	29	2.2	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	1.7	241	615	43	32	65	4.5	.00	.00	.00

WTR YR 1990 TOTAL 505.36 MEAN 1.38 MAX 178 MIN .00 AC-FT 1000

e Estimated.

11070270 PERRIS VALLEY STORM DRAIN AT NUEVO ROAD, NEAR PERRIS, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--October 1989 to September 1990.

INSTRUMENTATION.--Recording tipping-bucket rain gage since Oct. 17, 1989.

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall, 1.23 in, Feb. 17; no rainfall for many days.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
SUM VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00
2	---	.00	.00	.23	.00	.00	.00	.00	.00	.00	.00	.00
3	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	---	.00	.00	.00	.40	.00	.02	.00	.00	.00	.00	.00
5	---	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00	.01
6	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	---	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	---	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00
10	---	.00	.00	.00	.00	.00	.00	.00	.11	.00	.00	.00
11	---	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
12	---	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00
13	---	.00	.00	.25	.00	.01	.00	.00	.00	.00	.00	.00
14	---	.00	.00	.16	.00	.00	.00	.00	.00	.00	.00	.00
15	---	.00	.00	.16	.00	.00	.00	.00	.00	.00	.00	.00
16	---	.00	.00	.16	.00	.00	.01	.00	.00	.00	.00	.00
17	.00	.00	.00	.20	1.23	.00	.01	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.29	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.01	.00	.00	.00	.00	.74	.00	.00	.00	.00
29	.00	.31	.02	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.26	---	.00	.14	.00	.00	.00	.00	.00
31	.00	---	.00	.08	---	.00	---	.00	---	.00	.00	---
TOTAL	---	0.31	0.03	1.56	1.94	0.23	0.18	0.74	0.25	0.00	0.00	0.01

11070500 SAN JACINTO RIVER NEAR ELSINORE, CA

LOCATION.--Lat 33°39'51", long 117°17'35", in SE 1/4 NE 1/4 sec.9, T.6 S., R.4 W., Riverside County, Hydrologic Unit 18070203, on right bank 2.0 mi east of Elsinore, 2.1 mi downstream from Railroad Canyon Dam, and 36 mi downstream from Lake Hemet.

DRAINAGE AREA.--723 mi².

PERIOD OF RECORD.--January 1916 to current year. Monthly figures 1927-50, adjusted for diversion, published in WSP 1315-B.

REVISED RECORDS.--WDR CA-72-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,270 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Feb. 13, 1916, nonrecording gage at site 0.7 mi downstream at different datum. Feb. 13, 1916, to Oct. 27, 1921, nonrecording gage at present site, at different datum.

REMARKS.--Records fair. Flow partly regulated by Lake Hemet, capacity 13,500 acre-ft, and since 1928 by Railroad Canyon Reservoir, capacity, 12,000 acre-ft, 2.1 mi upstream from station. Diversions for irrigation and domestic use upstream from Railroad Canyon Reservoir. Temescal Water Co. diverted 2,100 acre-ft during the current year from Railroad Canyon Reservoir for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s, Feb. 17, 1927, gage height, 11.8 ft, from rating curve extended above 2,000 ft³/s on basis of slope-area measurement of peak flow; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6.4 ft³/s, Feb. 18, gage height, 2.88 ft; minimum daily, 0.12 ft³/s, Aug. 5.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.40	1.1	1.3	.93	1.6	1.0	.87	.86	.76	.46	.29	.39
2	e.41	1.1	1.1	1.3	1.6	.95	1.0	.87	.66	.56	.28	.36
3	e.42	1.1	1.0	1.2	1.5	1.3	1.1	.83	.50	.74	.35	.33
4	e.43	1.1	1.1	1.1	1.6	1.4	1.2	.73	.53	.72	.26	.37
5	e.45	.92	1.1	1.1	1.1	1.4	1.3	.61	.64	.60	.12	.41
6	e.46	.99	.97	1.1	1.5	1.3	1.0	.48	.80	.49	.19	.40
7	e.47	1.1	1.1	1.0	.96	1.4	.87	.60	1.0	.49	.38	.36
8	e.49	1.0	1.1	1.2	1.4	1.1	.79	.76	.94	.51	.36	.28
9	e.50	1.0	1.0	1.1	1.5	1.0	.98	.76	.85	.55	.37	.20
10	e.51	.98	1.0	.95	.91	.97	1.2	.68	.90	.70	.30	.27
11	e.52	.88	1.1	.92	1.5	.92	1.0	.69	.96	.65	.21	.38
12	e.54	.68	1.2	.99	1.6	1.0	.85	.62	.91	.52	.15	.33
13	e.55	.89	1.3	.96	1.3	1.1	.74	.52	.92	.55	.18	.33
14	e.56	1.0	1.3	1.1	1.2	1.1	.59	.66	.96	.43	.32	.35
15	e.57	1.0	1.3	.96	1.4	1.1	.56	.74	.90	.13	.31	.38
16	.58	1.1	1.2	.98	.94	1.1	.68	.73	.83	.13	.33	.32
17	.62	1.1	1.1	1.6	2.6	.93	.79	.78	.56	.23	.32	.40
18	.57	1.0	1.2	1.3	3.1	.82	.78	.78	.63	.28	.30	.51
19	.55	.91	1.3	1.2	1.4	.98	.83	.76	.64	.28	.31	.57
20	.67	1.1	1.2	1.2	1.0	1.1	.70	.64	.47	.26	.38	.59
21	.79	1.3	1.3	1.2	1.3	1.1	.67	.74	.55	.27	.40	.54
22	.75	1.3	1.1	1.2	1.5	1.0	.57	.72	.49	.16	.36	.55
23	.79	1.3	.91	1.2	1.3	1.0	.67	.62	.31	.20	.33	.59
24	.82	1.3	.79	1.2	1.4	1.1	.83	.62	.15	.31	.34	.59
25	.80	1.0	.81	1.1	1.4	.96	.77	.61	.28	.35	.36	.74
26	.79	.90	.99	1.1	1.3	1.2	.72	.68	.36	.37	.29	.55
27	.80	1.2	1.1	1.0	1.0	1.2	.81	.60	.64	.33	.31	.52
28	.66	1.3	1.1	.89	.94	1.3	.69	.86	.75	.29	.34	.52
29	.54	1.4	1.1	.93	---	1.3	.56	.87	.93	.19	.28	.49
30	.65	1.4	.94	1.1	---	1.2	.66	.73	.78	.20	.30	.51
31	.90	---	.93	1.5	---	1.1	---	.80	---	.29	.37	---
TOTAL	18.56	32.45	34.04	34.61	39.85	34.43	24.78	21.95	20.60	12.24	9.39	13.13
MEAN	.60	1.08	1.10	1.12	1.42	1.11	.83	.71	.69	.39	.30	.44
MAX	.90	1.4	1.3	1.6	3.1	1.4	1.3	.87	1.0	.74	.40	.74
MIN	.40	.68	.79	.89	.91	.82	.56	.48	.15	.13	.12	.20
AC-FT	37	64	68	69	79	68	49	44	41	24	19	26

CAL YR 1989 TOTAL 253.60 MEAN .69 MAX 2.3 MIN .00 AC-FT 503
WTR YR 1990 TOTAL 296.03 MEAN .81 MAX 3.1 MIN .12 AC-FT 587

e Estimated.

11072100 TEMESCAL CREEK ABOVE MAIN STREET, AT CORONA, CA

LOCATION.--Lat 33°53'21", long 117°33'43", in La Sierra Grant, Riverside County, Hydrologic Unit 18070203, on right bank 500 ft upstream from Main Street bridge in Corona, and 1.5 mi upstream from topographic boundary of Prado Flood control basin.

DRAINAGE AREA.--224 mi², excludes 768 mi² above Lake Elsinore.

PERIOD OF RECORD.--December 1967 to September 1974, December 1980 to July 1983, February 1984 to current year.

GAGE.--Water-stage recorder and concrete-lined flood control channel. Elevation of gage is 600 ft above National Geodetic Vertical Datum of 1929, from topographic map. December 1967 to September 1974, water-stage recorder at site 1.2 mi downstream at different datum. December 1980 to July 1983 at site 500 ft downstream at different datum.

REMARKS.--No estimated daily discharges. Records fair. Flow regulated by several small storage reservoirs. Many diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--6 years, (water years 1985-90), 9.40 ft³/s, 6,810 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,850 ft³/s, Feb. 25, 1969, gage height, 8.17 ft, from floodmark, at old site 1.2 mi downstream on basis of slope-area measurement of peak flow; no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 765 ft³/s, Feb. 17, gage height, 4.28 ft; minimum daily, 2.0 ft³/s, July 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.0	5.6	3.5	15	4.5	4.5	5.9	7.3	5.4	6.6	13	9.8
2	5.1	6.0	3.4	55	3.9	4.0	8.5	5.7	6.3	5.2	16	14
3	5.3	6.0	3.9	7.6	4.3	3.4	9.7	6.5	6.5	5.9	13	13
4	5.6	6.1	2.9	6.9	39	3.8	36	8.4	5.5	6.1	16	14
5	5.6	6.8	3.9	4.7	4.7	3.8	8.3	7.7	5.7	6.3	17	12
6	5.2	8.2	3.2	6.7	5.0	3.3	8.8	8.5	5.1	8.8	18	9.6
7	5.8	7.3	3.9	4.6	5.2	3.4	7.0	8.8	7.0	4.0	15	10
8	3.9	8.5	5.2	4.2	3.8	3.7	4.8	9.3	8.5	6.9	15	15
9	4.0	6.9	3.9	4.3	4.3	3.4	4.6	7.9	14	4.0	14	14
10	4.4	8.1	4.6	3.7	4.5	4.1	4.9	7.1	7.2	7.4	15	11
11	3.5	9.1	3.8	3.9	5.6	17	5.6	7.2	4.6	9.0	15	11
12	3.8	7.3	4.7	4.3	5.4	26	5.6	6.3	6.7	2.8	15	19
13	5.1	7.3	5.1	24	5.3	6.3	4.6	6.8	3.8	6.1	14	18
14	4.1	8.8	5.5	58	5.9	4.0	5.2	5.8	3.4	2.7	17	27
15	4.5	8.9	8.1	4.2	6.0	4.1	4.4	6.1	4.7	3.1	19	17
16	4.3	7.8	6.6	7.9	6.0	4.0	6.2	6.9	3.6	8.9	16	5.0
17	5.8	7.5	7.3	53	323	3.6	7.6	7.8	3.2	17	15	5.0
18	5.3	8.0	7.0	3.9	48	3.3	6.4	8.3	5.8	11	17	4.7
19	5.2	8.1	7.3	2.8	7.8	4.7	7.0	9.6	3.7	13	17	4.9
20	5.5	5.0	6.8	2.9	4.8	4.8	5.5	11	5.1	13	16	3.1
21	7.1	4.1	6.9	2.7	4.6	4.8	5.4	15	4.4	12	14	4.2
22	21	3.8	6.6	2.6	4.8	4.7	5.0	16	4.6	2.0	8.3	3.7
23	4.3	3.4	6.5	3.1	4.8	5.2	6.2	11	4.8	8.2	11	3.5
24	4.8	3.9	6.3	3.7	4.2	6.1	6.1	12	14	9.9	10	3.3
25	7.5	3.9	6.3	3.0	6.1	6.3	6.1	12	4.4	12	9.0	3.2
26	4.8	12	6.0	3.2	6.3	6.2	6.2	14	6.7	12	7.9	4.1
27	5.3	3.0	9.3	2.9	4.5	6.0	5.7	13	6.4	12	8.6	3.6
28	5.6	3.2	19	2.5	4.1	6.9	6.6	61	7.5	13	5.8	4.5
29	4.6	3.8	13	2.8	---	8.3	7.5	11	7.4	12	9.4	4.6
30	4.9	4.2	12	5.7	---	17	28	8.9	6.4	12	8.8	3.4
31	6.5	---	11	11	---	7.4	---	5.4	---	13	10	---
TOTAL	173.4	192.6	203.5	320.8	536.4	194.1	239.4	332.3	182.4	265.9	415.8	275.2
MEAN	5.59	6.42	6.56	10.3	19.2	6.26	7.98	10.7	6.08	8.58	13.4	9.17
MAX	21	12	19	58	323	26	36	61	14	17	19	27
MIN	3.5	3.0	2.9	2.5	3.8	3.3	4.4	5.4	3.2	2.0	5.8	3.1
AC-FT	344	382	404	636	1060	385	475	659	362	527	825	546

CAL YR 1989 TOTAL 2685.3 MEAN 7.36 MAX 100 MIN 2.0 AC-FT 5330
WTR YR 1990 TOTAL 3331.8 MEAN 9.13 MAX 323 MIN 2.0 AC-FT 6610

11073360 CHINO CREEK AT SCHAEFER AVENUE, NEAR CHINO, CA

LOCATION.--Lat 34°00'14", long 117°43'34", in Santa Ana del Chino Grant, San Bernardino County, Hydrologic Unit 18070203, on right bank 300 ft downstream from Schaefer Avenue, 0.8 mi downstream from San Antonio Creek, and 1.5 mi southwest of Chino.

DRAINAGE AREA.--48.9 mi².

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

REVISED RECORDS.--WDR CA-84-1: 1983(M).

GAGE.--Water-stage recorder. Concrete dikes have formed low-water control since October 1975. Elevation of gage is 685 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow mostly regulated by San Antonio flood-control reservoir, capacity, 7,700 acre-ft. Natural streamflow affected by extensive ground-water withdrawals, diversions for power, domestic use, irrigation, and return flow from irrigated areas. California Water Project reported no releases during the year to the basin via San Antonio Creek from Rialto Pipeline below San Antonio Dam at a site 10 mi upstream. See schematic diagram of Santa Ana River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft³/s, Feb. 27, 1983, gage height, 10.32 ft, from rating curve extended above 560 ft³/s on basis of slope-conveyance study; no flow May 21, June 30, July 1, Oct. 30, Nov. 3, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 25, 1969, reached a stage of 9.23 ft, present datum, discharge, 9,200 ft³/s, on basis of contracted-opening measurement at site 6.1 mi downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,030 ft³/s, Feb. 17, gage height, 6.33 ft; minimum daily, 0.63 ft³/s, Jan. 22.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	.97	.91	2.5	43	1.2	1.1	1.0	1.1	.88	1.4	.99
2	2.9	.98	.98	46	1.5	1.4	1.1	1.5	.99	1.0	.94	1.6
3	1.2	1.1	.90	1.3	1.2	1.1	.96	.96	.89	.96	1.1	1.1
4	1.3	1.0	.87	1.2	77	.96	17	1.1	1.0	.81	.91	1.7
5	1.2	1.1	1.7	.82	2.9	2.2	1.5	.99	.91	.90	.88	1.7
6	.98	1.1	2.0	.83	3.5	.98	1.1	.92	1.1	1.1	1.1	1.6
7	1.5	.99	.89	.83	1.1	1.0	1.2	1.6	.99	1.1	1.1	1.5
8	3.1	1.0	1.1	.90	1.1	1.0	1.1	.96	.97	1.0	1.1	2.5
9	1.0	1.2	.79	.94	1.2	1.0	1.0	1.1	1.2	1.0	1.2	.86
10	1.0	.97	.83	1.1	.96	1.1	1.1	1.0	.95	1.0	1.2	1.1
11	1.0	.91	.83	1.1	.96	10	1.1	1.1	1.0	1.2	1.1	1.0
12	.98	1.0	.99	1.6	.96	2.4	1.3	1.1	.96	1.0	.98	1.0
13	1.0	1.1	1.1	60	.99	1.7	1.2	1.1	.87	1.1	1.3	1.1
14	1.0	1.1	.87	58	4.8	1.4	1.1	1.1	.87	1.1	.97	1.1
15	1.0	1.0	.91	1.4	2.3	.96	1.9	1.3	.93	.87	1.3	.92
16	1.1	1.2	.91	62	2.5	.96	4.3	1.3	.85	1.1	.99	.85
17	1.6	1.0	.84	53	499	1.5	2.5	1.3	.76	1.4	1.1	.97
18	1.1	1.1	.98	1.2	54	.99	1.5	1.4	.92	1.7	.95	1.0
19	1.3	1.1	1.5	.96	3.2	1.5	1.1	.96	.98	1.3	.91	1.1
20	1.2	1.1	1.0	.87	2.7	1.2	1.3	.96	.89	1.2	1.1	1.1
21	1.1	1.2	.96	.80	1.4	1.2	1.2	1.4	.87	.90	1.1	1.1
22	24	1.4	1.1	.63	1.0	1.3	1.3	1.3	.91	.84	.95	.93
23	1.6	1.2	1.0	.86	.86	1.5	7.4	1.4	.86	1.3	1.2	.88
24	1.0	1.1	.96	.91	1.0	1.3	2.0	1.4	.82	1.0	1.1	.99
25	12	1.6	.91	.82	.99	1.1	.95	2.1	.82	.91	1.0	.98
26	.88	62	1.2	.84	.98	1.1	.95	1.0	1.0	1.2	.95	1.2
27	.83	2.2	1.2	.83	.92	1.2	1.0	1.0	.97	1.7	.95	1.0
28	.95	.85	27	.83	1.0	3.3	1.3	144	1.0	.88	.96	1.1
29	.83	.72	1.5	.93	---	1.1	2.0	4.5	1.1	.76	1.3	1.0
30	.95	.79	.91	70	---	1.0	11	1.5	1.1	1.2	1.1	1.1
31	1.0	---	2.2	5.9	---	1.2	---	1.2	---	.96	1.0	---
TOTAL	72.70	94.08	59.84	379.90	713.02	49.85	73.56	183.55	28.58	33.37	33.24	35.07
MEAN	2.35	3.14	1.93	12.3	25.5	1.61	2.45	5.92	.95	1.08	1.07	1.17
MAX	24	62	27	70	499	10	17	144	1.2	1.7	1.4	2.5
MIN	.83	.72	.79	.63	.86	.96	.95	.92	.76	.76	.88	.85
AC-FT	144	187	119	754	1410	99	146	364	57	66	66	70

CAL YR 1989 TOTAL 3344.42 MEAN 9.16 MAX 192 MIN .72 AC-FT 6630
WTR YR 1990 TOTAL 1756.76 MEAN 4.81 MAX 499 MIN .63 AC-FT 3480

11073495 CUCAMONGA CREEK NEAR MIRA LOMA, CA

LOCATION.--Lat 33°58'58", long 117°35'55", in SW 1/4 NE 1/4 sec.22, T.2 S., R.7 W., San Bernardino County, Hydrologic Unit 18070203, on right bank 300 ft upstream from Merrill Avenue bridge, and 4.6 mi west of Mira Loma.

DRAINAGE AREA.--75.8 mi².

PERIOD OF RECORD.--January 1968 to July 1977, January 1979 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 660 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 1977 at site 100 ft downstream at different datum.

REMARKS.--Records poor. Channel is a trapezoidal concrete floodway; records for low and medium flows prior to July 31, 1977, are not equivalent. Chino Basin Municipal Water District Tertiary Plant No. 1 began discharging effluent 1.5 mi upstream from station on May 8, 1985. See schematic diagram of Santa Ana River basin.

AVERAGE DISCHARGE.--8 years (water years 1969-76), 2.74 ft³/s, 1,990 acre-ft/yr; 5 years (water years 1980-84), 19.3 ft³/s, 13,980 acre-ft/yr; 6 years (water years 1985-90), 28.4 ft³/s, 20,580 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft³/s, Feb. 27, 1983, gage height, 7.85 ft, from floodmark on basis of slope-conveyance study of peak flow; prior to operation of Plant No. 1, no flow for most of some years; minimum daily, since 1985, 2.5 ft³/s, June 6, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, unknown, Feb. 17, gage height, unknown; minimum daily, 11 ft³/s, June 27.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e28	e29	e30	e36	e77	e28	e32	e24	e24	e26	e28	e26
2	e31	e32	e32	e110	e29	e30	e26	e24	e26	e28	e34	e27
3	e29	e28	e32	e32	e33	e33	e24	e27	e26	e26	e23	e29
4	e29	e32	e27	e31	e33	e31	e27	e25	e20	e26	e28	e28
5	e27	e33	e25	e28	e34	e30	e28	e29	e24	e25	e29	e31
6	e30	e30	e28	e34	e31	e31	e23	e26	e23	e24	e28	e27
7	e31	e28	e35	e32	e26	e31	e30	e20	e24	e29	e27	e26
8	e30	e31	e31	e34	e31	e18	e29	e24	e23	e28	e28	e29
9	e29	e30	e33	e28	e28	e31	e28	e17	e28	e29	e30	e29
10	e27	e30	e35	e30	e25	e30	e23	e17	e28	e27	e27	e27
11	e29	e28	e35	e28	e28	e190	e25	e23	e26	e27	e27	e26
12	e34	e29	e26	e30	e28	e120	e28	e21	e22	e27	e31	e30
13	e28	e35	e27	e150	e28	e40	e24	e20	e21	e30	e27	e26
14	e31	e31	e30	e210	e24	e25	e27	e20	e25	e24	e29	e29
15	e30	e32	e29	e32	e18	e30	e29	e20	e26	e28	e30	e30
16	e33	e26	e29	e60	e25	e28	e25	e16	e30	e30	e27	e31
17	e28	e32	e30	e200	e780	e29	e27	e17	e29	e26	e30	e29
18	e30	e31	e30	e40	e200	e30	e26	e17	e28	e29	e27	e27
19	e27	e33	e34	e31	e100	e25	e27	e24	e27	e27	e28	e29
20	e31	e29	e28	e32	e53	e28	e27	e26	e27	e26	e28	e28
21	e29	e24	e31	e33	e40	e31	e26	e22	e28	e30	e28	e27
22	e65	e31	e31	e31	e29	e27	e29	e21	e26	e30	e28	e30
23	e30	e32	e31	e31	e30	e26	e29	e18	e27	e26	e27	e33
24	e32	e27	e35	e31	e31	e28	e20	e19	e29	e29	e26	e30
25	e48	e30	e33	e30	e28	e28	e25	e16	e25	e28	e27	e26
26	e30	e113	e29	e25	e32	e29	e23	e17	e24	e26	e27	e28
27	e27	e27	e30	e32	e30	e29	e23	e15	e11	e26	e26	e27
28	e31	e27	e27	e33	e28	e27	e26	e230	e16	e28	e26	e29
29	e32	e27	e30	e32	---	e28	e26	e21	e36	e29	e26	e31
30	e31	e34	e34	e170	---	e26	e27	e24	e29	e26	e29	e32
31	e30	---	e30	e93	---	e27	---	e23	---	e25	e26	---
TOTAL	977	981	947	1749	1879	1144	789	863	758	845	862	857
MEAN	31.5	32.7	30.5	56.4	67.1	36.9	26.3	27.8	25.3	27.3	27.8	28.6
MAX	65	113	35	210	780	190	32	230	36	30	34	33
MIN	27	24	25	25	18	18	20	15	11	24	23	26
AC-FT	1940	1950	1880	3470	3730	2270	1560	1710	1500	1680	1710	1700

CAL YR 1989 TOTAL 10644 MEAN 29.2 MAX 262 MIN 14 AC-FT 21110
WTR YR 1990 TOTAL 12651 MEAN 34.7 MAX 780 MIN 11 AC-FT 25090

e Estimated.

SANTA ANA RIVER BASIN

11074000 SANTA ANA RIVER BELOW PRADO DAM, CA
(National stream-quality accounting network station)

LOCATION.--Lat 33°53'00", long 117°38'40", in La Sierra Grant, Riverside County, Hydrologic Unit 18070203, on left bank of outlet channel, 2,500 ft downstream from axis of Prado Dam, and 4.5 mi west of Corona.

DRAINAGE AREA.--1,490 mi², excludes 768 mi² above Lake Elsinore.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1930 to November 1939 (irrigation seasons only), March 1940 to current year. Published as "at Santa Fe Railroad Bridge, near Prado" May 1930 to November 1931, as "at Atchison, Topeka, and Santa Fe Railroad Bridge, near Prado" May 1932 to November 1939, and as "below Prado Dam, near Prado" March 1940 to September 1950.

GAGE.--Water-stage recorder and concrete control since August 1944. Datum of gage is approximately 449 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to Mar. 18, 1940, at about same site at various datums.

REMARKS.--No estimated daily discharges. Records good. Flow regulated since 1940 by Prado flood-control reservoir, capacity, 196,200 acre-ft. Natural streamflow affected by extensive ground-water withdrawals, diversion for irrigation, and return flow from irrigated areas. During the current year, no California Water Project releases were made. See schematic diagram of Santa Ana River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,440 ft³/s, Feb. 21, 1980, gage height, 6.88 ft; minimum daily, 2.4 ft³/s, July 29 to Aug. 3, Sept. 20, 1978 (result of gate closure).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 2, 1938, reached a discharge of 100,000 ft³/s, on basis of slope-area measurement of peak flow at site 2.5 mi downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,600 ft³/s, Feb. 18, gage height, 5.50 ft; minimum daily, 115 ft³/s, Sept. 11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	144	171	210	207	278	331	198	316	174	129	132	132
2	150	161	201	307	272	326	177	306	168	129	135	131
3	154	161	207	290	251	338	135	289	160	128	139	128
4	155	161	206	228	247	336	136	262	150	128	136	128
5	152	171	196	208	253	334	136	222	144	125	136	128
6	148	172	203	201	254	331	136	187	148	119	136	124
7	149	172	203	203	288	323	136	182	141	122	136	121
8	154	175	203	213	328	321	137	174	144	127	132	123
9	153	173	208	219	340	318	162	186	147	128	131	126
10	155	176	204	209	326	317	176	170	168	123	131	125
11	153	174	175	209	310	314	176	170	158	124	130	115
12	159	181	166	201	251	314	177	175	154	122	127	121
13	163	180	176	250	210	280	179	167	148	117	132	120
14	163	183	180	272	211	254	179	164	138	120	134	124
15	162	188	187	340	212	252	178	165	150	122	143	122
16	168	178	205	320	211	251	177	168	156	120	139	123
17	172	182	206	298	305	250	181	157	160	126	136	126
18	164	180	195	378	1700	250	260	160	152	128	143	126
19	159	176	201	345	794	228	324	161	149	126	147	127
20	154	176	206	302	426	207	357	163	141	131	144	133
21	158	176	188	297	408	205	355	162	141	131	142	132
22	208	174	198	295	315	204	354	159	141	125	138	136
23	210	186	200	292	273	203	351	156	139	124	138	137
24	186	192	203	302	283	202	348	155	141	125	136	141
25	184	187	207	308	280	202	345	157	138	131	133	135
26	165	301	201	304	331	201	341	160	132	132	134	132
27	179	258	200	292	361	200	339	161	131	133	134	139
28	180	210	207	281	359	199	338	301	129	130	126	137
29	175	201	233	273	---	199	332	368	129	128	125	138
30	166	207	220	224	---	198	324	214	133	134	126	141
31	172	---	212	240	---	198	---	182	---	130	131	---
TOTAL	5114	5583	6207	8308	10077	8086	7144	6119	4404	3917	4182	3871
MEAN	165	186	200	268	360	261	238	197	147	126	135	129
MAX	210	301	233	378	1700	338	357	368	174	134	147	141
MIN	144	161	166	201	210	198	135	155	129	117	125	115
AC-FT	10140	11070	12310	16480	19990	16040	14170	12140	8740	7770	8290	7680

CAL YR 1989 TOTAL 74925 MEAN 205 MAX 1510 MIN 24 AC-FT 148600
WTR YR 1990 TOTAL 73012 MEAN 200 MAX 1700 MIN 115 AC-FT 144800

11074000 SANTA ANA RIVER BELOW PRADO DAM, CA--Continued

WATER-QUALITY RECORDS

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

CHEMICAL DATA: Water years 1967 to current year.

BIOLOGICAL DATA: Water years 1975-81.

SPECIFIC CONDUCTANCE: Water years 1970 to current year.

WATER TEMPERATURE: Water years 1970 to current year.

SEDIMENT DATA: Water years 1974 to current year.

PERIOD OF DAILY RECORD.--

CHLORIDE: October 1970 to September 1971.

SPECIFIC CONDUCTANCE: October 1969 to current year.

WATER TEMPERATURE: October 1969 to current year.

SUSPENDED-SEDIMENT DISCHARGE: October 1973 to June 1982.

INSTRUMENTATION.--Water-quality monitor recording specific conductance and water temperature since October 1969.

REMARKS.--Period of missing specific-conductance and water-temperature data due to isolation of probes above water surface.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum recorded, 1,830 microsiemens, Apr. 30, 1971; minimum recorded, 220 microsiemens, Feb. 20, 1978.

WATER TEMPERATURE: Maximum recorded, 36.0 °C, Sept. 4, 1972, Sept. 8, 1984; minimum recorded, 2.5 °C, Dec. 30, 1969.

SEDIMENT CONCENTRATION: Maximum daily mean, 2,870 mg/L, Mar. 5, 1978; minimum daily mean, 3 mg/L, Apr. 2, 1980, and several days during 1982.

SEDIMENT LOAD: Maximum daily, 18,900 tons, Mar. 5, 1978; minimum daily, 0.58 ton, Sept. 20, 1978.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum recorded, 1,160 microsiemens, May 10; minimum recorded, 396 microsiemens, Feb. 19.

WATER TEMPERATURE: Maximum recorded, 28.0 °C, July 11, 14, 19, 20; minimum recorded, 9.0 °C, Dec. 13.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	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 TOTAL (MG/L AS CaCO3)
OCT												
03...	1600	150	1100	--	21.5	--	--	--	--	--	--	--
27...	1510	178	1090	--	17.5	--	--	--	--	--	--	--
NOV												
24...	1130	189	1060	8.0	16.0	15	745	8.8	92	2200	2300	290
DEC												
05...	1210	196	1080	--	12.5	--	--	--	--	--	--	--
14...	1320	182	1110	--	12.0	--	--	--	--	--	--	--
JAN												
04...	1600	218	1080	--	12.0	--	--	--	--	--	--	--
18...	1156	408	750	--	11.5	--	--	--	--	--	--	--
25...	1230	312	1100	7.9	12.5	3.5	745	9.5	92	140	310	300
FEB												
02...	1240	253	872	--	13.0	--	--	--	--	--	--	--
13...	1045	198	1100	--	14.5	--	--	--	--	--	--	--
MAR												
05...	1415	333	946	--	15.0	--	--	--	--	--	--	--
20...	1300	200	1080	--	15.5	--	--	--	--	--	--	--
27...	1430	201	1090	8.0	17.5	2.1	745	8.9	96	K30	K24	310
APR												
12...	1300	178	1080	--	18.0	--	--	--	--	--	--	--
25...	1350	342	1050	--	18.5	--	--	--	--	--	--	--
MAY												
07...	1315	180	1110	--	21.0	--	--	--	--	--	--	--
23...	1300	159	1100	--	21.5	--	--	--	--	--	--	--
31...	1045	182	1090	8.0	18.5	35	745	8.3	91	K8700	7800	290
JUL												
09...	1210	127	1090	--	23.5	--	--	--	--	--	--	--
31...	1045	135	1060	8.0	21.0	32	745	7.8	90	K13000	K1800	280
AUG												
20...	1210	148	1070	--	22.5	--	--	--	--	--	--	--
SEP												
04...	1200	132	1050	--	22.5	--	--	--	--	--	--	--
19...	1230	132	1060	--	21.5	--	--	--	--	--	--	--
27...	1330	145	1050	7.9	20.0	2.5	740	8.0	91	K900	350	270

SANTA ANA RIVER BASIN

11074000 SANTA ANA RIVER BELOW PRADO DAM, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
NOV 24...	61	83	20	100	42	3	11	279	228	130	120
JAN 25...	64	86	21	98	40	2	11	290	238	140	110
MAR 27...	68	90	21	99	40	2	11	297	243	120	110
MAY 31...	47	82	20	100	42	3	9.8	294	241	120	120
JUL 31...	76	78	21	110	45	3	9.8	251	206	120	130
SEP 27...	71	74	20	100	44	3	10	239	196	110	110
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)
OCT 03...	--	--	640	--	--	--	--	--	--	--	--
27...	--	--	651	--	--	--	--	--	--	--	--
NOV 24...	0.50	24	653	670	0.89	0.350	7.60	1.90	1.90	2.9	3.50
DEC 05...	--	--	674	--	--	--	--	--	--	--	--
14...	--	--	683	--	--	--	--	--	--	--	--
JAN 04...	--	--	667	--	--	--	--	--	--	--	--
18...	--	--	479	--	--	--	--	--	--	--	--
25...	0.50	24	697	674	0.95	0.270	6.60	2.50	2.40	3.7	3.20
FEB 02...	--	--	543	--	--	--	--	--	--	--	--
13...	--	--	687	--	--	--	--	--	--	--	--
MAR 05...	--	--	569	--	--	--	--	--	--	--	--
20...	--	--	657	--	--	--	--	--	--	--	--
27...	0.50	22	670	628	0.91	0.200	1.30	1.00	1.00	1.7	2.30
APR 12...	--	--	659	--	--	--	--	--	--	--	--
25...	--	--	636	--	--	--	--	--	--	--	--
MAY 07...	--	--	652	--	--	--	--	--	--	--	--
23...	--	--	664	--	--	--	--	--	--	--	--
31...	0.50	22	652	659	0.89	0.250	6.60	2.50	2.10	5.3	3.20
JUL 09...	--	--	620	--	--	--	--	--	--	--	--
31...	0.50	25	628	662	0.85	0.430	8.70	1.40	1.40	3.2	3.80
AUG 20...	--	--	624	--	--	--	--	--	--	--	--
SEP 04...	--	--	634	--	--	--	--	--	--	--	--
19...	--	--	640	--	--	--	--	--	--	--	--
27...	0.40	21	620	608	0.84	0.300	7.80	1.00	1.00	2.2	3.10

11074000 SANTA ANA RIVER BELOW PRADO DAM, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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 24...	3.10	2.60	<10	3	38	<0.5	<1.0	1	<3	2	15
JAN 25...	2.60	2.50	20	3	39	<0.5	<1.0	<1	<3	<10	14
MAR 27...	2.30	0.480	--	--	--	--	--	--	--	--	--
MAY 31...	2.70	2.30	<10	5	46	0.6	<1.0	<1	<3	2	13
JUL 31...	3.20	1.10	20	3	40	<0.5	1.0	<1	<3	4	12
SEP 27...	3.00	3.00	--	--	--	--	--	--	--	--	--

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 24...	<1	11	100	<0.1	<10	4	<1	<1.0	560	<6	12
JAN 25...	<10	11	87	<0.1	<10	<10	<1	<1.0	580	<6	14
MAY 31...	<1	11	150	<0.1	<10	3	<1	<1.0	530	7	8
JUL 31...	<1	11	93	0.7	<10	5	<1	<1.0	520	7	8

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DEPTH AT SAMPLE LOC- ATION, TOTAL (FEET)	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAR											
27...*	1305	1.26	5.00	1100	8.0	17.5	745	9.1	98	8	97
27...*	1310	1.52	10.5	1090	8.0	17.5	745	8.9	96	4	94
27...*	1315	1.54	16.0	1090	8.0	17.5	745	8.9	96	3	100
27...*	1320	1.49	21.0	1090	8.0	17.5	745	8.8	94	3	100
27...*	1325	1.31	26.0	1090	8.0	17.5	745	8.8	94	6	84
27...*	1330	1.40	31.0	1090	8.0	17.5	745	8.8	94	5	100
SEP											
27...*	1300	1.36	6.00	1060	7.9	20.0	740	8.1	92	72	94
27...*	1305	1.48	12.0	1050	7.9	20.0	740	8.1	92	83	93
27...*	1310	1.57	19.0	1050	7.9	20.0	740	8.0	91	92	81
27...*	1315	1.62	25.0	1050	7.9	20.0	740	8.0	91	89	91
27...*	1320	1.59	31.0	1050	7.9	20.0	740	8.0	91	86	91

* Instantaneous streamflow at the time of cross-sectional measurements: Mar. 27, 201 ft³/s; Sept. 27, 145 ft³/s.

SANTA ANA RIVER BASIN

11074000 SANTA ANA RIVER BELOW PRADO DAM, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, . INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
NOV						
24...	1130	189	16.0	65	33	79
JAN						
25...	1230	312	12.5	9	7.6	73
MAR						
27...	1430	201	17.5	5	2.7	95
MAY						
31...	1045	182	18.5	176	86	94
JUL						
31...	1045	135	21.0	95	35	93
SEP						
27...	1330	145	20.0	85	33	92

11074000 SANTA ANA RIVER BELOW PRADO DAM, CA--Continued

SPECIFIC CONDUCTANCE, MICROSIEMENS/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	1140	1100	1080	1060	1070	1060	1120	1100	842	702	859	699
2	1120	1080	1070	1060	1080	1050	1110	756	883	842	888	858
3	1100	1070	1060	1050	1080	1060	1010	877	926	834	908	897
4	1100	1070	1070	1050	1070	1060	1090	999	1010	926	956	907
5	1100	1070	1060	1040	1100	1070	1090	1070	1010	941	946	886
6	1110	1080	1050	1040	1100	1070	1090	1070	931	832	888	867
7	1130	1090	1060	1040	1070	1060	1080	1060	876	814	950	888
8	1130	1090	1060	1040	1070	1050	1060	1050	979	886	971	940
9	1140	1100	1060	1040	1060	1050	1060	1050	1050	979	973	952
10	1150	1120	1060	1050	1080	1050	1050	1030	1080	1040	975	963
11	1140	1120	1060	1050	1110	1080	1040	1030	1120	1070	996	975
12	1130	1100	1070	1050	1140	1100	1040	1020	1120	867	998	986
13	1140	1110	1070	1050	1130	1110	1040	700	1120	1090	1010	939
14	1150	1130	1070	1050	1120	1110	709	637	1120	1090	1020	1000
15	1140	1120	1060	1040	1120	1100	761	665	1100	1080	1030	1000
16	1130	1100	1070	1050	1100	1080	797	729	1100	1080	1030	1010
17	1120	1100	1070	1060	1100	1080	874	776	1080	637	1050	1020
18	1110	1090	1070	1060	1110	1090	842	735	577	447	1090	1040
19	1100	1090	1070	1060	1100	1080	735	669	536	396	1070	1020
20	1100	1080	1070	1060	1090	1080	775	690	535	505	1090	1070
21	1100	1080	1080	1060	1110	1080	885	776	554	514	1090	1070
22	1080	990	1070	1060	1110	1080	945	886	683	524	1080	1060
23	1060	1010	1070	1060	1110	1100	1020	946	743	673	1100	1060
24	1080	1060	1080	1060	1120	1110	1090	1020	782	743	1090	1060
25	1080	1060	1100	1070	1120	1100	1090	1070	771	742	1080	1060
26	1090	1050	1090	704	1120	1100	1120	1080	751	701	1090	1070
27	1100	1070	1050	775	1110	1100	1120	1100	701	670	1080	1060
28	1100	1080	1080	1030	1120	1110	1130	1110	769	690	1060	1040
29	1100	1080	1070	1060	1110	1040	1130	1120	---	---	1100	1050
30	1100	1080	1070	1060	1110	1080	1120	1080	---	---	1100	1050
31	1080	1060	---	---	1120	1100	1100	742	---	---	1080	1060
MONTH	1150	990	1100	704	1140	1040	1130	637	1120	396	1100	699
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	1070	1050	1100	1080	1080	1050	---	---	1060	1030	1060	1030
2	1090	1060	1100	1070	1080	1060	---	---	1070	1030	1060	1020
3	1100	1080	1110	1080	1090	1060	---	---	1060	1020	1060	1030
4	1090	1060	1140	1100	1090	1060	---	---	1090	1040	1060	1020
5	1080	1050	1140	1100	1080	1040	---	---	1080	1030	1080	1020
6	1090	1060	1140	1100	1070	1040	---	---	1080	1040	1080	1030
7	1090	1070	1130	1090	1080	1050	---	---	1070	1040	1060	1030
8	1090	1070	1140	1090	1080	1050	---	---	1080	1040	1060	1030
9	1090	1070	1140	1090	1070	1060	---	---	1070	1040	1060	1020
10	1110	1080	1160	1110	1070	1030	1100	1060	1070	1030	1070	1020
11	1100	1090	1150	1090	1060	1030	1120	1080	1080	1040	1090	1040
12	1090	1080	1100	1080	1070	1040	1100	1070	1090	1040	1050	1020
13	1120	1040	1100	1080	1060	1050	1100	1070	1070	1040	1050	1010
14	1090	1070	1110	1090	---	---	1110	1070	1070	1040	1050	1010
15	1100	1070	1110	1090	---	---	1110	1050	1070	1050	1050	1000
16	1100	1080	1110	1080	---	---	1100	1050	1070	1040	1040	1000
17	1120	1090	1120	1090	---	---	1120	1080	1090	1040	1040	1010
18	1130	1100	1120	1100	---	---	1140	1100	1090	1050	1050	1010
19	1100	1080	1110	1090	---	---	1120	1080	1090	1050	1060	1030
20	1080	1060	1110	1090	---	---	1130	1090	1090	1050	1070	1040
21	1070	1050	1110	1090	---	---	1120	1080	1090	1060	1080	1050
22	1060	1040	1110	1090	---	---	1090	1060	1080	1060	1080	1040
23	1060	1040	1110	1080	---	---	1090	1050	1080	1060	1070	1040
24	1070	1050	1090	1070	---	---	1080	1050	1080	1050	1070	1040
25	1070	1050	1090	1070	---	---	1070	1050	1080	1050	1070	1040
26	1070	1050	1090	1070	---	---	1070	1040	1070	1040	1070	1030
27	1070	1050	1080	1070	---	---	1070	1040	1070	1030	1050	1020
28	1080	1050	1080	614	---	---	1070	1040	1080	1040	1060	1010
29	1100	1070	744	630	---	---	1080	1030	1070	1030	1050	1030
30	1100	1080	963	743	---	---	1130	1030	1080	1000	1060	1020
31	---	---	1100	977	---	---	1060	1040	1060	1030	---	---
MONTH	1130	1040	1160	614	---	---	---	---	1090	1000	1090	1000

11074000 SANTA ANA RIVER BELOW PRADO DAM, CA--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	21.5	18.0	17.0	13.0	14.0	10.0	14.0	10.5	13.5	12.5	13.0	12.5
2	21.5	19.0	17.0	14.0	15.0	12.0	13.5	12.0	13.0	12.0	13.5	13.0
3	21.5	18.5	17.0	13.0	15.0	11.5	13.0	11.0	12.0	11.0	14.5	14.0
4	21.0	17.0	17.0	13.0	15.0	11.0	12.5	10.0	11.5	11.0	15.0	14.0
5	21.0	17.0	17.0	13.5	14.5	11.0	13.5	9.5	11.0	10.5	15.0	14.5
6	22.0	19.0	18.0	16.0	15.0	11.5	14.0	10.0	11.0	10.5	15.0	14.5
7	22.0	18.5	18.0	16.0	15.5	12.0	13.5	10.0	11.5	10.5	15.5	14.5
8	22.0	18.0	18.0	14.5	15.5	11.5	14.5	11.0	12.0	11.5	15.0	14.5
9	22.0	19.5	18.0	13.5	15.0	11.5	15.5	11.5	12.5	12.0	15.0	14.5
10	21.5	19.0	18.0	13.5	14.0	11.5	16.0	12.0	13.0	12.0	15.0	15.0
11	21.5	19.0	18.0	14.0	12.5	11.0	16.0	12.5	14.5	12.5	15.0	14.5
12	21.0	19.0	18.0	15.5	12.5	10.0	16.0	13.0	16.0	14.5	15.0	14.5
13	20.5	18.5	18.0	16.0	12.5	9.0	16.5	15.0	16.0	14.5	15.0	14.0
14	20.0	19.0	17.5	15.5	13.5	9.5	15.5	14.0	15.0	12.0	14.5	13.5
15	20.0	18.5	17.5	14.0	13.0	10.5	14.0	13.5	12.5	10.0	15.0	13.5
16	21.0	17.5	17.0	13.5	14.0	11.5	13.5	13.0	11.0	10.0	14.5	13.5
17	21.5	17.5	16.5	12.5	13.5	10.5	13.0	12.5	11.5	9.5	14.5	13.5
18	21.5	17.5	17.0	14.0	14.0	11.0	12.5	11.0	10.5	9.5	15.0	14.0
19	20.5	16.5	17.5	13.5	14.5	12.5	11.0	11.0	11.0	10.5	15.5	14.5
20	20.0	18.5	18.0	15.0	14.0	11.0	11.5	10.5	10.5	10.0	16.0	15.0
21	20.5	18.5	17.5	14.5	13.5	10.5	11.5	10.5	10.5	10.0	16.5	15.5
22	20.5	19.0	17.5	15.0	14.0	10.5	11.5	11.0	11.0	10.5	17.0	16.0
23	21.0	19.0	17.0	15.0	14.5	10.5	12.0	11.5	11.0	10.5	17.5	16.5
24	20.5	18.5	17.0	15.5	15.5	12.0	13.0	11.5	11.5	10.5	18.0	17.0
25	19.5	17.5	17.5	16.5	15.5	12.5	13.0	12.0	11.5	11.0	18.5	17.5
26	18.0	14.5	17.0	15.5	15.5	13.0	13.0	12.5	11.5	11.0	18.0	17.5
27	17.5	14.5	16.0	13.5	15.5	13.0	13.0	12.0	11.5	11.0	18.0	17.0
28	17.5	14.0	13.5	11.5	15.5	14.0	13.0	12.0	12.5	11.5	17.5	17.0
29	16.5	14.5	14.0	11.5	14.0	12.0	12.5	12.0	---	---	17.5	16.5
30	17.0	14.0	14.0	10.5	14.5	11.0	13.0	11.5	---	---	17.0	16.0
31	17.0	13.5	---	---	14.5	10.5	13.5	12.5	---	---	17.0	16.0
MONTH	22.0	13.5	18.0	10.5	15.5	9.0	16.5	9.5	16.0	9.5	18.5	12.5
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	17.0	16.0	19.5	18.5	23.0	17.5	---	---	25.5	21.0	24.5	20.5
2	17.0	16.0	19.0	18.0	25.0	18.0	---	---	25.0	21.0	25.0	21.0
3	17.5	16.0	20.5	19.0	26.0	19.0	---	---	25.5	21.5	25.0	21.0
4	17.0	16.0	23.0	20.0	26.5	19.5	---	---	26.0	21.5	25.0	20.5
5	17.5	16.5	24.0	20.0	26.0	20.0	---	---	26.0	21.5	25.5	21.5
6	17.0	16.5	25.0	20.0	25.5	20.5	---	---	27.0	23.0	25.5	22.0
7	18.0	16.5	24.5	20.5	25.5	20.5	---	---	27.0	23.0	25.5	21.0
8	18.0	16.5	23.5	20.0	27.0	21.0	---	---	27.0	23.5	25.5	21.0
9	18.0	16.5	23.5	19.0	23.5	21.5	---	---	26.5	23.0	25.5	21.5
10	18.0	17.0	21.5	18.5	23.5	21.0	27.0	21.5	27.0	23.0	25.0	20.5
11	18.0	17.0	19.5	17.5	26.0	20.5	28.0	23.5	27.5	23.0	25.0	20.0
12	18.5	17.5	22.5	17.0	25.0	20.0	27.5	22.5	27.5	23.5	24.5	20.0
13	18.5	17.0	22.0	18.0	22.5	20.0	27.0	23.0	26.0	23.0	24.5	20.5
14	18.5	18.0	21.5	18.5	23.0	19.0	28.0	23.0	24.0	22.5	25.0	21.5
15	19.0	18.0	22.5	18.0	20.0	18.5	27.5	23.5	24.5	22.0	24.5	21.0
16	19.0	18.5	22.5	17.0	23.5	17.5	27.0	23.0	25.5	21.5	23.5	19.5
17	19.5	18.5	23.5	18.0	24.5	19.0	27.0	22.5	25.0	21.0	23.5	20.5
18	19.0	18.0	23.5	18.5	25.0	20.0	27.5	23.0	25.0	21.5	23.5	21.0
19	19.0	18.0	22.0	18.0	25.5	19.5	28.0	23.0	25.5	22.0	22.5	20.5
20	19.0	18.5	22.5	17.5	26.0	20.0	28.0	23.0	24.5	21.0	23.0	20.5
21	19.0	18.5	22.5	17.5	26.0	21.0	27.5	22.5	24.5	20.0	23.5	20.5
22	19.0	18.5	24.5	18.0	26.0	21.0	27.5	23.0	24.5	20.0	23.0	20.0
23	18.5	18.5	23.5	18.5	26.0	20.0	27.5	23.5	24.0	20.0	23.0	20.0
24	18.5	18.0	24.0	19.0	26.5	21.0	26.5	23.0	24.5	21.0	22.5	20.0
25	18.5	18.0	23.5	17.5	26.5	20.0	25.5	21.5	24.5	21.0	23.0	19.5
26	19.0	18.0	23.5	18.5	27.0	21.0	25.5	21.0	24.0	20.0	21.5	19.0
27	19.5	18.5	21.5	18.0	26.5	21.5	26.0	21.0	24.0	19.0	22.0	18.5
28	20.5	19.0	19.5	18.0	26.5	20.5	25.5	20.5	24.5	20.0	22.5	20.0
29	20.5	20.0	20.0	18.0	---	---	26.0	20.5	25.0	20.5	22.0	19.5
30	20.0	19.5	22.0	17.5	---	---	25.5	20.5	24.5	20.5	22.5	19.0
31	---	---	22.5	18.0	---	---	26.0	21.0	25.0	21.0	---	---
MONTH	20.5	16.0	25.0	17.0	---	---	---	---	27.5	19.0	25.5	18.5

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.37	.00	.16	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.04	.01	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.02	.01	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.01	.10	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.11	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	1.5	32	.02	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.02	.77	.02	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.03	.01	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
22	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.01	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.18	---	.00	.00	.00	.00	.01	.00	.00
31	.00	---	.00	.19	---	.00	---	.00	---	.01	.00	---
TOTAL	0.05	0.01	0.03	2.14	33.22	0.06	0.16	0.05	0.01	0.02	0.00	0.00
MEAN	.002	.000	.001	.069	1.19	.002	.005	.002	.000	.001	.000	.000
MAX	.02	.01	.02	1.5	32	.02	.16	.05	.01	.01	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.1	.02	.06	4.2	66	.1	.3	.1	.02	.04	.00	.00
CAL YR 1989	TOTAL 11.98	MEAN .033	MAX 4.4	MIN .00	AC-FT 24							
WTR YR 1990	TOTAL 35.75	MEAN .098	MAX 32	MIN .00	AC-FT 71							

SANTA ANA RIVER BASIN

11075800 SANTIAGO CREEK AT MODJESKA, CA

LOCATION.--Lat 33°42'46", long 117°38'39", in NE 1/4 NE 1/4 sec.30, T.5 S., R.7 W., Orange County, Hydrologic Unit 18070203, on right bank at Santiago Canyon Road bridge, 0.9 mi northwest of Modjeska, 1.0 mi downstream from Harding Creek, and 1.5 mi downstream from Modjeska Reservoir.

DRAINAGE AREA.--13.0 mi².

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

REVISED RECORDS.--WDR CA-86-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,210 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Sept. 10, 1969, at site 0.6 mi upstream at datum approximately 48 ft higher. Sept. 10, 1969, to Feb. 6, 1985, at site 0.6 mi upstream at datum approximately 44 ft higher.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Slight regulation by Modjeska Reservoir on Harding Creek. Santiago County Water District diverts water at Modjeska Reservoir on Harding Creek. See schematic diagram of Santa Ana River basin.

AVERAGE DISCHARGE.--29 years, 7.20 ft³/s, 5,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,520 ft³/s, Feb. 25, 1969, gage height, 6.18 ft, site and datum then in use, from rating curve extended above 840 ft³/s on basis of slope-area measurement of peak flow; no flow at times in most years.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	1923	*287	*7.70				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.02	1.5	.05	e.06	.00	.00	.00	.00
2	.00	.00	.00	.01	e.05	1.2	.05	e.05	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	1.2	.03	e.05	.00	.00	.00	.00
4	.00	.00	.00	.00	.44	1.3	.11	e.04	.00	.00	.00	.00
5	.00	.00	.00	.00	e.10	1.3	.13	e.03	.00	.00	.00	.00
6	.00	.00	.00	.00	e.10	1.1	.13	e.01	.00	.00	.00	.00
7	.00	.00	.00	.00	e.08	.96	.12	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	e.07	.90	e.10	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	e.06	.90	e.07	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	e.06	.85	e.06	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	e.05	1.4	e.05	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	e.05	1.0	e.04	.00	.00	.00	.00	.00
13	.00	.00	.00	.04	e.04	.93	e.02	.00	.00	.00	.00	.00
14	.00	.00	.00	.08	e.04	.72	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.01	e.05	.58	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.02	e.03	.45	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.28	50	.37	1.2	.00	.00	.00	.00	.00
18	.00	.00	.00	e.05	44	.31	.82	.00	.00	.00	.00	.00
19	.00	.00	.00	e.03	16	.25	.51	.00	.00	.00	.00	.00
20	.00	.00	.00	e.04	8.6	.22	.37	.00	.00	.00	.00	.00
21	.00	.00	.00	e.06	5.8	.15	.31	.00	.00	.00	.00	.00
22	.00	.00	.00	e.05	4.3	.10	e.20	.00	.00	.00	.00	.00
23	.00	.00	.00	e.04	3.3	.09	e.15	.00	.00	.00	.00	.00
24	.00	.00	.00	e.01	2.6	.06	e.10	.00	.00	.00	.00	.00
25	.00	.00	.00	e.00	2.2	.05	e.08	.00	.00	.00	.00	.00
26	.00	.00	.00	e.00	1.9	.04	e.07	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	1.8	.04	e.06	.00	.00	.00	.00	.00
28	.00	.00	.01	.00	1.6	.07	e.04	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.09	e.03	.00	.00	.00	.00	.00
30	.00	.00	.00	.04	---	.10	e.07	.00	.00	.00	.00	.00
31	.00	---	.00	.13	---	.08	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.01	0.89	143.34	18.31	4.97	0.24	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.029	5.12	.59	.17	.008	.000	.000	.000	.000
MAX	.00	.00	.01	.28	50	1.5	1.2	.06	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.02	1.8	284	36	9.9	.5	.00	.00	.00	.00

CAL YR 1989 TOTAL 368.42 MEAN 1.01 MAX 53 MIN .00 AC-FT 731
WTR YR 1990 TOTAL 167.76 MEAN .46 MAX 50 MIN .00 AC-FT 333

e Estimated.

11077500 SANTIAGO CREEK AT SANTA ANA, CA

LOCATION.--Lat 33°46'13", long 117°53'01", in SW 1/4 NW 1/4 sec.1, T.5 S., R.10 W., Orange County, Hydrologic Unit 18070203, on left bank 127 ft upstream from Bristol Street bridge at Santa Ana, and 1,700 ft upstream from mouth at Santa Ana River.

DRAINAGE AREA.--98.6 mi².

PERIOD OF RECORD.--October 1928 to current year. Monthly discharge only October to December 1928, published in WSP 1315-B.

GAGE.--Water-stage recorder. Datum of gage is 105.00 ft, Orange County Environmental Management Agency bench mark. Prior to Sept. 8, 1969, at site 0.1 mi upstream at different datum; Sept. 8, 1969, to July 21, 1976, at site 127 ft downstream at datum 2.66 ft lower.

REMARKS.--Records poor. Flow regulated since December 1931 by Santiago Reservoir, capacity, 25,000 acre-ft; since January 1963 by Villa Park flood-control reservoir, capacity, 15,500 acre-ft, and affected by intervening gravel pits. Diversions upstream from station by Irvine Company and Serrano and Carpenter Irrigation Districts. See schematic diagram of Santa Ana River basin.

AVERAGE DISCHARGE.--62 years, 4.67 ft³/s, 3,380 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,600 ft³/s, Feb. 25, 1969, gage height, 9.10 ft, site and datum then in use; maximum gage height, 9.85 ft, Jan. 16, 1952, site and datum then in use; no flow for several months in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,270 ft³/s, Jan. 13, gage height, 5.16 ft, from floodmarks; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00
2	.00	.00	.00	3.3	.00	.00	e.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	e.00	.00	.02	.00	.00	.00
4	.00	.00	.00	.00	2.1	.00	e.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.38	.26
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	52	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	15	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.31	.00
16	.00	.00	.00	7.7	.00	.00	.00	.00	.00	.23	.00	.00
17	.00	.00	.00	8.5	125	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.72	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.19	.00	.00
22	.15	.00	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.85	.00	.00	.00	.00
29	.00	.00	.00	.00	---	e.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	e.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	e.00	---	.00	---	.00	.00	---
TOTAL	0.15	0.01	0.00	86.50	127.87	0.01	0.00	0.85	0.02	0.55	0.69	0.26
MEAN	.005	.000	.000	2.79	4.57	.000	.000	.027	.001	.018	.022	.009
MAX	.15	.01	.00	52	125	.01	.00	.85	.02	.23	.38	.26
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.3	.02	.00	172	254	.02	.00	1.7	.04	1.1	1.4	.5

CAL YR 1989 TOTAL 7.93 MEAN .022 MAX 3.7 MIN .00 AC-FT 16
WTR YR 1990 TOTAL 216.91 MEAN .59 MAX 125 MIN .00 AC-FT 430

e Estimated.

SANTA ANA RIVER BASIN

11078000 SANTA ANA RIVER AT SANTA ANA, CA

LOCATION.--Lat 33°44'56", long 117°54'30", in SW 1/4 SE 1/4 sec.10, T.5 S., R.10 W., Orange County, Hydrologic Unit 18070203, on right bank 50 ft downstream from Fifth Street Bridge in Santa Ana and 1.8 mi downstream from Santiago Creek.

DRAINAGE AREA.--1,700 mi², excludes 768 mi² above Lake Elsinore.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1923 to September 1989. Discharge measurements only, October 1989 to September 1990.

REVISED RECORDS.--WDR CA-74-1: Drainage area. WDR CA-79-1: 1978(M).

GAGE.--Water-stage recorder. Datum of gage is 61.01 ft, Orange County Environmental Management Agency datum. Jan. 3, 1923, to Jan. 24, 1929, at same site at different datum. Jan. 25, 1929, to June 20, 1948, at site 450 ft upstream at different datum. June 21, 1948, to May 2, 1960, at same site at different datum. Feb. 28, 1961, to Oct. 1, 1961, at same site at datum 12.00 ft higher. Oct. 2, 1961, to Nov. 28, 1979, at same site at datum 10.00 ft higher. Nov. 29, 1979, to Apr. 20, 1980, at same site at arbitrary datum approximately 15 ft lower.

REMARKS.--Indeterminate stage-discharge relation at the gage during water year 1990. Discharge measurements are shown in the table below. Natural flow affected by ground-water withdrawals, diversions, importation by Metropolitan Water District, municipal use, return flow from irrigation. Since 1940, natural flow affected by Prado flood-control reservoir, capacity, 196,200 acre-ft; three small flood-control reservoirs, combined capacity, 31,900 acre-ft; Big Bear Lake (station 11049000); and Santiago Reservoir, capacity, 25,000 acre-ft. Discharge up to 100 ft³/s can be diverted from Carbon Creek to Coyote Creek 1.5 mi upstream from mouth of Carbon Creek. See schematic diagram of Santa Ana River basin.

AVERAGE DISCHARGE.--17 years (water years 1924-40), 23.4 ft³/s, 16,940 acre-ft/yr; 49 years (water years 1941-89, unadjusted for storage), 53.1 ft³/s, 38,470 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 46,300 ft³/s, Mar. 3, 1938, gage height, 10.20 ft, site and datum then in use on basis of slope-area measurement of peak flow; no flow for many days in each year.

DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

Date	Time	Discharge (ft ³ /s)	Date	Time	Discharge (ft ³ /s)
Oct. 4	1045	0	Mar. 2	0740	0
Nov. 1	1115	0	Apr. 4	1325	18.9
Jan. 2	1035	5.96	Apr. 26	1020	0
Jan. 16	1020	2.83	June 1	1315	0
Feb. 7	0900	.63	June 29	1005	0
Feb. 15	1245	e.1	Aug. 6	1110	0
Feb. 18	1050	578	Sept. 4	1150	0
Feb. 20	1020	57.7			

e Estimated.

11078000 SANTA ANA RIVER AT SANTA ANA, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968-71, 1973 to current year.

WATER TEMPERATURE: Water years 1968-69, 1971, 1973-80, 1982-87.

SEDIMENT DATA: Water years 1968-71, 1973 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1967 to September 1969, October 1970 to September 1971, October 1972 to September 1980, October 1981 to September 1987.

SUSPENDED-SEDIMENT DISCHARGE: October 1967 to September 1971, October 1972 to September 1980, October 1981 to September 1987.

SUSPENDED-SEDIMENT DISCHARGE, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDE (T/DAY)
JAN					
02...	1145	6.0	13.0	22	0.35
FEB					
07...	0930	0.63	12.0	13	0.02
FEB					
20...	1130	57	20.5	374	58
APR					
04...	1400	19	20.5	45	2.3

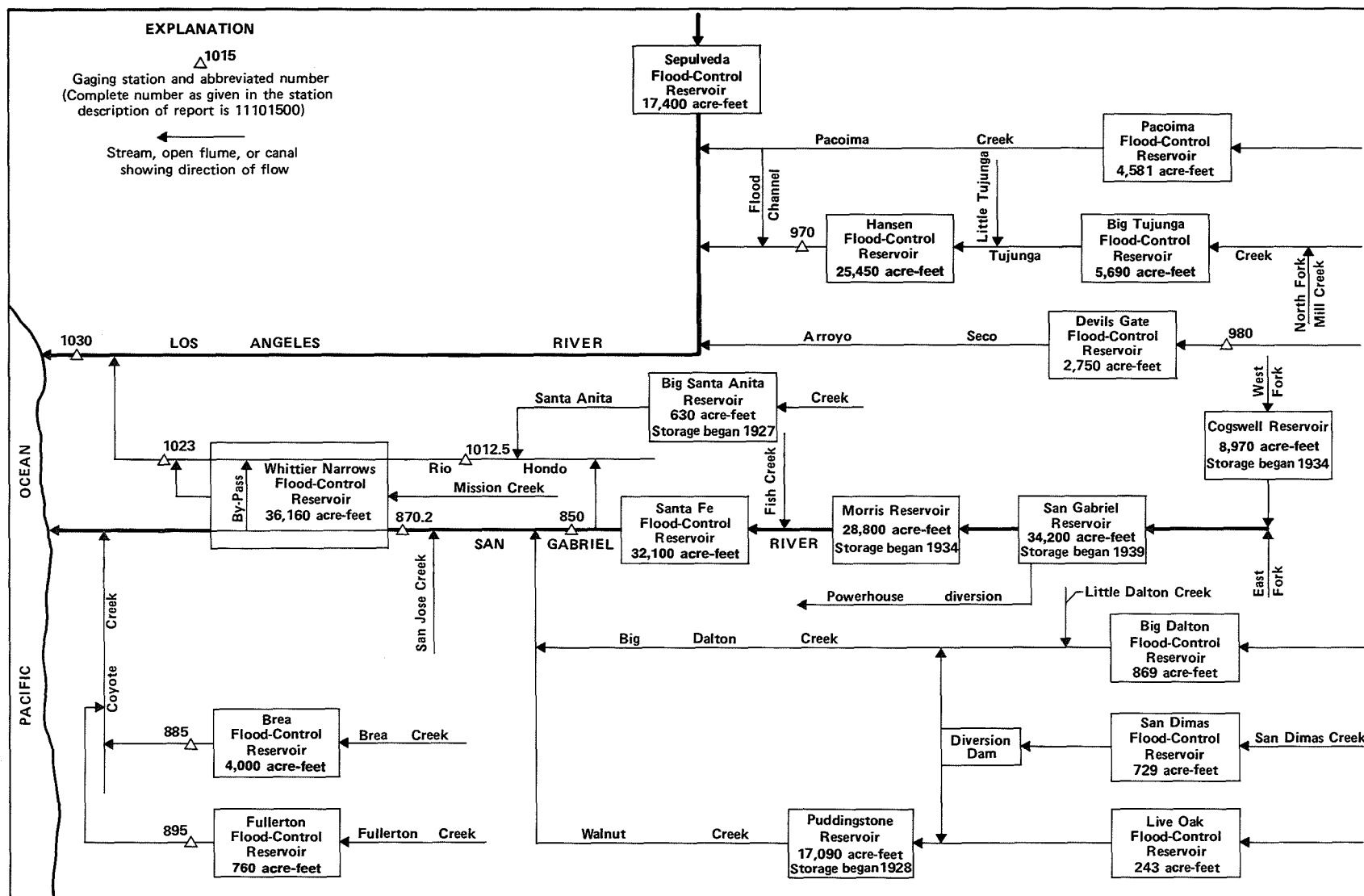


Figure 19. Diversions and storage in San Gabriel and Los Angeles River basins.

11085000 SAN GABRIEL RIVER BELOW SANTA FE DAM, NEAR BALDWIN PARK, CA

LOCATION.--Lat 34°06'44", long 117°58'07", in NE 1/4 SW 1/4 sec.6, T.1 S., R.10 W., Los Angeles County, Hydrologic Unit 18070106, on left bank at stilling basin of outlet of Santa Fe flood-control dam, 500 ft downstream from axis of dam, and 1.7 mi north of Baldwin Park.

DRAINAGE AREA.--236 mi².

PERIOD OF RECORD.--October 1942 to current year.

GAGE.--Water-stage recorder. Datum of gage is 400.00 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--No estimated daily discharges. Records fair. Flow regulated by Cogswell and San Gabriel flood-control reservoirs, combined capacity, 43,150 acre-ft; Morris Reservoir, capacity, 28,800 acre-ft; and Santa Fe flood-control reservoir, capacity, 32,100 acre-ft. Diversions upstream from station for irrigation, power development, and ground-water replenishment. At times water is diverted from side of stilling basin to headwaters of Rio Hondo; no flows were diverted during the current year. See schematic diagram of San Gabriel and Los Angeles River basins.

COOPERATION.--Records of diversion to Rio Hondo were provided by Los Angeles County Department of Public Works.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,900 ft³/s, Jan. 26, 1969, gage height, 22.20 ft; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 116 ft³/s, Feb. 18, gage height, 11.03 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.47	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.66	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	113.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	4.04	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.66	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	224	.00	.00	.00	.00	.00	.00	.00

CAL YR 1989 TOTAL 366.42 MEAN 1.00 MAX 120 MIN .00 AC-FT 727
WTR YR 1990 TOTAL 113.05 MEAN .31 MAX 66 MIN .00 AC-FT 224

SAN GABRIEL RIVER BASIN

11087020 SAN GABRIEL RIVER ABOVE WHITTIER NARROWS DAM, CA

LOCATION.--Lat 34°02'03", long 118°02'14", in La Puente Grant, Los Angeles County, Hydrologic Unit 18070106, at Peck Road 0.8 mi downstream from San Jose flood channel, 1.2 mi upstream from axis of Whittier Narrows Dam, and 1.8 mi south of El Monte.

DRAINAGE AREA.--442 mi².

PERIOD OF RECORD.--October 1955 to September 1957, October 1963 to current year.

REVISED RECORDS.--WDR CA-86-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 220 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records good except discharges below 200 ft³/s, which are fair. Flow regulated by San Gabriel, Cogswell, and Santa Fe flood-control reservoirs, combined capacity, 75,300 acre-ft; several small flood-control reservoirs, combined capacity, 19,100 acre-ft; and Morris Reservoir, capacity, 28,800 acre-ft. Many diversions upstream from station for irrigation, power development, and ground-water replenishment. Colorado River water released to the San Gabriel River at a site 14.9 mi upstream from gage, at Metropolitan Water District aqueduct crossing on San Dimas Creek for ground-water replenishment. Los Angeles County Department of Public Works diverted no water from San Gabriel River below Santa Fe Dam to Rio Hondo during the current year. See schematic diagram of San Gabriel and Los Angeles River basins.

COOPERATION.--Records of diversion to Rio Hondo were provided by Los Angeles County Department of Public Works.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 46,600 ft³/s, Jan. 25, 1969, gage height, 10.90 ft; no flow for part of some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 15,900 ft³/s, Feb. 17, gage height, 7.88 ft; no flow Oct. 1 and July 31.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.20	138	84	248	1.2	333	80	236	94	28	136
2	38	.64	92	412	181	.79	295	126	239	95	72	130
3	136	2.1	51	89	179	47	332	128	246	96	8.0	137
4	148	2.3	24	87	568	118	514	118	239	89	7.3	142
5	139	3.8	5.1	95	159	122	178	108	237	90	7.4	147
6	130	3.7	3.0	109	146	202	168	106	220	92	13	139
7	132	4.8	5.4	109	131	269	275	100	232	86	102	120
8	137	3.4	4.8	104	158	275	316	95	235	86	107	111
9	141	21	4.9	111	277	280	287	93	231	84	103	108
10	119	122	5.8	103	280	284	324	65	228	114	102	112
11	127	130	5.4	103	281	380	341	94	231	113	80	173
12	129	133	3.3	49	277	294	344	98	233	111	91	208
13	129	132	4.0	277	254	274	337	97	203	58	107	209
14	129	136	6.3	463	254	276	333	97	180	109	105	216
15	129	175	5.2	20	247	280	309	95	75	109	114	218
16	128	237	5.4	365	247	282	53	69	72	98	106	195
17	126	223	6.1	603	6440	291	284	17	82	106	88	210
18	122	222	6.3	16	340	298	145	90	95	67	132	215
19	5.5	196	5.1	11	51	303	160	90	94	113	145	214
20	.34	230	7.4	9.5	82	305	161	99	99	112	148	208
21	5.7	228	5.5	12	81	306	163	111	101	119	148	207
22	243	230	4.3	43	63	329	161	103	99	105	153	206
23	12	158	6.0	148	194	348	288	102	97	62	160	183
24	3.3	201	6.9	154	135	357	193	117	73	14	154	210
25	63	233	7.9	156	121	354	171	122	76	38	153	208
26	3.0	538	9.1	163	12	317	178	107	90	67	145	211
27	2.9	234	7.2	169	1.9	276	190	108	94	14	148	209
28	3.0	230	59	175	.75	316	186	2200	93	14	151	209
29	1.8	212	55	179	---	333	186	201	96	13	154	211
30	2.4	173	95	442	---	329	216	256	90	8.7	153	211
31	1.8	---	89	274	---	328	---	244	---	.00	141	---
TOTAL	2486.74	4414.94	733.4	5134.5	11408.65	8174.99	7421	5536	4616	2376.70	3325.7	5413
MEAN	80.2	147	23.7	166	407	264	247	179	154	76.7	107	180
MAX	243	538	138	603	6440	380	514	2200	246	119	160	218
MIN	.00	.20	3.0	9.5	.75	.79	53	17	72	.00	7.3	108
AC-FT	4930	8760	1450	10180	22630	16220	14720	10980	9160	4710	6600	10740

CAL YR 1989 TOTAL 44434.86 MEAN 122 MAX 1550 MIN .00 AC-FT 88140
WTR YR 1990 TOTAL 61041.62 MEAN 167 MAX 6440 MIN .00 AC-FT 121100

11088500 BREA CREEK BELOW BREA DAM, NEAR FULLERTON, CA

LOCATION.--Lat 33°53'16", long 117°55'32", in NE 1/4 NE 1/4 sec.28, T.3 S., R.10 W., Orange County, Hydrologic Unit 18070106, on right bank 0.2 mi downstream from Brea Dam and 1 mi north of Fullerton.

DRAINAGE AREA.--21.6 mi².

PERIOD OF RECORD.--January 1942 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 200 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Dec. 4, 1964, at datum 1.03 ft higher.

REMARKS.--No estimated daily discharges. Records poor except for discharges above 100 ft³/s, which are fair. Flow regulated by Brea flood-control reservoir, capacity, 4,000 acre-ft. No diversion upstream from station. Since August 1966 low flow mostly the result of irrigation wastewater from golf course 0.8 mi upstream. See schematic diagram of San Gabriel and Los Angeles River basins.

AVERAGE DISCHARGE.--48 years, 3.16 ft³/s, 2,290 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,700 ft³/s, Feb. 18, 1980; no flow for parts of some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 800 ft³/s, Feb. 17, gage height, 4.25 ft; minimum daily, 0.13 ft³/s, July 21.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	.75	.34	.39	.34	1.0	.72	1.2	1.3	.52	.52	.42
2	1.1	.38	.36	15	.23	1.1	.72	.66	1.0	.50	.45	.46
3	1.4	.45	.35	.68	.26	1.1	.82	.51	.56	.44	.33	.37
4	1.2	.40	.46	.44	25	.97	14	.47	.77	.44	.35	.34
5	1.2	.37	.59	.40	.95	2.3	1.7	.49	.54	.44	.34	.30
6	1.2	.40	.47	.41	.46	.96	1.2	.46	.51	.51	.41	.36
7	1.2	.41	.46	.43	.31	.93	1.6	.70	.52	.56	.40	.32
8	1.2	.43	.42	.52	.67	.76	1.5	.53	.44	.44	.45	.27
9	1.3	.36	.42	.41	.79	.71	1.5	.46	.78	.51	.35	.37
10	1.3	.39	.40	.38	1.1	.73	1.7	.50	.69	.41	.52	.38
11	1.3	.40	.38	.36	1.0	6.7	1.3	.59	.48	.46	.53	.33
12	1.2	.35	.33	.37	.72	1.2	1.3	.62	.52	.35	.53	.29
13	1.2	.38	.41	12	.62	1.1	1.2	.55	.46	.40	.38	.66
14	1.2	.37	.45	31	.65	.99	1.3	.63	.47	.35	.46	.56
15	2.1	.36	.47	.74	.79	.91	.63	.63	.52	.30	.46	.42
16	2.2	.32	.44	7.7	.90	.96	.90	.57	.57	.34	.38	.39
17	1.2	.37	.43	42	404	.96	1.2	.58	.73	.30	.40	.35
18	1.1	.36	.35	1.0	.76	.93	.58	.58	.62	.25	.42	.37
19	1.0	.42	.35	.44	.18	.84	.59	.57	.72	.18	.45	.37
20	.98	.42	.43	.33	10	.91	.54	.58	.70	.15	.40	.40
21	1.3	.41	.34	.34	7.3	.91	.52	.52	.71	.13	.39	.42
22	26	.46	.35	.34	6.2	.89	.44	.62	.63	.16	.42	.36
23	2.2	.34	.37	.38	3.7	.93	1.0	.63	.67	.22	.48	.38
24	1.3	.25	.38	.36	2.6	.88	2.8	.71	.56	.43	.42	.41
25	3.9	.30	.43	.34	1.7	.81	.71	.67	.41	.48	.47	.48
26	.88	11	.35	.42	2.2	.79	.69	.65	.46	.35	.62	.49
27	.88	.59	.35	.41	1.4	.73	.71	.57	.51	.32	.54	.47
28	.96	.42	.35	.42	1.1	.67	.75	83	.61	.36	.53	.45
29	.96	.43	.63	.44	---	.79	.70	4.0	.59	.43	.57	.44
30	1.0	.32	.32	4.1	---	.73	1.9	1.5	.56	.48	.53	.42
31	1.2	---	.37	8.3	---	.80	---	.94	---	.47	.44	---
TOTAL	66.26	22.61	12.55	130.85	568.99	34.99	45.22	105.69	18.61	11.68	13.94	12.05
MEAN	2.14	.75	.40	4.22	20.3	1.13	1.51	3.41	.62	.38	.45	.40
MAX	26	11	.63	42	404	6.7	14	83	1.3	.56	.62	.66
MIN	.88	.25	.32	.33	.23	.67	.44	.46	.41	.13	.33	.27
AC-FT	131	45	25	260	1130	69	90	210	37	23	28	24

CAL YR 1989 TOTAL 746.36 MEAN 2.04 MAX 88 MIN .25 AC-FT 1480
WTR YR 1990 TOTAL 1043.44 MEAN 2.86 MAX 404 MIN .13 AC-FT 2070

SAN GABRIEL RIVER BASIN

11089500 FULLERTON CREEK BELOW FULLERTON DAM, NEAR BREA, CA

LOCATION.--Lat 33°53'45", long 117°53'07", in NW 1/4 SW 1/4 sec.24, T.3 S., R.10 W., Orange County, Hydrologic Unit 18070106, on left bank of outlet channel of Fullerton Dam, and 1.6 mi southeast of Brea.

DRAINAGE AREA.--4.94 mi².

PERIOD OF RECORD.--October 1941 to current year.

REVISED RECORDS.--WDR CA-82-1: 1981.

GAGE.--Water-stage recorder. Elevation of gage is 250 ft above National Geodetic Vertical Datum of 1929, from topographic map. V-notch sharp-crested weir used Oct. 25, 1946, to Feb. 2, 1956. Prior to Dec. 3, 1971, at datum 3.00 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Fullerton flood-control reservoir, capacity, 760 acre-ft (resurvey of 1970). Small tributary formerly entering below station diverted into reservoir since December 1954. See schematic diagram of San Gabriel and Los Angeles River basins.

AVERAGE DISCHARGE.--13 years (water years 1942-54), 0.19 ft³/s, 135 acre-ft/yr; 36 years (water years 1955-90), 1.27 ft³/s, 920 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 392 ft³/s, Mar. 1, 1983, gage height, 8.25 ft, present datum; no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 355 ft³/s, Feb. 17, gage height, 8.09 ft; minimum daily, 0.11 ft³/s, May 2.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.56	.47	.17	.47	.45	.34	.17	1.7	.44	.34	.55	.52
2	.76	.39	.17	9.7	.34	.37	.17	.11	.45	.52	.55	.48
3	.69	.47	.17	.64	.30	.33	.17	.16	.39	.45	.63	.54
4	.52	.48	.23	.50	16	.35	9.0	.17	.46	.34	.55	.55
5	.56	.38	.39	.44	.86	2.1	.63	.76	.46	.38	.54	.53
6	.56	.43	.46	.43	.40	.36	.43	.30	.41	.43	.51	.50
7	.58	.38	.50	.42	.40	.36	.39	.34	.40	.41	.53	.53
8	.60	.40	.44	.48	.35	.36	.41	.33	.40	.41	.44	.48
9	.63	.40	.43	.47	.30	.36	.36	.36	.40	.46	.54	.43
10	.57	.45	.43	.50	.35	.36	.37	.35	.40	.48	.51	.51
11	.58	.48	.45	.55	.34	3.3	.36	.38	.45	.45	.48	.60
12	.44	.40	.40	.61	.39	.40	.39	.38	.44	.56	.48	.49
13	.22	.41	.47	13	.37	.39	.39	.38	.45	.50	.51	.58
14	1.0	.43	.48	12	.30	.40	.38	.41	.44	.45	.72	.55
15	.57	.53	.45	.79	.30	.43	.36	.41	.43	.43	.54	.58
16	.64	.55	.47	7.4	.34	.40	.94	.46	.56	.50	.60	.54
17	.60	.57	.50	21	195	.45	.44	.41	.47	.67	.56	.57
18	.61	.42	.53	.77	18	.37	.38	.42	.46	.62	.48	.89
19	.62	.31	.50	.41	.99	.36	.42	.42	.52	.57	.46	.73
20	.60	.41	.50	.41	.53	.36	.40	.40	.41	.79	.53	.77
21	.95	.49	.46	.34	.50	.36	.42	.47	.42	.77	.54	.71
22	11	.54	.54	.34	.46	.39	.39	.47	.46	.80	.49	.57
23	.76	.52	.69	.36	.36	.36	.95	.49	.44	.89	.61	.55
24	.64	.50	.40	.34	.36	.37	.64	.57	.38	.72	.63	.58
25	1.1	.49	.43	.38	.40	.36	.36	.55	.40	.60	.51	.59
26	.43	9.0	.37	.51	.43	.38	.35	.52	.49	.60	.50	.56
27	.48	.85	.43	.38	.36	.38	.32	.53	.39	.56	.53	.77
28	.43	.12	.47	.36	.32	.36	.35	24	.41	.51	.59	.67
29	.37	.17	.43	.36	---	1.9	.79	.74	.46	.53	.56	.52
30	.45	.17	.39	5.6	---	.15	1.1	.51	.41	.53	.58	.43
31	.51	---	.43	6.4	---	.17	---	.45	---	.56	.64	---
TOTAL	29.03	21.61	13.18	86.36	239.50	17.33	22.23	37.95	13.10	16.83	16.89	17.32
MEAN	.94	.72	.43	2.79	8.55	.56	.74	1.22	.44	.54	.54	.58
MAX	11	9.0	.69	21	195	3.3	9.0	24	.56	.89	.72	.89
MIN	.22	.12	.17	.34	.30	.15	.17	.11	.38	.34	.44	.43
AC-FT	58	43	26	171	475	34	44	75	26	33	34	34

CAL YR 1989 TOTAL 375.24 MEAN 1.03 MAX 26 MIN .10 AC-FT 744

WTR YR 1990 TOTAL 531.33 MEAN 1.46 MAX 195 MIN .11 AC-FT 1050

11097000 BIG TUJUNGA CREEK BELOW HANSEN DAM, CA

LOCATION.--Lat 34°15'13", long 118°23'17", in Mission San Fernando Grant, Los Angeles County, Hydrologic Unit 18070105, in city of Los Angeles, on left bank of outlet channel 0.5 mi downstream from Hansen Dam, 0.1 mi upstream from Glen Oaks Boulevard, and 3 mi southeast of San Fernando.

DRAINAGE AREA.--153 mi².

PERIOD OF RECORD.--May 1932 to February 1938, August 1940 to current year. Monthly discharge only for some periods, published in WSP 1315-B. Prior to October 1975, published as Tujunga Creek below Hansen Dam.

REVISED RECORDS.--WDR CA-84-1: 1978(M).

GAGE.--Water-stage recorder. Datum of gage is 943.32 ft above National Geodetic Vertical Datum of 1929 (U.S. Army Corps of Engineers benchmark). See WSP 1735 for history of changes prior to Oct. 1, 1953.

REMARKS.--Records poor. Flow regulated since July 1931 by Big Tujunga flood-control reservoir, capacity, 5,690 acre-ft, and since September 1940 by Hansen flood-control reservoir, capacity, 25,450 acre-ft. Several small diversions for domestic use and irrigation. Los Angeles County Department of Public Works diverts water 0.3 mi upstream from gage to spreading grounds, as shown in footnote below table. See schematic diagram of San Gabriel and Los Angeles River basins.

COOPERATION.--Records of diversion were provided by Los Angeles County Department of Public Works.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,200 ft³/s, Feb. 10, 1978, Mar. 2, 1983; maximum gage height, 7.64 ft, Mar. 2, 1983; no flow for many days in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 54,000 ft³/s, estimated, Mar. 2, 1938.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 41 ft³/s, Apr. 25, gage height, 1.18 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.38	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.12	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
17	.00	.15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	2.8	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00
19	.00	.50	.00	.00	.00	.00	.47	.00	.00	.00	.00	.00
20	.00	.20	.00	.00	.00	.00	.28	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.38	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.29	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00
25	.22	.00	.00	.00	.00	.00	1.2	.00	.05	.00	.00	e.00
26	.50	.20	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00
27	.50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00
28	.50	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.50	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.50	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.50	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	3.22	5.85	0.00	0.04	0.00	0.00	1.96	0.00	0.97	0.00	0.00	0.00
MEAN	.10	.19	.000	.001	.000	.000	.065	.000	.032	.000	.000	.000
MAX	.50	2.8	.00	.04	.00	.00	1.2	.00	.38	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	6.4	12	.00	.08	.00	.00	3.9	.00	1.9	.00	.00	.00
a	6.4	12	169	112	404	576	363	163	61	91	32	64

CAL YR 1989 TOTAL 167.36 MEAN .46 MAX 4.7 MIN .00 AC-FT 332
WTR YR 1990 TOTAL 12.04 MEAN .033 MAX 2.8 MIN .00 AC-FT 24

e Estimated.

a Combined discharge, in acre-feet, of creek and diversion.

LOS ANGELES RIVER BASIN

11098000 ARROYO SECO NEAR PASADENA, CA

LOCATION.--Lat 34°13'20", long 118°10'36", in NW 1/4 NE 1/4 sec.31, T.2 N., R.12 W., Los Angeles County, Hydrologic Unit 18070105, on right bank 0.7 mi east of Angeles Crest Highway, 1.5 mi upstream from Millard Canyon, and 5.5 mi northwest of Pasadena.

DRAINAGE AREA.--16.0 mi².

PERIOD OF RECORD.--December 1910 to January 1913 (fragmentary), April 1913 to November 1915, April 1916 to current year.

GAGE.--Water-stage recorder. Broad-crested weir since November 1938. Datum of gage is 1,397.88 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1916, nonrecording gage at different datum. Oct. 1, 1916, to Oct. 19, 1945, water-stage recorder at datum 4.00 ft lower.

REMARKS.--No estimated daily discharges. Records good except discharges below 1 ft³/s, which are fair. No regulation or diversion upstream from station. See schematic diagram of San Gabriel and Los Angeles River basins.

AVERAGE DISCHARGE.--76 years (water years 1914-15, 1917-90), 9.58 ft³/s, 6,940 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,620 ft³/s, Mar. 2, 1938, gage height, 9.42 ft, present datum, on basis of slope-area measurement of peak flow; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	1515	*163	*2.86				

No flow Sept. 10-13.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.15	.26	.53	.43	1.1	2.3	1.5	.88	.99	.08	.04	.02
2	.18	.15	.46	.65	1.1	2.3	1.4	.84	.82	.08	.04	.02
3	.20	.12	.50	.50	1.1	2.3	1.3	.84	.65	.08	.05	.02
4	.17	.14	.51	.50	1.4	2.3	1.5	.69	.52	.08	.05	.02
5	.14	.16	.53	.49	1.2	2.2	1.4	.50	.51	.09	.03	.01
6	.17	.17	.59	.50	1.1	2.1	1.5	.45	.52	.09	.03	.01
7	.13	.18	.52	.50	1.2	2.1	1.6	.49	.47	.11	.05	.01
8	.09	.16	.29	.50	1.1	2.1	1.4	.54	.40	.12	.04	.01
9	.10	.12	.34	.50	1.1	2.0	1.3	.56	.48	.10	.04	.01
10	.11	.11	.35	.50	1.0	2.1	1.1	.68	.53	.10	.03	.00
11	.15	.09	.32	.50	.99	2.4	1.0	.67	.41	.08	.02	.00
12	.15	.35	.35	.52	.99	2.2	.93	.56	.38	.07	.02	.00
13	.16	.49	.35	7.4	.99	2.1	.88	.54	.47	.07	.03	.00
14	.21	.40	.35	17	.99	2.0	.87	.60	.43	.07	.06	.01
15	.24	.20	.40	4.8	.98	2.0	.88	.55	.51	.07	.10	.01
16	.22	.19	.40	3.8	1.0	1.8	1.1	.47	.37	.08	.07	.01
17	.16	.22	.35	9.8	61	1.7	3.6	.47	.31	.08	.05	.02
18	.14	.20	.35	4.1	25	1.7	2.4	.58	.30	.07	.04	.05
19	.14	.18	.36	2.7	11	1.6	1.8	.53	.24	.06	.04	.08
20	.20	.11	.39	2.1	6.8	1.5	1.5	.47	.19	.05	.04	.07
21	.26	.14	.38	1.8	5.3	1.5	1.3	.44	.19	.23	.03	.05
22	.26	.18	.35	1.6	4.1	1.5	1.2	.37	.51	.05	.02	.05
23	.23	.22	.35	1.5	3.2	1.4	1.4	.33	.25	.05	.03	.04
24	.18	.30	.35	1.4	2.9	1.4	1.4	.36	.23	.05	.04	.04
25	.24	.51	.36	1.3	2.7	1.4	1.2	.35	.20	.07	.04	.03
26	.37	1.4	.39	1.2	2.4	1.4	1.1	.37	.14	.06	.04	.03
27	.18	.33	.43	1.2	2.3	1.5	.96	.44	.18	.05	.02	.03
28	.15	.49	.43	1.1	2.3	1.6	.91	1.3	.34	.04	.02	.04
29	.27	.54	.43	1.1	---	1.6	.93	1.1	.09	.04	.02	.05
30	.27	.53	.43	1.2	---	1.6	.94	1.4	.08	.03	.01	.04
31	.30	---	.43	1.3	---	1.5	---	1.2	---	.03	.02	---
TOTAL	5.92	8.64	12.57	72.49	146.34	57.2	40.30	19.57	11.71	2.33	1.16	0.78
MEAN	.19	.29	.41	2.34	5.23	1.85	1.34	.63	.39	.075	.037	.026
MAX	.37	1.4	.59	17	61	2.4	3.6	1.4	.99	.23	.10	.08
MIN	.09	.09	.29	.43	.98	1.4	.87	.33	.08	.03	.01	.00
AC-FT	12	17	25	144	290	113	80	39	23	4.6	2.3	1.5

CAL YR 1989 TOTAL 657.07 MEAN 1.80 MAX 50 MIN .09 AC-FT 1300
WTR YR 1990 TOTAL 379.01 MEAN 1.04 MAX 61 MIN .00 AC-FT 752

LOCATION.--Lat 34°03'30", long 118°04'15", in Potrero Grande Grant, Los Angeles County, Hydrologic Unit 18070105, on right bank 0.3 mi downstream from Garvey Avenue, 0.4 mi downstream from Rubio Wash, 2.8 mi upstream from axis of Whittier Narrows Dam, and 2.2 mi west of El Monte.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,360 ft³/s, Feb. 17, gage height, 3.68 ft; minimum daily, 0.27 ft³/s, Sept. 10.

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	2.7	2.9	2.6	10	4.4	1.2	2.6	.47	.56	.80	.49
2	3.6	3.2	3.3	108	3.3	2.7	1.8	2.0	.41	.58	.80	.47
3	3.0	2.6	3.1	2.1	1.9	2.3	1.0	1.8	.29	.74	.80	.40
4	3.0	2.6	4.1	2.1	247	3.1	67	2.5	.49	1.1	.69	.88
5	4.0	2.8	3.9	2.2	2.5	2.6	2.4	3.7	.36	1.4	.81	.55
6	3.7	3.5	4.2	2.0	2.2	2.3	2.8	.43	.47	.81	1.8	.38
7	2.7	2.9	3.3	2.0	3.3	2.5	1.6	3.4	.83	1.3	5.5	.39
8	2.6	3.0	4.1	2.4	2.8	2.4	.68	1.2	.79	.72	.84	.42
9	2.6	2.5	4.1	3.8	2.2	2.2	3.5	.64	.75	.93	.74	.32
10	3.1	2.5	2.3	2.7	2.2	2.4	3.8	.54	.88	.92	.81	.27
11	3.1	2.9	2.0	2.3	2.2	51	3.8	.63	.75	.69	.70	.29
12	3.1	2.3	1.8	30	2.4	44	4.0	.69	.80	.62	.87	.44
13	3.7	2.7	2.7	707	27	3.4	1.1	.43	.70	.76	1.1	.78
14	4.0	2.3	2.4	105	23	2.2	3.2	.49	.45	1.0	1.8	.63
15	2.7	2.2	3.0	8.7	1.9	1.5	.85	.57	3.2	.72	4.5	.66
16	2.7	2.2	2.3	321	108	.78	73	.97	1.5	1.4	1.1	.57
17	2.4	2.2	2.2	25	1910	.68	159	.70	1.2	.97	.73	.83
18	2.5	2.5	2.3	2.4	74	.96	6.0	.64	.46	.78	.99	1.3
19	3.3	2.0	2.5	2.1	3.6	1.1	.71	.81	1.2	.83	1.0	1.3
20	3.4	2.7	2.3	1.8	3.5	.83	.64	.60	1.0	.89	1.5	.93
21	8.5	2.6	2.4	1.8	2.3	.76	.55	.56	.62	1.2	1.5	.99
22	14	2.5	2.2	2.1	2.0	1.8	.60	.32	.80	.68	.63	.71
23	3.0	2.3	2.1	1.9	2.1	1.5	62	.43	.61	1.2	1.0	.72
24	2.3	2.4	2.3	2.1	2.3	1.3	3.1	.53	.47	1.4	1.0	1.0
25	11	3.1	2.2	1.9	2.3	.97	.54	.56	.46	1.2	.57	.86
26	1.9	174	2.3	2.0	4.1	1.1	.42	.37	.61	.90	1.2	.81
27	2.0	2.4	2.6	2.1	2.8	1.2	.68	.43	.60	.94	.83	1.1
28	2.0	1.8	3.0	1.9	3.9	1.6	.84	764	1.3	.67	1.6	1.6
29	2.0	1.7	3.0	2.5	---	1.2	.36	2.1	1.4	.68	1.5	3.1
30	2.6	2.8	2.3	97	---	1.5	26	.85	.67	2.8	1.2	1.4
31	2.6	---	2.1	7.2	---	1.2	---	.57	---	1.8	.94	---
TOTAL	114.5	247.9	85.3	1457.7	2454.8	147.48	433.17	796.06	24.54	31.19	39.85	24.59
MEAN	3.69	8.26	2.75	47.0	87.7	4.76	14.4	25.7	.82	1.01	1.29	.82
MAX	14	174	4.2	707	1910	51	159	764	3.2	2.8	5.5	3.1
MIN	1.9	1.7	1.8	1.8	1.9	.68	.36	.32	.29	.56	.57	.27
AC-FT	227	492	169	2890	4870	293	859	1580	49	62	79	49
CAL YR 1989	TOTAL 2878.28		MEAN	7.89	MAX	595	MIN	.38	AC-FT 5710			
WTR YR 1990	TOTAL 5857.08		MEAN	16.0	MAX	1910	MIN	.27	AC-FT 11620			

LOS ANGELES RIVER BASIN

11102300 RIO HONDO BELOW WHITTIER NARROWS DAM, CA

LOCATION.--Lat 34°01'00", long 118°05'15", in Paso de Bartolo Grant, Los Angeles County, Hydrologic Unit 18070105, on right levee 0.2 mi upstream from Beverly Boulevard, 0.4 mi downstream from axis of Whittier Narrows Dam, and 1.0 mi northeast of Montebello.

DRAINAGE AREA.--124 mi².

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

GAGE.--Water-stage recorder. Elevation of gage is 175 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair except discharges below 100 ft³/s, which are poor. Flow regulated by Whittier Narrows flood-control reservoir, capacity, 36,160 acre-ft. There are several small flood-control reservoirs (combined capacities, 1,700 acre-ft) and several small debris basins above Whittier Narrows Dam. Many diversions for domestic use and irrigation. At times flow is diverted from San Gabriel River to Rio Hondo from sites below Santa Fe Dam and above Whittier Narrows Dam. See schematic diagram of San Gabriel and Los Angeles River basins.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,800 ft³/s, Jan. 25, 1969, gage height, 13.82 ft, from rating curve extended above 15,000 ft³/s on basis of gate openings at dam at gage heights 12.32 and 13.82 ft; no flow at times in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 17,100 ft³/s, Feb. 17, gage height, 8.77 ft; no flow for several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

11103000 LOS ANGELES RIVER AT LONG BEACH, CA
(National stream-quality accounting network station)

LOCATION.--Lat 33°49'02", long 118°12'20", in Los Cerritos Grant, Los Angeles County, Hydrologic Unit 18070105, on right bank 5,000 ft upstream from Willow Street, 3.4 mi north of Long Beach, and 3.7 mi upstream from mouth.

DRAINAGE AREA.--827 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1928 to September 1983, October 1988 to current year. October 1983 to September 1988, available in files of Los Angeles County Department of Public Works; not reviewed by U.S. Geological Survey.

GAGE.--Water-stage recorder. Datum of gage is 11.91 ft above National Geodetic Vertical Datum of 1929 (levels by Los Angeles County Department of Public Works). See WSP 1735 for history of changes prior to Jan. 19, 1956.

REMARKS.--Flow regulated since September 1940 by Hansen flood-control reservoir, capacity, 25,450 acre-ft, from April 1983 survey, revised; Sepulveda flood-control reservoir, capacity, 17,400 acre-ft, from December 1982 survey; and several small flood-control reservoirs. City of Los Angeles stores imported Owens River water in San Fernando and Chatsworth reservoirs and at times discharges imported water into Los Angeles River upstream from station. Many diversions upstream from station for domestic use and irrigation. AVERAGE DISCHARGE represents flow to the ocean, regardless of upstream development. See schematic diagram of San Gabriel and Los Angeles River basins.

COOPERATION.--Records were provided by Los Angeles County Department of Public Works.

AVERAGE DISCHARGE.--56 years (water years 1930-83, 1989-90), 214 ft³/s, 155,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 129,000 ft³/s, Feb. 16, 1980, gage height, 17.99 ft; no flow at times in 1929-30, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 12,100 ft³/s, Feb. 17; minimum daily, 115 ft³/s, Jan. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e133	e131	e133	e126	e272	e135	e146	e146	e127	e137	e126	e126
2	e133	e130	e130	e627	e126	e133	e143	e130	e126	e139	e128	e126
3	e133	e130	e134	e124	e124	e133	e146	e130	e126	e138	e130	e126
4	e133	e133	e134	e118	e124	e135	e795	e130	e128	e130	e130	e126
5	e133	e132	e139	e116	e761	e143	e178	e130	e128	e130	e133	e126
6	e133	e130	e136	e118	e268	e130	e143	e128	e130	e130	e135	e127
7	e133	e130	e137	e116	e126	e127	e146	e125	e130	e130	e349	e128
8	e133	e130	e138	e120	e124	e126	e143	e126	e131	e130	e132	e126
9	e133	e130	e133	e119	e124	e126	e149	e127	e133	e130	e127	e125
10	e133	e129	e134	e117	e124	e136	e154	e127	e133	e130	e124	e122
11	e133	e131	e133	e116	e123	e246	e154	e126	e135	e130	e126	e122
12	e137	e129	e135	e115	e124	e150	e152	e125	e135	e130	e124	e122
13	e137	e129	e132	e1520	e124	e212	e152	e126	e135	e130	e122	e122
14	e137	e128	e131	e1260	e125	e143	e151	e127	e133	e130	e118	e120
15	e138	e127	e132	e495	e127	e140	e151	e127	e135	e132	e116	e120
16	e137	e126	e132	e133	e231	e137	e368	e127	e135	e133	e127	e120
17	e135	e123	e132	e1080	e12100	e135	e271	e126	e139	e133	e126	e120
18	e135	e128	e131	e142	e710	e135	e223	e127	e141	e133	e126	e120
19	e135	e130	e131	e123	e124	e138	e159	e133	e144	e135	e126	e120
20	e135	e128	e130	e121	e120	e146	e151	e131	e145	e135	e126	e120
21	e184	e132	e130	e123	e120	e144	e143	e132	e144	e135	e126	e128
22	e674	e133	e131	e122	e137	e146	e146	e130	e145	e135	e126	e128
23	e319	e135	e130	e122	e137	e143	e216	e128	e138	e135	e126	e128
24	e138	e137	e129	e122	e133	e141	e240	e127	e136	e134	e126	e126
25	e165	e137	e128	e121	e133	e141	e166	e126	e135	e133	e126	e126
26	e134	e826	e129	e120	e133	e138	e166	e137	e135	e132	e126	e126
27	e132	e153	e130	e119	e133	e138	e163	e137	e137	e126	e126	e126
28	e132	e138	e130	e117	e135	e142	e167	e2190	e139	e126	e126	e126
29	e130	e133	e137	e119	---	e144	e161	e153	e139	e126	e126	e126
30	e130	e133	e132	e121	---	e145	e199	e131	e138	e126	e126	e126
31	e131	---	e131	e119	---	e144	---	e125	---	e126	e126	---
TOTAL	4958	4641	4104	8131	17142	4472	5842	6090	4055	4079	4137	3730
MEAN	160	155	132	262	612	144	195	196	135	132	133	124
MAX	674	826	139	1520	12100	246	795	2190	145	139	349	128
MIN	130	123	128	115	120	126	143	125	126	126	116	120
AC-FT	9830	9210	8140	16130	34000	8870	11590	12080	8040	8090	8210	7400

CAL YR 1989 TOTAL 59519 MEAN 163 MAX 2440 MIN 114 AC-FT 118100
WTR YR 1990 TOTAL 71381 MEAN 196 MAX 12100 MIN 115 AC-FT 141600

e Estimated.

11103000 LOS ANGELES RIVER AT LONG BEACH, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1973 to current year.

CHEMICAL DATA: Water years 1973 to current year.

BIOLOGICAL DATA: Water years 1973-81.

SPECIFIC CONDUCTANCE: Water years 1974-75, 1980-83.

WATER TEMPERATURE: Water years 1974-75, 1980-83.

SEDIMENT DATA: Water years 1975 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1973 to September 1975, July 1980 to September 1983.

WATER TEMPERATURE: October 1973 to September 1975, January 1980 to September 1983.

INSTRUMENTATION.--Water-quality monitor recording specific conductance and water temperature from October 1973 to September 1975, January 1980 to September 1983.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	TUR- BID- ITY (NTU)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	COLI- FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP- TOCOCCHI FECAL, KF AGAR (COLS. PER 100 ML)	HARD- NESS TOTAL (MG/L AS CACO3)
DEC 28...	1400	114	967	10.0	16.0	6.9	755	>20.0	>204	600	230	210
MAR 29...	1300	151	1020	10.1	19.0	4.0	755	>20.0	>215	80	K23	220
JUN 27...	1300	117	1150	10.1	30.5	7.8	750	>20.0	>267	K11	77	230
SEP 26...	1215	114	1100	10.0	26.0	16	755	>20.0	>247	1100	180	230

DATE	HARD- NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)
DEC 28...	90	52	20	110	52	3	8.9	29	59	123	150	120
MAR 29...	120	54	20	120	53	4	11	1	58	98	160	150
JUN 27...	110	62	19	140	55	4	10	4	73	126	200	190
SEP 26...	120	58	21	140	55	4	12	7	62	110	160	170

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)
DEC 28...	0.50	17	597	584	0.81	1.40	6.20	2.00	1.80	5.1	1.40
MAR 29...	0.40	16	630	622	0.86	1.00	6.90	0.540	0.530	3.0	0.870
JUN 27...	0.60	19	644	731	0.88	1.10	3.20	0.430	0.400	3.1	1.20
SEP 26...	0.40	16	664	660	0.90	0.700	3.20	1.60	1.50	3.5	0.880

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)
DEC 28...	0.670	0.510	20	3	19	<0.5	1.0	3	<3	8	5
MAR 29...	0.260	0.200	10	2	16	<0.5	2.0	<5	<3	<10	<3
JUN 27...	0.160	0.100	<10	2	33	<0.5	<1.0	2	<3	9	11
SEP 26...	0.200	0.180	10	2	32	<0.5	1.0	1	<3	5	11

11103000 LOS ANGELES RIVER AT LONG BEACH, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

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)
DEC 28...	<1	33	3	<0.1	20	13	1	<1.0	390	<6	29
MAR 29...	<10	30	<1	<0.1	20	20	1	<1.0	420	<6	18
JUN 27...	<1	40	1	<0.1	30	12	2	<1.0	490	<6	17
SEP 26...	1	22	3	<0.1	20	11	<1	<1.0	460	<6	20

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DEPTH AT SAMPLE LOC- ATION, TOTAL (FEET)	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK)	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, (PER- CENT SATUR- ATION)	SEDI- MENT, SUS- PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAR											
29...*	1215	0.36	74.0	1030	10.2	19.5	755	>20.0	>217	8	82
29...*	1220	1.42	92.0	1020	10.1	19.0	755	>20.0	>215	7	90
29...*	1225	1.45	97.0	1020	10.0	19.0	755	>20.0	>215	11	80
29...*	1230	1.43	101	1020	10.0	19.0	755	>20.0	>215	10	77
29...*	1235	1.45	105	1020	10.0	19.0	755	>20.0	>215	7	88
29...*	1240	1.10	110	1020	10.0	19.0	755	>20.0	>215	13	74
SEP											
26...*	1140	0.88	25.0	1110	10.0	26.5	755	>20.0	>249	21	62
26...*	1145	1.36	31.0	1100	10.0	26.0	755	>20.0	>247	21	84
26...*	1150	1.32	36.0	1100	10.0	26.0	755	>20.0	>247	27	72
26...*	1155	1.36	42.0	1100	10.0	26.0	755	>20.0	>247	20	88
26...*	1200	1.07	47.0	1100	10.1	26.5	755	>20.0	>249	17	69

* Instantaneous streamflow at the time of cross-sectional measurements: Mar. 29, 151 ft³/s; Sept. 26, 114 ft³/s.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC 28...	1400	114	16.0	20	6.2	81
MAR 29...	1300	151	19.0	11	4.5	77
JUN 27...	1300	117	30.5	10	3.2	76
SEP 26...	1215	114	26.0	18	5.5	76

SANTA CLARA RIVER BASIN

11108075 CASTAIC CREEK ABOVE FISH CREEK, NEAR CASTAIC, CA
(Formerly published as Castaic Creek One Mile above Fish Creek, near Castaic)

LOCATION.--Lat 34°36'23", long 118°39'51", in SW 1/4 SE 1/4 sec.15, T.6 N., R.17 W, Los Angeles County, Hydrologic Unit 18070102, on left bank 100 ft upstream from bridge, 1.4 mi north of Castaic powerplant and 8.5 mi northwest of Castaic.

DRAINAGE AREA.--37.0 mi².

PERIOD OF RECORD.--October 1976 to September 1978, October 1988 to current year. October 1968 to September 1976, October 1978 to September 1988 in files of California Department of Water Resources.

GAGE.--Water-stage recorder. Elevation of gage is 1,640 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Station is used to monitor natural inflow to Castaic Lake.

COOPERATION.--Records were provided by California Department of Water Resources, under the general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,300 ft³/s, Mar. 4, 1978, gage height, 7.00 ft, from information furnished by California Department of Water Resources; no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 11,000 ft³/s, Jan. 19, 1969, gage height unknown, from information furnished by California Department of Water Resources.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1.6 ft³/s, Feb. 17, gage height, 1.15 ft; no flow for many days.

EXTREMES FOR 1989 WATER YEAR (NOT PREVIOUSLY PUBLISHED).--Maximum discharge, 1.9 ft³/s, Feb. 11, gage height, 1.23 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES
(NOT PREVIOUSLY PUBLISHED)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.05	.33	.12	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.07	.45	.15	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.09	.52	.14	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.25	.46	.10	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.33	.44	.05	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.24	.44	.02	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.20	.45	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.24	.43	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.69	.41	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	1.5	.42	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	1.8	.41	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	1.7	.39	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	1.4	.37	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	1.0	.36	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.80	.36	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.68	.38	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.64	.39	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.60	.37	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.58	.33	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.57	.31	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.53	.30	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.45	.31	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.48	.30	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.42	.30	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.39	.45	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.35	.43	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.33	.31	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.31	.25	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.21	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.18	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.02	---	.14	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.02	16.69	11.20	0.58	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.001	.60	.36	.019	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.02	1.8	.52	.15	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.05	.14	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.04	33	22	1.2	.00	.00	.00	.00	.00

WTR YR 1989 TOTAL 28.49 MEAN .078 MAX 1.8 MIN .00 AC-FT 57

11108075 CASTAIC CREEK ABOVE FISH CREEK, NEAR CASTAIC, CA--Continued
 (Formerly published as Castaic Creek One Mile above Fish Creek, near Castaic)

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
 MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.02	.08	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.06	.08	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.03	.05	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.03	.04	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.09	.04	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.24	.03	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.23	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.22	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.22	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.19	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.10	.08	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	1.2	.09	.01	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.62	.12	.01	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.13	.09	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.11	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.10	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.12	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	2.05	3.23	0.55	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.073	.10	.018	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	1.2	.24	.08	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	4.1	6.4	1.1	.00	.00	.00	.00	.00

CAL YR 1989 TOTAL 28.49 MEAN .078 MAX 1.8 MIN .00 AC-FT 57
 WTR YR 1990 TOTAL 5.83 MEAN .016 MAX 1.2 MIN .00 AC-FT 12

11108080 FISH CREEK ABOVE CASTAIC CREEK, NEAR CASTAIC, CA

LOCATION.--Lat 34°36'09", long 118°39'43", NE 1/4 NE 1/4 sec.22, T.6 N., R.17 W., Los Angeles County, Hydrologic Unit 18070102, on right bank 700 ft upstream from confluence of Fish Creek with Castaic Creek, and 8.1 mi northwest of Castaic.

DRAINAGE AREA, --27.2 mi².

PERIOD OF RECORD.--October 1976 to September 1978, October 1988 to current year. June 1965 to September 1976, October 1978 to September 1988 in files of California Department of Water Resources.

GAGE.--Water-stage recorder. Elevation of gage is 1,620 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Station is used to monitor natural inflow to Castaic Lake.

COOPERATION.--Records were provided by California Department of Water Resources, under the general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,260 ft³/s, estimated, Mar. 4, 1978, gage height, 4.80 ft, from information furnished by California Department of Water Resources; no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 5,990 ft³/s, Feb. 24, 1969, gage height, 4.98 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3.9 ft³/s, Feb. 17, gage height, 2.13 ft; no flow for most of year.

EXTREMES FOR 1989 WATER YEAR (NOT PREVIOUSLY PUBLISHED).--No flow for 1989 water year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	1.0	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.036	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	1.0	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	2.0	.00	.00	.00	.00	.00	.00	.00

CAL YR 1989	TOTAL 0.00	MEAN .000	MAX .00	MIN .00	AC-FT .00
WTR YR 1990	TOTAL 1.00	MEAN .003	MAX 1.0	MIN .00	AC-FT 2.0

11108090 ELDERBERRY CANYON CREEK ABOVE CASTAIC CREEK, NEAR CASTAIC, CA

LOCATION.--Lat 34°34'20", long 118°37'28", in NW 1/4 NW 1/4 sec.31, T.6 N., R.31 W., Los Angeles County, Hydrologic Unit 18070102, on right bank 2.8 mi southeast of Castaic powerplant, and 5.5 mi northwest of Castaic.

DRAINAGE AREA.--2.50 mi².

PERIOD OF RECORD.--October 1977 to September 1978, October 1988 to current year. October 1966 to September 1976, October 1978 to September 1988 in files of California Department of Water Resources.

GAGE.--Water-stage recorder. Elevation of gage is 1,560 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Station is used to monitor natural inflow into Castaic Lake.

COOPERATION.--Records were provided by California Department of Water Resources, under the general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,100 ft³/s, estimated, Mar. 4, 1978, gage height, 6.00 ft, from information furnished by California Department of Water Resources; no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2.7 ft³/s, Feb. 18, gage height, 1.07 ft; no flow for many days.

EXTREMES FOR 1989 WATER YEAR (NOT PREVIOUSLY PUBLISHED).--Maximum discharge, 2.5 ft³/s, Feb. 10, gage height 1.04 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES
(NOT PREVIOUSLY PUBLISHED)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.07	.07	.03	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.03	.07	.02	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.02	.07	.06	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.02	.25	.02	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.18	.35	.02	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.67	.18	.02	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.27	.14	.02	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.17	.14	.01	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.12	.57	.02	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.10	1.0	.02	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.07	1.5	.02	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.07	.99	.01	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.06	.64	.01	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.07	.42	.01	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.07	.29	.01	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.08	.21	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.09	.16	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.08	.15	.01	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.09	.12	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.08	.10	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.20	.07	.09	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.10	.08	.11	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.07	.11	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.30	.07	.10	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.60	.07	.08	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.30	.08	.06	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.10	.07	.04	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.10	.08	.04	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.08	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.07	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.10	.07	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	1.80	3.22	8.05	0.31	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.058	.10	.29	.010	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.60	.67	1.5	.06	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.02	.04	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	3.6	6.4	16	.6	.00	.00	.00	.00	.00	.00

WTR YR 1989 TOTAL 13.38 MEAN .037 MAX 1.5 MIN .00 AC-FT 27

SANTA CLARA RIVER BASIN

11108090 ELDERBERRY CANYON CREEK ABOVE CASTAIC CREEK, NEAR CASTAIC, CA--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	1.3	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	1.7	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.59	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.23	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	3.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.14	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	1.7	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	7.9	.00	.00	.00	.00	.00	.00	.00
CAL YR 1989	TOTAL	11.58	MEAN	.032	MAX	1.5	MIN	.00	AC-FT	23		
WTR YR 1990	TOTAL	3.97	MEAN	.011	MAX	1.7	MIN	.00	AC-FT	7.9		

11108095 NECKTIE CANYON CREEK ABOVE CASTAIC CREEK, NEAR CASTAIC, CA

LOCATION.-- Lat 34°33'38", long 118°36'51", in SW 1/4 SE 1/4 sec.31, T.6 N., R.16 W., Los Angeles County, Hydrologic Unit 18070102, on right bank 4.7 mi southeast of Castaic Powerplant, and 5 mi north of Castaic.

DRAINAGE AREA.--2.12 mi².

PERIOD OF RECORD.--October 1976 to September 1978, October 1988 to current year. February 1967 to September 1976, October 1978 to September 1988 in files of California Department of Water Resources.

GAGE.--Water-stage recorder. Elevation of gage is 1,560 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Station is used to monitor natural inflow to Castaic Lake.

COOPERATION.--Records were provided by California Department of Water Resources, under the general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,200 ft³/s, estimated, Mar. 4, 1978, gage height, 5.10 ft; no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3.4 ft³/s, Feb. 18, gage height, 1.32 ft; no flow for many days.

EXTREMES FOR 1989 WATER YEAR (NOT PREVIOUSLY PUBLISHED).--Maximum discharge, 1.3 ft³/s, Feb. 9, gage height, 0.99 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES
(NOT PREVIOUSLY PUBLISHED)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.09	.06	.10	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.07	.06	.20	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.06	.06	.21	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.06	.26	.15	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.17	.18	.14	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.52	.17	.13	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.38	.14	.12	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.27	.18	.10	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.21	1.2	.09	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.18	1.3	.08	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.13	.99	.08	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.11	.86	.08	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.10	.63	.07	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.10	.46	.06	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.09	.32	.06	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.08	.27	.06	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.08	.24	.06	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.07	.21	.05	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.07	.20	.05	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.07	.17	.04	.00	.00	.00	.00	.00	.00
21	.00	.00	.30	.06	.16	.04	.00	.00	.00	.00	.00	.00
22	.00	.00	.10	.06	.14	.03	.00	.00	.00	.00	.00	.00
23	.00	.00	.10	.06	.13	.03	.00	.00	.00	.00	.00	.00
24	.00	.00	.40	.06	.14	.03	.00	.00	.00	.00	.00	.00
25	.00	.00	.50	.05	.12	.07	.00	.00	.00	.00	.00	.00
26	.00	.00	.20	.05	.11	.06	.00	.00	.00	.00	.00	.00
27	.00	.00	.10	.05	.10	.05	.00	.00	.00	.00	.00	.00
28	.00	.00	.10	.05	.11	.04	.00	.00	.00	.00	.00	.00
29	.00	.00	.10	.05	---	.03	.00	.00	.00	.00	.00	.00
30	.00	.00	.10	.06	---	.02	.00	.00	.00	.00	.00	.00
31	.00	---	.10	.06	---	.02	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	2.10	3.52	8.97	2.35	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.068	.11	.32	.076	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.50	.52	1.3	.21	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.05	.06	.02	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	4.2	7.0	18	4.7	.00	.00	.00	.00	.00	.00

WTR YR 1989 TOTAL 16.94 MEAN .046 MAX 1.3 MIN .00 AC-FT 34

SANTA CLARA RIVER BASIN

11108095 NECKTIE CANYON CREEK ABOVE CASTAIC CREEK, NEAR CASTAIC, CA--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	e1.2	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	e1.8	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	e.70	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	4.26	0.05	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.15	.002	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	1.8	.02	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	8.4	.1	.00	.00	.00	.00	.00	.00

CAL YR 1989 TOTAL 14.84 MEAN .041 MAX 1.3 MIN .00 AC-FT 29
WTR YR 1990 TOTAL 4.31 MEAN .012 MAX 1.8 MIN .00 AC-FT 8.5

e Estimated.

11108130 ELIZABETH LAKE CANYON CREEK ABOVE CASTAIC LAKE, NEAR CASTAIC, CA

LOCATION.--Lat 34°34'46", long 118°33'15", unsurveyed, Los Angeles County, Hydrologic Unit 18070102, on left bank 0.4 mi northeast of Elizabeth Lake Guard Station, and 7.0 mi northeast of Castaic on Lake Hughes Road.

DRAINAGE AREA.--43.7 mi², excluding 18.1 mi² of noncontributing area in Elizabeth and Hughes Lake basins.

PERIOD OF RECORD.--October 1976 to September 1978, October 1988 to current year. January 1962 to September 1976, October 1978 to September 1988 in files of California Department of Water Resources.

GAGE.--Water-stage recorder. Elevation of gage is 1,680 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Station is used to monitor inflow into Castaic Lake.

COOPERATION.--Records were provided by California Department of Water Resources, under the general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,800 ft³/s, Feb. 9, 1978, gage height, 5.79 ft; no flow for many days in water years 1977, 1989, and 1990.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 7,500 ft³/s, estimated, Jan. 25, 1969.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 91 ft³/s, Feb 17, gage height, 2.41 ft; no flow for many days.

EXTREMES FOR 1989 WATER YEAR (NOT PREVIOUSLY PUBLISHED).--Maximum discharge, 107 ft³/s, Dec. 21, gage height, 2.46 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES
(NOT PREVIOUSLY PUBLISHED)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	.18	.31	1.3	1.7	1.8	1.6	.71	.12	.00	.00	.00
2	.09	.21	.33	1.1	1.8	6.2	1.6	.69	.11	.00	.00	.00
3	.08	.21	.33	1.1	1.9	4.5	1.6	.62	.15	.00	.00	.00
4	.07	.18	.32	1.1	6.8	3.2	1.3	.57	.29	.00	.00	.00
5	.08	.17	.34	3.5	4.3	2.9	1.1	.55	.29	.00	.00	.00
6	.09	.17	.34	4.1	2.8	2.9	1.0	.52	.25	.00	.00	.00
7	.09	.19	.32	2.3	2.7	2.7	.95	.53	.22	.00	.00	.00
8	.09	.24	.30	1.9	2.8	2.6	.90	.48	.21	.00	.00	.00
9	.09	.26	.31	1.7	5.9	2.5	.96	.65	.20	.00	.00	.00
10	.09	.27	.35	1.6	7.3	2.4	.99	.83	.20	.00	.00	.00
11	.09	.27	.36	1.7	7.2	2.4	1.0	.67	.19	.00	.00	.00
12	.09	.28	.35	1.8	5.6	2.3	1.1	.49	.16	.00	.00	.00
13	.09	.38	.37	2.1	4.2	2.3	1.0	.55	.11	.00	.00	.00
14	.09	1.0	.38	2.0	3.7	2.2	.95	.53	.09	.00	.00	.00
15	.10	.47	.53	1.9	3.4	2.2	.99	.50	.07	.00	.00	.00
16	.10	.41	4.4	1.9	3.3	2.2	1.0	.45	.06	.00	.00	.00
17	.10	.38	1.8	1.9	3.2	2.1	1.0	.45	.05	.00	.00	.00
18	.10	.35	1.7	1.9	3.1	2.1	.90	.40	.03	.00	.00	.00
19	.10	.35	1.7	1.8	3.1	2.0	.83	.35	.02	.00	.00	.00
20	.10	.36	4.3	1.8	3.4	1.9	.80	.29	.01	.00	.00	.00
21	.10	.36	25	1.8	3.3	1.9	.72	.25	.01	.00	.00	.00
22	.10	.35	2.1	1.8	3.0	1.9	.73	.27	.00	.00	.00	.00
23	.10	.37	1.7	1.9	2.9	1.9	.79	.27	.00	.00	.00	.00
24	.11	.40	5.9	1.9	2.7	2.0	.88	.26	.00	.00	.00	.00
25	.11	.50	5.5	1.9	2.5	4.2	1.0	.24	.01	.00	.00	.00
26	.13	.42	2.4	1.8	2.3	2.5	1.0	.15	.00	.00	.00	.00
27	.14	.39	1.4	1.8	2.2	2.1	.96	.10	.00	.00	.00	.00
28	.18	.37	1.3	1.8	2.0	1.9	.82	.07	.00	.00	.00	.00
29	.20	.34	1.2	1.8	---	1.9	.76	.11	.00	.00	.00	.00
30	.21	.31	1.1	1.7	---	1.8	.72	.16	.00	.00	.00	.00
31	.19	---	1.5	1.8	---	1.7	---	.13	---	.00	.00	---
TOTAL	3.39	10.14	68.24	58.5	99.1	77.2	29.95	12.84	2.85	0.00	0.00	0.00
MEAN	.11	.34	2.20	1.89	3.54	2.49	1.00	.41	.095	.000	.000	.000
MAX	.21	1.0	.25	4.1	7.3	6.2	1.6	.83	.29	.00	.00	.00
MIN	.07	.17	.30	1.1	1.7	1.7	.72	.07	.00	.00	.00	.00
AC-FT	6.7	20	135	116	197	153	59	25	5.7	.00	.00	.00

WTR YR 1989 TOTAL 362.21 MEAN .99 MAX 25 MIN .00 AC-FT 718

SANTA CLARA RIVER BASIN

11108130 ELIZABETH LAKE CANYON CREEK ABOVE CASTAIC LAKE, NEAR CASTAIC, CA--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.24	.29	.30	1.6	1.5	.54	.30	.00	.00	.00
2	.00	.00	.24	.31	.30	1.6	1.5	.46	.22	.00	.00	.00
3	.00	.00	.24	.29	.30	1.6	1.5	.42	.16	.00	.00	.00
4	.00	.00	.22	.29	.93	1.6	1.4	.36	.12	.00	.00	.00
5	.00	.00	.22	.29	.54	1.6	1.4	.28	.09	.00	.00	.00
6	.00	.02	.22	.29	.42	1.5	1.4	.23	.07	.00	.00	.00
7	.00	.03	.22	.29	.38	1.5	1.4	.19	.07	.00	.00	.00
8	.00	.04	.20	.29	.37	1.5	1.3	.19	.06	.00	.00	.00
9	.00	.05	.20	.30	.35	1.5	1.2	.21	.06	.00	.00	.00
10	.00	.06	.20	.31	.34	1.5	1.1	.27	.07	.00	.00	.00
11	.00	.07	.20	.29	.32	1.6	1.0	.31	.07	.00	.00	.00
12	.00	.08	.20	.32	.33	1.5	.90	.29	.06	.00	.00	.00
13	.00	.09	.20	3.8	.34	1.4	.84	.26	.06	.00	.00	.00
14	.00	.10	.22	3.5	.36	1.4	.81	.31	.06	.00	.00	.00
15	.00	.11	.22	1.3	.36	1.4	.88	.32	.07	.00	.00	.00
16	.00	.11	.22	1.2	.76	1.3	1.4	.27	.08	.00	.00	.00
17	.00	.12	.22	1.1	49	1.4	1.4	.22	.08	.00	.00	.00
18	.00	.13	.22	.76	29	1.4	1.2	.24	.08	.00	.00	.00
19	.00	.14	.22	.63	13	1.3	1.1	.26	.07	.00	.00	.00
20	.00	.14	.22	.48	5.8	1.3	1.0	.29	.06	.00	.00	.00
21	.00	.14	.26	.34	3.3	1.3	.91	.26	.06	.00	.00	.00
22	.00	.14	.24	.33	2.8	1.2	.92	.22	.05	.00	.00	.00
23	.00	.14	.24	.48	2.5	1.2	1.1	.19	.05	.00	.00	.00
24	.00	.16	.24	.43	2.3	1.3	1.1	.17	.04	.00	.00	.00
25	.00	.17	.24	.39	2.1	1.2	.76	.15	.02	.00	.00	.00
26	.00	.22	.24	.39	2.0	1.2	.63	.15	.01	.00	.00	.00
27	.00	.22	.24	.37	1.8	1.3	.57	.16	.00	.00	.00	.00
28	.00	.24	.26	.34	1.6	1.5	.57	1.5	.00	.00	.00	.00
29	.00	.27	.29	.33	---	1.5	.54	.81	.00	.00	.00	.00
30	.00	.26	.29	.34	---	1.5	.61	.55	.00	.00	.00	.00
31	.00	---	.29	.31	---	1.4	---	.45	---	.00	.00	---
TOTAL	0.00	3.25	7.17	20.38	121.90	44.1	31.94	10.53	2.14	0.00	0.00	0.00
MEAN	.000	.11	.23	.66	4.35	1.42	1.06	.34	.071	.000	.000	.000
MAX	.00	.27	.29	3.8	49	1.6	1.5	1.5	.30	.00	.00	.00
MIN	.00	.00	.20	.29	.30	1.2	.54	.15	.00	.00	.00	.00
AC-FT	.00	6.4	14	40	242	87	63	21	4.2	.00	.00	.00
CAL YR 1989	TOTAL 290.86	MEAN .80	MAX 7.3	MIN .00	AC-FT 577							
WTR YR 1990	TOTAL 241.41	MEAN .66	MAX 49	MIN .00	AC-FT 479							

11108133 CASTAIC LAKE NEAR CASTAIC, CA

LOCATION.--Lat 34°31'18", long 118°36'18", in SW 1/4 NW 1/4 sec.18, T.5 N., R.16 W., Los Angeles County, Hydrologic Unit 18070102, on center of upstream face of Castaic Dam and 3.0 mi north of Castaic.

DRAINAGE AREA.--13.7 mi², excludes 1.8 mi² non-contributing area in Elizabeth Canyon Creek basin.

PERIOD OF RECORD.--October 1988 to current year. Prior to October 1988 in files of California Department of Water Resources.

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

REMARKS.--Lake is formed by earthfill dam. Storage began April 1972. Dead storage below outlet tower to downstream distribution system, 1,799 acre-ft, elevation, 1,213 ft. Capacity below spillway level, 323,699 acre-ft, elevation 1,515 ft. Lake receives natural inflow from Castaic Creek and its tributaries, and water diverted from Pyramid Lake through Angeles Tunnel. Water is released downstream through Castaic Tunnel No. 1 and to Castaic Lagoon. Records, including extremes, represent total contents at 2400 hours.

COOPERATION.--Records were provided by California Department of Water Resources, under the general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES (AT 2400) FOR PERIOD OF RECORD.--Maximum contents, 319,424 acre-ft, Apr. 12, 1990, elevation, 1,513.08 ft; minimum, 147,551 acre-ft, Nov. 8, 1988, elevation, 1,419.08 ft.

EXTREMES (AT 2400) FOR CURRENT YEAR.--Maximum contents, 319,424 acre-ft, Apr. 12, elevation, 1,513.08 ft; minimum, 179,181 acre-ft, Nov. 5, elevation, 1,439.60 ft.

EXTREMES (AT 2400) FOR 1989 WATER YEAR (NOT PREVIOUSLY PUBLISHED).--Maximum contents, 316,725 acre-ft, Apr. 28, elevation, 1,511.86 ft; minimum, 147,551 acre-ft, Nov. 8, elevation, 1,419.08 ft.

RESERVOIR STORAGE (ACRE-Feet), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
OBSERVATION AT 24:00 VALUES
(NOT PREVIOUSLY PUBLISHED)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	203051	155061	183260	258396	300278	302787	306150	311827	290263	251164	210459	167478
2	200963	156371	185820	260700	300236	302830	304358	312330	288171	249061	208418	165297
3	198904	154640	185754	265162	300172	304811	305696	312220	286130	246967	206371	163192
4	196822	152994	185639	269665	300300	304725	308209	313118	284159	244787	204229	161224
5	194702	151327	188999	273049	300236	304703	310233	312571	285175	247734	202100	163439
6	192745	149639	192224	277335	302185	304617	311586	312417	285880	249504	200086	165313
7	190783	148035	195650	277274	302078	304552	309993	307797	283932	250063	198032	167041
8	188816	147551	198322	277213	302035	304530	307688	300940	282052	248003	195955	167806
9	186794	149506	201807	282155	302078	304444	305351	309971	280160	246163	193840	165716
10	184833	152070	201704	288547	302057	304401	306258	307775	278295	247331	191604	163547
11	182852	154580	201600	288610	301992	304336	306583	305826	276297	248965	189265	165235
12	181842	153068	204768	288484	301885	304293	308666	304186	277887	249619	186909	167165
13	179879	151534	207419	288401	301842	304250	309187	302507	278950	247696	184554	168589
14	177776	149994	210512	288338	303733	304142	310211	300942	277029	245608	182232	169941
15	175753	153188	213682	288255	303712	305459	308926	303045	274974	243549	179863	168088
16	173709	156311	216859	289739	303647	307970	308926	304164	272867	241499	177535	166541
17	175513	160198	216806	292469	302583	307428	307016	305199	270750	239365	175161	164987
18	173550	159512	216752	294030	303475	306605	309775	303647	268480	240100	172850	168762
19	173136	158887	221616	295998	303432	305135	313403	302035	269665	237878	170508	171994
20	172168	158218	226093	295934	303367	305545	316130	300535	267418	235667	168119	175209
21	170240	159481	230540	295871	303303	305502	315425	299018	267699	233542	168903	178631
22	168245	166838	238894	295807	303238	306432	313645	299082	265401	231371	170035	177358
23	166308	168997	238818	297825	303174	307450	311805	301263	262995	229230	170824	176073
24	165243	173741	238856	297782	303109	305545	311739	301285	260502	227154	169673	174793
25	163965	174474	238818	297697	303066	303647	313710	299274	258258	225070	167509	177793
26	162484	173852	242599	297612	303002	301649	315557	297102	259143	222906	165390	179731
27	160642	173248	246775	298762	302916	304423	315689	294939	256964	221000	163208	182656
28	159024	174713	250526	298720	302851	305977	316725	292806	257611	218727	166028	184603
29	157551	177342	254484	298613	---	307493	314479	293565	255517	216591	166807	185969
30	155994	180267	258435	300407	---	309666	312002	294600	253180	214501	168982	184128
31	154490	---	258435	300343	---	308057	---	292332	---	212404	169610	---
MAX	203051	180267	258435	300407	303733	309666	316725	313118	290263	251164	210459	185969
MIN	154490	147551	183260	258396	300172	301649	304358	292332	253180	212404	163208	161224
a	1423.76	1440.27	1483.87	1504.32	1505.49	1507.90	1509.71	1500.54	1481.18	1459.21	1433.60	1442.64
b	-50539	+25777	+78168	+41908	+2508	+5206	+3945	-19670	-39152	-40776	-42794	+14518

WTR YR 1989 b -20901

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

SANTA CLARA RIVER BASIN

11108133 CASTAIC LAKE NEAR CASTAIC, CA--Continued

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	181923	186001	193773	214750	261273	286498	312220	315007	294727	271072	261253	265740
2	184489	186150	191671	218439	266499	288923	313009	316571	293565	268521	263690	263352
3	183130	183817	189465	222942	264764	286879	313776	317498	292322	268059	263332	263809
4	183718	181451	192426	226806	263253	284967	315117	318781	290829	265660	261016	265341
5	184472	179181	194718	231002	263174	287712	317675	316637	293439	266379	258710	266958
6	184883	181191	196720	229009	263789	291060	319225	314237	293650	266818	259163	270571
7	182624	184062	199229	227081	264465	291859	317255	314369	292932	264744	261055	272625
8	180397	186265	200653	229857	269505	294643	315337	314523	290976	262084	262599	270128
9	182037	188816	198305	235033	270430	297251	315711	313689	288944	264107	264584	267699
10	183931	190499	195887	237897	268500	295277	317366	313118	286983	263590	265760	269344
11	184899	192930	198408	241518	266598	293312	318737	312483	285133	262301	263432	271152
12	185557	191151	200997	239459	264724	295426	319424	310429	287650	268280	261095	272584
13	185936	188550	203692	237597	266978	299274	318936	308448	288798	267158	261886	274670
14	183686	186232	205394	235705	268862	301113	318051	306453	289070	264704	263253	277090
15	181403	183898	207524	238329	270971	302293	315755	306691	287587	262222	263928	274690
16	183440	188583	204785	242163	273332	304962	315645	307927	286130	259812	262916	272241
17	182803	187009	202480	243720	271898	302916	315337	308188	284656	260838	260522	269786
18	183849	184685	202359	248387	270229	300856	315161	306258	283270	261905	258180	270551
19	186397	182249	208173	247159	268340	301370	315029	303927	285112	263471	255810	271495
20	184505	185952	209719	245493	269967	304401	315535	303217	285195	263710	256945	272685
21	182607	191235	212564	243873	272564	306843	315645	301049	286234	261134	258298	274061
22	180705	193537	214163	247216	275441	308209	315535	301242	284366	258769	259163	271737
23	181029	191252	211997	250314	278336	311542	315469	300963	282465	256397	260304	269404
24	184129	189431	209719	253103	276296	309362	315337	301520	280529	257866	262004	267118
25	187654	187124	211236	256025	274609	307190	318095	299061	278459	259458	259675	268521
26	185656	184817	215214	257317	277907	308383	319247	296698	279175	260364	257317	269525
27	183636	187472	217792	255068	280427	311215	319158	294516	276968	260739	257964	271112
28	181565	190599	219087	252947	282650	313228	319047	292743	278623	258435	262876	272827
29	179488	191738	220928	252811	---	315425	318516	290955	276092	256084	266758	270470
30	181191	194380	218853	253666	---	316130	316505	292069	273595	257395	267458	268140
31	183980	---	216770	260680	---	314150	---	293650	---	259084	268099	---
MAX	187654	194380	220928	260680	282650	316130	319424	318781	294727	271072	268099	277090
MIN	179488	179181	189465	214750	261273	284967	312220	290955	273595	256084	255810	263352
a	1442.55	1448.80	1461.66	1485.01	1495.90	1510.69	1511.76	1501.17	1491.47	1484.20	1488.74	1488.76
b	-148	+10400	+22390	+43910	+21970	+31500	+2355	-22855	-20055	-14511	+9015	+41

CAL YR 1989 b -41665

WTR YR 1990 b +84012

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11108135 CASTAIC LAGOON PARSHALL FLUME NEAR CASTAIC, CA

LOCATION (REVISED).--Lat 34°29'50", long 118°36'49", in SW 1/4 SE 1/4 sec.24, T.5 N., R.17 W., Los Angeles County, Hydrologic Unit 18070102, at southeast end of lagoon under Lake Hughes Road bridge, 0.5 mi east of Castaic on Lake Hughes Road.

DRAINAGE AREA.--138 mi², excluding 18.1 mi² noncontributing area in Elizabeth Canyon Creek basin.

PERIOD OF RECORD.--October 1976 to September 1978, October 1988 to current year. June 1972 to September 1976, October 1978 to September 1988 in files of California Department of Water Resources.

GAGE.--Water-stage recorder and Parshall flume. Elevation of gage is 1,140 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Station is used to monitor outflow from Castaic Lake.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 195 ft³/s, estimated, June 30, 1978; no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 7,670 ft³/s, Mar. 2, 1983, gage height, 4.10 ft; no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--No flow for 1990 water year.

EXTREMES FOR 1989 WATER YEAR (NOT PREVIOUSLY PUBLISHED).--No flow for 1989 water year.

11108500 SANTA CLARA RIVER AT LOS ANGELES-VENTURA COUNTY LINE, CA

LOCATION.--Lat 34°23'59", long 118°42'14", in San Francisco Grant, Ventura County, Hydrologic Unit 18070102, on downstream end of old diversion weir on right bank, on private road 0.2 mi south of Highway 126, 0.8 mi west of Los Angeles-Ventura County line, and 6.4 mi west of intersection of Highway 126 and Interstate 5.

DRAINAGE AREA.--625 mi².

PERIOD OF RECORD.--October 1952 to current year.

REVISED RECORDS.--WDR CA-78-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 794.93 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records poor. Base flow affected by pumping from wells along stream for irrigation. Flow partly regulated since January 1972 by Castaic Lake (station 11108133), capacity, 324,000 acre-ft. Imported water from California Water Project stored and released at Castaic Dam.

AVERAGE DISCHARGE.--38 years, 48.3 ft³/s, 34,990 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 68,800 ft³/s, Jan. 25, 1969, gage height, 19.01 ft, from rating curve extended above 9,200 ft³/s on basis of field estimate of peak flow; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 750 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 13	1015	1,600	6.43	Feb. 17	0445	*1,870	*6.66

Minimum daily, 20 ft³/s, July 11, 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	29	38	29	31	45	39	35	29	29	23	25	27
2	29	37	29	33	45	39	35	28	27	23	28	27
3	29	36	29	31	46	40	33	27	26	23	29	29
4	29	36	30	31	105	40	34	26	27	24	29	30
5	29	34	29	31	52	39	31	26	27	24	28	30
6	29	33	28	31	44	39	31	27	28	25	27	30
7	30	32	28	31	37	39	31	27	27	24	28	29
8	30	32	28	32	35	39	31	26	25	24	29	29
9	32	32	28	31	37	39	31	27	27	24	29	29
10	32	32	28	31	38	40	29	27	27	22	28	30
11	32	32	29	30	37	40	29	27	28	20	26	27
12	32	33	29	31	38	39	29	27	28	20	27	25
13	33	34	29	183	38	38	29	28	29	21	27	25
14	33	34	29	109	37	37	29	29	29	21	28	25
15	33	33	29	e42	37	37	30	28	29	22	29	25
16	35	33	29	e42	38	37	32	27	30	22	29	26
17	33	33	29	e42	440	37	31	27	31	22	29	28
18	32	33	29	e42	95	37	30	27	29	22	29	28
19	32	33	29	42	57	37	29	28	24	23	28	29
20	33	33	29	40	42	35	28	41	23	24	30	28
21	34	32	29	39	38	34	29	30	22	26	30	28
22	51	32	29	39	37	33	68	26	23	25	30	28
23	48	32	30	38	35	33	35	25	e23	26	30	30
24	42	31	31	38	34	34	31	25	e23	27	30	32
25	41	32	30	38	33	34	29	25	e23	28	29	30
26	40	34	30	39	41	35	29	24	e23	26	29	28
27	40	32	30	41	38	35	29	23	e23	24	30	28
28	40	31	30	43	38	34	29	37	23	28	29	27
29	40	31	30	44	---	35	30	35	23	28	28	27
30	41	30	30	46	---	35	31	32	23	28	28	27
31	39	---	30	45	---	35	---	31	---	26	28	---
TOTAL	1082	990	905	1366	1637	1144	957	872	779	745	883	841
MEAN	34.9	33.0	29.2	44.1	58.5	36.9	31.9	28.1	26.0	24.0	28.5	28.0
MAX	51	38	31	183	440	40	68	41	31	28	30	32
MIN	29	30	28	30	33	33	28	23	22	20	25	25
AC-FT	2150	1960	1800	2710	3250	2270	1900	1730	1550	1480	1750	1670

CAL YR 1989 TOTAL 12503 MEAN 34.3 MAX 415 MIN 20 AC-FT 24800
WTR YR 1990 TOTAL 12201 MEAN 33.4 MAX 440 MIN 20 AC-FT 24200

e Estimated.

11109375 PIRU CREEK BELOW BUCK CREEK, NEAR PYRAMID LAKE, CA

LOCATION.--Lat 34°39'58", long 118°49'24", in SE 1/4 SE 1/4 sec.30, T.7 N., R.18 W., Ventura County, Hydrologic Unit 18070102, on left bank 300 ft downstream from the confluence of Piru Creek and Buck Creek, and 2.3 mi southeast of U.S. Forest Service Hardluck Campground.

DRAINAGE AREA.--198 mi².

PERIOD OF RECORD.--October 1976 to September 1978, October 1988 to current year. February 1975 to September 1976, October 1978 to September 1988 in files of California Department of Water Resources.

GAGE.--Water-stage recorder. Elevation of gage is 2,700 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Station is used to monitor flow into Pyramid Lake.

COOPERATION.--Records were provided by California Department of Water Resources, under the general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,000 ft³/s, estimated, Mar. 4, 1978, gage height, 10.08 ft; no flow many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 198 ft³/s, Jan. 14, gage height, 3.42 ft; no flow July 2 to Sept. 30.

EXTREMES FOR 1989 WATER YEAR (NOT PREVIOUSLY PUBLISHED).--Maximum discharge, 260 ft³/s, Feb. 10, gage height, 3.70 ft; no flow July 6 to Sept. 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES
(NOT PREVIOUSLY PUBLISHED)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	2.4	3.6	7.3	5.9	40	9.0	4.4	1.9	.36	.00	.00
2	1.6	2.5	3.6	7.2	6.0	43	8.7	4.2	1.7	.29	.00	.00
3	1.6	2.5	3.6	7.1	6.0	61	8.6	3.8	1.7	.17	.00	.00
4	1.6	2.5	3.6	7.0	6.7	35	8.4	3.5	1.7	.15	.00	.00
5	1.6	2.5	3.6	6.8	9.9	28	8.0	3.4	1.9	.08	.00	.00
6	1.7	2.5	3.6	6.7	7.2	28	7.6	3.3	1.9	.00	.00	.00
7	1.8	2.6	3.6	5.6	4.6	37	7.4	3.1	1.8	.00	.00	.00
8	1.9	2.7	3.6	5.6	4.2	37	7.3	3.0	1.6	.00	.00	.00
9	1.8	2.8	3.6	5.7	8.1	33	7.1	3.1	1.4	.00	.00	.00
10	1.8	2.8	3.6	6.6	103	28	6.7	4.2	1.4	.00	.00	.00
11	1.9	2.8	3.6	6.4	110	24	6.5	5.9	1.3	.00	.00	.00
12	1.9	2.8	3.6	5.6	67	21	6.4	5.3	1.2	.00	.00	.00
13	2.0	2.9	3.6	4.5	28	20	6.4	4.4	1.0	.00	.00	.00
14	2.1	3.0	3.6	5.3	15	18	6.1	4.1	.89	.00	.00	.00
15	2.1	3.0	4.6	5.7	14	17	5.8	4.4	.78	.00	.00	.00
16	2.1	3.0	4.6	5.7	16	16	5.7	4.4	.75	.00	.00	.00
17	2.0	3.0	8.5	6.0	16	15	5.6	4.1	.74	.00	.00	.62
18	2.0	3.0	8.5	6.1	17	14	5.2	3.4	.65	.00	.00	.96
19	2.0	3.0	7.8	5.9	23	13	5.0	3.0	.57	.00	.00	2.0
20	2.0	3.0	9.3	5.9	52	13	4.8	2.8	.51	.00	.00	1.7
21	2.0	3.0	29	6.0	40	12	4.7	2.6	.44	.00	.00	1.3
22	2.0	3.1	15	6.2	43	12	4.7	2.5	.37	.00	.00	1.1
23	2.0	3.1	9.4	6.2	63	12	4.8	2.3	.38	.00	.00	1.1
24	2.1	3.1	8.7	7.3	67	12	5.0	2.3	.57	.00	.00	1.0
25	2.1	3.5	14	6.9	57	11	5.3	2.3	.72	.00	.00	.88
26	2.2	5.1	11	5.8	65	11	5.8	2.3	.76	.00	.00	.88
27	2.2	4.5	7.1	5.8	79	11	5.9	2.1	.75	.00	.00	.90
28	2.3	3.9	7.3	5.9	56	10	5.4	2.1	.45	.00	.00	.89
29	2.4	3.7	7.4	6.0	---	9.8	4.9	2.1	.39	.00	.00	.97
30	2.4	3.6	6.8	6.0	---	9.5	4.6	2.1	.41	.00	.00	1.1
31	2.4	---	7.4	5.9	---	9.2	---	2.0	---	.00	.00	---
TOTAL	61.2	91.9	258.2	190.7	989.6	660.5	187.4	102.5	30.63	1.05	0.00	15.40
MEAN	1.97	3.06	8.33	6.15	35.3	21.3	6.25	3.31	1.02	.034	.000	.51
MAX	2.4	5.1	46	7.3	110	61	9.0	5.9	1.9	.36	.00	2.0
MIN	1.6	2.4	3.6	4.5	4.2	9.2	4.6	2.0	.37	.00	.00	.00
AC-FT	121	182	512	378	1960	1310	372	203	61	2.1	.00	31

WTR YR 1989 TOTAL 2589.08 MEAN 7.09 MAX 110 MIN .00 AC-FT 5140

SANTA CLARA RIVER BASIN

11109375 PIRU CREEK BELOW BUCK CREEK, NEAR PYRAMID LAKE, CA--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	2.4	2.6	3.1	3.9	7.5	3.6	2.0	1.3	.03	.00	.00
2	1.3	2.4	2.7	3.1	3.7	7.4	3.5	1.8	1.1	.00	.00	.00
3	1.3	2.4	2.7	3.1	3.6	7.4	3.4	1.6	.86	.00	.00	.00
4	1.4	2.4	2.6	2.6	4.7	7.8	3.6	1.4	.70	.00	.00	.00
5	1.4	2.4	2.6	3.0	4.3	8.2	3.7	1.2	.60	.00	.00	.00
6	1.4	2.3	2.6	3.3	4.5	7.5	3.8	1.0	.51	.00	.00	.00
7	1.3	2.3	2.5	3.3	4.7	6.8	3.5	.96	.43	.00	.00	.00
8	1.3	2.3	2.4	3.3	4.3	6.3	3.2	.98	.39	.00	.00	.00
9	1.2	2.2	2.5	3.2	4.2	6.1	2.9	1.0	.42	.00	.00	.00
10	1.2	2.2	2.5	3.2	3.9	5.9	2.6	1.0	.73	.00	.00	.00
11	1.2	2.2	2.5	3.2	3.8	5.5	2.4	1.2	.79	.00	.00	.00
12	1.2	2.2	2.3	3.7	3.8	5.6	2.2	1.2	.65	.00	.00	.00
13	1.2	2.2	2.2	16	3.8	5.6	2.1	1.1	.55	.00	.00	.00
14	1.3	2.3	2.7	90	3.8	5.4	2.0	1.1	.62	.00	.00	.00
15	1.4	2.3	2.7	17	3.2	5.2	2.1	1.1	.70	.00	.00	.00
16	1.4	2.2	2.6	10	3.9	5.0	2.5	.99	.73	.00	.00	.00
17	1.4	2.3	2.6	7.9	7.0	4.7	3.0	1.0	.58	.00	.00	.00
18	1.4	2.3	2.6	6.5	7.8	4.7	3.1	1.1	.44	.00	.00	.00
19	1.5	2.2	2.8	5.8	7.1	4.5	2.9	1.1	.35	.00	.00	.00
20	1.6	2.3	2.7	5.3	6.1	4.3	2.9	1.2	.26	.00	.00	.00
21	1.8	2.4	2.7	4.9	6.6	4.2	3.0	1.1	.21	.00	.00	.00
22	2.3	2.4	2.8	4.6	6.5	4.1	2.5	1.1	.19	.00	.00	.00
23	2.7	2.4	2.8	4.4	6.6	4.1	2.5	.98	.17	.00	.00	.00
24	2.3	2.4	2.7	4.2	7.2	3.9	2.3	.91	.15	.00	.00	.00
25	2.3	2.5	2.9	3.9	7.7	3.9	2.1	.94	.13	.00	.00	.00
26	2.3	2.6	2.8	3.8	7.8	3.8	1.9	.93	.10	.00	.00	.00
27	2.3	2.5	2.9	3.8	7.8	3.8	1.7	1.0	.07	.00	.00	.00
28	2.4	2.5	2.9	3.6	7.7	3.9	1.7	1.7	.06	.00	.00	.00
29	2.4	2.6	3.0	3.7	---	4.0	1.6	1.9	.05	.00	.00	.00
30	2.4	2.7	3.0	3.6	---	3.7	1.7	1.5	.04	.00	.00	.00
31	2.3	---	3.1	3.8	---	3.7	---	1.4	---	.00	.00	---
TOTAL	52.2	70.8	83.0	240.9	150.0	164.5	80.0	37.49	13.88	0.03	0.00	0.00
MEAN	1.68	2.36	2.68	7.77	5.36	5.31	2.67	1.21	.46	.001	.000	.000
MAX	2.7	2.7	3.1	90	7.8	8.2	3.8	2.0	1.3	.03	.00	.00
MIN	1.2	2.2	2.2	2.6	3.2	3.7	1.6	.91	.04	.00	.00	.00
AC-FT	104	140	165	478	298	326	159	74	28	.06	.00	.00

CAL YR 1989 TOTAL 2383.78 MEAN 6.53 MAX 110 MIN .00 AC-FT 4730
WTR YR 1990 TOTAL 892.80 MEAN 2.45 MAX 90 MIN .00 AC-FT 1770

11109395 CANADA DE LOS ALAMOS ABOVE PYRAMID LAKE, CA

LOCATION.--Lat 34°41'31", long 118°47'25", in SW 1/4 SE 1/4 sec.16, T.7 N., R.18 W., Los Angeles County, Hydrologic Unit 18070102, on right bank 1.1 mi south of Hungry Valley road off ramp from Interstate Highway 5 and 0.4 mi above Pyramid Landing on Pyramid Lake.

DRAINAGE AREA.--61.9 mi².

PERIOD OF RECORD.--October 1976 to September 1978, October 1988 to current year. March 1965 to September 1976, October 1978 to September 1988 in files of California Department of Water Resources.

GAGE.--Water-stage recorder. Elevation of gage is 2,800 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Station is used to monitor natural inflow to Pyramid Lake.

COOPERATION.--Records were provided by California Department of Water Resources, under the general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,990 ft³/s, Feb. 10, 1978, gage height, 5.10 ft; minimum daily, 0.30 ft³/s, May 10, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10 ft³/s, Jan. 13, gage height, 2.85 ft; minimum daily, 1.1 ft³/s, Aug. 5.

EXTREMES FOR 1989 WATER YEAR (NOT PREVIOUSLY PUBLISHED).--Maximum discharge, 12 ft³/s, Dec. 21, gage height, 2.86 ft; minimum daily, 1.1 ft³/s, July 6, 7, 16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES
(NOT PREVIOUSLY PUBLISHED)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	2.2	2.6	2.6	3.1	2.5	2.4	2.3	1.9	1.7	1.6	1.5
2	1.6	2.2	2.6	2.5	3.0	2.3	2.4	1.8	1.8	1.6	1.6	1.4
3	1.6	2.1	2.6	2.7	2.8	2.2	2.2	1.6	2.0	1.5	1.4	1.3
4	1.6	2.0	2.6	2.7	2.6	2.2	2.1	1.6	2.1	1.5	1.3	1.3
5	1.6	2.1	2.6	2.5	2.5	2.2	2.1	1.6	2.3	1.4	1.3	1.3
6	1.8	2.3	2.6	2.7	2.5	2.3	2.0	1.6	2.1	1.1	1.4	1.3
7	1.7	2.4	2.6	2.5	2.5	2.3	2.0	1.6	2.1	1.1	1.5	1.3
8	1.6	2.3	2.6	2.5	3.0	2.3	2.0	1.6	2.2	1.2	1.5	1.5
9	1.6	2.2	2.6	2.5	3.5	2.3	2.0	2.1	2.0	1.3	1.5	1.6
10	1.6	2.0	2.6	2.5	3.8	2.5	1.9	2.6	2.3	1.3	1.4	1.5
11	1.6	2.1	2.6	2.5	4.6	2.5	2.0	2.5	2.2	1.3	1.4	1.5
12	1.7	2.2	2.6	2.5	3.7	2.6	2.1	2.2	1.7	1.2	1.3	1.5
13	1.8	2.2	2.6	2.5	3.4	2.6	2.0	2.4	1.9	1.3	1.3	1.5
14	1.9	2.3	2.6	2.6	3.7	2.6	2.0	2.4	1.7	1.3	1.2	1.5
15	1.8	2.3	2.7	2.5	3.5	2.6	2.0	2.5	1.7	1.2	1.2	1.5
16	1.7	2.5	4.6	2.6	3.1	2.7	2.2	2.2	1.7	1.1	1.3	1.9
17	1.7	2.5	3.8	2.6	3.0	2.7	2.2	2.3	1.6	1.3	1.3	2.1
18	1.7	2.5	3.2	2.8	2.9	2.7	2.0	2.3	1.6	1.3	1.3	1.8
19	1.8	2.4	3.0	2.8	2.7	2.7	2.1	2.1	1.6	1.3	1.4	2.5
20	1.8	2.3	2.8	2.8	2.6	2.7	2.1	2.2	1.6	1.3	1.7	1.7
21	1.7	2.3	3.4	2.9	2.6	2.8	2.3	2.2	1.5	1.3	1.8	1.6
22	1.7	2.3	2.9	3.0	2.6	2.6	2.4	2.0	1.5	1.4	1.6	1.6
23	1.8	2.3	2.6	3.3	2.6	2.4	2.7	1.9	1.8	1.5	1.7	1.6
24	1.9	2.3	2.6	3.1	2.6	2.4	2.9	2.0	2.0	1.5	1.6	1.6
25	1.9	2.3	2.6	3.0	2.6	2.5	3.1	2.1	2.0	1.4	1.6	1.7
26	1.9	2.5	2.6	2.9	2.6	2.6	3.1	1.9	1.9	1.3	1.6	1.5
27	2.0	2.6	2.6	3.0	2.6	2.5	2.9	1.9	1.7	1.5	1.6	1.5
28	2.1	2.6	2.6	3.0	2.8	2.4	2.9	2.0	1.6	1.6	1.5	1.6
29	2.1	2.6	2.6	3.0	---	2.5	2.8	2.0	1.7	1.7	1.4	1.7
30	2.1	2.6	2.6	3.0	---	2.4	2.8	2.2	1.9	1.8	1.5	1.9
31	2.1	---	2.7	3.1	---	2.5	---	2.0	---	1.5	1.5	---
TOTAL	55.1	69.5	86.3	85.2	83.5	77.1	69.7	63.7	55.7	42.8	45.3	47.8
MEAN	1.78	2.32	2.78	2.75	2.98	2.49	2.32	2.05	1.86	1.38	1.46	1.59
MAX	2.1	2.6	4.6	3.3	4.6	2.8	3.1	2.6	2.3	1.8	1.8	2.5
MIN	1.6	2.0	2.6	2.5	2.5	2.2	1.9	1.6	1.5	1.1	1.2	1.3
AC-FT	109	138	171	169	166	153	138	126	110	85	90	95

WTR YR 1989 TOTAL 781.7 MEAN 2.14 MAX 4.6 MIN 1.1 AC-FT 1550

SANTA CLARA RIVER BASIN

11109395 CANADA DE LOS ALAMOS ABOVE PYRAMID LAKE, CA--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	2.3	2.9	2.6	2.7	3.0	3.3	2.5	2.5	1.6	1.4	1.6
2	2.5	2.2	2.9	2.6	2.7	3.0	3.1	2.4	2.3	1.7	1.4	1.6
3	2.6	2.3	2.9	2.6	2.8	3.0	3.0	2.4	2.1	1.8	1.4	1.6
4	2.3	2.4	3.0	2.5	4.0	3.0	3.2	2.4	2.1	1.9	1.2	1.5
5	2.2	2.4	2.9	2.6	3.0	2.9	3.1	2.3	2.0	1.7	1.1	1.5
6	2.1	2.5	3.0	2.6	2.9	2.8	3.0	2.3	2.0	1.7	1.2	1.5
7	2.0	2.5	2.8	2.6	2.8	2.8	3.1	2.3	2.0	1.7	1.3	1.5
8	1.8	2.5	2.8	2.6	2.8	3.0	3.0	2.2	2.0	1.7	1.3	1.5
9	1.7	2.4	2.8	2.6	2.8	3.0	2.8	2.2	2.0	1.7	1.4	1.5
10	2.2	2.4	2.8	2.6	2.8	3.2	2.7	2.1	1.9	1.6	1.3	1.4
11	e2.6	2.5	2.6	2.6	2.8	3.1	2.7	2.2	1.9	1.5	1.3	1.6
12	e2.5	2.6	2.7	2.9	2.9	3.1	2.6	2.1	1.9	1.3	1.3	1.6
13	e2.1	2.6	2.8	6.9	2.8	3.1	2.5	2.1	1.9	1.4	1.5	1.5
14	e2.0	2.6	2.8	3.5	3.0	3.0	2.5	2.3	1.8	1.4	1.9	1.6
15	e2.2	2.5	2.8	2.8	2.8	3.1	2.7	2.2	1.8	1.5	2.2	1.7
16	e2.8	2.8	2.8	2.8	3.0	3.2	3.2	1.9	1.8	1.6	1.9	2.0
17	e2.1	2.9	2.7	3.0	4.8	3.2	3.0	2.2	1.8	2.0	1.7	1.9
18	e1.9	2.8	2.7	2.8	3.1	3.2	2.9	2.4	1.8	1.4	1.7	1.8
19	e2.2	2.8	2.6	2.8	3.1	3.3	2.8	2.5	1.8	1.4	1.9	2.1
20	e2.0	3.0	2.7	2.8	2.9	3.4	2.8	2.3	1.7	1.4	1.8	2.2
21	e2.0	2.9	2.6	2.8	2.9	3.3	2.8	2.2	1.7	1.5	1.6	2.1
22	e1.9	2.9	2.6	2.8	2.8	3.3	2.8	2.2	1.7	1.5	1.4	2.0
23	e2.5	3.0	2.6	2.8	2.9	3.3	3.1	2.3	1.6	1.3	1.4	1.9
24	e2.9	3.0	2.7	2.8	3.0	3.3	2.9	2.4	1.6	1.5	1.7	1.9
25	e2.9	3.0	2.7	2.8	3.0	3.3	2.7	2.3	1.6	1.7	1.9	1.9
26	e2.6	3.0	2.8	2.8	3.0	3.5	2.5	2.2	1.5	1.7	1.8	1.8
27	e2.5	2.8	2.6	2.8	3.0	3.6	2.5	2.6	1.4	1.6	1.8	2.2
28	e1.9	2.7	2.6	2.8	3.0	3.7	2.5	3.3	1.5	1.5	1.7	1.9
29	e2.2	2.8	2.6	2.9	---	3.6	2.5	3.1	1.6	1.5	1.7	1.8
30	e2.9	2.8	2.5	3.0	---	3.6	2.5	2.9	1.6	1.5	1.7	1.6
31	e3.0	---	2.5	2.9	---	3.4	---	2.7	---	1.6	1.7	---
TOTAL	71.2	79.9	84.8	90.0	84.1	99.3	84.8	73.5	54.9	48.9	48.6	52.3
MEAN	2.30	2.66	2.74	2.90	3.00	3.20	2.83	2.37	1.83	1.58	1.57	1.74
MAX	3.0	3.0	3.0	6.9	4.8	3.7	3.3	3.3	2.5	2.0	2.2	2.2
MIN	1.7	2.2	2.5	2.5	2.7	2.8	2.5	1.9	1.4	1.3	1.1	1.4
AC-FT	141	158	168	179	167	197	168	146	109	97	96	104

CAL YR 1989 TOTAL 806.7 MEAN 2.21 MAX 4.6 MIN 1.1 AC-FT 1600
WTR YR 1990 TOTAL 872.3 MEAN 2.39 MAX 6.9 MIN 1.1 AC-FT 1730

e Estimated.

11109520 PYRAMID LAKE NEAR GORMAN, CA

LOCATION.--Lat 34°38'41", long 118°45'47", in NW 1/4 NW 1/4 sec.2, T.6 N., R.18 W., Los Angeles County, Hydrologic Unit 18070102, on center of upstream face of Pyramid Dam and 11.5 mi southeast of Gorman.

DRAINAGE AREA.--295 mi².

PERIOD OF RECORD.--October 1988 to current year. Prior to October 1988 in files of California Department of Water Resources.

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

REMARKS.--Reservoir is formed by earthfill dam. Storage began August 1974. Dead storage below outlet to Angeles Tunnel, 5,720 acre-ft, elevation 2,345 ft, included in contents. Capacity below invert of radial gate, 133,600 acre-ft, elevation 2,547.72 ft; below top of radial gate, 169,901 acre-ft, elevation, 2,578 ft; below spillway level, 171,196 acre-ft, elevation, 2,579 ft. Lake receives natural flow from Piru Creek, Canada de Los Alamos, and imported water from West Branch California Aqueduct. Water is released through the Angeles Tunnel to Castaic powerplant and during periods of low electricity demand water from Elderberry Forebay is pumped back to Pyramid Lake. Water is also released to Piru Creek to satisfy minimum fishwater release requirements (see station 11109525). Records, including extremes, represent contents at 2400 hours.

COOPERATION.--Records were provided by California Department of Water Resources, under general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project. Contents not rounded to U.S. Geological Survey standards.

EXTREMES (at 2400) FOR PERIOD OF RECORD.--Maximum contents, 170,043 acre-ft, Nov. 5, 1989; elevation, 2,578.11 ft; minimum, 147,633 acre-ft, July 20, 1990, elevation, 2,559.96 ft.

EXTREMES (at 2400) FOR CURRENT YEAR.--Maximum contents, 170,043 acre-ft, Nov. 5, elevation, 2,578.11 ft; minimum, 147,633 acre-ft, July 20, elevation, 2,559.96 ft.

EXTREMES (at 2400) FOR 1989 WATER YEAR (NOT PREVIOUSLY PUBLISHED).--Maximum contents, 169,372 acre-ft, Oct. 18, elevation 2,577.59 ft; minimum 151,823 acre-ft, Sept. 15, elevation 2,563.48 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
OBSERVATION AT 24:00 VALUES
(NOT PREVIOUSLY PUBLISHED)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	164396	161933	157372	161958	161795	160362	160498	166006	160188	163564	167562	152870
2	166388	161034	156428	163904	161258	161483	163451	163740	159790	166146	166745	155220
3	164599	161458	159048	161983	161021	160921	160125	161633	160374	165080	165765	160001
4	164599	161370	163551	157999	161096	161133	156477	160648	160672	166808	164586	166019
5	164245	164472	161770	154042	162484	161196	156183	158961	160710	164182	165004	163917
6	162058	167166	159914	152147	151859	156710	154588	160798	160797	163224	167051	162534
7	161883	166579	159716	154030	154018	159902	154661	161645	161158	160287	167409	161358
8	161383	166604	159060	156183	158445	159890	158788	161395	160362	161595	167844	160225
9	162008	167242	156086	155561	159122	160523	163665	160834	159666	164434	166515	163275
10	162258	161795	159803	155196	160101	160585	163829	161883	160560	162910	165168	165004
11	162873	157495	163929	155585	160648	161983	163690	161208	161383	163388	163451	163640
12	162183	161009	164561	156404	161445	162484	161970	160449	161445	163489	163413	162496
13	159567	165790	153740	156869	160822	162346	160548	160536	160884	163803	163363	152532
14	159654	165092	162772	159518	161133	162158	159604	160847	158936	163413	162396	152063
15	162797	163791	161695	165219	163400	161845	161645	160760	159394	163375	163489	151823
16	168357	163614	161059	164207	163489	159852	165536	160449	158504	163816	164675	157433
17	169334	161758	162797	161470	161308	157999	163476	160424	154661	162980	166528	160473
18	169372	159394	165803	161858	162045	160909	155671	159741	159443	163099	167549	157593
19	169166	161320	161021	160648	162697	165270	154770	158516	158986	158516	168639	160287
20	168793	162885	157237	158529	163564	164637	153316	159803	159307	156379	168819	160573
21	165853	159852	153268	160722	164093	163149	152472	160697	159728	156440	164232	156612
22	165612	157802	152364	164308	164396	161370	156526	160672	158776	160859	162509	153087
23	167498	154661	152460	165561	163237	161395	163728	161059	158603	166464	161358	156685
24	167217	155135	154551	165841	161146	160897	164687	158776	158270	166592	160250	163099
25	166668	158208	160262	164056	161720	162108	160897	157900	158640	166095	161133	164637
26	165473	159109	162496	163338	160847	162709	158924	157482	161133	163766	161845	159654
27	162923	161133	162684	162346	159914	160275	157950	158270	161508	160573	163526	157740
28	159394	159580	161858	162734	159989	158628	158936	158961	162246	160486	161183	159481
29	160710	159580	158171	163350	---	154891	161745	159642	163136	164220	158208	157556
30	162835	158331	155512	163287	---	157691	165549	160225	161820	167460	155524	160150
31	162333	---	157630	163048	---	157691	---	160710	---	166936	153099	---
MAX	169372	167242	165803	165841	164396	165270	165549	166006	163136	167460	168819	166019
MIN	159394	154661	152364	152147	151859	154891	152472	157482	154661	156379	153099	151823
a	2572.05	2568.83	2568.26	2572.62	2570.17	2568.31	2574.60	2570.75	2571.64	2579.69	2564.54	2570.30
b	-2911	-4002	-701	+5418	-3059	-2298	+7858	-4839	+1110	+5116	-13837	+7051

WTR YR 1989 b -5094

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

SANTA CLARA RIVER BASIN

11109520 PYRAMID LAKE NEAR GORMAN, CA--Continued

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	162170	163665	156074	161034	156575	159159	160797	161233	160872	164485	161733	158467
2	161770	162709	158751	158418	155720	157372	164928	160772	163841	162258	158048	161433
3	160374	161745	163816	155025	157556	159357	165447	160486	164826	161433	155269	164586
4	159691	165295	165511	153582	161645	161670	164801	160014	163539	166108	159109	161783
5	157913	170043	163400	155317	162898	159196	164690	163363	163300	163426	164953	159085
6	158504	166235	161958	157962	162271	158356	163551	165435	161658	159790	159828	156061
7	161171	164043	160697	160411	161575	157925	165688	161983	155147	160872	156526	151176
8	164396	161995	159716	159295	158726	156049	168549	163955	155854	166095	155390	153051
9	163451	160822	162659	159010	155305	156575	166413	164750	160585	164573	154758	157962
10	162747	163174	165777	156465	157679	157065	166413	164826	164700	158788	151319	158825
11	161608	165105	163463	154770	163942	159691	165004	164725	164409	155585	153123	160250
12	160822	169151	160188	153812	163287	159803	165042	166299	164396	153655	159357	157544
13	160722	167945	158479	156306	161858	156906	164712	168562	164599	153667	161009	151044
14	163086	165765	156967	162045	161608	156232	166451	167997	161633	155939	160685	149576
15	165981	163501	155720	161508	159952	156734	168074	166910	157974	162722	161083	155646
16	165333	161370	159629	160324	159221	156563	167703	165042	161520	162973	159939	158998
17	163061	158430	162609	159939	160473	159171	167217	164675	165105	160787	159790	160697
18	159877	159357	161727	159010	165143	162446	165625	163514	162672	157151	162785	160648
19	158825	163111	159902	155598	167332	161608	163816	165320	158714	152436	165841	156661
20	158776	160051	157851	157863	167588	160275	161858	167267	158073	147633	164371	156000
21	161096	157212	155305	160897	164093	160872	163275	167166	156795	154588	162396	155537
22	163300	156049	155427	159815	163187	159592	164991	164776	155123	162120	160872	158307
23	162471	159221	157421	157950	161395	159109	166834	162208	156049	163149	159654	166120
24	159567	158776	163426	157310	164510	159122	165282	160386	164194	162546	158751	159295
25	159048	161670	167434	157114	167600	162095	163690	158776	163174	160921	161908	162421
26	157237	164890	162058	156196	164877	159443	161133	164662	162008	156697	163224	161246
27	155074	163816	158689	159270	162785	159369	159468	168228	161733	153872	163476	157102
28	157740	165523	154187	164056	160486	158973	159431	168100	161620	159567	161034	153933
29	161009	163829	151787	161870	---	156563	161745	168434	157212	165625	158689	156746
30	163338	155951	153510	159666	---	156893	161845	166541	158986	163728	157753	162622
31	165130	---	157126	161433	---	158788	---	164472	---	162546	155281	---
MAX	165981	170043	167434	164056	167600	162446	168549	168562	165105	166108	165841	166120
MIN	155074	155951	151787	153582	155305	156049	159431	158776	155123	147633	151319	149576
a	2574.27	2566.89	2567.85	2571.33	2570.57	2569.20	2571.66	2573.75	2569.36	2572.22	2566.34	2572.28
b	+4980	-9179	+1175	+4307	-947	-1698	+3057	+2627	-5486	+3560	-7265	+7341
CAL YR 1989	b	-504										
WTR YR 1990	b	+2472										

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet

11109525 PIRU CREEK BELOW PYRAMID LAKE, NEAR GORMAN, CA

LOCATION.--Lat 34°38'30", long 118°45'49", in SW 1/4 NW 1/4 sec.2, T.61 N., R.18 W., Los Angeles County, Hydrologic Unit 18070102, at downstream base of dam, and 11.7 mi southeast of Gorman.

DRAINAGE AREA.--295 mi².

PERIOD OF RECORD.--October 1988 to current year. Prior to October 1988 in files of California Department of Water Resources.

GAGE.--Flow meters with totalizer. Elevation of gage is 2,200 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Flow regulated beginning December 1971 by Pyramid Lake, capacity, 171,196 acre-ft. Station is operated to satisfy fishwater release requirements as prescribed by the Federal Energy Regulatory Commission.

COOPERATION.--Records were provided by California Department of Water Resources, under the general supervision of the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 77 ft³/s, Mar. 25, 1989; minimum daily, 5.0 ft³/s, many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 20 ft³/s, May 7, June 3, 27, 29, 30; minimum daily, 5.0 ft³/s, many days.

EXTREMES FOR 1989 WATER YEAR (NOT PREVIOUSLY PUBLISHED).--Maximum daily discharge, 77 ft³/s, Mar. 25; minimum daily, 5.0 ft³/s, many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES
(NOT PREVIOUSLY PUBLISHED)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	10	5.0	15	15	15	10	10	15	10	11	15
2	20	10	5.0	15	15	25	10	10	13	15	13	15
3	20	10	5.0	15	15	25	10	12	11	15	13	15
4	20	11	5.0	15	15	25	10	12	11	15	11	15
5	20	12	5.0	15	15	25	10	12	10	10	13	15
6	20	10	5.0	15	12	25	10	11	10	10	13	15
7	20	10	5.0	15	12	25	10	13	10	10	13	15
8	20	10	5.0	15	12	25	10	13	10	10	13	15
9	20	10	5.0	15	12	25	10	10	10	10	13	15
10	20	10	5.0	15	21	25	10	10	10	10	13	11
11	20	10	5.0	15	55	25	10	10	10	10	13	11
12	20	10	5.0	15	55	25	10	10	10	10	13	15
13	20	10	5.0	15	55	36	10	10	13	10	14	15
14	20	6.0	5.0	15	25	50	10	10	17	10	15	15
15	20	5.0	5.0	15	13	50	11	10	15	20	13	15
16	20	5.0	5.0	15	13	50	11	10	15	15	13	11
17	20	5.0	5.0	15	13	50	11	10	14	15	12	10
18	20	5.0	5.0	15	13	48	11	10	12	15	11	10
19	20	5.0	5.0	15	13	49	11	10	13	15	11	10
20	15	5.0	5.0	15	13	49	11	11	15	15	11	10
21	10	5.0	10	15	13	49	11	11	16	15	15	15
22	10	5.0	15	15	13	52	11	11	15	15	13	15
23	10	5.0	15	15	13	75	11	10	15	25	11	15
24	10	5.0	15	15	13	76	11	10	13	15	13	15
25	10	5.0	15	15	13	77	11	10	11	15	13	15
26	10	5.0	15	14	13	64	11	12	11	15	13	15
27	10	5.0	15	14	13	10	11	12	17	15	11	15
28	10	6.0	15	14	13	10	11	10	12	15	12	10
29	10	6.0	15	14	---	10	11	10	13	15	14	10
30	10	6.0	15	13	---	10	11	10	10	15	17	10
31	10	---	15	13	---	10	---	10	---	13	15	---
TOTAL	505	222.0	260.0	457	516	1115	316	330	377	423	399	403
MEAN	16.3	7.40	8.39	14.7	18.4	36.0	10.5	10.6	12.6	13.6	12.9	13.4
MAX	20	12	15	15	55	77	11	13	17	25	17	15
MIN	10	5.0	5.0	13	12	10	10	10	10	10	11	10
AC-FT	1000	440	516	906	1020	2210	627	655	748	839	791	799

WTR YR 1989 TOTAL 5323.0 MEAN 14.6 MAX 77 MIN 5.0 AC-FT 10560

SANTA CLARA RIVER BASIN

11109525 PIRU CREEK BELOW PYRAMID LAKE, NEAR GORMAN, CA--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	10	5.0	5.0	5.0	16	6.0	10	10	18	15	15
2	10	10	5.0	5.0	5.0	15	6.0	10	10	18	12	15
3	10	10	5.0	5.0	5.0	15	6.0	10	20	11	15	15
4	10	10	5.1	5.0	5.0	15	6.0	10	10	11	15	15
5	12	10	5.1	5.0	5.0	15	6.0	14	10	11	15	15
6	12	10	5.1	5.0	5.0	15	6.0	15	10	11	15	15
7	13	10	5.1	5.0	5.0	15	6.0	20	15	12	15	15
8	13	10	5.1	5.0	5.0	15	6.0	10	10	11	15	15
9	17	10	5.1	5.0	12	15	6.0	10	10	12	15	15
10	17	10	5.1	5.0	15	15	6.0	10	10	13	15	15
11	13	10	5.1	5.0	15	15	6.0	10	10	18	15	15
12	13	10	5.1	5.0	15	15	6.0	10	10	18	15	15
13	13	10	5.1	5.0	15	15	6.0	10	10	18	15	15
14	10	10	5.1	5.0	15	15	6.0	10	10	18	15	15
15	10	6.0	5.1	5.5	15	15	10	10	10	18	15	15
16	10	6.0	5.1	6.0	15	15	10	10	10	12	15	15
17	13	6.0	5.1	6.0	15	15	10	10	10	13	10	15
18	17	6.0	5.5	6.0	15	15	10	10	10	13	10	15
19	13	6.0	5.5	6.0	15	15	10	10	10	18	10	10
20	10	6.0	5.5	6.0	15	15	10	10	16	18	10	10
21	10	6.0	5.5	6.0	15	15	10	10	15	18	10	10
22	10	6.0	5.5	6.0	15	15	10	10	15	13	15	10
23	10	5.0	5.5	6.0	15	15	10	10	10	13	15	10
24	10	5.0	5.5	6.0	15	15	10	10	10	13	10	10
25	10	5.0	5.5	6.0	15	15	10	10	15	10	10	10
26	10	5.0	5.5	6.0	15	15	10	10	15	12	10	10
27	10	5.0	5.5	6.0	15	15	10	10	20	12	15	10
28	10	5.0	5.5	6.0	15	15	10	10	15	12	15	10
29	10	5.0	5.5	6.0	---	15	10	10	20	12	15	10
30	10	5.0	5.5	6.0	---	15	12	10	20	18	15	10
31	10	---	5.5	6.0	---	15	---	10	---	18	15	---
TOTAL	356	228.0	163.4	171.5	337.0	466	246.0	329	376	443	422	390
MEAN	11.5	7.60	5.27	5.53	12.0	15.0	8.20	10.6	12.5	14.3	13.6	13.0
MAX	17	10	5.5	6.0	15	16	12	20	20	18	15	15
MIN	10	5.0	5.0	5.0	5.0	15	6.0	10	10	10	10	10
AC-FT	706	452	324	340	668	924	488	653	746	879	837	774
CAL YR 1989	TOTAL	5083.4	MEAN	13.9	MAX	77	MIN	5.0	AC-FT	10080		
WTR YR 1990	TOTAL	3927.9	MEAN	10.8	MAX	20	MIN	5.0	AC-FT	7790		

11109600 PIRU CREEK ABOVE LAKE PIRU, CA

LOCATION.--Lat 34°31'23", long 118°45'22", in NE 1/4 NW 1/4 sec.15, T.5 N., R.18 W., Ventura County, Hydrologic Unit 18070102, on left bank near Blue Point, 1.3 mi downstream from Agua Blanca Creek, 4.3 mi upstream from Santa Felicia Dam, 8.0 mi northeast of Piru, and 15 mi downstream from Pyramid Dam.

DRAINAGE AREA.--372 mi².

PERIOD OF RECORD.--October 1955 to current year.

REVISED RECORDS.--WSP 1928: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,058.55 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Forest Service). Prior to Dec. 15, 1972, at site 0.3 mi upstream at different datum.

REMARKS.--No estimated daily discharges. Records fair. Flow regulated beginning December 1971 by Pyramid Lake, capacity, 171,196 acre-ft. Imported water from the California Water Project stored and released at Pyramid Dam.

AVERAGE DISCHARGE.--16 years (water years 1956-71), 55.1 ft³/s, 39,920 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,200 ft³/s, Feb. 25, 1969, gage height, 18.6 ft, site and datum then in use, from floodmarks, from rating curve extended above 4,000 ft³/s on basis of slope-area measurement at gage height 12.2 ft and inflow-outflow records for Lake Piru; no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 2, 1938, reached a discharge of 35,000 ft³/s, and is the greatest since that date.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 226 ft³/s, Feb. 17, gage height, 4.35 ft; minimum daily, 2.9 ft³/s, Jan. 7-11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.3	8.2	3.6	5.2	5.2	17	15	5.3	8.9	11	8.1	8.8
2	8.9	8.2	3.5	5.7	5.2	17	15	6.5	8.3	10	8.1	9.7
3	9.1	7.9	3.4	5.6	5.2	17	15	7.0	8.7	9.2	7.1	9.3
4	9.0	7.4	3.4	5.3	7.3	18	16	7.2	11	7.5	7.1	9.7
5	8.0	7.4	3.4	5.0	6.9	18	17	8.5	12	6.7	8.3	9.9
6	9.7	7.4	3.4	4.3	5.9	17	17	10	9.6	6.5	9.0	10
7	9.9	7.4	3.4	2.9	5.7	15	17	10	8.9	6.4	10	12
8	9.6	7.4	3.4	2.9	5.5	17	13	8.9	9.8	7.3	9.1	12
9	10	7.1	3.6	2.9	5.5	17	7.2	7.7	14	6.1	9.4	11
10	13	7.0	3.6	2.9	8.4	17	6.0	7.5	10	7.8	9.5	12
11	13	7.0	3.8	2.9	13	18	5.8	7.4	8.0	8.1	9.1	12
12	11	7.0	3.8	3.8	14	18	5.4	7.4	8.4	9.1	9.4	13
13	11	7.0	3.8	84	14	17	5.5	7.4	7.6	8.9	9.5	12
14	11	7.0	3.8	62	14	17	5.6	7.4	8.2	8.7	9.4	10
15	9.8	6.7	3.8	14	15	17	5.2	7.7	7.7	8.8	8.2	9.3
16	9.4	6.7	4.0	9.2	17	17	6.6	7.8	6.7	9.3	8.6	10
17	7.8	6.1	4.0	8.6	123	17	8.9	8.4	6.5	7.8	8.4	9.0
18	9.8	4.4	4.0	7.4	41	16	6.7	7.8	8.4	7.5	6.5	8.0
19	12	3.8	4.0	6.6	25	16	6.2	7.0	9.2	7.3	6.3	7.1
20	11	3.6	4.0	6.2	19	16	6.2	7.0	8.8	8.3	6.9	7.6
21	10	3.4	4.0	5.8	17	16	5.9	7.0	12	9.2	6.9	7.4
22	11	3.4	4.2	5.7	16	15	5.6	6.9	12	9.9	6.7	7.7
23	13	3.4	4.6	5.6	16	15	5.7	6.7	9.7	8.5	7.4	8.1
24	9.8	3.4	4.7	5.5	16	15	5.9	6.7	9.3	8.4	8.0	7.8
25	9.6	3.4	4.7	5.5	16	15	5.4	6.7	9.0	8.5	8.0	7.9
26	9.1	3.6	4.7	6.3	16	15	5.4	6.7	10	6.4	7.7	7.6
27	9.0	3.4	4.7	5.6	16	15	5.1	7.4	8.8	6.3	7.1	7.5
28	8.4	3.4	4.9	5.3	17	15	5.0	14	10	6.3	7.2	9.0
29	8.2	3.4	5.0	5.0	---	14	5.2	12	10	7.2	8.8	9.1
30	8.2	3.5	5.0	5.0	---	15	5.2	9.7	10	7.9	13	8.5
31	8.2	---	5.2	5.2	---	15	---	9.1	---	9.5	11	---
TOTAL	306.8	169.0	125.4	307.9	485.8	504	254.7	246.8	281.5	250.4	259.8	283.0
MEAN	9.90	5.63	4.05	9.93	17.3	16.3	8.49	7.96	9.38	8.08	8.38	9.43
MAX	13	8.2	5.2	84	123	18	17	14	14	11	13	13
MIN	7.8	3.4	3.4	2.9	5.2	14	5.0	5.3	6.5	6.1	6.3	7.1
AC-FT	609	335	249	611	964	1000	505	490	558	497	515	561

CAL YR 1989 TOTAL 5115.0 MEAN 14.0 MAX 97 MIN 3.4 AC-FT 10150
WTR YR 1990 TOTAL 3475.1 MEAN 9.52 MAX 123 MIN 2.9 AC-FT 6890

SANTA CLARA RIVER BASIN

11109700 LAKE PIRU NEAR PIRU, CA

LOCATION.--Lat 34°27'41", long 118°45'02", in Temescal Grant, Ventura County, Hydrologic Unit 18070102, near center of Santa Felicia Dam on Piru Creek, 0.5 mi downstream from Santa Felicia Canyon, 4.2 mi northeast of Piru, and 20 mi downstream from Pyramid Dam.

DRAINAGE AREA.--425 mi².

PERIOD OF RECORD.--May 1955 to current year. Prior to October 1985, monthend elevation and contents only.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by United Water Conservation District). Prior to Jan. 27, 1956, reference point at intake tower at same datum. Jan. 27, 1956, to Dec. 1, 1980, nonrecording gage at same site and datum.

REMARKS.--Lake is formed by earthfill dam. Storage began May 20, 1955. Capacity below spillway level at elevation 1,055.0 ft, 88,340 acre-ft. Water is released from outlet to Piru Creek for ground-water recharge, domestic use, and irrigation on the Oxnard Plain.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 109,400 acre-ft, Feb. 25, 1969, elevation, 1,061.45 ft; lake dry, Oct. 25 to Nov. 20, 1961.

EXTREMES (at 2400) FOR CURRENT YEAR.--Maximum contents, 22,200 acre-ft, Mar. 24-30; maximum elevation, 983.17 ft, Mar. 26; minimum contents 20,500 acre-ft, Dec. 31 to Jan. 12; minimum elevation 980.42 ft, Jan. 7-11.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey by United Water Conservation District in October 1985)

975	17,400	1,000	33,900	1,020	50,800
980	20,300	1,005	37,900	1,025	55,600
985	23,400	1,010	42,000	1,030	60,500
990	26,700	1,015	46,300	1,035	65,600
995	30,200				

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21100	21000	20800	20500	20900	21800	22100	21400	21400	21200	20900	20700
2	21100	21000	20800	20500	20900	21800	22100	21400	21400	21200	20900	20700
3	21100	21000	20700	20500	20900	21800	22100	21400	21400	21200	20900	20700
4	21000	21000	20700	20500	20900	21800	22100	21400	21300	21200	20900	20700
5	21000	21000	20700	20500	20900	21800	22100	21400	21300	21200	20900	20700
6	21000	20900	20700	20500	20900	21900	22100	21400	21300	21100	20900	20700
7	21000	20900	20700	20500	20900	21900	22100	21400	21300	21100	20900	20700
8	21000	20900	20700	20500	20900	21900	22100	21400	21300	21100	20900	20700
9	21000	20900	20700	20500	20900	21900	22000	21400	21300	21100	20900	20700
10	21000	20900	20700	20500	20900	21900	22000	21400	21300	21100	20900	20700
11	21000	20900	20600	20500	21000	22000	22000	21400	21300	21100	20900	20700
12	21000	20900	20600	20500	21000	22000	22000	21400	21300	21100	20900	20700
13	21000	20900	20600	20700	21000	22000	21900	21400	21300	21100	20900	20700
14	21000	20900	20600	20800	21000	22000	21900	21400	21300	21100	20900	20700
15	21000	20900	20600	20900	21000	22000	21800	21400	21300	21100	20900	20700
16	21000	20900	20600	20900	21100	22000	21900	21400	21300	21100	20900	20700
17	21000	20900	20600	20900	21400	22100	21800	21400	21300	21100	20900	20700
18	21000	20900	20600	20900	21500	22100	21800	21400	21300	21100	20900	20700
19	21000	20900	20600	20900	21500	22100	21800	21400	21300	21000	20800	20700
20	21000	20900	20600	20900	21600	22100	21700	21300	21300	21000	20800	20700
21	21000	20900	20600	20900	21600	22100	21700	21300	21200	21000	20800	20700
22	21000	20900	20600	20900	21600	22100	21700	21300	21200	21000	20800	20700
23	21000	20900	20600	20900	21600	22100	21600	21300	21200	21000	20800	20700
24	21000	20800	20600	20900	21700	22200	21600	21300	21200	21000	20800	20700
25	21000	20800	20600	20900	21700	22200	21600	21300	21200	21000	20800	20700
26	21000	20800	20600	20900	21700	22200	21500	21300	21200	21000	20800	20700
27	21000	20800	20600	20900	21700	22200	21500	21300	21200	21000	20800	20600
28	21000	20800	20600	20900	21800	22200	21500	21400	21200	21000	20800	20600
29	21000	20800	20600	20900	---	22200	21400	21400	21200	21000	20800	20600
30	21000	20800	20600	20900	---	22200	21400	21400	21200	20900	20700	20700
31	21000	---	20500	20900	---	22100	---	21400	---	20900	20800	---
MAX	21100	21000	20800	20900	21800	22200	22100	21400	21400	21200	20900	20700
MIN	21000	20800	20500	20500	20900	21800	21400	21300	21200	20900	20700	20600
a	981.20	980.85	980.46	981.09	982.45	983.09	981.91	981.83	981.55	981.10	980.81	980.64
b	-100	-200	-300	+400	+900	+300	-700	+0	-200	-300	-100	-100
CAL YR 1989	b	-3600										
WTR YR 1990	b	-400										

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

SANTA CLARA RIVER BASIN

237

11109800 PIRU CREEK BELOW SANTA FELICIA DAM, CA

LOCATION.--Lat 34°27'37", long 118°45'04", in Temescal Grant, Ventura County, Hydrologic Unit 18070102, on right bank 750 ft downstream from Santa Felicia Dam, 1 mi upstream from Lime Canyon, 4 mi northeast of Piru, and 20 mi downstream from Pyramid Dam.

DRAINAGE AREA.--425 mi².

PERIOD OF RECORD.--October 1955 to September 1968, October 1973 to current year.

REVISED RECORDS.--WSP 1928: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 858.8 ft above National Geodetic Vertical Datum of 1929 (levels by United Water Conservation District).

REMARKS.--No estimated daily discharges. Records good. Since May 1955 flow regulated by Lake Piru (station 11109700) and since December 1971 by Pyramid Lake, capacity, 171,196 acre-ft. Imported water from the California Water Project stored by Pyramid Lake. No diversion upstream from station. Spill from Lake Piru bypasses gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 623 ft³/s, Aug. 2, 1982, gage height, 3.82 ft; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 19 ft³/s, Mar. 27-29, Apr. 7, 8, gage height, 1.86 ft; maximum gage height, 1.87 ft, Apr. 16, 17; minimum daily, 3.20 ft³/s, Oct. 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	6.0	6.2	6.0	5.3	5.7	18	5.7	7.5	6.6	6.9	4.8
2	6.2	6.6	6.3	6.1	5.3	5.7	18	5.7	11	6.6	6.7	4.8
3	5.8	6.9	6.3	6.2	5.2	5.9	18	5.7	12	6.6	6.3	4.9
4	5.7	6.9	6.3	6.3	5.5	6.3	18	5.7	9.0	6.6	6.3	4.8
5	5.7	6.9	6.3	6.3	5.5	6.2	18	5.7	6.0	6.6	6.3	4.8
6	5.7	6.9	6.3	6.3	5.5	6.0	18	5.7	6.0	6.6	5.9	4.8
7	5.7	6.6	6.6	6.3	5.5	6.0	18	5.8	6.2	6.4	6.3	4.8
8	5.7	7.2	6.8	6.3	5.5	6.0	18	6.0	6.2	6.3	6.5	4.8
9	6.3	7.2	6.9	6.3	5.5	6.0	18	6.0	6.3	6.3	6.3	5.4
10	6.1	7.2	6.9	6.3	5.5	6.0	18	6.0	6.3	6.4	6.4	5.2
11	4.0	7.2	6.8	7.4	5.5	6.0	18	5.9	6.4	6.6	6.6	5.5
12	3.2	7.1	6.9	7.0	5.5	6.0	18	6.0	6.4	6.7	6.6	5.5
13	6.6	6.9	6.9	5.9	5.6	6.0	18	6.0	6.6	6.8	6.6	5.5
14	7.4	6.9	6.9	5.7	5.5	6.0	18	6.0	6.6	6.7	6.6	5.3
15	9.1	6.9	6.9	5.7	5.5	6.0	18	6.0	6.6	6.9	6.6	5.2
16	8.3	6.9	7.2	5.7	5.5	6.0	18	6.0	6.6	6.9	6.6	5.2
17	7.0	6.9	7.2	5.7	5.6	6.0	18	6.1	6.6	7.0	6.9	5.0
18	6.6	6.6	6.7	5.7	5.5	6.0	18	6.2	6.6	6.3	6.6	5.0
19	6.5	6.6	6.3	5.7	5.3	6.0	18	6.3	6.1	6.8	6.3	5.0
20	7.2	6.6	6.2	5.7	8.1	5.5	18	6.3	4.7	6.6	6.3	4.9
21	6.6	6.6	6.2	5.8	6.6	5.5	18	6.3	6.4	6.9	6.4	4.8
22	6.4	6.4	6.3	5.7	4.9	5.5	18	6.5	6.6	7.2	6.6	4.7
23	6.3	6.3	6.3	5.7	5.5	5.5	18	6.6	6.6	6.9	7.0	4.6
24	6.3	6.3	6.3	5.7	5.5	5.3	18	6.6	6.6	6.9	6.2	4.4
25	6.3	6.3	6.3	5.0	5.5	5.2	18	6.6	6.7	6.8	5.5	4.3
26	6.3	6.3	6.2	5.7	5.5	5.2	18	6.5	6.9	6.9	5.5	4.3
27	6.3	6.3	6.0	5.7	5.6	14	18	6.4	6.7	7.0	5.2	4.2
28	6.3	6.3	6.0	5.6	5.7	19	18	6.6	6.6	7.2	5.2	4.2
29	6.2	6.3	6.0	5.5	---	19	18	6.4	6.6	7.2	5.2	4.3
30	6.0	6.2	6.0	5.4	---	18	9.8	6.3	6.6	7.2	5.2	4.3
31	6.0	---	6.0	5.3	---	18	---	5.4	---	7.2	5.2	---
TOTAL	194.0	200.3	200.5	183.7	156.7	239.5	531.8	189.0	206.0	209.7	192.8	145.3
MEAN	6.26	6.68	6.47	5.93	5.60	7.73	17.7	6.10	6.87	6.76	6.22	4.84
MAX	9.1	7.2	7.2	7.4	8.1	19	18	6.6	12	7.2	7.0	5.5
MIN	3.2	6.0	6.0	5.0	4.9	5.2	9.8	5.4	4.7	6.3	5.2	4.2
AC-FT	885	397	398	364	311	475	1050	375	409	416	382	288

CAL YR 1989 TOTAL 5253.9 MEAN 14.4 MAX 294 MIN 1.9 AC-FT 10420
WTR YR 1990 TOTAL 2649.3 MEAN 7.26 MAX 19 MIN 3.2 AC-FT 5250

SANTA CLARA RIVER BASIN

11111500 SESPE CREEK NEAR WHEELER SPRINGS, CA

LOCATION.--Lat 34°34'40", long 119°15'25", in NW 1/4 SW 1/4 sec.30, T.6 N., R.22 W., Ventura County, Hydrologic Unit 18070102, on right bank at Sespe Gorge, 1.6 mi upstream from Tule Creek, and 5 mi northeast of Wheeler Springs.

DRAINAGE AREA.--49.5 mi².

PERIOD OF RECORD.--October 1947 to current year. Discharge estimated for period October 1947 to July 1948.

REVISED RECORDS.--WSP 1928: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,500.65 ft above National Geodetic Vertical Datum of 1929 (levels by Ventura County Flood Control District).

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

AVERAGE DISCHARGE.--43 years, 13.1 ft³/s, 9,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft³/s, Mar. 1, 1983, gage height, 15.02 ft, from rating curve extended above 3,000 ft³/s on basis of slope-area measurement of peak flow; no flow for many days in some years.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 13	2200	*38	*2.38				

No flow Sept. 10-16.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.08	.37	.51	.82	.95	1.3	1.0	.66	.30	.12	.02	.02
2	.08	.39	.45	.78	.90	1.3	1.0	.64	.28	.11	.03	.02
3	.09	.39	.45	.64	.91	1.3	1.0	.59	.27	.11	.02	.02
4	.09	.38	.45	.64	.95	1.3	1.0	.54	.26	.11	.02	.02
5	.08	.39	.45	.67	.91	1.2	1.0	.54	.26	.10	.03	.02
6	.07	.40	.50	.67	.97	1.2	.98	.53	.28	.10	.03	.02
7	.06	.43	.51	.69	.92	1.2	.96	.52	.29	.10	.06	.01
8	.05	.45	.50	.72	.96	1.2	.95	.50	.28	.08	.05	.01
9	.05	.49	.46	.72	1.0	1.2	.93	.45	.32	.12	.05	.01
10	.05	.50	.53	.76	1.0	1.2	.92	.45	.32	.12	.03	.00
11	.06	.51	.54	.81	1.0	1.2	.91	.45	.30	.11	.03	.00
12	.06	.51	.57	1.2	1.0	1.1	.91	.44	.26	.09	.01	.00
13	.07	.51	.57	15	.97	1.1	.91	.44	.31	.09	.01	.00
14	.08	.51	.57	6.7	.93	1.1	.86	.45	.31	.09	.01	.00
15	.10	.54	.57	2.4	.91	1.1	.84	.43	.29	.09	.02	.00
16	.10	.56	.57	1.9	1.0	1.0	.99	.43	.27	.06	.04	.00
17	.10	.57	.57	1.7	2.0	1.0	.97	.43	.25	.06	.02	.02
18	.11	.57	.57	1.5	1.8	1.0	.99	.43	.24	.05	.02	.02
19	.12	.56	.57	1.4	1.4	1.0	.97	.39	.21	.04	.03	.02
20	.14	.57	.57	1.3	1.4	1.0	.95	.37	.19	.04	.05	.02
21	.22	.57	.57	1.2	1.5	1.0	.93	.37	.18	.04	.04	.02
22	.26	.55	.57	1.2	1.6	1.0	.91	.36	.16	.04	.03	.01
23	.22	.57	.57	1.2	1.7	.99	.90	.34	.16	.04	.03	.01
24	.22	.57	.59	1.1	1.6	1.0	.85	.32	.15	.03	.04	.03
25	.25	.57	.58	1.1	1.5	.97	.86	.30	.20	.04	.05	.03
26	.28	.59	.63	1.1	1.4	.96	.86	.30	.13	.04	.05	.02
27	.30	.51	.64	1.1	1.4	.98	.82	.32	.12	.04	.05	.03
28	.31	.51	.66	1.0	1.3	1.0	.74	.40	.12	.03	.03	.03
29	.33	.53	.72	1.0	---	1.0	.69	.33	.12	.03	.02	.03
30	.35	.55	.78	1.0	---	1.1	.72	.31	.12	.02	.02	.04
31	.36	---	.81	1.0	---	1.0	---	.33	---	.02	.02	---
TOTAL	4.74	15.12	17.60	53.02	33.88	34.00	27.32	13.36	6.95	2.16	0.96	0.48
MEAN	.15	.50	.57	1.71	1.21	1.10	.91	.43	.23	.070	.031	.016
MAX	.36	.59	.81	15	2.0	1.3	1.0	.66	.32	.12	.06	.04
MIN	.05	.37	.45	.64	.90	.96	.69	.30	.12	.02	.01	.00
AC-FT	9.4	30	35	105	67	67	54	26	14	4.3	1.9	1.0

CAL YR 1989 TOTAL 584.22 MEAN 1.60 MAX 27 MIN .01 AC-FT 1160
WTR YR 1990 TOTAL 209.59 MEAN .57 MAX 15 MIN .00 AC-FT 416

11113500 SANTA PAULA CREEK NEAR SANTA PAULA, CA

LOCATION.--Lat 34°24'48", long 119°04'53", in NW 1/4 SE 1/4 sec.21, T.4 N., R.21 W., Mission San Buenaventura Grant, Ventura County, Hydrologic Unit 18070102, on right bank 1.3 mi downstream from Sisar Creek and 4.8 mi north of Santa Paula.

DRAINAGE AREA.--38.4 mi².

PERIOD OF RECORD.--October 1927 to current year. March 1912 to September 1913, at site 1.2 mi upstream; records not equivalent.

GAGE.--Water-stage recorder. Elevation of gage is 790 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Oct. 22, 1980, at various sites and datums 1.3 mi downstream. See WDR CA-79-1 for history of changes prior to Oct. 22, 1980.

REMARKS.--Records fair except for estimated daily discharges, which are poor. Natural flow affected by pumping and return flow from irrigated areas.

AVERAGE DISCHARGE.--63 years, 22.6 ft³/s, 16,370 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,000 ft³/s, Feb. 25, 1969, gage height, 18.18 ft, from floodmark, site and datum then in use, from rating curve extended above 2,300 ft³/s on basis of critical-depth measurement at gage height 15.2 ft; no flow at times in 1949, 1951-52, 1965.

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)
Jan. 13	1300	384	3.81	Feb. 17	0230	*499	*4.06

Minimum daily, 0.29 ft³/s, Sept. 11, 12.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.80	1.0	1.1	1.7	e5.0	8.5	3.2	2.7	1.8	.92	e.60	e.37
2	.90	1.1	1.1	2.0	e4.0	8.1	3.3	2.7	1.7	1.2	e.61	e.37
3	.93	1.0	1.1	1.7	e4.0	7.8	3.2	2.8	1.6	.94	e.61	e.36
4	.89	1.1	1.1	1.7	e49	7.8	4.4	2.4	1.5	.88	e.61	e.35
5	.86	1.1	1.1	1.7	e12	7.7	3.6	2.2	1.5	.88	e.55	e.34
6	.93	1.2	1.1	1.8	e3.3	7.4	3.4	2.0	1.5	.90	e.52	e.33
7	.88	1.2	1.1	1.7	3.1	7.2	3.4	2.1	1.4	.91	e.54	.33
8	.81	1.1	1.1	1.7	2.9	7.1	3.5	2.3	1.4	1.0	e.52	.30
9	.89	.95	1.1	1.6	2.9	7.0	3.3	2.8	1.4	1.0	e.54	.30
10	.87	1.0	1.2	1.5	2.8	6.8	3.0	2.5	1.5	.89	e.53	.30
11	.88	.97	1.3	1.5	2.4	6.4	2.9	3.0	1.5	.79	e.48	.29
12	.92	1.1	1.3	2.9	2.7	6.0	2.7	2.7	1.8	.76	e.44	.29
13	.95	1.2	1.3	84	2.9	5.9	2.7	2.3	1.9	.72	e.45	.31
14	.98	1.1	1.2	47	3.0	5.6	2.8	2.3	1.6	.73	e.46	.33
15	1.1	1.0	1.2	e19	2.9	5.3	3.0	1.9	1.6	.73	e.51	.35
16	1.1	.98	1.2	e17	8.6	5.0	4.0	1.8	1.5	.78	e.51	.39
17	.96	.96	1.4	e17	120	4.7	3.6	1.8	1.5	.77	e.50	.47
18	.80	.94	1.5	e16	23	4.1	3.2	1.8	1.5	.75	e.50	.52
19	.79	1.0	1.5	e15	14	4.0	3.2	1.9	1.4	.72	e.51	.57
20	.88	1.1	1.4	e14	12	3.8	3.1	2.1	1.3	.71	e.50	.58
21	1.0	1.1	1.4	e13	12	3.6	3.1	2.1	1.2	e.67	e.48	.57
22	1.2	1.1	1.4	e13	12	3.6	3.3	1.9	1.3	.69	e.43	.61
23	1.3	1.1	1.4	e12	13	3.6	3.5	1.7	1.2	.71	e.43	.62
24	1.2	1.2	1.4	e11	12	3.5	3.4	1.7	1.2	.73	e.46	.63
25	1.1	1.2	1.4	e10	11	3.5	2.9	1.6	1.1	e.66	e.45	.64
26	1.1	1.5	1.5	e10	10	3.6	2.7	1.7	1.0	e.64	e.42	.65
27	1.1	1.2	1.5	e9.0	9.4	3.5	2.5	1.8	.90	e.60	e.42	.66
28	1.0	1.2	1.5	e8.0	8.9	3.5	2.7	4.4	.89	e.62	e.39	.70
29	1.0	1.2	1.5	e7.0	---	3.5	2.9	2.5	.90	e.61	e.39	.79
30	1.1	1.2	1.5	e6.0	---	3.7	2.9	2.2	.90	e.61	e.38	.73
31	1.1	---	1.6	e6.0	---	3.5	---	2.0	---	e.59	e.38	---
TOTAL	30.32	33.10	40.5	355.5	368.8	165.3	95.4	69.7	41.49	24.11	15.12	14.05
MEAN	.98	1.10	1.31	11.5	13.2	5.33	3.18	2.25	1.38	.78	.49	.47
MAX	1.3	1.5	1.6	84	120	8.5	4.4	4.4	1.9	1.2	.61	.79
MIN	.79	.94	1.1	1.5	2.4	3.5	2.5	1.6	.89	.59	.38	.29
AC-FT	60	66	80	705	732	328	189	138	82	48	30	28

CAL YR 1989 TOTAL 1290.85 MEAN 3.54 MAX 64 MIN .69 AC-FT 2560
WTR YR 1990 TOTAL 1253.39 MEAN 3.43 MAX 120 MIN .29 AC-FT 2490

e Estimated.

SANTA CLARA RIVER BASIN

11114000 SANTA CLARA RIVER AT MONTALVO, CA

LOCATION.--Lat 34°14'31", long 119°11'21", in San Miguel Grant, Ventura County, Hydrologic Unit 18070102, on downstream end of center pier of southbound bridge on U.S. Highway 101, 0.9 mi southeast of Montalvo, and 4.5 mi upstream from mouth.

DRAINAGE AREA.--1,612 mi².

PERIOD OF RECORD.--October 1927 to September 1932, October 1949 to September 1988, October 1989 to September 1990. Monthly discharge only for 1950-67, published in WDR 1968. October 1949 to September 1969, published as "at Saticoy."

REVISED RECORDS.--WSP 2128: Drainage area.

GAGE.--Two water-stage recorders. Datum of main gage is 51.88 ft above National Geodetic Vertical Datum of 1929 (levels by Ventura County Flood Control District). Oct. 1, 1927, to Sept. 30, 1932, and Oct. 1, 1949, to Sept. 30, 1967, at same site at different datums. Oct. 1, 1967, to Feb. 2, 1970, at site 3.9 mi upstream at different datum. Supplementary gage 0.7 mi upstream at different datum.

REMARKS.--Records poor. Flow partly regulated by Lake Piru (station 11109700), capacity, 88,340, 33 mi upstream since May 1955; by Pyramid Lake (station 11109520), capacity, 171,196 acre-ft, 42 mi upstream since December 1971; and by Castaic Lake (station 11108133), capacity 324,000 acre-ft, 43 mi upstream since January 1972. Natural flow affected by ground-water withdrawals, diversions, municipal use, and ground-water replenishment. Imported water from the California Water Project released to the basin at Castaic Dam and Pyramid Dam. Diversion to spreading grounds and for irrigation in Pleasant Valley, at site 6.0 mi upstream. AVERAGE DISCHARGE represents flow to the ocean regardless of upstream development.

AVERAGE DISCHARGE.--45 years (water years 1928-32, 1950-1988, 1990), 147 ft³/s, 106,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 165,000 ft³/s, Jan. 25, 1969, gage height, 17.41 ft, present datum; no flow for long periods in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 2, 1938, reached a discharge of 120,000 ft³/s, estimated by Ventura County Flood Control District.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,200 ft³/s, Feb. 17, gage height, 4.36 ft from floodmark; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	e700	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	e100	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	28.6	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	700	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	1590	.00	.00	.00	.00	.00	.00	.00

WTR YR 1990 TOTAL 800.00 MEAN 2.19 MAX 700 MIN .00 AC-FT 1590

e Estimated.

VENTURA RIVER BASIN

241

11118500 VENTURA RIVER NEAR VENTURA, CA

LOCATION.--Lat 34°21'05", long 119°18'23", in southeast corner of Santa Ana Grant, Ventura County, Hydrologic Unit 18070101, on right bank 420 ft downstream from bridge on Casitas Pass Road at Foster Memorial Park, 0.2 mi downstream from Coyote Creek, and 5 mi north of Ventura.
DRAINAGE AREA.--188 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1911 to January 1914, October 1929 to current year; combined records of river and diversion, October 1932 to current year.

REVISED RECORDS.--WSP 1928: Drainage area.

GAGE.--Water-stage recorder on river; water-stage recorder and Parshall flume on diversion. Datum of gage is 205.23 ft, Ventura County Flood Control datum. See WSP 1315-B for history of changes prior to Nov. 2, 1949. Nov. 2, 1949, to June 12, 1969, at site 80 ft downstream at datum 9.00 ft lower. June 13, 1969, to Dec. 22, 1986, at site 370 ft upstream at datum 5.00 ft lower.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow partly regulated since March 1948 by Matilija Reservoir, usable capacity, 1,480 acre-ft, and since October 1959 by Casitas Reservoir, capacity, 267,000 acre-ft. Water diverted to Casitas Reservoir on Coyote Creek since January 1959. Diversion by city of Ventura for municipal supply began prior to 1911. AVERAGE DISCHARGE (river only) represents flow to ocean regardless of upstream development. For records of combined discharge of river and Ventura City diversion, see following page.

AVERAGE DISCHARGE.--River only: 63 years (water years 1912-13, 1930-90), 57.5 ft³/s, 41,660 acre-ft/yr.
Combined river and diversion: 58 years, 66.8 ft³/s, 48,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 63,600 ft³/s, Feb. 10, 1978, gage height, 24.14 ft, from rating curve extended above 34,000 ft³/s; maximum gage height, 29.3 ft, Jan. 25, 1969, present datum, from floodmarks; no flow at times in many years.

Combined river and diversion: Maximum discharge, 63,600 ft³/s, Feb. 10, 1978; no flow Nov. 28, 29, 1977.

EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 574 ft³/s, Feb. 17, gage height, 6.10 ft; no flow for many days.

Combined river and diversion: Maximum discharge, 581 ft³/s, Feb. 17; no flow Oct. 23-26, July 9-11.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	35	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	2.5	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	142	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	e1.9	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	e.38	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	e.35	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	e.30	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	e.25	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	37.50	145.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	1.21	5.20	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	35	142	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	74	289	.00	.00	.00	.00	.00	.00	.00

CAL YR 1989 TOTAL 675.27 MEAN 1.85 MAX 70 MIN .00 AC-FT 1340
WTR YR 1990 TOTAL 183.09 MEAN .50 MAX 142 MIN .00 AC-FT 363

e Estimated.

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF VENTURA RIVER AND VENTURA
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

[illegible]

11118500 VENTURA RIVER NEAR VENTURA, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1907 to December 1908, water years 1967 to current year.

CHEMICAL DATA: December 1907 to December 1908, water years 1967-79.

WATER TEMPERATURE: Water years 1969, 1971-73, 1975-81, 1986.

SEDIMENT DATA: Water years 1969-73, 1975 to current year.

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: October 1968 to September 1969, October 1970 to September 1973, October 1974 to September 1981, October 1985 to September 1986.

SUSPENDED-SEDIMENT DISCHARGE: October 1968 to September 1973, October 1974 to September 1981, October 1985 to September 1986.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE INST CUBIC FEET- PER SECOND	TEMPER- ATURE WATER (DEG C)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (MG/L)	SEDI- MENT, DIS- CHARGE, SUS- PENDED (T/DAY)
FEB					
22...	1135	.25	16.0	41	0.03

CARPINTERIA CREEK BASIN

11119500 CARPINTERIA CREEK NEAR CARPINTERIA, CA

LOCATION.--Lat 34°24'05", long 119°29'08", in El Rincon Grant, Santa Barbara County, Hydrologic Unit 18060013, on right bank 100 ft upstream from bridge on State Highway 192, 165 ft downstream from Gobernador Creek, and 1.8 mi northeast of Carpinteria.

DRAINAGE AREA.--13.1 mi².

PERIOD OF RECORD.--January 1941 to September 1977, October 1978 to current year.

REVISED RECORDS.--WSP 1928: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 130 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to July 1, 1958, at site 100 ft downstream, at datum 6.00 ft higher. July 2, 1958, to Aug. 27, 1970, at site 65 ft downstream at datum 4.00 ft higher. Aug. 28, 1970, to Sept. 30, 1977, at site 100 ft downstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation upstream from station. Gobernador Land and Water Co. diverts from Gobernador Creek 1.8 mi upstream from station. Small lake 0.8 mi southeast of station and outside the drainage area stores storm runoff and surplus water diverted from Gobernador Creek by Gobernador Land and Water Co. At times this lake is drained by pumping water back into Gobernador Creek 1,000 ft upstream from station.

AVERAGE DISCHARGE.--48 years (water years 1942-77, 1979-90), 2.87 ft³/s, 2,080 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,880 ft³/s, Dec. 27, 1971, gage height, 14.10 ft, from floodmark, from rating curve extended above 130 ft³/s on basis of slope-area measurement of peak flow; no flow at times in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 125 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	0530	*24	*3.78				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
12	.00	.00	.00	.01	.00	.00	.00	.00	.00	e.00	.00	.00
13	.00	.00	.00	.24	.00	.00	.00	.00	.00	e.00	.00	.00
14	.00	.00	.00	.01	.00	.00	.00	.00	.00	e.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
16	.00	.00	.00	.00	.16	.00	.00	.00	.00	e.00	.00	.00
17	.00	.00	.00	.00	6.3	.00	.00	.00	.00	e.00	.00	.00
18	.00	.00	.00	.00	.16	.00	.00	.00	.00	e.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	e.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	e.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	e.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.26	6.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.008	.24	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.24	6.3	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.5	13	.00	.00	.00	.00	.00	.00	.00

CAL YR 1989 TOTAL 35.21 MEAN .096 MAX 11 MIN .00 AC-FT 70
WTR YR 1990 TOTAL 6.88 MEAN .019 MAX 6.3 MIN .00 AC-FT 14

e Estimated.

11119750 MISSION CREEK NEAR MISSION STREET, AT SANTA BARBARA, CA

LOCATION.--Lat 34°25'35", long 119°43'20", in Pueblo Lands of Santa Barbara, Santa Barbara County, Hydrologic Unit 18060013, on left bank 200 ft downstream from Los Olivos Street in Santa Barbara.

DRAINAGE AREA.--8.38 mi².

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder and low-flow concrete control. Concrete-lined channel. Elevation of gage is 105 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records poor. At times water is released to creek for ground-water recharge from Gibraltar tunnel several miles upstream. Control installed Nov. 26, 1979.

AVERAGE DISCHARGE.--20 years, 2.60 ft³/s, 1,880 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,580 ft³/s, Jan. 18, 1973, gage height, 4.97 ft, from rating curve extended above 41 ft³/s on basis of computation of flow in concrete-lined channel; maximum gage height, 5.45 ft, Feb. 16, 1980; no flow most of each year.

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. 16	2245	*115	*2.41				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	e.00	e.00	e.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	e.00	e.00	e.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	e.00	e.00	e.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	e1.0	e.00	e.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	e.00	e.00	e.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	e.00	e.00	e.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	e.30	e.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	e.05	e.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00
12	.00	.00	.00	6.0	.00	e.00	e.00	.00	.00	.00	.00	.00
13	.00	.00	.00	5.4	.00	e.00	e.00	.00	.00	.00	.00	.00
14	.00	.00	.00	5.2	.00	e.00	e.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.05	.00	e.00	e.00	.00	.00	.00	.00	.00
16	.00	e.00	.00	.19	11	e.00	e.00	.00	.00	.00	.00	.00
17	.00	e.00	.00	.01	10	e.00	e.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	e.77	e.00	e.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	e.10	e.00	e.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	e.00	e.00	e.00	.00	.00	.00	.00	.00
21	1.2	.00	.00	.00	e.00	e.00	e.00	.00	.00	.00	.00	.00
22	.01	.00	.00	.00	e.00	e.00	e.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	e.00	e.00	e.00	.00	.00	.00	.00	.00
24	.02	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00	e.00
25	.00	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00	e.00
26	.00	1.6	.00	.00	e.00	e.00	.00	.00	.00	.00	.00	e.00
27	.00	.00	.00	e.00	e.00	e.00	.00	.76	.00	.00	.00	e.00
28	.00	.00	.00	e.00	e.00	e.00	.00	.97	.00	.00	.00	e.00
29	.00	.00	.00	e.00	---	e.00	.00	.00	.00	.00	.00	e.00
30	.00	.00	.00	e.00	---	e.00	.00	.00	.00	.00	.00	e.00
31	.00	---	.00	e.00	---	e.00	---	.00	---	.00	.00	---
TOTAL	1.23	1.60	0.00	16.85	22.87	0.35	0.00	1.73	0.00	0.00	0.00	0.00
MEAN	.040	.053	.000	.54	.82	.011	.000	.056	.000	.000	.000	.000
MAX	1.2	1.6	.00	6.0	11	.30	.00	.97	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	2.4	3.2	.00	33	45	.7	.00	3.4	.00	.00	.00	.00

CAL YR 1989 TOTAL 38.52 MEAN .11 MAX 20 MIN .00 AC-FT 76
WTR YR 1990 TOTAL 44.63 MEAN .12 MAX 11 MIN .00 AC-FT 89

e Estimated.

11119780 ARROYO BURRO AT SANTA BARBARA, CA

LOCATION.--Lat 34°26'13", long 119°44'44", in Pueblo Lands of Santa Barbara, Santa Barbara County, Hydrologic Unit 18060013, on right bank 0.2 mi south of State Street on Hope Avenue in Santa Barbara.

DRAINAGE AREA.--6.65 mi².

PERIOD OF RECORD.--October 1970 to current year. Prior to October 1988, published as Arroyo Burro Creek.

REVISED RECORDS.--WDR CA-76-1: 1974(M), 1975(P).

GAGE.--Water-stage recorder. Concrete-lined channel with a low-water control. Elevation of gage is 160 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. Small amount of inflow occurs at times from large shopping center that empties water directly into the stream. Partial regulation by Lauro Canyon Reservoir on San Roque Creek.

AVERAGE DISCHARGE.--20 years, 2.09 ft³/s, 1,510 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,850 ft³/s, Mar. 4, 1978, Feb. 16, 1980, from rating curve extended above 50 ft³/s on basis of slope-conveyance study; maximum gage height, 5.67 ft, Mar. 4, 1978; no flow for many days in most years.

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. 16	2230	*292	*3.14				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.01	.00	.62	.03	.00	.00	.00	.00	.00	.00	.00
2	.01	.02	.00	.06	.02	.00	.00	.00	.00	.00	.01	.01
3	.00	.02	.00	.01	.01	.00	.00	.01	.00	.00	.00	.00
4	.00	.00	.00	.02	3.1	.20	.00	.00	.00	.00	.00	.15
5	.01	.01	.00	.01	.00	.00	.00	.00	.00	.01	.01	.02
6	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.04
7	.00	.00	.00	.01	.01	.00	.00	.00	.01	.00	.00	.00
8	.01	.00	.00	.01	.03	.00	.00	.00	.00	.00	.01	.00
9	.01	.01	.00	.01	.01	.00	.00	.00	.00	.00	.00	.01
10	.01	.01	.01	.01	.01	.00	.00	.00	.01	.00	.00	.10
11	.00	.00	.02	.02	.02	.00	.00	.00	.00	.00	.00	.00
12	.01	.00	.01	11	.01	.00	.00	.00	.00	.01	.00	.00
13	.00	.01	.02	11	.01	.00	.00	.00	.00	.00	.00	.01
14	.00	.01	.01	5.5	.01	.00	.00	.00	.01	.00	.00	.00
15	.08	.01	.00	.70	.02	.00	.00	.00	.00	.01	.00	.00
16	.00	.00	.01	.95	20	.00	.34	.00	.00	.01	.01	.00
17	.00	.00	.01	.02	5.3	.00	.00	.00	.00	.01	.00	.00
18	.00	.00	.00	.00	.36	.00	.00	.00	.00	.01	.00	.00
19	.01	.00	.01	.01	.00	.00	.00	.00	.00	.01	.00	.00
20	.00	.00	.01	.00	.00	.00	.00	.00	.01	.00	.16	.45
21	1.6	.00	.02	.00	.06	.00	.00	.00	.04	.00	.62	.21
22	.26	.00	.00	.01	.00	.00	.00	.00	.00	.01	.45	.00
23	.07	.00	.00	.02	.00	.01	.00	.00	.00	.00	.01	.00
24	1.2	.00	.01	.02	.00	.00	.00	.00	.01	.00	.00	.00
25	.06	.00	.00	.04	.01	.00	.00	.00	.01	.00	.00	.00
26	.02	.00	.00	.03	.00	.00	.00	.00	.00	.02	.01	.00
27	.00	.00	.00	.03	.00	.01	.00	3.4	.00	.00	.00	.01
28	.00	.00	.01	.04	.00	.00	.00	1.0	.01	.00	.00	.00
29	.02	.00	.00	.02	---	.00	.00	.00	.00	.01	.00	.00
30	.01	.00	.01	.12	---	.00	.00	.16	.00	.00	.01	.00
31	.02	---	.02	.02	---	.00	---	.03	---	.01	.00	---
TOTAL	3.42	0.11	0.18	30.31	29.02	0.22	0.34	4.60	0.12	0.12	1.30	1.01
MEAN	.11	.004	.006	.98	1.04	.007	.011	.15	.004	.004	.042	.034
MAX	1.6	.02	.02	11	20	.20	.34	3.4	.04	.02	.62	.45
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	6.8	.2	.4	60	58	.4	.7	9.1	.2	.2	2.6	2.0

CAL YR 1989 TOTAL 55.07 MEAN .15 MAX 29 MIN .00 AC-FT 109
WTR YR 1990 TOTAL 70.75 MEAN .19 MAX 20 MIN .00 AC-FT 140

11119940 MARIA YGNACIO CREEK AT UNIVERSITY DRIVE, NEAR GOLETA, CA

LOCATION.--Lat 34°26'42", long 119°48'10", in Goleta Grant, Santa Barbara County, Hydrologic Unit 18060013, on right bank at University Drive, 0.2 mi east of Patterson Avenue, and 1.5 mi northeast of Goleta.

DRAINAGE AREA.--6.35 mi².

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 60 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair. No regulation upstream from station. Some pumping for irrigation.

AVERAGE DISCHARGE.--20 years, 1.55 ft³/s, 1,120 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,650 ft³/s, Jan. 16, 1978, gage height, 5.87 ft, from rating curve extended above 290 ft³/s on basis of slope-area measurement of peak flow; no flow most of each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 75 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	0145	*84	*2.10				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.24	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.99	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	1.1	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.81	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.22	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.04	5.5	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	5.2	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.07	e.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	e.00	.00	.00	.00	.00	.10	.00	.00	.00	.00
28	.00	.00	e.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
29	.00	.00	e.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	e.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	e.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.07	0.00	3.16	10.96	0.05	0.00	0.11	0.00	0.00	0.00	0.00
MEAN	.000	.002	.000	.10	.39	.002	.000	.004	.000	.000	.000	.000
MAX	.00	.07	.00	1.1	5.5	.04	.00	.10	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.1	.00	6.3	22	.1	.00	.2	.00	.00	.00	.00

CAL YR 1989 TOTAL 47.02 MEAN .13 MAX 9.3 MIN .00 AC-FT 93
WTR YR 1990 TOTAL 14.35 MEAN .039 MAX 5.5 MIN .00 AC-FT 28

e Estimated.

11120000 ATASCADERO CREEK NEAR GOLETA, CA

LOCATION.--Lat 34°25'29", long 119°48'39", in La Goleta Grant, Santa Barbara County, Hydrologic Unit 18060013, on downstream side of center pier of county road bridge 100 ft downstream from Maria Ygnacio Creek, 1.3 mi upstream from mouth, and 1.3 mi southeast of Goleta.

DRAINAGE AREA.--18.9 mi².

PERIOD OF RECORD.--October 1941 to current year. Prior to October 1947, published as "Atascadero Creek near Goleta."

REVISED RECORDS.--WSP 1928: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 8.59 ft, Santa Barbara County benchmark. Prior to Dec. 14, 1967, at site 275 ft downstream, datum 4.00 ft higher. Dec. 14, 1967, to Sept. 30, 1976, at datum 4.00 ft higher; and Oct. 1, 1976, to Sept. 30, 1978, at datum 2.00 ft higher, both at present site.

REMARKS.--Records fair except discharges below 1.0 ft³/s, which are poor. No regulation upstream from station. Small diversions for irrigation upstream from station. Some low flow results from return irrigation wastewater.

AVERAGE DISCHARGE.--49 years, 4.58 ft³/s, 3,320 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,380 ft³/s, Jan. 18, 1973, gage height, 17.1 ft, present datum, from rating curve extended above 2,300 ft³/s; maximum gage height, 17.3 ft, from floodmark, Dec. 3, 1974, present datum; no flow some days in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 225 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 12	2000	338	3.82	Feb. 17	unknown	*1,090	*5.54

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	e.00	.00	.00	e.00	.01	.00	.00	.02	.00	.00	.00
2	.00	e.00	.00	.78	e.00	.04	.00	.00	.02	.00	.00	.00
3	.00	e.00	.00	.06	e.00	.04	.00	.00	.02	.00	.00	.00
4	.00	e.00	.02	.00	e20	.02	.00	.00	.02	.00	.00	.00
5	.00	e.00	.05	.00	.07	.01	.00	.00	.02	.00	.00	.00
6	.00	e.00	.02	.00	.00	.00	.00	.00	.02	.00	.00	.00
7	.00	e.00	.00	.00	.00	.08	.00	.00	.02	.00	.00	.00
8	.00	e.00	.00	.00	.00	.03	.00	.00	.02	.03	.00	.00
9	.00	e.00	.00	.00	.00	.01	.00	.00	.02	.04	.00	.00
10	.00	e.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
11	.00	e.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00
12	.00	e.00	.00	41	.00	.00	.01	.00	.02	.00	.00	.00
13	.00	.00	.00	46	.00	.00	.02	.00	.02	.01	.00	.00
14	.00	.00	.00	27	.00	.00	.02	.00	.01	.00	.00	.00
15	.00	.00	.00	4.9	e.00	.00	.02	.00	.01	.00	.00	.00
16	.00	.00	.00	1.3	e185	.00	.14	.00	.00	.01	.00	.00
17	.00	.00	.00	1.7	e110	.00	.84	.00	.00	.00	.00	.00
18	.00	.00	.00	.10	e5.0	.00	.05	.00	.00	.00	.00	.00
19	.00	.00	.00	.02	e.50	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	e.01	e.06	.00	.00	.00	.00	.00	.00	.00
21	.08	.00	.00	e.00	e.06	.00	.00	.00	.00	.00	.00	.00
22	.37	.00	.00	e.00	e.05	.00	.00	.00	.00	.01	.00	.24
23	e.13	.00	.00	e.00	e.05	.00	.00	.00	.00	.00	.00	.01
24	e.00	.00	.00	e.00	e.02	.00	.01	.00	.00	.00	.00	.00
25	e.00	.00	.00	e.00	e.02	.00	.01	.00	.00	.00	.00	.00
26	e.00	7.4	.00	e.00	e.01	.01	.06	.00	.00	.00	.00	.00
27	e.00	.17	.00	e.00	.01	.02	.00	.20	.00	.00	.00	.00
28	e.00	.00	.00	e.00	.00	.01	.00	13	.00	.00	.00	.00
29	e.00	.00	.00	e.00	---	.01	.00	.36	.00	.00	.00	.00
30	e.00	.00	.00	e.00	---	.01	.00	.04	.00	.00	.00	.00
31	e.00	---	.00	e.00	---	.00	---	.02	---	.00	.00	---
TOTAL	0.58	7.57	0.09	122.87	320.85	0.30	1.18	13.62	0.28	0.10	0.00	0.25
MEAN	.019	.25	.003	3.96	11.5	.010	.039	.44	.009	.003	.000	.008
MAX	.37	7.4	.05	46	185	.08	.84	13	.02	.04	.00	.24
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	1.2	15	.2	244	636	.6	2.3	27	.6	.2	.00	.5

CAL YR 1989 TOTAL 162.48 MEAN .45 MAX 69 MIN .00 AC-FT 322
WTR YR 1990 TOTAL 467.69 MEAN 1.28 MAX 185 MIN .00 AC-FT 928

e Estimated.

11120500 SAN JOSE CREEK NEAR GOLETA, CA

LOCATION.--Lat 34°27'33", long 119°48'29", in La Goleta Grant, Santa Barbara County, Hydrologic Unit 18060013, on right bank 1.1 mi downstream from unnamed tributary and 1.7 mi northeast of Goleta.

DRAINAGE AREA.--5.51 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1941 to current year.

REVISED RECORDS.--WSP 1928: Drainage area.

GAGE.--Water-stage recorder and concrete low-water control. Datum of gage is 95.61 ft, Santa Barbara County Road Department datum. Prior to Dec. 24, 1955, at datum 5.50 ft higher. Dec. 24, 1955, to Jan. 10, 1960, at datum 1.5 ft higher. Prior to Oct. 1, 1971, at site 75 ft downstream.

REMARKS.--Records poor. No regulation upstream from station. Many small diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--49 years, 1.99 ft³/s, 1,440 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,000 ft³/s, Jan. 25, 1969, gage height, 10.10 ft, from rating curve extended above 400 ft³/s on basis of slope-area measurement at gage height 9.32 ft; maximum gage height, 12.74 ft, present datum, Jan. 21, 1943; no flow at times in most years.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	unknown	*212	*4.95				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	e.00	e.00	e.02	e.00	.23	.03	.01	.00	.00	.00	.00
2	e.00	e.00	e.00	e.01	e.00	.23	.03	.01	.00	.00	.00	.00
3	e.00	e.00	e.00	e.01	e.00	.23	.03	.01	.00	.00	.00	.00
4	e.00	e.00	e.00	e.00	e.75	.23	.03	.01	.00	.00	.00	.00
5	e.00	e.00	e.00	e.00	e.06	.23	.03	.01	.00	.00	.00	.00
6	e.00	e.00	e.00	e.00	e.06	.20	.03	.00	.00	.00	.00	.00
7	e.00	e.00	e.00	e.00	e.06	.20	.03	.00	.00	.00	.00	.00
8	e.00	e.00	e.00	e.00	e.05	.23	.02	.00	.00	.00	.00	.00
9	e.00	e.00	e.00	e.00	e.04	.23	.02	.00	.00	.00	.00	.00
10	e.00	e.00	e.00	e.00	e.03	.18	.02	.00	.00	.00	.00	.00
11	e.00	e.00	e.00	e.00	e.02	.18	.02	.00	.00	.00	.00	.00
12	e.00	e.00	e.00	e3.0	e.01	.17	.02	.00	.00	.00	.00	.00
13	e.00	e.00	e.00	e2.0	e.01	.04	.03	.00	.00	.00	.00	.00
14	e.00	e.00	e.00	e1.0	e.01	.03	.03	.00	.00	.00	.00	.00
15	e.00	e.00	e.00	e.40	e.01	.03	.03	.00	.00	.00	.00	.00
16	e.00	e.00	e.00	e.04	e5.0	.03	.03	.00	.00	.00	.00	.00
17	e.00	e.00	e.00	e.01	e10	.03	.03	.00	.00	.00	.00	.00
18	e.00	e.00	e.00	e.01	e1.3	.03	.03	.00	.00	.00	.00	.00
19	e.00	e.00	e.00	e.01	.86	.03	.03	.00	.00	.00	.00	.00
20	e.00	e.00	e.00	e.00	.55	.03	.03	.00	.00	.00	.00	.00
21	e.07	e.00	e.00	e.00	.48	.03	.02	.00	.00	.00	.00	.00
22	e.00	e.00	e.00	e.00	.39	.03	.02	.00	.00	.00	.00	.00
23	e.00	e.00	e.00	e.00	.38	.03	.00	.00	.00	.00	.00	.00
24	e.10	e.00	e.00	e.00	.37	.03	.01	.00	.00	.00	.00	.00
25	e.00	e.00	e.00	e.00	.30	.03	.01	.00	.00	.00	.00	.00
26	e.00	e.15	e.00	e.00	.29	.03	.00	.00	.00	.00	.00	.00
27	e.00	e.00	e.00	e.00	.23	.03	.01	.00	.02	.00	.00	.00
28	e.00	e.00	e.00	e.00	.23	.03	.01	.02	.01	.00	.00	.00
29	e.00	e.00	e.00	e.00	---	.03	.01	.00	.00	.00	.00	.00
30	e.00	e.00	e.00	e.00	---	.03	.00	.00	.00	.00	.00	.00
31	e.00	---	e.00	e.00	---	.03	---	.00	---	.00	.00	---
TOTAL	0.17	0.15	0.00	6.51	21.49	3.12	0.64	0.07	0.03	0.00	0.00	0.00
MEAN	.005	.005	.000	.21	.77	.10	.021	.002	.001	.000	.000	.000
MAX	.10	.15	.00	3.0	.10	.23	.03	.02	.02	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00
AC-FT	.3	.3	.00	13	43	6.2	1.3	.1	.06	.00	.00	.00

CAL YR 1989 TOTAL 66.80 MEAN .18 MAX 15 MIN .00 AC-FT 132
WTR YR 1990 TOTAL 32.18 MEAN .088 MAX 10 MIN .00 AC-FT 64

e Estimated.

SAN JOSE CREEK BASIN

11120500 SAN JOSE CREEK NEAR GOLETA, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)							
FEB												
05...	1600	0.06	1550	11.0	1250							
MAR												
27...	1555	0.08	2100	13.0	1720							

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	BARO- METRIC PRES- SURE (MM OF HG)	OXYGEN, DIS- SOLVED (MG/L)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION)	CALCIUM DIS- SOLVED (MG/L AS CA)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG)	SODIUM, DIS- SOLVED (MG/L AS NA)	POTAS- SIUM, DIS- SOLVED (MG/L AS K)
FEB												
27...	1430	0.25	1350	8.0	13.0	760	14.4	137	150	46	84	2.0

DATE	BICAR- BONATE WATER WH IT FIELD MG/L AS HCO3	ALKA- LINITY WAT WH TOT IT FIELD MG/L AS CACO3	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB											
27...	296	295	390	56	0.40	16	<0.100	0.010	110	10	41

11120510 SAN JOSE CREEK AT GOLETA, CA

LOCATION.--Lat 34°25'49", long 119°49'16", in La Goleta Grant, Santa Barbara County, Hydrologic Unit 18060013, on right bank south of Hollister Avenue on Kellogg Avenue and 0.5 mi southeast of Goleta.

DRAINAGE AREA.--9.42 mi².

PERIOD OF RECORD.--October 1970 to current year.

REVISED RECORDS.--WDR CA-75-1: 1973(M).

GAGE.--Water-stage recorder and concrete channel. Elevation of gage is 10 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. No regulation upstream from station. Diversions for irrigation and domestic use upstream from station.

AVERAGE DISCHARGE.--20 years, 2.76 ft³/s, 2,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,330 ft³/s, Mar. 4, 1978, gage height, 5.65 ft, from rating curve extended above 400 ft³/s on basis of slope-conveyance computation of flow in concrete channel at gage height 8.00 ft; no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft³/s and maximum (*), from rating curve extended as explained above:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	0145	*166	*2.15				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	1.5	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00
12	.00	.00	.00	5.8	.00	.00	.16	.00	.00	.00	.00	.00
13	.00	.00	.00	3.3	.00	.00	.23	.00	.00	.00	.00	.00
14	.00	.00	.00	2.7	.00	.00	.24	.00	.00	.00	.00	.00
15	.00	.00	.00	.80	.00	.00	.21	.00	.00	.00	.00	.00
16	.00	.00	.00	.08	9.9	.00	.40	.01	.00	.00	.00	.00
17	.00	.00	.00	.02	21	.00	.18	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	2.4	.00	.18	.00	.00	.01	.00	.00
19	.00	.00	.00	.00	.69	.00	.19	.03	.00	.00	.00	.00
20	.00	.00	.00	.00	.31	.00	.37	.00	.00	.00	.00	.00
21	.15	.00	.00	.00	.18	.00	.06	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.10	.01	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
24	.22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.32	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.78	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.08	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.37	0.33	0.00	12.81	36.10	0.01	2.63	2.02	0.00	0.01	0.00	0.00
MEAN	.012	.011	.000	.41	1.29	.000	.088	.065	.000	.000	.000	.000
MAX	.22	.32	.00	5.8	21	.01	.40	1.2	.00	.01	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.7	.7	.00	25	72	.02	5.2	4.0	.00	.02	.00	.00

CAL YR 1989 TOTAL 76.99 MEAN .21 MAX 23 MIN .00 AC-FT 153
WTR YR 1990 TOTAL 54.28 MEAN .15 MAX 21 MIN .00 AC-FT 108

CARNEROS CREEK BASIN

11120530 TECOLOTITO CREEK NEAR GOLETA, CA

LOCATION.--Lat 34°26'05", long 119°52'04", in Los Dos Pueblos Grant, Santa Barbara County, Hydrologic Unit 18060013, on right bank 0.2 mi east of Glen Annie Road and 2.1 mi west of Goleta.

DRAINAGE AREA.--4.42 mi².

PERIOD OF RECORD.--October 1970 to September 1972, January 1980 to September 1982, October 1987 to current year.

REVISED RECORDS.--WDR CA-89-1: 1988(P).

GAGE.--Water-stage recorder and concrete channel. Elevation of gage is 40 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Jan. 25, 1980, at same site at different datum.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No regulation upstream from station. Some pumping for irrigation and water is occasionally released to channel from Tecolote tunnel.

AVERAGE DISCHARGE.--7 years (water years 1971-72, 1981-82, 1988-90), 0.58 ft³/s, 420 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,610 ft³/s, Feb. 16, 1980, gage height, 4.47 ft, from rating curve extended above 160 ft³/s on basis of slope-conveyance computation of flow in concrete channel; no flow at times in some years.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 16	2330	*53	*2.19				

No flow for several days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.05	.05	.10	.05	.10	.07	.09	.02	.02	.04	.01
2	.04	.04	.05	.09	.04	.10	.07	.10	.01	.04	.04	.01
3	.05	.04	.05	.05	.04	.11	.06	.10	.02	.03	.06	.01
4	.04	.04	.05	.05	.40	.10	.07	.11	.02	.02	.04	.01
5	.04	.05	.06	.06	.07	.08	.07	.09	.02	.02	.03	.01
6	.05	.05	.06	.05	.05	.08	.07	.05	.02	.01	.03	.01
7	.05	.06	.05	.05	.05	.09	.07	.06	.02	.03	.03	.00
8	.05	.07	.05	.06	.04	.09	.05	.08	.02	.02	.04	.00
9	.05	.07	.06	.06	.05	.09	.05	.09	.03	.02	.08	.00
10	.06	.04	.05	.06	.05	.08	.05	.09	.02	.02	.03	.00
11	.07	.04	.06	.06	.06	.08	.05	.08	.02	.03	.04	.00
12	.07	.05	.06	.77	.06	.09	.04	.08	.03	.02	.03	.01
13	.06	.05	.06	.48	.06	.09	.05	.06	.03	.02	.04	.00
14	.08	.05	.06	.08	.06	.09	.06	.09	.03	.03	.06	.01
15	.08	.06	.07	.06	.05	.09	.05	.07	.04	.01	.04	.00
16	.07	.06	.06	e.06	2.2	.08	.43	.09	.03	.03	.03	.01
17	.07	.06	.06	e.06	6.8	.08	.11	.08	.03	.03	.03	.00
18	.06	.06	.06	e.06	.40	.08	.07	.08	.05	.04	.04	.01
19	.06	.07	.06	.06	.19	.08	.07	.07	.04	.03	.04	.01
20	.06	.07	.05	.06	.14	.08	.07	.04	.03	.02	.03	.08
21	.17	.08	.06	.06	.13	.08	.07	.05	.03	.02	.03	.09
22	.12	.08	.06	.06	.13	.08	.08	.05	.03	.03	.04	.04
23	.08	.08	.05	.06	.11	.08	.09	.06	.03	.04	.17	.05
24	.27	.07	.05	.05	.11	.09	.09	.04	.02	.06	.03	.05
25	.10	.08	.05	.05	.10	.08	.07	.03	.02	.05	.02	.02
26	.07	.24	.05	.05	.10	.08	.11	.04	.01	.03	.02	.02
27	.07	.08	.06	.05	.10	.08	.16	.30	.01	.02	.02	.02
28	.06	.06	.06	.05	.10	.08	.14	.29	.00	.03	.02	.01
29	.07	.06	.05	.05	---	.07	.10	.02	.00	.03	.02	.03
30	.06	.06	.05	.06	---	.07	.08	.03	.03	.03	.01	.05
31	.05	---	.05	.05	---	.07	---	.02	---	.04	.00	---
TOTAL	2.26	1.97	1.72	2.97	11.74	2.62	2.62	2.53	0.71	0.87	1.18	0.57
MEAN	.073	.066	.055	.096	.42	.085	.087	.082	.024	.028	.038	.019
MAX	.27	.24	.07	.77	6.8	.11	.43	.30	.05	.06	.17	.09
MIN	.03	.04	.05	.05	.04	.07	.04	.02	.00	.01	.00	.00
AC-FT	4.5	3.9	3.4	5.9	23	5.2	5.2	5.0	1.4	1.7	2.3	1.1

CAL YR 1989 TOTAL 50.75 MEAN .14 MAX 6.4 MIN .03 AC-FT 101
WTR YR 1990 TOTAL 31.76 MEAN .087 MAX 6.8 MIN .00 AC-FT 63

e Estimated.

11121000 SANTA YNEZ RIVER AT JAMESON LAKE, NEAR MONTECITO, CA

LOCATION.--Lat 34°29'32", long 119°30'25", in NE 1/4 NW 1/4 sec.28, T.5 N., R.25 W., Santa Barbara County, Hydrologic Unit 18060010, on upstream face of Juncal Dam, 6.5 mi north of Carpinteria, and 8 mi northeast of Montecito.

DRAINAGE AREA.--13.9 mi², excludes that of Alder Creek.

PERIOD OF RECORD.--December 1930 to current year. Prior to October 1938, published as "at Juncal Reservoir, near Montecito."

GAGE.--Two water-stage recorders. Datum of lake gage is 2,021.6 ft above National Geodetic Vertical Datum of 1929 (U.S. Bureau of Reclamation bench mark). Supplementary gage and sharp-crested weir on outlet conduit of lake release, at different datum.

REMARKS.--Records of total inflow represent all water reaching Jameson Lake, including precipitation on the lake. Total inflow computed on basis of records of storage, diversion (draft) to city of Montecito, spill and release to river, evaporation, and seepage. Records of net inflow exclude precipitation on lake surface. Monthly evaporation from lake surface computed on basis of evaporation from U.S. Weather Bureau Class A land pan. Area and capacity tables are based on survey made in 1980. Lake capacity at spillway level, gage height 223.82 ft, 5,725 acre-ft. Dead storage, 32 acre-ft, below lowest outlet at gage height 139.0 ft included in these records. There is no regulation or diversion upstream from station. At times flow of Alder Creek, which enters Santa Ynez River 2 mi downstream from Juncal Dam, is diverted at elevation 2,250 ft through a tunnel to Jameson Lake and is included in these records.

COOPERATION.--Reservoir-operation records and related data were provided by Montecito Water District.

AVERAGE DISCHARGE.--59 years (water years 1932-90), 6.86 ft³/s, 4,970 acre-ft/yr.

MONTHLY NET INFLOW, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

Date	Elevation (feet) ^a	Contents (acre- feet)	Change in contents (acre- feet)	Draft (acre- feet)	Spill and release (acre- feet)	Evapo- ration and seepage (acre- feet)	Total inflow (acre- feet)	Rain on reservoir (acre- feet)	Net inflow (acre- feet)
Sept. 30.....	2,197.81	2,850	--	--	--	--	--	--	--
Oct. 31.....	2,195.96	2,690	-160	145	0	25	10	10	0
Nov. 30.....	2,194.19	2,530	-160	134	0	31	5	5	0
Dec. 31.....	2,192.48	2,390	-140	142	0	13	15	0	15
CAL YR 1989.....	--	--	-1,430	1,648	0	416	634	92	451
Jan. 31.....	2,191.94	2,350	-40	90	0	4	54	48	6
Feb. 28.....	2,191.98	2,350	0	59	0	5	64	29	35
Mar. 31.....	2,191.76	2,330	-20	65	0	11	56	3	53
Apr. 30.....	2,191.20	2,290	-40	69	0	14	43	0	43
May 31.....	2,189.60	2,160	-130	95	0	40	5	5	0
June 30.....	2,188.34	2,060	-100	121	0	34	55	0	55
July 31.....	2,186.11	1,890	-170	132	0	43	5	0	5
Aug. 31.....	2,183.97	1,740	-150	122	0	28	0	0	0
Sept. 30.....	2,181.43	1,570	-170	136	0	33	1	1	0
WTR YR 1990.....	--	--	-1,280	1,310	0	281	313	101	212

^a Elevation at 0800.

NOTE.--For months when inflow to the lake was small and other quantities were large, preliminary computations may indicate negative net inflow. This arises primarily from the difficulty of computing net inflow as the residual of several large quantities, which are not conducive to precise measurement. When this occurs, evaporation and seepage is adjusted to produce non-negative inflows.

11122000 SANTA YNEZ RIVER ABOVE GIBRALTAR DAM, NEAR SANTA BARBARA, CA

LOCATION.--Lat 34°31'34", long 119°41'08", in NW 1/4 SW 1/4 sec.11, T.5 N., R.27 W., Santa Barbara County, Hydrologic Unit 18060010, on upstream face of Gibraltar Dam and 7 mi north of Santa Barbara.

DRAINAGE AREA.--216 mi².

PERIOD OF RECORD.--April 1920 to current year. November 1903 to November 1918 (fragmentary) at river station at damsite; records not equivalent because records since April 1920 are based on operation of Gibraltar Reservoir, and since December 1930, Jameson Lake. Prior to October 1945, published as "Santa Ynez River near Santa Barbara."

REVISED RECORDS.--WDR CA-86-1: 1934-43.

GAGE.--Two water-stage recorders. Datum of gage is National Geodetic Vertical Datum of 1929. Supplementary gage and sharp-crested weir on diversion from reservoir at different datum. See WSP 1735 for history of changes on both gages prior to Oct. 1, 1955. Spill and release measured by streamgaging station below dam (station 11123000).

REMARKS.--Records of total inflow represent all water reaching Gibraltar Reservoir, including precipitation on reservoir. Total inflow computed on basis of records of storage, diversion (draft) to city of Santa Barbara, spill and release to river, evaporation, and seepage. Records of net inflow exclude precipitation on reservoir surface. Monthly evaporation from reservoir surface computed on basis of evaporation from U.S. Weather Bureau Class A land pan. Area and capacity tables, used Oct. 1 to Apr. 30, are based on survey made in September 1986. Reservoir capacity at spillway level, elevation, 1,399.82 ft, 8,240 acre-ft. Lowest outlet at elevation 1,333.86 ft. Area and capacity tables, used May 1 to Sept. 30, are based on survey made in February 1989. Reservoir capacity at spillway level, elevation, 1,399.82 ft, 8,440 acre-feet. Flow regulated by Jameson Lake (see station 11121000) since December 1930.

COOPERATION.--Reservoir-operation records and related data were provided by city of Santa Barbara.

MONTHLY NET INFLOW, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

Date	Elevation (feet) ^a	Contents (acre-feet)	Change in contents (acre-feet)	Draft (acre-feet)	Spill and release (acre-feet)	Evaporation and seepage (acre-feet)	Total inflow (acre-feet)	Rain on reservoir (acre-feet)	Net inflow (acre-feet)
Sept. 30.....	1,352.31	337	--	--	--	--	--	--	--
Oct. 31.....	1,349.13	101	-236	185	0	55	4	4	0
Nov. 30.....	--	0	-101	70	0	31	0	0	0
Dec. 31.....	--	0	0	0	0	0	0	0	0
CAL YR 1989.....	--	--	-2,890	4,395	0	573	2,078	106	1,972
Jan. 31.....	--	0	0	0	0	0	0	0	0
Feb. 28.....	--	0	0	0	0	0	0	0	0
Mar. 31.....	--	0	0	0	0	0	0	0	0
Apr. 30.....	--	0	0	0	0	0	0	0	0
May 31.....	--	0	0	0	0	0	0	0	0
June 30.....	--	0	0	0	0	0	0	0	0
July 31.....	--	0	0	0	0	0	0	0	0
Aug. 31.....	--	0	0	0	0	0	0	0	0
Sept. 30.....	--	0	0	0	0	0	0	0	0
WTR YR 1990.....	--	--	-337	255	0	86	4	4	0

^a Elevation at 0800.

NOTE.--For months when inflow to the reservoir was small and other quantities were large, negative figures of inflow may appear. This arises primarily from the difficulty of computing inflow as the residual of several larger quantities, which are not conducive to precise measurement. When this occurs, evaporation and seepage is adjusted to produce non-negative inflows. Reservoir dry Nov. 13 to Sept. 30.

11123000 SANTA YNEZ RIVER BELOW GIBRALTAR DAM, NEAR SANTA BARBARA, CA

LOCATION.--Lat 34°31'28", long 119°41'11", in SW 1/4 SW 1/4 sec.11, T.5 N., R.27 W., Santa Barbara County, Hydrologic Unit 18060010, on left bank 700 ft downstream from Gibraltar Dam and 7 mi north of Santa Barbara.

DRAINAGE AREA.--216 mi².

PERIOD OF RECORD.--April 1920 to current year (monthly discharge only prior to October 1941).

REVISED RECORDS.--WDR CA-86-1: 1934-43.

GAGE.--Two water-stage recorders. Datum of gage on main channel is 1,227 ft above National Geodetic Vertical Datum of 1929. Supplementary gage and sharp-crested weir on the release channel from Gibraltar Dam to river at different datum. See WSP 1735 for history of changes on both gages prior to May 20, 1958.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Jameson Lake (see station 11121000) and Gibraltar Reservoir (see station 11122000). City of Santa Barbara diverted 255 acre-ft during current year from Gibraltar Reservoir; Montecito Water District diverted 1,310 acre-ft during current year from Jameson Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 54,200 ft³/s, Jan. 25, 1969, gage height, 25.8 ft, from rating curve extended above 2,100 ft³/s on basis of computations of flow from gate openings and flow over dam at gage heights 17.5 and 25.8 ft; no flow at times in most years.

EXTREMES FOR CURRENT YEAR.--No flow for 1990 water year.

SANTA YNEZ RIVER BASIN

11123500 SANTA YNEZ RIVER BELOW LOS LAURELES CANYON, NEAR SANTA YNEZ, CA

LOCATION.--Lat 34°32'37", long 119°51'50", in San Marcos Grant, Santa Barbara County, Hydrologic Unit 18060010, on left bank 0.3 mi downstream from Los Laureles Canyon Creek, 10 mi downstream from Gibraltar Reservoir, and 13.3 mi east of Santa Ynez.

DRAINAGE AREA.--277 mi².

PERIOD OF RECORD.--April 1947 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

GAGE.--Water-stage recorder. Datum of gage is 787.8 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No estimated daily discharges. Records poor. Flow regulated by Jameson Lake and Gibraltar Reservoir (stations 11121000 and 11122000). Water diverted out of basin from these reservoirs to cities of Montecito and Santa Barbara for municipal supply. Low flow affected by intermittent pumping for irrigation from infiltration gallery in riverbed at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 67,500 ft³/s, Jan. 25, 1969, gage height, 18.88 ft, from rating curve extended above 11,600 ft³/s on basis of peak flow for station below Gibraltar Dam plus tributary inflow; no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 50 ft³/s, Feb. 17, gage height, 4.02 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	10	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.49	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	10.72	0.04	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.38	.001	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	10	.01	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	21	.08	.00	.00	.00	.00	.00	.00

CAL YR 1989 TOTAL 30.55 MEAN .084 MAX .69 MIN .00 AC-FT 61
WTR YR 1990 TOTAL 10.76 MEAN .029 MAX 10 MIN .00 AC-FT 21

11124500 SANTA CRUZ CREEK NEAR SANTA YNEZ, CA

LOCATION.--Lat 34°35'48", long 119°54'28", in San Marcos Grant, Santa Barbara County, Hydrologic Unit 18060010, on right bank 0.6 mi downstream from Pine Canyon and 9.9 mi east of Santa Ynez.

DRAINAGE AREA.--74.0 mi².

PERIOD OF RECORD.--October 1941 to current year. Monthly discharge only for some periods, published in WSP 1315-B.

GAGE.--Water-stage recorder. Datum of gage is 783.38 ft above National Geodetic Vertical Datum of 1929. See WSP 1735 for history of changes prior to Sept. 27, 1952. Sept. 27, 1952, to June 24, 1969, at datum 3.25 ft higher.

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

AVERAGE DISCHARGE.--49 years, 16.8 ft³/s, 12,170 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,050 ft³/s, Feb. 24, 1969, gage height, 14.45 ft, from floodmark, present datum, from rating curve extended above 2,500 ft³/s on basis of slope-area measurement at gage height 14.16 ft; no flow at times since 1953.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft³/s and maximum (*), from rating curve extended above 160 ft³/s on basis of slope-area measurement at gage height 12.10 ft:

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 18	2400	*1.9	*6.69				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.48	.31	.07	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.48	.28	.07	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.49	.25	.06	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.52	.22	.06	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.62	.19	.05	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.58	.18	.05	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.54	.17	.05	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.51	.16	.04	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.54	.16	.04	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.58	.14	.04	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.66	.14	.03	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.65	.14	.03	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.58	.14	.03	.00	.00	.00	.00
14	.00	.00	.00	.01	.00	.60	.13	.02	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.58	.13	.02	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.50	.16	.02	.00	.00	.00	.00
17	.00	.00	.00	.00	.06	.46	.13	.02	.00	.00	.00	.00
18	.00	.00	.00	.00	1.1	.41	.12	.02	.00	.00	.00	.00
19	.00	.00	.00	.00	1.2	.38	.11	.01	.00	.00	.00	.00
20	.00	.00	.00	.00	.35	.35	.10	.01	.00	.00	.00	.00
21	.00	.00	.00	.00	.12	.27	.10	.01	.00	.00	.00	.00
22	.00	.00	.00	.00	.06	.23	.10	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.22	.10	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.32	.22	.09	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.74	.23	.09	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.46	.28	.09	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.37	.29	.08	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.44	.39	.08	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.45	.08	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.36	.08	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.35	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.01	5.22	13.80	4.25	0.75	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.19	.45	.14	.024	.000	.000	.000	.000
MAX	.00	.00	.00	.01	1.2	.66	.31	.07	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.22	.08	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.02	10	27	8.4	1.5	.00	.00	.00	.00

CAL YR 1989 TOTAL 861.43 MEAN 2.36 MAX 157 MIN .00 AC-FT 1710
WTR YR 1990 TOTAL 24.03 MEAN .066 MAX 1.2 MIN .00 AC-FT 48

SANTA YNEZ RIVER BASIN

11125500 LAKE CACHUMA NEAR SANTA YNEZ, CA

LOCATION.--Lat 34°34'57", long 119°58'47", in Lomas de la Purification Grant, Santa Barbara County, Hydrologic Unit 18060010, at Bradbury Dam on Santa Ynez River, on upstream face near left end of dam, and 6.1 mi east of Santa Ynez.

DRAINAGE AREA.--417 mi².

PERIOD OF RECORD.--November 1952 to current year. Prior to October 1985, only monthend elevations and contents and total diversions published. November 1952 to October 1960, published as "Cachuma Reservoir near Santa Ynez."

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (U.S. Bureau of Reclamation bench mark). Prior to Oct. 1, 1965, nonrecording gage.

REMARKS.--Reservoir is formed by earthfill dam. Storage began November 1952. From capacity table used October 1, 1989, to May 31, 1990: Dead storage below outlet gage to river, elevation, 600 ft, 3,114 acre-ft, included in contents. Capacity below sill of inlet to Tecolote tunnel, elevation, 660 ft, 32,514 acre-ft; below spillway level, elevation, 720 ft, 125,292 acre-ft; and below top of four radial gates, elevation, 750 ft, 204,874 acre-ft. From capacity table used June 1 to Sept. 30, 1990: elevation, 600 ft, 531 acre-ft; elevation, 660 ft, 26,771 acre-ft; elevation 720 ft, 113,716 acre-ft; and elevation, 750 ft, 190,409 acre-ft. Water is released from outlet to Santa Ynez River to satisfy downstream water rights. Water diverted to Tecolote tunnel for use by city of Santa Barbara, nearby communities, and Santa Ynez River Water Conservation District, and to Cachuma recreation area.

COOPERATION.--Reservoir elevation, contents, and diversion figures were provided by U.S. Bureau of Reclamation. Contents not rounded to U.S. Geological Survey standards.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 221,100 acre-ft, Feb. 24, 1969, elevation, 755.11 ft; minimum since initial filling in April 1958, 34,188 acre-ft, Sept. 30, 1990, elevation 668.13 ft.

EXTREMES (AT 0800) FOR CURRENT YEAR.--Maximum contents, 66,010 acre-ft, Oct. 1, elevation, 687.93 ft; minimum, 34,188 acre-ft, Sept. 30, elevation, 668.13 ft.

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

Used Oct. 1 to May 31		Used June 1 to Sept 30	
675	48,513	665	31,199
680	54,874	670	36,074
685	61,738	675	41,474
690	69,129	680	47,346

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66010	63964	61810	60152	59399	58773	57538	55724	44779	42982	40589	36604
2	65936	63906	61781	60152	59357	58746	57511	55631	44768	42913	40522	36334
3	65817	63848	61738	60111	59343	58732	57485	55578	44756	42820	40455	36064
4	65729	63804	61681	60041	59357	58718	57430	55498	44733	42693	40365	35819
5	65670	63760	61653	59971	59315	58677	57390	55472	44686	42601	40299	35554
6	65566	63687	61625	59943	59287	58650	57349	55418	44638	42555	40244	35310
7	65477	63585	61568	59915	59273	58622	57309	55352	44592	42487	40200	35289
8	65433	63498	61525	59901	59245	58622	57255	55086	44544	42419	40123	35238
9	65344	63425	61454	59845	59203	58581	57201	54809	44497	42362	39991	35208
10	65256	63352	61369	59817	59189	58540	57187	54534	44415	42305	39881	35147
11	65152	63294	61270	59790	59175	58526	57134	54233	44345	42236	39793	35086
12	65064	63235	61199	59762	59161	58499	57080	53971	44262	42225	39716	35025
13	64975	63177	61100	59901	59133	58457	57012	53697	44169	42123	39672	34955
14	64916	63091	60986	59929	59078	58444	56931	53450	44075	42043	39606	34896
15	64857	63019	60972	59915	59036	58416	56823	53192	44016	41929	39529	34856
16	64768	62932	60916	59887	59008	58416	56715	53127	43957	41850	39463	34776
17	64709	62860	60873	59859	59133	58375	56634	53024	43898	41804	39397	34716
18	64679	62803	60845	59831	59147	58320	56580	52908	43839	41702	39331	34646
19	64620	62760	60774	59817	59092	58293	56540	52818	43781	41611	39243	34586
20	64548	62717	60703	59803	59078	58224	56499	52727	43734	41531	39189	34537
21	64460	62616	60632	59776	59036	58156	56445	52676	43700	41463	39135	34507
22	64387	62529	60561	59776	59008	58073	56418	52624	43642	41407	39081	34487
23	64358	62458	60533	59748	58994	58005	56364	52573	43584	41328	39027	34467
24	64314	62357	60519	59734	58966	57977	56283	52482	43503	41261	38757	34447
25	64270	62314	60490	59734	58924	57868	56229	52392	43422	41172	38466	34417
26	64198	62270	60433	59706	58883	57799	56202	52366	43364	41082	38185	34377
27	64198	62155	60363	59664	58842	57758	56096	52289	43318	41004	37930	34327
28	64110	62055	60334	59608	58814	57703	56029	52302	43237	40914	37855	34277
29	64096	61968	60292	59566	---	57648	55910	52238	43133	40824	37400	34227
30	64066	61896	60236	59524	---	57621	55804	52200	43052	40746	37146	34188
31	64023	---	60194	59441	---	57566	---	52149	---	40656	36885	---
MAX	66010	63964	61810	60152	59399	58773	57538	55724	44779	42982	40589	36604
MIN	64023	61896	60194	59441	58814	57566	55804	52149	43052	40656	36885	34188
a	686.58	685.11	683.91	683.37	682.92	682.01	680.70	677.90	676.38	674.27	670.78	668.13
b	-2075	-2127	-1702	-753	-627	-1248	-1762	-3655	-9097	-2396	-3771	-2697
c	1596	1834	1527	1189	930	1068	1509	1473	1414	1794	1584	1397

CAL YR 1989 b -31493

WTR YR 1990 b -31910

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

c Diversions, in acre-ft, to Tecolote tunnel.

11128250 ALAMO PINTADO CREEK NEAR SOLVANG, CA

LOCATION.--Lat 34°37'06", long 120°07'11", in NW 1/4 NW 1/4 sec.11, T.6 N., R.31 W., Santa Barbara County, Hydrologic Unit 18060010, on right bank at downstream side of bridge on Alamo Pintado Road, 1.5 mi northeast of Solvang.

DRAINAGE AREA.--29.4 mi².

PERIOD OF RECORD.--October 1970 to September 1985. October 1989 to September 1990. Records prior to October 1970 in files of Santa Barbara County Flood Control District.

GAGE.--Water-stage recorder. Datum of gage is 540.49 ft Santa Barbara County datum.

REMARKS.--Records good. No regulation upstream from station. Pumping from wells along stream for irrigation.

AVERAGE DISCHARGE.--16 years (water years 1971-85, 1990), 0.80 ft³/s, 580 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 900 ft³/s, Mar. 1, 1983, gage height, 6.10 ft, from rating curve extended above 70 ft³/s on basis of slope-area measurements at gage heights 4.90 ft and 5.51 ft; maximum gage height, 6.80 ft, Feb. 9, 1978, from floodmark; no flow most of each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 25, 1969, reached a stage of 10.32 ft, from information provided by Santa Barbara County Flood Control District.

EXTREMES FOR CURRENT YEAR.--No flow for 1990 water year.

SANTA YNEZ RIVER BASIN

11128300 ALISAL RESERVOIR NEAR SOLVANG, CA

LOCATION.--Lat 34°32'56", long 120°07'45", in NE 1/4 NW 1/4 sec.4, T.5 N., R.31 W., Santa Barbara County, Hydrologic Unit 18060010, in cove on right bank 0.4 mi upstream from reservoir spillway and 3 mi south of Solvang.

DRAINAGE AREA.--7.83 mi².

PERIOD OF RECORD.--December 1971 to current year. Prior to October 1985, only monthend elevations and contents published.

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

REMARKS.--Lake is formed by earthfill dam. Storage began Dec. 19, 1970. Usable capacity, 2,260 acre-ft between bottom of outlet gate at elevation 555.70 ft, and crest of spillway at elevation 599.88 ft. Dead storage, 110 acre-ft. Inflow must total 150 acre-ft during any one month between November and June in order to store flows for that water year.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 2,770 acre-ft, Mar. 4, 1978, elevation, 604.31 ft; minimum, 748 acre-ft, Nov. 8-10, 1972, elevation, 577.15 ft.

EXTREMES (AT 2400) FOR CURRENT YEAR.--Maximum contents, 1,690 acre-ft, Oct. 1-3, maximum elevation, 591.86 ft, Oct. 1; minimum contents, 1,230 acre-ft, Sept. 26-30, minimum elevation, 585.66 ft, Sept. 30.

Capacity table (elevation in feet, and contents, in acre-feet)
(Based on data provided by Santa Barbara County Flood Control District in 1971)

585	1,180
590	1,540
595	1,940

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1690	1650	1600	1570	1600	1670	1650	1630	1570	1430	1360	1280
2	1690	1650	1600	1570	1600	1670	1650	1630	1570	1430	1360	1280
3	1690	1640	1600	1570	1600	1670	1650	1630	1570	1430	1350	1280
4	1680	1640	1600	1570	1600	1670	1650	1620	1570	1430	1350	1280
5	1680	1640	1600	1570	1600	1670	1650	1620	1560	1420	1350	1270
6	1680	1640	1590	1570	1600	1670	1650	1620	1560	1420	1350	1270
7	1680	1640	1590	1570	1600	1670	1650	1620	1560	1420	1340	1270
8	1670	1630	1590	1570	1600	1670	1650	1620	1560	1420	1340	1270
9	1670	1630	1590	1570	1600	1670	1650	1610	1550	1410	1340	1270
10	1670	1630	1590	1570	1600	1670	1650	1610	1550	1410	1340	1270
11	1670	1630	1580	1570	1600	1670	1640	1610	1550	1410	1330	1260
12	1660	1630	1580	1580	1600	1670	1640	1610	1540	1410	1330	1260
13	1660	1630	1580	1600	1590	1670	1640	1600	1510	1400	1330	1260
14	1660	1620	1580	1600	1590	1670	1640	1600	1470	1400	1320	1250
15	1660	1620	1580	1600	1590	1670	1640	1600	1460	1400	1320	1250
16	1660	1620	1580	1600	1630	1670	1640	1600	1460	1400	1320	1250
17	1660	1620	1580	1600	1660	1670	1640	1590	1460	1390	1320	1250
18	1650	1620	1580	1600	1660	1670	1640	1590	1460	1390	1310	1250
19	1650	1620	1580	1600	1660	1670	1640	1590	1460	1390	1310	1250
20	1650	1620	1580	1600	1660	1660	1640	1590	1450	1390	1310	1240
21	1660	1620	1580	1600	1670	1660	1640	1580	1450	1380	1310	1240
22	1660	1610	1580	1600	1670	1660	1640	1580	1450	1380	1300	1240
23	1660	1610	1570	1600	1670	1660	1640	1580	1450	1380	1300	1240
24	1660	1610	1570	1600	1670	1660	1640	1580	1450	1380	1300	1240
25	1660	1610	1570	1600	1670	1660	1640	1580	1450	1370	1300	1240
26	1650	1610	1570	1600	1670	1660	1640	1570	1440	1370	1290	1230
27	1650	1610	1570	1600	1670	1660	1640	1580	1440	1370	1290	1230
28	1650	1610	1570	1600	1670	1660	1640	1580	1440	1370	1290	1230
29	1650	1610	1570	1600	---	1660	1640	1580	1440	1370	1290	1230
30	1650	1610	1570	1600	---	1660	1630	1580	1440	1360	1290	1230
31	1650	---	1570	1600	---	1650	---	1580	---	1360	1280	---
MAX	1690	1650	1600	1600	1670	1670	1650	1630	1570	1430	1360	1280
MIN	1650	1610	1570	1570	1590	1650	1630	1570	1440	1360	1280	1230
a	591.38	590.82	590.38	590.71	591.61	591.42	591.16	590.44	588.65	587.59	586.47	585.66
b	-40	-40	-40	+30	+70	-20	-20	-50	-140	-80	-80	-50

CAL YR 1989 b -460

WTR YR 1990 b -460

a Elevation, in feet, at end of month.

b Change in contents, in acre-feet.

11128500 SANTA YNEZ RIVER AT SOLVANG, CA

LOCATION.--Lat 34°35'06", long 120°08'37", in San Carlos de Jonata Grant, Santa Barbara County, Hydrologic Unit 18060010, near left bank on downstream end of pier of Alisal Road bridge, 25 ft downstream from Alisal Creek, 0.8 mi southwest of Solvang, and 10 mi downstream from Lake Cachuma.

DRAINAGE AREA.--579 mi².

PERIOD OF RECORD.--October 1928 to November 1936, June 1937 to November 1940 (irrigation seasons only), October 1946 to current year.

GAGE.--Water-stage recorder. Datum of gage is 357.43 ft above National Geodetic Vertical Datum of 1929. Various datums used during period of record. July 29 to Sept. 30, 1953, auxiliary water-stage recorder 750 ft upstream at different datum. Oct. 1, 1953, to Sept. 30, 1968, water-stage recorder at datum 2.00 ft higher. Oct. 1, 1968, to Sept. 30, 1988 water-stage recorder at datum 5.00 ft higher.

REMARKS.--No estimated daily discharges. Records fair. Flow regulated by Jameson Lake, Gibraltar Reservoir, and since November 1952 by Lake Cachuma (see stations 11121000, 11122000, and 11125500). Water diverted out of basin from Jameson Lake, Gibraltar Reservoir, and Lake Cachuma to cities of Montecito, Santa Barbara, and Goleta for municipal supply. Water for irrigation pumped from wells along banks of river in valley upstream.

EXTREMES FOR PERIOD OF RECORD (1928-36 and since 1946).--Maximum discharge, 82,000 ft³/s, Jan. 25, 1969, estimated on basis of discharge measurements up to 81,000 ft³/s for Santa Ynez River near Buellton, gage height, 17.1 ft, from floodmark; no flow for several months in many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 71 ft³/s, Sept. 4-6, gage height, 6.21 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.1
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	33
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	54
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	66
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	71
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	61
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	8.9
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.41
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	1.1	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	3.0	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	3.1	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	2.6	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	2.6	2.7	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	1.3	2.2	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.18	1.6	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.40	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	13.88	6.90	0.00	0.00	0.00	0.00	0.00	0.00	296.41
MEAN	.000	.000	.000	.45	.25	.000	.000	.000	.000	.000	.000	9.88
MAX	.00	.00	.00	3.1	2.7	.00	.00	.00	.00	.00	.00	71
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	28	14	.00	.00	.00	.00	.00	.00	588

CAL YR 1989 TOTAL 730.68 MEAN 2.00 MAX 78 MIN .00 AC-FT 1450
WTR YR 1990 TOTAL 317.19 MEAN .87 MAX 71 MIN .00 AC-FT 629

11129800 ZACA CREEK NEAR BUELLTON, CA

LOCATION.--Lat 34°38'55", long 120°11'00", in San Carlos de Jonata Grant, Santa Barbara County, Hydrologic Unit 18060010, on left bank 2 ft upstream of bridge on frontage road, 0.9 mi upstream from Dry Creek, 2.4 mi north of Buellton, and 4.0 mi upstream from mouth.

DRAINAGE AREA.-- 32.8 mi².

PERIOD OF RECORD.--September 1963 to September 1981. October 1989 to September 1990.

GAGE.--Water-stage recorder. Datum of gage is 471.54 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Some pumping from wells along stream for irrigation upstream from station. Small regulation by Zaca Lake, about 15 mi upstream.

AVERAGE DISCHARGE.--19 years, (water years 1964-81, 1990) 0.97 ft³/s, 703 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,390 ft³/s, Feb. 24, 1969, gage height, 9.20 ft; maximum gage height, 9.66 ft, Mar. 4, 1978; no flow most of each year.

EXTREMES FOR CURRENT YEAR.--No flow for 1990 water year.

11132500 SALSIPUEDES CREEK NEAR LOMPOC, CA

LOCATION.--Lat 34°35'19", long 120°24'27", in W 1/2 sec.24, T.6 N., R.34 W., Santa Barbara County, Hydrologic Unit 18060010, on right bank at bridge on Jalama Road, 0.4 mi downstream from El Jaro Creek, and 4.4 mi southeast of Lompoc.

DRAINAGE AREA.--47.1 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1941 to current year.

GAGE.--Water-stage recorder and concrete low-water control. Elevation of gage is 220 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. No regulation upstream from station. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--49 years, 9.55 ft³/s, 6,920 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,400 ft³/s, Mar. 15, 1952, gage height, 20.8 ft; no flow at times in some years.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	0300	*90	*2.05				

Minimum daily, 0.03 ft³/s, for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.05	.05	.05	.20	.22	.46	.07	.04	.03	.03	.05
2	.06	.05	.05	.11	.17	.22	.47	.07	.04	.03	.03	.06
3	.06	.05	.05	.07	.17	.24	.34	.07	.04	.03	.03	.07
4	.06	.05	.05	.06	.59	.35	.23	.06	.04	.03	.03	.07
5	.06	.05	.05	.06	.31	.37	.22	.06	.04	.03	.03	.05
6	.06	.05	.05	.06	.22	.34	.22	.06	.03	.04	.03	.03
7	.06	.05	.05	.06	.22	.37	.21	.06	.03	.04	.03	.03
8	.05	.05	.05	.06	.19	.37	.19	.06	.03	.04	.03	.03
9	.05	.05	.05	.06	.19	.36	.18	.06	.03	.04	.03	.03
10	.05	.05	.05	.06	.19	.37	.17	.05	.03	.03	.03	.03
11	.05	.05	.05	.06	.20	.37	.15	.05	.03	.03	.03	.03
12	.05	.05	.05	.12	.49	.37	.15	.05	.03	.03	.03	.03
13	.05	.05	.05	1.2	.45	.37	.13	.05	.03	.03	.03	.03
14	.05	.05	.05	1.3	.44	.37	.13	.05	.03	.03	.04	.03
15	.05	.05	.05	.95	.44	.37	.12	.05	.03	.03	.03	.03
16	.05	.05	.05	.38	.98	.37	.32	.05	.03	.03	.04	.03
17	.05	.05	.05	.47	17	.37	1.1	.05	.03	.03	.04	.03
18	.05	.05	.05	.29	.93	.37	.52	.05	.03	.03	.04	.03
19	.05	.05	.05	.22	.39	.37	.35	.05	.03	.03	.04	.03
20	.05	.05	.05	.19	.28	.37	.27	.05	.03	.03	.04	.03
21	.04	.05	.05	.20	.24	.37	.23	.05	.03	.03	.04	.03
22	.05	.05	.05	.18	.23	.37	.21	.05	.03	.03	.04	.03
23	.05	.05	.05	.17	.22	.37	.23	.05	.03	.03	.04	.03
24	.06	.05	.05	.17	.22	.37	.24	.05	.03	.03	.04	.04
25	.05	.05	.05	.17	.22	.37	.19	.05	.04	.03	.04	.04
26	.05	.05	.05	.17	.22	.37	.15	.05	.04	.03	.04	.04
27	.05	.05	.05	.17	.22	.37	.13	.05	.03	.03	.04	.04
28	.05	.05	.06	.17	.22	.42	.11	.08	.03	.03	.04	.04
29	.05	.05	.05	.16	---	.45	.09	.06	.03	.03	.04	.04
30	.05	.05	.05	.19	---	.44	.08	.05	.03	.03	.04	.04
31	.05	---	.05	.21	---	.43	---	.04	---	.03	.05	---
TOTAL	1.62	1.50	1.56	7.79	25.84	11.24	7.59	1.70	0.97	0.97	1.11	1.13
MEAN	.052	.050	.050	.25	.92	.36	.25	.055	.032	.031	.036	.038
MAX	.06	.05	.06	1.3	.17	.45	1.1	.08	.04	.04	.05	.07
MIN	.04	.05	.05	.05	.17	.22	.08	.04	.03	.03	.03	.03
AC-FT	3.2	3.0	3.1	15	51	22	15	3.4	1.9	1.9	2.2	2.2

CAL YR 1989 TOTAL 80.34 MEAN .22 MAX 1.8 MIN .01 AC-FT 159
WTR YR 1990 TOTAL 63.02 MEAN .17 MAX 17 MIN .03 AC-FT 125

11132500 SALSIPUEDES CREEK NEAR LOMPOC, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1978 to current year.

CHEMICAL DATA: Water years 1978 to current year.

pH: Water years 1982-83.

WATER TEMPERATURE: Water years 1982-83.

PERIOD OF DAILY RECORD.--

pH: Water years 1982-83.

WATER TEMPERATURE: Water years 1982-83.

INSTRUMENTATION.--Water-quality monitor, water years 1982-83.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
OCT					
11...	1220	0.05	1550	18.0	963
NOV					
07...	1015	0.05	1630	13.0	1080
DEC					
19...	1145	0.12	1830	8.0	1270
JAN					
17...	1030	0.48	1620	5.0	1120
MAR					
07...	1100	0.30	1620	14.0	1190
APR					
03...	1410	0.22	1690	17.0	1220
MAY					
09...	1345	0.12	1710	18.0	1160
JUN					
06...	0830	0.09	1680	15.0	1210
JUL					
12...	1120	0.04	1550	22.5	1110
AUG					
01...	1445	0.03	1550	20.0	1040
SEP					
05...	0950	0.02	1520	17.0	1050

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (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)
NOV									
07...	1015	0.05	1630	7.9	13.0	730	160	81	100

DATE	SODIUM PERCENT	SODIUM RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3)	ALKA-LINITY WAT DIS TOT IT 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)
NOV									
07...	23	2	4.3	635	0	520	280	140	0.30

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)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	BORON, DIS-SOLVED (UG/L AS B)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
NOV									
07...	36	1080	1110	1.47	<0.100	0.060	320	14	35

e Estimated

11133000 SANTA YNEZ RIVER AT NARROWS, NEAR LOMPOC, CA

LOCATION.--Lat 34°38'14", long 120°25'28", in Canada de Salsipuedes Grant, Santa Barbara County, Hydrologic Unit 18060010, on left bank 0.6 mi upstream from State Highway 246, 1.9 mi east of Lompoc, 1.8 mi downstream from Salsipuedes Creek, and 12.4 mi downstream from Lake Cachuma.

DRAINAGE AREA.--789 mi².

PERIOD OF RECORD.--May 1947 to November 1951 (irrigation seasons only). May 1952 to September 1963, October 1964 to September 1978, October 1980 to current year. Records equivalent, except for low-flow periods, to those published as "near Lompoc" (station 11133500), November to December 1906, October 1907 to September 1918, May 1925 to September 1960, and October 1978 to September 1980.

GAGE.--Two water-stage recorders. Elevation of main gage is 90 ft above National Geodetic Vertical Datum of 1929, from topographic map. See WSP 1715 for history of changes prior to Oct. 1, 1961. Since Oct. 1, 1961, at various sites and datums within 0.1 mi of present site. Supplementary gage, used for high-water periods, at site 0.6 mi downstream at datum 79.25 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by Jameson Lake, Gibraltar Reservoir, and since November 1952 by Lake Cachuma (see stations 11121000, 11122000, and 11125500). Water diverted out of Jameson Lake, Gibraltar Reservoir, and Lake Cachuma to cities of Montecito, Santa Barbara, and Goleta for municipal supply. Water pumped from wells along banks of river for irrigation in valley upstream.

EXTREMES FOR PERIOD OF RECORD (1952-63 and since 1964).--Maximum discharge, 80,000 ft³/s, Jan. 25, 1969, gage height, 24.20 ft, from supplementary gage; no flow at times in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 9, 1907, reached a stage of 22.0 ft, site and datum then in use, discharge, 120,000 ft³/s, from mean-depth study.

EXTREMES FOR CURRENT YEAR.--No flow for 1990 water year.

SANTA YNEZ RIVER BASIN

11134800 MIGUELITO CREEK AT LOMPOC, CA

LOCATION.--Lat 34°37'54", long 120°27'50", in Lompoc Grant, Santa Barbara County, Hydrologic Unit 18060010, on left bank at upstream end of debris dam and 1,900 ft south of Lompoc Union High School.

DRAINAGE AREA.--11.6 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1970 to May 6, 1986, October 1987 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 97.94 ft Santa Barbara County Flood Control District datum. Prior to May 6, 1986, on right bank at site 350 ft (revised) downstream at different datum.

REMARKS.--No estimated daily discharges. Records poor. No regulation or diversion upstream from station; some pumping from wells along stream for irrigation.

AVERAGE DISCHARGE.--18 years (water years 1971-85, 1988-90) 1.64 ft³/s, 1,190 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,210 ft³/s, Jan. 26, 1983, gage height, 7.63 ft, from rating curve extended above 380 ft³/s on basis of slope-area measurements at gage heights 4.34 ft and 7.63 ft; no flow many days in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 25, 1969, reached a stage of 5.83 ft, from floodmark, discharge, 680 ft³/s.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Jan. 14	0900	*228	*1.47	Feb. 16	2045	143	1.25

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.05	.02	.07	.33	.70	.23	.08	.08	.06	.03	.03
2	.03	.05	.02	1.3	.32	.70	.23	.08	.08	.07	.03	.03
3	.03	.05	.02	.05	.23	.70	.23	.07	.11	.08	.02	.02
4	.04	.04	.01	.05	.94	.70	.23	.06	.13	.08	.02	.02
5	.04	.04	.00	.04	.70	.70	.13	.06	.15	.08	.02	.02
6	.04	.04	.00	.03	.70	.70	.13	.06	.09	.08	.02	.02
7	.05	.05	.00	.04	.70	.48	.15	.06	.06	.07	.02	.02
8	.05	.03	.00	.04	.67	.23	.13	.06	.06	.07	.02	.02
9	.06	.03	.00	.03	.60	.23	.13	.06	.06	.06	.02	.02
10	.07	.03	.00	.03	.60	.23	.13	.06	.06	.06	.02	.02
11	.06	.03	.00	.03	.60	.24	.13	.06	.06	.06	.02	.02
12	.05	.02	.00	1.7	.60	.23	.10	.06	.07	.06	.02	.02
13	.05	.02	.00	8.0	.60	.23	.08	.06	.07	.07	.02	.02
14	.05	.01	.00	6.7	.60	.23	.08	.06	.07	.06	.02	.02
15	.05	.03	.00	2.6	.45	.23	.08	.06	.07	.08	.02	.02
16	.05	.00	.00	1.0	11	.23	.25	.06	.08	.10	.02	.02
17	.06	.00	.01	.85	1.4	.23	.08	.06	.08	.08	.02	.02
18	.07	.00	.02	.60	1.1	.23	.08	.06	.08	.07	.02	.02
19	.06	.00	.01	.49	.70	.23	.08	.06	.08	.06	.02	.02
20	.05	.00	.01	.43	.70	.23	.08	.06	.08	.06	.03	.02
21	.08	.00	.01	.43	.70	.23	.08	.06	.09	.06	.03	.02
22	.07	.00	.00	.43	.70	.23	.08	.06	.10	.05	.04	.02
23	.06	.00	.00	.34	.93	.23	.17	.07	.08	.05	.05	.02
24	.09	.00	.00	.33	.70	.23	.09	.06	.08	.05	.05	.02
25	.06	.03	.00	.33	.70	.23	.08	.05	.08	.05	.05	.02
26	.05	.19	.01	.33	.70	.23	.08	.05	.08	.05	.05	.02
27	.05	.00	.01	.33	.70	.23	.08	.13	.08	.04	.05	.02
28	.04	.14	.03	.23	.70	.23	.08	.25	.08	.03	.05	.02
29	.04	.02	.02	.25	---	.23	.08	.07	.08	.03	.06	.02
30	.04	.02	.02	.33	---	.23	.08	.07	.07	.03	.06	.02
31	.04	---	.02	.33	---	.25	---	.07	---	.03	.04	---
TOTAL	1.61	0.92	0.24	27.74	29.37	10.23	3.66	2.19	2.44	1.88	0.86	0.62
MEAN	.052	.031	.008	.89	1.05	.33	.12	.071	.081	.061	.031	.021
MAX	.09	.19	.03	8.0	11	.70	.25	.25	.15	.10	.06	.03
MIN	.03	.00	.00	.03	.23	.23	.08	.05	.06	.03	.02	.02
AC-FT	3.2	1.8	.5	55	58	20	7.3	4.3	4.8	3.7	1.9	1.2

CAL YR 1989 TOTAL 50.60 MEAN .14 MAX .76 MIN .00 AC-FT 100
WTR YR 1990 TOTAL 81.86 MEAN .22 MAX 11 MIN .00 AC-FT 162

SANTA YNEZ RIVER BASIN

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11134800 MIGUELITO CREEK AT LOMPOC, CA--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1980-86, 1988 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)
OCT					
11...	0940	0.06	1570	15.0	1130
NOV					
07...	1400	0.05	1340	14.0	902
DEC					
18...	1355	0.01	1380	10.5	925
JAN					
17...	1330	e0.72	1190	9.0	830
MAR					
07...	0815	e0.36	1320	10.5	980
APR					
04...	0930	e0.23	1350	14.5	959
MAY					
09...	1145	e0.03	1410	19.0	988
JUN					
06...	1000	e0.08	1520	20.0	1060
JUL					
12...	0840	e0.06	1480	20.0	1120
AUG					
01...	1250	e0.03	1410	23.5	858
SEP					
05...	1200	e0.04	1360	24.0	982

DATE	TIME	DIS- CHARGE, INST. CUBIC FEET PER SECOND	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (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)
NOV									
07...	1400	0.05	1340	8.5	14.0	610	130	69	79

DATE	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3	ALKA- LINITY WAT DIS TOT IT 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)
NOV									
07...	22	1	2.5	415	41	408	230	110	0.40

DATE	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, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
NOV									
07...	42	902	909	1.23	<0.100	0.410	150	11	10

e Estimated.

SAN ANTONIO CREEK BASIN

11135800 SAN ANTONIO CREEK AT LOS ALAMOS, CA

LOCATION.--Lat 34°44'36", long 120°16'12", in Los Alamos Grant, Santa Barbara County, Hydrologic Unit 18060009, on left bank 100 ft upstream from bridge on northbound lane of U.S. Highway 101 at Los Alamos.

DRAINAGE AREA.--34.9 mi².

PERIOD OF RECORD.--October 1970 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 580 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. No regulation upstream from station. Pumping for irrigation of about 1,000 acres upstream from station.

AVERAGE DISCHARGE.--20 years, 1.60 ft³/s, 1,160 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,230 ft³/s, Mar. 1, 1983, gage height, 11.6 ft, from floodmarks, from rating curve extended above 150 ft³/s on basis of computation of peak flow through culverts; no flow for most of each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 30 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Sept. 21	1745	*88	*2.37				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.03	.04	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.02	.06	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.02	.06	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.15	.04	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.08	.06	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.10	.04	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.07	.03	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.06	.02	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.09	.01	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.07	.02	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.05	.04	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.06	.03	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	1.0	.04	.03	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.54	.08	.02	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.29	.07	.01	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.17	.30	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.15	2.7	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.11	.80	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.08	.70	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.06	.53	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.07	.44	.00	.00	.00	.00	.00	.00	5.4
22	.00	.00	.00	.04	.38	.00	.00	.00	.00	.00	.00	.13
23	.00	.00	.00	.03	.37	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.04	.24	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.02	.05	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.03	.04	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.03	.04	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.01	.04	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.04	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.04	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	2.75	7.62	0.51	0.00	0.00	0.00	0.00	0.00	5.53
MEAN	.000	.000	.000	.089	.27	.016	.000	.000	.000	.000	.000	.18
MAX	.00	.00	.00	1.0	2.7	.06	.00	.00	.00	.00	.00	5.4
MIN	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	5.5	15	1.0	.00	.00	.00	.00	.00	11

CAL YR 1989 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00
WTR YR 1990 TOTAL 16.41 MEAN .045 MAX 5.4 MIN .00 AC-FT 33

11136100 SAN ANTONIO CREEK NEAR CASMALIA, CA

LOCATION.--Lat 34°46'56", long 120°31'47", in Jesus Maria Grant, Santa Barbara County, Hydrologic Unit 18060009, on Vandenberg Military Reservation on downstream side of San Antonio Road bridge, 0.7 mi east of junction of San Antonio Road and Lompoc-Casmalia Road, and 3.8 mi south of Casmalia.

DRAINAGE AREA.--135 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1955 to current year.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 160 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to June 27, 1958, at datum 2.00 ft higher.

REMARKS.--No estimated daily discharges. Records fair. No regulation upstream from station. Flow affected by pumping from wells along stream for irrigation upstream from station. At times water is released to creek from Vandenberg Air Force Base water-treatment plant.

AVERAGE DISCHARGE.--35 years, 5.61 ft³/s, 4,060 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,680 ft³/s, Mar. 1, 1983, gage height, 14.32 ft, from rating curve extended above 1,100 ft³/s on basis of slope-area measurement at gage height 12.93 ft; minimum daily, 0.10 ft³/s, June 19, 20, 1957.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	0900	*65	*2.52				

Minimum daily, 0.11 ft³/s, Sept. 19.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.19	.17	.23	.35	.38	.41	.35	.25	.22	.17	.13	.17
2	.18	.17	.22	.45	.35	.40	.37	.25	.20	.17	.13	.17
3	.19	.16	.22	.38	.33	.42	.39	.25	.20	.17	.14	.18
4	.19	.16	.22	.36	2.1	.40	.39	.24	.21	.17	.14	.18
5	.20	.17	.23	.37	5.4	.41	.39	.23	.19	.19	.14	.17
6	.19	.18	.25	.37	2.8	.39	.36	.24	.16	.20	.14	.15
7	.20	.18	.25	.35	1.3	.40	.35	.24	.16	.20	.14	.15
8	.20	.17	.25	.35	.57	.45	.35	.23	.16	.21	.14	.14
9	.18	.18	.28	.35	.46	.48	.34	.25	.15	.21	.15	.14
10	.18	.17	.28	.36	1.8	.44	.35	.23	.16	.20	.15	.15
11	.19	.17	.27	.38	1.1	.45	.30	.23	.16	.22	.14	.15
12	.20	.18	.26	.41	.49	.46	.30	.23	.16	.20	.14	.17
13	.21	.20	.26	1.2	.41	.54	.30	.23	.17	.17	.14	.14
14	.21	.21	.26	1.1	.45	.56	.31	.23	.17	.23	.15	.14
15	.21	.20	.28	7.2	.37	.49	.28	.23	.17	.19	.14	.14
16	.19	.19	.29	8.9	.42	.55	.27	.23	.16	.15	.14	.21
17	.19	.18	.30	7.3	21	.49	.29	.24	.17	.17	.13	.19
18	.17	.17	.32	4.8	8.5	.45	.27	.24	.17	.49	1.8	.12
19	.16	.17	.31	1.5	2.6	.44	.26	.23	.16	.21	.18	.11
20	.17	.17	.30	.67	.83	.43	.26	.23	.16	.15	.17	.12
21	.18	.18	.32	.53	.49	.49	.26	.24	.16	.17	.17	.15
22	.19	.19	.33	.43	.40	.56	.26	.24	.16	.14	.17	.17
23	.19	.20	.32	.40	.39	.52	.30	.24	.16	.16	.17	.17
24	.29	.21	.32	.37	.38	.45	.31	.25	.17	.16	.18	.17
25	.25	.22	.32	.36	.37	.42	.24	.23	.17	.14	.17	.15
26	.19	.28	.32	.36	.36	.42	.24	.23	.17	.14	.16	.15
27	.19	.24	.34	.32	.36	.39	.24	.27	.16	.13	.16	.17
28	.19	.22	.35	1.2	.39	.37	.24	.34	.18	.14	.17	.17
29	.18	.24	.34	.62	---	.37	.24	.28	.17	.13	.18	.17
30	.17	.23	.34	.53	---	.36	.25	.24	.17	.14	.18	.17
31	.17	---	.34	.46	---	.36	---	.23	---	.12	.17	---
TOTAL	5.99	5.76	8.92	42.73	54.80	13.77	9.06	7.52	5.13	5.64	6.41	4.73
MEAN	.19	.19	.29	1.38	1.96	.44	.30	.24	.17	.18	.21	.16
MAX	.29	.28	.35	8.9	21	.56	.39	.34	.22	.49	1.8	.21
MIN	.16	.16	.22	.32	.33	.36	.24	.23	.15	.12	.13	.11
AC-FT	12	11	18	85	109	27	18	15	10	11	13	9.4

CAL YR 1989 TOTAL 191.91 MEAN .53 MAX 3.1 MIN .15 AC-FT 381
WTR YR 1990 TOTAL 170.46 MEAN .47 MAX 21 MIN .11 AC-FT 338

WATER-QUALITY RECORDS

WATER TEMPERATURE: December 1981 to September 1983.

WATER TEMPERATURE: December 1981 to September 1983.

INSTRUMENTATION.--Water-quality monitor from December 1981 to September 1983.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

						DIS-CHARGE, INST. CUBIC FEET PER SECOND		SPE-CIFIC CON-DUCT-ANCE (US/CM)		TEMPER-ATURE WATER (DEG C)		SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	
						DATE		TIME					
						OCT 05...		1315		0.18		2290 14.5 1360	
						NOV 07...		1100		0.20		2150 12.0 1340	
						29...		1400		0.25		2110 9.0 1340	
						JAN 04...		1430		0.35		2130 7.0 1370	
						FEB 14...		1145		0.48		2140 8.0 1570	
						MAR 13...		0930		0.62		2200 10.5 1600	
						APR 10...		1225		0.37		2400 16.5 1640	
						MAY 09...		0915		0.25		2320 16.0 1490	
						JUN 05...		1345		0.21		2330 17.0 1480	
						JUL 11...		1025		0.20		2410 17.0 1540	
						AUG 01...		0900		0.14		2380 17.5 1540	
						SEP 05...		1450		0.17		2330 18.0 1520	
DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (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)	
OCT 05...	1315	0.18	2290	8.0	14.5	--	--	--	450	120	37	310	
JAN 04...	1430	0.35	2130	8.1	7.0	767	8.6	71	480	130	37	300	
APR 10...	1225	0.37	2400	7.8	16.5	764	5.8	60	660	180	50	290	
JUL 11...	1025	0.20	2410	7.9	17.0	760	6.1	64	520	140	42	360	
DATE	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE WATER WH IT FIELD MG/L AS HCO3	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT WH TOT IT FIELD MG/L AS CaCO3	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CaCO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SiO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	
OCT 05...	59	6	19	--	530	--	434	210	380	0.30	48	1360	
JAN 04...	57	6	18	--	468	--	384	250	340	0.30	47	1370	
APR 10...	48	5	12	439	--	360	--	460	340	0.10	34	1640	
JUL 11...	59	7	18	542	--	444	--	250	420	0.20	37	1540	

SAN ANTONIO CREEK BASIN

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11136100 SAN ANTONIO CREEK NEAR CASMALIA, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	BORON, DIS-SOLVED (UG/L AS B)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA- NESE, DIS-SOLVED (UG/L AS MN)	PCB, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PCN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ALA- CHLOR TOTAL RECOVER (UG/L)	ALDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT											
05...	1400	1.85	2.30	1.10	1900	30	30	--	--	--	--
JAN											
04...	1370	1.86	3.50	0.950	1600	30	60	--	--	--	--
APR											
10...	1590	2.23	0.600	1.10	1700	40	200	--	--	--	--
JUL											
11...	1540	2.09	0.300	1.20	2200	30	140	<1	<1.0	<0.10	<0.1
DATE	AME- TRYNE TOTAL	CHLOR- DANE, TOTAL ATRA- ZINE, TOTAL (UG/L)	CHLOR- DANE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	CYAN- AZINE TOTAL (UG/L)	DDD, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DDT, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/L)	DI- ELDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	DI- SYSTON TOTAL (UG/L)	ENDO- SULFAN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)
OCT											
05...	--	--	--	--	--	--	--	--	--	--	--
JAN											
04...	--	--	--	--	--	--	--	--	--	--	--
APR											
10...	--	--	--	--	--	--	--	<0.01	--	<0.01	--
JUL											
11...	<0.10	<0.10	<1.0	<0.10	0.6	0.7	<0.1	<0.01	0.1	<0.01	<0.1
DATE	ENDRIN, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	ETHION, TOTAL (UG/L)	HEPTA- CHLOR, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	HEPTA- CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	MALA- THION, TOTAL (UG/L)	METH- OXY- CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARA- THION, TOTAL (UG/L)	METHYL TRI- THION, TOTAL (UG/L)	METOLA- CHLOR WATER WHOLE TOT.REC (UG/L)	METRI- BUZIN WATER WHOLE TOT.REC (UG/L)
OCT											
05...	--	--	--	--	--	--	--	--	--	--	--
JAN											
04...	--	--	--	--	--	--	--	--	--	--	--
APR											
10...	--	<0.01	--	--	--	<0.01	--	<0.01	<0.01	--	--
JUL											
11...	<0.1	<0.01	<0.1	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.1	<0.1
DATE	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PARA- THION, TOTAL (UG/L)	PER- THANE IN BOT- TOM MA- TERIAL (UG/KG)	PROME- TONE TOTAL (UG/L)	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TRI- FLURA- LIN TOTAL RECOVER (UG/L)	TOTAL TRI- THION (UG/L)
OCT											
05...	--	--	--	--	--	--	--	--	--	--	--
JAN											
04...	--	--	--	--	--	--	--	--	--	--	--
APR											
10...	--	<0.01	--	--	--	--	--	--	--	--	<0.01
JUL											
11...	<0.1	<0.01	<1.00	<0.1	<0.1	<0.10	<0.10	<0.1	<10	<0.10	<0.01

SANTA MARIA RIVER BASIN

11136800 CUYAMA RIVER BELOW BUCKHORN CANYON, NEAR SANTA MARIA, CA

LOCATION.--Lat 35°01'19", long 120°13'39", SW 1/4 sec.14, T.11 N., R.32 W., San Luis Obispo-Santa Barbara County line, Hydrologic Unit 18060007, on downstream side of bridge on State Highway 166, 1.5 mi downstream from Buckhorn Canyon, and 13 mi northeast of Santa Maria.

DRAINAGE AREA.--886 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1903 to December 1905 (published as Santa Maria River near Santa Maria), October 1959 to current year. Monthly discharge only for October 1903 and July 1904 and yearly estimate for water year 1941 (incomplete), published in WSP 1315-B.

REVISED RECORDS.--WDR CA-71-1: Drainage area. WDR-CA-77-1: 1976.

GAGE.--Water-stage recorder. Elevation of gage is 760 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to October 1959, nonrecording gage at different site and datum.

REMARKS.--No estimated daily discharges. Records poor. No regulation upstream from station. Pumping from wells along stream for irrigation of several thousand acres in Upper Cuyama Valley.

AVERAGE DISCHARGE.--33 years (water years 1904, 1905, 1960-90), 20.9 ft³/s, 15,140 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,800 ft³/s, Feb. 25, 1969, gage height, 13.70 ft, from rating curve extended above 4,900 ft³/s on basis of slope-area measurement at gage height 10.85 ft; maximum gage height, 14.74 ft, Mar. 4, 1978; no flow at times in most years.

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)
Sept. 23	0015	*2,550	*9.28				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.01	.02	.04	.02	.04	.00	.00	.00	.00	.00	.00
2	.02	.01	.02	.05	.02	.04	.00	.00	.00	.00	.00	.00
3	.02	.01	.02	.03	.02	.04	.00	.00	.00	.00	.00	.00
4	.02	.01	.02	.03	.28	.04	.00	.00	.00	.00	.00	.00
5	.01	.01	.02	.03	.02	.04	.00	.00	.00	.00	.00	.00
6	.01	.01	.02	.03	.02	.04	.00	.00	.00	.00	.00	.00
7	.01	.01	.02	.03	.01	.03	.00	.00	.00	.00	.00	.00
8	.01	.01	.02	.02	.01	.04	.00	.00	.00	.00	.00	.00
9	.01	.01	.03	.02	.01	.03	.00	.00	.00	.00	.00	.00
10	.01	.01	.03	.02	.01	.03	.00	.00	.00	.00	.00	.00
11	.01	.01	.02	.02	.01	.04	.00	.00	.00	.00	.00	.00
12	.01	.01	.03	.04	.01	.04	.00	.00	.00	.00	.00	.00
13	.01	.01	.03	.31	.01	.04	.00	.00	.00	.00	.00	.00
14	.01	.01	.03	.21	.01	.03	.00	.00	.00	.00	.00	.00
15	.01	.01	.02	.07	.01	.02	.00	.00	.00	.00	.00	.00
16	.01	.01	.02	.17	.85	.02	.00	.00	.00	.00	.00	.00
17	.01	.01	.03	.05	.62	.02	.00	.00	.00	.00	.00	.00
18	.01	.01	.03	.03	.29	.02	.00	.00	.00	.00	.00	.00
19	.01	.01	.03	.03	.07	.02	.00	.00	.00	.00	.00	.00
20	.01	.01	.03	.03	.07	.01	.00	.00	.00	.00	.00	.00
21	.01	.01	.02	.03	.06	.01	.00	.00	.00	.00	.00	.02
22	.01	.01	.02	.02	.06	.01	.00	.00	.00	.00	.00	239
23	.01	.02	.02	.02	.05	.00	.00	.00	.00	.00	.00	432
24	.01	.01	.02	.02	.05	.00	.00	.00	.00	.00	.00	9.5
25	.01	.01	.03	.02	.05	.00	.00	.00	.00	.00	.00	.33
26	.01	.09	.03	.02	.05	.00	.00	.00	.00	.00	.00	.04
27	.01	.01	.02	.02	.04	.00	.00	.00	.00	.00	.00	.02
28	.01	.02	.02	.02	.04	.01	.00	.00	.00	.00	.00	.01
29	.01	.02	.02	.02	---	.01	.00	.00	.00	.00	.00	.01
30	.01	.02	.02	.02	---	.00	.00	.00	.00	.00	.00	.01
31	.01	---	.02	.02	---	.00	---	.00	---	.00	.00	---
TOTAL	0.35	0.42	0.73	1.49	2.77	0.67	0.00	0.00	0.00	0.00	0.00	680.94
MEAN	.011	.014	.024	.048	.099	.022	.000	.000	.000	.000	.000	22.7
MAX	.02	.09	.03	.31	.85	.04	.00	.00	.00	.00	.00	432
MIN	.01	.01	.02	.02	.01	.00	.00	.00	.00	.00	.00	.00
AC-FT	.7	.8	1.4	3.0	5.5	1.3	.00	.00	.00	.00	.00	1350

CAL YR 1989 TOTAL 163.60 MEAN .45 MAX 56 MIN .00 AC-FT 325
WTR YR 1990 TOTAL 687.37 MEAN 1.88 MAX 432 MIN .00 AC-FT 1360

11136800 CUYAMA RIVER BELOW BUCKHORN CANYON, NEAR SANTA MARIA, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Water year 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND		SPE-CIFIC CON-DUCT-ANCE (US/CM)		TEMPER-ATURE WATER (DEG C)		SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	
OCT									
04...	1055	0.01	1760	17.5	1360				
NOV									
06...	1145	0.01	1670	16.0	1280				
28...	1055	0.02	1780	9.5	1390				
JAN									
03...	1100	0.03	¹ 2070	3.0	1620				
FEB									
13...	1045	0.01	1710	10.5	1320				
MAR									
12...	1030	0.04	1690	10.0	1360				

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND		SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	HARD-NESS TOTAL (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)	SODIUM PERCENT
SEP											
24...	1215	4.0	2880	7.6	23.0	1200	390	65	120	17	

DATE	TIME	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE WATER WH IT FIELD HCO3	ALKA-LINITY WAT WH TOT IT FIELD CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
SEP										
24...		1	19	149	123	1500	42	0.30	24	2860

DATE	TIME	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	BORON, DIS-SOLVED (UG/L AS B)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
SEP										
24...	2250	3.89	0.090	0.380	3.40	0.090	350	1100	40	

¹ Laboratory value.

SANTA MARIA RIVER BASIN

11138500 SISQUOC RIVER NEAR SISQUOC, CA

LOCATION.--Lat 34°50'23", long 120°10'02", in Sisquoc Grant, Santa Barbara County, Hydrologic Unit 18060008, on left bank 2.6 mi upstream from La Brea Creek and 7 mi east of Sisquoc.
DRAINAGE AREA.--281 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1943 to current year. October 1929 to September 1933, at site 0.2 mi downstream; low-flow records not equivalent owing to diversion immediately upstream. Monthly discharge only for some periods, published in WSP 1315-B.

GAGE.--Water-stage recorder. Datum of gage is 624.30 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). See WSP 1735 for history of changes prior to Aug. 24, 1951.

REMARKS.--Records fair except for estimated daily discharges, which are poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--47 years, 42.3 ft³/s, 30,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,200 ft³/s, Dec. 6, 1966, gage height, 15.75 ft, from rating curve extended above 1,700 ft³/s on basis of slope-area measurements at gage heights 10.08 and 15.75 ft; no flow Nov. 11-18, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 2, 1938, reached a discharge of 11,000 ft³/s, gage height, 8.1 ft, from high-water mark in gage well, at site in use 1929-33, from rating curve extended above 2,800 ft³/s.

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)
Sept. 22	0230	*219	*2.60				

Minimum daily, 0.05 ft³/s, Oct. 19, 20.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.26	.10	.18	.31	1.8	2.6	.86	.30	.41	e.87	.27	.28
2	.22	.10	.17	.50	1.7	2.7	.87	.28	.43	e.86	.30	.28
3	.23	.09	.16	.38	1.7	3.0	.78	.25	.48	e.85	.31	.26
4	.21	.10	.16	.37	2.3	3.0	.68	.24	.59	e.84	.32	.29
5	.14	.13	.16	.34	1.6	2.8	.68	.24	.66	e.82	.32	.28
6	.11	.16	.15	.32	1.5	2.6	.70	.24	.55	e.82	.32	.19
7	.12	.18	.15	.33	1.4	3.0	.77	.24	.55	e.80	.29	.13
8	.09	.15	.15	.34	1.4	2.2	.76	.21	.47	e.79	.31	.12
9	.08	.14	.15	.31	1.4	1.5	.60	.23	.47	e.78	.31	.10
10	.09	.12	.18	.30	1.4	1.5	.57	.24	.55	e.77	.32	.10
11	.12	.12	.20	.30	1.4	2.0	.47	.23	.56	e.76	.34	.10
12	.12	.13	.20	.36	1.3	1.9	.47	.24	.54	e.75	.36	.09
13	.12	.15	.20	1.5	1.3	1.8	.42	.24	.60	e.74	.38	.08
14	.12	.15	.19	1.2	1.3	1.6	.48	.26	.68	e.73	.38	.09
15	.12	.13	.19	1.7	1.3	1.6	.59	.26	.73	e.72	.39	.09
16	.11	.11	.19	2.2	1.7	1.4	.70	.27	.73	e.71	.43	.09
17	.09	.10	.21	2.2	2.6	1.4	.73	.29	.75	e.70	.46	.09
18	.07	.10	.22	2.0	2.2	1.3	.56	.29	.77	e.68	.46	.09
19	.05	.10	.22	2.0	2.0	1.4	.46	.29	.80	e.67	.38	.09
20	.05	.10	.23	1.8	1.9	1.3	.46	.29	.79	e.65	.38	.09
21	.07	.11	.23	2.0	1.8	1.1	.46	.30	.82	e.64	.37	.11
22	.10	.13	.23	1.7	2.0	1.1	.48	.30	.89	e.63	.37	61
23	.12	.16	.20	1.5	2.1	1.1	.52	.31	.92	e.61	.37	43
24	.17	.16	.20	1.7	2.1	1.1	.48	.35	.95	e.60	.38	36
25	.19	.15	.20	1.7	2.1	1.0	.39	.33	1.0	e.58	.37	27
26	.16	.51	.20	1.7	2.4	.91	.37	.27	1.0	e.57	.36	22
27	.15	.25	.25	1.7	2.6	.97	.36	.90	1.1	e.42	.36	12
28	.13	.21	.30	1.8	2.6	1.0	.31	1.5	1.2	.28	.35	4.7
29	.12	.19	.31	1.6	---	.97	.31	.46	.89	.29	.36	3.6
30	.11	.19	.27	1.8	---	.83	.35	.38	e.88	.30	.35	3.3
31	.11	---	.25	1.7	---	.78	---	.39	---	.24	.30	---
TOTAL	3.95	4.52	6.30	37.66	50.9	51.46	16.64	10.62	21.76	20.47	10.97	215.64
MEAN	.13	.15	.20	1.21	1.82	1.66	.55	.34	.73	.66	.35	7.19
MAX	.26	.51	.31	2.2	2.6	3.0	.87	1.5	1.2	.87	.46	61
MIN	.05	.09	.15	.30	1.3	.78	.31	.21	.41	.24	.27	.08
AC-FT	7.8	9.0	12	75	101	102	33	21	43	41	22	428

CAL YR 1989 TOTAL 1401.54 MEAN 3.84 MAX 94 MIN .04 AC-FT 2780
WTR YR 1990 TOTAL 450.89 MEAN 1.24 MAX 61 MIN .05 AC-FT 894

e Estimated.

11138500 SISQUOC RIVER NEAR SISQUOC, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
OCT					
06...	1020	0.12	1140	18.0	878
NOV					
07...	1425	0.16	1170	17.0	838
30...	1025	0.23	1170	12.0	888
JAN					
05...	0945	0.35	1180	6.0	850
FEB					
15...	1150	1.4	1200	11.0	913
MAR					
13...	1500	1.8	1160	16.5	876
APR					
11...	1045	0.71	1170	18.0	912
MAY					
10...	1010	0.27	1180	17.0	848
JUN					
05...	1030	0.86	1180	18.0	872
JUL					
13...	1145	0.74	1140	21.5	952
31...	0950	0.29	1150	17.5	860
SEP					
06...	0900	0.26	1130	16.5	914

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED SATUR-ATION	HARD-NESS TOTAL (MG/L AS CaCO3)	CALCIUM DIS-SOLVED (MG/L AS Ca)
APR										
11...	1045	0.71	1170	7.7	18.0	760	11.2	119	520	100

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE WATER WH IT FIELD (MG/L AS HCO3)	ALKA-LINITY WAT WH TOT IT 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)
APR										
11...	65	64	21	1	2.0	284	233	380	23	0.20

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)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	BORON, DIS-SOLVED (UG/L AS B)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
APR									
11...	20	912	794	1.24	<0.100	0.050	180	19	5

e Estimated.

SANTA MARIA RIVER BASIN

11140000 SISQUOC RIVER NEAR GAREY, CA

LOCATION.--Lat 34°53'38", long 120°18'20", in SW 1/4 sec.36, T.10 N., R.33 W., Santa Barbara County, Hydrologic Unit 18060008, on downstream side of Santa Maria Mesa Road bridge near left bank, 0.6 mi northeast of Garey, and 3.7 mi downstream from Tepusquet Creek.

DRAINAGE AREA.--471 mi².

PERIOD OF RECORD.--October 1940 to current year. Records for water year 1941 incomplete; yearly estimate and monthly discharge only for October 1940 and January 1941, published in WSP 1315-B.

REVISED RECORDS.--WSP 1011: 1941, 1943. WSP 1928: Drainage area.

GAGE.--Two water-stage recorders. Datum of main gage is 354.8 ft, Santa Barbara County datum. See WSP 1735 for history of changes of main gage prior to Oct. 1, 1959. Oct. 1, 1959, to Dec. 30, 1965, at datum 6.00 ft higher. Since Oct. 1, 1959, supplementary gage on downstream side of bridge near right bank at same datum.

REMARKS.--No estimated daily discharges. Records good. No regulation upstream from station. Pumping from wells along stream for irrigation of about 7,000 acres upstream from station.

AVERAGE DISCHARGE.--50 years, 41.9 ft³/s, 30,360 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,600 ft³/s, Mar. 1, 1983, gage height, 11.16 ft, from rating curve extended above 22,000 ft³/s; maximum gage height, 13.50 ft, Dec. 6, 1966; no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--No flow for 1990 water year.

11140600 BRADLEY DITCH NEAR DONOVAN ROAD, AT SANTA MARIA, CA

LOCATION.--Lat 34°58'00", long 120°25'00", in NE 1/4 NE 1/4 sec.11, T.10 N., R.34 W., Santa Barbara County, Hydrologic Unit 18060008, on left bank 250 ft upstream from bridge on Donovan Road, and 0.2 mi east of U.S. Highway 101 in Santa Maria.

DRAINAGE AREA.--5.47 mi².

PERIOD OF RECORD.--October 1970 to September 1978, October 1979 to current year.

GAGE.--Water-stage recorder on concrete-lined channel. Elevation of gage is 225 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to September 1978, at site 50 ft downstream at same datum.

REMARKS.--No estimated daily discharges. Records poor. Extensive channel modification in 1979 water year widened the concrete-lined channel. No regulation upstream from station. Many diversions upstream from station for irrigation during growing season, and some waste water.

AVERAGE DISCHARGE.--19 years, 1.42 ft³/s, 1,030 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 539 ft³/s, Mar. 1, 1983, gage height, 4.59 ft, from rating curve extended above 69 ft³/s on basis of slope-conveyance studies of discharge; maximum gage height, 5.85 ft, Mar. 4, 1978; no flow for several days in most years.

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

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 26	0030	44	2.00				

No flow Jan. 19-21, and Sept. 24.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.73	.75	2.1	.98	.88	.48	.86	.39	.32	.15	1.3
2	.02	.88	.48	.65	.24	1.3	.57	.46	.26	.35	.08	.16
3	.06	.79	.70	.02	.73	.50	1.2	.15	.19	.53	.21	.10
4	1.1	1.5	.51	.02	3.9	.46	1.4	.12	.42	.88	.30	.19
5	1.1	1.0	.18	.19	.10	.24	.84	.30	.49	.32	.23	.69
6	.91	.30	.61	.40	.06	.83	.80	.99	.40	.05	.46	.15
7	.93	.41	.46	.01	.11	2.0	.17	.52	.09	.39	.32	.91
8	.40	.98	.95	.12	.89	2.1	.42	.75	.11	.55	.17	.20
9	.36	.66	.85	.01	.63	.35	.93	1.2	.48	.08	.08	.51
10	.30	.81	.87	.11	.88	1.6	.74	.60	.16	.17	.33	.48
11	.81	.17	.54	.28	1.2	2.2	.48	.82	.14	.10	.60	.56
12	.66	.23	1.1	3.5	.63	.09	.77	.69	.14	.51	.68	.42
13	.66	.32	.63	4.4	.67	1.2	.54	.86	.14	.52	.16	.26
14	.20	.27	1.0	5.7	.91	.96	.58	.74	.39	.10	.23	.34
15	.15	1.1	.75	1.0	1.1	1.3	1.2	.16	.38	.07	.09	.53
16	.10	.74	.58	4.7	6.4	1.8	.92	.39	.40	.03	.31	.31
17	.59	.72	.26	1.4	2.5	1.3	.07	.45	.64	.10	.35	.65
18	1.2	1.4	.12	.04	2.6	.35	.26	.17	.18	.05	.29	1.2
19	1.2	.58	.19	.00	.09	.57	.81	.63	.47	.88	.30	.22
20	1.2	.16	1.2	.00	.02	.70	1.6	.53	.43	.80	.29	.68
21	1.4	1.0	1.1	.00	.03	1.1	.61	.32	.34	.79	.31	3.8
22	.40	.51	.28	.02	.10	1.3	.56	.25	.16	.21	.50	.36
23	.14	.07	.31	.55	.05	.92	.28	.62	.27	.07	.58	.10
24	2.4	.28	.47	.60	.98	.96	.42	.18	.27	.41	.43	.00
25	.06	1.1	.10	.69	1.1	1.1	.91	.49	.15	.56	.48	.12
26	.26	3.4	.05	.96	.97	.76	.72	.19	.26	.27	.91	.33
27	1.1	.36	.96	.38	.72	.53	.55	.76	.64	.24	.55	.53
28	.55	.53	.74	.62	1.4	.15	.32	1.5	.38	.18	.36	.65
29	.84	.02	1.1	.78	---	.39	.76	.06	.30	.35	.32	.96
30	.27	.02	.84	1.6	---	.31	.51	.21	.11	.44	.35	.90
31	1.0	---	.49	.16	---	.38	---	.07	---	.13	1.6	---
TOTAL	20.42	21.04	19.17	31.01	29.99	28.63	20.42	16.04	9.18	10.45	12.02	17.61
MEAN	.66	.70	.62	1.00	1.07	.92	.68	.52	.31	.34	.39	.59
MAX	2.4	3.4	1.2	5.7	6.4	2.2	1.6	1.5	.64	.88	1.6	3.8
MIN	.02	.02	.05	.00	.02	.09	.07	.06	.09	.03	.08	.00
AC-FT	41	42	38	62	59	57	41	32	18	21	24	35

CAL YR 1989 TOTAL 326.93 MEAN .90 MAX 5.7 MIN .01 AC-FT 648
WTR YR 1990 TOTAL 235.98 MEAN .65 MAX 6.4 MIN .00 AC-FT 468

SANTA MARIA RIVER BASIN

11141050 ORCUTT CREEK NEAR ORCUTT, CA

LOCATION.--Lat 34°53'01", long 120°29'38", in SW 1/4 SE 1/4 sec.6, T.9 N., R.34 W., Santa Barbara County, Hydrologic Unit 18060008, on right bank 10 ft upstream from Black Road bridge, 0.2 mi northeast of State Highway 1, and 3.0 mi northwest of Orcutt.

DRAINAGE AREA.--18.5 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1982 to current year.

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

REMARKS.--Records poor. No regulation or diversion upstream from station. Natural flow affected by pumping and return flow from irrigated areas.

AVERAGE DISCHARGE.--8 years, 1.15 ft³/s, 833 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,830 ft³/s, Mar. 1, 1983, gage height, 7.53 ft, from floodmarks, from rating curve extended above 10 ft³/s on basis of slope-area measurements at gage heights 4.83 and 7.53 ft; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 25 ft³/s and maximum (*).

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Feb. 17	0030	*15	*2.82				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.01	e.07	e.06	.13	.14	.08	.01	.24	.00	.04	.00
2	.00	.02	e.07	e.06	.05	.17	.03	.02	.69	.00	.02	.00
3	.00	.01	e.08	e.08	.19	.23	.04	.02	.30	.00	.02	.00
4	.01	.02	e.04	e.11	2.6	.05	.04	.01	.02	.00	.07	.00
5	.00	.02	e.10	e.16	.40	.17	.04	.03	.00	.00	.01	.01
6	.00	.01	e.10	e.04	.14	.13	.05	.00	.04	.00	.00	.15
7	.00	.00	e.12	e.04	.13	.24	.08	.00	.02	.00	.00	.03
8	.00	.00	e.04	e.02	.14	.08	.02	.00	.00	.00	.00	.02
9	.00	.00	e.06	e.02	.08	.19	.01	.00	.02	.00	.04	.01
10	.00	.00	e.10	e.05	.06	.17	.01	.01	.04	.00	.00	.00
11	e.00	.00	e.07	e.02	.13	.23	.01	.08	.01	.00	.00	.00
12	.00	.00	e.07	e.06	.15	.10	.01	.15	.00	.00	.00	.00
13	.00	.01	e.06	e.13	.13	.08	.01	.19	.00	.00	.00	.00
14	.00	.01	e.04	e.19	.28	.08	.02	.01	.00	.00	.01	.00
15	.00	.01	e.04	e.52	.17	.21	.01	.06	.02	.00	.00	.00
16	.00	.01	e.04	.54	.94	.18	.03	.05	.01	.00	.00	.00
17	.00	.02	e.07	1.6	4.3	.17	.02	.10	.01	.00	.00	.00
18	.00	.04	e.06	.09	2.0	.14	.01	.12	.00	.00	.00	.00
19	.00	.04	e.05	.18	.23	.27	.01	.32	.00	.00	.00	.00
20	.00	.04	e.04	.17	.02	.15	.01	.38	.03	.00	.00	.04
21	.00	.05	e.06	.26	.02	.13	.00	.02	.04	.00	.01	.00
22	.00	.05	e.04	.02	.03	.09	.01	.01	.00	.00	.00	.12
23	.00	.06	e.06	.21	.08	.07	.02	.01	.02	.01	.00	.07
24	.00	.05	e.04	.07	.34	.11	.01	.02	.00	.03	.00	.00
25	.00	.08	e.03	.03	.05	.06	.00	.29	.00	.01	.17	.07
26	.00	.06	e.04	.08	.11	.04	.00	.01	.00	.03	.05	.06
27	.00	.03	e.06	.03	.18	.13	.00	.13	.00	.03	.00	.20
28	.00	.06	e.06	.20	.14	.10	.00	.07	.00	.02	.00	.10
29	.00	.10	e.07	.23	---	.06	.01	.02	.00	.05	.02	.40
30	.00	e.07	e.10	.10	---	.14	.00	.21	.00	.04	.00	.26
31	.00	---	e.38	.05	---	.14	---	.02	---	.02	.00	---
TOTAL	0.01	0.88	2.26	5.42	13.22	4.25	0.59	2.37	1.51	0.24	0.46	1.54
MEAN	.000	.029	.073	.17	.47	.14	.020	.076	.050	.008	.015	.051
MAX	.01	.10	.38	1.6	4.3	.27	.08	.38	.69	.05	.17	.40
MIN	.00	.00	.03	.02	.02	.04	.00	.00	.00	.00	.00	.00
AC-FT	.02	1.7	4.5	11	26	8.4	1.2	4.7	3.0	.5	.9	3.1

CAL YR 1989 TOTAL 38.12 MEAN .10 MAX 1.2 MIN .00 AC-FT 76
WTR YR 1990 TOTAL 32.75 MEAN .090 MAX 4.3 MIN .00 AC-FT 65

e Estimated.

11141050 ORCUTT CREEK NEAR ORCUTT, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1983 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	TEMPER-ATURE WATER (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
NOV					
07...	0910	<0.01	2150	18.0	1340
29...	1120	0.14	2090	9.0	1330
JAN					
04...	1030	0.11	2050	3.0	1240
FEB					
14...	0920	0.05	2230	4.5	1470
MAR					
13...	1035	0.06	2160	10.5	1480
APR					
11...	0850	0.02	2190	12.5	1350
MAY					
08...	1310	0.02	2200	21.0	1330
JUN					
04...	1250	0.02	2320	22.5	1470
JUL					
11...	1420	<0.01	2540	28.0	1580
31...	1340	e0.02	2400	26.5	1460
SEP					
06...	0835	0.20	2340	16.5	1500

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	HARD-NESS TOTAL (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)
JUL										
11...	1420	<0.01	2540	7.7	28.0	760	370	76	43	410

DATE	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE WATER WH IT FIELD (MG/L AS HCO3)	CAR-BONATE WATER WH IT FIELD (MG/L AS CO3)	ALKA-LINITY WAT WH TOT IT FIELD (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
JUL										
11...	70	9	7.5	375	0	307	280	490	1.3	47

DATE	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)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	BORON, DIS-SOLVED (UG/L AS B)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL								
11...	1580	1540	2.15	0.300	<0.010	450	140	330

e Estimated.

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the U.S. Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at crest-stage partial-record stations are presented in the following table. Discharge measurements made at miscellaneous sites are given in separate tables.

Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage station is a device which will register the peak stage occurring between inspections of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The date of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for the current year is given. Information on some lower floods may have been obtained but is not published here. The years given in the period of record represent water years for which the annual maximum has been obtained.

Annual maximum discharge at crest-stage partial-record stations during water year 1990

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Date	Annual maximum	
						Gage height (ft)	Discharge (ft ³ /s)
Bristol Lake basin							
10253000	Gourd Creek near Ludlow, CA	Lat 34°40'35", long 116°02'20", in SW 1/4 sec.23, T.7 N., R.9 E., San Bernardino County, Hydrologic Unit 18090208, at culvert on U.S. Highway 66, 8.5 mi southeast of Ludlow.	0.30	1979-74 1976-90	9-3-90	13.39	58
10261800	Beacon Creek at Helendale, CA	Lat 34°45'00", long 117°18'53", in SE 1/4 sec.29, T.8 N., R.4 W., San Bernardino County, Hydrologic Unit 18090208, at culvert on county road (formerly U.S. Highways 66 and 91), 0.6 mi northeast of Helendale.	.72	1959-60 1961-67* 1968-69 1976-90	8-6-90	12.88	24
10262600	Boom Creek near Barstow, CA	Lat 34°54'20", long 116°56'57", NW 1/4 NE 1/4 sec.2, T.9 N., R.1 W., San Bernardino County, Hydrologic Unit 18090208, at culvert on Interstate Highway 15, 4.3 mi east of Barstow.	.24	1956-66 1967-73* 1976-90	8-6-90	8.89	9.1
Antelope Valley							
10263900	Buckhorn Creek near Valyermo, CA	Lat 34°20'35", long 117°55'13", in SW 1/4 sec.15, T.3 N., R.10 W., Los Angeles County, Hydrologic Unit 18090206, at culvert on State Highway 2, Angeles National Forest, 8.1 mi southwest of Valyermo.	.48	1961-66* 1967-69 1971-73 1977-90	2-17-90	a	.10
10264503	Barrel Springs Tributary at California Aqueduct Crossing, near Palmdale, CA	Lat 34°31'56", long 118°04'32", in NW 1/4 SW 1/4 sec.7, T.5 N., R.11 W., Los Angeles County, Hydrologic Unit 18090206, at culvert on California Aqueduct, 0.25 mi upstream of Barrel Springs, and 3.5 mi southeast of Palmdale.	.80	1989-90	1-2-90	9.33	.01
10264504	Lake Palmdale Tributary at Highway 14, near Palmdale, CA	Lat 34°31'47", long 118°06'47", in NW 1/4 SW 1/4 sec.11, T.5 N., R.12 W., Los Angeles County, Hydrologic Unit 18090206, at culvert on State Highway 14, 1.75 mi upstream of Lake Palmdale, and 3.25 mi south of Palmdale.	.34	n1989 1990	12-21-88 2-17-90	3.60 3.43	.71 .04

* Operated as a continuous-record station.

a Peak flow below crest-stage gage pin; flow estimated.

n Not previously published.

Annual maximum discharge at crest-stage partial-record stations during water year 1990--Continued

Station No.	Station name	Location	Drainage area (mi ²)	Period of record	Date	Annual maximum	
						Gage height (ft)	Discharge (ft ³ /s)
Antelope Valley							
10264520	Amaragosa Creek Tributary near Leona Valley (formerly "near Palmdale"), CA	Lat 34°37'51", long 118°19'32", in SE 1/4 SE 1/4 sec.2, T.6 N., R.14 W., Los Angeles County, Hydrologic Unit 18090206, at culvert on Elizabeth Lake Road, 2.4 mi northwest of Leona Valley, and 12.5 mi northwest of Palmdale.	0.05	1959-73 1989-90	1-14-90	4.11	1.3
10264560	Spencer Canyon Creek near Fairmont, CA	Lat 34°46'33", long 118°34'08", in SW 1/4 SW 1/4 sec.15, T.8 N., R.16 W., Los Angeles County, Hydrologic Unit 18090206, at culvert on State Highway 138, 8.5 mi northwest of Fairmont.	3.60	1959-64 1965-73* 1974 1978-90	--	--	0
10264600	Oak Creek near Mojave, CA	Lat 35°03'00", long 118°21'17", in NE 1/4 NW 1/4 sec.15, T.11 N., R.14 W., Kern County, Hydrologic Unit 18090206, at culvert on Tehachapi-Willow Springs Road, 0.1 mi west of junction with Oak Creek Road, and 10.5 mi west of Mojave.	15.9	1957-86* 1989-90	1-16-90 3-12-90	1.15 1.17	.01 .01
10264610	Horned Toad Hills Creek near Mojave, CA	Lat 35°05'19", long 118°11'01", in NW 1/4 SW 1/4 sec.32, T.12 N., R.12 W., Kern County, Hydrologic Unit 18090206, at culvert on Southern Pacific Railroad, 1.5 mi north of junction of State Highways 14 and 58, and 2.2 mi north of Mojave.	.10	1989-90	--	--	0
10264650	Bissell Hills Creek at Edwards Air Force Base, CA	Lat 34°53'47", long 117°56'40", in SE 1/4 SW 1/4 sec.4, T.9 N., R.10 W., Kern County, Hydrologic Unit 18090206, at culvert on Rosamond Boulevard, 1.75 mi south of Edwards Air Force Base.	.76	1989-90	8-10-90	8.07	e.20
10264680	Mescal Creek Tributary at Big Pines, CA	Lat 34°22'28", long 117°41'59", in NW 1/4 SE 1/4 sec.3, T.3 N., R.8 W., Los Angeles County, Hydrologic Unit 18090206, at culvert on Angeles Crest Highway 0.7 mi southwest of Big Pines (Angeles National Forest).	.06	1961-73 1989-90	--	--	0
Franklin Creek basin							
11119530	Franklin Creek at Carpinteria, CA	Lat 34°24'17", long 119°31'05", in Pueblo Lands of Santa Barbara, Santa Barbara County, Hydrologic Unit 18060013, on right bank 20 ft downstream from Malibu Drive bridge, 0.5 mi north of Carpinteria, and 0.9 mi upstream from mouth.	1.81	1970-78* 1981-90	1-15-90	2.11	188
Santa Ynez River basin							
11131700	Santa Rita Creek near Lompoc, CA	Lat 34°38'41", long 120°22'09", in Santa Rita Grant, Santa Barbara County, Hydrologic Unit 18060010, on left bank 2.4 mi upstream from mouth and 6.5 mi east of Lompoc.	14.1	1976-79 1981-90	--	b	<26

* Operated as a continuous-record station.

e Estimated.

b Peak stage did not reach bottom of gage.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Annual maximum discharge at crest-stage partial-record stations during water year 1990--Continued

Station No.	Station name	Location	Drain- age area (mi ²)	Period of record	Date	Annual maximum	
						Gage height (ft)	Discharge (ft ³ /s)
Santa Ynez River basin--Continued							
11133700	Purissima Creek near Lompoc, CA	Lat 34°41'34", long 120°25'51", in Purissima Grant, Santa Barbara County, Hydrologic Unit 18060010, on right bank 1.1 mi northeast of junction of Buener Road and Lompoc- Casmalia Road and 4.0 mi northeast of Lompoc.	4.75	1972-75* 1976-90	1-15-90	1.72	27
11135200	Rodeo-San Pascal Creek near Lompoc, CA	Lat 34°38'42", long 120°30'57", in Lompoc Grant, Santa Barbara County, Hydrologic Unit 18060010, on left bank 0.1 mi east of Dewolf Avenue at State Highway 246 and 3.3 mi west of Lompoc.	7.80	1971-72* 1973-78 1980-90	--	b	<29

* Operated as a continuous-record station.

b Peak stage did not reach bottom of gage.

Miscellaneous sites

Discharge measurements in the following table were made at miscellaneous sites throughout the area covered by this volume.

Discharge measurements made at miscellaneous sites during water year 1990

Station No.	Station name	Location	Drainage area (mi ²)	Measured previously (water years)	Measurements	
					Date	Discharge (ft ³ /s)
Antelope Valley						
10263775	Big Rock Wash at Southern Pacific Railroad, near Llano, CA	Lat 34°32'00", long 117°50'41", in NE 1/4 SW 1/4 sec.8, T.5 N., R.9 W., Los Angeles County, Hydrologic Unit 18090206, at Southern Pacific Railroad Crossing, 0.75 mi northwest of junction with 165th Street East, and 2.4 mi northwest of Llano.	53.9	--	10-10-89	0
					11-6-89	0
					12-5-89	0
					1-2-90	0
					2-2-90	0
					3-5-90	0
					4-3-90	0
					5-3-90	0
					6-6-90	0
					7-9-90	0
10263780	Big Rock Wash at Avenue "T", near Llano, CA	Lat 34°32'33", long 117°50'52", in SW 1/4 SW 1/4 sec.5, T.5 N., R.9 W., Los Angeles County, Hydrologic Unit 18090206, at road fords on Avenue "T", 0.8 mi west of 165th Street East, and 3 mi northwest of Llano.	54.2	--	10-10-89	0
					11-6-89	0
					12-5-89	0
					1-2-90	0
					2-2-90	0
					3-5-90	0
					4-3-90	0
					5-3-90	0
					6-6-90	0
					7-9-90	0
10263780	Big Rock Wash at Avenue "T", near Llano, CA	Lat 34°32'33", long 117°50'52", in SW 1/4 SW 1/4 sec.5, T.5 N., R.9 W., Los Angeles County, Hydrologic Unit 18090206, at road fords on Avenue "T", 0.8 mi west of 165th Street East, and 3 mi northwest of Llano.	54.2	--	8-8-90	0
					9-6-90	0

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

SANTA MARIA RIVER BASIN

345556120274001 LA BREA RECHARGE POND AT SANTA MARIA, CA

LOCATION.--Lat 34°55'56", long 120°27'40", unsurveyed, Santa Barbara County, Hydrologic Unit 18060008, at inflow structure of recharge pond, 2.1 mi southwest of Santa Maria.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1985 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

					SPE- CIFIC CON- DUCT- ANCE (US/CM)	TEMPER- ATURE WATER (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)					
		DATE	TIME									
		FEB 14...	1400	257	11.5	168						
		MAR 14...	0830	820	13.5	603						
DATE	TIME	SPE- CIFIC CON- DUCT- ANCE (US/CM)	PH LAB (STAND- ARD UNITS)	TEMPER- ATURE WATER (DEG C)	HARD- NESS TOTAL (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)	SODIUM PERCENT	SODIUM AD- SORP- TION RATIO	POTAS- SIUM, DIS- SOLVED (MG/L AS K)	ALKA- LINITY LAB (MG/L AS CACO3)
FEB 14...	1400	257	8.0	11.5	91	22	8.7	14	25	0.6	1.9	50
DATE	SULFATE DIS- SOLVED (MG/L AS SO4)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	FLUO- RIDE, DIS- SOLVED (MG/L AS F)	SILICA, DIS- SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L)	SOLIDS, DIS- SOLVED (TONS PER AC-FT)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P)	BORON, DIS- SOLVED (UG/L AS B)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
FEB 14...	55	10	0.10	3.1	168	145	0.23	<0.100	0.060	30	27	2

SANTA MARIA RIVER BASIN

345727120375401 GREEN CANYON CREEK AT MAIN STREET, NEAR GUADALUPE, CA

LOCATION.--Lat 34°57'27", long 120°37'54", Santa Barbara County, Hydrologic Unit 18060008, at culvert on West Main Street and 3.6 mi southwest of Guadalupe.

DRAINAGE AREA.--Not determined.

PERIOD OF RECORD.--

CHEMICAL DATA: Water years 1986 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS TOTAL (MG/L AS CAC03)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
APR												
10...	0840	11	2130	7.8	13.0	760	7.7	74	910	200	100	130
JUL												
30...	1620	5.2	¹ 2360	8.0	22.0	760	9.4	109	1100	250	110	150

DATE	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE WATER WH IT FIELD MG/L AS HCO3	ALKA-LINITY WAT WH TOT IT FIELD MG/L AS CAC03	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)
APR											
10...	24	2	6.7	351	288	640	150	0.40	32	1720	1530
JUL											
30...	23	2	9.9	449	368	670	180	0.20	32	1750	1650

DATE	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P)	BORON, DIS-SOLVED (UG/L AS B)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PCN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ALA-CHLOR TOTAL RECOVER (UG/L)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	AME-TRYNE TOTAL
APR											
10...	2.34	22.0	0.860	270	40	120	--	--	--	--	--
JUL											
30...	2.38	6.00	0.610	290	50	160	<1	<1.0	<0.10	<0.1	<0.10

DATE	ATRA-ZINE, TOTAL (UG/L)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DYRIFOS TOTAL RECOVER (UG/L)	CYAN-AZINE TOTAL (UG/L)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/L)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-SYSTON TOTAL (UG/L)	ENDO-SULFAN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
APR											
10...	--	--	--	--	--	--	--	0.03	--	0.01	--
JUL											
30...	<0.10	<1.0	0.24	<0.10	11	26	36	0.03	1.4	<0.01	<0.1

DATE	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ETHION, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOT. IN BOT-TOM MA-TL. (UG/KG)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARA-THION, TOTAL (UG/L)	METHYL TRI-THION, TOTAL (UG/L)	METOLA-CHLOR WATER WHOLE TOT.REC (UG/L)	METRI-BUZIN WATER WHOLE TOT.REC (UG/L)
APR											
10...	--	<0.01	--	--	--	<0.01	--	<0.01	<0.01	--	--
JUL											
30...	1.2	<0.01	<0.1	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.1	<0.1

¹ Laboratory value.

ANALYSES OF SAMPLES COLLECTED AT WATER-QUALITY PARTIAL-RECORD STATIONS

SANTA MARIA RIVER BASIN

345727120375401 GREEN CANYON CREEK AT MAIN STREET, NEAR GUADALUPE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1989 TO SEPTEMBER 1990

DATE	MIREX, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	PARA- THION, TOTAL (UG/L)	PER- THANE IN BOT- TOM MA- TERIAL (UG/KG)	PROME- TONE TOTAL (UG/L)	PROME- TRYNE TOTAL (UG/L)	PRO- PAZINE TOTAL (UG/L)	SIMA- ZINE TOTAL (UG/L)	SIME- TRYNE TOTAL (UG/L)	TOXA- PHENE, TOTAL IN BOT- TOM MA- TERIAL (UG/KG)	TRI- FLURA- LIN TOTAL RECOVER (UG/L)	TOTAL TRI- THION (UG/L)
APR 10...	--	<0.01	--	--	--	--	--	--	--	--	<0.01
JUL 30...	<0.1	<0.01	<1.00	<0.1	0.3	<0.10	0.20	<0.1	<10	<0.10	<0.01

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

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI).

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

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