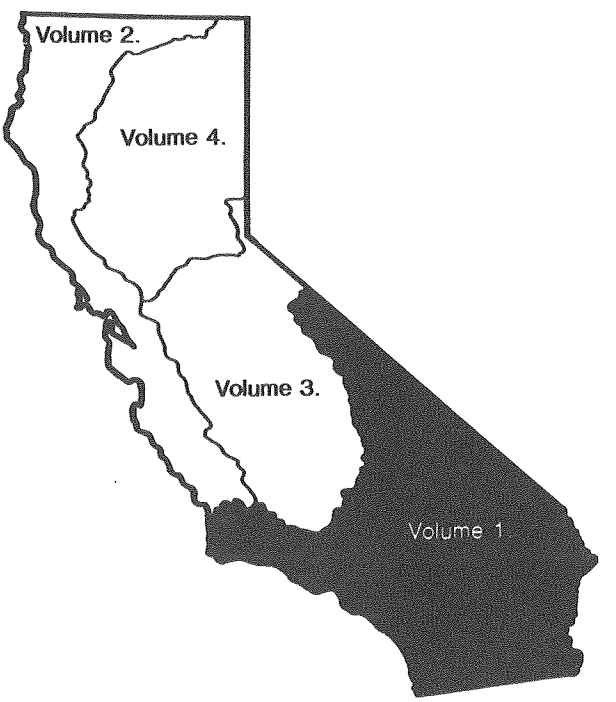
Water Resources Data California

Water Year 1989

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-89-1
Prepared in cooperation with the California Department of Water Resources and with other agencies

CALENDAR FOR WATER YEAR 1989

1988

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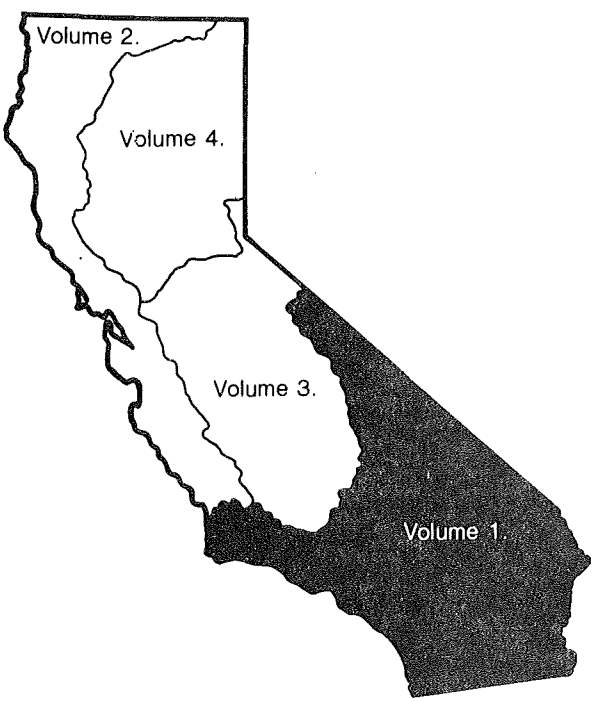
Water Resources Data California

Water Year 1989

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

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



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT CA-89-1
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
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2800 Cottage Way
Sacramento, California 95825

1990

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 the 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 the Walker River to the 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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Water resources data for the 1989 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 137 gaging stations; stage and contents for 15 lakes and reservoirs; water quality for 25 streams; and precipitation for 8 gaging stations. Also included are 15 crest-stage partial-record stations, 7 miscellaneous measurement sites, and 5 water-quality partial-record 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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IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED

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

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

WATER RESOURCES DATA -- CALIFORNIA, WATER YEAR 1989

VOLUME 1--SOUTHERN GREAT BASIN FROM MEXICAN BORDER TO MONO LAKE BASIN,

AND PACIFIC SLOPE BASINS FROM TIJUANA RIVER TO SANTA MARIA RIVER

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

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 137 streamflow-gaging stations, 15 crest-stage partial-record streamflow stations, and 7 miscellaneous measurement stations; (2) stage and contents records for 15 lakes and reservoirs; (3) water-quality records for 25 streamflow-gaging stations, 9 partial-record stations, and 5 miscellaneous measurement sites; and (4) precipitation records for 8 streamflow-gaging stations. Records included for stream stages are only a small fraction of those obtained during the water year.

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

Prior to introduction of this series and for several water years concurrent with it, water-resources data for California were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface-Water Supply of the United States, Parts 10 and 11." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States," and water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." These Water-Supply Papers may be consulted in public libraries of the principal cities of the United States and may be purchased from U.S. Geological Survey, Books and Open-File Reports Section, 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-89-1." 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. Gientke, 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 Pendelton 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 1989 water year--month by month and regionally. The variations are related to differences in precipitation, temperature, topography, and geology. Runoff during the 1989 water year in the area covered by this volume was 66 percent of the 1951-80 median (based on seven representative streamflow records). Total runoff in percent of median, at selected sites in California is shown in figure 1. Runoff ranged from 156 percent of median at Borrego Palm Creek near Borrego Springs (station 10255810) to 32 percent at Santa Cruz Creek near Santa Ynez (station 11124500). Figure 2 shows monthly mean discharge during the 1989 water year at four index stations compared to the 1951-80 median, maximum, and minimum monthly mean discharge. Few streams exceeded the peak discharge bases and none had peaks of record. Annual departure from normal discharge for four selected gaging stations is shown in figure 3.

Storage in several reservoirs was much below normal. Total reservoir storage in the Santa Ynez River basin was about 32 percent of capacity, and Lake Cachuma reached its lowest level since initial filling in 1958. Storage in selected reservoirs for water years 1987-89 is shown in figure 4.

There were no significant regionwide storms during the water year. Except for December, monthly precipitation and streamflow were below normal. Precipitation in the area (based on eight representative precipitation gages) was 53 percent of the long-term average. Precipitation varied from 81 percent of normal at San Bernardino to 34 percent at Palm Springs. Most precipitation occurred between December 15 and February 15. At many sites, 75 percent of the annual total occurred during this period.

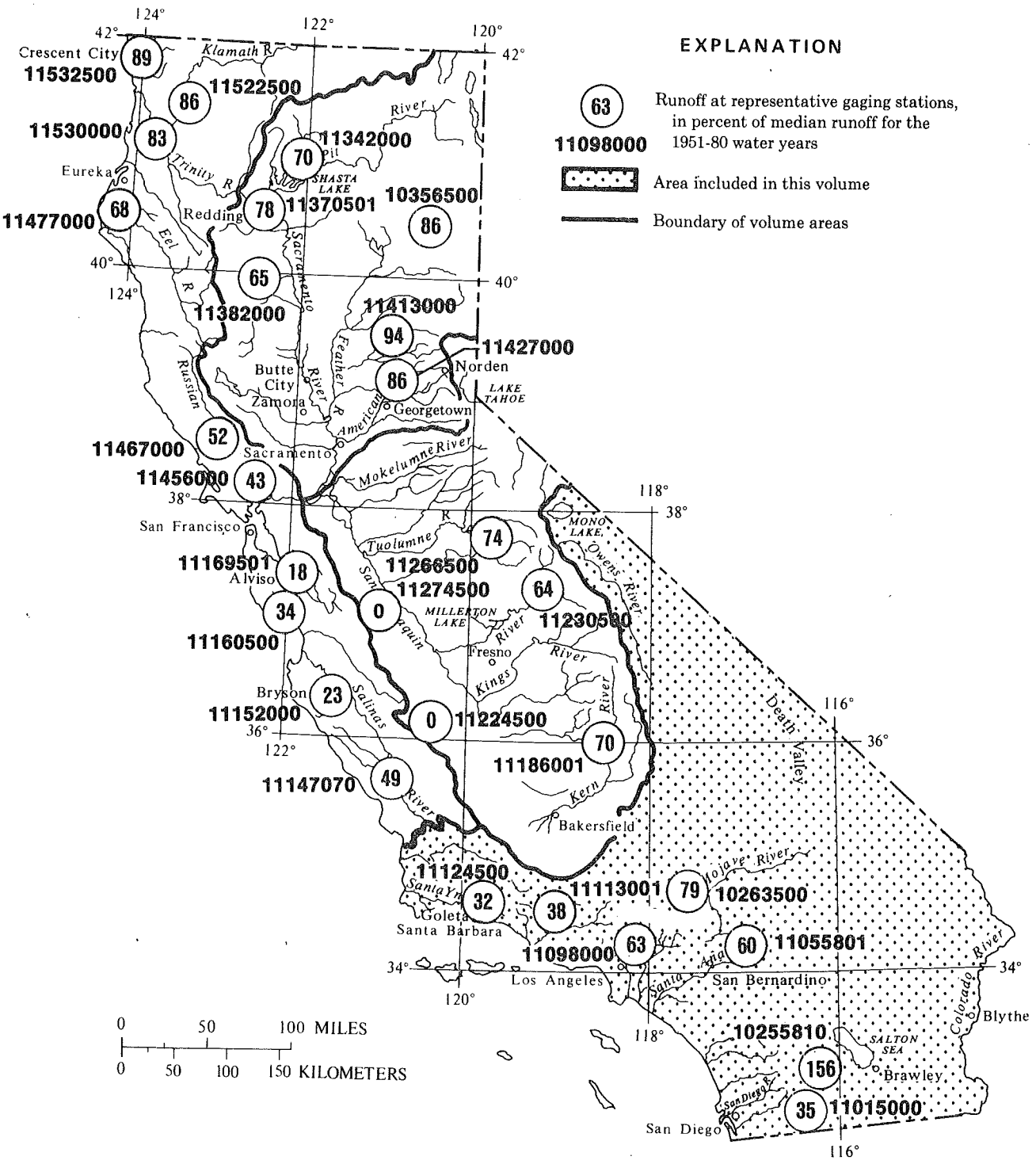

Figure 1. Runoff, in percent of median, for the 1989 water year.

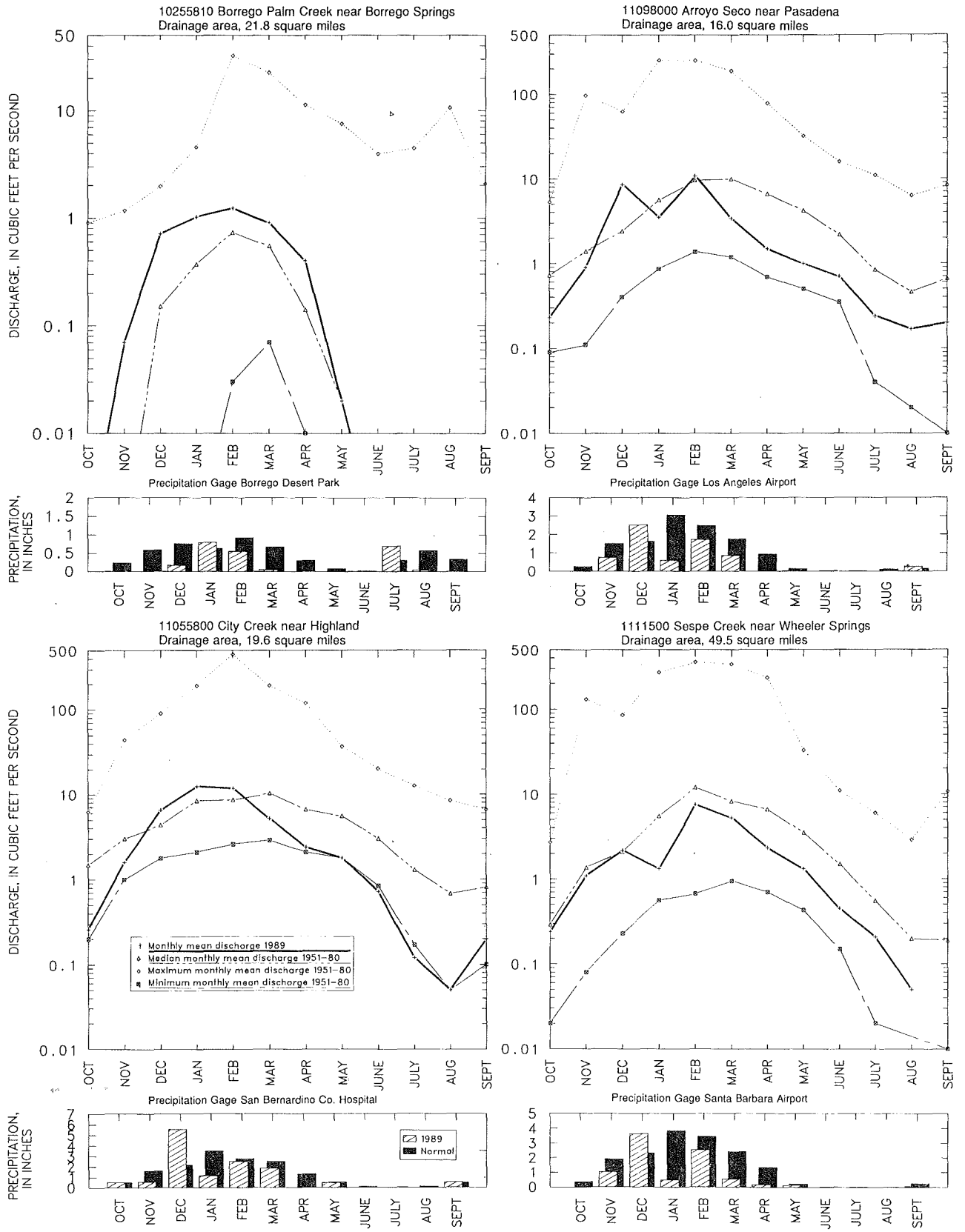

Figure 2. Comparison of monthly mean discharge during water year 1989 with long-term discharge statistics and precipitation at four representative gaging stations.

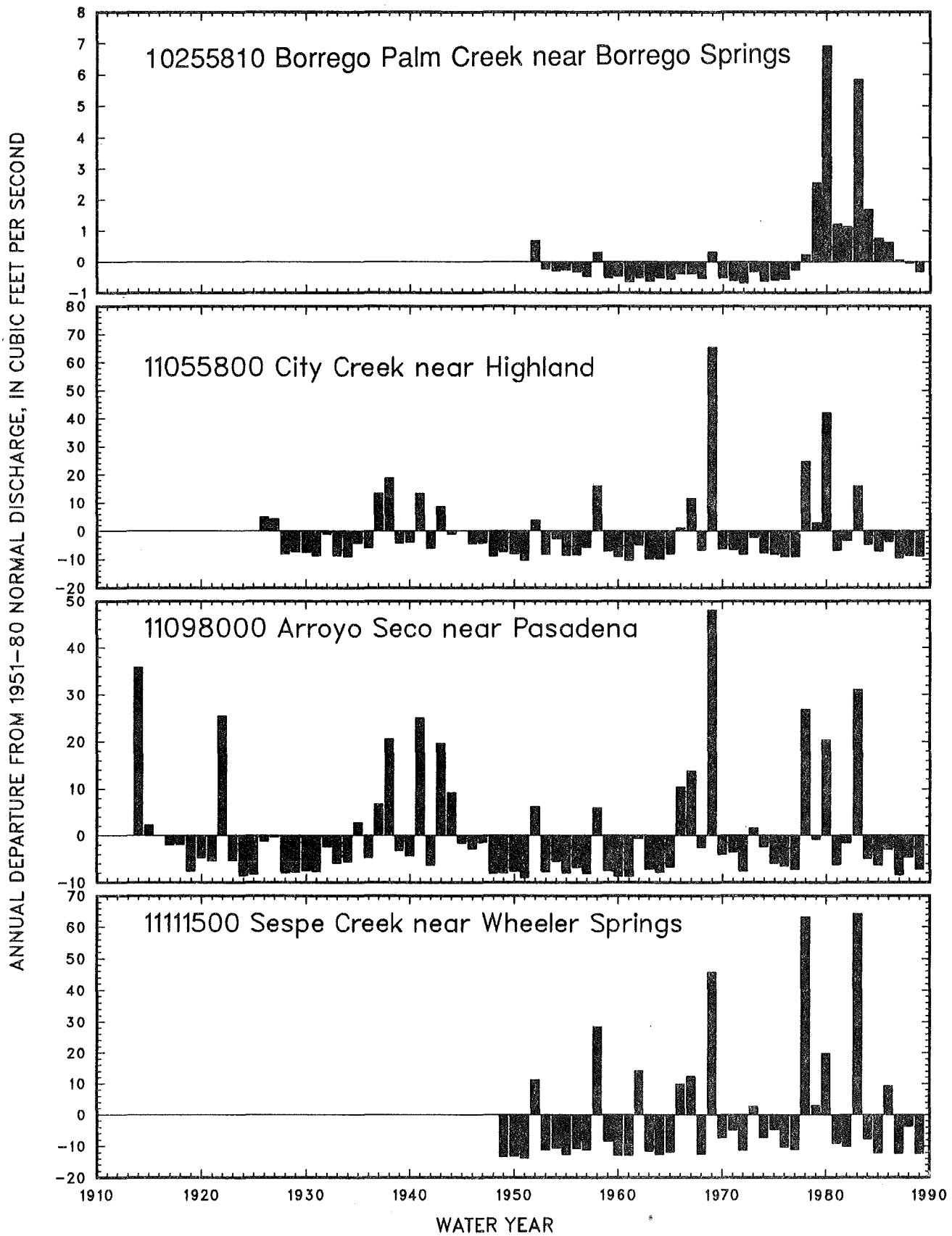

Figure 3. Annual departure from 1951-80 normal discharge for period of record at selected gaging stations.

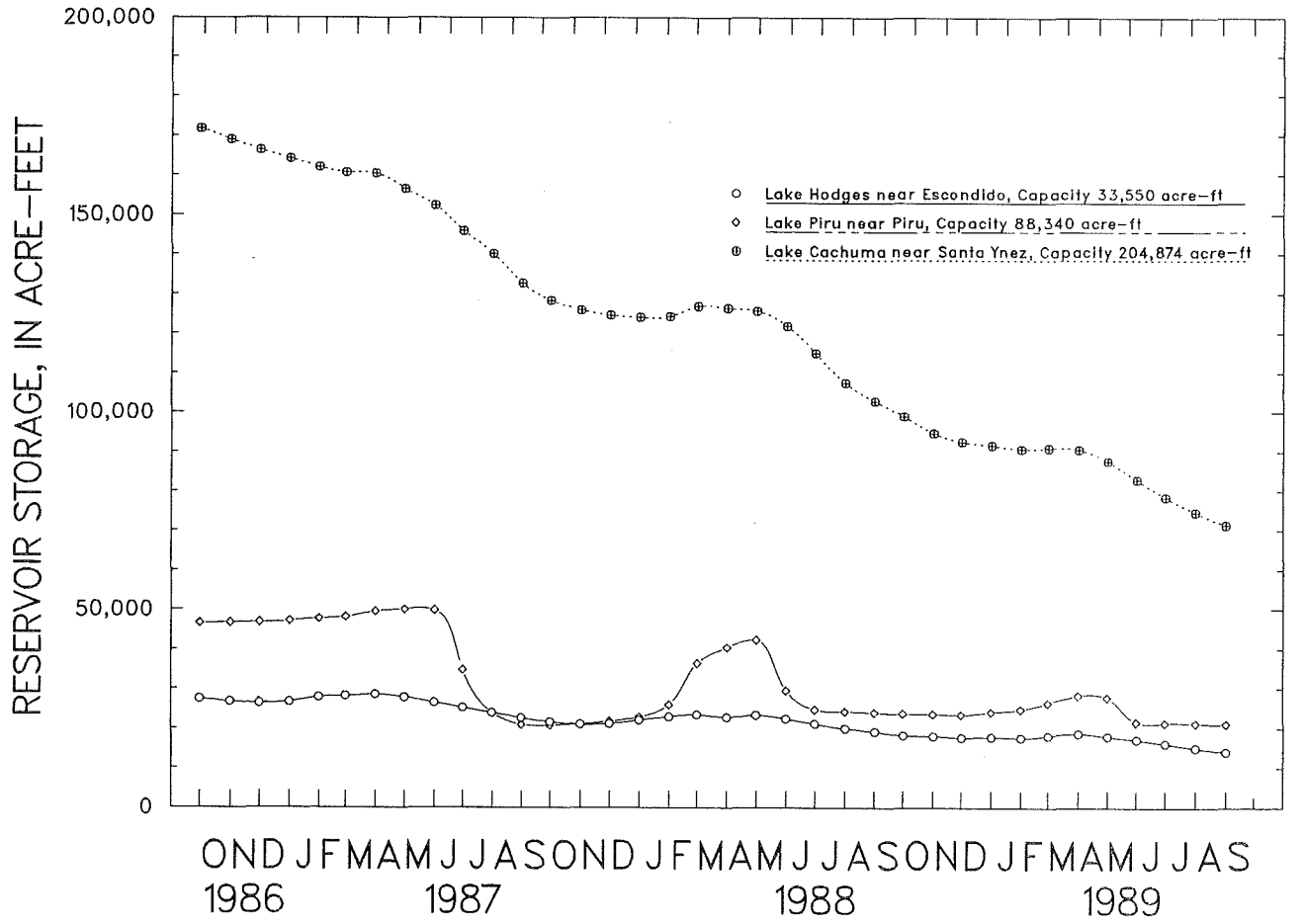

Figure 4. Storage in selected reservoirs, water years 1987-89

Water Quality

Water samples collected at four NASQAN stations reported in this volume were analyzed for water-quality constituents. Specific conductance varied from 628 microsiemens at Santa Ana River below Prado Dam (station 11074000) to 3,520 microsiemens at Alamo River at Drop 3, near Calipatria (station 10254670). Median dissolved-solids concentrations for samples collected from these stations increased slightly from those values reported in 1988. The monthly mean dissolved-solids concentrations during water year 1989 are compared with long-term mean dissolved-solids concentrations at two selected stations in figure 5.

The largest densities of fecal-coliform and fecal-streptococci bacteria were measured in water samples collected from Alamo River at Drop 3, near Calipatria, 7,700 colonies per 100 milliliters and 37,000 colonies per 100 milliliters, respectively.

Chemical-constituent concentrations in excess of U.S. Environmental Protection Agency 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 3 near Calipatria	Sulfate, Chloride
11074000	Santa Ana River below Prado Dam	Manganese
11136100	San Antonio Creek near Casmalia	Boron
11136800	Cuyama River below Buckhorn Canyon near Santa Maria	Sulfate

Sediment

Suspended-sediment discharge and concentration were monitored daily at 1 station and periodically at 14 stations in the area covered by this volume. The variation in storm patterns and basin characteristics in southern California resulted in significant differences in sediment discharge rates and concentrations at the sampled streams.

Sediment discharge was significantly below normal during the 1989 water year, with the majority of sediment transported during a few localized winter storms. Sediment discharge for Santa Ana River near Mentone (station 11051500) was only 10 percent of the annual mean for 1982-88.

Sediment discharge during the 1989 water year for Santa Ana River near Mentone was 3,820 tons or about 18 tons per square mile of drainage area.

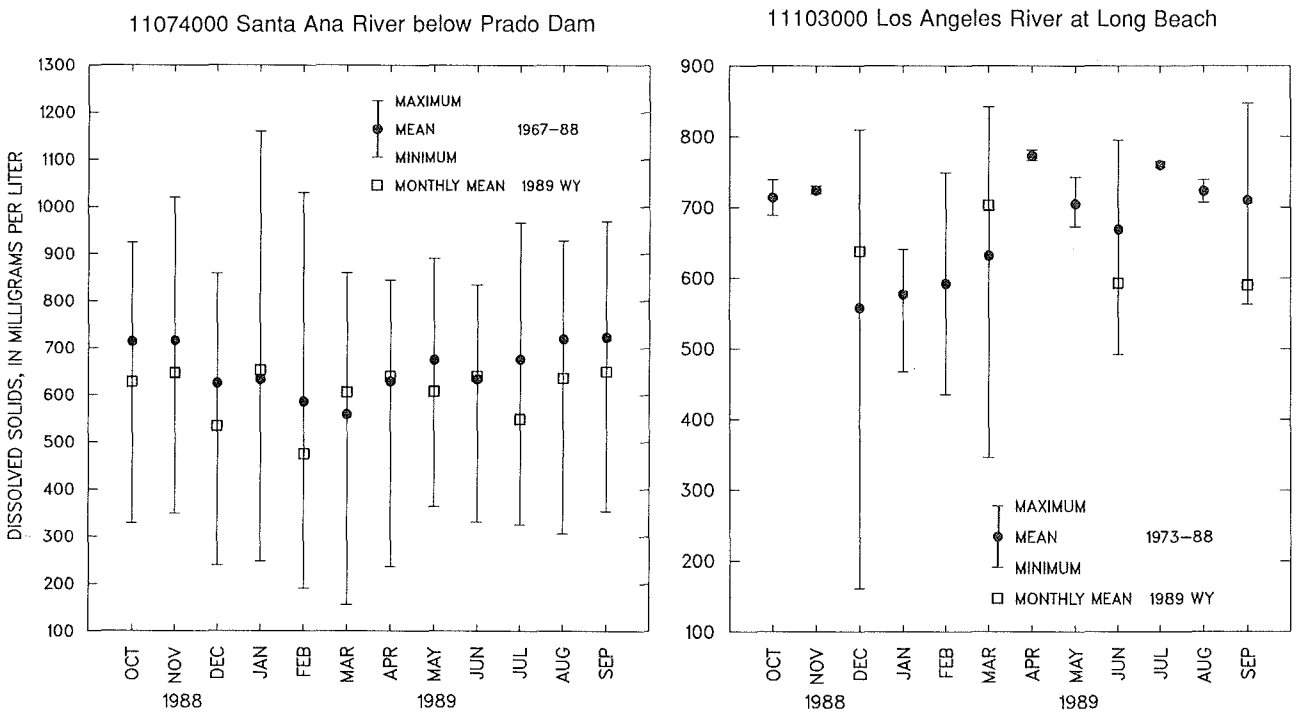

Figure 5. Comparison of monthly mean dissolved-solids concentration during water year 1989 with long-term mean dissolved-solids concentrations at two selected stations

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 1989 water year that began October 1, 1988, and ended September 30, 1989. 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.

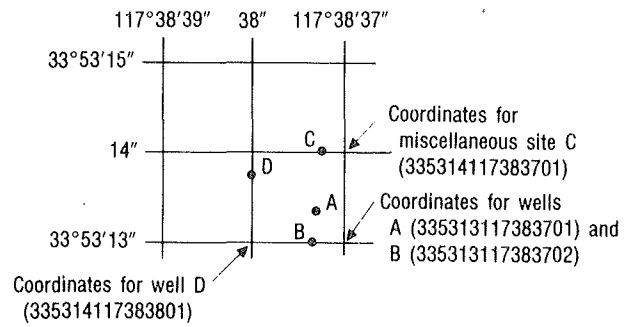

Figure 6. System for numbering miscellaneous sites (latitude and longitude)

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 ft^3/s, to the nearest tenth between 1.0 and 10 ft^3/s, to whole numbers between 10 and 1,000 ft^3/s, and to three significant figures for more than 1,000 ft^3/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.

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

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

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

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

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

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

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

From cell volume, total algal biomass expressed as biovolume ($\pi m^3/mL$) 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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Classification	Size (mm)	Method of analysis
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 [mg C/(m^2/time) for periphyton and macrophytes and mg C/(m^3/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 that 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 [mg O_2/(m^2/time) for periphyton and macrophytes and mg O_2/(m^3/time) for phytoplankton] are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light- and dark-bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

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

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

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

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

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

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

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

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

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

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

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

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

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

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25 °C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating 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 emersed or submersed solid surface, such as a rock or tree, upon which an organism lives.

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

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

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

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

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

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

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

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

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

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

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, 1989, is called the "1989 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. 1989. 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. 1989. 52 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-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. Ehlke, G.A. Irwin, B.W. Lium, and K.V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 322 pages.

5-A5. Methods for determination of radioactive substances in water and fluvial sediments, by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.

5-A6. Quality assurance practices for the chemical and biological analyses of water and fluvial sediments, by L.C. Friedman, and D.E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.

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

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. Shaffrannek, R.A. Baltzer, and D.E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.

8-A1. Methods of measuring water levels in deep wells, by M.S. Garber and F.C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.

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

8-B2. Calibration and maintenance of vertical-axis type current meters, by G.F. Smoot and C.E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

DISCONTINUED GAGING STATIONS

The following continuous-record streamflow stations reported in this volume have been discontinued as of the 1989 water year. Daily streamflow or stage records were collected and published for the period of record shown for each station.

Station No.	Station name	Drainage area (mi^2)	Period of record (water year)
10250800	Darwin Creek near Darwin	173	1963-89
11023310	Rattlesnake Creek at Poway	8.13	1970-89
11023325	Beeler Creek at Pomerado Road, near Poway	5.46	1970-89
11046250	San Onofre Creek at San Onofre	42.2	1947-67, 1989
11047300	Arroyo Trabuco at San Juan Capistrano	54.1	1973-77, 1984-89

DISCONTINUED WATER-QUALITY STATIONS

The following water-quality stations reported in this volume have been discontinued as of the 1989 water year. Continuous records of chemical and sediment data were collected and published for the period of record shown.

Station No.	Station name	Drainage area (mi^2)	Type of record	Period of record
11030500	San Dieguito River near Del Mar	338	S	1983-89
11046250	San Onofre Creek at San Onofre	42.2	S	1982-83, 1988-89
11051500	Santa Ana River River near Mentone	210	T,S	1982-89
11046370	San Mateo Creek at San Onofre	130	T,S	1982-89
11104000	Topanga Creek at Topanga Beach	18.0	C,S	1982-88
11104400	Malibu Creek at Cornell	37.6	C,S	1983-88
11105410	Cold Creek at Piuma Road, near Monte Nido	7.73	C,S	1982-84, 1986, 1987 1988
11105500	Malibu Creek at Crater Camp, near Calabasas	105	C,S	1982-88

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

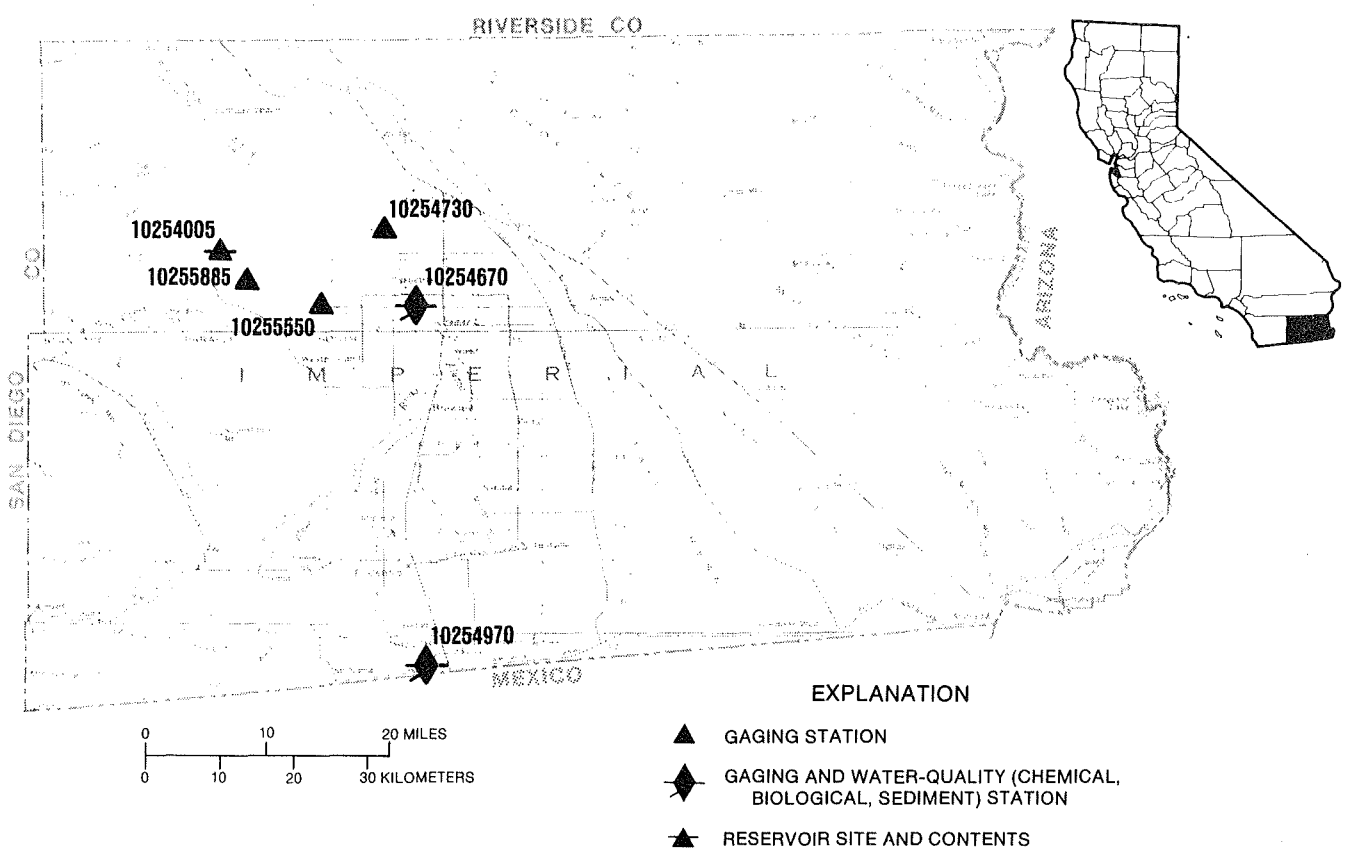

Figure 7. Location of discharge and water-quality stations in Imperial County.

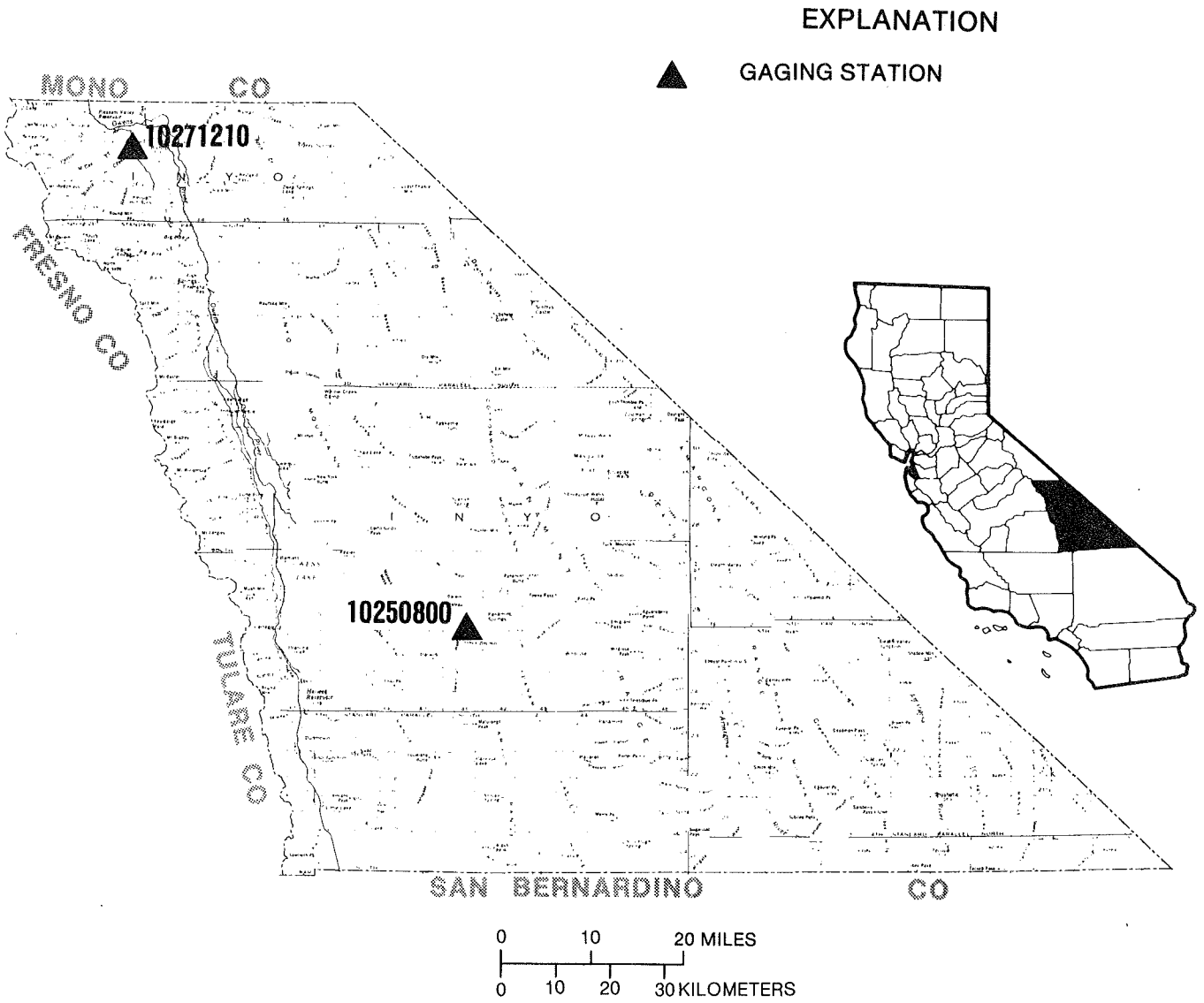

Figure 8. Location of discharge and water-quality stations in Inyo County.

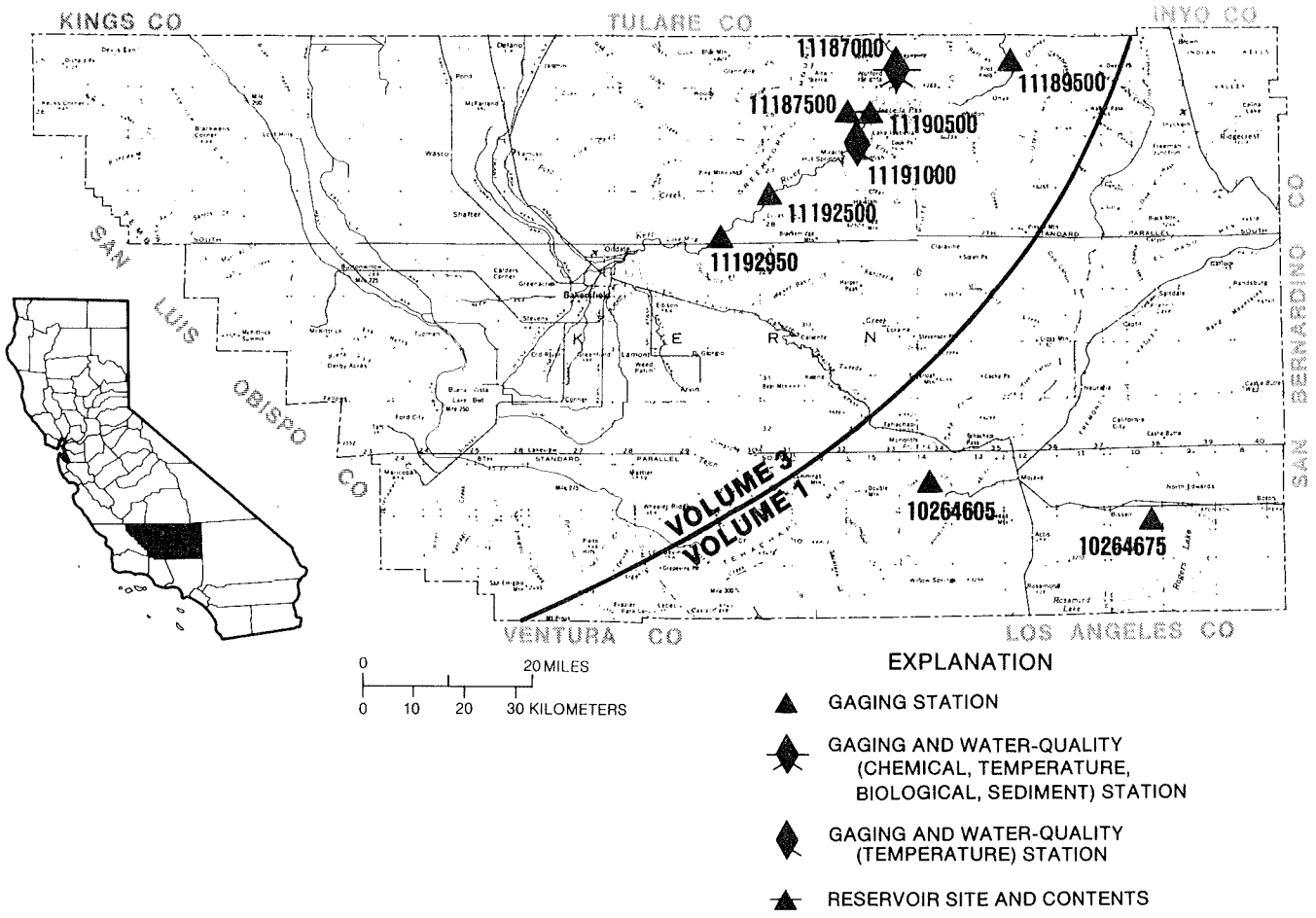

Figure 9. Location of discharge and water-quality stations in Kern County
(Note: Records for stations 11187000 through 11192950 published in volume 3)

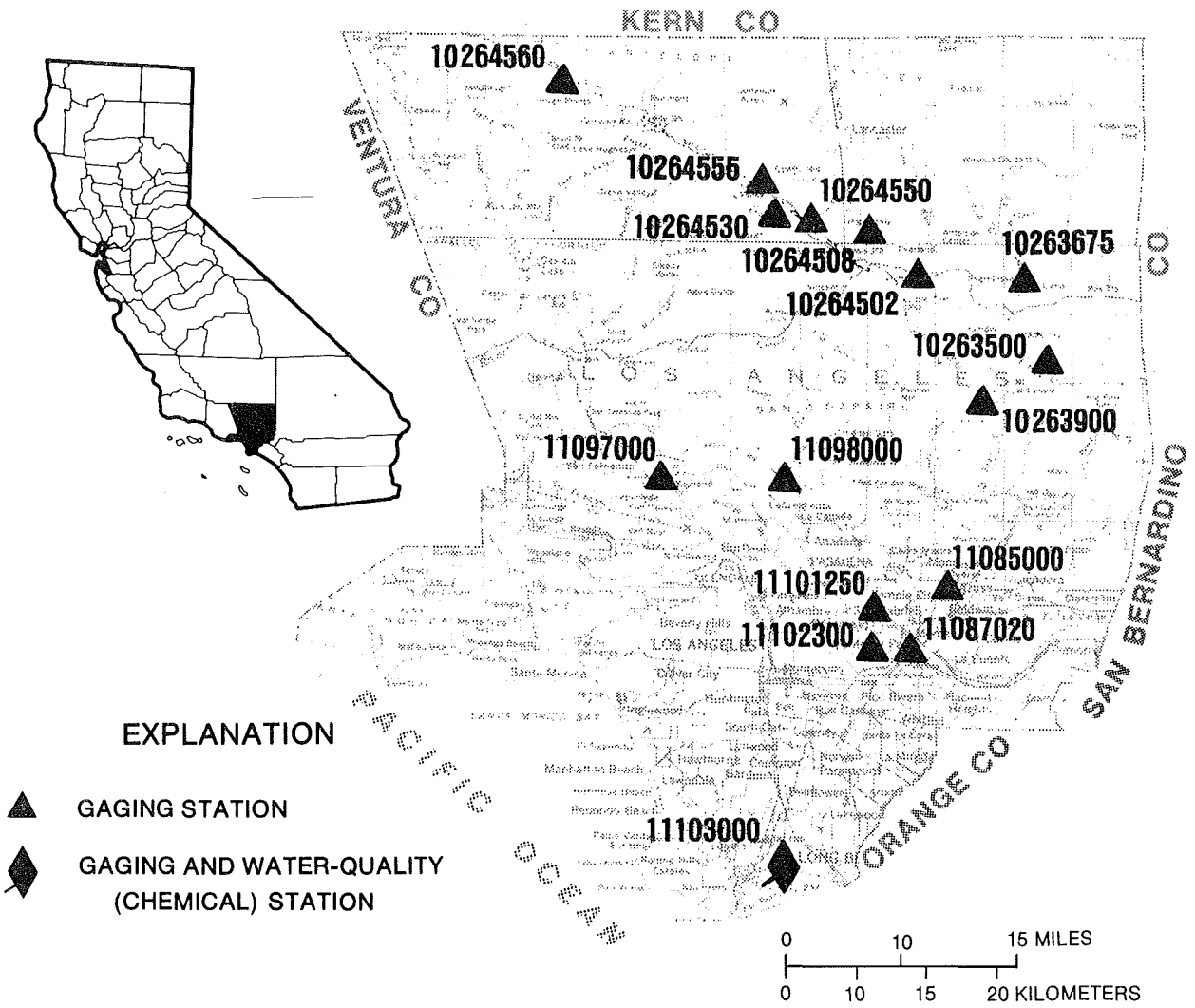

Figure 10. Location of discharge and water-quality stations in Los Angeles County.

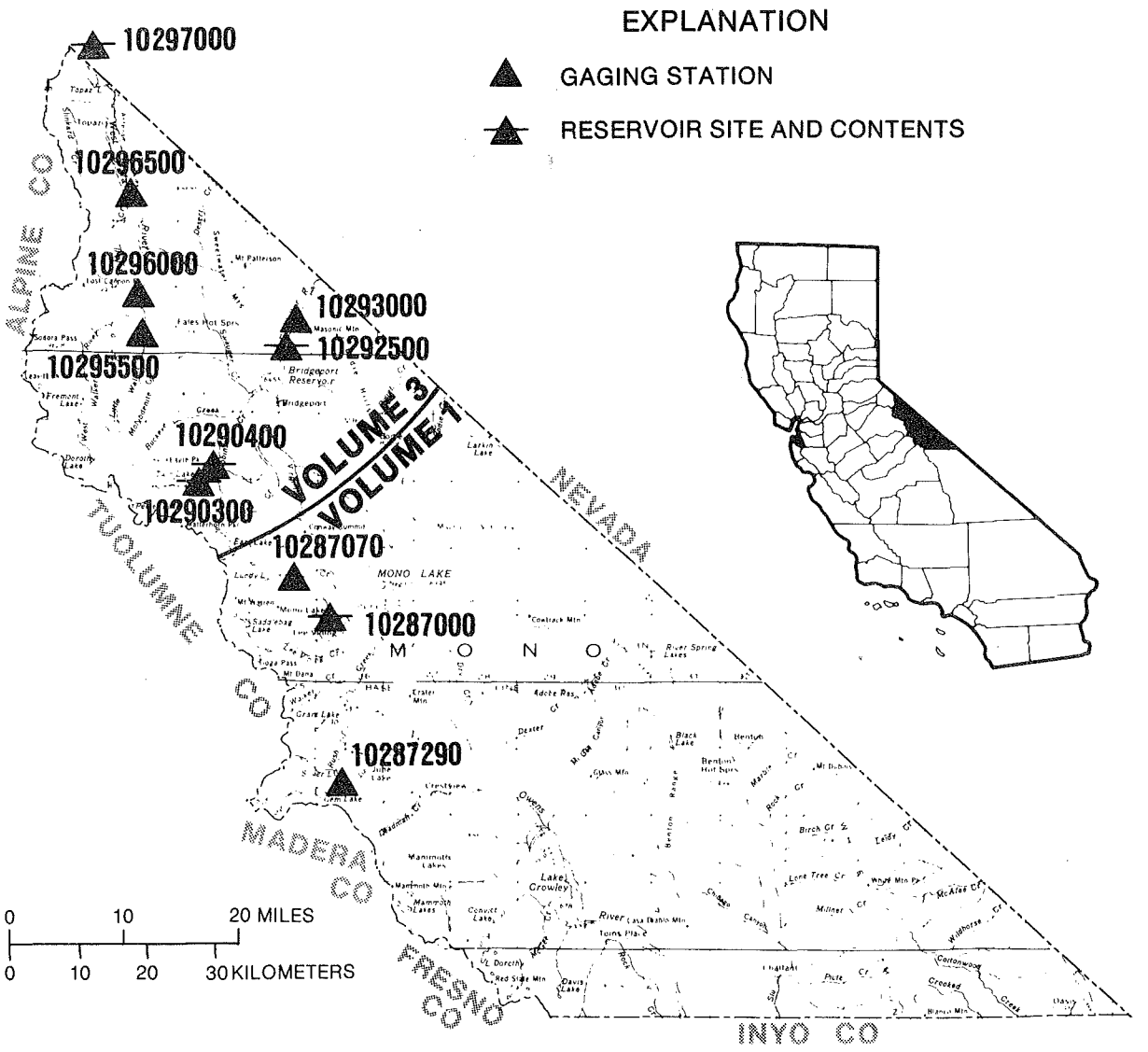

Figure 11. Location of discharge stations in Mono County.
(Note: Records for stations 10290300 through 10297000 published in volume 3)

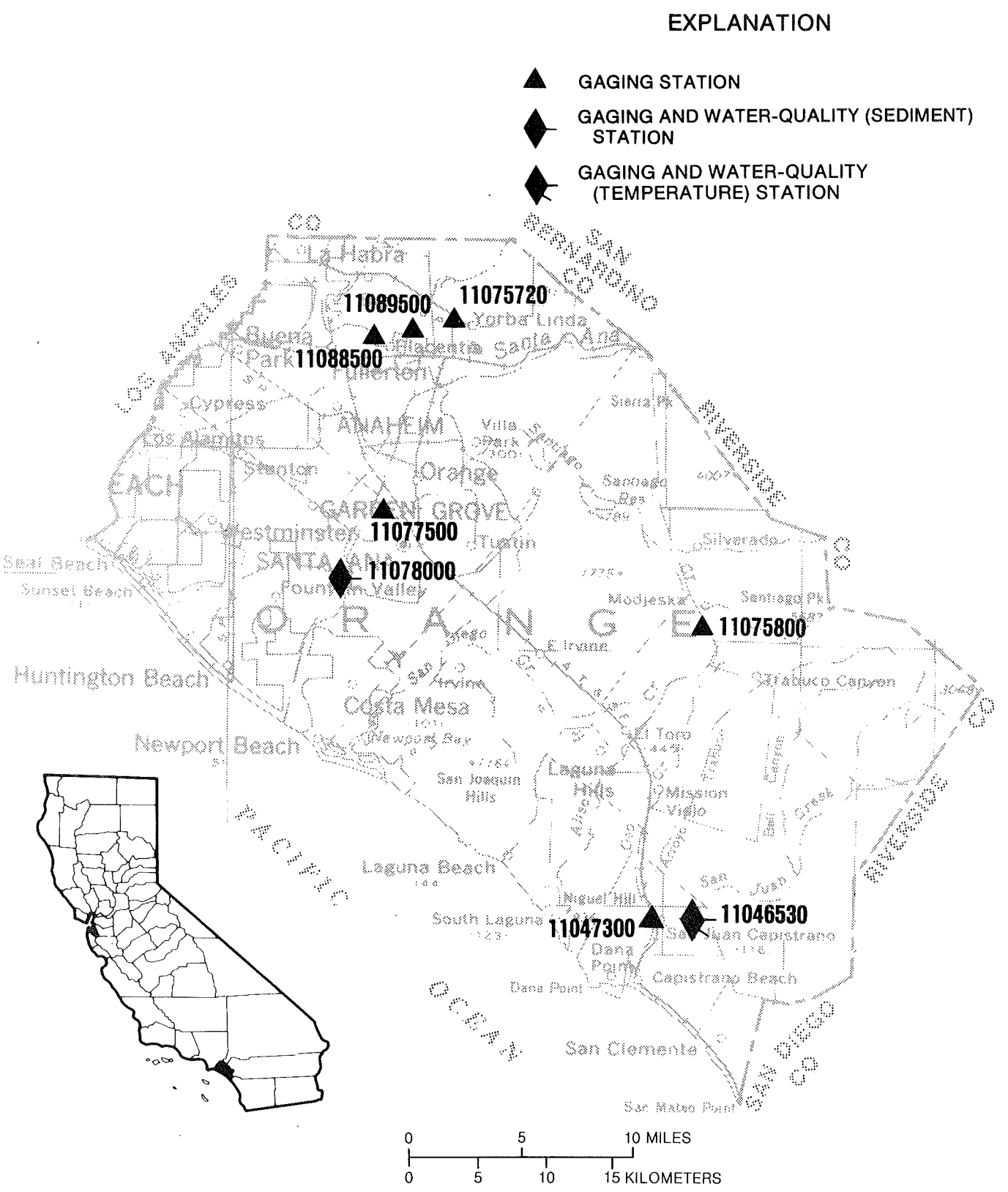

Figure 12. Location of discharge and water-quality stations in Orange County.

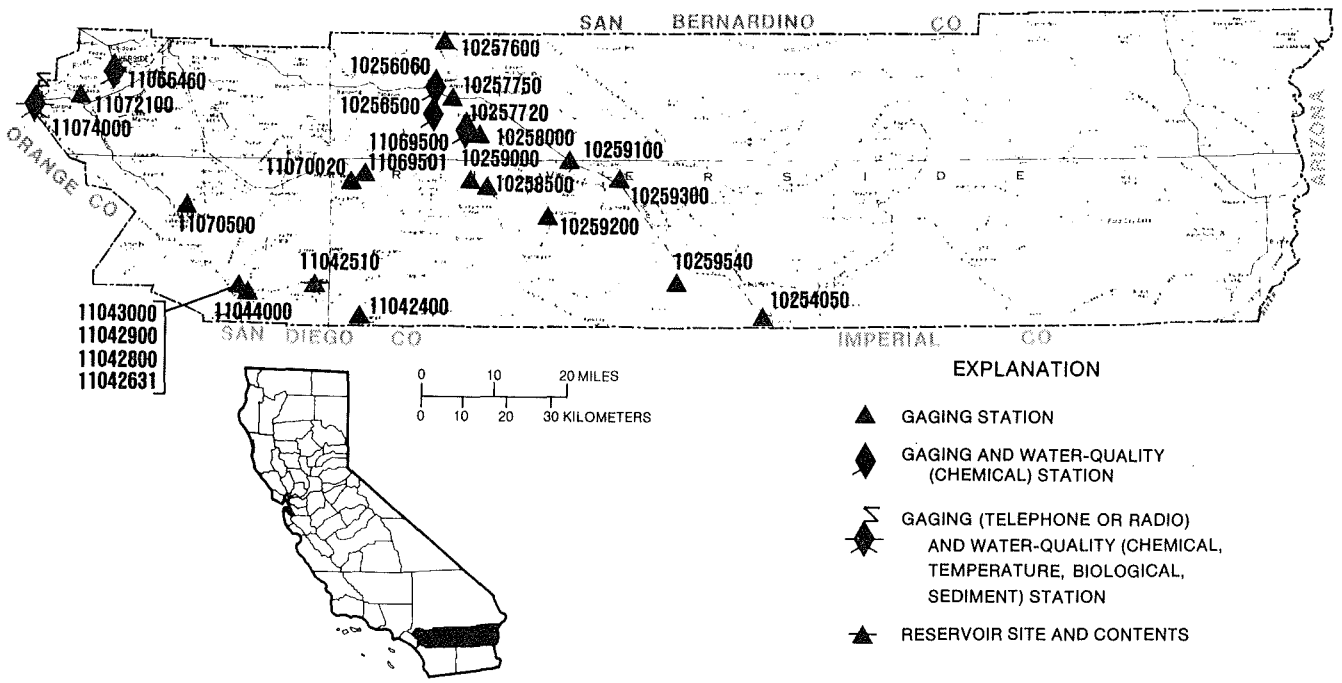

Figure 13. Location of discharge and water-quality stations in Riverside County.

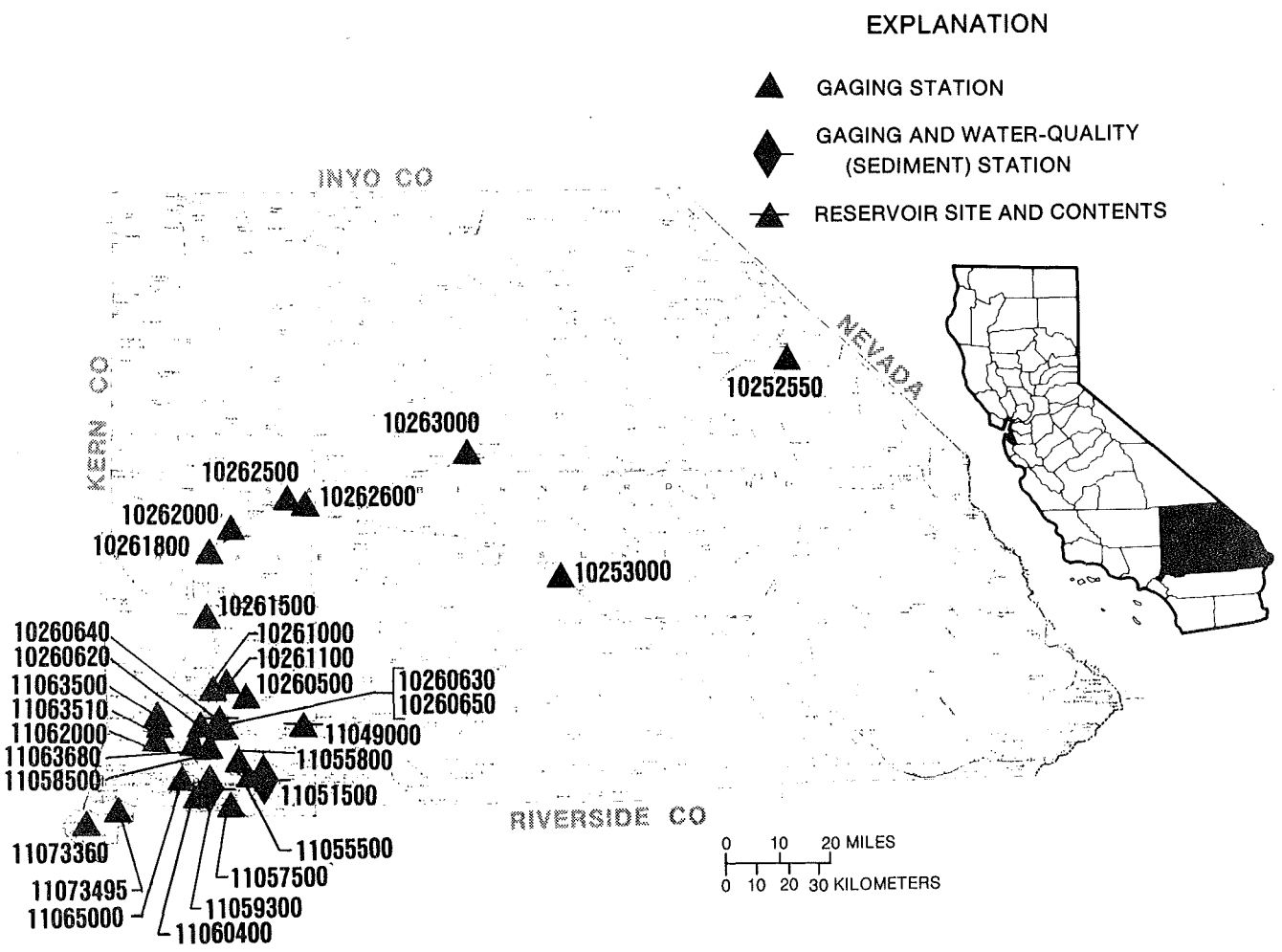

Figure 14. Location of discharge and water-quality stations in San Bernardino County.

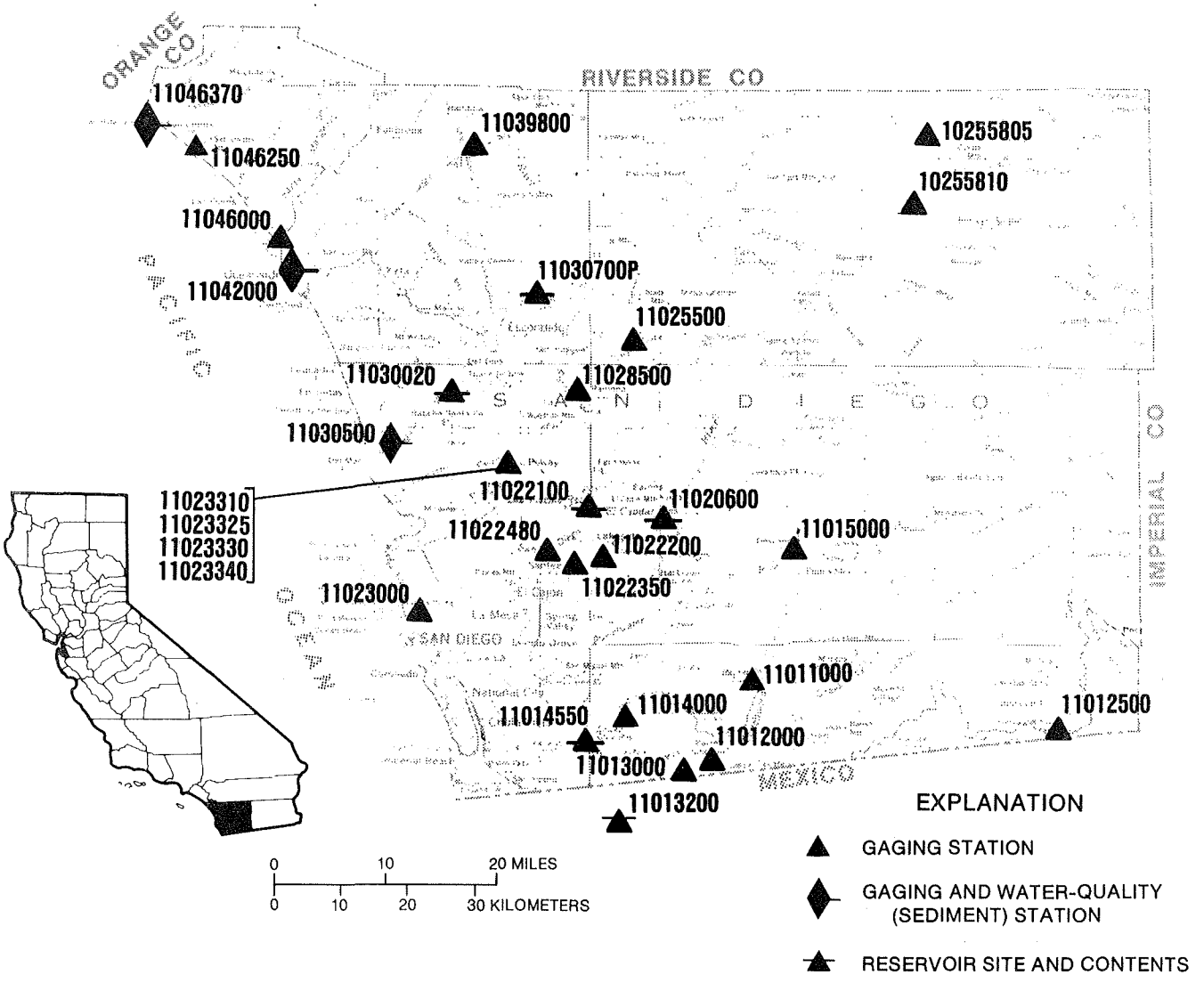

Figure 15. Location of discharge and water-quality stations in San Diego County.

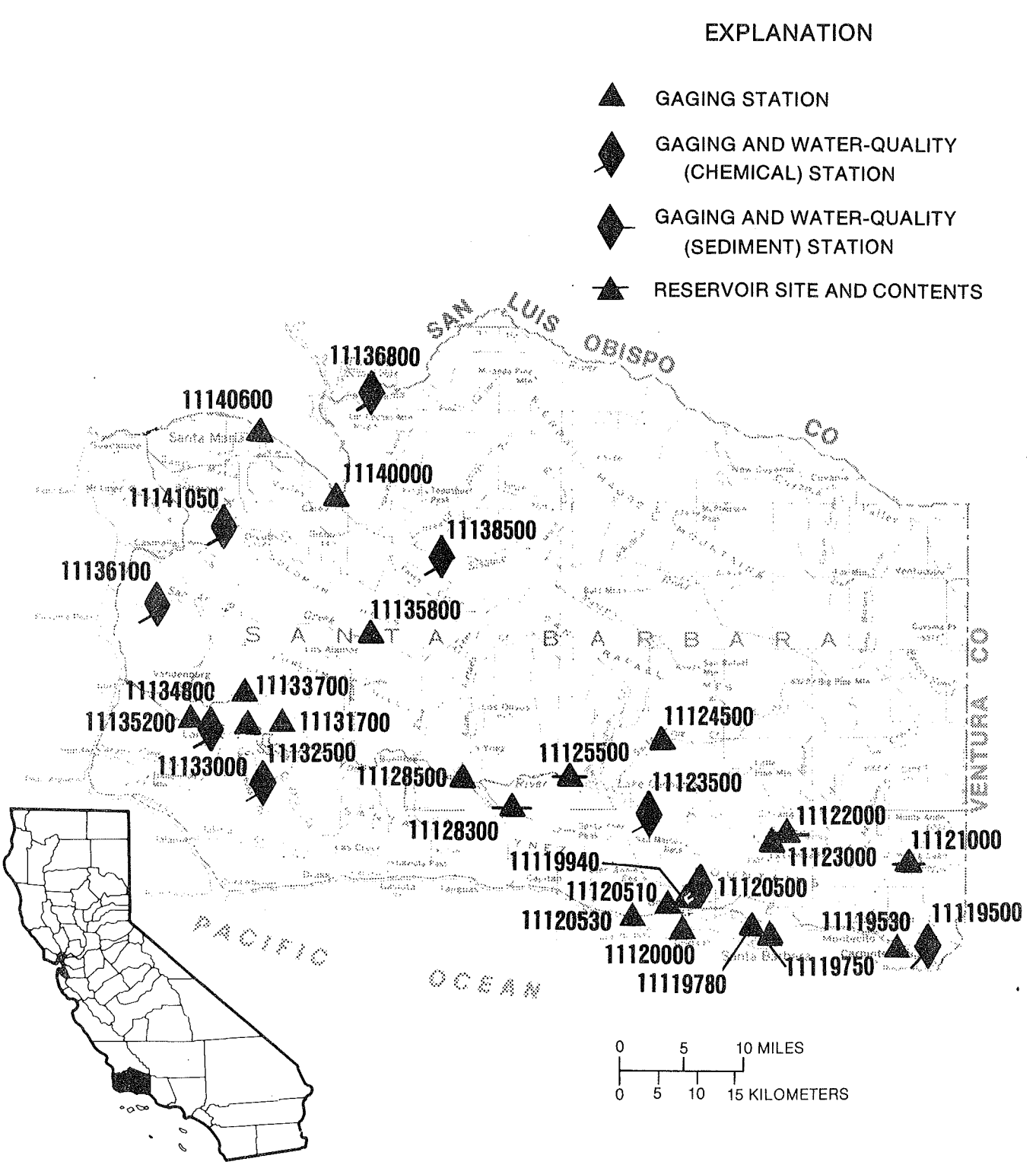

Figure 16. Location of discharge and water-quality stations in Santa Barbara County.

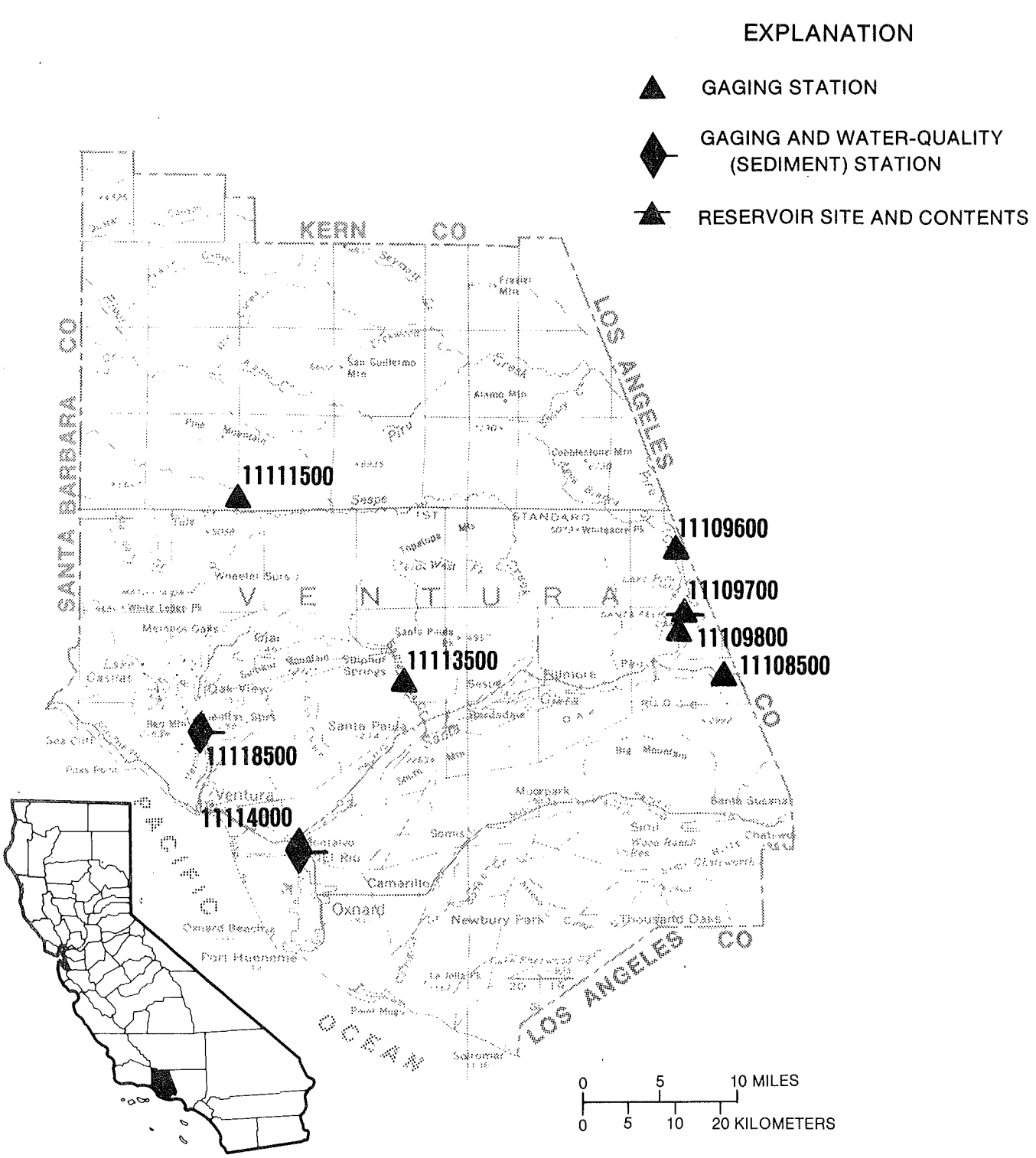

Figure 17. Location of discharge and water-quality stations in Ventura County.

GAGING STATION AND WATER-QUALITY RECORDS

SURFACE-WATER RECORDS

Remark Codes

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

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

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.

PANAMINT VALLEY

10250800 DARWIN CREEK NEAR DARWIN, CA

LOCATION.--Lat 36°19'14", long 117°31'23", in SE 1/4 SW 1/4 sec.34, T.18 S., R.41 E., Inyo County, Hydrologic Unit 18090204, on left bank 510 ft downstream from Darwin Falls, 1.6 mi upstream from unnamed tributary, and 5.2 mi northeast of Darwin.
DRAINAGE AREA.--173 mi^2.
PERIOD OF RECORD.--October 1962 to September 1989 (discontinued).
GAGE.--Water-stage recorder. Elevation of gage is 2,640 ft above National Geodetic Vertical Datum of 1929, from topographic map. Prior to Aug. 6, 1970, at site 190 ft downstream at same datum.
REMARKS.--Records fair except those for periods of estimated daily discharges, which are poor. No regulation upstream from station. Town of Darwin pumps water upstream from station for municipal supply.
AVERAGE DISCHARGE.--27 years, 0.40 ft^3/s, 290 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,400 ft^3/s, Jan. 25, 1969, gage height, 8.40 ft, at site then in use, from floodmarks on basis of slope-conveyance study of peak flow; minimum daily, 0.05 ft^3/s, Aug. 30 to Sept. 4, 1969, Sept. 10-12, 15, 17, 1980.
EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 20.42 ft, present site, from floodmarks, date and discharge unknown.
EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10 ft^3/s and maximum (*) from rating curve extended above 1.0 ft^3/s on basis of slope-area measurement at gage height 6.45 ft and slope-conveyance study at gage-height 8.40 ft:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 26	1830	*1.4	*4.75				

Minimum daily, 0.15 ft^3/s, July 21 to Aug. 30.

CORRECTIONS.--The average discharge values for the water year 1988 are as follows: 26 years, 0.41 ft^3/s, 297 acre-ft/yr. The previously published values were incorrect.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.34	.60	.47	.34	.34	.17	e.25	e.25	e.25	e.22	e.15	e.20
2	e.34	.64	.47	.31	.34	.17	e.25	e.25	e.25	e.22	e.15	e.20
3	e.34	.64	.47	.34	.34	.24	e.25	e.25	e.25	e.22	e.15	e.20
4	e.34	.64	.39	.34	.34	.24	e.25	e.25	e.25	e.22	e.15	e.20
5	e.34	.64	.34	.39	.34	.24	e.25	e.25	e.25	e.22	e.15	e.20
6	e.34	.64	.34	.47	.34	.24	e.25	e.25	e.25	e.20	e.15	e.20
7	e.34	.64	.34	.47	.34	.24	e.25	e.25	e.25	e.20	e.15	e.20
8	e.34	.64	.34	.47	.40	.24	e.25	e.25	e.25	e.20	e.15	e.20
9	e.34	.64	.34	.47	.59	.24	e.25	e.25	e.25	e.20	e.15	e.20
10	e.34	.64	.34	.47	.47	.25	e.25	e.25	e.25	e.20	e.15	e.20
11	e.34	.64	.34	.38	.47	.25	e.25	e.40	e.24	e.20	e.15	e.20
12	e.34	.64	.34	.34	.47	.24	e.25	e.30	e.24	e.20	e.15	e.20
13	e.34	.72	.42	.36	.46	.24	e.25	e.28	e.24	e.20	e.15	e.20
14	e.34	.81	.52	.29	.45	.24	e.25	e.26	e.24	e.20	e.15	e.20
15	e.34	.81	.47	.35	.41	.24	e.25	e.25	e.24	e.20	e.15	e.20
16	e.34	.64	.50	.34	.42	e.25	e.25	e.25	e.23	e.20	e.15	e.20
17	e.34	.64	.60	.34	.43	e.25	e.25	e.25	e.23	e.20	e.15	e.20
18	e.34	.64	.81	.34	.44	e.25	e.25	e.25	e.23	e.20	e.15	e.20
19	e.34	.64	.83	.34	.46	e.25	e.25	e.25	e.23	e.20	e.15	e.30
20	.34	.64	.82	.34	.47	e.25	e.25	e.25	e.23	e.20	e.15	e.28
21	.34	.54	.73	.34	.46	e.25	e.25	e.25	e.22	e.15	e.15	e.26
22	.34	.47	.64	.34	.45	e.25	e.25	e.25	e.22	e.15	e.15	e.25
23	.40	.47	.64	.39	.44	e.25	e.25	e.25	e.22	e.15	e.15	e.25
24	.64	.47	.65	.34	.54	e.25	e.25	e.25	e.22	e.15	e.15	e.25
25	.64	.47	.64	.34	.49	e.25	e.25	e.25	e.22	e.15	e.15	e.25
26	.64	.47	.74	.34	.39	e.25	e.25	e.25	e.22	e.15	e.15	e.25
27	.64	.47	.64	.34	.31	e.25	e.25	e.25	e.22	e.15	e.15	e.25
28	.59	.47	.47	.34	.23	e.25	e.25	e.25	e.22	e.15	e.15	e.25
29	.47	.47	.47	.34	---	e.25	e.25	e.25	e.22	e.15	e.15	e.25
30	.47	.47	.47	.34	---	e.25	e.25	e.25	e.22	e.15	e.15	e.25
31	.47	---	.39	.34	---	e.25	---	e.25	---	e.15	e.17	---
TOTAL	12.44	17.95	15.97	11.28	11.63	7.48	7.50	7.99	7.05	5.75	4.67	6.69
MEAN	.40	.60	.52	.36	.42	.24	.25	.26	.23	.19	.15	.22
MAX	.64	.81	.83	.47	.59	.25	.25	.40	.25	.22	.17	.30
MIN	.34	.47	.34	.29	.23	.17	.25	.25	.22	.15	.15	.20
AC-FT	25	36	32	22	23	15	15	16	14	11	9.3	13

CAL YR 1988 TOTAL 261.46 MEAN .71 MAX 63 MIN .13 AC-FT 519
WTR YR 1989 TOTAL 116.40 MEAN .32 MAX .83 MIN .15 AC-FT 231

e Estimated.

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 mi^2.

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

AVERAGE DISCHARGE.--25 years (water years 1964-81, 1983-89), 0.111 ft^3/s, 80 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 814 ft^3/s, Aug. 12, 1979, gage height, 5.75 ft, from rating curve extended above 2.5 ft^3/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 ft^3/s and maximum (*), from rating curve extended above 2.5 ft^3/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)
Jan. 4	1200	*5.8	*1.30				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	1.7	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.29	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.11	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.01	.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	.07	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.01	.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	0.00	0.00	0.00	2.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.074	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	1.7	.00	.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	4.5	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 1988 TOTAL 39.86 MEAN .11 MAX 11 MIN .00 AC-FT 79
WTR YR 1989 TOTAL 2.29 MEAN .006 MAX 1.7 MIN .00 AC-FT 4.5

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 mi^2, 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, 227.3 ft below NGVD, Apr. 17-22; minimum, 228.6 ft below NGVD, Sept. 30.

ELEVATION, IN FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	-228.10	-228.00	-228.20	-228.10	-227.90	-227.80	-227.50	-227.40	-227.50	-227.80	-228.00	-228.30
2	-228.10	-228.00	-228.20	-228.10	-227.90	-227.70	-227.50	-227.40	-227.50	-227.80	-228.00	-228.30
3	-228.10	-228.00	-228.20	-228.10	-227.90	-227.70	-227.50	-227.40	-227.60	-227.80	-228.00	-228.30
4	-228.10	-228.00	-228.20	-228.10	-227.90	-227.70	-227.40	-227.40	-227.60	-227.80	-228.00	-228.30
5	-228.10	-228.00	-228.20	-228.10	-227.90	-227.70	-227.40	-227.40	-227.60	-227.80	-228.00	-228.30
6	-228.10	-228.10	-228.20	-228.10	-227.90	-227.70	-227.40	-227.40	-227.60	-227.80	-228.00	-228.30
7	-228.10	-228.10	-228.20	-228.10	-227.90	-227.70	-227.40	-227.40	-227.60	-227.80	-228.00	-228.30
8	-228.10	-228.10	-228.20	-228.10	-227.90	-227.70	-227.40	-227.40	-227.60	-227.80	-228.00	-228.30
9	-228.10	-228.10	-228.20	-228.10	-227.90	-227.60	-227.40	-227.40	-227.60	-227.80	-228.00	-228.30
10	-228.10	-228.10	-228.20	-228.10	-227.90	-227.60	-227.40	-227.40	-227.60	-227.80	-228.00	-228.30
11	-228.10	-228.10	-228.20	-228.10	-227.80	-227.60	-227.40	-227.40	-227.60	-227.80	-228.00	-228.30
12	-228.10	-228.10	-228.20	-228.10	-227.80	-227.60	-227.40	-227.50	-227.60	-227.80	-228.00	-228.30
13	-228.10	-228.10	-228.20	-228.00	-227.80	-227.60	-227.40	-227.50	-227.60	-227.80	-228.00	-228.40
14	-228.10	-228.10	-228.20	-228.00	-227.80	-227.60	-227.40	-227.50	-227.60	-227.80	-228.00	-228.40
15	-228.10	-228.10	-228.20	-228.00	-227.80	-227.60	-227.40	-227.50	-227.60	-227.80	-228.00	-228.40
16	-228.10	-228.10	-228.20	-228.00	-227.80	-227.60	-227.40	-227.50	-227.60	-227.80	-228.00	-228.40
17	-228.10	-228.10	-228.20	-228.00	-227.80	-227.60	-227.30	-227.50	-227.60	-227.80	-228.00	-228.40
18	-228.10	-228.20	-228.20	-228.00	-227.80	-227.60	-227.30	-227.50	-227.60	-227.80	-228.00	-228.50
19	-228.10	-228.20	-228.20	-228.00	-227.80	-227.60	-227.30	-227.50	-227.60	-227.80	-228.10	-228.50
20	-228.10	-228.20	-228.20	-228.00	-227.80	-227.50	-227.30	-227.50	-227.70	-227.80	-228.10	-228.50
21	-228.10	-228.20	-228.20	-228.00	-227.80	-227.50	-227.30	-227.50	-227.70	-227.80	-228.10	-228.50
22	-228.10	-228.20	-228.20	-228.00	-227.80	-227.50	-227.30	-227.50	-227.70	-227.80	-228.20	-228.50
23	-228.00	-228.20	-228.10	-228.00	-227.80	-227.50	-227.40	-227.50	-227.70	-227.90	-228.20	-228.50
24	-228.00	-228.20	-228.10	-228.00	-227.80	-227.50	-227.40	-227.50	-227.70	-227.90	-228.20	-228.50
25	-228.00	-228.20	-228.10	-227.90	-227.80	-227.50	-227.40	-227.50	-227.70	-227.90	-228.20	-228.50
26	-228.00	-228.20	-228.10	-227.90	-227.80	-227.50	-227.40	-227.50	-227.70	-227.90	-228.20	-228.50
27	-228.00	-228.20	-228.10	-227.90	-227.80	-227.50	-227.40	-227.50	-227.70	-227.90	-228.20	-228.50
28	-228.00	-228.20	-228.10	-227.90	-227.80	-227.50	-227.40	-227.50	-227.70	-227.90	-228.20	-228.50
29	-228.00	-228.20	-228.10	-227.90	---	-227.50	-227.40	-227.50	-227.70	-227.90	-228.20	-228.50
30	-228.00	-228.20	-228.10	-227.90	---	-227.50	-227.40	-227.50	-227.80	-227.90	-228.30	-228.60
31	-228.00	---	-228.10	-227.90	---	-227.50	---	-227.50	---	-227.90	-228.30	---
MAX	-228.00	-228.00	-228.10	-227.90	-227.80	-227.50	-227.30	-227.40	-227.50	-227.80	-228.00	-228.30
MIN	-228.10	-228.20	-228.20	-228.10	-227.90	-227.80	-227.50	-227.50	-227.80	-227.90	-228.30	-228.60

CAL YR 1988 MAX -227.10 MIN -228.20
WTR YR 1989 MAX -227.30 MIN -228.60

INFLOW TO SALTON SEA

Salton Sea, located near the northwest corner of Imperial County, is a closed basin consisting of approximately 8,360 mi^2. 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 1988 to September 1989 and the annual inflow for the calendar year January to December 1988. Inflow from Imperial Valley is the sum of flows in Alamo River (station 10254730), New River (station 10255550), San Felipe Creek (station 10255885), and 36 drains. Drain inflow provided by Imperial Irrigation District. Inflow from Coachella Valley is the sum of flows in Salt Creek (station 10254050), Whitewater River (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	100700	89060	86410	79240	86730	109600	119400	106900	89600	93460	97610	97790
Coachella Valley	8530	7360	9270	8760	9020	10640	10490	10850	9840	9870	9590	9690

TOTAL CAL YR 1988 1,298,380 ac-ft
TOTAL WTR YR 1989 1,270,410 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	131	147	163	186	156	187	179	184	175	148	135	111
New River	15510	13630	18100	17320	13650	14960	14160	15280	12230	11910	14430	11710

CAL YR 1988: Alamo River 2,152 ac-ft WTR YR 1989: 1,900 ac-ft
CAL YR 1988: New River 218,000 ac-ft WTR YR 1989: 172,900 ac-ft

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 mi^2.

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.--28 years, 7.07 ft^3/s, 5,120 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,900 ft^3/s, Sept. 24, 1976, gage height, 16.8 ft, present datum, from floodmarks, from rating curve extended above 20 ft^3/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 ft^3/s, Nov. 1, 4, 5, 9, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 99 ft^3/s, Jan. 4, gage height, 6.82 ft, from rating curve extended above 5 ft^3/s on basis of estimated peak flow; minimum daily, 0.18 ft^3/s, July 24.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	2.8	3.5	4.9	5.2	4.9	3.7	2.3	1.2	.55	.46	.83
2	1.2	2.9	3.3	5.0	5.1	4.8	3.7	2.2	1.2	.56	.47	.82
3	1.4	3.1	3.5	5.1	5.1	4.9	3.5	2.3	1.2	.56	.51	.87
4	1.4	3.0	3.7	20	5.1	4.5	3.4	2.3	1.2	.53	.52	.87
5	1.6	3.0	3.7	12	5.3	5.0	3.2	2.0	1.0	.48	.50	.88
6	1.6	2.7	3.8	5.5	5.2	4.2	2.9	1.9	1.0	.52	.53	.87
7	1.6	2.5	3.7	4.0	5.4	4.0	2.8	1.7	1.0	.51	.56	.86
8	2.0	2.5	3.7	3.6	5.9	4.3	2.8	1.5	.94	.51	.61	.81
9	2.2	2.7	3.4	3.5	5.8	4.5	2.8	1.6	.91	.53	.64	.76
10	1.9	2.7	3.4	3.6	6.4	4.7	2.7	1.6	.94	.55	.72	.81
11	1.8	2.8	3.6	3.8	5.3	4.7	2.7	1.6	.85	.51	.76	.82
12	2.0	2.8	3.8	3.8	5.2	4.2	2.7	1.7	.93	.45	.79	.85
13	2.2	2.8	4.0	3.5	5.3	3.9	2.6	1.8	.99	.41	.76	.84
14	2.2	3.0	4.1	3.6	5.1	3.9	2.6	1.9	.99	.36	.73	.85
15	2.3	3.0	4.2	3.9	4.7	3.8	2.5	2.0	.98	.33	.72	.88
16	2.2	2.9	4.3	4.1	4.5	3.9	2.4	2.0	.96	.33	.72	.88
17	2.2	3.1	4.1	4.3	4.5	3.8	2.3	1.9	.91	.35	.73	.87
18	2.2	3.4	4.2	4.4	4.5	3.5	2.3	1.9	.87	.37	.71	.87
19	2.2	3.0	4.3	4.6	4.7	3.5	2.3	1.8	.87	.35	.69	.91
20	2.4	2.9	4.3	4.7	4.6	4.1	2.3	1.7	.90	.37	.71	1.1
21	2.4	3.2	4.3	4.7	4.2	4.0	2.3	1.6	.91	.55	.71	1.2
22	2.4	3.5	4.3	4.8	4.1	3.5	2.3	1.5	.76	.38	.75	1.3
23	2.5	3.6	4.2	4.9	4.4	3.7	2.2	1.3	.58	.22	.77	1.3
24	2.5	3.7	4.1	4.9	5.0	3.7	2.2	1.2	.53	.18	.77	1.3
25	2.6	3.9	4.3	4.9	5.4	3.7	2.2	1.1	.58	.22	.80	1.4
26	2.7	3.7	4.5	5.0	5.1	3.9	2.2	1.1	.59	.26	.85	1.4
27	3.3	3.6	4.4	4.6	5.1	4.0	2.4	1.2	.55	.29	.87	1.5
28	3.1	3.6	4.5	4.8	5.0	3.9	2.6	1.2	.52	.31	.89	1.5
29	2.9	3.7	4.7	4.9	---	3.7	2.6	1.2	.51	.37	.82	1.5
30	3.1	4.1	4.8	5.1	---	3.7	2.4	1.3	.54	.42	.80	1.5
31	2.9	---	4.7	5.0	---	3.6	---	1.2	---	.45	.80	---
TOTAL	68.1	94.2	125.4	161.5	141.2	126.5	79.6	51.6	25.91	12.78	21.67	31.15
MEAN	2.20	3.14	4.05	5.21	5.04	4.08	2.65	1.66	.86	.41	.70	1.04
MAX	3.3	4.1	4.8	20	6.4	5.0	3.7	2.3	1.2	.56	.89	1.5
MIN	1.1	2.5	3.3	3.5	4.1	3.5	2.2	1.1	.51	.18	.46	.76
AC-FT	135	187	249	320	280	251	158	102	51	25	43	62

CAL YR 1988 TOTAL 1007.20 MEAN 2.75 MAX 28 MIN .23 AC-FT 2000
WTR YR 1989 TOTAL 939.61 MEAN 2.57 MAX 20 MIN .18 AC-FT 1860

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 ft^3/s, Mar. 3, 1983, gage height, 5.95 ft, from rating curve extended above 1,000 ft^3/s; maximum gage height, 7.06 ft, Oct. 10, 1986 (backwater from debris); minimum daily, 259 ft^3/s, Jan. 2, 1985.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,670 ft^3/s, Jan. 4, gage height, 3.04 ft; minimum daily, 315 ft^3/s, Jan. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	919	664	676	609	651	666	936	1040	665	654	723	760
2	914	660	671	509	678	776	932	1010	710	631	710	715
3	903	692	656	546	699	836	937	1040	737	641	712	708
4	922	713	668	1110	753	809	959	1040	725	621	751	708
5	921	724	637	773	725	750	959	1070	730	656	707	708
6	947	703	619	485	646	783	1020	1000	760	684	710	678
7	909	715	677	372	637	846	1040	1020	742	722	705	622
8	898	730	647	360	735	855	1100	1010	731	701	749	643
9	901	694	640	346	758	822	1060	885	709	716	741	693
10	833	709	686	358	745	856	1040	876	699	731	791	708
11	808	749	681	356	710	885	1050	885	645	749	830	700
12	825	716	644	325	752	840	1050	920	675	757	755	678
13	789	716	643	315	673	806	1040	901	725	728	693	700
14	816	673	678	348	660	776	1020	862	706	710	649	708
15	885	687	708	422	670	805	1030	862	712	669	638	708
16	823	717	680	365	696	773	1070	844	683	709	636	722
17	728	683	664	407	656	795	995	856	687	703	629	745
18	694	707	634	510	650	801	1020	883	723	655	629	736
19	772	720	584	541	658	826	995	737	686	686	693	794
20	822	716	607	538	617	798	1000	688	714	710	723	820
21	799	667	585	526	631	774	1020	701	752	702	738	862
22	781	642	598	521	662	877	1010	757	768	731	753	869
23	698	664	614	484	673	925	1000	784	726	743	723	899
24	653	698	614	511	649	951	1000	761	690	750	730	886
25	673	605	474	549	682	994	1010	729	688	760	715	882
26	674	607	370	521	711	1040	1050	720	627	736	700	920
27	677	628	423	556	653	981	1030	771	613	719	685	918
28	676	577	527	588	644	923	1060	744	637	685	693	893
29	714	605	617	603	---	984	1100	672	658	667	708	887
30	706	621	613	551	---	938	1050	675	650	705	693	892
31	688	---	605	584	---	953	---	688	---	705	715	---
TOTAL	24768	20402	19140	15589	19074	26444	30583	26431	20973	21736	22027	23162
MEAN	799	680	617	503	681	853	1019	853	699	701	711	772
MAX	947	749	708	1110	758	1040	1100	1070	768	760	830	920
MIN	653	577	370	315	617	666	932	672	613	621	629	622
AC-FT	49130	40470	37960	30920	37830	52450	60660	52430	41600	43110	43690	45940

CAL YR 1988 TOTAL 262346 MEAN 717 MAX 1080 MIN 343 AC-FT 520400
WTR YR 1989 TOTAL 270329 MEAN 741 MAX 1110 MIN 315 AC-FT 536200

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

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969-70, 1975 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 1988 TO SEPTEMBER 1989

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)
DEC												
20...	0815	622	3520	8.10	12.0	180	770	10.3	96	K7700	37000	820
MAR												
24...	1000	915	3070	8.10	19.0	190	765	8.5	92	2100	24000	740
JUN												
28...	1015	636	3360	8.00	26.5	140	760	6.5	82	2000	1300	810
SEP												
26...	1315	971	3510	8.00	27.0	160	765	7.0	89	6000	2900	820

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											
20...	170	94	500	57	8	9.0	271	0	222	870	580
MAR											
24...	160	82	410	54	7	10	255	0	209	760	470
JUN											
28...	170	92	430	53	7	11	263	0	216	790	540
SEP											
26...	170	96	460	55	7	10	271	0	222	900	510

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											
20...	0.50	12	2400	2420	3.26	0.540	8.90	3.30	3.10	4.3	0.230
MAR											
24...	0.50	12	2090	2080	2.84	0.780	8.70	5.00	5.40	5.4	0.760
JUN											
28...	0.50	13	2280	2210	3.10	1.10	5.90	2.40	1.70	2.8	0.300
SEP											
26...	0.50	12	2430	2330	3.30	0.450	6.90	0.580	0.320	1.9	0.370

See footnote at end of table.

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

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS 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											
20...	0.210	0.170	20	4	100	<10	<1	<1	<1	3	30
MAR											
24...	0.700	0.630	20	6	200	<10	<1	<1	<1	3	20
JUN											
28...	0.270	0.240	20	5	<100	<10	<1	1	<1	2	20
SEP											
26...	0.320	0.330	10	5	<100	<10	<1	<1	<1	4	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)
DEC											
20...	<5	160	20	<0.1	11	<1	9	1.0	3200	9	<10
MAR											
24...	<5	140	40	0.1	12	5	5	3.0	2800	13	10
JUN											
28...	<1	170	20	<0.1	12	<1	7	<1.0	2900	36	<10
SEP											
26...	<1	170	<10	<0.1	14	2	9	<1.0	3400	16	<10

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

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAR										
24...*	1350	12.0	3120	7.90	19.5	765	8.4	92	838	87
24...*	1355	22.0	3120	7.90	19.5	765	8.4	92	1170	66
24...*	1405	34.0	3100	7.90	19.5	765	8.4	92	1120	65
24...*	1410	43.0	3090	8.00	19.5	765	8.4	92	1090	69
24...*	1415	53.0	3060	8.00	19.5	765	8.3	91	1070	78
SEP										
26...*	1735	12.0	3460	8.00	29.0	760	7.0	92	550	84
26...*	1740	21.0	3570	8.00	28.5	760	7.1	93	758	65
26...*	1745	33.0	3560	8.00	28.0	760	7.0	91	564	83
26...*	1750	42.0	3550	7.90	28.0	760	7.0	91	721	62
26...*	1755	53.0	3630	8.00	28.0	760	6.9	89	831	66

* Instantaneous streamflow at the time of cross-sectional measurement: Mar. 24, 963 ft^3/s; Sept. 26, 955 ft^3/s.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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						
20...	0815	622	12.0	661	1110	93
MAR						
24...	1000	915	19.0	986	2440	69
24...	1400	963	19.5	1060	2760	73
JUN						
28...	1015	636	26.5	517	888	79
SEP						
26...	1315	971	27.0	734	1920	61
26...	1745	955	28.0	685	1770	72

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 ft^3/s, Aug. 17, 1977, estimated by Imperial Irrigation District; minimum daily, 288 ft^3/s, Jan 2, 1966, Dec. 15, 1984.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1,220 ft^3/s, Apr. 26, 29; minimum daily, 319 ft^3/s, Jan. 13.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	945	782	704	680	e770	818	1060	1090	729	764	836	865
2	934	818	747	549	e780	1050	997	1040	791	729	800	818
3	924	800	704	578	e810	1040	924	1070	846	729	755	791
4	986	809	721	1180	e850	894	965	1100	855	713	836	782
5	976	827	663	1030	e830	836	976	1120	855	738	738	800
6	997	836	672	600	800	827	997	1040	914	755	747	800
7	955	846	782	409	738	855	1090	1030	865	809	721	791
8	934	904	773	381	904	904	1160	1030	884	836	800	773
9	955	846	729	371	904	894	1160	955	791	846	800	800
10	884	855	773	376	904	924	1120	1040	791	865	865	800
11	818	924	809	438	884	945	1040	1040	755	894	924	818
12	846	855	764	387	894	934	1100	976	764	904	894	782
13	836	827	704	319	846	924	1160	997	791	e860	818	782
14	865	827	764	350	818	884	1120	945	773	855	713	836
15	884	800	827	444	782	884	1070	934	764	773	672	914
16	855	827	738	392	818	865	1140	904	782	782	680	914
17	764	836	688	420	773	875	1100	875	800	809	680	884
18	688	904	721	556	773	875	1110	904	836	855	704	986
19	773	827	608	631	791	894	1110	818	800	755	773	914
20	827	791	663	600	713	894	1090	747	875	782	809	965
21	836	738	631	600	713	827	1120	764	865	747	827	1020
22	836	688	647	578	764	894	1190	809	e860	738	836	1040
23	764	713	647	578	809	965	1170	836	e840	773	827	1100
24	704	773	623	593	791	986	1210	865	e780	809	827	1030
25	738	655	647	655	800	1160	1180	846	e750	791	827	1160
26	729	608	355	663	846	1170	1220	827	e730	764	791	1140
27	721	647	376	631	800	1130	1190	846	713	747	764	1060
28	713	585	535	688	818	1050	1130	846	764	721	773	1020
29	755	655	713	738	---	1060	1220	818	800	721	773	1090
30	809	647	672	680	---	1070	1140	773	782	747	782	1060
31	773	---	655	663	---	1040	---	791	---	773	800	---
TOTAL	26024	23450	21055	17758	22723	29368	33259	28676	24145	24384	24392	27535
MEAN	839	782	679	573	812	947	1109	925	805	787	787	918
MAX	997	924	827	1180	904	1170	1220	1120	914	904	924	1160
MIN	688	585	355	319	713	818	924	747	713	713	672	773
AC-FT	51620	46510	41760	35220	45070	58250	65970	56880	47890	48370	48380	54620

CAL YR 1988 TOTAL 294478 MEAN 805 MAX 1210 MIN 355 AC-FT 584100
WTR YR 1989 TOTAL 302769 MEAN 830 MAX 1220 MIN 319 AC-FT 600500

e Estimated.

10254970 NEW RIVER AT INTERNATIONAL BOUNDARY, AT CALEXICO, CA

LOCATION.--Lat 32°39'57", long 115°30'08", in SW 1/4 SE 1/4 sec.14, T.17 S., R.14 E., Imperial County, Hydrologic Unit 18100200, on left bank 200 ft downstream from bridge on Second Street, 0.2 mi downstream from International Boundary in Calexico.

PERIOD OF RECORD.--October 1979 to current year. October 1945 to September 1979, in files of Imperial Irrigation District.

GAGE.--Water-stage recorder. Elevation of gage is 35 ft below National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--10 years (water years 1980-89), 293 ft^3/s, 212,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 833 ft^3/s, Dec. 9, 1982, gage height, 14.73 ft; minimum daily, 130 ft^3/s, Nov. 29, 1982.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 461 ft^3/s, Jan. 4, gage height, 11.52 ft; minimum daily, 171 ft^3/s, June 30.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	255	256	244	259	243	259	236	246	246	177	243	229
2	248	241	244	279	246	254	232	256	244	191	239	204
3	248	225	253	289	242	254	230	277	249	189	222	191
4	260	232	280	369	233	246	232	287	234	191	208	187
5	260	252	293	380	237	239	237	280	232	204	212	191
6	260	250	298	411	245	239	234	258	231	200	208	193
7	259	245	295	360	266	250	232	254	229	188	215	187
8	272	246	295	332	266	255	226	268	215	183	233	184
9	279	239	283	314	245	252	225	285	209	185	232	183
10	267	231	273	311	249	241	225	309	212	184	245	182
11	263	226	267	315	247	236	225	316	208	184	253	191
12	248	222	275	310	248	245	228	298	204	195	278	186
13	235	215	304	293	267	243	237	285	209	199	267	200
14	229	226	322	270	263	243	238	273	206	187	245	206
15	228	225	336	265	242	243	232	254	211	188	254	195
16	244	238	312	266	241	242	243	258	198	201	247	187
17	244	233	296	262	246	244	231	246	202	195	244	185
18	247	224	297	257	240	244	235	232	197	188	237	180
19	258	213	291	252	236	242	236	221	192	186	248	179
20	241	213	301	252	232	241	234	227	192	181	237	176
21	239	211	292	251	225	241	242	227	194	187	230	176
22	234	206	286	246	229	244	237	220	194	195	235	181
23	271	215	285	252	239	240	233	212	188	188	222	188
24	286	229	296	250	239	241	234	200	187	184	232	218
25	272	226	341	240	242	233	240	202	185	181	226	253
26	239	223	343	236	253	236	259	212	179	181	225	254
27	229	220	342	242	257	246	269	219	185	197	224	212
28	237	230	327	244	262	239	267	216	184	192	221	197
29	258	229	308	245	---	239	256	217	181	219	233	201
30	254	229	282	241	---	235	255	219	171	244	236	206
31	255	---	262	241	---	238	---	231	---	243	224	---
TOTAL	7819	6870	9123	8734	6880	7544	7140	7705	6168	6007	7275	5902
MEAN	252	229	294	282	246	243	238	249	206	194	235	197
MAX	286	256	343	411	267	259	269	316	249	244	278	254
MIN	228	206	244	236	225	233	225	200	171	177	208	176
AC-FT	15510	13630	18100	17320	13650	14960	14160	15280	12230	11910	14430	11710

CAL YR 1988 TOTAL 109923 MEAN 300 MAX 704 MIN 206 AC-FT 218000
WTR YR 1989 TOTAL 87167 MEAN 239 MAX 411 MIN 171 AC-FT 172900

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.--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. 5, Jan. 10 to Feb. 3, Feb. 7-20, June 21 to July 4, July 7, 10, 11, and July 14 to Sept. 30.

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

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 813 ft^3/s, Aug. 11; minimum daily, 528 ft^3/s, July 2.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	738	609	588	617	590	611	730	699	613	545	629	609
2	723	627	607	582	603	637	744	723	634	528	598	617
3	654	625	607	584	605	638	749	714	664	563	594	603
4	659	600	592	742	617	636	766	751	620	556	590	563
5	679	594	613	661	615	643	764	785	609	556	575	578
6	675	592	607	e620	578	644	780	803	609	577	578	562
7	652	594	625	e600	575	683	734	760	590	590	615	565
8	659	590	619	e580	619	660	724	702	591	592	619	580
9	681	580	617	e570	652	686	707	712	591	598	627	563
10	669	586	625	573	641	706	694	712	583	617	635	556
11	675	575	631	556	633	701	704	729	579	609	813	558
12	695	577	609	554	633	676	716	745	582	596	727	569
13	697	573	596	565	601	682	720	740	589	607	681	560
14	681	580	603	580	633	706	724	718	594	603	671	580
15	641	600	661	575	623	662	733	689	612	590	681	627
16	637	571	673	541	643	674	725	647	603	582	615	621
17	619	603	673	552	625	657	729	642	589	596	631	609
18	621	588	661	560	619	647	718	666	580	601	625	598
19	633	582	611	580	611	658	761	657	581	598	605	615
20	647	580	569	586	594	635	757	683	592	573	617	580
21	669	588	571	598	572	657	758	652	600	571	621	575
22	643	607	594	601	600	678	761	608	611	571	625	586
23	625	594	575	615	623	698	743	599	562	590	617	596
24	621	596	565	603	657	717	723	603	550	594	598	603
25	637	549	577	619	667	731	730	599	543	594	590	631
26	667	565	556	613	657	723	723	594	552	565	613	675
27	651	571	598	598	634	721	728	575	532	565	598	689
28	607	558	637	601	632	711	717	597	532	600	603	687
29	590	573	673	611	---	714	727	609	539	629	623	659
30	601	586	665	590	---	702	700	591	536	637	629	659
31	613	---	652	578	---	725	---	594	---	657	625	---
TOTAL	20259	17613	19050	18405	17352	21019	21989	20898	17562	18250	19468	18073
MEAN	654	587	615	594	620	678	733	674	585	589	628	602
MAX	738	627	673	742	667	731	780	803	664	657	813	689
MIN	590	549	556	541	572	611	694	575	532	528	575	556
AC-FT	40180	34940	37790	36510	34420	41690	43620	41450	34830	36200	38610	35850

CAL YR 1988 TOTAL 250714 MEAN 685 MAX 934 MIN 549 AC-FT 497300
WTR YR 1989 TOTAL 229938 MEAN 630 MAX 813 MIN 528 AC-FT 456100

e Estimated.

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 mi^2.

PERIOD OF RECORD.--October 1983 to current year. Records for water years 1984-86 published as Coyote Creek near Borrego Springs (station 10255800). 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 those for periods of estimated daily discharges, which are poor. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--6 years, 3.25 ft^3/s, 2,350 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 67 ft^3/s, Feb. 15. 1986, gage height, 2.39 ft; maximum gage height, 2.83 ft, Aug. 27, 1986; minimum daily, 0.28 ft^3/s, June 21, 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 4	unknown	*e8.0	unknown				

Minimum daily, 0.28 ft^3/s, June 21.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.8	1.4	2.2	e2.8	2.3	2.2	1.2	1.3	1.1	.82	.49	.39
2	1.8	1.5	2.4	e2.8	2.5	2.4	1.2	1.2	1.1	.70	.52	.34
3	1.8	1.6	2.4	e2.7	2.6	2.5	1.2	1.2	1.1	.70	.56	.33
4	1.8	1.6	2.2	e5.0	2.6	2.5	1.1	1.2	1.2	.70	.54	.36
5	1.7	1.6	2.1	e4.0	e2.7	2.8	1.1	1.4	1.3	.70	.54	.38
6	1.9	1.4	2.1	e3.2	e3.6	2.6	1.0	1.3	1.3	.76	.54	.39
7	1.9	1.6	2.0	e2.8	e2.9	2.3	1.0	1.3	1.2	.90	.58	.40
8	1.7	1.6	2.2	e2.6	e2.8	2.1	.94	1.3	1.2	.88	.63	.46
9	1.8	1.9	2.3	e2.6	e3.2	2.0	.94	1.4	1.2	.76	.63	.46
10	1.9	1.9	2.4	e2.7	2.4	1.9	1.0	1.7	1.1	.81	.70	.44
11	1.9	2.0	2.6	e2.7	2.4	1.8	1.3	1.9	1.0	.87	.62	.42
12	1.7	1.9	2.4	e2.6	2.4	1.8	2.0	1.8	.92	.85	.56	.42
13	1.7	1.8	2.4	e2.6	2.5	1.9	2.0	1.7	.88	.76	.55	.38
14	1.6	1.8	2.4	2.7	2.5	2.1	1.9	1.7	.54	.76	.53	.37
15	1.7	2.0	2.6	2.4	2.4	2.1	1.5	1.7	.58	.82	.53	.37
16	1.5	2.0	2.6	2.3	2.5	2.0	1.1	1.8	.54	.82	.56	.36
17	1.4	2.0	2.4	2.3	2.6	2.2	1.1	1.5	.50	.70	.53	.37
18	1.4	2.0	2.5	2.3	2.5	2.0	1.2	1.7	.50	.66	.54	.46
19	1.5	2.0	2.4	2.2	2.3	1.3	1.2	1.7	.54	.66	.55	.54
20	1.6	1.9	2.4	2.2	2.4	e1.2	1.2	1.4	.36	.70	.51	.59
21	1.5	1.9	2.5	2.3	2.3	e1.1	1.3	1.1	.28	.66	.51	.47
22	1.5	1.9	2.6	2.3	2.3	e1.0	1.4	1.1	.39	.76	.48	.50
23	1.4	1.9	e2.7	2.3	2.2	e1.2	1.4	1.1	.37	.66	.48	.52
24	1.5	1.9	e3.0	2.4	2.0	e1.3	1.5	1.3	.44	.70	.53	.54
25	1.4	2.1	e3.5	2.2	2.1	e1.6	1.6	1.3	.49	e.70	.52	.43
26	1.6	2.2	e2.9	2.3	2.0	e2.8	1.7	1.3	.46	e.60	.52	.51
27	1.6	2.2	e2.8	2.5	2.0	e1.4	1.6	1.2	.61	e.58	.50	.49
28	1.6	2.3	e2.8	2.6	2.2	1.3	1.5	1.0	.67	.52	.49	.47
29	1.5	2.3	e2.8	2.4	---	1.2	1.4	.99	.67	.51	.46	.38
30	1.4	2.2	e2.9	2.3	---	1.2	1.2	1.1	.76	.52	.45	.42
31	1.4	---	e2.8	2.3	---	1.1	---	1.2	---	.49	.44	---
TOTAL	50.5	56.4	78.3	81.4	69.2	56.9	39.78	42.89	23.30	22.03	16.59	12.96
MEAN	1.63	1.88	2.53	2.63	2.47	1.84	1.33	1.38	.78	.71	.54	.43
MAX	1.9	2.3	3.5	5.0	3.6	2.8	2.0	1.9	1.3	.90	.70	.59
MIN	1.4	1.4	2.0	2.2	2.0	1.0	.94	.99	.28	.49	.44	.33
AC-FT	100	112	155	161	137	113	79	85	46	44	33	26

CAL YR 1988 TOTAL 779.0 MEAN 2.13 MAX 4.2 MIN 1.0 AC-FT 1550
WTR YR 1989 TOTAL 550.25 MEAN 1.51 MAX 5.0 MIN .28 AC-FT 1090

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 mi^2.

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

AVERAGE DISCHARGE.--39 years, 0.96 ft^3/s, 696 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,640 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 4	1745	*6.7	*3.03				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.38	.81	.75	.90	.76	.13	.00	.00	.00	.00
2	.00	.00	.40	.76	.77	.93	.70	.12	.00	.00	.00	.00
3	.00	.00	.41	.82	.86	1.3	1.3	.11	.00	.00	.00	.00
4	.00	.00	.41	3.7	1.8	1.1	1.9	.09	.00	.00	.00	.00
5	.00	.00	.41	2.5	3.2	.98	1.4	.08	.00	.00	.00	.00
6	.00	.00	.43	1.9	1.7	.93	.93	.07	.00	.00	.00	.00
7	.00	.00	.45	1.5	1.4	.92	.75	.05	.00	.00	.00	.00
8	.00	.00	.45	1.2	1.3	.85	.63	.03	.00	.00	.00	.00
9	.00	.00	.49	1.0	1.6	.83	.51	.01	.00	.00	.00	.00
10	.00	.00	.50	1.0	2.1	.78	.41	.01	.00	.00	.00	.00
11	.00	.00	.52	.94	1.6	.75	.35	.01	.00	.00	.00	.00
12	.00	.00	.53	.87	1.4	.71	.29	.00	.00	.00	.00	.00
13	.00	.00	.53	.83	1.3	.72	.23	.00	.00	.00	.00	.00
14	.00	.00	.52	.81	1.3	.72	.19	.00	.00	.00	.00	.00
15	.00	.00	.55	.81	1.1	.72	.18	.00	.00	.00	.00	.00
16	.00	.00	.66	.79	1.1	.75	.17	.00	.00	.00	.00	.00
17	.00	.00	.63	.78	1.0	.76	.17	.00	.00	.00	.00	.00
18	.00	.00	.63	.76	1.0	.74	.15	.00	.00	.00	.00	.00
19	.00	.00	.74	.75	1.0	.72	.12	.00	.00	.00	.00	.00
20	.00	.00	.68	.75	1.0	.71	.10	.00	.00	.00	.00	.00
21	.00	.00	.95	.76	.95	.72	.08	.00	.00	.00	.00	.00
22	.00	.00	.89	.77	.92	.73	.09	.00	.00	.00	.00	.00
23	.00	.00	.71	.76	.90	.72	.10	.00	.00	.00	.00	.00
24	.00	.00	.70	.77	.85	.73	.10	.00	.00	.00	.00	.00
25	.00	.20	2.4	.78	.82	1.1	.09	.00	.00	.00	.00	.00
26	.00	.46	1.5	.76	.84	2.5	.09	.00	.00	.00	.00	.00
27	.00	.34	1.0	.76	.92	1.5	.06	.00	.00	.00	.00	.00
28	.00	.36	.93	.77	.92	1.0	.06	.00	.00	.00	.00	.00
29	.00	.34	.87	.76	---	.84	.10	.00	.00	.00	.00	.00
30	.00	.36	.81	.75	---	.74	.11	.00	.00	.00	.00	.00
31	.00	---	.81	.75	---	.74	---	.00	---	.00	.00	---
TOTAL	0.00	2.06	21.89	31.67	34.40	28.14	12.12	0.71	0.00	0.00	0.00	0.00
MEAN	.000	.069	.71	1.02	1.23	.91	.40	.023	.000	.000	.000	.000
MAX	.00	.46	2.4	3.7	3.2	2.5	1.9	.13	.00	.00	.00	.00
MIN	.00	.00	.38	.75	.75	.71	.06	.00	.00	.00	.00	.00
AC-FT	.00	4.1	43	63	68	56	24	1.4	.00	.00	.00	.00

CAL YR 1988 TOTAL 201.57 MEAN .55 MAX 9.2 MIN .00 AC-FT 400
WTR YR 1989 TOTAL 130.99 MEAN .36 MAX 3.7 MIN .00 AC-FT 260

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 mi^2.

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 those for periods of 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.--28 years (water years 1962-89), 7.44 ft^3/s, 5,390 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100,000 ft^3/s, Sept. 10, 1976, gage height, 19.0 ft, site and datum then in use, from rating curve extended above 500 ft^3/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 ft^3/s, from rating curve extended above 820 ft^3/s on basis of slope-area measurement at gage height 15.0 ft, from floodmark, and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jan. 5	0500	e1,270	unknown	July 23	0100	e2,550	unknown
Jan. 14	0445	e3,740	unknown	July 28	0245	e2,550	unknown
July 12	1000	242	6.53	Aug. 10	0300	*12,600	*15.00

Minimum daily, 0.14 ft^3/s, Sept. 7.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.56	.80	1.1	1.4	1.4	.80	.89	.74	.57	.51	e.40	.27
2	.56	.80	1.1	1.4	1.1	1.0	.89	.71	.59	.58	e.40	.25
3	.63	.80	1.1	1.5	1.1	1.0	.89	.80	.50	.63	e.40	.33
4	.63	.80	1.1	25	1.1	.89	.89	.64	.44	.55	e.40	.33
5	.63	.80	1.1	e62	1.0	1.0	.89	.53	.46	.56	e.35	.33
6	.56	.80	1.1	1.4	1.0	1.0	1.0	.56	.45	.74	e.40	.25
7	.56	.71	1.1	1.1	1.2	1.0	.74	.47	.44	.74	e.50	.14
8	.56	.71	1.1	1.1	1.2	1.0	.63	.46	.43	.80	e.50	.17
9	.56	.71	1.1	1.1	1.4	1.0	.54	.43	.51	.75	e.40	.22
10	.50	.80	1.1	1.1	1.4	.89	.62	.36	.49	.81	e1510	.25
11	.56	.80	1.1	1.0	1.4	.89	.66	.41	.47	.63	14	.30
12	.56	.71	1.1	.89	1.4	.63	.70	.56	.50	34	1.2	.27
13	.50	.71	1.1	1.0	1.4	.50	.63	.57	.52	2.4	.88	.31
14	.50	.80	1.1	e177	1.4	.56	.61	.54	.49	.55	.73	.33
15	.50	.80	1.1	1.1	1.2	.71	.64	.55	.44	.49	.56	.33
16	.56	.80	1.1	1.1	1.2	.63	.51	.65	.41	.44	.48	.33
17	.56	.89	1.1	1.1	1.2	.56	.58	.60	.34	.39	.34	.28
18	.56	.80	1.1	1.1	1.2	.56	.62	.50	.39	.43	.27	.19
19	.63	.80	1.1	1.2	1.1	.56	.64	.49	.43	.49	.29	.28
20	.63	.89	1.1	1.4	1.1	.56	.60	.50	.52	.48	.21	.30
21	.63	.89	1.1	1.4	1.1	.63	.59	.34	.41	.49	.20	.33
22	.63	1.0	1.2	1.4	1.0	.63	.48	.36	.45	e7.3	.29	.33
23	.63	1.0	1.1	1.4	1.0	.63	.50	.35	.33	e213	.25	.33
24	.63	1.0	1.2	1.2	1.1	.63	.60	.31	.42	e.29	.20	.33
25	.63	1.0	1.2	1.1	1.1	.63	.63	.34	.58	e.50	.27	.33
26	.63	1.1	1.1	1.0	1.1	.63	.74	.50	.54	e.40	.29	.34
27	.63	1.0	1.2	1.1	1.1	.63	.79	.50	.53	e.40	.29	.33
28	.71	1.0	1.2	1.2	.89	.71	.77	.42	.54	e364	.29	.31
29	.80	1.1	1.4	1.2	---	1.0	.78	.40	.49	e2.5	.29	.29
30	.80	1.1	1.4	1.2	---	1.0	.72	.48	.51	e.50	.25	.24
31	.80	---	1.4	1.2	---	1.0	---	.53	---	e.40	.20	---
TOTAL	18.83	25.92	35.5	297.39	32.89	23.86	20.77	15.60	14.19	636.75	1535.53	8.62
MEAN	.61	.86	1.15	9.59	1.17	.77	.69	.50	.47	20.5	49.5	.29
MAX	.80	1.1	1.4	177	1.4	1.0	1.0	.80	.59	364	1510	.34
MIN	.50	.71	1.1	.89	.89	.50	.48	.31	.33	.29	.20	.14
AC-FT	37	51	70	590	65	47	41	31	28	1260	3050	17

CAL YR 1988 TOTAL 618.53 MEAN 1.69 MAX 135 MIN .26 AC-FT 1230
WTR YR 1989 TOTAL 2665.85 MEAN 7.30 MAX 1510 MIN .14 AC-FT 5290
e Estimated.

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 Gorgonio River.

DRAINAGE AREA.--59.1 mi^2.

WATER-DISCHARGE RECORDS

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

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. During the 1989 water year no imported water was released. Water is diverted out of the basin 16.5 mi upstream to powerplants in the San Gorgonio 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 ft^3/s, Feb. 15, 1986, gage height, 11.97 ft, from rating curve extended above 900 ft^3/s; no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 70 ft^3/s, Dec. 25; minimum daily, 0.46 ft^3/s, June 23.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.2	e2.8	e6.8	e12	e5.4	e5.0	e5.0	e3.1	1.2	e.60	1.1	e2.0
2	e2.2	e2.8	5.9	e14	e6.0	e17	e4.0	e3.0	.84	e.60	1.0	e2.0
3	e2.2	e8.0	6.2	e13	e5.8	e15	e3.3	e3.0	.88	.58	.93	e2.0
4	e2.2	e6.0	5.4	e15	e25	e11	e2.9	e2.9	.79	.53	.97	e2.0
5	e2.3	e5.0	4.8	e12	e15	e8.0	e2.4	e2.9	.88	e.60	.83	e2.0
6	e2.3	e4.8	4.1	e11	e13	e9.0	e2.1	e2.8	.98	e.60	.79	e2.0
7	e2.3	e4.6	3.1	e10	e11	e8.6	e1.9	e2.8	.81	.70	.80	e2.0
8	e2.3	e4.4	3.9	e10	e13	e7.0	e1.7	e2.7	.96	.72	7.6	e2.0
9	e2.3	e4.3	2.7	e10	e15	e5.0	e1.5	e2.6	1.2	.83	e13	e2.0
10	e2.3	e4.1	2.4	e10	e20	e3.8	e1.4	e2.6	1.0	.71	e19	e2.0
11	e2.4	e3.9	2.8	e9.0	e15	e3.3	e1.4	e2.6	1.1	.70	e2.0	e2.0
12	e2.4	e3.8	2.9	e8.0	e12	e2.9	e1.3	e2.5	1.1	.54	e2.0	e2.0
13	e2.4	e3.7	2.6	e7.5	e12	e2.6	e1.3	e2.5	1.1	.53	e2.0	e2.0
14	e2.4	e6.0	2.9	e8.0	e10	e2.5	e1.2	e2.5	.77	.67	e2.0	e2.0
15	e2.4	e10	4.6	e7.5	e9.0	e2.4	e1.2	e4.5	.95	.76	e2.0	e2.0
16	e2.4	e7.0	6.0	e7.0	e9.2	e2.3	e1.1	e5.0	.82	.83	e2.0	e2.0
17	e2.4	e5.0	4.3	e6.5	e8.0	e2.2	e1.1	e4.0	.79	.71	e2.0	e2.0
18	e2.5	e4.7	3.9	e6.0	e5.0	e2.1	e1.1	e2.0	.81	.79	e2.0	e2.0
19	e2.5	e4.5	4.4	e7.4	e3.6	e2.0	e1.0	e1.5	.61	.79	e2.0	e2.0
20	e2.5	e4.4	4.9	e6.0	e3.2	e1.9	e1.0	e1.4	.76	.57	e2.0	e2.0
21	e2.5	e4.2	35	e5.8	e2.8	e1.9	e.96	e1.2	.56	.75	e2.0	e2.0
22	e2.5	e4.1	e23	e5.6	e2.6	e1.8	e.92	e1.1	.80	.82	e2.0	e2.0
23	e2.6	e4.0	e23	e5.6	e2.4	e1.8	e.88	e1.0	.46	.68	e2.0	e2.0
24	e2.6	e13	e35	e5.4	e2.3	e1.8	e.85	1.1	.63	.55	e2.0	e2.0
25	e2.6	e15	e70	e5.2	e2.1	e9.0	e.83	1.1	.75	.88	e2.0	e2.0
26	e2.6	e11	e20	e7.0	e2.0	e15	e5.0	1.1	.78	.92	e2.0	e2.0
27	e2.6	e8.0	e15	e6.0	e1.9	e14	e4.0	1.0	.69	.79	e2.0	e2.0
28	e2.6	e6.4	e17	e6.4	e1.8	e14	e3.6	.82	e.60	1.6	e2.0	e2.0
29	e2.7	e7.0	e14	e5.8	---	e9.0	e3.4	.86	e.60	.99	e2.0	e2.0
30	e2.7	e8.0	e12	e5.6	---	e7.0	e3.2	.85	e.60	1.0	e2.0	e2.0
31	e2.7	---	e13	e5.4	---	e6.0	---	.94	---	1.2	e2.0	---
TOTAL	75.6	180.5	361.6	253.7	234.1	194.9	61.54	67.97	24.82	23.54	88.02	60.0
MEAN	2.44	6.02	11.7	8.18	8.36	6.29	2.05	2.19	.83	.76	2.84	2.00
MAX	2.7	15	70	15	25	17	5.0	5.0	1.2	1.6	19	2.0
MIN	2.2	2.8	2.4	5.2	1.8	1.8	.83	.82	.46	.53	.79	2.0
AC-FT	150	358	717	503	464	387	122	135	49	47	175	119

WTR YR 1989 TOTAL 1626.29 MEAN 4.46 MAX 70 MIN .46 AC-FT 3230

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 1988 TO SEPTEMBER 1989

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 WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT										
28...	1000	2.6	389	8.40	17.5	190	15	51	14	16
MAY										
03...	1430	3.2	386	8.80	27.0	180	9	51	13	14

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)
OCT									
28...	15	0.5	4.6	185	14	176	33	3.5	0.90
MAY									
03...	14	0.5	4.7	165	10	135	35	3.5	0.90

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-PHOROUS 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)
OCT									
28...	16	242	260	0.33	0.430	0.020	20	8	2
MAY									
03...	15	241	239	0.33	--	--	20	5	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 mi^2.

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 discharge only for 1930, 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.
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.--No estimated daily discharges on creek site. 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 page. 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 October 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: 37 years (water years 1923-26, 1929-31, 1960-89), 9.58 ft^3/s, 6,940 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD (Combined creek and diversion).-- Maximum discharge, 13,000 ft^3/s, Jan. 25, 1969, gage height, 13.8 ft, from floodmarks, site and datum then in use, from rating curve extended above 55 ft^3/s on basis of slope-area measurement of peak flow; minimum daily, 2.1 ft^3/s, June 23-27, Sept. 5-11, 1961.
EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft^3/s and maximum (*):

		Creek only		Combined creek and diversion
Date	Time	Discharge (ft^3/s)	Gage height (ft)	Discharge (ft^3/s)
Dec. 25	0115	107	3.55	107
Mar. 25	1930	109	3.56	109
Aug. 9	2315	*297	*4.34	*297

Creek only: Minimum daily, 0.06 ft^3/s, June 23, 27, 28.
Combined creek and diversion: Minimum daily, 3.0 ft^3/s, Sept. 17.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.4	1.5	1.7	5.0	2.0	4.1	5.3	1.3	.30	.16	.34	.58
2	1.4	1.5	1.7	4.8	1.9	5.5	4.9	1.4	.27	.13	.36	.61
3	1.4	1.5	1.7	4.7	2.0	14	5.2	1.5	.45	.20	.38	.58
4	1.5	1.6	1.6	8.9	11	10	4.8	1.6	2.0	.43	.37	.56
5	1.5	1.6	1.6	8.3	11	8.4	4.0	1.8	.64	.37	.39	.45
6	1.6	1.5	1.6	8.9	5.9	5.3	3.6	1.9	.62	.39	.42	.20
7	1.6	1.4	1.6	7.1	4.7	3.6	3.3	1.9	.55	.44	.41	.21
8	1.6	1.5	1.6	6.1	5.6	4.7	3.4	1.9	.58	.47	2.3	.29
9	1.6	1.5	1.6	5.0	5.8	4.9	3.6	4.3	.56	.44	13	.31
10	1.6	1.6	1.6	4.8	6.5	3.8	3.7	6.1	.62	.51	22	.30
11	1.6	1.6	1.6	5.1	6.5	3.2	3.8	6.0	.59	.59	6.7	.31
12	1.5	1.6	1.6	3.4	6.1	3.2	3.6	3.6	.49	.57	6.2	.30
13	1.3	1.6	1.6	2.4	5.8	3.6	3.2	2.0	.39	.46	4.6	.27
14	1.4	3.8	1.6	2.4	3.8	3.1	2.8	1.9	.36	.45	3.8	.26
15	1.3	4.1	2.8	2.4	2.7	2.8	2.6	3.6	.25	.44	2.3	.29
16	1.3	4.1	4.2	2.4	2.8	2.2	2.5	4.5	.18	.42	1.2	1.9
17	1.3	3.9	4.2	2.4	2.8	2.1	2.6	2.8	.18	.43	1.0	3.0
18	1.3	2.4	4.2	2.4	2.8	2.1	2.6	1.3	.16	.42	.88	3.1
19	1.4	1.6	4.1	2.4	2.8	1.9	2.8	1.4	.13	.39	.76	3.3
20	1.4	1.6	4.1	2.4	2.8	2.0	2.7	1.3	.13	.39	.77	1.9
21	1.4	1.6	7.7	2.4	2.7	1.9	2.4	1.2	.12	.42	.78	1.4
22	1.3	1.6	5.3	2.4	2.6	1.6	2.3	1.1	.15	.43	.73	.34
23	1.3	1.6	4.9	2.3	2.6	1.5	2.0	.90	.06	.41	.70	.32
24	1.3	2.5	8.2	2.9	2.8	1.4	1.8	.90	.07	.35	.72	.35
25	1.4	4.2	38	4.2	3.2	31	2.7	.95	.08	.36	.80	.34
26	1.3	5.3	11	4.2	3.6	28	6.5	.70	.08	.40	.77	.39
27	1.4	4.6	7.7	2.9	5.2	15	3.6	.52	.06	.50	.71	.37
28	1.5	2.9	6.0	2.0	5.2	9.5	1.5	.50	.06	.52	.66	.35
29	1.5	1.7	5.4	1.9	---	7.6	1.4	.47	.07	.45	.63	.38
30	1.5	1.7	5.3	1.9	---	6.6	1.3	.46	.08	.39	.60	.37
31	1.4	---	5.1	2.0	---	5.7	---	.37	---	.36	.60	---
TOTAL	44.3	69.2	150.9	120.4	123.2	200.3	96.5	60.17	10.28	12.69	75.88	23.33
MEAN	1.43	2.31	4.87	3.88	4.40	6.46	3.22	1.94	.34	.41	2.45	.78
MAX	1.6	5.3	38	8.9	11	31	6.5	6.1	2.0	.59	22	3.3
MIN	1.3	1.4	1.6	1.9	1.9	1.4	1.3	.37	.06	.13	.34	.20
AC-FT	88	137	299	239	244	397	191	119	20	25	151	46

CAL YR 1988 TOTAL 1466.44 MEAN 4.01 MAX 38 MIN 0.18 AC-FT 2909
WTR YR 1989 TOTAL 987.15 MEAN 2.70 MAX 38 MIN .06 AC-FT 1960

10256501 SNOW CREEK NEAR WHITE WATER, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF SNOW CREEK AND DIVERSION, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.8	3.9	4.2	5.0	4.6	6.5	9.3	5.5	4.5	4.0	3.3	3.5
2	3.8	4.0	e4.3	4.8	4.4	e6.8	8.9	5.5	4.5	3.9	3.5	3.5
3	3.7	3.9	4.3	4.7	4.4	14	9.0	5.6	4.4	3.9	3.5	3.4
4	3.8	3.8	4.2	8.9	12	10	e8.6	5.7	4.4	3.5	3.5	3.4
5	3.8	4.0	4.2	8.3	11	8.4	8.0	5.9	4.7	3.6	3.5	3.4
6	3.8	3.9	4.2	8.9	6.7	7.5	7.6	5.9	4.6	3.6	3.4	3.3
7	3.8	3.8	4.3	7.1	5.8	7.6	7.4	5.9	4.5	3.6	3.4	3.4
8	3.8	4.0	4.2	6.1	5.6	9.0	7.5	5.8	4.6	3.7	4.5	3.5
9	3.8	3.9	4.2	5.6	5.8	9.2	7.7	6.1	4.6	3.5	13	3.4
10	3.8	4.0	4.2	5.3	6.5	8.1	7.8	6.1	4.6	3.7	22	3.4
11	3.8	4.0	4.2	5.1	6.5	7.5	7.9	6.0	4.6	3.8	6.7	3.5
12	3.9	4.0	4.2	5.1	6.1	7.4	7.8	5.9	4.5	3.8	6.2	3.5
13	3.8	4.0	4.2	4.9	5.8	7.8	7.5	5.6	4.3	3.7	4.6	3.5
14	3.9	4.5	4.2	4.8	5.3	7.2	7.2	5.7	4.3	3.5	3.8	3.5
15	3.8	4.1	4.1	4.8	5.2	7.0	7.0	5.5	4.2	3.6	3.9	3.5
16	3.8	4.1	4.2	4.7	5.3	6.6	6.9	5.3	4.2	3.5	4.1	3.3
17	3.8	3.9	4.2	4.8	5.2	6.4	7.0	5.3	4.2	3.6	4.0	3.0
18	3.8	4.0	4.2	4.7	5.1	6.3	7.0	5.4	4.2	3.6	4.1	3.1
19	3.9	4.2	4.1	4.7	5.2	6.1	7.3	5.4	4.1	3.6	3.9	3.3
20	3.9	4.1	4.1	4.7	5.2	6.2	7.1	5.3	4.1	3.5	3.9	3.6
21	3.9	4.2	7.7	4.6	5.2	6.2	6.8	5.2	4.0	3.5	3.9	3.3
22	3.8	4.2	5.9	4.6	5.2	6.0	6.7	5.0	3.9	3.6	3.8	3.7
23	3.8	4.1	4.9	4.7	5.1	5.9	6.4	4.9	4.0	3.6	3.8	3.7
24	3.8	3.9	8.2	e4.7	5.4	5.8	6.2	4.9	4.1	3.3	3.8	3.5
25	3.9	4.2	38	e4.6	5.8	33	5.6	4.8	4.1	3.5	3.7	3.5
26	3.8	5.3	11	e4.6	6.2	28	6.5	4.8	4.1	3.5	3.7	3.6
27	3.9	4.6	7.7	e4.7	7.7	15	6.1	4.8	4.1	3.6	3.6	3.6
28	4.0	4.5	6.0	4.7	7.6	12	5.8	4.7	4.1	3.7	3.7	3.5
29	3.9	4.3	5.4	4.5	---	12	5.6	4.7	4.1	3.5	3.6	3.6
30	4.0	4.4	5.3	4.6	---	11	5.5	4.7	4.0	3.5	3.5	3.5
31	3.9	---	5.1	4.6	---	9.9	---	4.6	---	3.5	3.5	---
TOTAL	119.0	123.8	189.2	163.9	169.9	300.4	215.7	166.5	128.6	112.0	149.4	103.5
MEAN	3.84	4.13	6.10	5.29	6.07	9.69	7.19	5.37	4.29	3.61	4.82	3.45
MAX	4.0	5.3	38	8.9	12	33	9.3	6.1	4.7	4.0	22	3.7
MIN	3.7	3.8	4.1	4.5	4.4	5.8	5.5	4.6	3.9	3.3	3.3	3.0
AC-FT	236	246	375	325	337	596	428	330	255	222	296	205

CAL YR 1988 TOTAL 2152.8 MEAN 5.88 MAX 38 MIN 2.9 AC-FT 4270
WTR YR 1989 TOTAL 1941.9 MEAN 5.32 MAX 38 MIN 3.0 AC-FT 3850

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 1988 TO SEPTEMBER 1989

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 WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT										
27...	1245	3.9	115	7.50	15.5	37	0	13	1.0	10
MAY										
03...	1045	5.8	97	8.00	15.5	34	0	12	0.96	8.1

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)
OCT									
27...	36	0.7	2.0	66	0	54	1.8	1.3	0.10
MAY									
03...	33	0.6	1.9	54	0	44	1.0	1.2	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-PHOROUS 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)
OCT									
27...	20	79	82	0.11	<0.100	<0.010	10	19	<1
MAY									
03...	18	74	70	0.10	--	--	10	5	<1

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

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 mi^2.

PERIOD OF RECORD.--October 1984 to current year. 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.--Indeterminate stage-discharge relation at the gage during water year 1989 due to construction work in the channel upstream. 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 Gorgonio River basin and then to an area north of Banning for irrigation. Discharge measurements are shown in the table below.

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 ft^3/s, Nov. 22, 1986, gage height, 4.33 ft; no flow for several days in most years.

DISCHARGE MEASUREMENTS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Time	Discharge (ft^3/s)	Date	Time	Discharge (ft^3/s)
Oct. 3	1630	0	Mar. 21	1400	0
Nov. 15	1320	3.1	Apr. 13	1215	0
Dec. 8	1215	0	May 11	1230	0
Jan. 9	1530	9.0	June 26	1325	0
Jan. 19	1445	e2.0	July 19	1145	0
Feb. 3	1300	0	Sept. 14	1120	e0.1
Feb. 15	1345	e0.5			

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT
a	0	0	0	0	0	0	0	0	0	0	0	0
b	24	116	108	90	122	101	124	110	75	52	78	67

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.
e Estimated.

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 mi^2.

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.--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.--22 years, 3.41 ft^3/s, 2,470 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,750 ft^3/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 long periods in most years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug. 10	0300	*7.8	*1.98				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	e.00	.13	.00	.00	.00	.00	.00	.00	.00	.00	e.00
2	e.00	e.00	.16	.00	.00	.00	.00	.00	.00	.00	.00	e.00
3	e.00	e.00	.16	.00	.00	.00	.00	.00	.00	.00	.00	e.00
4	e.00	e.00	.17	.00	.05	.00	.00	.00	.00	.00	.00	e.00
5	e.00	e.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	e.00
6	e.00	e.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	e.00
7	e.01	e.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	e.00
8	e.00	e.00	.27	.00	.00	.00	.00	.00	.00	.00	.00	e.00
9	e.00	.02	.32	.00	.00	.00	.00	.00	.00	.00	.00	e.00
10	e.00	.05	.23	.00	.00	.00	.00	.00	.00	.00	.47	e.00
11	e.00	.08	.17	.00	.00	.00	.00	.00	.00	.00	.62	e.00
12	e.00	.12	.03	.00	.00	.00	.00	.00	.00	.00	e.00	e.00
13	e.01	.13	.00	.00	.00	.00	.00	.00	.00	.00	e.00	e.00
14	e.00	.09	.00	.00	.00	.00	.00	.14	.00	.00	e.00	e.00
15	e.00	.05	.05	.00	.00	.00	.00	.00	.00	.00	e.00	e.00
16	e.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	e.00	e.00
17	e.00	.00	.10	.00	.00	.00	.00	.00	.00	.00	e.00	e.00
18	e.00	.00	.17	.00	.00	.00	.00	.00	.00	.00	e.00	e.00
19	e.00	.00	.10	.00	.00	.00	.00	.00	.00	.00	e.00	e.00
20	e.00	.00	.16	.00	.00	.00	.00	.00	.00	.00	e.00	e.00
21	e.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	e.00	e.00
22	e.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	e.00	e.00
23	e.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	e.00	e.00
24	e.00	.12	.19	.00	.00	.00	.00	.00	.00	.00	e.00	e.00
25	e.00	.09	.14	.00	.00	.00	.00	.00	.00	.00	e.00	e.00
26	e.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	e.00	e.00
27	e.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	e.00	e.00
28	e.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	e.00	e.00
29	e.00	.09	.00	.00	---	.00	.00	.00	.00	.00	e.00	e.00
30	e.00	.11	.00	.00	---	.00	.00	.00	.00	.00	e.00	e.00
31	e.00	---	.00	.00	---	.00	---	.00	---	.00	e.00	---
TOTAL	0.02	1.16	2.88	0.00	0.05	0.00	0.00	0.14	0.00	0.00	1.09	0.00
MEAN	.001	.039	.093	.000	.002	.000	.000	.005	.000	.000	.035	.000
MAX	.01	.13	.32	.00	.05	.00	.00	.14	.00	.00	.62	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.04	2.3	5.7	.00	.1	.00	.00	.3	.00	.00	2.2	.00

CAL YR 1988 TOTAL 143.07 MEAN .39 MAX 52 MIN .00 AC-FT 284
WTR YR 1989 TOTAL 5.34 MEAN .015 MAX .62 MIN .00 AC-FT 11

e Estimated.

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 mi^2.

WATER-DISCHARGE RECORDS

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

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

REMARKS.--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 ft^3/s, Aug. 9, 1989, gage height, 9.95 ft, from rating curve extended above 2.0 ft^3/s on basis of critical depth computation; no flow for many days in 1989.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 62 ft^3/s, Aug. 9, gage height, 9.95 ft; no flow for many days.

REVISIONS.--The maximum discharge for the water year 1987 has been revised to 6.8 ft^3/s, Nov. 18, 1986, gage height, 9.03 ft superseding the figures published in the report for 1987.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.06	.35	.35	.43	.35	.18	.09	.02	.00	.00	.03
2	.03	.07	.35	.35	.43	.35	.18	.07	.02	.00	.00	.03
3	.03	.08	.35	.35	.43	.33	.16	.06	.02	.00	.00	.02
4	.05	.07	.35	.93	.37	.33	.14	.06	.02	.00	.00	.02
5	.08	.06	.35	.58	.23	.35	.14	.05	.02	.00	.00	.02
6	.09	.08	.35	.48	.26	.35	.13	.04	.02	.00	.00	.02
7	.08	.10	.31	.43	.35	.35	.12	.04	.02	.00	.00	.02
8	.06	.11	.29	.43	.35	.35	.11	.04	.02	.00	.00	.02
9	.04	.11	.29	.47	.35	.35	.11	.04	.02	.00	1.7	.02
10	.06	.11	.29	.51	.33	.33	.10	.07	.02	.00	1.4	.02
11	.05	.15	.29	.51	.29	.29	.09	.07	.01	.00	.58	.02
12	.06	.19	.29	.51	.29	.26	.09	.10	.01	.00	.33	.02
13	.07	.18	.29	.51	.29	.23	.09	.07	.01	.00	.14	.02
14	.05	.22	.29	.51	.35	.23	.10	.08	.01	.00	.12	.03
15	.06	.34	.44	.51	.43	.23	.08	.12	.00	.00	.13	.05
16	.05	.63	.40	.51	.43	.23	.09	.11	.00	.00	.13	.07
17	.04	.52	.35	.51	.43	.23	.09	.06	.00	.00	.11	.06
18	.05	.48	.30	.51	.43	.23	.09	.06	.00	.00	.10	.06
19	.06	.51	.23	.51	.40	.21	.09	.04	.00	.00	.08	.17
20	.05	.51	.23	.51	.35	.18	.07	.06	.00	.00	.07	.23
21	.07	.48	.33	.51	.35	.18	.08	.04	.00	.00	.07	.23
22	.05	.60	.32	.51	.35	.18	.09	.05	.00	.00	.05	.23
23	.06	.60	.29	.51	.35	.18	.10	.05	.00	.00	.05	.29
24	.05	.55	.32	.51	.35	.18	.11	.05	.00	.00	.05	.29
25	.06	.57	.59	.48	.35	.41	.13	.04	.00	.00	.05	.29
26	.07	.49	.43	.43	.35	.51	.14	.04	.00	.00	.04	.29
27	.08	.56	.43	.43	.35	.32	.14	.04	.00	.00	.04	.29
28	.10	e.56	.40	.43	.35	.23	.12	.03	.00	.00	.03	.29
29	.08	e.43	.35	.43	---	.22	.10	.03	.00	.00	.03	.33
30	.06	.35	.35	.43	---	.20	.08	.04	.00	.00	.03	.35
31	.05	---	.35	.43	---	.18	---	.03	---	.00	.03	---
TOTAL	1.82	9.77	10.55	15.08	10.02	8.55	3.34	1.77	0.24	0.00	5.36	3.83
MEAN	.059	.33	.34	.49	.36	.28	.11	.057	.008	.000	.17	.13
MAX	.10	.63	.59	.93	.43	.51	.18	.12	.02	.00	1.7	.35
MIN	.03	.06	.23	.35	.23	.18	.07	.03	.00	.00	.00	.02
AC-FT	3.6	19	21	30	20	17	6.6	3.5	.5	.00	11	7.6

CAL YR 1988 TOTAL 172.36 MEAN .47 MAX 3.0 MIN .01 AC-FT 342
WTR YR 1989 TOTAL 70.33 MEAN .19 MAX 1.7 MIN .00 AC-FT 139

e Estimated.

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 1988 TO SEPTEMBER 1989

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 WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)
OCT										
27...	1000	0.13	203	8.20	18.0	81	0	28	2.7	12
MAY										
04...	0930	0.11	206	8.30	18.0	80	0	28	2.4	12

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)
OCT									
27...	23	0.6	5.4	114	0	94	5.4	2.5	0.10
MAY									
04...	23	0.6	5.2	100	0	82	5.0	2.3	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-PHOROUS 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)
OCT									
27...	18	127	130	0.17	<0.100	<0.010	20	7	<1
MAY									
04...	18	130	122	0.18	--	--	<10	5	<1

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

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 mi^2.

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

AVERAGE DISCHARGE.--41 years (water years 1948-82, 1984-89), 5.07 ft^3/s, 3,670 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,900 ft^3/s, Nov. 22, 1965, Jan. 25, 1969, gage height, 12.34 ft, from rating curve extended above 70 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug. 9	2345	*59	*5.63				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.40	e.80	e.39	2.3	4.9	2.1	.44	.00	.00	.00
2	.00	.00	.41	e.80	e.39	2.3	4.8	2.0	.40	.00	.00	.00
3	.00	.12	.41	e.80	e.38	4.0	5.1	1.8	.37	.00	.00	.00
4	.00	.21	.41	e1.7	e.64	3.1	5.1	1.7	.34	.00	.00	.00
5	.00	.17	.41	e1.2	e1.3	2.7	5.0	1.6	.32	.00	.00	.00
6	.00	.16	.41	e1.4	e.97	2.5	4.8	1.5	.30	.00	.00	.00
7	.00	.15	.41	e1.0	e.90	2.7	4.5	1.4	.25	.00	.00	.00
8	.00	.13	e.41	e.90	e.96	3.3	4.4	1.3	.23	.00	.00	.00
9	.00	.14	e.41	e.84	.96	3.8	4.4	1.2	.20	.00	1.3	.00
10	.00	.11	e.41	e.79	1.0	3.7	4.3	1.3	.16	.00	3.7	.00
11	.00	.00	e.41	e.71	1.2	3.6	4.3	1.5	.14	.00	.36	.00
12	.00	.00	e.41	e.66	1.3	3.9	4.2	1.7	.13	.00	.36	.00
13	.00	.00	e.41	e.66	1.2	4.2	e4.1	1.6	.11	.00	.03	.00
14	.00	.05	e.41	e.66	1.2	4.0	e4.0	1.5	.09	.00	.00	.00
15	.00	.26	e.41	e.66	1.1	4.0	e3.8	1.6	.07	.00	.00	.00
16	.00	.28	e.41	e.63	1.1	3.8	e3.6	1.9	.04	.00	.00	.00
17	.00	.30	e.41	e.60	1.1	3.6	e3.4	1.7	.02	.00	.00	.00
18	.00	.31	e.41	e.57	1.1	3.4	e3.2	1.4	.01	.00	.00	.00
19	.00	.32	e.41	e.53	1.0	3.5	e3.1	1.3	.00	.00	.00	.00
20	.00	.33	e.41	e.49	1.0	3.7	e3.0	1.1	.00	.00	.00	.00
21	.00	.33	e1.0	e.49	.97	3.5	e2.9	e.91	.00	.00	.00	.00
22	.00	.33	e.60	e.47	.95	3.3	2.8	e.84	.00	.00	.00	.00
23	.00	.33	e.50	e.47	1.0	3.2	2.7	.76	.00	.00	.00	.00
24	.00	.33	e.90	e.45	1.1	3.1	2.6	.71	.00	.00	.00	.00
25	.00	.35	e3.0	e.45	1.4	4.9	2.6	.66	.00	.00	.00	.00
26	.00	.46	e1.0	e.43	1.6	7.9	2.7	.59	.00	.00	.00	.00
27	.00	.47	e.97	e.43	2.1	5.2	2.7	.54	.00	.00	.00	.00
28	.00	.46	e.94	e.43	2.5	4.6	2.5	.52	.00	.00	.00	.00
29	.00	.47	e.88	e.43	---	4.8	2.3	.50	.00	.00	.00	.00
30	.00	.42	e.80	e.41	---	4.9	2.2	.51	.00	.00	.00	.00
31	.00	---	e.80	e.39	---	4.8	---	.50	---	.00	.00	---
TOTAL	0.00	6.99	19.58	21.25	30.81	118.3	110.0	38.24	3.62	0.00	5.75	0.00
MEAN	.000	.23	.63	.69	1.10	3.82	3.67	1.23	.12	.000	.19	.000
MAX	.00	.47	3.0	1.7	2.5	7.9	5.1	2.1	.44	.00	3.7	.00
MIN	.00	.00	.40	.39	.38	2.3	2.2	.50	.00	.00	.00	.00
AC-FT	.00	14	39	42	61	235	218	76	7.2	.00	11	.00

CAL YR 1988 TOTAL 389.14 MEAN 1.06 MAX 5.6 MIN .00 AC-FT 772
WTR YR 1989 TOTAL 354.54 MEAN .97 MAX 7.9 MIN .00 AC-FT 703

e Estimated.

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 mi^2.

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.--53 years (water years 1931-41, 1948-89), 5.12 ft^3/s, 3,710 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,000 ft^3/s, Feb. 21, 1980, gage height, 7.29 ft, from rating curve extended above 650 ft^3/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.--Peak discharges greater than base discharge of 100 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Aug. 9	2315	*252	*3.51				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	.16	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	1.5	2.1	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	2.9	3.0	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	2.2	1.6	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.92	1.1	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.60	.96	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.46	.84	.00	.00	.00	.00	.00	4.5	.00
10	.00	.00	.00	.21	.93	.00	.00	.00	.00	.00	.14	.00
11	.00	.00	.00	.00	.89	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.80	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.71	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.35	.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	1.2	.00	.00	.08	.00	.00	.00	.00	.00	.00
26	.00	.00	1.3	.00	.00	.48	.00	.00	.00	.00	.00	.00
27	.00	.00	.68	.00	.00	.22	.00	.00	.00	.00	.00	.00
28	.00	.00	.23	.00	.00	.08	.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	3.41	8.79	13.28	1.02	0.00	0.00	0.00	0.00	4.64	0.00
MEAN	.000	.000	.11	.28	.47	.033	.000	.000	.000	.000	.15	.000
MAX	.00	.00	1.3	2.9	3.0	.48	.00	.00	.00	.00	4.5	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	6.8	17	26	2.0	.00	.00	.00	.00	9.2	.00

CAL YR 1988 TOTAL 286.34 MEAN .78 MAX 93 MIN .00 AC-FT 568
WTR YR 1989 TOTAL 31.14 MEAN .085 MAX 4.5 MIN .00 AC-FT 62

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 mi^2.

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

REVISED RECORD.--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 those for periods of 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.--41 years, 2.98 ft^3/s, 2,160 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,960 ft^3/s, Aug. 31, 1954, gage height, 7.11 ft, from rating curve extended above 80 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 25	0030	*49	*3.14				

Minimum daily, 0.61 ft^3/s, Aug. 1, Sept. 7.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	1.2	1.4	2.0	1.8	2.3	2.4	1.5	1.3	.77	.61	.70
2	1.0	1.2	1.4	2.0	1.8	2.7	2.4	1.5	1.3	.76	.64	.73
3	1.0	1.2	1.4	2.0	1.7	4.6	2.3	1.5	1.3	.74	.71	.72
4	1.1	e1.3	1.4	3.8	4.1	3.0	2.2	1.5	1.2	.70	.66	.68
5	1.1	e1.3	1.4	2.6	3.6	2.8	2.1	1.4	1.2	.72	.69	.65
6	1.1	e1.3	1.4	3.0	2.5	2.6	2.1	1.4	1.1	.70	.68	.62
7	1.1	e1.3	1.4	2.4	2.3	2.7	2.0	1.3	1.1	.72	.70	.61
8	1.1	e1.3	1.4	2.2	2.4	2.9	1.9	1.3	1.1	.79	.86	.66
9	1.0	e1.3	1.4	2.1	2.4	2.9	2.0	1.3	1.1	.73	2.0	.69
10	1.1	e1.3	1.5	2.0	2.6	2.6	2.0	1.4	1.1	.75	1.8	.71
11	1.1	e1.3	1.6	2.0	2.5	2.6	2.0	1.5	1.1	.85	1.3	.74
12	1.1	e1.3	1.6	1.9	2.4	2.6	1.9	1.5	1.0	.85	1.0	.75
13	1.1	e1.3	1.6	e1.9	2.3	2.7	1.9	1.5	1.0	.75	.87	.74
14	1.1	e1.8	1.6	1.9	2.3	2.5	1.9	1.5	.96	.68	.77	.71
15	1.1	1.4	1.8	1.9	2.2	2.4	1.8	1.6	.91	.72	.73	.76
16	1.1	1.4	1.9	1.8	2.2	2.4	1.8	1.6	.93	.71	.74	.93
17	1.1	1.4	1.8	1.8	2.1	2.4	1.8	e1.5	.92	.68	.80	.91
18	1.1	1.4	1.7	1.8	2.1	2.3	1.8	e1.4	.90	.65	.76	.92
19	1.2	1.4	1.8	1.8	2.1	2.3	1.7	1.3	.85	.63	.73	1.1
20	1.2	1.4	1.8	1.8	2.1	2.3	1.6	1.3	.83	.64	.75	.99
21	1.1	1.4	4.0	1.8	2.1	2.2	1.6	1.2	.82	.67	.79	.89
22	1.1	1.4	2.1	1.8	2.1	2.1	1.6	1.2	.83	.69	.80	.83
23	1.1	1.4	1.9	1.8	2.1	2.1	1.6	1.2	.86	.71	.79	.78
24	1.2	1.4	3.7	1.9	2.2	2.1	1.7	1.2	.92	.62	.79	.80
25	1.1	2.2	14	1.9	2.2	4.5	1.8	1.2	.92	.63	.82	.81
26	1.1	1.6	e3.2	1.7	2.3	4.8	1.8	1.2	.87	.67	.82	.87
27	1.1	1.5	e2.4	1.8	2.5	3.3	1.7	1.2	.82	.77	.80	.85
28	1.2	1.5	e2.4	1.8	2.5	2.9	1.7	1.2	.83	.81	.77	.83
29	1.3	1.4	2.2	1.7	---	2.8	1.6	1.2	.82	.76	.73	.81
30	1.2	1.4	2.1	1.7	---	2.6	1.6	1.4	.79	.69	.66	.82
31	1.2	---	2.1	1.8	---	2.4	---	1.3	---	.64	.70	---
TOTAL	34.5	42.0	71.4	62.4	65.5	85.4	56.3	42.3	29.68	22.20	26.27	23.61
MEAN	1.11	1.40	2.30	2.01	2.34	2.75	1.88	1.36	.99	.72	.85	.79
MAX	1.3	2.2	14	3.8	4.1	4.8	2.4	1.6	1.3	.85	2.0	1.1
MIN	1.0	1.2	1.4	1.7	1.7	2.1	1.6	1.2	.79	.62	.61	.61
AC-FT	68	83	142	124	130	169	112	84	59	44	52	47

CAL YR 1988 TOTAL 644.47 MEAN 1.76 MAX 18 MIN .49 AC-FT 1280
WTR YR 1989 TOTAL 561.56 MEAN 1.54 MAX 14 MIN .61 AC-FT 1110

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 ft^3/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.--Maximum discharge, 850 ft^3/s, Aug. 10, gage height, 3.85 ft, from rating curve based on critical-depth computations; no flow for most of year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	e15	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e40	.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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	55.00	0.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	1.77	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	40	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	109	.00

CAL YR 1988 TOTAL 44.92 MEAN .12 MAX 44 MIN .00 AC-FT 89
WTR YR 1989 TOTAL 55.00 MEAN .15 MAX 40 MIN .00 AC-FT 109

e Estimated.

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 Highway 111 with Highway 74.

DRAINAGE AREA.--588 mi^2.

PERIOD OF RECORD.--March to September 1989.

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

REMARKS.--Records fair. No regulation upstream from station. Water diverted from tributary streams for municipal supply in vicinity of Palm Springs.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 330 ft^3/s, Aug. 10, gage height, 3.09 ft, from floodmark; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN 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	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
5	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
6	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
7	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
8	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
9	---	---	---	---	---	---	.00	.00	.00	.00	e.06	.00
10	---	---	---	---	---	---	.00	.00	.00	.00	e24	.00
11	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
12	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
13	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
14	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
15	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
16	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
17	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
18	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
19	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
20	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
21	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
22	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
23	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
24	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
25	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
26	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
27	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
28	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
29	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
30	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
31	---	---	---	---	---	.00	---	.00	---	.00	.00	---
TOTAL	---	---	---	---	---	---	0.00	0.00	0.00	0.00	24.06	0.00
MEAN	---	---	---	---	---	---	.000	.000	.000	.000	.78	.000
MAX	---	---	---	---	---	---	.00	.00	.00	.00	24	.00
MIN	---	---	---	---	---	---	.00	.00	.00	.00	.00	.00
AC-FT	---	---	---	---	---	---	.00	.00	.00	.00	48	.00

e Estimated.

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 mi^2.

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 fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--27 years, 2.19 ft^3/s, 1,580 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,100 ft^3/s, Sept. 10, 1976, gage height, 7.84 ft, from rating curve extended above 40 ft^3/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 ft^3/s and maximum (*), from rating curve extended above 40 ft^3/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)
July 22	1515	*107	*3.06				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.01	.01	.02	.15	.42	.09	.02	.01	.00	.04	.00
2	.01	.01	.01	.02	.19	.42	.09	.01	.01	.00	.04	.00
3	.01	.01	.01	.02	.21	.46	.09	.01	.01	.00	.05	.00
4	.01	.01	.01	2.6	.28	.42	.08	.01	.01	.00	.00	.00
5	.01	.01	.01	.98	.26	.37	.08	.01	.01	.00	.04	.00
6	.01	.01	.01	.57	.20	.35	.07	.01	.00	.00	.00	.00
7	.01	.01	.01	.38	.20	.34	.06	.01	.01	.00	.00	.00
8	.01	.01	.01	.28	.26	.31	.06	.01	.00	.00	.00	.00
9	.00	.01	.01	.23	.33	.28	.06	.01	.00	.00	.05	.00
10	.00	.01	.01	.19	.38	.26	.05	.01	.00	.00	.05	.00
11	.00	.01	.01	.15	.46	.24	.04	.01	.00	.00	.05	.00
12	.00	.01	.01	.15	.40	.21	.04	.01	.00	.00	.05	.00
13	.00	.01	.01	.15	.34	.14	.04	.01	.00	.00	.05	.00
14	.00	.01	.01	.14	.28	.13	.04	.01	.00	.00	.00	.00
15	.00	.01	.02	.13	.25	.13	.04	.01	.00	.00	.00	.00
16	.00	.01	.02	.13	.23	.13	.04	.01	.00	.00	.00	.00
17	.00	.01	.02	.13	.20	.13	.04	.01	.00	.00	.00	.00
18	.00	.01	.02	.13	.26	.13	.04	.01	.00	.00	.00	.00
19	.00	.01	.02	.13	.28	.13	.04	.01	.00	.00	.00	.00
20	.00	.01	.02	.13	.28	.11	.03	.01	.00	.00	.00	.00
21	.00	.01	.02	.13	.29	.11	.03	.01	.00	.00	.00	.00
22	.00	.01	.02	.13	.28	.11	.03	.01	.00	2.4	.00	.00
23	.00	.01	.02	.13	.28	.11	.03	.01	.00	.12	.00	.00
24	.00	.01	.02	.14	.28	.10	.03	.01	.00	.09	.00	.00
25	.00	.01	.02	.15	.28	.10	.03	.01	.00	.09	.00	.00
26	.00	.01	.02	.17	.28	.10	.03	.01	.00	.08	.00	.00
27	.01	.01	.02	.16	.33	.11	.03	.01	.00	.07	.00	.00
28	.01	.01	.02	.18	.40	.11	.02	.01	.00	.06	.00	.00
29	.01	.01	.02	.15	---	.10	.02	.01	.00	.05	.00	.00
30	.01	.01	.02	.16	---	.10	.02	.01	.00	.05	.00	.00
31	.01	---	.02	.16	---	.10	---	.01	---	.05	.00	---
TOTAL	0.14	0.30	0.48	8.32	7.86	6.26	1.39	0.32	0.06	3.06	0.42	0.00
MEAN	.005	.010	.015	.27	.28	.20	.046	.010	.002	.099	.014	.000
MAX	.02	.01	.02	2.6	.46	.46	.09	.02	.01	2.4	.05	.00
MIN	.00	.01	.01	.02	.15	.10	.02	.01	.00	.00	.00	.00
AC-FT	.3	.6	1.0	17	16	12	2.8	.6	.1	6.1	.8	.00

CAL YR 1988 TOTAL 331.76 MEAN .91 MAX 29 MIN .00 AC-FT 658
WTR YR 1989 TOTAL 28.61 MEAN .078 MAX 2.6 MIN .00 AC-FT 57

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 mi^2.

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. Records excellent. No regulation upstream from station. Water diverted from tributary streams for municipal supply in vicinity of Palm Springs.

AVERAGE DISCHARGE.--23 years, 2.99 ft^3/s, 2,170 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,400 ft^3/s, Jan. 25, 1969, gage height, 14.41 ft, site and datum then in use, from rating curve extended above 1,300 ft^3/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 ft^3/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 ft^3/s on basis of slope-area measurement of peak flow.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3.9 ft^3/s, Jan. 4, gage height, 1.69 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	.74	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.32	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.02	.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	.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	0.00	0.02	0.00	1.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.001	.000	.034	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.02	.00	.74	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.04	.00	2.1	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 1988 TOTAL 19.74 MEAN .054 MAX 17 MIN .00 AC-FT 39
WTR YR 1989 TOTAL 1.08 MEAN .003 MAX .74 MIN .00 AC-FT 2.1

10259540 WHITEWATER RIVER NEAR MECCA, CA

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.

DRAINAGE AREA.--1,495 mi^2.

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.

REMARKS.--Records poor. Most flow represents seepage and return flow from irrigated areas.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,500 ft^3/s, Jan. 25, 1969, estimated; minimum daily, 37 ft^3/s, Nov. 25-29, 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 408 ft^3/s, Jan. 4, gage height, 5.10 ft, from floodmarks; minimum daily, 58 ft^3/s, Nov. 22.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	76	89	e77	85	89	93	77	90	102	e90	94
2	81	80	107	e77	97	92	83	76	86	96	e90	97
3	81	73	154	e180	99	90	82	78	91	85	e90	107
4	81	74	163	e200	88	83	84	86	94	91	e90	107
5	83	e75	e89	e76	84	82	83	94	90	92	e90	136
6	82	e77	94	e76	80	85	96	90	89	95	e90	124
7	79	e79	96	e76	81	85	95	96	84	e104	e90	102
8	75	81	90	e76	84	94	107	92	81	e110	e90	102
9	68	74	92	e76	94	94	97	95	83	e110	e90	99
10	65	80	106	e76	87	96	94	96	91	e110	e97	97
11	72	71	e104	e76	85	102	97	101	96	e110	e103	90
12	69	76	e102	e76	87	111	95	108	98	e110	e103	82
13	74	79	e100	e76	87	100	99	109	103	e110	e100	83
14	69	79	e97	e76	84	98	110	125	109	e110	e98	84
15	75	65	e95	e76	82	104	99	106	117	e110	e94	81
16	73	69	e92	e76	89	98	105	96	123	e110	e92	96
17	81	75	e90	e76	88	91	89	96	129	e110	e89	105
18	79	66	e87	e76	90	107	85	105	128	e110	94	93
19	87	60	e85	e76	98	106	93	104	107	e110	90	85
20	88	60	e83	82	89	95	95	106	95	e108	90	92
21	84	65	e81	83	87	93	97	107	111	e107	87	91
22	86	58	e79	79	84	100	98	111	99	e103	84	88
23	96	60	e78	81	93	93	106	90	102	e100	87	110
24	92	66	e78	76	87	86	104	98	108	e96	91	115
25	93	67	e78	78	85	92	95	102	113	e93	100	99
26	92	66	e78	77	88	108	91	93	114	e92	102	82
27	81	69	e78	79	90	94	96	89	91	e92	100	80
28	91	85	e77	75	89	91	102	102	82	e92	117	82
29	86	68	e77	75	---	103	91	83	78	e90	123	83
30	83	75	e77	76	---	101	87	77	87	e90	90	80
31	79	---	e77	77	---	93	---	82	---	e90	90	---
TOTAL	2494	2148	2873	2612	2461	2956	2848	2970	2969	3138	2931	2866
MEAN	80.5	71.6	92.7	84.3	87.9	95.4	94.9	95.8	99.0	101	94.5	95.5
MAX	96	85	163	200	99	111	110	125	129	110	123	136
MIN	65	58	77	75	80	82	82	76	78	85	84	80
AC-FT	4950	4260	5700	5180	4880	5860	5650	5890	5890	6220	5810	5680

CAL YR 1988 TOTAL 34096 MEAN 93.2 MAX 300 MIN 58 AC-FT 67630
WTR YR 1989 TOTAL 33266 MEAN 91.1 MAX 200 MIN 58 AC-FT 65980

e Estimated.

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 mi^2.

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 those for periods of estimated daily discharges, which are poor. Slight regulation by Lake Arrowhead, capacity, 48,000 acre-ft, used principally for recreation.

AVERAGE DISCHARGE.--78 years, 69.2 ft^3/s, 50,130 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 46,600 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 10	1030	*556	*3.12				

Minimum daily, 0.14 ft^3/s, July 18.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.95	1.5	e5.4	9.6	8.6	41	21	7.2	2.9	e.32	.17	1.2
2	.89	e1.5	4.4	9.1	8.7	35	19	7.0	2.7	.29	.19	1.4
3	.82	e1.5	4.7	8.3	8.8	63	18	6.9	2.6	.27	.21	1.2
4	e.90	e1.5	4.8	9.3	54	51	17	6.9	2.4	.24	.23	1.0
5	e.90	e1.5	4.8	12	100	36	16	6.8	2.3	.23	.23	1.2
6	e.90	e1.5	5.9	23	34	32	15	6.6	2.2	.19	.26	1.1
7	e.90	e1.5	6.2	18	21	37	14	6.3	2.2	.18	.27	.96
8	e.90	e1.5	6.5	12	19	45	13	5.8	2.3	.19	.26	.97
9	e.90	e2.0	6.5	10	21	52	12	6.0	2.2	.20	.28	1.1
10	e.90	e2.0	6.5	10	304	46	11	6.3	2.0	.21	.29	.96
11	e1.0	e2.0	6.7	9.6	125	39	11	7.1	1.8	.21	.26	.81
12	e1.0	e2.0	6.8	8.5	63	38	10	8.0	1.6	.24	.27	.80
13	e1.0	e2.0	7.3	8.1	42	38	9.8	8.4	1.5	.26	.28	.80
14	e1.1	e2.5	7.5	8.5	32	34	9.3	8.3	1.3	.25	.22	.80
15	1.1	e3.0	7.7	8.4	25	31	8.8	8.3	1.1	.21	.20	.76
16	1.1	e10	9.3	7.9	22	27	8.5	10	.97	.19	e.21	.77
17	1.2	e6.5	14	8.0	20	25	8.2	12	.89	.16	e.23	.96
18	1.1	e4.0	12	8.2	19	22	8.1	9.1	e.85	.14	e.25	1.2
19	1.1	e4.0	9.3	8.2	22	21	7.8	8.3	e.80	.18	e.30	1.2
20	1.1	e4.0	8.5	8.6	29	21	7.7	8.0	e.75	.16	e.32	1.6
21	1.1	e4.0	32	9.3	32	20	7.6	6.5	e.68	.16	e.35	1.1
22	1.1	e4.0	35	9.6	31	18	7.6	4.6	e.63	.17	.48	.82
23	1.1	e4.0	16	9.9	34	17	7.6	4.2	e.58	.19	.51	.84
24	1.1	e4.0	12	11	39	16	7.6	3.9	e.54	.19	.43	.70
25	1.1	e6.0	83	11	46	17	7.7	3.8	e.50	.19	.46	.67
26	1.1	e6.0	40	10	49	80	8.0	3.7	e.46	.17	.43	.68
27	1.1	e5.4	19	9.5	55	46	8.1	3.6	e.43	.17	.52	.83
28	1.2	e5.4	14	9.2	51	33	8.3	3.4	e.40	.20	.48	.85
29	1.2	e5.4	11	8.7	---	29	8.0	3.1	e.37	.21	.57	.84
30	1.2	e5.4	9.6	8.7	---	26	7.3	3.0	e.34	.18	.50	.88
31	1.3	---	9.8	8.5	---	23	---	3.0	---	.17	.86	---
TOTAL	32.36	105.6	426.2	310.7	1315.1	1059	323.0	196.1	40.29	6.32	10.52	29.00
MEAN	1.04	3.52	13.7	10.0	47.0	34.2	10.8	6.33	1.34	.20	.34	.97
MAX	1.3	10	83	23	304	80	21	12	2.9	.32	.86	1.6
MIN	.82	1.5	4.4	7.9	8.6	16	7.3	3.0	.34	.14	.17	.67
AC-FT	64	209	845	616	2610	2100	641	389	80	13	21	58

CAL YR 1988 TOTAL 5520.88 MEAN 15.1 MAX 231 MIN .35 AC-FT 10950
WTR YR 1989 TOTAL 3854.19 MEAN 10.6 MAX 304 MIN .14 AC-FT 7640

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 Road and Wildrose Road, and 0.3 mi east of Crestline.

DRAINAGE AREA.--0.35 mi^2.

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.--Records fair. No regulation upstream from station.

AVERAGE DISCHARGE.--10 years, 0.66 ft^3/s, 478 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 295 ft^3/s, Feb. 19, 1980, gage height, 7.40 ft, from rating curve extended above 70 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 25	1215	*49	*5.96				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.01	.00	.13	.03	.17	.17	.13	.04	.11	e.03	.04
2	.01	.01	.00	.10	.08	1.6	.16	.12	.03	.10	e.03	.03
3	.01	.00	.00	.13	2.1	.57	.14	.11	.03	.10	.04	.03
4	.02	.00	.00	1.5	16	.33	.13	.10	.04	.11	.05	.03
5	.01	.01	.00	4.5	1.8	.28	.13	.08	.05	.11	.02	.06
6	.01	.00	.00	2.6	.79	.24	.12	.07	.05	.09	.03	.04
7	.01	.00	.00	.19	.51	.22	.11	.07	.05	.09	.03	.04
8	.01	.00	.00	.09	.41	.18	.10	.07	.05	.10	.03	.04
9	.01	.00	.00	.06	4.0	.16	.10	.08	.05	.08	.04	.04
10	.01	.00	.00	.05	2.6	.15	.10	.12	.05	.08	.05	.07
11	.01	.00	.00	.04	1.0	.13	.09	.51	.05	.09	.06	.08
12	.01	.00	.00	.05	.75	.13	.09	.09	.05	.05	.04	.09
13	.01	.49	.00	.04	.60	.13	.08	.08	.05	.04	.03	.06
14	.01	7.7	.00	.03	.49	.13	.10	.08	.05	.05	.03	.05
15	.01	.00	.50	.03	.42	.13	.10	.22	.05	.05	.04	.07
16	.01	.00	3.8	.03	.39	.13	.10	.08	.05	.05	.03	.08
17	.01	.00	.44	.03	.36	.13	.10	.06	.05	.05	.02	1.1
18	.01	.00	.01	.02	.36	.13	.10	.05	.05	.03	.02	.05
19	.01	.00	.00	.02	.34	.12	.10	.05	.03	.04	.02	1.3
20	.01	.00	1.7	.02	.31	.11	.09	.05	.03	.03	.01	.01
21	.01	.00	6.9	.02	.28	.11	.08	.04	.04	.03	.01	.01
22	.01	.00	.07	.02	.26	.10	.08	.04	.05	.03	.01	.01
23	.01	.17	.03	.02	.23	.10	.10	.04	.05	.03	.02	.01
24	.00	.00	4.8	.02	.22	.10	.10	.04	.06	.03	.02	.02
25	.01	.00	1.2	.02	.20	4.6	.11	.04	.06	.04	.03	.03
26	.01	.00	.29	.02	.19	.73	.13	.04	.07	.03	.02	.04
27	.01	.00	.19	.02	.19	.34	.15	.03	.08	.03	.02	.03
28	.01	.00	.16	.02	.17	.25	.14	.03	.08	.03	.03	.03
29	.01	.00	.14	.02	---	.22	.13	.04	.10	.03	.02	.02
30	.01	.00	.11	.02	---	.20	.13	.04	.10	e.03	.02	.03
31	.01	---	.11	.02	---	.18	---	.04	---	e.03	.03	---
TOTAL	0.32	8.39	20.45	9.88	35.08	12.10	3.36	2.64	1.59	1.79	0.88	3.54
MEAN	.010	.28	.66	.32	1.25	.39	.11	.085	.053	.058	.028	.12
MAX	.02	7.7	6.9	4.5	16	4.6	.17	.51	.10	.11	.06	1.3
MIN	.00	.00	.00	.02	.03	.10	.08	.03	.03	.03	.01	.01
AC-FT	.6	17	41	20	70	24	6.7	5.2	3.2	3.6	1.7	7.0

CAL YR 1988 TOTAL 105.09 MEAN .29 MAX 11 MIN .00 AC-FT 208
WTR YR 1989 TOTAL 100.02 MEAN .27 MAX 16 MIN .00 AC-FT 198

e Estimated.

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 mi^2.

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

AVERAGE DISCHARGE.--10 years, 1.14 ft^3/s, 826 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 580 ft^3/s, Feb. 27, 1983, gage height, 6.32 ft, site and datum then in use, from rating curve extended above 94 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 4	1500	*49	*7.26				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.16	.19	.82	.42	.13	.01	.00	.00	.00
2	.00	.00	.00	.16	.18	1.8	.54	.13	.00	.00	.00	.00
3	.00	.00	.00	.15	.71	1.9	.60	.09	.00	.00	.00	.00
4	.00	.00	.00	.74	17	1.4	.58	.07	.00	.00	.00	.00
5	.00	.00	.00	2.4	2.9	.97	.57	.08	.01	.00	.00	.00
6	.00	.00	.00	3.0	1.1	.83	.41	.06	.00	.00	.00	.00
7	.00	.00	.00	.96	.61	.71	.55	.08	.00	.00	.00	.00
8	.00	.00	.00	.88	.69	.51	.49	.04	.00	.00	.00	.00
9	.00	.00	.00	.65	5.3	.39	.56	.06	.00	.00	.00	.00
10	.00	.00	.00	.56	3.3	.37	.55	.08	.00	.00	.00	.00
11	.00	.00	.00	.56	1.8	.39	.46	.55	.00	.00	.00	.00
12	.00	.00	.00	.55	.92	.47	1.3	.22	.00	.00	.00	.00
13	.00	.00	.00	.56	.88	.54	1.7	.16	.00	.00	.00	.00
14	.00	.75	.00	.55	.89	.73	.75	.19	.00	.00	.00	.00
15	.00	.00	.04	.42	.80	.62	.63	.39	.00	.00	.00	.00
16	.00	.00	.61	.26	.76	.66	.55	.39	.00	.00	.00	.00
17	.00	.00	.33	.26	.73	.55	.51	.28	.00	.00	.00	.01
18	.00	.00	.06	.31	.70	.54	.44	.22	.00	.00	.00	.00
19	.00	.00	.06	.31	.66	.52	.38	.17	.00	.00	.00	.22
20	.00	.00	.67	.28	.65	.56	.46	.14	.00	.00	.00	.00
21	.00	.00	7.9	.62	.61	.41	.64	.11	.00	.00	.00	.00
22	.00	.00	.17	.64	.57	.40	.52	.09	.00	.00	.00	.00
23	.00	.03	.07	.53	.50	.41	.35	.08	.00	.00	.00	.00
24	.00	.02	3.9	.31	.47	.43	.20	.09	.00	.00	.00	.00
25	.00	.00	1.6	.36	.42	3.7	.28	.09	.00	.00	.00	.00
26	.00	.00	.22	.22	.59	1.3	.28	.05	.00	.00	.00	.00
27	.00	.00	.15	.24	.87	1.0	.32	.03	.00	.00	.00	.00
28	.00	.00	.13	.25	.88	.77	.33	.02	.00	.00	.00	.00
29	.00	.00	.12	.22	---	.43	.16	.03	.00	.00	.00	.00
30	.00	.00	.14	.27	---	.41	.14	.02	.00	.00	.00	.00
31	.00	---	.17	.22	---	.42	---	.01	---	.00	.00	---
TOTAL	0.00	0.80	16.34	17.60	45.68	24.96	15.67	4.15	0.02	0.00	0.00	0.23
MEAN	.000	.027	.53	.57	1.63	.81	.52	.13	.001	.000	.000	.008
MAX	.00	.75	7.9	3.0	17	3.7	1.7	.55	.01	.00	.00	.22
MIN	.00	.00	.00	.15	.18	.37	.14	.01	.00	.00	.00	.00
AC-FT	.00	1.6	32	35	91	50	31	8.2	.04	.00	.00	.5

CAL YR 1988 TOTAL 113.86 MEAN .31 MAX 13 MIN .00 AC-FT 226
WTR YR 1989 TOTAL 125.45 MEAN .34 MAX 17 MIN .00 AC-FT 249

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 mi^2.

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, 2,180 acre-ft, Apr. 4, elevation, 4,518.2 ft; minimum, 1,950 acre-ft, Sept. 14-16, elevation, 4,515.58 ft.

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

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 1988 TO SEPTEMBER 1989
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2080	2040	2090	2090	2080	e2090	2150	2160	2150	2100	e2040	1980
2	2080	2040	2090	2090	2090	e2090	2150	2160	2150	2100	e2040	1980
3	2080	2040	2090	2090	2110	e2090	2160	2150	2150	2100	2040	1970
4	2070	2040	2090	2100	2150	e2090	2160	2160	2150	2100	2030	1970
5	2070	2040	2090	2130	2110	e2090	2160	2150	2150	2100	2030	1970
6	2070	2040	2090	2110	2100	e2090	2160	2150	2150	2090	2030	1970
7	2070	2040	2090	2100	2100	e2090	2160	2150	2150	2090	2030	1960
8	2070	2030	2090	2100	2100	e2090	2160	2150	2140	2090	2030	1960
9	2070	2030	2090	2100	2120	2090	2160	2150	2140	2090	2030	1960
10	2070	2030	2090	2090	2110	2090	2160	2150	2140	2090	2020	1960
11	2060	2030	2090	2090	2100	2090	2160	2160	2140	2080	2020	1960
12	2060	2030	2090	2090	2100	2090	2160	2160	2140	2080	2020	1960
13	2060	2030	2090	2090	2100	2090	2160	2160	2140	2080	2020	1960
14	2060	2100	2080	2090	2100	2090	2160	2160	2140	2080	2020	1950
15	2060	2100	2100	2090	2090	2090	2160	2160	2140	2080	2020	1950
16	2060	2100	2130	2090	2090	2080	2160	2160	2130	2070	2010	1950
17	2060	2100	2110	2090	2090	2080	2160	2160	2130	2070	2010	1960
18	2050	2090	2110	2090	2090	2090	2160	2160	2130	2070	2010	1960
19	2050	2090	2100	2090	e2090	2080	2160	2160	2130	2070	2010	1970
20	2050	2090	2110	2090	e2090	2080	2160	2160	2130	2070	2000	1970
21	2050	2090	2120	2090	e2090	2080	2160	2160	2120	2060	2000	1970
22	2050	2090	2110	2090	e2090	2080	2160	2160	2120	2060	2000	1970
23	2050	2100	2100	2090	e2090	2080	2160	2160	2120	2060	2000	1970
24	2050	2100	2130	2090	e2090	2080	2160	2160	2120	2060	2000	1970
25	2050	2100	2110	2090	e2090	2130	2160	2160	2110	e2060	1990	1970
26	2050	2100	2100	2090	e2090	2140	2160	2160	2110	e2060	1990	1970
27	2040	2100	2100	2090	e2090	2140	2160	2160	2110	e2060	1990	1970
28	2040	2100	2100	2090	e2090	2150	2160	2160	2110	e2050	1990	1970
29	2040	2090	2090	2090	---	2150	2160	2150	2110	e2050	1990	1970
30	2040	2090	2090	2090	---	2150	2150	2150	2100	e2050	1980	1960
31	2040	---	2090	2090	---	2150	---	2150	---	e2040	1980	---
MAX	2080	2100	2130	2130	2150	2150	2160	2160	2150	2100	2040	1980
MIN	2040	2030	2080	2090	2080	2080	2150	2150	2100	2040	1980	1950
a	4516.6	4517.2	4517.2	4517.1	4517.2	4517.8	4517.9	4517.9	4517.3	4516.7	4515.9	4515.7
b	-40	+50	0	0	0	+60	0	0	-50	-60	-60	-20

WTR YR 1989 MAX 2160 MIN 1950

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

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 mi^2.

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.--No estimated daily discharges. 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 ft^3/s, Jan. 29, 1980, gage height, 7.31 ft, from rating curve extended above 180 ft^3/s on basis of velocity-area study of peak flow; no flow for several days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 119 ft^3/s, Feb. 4, gage height, 6.56 ft; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.04	.06	1.5	.46	1.6	.08	.06	.05	.03	.01	.01
2	.02	.04	.07	1.2	.49	3.5	.06	.06	.05	.03	.01	.01
3	.02	.04	.07	1.1	1.1	3.8	.07	.06	.05	.04	.01	.02
4	.02	.04	.07	3.0	59	2.8	.06	.07	.06	.04	.01	.02
5	.02	.04	.07	6.7	24	2.3	.07	.07	.05	.03	.02	.02
6	.03	.05	.07	14	7.6	2.0	.06	.05	.05	.03	.02	.02
7	.02	.05	.09	5.0	4.7	2.0	.07	.05	.05	.03	.02	.01
8	.03	.06	.16	3.1	5.0	1.8	.07	.05	.05	.03	.02	.00
9	.03	.06	.10	2.2	9.3	1.6	.07	.05	.05	.04	.02	.00
10	.03	.06	.10	1.7	15	1.4	.06	.06	.05	.04	.02	.00
11	.03	.06	.09	1.1	7.6	1.2	.06	.08	.05	.04	.01	.00
12	.03	.06	.09	.83	5.2	1.3	.06	.07	.05	.04	.01	.00
13	.03	.10	.09	.81	4.2	1.1	.06	.06	.05	.04	.02	.00
14	.03	1.9	.09	.79	3.6	1.1	.06	.06	.04	.03	.02	.00
15	.03	1.2	.24	.67	3.2	1.2	.06	.07	.04	.03	.02	.00
16	.03	.69	2.7	.58	2.9	1.4	.06	.06	.04	.02	.03	.00
17	.03	.29	8.4	.51	2.7	.88	.06	.06	.04	.02	.02	.04
18	.03	.22	4.2	.47	2.7	.83	.06	.05	.04	.02	.00	.00
19	.03	.16	3.0	.44	2.4	.82	.06	.05	.04	.02	.00	.08
20	.02	.06	2.7	.43	2.3	.79	.05	.05	.05	.02	.00	.00
21	.02	.04	38	.42	2.1	.82	.05	.05	.05	.02	.00	.00
22	.02	.04	9.7	.54	2.0	.86	.06	.04	.05	.02	.00	.00
23	.02	.07	4.2	.47	2.0	.92	.06	.04	.04	.02	.00	.00
24	.03	.06	8.2	.28	2.0	.92	.06	.05	.05	.02	.00	.00
25	.03	.07	17	.24	1.8	1.4	.06	.05	.05	.02	.00	.00
26	.03	.06	6.1	.19	1.7	.38	.07	.06	.04	.01	.01	.00
27	.03	.06	3.9	.20	1.6	.28	.07	.06	.03	.01	.01	.00
28	.04	.06	2.5	.17	1.7	.26	.07	.05	.03	.01	.00	.00
29	.04	.06	1.8	.16	---	.17	.07	.05	.03	.01	.01	.00
30	.04	.06	1.6	.12	---	.09	.06	.05	.03	.01	.01	.00
31	.03	---	1.4	.18	---	.09	---	.05	---	.01	.01	---
TOTAL	0.86	5.80	116.86	49.10	178.35	39.61	1.89	1.74	1.35	0.78	0.34	0.23
MEAN	.028	.19	3.77	1.58	6.37	1.28	.063	.056	.045	.025	.011	.008
MAX	.04	1.9	38	14	59	3.8	.08	.08	.06	.04	.03	.08
MIN	.02	.04	.06	.12	.46	.09	.05	.04	.03	.01	.00	.00
AC-FT	1.7	12	232	97	354	79	3.7	3.5	2.7	1.5	.7	.5

CAL YR 1988 TOTAL 375.50 MEAN 1.03 MAX 38 MIN .00 AC-FT 745
WTR YR 1989 TOTAL 396.91 MEAN 1.09 MAX 59 MIN .00 AC-FT 787

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 Highway 174, 4.5 mi downstream from Cedar Springs Dam, and 6.5 mi southeast of Hesperia.

DRAINAGE AREA.--70.3 mi^2.

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. June 30, 1942, to Apr. 14, 1966, at datum 2.00 ft higher than datum then in use.

REMARKS.--No estimated daily discharges. Records good. Since 1972 regulated by Cedar Springs Reservoir (holding basin for imported water), total capacity, 78,000 acre-ft, 4.5 mi upstream.

AVERAGE DISCHARGE.--60 years (water years 1905-22, 1930-71), 39.4 ft^3/s, 28,550 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,100 ft^3/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, 289 ft^3/s, Feb. 5, gage height, 1.67 ft; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	3.0	2.9	14	13	.64	.00	.00	.00	.00
2	.00	.00	.00	3.5	5.9	14	13	.00	.00	.00	.00	.00
3	.00	.00	.00	3.8	5.9	14	12	.00	.00	.00	.00	.00
4	.00	.00	.00	6.5	36	14	12	.00	.00	.00	.00	.00
5	.00	.00	.00	11	275	14	12	.00	.00	.00	.00	.00
6	.00	.00	.00	12	186	14	13	.00	.00	.00	.00	.00
7	.00	.00	.00	12	17	12	12	.00	.00	.00	.00	.00
8	.00	.00	.00	11	17	3.5	12	.00	.00	.00	.00	.00
9	.00	.00	.00	11	22	.91	12	.00	.00	.00	.00	.00
10	.00	.00	.00	12	47	.27	12	.00	.00	.00	.00	.00
11	.00	.00	.00	11	27	.00	12	.00	.00	.00	.00	.00
12	.00	.00	.00	10	20	.00	12	.00	.00	.00	.00	.00
13	.00	.00	.00	11	18	.00	12	.00	.00	.00	.00	.00
14	.00	.00	.00	10	16	.00	12	.00	.00	.00	.00	.00
15	.00	.00	.00	10	15	.00	11	.00	.00	.00	.00	.00
16	.00	.00	.00	10	14	.00	12	.00	.00	.00	.00	.00
17	.00	.00	.00	10	13	.00	12	.00	.00	.00	.00	.00
18	.00	.00	.00	10	12	.00	12	.00	.00	.00	.00	.00
19	.00	.00	.00	10	12	.00	12	.00	.00	.00	.00	.00
20	.00	.00	.00	10	11	.00	13	.00	.00	.00	.00	.00
21	.00	.00	.00	10	8.4	.00	13	.00	.00	.00	.00	.00
22	.00	.00	.00	10	4.4	.00	13	.00	.00	.00	.00	.00
23	.00	.00	.00	10	3.0	.00	14	.00	.00	.00	.00	.00
24	.00	.00	.00	8.5	2.1	.00	14	.00	.00	.00	.00	.00
25	.00	.00	.00	1.7	10	.00	13	.00	.00	.00	.00	.00
26	.00	.00	.00	.51	13	.00	7.2	.00	.00	.00	.00	.00
27	.00	.00	.00	.11	13	.00	4.8	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	14	13	3.8	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	50	2.8	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	54	1.5	.00	.00	.00	.00	.00
31	.00	---	.42	6.2	---	26	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.42	234.82	840.6	243.68	330.1	0.64	0.00	0.00	0.00	0.00
MEAN	.000	.000	.014	7.57	30.0	7.86	11.0	.021	.000	.000	.000	.000
MAX	.00	.00	.42	12	275	54	14	.64	.00	.00	.00	.00
MIN	.00	.00	.00	.00	2.1	.00	1.5	.00	.00	.00	.00	.00
AC-FT	.00	.00	.8	466	1670	483	655	1.3	.00	.00	.00	.00

CAL YR 1988 TOTAL 2192.31 MEAN 5.99 MAX 132 MIN .00 AC-FT 4350
WTR YR 1989 TOTAL 1650.26 MEAN 4.52 MAX 275 MIN .00 AC-FT 3270

10261100 MOJAVE RIVER BELOW 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 mi^2.

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.--12 years (water years 1972-74, 1981-89), 66.7 ft^3/s, 48,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 11,700 ft^3/s, Mar. 2, 1983, on basis of flood routing; no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 637 ft^3/s, Feb. 5, gage height, 2.19 ft; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	e8.0	14	49	48	3.7	.00	.00	.00	.00
2	.00	.00	.00	e9.0	18	49	44	3.0	.00	.00	.00	.00
3	.00	.00	.00	e10	20	77	40	2.7	.00	.00	.00	.00
4	.00	.00	.00	e11	113	e70	37	2.7	.00	.00	.00	.00
5	.00	.00	.00	15	596	e60	35	2.3	.00	.00	.00	.00
6	.00	.00	.00	27	453	e58	33	1.9	.00	.00	.00	.00
7	.00	.00	.00	28	85	e56	31	1.6	.00	.00	.00	.00
8	.00	.00	.00	16	28	e56	30	1.1	.00	.00	.00	.00
9	.00	.00	.00	12	26	54	27	.87	.00	.00	.00	.00
10	.00	.00	.00	12	364	53	26	.92	.00	.00	.00	.00
11	.00	.00	.00	12	216	42	26	1.5	.00	.00	.00	.00
12	.00	.00	.00	10	82	39	25	2.9	.00	.00	.00	.00
13	.00	.00	.00	9.4	62	40	24	6.3	.00	.00	.00	.00
14	.00	.00	.00	9.4	39	38	23	5.8	.00	.00	.00	.00
15	.00	.00	.00	9.4	28	30	22	6.1	.00	.00	.00	.00
16	.00	.00	.00	9.4	18	22	22	8.5	.00	.00	.00	.00
17	.00	.00	e1.0	9.4	13	17	21	17	.00	.00	.00	.00
18	.00	.00	e2.0	9.4	9.9	15	21	12	.00	.00	.00	.00
19	.00	.00	e2.8	9.4	9.9	14	20	7.3	.00	.00	.00	.00
20	.00	.00	e4.5	9.4	12	13	20	5.6	.00	.00	.00	.00
21	.00	.00	e10	9.4	15	12	18	5.4	.00	.00	.00	.00
22	.00	.00	e11	9.4	11	11	18	3.3	.00	.00	.00	.00
23	.00	.00	e6.0	9.4	12	9.9	19	1.2	.00	.00	.00	.00
24	.00	.00	e5.0	9.2	15	8.6	20	.77	.00	.00	.00	.00
25	.00	.00	e30	7.8	25	8.7	20	.76	.00	.00	.00	.00
26	.00	.00	e15	7.8	39	124	14	.64	.00	.00	.00	.00
27	.00	.00	e10	7.2	46	76	8.9	e.40	.00	.00	.00	.00
28	.00	.00	e7.0	7.1	49	55	7.1	.00	.00	.00	.00	.00
29	.00	.00	e7.0	7.6	---	111	5.7	.00	.00	.00	.00	.00
30	.00	.00	e7.0	8.1	---	130	4.8	.00	.00	.00	.00	.00
31	.00	---	e7.0	13	---	90	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	125.30	341.2	2418.8	1488.2	710.5	106.26	0.00	0.00	0.00	0.00
MEAN	.000	.000	4.04	11.0	86.4	48.0	23.7	3.43	.000	.000	.000	.000
MAX	.00	.00	30	28	596	130	48	17	.00	.00	.00	.00
MIN	.00	.00	.00	7.1	9.9	8.6	4.8	.00	.00	.00	.00	.00
AC-FT	.00	.00	249	677	4800	2950	1410	211	.00	.00	.00	.00

CAL YR 1988 TOTAL 7008.60 MEAN 19.1 MAX 227 MIN .00 AC-FT 13900
WTR YR 1989 TOTAL 5190.26 MEAN 14.2 MAX 596 MIN .00 AC-FT 10290

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 mi^2.

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.--66 years (water years 1900-06, 1931-89), 76.2 ft^3/s, 55,210 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 70,600 ft^3/s, Mar. 2, 1938, gage height, 23.7 ft, present datum, from rating curve extended above 10,000 ft^3/s on basis of slope-area measurement of peak flow; minimum daily, 3.4 ft^3/s, July 25, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 35 ft^3/s, Feb. 6-15; minimum daily, 2.0 ft^3/s, Sept. 6-10.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e14	e15	e30	e25	e30	e27	e22	e14	e7.8	e3.9	e3.0	e2.2
2	e14	e15	e30	e25	e30	e27	e21	e14	e7.6	e3.8	e2.9	e2.1
3	e14	e16	e30	e25	e30	e27	e21	e14	e7.4	e3.8	e2.9	e2.1
4	e14	e16	e30	e25	e30	e27	e21	e14	e7.2	e3.7	e2.9	e2.1
5	e14	e16	e30	e25	e30	e27	e21	e13	e7.0	e3.6	e2.8	e2.1
6	e14	e16	e30	e25	e35	e27	e21	e13	e7.0	e3.5	e2.8	e2.0
7	e14	e16	e30	e25	e35	e27	e21	e12	e6.8	e3.4	e2.8	e2.0
8	e14	e16	e30	e25	e35	e27	e21	e11	e6.6	e3.3	e2.7	e2.0
9	e14	e18	e30	e25	e35	e27	e21	e11	e6.4	e3.3	e2.7	e2.0
10	e14	e18	e30	e25	e35	e27	e21	e11	e6.4	e3.2	e2.7	e2.0
11	e14	e18	e30	e25	e35	e27	e21	e11	e6.2	e3.1	e2.7	e2.1
12	e14	e18	e30	e25	e35	e25	e21	e11	e6.0	e3.0	e2.6	e2.2
13	e14	e18	e30	e25	e35	e25	e21	e11	e6.0	e3.0	e2.6	e2.3
14	e14	e18	e30	e25	e35	e25	e20	e11	e5.8	e3.0	e2.6	e2.3
15	e14	e20	e30	e25	e35	e25	e20	e10	e5.6	e3.0	e2.6	e2.4
16	e14	e23	e30	e25	e34	e25	e19	e10	e5.6	e3.0	e2.5	e2.5
17	e14	e23	e30	e25	e32	e25	e19	e10	e5.4	e3.0	e2.5	e2.7
18	e14	e23	e25	e25	e32	e25	e18	e10	e5.2	e3.0	e2.5	e3.0
19	e14	e23	e25	e25	e32	e23	e18	e10	e5.2	e3.0	e2.5	e3.2
20	e14	e23	e25	e25	e32	e23	e18	e10	e5.0	e3.0	e2.4	e3.5
21	e14	e25	e25	e30	e32	e23	e17	e9.8	e4.9	e3.0	e2.3	e3.9
22	e14	e28	e25	e30	e32	e23	e17	e9.8	e4.8	e3.0	e2.3	e4.3
23	e14	e28	e25	e30	e31	e23	e16	e9.6	e4.7	e3.0	e2.3	e4.5
24	e14	e28	e25	e30	e29	e23	e16	e9.4	e4.6	e3.0	e2.3	e4.7
25	e14	e28	e25	e30	e29	e23	e16	e9.2	e4.5	e3.0	e2.3	e4.9
26	e14	e28	e25	e30	e28	e23	e15	e9.0	e4.4	e3.0	e2.3	e5.2
27	e14	e30	e25	e30	e28	e23	e15	e8.8	e4.3	e3.0	e2.3	e5.4
28	e15	e30	e25	e30	e28	e23	e15	e8.6	e4.2	e3.0	e2.2	e5.6
29	e15	e30	e25	e30	---	e23	e14	e8.4	e4.1	e3.0	e2.2	e5.8
30	e15	e30	e25	e30	---	e23	e14	e8.2	e4.0	e3.0	e2.2	e6.0
31	e15	---	e25	e30	---	e23	---	e8.0	---	---	e2.2	---
TOTAL	438	654	860	830	899	771	561	329.8	170.7	95.6	78.6	97.1
MEAN	14.1	21.8	27.7	26.8	32.1	24.9	18.7	10.6	5.69	3.19	2.54	3.24
MAX	15	30	30	30	35	27	22	14	7.8	3.9	3.0	6.0
MIN	14	15	25	25	28	23	14	8.0	4.0	3.0	2.2	2.0
AC-FT	869	1300	1710	1650	1780	1530	1110	654	339	190	156	193

CAL YR 1988 TOTAL 7595.6 MEAN 20.8 MAX 134 MIN 5.2 AC-FT 15070
WTR YR 1989 TOTAL 5784.8 MEAN 15.9 MAX 35 MIN 2.0 AC-FT 11470

e Estimated.

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 mi^2.

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.--21 years (water years 1931-32, 1971-89), 38.0 ft^3/s, 27,530 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft^3/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 1989 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 mi^2.

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.--59 years, 23.9 ft^3/s, 17,320 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 64,300 ft^3/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 1989 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 mi^2.

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.--38 years (water years 1930-32, 1953-78, 1981-89), 6.24 ft^3/s, 4,520 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 1.0 ft^3/s, for many days; minimum daily, 0.25 ft^3/s, for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.45	e.45	e1.0	e1.0	e1.0	e1.0	e.80	e.58	e.25	e.25	e.25	e.25
2	e.45	e.50	e1.0	e1.0	e1.0	e1.0	e.70	e.58	e.25	e.25	e.25	e.25
3	e.45	e.50	e1.0	e1.0	e1.0	e1.0	e.70	e.57	e.25	e.25	e.25	e.25
4	e.45	e.50	e1.0	e1.0	e1.0	e1.0	e.70	e.56	e.25	e.25	e.25	e.25
5	e.45	e.50	e1.0	e1.0	e1.0	e1.0	e.70	e.56	e.25	e.25	e.25	e.25
6	e.45	e.50	e1.0	e1.0	e1.0	e1.0	e.70	e.55	e.25	e.25	e.25	e.25
7	e.45	e.50	e1.0	e1.0	e1.0	e1.0	e.70	e.53	e.25	e.25	e.25	e.25
8	e.45	e.50	e1.0	e1.0	e1.0	e1.0	e.70	e.51	e.25	e.25	e.25	e.25
9	e.45	e.60	e1.0	e1.0	e1.0	e1.0	e.70	e.48	e.25	e.25	e.25	e.25
10	e.45	e.60	e1.0	e1.0	e1.0	e1.0	e.70	e.45	e.25	e.25	e.25	e.25
11	e.45	e.60	e1.0	e1.0	e1.0	e1.0	e.70	e.45	e.25	e.25	e.25	e.25
12	e.45	e.60	e1.0	e1.0	e1.0	e1.0	e.70	e.45	e.25	e.25	e.25	e.25
13	e.45	e.60	e1.0	e1.0	e1.0	e1.0	e.70	e.45	e.25	e.25	e.25	e.25
14	e.45	e.60	e1.0	e1.0	e1.0	e1.0	e.70	e.45	e.25	e.25	e.25	e.25
15	e.45	e.70	e1.0	e1.0	e1.0	e1.0	e.70	e.45	e.25	e.25	e.25	e.25
16	e.45	e.70	e1.0	e1.0	e1.0	e.96	e.68	e.45	e.25	e.25	e.25	e.25
17	e.45	e.70	e1.0	e1.0	e1.0	e.90	e.68	e.45	e.25	e.25	e.25	e.25
18	e.45	e.70	e1.0	e1.0	e1.0	e.90	e.68	e.45	e.25	e.25	e.25	e.25
19	e.45	e.80	e1.0	e1.0	e1.0	e.90	e.67	e.41	e.25	e.25	e.25	e.25
20	e.45	e.86	e1.0	e1.0	e1.0	e.90	e.66	e.37	e.25	e.25	e.25	e.25
21	e.45	e.90	e1.0	e1.0	e1.0	e.90	e.65	e.33	e.25	e.25	e.25	e.25
22	e.45	e.90	e1.0	e1.0	e1.0	e.90	e.65	e.30	e.25	e.25	e.25	e.25
23	e.45	e.90	e1.0	e1.0	e1.0	e.90	e.64	e.30	e.25	e.25	e.25	e.25
24	e.45	e.90	e1.0	e1.0	e1.0	e.90	e.64	e.30	e.25	e.25	e.25	e.25
25	e.45	e.90	e1.0	e1.0	e1.0	e.90	e.63	e.30	e.25	e.25	e.25	e.25
26	e.45	e1.0	e1.0	e1.0	e1.0	e.80	e.62	e.27	e.25	e.25	e.25	e.25
27	e.45	e1.0	e1.0	e1.0	e1.0	e.80	e.62	e.25	e.25	e.25	e.25	e.25
28	e.45	e1.0	e1.0	e1.0	e1.0	e.80	e.61	e.25	e.25	e.25	e.25	e.25
29	e.45	e1.0	e1.0	e1.0	---	e.80	e.60	e.25	e.25	e.25	e.25	e.25
30	e.45	e1.0	e1.0	e1.0	---	e.80	e.59	e.25	e.25	e.25	e.25	e.25
31	e.45	---	e1.0	e1.0	---	e.80	---	e.25	---	e.25	e.25	---
TOTAL	13.95	21.51	31.0	31.0	28.0	28.86	20.22	12.80	7.50	7.75	7.75	7.50
MEAN	.45	.72	1.00	1.00	1.00	.93	.67	.41	.25	.25	.25	.25
MAX	.45	1.0	1.0	1.0	1.0	1.0	.80	.58	.25	.25	.25	.25
MIN	.45	.45	1.0	1.0	1.0	.80	.59	.25	.25	.25	.25	.25
AC-FT	28	43	61	61	56	57	40	25	15	15	15	15

CAL YR 1988 TOTAL 416.53 MEAN 1.14 MAX 15 MIN .11 AC-FT 826
WTR YR 1989 TOTAL 217.84 MEAN .60 MAX 1.0 MIN .25 AC-FT 432

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 mi^2.

PERIOD OF RECORD.--January 1923 to current year. Monthly discharge only for October 1937 to January 1939, published in WSP 1314. Prior to October 1954, published as Rock Creek near Valyermo.

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. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--66 years (water years 1924-89), 17.4 ft^3/s, 12,610 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,300 ft^3/s, Mar. 2, 1938, gage height unknown, on basis of slope-area measurement of peak flow; minimum daily, 0.70 ft^3/s, Nov. 5, 1951.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 24	2000	*35	*2.44				

Minimum daily, 1.7 ft^3/s, Sept. 3.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	4.3	5.6	6.8	6.8	17	15	9.3	6.6	3.9	2.9	1.9
2	9.3	4.7	5.4	6.3	8.4	18	14	9.2	6.1	3.1	2.8	1.8
3	9.1	4.5	5.2	6.5	8.8	19	14	8.8	5.8	3.0	2.5	1.7
4	8.5	4.5	5.2	6.9	13	17	13	8.3	5.6	3.0	2.5	1.9
5	7.7	4.6	5.2	7.1	14	15	12	8.0	5.4	3.0	2.6	2.1
6	8.3	5.0	4.9	9.1	11	15	13	7.9	5.3	2.7	2.5	2.0
7	8.5	5.1	4.8	8.0	11	19	14	7.9	5.2	3.0	2.4	2.1
8	8.4	5.0	4.8	7.7	10	25	14	7.8	5.2	3.3	2.5	2.4
9	7.7	5.1	4.8	7.3	15	29	13	7.9	4.9	3.2	2.4	2.4
10	6.9	4.8	4.7	7.0	25	24	13	9.0	4.9	3.5	2.4	2.4
11	7.0	4.8	4.5	6.7	21	21	14	9.3	4.8	3.5	2.5	2.4
12	7.1	4.8	4.5	6.4	18	21	14	9.0	4.6	3.6	2.6	2.4
13	7.2	5.3	4.8	6.8	17	22	14	8.7	4.3	3.5	2.3	2.4
14	7.5	8.5	5.7	6.7	15	19	14	8.9	4.2	3.3	2.2	2.6
15	7.2	7.6	7.3	6.6	14	17	15	10	4.0	3.1	2.1	2.6
16	6.7	6.9	15	6.5	13	16	14	9.9	4.3	3.2	2.0	2.6
17	6.6	6.5	13	6.5	12	16	14	8.6	4.1	2.9	1.9	2.9
18	6.4	6.4	8.6	6.0	12	15	14	8.0	3.8	2.8	2.0	2.9
19	6.1	5.9	7.4	6.0	12	14	14	7.4	3.7	2.6	2.0	3.3
20	5.8	5.1	7.0	6.0	13	15	14	6.9	3.7	2.4	2.0	2.9
21	5.8	4.9	21	6.0	13	15	12	7.2	4.0	2.2	2.1	2.7
22	5.9	4.8	13	6.2	12	14	11	8.1	3.7	2.1	2.1	2.6
23	5.6	5.2	10	6.7	14	14	12	7.6	3.6	2.3	2.1	2.5
24	5.2	6.0	14	6.9	16	14	12	8.3	3.9	2.5	2.1	2.5
25	5.3	6.1	16	6.9	17	18	12	8.2	4.5	2.5	1.9	2.2
26	5.5	6.2	12	6.7	19	19	12	7.8	3.5	2.7	2.0	e2.1
27	5.4	6.1	8.9	6.1	23	16	11	8.1	3.7	2.9	2.0	e2.1
28	5.5	5.8	8.1	6.1	19	15	11	8.0	4.0	2.8	1.9	e2.0
29	5.7	5.6	7.4	5.9	---	15	10	7.8	4.3	2.7	1.8	e2.0
30	5.3	5.6	7.0	5.9	---	15	9.8	7.8	4.4	2.7	1.9	e1.9
31	4.3	---	6.9	5.9	---	14	---	7.2	---	2.9	2.0	---
TOTAL	212.5	165.7	252.7	206.2	403.0	543	388.8	256.9	136.1	90.9	69.0	70.3
MEAN	6.85	5.52	8.15	6.65	14.4	17.5	13.0	8.29	4.54	2.93	2.23	2.34
MAX	11	8.5	21	9.1	25	29	15	10	6.6	3.9	2.9	3.3
MIN	4.3	4.3	4.5	5.9	6.8	14	9.8	6.9	3.5	2.1	1.8	1.7
AC-FT	421	329	501	409	799	1080	771	510	270	180	137	139

CAL YR 1988 TOTAL 5869.6 MEAN 16.0 MAX 156 MIN 4.3 AC-FT 11640
WTR YR 1989 TOTAL 2795.1 MEAN 7.66 MAX 29 MIN 1.7 AC-FT 5540

e Estimated.

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 Highway 138 crossing, and 1.6 mi west of Llano.

DRAINAGE AREA.--53.1 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1988 to September 1989.

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.--Records fair except those for periods of estimated daily discharges, which are poor. Low flows affected by diversion for municipal supply 3 mi upstream. Storm runoff unaffected.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 8	1500	*38	*4.06				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	1.0	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	1.2	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	1.5	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.15	1.8	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.32	1.3	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.12	1.5	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.25	1.7	.00	.00	.00	.00	.00	.00
8	.00	.00	e.01	.00	3.7	2.0	.00	.00	.00	.00	.00	.00
9	.00	.00	e.02	.00	2.1	2.6	.00	.00	.00	.00	.00	.00
10	.00	.00	e.03	.00	.00	3.7	.00	.00	.00	.00	.00	.00
11	.00	.00	e.04	.00	.07	3.1	.00	.00	.00	.00	.00	.00
12	.00	.00	e.05	.00	.24	3.2	.00	.00	.00	.00	.00	.00
13	.00	.00	.01	.00	.27	4.0	.00	.00	.00	.00	.00	.00
14	.00	.00	.03	.00	.30	2.1	.00	.00	.00	.00	.00	.00
15	.00	.00	.12	.00	.42	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	2.4	.00	.64	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	3.0	.00	.51	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	2.0	.00	.54	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.60	.00	.61	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.44	.00	.67	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	4.7	.00	.81	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	5.2	.00	.91	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	3.6	.00	1.1	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	4.1	.00	1.0	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	11	.00	.98	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	3.8	.00	.98	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	e2.3	.00	.99	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	e.76	.00	.91	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.29	.01	---	.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	44.50	0.01	18.59	30.70	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	1.44	.000	.66	.99	.000	.000	.000	.000	.000	.000
MAX	.00	.00	11	.01	3.7	4.0	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	88	.02	37	61	.00	.00	.00	.00	.00	.00

WTR YR 1989 TOTAL 93.80 MEAN .26 MAX 11 MIN .00 AC-FT 186

e Estimated.

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

PRECIPITATION RECORDS

PERIOD OF RECORD.--February to September 1989.

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

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall during period February to September, 0.52 in, Sept. 19; no rainfall for many days.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	.00	.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	.00	.00	.00	.00
10	---	---	---	---	---	.00	.00	.00	.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	.35	.00	.00	.00	.00
16	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.01
17	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
18	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
19	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.52
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	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
26	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
27	---	---	---	---	.00	.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	---	---	---	---	---	0.00	0.00	0.35	0.00	0.00	0.00	0.53

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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1988 to September 1989.

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 CURRENT YEAR.--Peak discharges greater than base discharge of 1.5 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 15	1640	1.6	0.67	Sept. 19	0810	*1.8	*0.69

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.02	.00	.00	.00	.00	.01	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.02	.00	.00	.01	.00	.00	.00	.00	.00
6	.00	.00	.00	.01	.01	.00	.00	.01	.00	.00	.01	.00
7	.00	.00	.01	.00	.00	.00	.00	.01	.00	.01	.01	.00
8	.00	.00	.01	.00	.03	.00	.00	.00	.01	.01	.01	.00
9	.00	.00	.01	.00	.15	.00	.00	.00	.00	.00	.04	.00
10	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.03	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.01	.01	.01	.00
12	.01	.00	.00	.00	.00	.00	.01	.00	.02	.00	.01	.00
13	.00	.00	.00	.00	.00	.00	.01	.00	.02	.00	.01	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.01	.00
15	.00	.00	.01	.00	.00	.00	.00	.03	.01	.00	.01	.00
16	.00	.00	.09	.00	.00	.00	.00	.00	.01	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00
18	.00	.00	.03	.00	.00	.00	.00	.00	.02	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.13
20	.00	.00	.01	.01	.00	.01	.00	.01	.02	.00	.00	.00
21	.00	.00	.09	.00	.01	.00	.00	.00	.01	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.01	.00	.00	.00	.01	.00	.00	.00	.00	.00
24	.00	.00	.01	.00	.00	.00	.00	.00	.01	.00	.00	.00
25	.00	.00	.01	.00	.00	.00	.01	.00	.01	.00	.00	.01
26	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.02
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	---	.03	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.01	0.00	0.32	0.13	0.22	0.01	0.05	0.06	0.21	0.03	0.15	0.16
MEAN	.000	.000	.010	.004	.008	.000	.002	.002	.007	.001	.005	.005
MAX	.01	.00	.09	.05	.15	.01	.01	.03	.02	.01	.04	.13
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.02	.00	.6	.3	.4	.02	.1	.1	.4	.06	.3	.3

WTR YR 1989 TOTAL 1.35 MEAN .004 MAX .15 MIN .00 AC-FT 2.7

10264502 PEACH TREE CREEK NEAR LITTLEROCK, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--February to September 1989.

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

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall during period February to September, 0.47 in, Sept. 19; no rainfall for many days.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	.00	.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	.00	.00	.00	.00
10	---	---	---	---	---	.00	.00	.01	.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	.00	.25	.00	.00	.00	.00
16	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
17	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.01
18	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
19	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.47
20	---	---	---	---	.00	.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	.00	.00	.00	.00	.00	.00
24	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
25	---	---	---	---	.00	.01	.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	.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	---	---	---	---	---	0.01	0.00	0.26	0.00	0.00	0.00	0.48

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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--February to September 1989.

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 those for periods of estimated daily discharges, which are poor. No regulation or diversion upstream from station.

EXTREMES FOR CURRENT PERIOD.--February to September 1989: Peak discharges greater than base discharge of 2.5 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 9	1145	*2.8	*0.85	Sept. 19	0650	*2.8	*0.85

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	.00	.00	.00	e.01	.01	.02	.00
2	---	---	---	---	---	.00	.00	.00	e.01	.01	.01	.00
3	---	---	---	---	---	.00	.00	.00	e.01	.01	e.01	.00
4	---	---	---	---	---	.00	.01	.00	e.01	.01	e.01	.00
5	---	---	---	---	---	.00	.00	.00	e.01	.01	e.01	.00
6	---	---	---	---	---	.00	.00	.00	e.01	.01	e.01	.00
7	---	---	---	---	.00	.00	.00	.01	e.01	.02	e.01	.00
8	---	---	---	---	.05	.00	.00	.01	.01	.01	e.01	e.01
9	---	---	---	---	.50	.00	.00	.00	.01	.01	e.01	e.01
10	---	---	---	---	.30	.00	.00	.00	.02	.02	e.01	e.01
11	---	---	---	---	e.01	.02	.00	.00	.02	.01	e.01	e.01
12	---	---	---	---	e.01	.02	.00	.00	.02	.01	e.01	.01
13	---	---	---	---	.00	.00	.00	.00	.01	.01	e.01	.01
14	---	---	---	---	.00	.01	.00	.00	.01	.01	e.01	.01
15	---	---	---	---	.00	.01	.01	.04	.01	.01	e.01	.01
16	---	---	---	---	.00	.00	.00	.01	.01	.03	e.01	.02
17	---	---	---	---	.00	.00	.00	.01	.01	.02	e.01	.01
18	---	---	---	---	.00	.00	.00	.00	.01	.02	e.01	.00
19	---	---	---	---	.00	.00	.00	.01	.01	.03	.00	.26
20	---	---	---	---	.00	.00	.00	.01	.01	.01	.00	.02
21	---	---	---	---	.00	.00	.00	.01	.01	.02	.00	.01
22	---	---	---	---	.00	.00	.00	.02	.01	.02	.00	.01
23	---	---	---	---	.00	.04	.00	.02	.01	.01	.00	.01
24	---	---	---	---	.00	.12	.00	.02	.01	.03	.00	.01
25	---	---	---	---	.01	.01	.00	.03	.02	.01	.00	.01
26	---	---	---	---	.01	.00	.00	e.01	.02	.01	.00	.00
27	---	---	---	---	.00	.01	.00	e.01	.02	.01	.00	.00
28	---	---	---	---	.00	.00	.00	e.01	.01	.01	.00	.01
29	---	---	---	---	---	.00	.00	e.01	.01	.00	.00	.01
30	---	---	---	---	---	.01	.00	e.01	.01	.00	.00	.01
31	---	---	---	---	---	.01	---	e.01	---	.03	.00	---
TOTAL	---	---	---	---	0.89	0.26	0.02	0.26	0.36	0.43	0.19	0.47
MEAN	---	---	---	---	.040	.008	.001	.008	.012	.014	.006	.016
MAX	---	---	---	---	.50	.12	.01	.04	.02	.03	.02	.26
MIN	---	---	---	---	.00	.00	.00	.00	.01	.00	.00	.00
AC-FT	---	---	---	---	1.8	.5	.04	.5	.7	.9	.4	.9

e Estimated.

10264508 SOMERSET CREEK AT PALMDALE, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--February to September 1989.

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

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall during period February to September, 0.40 in, Sept. 19; no rainfall for many days.

RAINFALL ACCUMULATED (INCHES), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	.00	.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	.00	.00	.00	.00
10	---	---	---	---	---	.00	.00	.05	.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	.15	.00	.00	.00	.00
16	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.04
17	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.01
18	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
19	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.40
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	.00
24	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
25	---	---	---	---	.00	.06	.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	.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	---	---	---	---	---	0.06	0.00	0.20	0.00	0.00	0.00	0.45

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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1958 to September 1973, October 1977 to September 1988 (crest-stage partial-record station); October 1988 to September 1989.

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

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 69 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 21	0100	*0.67	*10.43				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	.00	.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	.01	.05	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.01	.01	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.01	.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	.02	.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	.02	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	e.05	.00	.01	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.01	.00	.00	.00	.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	.09	.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	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.01	.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	---	.01	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.20	0.06	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.006	.002	.006	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.09	.02	.05	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.4	.1	.4	.00	.00	.00	.00	.00	.00	.00

WTR YR 1989 TOTAL 0.44 MEAN .001 MAX .09 MIN .00 AC-FT .9

e Estimated.

10264530 PINE CREEK NEAR PALMDALE, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--January to September 1989.

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

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall during period January to September, 1.50 in, Feb. 4; no rainfall for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
2	---	---	---	---	.00	.03	.00	.00	.00	.00	.00	.00
3	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
4	---	---	---	---	1.50	.00	.00	.00	.00	.00	.00	.00
5	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
6	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
7	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
8	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
9	---	---	---	---	.70	.00	.00	.05	.00	.00	.00	.00
10	---	---	---	---	.70	.00	.00	.13	.00	.00	.00	.00
11	---	---	---	---	.10	.00	.00	.00	.00	.00	.00	.00
12	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
13	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
14	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
15	---	---	---	---	.00	.00	.00	.07	.00	.00	.00	.00
16	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.04
17	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.08
18	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
19	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.25
20	---	---	---	---	.00	.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	.00	.00	.00	.00	.00	.00	.00
24	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	---	---	---	.00	.00	.20	.00	.00	.00	.00	.00	.00
26	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	---	---	---	.00	---	.00	.00	.00	.00	.00	.00	.00
30	---	---	---	.00	---	.00	.00	.00	.00	.00	.00	.00
31	---	---	---	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	---	---	---	0.00	3.00	0.23	0.00	0.25	0.00	0.00	0.00	0.37

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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1988 to September 1989.

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 fair. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1.6 ft^3/s, Dec. 20, 1988, gage height, 3.19 ft; no flow for many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5.0 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 20	2400	*1.6	*3.19				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	.02	.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	.02	.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	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.02	.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	---	.01	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.002	.001	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.02	.02	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.1	.04	.00	.00	.00	.00	.00	.00	.00	.00

WTR YR 1989 TOTAL 0.08 MEAN .000 MAX .02 MIN .00 AC-FT .2

10264550 CITY RANCH CREEK NEAR PALMDALE, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--February to September 1989.

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

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall during period February to September, 0.17 in, Sept. 19; no rainfall for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
2	---	---	---	---	---	.02	.00	.00	.00	.00	.00	.00
3	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
4	---	---	---	---	---	.00	.00	.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	.00	.00	.00	.00
10	---	---	---	---	---	.00	.00	.09	.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	.03	.00	.00	.00	.00
16	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.01
17	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
18	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.00
19	---	---	---	---	---	.00	.00	.00	.00	.00	.00	.17
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	.00
25	---	---	---	---	.00	.15	.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	.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	---	---	---	---	0.00	0.17	0.00	0.12	0.00	0.00	0.00	0.18

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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May to September 1989.

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 fair. No regulation or diversion upstream from station.

EXTREMES FOR CURRENT PERIOD.--May to September 1989: Peak discharges greater than base discharge of 2.0 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 15	1500	*0.91	*4.21				

No flow for several days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	.00	.04	.04	.00	.01
2	---	---	---	---	---	---	---	.00	.01	.04	.01	.02
3	---	---	---	---	---	---	---	.00	.04	.04	.01	.01
4	---	---	---	---	---	---	---	.01	.02	.02	.02	.01
5	---	---	---	---	---	---	---	.01	.02	.03	.02	.00
6	---	---	---	---	---	---	---	.01	.00	.03	.03	.00
7	---	---	---	---	---	---	---	.01	.02	.04	.03	.01
8	---	---	---	---	---	---	---	.01	.05	.03	.01	.02
9	---	---	---	---	---	---	---	.00	.08	.04	.02	.02
10	---	---	---	---	---	---	---	.00	.04	.04	.02	.02
11	---	---	---	---	---	---	---	.00	.03	.01	.02	.02
12	---	---	---	---	---	---	---	.01	.04	.02	.02	.00
13	---	---	---	---	---	---	---	.01	.01	.03	.02	.01
14	---	---	---	---	---	---	---	.01	.03	.02	.02	.02
15	---	---	---	---	---	---	---	.06	.03	.03	.01	.03
16	---	---	---	---	---	---	---	.01	.03	.04	.02	.03
17	---	---	---	---	---	---	---	.02	.03	.04	.01	.04
18	---	---	---	---	---	---	---	.02	.03	.01	.01	.02
19	---	---	---	---	---	---	---	.02	.03	.03	.02	.02
20	---	---	---	---	---	---	---	.02	.01	.03	.03	.06
21	---	---	---	---	---	---	---	.03	.04	.04	.04	.08
22	---	---	---	---	---	---	---	.03	.05	.04	.01	.06
23	---	---	---	---	---	---	---	.03	.04	.03	.02	.05
24	---	---	---	---	---	---	---	.03	.03	.02	.03	.04
25	---	---	---	---	---	---	---	.08	.03	.01	.02	.04
26	---	---	---	---	---	---	---	.04	.04	.02	.03	.00
27	---	---	---	---	---	---	---	.08	.02	.03	.03	.02
28	---	---	---	---	---	---	---	.04	.05	.03	.02	.02
29	---	---	---	---	---	---	---	.04	.05	.03	.01	.03
30	---	---	---	---	---	---	---	.00	.04	.03	.01	.02
31	---	---	---	---	---	---	---	.02	---	.02	.01	---
TOTAL	---	---	---	---	---	---	---	0.65	0.98	0.91	0.58	0.73
MEAN	---	---	---	---	---	---	---	.021	.033	.029	.019	.024
MAX	---	---	---	---	---	---	---	.08	.08	.04	.04	.08
MIN	---	---	---	---	---	---	---	.00	.00	.01	.00	.00
AC-FT	---	---	---	---	---	---	---	1.3	1.9	1.8	1.2	1.4

10264555 ESTATES CREEK NEAR QUARTZ HILL, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--May to September 1989.

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

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall during period May to September, 0.20 in, Sept. 19; no rainfall for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
2	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
3	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
4	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
5	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
6	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
7	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
8	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
9	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
10	---	---	---	---	---	---	---	.09	.00	.00	.00	.00
11	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
12	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
13	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
14	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
15	---	---	---	---	---	---	---	.16	.00	.00	.00	.00
16	---	---	---	---	---	---	---	.00	.00	.00	.00	.03
17	---	---	---	---	---	---	---	.00	.00	.00	.00	.02
18	---	---	---	---	---	---	---	.00	.00	.00	.00	.01
19	---	---	---	---	---	---	---	.00	.00	.00	.00	.20
20	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
21	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
22	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
23	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
24	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
25	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
26	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
27	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
28	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
29	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
30	---	---	---	---	---	---	---	.00	.00	.00	.00	.00
31	---	---	---	---	---	---	---	.00	---	.00	.00	---
TOTAL	---	---	---	---	---	---	---	0.25	0.00	0.00	0.00	0.26

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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1958 to September 1973 (annual maximum only), October 1988 to September 1989.

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 above station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,540 ft^3/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 1989 water year.

10264605 JOSHUA CREEK NEAR MOJAVE, CA--Continued

PRECIPITATION RECORDS

PERIOD OF RECORD.--February to September 1989.

INSTRUMENTATION.--Tipping-bucket rain gage with data logger.

REMARKS.--Period of missing record March 16 to April 5 due to recorder malfunction.

EXTREMES FOR PERIOD.--Maximum recorded daily rainfall, 0.25 inch, Sept. 19; no rainfall for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						.00	---	.00	.00	.00	.00	.00
2						.15	---	.00	.00	.00	.00	.00
3						.00	---	.00	.00	.00	.00	.00
4						.00	---	.00	.00	.00	.00	.00
5						.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	.01	.00	.00	.00	.00
11						.00	.00	.01	.00	.00	.00	.00
12						.00	.00	.00	.00	.00	.00	.00
13						.00	.00	.00	.00	.00	.00	.00
14						.00	.00	.19	.00	.00	.00	.00
15						.00	.00	.05	.00	.00	.00	.00
16						---	.00	.00	.00	.00	.00	.19
17						---	.00	.00	.00	.00	.00	.00
18						---	.00	.00	.00	.00	.00	.00
19						---	.00	.00	.00	.00	.00	.25
20						---	.00	.00	.00	.00	.00	.00
21						---	.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					.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	.00	.00	.00	.00	.00
29					---	---	.00	.00	.00	.00	.00	.00
30					---	---	.00	.00	.00	.00	.00	.00
31					---	---	---	.00	---	.00	.00	---
TOTAL					---	---	---	0.26	0.00	0.00	0.00	0.44

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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1988 to September 1989.

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. Records fair. No regulation or diversion upstream from station. Inflow can occur from artificial ditch 10 ft upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11 ft^3/s, Apr. 14, 1989, gage height, 4.81 ft; no flow for many days.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5.0 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr. 14	2300	*11	*4.81				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	.54	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.01	.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	.01	.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	0.00	0.01	0.55	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.000	.000	.018	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.01	.54	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.02	1.1	.00	.00	.00	.00	.00

WTR YR 1989 TOTAL 0.56 MEAN .002 MAX .54 MIN .00 AC-FT 1.1

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

PRECIPITATION RECORDS

PERIOD OF RECORD.--January to September 1989.

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

EXTREMES FOR CURRENT YEAR.--Maximum daily rainfall during period January to September, 0.21 in, Mar. 25; no rainfall for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
2	---	---	---	---	.00	.01	.00	.00	.00	.00	.00	.00
3	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
4	---	---	---	---	.10	.00	.00	.00	.00	.00	.00	.00
5	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
6	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
7	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
8	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
9	---	---	---	---	.10	.00	.00	.00	.00	.00	.00	.00
10	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
11	---	---	---	---	.10	.00	.00	.00	.00	.00	.00	.00
12	---	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00
13	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	---	---	---	.00	.00	.00	.00	.02	.00	.00	.00	.00
16	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.01
17	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.05
18	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.08
20	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	---	---	---	.00	.00	.21	.00	.00	.00	.00	.00	.00
26	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	---	---	---	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	---	---	---	.00	---	.00	.00	.00	.00	.00	.00	.00
30	---	---	---	.00	---	.00	.00	.00	.00	.00	.00	.00
31	---	---	---	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	---	---	---	0.00	0.30	0.22	0.00	0.02	0.00	0.00	0.00	0.14

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 mi^2, 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.--No estimated discharges. Flow regulated for power development by South Lake, Lake Sabrina, and Intake No. 2 Reservoir, combined capacity, 20,660 acre-ft, and many 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 provided by Southern California Edison Co. and reviewed by the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE (ACTUAL FLOW).--54 years, 103 ft^3/s, 74,620 acre-ft/yr.
(NATURAL FLOW).--54 years, 106 ft^3/s, 76,800 acre-ft/yr.

EXTREMES (ACTUAL FLOW) FOR PERIOD OF RECORD (SINCE 1970).--Maximum daily discharge, 1,070 ft^3/s, Sept. 26, 1982; minimum daily, 32 ft^3/s, Dec. 19, 1977.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	84	63	51	52	51	63	67	95	94	94	95	91
2	72	64	52	53	61	64	63	95	95	96	92	89
3	66	63	51	52	62	65	72	95	96	94	93	91
4	63	63	51	56	60	65	71	94	97	94	95	89
5	64	62	52	53	60	66	69	96	94	95	95	89
6	63	63	50	51	60	66	70	94	95	94	94	88
7	63	62	52	51	60	66	76	95	94	95	96	87
8	64	62	51	51	61	71	77	95	97	94	96	88
9	63	61	48	55	61	66	83	96	94	94	95	89
10	63	56	51	53	62	61	92	95	96	94	93	87
11	63	56	50	51	61	64	99	95	98	94	93	88
12	64	59	51	51	61	66	101	95	97	94	93	89
13	63	56	51	52	63	71	101	95	96	94	92	87
14	64	57	50	51	63	66	104	95	97	94	92	88
15	63	57	52	51	62	67	108	95	93	93	92	88
16	64	54	51	51	62	66	114	95	96	94	92	88
17	64	54	55	89	61	66	111	95	96	95	92	91
18	63	54	52	98	62	66	114	94	96	94	93	90
19	63	53	50	103	62	69	117	95	96	94	93	100
20	63	52	50	86	64	66	114	95	95	95	96	95
21	63	52	50	51	62	66	111	96	95	100	94	91
22	64	52	49	51	63	64	105	95	97	96	94	93
23	62	57	52	52	63	67	107	94	96	95	91	90
24	63	52	52	52	62	67	99	95	98	94	91	90
25	62	53	51	50	62	67	97	94	96	95	92	92
26	63	52	51	52	65	66	91	94	96	93	92	92
27	64	51	51	49	64	66	109	96	95	94	92	93
28	64	50	53	48	62	65	95	96	96	93	88	96
29	63	52	52	50	---	66	94	96	96	93	90	94
30	66	52	51	50	---	68	92	96	95	93	91	93
31	63	---	52	51	---	67	---	96	---	93	91	---
TOTAL	1996	1694	1585	1766	1722	2049	2823	2947	2872	2924	2878	2716
MEAN	64.4	56.5	51.1	57.0	61.5	66.1	94.1	95.1	95.7	94.3	92.8	90.5
MAX	84	64	55	103	65	71	117	96	98	100	96	100
MIN	62	50	48	48	51	61	63	94	93	93	88	87
AC-FT	3960	3360	3140	3500	3420	4060	5600	5850	5700	5800	5710	5390
a	2460	2350	2600	2820	2120	2940	5200	6870	8960	5730	3490	2930

CAL YR 1988 TOTAL 30280 MEAN 82.7 MAX 115 MIN 48 AC-FT 60060 a 51650
WTR YR 1989 TOTAL 27972 MEAN 76.6 MAX 117 MIN 48 AC-FT 55480 a 48470

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

10287000 MONO LAKE NEAR MONO LAKE, CA

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.

DRAINAGE AREA.--785 mi^2.

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 (NGVD). 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 ft^3/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 1988 TO SEPTEMBER 1989
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	6376.1	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	6377.2	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	6377.0	---	---	---	---	---
7	---	---	---	---	---	6376.9	---	---	---	---	---	6375.7
8	---	---	6377.0	---	6376.8	---	---	---	6376.3	---	---	---
9	---	6377.0	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	6376.1	---
11	---	---	---	---	---	---	---	---	---	---	---	6375.6
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	6376.4	6376.0	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	6377.1	---	---	6376.8	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	6375.5
20	---	---	---	---	---	---	---	---	---	6376.3	---	---
21	---	6376.9	---	---	---	---	---	---	---	---	6375.9	---
22	---	---	---	---	---	6377.0	---	---	---	---	---	6375.5
23	---	---	---	---	---	---	---	---	6376.6	---	---	---
24	---	---	---	6376.8	---	---	6376.8	---	---	6376.3	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	6377.1	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	6376.8	---	---	---	---	---	---	6376.2	---	6375.4
29	---	6376.9	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	6375.8	---

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 mi^2.

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 of Lundy Lake.

COOPERATION.--Records were provided by Southern California Edison Co. and reviewed by the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE (ACTUAL FLOW).--48 years, 29.1 ft^3/s, 21,080 acre-ft/yr.
(NATURAL FLOW).--48 years, 30.4 ft^3/s, 22,020 acre-ft/yr.

EXTREMES (ACTUAL FLOW) FOR PERIOD OF RECORD (SINCE 1970).--Maximum daily discharge, 229 ft^3/s, June 22, 1983; no flow for many days in 1971 and 1974.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	7.0	7.2	5.4	5.4	5.6	13	14	19	45	21	12
2	11	6.5	7.2	5.4	5.4	11	12	17	25	45	19	13
3	11	6.1	7.1	5.4	5.4	17	11	19	36	46	19	13
4	8.9	6.1	7.0	5.4	5.4	17	13	21	39	47	17	13
5	7.4	6.1	7.0	5.4	5.4	17	16	23	40	47	17	12
6	7.4	6.1	6.9	5.4	5.4	18	19	23	45	49	17	13
7	7.4	6.1	6.5	5.4	5.4	17	20	23	51	50	16	14
8	7.4	6.1	5.9	5.4	5.4	17	19	38	51	49	18	10
9	7.4	6.1	5.4	5.4	5.4	17	20	55	54	51	19	8.3
10	7.4	5.7	5.4	5.4	5.4	17	25	55	59	54	19	8.3
11	7.2	5.6	5.4	5.4	5.4	16	28	54	62	58	19	8.3
12	7.2	6.4	5.4	5.4	5.4	16	25	54	63	53	19	8.2
13	7.2	7.2	5.4	5.4	5.4	17	23	53	63	48	18	8.1
14	7.2	7.2	5.4	5.4	5.4	17	28	54	48	48	18	8.2
15	7.2	7.4	5.4	5.4	5.4	17	34	45	62	44	19	8.3
16	7.2	7.4	5.4	5.4	5.4	17	34	38	65	39	19	8.6
17	8.2	7.4	5.4	5.4	5.4	17	34	37	68	36	18	9.5
18	6.1	7.4	5.4	5.4	5.4	17	18	48	68	35	18	9.0
19	3.5	7.5	5.4	5.4	5.4	17	25	60	68	36	18	8.8
20	3.4	7.5	5.6	5.4	5.4	17	25	60	68	39	18	9.0
21	4.8	7.5	5.6	5.4	5.4	25	25	60	68	41	19	9.0
22	7.0	7.5	5.6	5.4	5.4	41	33	55	68	39	19	9.0
23	7.0	7.4	5.6	5.4	5.4	40	32	49	68	37	19	8.8
24	7.0	7.4	5.6	5.4	5.6	40	32	49	68	32	19	8.8
25	7.0	7.5	5.6	5.4	5.6	40	29	48	68	31	19	8.8
26	7.0	7.2	5.6	5.4	5.6	32	27	48	65	31	19	9.0
27	7.0	7.2	5.6	5.4	5.6	17	27	49	61	31	19	11
28	7.0	7.2	5.5	5.4	5.6	17	20	49	54	31	17	9.0
29	7.0	7.2	5.4	5.4	---	17	15	48	48	27	19	9.1
30	7.0	7.2	5.4	5.4	---	16	16	49	45	25	19	9.2
31	7.0	---	5.4	5.4	---	13	---	29	---	24	17	---
TOTAL	225.5	206.2	180.7	167.4	152.2	619.6	698	1324	1667	1268	571	294.3
MEAN	7.27	6.87	5.83	5.40	5.44	20.0	23.3	42.7	55.6	40.9	18.4	9.81
MAX	11	7.5	7.2	5.4	5.6	41	34	60	68	58	21	14
MIN	3.4	5.6	5.4	5.4	5.4	5.6	11	14	19	24	16	8.1
AC-FT	447	409	358	332	302	1230	1380	2630	3310	2520	1130	584
a	354	322	425	312	345	634	1510	2640	4480	2560	920	609

CAL YR 1988 TOTAL 5180.6 MEAN 14.2 MAX 36 MIN 3.4 AC-FT 10280 a 10540
WTR YR 1989 TOTAL 7373.9 MEAN 20.2 MAX 68 MIN 3.4 AC-FT 14630 a 15110

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

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 mi^2.

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 provided by Southern California Edison Co., and reviewed by the U.S. Geological Survey, in connection with a Federal Energy Regulatory Commission project.

AVERAGE DISCHARGE (ACTUAL FLOW).--38 years, 56.1 ft^3/s, 40,640 acre-ft/yr.
(NATURAL FLOW).--38 years, 60.3 ft^3/s, 43,690 acre-ft/yr.

EXTREMES (ACTUAL FLOW) FOR PERIOD OF RECORD (SINCE 1970).--Maximum daily discharge, 421 ft^3/s, July 15, 1978; minimum daily, 0.90 ft^3/s, Aug. 31 to Sept. 2, 1976.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26	35	28	32	28	45	46	56	50	52	37	29
2	30	29	30	32	32	46	47	48	50	52	30	29
3	28	27	30	32	32	47	48	48	49	50	30	29
4	25	26	30	32	29	46	46	48	50	50	29	29
5	27	26	29	32	25	46	45	48	46	56	29	29
6	30	25	29	32	33	47	45	48	49	51	29	29
7	38	25	29	32	32	46	45	48	49	50	29	29
8	38	25	29	32	32	47	45	48	49	51	28	29
9	37	25	29	31	32	47	45	48	50	51	29	28
10	37	25	29	32	60	46	63	48	50	51	29	29
11	37	25	29	32	81	46	87	48	50	51	29	29
12	43	25	29	32	81	46	67	48	49	51	29	29
13	54	26	29	32	81	45	51	48	49	50	29	29
14	34	26	29	33	81	27	71	48	41	50	29	29
15	19	26	30	32	81	46	89	48	49	49	29	29
16	19	27	29	32	81	53	87	48	49	49	29	29
17	11	27	29	32	81	43	89	48	49	49	28	29
18	8.9	27	29	32	81	46	89	48	49	49	29	29
19	8.9	26	29	32	81	46	79	48	49	49	29	29
20	9.2	26	29	32	81	47	67	48	48	49	29	29
21	14	26	29	31	81	45	67	48	49	49	29	30
22	33	26	29	31	81	46	67	48	53	49	29	30
23	37	26	29	31	86	46	67	49	42	49	29	29
24	19	29	29	32	92	46	68	49	52	49	30	29
25	10	27	29	32	67	47	69	49	52	49	29	13
26	10	27	29	32	44	46	67	49	52	49	29	9.4
27	9.6	27	29	32	45	46	67	49	52	49	29	9.5
28	13	27	29	32	45	45	67	49	30	49	24	9.7
29	26	26	29	32	---	45	67	50	52	49	29	11
30	25	26	30	32	---	46	67	49	52	49	29	27
31	27	---	32	32	---	46	---	50	---	49	29	---
TOTAL	783.6	796	906	989	1686	1412	1924	1507	1460	1549	903	776.6
MEAN	25.3	26.5	29.2	31.9	60.2	45.5	64.1	48.6	48.7	50.0	29.1	25.9
MAX	54	35	32	33	92	53	89	56	53	56	37	30
MIN	8.9	25	28	31	25	27	45	48	30	49	24	9.4
AC-FT	1550	1580	1800	1960	3340	2800	3820	2990	2900	3070	1790	1540
a	109	101	200	143	35	607	5120	9610	9220	2520	1090	963

CAL YR 1988 TOTAL 11291.6 MEAN 30.9 MAX 57 MIN 8.9 AC-FT 22400 a 24610
WTR YR 1989 TOTAL 14692.2 MEAN 40.3 MAX 92 MIN 8.9 AC-FT 29140 a 29720

a Computed "NATURAL FLOW", in acre-feet. When "ACTUAL FLOW" was small and other quantities were large, negative figures of flow may appear. This arises primarily from the difficulty of computing "NATURAL FLOW" as the residual of several larger quantities, which are not conducive to precise measurement. When this occurs, adjustments are made to produce non-negative flows.

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 mi^2.

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.

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, 15,200 acre-ft, June 29, 30, elevation, 1,571.20 ft; minimum, 4,710 acre-ft, Nov. 18-24, elevation, 1,538.84 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 1988 TO SEPTEMBER 1989
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e6380	4900	4850	6320	7540	7760	9740	11700	14200	15100	13400	11600
2	e6330	4870	4890	6370	7520	7840	9800	11800	14300	15100	13300	11500
3	e6280	4840	4930	6410	7500	7900	9870	11900	14300	15000	13300	11400
4	e6220	4820	4980	6470	7490	7940	9940	12000	14300	14900	13200	11400
5	e6170	4800	5020	6510	7470	7970	10000	12100	14300	14900	13200	11300
6	e6120	4780	5070	6560	7440	7990	10100	12200	14400	14800	13100	11300
7	e6070	4780	5120	6600	7410	8020	10200	12300	14400	14700	13100	11200
8	e6020	4760	5150	6640	7370	8040	10200	12400	14500	14700	13000	11100
9	e5970	4750	5200	6690	7350	8050	10300	12500	14500	14700	13000	11100
10	e5910	4740	5240	6730	7320	8080	10400	12600	14500	14600	12900	11000
11	e5860	4740	5290	6770	7280	8150	10400	12700	14600	14500	12800	11000
12	e5810	4730	5330	6810	7240	8220	10500	12900	14600	14500	12800	10900
13	e5760	4730	5370	6860	7220	8290	10600	13000	14700	14400	12700	10800
14	e5710	4720	5420	6910	7230	8360	10600	13100	14700	14400	12600	10800
15	e5650	4720	5470	6940	7240	8430	10700	13200	14800	14300	12600	10700
16	e5600	4720	5520	6990	7250	8500	10800	13300	14800	14300	12500	10700
17	e5550	4720	5560	7030	7270	8570	10800	13400	14800	14200	12400	10600
18	e5500	4710	5620	7070	7270	8650	10900	13500	14900	14200	12400	10500
19	e5450	4710	5670	7130	7280	8730	11000	13600	14900	14100	12300	10500
20	e5400	4710	5720	7180	7290	8790	11000	13600	14900	14100	12200	10400
21	5330	4710	5780	7230	7290	8860	11100	13700	15000	14000	12200	10400
22	5300	4710	5830	7280	7300	8930	11200	13700	15000	13900	12100	10300
23	5260	4710	5860	7320	7350	9000	11200	13800	15000	13900	12100	10300
24	5220	4710	5920	7360	7410	9070	11300	13800	15000	13800	12000	10200
25	5180	4730	6000	7400	7480	9180	11300	13900	15000	13800	11900	10200
26	5140	4730	6050	7430	7550	9290	11400	13900	15100	13700	11900	10100
27	5090	4730	6090	7460	7620	9370	11500	14000	15100	13700	11800	10000
28	5050	4750	6140	7490	7690	9440	11500	14000	15100	13600	11800	10000
29	5010	4780	6180	7500	---	9530	11600	14100	15200	13600	11700	10000
30	4980	4820	6230	7530	---	9590	11600	14100	15200	13500	11700	10000
31	4940	---	6280	7540	---	9660	---	14200	---	13500	11600	---
MAX	6380	4900	6280	7540	7690	9660	11600	14200	15200	15100	13400	11600
MIN	4940	4710	4850	6320	7220	7760	9740	11700	14200	13500	11600	10000
a	1539.93	1539.36	1545.70	1550.47	1550.97	1557.31	1562.79	1568.92	1571.14	1567.26	1562.73	1558.31
b	-1490	-120	+1460	+1260	+150	+1970	+1940	+2600	+1000	-1700	-1900	-1600

CAL YR 1988 MAX 12080 MIN 4710 b -5580
WTR YR 1989 MAX 15200 MIN 4710 b +3570

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

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 mi^2.

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

REVISED RECORDS.--WDR CA-66-1: Drainage area

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 Reservoir, capacity, 44,760 acre-ft. Water diverted from Barrett Reservoir through San Diego and Dulzura conduits to Lower Otay Reservoir.

AVERAGE DISCHARGE.--53 years, 14.1 ft^3/s, 10,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft^3/s, Feb. 21, 1980, gage height, 11.15 ft, from rating curve extended above 8,700 ft^3/s; no flow for part of each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2.8 ft^3/s, Feb. 4, gage height, 3.19 ft; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.10	.16	.29	.05	.00	.00	.00	.00	.00
2	.00	.00	.00	.08	.21	.34	.04	.00	.00	.00	.00	.00
3	.00	.00	.00	.09	.25	.59	.04	.00	.00	.00	.00	.00
4	.00	.00	.00	.15	1.3	.31	.02	.00	.00	.00	.00	.00
5	.00	.00	.00	.19	.99	.25	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.29	.59	.24	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.17	.39	.20	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.15	.35	.18	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.14	.66	.16	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.14	.96	.16	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.14	.66	.16	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.11	.62	.15	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.12	.72	.14	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.13	.76	.13	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.13	.63	.13	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.13	.58	.13	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.13	.54	.12	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.13	.55	.10	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.13	.57	.09	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.13	.54	.08	.00	.00	.00	.00	.00	.00
21	.00	.00	.02	.14	.46	.05	.00	.00	.00	.00	.00	.00
22	.00	.00	.10	.15	.40	.02	.00	.00	.00	.00	.00	.00
23	.00	.00	.08	.16	.38	.02	.00	.00	.00	.00	.00	.00
24	.00	.00	.08	.21	.34	.04	.00	.00	.00	.00	.00	.00
25	.00	.00	.96	.18	.32	.50	.00	.00	.00	.00	.00	.00
26	.00	.00	.51	.15	.30	1.0	.00	.00	.00	.00	.00	.00
27	.00	.00	.19	.15	.30	.23	.00	.00	.00	.00	.00	.00
28	.00	.00	.22	.16	.30	.14	.00	.00	.00	.00	.00	.00
29	.00	.00	.14	.16	---	.10	.00	.00	.00	.00	.00	.00
30	.00	.00	.11	.15	---	.08	.00	.00	.00	.00	.00	.00
31	.00	---	.11	.15	---	.07	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	2.52	4.54	14.83	6.20	0.15	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.081	.15	.53	.20	.005	.000	.000	.000	.000	.000
MAX	.00	.00	.96	.29	1.3	1.0	.05	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.08	.16	.02	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	5.0	9.0	29	12	.3	.00	.00	.00	.00	.00

CAL YR 1988 TOTAL 578.57 MEAN 1.58 MAX 160 MIN .00 AC-FT 1150
WTR YR 1989 TOTAL 28.24 MEAN .077 MAX 1.3 MIN .00 AC-FT 56

11012500 CAMPO CREEK NEAR CAMPO, CA

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.

DRAINAGE AREA.--85.0 mi^2, of which 3 mi^2 are in Mexico.

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

GAGE.--Water-stage recorder and broad-crested weir. Broad-crested weir was buried by sand Mar. 25, 1982, to Sept. 30, 1985, and was ineffective as a control. 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.--Records fair. Peaks are attenuated by small conservation reservoir 1 mi upstream since August 1956. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--53 years, 3.20 ft^3/s, 2,320 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 895 ft^3/s, Mar. 24, 1983, gage height, 5.39 ft, from rating curve extended above 340 ft^3/s; no flow for part of most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3.2 ft^3/s, Mar. 26, gage height, 1.65 ft; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.14	.19	.26	e.25	.32	.71	.32	.15	.10	.00	.00
2	.11	.16	.19	.25	e.30	.35	.70	.31	.17	.07	.00	.00
3	.11	.15	.19	.25	e.27	.42	.69	.28	.18	.04	.00	.00
4	.10	.13	.19	.37	e.50	.41	.65	.26	.19	.02	.00	.00
5	.11	.10	.19	.31	e.35	.39	.59	.23	.19	.02	.00	.00
6	.12	.09	.19	.39	e.30	.40	.55	.19	.19	.01	.00	.00
7	.12	.11	.20	.31	e.27	.41	.53	.14	.20	.01	.00	.00
8	.09	.14	.19	.29	e.27	.40	.50	.13	.22	.00	.00	.00
9	.08	.15	.19	.28	e.30	.39	.49	.17	.21	.00	.00	.00
10	.08	.16	.19	.27	e.40	.38	.48	.20	.20	.00	.00	.00
11	.07	.17	.18	.26	e.30	.39	.48	.26	.19	.00	.00	.00
12	.08	.16	.19	.25	e.27	.41	.47	.24	.18	.00	.00	.00
13	.09	.16	.20	.25	e.28	.40	.45	.26	.16	.00	.00	.00
14	.14	.25	.22	.25	.30	.41	.41	.27	.14	.00	.00	.00
15	.15	.20	.23	.25	.27	.42	.40	.28	.11	.00	.00	.00
16	.14	.18	.26	.24	.27	.41	.37	.25	.10	.00	.00	.00
17	.13	.19	.27	.24	.27	.42	.36	.23	.09	.00	.00	.00
18	.12	.19	.32	e.24	.26	.42	.34	.20	.07	.00	.00	.00
19	.18	.19	.32	e.24	.27	.42	.32	.17	.06	.00	.00	.00
20	.17	.19	.27	e.24	.27	.40	.28	.15	.05	.00	.00	.00
21	.15	.18	.33	e.24	.25	.38	.26	.13	.04	.00	.00	.00
22	.15	.19	.27	e.24	.30	.39	.28	.12	.03	.00	.00	.00
23	.15	.19	.27	e.24	.31	.41	.28	.12	.04	.00	.00	.00
24	.14	.22	.28	e.30	.30	.42	.31	.13	.08	.00	.00	.00
25	.14	.34	.69	e.25	.30	.69	.32	.14	.10	.00	.00	.00
26	.15	.30	.42	e.25	.30	2.4	.42	.14	.09	.00	.00	.00
27	.15	.22	.32	e.25	.31	2.9	.36	.14	.06	.00	.00	.00
28	.16	.21	.33	e.25	.32	1.8	.34	.14	.05	.00	.00	.00
29	.18	.19	.29	e.25	---	.89	.33	.15	.05	.00	.00	.00
30	.17	.19	.27	e.25	---	.79	.33	.15	.10	.00	.00	.00
31	.15	---	.27	e.25	---	.74	---	.15	---	.00	.00	---
TOTAL	3.98	5.44	8.11	8.21	8.36	19.78	13.00	6.05	3.69	0.27	0.00	0.00
MEAN	.13	.18	.26	.26	.30	.64	.43	.20	.12	.009	.000	.000
MAX	.18	.34	.69	.39	.50	2.9	.71	.32	.22	.10	.00	.00
MIN	.07	.09	.18	.24	.25	.32	.26	.12	.03	.00	.00	.00
AC-FT	7.9	11	16	16	17	39	26	12	7.3	.5	.00	.00

CAL YR 1988 TOTAL 510.34 MEAN 1.39 MAX 141 MIN .06 AC-FT 1010
WTR YR 1989 TOTAL 76.89 MEAN .21 MAX 2.9 MIN .00 AC-FT 153

e Estimated.

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 Reservoir.

DRAINAGE AREA.--481 mi^2, of which 70 mi^2 are in Mexico.

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

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.--53 years, 24.3 ft^3/s, 17,600 acre-ft/yr.

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

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 48 ft^3/s, Mar. 26, gage height, 2.41 ft; minimum daily, 0.59 ft^3/s, July 17.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1.4	3.4	e3.0	e4.0	3.3	2.0	e3.0	2.7	1.3	1.0	.93	.99
2	e1.4	2.9	e3.5	e4.0	4.8	3.0	6.0	1.8	1.9	.87	1.1	1.2
3	e1.5	3.7	e4.0	e3.5	6.0	8.4	e5.5	2.2	1.4	.74	1.1	1.1
4	e1.6	1.2	e3.0	e3.5	14	5.4	e3.0	1.3	1.1	.89	1.1	1.1
5	e1.6	1.5	e2.8	e4.5	19	3.7	e3.5	.99	1.1	.94	1.3	1.2
6	e1.7	1.6	2.1	9.7	4.6	2.3	e4.0	1.1	1.3	1.0	1.2	1.1
7	e1.8	1.8	e2.5	5.2	2.5	2.5	e3.0	1.9	1.5	.95	1.2	1.1
8	e1.8	2.8	e3.0	4.5	3.6	3.1	e2.5	1.6	1.5	.95	1.2	1.3
9	e1.9	1.9	e3.5	3.0	5.8	2.6	e4.0	3.0	1.8	1.1	1.2	1.2
10	e2.0	3.0	e3.0	6.1	6.7	2.7	e3.5	2.9	1.2	1.0	1.3	1.1
11	e2.1	3.5	e3.0	5.4	3.8	3.6	e3.5	3.2	1.3	1.1	1.1	1.1
12	e2.2	4.0	e2.0	4.1	4.0	2.9	e3.0	2.0	1.1	.95	1.5	1.4
13	e2.3	3.1	e2.5	5.4	3.7	1.9	e2.5	3.7	1.1	.82	1.2	1.4
14	e2.4	1.3	e3.0	e5.1	4.2	2.3	e2.0	4.5	1.1	.78	1.1	1.2
15	e2.4	2.9	e3.5	e4.8	3.2	1.8	e3.5	6.0	1.3	.71	1.4	1.2
16	e2.5	3.4	e4.5	e5.2	3.1	2.9	e3.0	6.6	1.5	.61	1.5	1.2
17	e2.5	3.4	e5.0	e4.5	3.5	1.3	e2.5	3.0	1.1	.59	1.5	1.1
18	4.5	1.6	e4.5	e4.0	3.0	1.1	e2.5	3.6	1.2	.60	1.4	1.2
19	5.0	2.9	e5.5	2.4	2.9	1.1	e3.0	2.2	.89	.62	1.2	2.1
20	5.6	3.2	e5.0	2.9	3.0	1.0	e2.5	3.6	1.0	.65	1.1	3.3
21	5.4	1.7	e6.5	2.5	3.0	.91	2.9	5.0	.96	.71	.96	4.6
22	5.8	1.7	e5.5	4.4	1.9	1.1	3.6	1.7	.94	.77	1.3	3.7
23	5.6	1.6	e6.0	1.7	2.5	3.1	2.9	3.1	.92	.85	1.6	3.2
24	6.1	2.4	e5.5	2.0	1.7	3.9	2.6	4.4	.96	.89	1.6	3.1
25	6.6	4.5	e15	2.1	2.4	7.6	3.4	e3.0	.86	1.0	1.8	2.4
26	7.3	5.4	e9.0	2.5	2.3	27	4.3	e1.5	.75	1.4	1.7	2.5
27	8.0	e4.0	e5.5	3.0	1.8	8.3	2.2	e2.0	.90	1.3	1.3	2.2
28	5.5	e3.5	e5.0	2.7	1.8	3.7	2.7	e3.0	1.1	1.4	1.2	2.3
29	2.6	e3.0	e4.5	5.5	---	2.5	3.7	e3.5	1.3	1.2	1.3	2.6
30	1.4	e3.0	e4.5	4.2	---	4.3	4.2	e3.0	1.2	1.1	1.3	3.3
31	1.9	---	e4.0	4.2	---	e3.5	---	e2.0	---	.80	1.3	---
TOTAL	104.4	83.9	139.9	126.6	122.1	121.51	98.5	90.09	35.58	28.29	39.99	56.49
MEAN	3.37	2.80	4.51	4.08	4.36	3.92	3.28	2.91	1.19	.91	1.29	1.88
MAX	8.0	5.4	15	9.7	19	27	6.0	6.6	1.9	1.4	1.8	4.6
MIN	1.4	1.2	2.0	1.7	1.7	.91	2.0	.99	.75	.59	.93	.99
AC-FT	207	166	277	251	242	241	195	179	71	56	79	112

CAL YR 1988 TOTAL 2935.86 MEAN 8.02 MAX 604 MIN .70 AC-FT 5820
WTR YR 1989 TOTAL 1047.35 MEAN 2.87 MAX 27 MIN .59 AC-FT 2080

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 mi^2, of which 10 mi^2 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 the current year a total of 323 acre-ft was imported in May and June.

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, 3,950 acre-ft, Feb. 28; minimum monthend contents observed, 3,220 acre-ft, Sept. 30.

MONTHEND CONTENTS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	4,230	--
Oct. 31	3,760	-470
Nov. 30	3,830	+70
Dec. 31	3,890	+60
CAL YR 1988	--	-6,650
Jan. 31	3,930	+40
Feb. 28	3,950	+20
Mar. 31	3,930	-20
Apr. 30	3,850	-80
May 31	3,710	-140
June 30	3,600	-110
July 31	3,450	-150
Aug. 31	3,930	+480
Sept. 30	3,220	-710
WTR YR 1989	--	-1,010

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 mi^2.

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.--No estimated daily discharges. Records good. No regulation upstream from station. Water diverted from Cottonwood Creek at Barrett Lake 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 ft^3/s, Dec. 1, 1947, gage height, 6.42 ft, present datum, from rating curve extended above 1,200 ft^3/s; no flow for many days most years.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar. 25	1814	*37	*2.23				

Minimum daily, 0.32 ft^3/s, May 18.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	19	4.7	4.3	14	1.1	27	26	22	24	21	25
2	23	18	5.2	4.2	14	1.1	27	26	23	24	21	25
3	23	17	3.5	4.2	14	1.4	27	23	23	23	21	24
4	23	15	2.8	4.6	19	6.1	27	6.0	23	23	21	24
5	24	12	2.6	4.6	20	14	26	3.2	23	23	21	24
6	24	9.8	2.5	5.1	19	19	24	2.2	23	23	21	23
7	24	7.8	2.7	4.8	22	20	24	1.7	23	23	21	23
8	23	6.6	2.4	4.8	22	21	24	1.4	24	23	25	24
9	22	6.4	2.2	4.9	22	22	24	1.2	24	23	26	24
10	22	5.7	2.4	5.0	22	25	24	1.1	24	23	26	24
11	22	5.2	2.6	4.9	22	25	25	1.0	24	23	26	24
12	22	4.6	2.6	4.7	22	26	25	.83	24	23	26	25
13	22	4.1	2.6	4.9	22	26	25	.71	24	23	26	24
14	22	4.2	2.8	5.0	11	27	25	.69	23	23	26	24
15	22	3.6	3.0	5.1	4.7	27	25	.58	23	23	26	24
16	21	3.2	3.3	5.2	3.6	26	25	.58	23	23	25	24
17	21	2.8	3.4	5.2	3.1	26	25	.41	23	23	25	24
18	21	2.6	3.4	5.3	2.8	27	25	.32	23	23	25	24
19	21	2.4	4.0	4.1	2.6	27	26	4.8	23	22	25	24
20	21	2.3	3.6	2.5	2.4	27	26	14	23	22	25	24
21	20	2.1	3.7	2.2	2.2	27	26	17	23	22	25	24
22	20	1.9	3.6	2.5	2.1	27	26	19	23	22	25	24
23	20	1.7	3.7	3.8	2.1	28	26	19	23	22	25	23
24	20	1.6	3.7	4.3	2.0	28	27	20	23	21	25	23
25	20	1.9	7.4	5.4	2.1	30	27	21	24	21	25	23
26	20	2.4	5.5	7.0	1.8	31	27	21	24	21	25	23
27	20	2.4	4.6	9.8	1.2	29	27	21	23	21	24	23
28	22	2.3	4.6	13	1.1	29	26	21	24	21	22	22
29	22	2.6	4.4	14	---	27	26	22	24	21	23	9.5
30	21	3.7	4.3	14	---	27	26	22	24	21	24	4.1
31	20	---	4.3	14	---	27	---	22	---	21	25	---
TOTAL	671	174.9	112.1	183.4	298.8	704.7	770	340.72	700	694	747	679.6
MEAN	21.6	5.83	3.62	5.92	10.7	22.7	25.7	11.0	23.3	22.4	24.1	22.7
MAX	24	19	7.4	14	22	31	27	26	24	24	26	25
MIN	20	1.6	2.2	2.2	1.1	1.1	24	.32	22	21	21	4.1
AC-FT	1330	347	222	364	593	1400	1530	676	1390	1380	1480	1350

CAL YR 1988 TOTAL 5150.28 MEAN 14.1 MAX 211 MIN .00 AC-FT 10220
WTR YR 1989 TOTAL 6076.22 MEAN 16.6 MAX 31 MIN .32 AC-FT 12050

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 mi^2.

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, 41,320 acre-ft, May 3, elevation, 476.81 ft; minimum, 39,620 acre-ft, Mar. 3-5, elevation, 474.99 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 1988 TO SEPTEMBER 1989
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40560	40870	40440	39960	39670	39640	40470	41300	40970	41200	40470	40140
2	40570	40890	40430	39940	39680	39640	40500	41300	40970	41190	40400	40150
3	40590	40890	40390	39910	39710	39620	40540	41320	40980	41190	40370	40150
4	40600	40890	40370	39900	39740	39620	40600	41300	41000	41180	40350	40160
5	40620	40900	40330	39910	39740	39620	40640	41290	41000	41170	40330	40150
6	40640	40890	40320	39910	39740	39630	40660	41260	41010	41150	40320	40150
7	40660	40870	40280	39890	39750	39650	40700	41240	41000	41130	40320	40140
8	40670	40860	40260	39880	39770	39660	40720	41210	41000	41120	40300	40100
9	40680	40850	40210	39870	39810	39680	40750	41170	41020	41110	40280	40090
10	40680	40830	40180	39880	39830	39700	40790	41130	41040	41110	40260	40080
11	40680	40840	40150	39860	39860	39730	40810	41090	41060	41120	40260	40070
12	40710	40820	40120	39840	39870	39750	40850	41080	41080	41110	40260	40070
13	40710	40800	40100	39830	39880	39790	40880	41050	41100	41100	40260	40100
14	40720	40800	40090	39820	39900	39800	40920	41020	41120	41080	40250	40110
15	40720	40780	40090	39810	39910	39860	40960	40990	41140	41060	40230	40110
16	40730	40750	40090	39790	39900	39890	40990	40980	41160	41060	40210	40140
17	40740	40720	40090	39780	39880	39900	41030	40950	41150	41040	40190	40180
18	40760	40690	40070	39760	39880	39900	41060	40930	41150	41030	40180	40220
19	40780	40660	40070	39760	39860	39910	41100	40910	41170	41020	40160	40260
20	40780	40630	40070	39740	39850	39940	41120	40900	41190	41010	40160	40320
21	40790	40620	40050	39740	39840	39930	41140	40910	41190	41000	40160	40350
22	40800	40590	40040	39710	39820	39920	41160	40920	41200	40980	40150	40350
23	40800	40570	40020	39700	39780	39940	41170	40950	41210	40970	40140	40380
24	40800	40540	40010	39690	39760	39960	41190	40960	41220	40930	40130	40420
25	40810	40560	40020	39670	39740	40070	41200	40950	41230	40860	40120	40440
26	40830	40550	40030	39660	39720	40120	41220	40940	41240	40810	40120	40450
27	40850	40530	40020	39660	39690	40160	41240	40950	41240	40760	40110	40460
28	40880	40500	40020	39650	39660	40250	41270	40950	41230	40700	40110	40480
29	40870	40480	40000	39640	---	40330	41270	40940	41220	40650	40100	40470
30	40870	40460	39980	39650	---	40380	41280	40950	41210	40580	40110	40460
31	40870	---	39980	39670	---	40430	---	40950	---	40520	40130	---
MAX	40880	40900	40440	39960	39910	40430	41280	41320	41240	41200	40470	40480
MIN	40560	40460	39980	39640	39660	39620	40470	40900	40970	40520	40100	40070
a	476.34	475.90	475.39	475.06	475.05	475.87	476.76	476.42	476.69	475.97	475.55	475.90
b	+300	-410	-480	-310	-10	+770	+850	-330	+260	-690	-390	+330

CAL YR 1988 MAX 43960 MIN 39980 b -1120
WTR YR 1989 MAX 41320 MIN 39620 b -110

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

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 mi^2.

PERIOD OF RECORD.--October 1905 to September 1927 (monthly discharge only, 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 110150001) were published. No diversion since November 1976.

REVISED RECORD.--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.--33 years (water years 1957-89), 8.60 ft^3/s, 6,230 acre-ft/yr, adjusted for periods of diversion.

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 11,200 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 25	0300	*14	*4.78				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.86	.23	.40	1.3	.20	.03	.00	.00	.00
2	.00	.00	.00	.84	.42	.79	1.2	.16	.03	.00	.00	.00
3	.00	.00	.00	.88	.50	2.3	1.2	.11	.03	.00	.00	.00
4	.00	.00	.00	1.1	4.4	1.9	1.1	.10	.03	.00	.00	.00
5	.00	.00	.00	1.0	2.4	1.4	.95	.10	.03	.00	.00	.00
6	.00	.00	.00	1.6	1.3	1.3	.80	.09	.02	.00	.00	.00
7	.00	.00	.00	.93	1.0	1.2	.77	.08	.03	.00	.00	.00
8	.00	.00	.00	.79	.90	1.0	.74	.07	.03	.00	.00	.00
9	.00	.00	.01	.66	1.1	.96	.66	.09	.02	.00	.00	.00
10	.00	.00	.01	.60	1.0	.95	.66	.13	.01	.00	.00	.00
11	.00	.00	.02	.50	.83	.93	.66	.28	.01	.00	.00	.00
12	.00	.00	.03	.44	.76	.91	.67	.22	.01	.00	.00	.00
13	.00	.00	.04	.42	.82	.87	.64	.22	.00	.00	.00	.00
14	.00	.00	.05	.42	.91	.87	.53	.28	.00	.00	.00	.00
15	.00	.00	.10	.37	.72	.80	.47	.43	.00	.00	.00	.00
16	.00	.00	.15	.31	.64	.75	.41	.39	.00	.00	.00	.00
17	.00	.00	.23	.27	.57	.72	.37	.31	.00	.00	.00	.00
18	.00	.00	.27	.25	.53	.68	.33	.23	.00	.00	.00	.00
19	.00	.00	.22	.24	.56	.65	.29	.18	.00	.00	.00	.00
20	.00	.00	.13	.23	.50	.59	.22	.15	.00	.00	.00	.00
21	.00	.00	.48	.24	.41	.51	.19	.12	.00	.00	.00	.00
22	.00	.00	.19	.27	.38	.53	.20	.09	.00	.00	.00	.00
23	.00	.00	.17	.26	.39	.51	.18	.06	.00	.00	.00	.00
24	.00	.00	.20	.37	.37	.50	.20	.06	.00	.00	.00	.00
25	.00	.00	4.5	.29	.35	2.4	.24	.06	.00	.00	.00	.00
26	.00	.00	1.6	.25	.38	5.2	.39	.05	.00	.00	.00	.00
27	.00	.00	1.3	.24	.37	3.8	.45	.05	.00	.00	.00	.00
28	.00	.00	1.2	.24	.38	2.4	.38	.04	.00	.00	.00	.00
29	.00	.00	1.0	.23	---	1.9	.32	.04	.00	.00	.00	.00
30	.00	.00	.92	.21	---	1.7	.25	.05	.00	.00	.00	.00
31	.00	---	.92	.21	---	1.4	---	.04	---	.00	.00	---
TOTAL	0.00	0.00	13.74	15.52	23.12	40.82	16.77	4.48	0.28	0.00	0.00	0.00
MEAN	.000	.000	.44	.50	.83	1.32	.56	.14	.009	.000	.000	.000
MAX	.00	.00	4.5	1.6	4.4	5.2	1.3	.43	.03	.00	.00	.00
MIN	.00	.00	.00	.21	.23	.40	.18	.04	.00	.00	.00	.00
AC-FT	.00	.00	27	31	46	81	33	8.9	.6	.00	.00	.00

CAL YR 1988 TOTAL 456.03 MEAN 1.25 MAX 87 MIN .00 AC-FT 905
WTR YR 1989 TOTAL 114.73 MEAN .31 MAX 5.2 MIN .00 AC-FT 228

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 mi^2.

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, 49,930 acre-ft, Apr. 4, 5, elevation, 699.16 ft; minimum, 36,700 acre-ft, Oct. 1, elevation, 683.74 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 1988 TO SEPTEMBER 1989
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36700	38890	41000	42670	44930	47440	49770	e49400	48950	47470	45940	45020
2	36780	38970	40990	42740	44990	47560	49800	e49390	48920	47430	45920	45010
3	36840	39060	40980	42810	45100	47630	49820	49340	48860	47390	45900	44990
4	36890	39140	40970	42890	45280	47730	49850	49320	48810	47360	45900	44980
5	36930	39220	40960	42980	45360	47850	49830	49320	48770	47300	45880	44980
6	37000	39290	40950	43060	45480	47940	49840	49300	48720	47240	45860	44940
7	37060	39350	40890	43130	45570	48040	49820	49290	48670	47180	45840	44910
8	37120	39430	40880	43200	45660	48090	49780	49250	48620	47130	45740	44880
9	e37180	39510	40910	43280	45770	48150	49730	49250	48570	47060	45610	44860
10	e37250	39580	40980	43350	45840	48240	49730	49220	48510	47010	45480	44830
11	e37320	39610	41050	43420	45930	48340	49690	49210	48480	46960	45420	44820
12	e37390	39660	41130	43460	46000	48420	49670	49220	48420	46920	45410	44810
13	e37460	39710	41200	43530	46060	48490	49650	49210	48380	46870	45390	44790
14	e37530	39800	41240	43590	46160	48570	e49620	49210	48350	46840	45370	44760
15	e37600	39880	41340	43670	46240	48640	e49600	49220	48290	46760	45340	44710
16	e37670	39970	41420	43740	46330	48720	e49590	49220	48250	46700	45310	44660
17	e37740	40030	41480	43830	46420	48790	e49570	49220	48210	46650	45280	44630
18	e37810	40120	41560	43890	46510	48900	e49560	49210	48180	46610	45260	44600
19	e37880	40180	41630	43980	46600	48960	e49550	49230	48140	46570	45250	44580
20	37960	40260	41710	44060	46710	49040	e49540	49220	48070	46550	45220	44580
21	38040	40350	41800	44140	46800	49120	e49530	49200	48010	46490	45210	44590
22	38130	40410	41870	44190	46910	49200	e49520	49180	47930	46420	45180	44560
23	38200	40460	41930	44240	47000	49270	e49500	49150	47880	46370	45160	44520
24	38280	40530	42040	44310	47080	49320	e49490	49130	47820	46320	45150	44500
25	38350	40680	42180	44420	47160	49400	e49480	49120	47770	46270	45140	44490
26	38430	40770	42250	44490	47240	49460	e49460	49100	47730	46210	45100	44430
27	38510	40860	42310	44550	47300	49550	e49450	49060	47680	46180	45090	44380
28	38570	40930	42390	44590	47360	49600	e49430	49040	47630	46140	45080	44330
29	38650	41020	42460	44680	---	49650	e49430	49020	47570	46080	45050	44280
30	38740	41000	42520	44770	---	49720	e49420	48990	47530	46020	45040	44210
31	38820	---	42590	44850	---	49750	---	48970	---	45970	45020	---
MAX	38820	41020	42590	44850	47360	49750	49850	49400	48950	47470	45940	45020
MIN	36700	38890	40880	42670	44930	47440	49420	48970	47530	45970	45020	44210
a	686.42	689.06	690.95	693.54	696.37	698.96	698.60	698.11	696.55	694.82	693.74	692.80
b	+2220	+2180	+1590	+2260	+2510	+2390	-330	-450	-1440	-1560	-950	-810

CAL YR 1988 MAX 42590 MIN 22490 b +19270
WTR YR 1989 MAX 49850 MIN 36700 b +7610

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 mi^2.

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, 76,540 acre-ft, Oct 1, elevation 636.79 ft; minimum, 70,080 acre-ft, Mar. 22, elevation, 630.17 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table dated Feb. 18, 1944, provided by City of San Diego)

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 1988 TO SEPTEMBER 1989
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e76530	75890	75210	72890	70450	70630	70750	71890	74690	74660	75050	74570
2	e76520	75850	75130	72820	70380	70700	70690	71950	74720	74690	75030	74570
3	e76500	75910	75050	72730	70350	70780	70710	72040	74700	74680	75010	74640
4	e76480	75940	74970	72680	70390	70880	70760	72160	74680	74720	75000	74700
5	e76470	75950	74890	72700	70430	70970	70770	72280	74670	74760	74990	74730
6	e76450	75940	74820	72690	70390	71000	70750	72410	74650	74830	74990	74740
7	e76440	75950	74770	72650	70370	70920	70650	72530	74630	74850	74980	74790
8	e76420	75990	74730	72570	70330	70830	70540	72640	74620	74830	74930	74810
9	e76400	76000	74630	72460	70320	70780	70460	72750	74610	74820	74950	74890
10	e76390	75980	74490	72390	70300	70730	70480	72840	74590	74800	74960	74960
11	e76370	75920	74360	72320	70260	70650	70540	72980	74580	74780	74920	74980
12	e76350	75840	74230	72230	70230	70590	70620	73100	74570	74760	74900	75050
13	e76340	75730	74110	72130	70190	70540	70680	73240	74570	74750	74880	75070
14	e76320	75730	73980	72010	70170	70470	70750	73380	74580	74770	74860	75050
15	e76310	75790	73960	71910	70140	70420	70840	73530	74590	74820	74840	75030
16	e76290	75840	73960	71800	70170	70440	70950	73650	74570	74880	74810	75020
17	e76270	75840	73910	71720	70200	70390	71040	73760	74580	74940	74790	75040
18	e76260	75820	73870	71680	70220	70340	71110	73850	74620	75000	74780	75020
19	e76240	75740	73790	71560	70250	70280	71170	73930	74620	75080	74770	75010
20	76270	75670	73710	71430	70280	70210	71180	74010	74650	75150	74740	75000
21	76270	75570	73660	71320	70350	70140	71150	74090	74670	75190	74740	74990
22	76280	75460	73570	71180	70410	70090	71170	74160	74680	75200	74720	74980
23	76300	75370	73500	71090	70430	70110	71220	74210	74680	75180	74700	75000
24	76310	75330	73520	71020	70450	70170	71300	74260	74710	75160	74680	75020
25	76320	75400	73510	70980	70490	70350	71400	74310	74730	75160	74660	75020
26	76320	75450	73400	70960	70530	70520	71500	74350	74740	75160	74640	75060
27	76320	75440	73310	70900	70560	70660	71610	74410	74730	75130	74620	75110
28	76270	75390	73230	70810	70600	70810	71680	74480	74710	75110	74600	75090
29	76160	75410	73160	70710	---	70860	71740	74540	74690	75100	74580	75070
30	76060	75310	73080	70630	---	70830	71820	74590	74680	75080	74570	75060
31	75970	---	72980	70550	---	70790	---	74640	---	75070	74540	---
MAX	76530	76000	75210	72890	70600	71000	71820	74640	74740	75200	75050	75110
MIN	75970	75310	72980	70550	70140	70090	70460	71890	74570	74660	74540	74570
a	636.21	635.54	633.18	630.66	630.72	630.92	631.99	634.86	634.90	635.30	634.76	635.29
b	-580	-660	-2330	-2430	+50	+190	+1030	+2820	+40	+390	-530	+520

CAL YR 1988 MAX 80570 MIN 72980 b -2270
WTR YR 1989 MAX 76530 MIN 70090 b -1490

e Estimated.
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 mi^2.

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 good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--6 years, 1.24 ft^3/s, 898 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 470 ft^3/s, Dec. 18, 1984, gage height, 7.20 ft from floodmarks; minimum daily, 0.07 ft^3/s, July 11, 12, 1984.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 40 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 25	0445	*29	*3.48				

Minimum daily, 0.12 ft^3/s, Sept. 5, 6.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.26	.35	.43	.65	.61	.62	.55	.38	.33	.24	.16	.18
2	.25	.38	.43	.65	.76	.88	.56	.38	.33	.25	.16	.15
3	.26	.36	.44	.62	.73	.92	.54	.38	.34	.23	.16	.14
4	.26	.36	.44	.86	5.5	.69	.51	.37	.34	.22	.15	.13
5	.26	.35	.43	.71	1.8	.64	.45	.37	.32	.21	.14	.12
6	.26	.35	.44	1.1	.80	.64	.45	.36	.31	.22	.15	.12
7	.24	.37	.44	.68	.75	.63	.44	.35	.37	.24	.16	.17
8	.23	.39	.37	.65	.72	.59	.40	.34	.42	.24	.17	.14
9	.21	.39	.35	.62	2.5	.58	.38	.35	.42	.28	.17	.14
10	.19	.39	.37	.65	1.6	.58	.41	.37	.39	.28	.16	.17
11	.20	.44	.39	.66	.82	.58	.46	.62	.38	.29	.14	.19
12	.22	.41	.41	.62	.79	.65	.49	.44	.36	.28	.15	.34
13	.25	.41	.44	.62	2.2	.68	.49	.46	.34	.29	.14	.22
14	.30	1.3	.49	.62	1.2	.68	.47	.52	.31	.24	.16	.15
15	.27	.55	.71	.63	.79	.65	.45	.52	.28	.18	.16	.13
16	.25	.48	1.1	.62	.75	.65	.42	.50	.28	.24	.15	.16
17	.25	.47	.71	.62	.75	.62	.41	.47	.27	.21	.15	.33
18	.27	.44	1.7	.60	.76	.62	.41	.45	.25	.22	.15	.29
19	.31	.43	1.2	.60	.75	.52	.40	.41	.24	.22	.16	.53
20	.31	.43	.65	.59	.73	.50	.39	.37	.23	.20	.16	.32
21	.32	.42	.92	.60	.69	.48	.41	.35	.22	.19	.16	.25
22	.33	.42	.62	.60	.67	.50	.39	.33	.24	.20	.17	.23
23	.31	.42	.62	.60	.65	.49	.39	.33	.25	.21	.18	.25
24	.31	.44	.65	.79	.64	.48	.39	.32	.27	.22	.19	.23
25	.31	1.3	9.4	.66	.63	4.1	.41	.32	.27	.22	.18	.20
26	.32	.73	2.4	.64	.63	1.8	.80	.32	.26	.21	.16	.19
27	.34	.54	.92	.62	.63	.83	.47	.33	.27	.20	.18	.20
28	.32	.49	.86	.62	.64	.68	.44	.33	.24	.17	.18	.20
29	.33	.46	.71	.62	---	.62	.42	.32	.25	.17	.19	.18
30	.34	.45	.68	.61	---	.60	.40	.32	.25	.17	.19	.19
31	.33	---	.68	.59	---	.57	---	.33	---	.16	.19	---
TOTAL	8.61	14.72	30.40	20.32	30.49	24.07	13.60	12.01	9.03	6.90	5.07	6.24
MEAN	.28	.49	.98	.66	1.09	.78	.45	.39	.30	.22	.16	.21
MAX	.34	1.3	9.4	1.1	5.5	4.1	.80	.62	.42	.29	.19	.53
MIN	.19	.35	.35	.59	.61	.48	.38	.32	.22	.16	.14	.12
AC-FT	17	29	60	40	60	48	27	24	18	14	10	12

CAL YR 1988 TOTAL 353.16 MEAN .96 MAX 38 MIN .14 AC-FT 700
WTR YR 1989 TOTAL 181.46 MEAN .50 MAX 9.4 MIN .12 AC-FT 360

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 mi^2.
PERIOD OF RECORD.--October 1983 to current year.
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.--6 years, 5.65 ft^3/s, 4,090 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,510 ft^3/s, revised, Dec. 4, 1987, gage height, 9.31 ft, from rating curve extended above 900 ft^3/s on basis of step-backwater computation; minimum daily, 0.48 ft^3/s, Sept. 25, 1988.
EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 900 ft^3/s and maximum (*), from rating curve extended above 900 ft^3/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)
Dec. 25	0100	*1,890	*8.60				

Minimum daily, 0.67 ft^3/s, June 15.

REVISIONS.--The maximum discharges for some water years have been revised, as shown in the following table. They supersede figures published in the reports for 1984-86 and 1988.

Water year	Date	Discharge (ft^3/s)	Gage height (ft)	Water year	Date	Discharge (ft^3/s)	Gage height (ft)
1984	Nov. 25, 1983	1,300	7.88	1986	Jan. 30, 1986	1,240	7.69
1985	Dec. 18, 1984	1,350	7.85	1986	Feb. 15, 1986	2,450	9.25
1985	Dec. 27, 1984	922	7.11	1986	Mar. 8, 1986	942	7.15
1986	Nov. 11, 1985	2,320	9.11	1986	Mar. 15, 1986	1,840	8.55
1986	Nov. 25, 1985	2,160	8.92	1988	Oct. 31, 1987	2,050	8.80
1986	Nov. 29, 1985	1,330	7.82	1988	Dec. 4, 1987	2,510	9.31

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.95	.96	.78	1.1	1.5	1.4	.99	1.1	.88	1.0	1.2	.98
2	.93	1.0	.75	1.0	3.7	12	1.1	1.1	1.1	1.1	3.0	.96
3	1.1	1.1	.70	.99	1.3	7.3	1.1	1.1	.93	1.2	.92	.99
4	1.2	1.1	.74	9.4	41	1.1	1.1	1.1	.92	1.1	.93	.94
5	1.1	1.0	.83	8.2	2.3	1.0	1.2	1.2	.86	1.2	.93	1.0
6	1.2	1.0	.85	14	1.4	1.1	1.2	1.1	.96	1.2	.80	1.1
7	1.2	1.0	.89	1.3	1.2	1.3	1.3	1.1	1.0	.98	.91	.93
8	1.1	1.9	.68	1.1	1.2	1.2	1.2	1.2	.92	.95	.97	.96
9	1.1	1.0	.84	1.1	33	1.1	1.2	1.2	.86	.97	1.2	.91
10	1.2	1.2	.79	1.1	3.1	1.1	1.2	1.4	.78	1.4	1.0	.90
11	1.1	1.6	.83	1.2	1.5	1.1	1.2	1.6	.74	1.8	.87	.99
12	1.1	1.0	.78	1.1	1.2	1.3	1.2	1.2	.74	1.1	.76	1.0
13	.96	.98	.80	1.0	9.9	1.5	1.2	1.1	.70	.92	.73	.98
14	1.0	26	.76	1.1	1.9	1.3	1.2	.97	.81	.90	1.0	1.1
15	.91	.94	8.5	1.1	1.3	1.3	1.1	1.3	.67	.90	.96	1.1
16	1.0	.77	12	1.2	1.3	1.2	1.1	1.1	.73	.86	1.1	1.0
17	1.1	.91	1.6	1.1	1.3	1.3	1.2	1.0	.70	.96	1.1	3.8
18	.93	.77	4.5	1.1	1.3	1.2	1.4	1.0	.73	1.0	1.2	.85
19	.84	.78	9.3	1.1	1.3	1.2	1.5	.97	.92	1.4	.92	12
20	.76	.75	1.1	1.2	1.4	1.3	1.4	.89	.91	1.4	.95	1.0
21	.83	.80	11	1.2	1.3	1.1	1.5	.88	.99	1.6	1.4	.88
22	.82	.84	1.0	1.2	1.3	1.2	1.6	.91	1.2	1.3	.92	1.0
23	.87	.83	3.9	1.6	1.3	1.2	1.4	.82	1.1	1.2	.92	1.0
24	1.3	2.0	8.2	3.9	1.3	1.3	1.7	.87	1.1	1.4	.89	1.2
25	1.3	50	122	1.2	1.3	70	1.5	.99	1.1	1.5	1.0	1.5
26	1.1	4.4	10	1.1	1.3	17	5.6	.99	1.2	1.2	.96	1.9
27	.83	.89	1.2	1.1	1.4	1.5	1.1	.94	1.1	1.2	.87	2.5
28	.81	.83	2.3	1.1	1.4	1.1	1.2	1.0	1.0	1.5	.91	1.9
29	.80	.78	1.0	1.1	---	1.1	1.1	1.1	1.2	1.4	.91	1.8
30	.90	.78	1.0	1.2	---	1.1	1.1	.96	1.3	1.4	1.0	1.8
31	.97	---	1.1	1.2	---	1.2	---	1.1	---	1.5	.99	---
TOTAL	31.31	107.91	210.72	66.39	122.7	139.1	41.89	33.29	28.15	37.54	32.22	48.97
MEAN	1.01	3.60	6.80	2.14	4.38	4.49	1.40	1.07	.94	1.21	1.04	1.63
MAX	1.3	50	122	14	41	70	5.6	1.6	1.3	1.8	3.0	12
MIN	.76	.75	.68	.99	1.2	1.0	.99	.82	.67	.86	.73	.85
AC-FT	62	214	418	132	243	276	83	66	56	74	64	97

CAL YR 1988 TOTAL 1764.62 MEAN 4.82 MAX 264 MIN .48 AC-FT 3500
WTR YR 1989 TOTAL 900.19 MEAN 2.47 MAX 122 MIN .67 AC-FT 1790

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 Damsite, 2.8 mi west of Santee, and 14.2 mi downstream from El Capitan Lake.

DRAINAGE AREA.--368 mi^2.

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 (station 11022500).

REMARKS.--No estimated daily discharges. Records fair below 10 ft^3/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.--76 years (water years 1913-15, 1917-89), 25 ft^3/s, 18,110 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,400 ft^3/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 ft^3/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, 742 ft^3/s, Dec. 25, gage height, 8.20 ft, from rating curve extended above 200 ft^3/s; minimum daily, 0.48 ft^3/s, Aug. 7.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	3.5	5.9	8.4	5.6	5.7	7.5	2.6	2.4	1.7	.77	.96
2	2.4	3.5	5.7	7.9	7.6	6.5	7.2	2.7	2.2	1.4	.92	.98
3	2.4	3.4	5.5	7.7	6.8	23	6.4	2.7	2.5	1.7	1.8	.85
4	2.6	3.4	5.5	15	49	7.6	6.1	2.7	2.3	1.5	1.0	.77
5	2.6	2.9	5.6	10	19	6.9	5.6	2.7	2.3	1.5	.78	.73
6	2.6	2.8	5.7	32	8.8	7.9	5.3	2.7	2.4	1.6	.65	.75
7	2.6	2.9	5.6	9.1	8.2	10	5.2	2.6	2.4	1.5	.48	.79
8	2.5	3.7	6.4	8.2	7.4	9.6	4.9	2.6	2.4	1.5	.56	.76
9	2.4	3.2	4.8	7.7	41	8.4	4.8	2.7	2.3	1.4	.60	.80
10	2.5	3.1	5.5	7.5	16	7.7	4.6	2.5	2.5	1.5	.74	.83
11	2.6	3.3	5.5	7.4	12	7.0	4.7	3.2	2.5	1.7	.67	.87
12	2.6	3.3	7.4	7.1	10	6.5	4.9	2.7	2.4	1.6	.59	.93
13	2.7	3.0	11	7.0	13	6.1	4.8	2.8	2.3	1.4	.54	.98
14	2.7	31	6.8	7.0	15	5.1	4.4	2.8	2.3	1.4	.50	1.0
15	2.8	6.5	10	7.1	9.1	5.4	3.4	2.8	2.1	1.3	.60	.99
16	2.7	4.6	23	7.0	8.5	6.5	3.4	2.9	2.1	1.3	.75	1.2
17	2.8	4.3	14	6.8	9.6	7.3	3.8	2.7	1.9	1.3	1.3	3.1
18	3.0	4.2	8.4	6.6	10	7.0	4.7	2.7	1.8	1.3	1.0	2.2
19	3.0	4.0	21	6.5	9.1	6.5	4.5	2.8	1.7	1.5	1.0	12
20	3.2	4.0	9.0	6.6	8.7	6.3	3.6	2.7	1.8	1.3	.85	3.8
21	3.0	4.0	20	6.6	8.2	6.2	2.8	2.5	1.8	1.1	.90	2.1
22	3.0	3.9	10	6.7	7.9	6.1	2.6	2.5	1.8	1.2	1.2	1.7
23	3.2	3.9	12	6.7	7.8	6.3	2.6	2.5	1.9	1.0	.92	1.7
24	3.3	5.4	9.5	9.5	8.6	5.4	2.4	2.4	1.8	.92	.86	1.5
25	3.0	71	164	7.9	7.8	81	2.4	2.4	1.7	.90	.94	1.4
26	3.2	16	31	6.9	5.7	42	5.6	2.6	1.7	.89	.81	1.5
27	3.2	8.1	14	6.4	7.0	17	3.1	2.5	1.7	.86	.77	1.4
28	2.9	6.8	15	6.1	7.3	9.1	2.7	2.5	1.7	.79	.68	1.6
29	3.2	6.3	12	5.9	---	12	2.7	2.5	1.6	.85	.62	1.5
30	3.3	6.0	9.9	5.9	---	10	2.6	2.4	1.6	.76	.75	1.6
31	3.4	---	8.9	5.9	---	8.6	---	2.4	---	.75	.86	---
TOTAL	87.8	232.0	478.6	257.1	334.7	360.7	129.3	81.8	61.9	39.42	25.41	51.29
MEAN	2.83	7.73	15.4	8.29	12.0	11.6	4.31	2.64	2.06	1.27	.82	1.71
MAX	3.4	71	164	32	49	81	7.5	3.2	2.5	1.7	1.8	12
MIN	2.4	2.8	4.8	5.9	5.6	5.1	2.4	2.4	1.6	.75	.48	.73
AC-FT	174	460	949	510	664	715	256	162	123	78	50	102

CAL YR 1988 TOTAL 4356.1 MEAN 11.9 MAX 257 MIN 2.2 AC-FT 8640
WTR YR 1989 TOTAL 2140.02 MEAN 5.86 MAX 164 MIN .48 AC-FT 4240

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 mi^2.

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 1934 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 ft^3/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 ft^3/s, Mar. 2, 1983, gage height, 13.11 ft, from rating curve extended above 5,800 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 957 ft^3/s, Dec. 25, gage height, 8.10 ft; no flow for several days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	3.7	17	18	8.5	8.0	16	6.1	3.2	1.4	.81	.24
2	3.9	4.2	17	15	13	8.7	15	9.1	3.3	1.4	.71	.13
3	2.4	4.3	8.2	13	17	17	13	8.3	3.4	1.5	.92	.04
4	4.2	6.4	13	15	22	17	11	8.0	2.9	1.5	.68	.00
5	4.4	7.1	13	21	57	17	11	8.2	2.6	1.2	.47	.00
6	4.8	7.4	17	48	46	13	11	7.9	3.5	1.1	.34	.00
7	2.3	7.0	11	41	23	10	11	7.0	2.7	1.1	.48	.00
8	2.3	7.3	3.0	28	15	9.0	10	6.1	3.3	.63	.39	.00
9	2.3	6.8	2.1	17	49	9.2	10	5.2	3.4	.38	.43	.00
10	2.0	6.6	1.5	13	52	10	9.6	5.5	2.8	.24	.40	.00
11	1.9	5.0	1.5	12	38	11	9.3	5.5	3.4	.58	.50	.00
12	1.0	5.7	1.2	11	25	10	9.4	3.9	2.4	.89	.88	.00
13	2.1	7.1	.89	10	18	10	8.6	3.7	3.6	1.1	1.1	.00
14	4.1	6.5	.85	9.3	23	8.9	7.9	4.0	3.4	1.2	1.3	.00
15	3.8	7.1	3.6	11	20	8.0	7.3	4.1	2.2	2.0	1.4	.00
16	4.8	13	88	11	16	6.7	7.2	3.8	2.2	2.5	1.5	.00
17	3.5	9.9	52	9.6	13	5.9	7.0	3.5	2.1	2.6	1.3	.00
18	3.4	9.4	29	9.3	13	6.0	6.0	5.6	1.8	2.5	.86	.00
19	3.7	9.1	45	9.6	13	7.1	5.0	6.4	2.1	2.7	.74	.10
20	3.3	8.9	25	8.2	13	7.9	4.2	5.4	2.3	2.2	.54	.52
21	3.5	8.0	64	8.6	12	6.9	4.1	4.7	2.7	2.0	.64	.32
22	2.9	7.7	35	9.9	10	5.5	5.2	4.3	2.4	1.9	.85	.19
23	.24	6.7	28	10	9.7	5.6	5.3	5.0	2.0	1.8	.93	.10
24	7.3	6.6	23	15	10	5.7	4.3	4.8	2.1	1.8	1.1	.29
25	17	182	401	13	10	96	3.3	3.9	2.7	1.1	1.1	.34
26	13	100	167	11	10	206	3.6	3.6	2.6	1.5	1.1	.29
27	7.8	51	61	11	10	79	2.6	3.2	2.1	1.2	.79	.21
28	6.4	29	38	11	8.6	42	3.1	3.8	2.0	.90	.77	.08
29	4.4	16	28	11	---	25	4.8	3.3	1.8	1.3	.76	.00
30	3.9	17	22	9.7	---	17	5.0	4.2	1.7	1.5	.60	.00
31	3.2	---	20	8.3	---	16	---	3.9	---	1.3	.35	---
TOTAL	132.44	566.5	1236.84	448.5	574.8	705.1	230.8	162.0	78.7	45.02	24.74	2.85
MEAN	4.27	18.9	39.9	14.5	20.5	22.7	7.69	5.23	2.62	1.45	.80	.095
MAX	17	182	401	48	57	206	16	9.1	3.6	2.7	1.5	.52
MIN	.24	3.7	.85	8.2	8.5	5.5	2.6	3.2	1.7	.24	.34	.00
AC-FT	263	1120	2450	890	1140	1400	458	321	156	89	49	5.7

CAL YR 1988 TOTAL 8707.35 MEAN 23.8 MAX 715 MIN .01 AC-FT 17270
WTR YR 1989 TOTAL 4208.29 MEAN 11.5 MAX 401 MIN .00 AC-FT 8350

11023310 RATTLESNAKE CREEK AT POWAY, CA

LOCATION.--Lat 32°57'07", long 117°02'56", in SE 1/4 SE 1/4 sec.14, T.14 S., R.2 W., San Diego County, Hydrologic Unit 18070304, on right bank 400 ft upstream from its confluence with Poway Creek and 1.0 mi southwest of Poway Post Office.

DRAINAGE AREA.--8.13 mi^2.

PERIOD OF RECORD.--October 1969 to September 1977 (gage heights and discharge measurements only), October 1977 to September 1989 (discontinued).

GAGE.--Water-stage recorder. Concrete control since Aug. 17, 1982. Elevation of gage is 460 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.--12 years, 2.26 ft^3/s, 1,640 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,430 ft^3/s, Feb. 21, 1980, gage height, 2.88 ft, from rating curve extended above 100 ft^3/s on basis of step-back water computations, and slope-conveyence study at gage height 1.20 ft; no flow for many days most years.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 25	0100	*71	*1.09				

Minimum daily, 0.02 ft^3/s, May 30, 31, June 6, July 3, 10, 17.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.39	.11	.07	.20	.20	.16	.38	.09	.03	.03	.03	.07
2	.16	.17	.08	.20	.69	.56	.40	.13	.07	.03	.06	.07
3	.19	.17	.09	.24	.48	1.2	.37	.11	.09	.02	.06	.10
4	.29	.17	.12	.20	7.0	.32	.38	.10	.04	.03	.05	.09
5	.24	.18	.15	.58	1.0	.20	.36	.08	.04	.03	.06	.08
6	.16	.17	.11	1.7	.29	.21	.41	.09	.02	.04	.05	.05
7	.11	.17	.19	.20	.21	.29	.40	.08	.04	.03	.04	.04
8	.09	.17	.13	.20	.31	.27	.37	.08	.06	.04	.04	.05
9	.17	.17	.11	.21	2.4	.27	.38	.06	.07	.04	.07	.04
10	.13	.14	.16	.20	1.1	.25	.38	.14	.06	.02	.08	.06
11	.16	.17	.21	.20	.30	.23	.40	.12	.06	.04	.06	.04
12	.15	.18	.20	.19	.29	.22	.40	.09	.06	.04	.05	.04
13	.23	.16	.20	.23	.37	.22	.44	.10	.05	.03	.03	.04
14	.17	2.3	.20	.21	.35	.22	.41	.11	.06	.03	.04	.04
15	.22	.08	1.1	.18	.21	.28	.45	.16	.04	.04	.04	.04
16	.12	.10	1.6	.10	.23	.32	.40	.08	.03	.03	.07	.05
17	.16	.17	.29	.11	.24	.29	.43	.06	:04	.02	.06	.41
18	.14	.15	.69	.11	.25	.29	.44	.09	.04	.03	.07	.05
19	.15	.15	.36	.15	.24	.31	.37	.09	.03	.03	.06	1.6
20	.15	.13	.20	.15	.18	.31	.34	.05	.03	.04	.07	.10
21	.08	.12	3.0	.12	.19	.30	.30	.04	.05	.05	.04	.08
22	.03	.12	.22	.14	.15	.33	.30	.05	.05	.03	.04	.09
23	.08	.17	.39	.16	.19	.37	.32	.05	.05	.07	.05	.08
24	.29	.26	1.0	.32	.19	.36	.31	.04	.04	.05	.05	.08
25	.14	3.6	13	.20	.20	6.3	.33	.06	.05	.07	.07	.06
26	.12	1.0	.94	.21	.18	3.6	1.4	.07	.07	.09	.07	.05
27	.09	.17	.24	.20	.19	.36	.22	.06	.04	.06	.09	.04
28	.07	.10	.32	.20	.17	.30	.12	.06	.04	.07	.08	.05
29	.12	.07	.21	.20	---	.31	.13	.04	.03	.06	.10	.05
30	.14	.06	.20	.19	---	.35	.10	.02	.03	.04	.10	.05
31	.24	---	.20	.20	---	.36	---	.02	---	.04	.07	---
TOTAL	4.98	10.88	25.98	7.70	17.80	19.36	11.44	2.42	1.41	1.27	1.85	3.69
MEAN	.16	.36	.84	.25	.64	.62	.38	.078	.047	.041	.060	.12
MAX	.39	3.6	13	1.7	7.0	6.3	1.4	.16	.09	.09	.10	1.6
MIN	.03	.06	.07	.10	.15	.16	.10	.02	.02	.02	.03	.04
AC-FT	9.9	22	52	15	35	38	23	4.8	2.8	2.5	3.7	7.3

CAL YR 1988 TOTAL 250.48 MEAN .68 MAX 29 MIN .02 AC-FT 497
WTR YR 1989 TOTAL 108.78 MEAN .30 MAX 13 MIN .02 AC-FT 216

11023325 BEELER CREEK AT POMERADO ROAD, NEAR POWAY, CA

LOCATION.--Lat 32°56'23", long 117°03'57", in NW 1/4 SW 1/4 sec.23, T.14 S., R.2 W., San Diego County, Hydrologic Unit 18070304, on right downstream wingwall of bridge on Pomerado Road, 0.8 mi upstream from Los Penasquitos Creek, and 1.7 mi southwest of Poway Post Office.

DRAINAGE AREA.--5.46 mi^2.

PERIOD OF RECORD.--November 1969 to September 1977 (gage heights and discharge measurements only), October 1977 to September 1989 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 465 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. Flow partially regulated by several conservation reservoirs upstream from station.

AVERAGE DISCHARGE.--13 years, 1.51 ft^3/s, 1,090 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,410 ft^3/s, Jan. 29, 1980, gage height, 9.20 ft, from rating curve extended above 80 ft^3/s on basis of slope-area measurement at gage height 8.79 ft; no flow for much of each year.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 25	0130	*3.4	*4.79				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.04	.03	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.04	.03	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.03	.03	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.03	.04	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.02	.03	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.03	.02	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.03	.02	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.03	.02	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.03	.02	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.02	.03	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.02	.02	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.02	.02	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.03	.02	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.05	.03	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.05	.02	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.04	.02	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.03	.02	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.03	.02	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.03	.02	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.03	.02	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.04	.01	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.03	.01	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.03	.01	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.03	.01	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.34	.03	.01	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.02	.03	.01	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.02	.03	.01	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.02	.03	.01	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.03	.03	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.04	.03	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.04	.03	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.51	0.97	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.016	.031	.020	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.34	.05	.04	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.02	.01	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	1.0	1.9	1.1	.00	.00	.00	.00	.00	.00	.00

CAL YR 1988 TOTAL 31.79 MEAN .087 MAX 1.8 MIN .00 AC-FT 63
WTR YR 1989 TOTAL 2.04 MEAN .006 MAX .34 MIN .00 AC-FT 4.0

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 mi^2.

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.--19 years, 6.04 ft^3/s, 4,380 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,990 ft^3/s, Feb. 21, 1980, gage height, 11.11 ft, from rating curve extended above 300 ft^3/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 ft^3/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)
Dec. 25	0015	*610	*6.39				

Minimum daily, 0.24 ft^3/s, May 31.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.61	.63	.75	.72	.86	.55	.89	.50	.39	.49	.48	.57
2	.61	.65	.60	.69	1.8	1.1	.90	.56	.54	.47	.49	.60
3	.61	.64	.68	.98	2.0	1.9	.97	.68	.54	.51	.50	.60
4	.62	.63	.61	1.1	13	.65	.96	.67	.54	.43	.46	.63
5	.62	.69	.59	1.9	2.5	.54	.97	.72	.43	.47	.54	.58
6	.62	.70	.68	5.4	1.1	.59	1.0	.71	.38	.48	.56	.49
7	.59	.73	.60	.91	1.0	.60	1.1	.78	.51	.52	.59	.51
8	.64	.72	.60	.75	1.1	.61	1.2	.87	.74	.58	.59	.49
9	.64	.62	.59	1.3	4.0	.59	1.1	.84	.75	.57	.63	.50
10	.63	.58	.60	.97	2.3	.52	1.0	.77	.76	.47	.58	.45
11	.63	.71	.59	1.1	1.0	.47	1.0	1.2	.71	.46	.61	.45
12	.64	.59	.64	.67	.93	.51	1.1	.79	.78	.42	.58	.44
13	.62	.60	.62	.80	1.1	.50	.96	.76	.77	.46	.46	.48
14	.67	10	.78	.76	1.1	.50	.86	.76	.76	.37	.44	.39
15	.67	.89	2.8	.85	.84	.47	.88	.81	.79	.39	.44	.39
16	.64	.60	5.6	.85	.88	.51	.78	.75	.76	.38	.49	.40
17	.68	.58	1.4	.81	.80	.48	.80	.71	.68	.41	.54	1.1
18	.71	.49	2.5	.87	.71	.45	.87	.74	.67	.42	.55	.46
19	.64	.47	1.3	.76	.68	.40	.91	.75	.75	.49	.60	2.2
20	.64	.50	.76	.75	.63	.50	.85	.83	.65	.48	.57	.51
21	.62	.46	11	.77	.63	.44	.96	.88	.66	.53	.56	.39
22	.61	.50	.95	.69	.63	.49	1.1	.89	.66	.54	.61	.39
23	.60	.48	1.5	.72	.69	.66	.84	.89	.61	.55	.68	.40
24	.67	.94	8.2	1.4	.69	.55	.99	.78	.57	.55	.66	.41
25	.64	18	80	.85	.67	14	1.1	.77	.56	.52	.64	.42
26	.61	2.7	3.0	.82	.52	11	2.3	.78	.49	.50	.68	.48
27	.62	.84	1.1	.74	.58	1.2	.65	.73	.47	.60	.63	.45
28	.62	.68	1.2	.80	.57	.91	.47	.60	.48	.57	.67	.44
29	.60	.72	.95	.81	---	.89	.55	.43	.49	.50	.63	.41
30	.58	.58	.93	.74	---	.84	.37	.46	.49	.49	.62	.39
31	.69	---	.74	.80	---	.85	---	.24	---	.47	.58	---
TOTAL	19.59	47.92	132.86	32.08	43.31	44.27	28.43	22.65	18.38	15.09	17.66	16.42
MEAN	.63	1.60	4.29	1.03	1.55	1.43	.95	.73	.61	.49	.57	.55
MAX	.71	18	80	5.4	13	14	2.3	1.2	.79	.60	.68	2.2
MIN	.58	.46	.59	.67	.52	.40	.37	.24	.38	.37	.44	.39
AC-FT	39	95	264	64	86	88	56	45	36	30	35	33

CAL YR 1988 TOTAL 1175.50 MEAN 3.21 MAX 275 MIN .27 AC-FT 2330
WTR YR 1989 TOTAL 438.66 MEAN 1.20 MAX 80 MIN .24 AC-FT 870

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 mi^2.

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.--25 years, 8.01 ft^3/s, 5,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,750 ft^3/s, Feb. 21, 1980, gage height, 10.26 ft, from rating curve extended above 1,400 ft^3/s; no flow at times in 1968, 1972, and 1977.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 25	0230	*634	*5.06				

Minimum daily, 0.17 ft^3/s, Aug. 19.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.2	1.2	1.8	1.6	1.5	2.4	1.5	1.2	1.1	1.2	.44
2	1.1	1.0	1.3	1.8	4.1	1.8	2.3	1.4	1.2	1.1	1.0	.29
3	1.1	.95	1.2	1.4	3.7	8.9	2.3	1.3	1.2	1.1	1.1	.45
4	1.1	.91	1.2	2.1	35	2.7	2.3	1.1	1.1	1.1	1.1	1.1
5	1.1	1.2	.83	2.2	14	1.9	2.1	1.1	.86	.71	1.8	1.7
6	1.1	1.2	.79	16	2.9	1.6	2.1	1.1	.90	.84	1.4	.56
7	1.0	1.3	.84	2.8	2.1	1.6	2.2	1.1	1.1	1.3	1.1	.31
8	1.1	1.3	.69	1.9	2.2	1.6	2.3	1.1	1.4	1.2	1.1	.47
9	1.1	.97	.45	2.3	10	1.6	2.4	1.2	1.4	1.2	1.1	1.1
10	1.0	.74	.72	2.4	11	1.5	2.5	1.3	1.3	1.1	1.1	1.7
11	1.0	.90	.89	2.0	3.6	1.6	2.7	1.7	1.2	1.3	1.1	1.3
12	1.0	1.4	.59	1.5	2.5	1.5	2.9	1.5	1.1	1.1	1.2	.99
13	1.0	1.2	.72	1.1	2.3	1.4	3.0	1.3	.96	1.1	1.1	1.2
14	1.0	24	.67	1.6	2.6	1.3	3.1	1.7	.95	1.1	1.1	1.1
15	1.1	5.1	4.7	1.6	2.1	1.4	2.9	1.6	.88	1.1	1.1	.98
16	1.1	1.7	21	1.5	1.9	1.4	2.9	1.6	.97	2.0	1.1	1.4
17	1.1	2.1	7.4	1.6	2.4	1.4	2.6	1.3	.91	1.8	1.1	4.5
18	1.1	1.1	6.4	1.5	2.7	1.5	2.6	1.3	.65	1.8	1.0	3.8
19	1.1	1.1	5.3	1.4	2.8	1.5	2.8	1.3	.52	1.6	.17	10
20	1.1	1.1	2.3	1.4	2.7	1.7	2.8	1.2	.63	1.7	.29	6.5
21	1.1	.82	24	1.5	2.0	1.8	2.8	1.2	.75	1.7	.47	2.1
22	1.1	.79	4.7	1.6	1.8	1.6	3.2	1.2	.84	1.3	.33	2.3
23	1.1	.86	5.4	1.4	1.9	1.7	3.1	1.2	1.0	1.1	.53	1.9
24	1.1	2.8	5.3	3.3	1.8	1.9	3.0	1.0	1.0	1.2	4.0	1.9
25	1.1	36	127	2.0	1.8	31	3.5	.84	.91	1.1	2.3	1.9
26	1.1	12	8.9	1.6	1.8	36	12	1.1	.79	1.1	.86	1.2
27	1.1	3.3	3.8	1.7	1.6	5.3	4.4	1.3	1.0	1.0	.84	1.6
28	1.1	2.0	3.6	1.8	1.6	3.3	2.8	1.3	1.1	1.0	.67	.56
29	1.1	1.4	2.4	1.8	---	2.8	2.3	1.2	1.0	1.1	.89	1.8
30	1.1	1.1	2.0	1.6	---	2.6	1.9	1.2	1.0	1.1	.92	2.2
31	.91	---	2.1	1.5	---	2.5	---	1.2	---	1.1	.77	---
TOTAL	33.31	111.54	248.39	69.7	126.5	129.9	90.2	39.44	29.82	38.15	33.84	57.35
MEAN	1.07	3.72	8.01	2.25	4.52	4.19	3.01	1.27	.99	1.23	1.09	1.91
MAX	1.1	36	127	16	35	36	12	1.7	1.4	2.0	4.0	10
MIN	.91	.74	.45	1.1	1.6	1.3	1.9	.84	.52	.71	.17	.29
AC-FT	66	221	493	138	251	258	179	78	59	76	67	114

CAL YR 1988 TOTAL 1934.83 MEAN 5.29 MAX 301 MIN .45 AC-FT 3840
WTR YR 1989 TOTAL 1008.14 MEAN 2.76 MAX 127 MIN .17 AC-FT 2000

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 mi^2.

PERIOD OF RECORD.--February 1912 to February 1923 (monthly discharge only for February 1912, published in WSP 1315-B), October 1943 to current year.

REVISED RECORD.--WDR CA-63-1: Drainage area.

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.--Records good except those below 0.5 ft^3/s, which are 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 ft^3/s, Jan. 27, 1916, gage height, 14.0 ft, datum then in use, from rating curve extended above 1,500 ft^3/s on basis of slope-conveyance study of peak flow; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 30 ft^3/s, Feb. 5, gage height, 2.57 ft; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.01	.03	.03	.20	.41	1.4	1.9	.16	.03	.00	.00	.00
2	e.01	.03	.03	.22	.54	1.6	1.9	.15	.03	.00	.00	.00
3	e.01	.03	.03	.27	.72	4.0	1.8	.14	.04	.01	.00	.00
4	e.01	.02	.02	.51	2.1	4.8	1.7	.14	.04	.01	.00	.00
5	e.01	.02	.01	.61	15	2.7	1.5	.14	.03	.01	.00	.00
6	e.01	.02	.02	1.6	6.2	2.1	1.4	.12	.03	.01	.00	.00
7	.01	.02	.03	1.9	3.8	1.8	1.1	.09	.03	.01	.00	.00
8	.01	.01	.08	1.7	3.1	1.6	.83	.08	.04	.01	.00	.00
9	.01	.01	.13	1.4	3.0	1.3	.56	.08	.04	.01	.00	.00
10	.01	.01	.15	1.1	4.4	1.3	.49	.08	.04	.02	.00	.00
11	.02	.02	.17	.90	4.6	1.1	.52	.08	.04	.02	.01	.00
12	.02	.02	.18	.66	3.3	1.1	.66	.08	.03	.03	.01	.00
13	.02	.02	.18	.56	3.2	1.1	.80	.09	.02	.03	.01	.00
14	.02	.03	.19	.53	4.0	1.3	.67	.10	.02	.02	.00	.00
15	.02	.02	.18	.51	3.2	1.2	.65	.12	.02	.03	.01	.00
16	.02	.01	.05	.50	2.6	1.1	.47	.11	.01	.03	.01	.00
17	.02	.01	.05	.45	2.3	1.1	.39	.09	.01	.02	.01	.01
18	.02	.01	.06	.42	2.3	1.1	.34	.08	.01	.01	.01	.00
19	.02	.01	.06	.45	2.3	.92	.31	.07	.02	.01	.01	.00
20	.02	.01	.05	.41	2.1	.84	.28	.05	.03	.01	.01	.00
21	.03	.01	.08	.48	2.0	.63	.25	.05	.03	.01	.01	.00
22	.03	.01	.05	.45	1.9	.53	.24	.04	.02	.01	.00	.00
23	.03	.02	.05	.41	1.8	.53	.22	.04	.02	.01	.01	.00
24	.03	.02	.06	.51	1.6	.53	.20	.03	.02	.02	.01	.00
25	.03	.02	.53	.46	1.6	1.4	.20	.03	.02	.02	.00	.00
26	.03	.02	.30	.41	1.5	8.3	.25	.03	.02	.01	.00	.00
27	.03	.01	.22	.41	1.4	7.2	.22	.03	.02	.01	.00	.00
28	.03	.01	.23	.41	1.4	4.1	.20	.02	.02	.01	.00	.00
29	.03	.02	.18	.42	---	3.0	.18	.02	.02	.00	.01	.00
30	.03	.03	.18	.41	---	2.4	.16	.02	.01	.00	.00	.00
31	.03	---	.18	.41	---	2.2	---	.03	---	.00	.00	---
TOTAL	0.63	0.53	3.76	19.68	82.37	64.28	20.39	2.39	0.76	0.40	0.13	0.01
MEAN	.020	.018	.12	.63	2.94	2.07	.68	.077	.025	.013	.004	.000
MAX	.03	.03	.53	1.9	15	8.3	1.9	.16	.04	.03	.01	.01
MIN	.01	.01	.01	.20	.41	.53	.16	.02	.01	.00	.00	.00
AC-FT	1.2	1.1	7.5	39	163	127	40	4.7	1.5	.8	.3	.02

CAL YR 1988 TOTAL 565.87 MEAN 1.55 MAX 130 MIN .00 AC-FT 1120
WTR YR 1989 TOTAL 195.33 MEAN .54 MAX 15 MIN .00 AC-FT 387

e Estimated.

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 mi^2.

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, but 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 1.8 acre-ft as of 1989.

AVERAGE DISCHARGE.--50 years (water years 1914-20, 1947-89), 5.89 ft^3/s, 4,270 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,200 ft^3/s, Feb. 21, 1980, gage height, 14.39 ft, from rating curve extended above 130 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 25	0215	*13	*1.60				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.32	.17	.02	.19	.92	.73	.92	.05	.09	.02	.00	.00
2	.09	.11	.12	.15	1.2	1.3	.91	.07	.04	.00	.00	.00
3	.26	.07	.29	.28	1.1	1.4	.98	.35	.02	.00	.00	.00
4	.29	.05	.28	.95	2.8	.22	.72	.30	.01	.00	.00	.00
5	.43	.04	.24	1.1	.74	.12	.25	.09	.10	.00	.00	.00
6	.37	.05	.13	1.1	.51	.12	.27	.05	.12	.00	.00	.00
7	.38	.08	.34	.32	1.1	.39	.64	.17	.15	.03	.00	.00
8	.50	.08	.22	.25	.94	.64	.73	.24	.02	.02	.00	.00
9	.50	.15	.19	.15	1.5	.58	.20	.08	.14	.00	.00	.00
10	.58	.33	.08	.34	1.4	.52	.71	.07	.03	.00	.00	.00
11	.60	.08	.08	.45	1.3	.13	.28	.06	.02	.00	.00	.00
12	.54	.10	.37	.47	1.5	.11	.19	.04	.25	.00	.00	.00
13	.66	.30	.44	.73	1.6	.11	.19	.05	.32	.00	.00	.00
14	.63	.93	.40	.91	.97	.35	.19	.12	.22	.00	.00	.05
15	.30	.60	.50	.57	.79	.47	.66	.18	.04	.00	.00	.02
16	.22	.35	.47	.26	1.2	.47	.64	.07	.02	.00	.00	.00
17	.17	.22	.35	.19	1.2	.70	.91	.03	.01	.23	.00	.00
18	.18	.06	.76	.24	1.0	1.0	.41	.06	.00	.05	.00	.00
19	.31	.17	.76	.33	.91	1.0	.14	.22	.00	.00	.00	.00
20	.30	.15	.56	.32	.75	.91	.16	.07	.00	.00	.34	.00
21	.29	.06	1.0	.25	.78	.48	.14	.10	.00	.00	.38	.00
22	.17	.08	.26	.24	.78	.84	.41	.14	.00	.00	.00	.01
23	.36	.11	.36	.31	.94	.46	.43	.06	.00	.00	.00	.01
24	.42	.18	.34	.69	.77	.27	.12	.02	.00	.00	.00	.00
25	.48	.52	2.9	1.1	.93	.70	.10	.01	.00	.02	.04	.00
26	.43	.31	.86	.81	.91	2.0	.10	.01	.00	.00	.00	.00
27	.53	.06	.26	.75	.75	.47	.09	.02	.00	.00	.00	.00
28	.16	.04	.29	.97	.58	.25	.10	.15	.00	.00	.00	.05
29	.39	.04	.25	.82	---	.19	.06	.15	.00	.00	.00	.04
30	.30	.02	.64	.93	---	.19	.05	.03	.05	.00	.00	.02
31	.11	---	.27	.99	---	.59	---	.01	---	.00	.00	---
TOTAL	11.27	5.51	14.03	17.16	29.87	17.71	11.70	3.07	1.65	0.37	0.76	0.20
MEAN	.36	.18	.45	.55	1.07	.57	.39	.099	.055	.012	.025	.007
MAX	.66	.93	2.9	1.1	2.8	2.0	.98	.35	.32	.23	.38	.05
MIN	.09	.02	.02	.15	.51	.11	.05	.01	.00	.00	.00	.00
AC-FT	22	11	28	34	59	35	23	6.1	3.3	.7	1.5	.4

CAL YR 1988 TOTAL 526.36 MEAN 1.44 MAX 112 MIN .00 AC-FT 1040
WTR YR 1989 TOTAL 113.30 MEAN .31 MAX 2.9 MIN .00 AC-FT 225

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 mi^2.
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.
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, 18,780 acre-ft, Apr. 2, elevation, 300.32 ft; minimum, 13,000 acre-ft, Sept. 25.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table dated July 1, 1953, provided by city of San Di'ego)

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 1988 TO SEPTEMBER 1989
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e18200	18030	17640	17820	17620	18140	18700	17960	17180	16210	e15120	e14060
2	e18200	18020	17630	17820	17630	18150	18770	17930	17140	16180	e15080	e14030
3	e18200	18000	17600	17810	17670	18160	18670	17900	17100	16140	e15050	e14000
4	e18210	17980	17590	17820	17830	18160	18660	17870	17060	16100	e15020	e13960
5	e18210	17960	17570	17840	17860	18150	18620	17840	17030	16050	e14980	e13930
6	e18210	17930	17540	17870	17860	18150	18590	17870	17000	16030	e14950	e13900
7	e18220	17920	17520	17870	17870	18130	18550	17810	16960	e16000	e14920	e13870
8	e18220	17900	17490	17860	17880	18120	18510	17790	16940	e15960	e14880	e13840
9	e18220	17880	17480	17860	17920	18110	18470	17750	16920	e15930	e14850	e13810
10	e18230	17860	17450	17870	17950	18100	18430	17720	16900	e15890	e14810	e13770
11	e18230	17850	17430	17850	17960	18080	18400	17680	16890	e15860	e14760	e13750
12	e18230	17810	17400	17830	17980	18540	18370	17660	16880	e15820	e14720	e13720
13	e18240	17790	17370	17820	17990	18530	18350	17640	16860	e15790	e14690	e13690
14	e18240	17840	17350	17810	18010	18510	18330	17620	16850	e15760	e14660	e13660
15	e18240	17820	17350	17800	18020	18490	18310	17620	16820	e15720	e14630	e13620
16	e18250	17800	17390	17800	18020	18480	18290	17600	16800	e15690	e14600	e13570
17	e18250	17780	17370	17770	18030	18470	18280	17620	16770	e15650	e14560	e13540
18	e18250	17770	17370	17760	18050	18510	18250	17600	16730	e15620	e14530	e13510
19	e18260	17740	17370	17740	18060	18540	18230	17590	16700	e15590	e14500	e13480
20	e18260	17720	17360	17740	18080	18530	18210	17560	16670	e15550	e14470	e13450
21	e18260	17690	17450	17730	18090	18510	18190	17550	16620	e15520	e14440	e13420
22	18250	17660	17450	17700	18100	18460	18170	17530	16590	e15480	e14400	e13390
23	18240	17630	17450	17690	18110	18440	18140	17500	16540	e15450	e14370	e13360
24	18210	17600	17520	17690	18110	18410	18110	17470	16500	e15420	e14340	e13330
25	18190	17710	17810	17680	18130	18540	18080	17440	16460	e15350	e14310	e13000
26	18180	17710	17830	17680	18140	18660	18080	17390	16420	e15320	e14250	e13270
27	18150	17680	17830	17670	18140	18680	18050	17360	16380	e15280	e14210	e13240
28	18120	17660	17830	17660	18140	18690	18030	17320	16340	e15250	e14180	e13210
29	18100	17660	17830	17650	---	18690	18010	17290	16310	e15220	e14150	e13180
30	18080	17640	17830	17650	---	18700	17990	17250	16260	e15180	e14120	e13150
31	18050	---	17830	17640	---	18700	---	17210	---	e15150	e14090	---
MAX	18260	18030	17830	17870	18140	18700	18770	17960	17180	16210	15120	14060
MIN	18050	17600	17350	17640	17620	18080	17990	17210	16260	15150	14090	13000
a	299.38	298.84	299.08	298.83	299.49	300.21	299.29	298.25	296.93	295.30	293.65	292.08
b	-150	-410	+190	-190	+500	+560	-710	-780	-950	-1110	-1060	-940

CAL YR 1988 MAX 23570 MIN 17350 b -4240
WTR YR 1989 MAX 18770 MIN 13000 b -5050

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

11030500 SAN DIEGUITO RIVER NEAR DEL MAR, CA

LOCATION.--Lat 32°54'23", long 117°12'45", in SE 1/4 SW 1/4 sec.6, T.14 S., R.3 W., San Diego County, Hydrologic Unit 18070304, on downstream side of second pier from right bank of El Camino Real bridge, 0.3 mi south of intersection of El Camino Real and Via Del La Valle, and 2.6 mi upstream from mouth.

DRAINAGE AREA.--338 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1984 to current year. Prior to October 1986, published as San Dieguito Creek near Del Mar.

GAGE.--Water-stage recorder. Elevation of gage is 20 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair. Flow regulated by Lake Sutherland, capacity 29,680 acre-ft, since July 1954 and Lake Hodges (station 11030020), capacity 33,550 acre-ft, since 1919. Diversions and pumping from wells in San Pasqual Valley and lower San Dieguito Valley.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,160 ft^3/s, Mar. 17, 1986, gage height, 10.69 ft; no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9.3 ft^3/s, Dec. 25, gage height, 7.21 ft; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.00	.00	.53	.32	.40	.23	.03	.00	.00	.00	.00
2	.06	.03	.00	.40	.36	.32	.28	.02	.00	.00	.00	.00
3	.01	.19	.00	.36	.45	.38	.24	.04	.00	.00	.00	.00
4	.04	.25	.00	.36	.66	.25	.22	.05	.04	.00	.00	.00
5	.07	.24	.00	.36	1.1	.16	.15	.04	.03	.00	.00	.00
6	.05	.24	.03	.47	.94	.21	.07	.04	.00	.00	.00	.00
7	.00	.24	.04	.42	.57	.22	.03	.04	.00	.00	.00	.00
8	.00	.21	.04	.37	.44	.16	.03	.03	.07	.00	.00	.00
9	.00	.14	.00	.30	.57	.16	.04	.01	.28	.00	.00	.00
10	.08	.12	.00	.30	.97	.13	.08	.02	.30	.00	.00	.00
11	.28	.20	.00	.29	.74	.08	.12	.02	.24	.00	.00	.00
12	.22	.29	.00	.18	.65	.22	.23	.01	.24	.00	.00	.00
13	.09	.15	.02	.16	.54	.24	.24	.00	.23	.00	.00	.00
14	.03	.54	.06	.27	.60	.37	.22	.06	.14	.00	.00	.00
15	.00	.70	.09	.26	.48	.34	.16	.42	.07	.00	.00	.00
16	.07	.38	.56	.25	.46	.24	.16	.51	.03	.00	.00	.00
17	.35	.24	1.4	.24	.45	.22	.14	.29	.01	.00	.00	.00
18	.36	.13	1.2	.24	.49	.16	.08	.16	.00	.00	.00	.00
19	.31	.03	.67	.24	.62	.16	.08	.09	.00	.00	.00	.00
20	.28	.00	.42	.24	.60	.16	.07	.04	.00	.00	.00	.00
21	.42	.00	.81	.24	.52	.14	.08	.01	.00	.00	.00	.00
22	.39	.00	1.9	.26	.48	.08	.07	.00	.00	.00	.00	.00
23	.35	.03	1.2	.25	.52	.11	.07	.00	.00	.00	.00	.00
24	.21	.26	1.4	.36	.54	.11	.05	.00	.00	.00	.00	.00
25	.14	.83	4.9	.39	.52	.38	.02	.00	.00	.00	.00	.00
26	.07	1.7	2.6	.31	.49	1.8	.00	.00	.00	.00	.00	.00
27	.07	.84	1.1	.30	.52	2.0	.00	.00	.00	.00	.00	.00
28	.01	.27	1.4	.26	.52	.78	.01	.00	.00	.00	.00	.00
29	.00	.09	1.3	.27	---	.42	.03	.00	.00	.00	.00	.00
30	.00	.03	.97	.29	---	.30	.03	.00	.00	.00	.00	.00
31	.00	---	.64	.31	---	.26	---	.00	---	.00	.00	---
TOTAL	4.01	8.37	22.75	9.48	16.12	10.96	3.23	1.93	1.68	0.00	0.00	0.00
MEAN	.13	.28	.73	.31	.58	.35	.11	.062	.056	.000	.000	.000
MAX	.42	1.7	4.9	.53	1.1	2.0	.28	.51	.30	.00	.00	.00
MIN	.00	.00	.00	.16	.32	.08	.00	.00	.00	.00	.00	.00
AC-FT	8.0	17	45	19	32	22	6.4	3.8	3.3	.00	.00	.00

CAL YR 1988 TOTAL 293.93 MEAN .80 MAX 34 MIN .00 AC-FT 583
WTR YR 1989 TOTAL 78.53 MEAN .22 MAX 4.9 MIN .00 AC-FT 156

11030500 SAN DIEGUITO RIVER NEAR DEL MAR, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
SEDIMENT DATA: Water years 1982 to September 1989 (discontinued).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: January to September 1984.
SEDIMENT DATA: January to September 1984.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	TEMPERATURE WATER (DEG C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
DEC						
19...	0930	0.68	9.5	1	0.00	--
MAY						
03...	1015	0.04	16.5	7	0.00	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	TEMPERATURE WATER (DEG C)	NUMBER OF SAMPLING POINTS (COUNT)	DISCHARGE, 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	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM
MAY										
03...	1020	16.5	1	0.04	11	29	78	89	98	100
03...	1025	16.5	1	0.04	13	41	87	96	100	--
03...	1030	16.5	1	0.04	26	44	77	89	98	100
03...	1035	16.5	1	0.04	10	26	60	90	98	100

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 mi^2.

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.

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, 6,420 acre-ft, May 16, 17, elevation, 1,477.61 ft; minimum, 2,100 acre-ft, Dec. 8, 11, elevation, 1,451.72 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on table dated March 1955, provided by city of Escondido)

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 1988 TO SEPTEMBER 1989
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5730	4040	2470	2360	3630	4040	4710	6250	6130	5660	4870	3470
2	5720	3970	2410	2370	3690	4100	4750	6240	6130	5650	4810	3440
3	5710	3900	2340	2370	3750	4120	4770	6250	6110	5630	4750	3400
4	5700	3830	2290	2380	3800	4150	4820	6250	6100	5610	4720	3360
5	5680	3760	2220	2400	3820	4190	4860	6280	6090	5580	4680	3320
6	5680	3690	2160	2410	3800	4210	4910	6290	6070	5540	4650	3270
7	5670	3620	2110	2420	3820	4240	4950	6310	6050	5520	4600	3220
8	5650	3570	2100	2430	3820	4260	5000	6310	6060	5520	4550	3170
9	5640	3520	2110	2420	3810	4260	5060	6310	6050	5510	4500	3120
10	5630	3470	2110	2430	3790	4280	5150	6320	6040	5490	4460	3070
11	5620	3420	2100	2480	3760	4290	5230	6320	6050	5500	4430	3030
12	5590	3360	2110	2510	3740	4320	5310	6340	6040	5490	4390	2980
13	5510	3320	2110	2550	3730	4340	5390	6370	6020	5460	4360	2960
14	5430	3290	2110	2590	3710	4350	5450	6390	5990	5440	4330	2970
15	5360	3250	2120	2640	3670	4370	5500	6410	5960	5430	4290	2980
16	5290	3200	2120	2690	3700	4370	5560	6420	5960	5420	4220	2990
17	5210	3160	2130	2740	3740	4380	5630	6420	5930	5390	4170	3010
18	5130	3110	2140	2780	3770	4400	5710	6420	5910	5380	4110	3030
19	5060	3060	2140	2830	3810	4410	5790	6410	5890	5370	4060	3050
20	4980	3000	2140	2890	3850	4420	5880	6390	5850	5350	4010	3060
21	4900	2940	2160	2930	3880	4440	5950	6380	5770	5320	3950	3060
22	4830	2870	2170	2970	3900	4480	6040	6340	5730	5280	3910	3070
23	4740	2800	2180	3040	3920	4510	6120	6310	5720	5260	3840	3070
24	4670	2750	2190	3080	3940	4540	6190	6290	5710	5230	3790	3080
25	4590	2730	2240	3120	3960	4540	6250	6300	5710	5190	3740	3080
26	4510	2700	2260	3200	3980	4550	6260	6270	5700	5140	3700	3080
27	4430	2670	2270	3280	4000	4550	6240	6250	5700	5100	3660	3070
28	4350	2630	2270	3360	4020	4580	6240	6230	5670	5050	3620	3070
29	4280	2590	2280	3440	---	4610	6250	6220	5680	5010	3590	3050
30	4200	2540	2280	3520	---	4660	6260	6190	5670	4970	3550	3050
31	4120	---	2350	3580	---	4690	---	6160	---	4920	3510	---
MAX	5730	4040	2470	3580	4020	4690	6260	6420	6130	5660	4870	3470
MIN	4120	2540	2100	2360	3630	4040	4710	6160	5670	4920	3510	2960
a	1465.61	1455.22	1453.71	1462.37	1464.98	1468.81	1476.86	1476.38	1473.95	1470.08	1461.93	1458.87
b	-1620	-1580	-190	+1230	+440	+670	+1570	-100	-490	-750	+1410	-460

CAL YR 1988 MAX 6310 MIN 2100 b -350
WTR YR 1989 MAX 6420 MIN 2100 b -2690

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 mi^2.

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.--No estimated daily discharges. Records fair. Flow regulated by Lake Henshaw, capacity, 194,300 acre-ft. Several small diversions upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 179 ft^3/s, Jan. 18, 1988, gage height, 3.34 ft, from rating curve extended above 12 ft^3/s; no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2.4 ft^3/s, Mar. 27, gage height, 1.94 ft, from rating curve extended above 1.0 ft^3/s; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.04	.53	.48	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.03	.73	.41	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.11	1.1	.36	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.61	1.1	.20	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.55	1.0	.10	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.26	1.2	.06	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.20	1.2	.04	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.67	.80	.03	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.63	.63	.05	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.42	.53	.06	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.33	.33	.07	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.35	.35	.10	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.43	.38	.09	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.83	.34	.07	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.59	.28	.07	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.48	.34	.07	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.49	.41	.07	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.64	.40	.05	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.73	.38	.04	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.64	.33	.03	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.62	.21	.02	.00	.00	.00	.00	.00
22	.00	.00	.00	.02	.72	.15	.02	.00	.00	.00	.00	.00
23	.00	.00	.00	.10	.88	.11	.02	.00	.00	.00	.00	.00
24	.00	.00	.00	.13	.98	.09	.03	.00	.00	.00	.00	.00
25	.00	.00	.00	.14	.90	.26	.03	.00	.00	.00	.00	.00
26	.00	.00	.00	.24	.89	.81	.03	.00	.00	.00	.00	.00
27	.00	.00	.00	.29	.85	2.3	.02	.00	.00	.00	.00	.00
28	.00	.00	.00	.21	.72	2.0	.02	.00	.00	.00	.00	.00
29	.00	.00	.00	.12	---	1.4	.01	.00	.00	.00	.00	.00
30	.00	.00	.00	.12	---	.98	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.07	---	.63	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	1.44	15.59	21.30	2.65	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.046	.56	.69	.088	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.29	.98	2.3	.48	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.03	.09	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	2.9	31	42	5.3	.00	.00	.00	.00	.00

CAL YR 1988 TOTAL 630.79 MEAN 1.72 MAX 77 MIN .00 AC-FT 1250
WTR YR 1989 TOTAL 40.98 MEAN .11 MAX 2.3 MIN .00 AC-FT 81

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 mi^2.

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 fair. 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.--57 years (water years 1913-14, 1930-41, 1947-89), 34.8 ft^3/s, 25,213 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,600 ft^3/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 ft^3/s, Feb. 21, 1980, gage height, 14.00 ft.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 102 ft^3/s, Dec. 25, gage height, 13.39 ft; minimum daily, 2.3 ft^3/s, Sept. 9-11.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.6	4.8	11	38	26	29	28	14	10	6.3	4.6	2.6
2	4.6	5.1	11	35	27	29	26	14	10	6.2	4.6	2.6
3	4.6	5.1	11	33	27	31	25	14	10	6.1	4.3	2.5
4	4.6	5.3	11	32	28	31	23	13	10	6.1	4.1	2.4
5	4.7	5.4	11	31	31	31	22	13	9.5	6.1	3.9	2.4
6	e4.7	5.4	11	35	31	30	21	13	9.2	5.8	3.8	2.4
7	e4.7	5.7	11	39	31	30	20	12	9.3	5.5	3.8	2.4
8	e4.7	6.3	11	44	32	29	19	13	9.6	5.5	4.1	2.4
9	e4.6	7.6	10	43	34	28	19	13	9.3	5.4	4.0	2.3
10	e4.6	7.2	9.5	42	38	27	18	12	9.3	5.4	3.9	2.3
11	e4.6	6.8	9.5	40	36	27	18	13	9.0	5.7	3.7	2.3
12	e4.5	6.9	9.5	36	36	27	18	12	9.2	5.2	3.4	2.4
13	e4.5	6.8	9.7	33	35	26	19	12	9.3	4.9	3.3	2.4
14	e4.5	12	9.8	32	33	25	19	14	9.3	5.2	3.2	2.4
15	e4.6	11	11	32	32	24	19	17	9.1	5.0	3.2	2.4
16	e4.6	9.5	22	32	31	23	19	17	9.0	4.8	3.1	2.4
17	e4.6	8.6	20	31	34	22	18	15	8.9	5.0	3.0	2.7
18	e4.7	8.1	20	31	34	23	18	15	8.6	5.1	2.8	2.7
19	e4.7	7.6	30	30	34	22	17	14	8.6	5.1	2.7	2.7
20	e4.7	7.4	24	29	34	22	17	14	8.4	5.0	2.7	3.0
21	e4.7	7.5	35	29	33	21	16	14	8.0	4.8	2.7	2.7
22	e4.6	7.8	43	28	33	21	15	14	7.6	4.5	2.7	2.6
23	e4.6	7.8	38	28	33	20	15	13	7.4	4.3	2.7	2.6
24	e4.6	8.2	35	28	32	19	15	12	7.0	4.3	2.7	2.8
25	4.6	21	92	28	30	26	14	12	6.8	4.6	2.7	2.7
26	4.6	22	78	27	29	37	14	12	6.5	4.6	2.7	2.7
27	4.7	15	70	27	29	35	15	12	6.5	4.5	2.7	2.9
28	4.7	13	62	27	29	32	15	11	6.4	4.5	2.6	2.9
29	4.6	12	52	27	---	32	15	11	6.3	4.6	2.6	2.9
30	4.6	11	45	27	---	31	14	11	6.1	4.6	2.6	2.7
31	4.6	---	41	26	---	30	---	10	---	4.6	2.7	---
TOTAL	143.3	267.9	864.0	1000	892	840	551	406	254.2	159.3	101.6	77.2
MEAN	4.62	8.93	27.9	32.3	31.9	27.1	18.4	13.1	8.47	5.14	3.28	2.57
MAX	4.7	22	92	44	38	37	28	17	10	6.3	4.6	3.0
MIN	4.5	4.8	9.5	26	26	19	14	10	6.1	4.3	2.6	2.3
AC-FT	284	531	1710	1980	1770	1670	1090	805	504	316	202	153

CAL YR 1988 TOTAL 9035.3 MEAN 24.7 MAX 288 MIN 4.0 AC-FT 17920
WTR YR 1989 TOTAL 5556.5 MEAN 15.2 MAX 92 MIN 2.3 AC-FT 11020

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 1988 TO SEPTEMBER 1989

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)
NOV												
21...	1400	7.8	2310	7.80	13.0	1.0	765	9.7	92	K25	210	710
JAN												
31...	1230	25	2170	8.20	13.0	4.4	770	12.5	118	70	67	680
MAR												
30...	1535	30	2140	8.00	21.5	2.5	765	8.3	94	K45	110	690
MAY												
23...	1330	13	2230	8.10	22.0	2.2	765	10.3	118	64	160	700
JUL												
13...	1305	4.7	2380	8.00	23.0	2.6	760	7.3	86	K21	350	680
SEP												
28...	1230	2.8	2600	7.80	20.5	2.2	760	6.8	76	91	100	750

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											
21...	160	76	220	40	4	9.5	289	0	237	410	390
JAN											
31...	150	74	200	39	3	6.6	301	0	247	430	350
MAR											
30...	150	77	200	38	3	6.8	296	0	243	420	340
MAY											
23...	150	80	230	41	4	7.0	265	0	217	420	380
JUL											
13...	140	81	230	42	4	8.4	268	0	220	450	410
SEP											
28...	160	84	270	44	4	10	290	0	238	470	470

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-PHOROUS TOTAL (MG/L AS P)
NOV											
21...	0.30	20	1490	1440	2.03	<0.010	2.10	0.050	0.040	0.80	0.130
JAN											
31...	0.30	23	1430	1390	1.94	<0.010	1.80	0.030	0.040	0.80	0.100
MAR											
30...	0.30	23	1410	1370	1.92	<0.010	1.40	0.080	0.040	0.50	0.130
MAY											
23...	0.30	8.5	1470	1410	2.00	<0.010	0.640	0.040	0.060	0.40	0.120
JUL											
13...	0.30	11	1530	1460	2.08	<0.010	0.320	0.060	0.050	0.60	0.210
SEP											
28...	0.30	17	1670	1630	2.27	0.010	0.230	0.040	0.020	0.90	0.200

See footnotes at end of table.

11042000 SAN LUIS REY RIVER AT OCEANSIDE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS 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											
21...	0.120	0.100	<10	1	100	<10	2	<1	<1	2	20
JAN											
31...	0.070	0.050	--	--	--	--	--	--	--	--	--
MAR											
30...	0.120	0.090	20	1	400	<10	<1	<1	1	2	20
MAY											
23...	0.110	0.090	20	1	<100	<10	<1	<1	<1	1	10
JUL											
13...	0.170	0.160	--	--	--	--	--	--	--	--	--
SEP											
28...	0.180	0.180	10	<1	<100	<10	<1	1	<1	2	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											
21...	<5	<10	40	<0.1	12	3	1	<1.0	820	9	<10
JAN											
31...	--	--	--	--	--	--	--	--	--	--	--
MAR											
30...	<5	<10	80	0.1	11	2	1	1.0	730	11	10
MAY											
23...	1	<10	90	<0.1	11	<1	1	<1.0	750	12	<10
JUL											
13...	--	--	--	--	--	--	--	--	--	--	--
SEP											
28...	<1	<10	70	0.1	10	2	<1	<1.0	1000	12	<10

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

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
MAY										
23...*	1630	4.00	2240	8.30	22.0	760	11.2	129	30	54
23...*	1640	71.0	2250	8.00	20.5	760	7.6	85	30	51
23...*	1650	114	2260	8.00	21.0	760	8.5	96	20	74
23...*	1700	139	2260	7.90	21.0	760	8.5	96	25	64
SEP										
28...*	1555	2.00	2630	7.80	20.5	755	6.8	77	2	--
28...*	1605	37.0	2590	7.90	20.5	755	7.7	87	2	--
28...*	1610	79.0	2650	7.80	21.0	755	6.3	72	--	--
28...*	1620	158	2500	7.90	21.0	755	7.2	82	9	--

* Instantaneous streamflow at time of cross-sectional measurement: May 23, 13 ft^3/s; Sept. 28, 2.8 ft^3/s.

11042000 SAN LUIS REY RIVER AT OCEANSIDE, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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
OCT						
27...	1345	4.8	21.0	45	0.58	41
NOV						
21...	1400	7.8	13.0	15	0.32	36
JAN						
31...	1230	26	13.0	8	0.56	51
MAR						
30...	1535	31	21.5	47	3.9	38
MAY						
03...	1230	14	23.0	34	1.3	60
23...	1330	13	22.0	25	0.88	67
23...	1645	13	22.0	26	0.91	61
JUL						
13...	1305	4.8	23.0	29	0.38	60
AUG						
17...	1400	2.9	23.0	10	0.08	--
SEP						
28...	1230	2.9	20.5	13	0.10	42
28...	1610	2.9	21.0	4	0.02	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	TEMPER-ATURE WATER (DEG C)	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
MAY							
03...	1240	23.0	1	14	1	5	47
03...	1245	23.0	1	14	2	14	46
03...	1250	23.0	1	14	1	4	35
03...	1255	23.0	1	14	4	10	23

DATE	BED MAT. SIEVE DIAM. % FINER THAN .500 MM	BED MAT. SIEVE DIAM. % FINER THAN 1.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM
MAY							
03...	49	59	67	74	83	93	100
03...	68	76	80	85	89	99	100
03...	49	79	86	88	90	94	100
03...	55	72	77	82	89	96	100

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 mi^2.

PERIOD OF RECORD.--August 1957 to current year.

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.--32 years, 6.79 ft^3/s, 4,920 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,200 ft^3/s, revised, Feb. 21, 1980, gage height, 12.0 ft, from floodmarks, from rating curve extended above 1,200 ft^3/s; no flow for several days in most years.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 25	0630	*49	*1.97				

Minimum daily, 0.29 ft^3/s, July 29.

REVISIONS.--The maximum discharges for some water years have been revised, as shown in the following table. These discharges supersede figures published in WSP 1735 and in the reports for 1966, 1979, 1980, and 1986.

Water year	Date	Discharge (ft^3/s)	Gage height (ft)	Water year	Date	Discharge (ft^3/s)	Gage height (ft)
1958	Apr. 1, 1958	1,540	5.65	1979	Mar. 28, 1979	1,550	5.65
1958	Apr. 3, 1958	2,060	6.57	1980	Feb. 21, 1980	4,200	12.0
1966	Nov. 22, 1965	1,950	6.37	1986	Feb. 15, 1986	1,180	4.93

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.64	e1.2	1.5	2.3	2.0	2.4	2.9	1.2	.67	.67	.40	.40
2	e.70	e1.3	1.5	2.1	2.0	2.4	2.5	1.0	.81	.65	.36	.49
3	e.75	1.3	1.6	2.0	2.1	4.3	2.7	1.0	.82	.63	.34	.50
4	e.80	1.3	1.7	3.0	2.3	3.6	2.6	.93	.87	.61	.40	.41
5	e.86	1.2	1.8	4.5	6.7	3.2	2.0	.89	.89	.58	.48	.41
6	e.92	1.1	1.7	7.7	4.1	3.0	1.9	.97	.76	.61	.52	.41
7	e.99	1.3	1.7	5.7	3.3	2.7	1.8	.95	.77	.62	.52	.41
8	1.0	1.2	1.6	4.1	3.2	2.7	1.8	.82	.78	.66	.49	.41
9	.85	1.3	1.6	3.4	3.3	2.3	1.9	.87	.85	.70	.58	.55
10	.83	1.4	1.6	3.1	4.6	2.3	1.8	.93	.79	.75	.92	.61
11	.91	1.4	1.6	2.9	4.2	2.2	1.8	1.2	1.0	.79	.76	.53
12	.83	1.4	1.7	2.7	3.9	2.1	1.9	1.4	.88	.70	.64	.47
13	.92	1.4	1.6	2.6	3.9	2.1	2.2	1.4	.71	.46	.38	.48
14	1.1	1.7	1.7	2.3	3.8	2.1	2.1	1.5	.67	.40	.38	.44
15	1.1	1.6	1.7	2.0	3.4	2.0	2.1	1.6	.64	.41	.39	.55
16	1.1	1.6	1.7	2.4	3.2	2.0	1.7	1.5	.63	.45	.31	.70
17	e1.2	1.5	1.7	2.3	3.0	2.0	1.7	1.4	.64	.42	.34	.79
18	e1.2	1.6	1.9	2.3	2.8	1.9	1.8	1.2	.59	.42	.44	.80
19	e1.2	1.6	1.9	2.2	2.8	1.9	1.7	1.1	.59	.42	.58	.71
20	e1.2	1.6	1.9	2.3	2.9	1.9	1.5	1.1	.59	.37	.52	.71
21	e1.2	1.6	1.9	2.2	2.9	1.9	1.4	1.1	.56	.40	.50	.59
22	e1.2	1.5	1.8	2.2	2.8	1.9	1.2	.96	.54	.36	.44	.64
23	e1.2	1.5	1.8	2.2	2.7	1.8	1.3	.87	.63	.38	.42	.56
24	e1.2	1.5	2.0	2.2	2.6	1.8	1.3	.90	.70	.38	.44	.61
25	e1.2	1.8	17	2.2	2.6	3.0	1.4	.90	.72	.36	.50	.71
26	e1.2	1.7	5.2	2.0	2.6	9.6	1.5	.90	.74	.34	.48	.73
27	e1.2	1.7	3.3	2.1	2.6	5.3	1.5	.89	.65	.30	.56	.72
28	e1.2	1.6	2.9	2.0	2.5	4.2	1.4	.75	.62	.31	.57	.67
29	e1.2	1.6	2.7	1.9	---	4.3	1.3	.69	.63	.29	.42	.68
30	e1.2	1.6	2.5	1.9	---	3.8	1.3	.69	.68	.48	.41	.66
31	e1.2	---	2.4	1.9	---	3.3	---	.66	---	.45	.41	---
TOTAL	32.30	44.1	77.2	84.7	88.8	90.0	54.0	32.27	21.42	15.37	14.90	17.35
MEAN	1.04	1.47	2.49	2.73	3.17	2.90	1.80	1.04	.71	.50	.48	.58
MAX	1.2	1.8	17	7.7	6.7	9.6	2.9	1.6	1.0	.79	.92	.80
MIN	.64	1.1	1.5	1.9	2.0	1.8	1.2	.66	.54	.29	.31	.40
AC-FT	64	87	153	168	176	179	107	64	42	30	30	34

CAL YR 1988 TOTAL 955.34 MEAN 2.61 MAX 80 MIN .36 AC-FT 1890
WTR YR 1989 TOTAL 572.41 MEAN 1.57 MAX 17 MIN .29 AC-FT 1140

e Estimated.

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 mi^2.

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 ft^3/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, 19,970 acre-ft, Apr. 5, elevation, 1,435.86 ft; minimum, 18,400 acre-ft, Sept. 30, elevation, 1,433.40 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 1988 TO SEPTEMBER 1989
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19450	19320	19270	19390	19550	19770	19930	19840	19640	19360	18980	18630
2	19450	19320	19270	19390	19560	19780	19950	19830	19620	19340	18960	18610
3	19450	19320	19260	19390	19560	19790	19940	19820	19620	19330	18940	18610
4	19440	19320	19270	19430	19570	19800	19950	19820	19620	19320	18930	18590
5	19430	19320	19260	19430	19580	19810	19950	19820	19610	19320	18930	18590
6	19410	19310	19260	19450	19590	19820	19940	19820	19600	19300	18920	18560
7	19410	19310	19250	19450	19590	19840	19930	19810	19600	19280	18910	18550
8	19410	19310	19250	19460	19590	19840	19940	19800	19590	19270	18900	18540
9	19410	19300	19250	19470	19600	19840	19930	19790	19590	19270	18890	18530
10	19410	19300	19240	19480	19620	19850	19920	19780	19580	19250	18880	18520
11	19390	19300	19240	19480	19630	19850	19920	19780	19580	19240	18880	18510
12	19390	19290	19250	19480	19630	19860	19920	19770	19570	19240	18870	18510
13	19380	19290	19250	19480	19640	19860	19920	19770	19570	19220	18860	18500
14	19380	19310	19240	19490	19660	19860	19920	19770	19560	19200	18840	18500
15	19370	19310	19250	19490	19670	19860	19920	19770	19550	19180	18830	18490
16	19370	19300	19260	19500	19680	19860	19910	19770	19540	19180	18810	18480
17	19360	19300	19270	19500	19690	19870	19910	19750	19530	19160	18790	18480
18	19360	19290	19290	19510	19700	19870	19910	19750	19520	19150	18790	18460
19	19360	19290	19310	19520	19700	19880	19910	19750	19520	19150	18780	18460
20	19360	19290	19300	19520	19720	19880	19900	19750	19500	19130	18760	18460
21	19360	19280	19320	19520	19730	19870	19890	19730	19480	19120	18760	18460
22	19350	19280	19320	19530	19730	19860	19880	19730	19460	19110	18730	18460
23	19350	19280	19320	19520	19750	19860	19870	19710	19450	19100	18730	18460
24	19340	19280	19350	19520	19750	19860	19860	19710	19440	19090	18710	18450
25	19340	19280	19360	19530	19760	19880	19840	19700	19430	19080	18710	18450
26	19340	19280	19380	19530	19770	19890	19840	19690	19420	19060	18700	18440
27	19330	19280	19380	19540	19770	19900	19860	19680	19410	19050	18690	18430
28	19330	19280	19380	19540	19770	19910	19840	19670	19390	19040	18680	18420
29	19320	19290	19380	19550	---	19910	19840	19660	19380	19030	18670	18410
30	19320	19290	19380	19550	---	19930	19840	19660	19360	19010	18650	18400
31	19320	---	19390	19550	---	19950	---	19640	---	18990	18640	---
MAX	19450	19320	19390	19550	19770	19950	19950	19840	19640	19360	18980	18630
MIN	19320	19280	19240	19390	19550	19770	19840	19640	19360	18990	18640	18400
a	1434.84	1434.79	1434.96	1435.21	1435.54	1435.82	1435.65	1435.35	1434.91	1434.33	1433.77	1433.40
b	-140	-30	+100	+160	+220	+180	-110	-200	-280	-370	-350	-240

CAL YR 1988 MAX 24700 MIN 19240 b -3970
WTR YR 1989 MAX 19950 MIN 18400 b -1060

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

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 mi^2.

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 poor. No regulation or diversion upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 24	2330	*13	*4.01				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	.03	.77	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.26	.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	.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	.34	.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	1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.66	.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	2.00	0.38	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.065	.012	.027	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	1.0	.26	.77	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	4.0	.8	1.5	.00	.00	.00	.00	.00	.00	.00

CAL YR 1988 TOTAL 10.73 MEAN .029 MAX 4.0 MIN .00 AC-FT 21
WTR YR 1989 TOTAL 3.15 MEAN .009 MAX 1.0 MIN .00 AC-FT 6.2

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 mi^2.

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.--No estimated daily discharges. Records poor. 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 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 24	2400	*91	*4.65				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	2.6	.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	.22	.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	.08	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.51	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	2.1	.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	.38	.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	7.4	.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	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	4.8	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	4.8	.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	20.00	2.82	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.65	.091	.004	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	7.4	2.6	.08	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	40	5.6	.2	.00	.00	.00	.00	.00	.00	.00

CAL YR 1988 TOTAL 75.20 MEAN .21 MAX 22 MIN .00 AC-FT 149
WTR YR 1989 TOTAL 22.93 MEAN .063 MAX 7.4 MIN .00 AC-FT 45

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 Tucalota Creek, and 2.2 mi northeast of Temecula.

DRAINAGE AREA.--92.8 mi^2.

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.--No estimated daily discharges. Records poor. No regulation upstream from station. Flow less than 1 ft^3/s from urban runoff at times bypasses station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 4	1600	*55	*4.60				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	3.7	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	6.0	14	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	8.3	6.4	.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	3.4	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	2.9	.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	1.3	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	1.5	.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	.50
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.78	.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	.43	.00	.00	.00	.00	.00	.00
24	.00	.00	1.2	.00	.00	5.2	.00	.00	.00	.00	.00	.00
25	.00	.00	.49	.00	.00	6.7	.00	.00	.00	.00	.00	.00
26	.00	.00	.20	.00	.00	.86	.00	.00	.00	.00	.00	.00
27	.00	.00	.67	.00	.00	.02	.00	.00	.00	.00	.00	.00
28	.00	.00	.22	.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	3.56	14.30	29.50	17.03	0.00	0.00	0.00	0.00	0.00	0.50
MEAN	.000	.000	.11	.46	1.05	.55	.000	.000	.000	.000	.000	.017
MAX	.00	.00	1.2	8.3	14	6.7	.00	.00	.00	.00	.00	.50
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	7.1	28	59	34	.00	.00	.00	.00	.00	1.0

CAL YR 1988 TOTAL 20.01 MEAN .055 MAX 15 MIN .00 AC-FT 40
WTR YR 1989 TOTAL 64.89 MEAN .18 MAX 14 MIN .00 AC-FT 129

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 Tucalota Creek.

DRAINAGE AREA.--222 mi^2.

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 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.

AVERAGE DISCHARGE.--65 years, 10.8 ft^3/s, 7,820 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,800 ft^3/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.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 25	0345	*186	*3.95				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	.01	.00	1.4	.00	.00	.11	.34	2.6	2.1	2.1	3.1
2	.97	.01	.00	1.6	.00	.69	.06	1.7	2.6	2.5	2.2	3.2
3	1.0	.00	.00	2.1	.00	2.3	.14	2.3	2.4	2.6	2.4	3.2
4	1.1	.00	.00	35	14	1.1	.09	2.1	2.3	2.3	2.4	3.3
5	1.3	.00	.00	7.7	2.9	.68	.02	1.7	2.3	2.3	2.6	3.3
6	1.5	.00	.00	19	.33	.23	.00	1.7	1.9	2.2	2.6	3.3
7	1.4	.00	.01	1.4	.23	.20	.00	2.0	1.8	2.4	2.6	2.9
8	1.3	.01	.01	.28	.33	.04	.00	2.0	1.9	2.3	2.5	3.0
9	1.3	.01	.00	.17	.34	.00	.00	2.1	1.7	2.2	2.3	3.3
10	1.3	.03	.01	.24	2.9	.01	.00	1.8	1.7	2.1	2.4	3.3
11	1.2	.03	.04	.28	.86	.01	.01	1.8	2.0	1.7	2.5	3.1
12	1.2	.01	.07	.29	.09	.01	.04	1.9	1.9	2.1	2.5	3.1
13	1.2	.05	.10	.39	.47	.01	.04	1.7	2.0	2.1	2.5	3.2
14	1.2	.22	.13	.43	.94	.00	.06	1.7	1.9	2.2	2.6	3.3
15	1.2	.17	.33	.41	.65	.00	.01	1.7	2.2	2.1	2.4	3.7
16	1.1	.14	.68	.43	.37	.04	.36	2.0	2.2	2.2	2.4	3.7
17	1.1	.11	.34	.48	.30	.19	.05	2.2	1.9	2.3	2.3	3.9
18	.97	.12	.53	.48	.01	.18	.00	2.4	2.1	2.4	2.1	3.8
19	.86	.10	.75	.51	.00	.04	.00	2.2	2.1	2.5	1.8	3.8
20	.80	.11	.38	.48	.00	.04	.00	2.0	2.2	2.2	2.2	4.0
21	.90	.11	40	.48	.00	.04	.00	2.2	2.2	2.0	1.9	3.8
22	.92	.14	4.3	.48	.00	.01	.00	2.3	2.3	1.9	1.9	3.6
23	.92	.17	.74	.25	.00	.01	.00	2.3	2.4	2.1	2.0	3.6
24	1.0	.10	2.7	.33	.00	.01	.00	2.6	2.3	2.0	2.2	3.5
25	1.1	.30	70	.36	.00	3.2	.00	2.8	2.3	1.9	2.0	3.6
26	1.1	.13	3.5	.32	.00	5.7	.00	2.8	2.0	1.9	2.0	3.2
27	1.2	.02	1.2	.00	.00	e.54	.00	2.7	2.1	1.9	2.1	3.4
28	1.2	.00	1.4	.00	.00	.37	.18	2.6	2.1	1.9	2.2	3.3
29	1.2	.00	.97	.00	---	.54	.57	2.6	2.2	2.3	2.6	3.3
30	1.2	.00	.96	.00	---	.12	.44	2.7	2.1	2.0	3.3	3.3
31	.48	---	1.1	.00	---	.24	---	2.7	---	1.8	3.2	---
TOTAL	34.32	2.10	130.25	75.29	24.72	16.55	2.18	65.64	63.7	66.5	72.8	102.1
MEAN	1.11	.070	4.20	2.43	.88	.53	.073	2.12	2.12	2.15	2.35	3.40
MAX	1.5	.30	70	35	14	5.7	.57	2.8	2.6	2.6	3.3	4.0
MIN	.48	.00	.00	.00	.00	.00	.00	.34	1.7	1.7	1.8	2.9
AC-FT	68	4.2	258	149	49	33	4.3	130	126	132	144	203

CAL YR 1988 TOTAL 928.03 MEAN 2.54 MAX 300 MIN .00 AC-FT 1840
WTR YR 1989 TOTAL 656.15 MEAN 1.80 MAX 70 MIN .00 AC-FT 1300

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 mi^2.

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 Tucalota 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 ft^3/s, 20,420 acre-ft/yr; 41 years (water years 1949-89), 14.7 ft^3/s, 10,650 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,000 ft^3/s, Feb. 16, 1927, gage height, 14.6 ft, at site then in use, from rating curve extended above 10,000 ft^3/s; minimum daily, 0.16 ft^3/s, Mar. 31, Apr. 1, 11, 1988. Since partial regulation by Vail Lake and Skinner Reservoir, maximum discharge 22,000 ft^3/s, Feb. 21, 1980, gage height, 16.5 ft, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 246 ft^3/s, Dec. 25, gage height, 5.82 ft; minimum daily, 0.18 ft^3/s, Nov. 23.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	.34	.27	1.1	.52	.90	.47	e.42	e3.2	e2.6	e2.6	e3.7
2	1.5	.28	.28	1.2	.59	1.6	.48	e2.1	e3.1	e2.4	e2.7	e3.8
3	2.2	.26	.28	1.1	.64	2.9	.50	e2.5	e3.0	e2.6	e2.9	e4.0
4	1.7	.27	.27	32	24	1.3	.39	e2.7	e2.9	e2.5	e2.9	e4.0
5	1.6	.25	.25	10	7.1	1.5	.38	e2.2	e2.8	e2.6	e3.1	e4.1
6	1.7	.22	.30	28	.86	1.5	.35	e2.1	e2.5	e2.7	e3.2	e4.0
7	1.6	.22	.31	3.0	.54	1.6	.31	e2.4	e2.2	e2.9	e3.1	e3.5
8	1.4	.20	.33	1.2	.54	2.1	.30	e2.4	e2.3	e2.8	e3.0	e3.7
9	1.4	.19	.46	.90	.81	1.1	.29	e2.6	e2.1	e2.7	e2.8	e4.0
10	1.2	.21	.49	.85	3.9	1.3	.30	e2.3	e2.1	e2.6	e2.9	e4.0
11	1.2	.31	.51	.76	1.1	1.7	.30	e2.2	e2.4	e2.2	e3.0	e3.8
12	1.2	.22	.51	.66	.56	1.9	.32	e2.2	e2.3	e2.5	e3.0	e3.7
13	1.2	.24	.51	.74	.82	2.0	.29	e2.3	e2.4	e2.6	e3.1	e4.0
14	1.5	.37	.55	.76	1.2	2.2	.26	e2.1	e2.3	e2.7	e3.2	e4.1
15	1.5	.34	.71	.76	.80	2.2	.25	e2.1	e2.6	e2.6	e2.9	e4.3
16	1.4	.31	1.1	.76	.74	2.2	.25	e2.4	e2.7	e2.7	e2.9	e4.5
17	1.4	.35	.68	.57	.42	2.2	.42	e2.7	e2.4	e2.8	e2.8	e4.7
18	1.2	.28	1.0	.48	.42	2.3	.26	e2.9	e2.5	e3.0	e2.6	e4.5
19	1.2	.28	1.9	.48	.70	2.4	.24	e2.7	e2.6	e2.9	e2.3	e4.7
20	1.0	.26	.85	.46	.44	2.2	.23	e2.5	e2.7	e2.6	e2.6	e4.8
21	.89	.24	46	.46	.47	1.9	.22	e2.6	e2.7	e2.4	e2.3	e4.6
22	.96	.29	5.7	.46	.72	2.0	.21	e2.8	e2.8	e2.3	e2.3	e4.4
23	.92	.18	e1.0	.52	.47	2.0	.21	e2.9	e2.9	e2.5	e2.5	e4.4
24	.83	.22	6.2	.54	.46	2.0	e.20	e3.0	e2.8	e2.4	e2.7	e4.3
25	1.1	.32	92	.54	.51	11	e.20	e3.4	e2.7	e2.3	e2.4	e4.4
26	1.0	.34	4.2	.60	.50	12	e.20	e3.4	e2.5	e2.3	e2.5	e4.0
27	1.2	.28	3.9	.64	.73	.72	e.20	e3.3	e2.6	e2.3	e2.6	e4.1
28	1.4	.27	3.3	.64	.90	.53	e.40	e3.2	e2.6	e2.4	e2.8	e4.0
29	1.7	.28	2.2	.55	---	.50	e.70	e3.2	e2.7	e2.7	e3.3	e4.0
30	1.8	.27	1.1	.52	---	.56	e.57	e3.3	e2.6	e2.5	e3.9	e4.1
31	1.3	---	1.1	.52	---	e.60	---	e3.3	---	e2.2	e3.8	---
TOTAL	41.80	8.09	178.26	91.77	51.46	70.91	9.70	80.22	78.0	79.3	88.7	124.2
MEAN	1.35	.27	5.75	2.96	1.84	2.29	.32	2.59	2.60	2.56	2.86	4.14
MAX	2.2	.37	92	32	24	12	.70	3.4	3.2	3.0	3.9	4.8
MIN	.83	.18	.25	.46	.42	.50	.20	.42	2.1	2.2	2.3	3.5
AC-FT	83	16	354	182	102	141	19	159	155	157	176	246

CAL YR 1988 TOTAL 1270.81 MEAN 3.47 MAX 315 MIN .16 AC-FT 2520
WTR YR 1989 TOTAL 902.41 MEAN 2.47 MAX 92 MIN .18 AC-FT 1790

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 mi^2.

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. See WSP 1735 for history of changes prior to Nov. 27, 1935. Nov. 27, 1935, to Feb. 25, 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. 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 ft^3/s, 24,710 acre-ft/yr; 9 years (water years 1981-89), 31.9 ft^3/s, 23,110 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,600 ft^3/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, 137 ft^3/s, Dec. 26, gage height, 4.47 ft; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	19	22	3.6	6.0	7.9	4.4	1.2	.01	.00	.00
2	.00	.00	16	19	3.5	5.8	8.0	4.3	2.3	.00	.00	.00
3	.00	.00	8.9	19	3.5	5.7	7.6	3.9	3.6	.00	.00	.00
4	.00	.00	5.2	18	4.9	5.5	6.3	3.5	3.5	.00	.00	.00
5	.00	.00	2.9	24	21	5.1	5.7	4.0	5.0	.00	.00	.00
6	.00	.00	2.3	35	19	5.0	5.0	3.4	6.0	.00	.00	.00
7	.00	.00	2.0	26	8.9	4.9	5.1	5.0	5.5	.00	.00	.00
8	.00	.00	2.5	16	7.4	5.3	4.8	5.1	4.6	.00	.00	.00
9	.00	.00	4.5	13	6.6	6.1	5.0	3.2	4.7	.00	.00	.00
10	.00	.00	3.2	12	6.7	5.9	4.9	3.7	4.9	.00	.00	.00
11	.00	.00	2.6	10	7.0	6.4	4.2	4.7	4.4	.00	.00	.00
12	.00	.00	e2.0	9.7	7.5	6.9	4.1	3.4	4.4	.00	.00	.00
13	.00	.00	e1.1	8.9	8.2	6.5	3.6	4.7	2.9	.00	.00	.00
14	.00	.00	e.92	8.6	8.7	6.7	4.0	5.8	8.1	.00	.00	.00
15	.00	.04	.93	7.8	9.3	6.3	4.1	5.9	5.0	.00	.00	.00
16	.00	.51	3.3	7.7	9.5	5.5	4.2	5.6	3.7	.00	.00	.00
17	.00	.89	5.2	6.8	9.4	5.4	4.0	6.0	2.8	.00	.00	.00
18	.00	4.1	6.6	6.3	9.5	5.0	4.1	6.0	3.7	.00	.00	.00
19	.00	5.8	7.3	6.3	9.4	5.2	4.0	5.2	3.7	.00	.00	.00
20	.00	6.2	8.8	6.1	9.2	5.2	2.9	4.6	1.7	.00	.00	.00
21	.00	5.0	15	5.3	8.8	4.6	3.0	4.5	.93	.00	.00	.00
22	.00	3.6	23	5.1	8.3	4.8	4.2	5.4	.70	.00	.00	.00
23	.00	2.8	25	4.9	7.8	4.9	4.5	4.3	.56	.00	.00	.00
24	.00	2.7	21	5.3	7.1	4.8	4.9	3.3	.58	.00	.00	.00
25	.00	3.4	67	5.0	7.0	6.0	5.1	4.1	.78	.00	.00	.00
26	.00	3.4	103	4.5	6.8	6.5	4.6	3.3	.61	.00	.00	.00
27	.00	1.5	52	3.9	6.7	8.8	4.5	2.3	.73	.00	.00	.00
28	.00	1.0	34	4.1	6.3	7.6	4.6	3.3	.41	.00	.00	.00
29	.00	.96	27	4.2	---	8.0	5.3	3.1	.13	.00	.00	.00
30	.00	2.9	24	4.0	---	8.5	4.7	2.0	.09	.00	.00	.00
31	.00	---	23	4.0	---	8.3	---	1.4	---	.00	.00	---
TOTAL	0.00	44.80	519.25	332.5	231.6	187.2	144.9	129.4	87.22	0.01	0.00	0.00
MEAN	.000	1.49	16.7	10.7	8.27	6.04	4.83	4.17	2.91	.000	.000	.000
MAX	.00	6.2	103	35	21	8.8	8.0	6.0	8.1	.01	.00	.00
MIN	.00	.00	.92	3.9	3.5	4.6	2.9	1.4	.09	.00	.00	.00
AC-FT	.00	89	1030	660	459	371	287	257	173	.02	.00	.00

CAL YR 1988 TOTAL 3229.20 MEAN 8.82 MAX 762 MIN .00 AC-FT 6410
WTR YR 1989 TOTAL 1676.88 MEAN 4.59 MAX 103 MIN .00 AC-FT 3330

e Estimated

11046250 SAN ONOFRE CREEK AT SAN ONOFRE, CA

LOCATION.--Lat 33°23'00", long 117°34'22", in SE 1/4 SE 1/4, sec.14, T.9 S., R.7 W., San Diego County, Hydrologic Unit 18070301, on left bank 0.2 mi north of San Onofre, 0.3 mi upstream from Interstate 5, and 0.5 mi upstream from mouth.

DRAINAGE AREA.--42.2 mi^2.

PERIOD OF RECORD.--October 1946 to September 1967. January to September 1989 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 15 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No regulation upstream from station. Detention basins upstream from station for ground-water recharge. Pumping upstream from station for irrigation and water supply.

AVERAGE DISCHARGE.--21 years, (1947-67) 1.44 ft^3/s, 1,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,600 ft^3/s, Apr. 1, 1958, gage height, 6.90 ft, no flow for all or part of most years.

EXTREMES FOR CURRENT YEAR.--No flow for the period January to September 1989.

11046250 SAN ONOFRE CREEK AT SAN ONOFRE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
WATER TEMPERATURE: January 1982 to September 1983, October 1987 to September 1989 (discontinued).
SEDIMENT DATA: January 1982 to September 1983, October 1987 to September 1989 (discontinued).

REMARKS.--No flow for the entire 1989 year.

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	NUMBER OF SAMPLING POINTS (COUNT)	DISCHARGE, 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							
03...	1610	1	0.0	--	--	7	14
03...	1615	1	0.0	--	1	5	28
03...	1620	1	0.0	1	2	10	42

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
MAY						
03...	50	77	86	90	93	100
03...	70	94	98	100	--	--
03...	78	94	98	100	--	--

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 mi^2.

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.--No estimated daily discharges. Records fair. 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 ft^3/s, Dec. 17, 1988, gage height, 13.58 ft, from rating curve extended above 30 ft^3/s; no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 25, 1969, reached a discharge of 22,400 ft^3/s, at site 1.9 mi upstream.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 200 ft^3/s and maximum (*), from rating curve extended above 30 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 25	0345	*382	*13.27				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	1.2	.48	.35	.46	.00	.00	.00	.00	.00
2	.00	.00	.00	.79	.63	1.3	.32	.00	.00	.00	.00	.00
3	.00	.00	.00	.42	.84	1.5	.15	.00	.00	.00	.00	.00
4	.00	.00	.00	.32	1.6	1.2	.02	.00	.00	.00	.00	.00
5	.00	.00	.00	.76	2.8	1.0	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	1.8	1.3	.91	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	1.3	1.2	.79	.01	.00	.00	.00	.00	.00
8	.00	.00	.00	.95	1.2	.72	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.79	2.1	.64	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.53	4.3	.64	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.45	1.6	.64	.02	.00	.00	.00	.00	.00
12	.00	.00	.00	.33	1.3	.60	.05	.00	.00	.00	.00	.00
13	.00	.00	.00	.40	1.2	.64	.09	.00	.00	.00	.00	.00
14	.00	.37	.00	.53	1.2	1.0	.00	.00	.00	.00	.00	.00
15	.00	.00	.67	.56	1.1	.73	.00	.00	.00	.00	.00	.00
16	.00	.00	2.3	.56	1.0	.67	.00	.00	.00	.00	.00	.00
17	.00	.00	.02	.36	1.2	1.2	.00	.00	.00	.00	.00	.00
18	.00	.00	.58	.36	1.3	1.1	.00	.00	.00	.00	.00	.00
19	.00	.00	2.3	.54	1.1	.66	.00	.00	.00	.00	.00	.00
20	.00	.00	.52	.45	1.0	.92	.00	.00	.00	.00	.00	.00
21	.00	.00	28	.59	.81	.39	.00	.00	.00	.00	.00	.00
22	.00	.00	2.8	.42	.76	.32	.00	.00	.00	.00	.00	.00
23	.00	.00	2.0	.39	.64	.41	.00	.00	.00	.00	.00	.00
24	.00	.00	30	.51	.50	.29	.00	.00	.00	.00	.00	.00
25	.00	.45	56	.37	.44	5.0	.00	.00	.00	.00	.00	.00
26	.00	.00	2.8	.17	.40	3.9	.00	.00	.00	.00	.00	.00
27	.00	.00	1.7	.37	.41	2.0	.00	.00	.00	.00	.00	.00
28	.00	.00	1.5	.51	.35	1.4	.00	.00	.00	.00	.00	.00
29	.00	.00	1.3	.47	---	1.2	.00	.00	.00	.00	.00	.00
30	.00	.00	1.2	.34	---	.86	.00	.00	.00	.00	.00	.00
31	.00	---	1.1	.46	---	.73	---	.00	---	.00	.00	---
TOTAL	0.00	0.82	134.79	18.00	32.76	33.71	1.12	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.027	4.35	.58	1.17	1.09	.037	.000	.000	.000	.000	.000
MAX	.00	.45	56	1.8	4.3	5.0	.46	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.17	.35	.29	.00	.00	.00	.00	.00	.00
AC-FT	.00	1.6	267	36	65	67	2.2	.00	.00	.00	.00	.00

CAL YR 1988 TOTAL 424.33 MEAN 1.16 MAX 56 MIN .00 AC-FT 842
WTR YR 1989 TOTAL 221.20 MEAN .61 MAX 56 MIN .00 AC-FT 439

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 to current year.
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 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	TEMPERATURE WATER (DEG C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
DEC					
16...	1100	3.4	13.0	1600	15
22...	2215	2.6	11.0	214	1.5
24...	1545	1.3	11.0	12	0.04
24...	2100	300	12.0	2270	1840
JAN					
04...	1400	0.40	16.0	3	0.00
20...	0750	0.46	8.0	19	0.02
FEB					
04...	1530	3.0	13.0	97	0.79
09...	1115	2.5	13.0	89	0.60
09...	1330	2.7	13.0	134	0.98
19...	1045	1.0	12.0	38	0.10
MAR					
01...	0845	0.35	13.0	47	0.04
02...	1115	2.9	14.0	125	0.98
25...	1300	18	16.0	140	6.8

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	NUMBER OF SAMPLING POINTS (COUNT)	DISCHARGE, 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							
04...	1030	4	0.0	3	7	16	28

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							
04...	42	55	63	72	85	97	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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1972 to September 1977, October 1983 to September 1989 (discontinued). Records prior to October 1963, in files of Orange County Environmental Management Agency.

GAGE.--Water-stage recorder. Elevation of gage is 80 ft above National Geodetic Vertical Datum of 1929, from topographic map.

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

AVERAGE DISCHARGE.--11 years (water years 1973-77, 1984-89), 6.76 ft^3/s, 4,898 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,020 ft^3/s, Feb. 15, 1986, gage height, 15.35 ft, from rating curve extended above 220 ft^3/s; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 450 ft^3/s and maximum (*), from rating curve extended above 340 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 21	0545	697	13.62	Mar. 25	1415	489	13.16
Dec. 24	2115	*1,490	*14.75				

No flow Aug. 6.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	.91	.95	20	e4.0	3.1	1.8	.87	3.0	.77	.13	.69
2	2.0	1.7	.88	7.5	e4.5	33	1.7	.75	3.1	.62	.22	.55
3	1.6	1.8	.85	5.1	e4.5	7.7	2.0	.29	2.7	1.1	.13	.49
4	.51	.99	.79	8.2	e140	2.0	2.1	.56	2.9	.95	.22	.49
5	.48	.72	.96	31	e90	2.0	1.8	e.62	3.2	1.2	.10	.22
6	.51	.70	e.90	33	e20	1.8	1.6	e.46	3.3	1.1	.00	.28
7	1.5	1.5	e.80	e3.0	e10	1.8	.98	.80	3.6	.95	.11	.36
8	.74	1.5	e.80	e2.5	e20	2.2	1.1	1.0	3.8	.86	.24	.36
9	.70	.96	e.90	e2.5	e140	2.2	1.3	1.1	3.4	.55	.24	.42
10	.76	.65	e1.0	e2.5	e50	2.6	1.4	1.4	3.1	.86	.17	.12
11	.72	2.2	e.90	e2.5	e20	2.0	1.6	1.7	2.9	.69	.11	.35
12	.77	.69	e.90	e2.5	e10	1.8	2.6	1.5	3.1	.86	.10	.42
13	.65	.58	e1.0	e3.0	e5.0	2.2	1.9	1.3	2.9	.77	.06	.39
14	1.9	38	e1.0	e3.0	e4.0	2.2	1.5	1.5	3.1	.54	.17	.22
15	1.6	.72	e40	e3.0	e4.0	2.4	.88	2.5	3.1	.36	.36	.17
16	1.1	.39	e200	e3.0	e4.5	2.4	.99	1.9	3.1	.42	.48	.28
17	1.4	.45	e10	e3.0	e3.5	2.6	.92	1.8	2.4	.69	.29	.42
18	.80	.61	e4.0	e3.5	e3.5	2.0	.69	1.9	2.0	.69	.29	.55
19	.96	.62	e15	e3.5	e3.0	2.0	.69	2.0	2.6	1.1	.28	41
20	.87	.65	3.5	3.9	e3.0	2.4	.49	1.9	3.1	.77	.13	2.6
21	1.1	.76	184	e4.0	e3.0	2.4	.45	1.7	2.9	.86	.29	2.2
22	.98	1.2	6.9	e3.5	e3.5	2.9	.28	2.0	2.6	.49	.29	2.0
23	1.2	1.0	29	e3.5	e3.5	2.4	.17	2.1	1.4	.49	.42	2.2
24	1.2	9.0	180	e5.0	e3.0	2.6	.13	2.3	.95	.69	.28	2.2
25	1.0	38	204	e4.0	e3.0	88	.27	2.1	.95	.69	.28	2.6
26	1.0	1.3	36	e4.0	e3.0	23	1.0	2.5	1.8	.42	.49	2.9
27	.99	.80	18	e3.5	e3.0	4.8	.73	2.3	1.3	.36	.22	2.6
28	1.1	.80	12	e3.5	e3.0	3.4	.90	2.2	1.3	.17	.46	2.4
29	1.1	.88	8.7	e3.5	---	2.1	.63	2.4	1.4	.17	.55	2.4
30	1.2	.90	6.8	e3.5	---	1.9	.50	2.7	1.2	.01	1.2	2.4
31	1.0	---	13	e3.5	---	1.9	---	3.3	---	.15	1.3	---
TOTAL	33.84	110.98	983.53	187.7	568.5	215.8	33.10	51.45	76.20	20.35	9.61	74.28
MEAN	1.09	3.70	31.7	6.05	20.3	6.96	1.10	1.66	2.54	.66	.31	2.48
MAX	2.4	38	204	33	140	88	2.6	3.3	3.8	1.2	1.3	41
MIN	.48	.39	.79	2.5	3.0	1.8	.13	.29	.95	.01	.00	.12
AC-FT	67	220	1950	372	1130	428	66	102	151	40	19	147

CAL YR 1988 TOTAL 2357.34 MEAN 6.44 MAX 331 MIN .00 AC-FT 4680
WTR YR 1989 TOTAL 2365.34 MEAN 6.48 MAX 204 MIN .00 AC-FT 4690

e Estimated.

11047300 ARROYO TRABUCO AT SAN JUAN CAPISTRANO, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1971-78, December 1983 to current year.
WATER TEMPERATURE: Water years 1971-78, December 1983 to current year.
SEDIMENT DATA: 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 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	TEMPERATURE WATER (DEG C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT						
28...	1345	1.1	21.0	495	1.5	99
NOV						
24...	1330	3.5	15.0	325	3.1	--
25...	1100	180	13.0	5170	2510	--
DEC						
15...	1315	0.36	15.0	673	0.65	--
15...	2355	230	13.0	5770	3580	--
16...	0830	431	13.0	12200	14200	54
18...	1100	56	9.0	6430	972	--
20...	1030	1.3	--	79	0.28	--
22...	2300	14	12.0	970	37	--
24...	1600	4.3	11.0	94	1.1	--
24...	2130	1410	11.0	22100	84100	--
JAN						
04...	1400	5.8	16.0	379	5.9	--
20...	1005	3.9	12.0	66	0.69	--
FEB						
04...	1545	230	--	6830	4240	--
09...	1100	102	--	1760	485	--
09...	1345	141	--	2220	845	--
19...	1040	3.0	11.0	67	0.54	--
MAR						
01...	1055	3.1	18.0	44	0.37	--
02...	1245	69	13.0	2110	393	--
25...	1315	394	16.0	9870	10500	--
MAY						
04...	1315	0.49	28.0	4	0.01	65
JUN						
09...	1530	4.4	21.0	30	0.36	80
JUL						
14...	1020	0.62	25.0	47	0.08	80
AUG						
16...	1630	0.55	27.0	22	0.03	--
SEP						
14...	1015	0.36	27.0	14	0.01	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	TEMPERATURE WATER (DEG C)	NUMBER OF SAMPLING POINTS (COUNT)	DISCHARGE, 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								
04...	1545	28.0	3	0.49	1	2	8	16

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							
04...	28	38	48	60	78	96	100

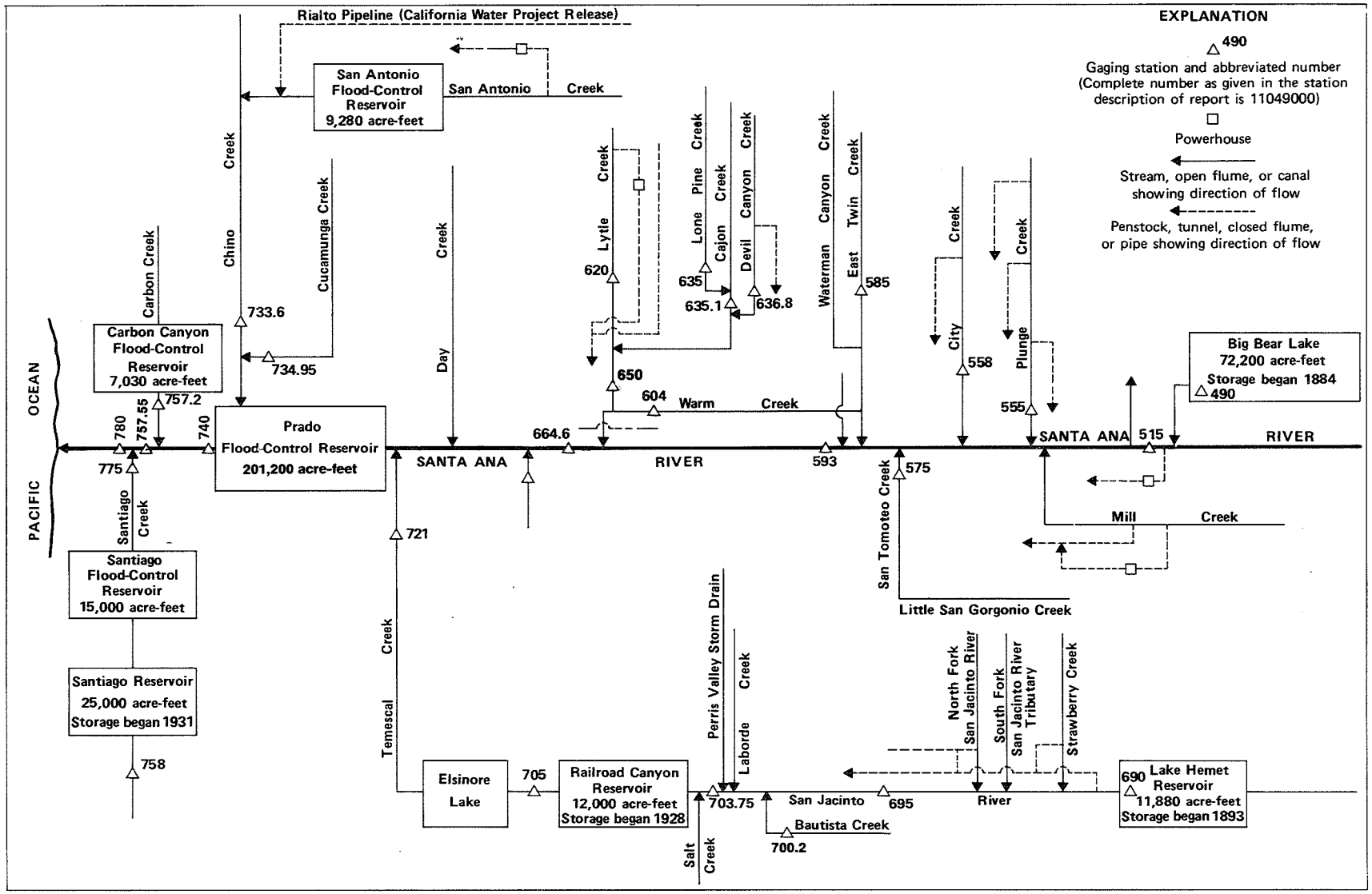

Figure 18. Diversions and storage in Santa Ana River basin.

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 mi^2, 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; new 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 1988 and April 1989, 612 acre-ft was pumped from the lake for snowmaking. 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, 50,220 acre-ft, Apr. 10; minimum contents observed, 42,940 acre-ft, Sept. 25.

MONTHEND CONTENTS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

Date	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30	49,460	--
Oct. 31	48,320	-1,140
Nov. 30	47,810	-510
Dec. 31	47,310	-500
CAL YR 1988	--	-6,570
Jan. 31	-- (Frozen)	--
Feb. 28	49,080	--
Mar. 31	49,970	+890
Apr. 30	49,590	-380
May 31	48,440	-1,150
June 30	47,310	-1,130
July 31	45,330	-1,980
Aug. 31	44,020	-1,310
Sept. 30	42,940	-1,080
WTR YR 1989	--	-6,520

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 mi^2, including area tributary to Baldwin Lake at head of Bear Valley.

WATER-DISCHARGE RECORDS

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.--Records good. 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: 75 years (water years 1915-89), 35.6 ft^3/s, 25,790 acre-ft/yr.
Combined river and canal: 93 years, 82.2 ft^3/s, 59,550 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 52,300 ft^3/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 ft^3/s, Mar. 2, 1938; minimum daily, 7.4 ft^3/s, Sept. 21, 1971.
EXTREMES OUTSIDE PERIOD OF RECORD.--Combined river and canal: Flood of Feb. 23, 1891, 53,700 ft^3/s, from notes provided by F. C. Finkle, consulting engineer, Los Angeles.
EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 350 ft^3/s, Feb. 4, gage height, 7.60 ft; no flow for many days.
Combined river and canal: Maximum discharge, 350 ft^3/s, Feb. 4; minimum daily, 9.7 ft^3/s, July 19.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	1.4	.59	2.7	1.3	.56	.25	.15	.13	.00
2	.00	.00	.00	.31	.66	3.1	1.2	.39	.29	.14	.09	.00
3	.00	.00	.00	.06	.84	13	1.2	.36	.32	.13	.08	.00
4	.00	.00	.00	1.6	121	7.1	1.2	.34	.30	.11	.07	.00
5	.00	.00	.00	2.6	134	e4.0	1.2	.32	.30	.10	.06	.00
6	.00	.00	.00	18	81	e3.8	1.1	.30	.31	.11	.06	.00
7	.00	.00	.00	11	45	3.0	1.0	.32	.32	.11	.05	.00
8	.00	.00	.00	3.1	22	2.7	1.1	.31	.36	.12	.05	.00
9	.00	.00	.00	17	e58	2.6	1.0	.40	.34	.14	.04	.00
10	.00	.00	.00	24	e130	2.2	1.2	.38	.42	.15	.04	.00
11	.00	.00	.00	2.2	e62	2.2	1.4	.56	.37	.16	.02	.00
12	.00	.00	.00	1.8	e35	2.0	1.5	.42	.34	.12	.04	.00
13	.00	.00	.00	1.5	e28	1.9	1.3	.36	.31	.13	.02	.00
14	.00	.00	.00	1.3	e26	1.9	1.1	.37	.30	.12	.01	.00
15	.00	.00	.00	1.1	e25	1.9	1.0	.53	.28	.15	.01	.00
16	.00	.00	.00	.71	e25	1.8	.92	1.1	.27	.15	.01	.00
17	.00	.00	.00	.66	e10	1.5	.83	.50	.26	.12	.02	.00
18	.00	.00	.00	.63	8.0	1.5	.79	.34	.26	.11	.01	.00
19	.00	.00	.00	.59	6.7	1.4	.60	.32	.25	.09	.01	.00
20	.00	.00	.00	.59	8.1	1.4	.56	.27	.22	.07	.01	.00
21	.00	.00	42	.59	6.6	1.4	.52	.26	.24	.12	.00	.00
22	.00	.00	27	.59	4.6	1.3	.51	.25	.26	.12	.00	.00
23	.00	.00	14	.59	4.2	1.4	.43	.26	.31	.11	.00	.00
24	.00	.00	6.3	.59	3.8	1.2	.42	.27	.34	.10	.00	.00
25	.00	.00	132	.59	3.4	8.0	.49	.26	.36	.10	.00	.00
26	.00	.00	56	.59	3.1	9.0	.94	.26	.38	.08	.00	.00
27	.00	.00	43	.59	3.1	4.1	.54	.26	.33	.08	.00	.00
28	.00	.00	39	.59	2.7	3.2	.38	.27	.28	.09	.00	.00
29	.00	.00	35	.59	---	2.6	.33	.29	.29	.10	.00	.00
30	.00	.00	31	.59	---	1.7	.34	.31	.21	.09	.00	.00
31	.00	---	22	.59	---	1.2	---	.31	---	.07	.00	---
TOTAL	0.00	0.00	447.30	96.64	858.39	96.8	26.40	11.45	9.07	3.54	0.83	0.00
MEAN	.000	.000	14.4	3.12	30.7	3.12	.88	.37	.30	.11	.027	.000
MAX	.00	.00	132	24	134	13	1.5	1.1	.42	.16	.13	.00
MIN	.00	.00	.00	.06	.59	1.2	.33	.25	.21	.07	.00	.00
AC-FT	.00	.00	887	192	1700	192	52	23	18	7.0	1.6	.00

CAL YR 1988 TOTAL 956.80 MEAN 2.61 MAX 132 MIN .00 AC-FT 1900
WTR YR 1989 TOTAL 1550.42 MEAN 4.25 MAX 134 MIN .00 AC-FT 3080

e Estimated.

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, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	18	24	31	30	42	39	23	17	13	11	12
2	18	20	24	31	30	46	38	24	18	12	12	12
3	18	19	24	31	32	61	37	23	18	12	13	11
4	18	18	24	38	155	51	37	22	19	11	13	11
5	18	18	24	38	134	49	36	21	18	11	13	11
6	19	18	23	69	82	48	35	21	18	10	13	11
7	19	18	23	48	68	48	34	20	18	10	13	11
8	18	19	23	36	59	49	34	19	18	10	13	12
9	17	20	24	48	73	48	33	21	17	11	15	12
10	17	20	24	56	147	45	32	24	17	11	15	12
11	18	20	24	35	101	45	32	32	17	11	14	12
12	18	20	23	32	82	45	32	27	16	11	13	12
13	19	20	23	31	69	45	32	26	15	10	13	12
14	20	29	24	32	64	44	32	26	14	10	13	11
15	19	23	25	32	64	43	32	30	14	10	12	11
16	18	22	25	32	65	40	31	29	14	10	12	13
17	18	23	25	31	48	39	31	26	14	10	12	17
18	18	23	25	31	48	38	30	24	13	10	13	15
19	18	23	25	31	46	37	29	23	13	9.7	13	18
20	18	23	24	31	45	37	29	21	12	10	13	16
21	18	23	55	31	45	36	29	20	12	11	13	14
22	18	23	40	31	44	35	29	20	12	11	13	13
23	18	24	42	31	44	35	28	19	13	11	13	13
24	18	28	36	31	44	35	29	20	14	11	13	13
25	18	28	133	31	44	50	30	20	15	10	13	13
26	18	27	57	30	44	55	33	19	14	11	13	13
27	19	25	53	30	46	45	31	19	13	11	13	11
28	18	24	63	30	44	41	27	18	13	11	12	13
29	18	23	62	30	---	42	26	19	13	11	12	13
30	18	23	56	30	---	41	25	19	13	11	12	13
31	18	---	49	30	---	39	---	18	---	11	12	---
TOTAL	563	662	1126	1079	1797	1354	952	693	452	332.7	398	381
MEAN	18.2	22.1	36.3	34.8	64.2	43.7	31.7	22.4	15.1	10.7	12.8	12.7
MAX	20	29	133	69	155	61	39	32	19	13	15	18
MIN	17	18	23	30	30	35	25	18	12	9.7	11	11
AC-FT	1120	1310	2230	2140	3560	2690	1890	1370	897	660	789	756

CAL YR 1988 TOTAL 10699 MEAN 29.2 MAX 133 MIN 15 AC-FT 21220
WTR YR 1989 TOTAL 9789.7 MEAN 26.8 MAX 155 MIN 9.7 AC-FT 19420

11051500 SANTA ANA RIVER NEAR MENTONE, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1982 to September 1989 (discontinued).
WATER TEMPERATURE: Water years 1982 to September 1989 (discontinued).
SEDIMENT DATA: Water years 1982 to September 1989 (discontinued).

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: January 1982 to September 1989 (discontinued).
SUSPENDED-SEDIMENT DISCHARGE: January 1982 to September 1989 (discontinued).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATION: Maximum daily mean, 10,100 mg/L, Mar. 1, 2, 1983; no flow at times in some years.
SEDIMENT LOAD: Maximum daily discharge, 49,300 tons, Mar. 1, 1983; 0 ton for many days each year.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATION: Maximum daily mean, 2,420 mg/L, Feb. 4; no flow for many days.
SEDIMENT LOAD: Maximum daily, 1,460 tons, Feb. 4; 0 ton for many days.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	9.0	13.5	14.0	27.0	---	---	---	---
2	---	---	---	7.5	---	---	---	---	---	---	---	---
3	---	---	---	8.5	---	9.0	---	28.5	22.0	---	18.0	---
4	---	---	---	8.5	8.5	---	14.5	15.5	22.0	---	18.0	---
5	---	---	---	7.0	---	---	15.0	15.5	19.5	18.0	18.0	---
6	---	---	---	6.5	---	19.0	14.5	---	---	18.0	18.5	---
7	---	---	---	9.0	9.0	20.0	14.5	---	---	18.0	18.5	---
8	---	---	---	6.5	6.5	13.5	---	---	---	---	---	---
9	---	---	---	10.5	7.0	13.0	---	15.5	19.0	---	---	---
10	---	---	---	9.5	9.5	12.5	21.5	15.0	19.0	---	---	---
11	---	---	---	8.5	5.5	---	23.0	15.5	14.5	17.0	---	---
12	---	---	---	12.5	5.5	---	24.0	---	14.5	17.0	---	---
13	---	---	---	---	5.0	12.0	25.5	14.5	---	---	---	---
14	---	---	---	---	11.5	12.5	13.5	14.5	16.5	---	---	---
15	---	---	---	---	12.0	12.5	---	---	---	---	---	---
16	---	---	---	7.0	13.0	12.0	---	19.5	---	---	---	---
17	---	---	---	8.0	---	---	---	---	---	---	---	---
18	---	---	---	9.0	---	---	14.5	---	17.0	---	---	---
19	---	---	---	9.0	---	22.5	15.0	---	---	---	---	---
20	---	---	---	9.0	12.0	17.5	15.0	23.5	---	17.5	---	---
21	---	---	9.5	---	17.0	20.0	15.0	20.0	---	17.5	---	---
22	---	---	8.0	---	---	---	13.0	23.0	17.0	17.5	---	---
23	---	---	7.5	12.0	16.5	13.5	---	27.0	---	17.5	---	---
24	---	---	9.0	13.5	17.0	13.5	14.0	27.0	---	17.5	---	---
25	---	---	8.0	13.5	17.0	14.5	23.5	---	---	18.0	---	---
26	---	---	7.5	14.0	---	10.0	10.5	---	---	18.5	---	---
27	---	---	2.5	14.5	15.0	9.5	10.5	15.5	25.0	---	---	---
28	---	---	8.0	---	15.0	21.0	11.0	16.0	15.0	---	---	---
29	---	---	6.0	---	---	13.0	---	16.0	14.0	17.0	---	---
30	---	---	7.0	9.0	---	13.0	---	32.0	13.5	---	---	---
31	---	---	---	9.0	---	14.0	---	13.5	---	---	---	---

11051500 SANTA ANA RIVER NEAR MENTONE, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	.00	0	.00	.00	0	.00	.00	0	.00
2	.00	0	.00	.00	0	.00	.00	0	.00
3	.00	0	.00	.00	0	.00	.00	0	.00
4	.00	0	.00	.00	0	.00	.00	0	.00
5	.00	0	.00	.00	0	.00	.00	0	.00
6	.00	0	.00	.00	0	.00	.00	0	.00
7	.00	0	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	.00	0	.00
10	.00	0	.00	.00	0	.00	.00	0	.00
11	.00	0	.00	.00	0	.00	.00	0	.00
12	.00	0	.00	.00	0	.00	.00	0	.00
13	.00	0	.00	.00	0	.00	.00	0	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.00	0	.00	.00	0	.00	.00	0	.00
16	.00	0	.00	.00	0	.00	.00	0	.00
17	.00	0	.00	.00	0	.00	.00	0	.00
18	.00	0	.00	.00	0	.00	.00	0	.00
19	.00	0	.00	.00	0	.00	.00	0	.00
20	.00	0	.00	.00	0	.00	.00	0	.00
21	.00	0	.00	.00	0	.00	42	1610	296
22	.00	0	.00	.00	0	.00	27	100	7.5
23	.00	0	.00	.00	0	.00	14	42	1.6
24	.00	0	.00	.00	0	.00	6.3	106	23
25	.00	0	.00	.00	0	.00	132	1140	645
26	.00	0	.00	.00	0	.00	56	139	21
27	.00	0	.00	.00	0	.00	43	69	8.0
28	.00	0	.00	.00	0	.00	39	45	4.8
29	.00	0	.00	.00	0	.00	35	17	1.6
30	.00	0	.00	.00	0	.00	31	19	1.6
31	.00	0	.00	---	---	---	22	15	.89
TOTAL	0.00	---	0.00	0.00	---	0.00	447.30	---	1010.99
		JANUARY			FEBRUARY			MARCH	
1	1.4	8	.03	.59	1	.00	2.7	13	.09
2	.31	5	.00	.66	1	.00	3.1	20	.17
3	.06	4	.00	.84	5	.01	13	438	17
4	1.6	16	.14	121	2420	1460	7.1	40	.77
5	2.6	4	.03	134	1100	398	e4.0	20	.22
6	18	46	2.8	81	590	129	e3.8	3	.03
7	11	15	.45	45	240	29	3.0	8	.06
8	3.1	3	.03	22	120	7.1	2.7	5	.04
9	17	451	36	e58	938	147	2.6	2	.01
10	24	220	16	e130	1230	432	2.2	2	.01
11	2.2	5	.03	e62	295	49	2.2	3	.02
12	1.8	4	.02	e35	150	14	2.0	3	.02
13	1.5	4	.02	e28	100	7.6	1.9	3	.02
14	1.3	3	.01	e26	110	7.7	1.9	5	.03
15	1.1	3	.01	e25	150	10	1.9	1	.01
16	.71	3	.01	e25	100	6.7	1.8	1	.00
17	.66	3	.01	e10	70	1.9	1.5	1	.00
18	.63	2	.00	8.0	50	1.1	1.5	1	.00
19	.59	3	.00	6.7	30	.54	1.4	1	.00
20	.59	4	.01	8.1	20	.44	1.4	1	.00
21	.59	4	.01	6.6	9	.16	1.4	1	.00
22	.59	4	.01	4.6	10	.12	1.3	1	.00
23	.59	5	.01	4.2	10	.11	1.4	1	.00
24	.59	3	.00	3.8	40	.41	1.2	1	.00
25	.59	3	.00	3.4	30	.28	8.0	361	19
26	.59	2	.00	3.1	10	.08	9.0	480	12
27	.59	2	.00	3.1	2	.02	4.1	50	.55
28	.59	2	.00	2.7	5	.04	3.2	10	.09
29	.59	1	.00	---	---	---	2.6	3	.02
30	.59	1	.00	---	---	---	1.7	4	.02
31	.59	1	.00	---	---	---	1.2	5	.02
TOTAL	96.64	---	55.63	858.39	---	2702.31	96.8	---	50.20

e Estimated.

11051500 SANTA ANA RIVER NEAR MENTONE, CA--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		APRIL			MAY			JUNE	
1	1.3	2	.01	.56	3	.00	.25	2	.00
2	1.2	2	.01	.39	1	.00	.29	2	.00
3	1.2	1	.00	.36	1	.00	.32	3	.00
4	1.2	1	.00	.34	1	.00	.30	2	.00
5	1.2	1	.00	.32	1	.00	.30	2	.00
6	1.1	1	.00	.30	1	.00	.31	2	.00
7	1.0	1	.00	.32	1	.00	.32	1	.00
8	1.1	1	.00	.31	1	.00	.36	1	.00
9	1.0	1	.00	.40	1	.00	.34	1	.00
10	1.2	1	.00	.38	1	.00	.42	1	.00
11	1.4	1	.00	.56	2	.00	.37	1	.00
12	1.5	1	.00	.42	2	.00	.34	1	.00
13	1.3	1	.00	.36	5	.00	.31	1	.00
14	1.1	1	.00	.37	1	.00	.30	1	.00
15	1.0	1	.00	.53	10	.01	.28	1	.00
16	.92	1	.00	1.1	3	.01	.27	1	.00
17	.83	1	.00	.50	2	.00	.26	1	.00
18	.79	1	.00	.34	2	.00	.26	1	.00
19	.60	1	.00	.32	1	.00	.25	1	.00
20	.56	1	.00	.27	1	.00	.22	1	.00
21	.52	1	.00	.26	1	.00	.24	1	.00
22	.51	1	.00	.25	1	.00	.26	1	.00
23	.43	1	.00	.26	1	.00	.31	1	.00
24	.42	1	.00	.27	3	.00	.34	2	.00
25	.49	7	.01	.26	2	.00	.36	2	.00
26	.94	1	.00	.26	2	.00	.38	3	.00
27	.54	1	.00	.26	1	.00	.33	3	.00
28	.38	1	.00	.27	2	.00	.28	2	.00
29	.33	1	.00	.29	2	.00	.29	2	.00
30	.34	1	.00	.31	3	.00	.21	3	.00
31	---	---	---	.31	1	.00	---	---	---
TOTAL	26.40	---	0.03	11.45	---	0.02	9.07	---	0.00
		JULY			AUGUST			SEPTEMBER	
1	.15	3	.00	.13	2	.00	.00	0	.00
2	.14	3	.00	.09	2	.00	.00	0	.00
3	.13	3	.00	.08	1	.00	.00	0	.00
4	.11	3	.00	.07	1	.00	.00	0	.00
5	.10	3	.00	.06	1	.00	.00	0	.00
6	.11	5	.00	.06	3	.00	.00	0	.00
7	.11	6	.00	.05	6	.00	.00	0	.00
8	.12	5	.00	.05	5	.00	.00	0	.00
9	.14	4	.00	.04	4	.00	.00	0	.00
10	.15	3	.00	.04	3	.00	.00	0	.00
11	.16	2	.00	.02	2	.00	.00	0	.00
12	.12	2	.00	.04	2	.00	.00	0	.00
13	.13	2	.00	.02	2	.00	.00	0	.00
14	.12	2	.00	.01	2	.00	.00	0	.00
15	.15	2	.00	.01	2	.00	.00	0	.00
16	.15	2	.00	.01	2	.00	.00	0	.00
17	.12	2	.00	.02	2	.00	.00	0	.00
18	.11	2	.00	.01	2	.00	.00	0	.00
19	.09	2	.00	.01	2	.00	.00	0	.00
20	.07	2	.00	.01	2	.00	.00	0	.00
21	.12	2	.00	.00	0	.00	.00	0	.00
22	.12	2	.00	.00	0	.00	.00	0	.00
23	.11	3	.00	.00	0	.00	.00	0	.00
24	.10	2	.00	.00	0	.00	.00	0	.00
25	.10	2	.00	.00	0	.00	.00	0	.00
26	.08	4	.00	.00	0	.00	.00	0	.00
27	.08	3	.00	.00	0	.00	.00	0	.00
28	.09	3	.00	.00	0	.00	.00	0	.00
29	.10	2	.00	.00	0	.00	.00	0	.00
30	.09	2	.00	.00	0	.00	.00	0	.00
31	.07	2	.00	.00	0	.00	---	---	---
TOTAL	3.54	---	0.00	0.83	---	0.00	0.00	---	0.00
YEAR	1550.42		3819.18						

11051500 SANTA ANA RIVER NEAR MENTONE, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	TEMPERATURE WATER (DEG C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM
DEC							
21...	0625	32	9.5	9640	833	25	40
21...	0930	88	9.5	2660	632	28	37

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
DEC						
21...	67	90	99	100	--	--
21...	58	77	90	94	99	100

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 mi^2.
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. 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 above 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: 70 years, 6.66 ft^3/s, 4,830 acre-ft/yr.
Combined creek and diversions: 38 years, 8.57 ft^3/s, 6,210 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD.--Creek only: Maximum discharge, 5,340 ft^3/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 ft^3/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 ft^3/s and maximum (*):

		Creek only		Combined creek and diversions
Date	Time	Discharge (ft^3/s)	Gage height (ft)	Discharge (ft^3/s)
Feb. 4	1645	*330	*4.40	*331

Creek only: No flow for many days.
Combined creek and diversions: No flow for several days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	1.1	4.6	2.4	e5.4	.92	.14	.00	.00	.00	.08
2	.00	.00	1.1	3.9	2.4	6.2	.90	.13	.00	.00	.00	.08
3	.00	.00	1.1	3.5	2.9	13	.82	.12	.04	.00	.00	.06
4	.00	.00	1.2	5.8	131	e7.0	.74	.09	.10	.00	.00	.08
5	.00	.00	1.2	5.9	32	e6.2	.66	.08	.05	.00	.00	.08
6	.00	.00	1.5	9.2	12	e6.0	.59	.07	.05	.00	.00	.01
7	.00	.00	1.7	6.3	8.8	e5.8	.56	.05	.04	.00	.06	.00
8	.00	.00	1.7	5.3	9.1	5.7	.43	.05	.08	.00	.26	.03
9	.00	.00	1.7	4.4	18	5.5	.32	.07	.11	.00	.00	.05
10	.00	.07	1.6	4.0	35	5.2	.31	.10	.11	.00	.00	.05
11	.00	.15	1.7	3.4	17	5.2	.32	.22	.14	.00	.00	.05
12	.00	.14	1.6	3.4	15	5.1	.36	.21	.07	.00	.00	.03
13	.00	.10	1.6	3.4	13	4.9	.32	.25	.06	.00	.00	.01
14	.00	.27	1.6	3.1	12	4.7	.30	.26	.04	.00	.00	.03
15	.00	.00	2.5	3.1	9.5	4.6	.28	.88	.02	.00	.00	.03
16	.00	.00	2.4	2.9	e9.0	4.6	.26	2.9	.00	.00	.02	.04
17	.00	.00	2.0	2.8	e8.0	4.5	.26	.78	.00	.00	.04	.09
18	.00	.00	1.9	2.7	e7.0	4.3	.30	.10	.00	.00	.04	.09
19	.00	.00	2.1	2.7	e6.6	4.2	.24	.07	.00	.00	.02	.12
20	.00	.00	1.9	2.7	e6.4	4.0	.21	.05	.00	.00	.03	.07
21	.00	.00	18	2.6	e6.2	3.8	.22	.03	.00	.00	.05	.09
22	.00	.00	6.4	2.6	e6.0	3.7	.24	.02	.00	.00	.06	.08
23	.00	.02	4.3	2.6	e5.8	3.7	.26	.01	.00	.00	.08	.09
24	.00	.05	7.3	2.6	e5.6	3.9	.28	.00	.00	.00	.09	.15
25	.00	.00	27	2.5	e5.6	15	.28	.00	.00	.00	.09	.24
26	.00	.00	7.2	2.4	e5.4	11	.31	.00	.00	.00	.06	.21
27	.00	.00	6.5	2.3	e5.4	7.8	.28	.00	.00	.00	.06	.17
28	.00	.00	5.6	2.4	e5.4	5.9	.22	.00	.00	.00	.07	.23
29	.00	.00	4.6	2.4	---	4.1	.18	.01	.00	.00	.08	.21
30	.00	.11	4.2	2.4	---	1.9	.17	.02	.00	.00	.09	.14
31	.00	---	4.1	2.4	---	.99	---	.02	---	.00	.09	---
TOTAL	0.00	0.91	128.4	110.3	402.5	173.89	11.54	6.73	0.91	0.00	1.29	2.69
MEAN	.000	.030	4.14	3.56	14.4	5.61	.38	.22	.030	.000	.042	.090
MAX	.00	.27	27	9.2	131	15	.92	2.9	.14	.00	.26	.24
MIN	.00	.00	1.1	2.3	2.4	.99	.17	.00	.00	.00	.00	.00
AC-FT	.00	1.8	255	219	798	345	23	13	1.8	.00	2.6	5.3

CAL YR 1988 TOTAL 633.30 MEAN 1.73 MAX 56 MIN .00 AC-FT 1260
WTR YR 1989 TOTAL 839.16 MEAN 2.30 MAX 131 MIN .00 AC-FT 1660

e Estimated.

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 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.80	.68	1.1	4.6	2.4	5.4	4.4	1.9	1.6	.71	.48	.55
2	.53	.71	1.1	3.9	2.4	6.2	4.4	1.8	1.6	.67	.48	.59
3	.53	.63	1.1	3.5	2.9	13	4.2	1.8	1.8	.63	.49	.55
4	.52	.50	1.2	5.8	131	7.0	3.9	1.6	1.8	.57	.48	.57
5	.55	.54	1.2	5.9	32	6.2	3.8	1.5	1.5	.53	.46	.56
6	.61	.64	1.5	9.2	12	6.0	3.6	1.4	1.4	.50	.48	.48
7	.61	.64	1.7	6.3	8.8	5.8	3.4	1.3	1.4	.52	.72	.47
8	.53	.63	1.7	5.3	9.1	5.7	3.3	1.3	1.5	.56	.87	.52
9	.52	.61	1.7	4.4	18	5.5	3.2	1.5	1.5	.55	.54	.55
10	.52	.66	1.6	4.0	35	5.2	3.0	1.8	1.5	.57	.54	.58
11	.52	.73	1.7	3.4	17	5.2	3.1	2.6	1.5	.58	.49	.63
12	.53	.72	1.6	3.4	15	5.1	3.4	2.4	1.3	.55	.42	.62
13	.53	.68	1.6	3.4	13	4.9	3.2	2.4	1.2	.49	.42	.52
14	.61	.52	1.6	3.1	12	4.7	3.0	2.3	1.1	.50	.44	.52
15	.58	.00	2.5	3.1	9.5	4.6	3.0	3.5	1.1	.49	.51	.51
16	.50	.00	2.4	2.9	9.0	4.6	2.9	6.4	.98	.50	.52	.64
17	.48	.00	2.0	2.8	8.0	4.5	2.8	3.2	.93	.51	.54	.90
18	.47	.00	1.9	2.7	7.0	4.3	2.7	2.2	.85	.51	.55	.88
19	.44	.00	2.1	2.7	6.6	4.2	2.4	2.1	.80	.48	.57	.94
20	.42	.00	1.9	2.7	6.4	4.0	2.3	2.0	.82	.44	.62	.77
21	.48	.00	18	2.6	6.2	3.8	2.3	1.7	.80	.31	.64	.75
22	.60	.00	6.4	2.6	6.0	3.7	2.3	1.6	.78	.45	.61	.75
23	.61	.02	4.3	2.6	5.8	3.7	2.4	1.6	.82	.51	.66	.73
24	.60	.05	7.3	2.6	5.6	3.9	2.5	2.0	.89	.52	.71	.74
25	.59	.00	27	2.5	5.6	15	2.6	2.4	.89	.54	.74	.67
26	.62	.00	7.2	2.4	5.4	11	2.7	3.6	.81	.54	.70	.66
27	.63	.00	6.5	2.3	5.4	7.8	2.6	2.5	.71	.52	.67	.75
28	.66	.00	5.6	2.4	5.4	5.9	2.3	1.5	.69	.51	.63	.81
29	.70	.00	4.6	2.4	---	4.1	2.1	1.5	.71	.48	.61	.77
30	.66	.11	4.2	2.4	---	4.3	2.0	1.5	.71	.45	.61	.41
31	.62	---	4.1	2.4	---	4.6	---	1.7	---	.44	.58	---
TOTAL	17.57	9.07	128.4	110.3	402.5	179.9	89.8	66.6	33.99	16.13	17.78	19.39
MEAN	.57	.30	4.14	3.56	14.4	5.80	2.99	2.15	1.13	.52	.57	.65
MAX	.80	.73	27	9.2	131	15	4.4	6.4	1.8	.71	.87	.94
MIN	.42	.00	1.1	2.3	2.4	3.7	2.0	1.3	.69	.31	.42	.41
AC-FT	35	18	255	219	798	357	178	132	67	32	35	38

CAL YR 1988 TOTAL 989.12 MEAN 2.70 MAX 57 MIN .00 AC-FT 1960
WTR YR 1989 TOTAL 1091.43 MEAN 2.99 MAX 131 MIN .00 AC-FT 2160

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 mi^2.
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 September 1989.
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 good. 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: 70 years, 9.51 ft^3/s, 6,890 acre-ft/yr.
Combined creek and canal: 63 years (water years 1925-86, 1989), 11.2 ft^3/s, 8,110 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD.--Creek only: Maximum discharge, 7,000 ft^3/s, Feb. 25, 1969, gage height, 9.39 ft, from rating curve extended above 580 ft^3/s on basis of slope-area measurement at gage height 8.82 ft; no flow for several months in some years.
Combined creek and canal: Maximum discharge, 7,000 ft^3/s, Feb. 25, 1969; no flow at times in some years.
EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 150 ft^3/s and maximum (*):

		Creek only		Combined creek and canal
Date	Time	Discharge (ft^3/s)	Gage height (ft)	Discharge (ft^3/s)
Jan. 6	1400	*262	*5.29	*262

Creek only: Minimum daily, 0.01 ft^3/s, Aug. 5-10, 12-19.
Combined creek and canal: Minimum daily, 0.01 ft^3/s, Aug. 5-10, 12-19.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.49	2.2	6.5	e5.0	4.7	1.1	.53	.57	.15	.03	e.09
2	.22	.60	2.3	5.2	e4.7	6.8	1.1	.54	.62	.15	.02	e.10
3	.19	.76	2.5	5.0	e4.7	10	1.0	.54	.72	.15	.02	e.10
4	.21	.68	2.5	7.4	e4.5	6.8	.87	.51	.85	.13	.02	e.08
5	.21	.52	2.6	7.0	e60	5.8	.84	.51	.79	.12	.01	e.10
6	.23	.50	2.2	117	e21	5.4	.77	.57	.76	.12	.01	e.09
7	.25	.60	2.0	40	14	5.1	.72	.57	.77	.13	.01	e.10
8	.21	.80	2.9	e18	14	4.9	.68	.56	.83	.15	.01	e.10
9	.19	.92	3.5	e14	22	4.6	.66	.67	.85	.16	.01	e.11
10	.20	.93	3.8	e13	29	4.4	.69	.81	1.4	.17	.01	e.12
11	.19	1.0	3.8	e12	20	4.2	.72	1.1	1.5	.17	.02	e.12
12	.13	1.3	3.8	e11	15	4.1	.80	.99	1.0	.17	.01	e.12
13	.11	1.3	3.8	e10	13	4.1	.75	.94	.59	.14	.01	e.13
14	.11	5.9	3.8	e9.0	11	4.1	.69	.97	.45	.13	.01	.11
15	.10	2.7	6.2	e8.0	10	4.0	.75	1.5	.35	.13	.01	.08
16	.10	1.7	5.7	e8.0	9.1	3.9	.75	1.3	.32	.12	.01	.10
17	.18	1.5	5.3	e8.0	8.3	3.9	.77	.83	.28	.13	.01	.43
18	.25	1.5	4.3	e7.5	7.6	3.8	.73	.80	.24	.14	.01	.21
19	.25	1.5	4.2	e7.0	7.2	3.7	.71	.74	.19	.14	.01	.71
20	.26	1.5	3.0	e6.8	6.8	3.5	.67	.68	.16	.11	.03	.98
21	.29	1.5	29	e6.4	6.3	3.5	.67	.63	.14	.09	.07	.47
22	.32	1.4	7.9	e6.2	5.8	3.4	.69	.60	.14	.08	.13	.30
23	.32	1.7	5.8	e6.1	5.6	3.4	.75	.59	.14	.06	.14	.25
24	.34	3.6	10	e6.0	5.4	3.5	.84	.60	.14	.06	.12	.21
25	.36	2.7	36	e6.0	5.1	12	.94	.64	.17	.07	.13	.19
26	.38	2.6	11	e5.5	5.0	11	1.1	.63	.24	.08	.14	.17
27	.44	2.2	7.3	e5.5	4.8	6.8	.97	.60	.19	.07	.13	.14
28	.48	2.0	6.3	e5.5	4.8	5.6	.69	.65	.16	.06	.12	.14
29	.52	1.7	5.8	e5.5	---	5.0	.52	.66	.16	.05	.11	.14
30	.51	1.8	5.3	e5.5	---	4.5	.52	.68	.16	.04	.10	.14
31	.46	---	5.3	e5.5	---	2.9	---	.60	---	.03	e.10	---
TOTAL	8.21	47.90	200.1	384.1	329.7	159.4	23.46	22.54	14.88	3.50	1.57	6.13
MEAN	.26	1.60	6.45	12.4	11.8	5.14	.78	.73	.50	.11	.051	.20
MAX	.52	5.9	36	117	60	12	1.1	1.5	1.5	.17	.14	.98
MIN	.10	.49	2.0	5.0	4.5	2.9	.52	.51	.14	.03	.01	.08
AC-FT	16	95	397	762	654	316	47	45	30	6.9	3.1	12

CAL YR 1988 TOTAL 1217.06 MEAN 3.33 MAX 63 MIN .05 AC-FT 2410
WTR YR 1989 TOTAL 1201.49 MEAN 3.29 MAX 117 MIN .01 AC-FT 2380

e Estimated.

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 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.49	2.2	6.5	5.0	4.7	e3.3	1.9	e1.3	.18	.03	.09
2	.22	.60	2.3	5.2	4.7	6.8	e3.0	1.9	e1.3	.19	.02	.10
3	.19	.76	2.5	5.0	4.7	10	2.8	1.9	e1.2	.17	.02	.10
4	.21	.68	2.5	7.4	4.5	6.8	2.7	1.9	e1.2	.13	.02	.08
5	.21	.52	2.6	7.0	60	5.8	2.6	1.9	1.4	.12	.01	.10
6	.23	.50	2.2	117	21	5.4	2.6	2.0	1.4	.12	.01	.09
7	.25	.60	2.0	40	14	5.1	2.5	2.0	1.2	.13	.01	.10
8	.21	.80	2.9	18	14	4.9	2.5	2.0	1.2	.15	.01	.10
9	.19	.92	3.5	14	22	4.6	2.5	2.1	1.2	.16	.01	.11
10	.20	.93	3.8	13	29	4.4	2.5	1.8	1.8	.17	.01	.12
11	.19	1.0	3.8	12	20	4.2	2.5	2.1	1.9	.18	.02	.12
12	.13	1.3	3.8	11	15	4.1	2.6	2.0	1.0	.17	.01	.12
13	.11	1.3	3.8	10	13	4.1	2.5	1.9	1.1	.14	.01	.13
14	.11	5.9	3.8	9.0	11	4.1	2.5	2.0	.45	.13	.01	.11
15	.10	2.7	6.2	8.0	10	4.0	2.5	2.5	.35	.13	.01	.08
16	.10	1.7	5.7	8.0	9.1	3.9	2.5	2.3	.32	.12	.01	.10
17	.18	1.5	5.3	8.0	8.3	3.9	2.6	1.8	.28	.13	.01	.43
18	.25	1.5	4.3	7.5	7.6	3.8	2.5	1.8	.24	.14	.01	.21
19	.25	1.5	4.2	7.0	7.2	3.7	2.5	1.7	.19	.14	.01	.71
20	.26	1.5	3.0	6.8	6.8	3.5	e2.3	1.7	.16	.11	.03	.98
21	.29	1.5	29	6.4	6.3	3.5	e2.2	1.6	.21	.09	.07	.47
22	.32	1.4	7.9	6.2	5.8	3.4	e2.1	1.6	.18	.08	.13	.30
23	.32	1.7	5.8	6.1	5.6	3.4	e2.0	1.6	.18	.06	.14	.25
24	.34	3.6	10	6.0	5.4	3.5	e1.9	1.6	.20	.08	.12	.21
25	.36	2.7	36	6.0	5.1	12	1.9	1.6	.30	.09	.13	.19
26	.38	2.6	11	5.5	5.0	11	2.1	1.6	.45	.08	.14	.17
27	.44	2.2	7.3	5.5	4.8	6.8	2.0	1.6	.34	.07	.13	.14
28	.48	2.0	6.3	5.5	4.8	5.6	1.7	1.6	.24	.06	.12	.14
29	.52	1.7	5.8	5.5	---	5.0	1.9	1.5	.23	.05	.11	.14
30	.51	1.8	5.3	5.5	---	4.5	1.9	1.5	.20	.04	.10	.14
31	.46	---	5.3	5.5	---	e3.7	---	1.4	---	.03	.10	---
TOTAL	8.21	47.90	200.1	384.1	329.7	160.2	71.7	56.4	21.72	3.64	1.57	6.13
MEAN	.26	1.60	6.45	12.4	11.8	5.17	2.39	1.82	.72	.12	.051	.20
MAX	.52	5.9	36	117	60	12	3.3	2.5	1.9	.19	.14	.98
MIN	.10	.49	2.0	5.0	4.5	3.4	1.7	1.4	.16	.03	.01	.08
AC-FT	16	95	397	762	654	318	142	112	43	7.2	3.1	12

WTR YR 1989 TOTAL 1291.37 MEAN 3.54 MAX 117 MIN .01 AC-FT 2560

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 mi^2.

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.--Records poor. No regulation upstream from station. Natural flow affected by pumping and return flow from irrigated areas.

AVERAGE DISCHARGE.--26 years (1955-65, 1969-73, 1980-89), 2.68 ft^3/s, 1,940 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft^3/s, Feb. 25, 1969, gage height, 8.2 ft, from floodmark, from rating curve extended above 2,100 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 15	1600	190	3.69	Feb. 4	1915	*342	*4.05
Dec. 25	0130	219	3.76	Mar. 2	2300	175	3.65
Jan. 4	1615	210	3.74				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.20	.60	3.0	1.2	.86	e.53	1.2	3.5	3.8	.43	1.0
2	.25	.69	1.2	2.2	1.1	17	e.52	1.1	4.6	4.5	.46	.26
3	.06	.33	1.0	2.2	11	35	e.52	.92	.39	1.1	.77	.20
4	.05	.00	1.1	e30	114	3.5	e.51	.42	.12	.04	.93	.23
5	.03	.24	1.1	e2.0	8.3	4.0	e.51	1.0	.00	.48	.90	.01
6	.06	.88	1.7	e4.0	.87	1.2	e.50	.66	1.1	.49	.35	.07
7	.00	.89	1.3	e2.5	.38	1.2	.49	1.1	.47	.93	.03	.07
8	.12	.27	1.7	1.7	5.3	.40	.50	1.3	1.5	.65	1.4	.52
9	.73	.26	.78	.88	50	.08	.00	.61	3.0	.06	.58	.26
10	.12	.40	.01	.88	33	.27	.00	.28	.46	.01	.00	.01
11	.16	.05	.00	.88	.95	.15	.00	1.4	.60	.19	.00	.00
12	.22	.00	.07	.88	1.7	.04	.50	.49	2.9	.43	.13	.12
13	.62	.01	1.1	2.7	5.4	.12	.76	1.2	3.9	3.4	.40	1.2
14	.35	2.9	3.6	2.9	1.9	.42	.25	2.2	1.6	2.5	.39	.94
15	.01	.26	33	4.1	.98	.56	.00	4.7	.00	.15	.00	.23
16	.01	.01	17	4.0	.86	.66	.00	.38	.00	.00	.02	.22
17	.01	.00	3.0	3.4	.75	.59	.00	.03	.00	.00	.03	.54
18	.01	.00	4.2	3.1	.82	.50	.05	.03	.00	.00	.00	.03
19	.01	.05	4.2	3.7	1.4	.65	.00	.12	.00	.02	.00	4.0
20	.01	.08	.48	3.3	1.9	e.60	.04	.04	.00	.01	.05	.00
21	.01	.14	27	3.6	2.2	e.58	.16	.00	.00	.01	.01	.00
22	.01	.69	.39	1.7	1.1	e.55	.83	.02	.00	.02	.00	.00
23	.01	.92	.42	4.0	.75	e.50	.76	.05	.00	.00	.07	.00
24	.00	.45	16	2.9	1.3	e.50	.44	2.1	13	.34	.22	.13
25	.00	1.3	43	3.3	.10	e38	1.2	2.5	1.7	.69	.11	.61
26	.00	.00	.10	3.1	.00	e8.0	2.6	3.8	9.4	.76	.04	.67
27	.00	.00	.04	3.5	.00	e1.0	1.3	5.4	6.5	.06	.09	.76
28	.01	.00	.61	3.3	.00	e.60	1.3	1.9	4.7	.25	.40	1.4
29	.12	.00	1.2	2.0	---	e.59	.67	2.9	3.8	.77	.76	1.4
30	.28	.31	1.6	.84	---	e.55	.84	3.2	2.7	.01	.02	.01
31	.15	---	6.0	.74	---	e.54	---	3.5	---	.00	.30	---
TOTAL	3.44	11.33	173.50	107.30	247.26	119.21	15.78	44.55	65.94	21.67	8.89	14.89
MEAN	.11	.38	5.60	3.46	8.83	3.85	.53	1.44	2.20	.70	.29	.50
MAX	.73	2.9	43	30	114	38	2.6	5.4	13	4.5	1.4	4.0
MIN	.00	.00	.00	.74	.00	.04	.00	.00	.00	.00	.00	.00
AC-FT	6.8	22	344	213	490	236	31	88	131	43	18	30

CAL YR 1988 TOTAL 555.12 MEAN 1.52 MAX 94 MIN .00 AC-FT 1100
WTR YR 1989 TOTAL 833.76 MEAN 2.28 MAX 114 MIN .00 AC-FT 1650

e Estimated.

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 mi^2.

PERIOD OF RECORD.--December 1919 to current year. Prior to October 1952, published as Strawberry Creek near Arrowhead Springs.

GAGE.--Water-stage recorder. Elevation of gage is 1,590 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--Records fair except those for periods of estimated daily discharges, which are 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.--69 years (water years 1921-89), 4.82 ft^3/s, 3,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,710 ft^3/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 ft^3/s and maximum (*), from rating curve extended above 120 ft^3/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)
Dec. 21	0645	70	2.85	Feb. 4	1530	*122	*3.21
Dec. 24	2345	59	2.74				

Minimum daily, 0.39 ft^3/s, Oct. 16, 17, 22, 24.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.55	.48	.79	2.4	1.6	1.5	2.2	1.2	.86	.52	e.45	e.50
2	.55	.67	.82	2.2	1.7	3.3	2.2	1.2	.94	.54	e.45	e.50
3	.58	.50	.82	2.0	2.8	4.6	2.1	1.1	1.3	.55	e.45	e.50
4	.55	.56	.83	3.7	52	2.7	1.9	1.0	1.3	.70	e.45	e.50
5	.48	.46	.86	3.8	22	2.6	1.8	.99	1.2	.56	e.45	e.50
6	.55	.46	.85	7.5	10	2.5	1.7	.97	1.0	.60	e.45	e.50
7	.58	.53	.86	4.4	6.7	2.4	1.6	.93	1.0	.58	e.45	e.50
8	.52	.70	.85	3.7	7.3	2.4	1.5	.89	1.2	.58	e.45	e.50
9	.50	.87	.86	3.1	14	2.4	1.6	1.1	1.1	.57	e.45	e.50
10	.49	.92	.96	2.8	15	2.5	1.6	1.4	1.3	.57	e.45	e.50
11	.52	.72	.99	2.5	9.2	2.6	1.7	1.9	1.1	.54	e.45	e.50
12	.51	.70	.93	2.1	7.3	2.8	1.8	1.6	.95	.51	e.45	e.50
13	.47	.72	.83	2.1	6.6	2.9	1.7	1.6	.76	.52	e.45	e.50
14	.47	6.5	.88	2.0	5.4	3.1	1.6	1.6	.63	.51	e.45	e.50
15	.46	1.1	3.0	2.0	4.5	2.9	1.6	2.3	.57	.51	e.45	e.50
16	.39	.90	2.5	1.9	3.7	3.0	1.7	2.0	.55	.50	e.45	e.50
17	.39	.79	3.4	1.8	3.1	3.1	1.6	1.7	.54	.48	e.45	2.0
18	.44	.64	2.8	1.8	2.9	3.1	1.5	1.5	.54	.47	e.45	1.1
19	.47	.65	2.4	1.8	2.7	3.0	1.5	1.4	.57	.45	e.45	e5.1
20	.47	.57	1.9	1.8	2.6	3.0	1.4	1.2	.64	.44	e.45	e.80
21	.43	.54	21	1.8	2.3	3.0	1.6	1.1	.63	.43	e.45	e.75
22	.39	.54	3.8	1.8	2.1	2.9	1.6	.95	.66	.42	e.45	e.70
23	.42	.92	2.9	1.7	2.0	3.0	1.6	.93	.65	.44	e.45	e.65
24	.39	2.0	9.3	1.7	1.8	3.2	1.7	.95	.64	e.45	e.45	e.60
25	.47	1.3	17	1.7	1.6	11	1.7	.94	.63	e.45	e.47	e.55
26	.48	1.1	5.2	1.6	1.6	4.8	1.8	.88	.58	e.45	e.50	e.50
27	.48	.97	3.7	1.6	1.5	3.2	1.6	.89	.53	e.45	e.50	e.48
28	.53	.90	3.2	1.7	1.5	2.9	1.4	.95	.53	e.45	e.50	e.45
29	.48	.80	2.6	1.6	---	2.7	1.4	1.0	.49	e.45	e.50	e.43
30	.49	.78	2.3	1.6	---	2.5	1.3	1.0	.47	e.45	e.50	e.40
31	.56	---	2.5	1.6	---	2.2	---	.91	---	e.45	e.50	---
TOTAL	15.06	29.29	101.63	73.8	195.5	97.8	50.0	38.08	23.86	15.59	14.27	22.51
MEAN	.49	.98	3.28	2.38	6.98	3.15	1.67	1.23	.80	.50	.46	.75
MAX	.58	6.5	21	7.5	52	11	2.2	2.3	1.3	.70	.50	5.1
MIN	.39	.46	.79	1.6	1.5	1.5	1.3	.88	.47	.42	.45	.40
AC-FT	30	58	202	146	388	194	99	76	47	31	28	45

CAL YR 1988 TOTAL 656.60 MEAN 1.79 MAX 32 MIN .36 AC-FT 1300
WTR YR 1989 TOTAL 677.39 MEAN 1.86 MAX 52 MIN .39 AC-FT 1340

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 mi^2.

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 those for periods of estimated daily discharges, 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 ft^3/s, 9,050 acre-ft/yr; 23 years (water years 1967-89), 93.7 ft^3/s, 67,890 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,000 ft^3/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 ft^3/s; no flow for many days prior to 1967, minimum daily since 1967, 7.0 ft^3/s, Mar. 29, 1971.
EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 4	1515	*985	*5.47				

Minimum daily, 25 ft^3/s, Apr. 11.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e37	33	33	e50	e42	46	40	34	34	32	35	37
2	e35	35	33	e51	e43	e88	41	34	34	31	35	37
3	e35	36	34	e40	56	e54	39	34	33	31	35	35
4	e34	33	33	e90	e421	42	37	34	35	30	35	40
5	e35	34	33	e145	222	41	36	36	32	30	35	38
6	e34	37	35	e80	99	43	36	35	34	32	36	38
7	35	35	33	e80	77	40	35	35	34	32	36	37
8	32	35	32	e65	87	41	36	35	33	32	37	37
9	33	36	34	e55	e178	39	34	34	33	31	37	36
10	33	37	33	e40	e172	35	35	34	33	32	37	38
11	32	34	33	e42	74	35	25	37	34	34	39	37
12	32	33	32	e39	62	35	31	35	34	33	37	36
13	33	33	33	e38	60	35	37	39	34	34	36	36
14	33	49	33	e40	56	34	40	37	34	34	39	36
15	35	38	113	e41	52	34	34	e41	33	33	37	35
16	33	35	83	e41	50	34	33	e52	34	32	38	36
17	33	36	69	e40	51	35	35	36	35	34	38	41
18	33	36	47	e39	52	36	35	34	33	35	39	38
19	33	33	54	e39	e39	36	38	35	35	34	37	78
20	34	34	39	e41	e46	36	36	34	34	35	35	47
21	33	34	205	e42	49	36	34	34	33	36	37	35
22	35	34	38	e40	47	30	35	34	32	e39	35	31
23	34	35	39	e41	48	e32	38	33	32	35	36	31
24	37	43	108	e39	45	e27	36	34	31	36	36	31
25	35	45	238	e38	48	e38	35	34	31	37	36	30
26	36	38	52	e40	47	e72	42	35	32	37	36	31
27	34	39	37	e42	46	e40	36	34	32	33	36	30
28	33	36	e36	e40	43	42	35	32	32	33	36	31
29	33	33	e37	e41	---	42	35	36	32	35	36	31
30	34	33	e38	e42	---	42	33	34	32	34	36	30
31	32	---	e38	e42	---	39	---	35	---	35	36	---
TOTAL	1050	1082	1735	1543	2312	1259	1072	1100	994	1041	1129	1104
MEAN	33.9	36.1	56.0	49.8	82.6	40.6	35.7	35.5	33.1	33.6	36.4	36.8
MAX	37	49	238	145	421	88	42	52	35	39	39	78
MIN	32	33	32	38	39	27	25	32	31	30	35	30
AC-FT	2080	2150	3440	3060	4590	2500	2130	2180	1970	2060	2240	2190

CAL YR 1988 TOTAL 16552 MEAN 45.2 MAX 342 MIN 30 AC-FT 32830
WTR YR 1989 TOTAL 15421 MEAN 42.2 MAX 421 MIN 25 AC-FT 30590
e Estimated.

11059300 SANTA ANA RIVER AT E STREET, NEAR SAN BERNARDINO, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1983 to 1986, 1988 to current year.
WATER TEMPERATURE: November 1982 to September 1986, water year 1988 to current year.
SEDIMENT DATA: Water years 1983 to 1986, 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 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	TEMPERATURE WATER (DEG C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT						
06...	1225	49	26.5	22	2.9	--
NOV						
18...	1520	45	21.0	37	4.5	--
DEC						
05...	1410	42	23.0	13	1.5	--
21...	1030	372	12.5	1410	1420	48
FEB						
02...	1400	44	21.5	11	1.3	--
MAR						
03...	1515	52	21.0	83	12	--
17...	1345	52	24.5	7	0.98	--
APR						
05...	1140	52	--	47	6.6	--
14...	1715	41	--	9	1.1	--
MAY						
02...	1425	41	27.5	8	0.89	--
JUN						
01...	1640	39	27.5	7	0.74	--
SEP						
14...	1420	43	29.5	5	0.58	--

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 mi^2.

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 October 1974 to current year. 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 ft^3/s, 1,170 acre-ft/yr; 15 years (water years 1975-89), 20.0 ft^3/s, 14,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft^3/s, estimated, Mar. 1, 1978, gage height unknown; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 789 ft^3/s, Dec. 21, Feb. 4, gage height, 2.28 ft, from rating curve extended above 420 ft^3/s on basis of step-backwater analysis; minimum daily, 4.6 ft^3/s, Sept. 20-23.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.8	6.8	13	20	12	23	9.2	11	29	6.8	6.0	7.4
2	9.6	6.8	14	16	13	51	9.6	11	31	7.1	5.8	7.8
3	9.6	6.8	14	17	50	12	11	11	33	7.3	5.6	7.4
4	9.6	6.8	15	69	257	10	11	11	34	6.8	5.9	6.8
5	9.6	6.8	16	20	18	10	12	11	33	6.8	5.8	6.8
6	9.1	6.9	16	23	17	11	13	11	33	6.8	5.7	6.8
7	8.7	7.3	13	14	16	12	13	10	35	6.4	5.9	6.7
8	8.7	7.8	9.9	14	34	13	12	11	36	6.0	6.0	6.7
9	8.5	7.8	11	14	60	14	12	10	33	5.8	6.0	6.8
10	8.7	7.8	12	14	17	16	12	10	32	5.2	6.0	7.4
11	9.3	7.8	13	14	14	16	12	9.8	29	7.2	6.0	7.8
12	8.7	7.8	12	14	14	17	12	9.6	19	9.6	6.0	7.8
13	7.8	7.8	14	14	15	17	12	9.6	17	8.6	6.0	7.7
14	7.8	17	15	14	15	17	11	9.6	14	8.9	6.0	7.8
15	7.7	6.0	62	14	15	16	11	29	14	7.0	6.0	7.8
16	7.8	6.0	70	16	14	16	11	12	13	6.8	6.6	7.8
17	8.2	6.8	23	15	14	16	11	11	12	6.5	6.1	10
18	8.7	6.6	28	15	14	15	12	10	11	5.9	6.2	8.3
19	8.8	6.8	12	15	14	13	12	11	10	5.6	6.5	65
20	8.4	7.0	21	15	16	12	11	11	8.9	6.8	6.5	4.6
21	9.0	7.8	145	14	18	11	12	11	9.6	6.9	6.5	4.6
22	11	7.9	14	13	18	11	12	11	8.8	6.0	6.5	4.6
23	12	11	14	13	20	9.6	12	11	6.8	4.7	6.8	4.6
24	9.2	12	125	12	21	10	12	12	6.9	4.8	6.8	5.0
25	6.8	14	31	11	22	74	11	12	6.8	4.7	6.8	5.2
26	7.0	9.6	15	12	24	18	12	13	6.8	4.7	6.7	5.2
27	6.8	9.6	14	12	24	6.4	10	14	6.1	5.1	6.7	5.2
28	6.9	10	16	11	24	6.8	11	16	6.8	5.8	6.9	5.2
29	6.8	11	16	12	---	7.7	11	20	6.3	6.0	6.5	5.2
30	6.8	13	16	12	---	7.7	9.8	23	6.5	6.0	6.6	5.2
31	6.8	---	21	12	---	8.7	---	26	---	6.0	7.8	---
TOTAL	264.2	257.1	830.9	501	810	497.9	342.6	398.6	548.3	198.6	195.2	255.2
MEAN	8.52	8.57	26.8	16.2	28.9	16.1	11.4	12.9	18.3	6.41	6.30	8.51
MAX	12	17	145	69	257	74	13	29	36	9.6	7.8	65
MIN	6.8	6.0	9.9	11	12	6.4	9.2	9.6	6.1	4.7	5.6	4.6
AC-FT	524	510	1650	994	1610	988	680	791	1090	394	387	506

CAL YR 1988 TOTAL 5813.4 MEAN 15.9 MAX 160 MIN 6.0 AC-FT 11530
WTR YR 1989 TOTAL 5099.6 MEAN 14.0 MAX 257 MIN 4.6 AC-FT 10120

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 mi^2.
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: 71 years, 17.9 ft^3/s, 12,970 acre-ft/yr.
Combined creek and diversions: 86 years (water years 1899, 1905-89), 44.7 ft^3/s, 32,390 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD.--Creek only: Maximum discharge, 35,900 ft^3/s, Jan. 25, 1969, gage height, 15.0 ft, from floodmark, from rating curve extended above 570 ft^3/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 ft^3/s, Jan. 25, 1969; minimum daily, 0.12 ft^3/s, June 21, 22, 1976.
EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft^3/s and maximum (*):

		Creek only		Combined creek and diversions
Date	Time	Discharge (ft^3/s)	Gage height (ft)	Discharge (ft^3/s)
Dec. 16	----	Unknown	Unknown	Unknown

Creek only: No flow for many days.
Combined creek and diversions: Minimum daily, 9.1 ft^3/s, Sept. 5, 6.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	e3.5	.00	e4.0	e1.5	.00	.00	.00	.00	.00
2	.00	.00	.00	e3.0	.00	e3.9	e1.4	.00	.00	.00	.00	.00
3	.00	.00	.00	e2.7	.00	e3.9	e1.3	.00	.00	.00	.00	.00
4	.00	.00	.00	e2.9	e3.0	e3.8	e1.0	.00	.00	.00	.00	.00
5	.00	.00	.00	e4.5	e40	e3.7	e.60	.00	.00	.00	.00	.00
6	.00	.00	.00	e15	e20	e3.7	e.50	.00	.00	.00	.00	.00
7	.00	.00	.00	e12	e7.0	e3.6	e.45	.00	.00	.00	.00	.00
8	.00	.00	.00	e5.0	e6.3	e3.5	e.25	.00	.00	.00	.00	.00
9	.00	.00	.00	e3.6	e20	e3.5	e.22	.00	.00	.00	.00	.00
10	.00	.00	.00	e3.2	e18	e3.4	e.20	.00	.00	.00	.00	.00
11	.00	.00	.00	e2.8	e14	e3.4	e.16	.00	.00	.00	.00	.00
12	.00	.00	.00	e2.4	e10	e3.4	e.12	.00	.00	.00	.00	.00
13	.00	.00	.00	e2.1	e8.4	e3.3	e.08	.00	.00	.00	.00	.00
14	.00	.00	.00	e1.9	e7.0	e3.3	e.06	.00	.00	.00	.00	.00
15	.00	.00	.00	e1.7	e6.4	e3.2	e.04	.00	.00	.00	.00	.00
16	.00	.00	e80	e1.4	e6.2	e3.1	e.03	.00	.00	.00	.00	.00
17	.00	.00	e9.0	e1.2	e5.8	e3.0	e.02	.00	.00	.00	.00	.00
18	.00	.00	e8.0	e.90	e5.4	e2.9	e.01	.00	.00	.00	.00	.00
19	.00	.00	e6.0	e.80	e5.2	e2.8	.00	.00	.00	.00	.00	.00
20	.00	.00	e8.0	e.60	e4.9	e2.7	.00	.00	.00	.00	.00	.00
21	.00	.00	e35	e.55	e4.7	e2.6	.00	.00	.00	.00	.00	.00
22	.00	.00	e31	e.31	e4.6	e2.5	.00	.00	.00	.00	.00	.00
23	.00	.00	e10	e.23	e4.5	e2.3	.00	.00	.00	.00	.00	.00
24	.00	.00	e22	e.12	e4.4	e2.2	.00	.00	.00	.00	.00	.00
25	.00	.00	e21	.00	e4.3	e6.0	.00	.00	.00	.00	.00	.00
26	.00	.00	e14	.00	e4.2	e5.0	.00	.00	.00	.00	.00	.00
27	.00	.00	e9.0	.00	e4.1	e3.0	.00	.00	.00	.00	.00	.00
28	.00	.00	e8.0	.00	e4.0	e1.8	.00	.00	.00	.00	.00	.00
29	.00	.00	e7.0	.00	---	e1.7	.00	.00	.00	.00	.00	.00
30	.00	.00	e6.0	.00	---	e1.7	.00	.00	.00	.00	.00	.00
31	.00	---	e4.5	.00	---	e1.6	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	278.50	72.41	222.40	98.5	7.94	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	8.98	2.34	7.94	3.18	.26	.000	.000	.000	.000	.000
MAX	.00	.00	80	15	40	6.0	1.5	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	1.6	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	552	144	441	195	16	.00	.00	.00	.00	.00

CAL YR 1988 TOTAL 1248.55 MEAN 3.41 MAX 200 MIN .00 AC-FT 2480
WTR YR 1989 TOTAL 679.75 MEAN 1.86 MAX 80 MIN .00 AC-FT 1350

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 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	15	19	27	21	25	23	18	14	13	9.7	9.5
2	15	16	18	26	21	25	23	18	14	13	9.7	9.6
3	15	16	18	26	21	25	23	18	15	12	9.8	9.6
4	15	16	18	26	19	25	23	17	15	12	9.6	9.6
5	15	15	18	28	50	25	23	17	15	11	9.8	9.1
6	15	16	18	38	41	25	22	17	14	11	10	9.1
7	15	16	18	35	28	25	22	17	14	11	10	9.3
8	15	16	19	28	27	22	22	17	14	11	10	9.4
9	15	16	18	27	41	23	22	17	15	11	10	9.7
10	14	16	18	26	39	24	22	18	15	11	10	10
11	14	17	18	26	35	24	22	18	15	11	10	10
12	15	16	19	25	31	24	22	18	14	10	10	11
13	15	17	18	25	29	24	22	18	14	10	9.8	12
14	15	19	19	25	28	25	21	18	14	10	9.6	11
15	15	18	19	25	27	25	21	17	14	11	10	11
16	14	18	84	24	27	25	21	17	14	11	9.6	11
17	14	18	20	24	27	25	20	17	14	11	9.2	11
18	14	18	29	24	26	25	20	17	14	10	9.4	11
19	15	18	27	24	26	25	20	16	13	10	9.5	12
20	14	18	29	24	26	25	20	16	13	9.8	9.7	12
21	15	18	43	24	26	25	19	16	13	9.8	10	11
22	15	18	41	23	26	24	20	16	13	10	9.9	10
23	15	18	33	23	25	24	20	15	13	10	9.9	10
24	15	18	41	23	25	24	20	15	13	11	9.8	9.9
25	15	20	31	22	25	28	20	15	14	11	9.9	10
26	15	19	36	22	25	27	20	15	13	10	9.9	10
27	15	18	32	22	25	25	20	15	13	10	9.8	10
28	15	18	30	22	25	24	19	15	13	10	9.7	10
29	15	17	30	21	---	24	19	15	13	9.8	9.5	9.9
30	15	18	29	21	---	24	19	15	13	9.7	9.9	10
31	15	---	28	21	---	24	---	14	---	9.7	9.8	---
TOTAL	460	517	838	777	792	764	630	512	415	330.8	303.5	307.7
MEAN	14.8	17.2	27.0	25.1	28.3	24.6	21.0	16.5	13.8	10.7	9.79	10.3
MAX	16	20	84	38	50	28	23	18	15	13	10	12
MIN	14	15	18	21	19	22	19	14	13	9.7	9.2	9.1
AC-FT	912	1030	1660	1540	1570	1520	1250	1020	823	656	602	610

CAL YR 1988 TOTAL 7909 MEAN 21.6 MAX 208 MIN 13 AC-FT 15690
WTR YR 1989 TOTAL 6647.0 MEAN 18.2 MAX 84 MIN 9.1 AC-FT 13180

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 mi^2.

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.--No estimated daily discharges. Records fair. No regulation or diversion above station. See schematic diagram of Santa Ana River basin.

AVERAGE DISCHARGE.--58 years (water years 1921-38, 1950-89), 1.82 ft^3/s, 1,320 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,180 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	0745	*9.6	*1.48				

Minimum daily, 0.14 ft^3/s for several days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.28	.33	.47	.38	.43	.59	.38	.32	.39	.28	.14	.18
2	.28	.38	.47	.38	.39	.57	.38	.28	.38	.28	.14	.18
3	.28	.38	.47	.38	.38	.47	.38	.28	.41	.28	.17	.18
4	.28	.38	.47	.38	.43	.47	.38	.28	.38	.29	.17	.18
5	.31	.33	.40	.41	.38	.47	.37	.28	.38	.20	.16	.18
6	.36	.31	.38	.45	.38	.51	.36	.28	.38	.20	.17	.19
7	.35	.38	.38	.39	.31	.49	.36	.35	.31	.23	.17	.19
8	.32	.38	.38	.38	.28	.38	.35	.40	.28	.24	.17	.20
9	.28	.38	.38	.38	.37	.38	.38	.45	.28	.24	.17	.20
10	.28	.38	.38	.38	.33	.38	.38	.47	.28	.25	.17	.20
11	.28	.33	.38	.38	.28	.40	.38	.47	.28	.25	.16	.20
12	.29	.28	.38	.38	.31	.42	.38	.47	.28	.24	.14	.22
13	.34	.33	.38	.38	.34	.45	.38	.47	.26	.24	.15	.20
14	.38	.40	.38	.38	.38	.45	.38	.46	.25	.24	.15	.17
15	.34	.39	1.0	.38	.38	.45	.42	.47	.25	.24	.14	.14
16	.32	.38	2.4	.38	.38	.47	.43	.47	.27	.20	.14	.14
17	.31	.42	.39	.38	.38	.47	.38	.47	.27	.17	.14	.18
18	.29	.38	.38	.38	.37	.47	.38	.47	.26	.18	.16	.19
19	.29	.38	.32	.38	.28	.48	.38	.47	.27	.17	.18	.25
20	.32	.38	.30	.38	.32	.40	.38	.41	.27	.19	.20	.17
21	.28	.40	1.3	.38	.38	.38	.38	.36	.27	.20	.20	.14
22	.28	.38	.49	.38	.38	.38	.38	.36	.28	.20	.19	.14
23	.28	.45	.40	.38	.44	.38	.44	.37	.28	.19	.19	.14
24	.28	.58	1.3	.38	.47	.38	.45	.38	.28	.18	.20	.14
25	.28	.59	.67	.38	.47	.49	.46	.38	.32	.17	.20	.14
26	.24	.58	.47	.38	.47	.39	.45	.36	.34	.16	.20	.14
27	.20	.52	.47	.38	.47	.38	.46	.38	.33	.14	.19	.14
28	.20	.47	.44	.38	.49	.38	.46	.38	.32	.16	.18	.14
29	.20	.47	.44	.38	---	.38	.46	.38	.28	.15	.18	.15
30	.22	.47	.42	.42	---	.38	.43	.38	.28	.18	.18	.16
31	.27	---	.43	.47	---	.38	---	.37	---	.14	.18	---
TOTAL	8.91	12.21	17.32	12.02	10.67	13.47	11.98	12.12	9.11	6.48	5.28	5.17
MEAN	.29	.41	.56	.39	.38	.43	.40	.39	.30	.21	.17	.17
MAX	.38	.59	2.4	.47	.49	.59	.46	.47	.41	.29	.20	.25
MIN	.20	.28	.30	.38	.28	.38	.35	.28	.25	.14	.14	.14
AC-FT	18	24	34	24	21	27	24	24	18	13	10	10

CAL YR 1988 TOTAL 207.78 MEAN .57 MAX 20 MIN .20 AC-FT 412
WTR YR 1989 TOTAL 124.74 MEAN .34 MAX 2.4 MIN .14 AC-FT 247

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 mi^2.

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.--No estimated daily discharges. 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.--12 years (water years 1972-77, 1984-89), 7.77 ft^3/s, 5,630 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,780 ft^3/s, Feb. 11, 1973, gage height, 13.50 ft, site and datum then in use; minimum daily, 1.7 ft^3/s, Sept. 5, 6, 1989.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft^3/s and maximum (*), from rating curve extended above 30 ft^3/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)
Dec. 16	0815	*89	*4.66				

Minimum daily, 1.7 ft^3/s, Sept. 5, 6.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.7	3.1	3.4	4.8	4.1	5.4	5.3	3.9	3.5	2.9	2.5	2.0
2	3.6	3.1	3.4	4.2	4.6	7.2	5.2	3.9	3.6	2.7	2.5	1.8
3	3.5	3.1	3.4	4.2	4.5	6.8	5.0	3.8	3.8	2.6	2.5	1.8
4	3.6	2.9	3.1	5.2	7.6	6.0	4.9	3.8	3.8	2.5	2.5	1.8
5	3.6	3.0	3.4	8.3	6.1	5.8	4.8	3.7	3.7	2.5	2.5	1.7
6	3.7	3.0	3.5	14	5.4	5.8	4.7	3.7	3.7	2.5	2.4	1.7
7	3.7	3.1	3.5	7.3	5.0	5.8	4.4	3.6	3.5	2.6	2.4	1.8
8	3.5	3.0	3.5	6.6	5.2	5.7	4.3	3.6	3.5	2.7	2.4	1.8
9	3.3	3.0	3.5	6.1	12	5.7	4.4	3.9	3.5	2.5	2.4	1.8
10	3.3	3.1	3.5	6.0	20	5.8	4.3	4.0	3.7	2.6	2.6	1.8
11	3.3	3.0	3.5	5.5	13	5.7	4.4	4.1	3.5	2.6	3.1	2.3
12	3.3	2.9	3.5	5.1	9.4	5.6	4.4	4.0	3.3	2.4	2.9	2.3
13	3.3	3.2	3.5	4.7	8.6	5.5	4.3	4.1	3.2	2.3	2.2	2.2
14	3.4	3.6	3.5	5.0	8.1	5.5	4.4	4.0	3.1	2.3	2.1	2.2
15	3.4	3.1	9.4	4.0	7.1	5.5	4.4	4.2	3.1	2.3	2.0	2.1
16	3.3	3.1	44	3.8	6.5	5.4	4.3	4.0	3.2	2.3	2.1	2.1
17	3.3	3.1	9.8	3.7	6.4	5.3	4.2	4.1	3.2	2.3	2.1	2.4
18	3.4	3.1	5.3	3.8	6.5	5.3	4.2	4.0	3.1	2.4	2.2	2.4
19	3.4	3.1	4.6	3.9	6.2	5.2	4.0	4.0	3.1	2.3	2.2	3.4
20	3.4	3.1	5.5	3.9	6.2	4.9	3.9	3.9	3.0	2.3	2.3	2.8
21	3.4	3.2	22	3.8	5.8	4.9	4.0	3.7	2.9	2.5	2.3	2.6
22	3.4	3.1	7.7	3.9	5.9	4.9	4.0	3.6	2.9	2.7	2.3	2.5
23	3.6	3.2	6.4	4.1	5.9	4.9	4.0	3.5	3.1	2.8	2.3	2.6
24	3.4	3.4	17	4.1	5.7	5.0	4.1	3.6	3.3	2.8	2.3	2.6
25	3.4	3.5	15	4.1	5.5	7.7	4.2	3.6	3.1	2.8	2.4	2.7
26	3.5	3.4	6.6	4.2	5.4	6.4	4.3	3.5	2.9	2.7	2.3	2.6
27	3.6	3.4	5.6	4.2	5.4	5.9	4.2	3.5	2.8	2.7	2.2	2.5
28	3.3	3.3	5.0	4.2	5.4	5.7	4.2	3.6	2.7	2.7	2.3	2.5
29	3.0	3.2	4.8	4.0	---	5.6	4.1	3.6	2.7	2.7	2.2	2.5
30	2.9	3.2	4.6	4.0	---	5.2	4.0	3.6	3.0	2.6	2.1	2.5
31	2.8	---	4.5	4.1	---	5.1	---	3.5	---	2.6	2.0	---
TOTAL	105.3	94.6	226.0	154.8	197.5	175.2	130.9	117.6	97.5	79.2	72.6	67.8
MEAN	3.40	3.15	7.29	4.99	7.05	5.65	4.36	3.79	3.25	2.55	2.34	2.26
MAX	3.7	3.6	44	14	20	7.7	5.3	4.2	3.8	2.9	3.1	3.4
MIN	2.8	2.9	3.1	3.7	4.1	4.9	3.9	3.5	2.7	2.3	2.0	1.7
AC-FT	209	188	448	307	392	348	260	233	193	157	144	134

CAL YR 1988 TOTAL 2375.8 MEAN 6.49 MAX 135 MIN 2.8 AC-FT 4710
WTR YR 1989 TOTAL 1519.0 MEAN 4.16 MAX 44 MIN 1.7 AC-FT 3010

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 mi^2.
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.--No estimated daily discharges. 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: 70 years (water years 1914, 1921-89), 2.26 ft^3/s, 1,640 acre-ft/yr. Combined creek and diversion: 56 years (water years 1914, 1935-89), 4.21 ft^3/s, 3,050 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD (1913-14 AND SINCE 1919).--Maximum discharge, 3,720 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 4	1300	*135	*5.97				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	1.9	.02	.49	.06	.00	1.8	.00	.84	.95
2	.00	.00	.00	.97	1.4	4.7	.04	.00	1.6	.00	.93	.77
3	.00	.00	.00	.76	2.6	2.8	.02	.00	.67	.00	.74	.72
4	.00	.00	.00	2.3	48	.19	.00	.00	1.2	.00	.98	.75
5	.00	.00	.00	2.9	15	.18	.00	.00	.81	.00	.60	.83
6	.00	.00	.00	6.5	8.1	.34	.00	.00	.08	.00	.98	.84
7	.00	.00	.00	3.1	6.4	.31	.00	.00	.01	.00	1.0	.83
8	.00	.00	.00	1.6	6.0	.20	.00	.00	.00	.31	1.1	.89
9	.00	.00	.21	1.0	7.6	.17	.00	.12	.00	1.2	1.1	.74
10	.00	.00	.33	1.2	7.4	.16	.00	1.4	.00	1.1	1.1	.75
11	.00	.06	.00	1.6	6.3	.15	.00	1.8	.00	1.2	1.1	.88
12	.02	.00	.00	1.9	5.8	.14	.57	1.2	.00	1.2	.71	.75
13	.00	.00	.00	1.7	5.5	.13	.19	1.2	.00	.54	.92	.89
14	.00	4.0	.01	1.1	5.5	.12	.10	1.1	.00	.10	.91	.86
15	.00	1.5	1.4	.61	5.2	.11	.00	1.9	.00	1.0	.98	.87
16	.00	.00	4.7	.13	4.5	.26	.00	2.2	.00	1.0	.99	.81
17	.00	.00	5.0	.13	3.6	1.1	.00	2.2	.00	1.1	1.0	1.1
18	.00	.00	3.4	.09	3.5	.06	.00	2.1	.00	1.0	.80	1.1
19	.00	.00	3.0	.05	3.7	.19	.11	1.4	.00	.93	.74	1.8
20	.00	.00	2.9	.05	4.1	.17	.06	.09	.00	.99	.79	1.5
21	.00	.00	10	.03	3.9	.13	.00	.01	.00	1.0	.88	1.2
22	.00	.00	2.9	.00	3.3	.11	.00	.00	.00	.61	.90	.91
23	.00	.48	2.2	.32	2.4	.01	.36	1.6	.00	1.0	.89	.94
24	.00	1.8	4.6	1.6	2.3	.56	.72	1.3	.00	1.2	.94	.87
25	.00	1.7	6.1	1.5	1.4	6.6	.34	.01	.00	1.1	1.2	.96
26	.00	1.6	3.1	1.1	.54	4.5	1.3	.69	.00	.15	1.1	.68
27	.00	1.5	2.4	.53	.32	2.5	.00	1.4	.00	.27	1.0	.04
28	.00	1.0	2.2	.10	.31	.36	.00	1.4	.00	.81	1.1	.21
29	.00	.00	2.0	.01	---	.57	.00	.01	.00	.74	1.0	.51
30	.00	.00	1.9	.00	---	1.1	.00	.81	.00	.74	1.0	.94
31	.00	---	1.9	.00	---	.71	---	1.6	---	.65	.97	---
TOTAL	0.02	13.64	60.25	34.78	164.69	29.12	3.87	25.54	6.17	19.94	29.29	25.89
MEAN	.001	.45	1.94	1.12	5.88	.94	.13	.82	.21	.64	.94	.86
MAX	.02	4.0	10	6.5	48	6.6	1.3	2.2	1.8	1.2	1.2	1.8
MIN	.00	.00	.00	.00	.02	.01	.00	.00	.00	.00	.60	.04
AC-FT	.04	27	120	69	327	58	7.7	51	12	40	58	51
a	52	103	192	188	379	201	164	141	125	76	80	68

CAL YR 1988 TOTAL 292.49 MEAN .80 MAX 15 MIN .00 AC-FT 580 a 1713
WTR YR 1989 TOTAL 413.20 MEAN 1.13 MAX 48 MIN .00 AC-FT 820 a 1769

a Combined discharge, in acre-feet, of Devil Canyon Creek and city of San Bernardino diversion.

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 mi^2.

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. Flow partly regulated by Lytle Creek spreading grounds 3.2 mi upstream. Diversions above 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 ft^3/s, Mar. 4, 1978, gage height, 14.8 ft, from rating curve extended above 4,200 ft^3/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, 696 ft^3/s, Feb. 4, gage height, 2.63 ft; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	2.8	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	1.5	.00	15	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.80	3.0	3.7	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	7.3	289	2.6	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	2.1	9.3	1.9	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	2.8	6.8	1.4	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	1.3	5.1	1.0	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.72	7.2	.67	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.22	15	.30	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	4.6	.00	.00	.00	.00	.00	.04	.00
11	.00	.00	.00	.00	3.4	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	2.6	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	2.0	.00	.00	.00	.00	.00	.00	.00
14	.00	2.8	.00	.00	1.5	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	4.8	.00	1.0	.00	.00	2.1	.00	.00	.00	.00
16	.00	.00	25	.00	.58	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	7.6	.00	.26	.00	.00	.00	.00	.00	.00	.21
18	.00	.00	4.6	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.33	.00	.00	.00	.00	.00	.00	.00	.00	11
20	.00	.00	1.4	.00	.00	.00	.00	.00	.00	.00	.00	1.1
21	.00	.00	159	.00	.00	.00	.00	.00	.00	.00	.00	.71
22	.00	.00	8.8	.00	.00	.00	.00	.00	.00	.00	.00	.25
23	.00	.02	6.4	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.06	106	.00	.00	.00	.09	.00	.00	.00	.00	.00
25	.00	2.9	47	.00	.00	45	.00	.00	.00	.00	.00	.00
26	.00	.00	7.1	.00	.00	3.2	.00	.00	.00	.00	.00	.00
27	.00	.00	4.5	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	3.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	2.1	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	1.4	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	2.6	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	5.78	391.63	19.54	351.34	74.77	0.09	2.10	0.00	0.00	0.04	13.27
MEAN	.00	.19	12.6	.63	12.5	2.41	.003	.068	.00	.00	.001	.44
MAX	.00	2.9	159	7.3	289	45	.09	2.1	.00	.00	.04	11
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.0	11	777	39	697	148	.2	4.2	.0	.0	.08	26

CAL YR 1988 TOTAL 962.54 MEAN 2.63 MAX 271 MIN .00 AC-FT 1910
WTR YR 1989 TOTAL 858.56 MEAN 2.35 MAX 289 MIN .00 AC-FT 1700

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 mi^2.

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.--No estimated daily discharges. 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 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.--19 years (water years 1971-89), 114 ft^3/s, 82,590 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,200 ft^3/s, Mar. 2, 1983, gage height, 15.38 ft, site and datum then in use, from rating curve extended above 5,100 ft^3/s on basis of area-velocity study; maximum gage height, 20.23 ft, Mar. 4, 1978; minimum daily, 15 ft^3/s, Sept. 7, 8, 1980.
EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since at least 1927, 100,000 ft^3/s, Mar. 2, 1938, on basis of slope-area measurement at site 1.1 mi downstream. Flood of Jan. 22, 1862, 320,000 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 21	1100	2,710	10.20	Feb. 4	2000	*3,640	*10.53
Dec. 25	0415	2,730	10.21				

Minimum daily, 45 ft^3/s, July 16.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	64	76	93	83	80	76	63	60	59	53	50
2	72	75	76	73	81	145	81	63	65	59	52	52
3	78	64	70	86	103	127	80	61	77	61	53	52
4	70	64	78	322	1120	83	75	63	75	57	56	52
5	80	64	89	141	292	73	70	63	76	58	54	56
6	74	69	88	135	153	73	67	60	74	60	53	56
7	84	66	87	82	112	77	67	55	80	61	55	57
8	72	74	86	77	143	75	64	53	81	59	63	56
9	63	83	92	78	269	76	61	55	89	61	62	56
10	70	85	77	83	293	75	63	59	89	52	61	55
11	69	85	75	78	143	73	66	63	90	57	67	57
12	69	79	88	74	117	73	70	59	90	55	66	58
13	81	80	80	77	106	76	68	56	85	46	61	58
14	80	158	92	81	103	80	68	56	70	47	62	59
15	81	111	171	79	93	88	65	58	60	48	68	55
16	77	100	593	81	91	89	64	86	66	45	66	54
17	73	98	291	76	86	87	67	65	70	49	64	66
18	77	106	96	74	81	82	67	52	65	49	66	65
19	80	92	111	79	83	77	65	51	72	51	65	191
20	76	84	74	78	84	75	67	48	70	49	68	174
21	72	91	855	79	80	72	64	49	66	48	60	77
22	75	102	116	76	78	72	63	58	71	55	62	65
23	75	101	81	72	82	71	64	55	72	50	60	59
24	66	117	164	73	90	71	68	60	76	53	59	59
25	72	209	821	74	88	309	70	57	68	55	57	68
26	81	111	127	70	84	180	78	59	67	58	58	61
27	88	86	80	75	80	95	75	59	64	55	56	65
28	81	76	74	83	82	87	72	57	64	54	53	71
29	75	63	70	84	---	84	70	52	64	53	53	67
30	69	68	70	89	---	81	64	58	62	54	53	56
31	64	---	75	80	---	77	---	56	---	50	53	---
TOTAL	2307	2725	5023	2802	4300	2883	2059	1809	2178	1668	1839	2027
MEAN	74.4	90.8	162	90.4	154	93.0	68.6	58.4	72.6	53.8	59.3	67.6
MAX	88	209	855	322	1120	309	81	86	90	61	68	191
MIN	63	63	70	70	78	71	61	48	60	45	52	50
AC-FT	4580	5410	9960	5560	8530	5720	4080	3590	4320	3310	3650	4020

CAL YR 1988 TOTAL 36283 MEAN 99.1 MAX 1180 MIN 46 AC-FT 71970
WTR YR 1989 TOTAL 31620 MEAN 86.6 MAX 1120 MIN 45 AC-FT 62720

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 1988 TO SEPTEMBER 1989

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...	1230	62	930	22.5	573
20...	1100	66	948	20.0	586
NOV					
08...	1250	79	915	19.0	578
18...	1345	75	975	15.5	589
DEC					
02...	1115	77	922	15.0	572
30...	1115	70	925	12.5	580
JAN					
09...	1315	79	928	16.0	558
FEB					
03...	1145	79	936	16.0	569
23...	1330	83	980	21.0	585
MAR					
06...	1230	72	955	22.0	562
16...	1300	77	940	19.0	569
APR					
03...	1230	84	938	22.5	559
13...	1150	70	968	22.5	590
MAY					
03...	1345	62	964	28.0	577
31...	1245	58	943	25.0	552
JUN					
13...	1530	60	954	28.0	571
23...	1235	67	925	24.5	564
JUL					
14...	1445	48	922	27.5	579
AUG					
03...	1155	59	938	24.5	573
14...	1025	64	945	23.5	571
29...	0945	68	932	21.0	573
SEP					
15...	1030	66	942	21.5	569

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 mi^2.
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. 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: 57 years (water years 1921-26, 1928-69, 1981-89), 18.4 ft^3/s, 13,330 acre-ft/yr; 11 years (water years 1970-80), 29.0 ft^3/s, 21,010 acre-ft/yr. Combined river and diversion: 40 years (water years 1949-80, 1982-89), 24.8 ft^3/s, 17,970 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 45,000 ft^3/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 ft^3/s, Feb. 21, 1980; no flow at times in 1951, 1952, 1957, 1976.
EXTREMES FOR CURRENT YEAR.--Combined river and diversion: Peak discharges greater than base discharge of 500 ft^3/s and maximum (*), from rating curve extended above 1,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 4	2100	*573	*4.70				

Minimum daily, 0.21 ft^3/s, Nov. 22.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.14	.15	.90	9.5	.09	.02	.00	.00	.00
2	.00	.00	.00	.13	.17	1.2	9.0	.08	.01	.00	.00	.00
3	.00	.00	.00	.12	.18	11	8.3	.07	.01	.00	.00	.00
4	.00	.00	.00	2.4	91	7.9	5.2	.07	.00	.00	.00	.00
5	.00	.00	.00	3.3	61	9.5	4.8	.05	.00	.00	.00	.00
6	.00	.00	.00	7.0	11	11	2.8	.04	.00	.00	.00	.00
7	.00	.00	.00	4.6	7.6	12	1.8	.04	.06	.00	.00	.00
8	.00	.00	.00	3.2	7.7	13	.97	.04	.24	.00	.00	.00
9	.00	.00	.00	1.6	7.9	11	1.0	.04	.25	.00	.00	.00
10	.00	.00	.00	1.3	8.6	8.5	1.1	.12	.05	.00	.00	.00
11	.00	.00	.00	.89	8.9	5.8	.37	.40	e.05	.00	.00	.00
12	.00	.00	.00	1.1	7.8	4.4	.49	.47	e.04	.00	.00	.00
13	.00	.00	.00	1.8	6.8	6.5	.41	.15	e.03	.00	.00	.00
14	.00	.16	.00	2.6	6.0	7.0	.41	.20	e.02	.00	.00	.00
15	.00	.10	.00	.67	4.3	5.4	.29	.61	e.01	.00	.00	.00
16	.00	.27	.00	.79	3.6	5.6	.28	.46	.00	.00	.00	.00
17	.00	.09	.00	.56	3.6	4.8	.28	.14	.00	.00	.00	.00
18	.00	.04	.20	.33	3.3	4.6	.24	.13	.00	.00	.00	.00
19	.00	.00	.21	.63	3.7	4.6	.19	.11	.00	.00	.00	.00
20	.00	.00	.16	.56	3.8	4.3	.16	.10	.00	.00	.00	.00
21	.00	.00	3.4	.68	2.1	4.6	.16	.13	.00	.00	.00	.00
22	.00	.00	1.6	.94	.94	4.4	.17	.09	.00	.00	.00	.00
23	.00	.00	.53	1.1	.67	4.1	.15	.07	.00	.00	.00	.00
24	.00	.00	.30	1.0	.81	3.7	.15	.06	.00	.00	.00	.00
25	.00	.00	61	.89	1.7	58	.16	.06	.00	.00	.00	.00
26	.00	.03	7.8	.80	.78	161	.20	.06	.00	.00	.00	.00
27	.00	.05	2.7	.52	1.7	63	.17	.05	.00	.00	.00	.00
28	.00	.00	1.3	.34	2.7	43	.14	.04	.00	.00	.00	.00
29	.00	.00	1.2	.20	---	44	.13	.04	.00	.00	.00	.00
30	.00	.00	.22	.19	---	34	.11	.04	.00	.00	.00	.00
31	.00	---	.17	.18	---	22	---	.03	---	.00	.00	---
TOTAL	0.00	0.74	80.79	40.56	258.50	580.80	49.13	4.08	0.79	0.00	0.00	0.00
MEAN	.000	.025	2.61	1.31	9.23	18.7	1.64	.13	.026	.000	.000	.000
MAX	.00	.27	61	7.0	91	161	9.5	.61	.25	.00	.00	.00
MIN	.00	.00	.00	.12	.15	.90	.11	.03	.00	.00	.00	.00
AC-FT	.00	1.5	160	80	513	1150	97	8.1	1.6	.00	.00	.00

CAL YR 1988 TOTAL 405.32 MEAN 1.11 MAX 61 MIN .00 AC-FT 804
WTR YR 1989 TOTAL 1015.39 MEAN 2.78 MAX 161 MIN .00 AC-FT 2010

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 1988 TO SEPTEMBER 1989
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	3.2	.53	.66	2.5	6.5	12	1.0	4.8	4.9	5.2	4.3
2	2.8	4.0	.52	.40	2.9	7.1	13	.92	4.8	5.0	5.5	4.2
3	2.5	3.9	1.5	.90	3.1	18	14	.67	5.0	4.7	5.7	4.1
4	2.8	3.3	2.4	6.6	96	15	9.6	1.7	5.1	4.5	5.9	3.8
5	3.1	1.7	2.9	6.3	67	16	9.0	2.9	5.1	4.7	5.9	3.9
6	3.0	1.3	1.9	11	17	18	7.5	4.5	7.5	4.4	6.1	3.9
7	3.6	1.4	1.1	6.5	11	16	6.7	4.5	8.8	4.4	6.2	4.0
8	3.4	1.1	.75	4.1	10	16	5.5	4.4	9.0	4.4	6.1	5.1
9	3.5	.82	.75	3.0	11	18	5.1	4.3	8.0	4.7	6.5	5.3
10	3.3	1.3	.85	2.4	11	16	4.9	4.5	5.2	4.3	6.3	5.4
11	3.2	1.7	.91	1.8	10	12	4.4	5.4	4.6	3.5	5.9	5.5
12	3.7	1.1	1.1	1.4	8.5	11	4.2	6.4	4.4	5.2	4.3	4.3
13	3.4	1.1	.79	1.8	6.9	13	3.7	6.6	4.0	5.1	4.1	4.0
14	3.3	2.6	.91	2.6	6.7	12	3.3	6.5	3.9	5.1	3.9	4.3
15	3.2	.89	1.0	.67	5.9	11	2.9	6.6	5.0	4.9	4.0	4.3
16	2.9	.65	1.4	.79	6.2	10	2.8	4.6	4.5	5.0	3.9	4.5
17	2.9	.35	1.4	.56	5.8	9.2	2.6	2.1	4.4	4.8	3.8	5.3
18	3.0	.29	.80	.33	4.4	8.3	2.3	1.2	4.5	4.8	5.5	5.1
19	3.1	.23	.92	.63	5.1	8.2	2.2	.58	4.4	4.7	5.7	5.6
20	2.9	.23	.82	.56	5.6	7.6	2.5	3.3	4.3	4.6	5.8	2.8
21	2.9	.23	6.1	.68	5.5	7.0	1.7	5.1	4.2	6.0	6.0	2.1
22	3.2	.21	4.3	.94	6.1	6.1	1.7	5.4	6.5	6.3	5.9	2.0
23	3.0	.23	2.0	1.1	5.7	5.6	1.5	5.3	6.4	6.6	5.8	1.9
24	2.9	.35	1.5	1.0	5.4	5.1	1.6	5.4	4.0	6.5	6.1	1.6
25	2.9	.63	63	.89	7.1	63	1.8	5.5	4.0	5.8	6.1	1.7
26	2.9	1.6	8.9	.80	6.7	166	2.5	5.4	3.6	3.4	5.9	1.7
27	3.0	1.1	4.7	.52	7.6	66	2.6	5.2	4.6	3.4	5.7	3.2
28	3.1	.70	3.1	.41	8.7	47	2.1	5.2	5.1	3.8	5.1	3.3
29	3.2	.81	1.9	.60	---	48	1.7	5.2	5.0	5.0	4.1	3.4
30	3.1	.54	.95	1.6	---	38	1.4	5.3	4.9	5.1	4.4	3.6
31	3.1	---	.72	2.6	---	26	---	5.0	---	5.1	4.3	---
TOTAL	95.9	37.56	120.42	64.14	349.4	726.7	136.8	130.67	155.6	150.7	165.7	114.2
MEAN	3.09	1.25	3.88	2.07	12.5	23.4	4.56	4.22	5.19	4.86	5.35	3.81
MAX	3.7	4.0	63	11	96	166	14	6.6	9.0	6.6	6.5	5.6
MIN	2.5	.21	.52	.33	2.5	5.1	1.4	.58	3.6	3.4	3.8	1.6
AC-FT	190	75	239	127	693	1440	271	259	309	299	329	227

CAL YR 1988 TOTAL 1347.93 MEAN 3.68 MAX 63 MIN .00 AC-FT 2670
WTR YR 1989 TOTAL 2247.79 MEAN 6.16 MAX 166 MIN .21 AC-FT 4460

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 mi^2.

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 CURRENT YEAR.--No flow for the 1989 water year.

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 mi^2.

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 (station 11069000) and regulated 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 1,760 acre-ft during the current year from Railroad Canyon Reservoir for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft^3/s, Feb. 17, 1927, gage height, 11.8 ft, from rating curve extended above 2,000 ft^3/s on basis of slope-area measurement of peak flow; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3.7 ft^3/s, Jan. 4, gage height, 2.67 ft; no flow for several days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.47	.66	.80	1.1	1.2	1.1	.55	e.45	.40	.28	.06	.33
2	.46	.74	.79	.98	1.3	1.2	.56	e.40	e.45	.17	.09	.33
3	.47	.78	.78	.98	.94	1.4	.56	e.40	e.50	.11	.12	.36
4	.45	.73	.78	1.7	1.1	1.2	.56	e.40	e.55	.14	.12	.37
5	.49	.68	.78	1.8	1.2	1.2	.47	.41	e.60	.07	.05	.37
6	.52	.61	.78	1.5	1.1	1.3	.41	.50	.73	.09	.00	.37
7	.54	.62	.78	1.3	1.5	1.4	.37	.56	.65	.09	.09	.37
8	.49	.65	.75	1.1	2.2	1.2	.33	.56	.69	.15	.23	.37
9	.44	.65	.74	1.3	2.3	1.1	.29	.64	.67	.15	.26	.34
10	.42	.65	.74	1.3	1.9	1.2	.26	.68	.69	.36	.26	.36
11	.47	.65	.74	1.3	1.5	.94	.29	.75	.68	.47	.26	.37
12	.51	.65	.74	1.2	1.1	.80	.37	.61	.67	.38	.23	.37
13	.55	.65	.74	1.1	1.5	.78	.43	.59	.58	.27	.12	.37
14	.56	.65	.74	1.1	1.4	1.1	.44	.63	.44	.20	.00	.37
15	.55	.69	.75	.99	1.4	1.3	.48	.82	.39	.11	.00	.39
16	.49	.69	.94	1.1	1.4	.83	.53	.89	.38	.05	.00	.40
17	.45	.69	1.6	1.1	1.3	.90	.53	.74	.33	.04	.33	.40
18	.51	.69	1.3	1.2	1.3	.78	.54	.65	.26	.11	.37	.37
19	.57	.71	1.2	1.1	.99	.72	.52	.59	.35	.08	.37	.43
20	.56	.74	1.2	1.1	1.3	.87	.41	.61	.33	.04	.37	.34
21	.56	.74	1.3	1.2	1.3	.73	.40	.44	.22	.00	.37	.33
22	.57	.74	1.5	.99	1.3	.74	.42	.50	.20	.00	.37	.33
23	.55	.74	1.3	1.2	1.2	.67	.44	.48	.25	.00	.33	.33
24	.59	.75	1.2	1.2	1.2	.67	.44	.41	.36	.08	.33	.33
25	.53	.78	2.0	1.2	1.2	.70	.46	.37	.39	.14	.33	.33
26	.55	.78	1.8	1.2	.95	.78	.51	.34	.43	.11	.33	.31
27	.67	.78	1.4	1.1	1.2	.81	.48	.30	.42	.06	.33	.35
28	.67	.78	1.2	1.1	1.2	.85	e.50	.28	.38	.03	.33	.43
29	.67	.78	1.2	.95	---	.80	e.50	.27	.32	.00	.33	e.40
30	.71	.78	1.1	1.2	---	.67	e.45	.31	.29	.00	.33	e.40
31	.62	---	1.1	1.2	---	.59	---	.40	---	.01	.35	---
TOTAL	16.66	21.23	32.77	36.89	37.48	29.33	13.50	15.98	13.60	3.79	7.06	10.92
MEAN	.54	.71	1.06	1.19	1.34	.95	.45	.52	.45	.12	.23	.36
MAX	.71	.78	2.0	1.8	2.3	1.4	.56	.89	.73	.47	.37	.43
MIN	.42	.61	.74	.95	.94	.59	.26	.27	.20	.00	.00	.31
AC-FT	33	42	65	73	74	58	27	32	27	7.5	14	22

CAL YR 1988 TOTAL 254.87 MEAN .70 MAX 12 MIN .00 AC-FT 506
WTR YR 1989 TOTAL 239.21 MEAN .66 MAX 2.3 MIN .00 AC-FT 474

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 mi^2, excludes 768 mi^2 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.--5 years, (water years 1985-89), 9.46 ft^3/s, 6,850 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,850 ft^3/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, 1,100 ft^3/s, Dec. 24, gage height, 4.66 ft; minimum daily, 2.0 ft^3/s, Apr. 22.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	7.4	7.7	7.5	4.3	6.3	4.7	4.8	5.1	9.2	4.1	6.7
2	8.4	13	6.5	3.8	7.7	29	6.2	6.3	6.6	11	4.4	5.3
3	7.0	11	6.7	11	11	8.7	5.9	5.6	7.7	8.8	4.5	5.1
4	7.2	8.3	7.7	74	41	7.0	4.8	6.2	6.5	8.8	5.4	5.3
5	6.2	5.3	7.1	6.3	6.9	6.5	4.8	6.6	6.7	11	4.8	5.6
6	5.8	5.2	7.5	8.1	6.5	6.1	4.9	6.0	7.1	13	4.8	6.6
7	5.6	6.1	8.5	3.9	8.1	8.4	5.2	6.3	5.9	12	5.1	7.0
8	5.3	6.4	7.7	3.6	15	7.0	5.9	6.3	6.2	13	4.9	10
9	4.7	5.4	7.4	3.6	51	7.1	4.6	5.8	6.3	12	4.7	3.3
10	4.6	4.6	7.3	3.2	6.3	7.8	4.0	5.4	7.4	12	4.8	4.7
11	4.8	5.2	10	3.2	4.8	9.8	5.7	7.4	8.5	12	5.1	3.7
12	4.7	6.4	8.3	3.9	4.7	8.0	6.5	7.8	8.6	11	4.8	4.5
13	5.2	6.6	7.6	3.4	23	7.1	3.9	8.8	9.6	13	4.5	4.0
14	4.6	20	7.9	3.7	6.2	8.3	2.6	6.5	11	11	3.9	3.5
15	3.3	5.1	36	3.2	4.9	9.2	2.6	5.7	12	10	4.9	3.4
16	3.3	4.4	92	3.2	4.2	11	2.9	8.5	14	11	4.2	6.7
17	3.6	4.2	12	3.4	4.2	10	2.8	10	14	10	3.6	4.7
18	3.5	4.3	44	3.3	5.6	8.6	2.5	13	13	11	3.5	4.1
19	4.1	4.0	5.4	3.4	5.9	9.5	2.3	11	12	12	4.1	56
20	6.6	4.2	4.5	3.6	4.5	8.7	3.1	8.7	9.5	12	3.3	8.1
21	8.5	4.5	84	3.5	4.2	10	2.7	9.5	7.5	10	4.3	7.6
22	6.8	4.2	4.9	3.5	4.5	13	2.0	10	7.1	8.8	4.1	7.0
23	6.9	4.3	5.5	4.6	4.4	12	3.4	9.6	7.7	9.8	4.4	7.1
24	6.7	4.5	170	4.1	5.0	11	3.8	9.6	6.8	8.8	4.3	6.8
25	7.2	38	28	4.0	5.1	100	3.1	9.4	6.9	7.8	4.3	5.5
26	7.5	6.2	4.7	5.2	5.5	9.9	4.0	8.3	6.9	6.3	5.8	5.0
27	7.7	5.3	4.5	7.3	5.3	7.3	4.0	5.3	7.2	5.7	5.2	4.9
28	8.2	5.7	4.3	7.5	5.9	5.8	4.6	5.4	7.8	5.8	4.8	5.8
29	8.4	5.6	4.1	7.4	---	4.6	3.5	5.2	8.1	4.4	6.5	5.3
30	8.4	4.9	4.0	6.2	---	4.5	3.5	4.9	9.4	4.5	5.0	4.7
31	8.2	---	12	4.7	---	5.5	---	4.9	---	4.3	6.6	---
TOTAL	193.0	220.3	627.8	217.3	265.7	367.7	120.5	228.8	253.1	300.0	144.7	218.0
MEAN	6.23	7.34	20.3	7.01	9.49	11.9	4.02	7.38	8.44	9.68	4.67	7.27
MAX	10	38	170	74	51	100	6.5	13	14	13	6.6	56
MIN	3.3	4.0	4.0	3.2	4.2	4.5	2.0	4.8	5.1	4.3	3.3	3.3
AC-FT	383	437	1250	431	527	729	239	454	502	595	287	432

CAL YR 1988 TOTAL 3319.7 MEAN 9.07 MAX 198 MIN 3.0 AC-FT 6580
WTR YR 1989 TOTAL 3156.9 MEAN 8.65 MAX 170 MIN 2.0 AC-FT 6260

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 mi^2.

PERIOD OF RECORD.--October 1969 to current year.

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, 7,620 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 4,490 acre-ft was released during the current year to the basin via San Antonio Creek from Rialto Pipeline below San Antonio Dam at a site 10 mi upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,700 ft^3/s, Feb. 27, 1983, gage height, 10.32 ft, from rating curve extended above 1,200 ft^3/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 ft^3/s, on basis of contracted-opening measurement at site 6.1 mi downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 984 ft^3/s, Mar. 25, gage height, 6.28 ft; minimum daily, 0.72 ft^3/s, June 4.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	9.1	2.0	4.4	.99	1.3	.96	75	1.2	1.1	72	1.1
2	75	44	1.9	1.3	5.2	38	.91	43	1.2	1.1	55	2.2
3	75	58	1.6	8.4	37	2.1	.91	.96	1.0	.94	1.5	2.0
4	73	73	1.6	57	192	1.2	.96	.96	.72	1.0	1.2	4.2
5	73	72	1.9	52	2.0	1.0	.96	.92	.88	1.2	.96	2.9
6	50	73	1.9	11	2.4	1.1	1.5	.88	.96	1.4	.95	3.5
7	1.1	71	1.9	4.1	2.7	1.1	1.2	.83	.97	1.4	1.5	3.1
8	1.0	72	3.0	4.4	21	1.1	1.3	.90	.96	1.3	1.1	3.9
9	1.0	70	4.1	3.7	28	1.1	1.3	.88	1.2	1.0	1.1	1.0
10	1.1	51	3.5	1.0	1.9	1.1	1.3	.86	.90	1.3	1.1	.93
11	1.0	1.1	3.5	.91	1.1	.97	1.1	.91	.83	19	1.1	1.1
12	1.1	1.5	3.5	.83	1.0	1.2	1.0	1.0	.90	42	1.1	1.3
13	1.0	1.3	4.0	1.6	13	.98	.93	.84	1.0	62	1.2	1.3
14	1.2	50	3.5	1.9	2.4	1.0	.89	.83	1.2	76	1.3	1.2
15	1.1	.98	166	1.6	1.5	1.3	.83	.96	1.0	75	1.1	1.2
16	.97	.96	255	1.3	1.2	1.1	.83	1.1	1.2	75	.98	1.5
17	1.0	1.0	3.2	.98	1.1	.97	.89	.92	1.0	75	1.0	4.2
18	1.0	1.8	18	.98	1.1	.99	1.3	1.1	1.1	74	3.6	4.0
19	1.5	.96	1.8	.96	1.3	1.1	.98	.95	1.2	72	4.5	57
20	1.1	.96	15	.96	1.3	1.4	.82	.94	1.6	74	3.3	1.1
21	1.3	.96	146	.96	1.2	.90	1.6	.88	1.3	73	3.0	1.3
22	1.2	1.1	2.3	.96	1.1	.92	.86	.94	1.3	72	2.9	1.5
23	1.3	16	2.3	1.3	1.1	.92	.93	.97	1.2	72	4.0	1.1
24	1.6	3.7	149	1.1	1.1	.83	14	1.0	1.1	73	1.8	1.0
25	1.2	76	7.0	.92	1.3	129	60	.96	1.1	75	2.2	.96
26	1.1	2.4	1.8	.92	1.7	2.0	78	1.0	1.2	74	1.5	.99
27	1.2	2.1	2.0	.96	1.4	1.0	77	1.1	1.1	74	1.5	1.1
28	1.3	2.1	1.6	.96	1.4	1.0	76	.82	1.3	74	1.2	1.4
29	1.1	1.9	2.1	1.1	---	1.0	76	.95	1.2	75	1.1	1.3
30	1.1	1.9	1.9	1.1	---	.96	76	.97	1.0	74	1.1	1.0
31	1.2	---	8.5	1.0	---	.96	---	.99	---	80	1.7	---
TOTAL	447.77	761.82	821.4	170.60	328.49	199.60	481.26	145.32	32.82	1471.74	177.59	110.38
MEAN	14.4	25.4	26.5	5.50	11.7	6.44	16.0	4.69	1.09	47.5	5.73	3.68
MAX	75	76	255	57	192	129	78	75	1.6	80	72	57
MIN	.97	.96	1.6	.83	.99	.83	.82	.82	.72	.94	.95	.93
AC-FT	888	1510	1630	338	652	396	955	288	65	2920	352	219

CAL YR 1988 TOTAL 6400.93 MEAN 17.5 MAX 367 MIN .94 AC-FT 12700
WTR YR 1989 TOTAL 5148.79 MEAN 14.1 MAX 255 MIN .72 AC-FT 10210

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 mi^2.

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 now 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 ft^3/s, 1,990 acre-ft/yr; 5 years (water years 1980-84), 19.3 ft^3/s, 13,980 acre-ft/yr; 5 years (water years 1985-89), 27.2 ft^3/s, 19,710 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft^3/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; since 1985, 2.5 ft^3/s, June 6, 1987.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,040 ft^3/s, Mar. 25, gage height, unknown; minimum daily, 14 ft^3/s, Jan. 12.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	38	22	30	22	28	21	26	26	31	24	30
2	23	31	22	20	25	75	24	23	25	32	24	24
3	21	26	20	35	39	36	24	21	23	25	26	30
4	22	25	18	59	e262	27	23	21	28	26	28	28
5	24	23	21	51	45	32	16	20	30	25	26	39
6	27	23	22	52	27	28	22	24	29	27	25	34
7	26	23	21	22	21	27	24	19	30	23	24	32
8	26	22	16	21	48	27	23	23	34	23	26	36
9	27	19	27	24	60	30	26	22	34	18	24	38
10	28	19	20	24	25	30	25	24	30	23	27	43
11	30	16	20	23	21	28	27	29	28	22	26	41
12	33	17	22	14	22	30	26	18	25	25	25	37
13	30	16	21	22	24	30	31	23	24	22	25	23
14	25	57	21	21	22	27	29	23	24	22	24	27
15	31	19	53	20	21	29	23	24	26	22	28	30
16	33	15	e330	22	21	26	27	27	30	19	25	30
17	40	18	45	25	22	29	25	30	34	24	26	30
18	41	18	53	22	23	30	26	24	37	26	24	34
19	34	18	33	22	23	31	25	27	29	26	24	e71
20	33	22	18	24	21	29	29	27	31	22	23	e34
21	33	23	e295	22	23	29	28	28	34	25	24	e34
22	32	23	58	24	22	25	28	26	31	25	24	e28
23	37	22	31	25	23	25	27	25	24	23	26	e26
24	37	18	e177	24	20	24	28	27	28	24	24	e26
25	37	45	78	24	23	e170	30	27	32	23	27	e25
26	35	19	34	22	24	26	29	23	31	25	25	e24
27	34	20	25	21	23	23	28	23	30	22	29	e25
28	36	22	25	23	26	23	27	28	30	23	29	e24
29	40	22	24	24	---	23	27	22	34	25	30	e25
30	40	22	24	24	---	19	26	28	32	23	28	e29
31	39	---	33	22	---	18	---	27	---	25	30	---
TOTAL	975	701	1629	808	978	1034	774	759	883	746	800	957
MEAN	31.5	23.4	52.5	26.1	34.9	33.4	25.8	24.5	29.4	24.1	25.8	31.9
MAX	41	57	330	59	262	170	31	30	37	32	30	71
MIN	21	15	16	14	20	18	16	18	23	18	23	23
AC-FT	1930	1390	3230	1600	1940	2050	1540	1510	1750	1480	1590	1900

CAL YR 1988 TOTAL 10073.8 MEAN 27.5 MAX 500 MIN 8.8 AC-FT 19980
WTR YR 1989 TOTAL 11044 MEAN 30.3 MAX 330 MIN 14 AC-FT 21910

e Estimated.

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 mi^2, excludes 768 mi^2 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 1941 by Prado Reservoir, capacity, 201,200 acre-ft. Natural streamflow affected by extensive ground-water withdrawals, diversion for irrigation, and return flow from irrigated areas. During the current year, the California Water Project released 4,490 acre-ft to the basin. See schematic diagram of Santa Ana River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,440 ft^3/s, Feb. 21, 1980, gage height, 6.88 ft; minimum daily, 2.4 ft^3/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 ft^3/s, on basis of slope-area measurement of peak flow at site 2.5 mi downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,790 ft^3/s, Feb. 9, gage height, 5.06 ft; minimum daily, 24 ft^3/s, May 4.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	223	177	204	486	206	266	302	240	159	140	206	126
2	230	189	203	481	213	263	298	150	155	140	205	124
3	232	217	199	406	201	263	267	25	155	138	151	127
4	235	238	192	357	216	260	312	24	156	138	136	118
5	238	261	181	359	227	256	303	58	146	135	131	127
6	236	262	160	364	226	255	298	156	145	136	129	124
7	190	267	197	364	297	255	293	156	155	139	124	121
8	172	264	218	359	914	256	287	149	147	141	123	126
9	163	257	194	357	1510	256	276	143	146	143	125	121
10	161	254	198	354	301	254	246	144	147	145	126	122
11	163	182	205	348	343	254	297	143	146	144	129	124
12	159	168	205	323	361	255	280	142	197	168	128	124
13	154	169	206	319	304	276	279	141	231	179	125	120
14	155	254	207	316	270	291	234	140	257	204	121	119
15	149	265	220	310	275	314	198	134	297	212	119	126
16	151	229	310	305	270	322	200	128	307	214	122	127
17	147	215	336	294	240	319	203	137	290	215	123	133
18	153	206	337	272	213	316	201	141	276	219	127	142
19	160	202	393	266	208	313	206	142	263	216	129	169
20	166	198	411	264	208	307	193	141	227	214	127	232
21	168	190	377	261	225	300	192	141	168	209	129	229
22	167	191	433	261	251	299	173	141	151	211	129	179
23	178	195	488	260	253	296	169	141	152	208	133	152
24	183	219	488	226	255	293	168	141	154	205	134	151
25	179	254	501	185	254	219	200	156	158	209	134	150
26	184	319	513	166	253	169	245	158	155	211	134	153
27	193	271	509	165	253	262	254	158	151	209	137	141
28	192	227	507	165	253	335	249	157	148	206	138	147
29	187	215	501	162	---	344	247	156	147	206	135	144
30	184	203	494	162	---	340	245	155	148	206	129	142
31	186	---	491	161	---	315	---	155	---	210	130	---
TOTAL	5638	6758	10078	9078	9000	8723	7315	4293	5534	5670	4168	4240
MEAN	182	225	325	293	321	281	244	138	184	183	134	141
MAX	238	319	513	486	1510	344	312	240	307	219	206	232
MIN	147	168	160	161	201	169	168	24	145	135	119	118
AC-FT	11180	13400	19990	18010	17850	17300	14510	8520	10980	11250	8270	8410

CAL YR 1988 TOTAL 87878 MEAN 240 MAX 977 MIN 64 AC-FT 174300
WTR YR 1989 TOTAL 80495 MEAN 221 MAX 1510 MIN 24 AC-FT 159700

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 conductance data due to gate closure. Periods of missing temperature data due to equipment malfunctions and gate closure.

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, 1,190 microsiemens, Apr. 14, 15, 19; minimum recorded, 506 microsiemens, Feb. 9.
WATER TEMPERATURE: Maximum recorded, 27.0 °C, July 4, Aug. 10-13; minimum recorded, 8.0 °C, Jan. 12-17.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	BAROMETRIC PRESSURE (MM OF HG)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)
OCT												
03...	1320	234	968	--	20.0	--	--	--	--	--	--	--
20...	1345	163	1080	--	20.0	--	--	--	--	--	--	--
NOV												
07...	1020	253	980	--	15.5	--	--	--	--	--	--	--
18...	1040	205	1160	--	12.5	--	--	--	--	--	--	--
22...	1200	182	1090	7.9	13.5	14	745	9.5	94	820	830	320
DEC												
01...	1400	234	1100	--	14.5	--	--	--	--	--	--	--
27...	1300	506	628	--	11.0	--	--	--	--	--	--	--
JAN												
19...	1345	268	1070	7.8	11.0	12	745	9.8	91	97	220	320
FEB												
07...	1030	221	658	--	10.0	--	--	--	--	--	--	--
24...	1100	243	955	--	13.0	--	--	--	--	--	--	--
MAR												
07...	1030	250	1020	--	15.0	--	--	--	--	--	--	--
15...	1450	310	1060	--	17.5	--	--	--	--	--	--	--
28...	1330	351	953	7.9	16.5	5.2	750	8.5	89	200	120	270
APR												
04...	1315	301	1010	--	20.0	--	--	--	--	--	--	--
13...	1545	264	1160	--	20.0	--	--	--	--	--	--	--
MAY												
01...	1045	242	925	--	18.0	--	--	--	--	--	--	--
23...	1315	151	1080	8.1	20.0	3.0	745	9.4	106	45	91	310
JUN												
01...	1345	229	1060	--	21.0	--	--	--	--	--	--	--
13...	1230	261	1010	--	20.5	--	--	--	--	--	--	--
23...	1600	140	1090	--	24.5	--	--	--	--	--	--	--
27...	1015	148	--	--	20.5	--	--	--	--	--	--	--
JUL												
14...	1100	189	962	--	22.0	--	--	--	--	--	--	--
27...	1015	210	896	7.9	21.5	36	750	8.5	98	2000	410	230
31...	1230	187	911	--	22.5	--	--	--	--	--	--	--
AUG												
14...	1500	109	1040	--	26.0	--	--	--	--	--	--	--
29...	1410	131	1060	--	23.0	--	--	--	--	--	--	--
SEP												
15...	1300	120	1070	--	22.0	--	--	--	--	--	--	--
26...	1115	157	1110	8.3	20.0	--	745	7.8	88	150	250	310

11074000 SANTA ANA RIVER BELOW PRADO DAM, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3	CARBONATE WATER DIS IT FIELD MG/L AS CO3	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)
NOV											
22...	93	91	23	100	40	2	8.9	279	0	229	130
JAN											
19...	76	91	22	95	38	2	11	297	0	243	130
MAR											
28...	55	75	19	89	41	2	10	259	0	212	110
MAY											
23...	84	88	22	100	40	2	10	272	2	227	130
JUL											
27...	61	61	19	92	45	3	7.6	208	0	170	99
SEP											
26...	79	87	22	110	43	3	9.9	267	6	229	130

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHOROUS TOTAL (MG/L AS P)
OCT												
03...	--	--	--	575	--	--	--	--	--	--	--	--
20...	--	--	--	681	--	--	--	--	--	--	--	--
NOV												
07...	--	--	--	579	--	--	--	--	--	--	--	--
18...	--	--	--	684	--	--	--	--	--	--	--	--
22...	110	0.50	25	679	676	0.92	0.210	8.50	2.40	2.20	4.2	3.20
DEC												
01...	--	--	--	677	--	--	--	--	--	--	--	--
27...	--	--	--	392	--	--	--	--	--	--	--	--
JAN												
19...	110	0.50	25	653	669	0.89	0.240	6.10	3.20	3.00	4.8	2.80
FEB												
07...	--	--	--	398	--	--	--	--	--	--	--	--
24...	--	--	--	552	--	--	--	--	--	--	--	--
MAR												
07...	--	--	--	616	--	--	--	--	--	--	--	--
15...	--	--	--	635	--	--	--	--	--	--	--	--
28...	97	0.50	19	567	582	0.77	0.330	5.60	2.10	2.00	3.5	2.90
APR												
04...	--	--	--	594	--	--	--	--	--	--	--	--
13...	--	--	--	686	--	--	--	--	--	--	--	--
MAY												
01...	--	--	--	555	--	--	--	--	--	--	--	--
23...	120	0.60	22	660	671	0.90	0.380	7.10	0.520	0.540	2.6	3.10
JUN												
01...	--	--	--	642	--	--	--	--	--	--	--	--
13...	--	--	--	627	--	--	--	--	--	--	--	--
23...	--	--	--	651	--	--	--	--	--	--	--	--
JUL												
14...	--	--	--	589	--	--	--	--	--	--	--	--
27...	110	0.30	21	519	543	0.71	0.300	4.60	1.30	1.40	3.3	3.50
31...	--	--	--	540	--	--	--	--	--	--	--	--
AUG												
14...	--	--	--	619	--	--	--	--	--	--	--	--
29...	--	--	--	653	--	--	--	--	--	--	--	--
SEP												
15...	--	--	--	628	--	--	--	--	--	--	--	--
26...	130	0.50	23	672	697	0.91	0.500	6.70	1.50	1.40	3.5	4.40

11074000 SANTA ANA RIVER BELOW PRADO DAM, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	PHOS-PHOROUS DIS-SOLVED (MG/L AS P)	PHOS-PHOROUS 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											
22...	3.00	2.90	<10	3	54	<0.5	<1	<1	<3	4	17
JAN											
19...	2.50	2.10	20	4	59	<0.5	<1	<1	<3	3	20
MAR											
28...	2.50	2.40	--	--	--	--	--	--	--	--	--
MAY											
23...	2.80	2.60	<10	4	38	<0.5	<1	1	<3	4	11
JUL											
27...	2.70	2.50	<10	4	40	<0.5	1	<1	<3	2	15
SEP											
26...	4.70	3.30	--	--	--	--	--	--	--	--	--

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											
22...	<5	13	110	<0.1	<10	4	<1	<1.0	600	7	12
JAN											
19...	<5	12	170	<0.1	<10	3	<1	<1.0	600	<6	15
MAY											
23...	<1	12	68	<0.1	<10	4	<1	<1.0	590	7	27
JUL											
27...	<1	9	73	<0.1	<10	3	<1	<1.0	450	7	11

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

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
JAN										
19...*	1245	8.00	1080	7.7	11.0	745	9.8	91	15	83
19...*	1250	26.0	1080	7.8	11.0	745	9.8	91	16	82
19...*	1255	42.0	1070	7.8	11.0	745	9.8	91	20	73
19...*	1300	56.0	1080	7.8	11.0	745	9.8	91	19	70
19...*	1305	72.0	1080	7.8	11.0	745	9.8	91	17	87
19...*	1310	102	1070	7.8	11.0	745	9.6	89	15	98
MAY										
23...*	1205	5.00	1070	8.1	20.0	745	9.4	106	16	81
23...*	1210	11.0	1070	8.1	20.0	745	9.3	105	12	83
23...*	1215	15.0	1070	8.1	20.0	745	9.3	105	16	65
23...*	1220	20.0	1070	8.1	20.0	745	9.4	106	15	62
23...*	1225	26.0	1070	8.1	20.5	745	9.5	108	--	--
23...*	1230	31.0	1070	8.1	20.5	745	9.5	108	20	72

* Instantaneous streamflow at the time of cross-sectional measurements: Jan. 19, 268 ft^3/s; May 23, 151 ft^3/s.

11074000 SANTA ANA RIVER BELOW PRADO DAM, CA--Continued

SPECIFIC CONDUCTANCE, (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	968	948	1070	1030	1120	1080	803	733	1070	1030	1060	1030
2	968	948	1070	1030	1100	1080	834	773	1070	1030	1060	1040
3	979	948	1030	994	1090	1070	865	785	1060	1020	1070	1040
4	988	963	1010	987	1090	1060	896	856	1040	1000	1070	1040
5	998	972	997	970	1080	1050	936	867	1050	790	1040	1030
6	988	970	986	976	1070	1050	908	837	770	589	1040	1020
7	1100	991	987	969	1090	1050	858	808	679	618	1030	1010
8	1110	1080	996	969	1100	1080	890	809	742	595	1020	1010
9	1120	1080	1010	982	1080	1050	921	870	621	506	1040	1010
10	1120	1090	1030	995	1060	1050	962	911	643	589	1040	1020
11	1130	1080	1140	1040	1060	1040	993	882	580	547	1050	1030
12	1090	1070	1150	1110	1060	1040	1000	914	564	546	1060	1040
13	1080	1060	1150	1130	1050	1030	955	884	611	561	1060	1030
14	1080	1060	1140	826	1050	1030	986	915	693	600	1060	1040
15	1080	1070	1110	1010	1050	794	1080	936	746	669	1090	885
16	1080	1060	1140	1100	764	525	1060	987	766	706	938	877
17	1070	1050	1160	1130	735	555	1080	968	806	743	942	920
18	1070	1050	1170	1130	725	655	1090	999	865	790	954	926
19	1080	1050	1130	1100	826	726	1080	1040	853	824	959	929
20	1090	1060	1120	1100	846	716	1080	1050	874	840	1010	942
21	1100	1050	1100	1080	846	776	1090	1060	878	858	1010	978
22	1080	1060	1090	1060	797	756	1080	1060	907	868	1000	971
23	1060	1050	1100	1070	757	707	1090	1070	944	897	1000	984
24	1070	1040	1080	933	737	687	1130	1090	993	937	998	980
25	1070	1030	1080	691	837	728	1140	1080	1010	981	997	978
26	1060	1040	1060	834	718	628	1110	1080	1020	1000	1010	938
27	1050	1030	1110	1070	718	608	1110	1090	1050	1010	988	951
28	1050	1020	1110	1080	669	619	1080	1060	1040	1020	965	923
29	1060	1030	1110	1090	710	600	1110	1060	---	---	917	879
30	1050	1030	1110	1090	791	710	1100	1060	---	---	963	889
31	1060	1030	---	---	812	771	1080	1050	---	---	969	915
MONTH	1130	948	1170	691	1120	525	1140	733	1070	506	1090	877
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	984	922	926	908	1090	961	1050	1010	912	881	1070	1030
2	1000	928	---	---	1070	1010	1050	1010	912	882	1070	1020
3	1030	972	---	---	1070	957	1040	1000	1030	893	1060	1030
4	1070	990	---	---	1060	1030	1040	1010	1040	1000	1070	1020
5	1070	1030	---	---	1050	1020	1030	1000	1060	1010	1050	1010
6	1110	1050	1070	971	1050	1010	1020	999	1060	1010	1050	1020
7	1140	1070	1040	972	1050	1010	1020	996	1050	1000	1060	1010
8	1130	1070	1050	969	1060	1020	1020	992	1060	1020	1070	1030
9	1130	1070	1050	965	1050	1030	1020	989	1060	1020	1090	1040
10	1130	1070	1150	982	1060	1020	1020	994	1050	1010	1060	1030
11	1150	1110	1140	1020	1060	1020	1020	991	1050	1010	1070	1030
12	1170	1150	1030	971	1040	1000	1010	972	1050	1010	1070	1030
13	1180	1160	1030	962	1080	1000	977	958	1050	1010	1110	1030
14	1190	1150	992	948	1050	1000	962	923	1040	1010	1130	1060
15	1190	1150	979	941	1090	1000	934	904	1050	1010	1080	1050
16	1160	1140	976	923	1070	1010	916	895	1050	1010	1070	1040
17	1160	1130	934	909	1060	1020	907	886	1060	1010	1070	1040
18	1160	1130	981	925	1070	1030	909	878	1050	1010	1070	1030
19	1190	1130	1010	952	1090	1050	911	880	1060	1010	1100	806
20	1150	1120	1030	978	1140	1080	913	892	1050	1010	1040	947
21	1130	1090	1070	1000	1130	1070	914	883	1050	1010	1050	1010
22	1100	1080	1090	1030	1120	1060	906	885	1060	1010	1070	1020
23	1100	1070	1080	1040	1090	1060	908	877	1050	1020	1080	1050
24	1070	1060	1060	1030	1080	1050	909	878	1050	1010	1110	1070
25	1060	989	1030	1000	1060	1030	901	880	1050	1020	1110	1080
26	990	946	1000	952	1060	1030	903	872	1060	1020	1110	1080
27	949	932	980	941	1060	1020	905	873	1060	1020	1120	1080
28	939	923	1010	929	1050	1010	916	885	1060	1030	1130	1090
29	933	915	996	967	1040	1000	908	877	1060	1030	1130	1100
30	930	907	994	955	1030	1000	910	878	1070	1030	1130	1090
31	---	---	982	952	---	---	911	881	1060	1030	---	---
MONTH	1190	907	---	---	1140	957	1050	872	1070	881	1130	806

11074000 SANTA ANA RIVER BELOW PRADO DAM, CA--Continued

TEMPERATURE, (DEG. C) OF WATER, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	21.5	19.0	---	---	15.5	12.5	9.0	8.5	11.5	10.5	16.0	15.5
2	21.5	19.0	---	---	14.0	10.5	9.5	9.0	11.5	11.0	16.0	15.5
3	21.5	18.5	---	---	---	---	9.5	9.0	11.5	11.0	16.0	15.0
4	21.5	19.0	---	---	15.5	11.5	9.5	9.0	11.5	11.5	16.0	15.0
5	21.5	19.5	17.0	13.5	15.5	11.5	10.5	10.0	12.0	10.5	15.5	14.5
6	21.5	19.0	17.0	15.5	15.5	12.5	10.0	9.5	10.5	9.5	15.5	14.5
7	22.0	19.0	18.0	15.0	15.5	13.0	10.0	10.0	9.5	9.5	15.5	14.0
8	22.5	18.5	18.0	16.5	13.5	12.0	10.0	9.5	9.5	8.5	15.0	14.0
9	22.0	18.0	17.5	15.5	14.0	11.5	10.0	9.0	9.5	9.0	15.0	14.5
10	21.5	17.5	17.0	15.5	14.0	10.5	9.0	9.0	10.0	9.0	16.0	15.0
11	21.5	17.0	18.0	16.0	14.5	10.5	9.5	8.5	10.5	9.5	16.0	15.5
12	21.5	18.5	17.5	15.0	14.5	10.5	9.0	8.0	10.5	10.0	16.5	16.0
13	20.5	18.0	17.5	15.5	14.5	11.0	8.5	8.0	11.0	10.0	18.5	16.0
14	20.0	18.0	17.0	15.5	14.5	12.5	8.5	8.0	11.0	10.5	17.0	16.5
15	---	---	15.5	13.0	14.0	13.0	9.0	8.0	11.0	10.5	17.5	16.5
16	---	---	15.5	12.5	13.0	12.0	9.5	8.0	11.0	10.5	17.0	16.5
17	---	---	15.0	12.5	12.5	12.0	10.0	8.0	11.0	10.5	17.0	16.5
18	---	---	14.5	11.5	12.5	12.0	---	---	11.5	10.5	17.0	16.5
19	---	---	14.0	11.0	12.5	12.0	---	---	11.5	11.0	17.0	16.5
20	---	---	14.0	10.5	12.0	11.5	---	---	11.5	11.0	18.0	16.5
21	20.5	18.5	15.0	10.5	12.0	11.5	12.0	11.0	---	---	17.5	16.5
22	19.0	15.0	15.0	12.0	12.0	11.5	---	---	12.5	12.0	17.5	16.5
23	15.0	14.0	15.5	12.0	12.5	11.5	12.5	12.0	13.0	12.5	17.5	16.5
24	14.0	13.0	15.5	13.5	11.5	11.5	12.5	12.0	---	---	17.5	17.0
25	13.5	12.5	13.0	11.5	12.0	11.5	---	---	---	---	17.5	16.5
26	16.5	11.5	14.5	12.0	11.0	10.5	---	---	---	---	17.5	16.0
27	17.5	11.5	15.0	12.5	10.5	10.0	---	---	---	---	17.0	16.0
28	13.0	10.5	15.0	11.5	10.5	10.0	---	---	15.5	14.5	16.5	16.0
29	12.0	10.0	15.0	12.5	10.0	9.5	---	---	---	---	16.5	16.0
30	---	---	15.5	12.5	9.5	9.0	---	---	---	---	17.0	16.5
31	---	---	---	---	9.5	9.0	---	---	---	---	18.0	17.0
MONTH	---	---	---	---	---	---	---	---	---	---	18.5	14.0
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1	18.5	17.5	19.0	15.0	20.0	18.5	25.5	19.5	24.5	20.5	23.5	19.0
2	19.0	18.0	---	---	20.0	19.0	26.0	20.0	24.5	20.5	23.5	18.5
3	21.5	18.5	---	---	19.5	19.0	26.0	20.0	25.5	20.5	23.5	18.5
4	20.5	18.5	---	---	19.5	18.5	27.0	20.0	25.5	20.5	23.5	18.5
5	20.0	19.0	---	---	20.0	18.5	26.5	20.5	26.0	21.0	24.0	19.0
6	21.0	19.5	21.5	20.0	19.5	18.5	26.5	21.5	26.5	21.5	24.0	19.5
7	21.0	20.5	21.5	20.5	19.5	18.5	26.0	21.5	26.0	21.5	23.5	19.0
8	21.5	21.0	21.5	20.5	19.5	18.5	25.5	21.5	26.5	22.0	22.5	18.0
9	21.5	21.0	22.0	20.5	19.0	18.5	25.5	21.0	26.5	22.0	23.0	18.5
10	22.5	18.5	21.0	20.0	19.0	18.5	25.5	20.5	27.0	22.0	22.5	19.0
11	21.0	19.5	20.0	18.5	19.5	18.0	25.5	21.0	27.0	22.0	23.0	19.0
12	19.5	18.5	19.0	17.5	19.0	18.0	25.5	21.5	27.0	22.5	22.5	19.5
13	21.5	18.5	18.5	17.5	20.5	18.5	25.5	21.0	27.0	22.0	23.5	19.5
14	21.5	18.5	18.5	17.5	21.0	20.0	25.0	21.0	26.5	21.5	24.0	19.5
15	22.0	18.5	18.5	17.5	22.0	21.0	25.0	21.0	26.0	21.0	23.0	20.0
16	21.5	18.0	18.5	17.5	22.5	22.0	25.0	21.0	25.0	20.5	23.5	21.5
17	21.0	18.0	18.5	17.5	22.5	22.0	24.5	21.0	25.0	20.5	23.0	21.0
18	22.0	17.5	19.0	17.5	23.5	22.5	25.0	21.0	24.5	20.0	22.0	19.0
19	23.0	18.5	19.0	18.0	24.5	23.5	25.5	21.5	24.5	20.0	20.5	18.5
20	23.0	18.0	19.5	18.5	26.0	22.0	26.0	22.5	24.0	20.5	21.0	18.5
21	23.0	18.5	20.0	18.5	26.0	20.5	26.0	23.0	24.0	20.0	22.5	19.0
22	22.5	17.0	20.0	19.0	25.5	20.5	26.0	22.5	24.0	19.0	23.5	19.5
23	21.0	15.5	---	---	24.5	20.5	26.0	22.5	23.5	19.5	23.0	19.5
24	19.5	16.0	---	---	22.5	19.5	25.5	22.0	24.0	20.5	23.5	19.5
25	19.0	13.5	19.5	18.0	24.5	19.5	25.5	22.0	23.5	20.0	22.0	20.5
26	18.0	14.5	19.5	18.5	25.5	19.0	25.5	21.5	23.5	20.0	24.0	20.5
27	19.5	14.0	19.5	18.5	25.5	19.5	25.5	22.0	23.5	19.5	23.5	20.5
28	20.0	14.5	20.0	18.5	25.0	19.5	26.0	22.5	23.5	19.0	23.5	20.0
29	20.5	15.5	19.5	18.5	26.5	18.5	25.0	21.5	24.0	19.5	23.0	19.5
30	20.5	16.0	20.0	18.5	25.0	18.5	25.0	21.5	23.5	19.0	22.5	19.0
31	---	---	20.0	18.5	---	---	24.5	21.0	23.5	19.0	---	---
MONTH	23.0	13.5	---	---	26.5	18.0	27.0	19.5	27.0	19.0	24.0	18.0

11074000 SANTA ANA RIVER BELOW PRADO DAM, CA--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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
NOV						
22...	1200	182	13.5	45	22	77
JAN						
19...	1345	268	11.0	20	14	80
MAR						
28...	1330	351	16.5	11	10	90
MAY						
23...	1315	151	20.0	14	5.7	86
JUN						
27...	1015	148	20.5	199	80	96
JUL						
27...	1015	210	21.5	137	78	93

11075720 CARBON CREEK BELOW CARBON CANYON DAM, CA

LOCATION.--Lat 33°54'48", long 117°50'30", in SW 1/4 NE 1/4 sec.17, T.3 S., R.9 W., Orange County, Hydrologic Unit 18070106, on right wall of outlet channel 250 ft downstream from toe of Carbon Canyon Dam, and 2.4 mi northwest of Yorba Linda.

DRAINAGE AREA.--19.5 mi^2.

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

REVISED RECORDS.--WDR CA-88-1: 1983(M).

GAGE.--Water-stage recorder. Datum of gage is 396.35 ft (revised), U.S. Army Corps of Engineers datum. Prior to Dec. 3, 1971, at datum 2.00 ft higher.

REMARKS.--Records fair except those below 10 ft^3/s, which are poor. Flow regulated by Carbon Canyon flood-control reservoir, capacity, 6,610 acre-ft. No diversion upstream from station. See schematic diagram of Santa Ana River basin.

AVERAGE DISCHARGE.--28 years, 1.00 ft^3/s, 724 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 796 ft^3/s, Mar. 1, 1983, gage height, 5.11 ft, present datum, from rating curve extended above 110 ft^3/s on basis of optical current-meter measurement at 241 ft^3/s and normal depth solution for discharge computation at gage height 4.27 ft; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 33 ft^3/s, Dec. 24, gage height, 2.61 ft; no flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	.54	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.08	.38	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	e.06	4.4	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	e1.1	e.81	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	1.8	e.05	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.02	e.02	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	e.19	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	e.58	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.56	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.16	.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	.23	.00	.00	.00	.00	.00	.00	.00
14	.00	.06	.00	.00	.19	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	2.2	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	6.3	.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	2.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	e.71	.00	.00	.00	.00	.00	.00	.00	.00	.01
20	.00	.00	e.87	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	6.3	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	e.04	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	6.4	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	5.5	.00	.00	.66	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	e.04	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	e.01	.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	0.06	30.44	2.98	7.27	1.63	0.00	0.00	0.00	0.00	0.00	0.01
MEAN	.000	.002	.98	.096	.26	.053	.000	.000	.000	.000	.000	.000
MAX	.00	.06	6.4	1.8	4.4	.66	.00	.00	.00	.00	.00	.01
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.1	60	5.9	14	3.2	.00	.00	.00	.00	.00	.02

CAL YR 1988 TOTAL 32.08 MEAN .088 MAX 6.4 MIN .00 AC-FT 64
WTR YR 1989 TOTAL 42.39 MEAN .12 MAX 6.4 MIN .00 AC-FT 84

e Estimated.

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 mi^2.

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. 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.--28 years, 7.44 ft^3/s, 5,390 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,520 ft^3/s, Feb. 25, 1969, gage height, 6.18 ft, at site and datum then in use, from rating curve extended above 840 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 25	0015	*167	*7.12	Feb. 4	1545	135	6.95

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	e1.6	e.33	e1.5	1.7	e.05	.00	.00	.00	.00
2	.00	.00	.00	e1.3	.45	1.9	1.5	e.04	.00	.00	.00	.00
3	.00	.00	.00	e1.0	.73	e3.6	1.4	e.04	.00	.00	.00	.00
4	.00	.00	.00	1.3	e53	e2.8	1.2	e.01	.00	.00	.00	.00
5	.00	.00	.00	e1.5	e40	e2.4	.95	.00	.00	.00	.00	.00
6	.00	.00	.00	e2.6	e20	e2.3	.84	.00	.00	.00	.00	.00
7	.00	.00	.00	e3.0	e14	2.2	.75	.00	.00	.00	.00	.00
8	.00	.00	.00	e2.4	e7.6	2.1	.68	.00	.00	.00	.00	.00
9	.00	.00	.00	e2.3	11	e2.0	.64	.00	.00	.00	.00	.00
10	.00	.00	.00	e1.8	e20	e1.8	.64	.00	.00	.00	.00	.00
11	.00	.00	.00	e1.7	e13	e1.7	.68	.00	.00	.00	.00	.00
12	.00	.00	.00	e1.8	e11	1.7	.81	.00	.00	.00	.00	.00
13	.00	.00	.00	e1.7	e9.5	e1.7	.83	.00	.00	.00	.00	.00
14	.00	.01	.00	e1.4	e8.1	1.4	.70	.03	.00	.00	.00	.00
15	.00	.00	.04	e1.3	e6.4	e1.4	.61	.08	.00	.00	.00	.00
16	.00	.00	.13	e1.2	e5.3	e1.4	.56	.09	.00	.00	.00	.00
17	.00	.00	.00	1.1	e4.4	e1.3	.51	.05	.00	.00	.00	.00
18	.00	.00	.03	.93	e3.9	e1.3	.48	e.05	.00	.00	.00	.00
19	.00	.00	.00	.89	3.7	e1.1	.42	e.04	.00	.00	.00	.00
20	.00	.00	.01	.83	e3.4	.96	.35	e.01	.00	.00	.00	.00
21	.00	.00	e15	.82	e3.0	e.86	.30	.00	.00	.00	.00	.00
22	.00	.00	e2.3	e.62	2.6	e.79	.26	.00	.00	.00	.00	.00
23	.00	.00	e1.3	.62	2.5	.78	.25	.00	.00	.00	.00	.00
24	.00	.00	e17	e.57	2.3	.79	.25	.00	.00	.00	.00	.00
25	.00	.01	e60	e.48	2.1	3.9	e.27	.00	.00	.00	.00	.00
26	.00	.00	e14	.45	1.9	3.8	.30	.00	.00	.00	.00	.00
27	.00	.00	e4.8	e.36	1.7	e2.8	e.27	.00	.00	.00	.00	.00
28	.00	.00	e3.4	e.36	1.6	e2.6	e.17	.00	.00	.00	.00	.00
29	.00	.00	e2.6	e.40	---	2.3	.12	.00	.00	.00	.00	.00
30	.00	.00	e2.3	e.36	---	1.9	.07	.00	.00	.00	.00	.00
31	.00	---	e1.8	e.33	---	1.8	---	.00	---	.00	.00	---
TOTAL	0.00	0.02	124.71	37.02	253.51	58.88	18.51	0.49	0.00	0.00	0.00	0.00
MEAN	.000	.001	4.02	1.19	9.05	1.90	.62	.016	.000	.000	.000	.000
MAX	.00	.01	60	3.0	53	3.9	1.7	.09	.00	.00	.00	.00
MIN	.00	.00	.00	.33	.33	.78	.07	.00	.00	.00	.00	.00
AC-FT	.00	.04	247	73	503	117	37	1.0	.00	.00	.00	.00

CAL YR 1988 TOTAL 353.67 MEAN .97 MAX 60 MIN .00 AC-FT 702
WTR YR 1989 TOTAL 493.14 MEAN 1.35 MAX 60 MIN .00 AC-FT 978

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 mi^2.

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. 9, 1969, to July 21, 1976, at site 127 ft downstream at datum 2.66 ft lower.

REMARKS.--No estimated daily discharges. 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.--61 years, 4.74 ft^3/s, 3,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,600 ft^3/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, 936 ft^3/s, Dec. 24, gage height, 4.61 ft; no flow for several months.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	.49	.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	3.7	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.01	.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	.10	.00	.00	.00	.00	.00	.00	.00
14	.00	2.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	22	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	29	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	12	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.18	.00	.00	.00	.00	.00	.00	.00	.00	.77
20	.00	.00	.55	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	34	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.81	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	111	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	1.4	3.5	.00	.00	2.7	.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	3.70	213.12	0.00	4.30	2.70	0.00	0.00	0.00	0.00	0.00	0.77
MEAN	.000	.12	6.87	.000	.15	.087	.000	.000	.000	.000	.000	.026
MAX	.00	2.3	111	.00	3.7	2.7	.00	.00	.00	.00	.00	.77
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	7.3	423	.00	8.5	5.4	.00	.00	.00	.00	.00	1.5

CAL YR 1988 TOTAL 457.78 MEAN 1.25 MAX 191 MIN .00 AC-FT 908
WTR YR 1989 TOTAL 224.59 MEAN .62 MAX 111 MIN .00 AC-FT 445

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 mi^2, excludes 768 mi^2 above Lake Elsinore.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--January 1923 to current year.

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.--Records poor. 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, 201,200 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 ft^3/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 ft^3/s, 16,940 acre-ft/yr; 49 years (water years 1941-89, unadjusted for storage), 53.1 ft^3/s, 38,470 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 46,300 ft^3/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.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,360 ft^3/s, Dec. 24, gage height, 7.43 ft; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	e120	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	e100	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	e90	.00	e20	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	e73	e40	e2.0	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	e80	e60	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	e90	e35	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	e5.0	e21	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	204	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	2040	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	703	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	e100	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	e10	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	e1.0	.00	.00	.00	.00	.00	.00	.00
14	.00	e30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	e5.0	396	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	e.90	1420	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	e10	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	e40	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	e10	.00	.00	.00	.00	.00	.00	.00	.00	e35
20	.00	.00	e15	.00	.00	.00	.00	.00	.00	.00	.00	e4.0
21	.00	.00	598	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	e20	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	e30	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	1240	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	e28	871	.00	.00	e10	.00	.00	.00	.00	.00	.00
26	.00	e3.0	188	.00	.00	e.10	.00	.00	.00	.00	.00	.00
27	.00	.00	e170	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	e40	e150	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	e140	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	e180	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	e150	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	106.90	5628.00	558.00	3214.00	32.10	0.00	0.00	0.00	0.00	0.00	39.00
MEAN	.000	3.56	182	18.0	115	1.04	.000	.000	.000	.000	.000	1.30
MAX	.00	40	1420	120	2040	20	.00	.00	.00	.00	.00	35
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	212	11160	1110	6370	64	.00	.00	.00	.00	.00	77

CAL YR 1988 TOTAL 13846.40 MEAN 37.8 MAX 1500 MIN .00 AC-FT 27460
WTR YR 1989 TOTAL 9578.00 MEAN 26.2 MAX 2040 MIN .00 AC-FT 19000

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 1968-71, 1973 to current year.
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 1988 TO SEPTEMBER 1989

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)
NOV					
25...	1500	28	14.0	70	5.4
DEC					
21...	1130	491	14.0	2700	3580
JAN					
04...	1545	73	13.5	64	13
FEB					
07...	1130	21	5.5	46	2.6
10...	1045	476	11.5	298	383

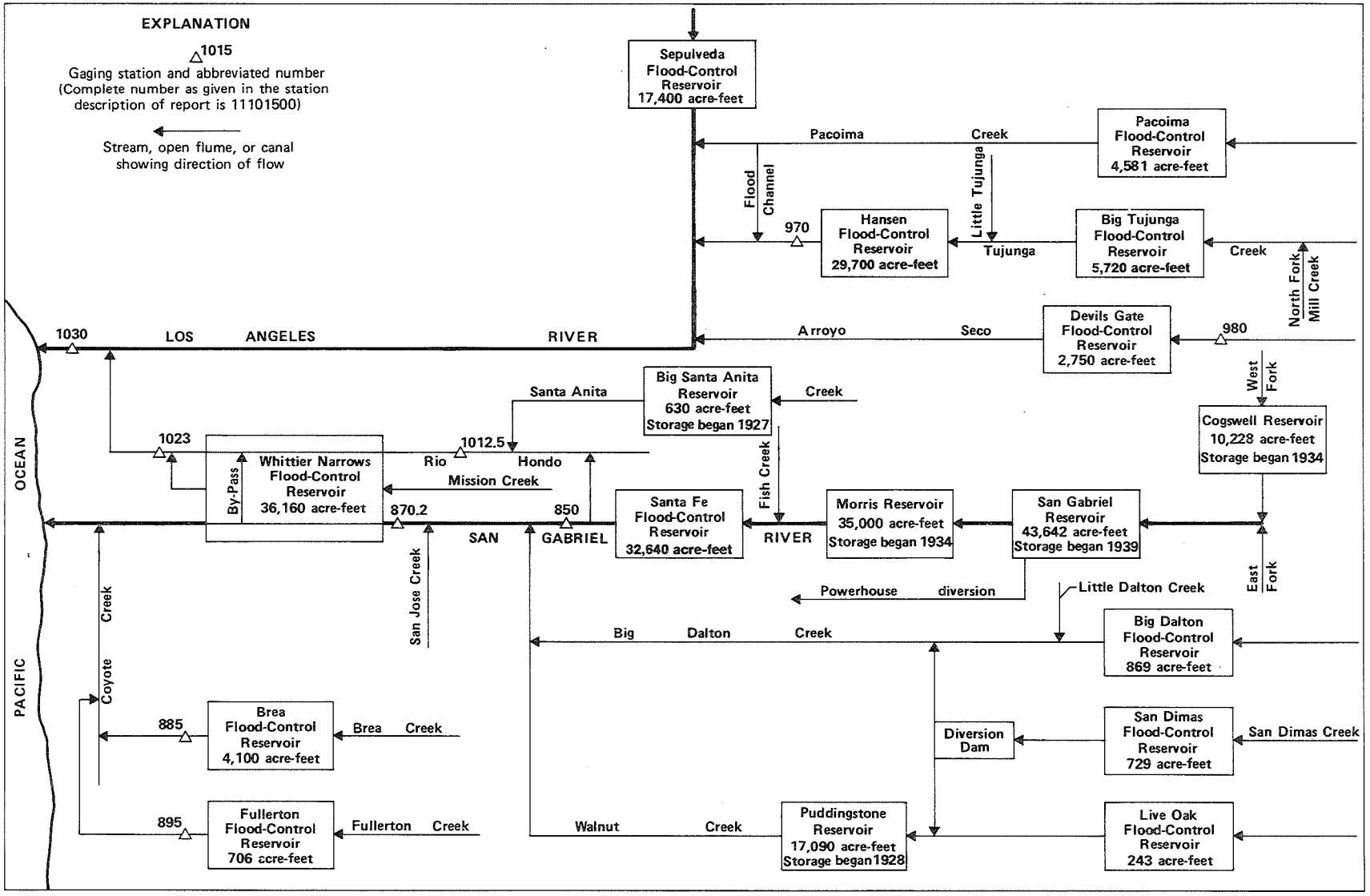

Figure 19. Diversions and storage in San Gabriel and Los Angeles River basins.

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 mi^2.

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, 53,870 acre-ft; Morris Reservoir, capacity, 35,000 acre-ft; and Santa Fe flood-control reservoir, capacity, 32,640 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; 301 acre-ft 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 ft^3/s, Jan. 26, 1969, gage height, 22.20 ft; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 335 ft^3/s, Feb. 6, gage height, 11.40 ft; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	45	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	8.6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	7.8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	20	.00	.00	.00	43	.00	.00	.00	.00	.00	.00	.00
5	.46	.00	.00	.00	120	.00	.00	.00	.00	.00	.00	.00
6	.69	.00	.00	.00	119	.00	.00	.00	.00	.00	.00	.00
7	.06	.00	.00	.00	84	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.36	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.02	.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	19	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.03	.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	19	.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	.57	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.68	.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	101.61	0.00	20.28	0.00	366.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	3.28	.000	.65	.000	13.1	.000	.000	.000	.000	.000	.000	.000
MAX	45	.00	19	.00	120	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	202	.00	40	.00	727	.00	.00	.00	.00	.00	.00	.00

CAL YR 1988 TOTAL 394.03 MEAN 1.08 MAX 59 MIN .00 AC-FT 782
WTR YR 1989 TOTAL 488.31 MEAN 1.34 MAX 120 MIN .00 AC-FT 969

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 mi^2.

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. Flow regulated by San Gabriel, Cogswell, and Santa Fe flood-control reservoirs, combined capacity, 90,670 acre-ft; several small flood-control reservoirs, combined capacity, 19,100 acre-ft; and Morris Reservoir, capacity, 35,000 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 301 acre-ft 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 ft^3/s, Jan. 25, 1969, gage height, 10.90 ft; no flow for part of some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 10,600 ft^3/s, Dec. 21, gage height, 7.09 ft; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.00	229	95	142	204	185	91	83	118	141	94
2	.00	.00	275	36	167	405	183	116	85	118	136	94
3	.00	.00	267	95	269	50	187	117	89	118	5.9	90
4	.00	.00	265	330	1550	145	185	118	87	120	.00	92
5	.00	.10	265	460	25	146	158	99	48	125	.00	99
6	.00	7.8	238	232	21	144	194	116	150	128	.00	97
7	.00	6.8	201	146	47	30	135	118	138	128	.00	99
8	.00	.00	191	147	189	13	118	163	138	131	.00	94
9	.00	.00	257	146	295	168	121	185	144	138	.00	94
10	.00	.00	265	143	61	135	118	163	157	138	.00	91
11	.00	.00	269	143	181	196	81	99	160	138	.00	48
12	.00	.00	269	156	188	197	114	93	177	138	.00	.00
13	.00	.01	269	248	291	139	113	93	193	141	.00	.00
14	.00	624	267	247	257	94	111	88	193	143	.00	.00
15	.00	39	1540	248	251	122	114	90	196	143	.00	.00
16	.00	97	2540	247	244	189	116	89	182	143	13	.00
17	28	95	30	252	248	188	87	53	186	143	82	.00
18	74	59	60	252	270	191	115	35	185	143	90	46
19	82	.31	21	252	279	158	111	93	171	144	89	243
20	80	.26	28	253	275	100	112	94	150	155	87	12
21	81	57	1840	254	244	100	111	93	149	160	91	1.4
22	80	91	20	252	271	100	112	94	107	160	97	.35
23	81	129	35	171	279	94	114	64	121	160	92	.00
24	81	35	1540	9.3	337	114	84	21	60	155	29	.02
25	76	330	206	34	277	1000	132	74	75	154	51	.81
26	80	7.7	54	130	280	141	120	92	113	154	90	.00
27	43	3.5	47	132	229	186	117	90	113	154	91	.00
28	.00	47	49	133	208	237	118	87	113	154	89	.00
29	.00	85	65	133	---	235	116	87	113	154	92	.00
30	.00	131	132	153	---	217	116	91	116	152	90	.00
31	.00	---	40	258	---	184	---	87	---	139	92	---
TOTAL	786.01	1845.48	11774	5787.3	7375	5622	3798	2993	3992	4389	1547.90	1295.58
MEAN	25.4	61.5	380	187	263	181	127	96.5	133	142	49.9	43.2
MAX	82	624	2540	460	1550	1000	194	185	196	160	141	243
MIN	.00	.00	20	9.3	21	13	81	21	48	118	.00	.00
AC-FT	1560	3660	23350	11480	14630	11150	7530	5940	7920	8710	3070	2570

CAL YR 1988 TOTAL 39467.40 MEAN 108 MAX 3790 MIN .00 AC-FT 78280
WTR YR 1989 TOTAL 51205.27 MEAN 140 MAX 2540 MIN .00 AC-FT 101600

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 mi^2.

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.--Records poor except those for discharges above 100 ft^3/s, which are fair. Flow regulated by Brea flood-control reservoir, capacity, 4,100 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.--47 years, 3.17 ft^3/s, 2,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,700 ft^3/s, Feb. 18, 1980; no flow for parts of some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 687 ft^3/s, Dec. 16, gage height, 3.89 ft; minimum daily, 0.33 ft^3/s, Feb. 7, May 12.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.90	.79	.90	9.6	5.5	1.8	.72	.74	1.0	.56	.76	.71
2	e.90	.88	1.0	1.8	3.9	50	.58	.76	.85	.55	.77	.69
3	e1.0	.85	.85	2.2	20	48	.62	.92	.70	.58	.79	.78
4	e1.0	.79	1.0	9.6	88	2.2	.85	.71	.58	.69	.80	.75
5	e1.1	.72	.98	19	11	1.5	.88	.76	.71	.88	.77	.87
6	1.2	.51	1.1	10	1.8	1.4	.85	.76	1.0	.68	.67	.80
7	1.3	.45	.75	2.4	.33	1.8	.84	.85	1.1	.62	.70	.76
8	1.3	.44	.65	1.9	8.6	1.9	.92	.86	1.1	.62	.72	.74
9	1.6	.47	.80	1.4	15	1.4	.77	.91	1.0	.58	.80	.88
10	1.5	.51	.81	1.3	4.6	1.1	.76	.47	1.2	.64	.81	.80
11	1.6	.67	.82	1.4	5.4	1.3	.73	.35	.79	.62	.77	.70
12	1.0	.76	.89	1.0	10	1.1	.84	.33	.66	.62	.81	.71
13	1.6	.80	.81	1.0	15	1.1	.74	.37	.73	.59	.82	.74
14	1.3	61	.71	.92	8.9	1.2	.63	.35	.62	.53	1.0	.69
15	1.6	1.5	95	.82	2.9	1.1	1.1	.34	.61	.58	.61	.73
16	1.7	.83	156	.82	7.5	1.1	.96	.95	.51	.56	.63	.75
17	2.0	.63	8.2	.91	2.2	1.3	.99	1.1	.56	.62	.71	1.0
18	1.7	.54	13	1.1	4.5	1.3	.91	.72	.64	.58	.67	.65
19	1.0	.55	2.7	1.1	1.9	1.9	.97	.76	.78	.54	.75	14
20	1.3	.63	8.2	.97	2.1	2.1	.89	.74	.68	.48	.75	1.3
21	1.7	.61	140	.84	1.7	1.4	.88	.77	.83	.46	.86	.72
22	1.4	.92	6.9	.77	1.6	1.4	.80	.80	.75	.54	.78	.67
23	1.4	2.2	7.2	.83	1.4	1.3	.92	.98	.65	.60	.82	.74
24	1.6	7.8	82	.97	1.4	1.3	.83	1.1	.59	.65	.70	.79
25	1.7	28	241	.42	1.5	43	1.0	1.0	.62	.65	.75	.69
26	1.6	11	41	.76	1.5	5.2	1.1	.88	.66	.51	.68	.78
27	1.2	.85	2.7	.87	1.5	2.6	.81	.90	.57	.50	.65	.79
28	.57	.71	2.2	.81	1.7	1.2	.86	.84	.53	.53	.65	.71
29	.57	.65	1.5	.81	---	.71	.86	1.0	.49	.63	.76	.66
30	.64	.77	1.5	.61	---	1.1	.87	.94	.51	.67	.73	.73
31	.89	---	2.6	2.3	---	.94	---	.97	---	.73	.69	---
TOTAL	39.87	127.83	823.77	79.23	231.43	184.75	25.48	23.93	22.02	18.59	23.18	36.33
MEAN	1.29	4.26	26.6	2.56	8.27	5.96	.85	.77	.73	.60	.75	1.21
MAX	2.0	61	241	19	88	50	1.1	1.1	1.2	.88	1.0	14
MIN	.57	.44	.65	.42	.33	.71	.58	.33	.49	.46	.61	.65
AC-FT	79	254	1630	157	459	366	51	47	44	37	46	72

CAL YR 1988 TOTAL 2117.73 MEAN 5.79 MAX 295 MIN .44 AC-FT 4200
WTR YR 1989 TOTAL 1636.41 MEAN 4.48 MAX 241 MIN .33 AC-FT 3250

e Estimated.

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 mi^2.

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, 764 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 ft^3/s, 135 acre-ft/yr; 35 years (water years 1955-89), 1.26 ft^3/s, 913 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 392 ft^3/s, Mar. 1, 1983, gage height, 8.25 ft, present datum; no flow at times some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 205 ft^3/s, Dec. 21, gage height, 6.60 ft; minimum daily, 0.10 ft^3/s, Jan. 18.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.85	1.6	.66	2.5	1.1	.75	.60	.57	.65	.59	.96	.61
2	.80	1.3	.63	.71	1.7	20	.60	.54	.67	.51	.85	.72
3	.83	.30	.80	.72	9.0	3.4	.60	.64	.68	.59	.75	.52
4	.80	.40	.67	2.6	26	.77	.60	.60	.64	.60	.89	.55
5	.74	.58	.69	10	2.7	.61	.73	.68	.74	.57	.80	.56
6	.79	.60	.74	4.3	.40	.60	.70	.66	.79	.60	.87	.55
7	.77	.64	.68	.75	1.1	.60	.75	.60	.79	.60	.99	.55
8	.69	.70	.52	.75	2.9	.60	.78	.78	.84	.63	1.1	.56
9	.60	.82	.56	.70	6.5	4.1	.90	.71	.83	.60	.88	.56
10	.60	.70	.60	.74	1.2	.72	.74	.60	1.1	.71	.91	.54
11	.71	.87	.60	.63	.74	.71	.76	.69	.68	.84	.91	.58
12	.68	.70	.60	.45	.90	.70	.83	.60	.82	.85	.82	.70
13	.60	.70	.65	.66	2.9	.70	.66	.65	.84	.84	.71	.58
14	.60	16	.73	.70	1.1	.58	.68	.78	.81	.84	.90	.55
15	.64	.81	35	.70	.81	.68	.81	.88	.79	.80	.95	.60
16	.76	.67	69	.70	.84	.72	.72	.92	.77	.70	.96	.69
17	.84	.59	1.6	.41	.72	.72	.68	.76	.71	.85	.87	1.0
18	.83	.73	15	.10	.75	.80	.68	.60	.62	.95	.89	.61
19	.86	.60	1.5	.40	.70	.77	.66	.75	.68	.84	.85	8.3
20	.86	.63	5.8	1.5	.70	.94	.65	.60	.68	.91	.76	.54
21	.77	.61	61	2.0	.70	.72	.62	.59	.56	.93	.95	.56
22	.78	.66	3.2	2.1	.41	.82	.65	.51	.62	.86	.79	.65
23	.84	4.3	2.7	2.5	.33	.97	.58	.51	.60	.75	.68	.61
24	.82	1.9	34	1.8	1.5	.93	.56	.51	.58	.94	.70	.53
25	.79	9.4	35	.95	.88	16	.61	.59	.51	1.2	.66	.56
26	.75	.81	1.3	.68	.70	1.3	.53	.68	.61	1.0	.56	.53
27	.74	.58	.99	.83	.41	.77	.43	.62	.67	.87	.55	.49
28	.70	.57	.77	.77	1.3	.71	.43	.51	.68	.98	.67	.47
29	.60	.67	.70	.70	---	.67	.43	.51	.62	1.0	.68	.48
30	.60	.57	.70	.66	---	.60	.43	.51	.67	.85	.69	.48
31	.62	---	2.9	.50	---	.60	---	.51	---	.89	.58	---
TOTAL	22.86	50.01	280.29	43.51	68.99	63.56	19.40	19.66	21.25	24.69	25.13	25.23
MEAN	.74	1.67	9.04	1.40	2.46	2.05	.65	.63	.71	.80	.81	.84
MAX	.86	16	69	10	26	20	.90	.92	1.1	1.2	1.1	8.3
MIN	.60	.30	.52	.10	.33	.58	.43	.51	.51	.51	.55	.47
AC-FT	45	99	556	86	137	126	38	39	42	49	50	50

CAL YR 1988 TOTAL 786.41 MEAN 2.15 MAX 85 MIN .30 AC-FT 1560
WTR YR 1989 TOTAL 664.58 MEAN 1.82 MAX 69 MIN .10 AC-FT 1320

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 mi^2.

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 Big 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.--No estimated daily discharges. Records poor. Flow regulated since July 1931 by Big Tujunga flood-control reservoir, capacity, 5,720 acre-ft in 1979, and since September 1940 by Hansen flood-control reservoir, capacity, 29,700 acre-ft. Several small diversions for domestic use and irrigation. Water reported herein is that which passed Hansen Dam. 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 ft^3/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 ft^3/s, estimated, Mar. 2, 1938.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 161 ft^3/s, Dec. 16, gage height, 1.44 ft; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	1.5	.50	.50	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	4.6	.50	1.7	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	4.6	.50	3.7	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	4.6	.50	3.4	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	4.6	.50	3.4	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	4.6	.21	3.4	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	4.6	.48	3.4	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	4.6	.50	4.7	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	4.6	.50	4.6	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	4.4	.50	3.5	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	3.4	.50	1.9	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	3.4	.50	3.4	.13
13	.00	.00	.00	.00	.00	.00	.00	.00	3.4	.50	3.4	.50
14	.00	.14	.00	.00	.00	.00	.00	.00	3.4	.50	3.4	.25
15	.00	.00	1.5	.00	.00	.00	.00	.00	3.4	.50	2.0	.00
16	.00	.00	.94	.00	.00	.00	.00	.00	3.4	.50	.49	.01
17	.00	.00	.00	.00	.00	.00	.00	.00	3.4	.50	.50	.50
18	.00	.00	.00	.00	.00	.00	.00	.00	2.7	.50	.50	.50
19	.00	.00	.00	.00	.00	.00	.00	.00	.50	.50	.50	3.5
20	.00	.00	.00	.00	.00	.00	.00	.00	.50	.50	.50	2.6
21	.00	.00	.00	.00	.00	.00	.00	.00	.92	.50	1.6	.50
22	.00	.00	.00	.00	.00	.00	.00	.00	1.1	.50	3.4	.50
23	.00	.00	.00	.00	.00	.00	.00	.00	.50	.50	2.2	.41
24	.00	.00	.00	.00	.00	.00	.00	.00	1.1	.50	.50	.01
25	.00	.00	.00	.00	.00	.00	.00	.00	.50	.53	.30	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.50	.50	.00	.00
27	.00	.00	.13	.00	.00	.00	.00	.00	.50	.50	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.50	.50	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.50	.50	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.50	.50	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.45	.00	---
TOTAL	0.00	0.14	2.57	0.00	0.00	0.00	0.00	0.00	76.82	15.17	56.89	9.41
MEAN	.000	.005	.083	.000	.000	.000	.000	.000	2.56	.49	1.84	.31
MAX	.00	.14	1.5	.00	.00	.00	.00	.00	4.6	.53	4.7	3.5
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.50	.21	.00	.00
AC-FT	.00	.3	5.1	.00	.00	.00	.00	.00	152	30	113	19
a	266	248	1090	766	1390	2630	745	487	159	30	113	19

CAL YR 1988 TOTAL 232.88 MEAN .64 MAX 146 MIN .00 AC-FT 462 a 15773
WTR YR 1989 TOTAL 161.00 MEAN .44 MAX 4.7 MIN .00 AC-FT 319 a 7943

a Combined discharge, in acre-feet, of creek and diversion.

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 mi^2.

PERIOD OF RECORD.--December 1910 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. No regulation or diversion above station. See schematic diagram of San Gabriel and Los Angeles River basins.

AVERAGE DISCHARGE.--75 years (water years 1914-15, 1917-89), 9.69 ft^3/s, 7,020 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,620 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 16	0845	*155	*2.83				

Minimum daily, 0.09 ft^3/s, Sept. 5, 6, 25.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.21	.28	.90	4.9	2.2	4.5	2.1	1.0	.69	.42	.16	.14
2	.23	.34	.85	4.4	2.3	6.5	2.0	1.0	.73	.39	.15	.10
3	.22	.33	.86	3.9	2.4	5.3	1.9	.97	.82	.35	.16	.10
4	.22	.33	.85	4.2	13	4.2	1.7	.92	.87	.31	.15	.10
5	.26	.30	.85	4.7	18	3.8	1.6	.87	.79	.28	.14	.09
6	.30	.37	.92	9.6	11	3.7	1.5	.87	.75	.31	.14	.09
7	.29	.42	.86	6.0	11	3.6	1.2	.83	.81	.31	.14	.13
8	.22	.46	.70	5.0	28	3.5	1.1	.76	.87	.32	.15	.17
9	.18	.44	.84	4.6	50	3.3	1.1	.81	.88	.35	.16	.17
10	.18	.46	.92	4.3	25	3.1	1.2	.91	.91	.35	.16	.20
11	.20	.46	.94	3.9	19	3.0	1.6	1.0	.88	.31	.14	.21
12	.21	.45	.94	3.3	15	3.1	1.8	1.2	.85	.26	.13	.23
13	.23	.52	.99	3.2	13	3.1	1.8	1.3	.79	.21	.12	.17
14	.25	5.5	1.0	3.2	11	3.2	1.7	1.4	.73	.19	.11	.12
15	.22	1.7	3.3	3.2	9.0	3.2	1.6	1.6	.70	.20	.12	.11
16	.16	.78	69	3.1	7.8	3.2	1.6	1.6	.70	.21	.14	.20
17	.17	.72	15	2.8	6.9	3.3	1.5	1.7	.66	.21	.16	.63
18	.21	.69	8.0	2.6	6.2	3.1	1.5	1.5	.61	.22	.18	.38
19	.25	.77	5.8	2.5	6.0	3.0	1.4	1.3	.59	.20	.18	1.1
20	.27	.81	4.7	2.4	5.7	2.7	1.4	1.2	.55	.17	.21	.29
21	.27	.76	46	2.3	5.4	2.5	1.3	1.0	.55	.16	.24	.17
22	.25	.76	14	2.3	5.6	2.5	1.3	.88	.55	.15	.21	.12
23	.26	.94	9.0	2.4	5.4	2.6	1.3	.80	.65	.17	.19	.11
24	.26	1.3	13	2.5	5.1	2.7	1.3	.79	.67	.18	.17	.10
25	.24	1.3	21	2.3	4.7	4.8	1.3	.80	.61	.18	.21	.09
26	.24	1.2	11	2.2	4.6	4.4	1.4	.77	.54	.18	.23	.11
27	.24	1.2	8.1	2.2	4.7	3.4	1.4	.77	.48	.17	.22	.11
28	.25	1.2	6.8	2.3	4.6	3.1	1.3	.81	.45	.16	.20	.11
29	.24	1.0	5.7	2.3	---	2.7	1.2	.76	.47	.15	.16	.12
30	.22	.95	5.0	2.2	---	2.4	1.1	.74	.44	.15	.15	.14
31	.21	---	4.8	2.1	---	2.2	---	.68	---	.15	.15	---
TOTAL	7.16	26.74	262.62	106.9	302.6	105.7	44.2	31.54	20.59	7.37	5.13	5.91
MEAN	.23	.89	8.47	3.45	10.8	3.41	1.47	1.02	.69	.24	.17	.20
MAX	.30	5.5	69	9.6	50	6.5	2.1	1.7	.91	.42	.24	1.1
MIN	.16	.28	.70	2.1	2.2	2.2	1.1	.68	.44	.15	.11	.09
AC-FT	14	53	521	212	600	210	88	63	41	15	10	12

CAL YR 1988 TOTAL 1687.63 MEAN 4.61 MAX 112 MIN .15 AC-FT 3350
WTR YR 1989 TOTAL 926.46 MEAN 2.54 MAX 69 MIN .09 AC-FT 1840

11101250 RIO HONDO ABOVE WHITTIER NARROWS DAM, CA

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.

DRAINAGE AREA.--91.2 mi^2.

PERIOD OF RECORD.--February 1956 to current year.

GAGE.--Water-stage recorder. Concrete trapezoidal channel. Datum of gage is 217.8 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for periods of estimated daily discharge, which are poor. Flow regulated by Big Santa Anita, Sawpit, and Eaton flood-control reservoirs, and Sierra Madre, Las Flores, and Rubio debris basins, combined capacity, 2,195 acre-ft. Many diversions upstream from station for domestic use and irrigation. Los Angeles County Department of Public Works diverted 301 acre-ft from San Gabriel River below Santa Fe Dam to Rio Hondo during current year. See schematic diagram of San Gabriel and Los Angeles River basins.

COOPERATION.--Records of diversion were provided by the Los Angeles County Department of Public Works.

AVERAGE DISCHARGE.--33 years, 41.8 ft^3/s, 30,280 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,200 ft^3/s, Feb. 16, 1980, gage height, 7.35 ft; no flow for some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,820 ft^3/s, Dec. 15, gage height, 3.87 ft; minimum daily, 0.34 ft^3/s, Nov. 20.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.92	1.2	.62	9.1	.94	.72	1.2	1.8	1.1	.70	.72	3.3
2	.95	1.2	1.1	.64	5.7	183	.93	2.3	1.3	.56	.87	2.5
3	1.0	1.2	1.1	5.4	23	5.6	1.2	1.1	1.3	.45	.92	2.1
4	.84	1.2	.50	49	595	.63	1.3	.91	1.1	.38	1.4	2.2
5	1.1	1.2	.59	278	1.5	.60	.96	2.2	1.3	.73	.78	2.4
6	1.0	1.8	.63	29	.63	2.1	1.1	1.3	1.8	.94	.69	2.6
7	.77	1.1	.71	.47	.59	1.9	.79	.72	2.5	.72	1.4	3.1
8	.98	1.1	1.8	.43	73	e1.8	1.1	1.3	1.4	.69	2.1	2.9
9	.85	.98	.82	1.1	364	e1.8	1.5	1.9	1.4	1.0	2.3	2.6
10	.74	1.0	1.3	.87	2.0	e1.5	2.7	1.1	1.4	1.0	2.2	2.6
11	1.0	.87	.55	.64	.85	e1.5	1.2	2.5	1.1	.56	2.2	2.7
12	1.3	.82	.60	.62	.68	e1.2	2.4	1.1	.75	1.0	2.2	2.2
13	1.4	2.1	.60	.84	51	e1.2	.82	1.4	.68	1.2	2.1	3.4
14	1.3	394	.62	.68	1.2	e1.0	.68	1.4	1.4	.95	2.2	e6.0
15	1.4	.53	948	1.2	.64	.99	.95	8.2	1.2	.91	2.2	e4.7
16	.80	.83	544	.86	.79	.71	.81	2.4	1.6	.75	2.2	e6.2
17	1.0	.74	2.4	.85	.72	.79	1.3	1.1	.96	1.7	2.4	e10
18	.99	.45	14	.96	.63	.81	1.3	1.1	1.2	1.2	2.3	e5.2
19	.93	.40	.74	.93	.65	.88	1.4	.72	.73	2.4	2.3	e116
20	.98	.34	58	.99	1.2	1.1	1.3	.69	.62	2.9	3.1	3.5
21	.99	.89	617	.96	.63	.72	2.4	.51	.83	2.0	4.6	2.3
22	1.1	.64	11	.80	.61	.81	.86	.84	.61	.97	4.5	2.3
23	1.0	167	3.6	1.7	.63	.76	1.2	1.1	.69	.88	4.5	2.2
24	1.1	6.7	498	1.1	.86	.96	1.8	.99	.78	2.0	2.8	2.0
25	.94	49	5.8	.78	.89	248	.53	1.1	.67	.96	2.7	2.8
26	1.2	.91	.86	.59	.68	1.3	.98	.84	1.3	1.8	2.8	2.4
27	1.1	1.2	.74	.86	.83	1.1	.86	.72	.78	.79	2.3	3.7
28	1.2	.70	.98	.88	1.4	.74	1.5	.76	.65	.90	4.1	2.6
29	.88	1.0	.54	.81	---	.85	.76	.66	.66	1.1	4.2	2.5
30	1.0	.63	.48	1.3	---	.90	.58	.99	1.1	1.6	4.7	3.5
31	1.1	---	4.4	1.5	---	1.3	---	.71	---	1.3	3.1	---
TOTAL	31.86	641.73	2722.08	393.86	1131.25	467.27	36.41	44.46	32.91	35.04	76.88	212.5
MEAN	1.03	21.4	87.8	12.7	40.4	15.1	1.21	1.43	1.10	1.13	2.48	7.08
MAX	1.4	394	948	278	595	248	2.7	8.2	2.5	2.9	4.7	116
MIN	.74	.34	.48	.43	.59	.60	.53	.51	.61	.38	.69	2.0
AC-FT	63	1270	5400	781	2240	927	72	88	65	70	152	421

CAL YR 1988 TOTAL 11570.85 MEAN 31.6 MAX 1730 MIN .34 AC-FT 22950
WTR YR 1989 TOTAL 5826.25 MEAN 16.0 MAX 948 MIN .34 AC-FT 11560

e Estimated.

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 mi^2.

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.--Records fair above 200 ft^3/s and poor below. 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 ft^3/s, Jan. 25, 1969, gage height, 13.82 ft, from rating curve extended above 15,000 ft^3/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, 6,360 ft^3/s, Dec. 24, gage height, 5.18 ft; no flow Sept. 25.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	1.9	152	49	131	224	103	92	92	97	305	102
2	14	1.9	183	17	147	286	102	119	97	94	301	111
3	15	1.9	185	23	138	52	113	125	91	91	67	113
4	16	2.0	185	131	588	99	131	122	e90	91	1.5	96
5	15	3.0	189	354	111	105	115	108	e50	90	1.1	91
6	13	3.7	180	272	91	137	136	124	e70	97	.36	91
7	11	3.5	169	99	18	63	116	132	e80	116	.05	95
8	11	2.7	154	100	108	17	98	93	90	111	1.5	82
9	11	2.7	172	79	331	66	110	89	131	112	4.8	88
10	12	2.2	176	67	25	79	110	97	160	118	6.7	97
11	14	2.1	179	66	53	93	78	73	160	116	8.9	79
12	4.9	2.7	177	71	74	129	100	100	164	126	11	15
13	13	1.7	189	103	129	128	93	88	172	150	13	12
14	16	319	184	122	119	115	113	95	172	143	9.9	1.9
15	9.7	18	468	122	152	129	118	113	172	141	.70	.61
16	14	13	1950	122	198	135	114	112	167	142	.45	.43
17	10	13	295	122	192	159	96	87	166	128	51	19
18	8.3	29	189	141	178	202	118	48	164	125	70	5.6
19	8.3	12	24	158	166	208	120	115	153	124	76	183
20	24	12	37	163	168	175	117	115	128	136	85	4.0
21	37	33	1110	140	172	183	116	120	128	139	83	.74
22	44	65	272	147	175	192	116	109	99	150	88	.23
23	55	160	136	101	179	185	116	76	78	158	92	.29
24	55	51	1080	7.0	215	185	79	31	40	174	60	.06
25	55	139	155	4.3	234	725	91	76	30	186	53	.00
26	57	17	16	2.6	232	93	105	101	62	203	99	2.0
27	35	14	9.1	46	223	98	107	89	65	226	98	.25
28	12	45	6.9	109	220	141	118	96	65	248	104	.07
29	12	87	18	111	---	137	106	101	98	251	102	.07
30	12	95	36	114	---	134	108	92	100	251	104	.12
31	5.6	---	8.9	168	---	123	---	87	---	276	104	---
TOTAL	632.8	1154.0	8284.9	3330.9	4767	4797	3263	3025	3334	4610	2001.96	1290.37
MEAN	20.4	38.5	267	107	170	155	109	97.6	111	149	64.6	43.0
MAX	57	319	1950	354	588	725	136	132	172	276	305	183
MIN	4.9	1.7	6.9	2.6	18	17	78	31	30	90	.05	.00
AC-FT	1260	2290	16430	6610	9460	9510	6470	6000	6610	9140	3970	2560

CAL YR 1988 TOTAL 29604.06 MEAN 80.9 MAX 2950 MIN .00 AC-FT 58720
WTR YR 1989 TOTAL 40490.93 MEAN 111 MAX 1950 MIN .00 AC-FT 80310

e Estimated.

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 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1928 to September 1983, October 1988 to September 1989. 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, 25,500 acre-ft, from December 1983 survey; 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.--55 years (water years 1930-83, 1989), 214 ft^3/s, 155,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 129,000 ft^3/s, Feb. 16, 1980, gage height, 17.99 ft; no flow at times in 1929-30, 1934.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 3,740 ft^3/s, Dec. 16; minimum daily, 101 ft^3/s, Oct. 14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e117	e109	e112	e292	e130	e118	e166	e114	e120	e133	e137	e126
2	e119	e107	e114	e152	e263	e869	e171	e114	e120	e133	e137	e126
3	e117	e108	e115	e148	e558	e247	e171	e116	e122	e130	e137	e128
4	e119	e109	e124	e181	e1760	e136	e177	e118	e122	e130	e137	e128
5	e119	e109	e119	e411	e304	e130	e164	e118	e124	e130	e137	e128
6	e117	e109	e119	e889	e159	e130	e141	e120	e126	e126	e137	e128
7	e114	e109	e120	e184	e156	e132	e141	e122	e128	e126	e137	e128
8	e113	e110	e123	e191	e856	e133	e135	e124	e126	e126	e137	e128
9	e110	e107	e122	e185	e2440	e133	e139	e124	e126	e122	e137	e126
10	e108	e118	e123	e183	e297	e130	e137	e126	e126	e122	e137	e126
11	e108	e122	e125	e176	e195	e130	e137	e128	e126	e121	e137	e126
12	e106	e123	e125	e119	e183	e130	e135	e128	e126	e120	e137	e124
13	e102	e120	e129	e120	e201	e131	e135	e126	e128	e120	e139	e124
14	e101	e1120	e130	e122	e220	e130	e135	e124	e128	e120	e139	e124
15	e104	e153	e2260	e124	e133	e130	e135	e122	e128	e120	e139	e124
16	e104	e180	e3740	e122	e130	e130	e135	e178	e126	e120	e139	e124
17	e104	e118	e347	e123	e130	e130	e135	e145	e126	e131	e139	e187
18	e106	e118	e284	e123	e128	e161	e135	e141	e127	e135	e139	e131
19	e107	e113	e146	e123	e126	e132	e135	e138	e128	e135	e139	e821
20	e108	e114	e272	e124	e125	e130	e132	e135	e128	e135	e139	e135
21	e108	e114	e3220	e126	e121	e130	e122	e135	e126	e135	e139	e124
22	e108	e113	e150	e128	e119	e130	e122	e130	e126	e135	e139	e125
23	e110	e213	e372	e128	e118	e133	e120	e127	e129	e135	e139	e126
24	e108	e253	e2610	e147	e118	e139	e128	e124	e128	e135	e139	e126
25	e110	e285	e1110	e131	e118	e1110	e122	e124	e130	e135	e137	e127
26	e108	e127	e143	e128	e118	e249	e131	e124	e133	e135	e135	e130
27	e109	e115	e133	e124	e116	e151	e127	e122	e135	e135	e133	e129
28	e107	e113	e140	e125	e116	e143	e120	e122	e137	e135	e130	e131
29	e107	e112	e136	e128	---	e150	e119	e126	e137	e135	e128	e131
30	e108	e112	e136	e128	---	e156	e116	e125	e135	e137	e126	e133
31	e108	---	e171	e139	---	e161	---	e120	---	e137	e126	---
TOTAL	3394	4933	17070	5524	9438	6144	4118	3940	3827	4024	4227	4574
MEAN	109	164	551	178	337	198	137	127	128	130	136	152
MAX	119	1120	3740	889	2440	1110	177	178	137	137	139	821
MIN	101	107	112	119	116	118	116	114	120	120	126	124
AC-FT	6730	9780	33860	10960	18720	12190	8170	7810	7590	7980	8380	9070

WTR YR 1989 TOTAL 71213 MEAN 195 MAX 3740 MIN 101 AC-FT 141300

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 from October 1973 to September 1975, January 1980 to September 1983.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	TURBIDITY (NTU)	BAROMETRIC PRESSURE (MM OF HG)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARDNESS TOTAL (MG/L AS CACO3)
DEC												
29...	1330	153	996	8.9	14.0	3.4	765	14.0	136	210	170	270
MAR												
30...	1600	123	1160	10.4	29.5	4.0	760	>20.0	>268	<1	88	260
JUN												
22...	1430	173	1080	10.5	31.0	11	750	>20.0	>270	K10	K57	220
SEP												
27...	1245	147	935	9.9	25.0	---	755	>20.0	>250	K19	89	210

DATE	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3	CARBONATE WATER DIS IT FIELD MG/L AS CO3	HYDROXIDE WATER WH IT FIELD MG/L AS OH	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3
DEC											
29...	75	70	22	100	44	3	9.4	184	24	0	190
MAR											
30...	130	70	20	130	51	4	9.3	0	83	0	138
JUN											
22...	100	63	16	120	52	3	11	0	84	6	139
SEP											
27...	70	55	17	110	52	3	10	52	57	0	138

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)
DEC												
29...	180	98	0.60	27	638	641	0.87	0.500	2.40	8.20	8.50	10
MAR												
30...	200	160	0.60	17	703	698	0.96	0.570	2.70	2.40	2.40	4.3
JUN												
22...	190	140	0.50	17	593	634	0.81	0.710	1.90	0.050	0.030	1.7
SEP												
27...	160	120	0.70	19	590	579	0.80	0.310	2.60	0.030	0.030	1.7

DATE	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	ALUMINUM, DISSOLVED (UG/L AS AL)	ARSENIC DISSOLVED (UG/L AS AS)	BARIUM, DISSOLVED (UG/L AS BA)	BERYLLIUM, DISSOLVED (UG/L AS BE)	CADMIUM DISSOLVED (UG/L AS CD)	CHROMIUM, DISSOLVED (UG/L AS CR)	COBALT, DISSOLVED (UG/L AS CO)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)
DEC												
29...	2.30	2.10	1.90	20	10	51	<0.5	1	3	<3	7	10
MAR												
30...	1.00	0.130	0.060	20	4	42	<0.5	<1	3	<3	10	3
JUN												
22...	0.640	0.090	0.040	<10	4	31	<0.5	<1	9	<3	6	6
SEP												
27...	2.00	1.20	0.920	20	10	22	<0.5	3	2	<3	9	3

See footnotes at end of table.

11103000 LOS ANGELES RIVER AT LONG BEACH, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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											
29...	<5	66	30	<0.1	30	10	2	<1.0	500	<6	36
MAR											
30...	<5	45	<1	0.2	20	9	2	<1.0	520	<6	7
JUN											
22...	<1	50	<1	<0.1	20	11	2	<1.0	480	<6	5
SEP											
27...	1	77	<1	0.1	20	10	1	<1.0	410	<6	22

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

CROSS-SECTIONAL DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	BARO-METRIC PRES-SURE (MM OF HG)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	SEDI-MENT, SUS-PENDED (MG/L)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
JUN										
22...*	1320	90.0	1030	10.0	30.5	750	18.3	249	18	74
22...*	1325	146	1040	10.1	31.0	750	>20.0	>270	24	77
22...*	1330	155	1040	10.2	31.0	750	>20.0	>270	22	82
22...*	1335	179	1050	10.3	30.5	750	>20.0	>268	26	81
22...*	1340	260	1090	10.6	31.0	750	19.4	267	40	94
SEP										
27...*	1305	124	944	10.2	26.0	755	>20.0	>245	--	--
27...*	1310	140	952	9.8	25.5	755	>20.0	>242	--	--
27...*	1315	148	956	9.7	25.5	755	>20.0	>242	--	--
27...*	1320	154	954	9.7	25.0	755	>20.0	>242	--	--
27...*	1325	164	951	9.8	25.0	755	>20.0	>242	--	--
27...*	1330	172	949	10.0	25.5	755	>20.0	>242	--	--
27...*	1335	184	951	10.3	26.5	755	>20.0	>248	--	--

* Instantaneous streamflow at the time of cross-sectional measurements: June 22, 173 ft^3/s; Sept. 27, 147 ft^3/s.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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						
29...	1330	153	14.0	9	3.7	85
MAR						
30...	1600	123	29.5	10	3.3	65
JUN						
22...	1430	173	31.0	23	11	84

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 mi^2.

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 Reservoir, capacity, 324,000 acre-ft. Imported water from California Water Project stored and released at Castaic Dam.

AVERAGE DISCHARGE.--37 years, 48.7 ft^3/s, 35,280 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 68,800 ft^3/s, Jan. 25, 1969, gage height, 19.01 ft, from rating curve extended above 9,200 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft /s)	Gage height (ft)	Date	Time	Discharge (ft /s)	Gage height (ft)
Nov. 29	2400	1,030	5.64	Dec. 21	0300	1,900	6.37
Dec. 16	0615	*11,000	*9.06	Feb. 9	0715	1,060	5.67

Minimum daily, 20 ft^3 /s, Sept. 6, 7.

CORRECTIONS.--The maximum discharge for water year 1988 is 3,900 ft^3/s, Feb. 28, 1988, gage height, 7.43 ft; the previously published figure was not the maximum.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	29	41	50	36	44	e38	29	29	29	25	21
2	30	29	38	47	36	46	e38	27	30	28	26	21
3	30	29	38	47	37	45	38	27	30	28	25	21
4	30	29	37	47	96	44	38	27	31	28	24	21
5	31	29	37	84	53	44	37	26	31	28	23	21
6	32	30	37	94	45	42	37	26	31	28	22	20
7	32	31	36	60	43	42	37	25	31	28	23	20
8	31	30	36	50	51	41	37	26	31	29	23	21
9	31	30	36	43	415	40	37	26	32	29	22	22
10	31	31	36	40	63	40	37	28	33	28	21	24
11	30	31	36	39	43	39	37	28	34	27	21	26
12	29	31	36	39	45	40	37	27	35	27	21	27
13	29	31	35	38	42	39	37	28	35	27	21	27
14	29	36	34	39	e43	39	37	28	35	27	21	27
15	30	30	515	38	e44	39	37	29	35	28	21	27
16	29	30	2760	40	e45	40	36	29	35	28	21	28
17	29	30	122	40	e45	44	36	29	35	30	21	32
18	31	30	89	40	e45	46	34	30	34	30	21	29
19	33	30	74	40	e45	47	34	29	34	29	21	36
20	33	32	76	39	e45	e45	33	30	34	29	22	27
21	33	31	367	39	e46	e45	32	30	32	29	22	26
22	34	29	76	39	e46	e45	32	30	33	29	22	26
23	34	30	69	39	e46	e43	32	29	33	29	21	27
24	32	31	153	33	e46	e43	31	29	33	29	21	28
25	31	33	109	30	e46	e42	31	30	32	29	21	29
26	31	31	55	30	e46	e42	31	30	31	29	21	29
27	31	30	53	30	46	e40	29	31	31	27	21	28
28	31	31	51	33	45	e40	29	28	30	27	21	27
29	32	75	49	36	---	e40	28	28	29	27	21	28
30	31	93	48	34	---	e39	29	29	29	27	21	28
31	30	---	55	36	---	e38	---	29	---	26	21	---
TOTAL	960	1022	5234	1333	1684	1303	1036	877	968	873	678	774
MEAN	31.0	34.1	169	43.0	60.1	42.0	34.5	28.3	32.3	28.2	21.9	25.8
MAX	34	93	2760	94	415	47	38	31	35	30	26	36
MIN	29	29	34	30	36	38	28	25	29	26	21	20
AC-FT	1900	2030	10380	2640	3340	2580	2050	1740	1920	1730	1340	1540

CAL YR 1988 TOTAL 18458 MEAN 50.4 MAX 2760 MIN 23 AC-FT 36610
WTR YR 1989 TOTAL 16742 MEAN 45.9 MAX 2760 MIN 20 AC-FT 33210

e Estimated

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 mi^2.

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.--Records fair except those for estimated daily discharges which are poor. Flow regulated beginning December 1971 by Pyramid Lake, capacity, 173,500 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 ft^3/s, 39,920 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,200 ft^3/s, Feb. 25, 1969, gage height, 18.6 ft, site and datum then in use, from floodmarks, from rating curve extended above 4,000 ft^3/s on basis of slope-area measurement at gage height 12.2 ft and inflow-outflow records for Lake Piru; no flow in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 2, 1938, reached a discharge of 35,000 ft^3/s, and is the greatest since that date.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 194 ft^3/s, Dec. 21, gage height, 4.25 ft; minimum daily, 3.8 ft^3/s, Nov. 29.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	7.1	5.3	14	16	14	11	7.8	6.8	9.5	9.3	10
2	9.6	7.0	4.8	14	16	29	11	7.4	8.2	10	8.7	11
3	8.8	7.0	4.9	14	16	39	12	7.1	9.1	11	10	10
4	7.9	7.0	4.9	e14	24	37	11	7.9	8.2	12	9.4	12
5	9.6	7.9	4.9	e14	23	37	9.7	9.7	7.6	12	7.7	12
6	7.9	8.7	4.9	e14	18	37	9.9	10	7.0	7.5	9.1	13
7	6.1	7.4	4.9	e14	14	37	9.4	8.2	7.0	6.7	8.4	13
8	6.6	7.5	5.3	e14	16	37	9.4	9.4	7.0	7.2	8.8	9.3
9	7.0	7.6	5.9	e14	44	37	9.3	10	7.0	7.2	9.0	9.2
10	8.8	8.0	6.7	e15	46	38	8.8	8.6	7.0	7.4	9.2	8.5
11	7.8	8.2	6.7	e15	87	38	9.1	8.0	7.7	7.3	9.1	8.7
12	7.9	8.2	6.7	e15	91	38	9.1	7.1	7.5	6.7	8.3	9.3
13	7.2	8.3	6.7	e15	87	38	9.1	6.7	8.6	6.7	8.2	9.7
14	6.9	9.3	6.7	e15	81	65	9.1	7.1	12	6.8	9.1	11
15	6.5	8.2	7.7	e15	31	69	9.1	7.6	11	6.4	10	12
16	6.2	7.8	39	e15	22	72	9.1	7.1	12	6.8	8.8	14
17	7.9	6.0	16	e15	20	72	8.9	6.7	11	11	8.6	9.9
18	10	4.9	11	e15	20	72	9.0	6.7	9.5	9.4	7.3	9.0
19	9.0	4.7	9.0	e15	20	72	8.6	6.3	10	10	7.3	13
20	9.2	4.6	8.5	e15	21	70	8.2	6.0	12	11	7.6	9.9
21	8.8	4.5	57	e15	18	72	8.1	7.2	13	11	6.6	8.8
22	9.0	4.5	15	e15	17	74	7.8	7.2	12	11	7.0	9.5
23	10	4.6	15	e15	17	96	7.8	7.6	13	11	6.5	14
24	11	4.7	18	e16	17	96	7.8	6.9	10	9.0	7.1	12
25	10	5.4	25	e16	16	97	7.8	6.6	9.7	8.7	6.5	13
26	11	5.3	16	e16	15	88	8.0	6.3	8.8	10	6.6	14
27	9.7	5.0	15	e16	15	23	8.9	7.4	9.5	11	6.5	13
28	8.2	4.1	14	e16	14	15	8.6	7.1	9.6	11	7.6	13
29	7.5	3.8	14	e16	---	13	8.2	5.6	12	11	8.8	10
30	7.4	7.6	14	15	---	13	7.8	6.0	9.0	11	9.2	11
31	7.4	---	14	16	---	12	---	5.7	---	12	10	---
TOTAL	260.9	194.9	387.5	463	842	1547	271.6	229.0	282.8	289.3	256.3	332.8
MEAN	8.42	6.50	12.5	14.9	30.1	49.9	9.05	7.39	9.43	9.33	8.27	11.1
MAX	11	9.3	57	16	91	97	12	10	13	12	10	14
MIN	6.1	3.8	4.8	14	14	12	7.8	5.6	6.8	6.4	6.5	8.5
AC-FT	517	387	769	918	1670	3070	539	454	561	574	508	660

CAL YR 1988 TOTAL 13430.2 MEAN 36.7 MAX 2200 MIN 3.8 AC-FT 26640
WTR YR 1989 TOTAL 5357.1 MEAN 14.7 MAX 97 MIN 3.8 AC-FT 10630

e Estimated.

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 mi^2.

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 FOR CURRENT YEAR.--Maximum contents, 28,300 acre-ft, Mar. 30 to Apr. 21; maximum elevation, 992.33 ft, Apr. 8; minimum contents 21,100 acre-ft, Aug. 25 to Sept. 30; minimum elevation 981.31 ft, Sept. 12.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Provided by United Water Conservation District based on survey dated 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 1988 TO SEPTEMBER 1989
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23700	23600	23400	24100	24800	26400	28300	27800	21600	21500	21300	21100
2	23700	23600	23400	24200	24900	26400	28300	27500	21600	21500	21300	21100
3	23700	23600	23400	24200	24900	26500	28300	26300	21600	21500	21300	21100
4	23700	23600	23400	24200	25000	26500	28300	25700	21600	21500	21300	21100
5	23700	23600	23400	24300	25100	26600	28300	24800	21600	21500	21300	21100
6	23700	23600	23400	24300	25100	26600	28300	24200	21600	21500	21300	21100
7	23700	23600	23400	24300	25100	26600	28300	23600	21600	21500	21300	21100
8	23700	23600	23400	24300	25200	26700	28300	23000	21600	21500	21300	21100
9	23700	23600	23300	24400	25300	26700	28300	22400	21600	21500	21200	21100
10	23700	23600	23300	24400	25300	26800	28300	21800	21600	21500	21200	21100
11	23700	23600	23300	24400	25500	26800	28300	21700	21600	21400	21200	21100
12	23700	23500	23300	24400	25600	26900	28300	21700	21600	21400	21200	21100
13	23700	23600	23300	24400	25800	26900	28300	21700	21600	21400	21200	21100
14	23700	23500	23300	24500	25900	27000	28300	21700	21500	21400	21200	21100
15	23700	23500	23400	24500	25900	27000	28300	21700	21500	21400	21200	21100
16	23700	23500	23500	24500	26000	27100	28300	21700	21500	21400	21200	21100
17	23700	23500	23500	24500	26000	27200	28300	21600	21500	21400	21200	21100
18	23700	23500	23500	24500	26000	27300	28300	21600	21500	21400	21200	21100
19	23700	23500	23500	24600	26100	27400	28300	21600	21500	21400	21200	21100
20	23700	23500	23700	24600	26100	27500	28300	21600	21500	21400	21200	21100
21	23700	23500	23800	24600	26200	27600	28300	21600	21500	21400	21200	21100
22	23700	23500	23800	24600	26200	27600	28200	21600	21500	21400	21200	21100
23	23700	23500	23800	24600	26200	27800	28200	21600	21500	21400	21200	21100
24	23700	23400	23900	24700	26200	27900	28200	21600	21500	21300	21200	21100
25	23700	23500	23900	24700	26300	28100	28200	21600	21500	21300	21100	21100
26	23600	23400	24000	24700	26300	28200	28200	21600	21500	21300	21100	21100
27	23600	23400	24000	24700	26300	28200	28200	21600	21500	21300	21100	21100
28	23600	23400	24000	24800	26300	28200	28100	21600	21500	21300	21100	21100
29	23600	23400	24000	24800	---	28200	28000	21600	21500	21300	21100	21100
30	23600	23400	24000	24800	---	28300	27900	21600	21500	21300	21100	21100
31	23600	---	24100	24800	---	28300	---	21600	---	21300	21100	---
MAX	23700	23600	24100	24800	26300	28300	28300	27800	21600	21500	21300	21100
MIN	23600	23400	23300	24100	24800	26400	27900	21600	21500	21300	21100	21100
a	985.41	985.08	986.17	987.25	989.52	992.30	991.84	982.20	981.99	981.74	981.41	981.33
b	-100	-200	+700	+700	+1500	+2000	-400	-6300	-100	-200	-200	+0

CAL YR 1988 b +1400
WTR YR 1989 b -2600

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

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 mi^2.

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.--Records good except those for estimated daily discharges, which are fair. Since May 1955 flow regulated by Lake Piru (station 11109700) and since December 1971 by Pyramid Lake, capacity, 173,500 acre-ft. Imported water from the California Water Project stored by Pyramid Lake. No diversion above station. Spill from Lake Piru bypasses gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 623 ft^3/s, Aug. 2, 1982, gage height, 3.82 ft; no flow at times in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 294 ft^3/s, May 12-16, gage height, 3.21 ft; minimum daily, 1.90 ft^3/s, Apr. 8-11.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.3	8.1	7.7	e4.8	4.3	2.9	6.9	53	5.8	6.3	8.8	5.7
2	8.1	8.1	7.2	e4.5	4.3	4.7	6.9	50	5.7	6.4	6.5	5.7
3	7.8	8.1	4.9	e4.5	4.3	6.0	6.9	51	5.5	6.6	6.3	5.7
4	7.8	8.1	4.6	4.5	4.4	6.0	6.9	51	5.5	6.6	6.2	5.7
5	7.8	7.9	4.8	4.5	4.0	6.0	5.1	51	5.3	6.6	6.1	6.1
6	7.8	7.2	4.8	4.5	3.9	6.2	3.5	51	5.0	6.6	6.0	6.4
7	7.8	8.2	4.8	4.5	3.9	6.1	2.0	51	5.0	6.6	6.0	6.0
8	7.8	9.4	4.6	4.5	4.0	4.2	1.9	118	5.1	6.7	6.0	6.0
9	7.8	10	4.7	4.5	4.0	6.0	1.9	188	5.2	6.9	5.9	6.0
10	7.9	9.0	4.6	4.7	3.7	6.0	1.9	280	5.2	6.9	5.7	6.0
11	8.1	8.2	4.5	4.9	3.7	6.0	1.9	290	5.2	6.7	5.6	6.0
12	7.8	14	4.7	4.9	3.9	6.0	3.9	293	5.2	6.6	5.5	6.8
13	7.8	12	4.6	5.0	3.9	6.0	6.9	294	5.2	6.6	5.5	6.0
14	7.8	9.7	4.5	5.0	3.5	6.0	6.9	294	5.3	6.6	5.5	5.7
15	7.9	11	4.5	5.0	3.5	6.0	6.9	294	5.5	6.6	5.5	5.6
16	8.1	10	4.6	5.0	3.5	6.0	6.9	294	5.5	6.4	5.8	5.5
17	8.0	7.8	5.3	4.4	3.5	6.2	6.7	291	5.5	6.1	5.8	5.5
18	7.8	6.9	5.5	4.1	3.5	6.4	6.6	96	5.5	6.2	5.9	5.9
19	7.8	7.5	5.0	4.1	3.5	6.6	6.6	6.0	5.5	7.7	5.9	5.8
20	7.8	7.5	5.0	4.1	3.5	6.6	6.6	6.0	5.6	6.3	6.0	5.7
21	7.8	7.5	5.0	4.1	3.5	5.9	6.6	6.2	5.8	7.0	6.0	5.3
22	7.8	7.5	4.9	4.1	3.5	6.4	6.6	6.3	6.0	7.5	5.8	5.0
23	7.6	7.5	4.8	4.3	3.4	6.0	6.6	6.1	6.0	7.9	5.7	5.3
24	7.6	7.5	e4.8	4.3	3.3	6.6	6.6	6.0	6.0	7.7	5.7	5.5
25	7.8	7.5	e4.8	4.3	3.3	6.6	6.6	6.0	6.0	8.3	5.7	5.5
26	10	7.5	e4.8	4.3	3.3	6.6	6.6	6.0	6.1	6.7	5.5	5.2
27	11	9.2	e4.8	4.4	3.3	6.6	8.9	6.0	6.3	6.6	5.5	5.2
28	7.5	7.5	e4.8	4.4	3.1	6.6	55	6.0	6.3	7.8	5.6	5.2
29	8.0	7.5	e4.8	4.3	---	6.8	55	6.0	6.3	6.8	5.7	5.3
30	9.3	7.5	e4.8	4.3	---	6.8	55	6.0	6.3	6.6	5.7	5.2
31	8.1	---	e4.8	4.3	---	6.9	---	6.0	---	6.7	5.7	---
TOTAL	250.3	255.4	154.0	139.1	103.5	187.7	317.3	3168.6	168.4	211.6	183.1	170.5
MEAN	8.07	8.51	4.97	4.49	3.70	6.05	10.6	102	5.61	6.83	5.91	5.68
MAX	11	14	7.7	5.0	4.4	6.9	55	294	6.3	8.3	8.8	6.8
MIN	7.5	6.9	4.5	4.1	3.1	2.9	1.9	6.0	5.0	6.1	5.5	5.0
AC-FT	496	507	305	276	205	372	629	6280	334	420	363	338

CAL YR 1988 TOTAL 12306.3 MEAN 33.6 MAX 354 MIN 2.4 AC-FT 24410
WTR YR 1989 TOTAL 5309.5 MEAN 14.5 MAX 294 MIN 1.9 AC-FT 10530

e Estimated.

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 mi^2.

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

AVERAGE DISCHARGE.--42 years, 13.4 ft^3/s, 9,710 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft^3/s, Mar. 1, 1983, gage height, 15.02 ft, from rating curve extended above 3,000 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 9	1830	*50	*2.38				

Minimum daily, 0.01 ft^3/s, Sept. 12-14.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.24	.37	1.9	1.5	1.2	7.3	3.3	1.8	.59	.37	.07	.05
2	e.24	.40	2.0	1.5	1.2	10	3.2	1.7	.49	.35	.06	.04
3	e.24	.45	2.0	1.5	1.2	9.4	3.1	1.6	.43	.31	.06	.04
4	e.24	.58	2.0	1.4	2.5	7.5	2.9	1.5	.42	.28	.06	.04
5	e.24	.68	1.7	1.6	1.7	6.8	2.8	1.5	.39	.25	.05	.05
6	e.24	.70	1.7	1.8	1.3	6.4	2.7	1.4	.44	.25	.05	.05
7	e.24	.81	1.5	1.5	1.1	6.3	2.7	1.4	.49	.33	.05	.05
8	e.24	.86	1.4	1.4	11	6.1	2.6	1.3	.44	.41	.05	.06
9	e.24	.86	1.3	1.4	27	5.9	2.5	1.7	e.45	.43	.05	.04
10	e.24	.87	1.4	1.4	7.1	6.0	2.4	2.1	e.45	.38	.05	.03
11	e.24	.90	1.4	1.5	6.3	5.9	2.4	2.0	e.45	.33	.04	.02
12	e.24	.92	1.5	1.4	5.0	5.7	2.4	1.8	e.45	.29	.04	.01
13	e.24	.95	1.5	1.3	4.2	5.5	2.3	1.7	e.45	.28	.04	.01
14	e.24	.89	1.5	1.3	4.1	5.4	2.3	1.8	e.45	.22	.02	.01
15	.24	.90	1.9	1.2	4.8	5.2	2.2	1.8	e.45	.23	.02	.04
16	.24	1.0	3.2	1.2	5.1	5.0	2.2	1.7	e.45	.24	.02	.05
17	.24	1.0	3.6	1.2	5.4	4.9	2.1	1.5	e.45	.20	.02	.05
18	.24	1.2	3.2	1.2	6.2	4.6	2.0	1.4	e.45	.17	.03	.05
19	.24	1.3	2.9	1.1	15	4.3	2.0	1.3	e.45	.14	.03	.05
20	.24	1.3	3.4	1.1	14	4.1	1.9	1.2	e.45	.12	.03	.04
21	.23	1.3	6.5	1.1	10	3.9	1.8	1.1	e.45	.10	.03	.06
22	.23	1.4	2.4	1.2	11	3.8	1.9	1.1	e.45	.10	.04	.06
23	.21	1.4	1.9	1.2	13	3.8	1.9	.91	e.45	.10	.06	.07
24	.22	1.4	3.0	1.3	11	3.8	2.0	.90	e.45	.10	.06	.08
25	.22	1.6	2.7	1.3	9.5	3.9	2.3	.90	e.45	.08	.08	.08
26	.22	1.6	1.8	1.2	10	3.7	2.3	.86	e.45	.10	.07	.08
27	.23	1.6	1.6	1.2	11	3.6	2.1	.75	e.50	.12	.07	.07
28	.25	1.7	1.5	1.2	8.6	3.5	1.9	.59	.46	.10	.06	.08
29	.26	1.9	1.5	1.2	---	3.5	1.9	.50	.42	.07	.05	.08
30	.30	1.9	1.5	1.2	---	3.4	1.8	.56	.39	.07	.05	.08
31	.31	---	1.6	1.2	---	3.3	---	.56	---	.07	.05	---
TOTAL	7.48	32.74	67.0	40.8	209.5	162.5	69.9	40.93	13.56	6.59	1.46	1.52
MEAN	.24	1.09	2.16	1.32	7.48	5.24	2.33	1.32	.45	.21	.047	.051
MAX	.31	1.9	6.5	1.8	27	10	3.3	2.1	.59	.43	.08	.08
MIN	.21	.37	1.3	1.1	1.1	3.3	1.8	.50	.39	.07	.02	.01
AC-FT	15	65	133	81	416	322	139	81	27	13	2.9	3.0

CAL YR 1988 TOTAL 3821.16 MEAN 10.4 MAX 1240 MIN .21 AC-FT 7580
WTR YR 1989 TOTAL 653.98 MEAN 1.79 MAX 27 MIN .01 AC-FT 1300

e Estimated.

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 mi^2.

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 those for periods of estimated daily discharge, which are poor. Natural flow affected by pumping and return flow from irrigated areas.

AVERAGE DISCHARGE.--62 years, 22.9 ft^3/s, 16,590 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,000 ft^3/s, Feb. 25, 1969, gage height, 18.18 ft, from floodmark, site and datum then in use, from rating curve extended above 2,300 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 9	0445	*109	*2.85				

Minimum daily, 0.69 ft^3/s, Aug. 7.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	1.8	2.0	5.0	3.0	11	4.4	2.9	2.3	1.8	.93	.81
2	1.7	1.9	2.4	4.6	2.9	13	e4.2	2.7	2.8	1.8	.93	.75
3	1.7	1.9	2.1	4.3	3.0	12	e4.0	2.7	2.9	1.7	.90	.74
4	1.6	1.8	2.1	4.0	24	9.8	3.8	2.5	3.2	1.6	.84	.78
5	1.6	1.5	1.9	4.4	14	9.6	4.0	2.7	3.1	1.9	.79	.77
6	1.7	1.8	2.4	4.1	9.3	9.5	3.8	2.7	3.0	1.6	.73	.73
7	1.8	1.9	2.0	3.7	9.4	9.3	3.6	2.6	2.9	e1.6	.69	.74
8	1.6	2.0	1.7	3.5	37	9.3	3.5	2.6	2.8	e1.6	.71	.76
9	1.5	2.0	2.3	3.6	64	9.0	3.7	3.3	2.9	e1.6	.72	.81
10	1.5	1.9	2.2	3.6	34	8.4	3.9	3.6	2.8	e1.6	.74	.88
11	1.5	1.9	2.0	3.6	24	8.0	3.9	4.2	3.0	e1.6	.74	.91
12	1.7	2.0	2.5	3.5	21	7.8	4.0	3.6	2.8	1.7	.72	.90
13	1.8	2.5	2.5	3.5	18	7.9	4.1	3.3	2.4	1.5	.70	.90
14	2.1	3.0	2.4	3.5	15	7.7	3.9	3.4	2.3	1.4	.72	.79
15	1.7	2.3	4.0	3.5	14	7.4	3.9	3.5	2.4	1.3	.77	.75
16	1.5	2.3	11	3.5	14	7.0	3.9	3.0	2.4	1.3	.80	.82
17	1.6	2.2	5.1	3.3	13	6.8	3.8	3.0	2.2	1.4	.79	.97
18	1.8	2.2	4.6	3.3	13	6.5	3.7	3.0	2.2	1.4	.79	1.0
19	1.6	2.2	4.2	3.2	14	6.3	3.5	3.1	2.1	1.3	.78	1.3
20	1.5	2.2	6.3	3.0	16	6.2	3.4	2.6	1.8	1.2	.87	1.2
21	1.6	2.2	17	3.1	15	6.1	3.3	2.8	1.8	1.1	.90	1.0
22	1.6	2.0	5.6	3.1	15	7.0	3.2	2.7	1.8	1.2	.92	.94
23	1.6	2.1	5.5	3.2	16	6.4	3.3	2.6	2.1	1.3	.90	.75
24	1.7	2.3	11	3.2	15	6.1	3.4	2.6	2.2	1.3	.92	.75
25	1.7	3.4	11	3.2	13	5.9	4.1	2.5	2.2	1.3	.92	.85
26	1.8	2.6	8.0	3.2	12	5.6	3.8	2.5	2.2	1.3	.95	.87
27	1.8	2.5	7.0	3.9	13	5.3	3.3	3.4	2.1	1.0	.97	.76
28	1.8	2.4	6.7	3.2	12	5.1	3.1	2.8	2.0	.89	.97	.74
29	1.8	2.2	6.4	3.1	---	4.9	2.9	3.2	2.0	.89	.90	.75
30	1.8	2.0	5.9	3.1	---	4.8	2.9	3.0	1.8	.93	.85	.73
31	1.8	---	5.7	3.3	---	4.7	---	2.6	---	.93	.78	---
TOTAL	52.1	65.0	155.5	110.3	473.6	234.4	110.3	91.7	72.5	43.04	25.64	25.45
MEAN	1.68	2.17	5.02	3.56	16.9	7.56	3.68	2.96	2.42	1.39	.83	.85
MAX	2.1	3.4	17	5.0	64	13	4.4	4.2	3.2	1.9	.97	1.3
MIN	1.5	1.5	1.7	3.0	2.9	4.7	2.9	2.5	1.8	.89	.69	.73
AC-FT	103	129	308	219	939	465	219	182	144	85	51	50

CAL YR 1988 TOTAL 3731.3 MEAN 10.2 MAX 668 MIN 1.3 AC-FT 7400
WTR YR 1989 TOTAL 1459.53 MEAN 4.00 MAX 64 MIN .69 AC-FT 2890

e Estimated.

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 mi^2.

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: 62 years (water years 1912-13, 1930-89), 58.4 ft^3/s, 42,310 acre-ft/yr.
Combined river and diversion: 57 years, 67.9 ft^3/s, 49,190 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--River only: Maximum discharge, 63,600 ft^3/s, Feb. 10, 1978, gage height, 24.14 ft, from rating curve extended above 34,000 ft^3/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 ft^3/s, Feb. 10, 1978; no flow Nov. 28, 29, 1977.
EXTREMES FOR CURRENT YEAR.--River only: Maximum discharge, 236 ft^3/s, Dec. 21, gage height, 4.98 ft; no flow for many days.
Combined river and diversion: Maximum discharge, 244 ft^3/s, Dec. 21; minimum daily, 3.2 ft^3/s, Jan. 1.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.05	8.7	4.4	e1.3	.18	.00	.00
2	.00	.00	.00	.00	.00	.11	8.3	4.1	e1.2	.14	.00	.00
3	.00	.00	.00	.00	.00	.13	8.1	4.9	e1.1	.13	.00	.00
4	.00	.00	.00	.00	16	.14	8.0	4.7	e1.0	.11	.00	.00
5	.00	.00	.00	.00	.81	2.7	7.8	4.0	e.94	.10	.00	.00
6	.00	.00	.00	.00	.15	4.6	7.7	e3.9	e.84	.10	.00	.00
7	.00	.00	.00	.00	.14	5.9	7.7	e3.8	.74	.07	.00	.00
8	.00	.00	.00	.00	70	7.8	7.2	e3.7	.70	.06	.00	.00
9	.00	.00	.00	.00	60	9.4	5.2	e3.6	.62	.05	.00	.00
10	.00	.00	.00	.00	7.6	8.7	4.4	e3.5	.60	.03	.00	.00
11	.00	.00	.00	.00	2.9	11	4.1	e3.4	.58	.01	.00	.00
12	.00	.00	.00	.00	1.9	12	3.8	e3.3	.50	.00	.00	.00
13	.00	.00	.00	.00	1.1	10	3.2	e3.2	.50	.00	.00	.00
14	.00	.00	.00	.00	.29	12	3.0	e3.1	.44	.00	.00	.00
15	.00	.00	.00	.00	.18	12	2.8	e3.0	.40	.00	.00	.00
16	.00	.00	.00	.00	.15	11	2.6	e2.9	.43	.00	.00	.00
17	.02	.00	.00	.00	.12	7.6	4.0	e2.8	.42	.00	.00	.00
18	.04	.00	.00	.00	.12	9.8	3.2	e2.7	.39	.00	.00	.00
19	.05	.00	.00	.00	.12	11	2.7	e2.6	.44	.00	.00	.00
20	.05	.00	.09	.00	.11	11	2.5	e2.5	.42	.00	.00	.00
21	.03	.00	30	.00	.16	12	2.2	e2.4	.36	.00	.00	.00
22	.02	.00	.33	.00	.21	11	2.4	e2.3	.33	.00	.00	.00
23	.02	.00	.15	.00	.19	11	2.6	e2.2	.29	.00	.00	.00
24	.00	.00	9.9	.00	.17	10	2.8	e2.1	.30	.00	.00	.00
25	.00	.00	4.4	.00	.14	10	4.8	e2.0	.29	.00	.00	.00
26	.00	.00	.87	.00	.12	8.6	7.4	e1.9	.23	.00	.00	.00
27	.00	.00	.25	.00	.10	8.5	8.2	e1.8	.22	.00	.00	.00
28	.00	.00	.19	.00	.06	8.8	5.3	e1.7	.24	.00	.00	.00
29	.00	.00	.11	.00	---	8.9	5.0	e1.6	.27	.00	.00	.00
30	.00	.00	.04	.00	---	8.9	4.9	e1.5	.23	.00	.00	.00
31	.00	---	.00	.00	---	8.9	---	e1.4	---	.00	.00	---
TOTAL	0.23	0.00	46.33	0.00	162.84	253.53	150.6	91.0	16.32	0.98	0.00	0.00
MEAN	.007	.000	1.49	.000	5.82	8.18	5.02	2.94	.54	.032	.000	.000
MAX	.05	.00	30	.00	70	12	8.7	4.9	1.3	.18	.00	.00
MIN	.00	.00	.00	.00	.00	.05	2.2	1.4	.22	.00	.00	.00
AC-FT	.5	.00	92	.00	323	503	299	180	32	1.9	.00	.00

CAL YR 1988 TOTAL 2282.03 MEAN 6.24 MAX 690 MIN .00 AC-FT 4530
WTR YR 1989 TOTAL 721.83 MEAN 1.98 MAX 70 MIN .00 AC-FT 1430

e Estimated.

11118501 VENTURA RIVER NEAR VENTURA, CA--Continued

COMBINED DISCHARGE, IN CUBIC FEET PER SECOND, OF VENTURA RIVER AND VENTURA CITY DIVERSION NEAR VENTURA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	7.5	6.5	3.2	7.1	11	9.1	16	12	10	8.6	7.4
2	9.1	7.4	6.4	6.2	7.0	11	8.7	16	12	10	8.3	7.2
3	8.6	7.4	6.3	7.0	7.1	6.1	8.5	15	12	10	8.2	7.2
4	9.0	7.3	6.3	8.5	24	5.0	8.4	17	12	10	8.8	7.1
5	8.9	7.2	6.3	8.3	9.8	4.9	8.2	16	12	10	9.2	7.1
6	8.8	6.6	6.2	8.1	8.9	5.2	8.1	16	12	10	9.0	7.0
7	8.4	5.6	6.1	7.8	8.9	6.6	8.3	16	12	10	8.6	7.0
8	7.8	7.4	6.1	7.7	79	8.4	12	15	12	10	9.0	6.9
9	7.9	7.3	6.0	7.1	70	11	14	16	12	10	8.8	6.9
10	6.6	7.1	6.0	7.0	17	10	13	15	12	10	8.7	6.8
11	8.0	7.1	5.9	7.8	13	12	13	15	12	10	8.6	6.7
12	7.9	7.0	5.9	7.7	12	16	13	15	11	10	8.5	6.7
13	7.9	6.9	5.9	7.4	11	13	12	15	11	10	8.4	6.7
14	7.9	6.9	5.9	6.9	12	12	12	15	11	10	8.0	6.6
15	7.9	6.8	5.8	7.0	12	12	13	15	11	10	7.6	6.5
16	7.9	6.8	5.7	6.2	11	15	12	14	11	10	7.6	6.5
17	7.9	6.8	5.9	5.4	11	13	11	14	11	10	7.7	6.4
18	7.8	6.7	6.2	7.6	11	10	14	14	11	10	7.7	6.4
19	7.8	6.7	6.3	7.3	9.5	11	14	14	10	9.9	7.7	6.4
20	7.8	6.6	6.8	7.3	4.5	11	13	13	11	9.9	7.7	6.3
21	7.7	6.6	38	7.2	8.9	12	13	13	11	9.8	7.7	6.2
22	7.8	6.6	8.8	6.6	13	11	13	13	11	9.7	7.7	5.5
23	7.7	6.5	8.4	7.1	12	11	14	13	11	9.7	7.6	4.7
24	7.7	6.5	18	7.1	11	11	14	13	10	9.7	7.4	4.7
25	7.6	6.3	9.8	7.1	11	14	9.0	13	10	9.6	7.6	4.7
26	7.6	6.5	7.6	7.0	10	11	9.3	13	10	9.5	7.5	4.7
27	7.6	6.5	9.5	7.0	9.8	9.0	13	13	10	9.4	7.5	4.8
28	7.6	5.2	9.0	7.0	11	9.2	17	13	10	9.1	7.5	4.8
29	7.6	6.7	8.6	7.0	---	9.3	13	11	10	9.3	7.4	4.8
30	7.9	6.5	8.3	5.3	---	9.3	11	12	10	9.2	7.4	4.9
31	7.3	---	8.1	7.2	---	9.3	---	12	---	8.8	7.4	---
TOTAL	247.1	203.0	256.6	217.1	432.5	320.3	351.6	441	333	303.6	249.4	185.6
MEAN	7.97	6.77	8.28	7.00	15.4	10.3	11.7	14.2	11.1	9.79	8.05	6.19
MAX	9.1	7.5	38	8.5	79	16	17	17	12	10	9.2	7.4
MIN	6.6	5.2	5.7	3.2	4.5	4.9	8.1	11	10	8.8	7.4	4.7
AC-FT	490	403	509	431	858	635	697	875	661	602	495	368

CAL YR 1988 TOTAL 6294.0 MEAN 17.2 MAX 700 MIN 5.0 AC-FT 12480
WTR YR 1989 TOTAL 3540.8 MEAN 9.70 MAX 79 MIN 3.2 AC-FT 7020

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 to current year.
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 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE INST CUBIC FEET PER SECOND	TEMPERATURE WATER (DEG C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .125 MM	SED. SUSP. SIEVE DIAM. % FINER THAN .250 MM
FEB								
10...	1815	5.0	15.0	26	0.33	--	--	--
APR								
05...	1145	8.5	15.0	112	2.60	88	95	100

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 mi^2.

WATER-DISCHARGE RECORDS

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.--No estimated daily discharges. Records 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.--47 years (water years 1942-77, 1979-89), 2.93 ft^3/s, 2,120 acre-ft/yr.
EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,880 ft^3/s, Dec. 27, 1971, gage height, 14.10 ft, from floodmark, from rating curve extended above 130 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 8	1915	*35	*3.89				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	.04	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	6.9	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	6.9	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.13	.01	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	11	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	7.9	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	1.3	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.33	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.06	.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	.06	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.34	.16	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	3.2	.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	.01	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.53	.00	.09	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.24	.00	.00	.06	.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	.08	.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	4.31	0.28	34.81	0.12	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.00	.00	.14	.009	1.24	.004	.00	.00	.00	.00	.00	.00
MAX	.00	.00	3.2	.16	11	.06	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	8.5	.6	69	.2	.00	.00	.00	.00	.00	.00

CAL YR 1988 TOTAL 104.06 MEAN .28 MAX 23 MIN .00 AC-FT 206
WTR YR 1989 TOTAL 39.52 MEAN .11 MAX 11 MIN .00 AC-FT 78

11119500 CARPINTERIA CREEK NEAR CARPINTERIA, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Water year 1979 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)
FEB 09...	1500	5.0	574	8.60	14.0	240	63	21	26	19	0.7	1.8

DATE	ALKA-LINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHOROUS 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 09...	170	110	13	0.3	15	338	358	0.94	0.02	40	36	6

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 mi^2.

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.--19 years, 2.73 ft^3/s, 1,980 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,580 ft^3/s, Jan. 18, 1973, gage height, 4.97 ft, from rating curve extended above 41 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 17	0300	*168	*2.64				

No flow for many days.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	2.6	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.0	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	4.7	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.02	.0	.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	20	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	7.2	.00	.00	.07	.00	.00	.00	.00
10	.00	.00	.00	.00	.94	.00	.00	.0	.00	.00	.00	.00
11	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.0	.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	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.00
17	.00	.00	19	.00	.00	.00	.00	.00	.00	.00	.00	e.00
18	.00	.00	.47	.00	.00	.00	.00	.00	.00	.00	.00	e.00
19	.00	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	6.7	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	2.3	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.74	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.02	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	3.5	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	1.0	.12	.00	.00	.00	.06	.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	1.02	32.86	0.02	32.94	2.60	0.06	0.07	0.00	0.00	0.00	0.00
MEAN	.00	.034	1.06	.001	1.18	.084	.002	.002	.00	.00	.00	.00
MAX	.00	1.0	19	.02	20	2.6	.06	.07	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.0	2.0	65	.04	65	5.2	.1	.1	.0	.0	.0	.0

CAL YR 1988 TOTAL 110.77 MEAN .30 MAX 29 MIN .00 AC-FT 220
WTR YR 1989 TOTAL 69.57 MEAN .19 MAX 20 MIN .00 AC-FT 138

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 mi^2.

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.--Records fair except for periods of estimated daily discharge, which are poor. 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.--19 years, 2.19 ft^3/s, 1,590 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,850 ft^3/s, Mar. 4, 1978, Feb. 16, 1980, from rating curve extended above 50 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 17	0100	*250	*3.01				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.01	.01	.00	.00	.06	.00	.01	.00	.00	.01	.00
2	.05	.00	.01	.00	.00	3.9	.01	.00	.00	.00	.00	.00
3	.01	.00	.00	.01	.08	.01	.00	.00	.01	.01	.00	.01
4	.02	.00	.01	.00	8.4	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.01	.73	.01	.00	.01	.00	.00	.00	.01	.00
6	.01	.01	.00	.11	.01	.00	.00	.00	.01	.00	.00	.00
7	.01	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.01
8	.01	.01	.02	.00	29	.00	.00	.00	.00	.00	.00	.01
9	.01	.01	.00	.00	4.4	.00	.00	1.1	.01	.00	.00	.00
10	.02	.00	.00	.00	.23	.00	.00	.00	.00	.01	.00	.01
11	.01	.00	.00	.01	.07	.00	.01	.00	.00	.00	.01	.00
12	.01	.00	.01	.01	.01	.00	.01	.00	.01	.00	.00	.00
13	.01	.35	.00	.01	e.01	.01	.00	.00	.00	.00	.00	.00
14	.02	.22	.00	.00	e.01	.02	.00	.00	.00	.01	.00	.01
15	.63	.01	1.3	.01	e.01	.02	.01	.00	.01	.01	.00	.00
16	.04	.00	.26	.02	e.01	.01	.00	.00	.00	.01	.00	.03
17	.04	.01	28	.00	e.01	.00	.01	.00	.00	.00	.02	.03
18	.02	.01	1.4	.00	e.01	.00	.00	.01	.01	.00	.00	.02
19	.00	.00	.18	.01	e.01	.00	.01	.00	.00	.01	.00	.00
20	.00	.02	12	.00	e.01	.01	.01	.00	.00	.01	.01	.00
21	.00	.01	1.4	.00	e.01	.00	.01	.00	.00	.00	.01	.01
22	.00	.01	1.6	.09	e.01	.00	.01	.01	.01	.00	.00	.00
23	.01	.85	.02	.41	e.01	.00	.01	.00	.02	.00	.00	.00
24	.00	.00	5.3	.02	e.01	.02	.08	.00	.00	.00	.01	.02
25	.00	3.4	.06	.00	e.01	.41	1.1	.02	.01	.00	.01	.05
26	.01	.00	.01	.00	e.01	.00	.00	.00	.03	.00	.01	.00
27	.01	.00	.01	.00	e.01	.01	.00	.00	.01	.00	.00	.00
28	.00	.01	.00	.00	e.01	.01	.00	.00	.00	.01	.00	.01
29	.00	.01	.00	.00	---	.01	.02	.00	.00	.00	.00	.03
30	.00	.01	.03	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.36	.01	---	.00	---	.00	---	.01	.00	---
TOTAL	0.97	4.96	52.01	1.45	42.37	4.50	1.31	1.15	0.14	0.09	0.10	0.25
MEAN	.031	.17	1.68	.047	1.51	.15	.044	.037	.005	.003	.003	.008
MAX	.63	3.4	28	.73	29	3.9	1.1	1.1	.03	.01	.02	.05
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	1.9	9.8	103	2.9	84	8.9	2.6	2.3	.3	.2	.2	.5

CAL YR 1988 TOTAL 167.24 MEAN .46 MAX 28 MIN .00 AC-FT 332
WTR YR 1989 TOTAL 109.30 MEAN .30 MAX 29 MIN .00 AC-FT 217

e Estimated.

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 mi^2.

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 above station. Some pumping for irrigation.

AVERAGE DISCHARGE.--19 years, 1.63 ft^3/s, 1,180 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,650 ft^3/s, Jan. 16, 1978, gage height, 5.87 ft, from rating curve extended above 290 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 20	2230	*50	*1.94				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	e.00	.17	.30	.21	.18
2	.00	.00	.00	.00	.00	.92	.00	e.00	.17	.36	.19	.15
3	.00	.00	.00	.00	.00	.08	.00	e.00	.14	.32	.23	.14
4	.00	.00	.00	.00	2.2	.00	.00	e.00	.16	.27	.26	.15
5	.00	.00	.00	.05	.16	.00	.00	e.00	.15	.29	.22	.17
6	.00	.00	.00	.00	.00	.00	.00	e.00	.18	.21	.20	.16
7	.00	.00	.00	.00	.00	.00	.00	e.00	.21	.19	.16	.20
8	.00	.00	.00	.00	9.3	.00	.00	e.00	.25	.21	.22	.22
9	.00	.00	.00	.00	5.8	.00	.00	.00	.28	.25	.23	.20
10	.00	.00	.00	.00	.85	.00	.00	.00	.30	.26	.22	.18
11	.00	.00	.00	.00	.47	.00	.00	.00	.33	.26	.23	.14
12	.00	.00	.00	.00	.29	.00	.00	.00	.33	.28	.25	.14
13	.00	.00	.00	.00	.29	.00	.00	.00	.33	.25	.28	.17
14	.00	.00	.00	.00	.26	.00	.00	.00	.33	.26	.26	.14
15	.00	.00	.04	.00	.07	.00	.00	.00	.34	.24	.21	.14
16	.00	.00	.00	.00	.00	.00	.00	.00	.33	.21	.19	.14
17	.00	.00	6.1	.00	.00	.00	.00	.00	.38	.22	.16	.14
18	.00	.00	.33	.00	.00	.00	.00	.00	.41	.16	.18	.11
19	.00	.00	.00	.00	.00	.00	.00	.00	.33	.17	.16	.00
20	.00	.00	3.7	.00	.00	.00	.00	.00	.38	.13	.22	.00
21	.00	.00	2.0	.00	.00	.00	.00	.00	.39	.14	.17	.00
22	.00	.00	.30	.00	.00	.00	.00	.00	.38	.17	.15	.00
23	.00	.01	.05	.00	.00	.00	.00	.00	.43	.24	.21	.00
24	.00	.00	2.5	.00	.00	.00	.00	.00	.41	.24	.28	.00
25	.00	.26	.30	.00	.00	.00	.00	.00	.41	.24	.30	.00
26	.00	.00	.03	.00	.00	.00	.00	.03	.39	.23	.31	.00
27	.00	.00	.00	.00	.00	.00	.00	.05	.37	.24	.28	.00
28	.00	.00	.00	.00	.00	.00	e.00	.05	.34	.22	.18	.00
29	.00	.00	.00	.00	---	.00	e.00	.06	.31	.26	.14	.00
30	.00	.00	.00	.00	---	.00	e.00	.01	.30	.23	.10	.00
31	.00	---	.00	.00	---	.00	---	.12	---	.23	.11	---
TOTAL	0.00	0.27	15.35	0.05	19.69	1.00	0.00	0.32	9.23	7.28	6.51	2.87
MEAN	.00	.009	.50	.002	.70	.032	.00	.010	.31	.23	.21	.096
MAX	.00	.26	6.1	.05	9.3	.92	.00	.12	.43	.36	.31	.22
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.14	.13	.10	.00
AC-FT	.00	.5	30	.1	39	2.0	.00	.6	18	14	13	5.7

CAL YR 1988 TOTAL 112.99 MEAN .31 MAX 39 MIN .00 AC-FT 224
WTR YR 1989 TOTAL 62.57 MEAN .17 MAX 9.3 MIN .00 AC-FT 124

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 mi^2.

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 those below 1.0 ft^3/s , which are poor. No regulation above station. Small diversions for irrigation above station. Some low flow results from return irrigation wastewater.

AVERAGE DISCHARGE.--48 years, 4.65 ft^3/s, 3,370 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,380 ft^3/s, Jan. 18, 1973, gage height, 17.1 ft, present datum, from rating curve extended above 2,300 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 17	0230	*888	*5.14	Dec. 20	2315	690	4.73

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.02	.00	.02	.26	.09	.11	.04	.05	.01	.02	.00	e.07
2	.02	.00	.02	.39	.09	4.9	.02	.01	.00	.02	.00	e.07
3	.01	.00	.02	.17	.09	.35	.04	.01	.01	.02	.01	e.07
4	.02	.01	.01	.15	18	.11	.02	.00	.00	.04	.03	e.07
5	.02	.01	.03	1.6	.49	.08	.02	.01	.07	.03	.03	e.07
6	.03	.01	.02	.52	.14	.08	.02	.00	.07	.00	.03	e.07
7	.00	.02	.00	.13	.10	.08	.02	.02	.05	.00	.01	.07
8	.00	.01	.00	.11	69	.16	.04	.02	.07	.01	.02	.07
9	.00	.00	.00	.12	35	.16	.14	.68	.09	.02	.04	.08
10	.00	.00	.00	.10	2.6	.16	.16	.47	.07	.01	.04	.07
11	.00	.00	.01	.09	.86	.08	.08	.04	.08	.00	.05	.08
12	.37	2.4	.02	.29	.47	.08	.08	.00	.08	.01	.03	.07
13	.46	e1.0	.03	e.20	.32	.05	.08	.00	.08	.01	.01	.04
14	.10	.84	.19	e.10	.34	.02	.07	.00	.08	.02	.02	.06
15	.39	.05	4.9	e.10	.31	.02	.06	.00	.13	.00	.06	.05
16	.00	.01	1.5	e.10	.28	.05	.06	.00	.10	.00	.07	.04
17	.00	.01	123	e.10	.28	.04	.06	.00	.05	.00	.06	.06
18	.00	.00	6.2	e.10	.28	.02	.08	.00	e.07	.00	.06	.03
19	.00	.00	.72	e.10	.28	.02	.09	.00	e.08	.01	.09	.02
20	.00	.00	39	e.10	.24	.01	.13	.00	.08	.00	.07	.00
21	.00	.00	28	e.10	.21	.01	.13	.00	.06	.00	.12	.00
22	.01	.00	6.7	e.10	.21	.02	.11	.00	.07	.00	.06	.00
23	.02	1.4	2.1	e.50	.22	.02	.12	.00	.11	.00	.04	.00
24	.01	.72	21	e.10	.20	.02	.11	.00	.13	.00	.07	.00
25	.01	13	1.8	e.09	.16	.18	1.2	.00	.10	.02	.08	.00
26	.01	.16	.42	e.09	.13	.11	.29	.00	.08	.05	e.09	.00
27	.01	.04	.30	e.09	.13	.02	.18	.00	.07	.01	e.08	.00
28	.01	.02	.29	e.09	.13	.02	.16	.00	.06	.00	e.07	.00
29	.00	.02	.23	e.09	---	.02	.15	.00	.05	.01	e.07	.00
30	.00	.02	.19	e.09	---	.02	.11	.01	.03	.01	e.07	.00
31	.00	---	.89	e.09	---	.05	---	.00	---	.01	e.07	---
TOTAL	1.52	19.75	237.61	6.26	130.65	7.07	3.87	1.32	2.03	0.33	1.55	1.16
MEAN	.049	.66	7.66	.20	4.67	.23	.13	.043	.068	.011	.050	.039
MAX	.46	13	123	1.6	69	4.9	1.2	.68	.13	.05	.12	.08
MIN	.00	.00	.00	.09	.09	.01	.02	.00	.00	.00	.00	.00
AC-FT	3.0	39	471	12	259	14	7.7	2.6	4.0	.7	3.1	2.3

CAL YR 1988 TOTAL 728.70 MEAN 1.99 MAX 123 MIN .00 AC-FT 1450
WTR YR 1989 TOTAL 413.12 MEAN 1.13 MAX 123 MIN .00 AC-FT 819

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 mi^2.

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.--No estimated daily discharge. Records fair. No regulation upstream from station. Many small diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--48 years, 2.03 ft^3/s, 1,470 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,000 ft^3/s, Jan. 25, 1969, gage height, 10.10 ft, from rating curve extended above 400 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 9	0715	*26	*3.16				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	.03	.06	.32	.40	.32	.14	.06	.02	.02	.00	.00
2	.03	.03	.03	.32	.31	.71	.14	.06	.02	.02	.00	.00
3	.03	.03	.03	.32	.25	.49	.14	.07	.02	.02	.00	.00
4	.03	.03	.03	.32	1.7	.48	.17	.06	.02	.01	.00	.00
5	.03	.03	.03	.38	.84	.42	.11	.06	.02	.01	.00	.00
6	.03	.03	.03	.48	.54	.40	.10	.06	.02	.01	.00	.00
7	.03	.03	.04	.40	.48	.44	.10	.06	.02	.00	.00	.00
8	.03	.02	.05	.37	7.6	.48	.10	.07	.01	.00	.00	.00
9	.03	.02	.03	.32	15	.48	.06	.07	.01	.00	.00	.00
10	.03	.02	.03	.36	2.3	.48	.06	.06	.01	.00	.00	.00
11	.03	.02	.03	.28	1.1	.48	.06	.05	.01	.01	.00	.00
12	.03	.02	.03	.29	.77	.45	.06	.03	.01	.01	.00	.00
13	.03	.02	.03	.32	.65	.32	.05	.03	.01	.00	.00	.00
14	.03	.02	.03	.32	.56	.39	.03	.03	.01	.00	.00	.00
15	.03	.02	.12	.32	.51	.40	.04	.03	.01	.00	.00	.00
16	.03	.02	.22	.53	.48	.40	.10	.04	.01	.00	.00	.00
17	.03	.03	1.4	.46	.48	.43	.11	.05	.01	.00	.00	.00
18	.03	.03	.53	.32	.48	.39	.14	.06	.01	.00	.00	.00
19	.03	.03	.38	.32	.48	.33	.10	.06	.01	.00	.00	.00
20	.03	.03	1.2	.32	.40	.39	.06	.05	.01	.01	.00	.00
21	.03	.03	2.3	.32	.40	.32	.11	.03	.01	.01	.00	.00
22	.03	.03	.68	.32	.40	.32	.06	.03	.01	.01	.00	.00
23	.03	.03	.64	.32	.40	.32	.04	.03	.01	.00	.00	.00
24	.03	.03	1.4	.32	.40	.32	.06	.04	.02	.00	.00	.00
25	.03	.27	.86	.35	.40	.71	.05	.05	.01	.00	.00	.00
26	.03	.17	.56	.40	.38	.54	.03	.03	.01	.00	.00	.00
27	.03	.10	.47	.40	.34	.43	.07	.03	.01	.00	.00	.00
28	.03	.10	.40	.40	.32	.32	.06	.03	.01	.00	.00	.00
29	.03	.10	.40	.40	---	.30	.06	.03	.01	.00	.00	.00
30	.03	.10	.40	.40	---	.15	.06	.03	.01	.00	.00	.00
31	.03	---	.39	.40	---	.17	---	.05	---	.00	.00	---
TOTAL	0.93	1.47	12.83	11.10	38.37	12.58	2.47	1.44	0.38	0.14	0.00	0.00
MEAN	.030	.049	.41	.36	1.37	.41	.082	.046	.013	.005	.000	.000
MAX	.03	.27	2.3	.53	15	.71	.17	.07	.02	.02	.00	.00
MIN	.03	.02	.03	.28	.25	.15	.03	.03	.01	.00	.00	.00
AC-FT	1.8	2.9	25	22	76	25	4.9	2.9	.8	.3	.00	.00

CAL YR 1988 TOTAL 159.08 MEAN .43 MAX 34 MIN .02 AC-FT 316
WTR YR 1989 TOTAL 81.71 MEAN .22 MAX 15 MIN .00 AC-FT 162

11120500 SAN JOSE CREEK NEAR GOLETA, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Water year 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
OCT						
05...	1010	0.04	2480	7.30	16.0	2080
NOV						
08...	1545	0.02	2550	7.60	16.0	2200
DEC						
12...	1420	0.04	2300	7.80	11.0	1860
JAN						
12...	1500	0.24	1300	8.20	11.0	945
FEB						
02...	1145	0.24	1260	8.20	11.0	900
10...	1040	2.4	593	8.10	9.0	382
MAR						
01...	1415	0.31	1200	--	13.0	853
APR						
06...	1115	0.09	1880	--	17.0	1430
MAY						
03...	0945	0.06	1960	--	15.0	1550
JUN						
07...	1200	0.02	2050	--	15.5	1760
JUL						
13...	1145	<0.01	2330	--	19.0	1890
AUG						
09...	1350	<0.01	2540	--	18.5	2030
SEP						
06...	1450	0.01	2650	--	20.0	2130

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
JAN									
12...	1500	0.24	1300	8.20	11.0	570	280	150	48

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
JAN								
12...	89	25	2	1.8	290	390	54	0.3

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHOROUS ORTHO, DISSOLVED (MG/L AS P)	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JAN								
12...	16	945	924	0.14	0.01	110	20	25

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

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 mi^2.

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.--Records fair. No regulation upstream from station. Diversions for irrigation and domestic use upstream from station.

AVERAGE DISCHARGE.--19 years, 2.90 ft^3/s, 2,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,330 ft^3/s, Mar. 4, 1978, gage height, 5.65 ft, from rating curve extended above 400 ft^3/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 ft^3/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)
Dec. 20	2240	*134	*2.08				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.00	.00	.00	.17	.15	.26	.00	.00	.00	.00	.00	.00
2	e.00	.00	.00	.12	.11	3.8	.00	.00	.00	.00	.00	.00
3	e.00	.00	.00	.14	.16	.65	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.11	6.2	.43	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	1.2	.82	.32	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.30	.52	.28	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.14	.49	.27	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.11	23	.23	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.12	16	.23	.00	.10	.00	.00	.00	.00
10	.00	.00	.00	.15	2.7	.27	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.18	1.3	.42	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.11	.89	.38	.00	.00	.00	.00	.00	.00
13	.00	.12	.00	.13	.73	.32	.00	.00	.00	.00	.00	.00
14	.00	.09	.00	.15	.57	.36	.00	.00	.00	.00	.00	.00
15	.00	.00	.26	.19	.44	.39	.00	.00	.00	.00	.00	.00
16	.00	.00	.12	.25	.42	.29	.00	.00	.00	.00	.00	.00
17	.00	.00	13	.44	.35	.30	.00	.00	.00	.00	.00	.00
18	.00	.00	.29	.15	.35	.27	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.18	.35	.04	.00	.00	.00	.00	.00	.00
20	.00	.00	8.8	.22	.35	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	3.7	.30	.27	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	2.3	.15	.25	.00	.00	.00	.00	.00	.00	.00
23	.00	.23	.39	.29	.27	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	7.2	.17	.27	.09	.00	.00	.00	.00	.00	.00
25	.00	2.6	.66	.14	.23	.59	.11	.00	.00	.00	.00	.00
26	.00	.00	.33	.18	.23	.50	.00	.00	.00	.00	.00	.00
27	.00	.00	.25	.19	.27	.37	.00	.00	.00	.00	.00	.00
28	.00	.00	.20	.12	.27	.11	.00	.00	.00	.00	.00	.00
29	.00	.00	.16	.10	---	.31	.00	.00	.00	.00	.00	.03
30	.00	.00	.16	.10	---	.20	.00	.00	.00	.00	.00	.00
31	.00	---	.53	.10	---	.01	---	.00	---	.00	.00	---
TOTAL	0.00	3.04	38.35	6.40	57.96	11.69	0.11	0.10	0.00	0.00	0.00	0.03
MEAN	.00	.10	1.24	.21	2.07	.38	.004	.003	.00	.00	.00	.001
MAX	.00	2.6	13	1.2	23	3.8	.11	.10	.00	.00	.00	.03
MIN	.00	.00	.00	.10	.11	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	6.0	76	13	115	23	.2	.2	.00	.00	.00	.06

CAL YR 1988 TOTAL 216.63 MEAN .59 MAX 24 MIN .00 AC-FT 430
WTR YR 1989 TOTAL 117.68 MEAN .32 MAX 23 MIN .00 AC-FT 233

e Estimated.

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 mi^2.

PERIOD OF RECORD.--October 1970 to September 1972, January 1980 to September 1982, October 1987 to current year.

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 period of estimated discharges, which are poor. No regulation above station. Some pumping for irrigation and water is occasionally released to channel from Tecolote tunnel.

AVERAGE DISCHARGE.--6 years (water years 1971-72, 1981-82, 1988-89), 0.66 ft^3/s, 478 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,610 ft^3/s, Feb. 16, 1980, gage height, 4.47 ft, from rating curve extended above 160 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 20	2315	*95	*2.30				

Minimum daily, 0.03 ft^3/s, Nov. 10, July 21, Aug. 7, and Sept. 27.

REVISIONS.--The maximum discharge reported for water year 1988 has been revised to 159 ft^3/s, Apr. 19, 1988, gage height, 2.52 ft. Peak discharge for Feb. 29, 1988 has been revised to 107 ft^3/s, gage height, 2.35 ft.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	.06	.09	.24	.17	.22	.11	.14	.07	.15	.04	.05
2	.11	.07	.09	.19	.17	.88	.11	.14	.08	.06	.04	.04
3	.11	.06	.09	.19	.19	.27	.10	.15	.10	.06	.04	.05
4	.10	.07	.09	.22	1.2	.23	.09	.13	.10	.05	.05	.05
5	.12	.06	.10	.48	.25	.22	.10	.10	.08	.04	.28	.04
6	.12	.06	.10	.25	.21	.23	.09	.11	.08	.05	.06	.04
7	.11	.06	.10	.18	.19	.24	.09	.11	.09	.05	.03	.04
8	.09	.05	.07	.17	6.4	.25	.09	.13	.08	.05	.05	.04
9	.08	.04	.08	.19	3.9	.23	.10	.17	.09	.08	.05	.04
10	.07	.03	.08	.19	.45	.27	.12	.09	.10	.06	.07	.04
11	.08	.06	.07	.17	.33	.25	.29	.06	.09	.06	.07	.05
12	.07	.06	.08	.19	.30	.22	.16	.07	.08	.06	.06	.06
13	.08	.12	.08	.18	.29	.21	.14	.07	.08	.06	.05	.05
14	.08	.19	.08	.19	.28	.21	.12	.09	.07	.05	.06	.04
15	.08	.07	.16	.18	.26	.19	.15	.09	.08	.04	.07	.04
16	e.09	.04	.25	.17	.26	.19	.15	.09	.10	.04	.08	.04
17	e.09	.04	2.6	.17	.26	.17	.17	.09	.13	.05	.08	.04
18	e.09	.04	.37	.16	.26	.20	.16	.09	.11	.05	.07	.04
19	e.10	.05	.22	.15	.25	.18	.14	.08	.09	.06	.07	.04
20	e.10	.04	4.9	.14	.25	.21	.16	.08	.07	.04	.08	.04
21	e.11	.06	2.7	.14	.22	.17	.12	.07	.08	.03	.09	.05
22	e.11	.08	.86	.14	.22	.17	.07	.11	.08	.04	.07	.05
23	e.12	.18	.42	.19	.21	.18	.10	.06	.11	.04	.06	.04
24	e.12	.12	3.1	.14	.23	.21	.10	.05	.11	.05	.07	.04
25	.10	.63	.43	.13	.22	.30	.21	.04	.09	.06	.07	.04
26	.08	.14	.28	.12	.22	.17	.16	.05	.07	.06	.07	.04
27	.07	.09	.25	.16	.23	.15	.15	.05	.07	.04	.05	.03
28	.07	.09	.25	.17	.22	.16	.19	.05	.07	.04	.06	.04
29	.07	.09	.21	.17	---	.14	.14	.06	.10	.04	.06	.05
30	.07	.08	.22	.16	---	.12	.15	.04	.12	.06	.08	.04
31	.07	---	.30	.18	---	.11	---	.06	---	.04	.06	---
TOTAL	2.87	2.83	18.72	5.70	17.64	6.95	4.03	2.72	2.67	1.66	2.14	1.29
MEAN	.093	.094	.60	.18	.63	.22	.13	.088	.089	.054	.069	.043
MAX	.12	.63	4.9	.48	6.4	.88	.29	.17	.13	.15	.28	.06
MIN	.07	.03	.07	.12	.17	.11	.07	.04	.07	.03	.03	.03
AC-FT	5.7	5.6	37	11	35	14	8.0	5.4	5.3	3.3	4.2	2.6

CAL YR 1988 TOTAL 149.04 MEAN .41 MAX 15 MIN .03 AC-FT 296
WTR YR 1989 TOTAL 69.22 MEAN .19 MAX 6.4 MIN .03 AC-FT 137

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 mi^2, 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 above 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.--58 years (water years 1932-89), 6.92 ft^3/s, 5,010 acre-ft/yr.

MONTHLY NET INFLOW, IN ACRE FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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.....	2,210.65	4,140	--	--	--	--	--	--	--
Oct. 31.....	2,208.93	3,960	-180	148	0	32	0	0	0
Nov. 30.....	2,207.81	3,850	-110	104	0	16	10	7	3
Dec. 31.....	2,207.55	3,820	-30	93	0	12	75	54	21
CAL YR 1988.....	--	--	+420	1,544	0	483	2,447	228	2,219
Jan. 31.....	2,207.12	3,780	-40	66	0	3	29	10	28
Feb. 28.....	2,209.70	4,040	+260	57	0	9	326	46	180
Mar. 31.....	2,209.83	4,050	+10	71	0	22	103	9	94
Apr. 30.....	2,208.70	3,940	-110	142	0	38	70	5	65
May 31.....	2,207.02	3,770	-170	173	0	48	51	3	48
June 30.....	2,204.92	3,550	-220	181	0	60	21	0	21
July 31.....	2,202.45	3,300	-250	183	0	67	0	0	0
Aug. 31.....	2,200.01	3,050	-250	184	0	66	0	0	0
Sept. 30.....	2,197.81	2,850	-200	170	0	34	4	4	0
WTR YR 1989.....	--	--	-1,290	1,572	0	407	689	138	2,460

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 mi^2.

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 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. 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, IN ACRE FEET, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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.....	1,381.29	4,370	--	--	--	--	--	--	--
Oct. 31.....	1,377.30	3,660	-710	644	0	66	0	0	0
Nov. 30.....	1,374.06	3,120	-540	536	0	26	22	14	8
Dec. 31.....	1,372.55	2,890	-230	332	0	16	118	78	40
CAL YR 1988.....	--	--	+840	6,176	92	796	7,904	340	7,564
Jan. 31.....	1,370.00	2,500	-390	419	0	15	44	3	41
Feb. 28.....	1,375.50	3,350	+850	345	0	19	1,214	69	1,145
Mar. 31.....	1,375.23	3,300	-50	557	0	38	545	20	525
Apr. 30.....	1,371.88	2,790	-510	636	0	62	188	2	186
May 31.....	1,367.44	2,130	-660	625	0	68	33	6	27
June 30.....	1,364.56	1,720	-410	350	0	75	15	0	15
July 31.....	1,360.89	1,240	-480	420	0	88	28	0	28
Aug. 31.....	1,356.50	726	-514	433	0	81	0	0	0
Sept. 30.....	1,352.31	337	-389	355	0	41	7	2	5
WTR YR 1989.....	--	--	-4,023	5,652	0	595	2,214	194	2,020

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.

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 mi^2.

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. Flow regulated by Jameson Lake (see station 11121000) and Gibraltar Reservoir (see station 11122000). City of Santa Barbara diverted 5,650 acre-ft during current year from Gibraltar Reservoir; Montecito Water District diverted 1,570 acre-ft during current year from Jameson Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 54,200 ft^3/s, Jan. 25, 1969, gage height, 25.8 ft, from rating curve extended above 2,100 ft^3/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 1989 water year.

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 mi^2.

WATER-DISCHARGE RECORDS

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 fair. 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 ft^3/s, Jan. 25, 1969, gage height, 18.88 ft, from rating curve extended above 11,600 ft^3/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, 0.74 ft^3/s, Mar. 2, gage height, 3.03 ft; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.62	.42	.09	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.69	.42	.08	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.67	.42	.06	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.67	.38	.05	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.61	.38	.05	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.61	.38	.04	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.61	.37	.03	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.61	.35	.03	.00	.00	.00	.00
9	.00	.00	.00	.00	.13	.61	.35	.03	.00	.00	.00	.00
10	.00	.00	.00	.00	.12	.56	.29	.03	.00	.00	.00	.00
11	.00	.00	.00	.00	.10	.56	.29	.03	.00	.00	.00	.00
12	.00	.00	.00	.00	.11	.56	.27	.03	.00	.00	.00	.00
13	.00	.00	.00	.00	.13	.56	.26	.03	.00	.00	.00	.00
14	.00	.00	.00	.00	.16	.55	.26	.02	.00	.00	.00	.00
15	.00	.00	.00	.00	.18	.51	.23	.02	.00	.00	.00	.00
16	.00	.00	.00	.00	.21	.51	.23	.02	.00	.00	.00	.00
17	.00	.00	.00	.00	.23	.51	.22	.02	.00	.00	.00	.00
18	.00	.00	.00	.00	.24	.51	.21	.02	.00	.00	.00	.00
19	.00	.00	.00	.00	.28	.51	.21	.01	.00	.00	.00	.00
20	.00	.00	.00	.00	.30	.46	.19	.01	.00	.00	.00	.00
21	.00	.00	.00	.00	.32	.46	.17	.01	.00	.00	.00	.00
22	.00	.00	.00	.00	.34	.46	.16	.01	.00	.00	.00	.00
23	.00	.00	.00	.00	.39	.46	.15	.01	.00	.00	.00	.00
24	.00	.00	.00	.00	.44	.46	.15	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.51	.46	.13	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.56	.51	.14	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.56	.46	.13	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.57	.42	.11	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.43	.11	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.42	.10	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.42	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	5.88	16.46	7.48	0.73	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.21	.53	.25	.024	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.57	.69	.42	.09	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.42	.10	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	12	33	15	1.4	.00	.00	.00	.00

CAL YR 1988 TOTAL 1225.59 MEAN 3.35 MAX 549 MIN .00 AC-FT 2430
WTR YR 1989 TOTAL 30.55 MEAN .084 MAX .69 MIN .00 AC-FT 61

11123500 SANTA YNEZ RIVER BELOW LOS LAURELES CANYON, NEAR SANTA YNEZ, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: October 1988 to September 1989.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
MAR						
02...	1115	0.74	1290	7.60	14.5	924
APR						
06...	0945	0.40	1400	--	16.5	1020
MAY						
03...	1240	0.60	1380	--	17.5	1060

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
MAR									
02...	1115	0.74	1290	7.60	14.5	650	370	160	60

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
MAR								
02...	59	17	1	2.0	276	430	32	0.4

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHOROUS ORTHO, DISSOLVED (MG/L AS P)	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR								
02...	19	924	928	<0.10	<0.01	320	7	12

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

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 mi^2.

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

AVERAGE DISCHARGE.--48 years, 17.1 ft^3/s, 12,390 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,050 ft^3/s, Feb. 24, 1969, gage height, 14.45 ft, from floodmark, present datum, from rating curve extended above 2,500 ft^3/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 ft^3/s and maximum (*), from rating curve extended above 160 ft^3/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)
Dec. 24	2030	161	8.17	Feb. 9	0745	*211	*8.36
Feb. 4	1700	124	8.00				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	1.2	1.2	7.2	4.7	.88	.14	.00	.00	.00
2	.00	.00	.00	.77	1.3	11	4.6	.75	.13	.00	.00	.00
3	.00	.00	.00	.60	1.3	20	4.4	.65	.12	.00	.00	.00
4	.00	.00	.00	.50	29	12	4.0	.48	.11	.00	.00	.00
5	.00	.00	.00	.52	26	9.7	3.5	.38	.10	.00	.00	.00
6	.00	.00	.00	.75	11	8.8	3.3	.33	.10	.00	.00	.00
7	.00	.00	.00	1.1	7.4	8.5	2.8	.28	.10	.00	.00	.00
8	.00	.00	.00	1.0	26	8.1	2.6	.25	e.09	.00	.00	.00
9	.00	.00	.00	.96	157	7.6	2.4	.32	e.09	.00	.00	.00
10	.00	.00	.00	.99	55	7.6	2.3	.61	e.08	.00	.00	.00
11	.00	.00	.00	.95	27	7.6	2.4	.73	e.08	.00	.00	.00
12	.00	.00	.00	.89	19	7.5	2.3	.67	e.07	.00	.00	.00
13	.00	.00	.00	.96	15	7.3	2.3	.65	e.06	.00	.00	.00
14	.00	.00	.00	.98	13	7.1	2.3	.70	e.05	.00	.00	.00
15	.00	.00	.00	1.0	11	6.7	2.1	.87	.04	.00	.00	.00
16	.00	.00	.00	1.1	10	6.8	2.2	.95	.04	.00	.00	.00
17	.00	.00	.00	1.1	9.3	6.8	2.1	.76	.03	.00	.00	.00
18	.00	.00	.00	1.1	8.8	6.6	2.0	.55	.02	.00	.00	.00
19	.00	.00	.00	1.1	8.4	6.5	1.8	.43	.02	.00	.00	.00
20	.00	.00	.00	1.0	7.9	6.3	1.6	.40	.01	.00	.00	.00
21	.00	.00	5.3	1.0	7.9	5.9	1.5	.38	.00	.00	.00	.00
22	.00	.00	3.6	1.0	7.7	5.9	1.3	.34	.00	.00	.00	.00
23	.00	.00	1.6	1.1	8.6	5.9	1.4	.33	.00	.00	.00	.00
24	.00	.00	23	1.2	8.6	6.1	1.4	.32	.00	.00	.00	.00
25	.00	.00	35	1.2	7.9	7.1	1.6	.32	.00	.00	.00	.00
26	.00	.00	8.9	1.2	7.5	7.1	2.0	.29	.00	.00	.00	.00
27	.00	.00	4.2	1.2	7.5	6.4	1.8	.24	.00	.00	.00	.00
28	.00	.00	2.6	1.3	7.4	5.9	1.5	.21	.00	.00	.00	.00
29	.00	.00	1.6	1.3	---	5.6	1.2	.18	.00	.00	.00	.00
30	.00	.00	1.1	1.2	---	5.3	1.0	.18	.00	.00	.00	.00
31	.00	---	1.1	1.2	---	4.9	---	.15	---	.00	.00	---
TOTAL	0.00	0.00	88.00	31.47	507.7	235.8	70.4	14.58	1.48	0.00	0.00	0.00
MEAN	.000	.000	2.84	1.02	18.1	7.61	2.35	.47	.049	.000	.000	.000
MAX	.00	.00	35	1.3	157	20	4.7	.95	.14	.00	.00	.00
MIN	.00	.00	.00	.50	1.2	4.9	1.0	.15	.00	.00	.00	.00
AC-FT	.00	.00	175	62	1010	468	140	29	2.9	.00	.00	.00

CAL YR 1988 TOTAL 1817.27 MEAN 4.97 MAX 434 MIN .00 AC-FT 3600
WTR YR 1989 TOTAL 949.43 MEAN 2.60 MAX 157 MIN .00 AC-FT 1880

e Estimated.

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 mi^2.

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. 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. 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, 66,098 acre-ft, Sept. 30, 1989, elevation 687.99 ft.
EXTREMES FOR CURRENT YEAR.--Maximum contents, 98,996 acre-ft, Oct. 1, elevation, 707.34 ft; minimum, 66,098 acre-ft, Sept. 30, elevation, 687.99 ft.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Based on survey dated January 1953, by U.S. Bureau of Reclamation)

685	61,738	700	85,530
690	69,129	705	94,580
695	77,040	710	104,163

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
OBSERVATION AT 08:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	98996	94748	92529	91669	90737	90991	90592	87658	82956	78524	74724	71432
2	98862	94469	92492	91632	90665	90991	90502	87569	82577	78425	74564	71308
3	98709	94210	92455	91632	90592	90918	90411	87461	82181	78310	74436	71198
4	98594	94173	92437	91650	90556	90937	90339	87336	81805	78194	74323	70824
5	98479	94099	92382	91650	90538	90973	90285	87212	81432	78079	74195	70437
6	98345	94007	92346	91614	90466	91010	90267	87105	81245	77947	74099	70083
7	98250	93877	92272	91577	90393	91065	90158	86981	81092	77832	73970	69698
8	98156	93785	92272	91504	90502	91101	89995	86822	80939	77716	73874	69344
9	98099	93655	92181	91504	90828	91101	89868	86716	80871	77568	73747	68992
10	98042	93618	92071	91522	91175	91028	89723	86627	80786	77452	73636	68643
11	97966	93544	91980	91522	91248	91046	89579	86503	80702	77320	73525	68446
12	97834	93452	91852	91504	91266	91046	89488	86450	80634	77188	73414	68279
13	97663	93396	91760	91449	91303	91028	89434	86397	80549	77056	73288	68112
14	97550	93322	91669	91412	91303	90955	89380	86327	80447	76926	73177	67945
15	97436	93211	91614	91358	91303	90937	89271	86238	80345	76796	73067	67732
16	97398	93155	91577	91321	91248	90918	89180	86167	80245	76666	72940	67476
17	97322	93063	91650	91303	91229	90900	89072	86114	80128	76536	72845	67251
18	97209	92989	91724	91321	91229	90864	88983	86061	80044	76422	72718	67012
19	97133	92952	91687	91321	91266	90864	88911	85937	79927	76308	72608	66922
20	97019	92860	91687	91303	91266	90864	88786	85866	79810	76227	72497	66847
21	96906	92841	91760	91266	91284	90882	88732	85742	79676	76113	72402	66802
22	96830	92804	91705	91229	91284	90864	88607	85636	79526	76016	72307	66772
23	96735	92804	91724	91193	91248	90864	88464	85495	79358	75902	72228	66682
24	96659	92749	91705	91156	91193	90846	88338	85355	79208	75804	72134	66607
25	96414	92730	91797	91101	91193	90791	88213	85216	79090	75674	72041	66532
26	96170	92693	91778	91046	91175	90719	88070	85076	78973	75560	71947	66428
27	95927	92657	91742	90991	91175	90701	87980	84761	78906	75430	71869	66323
28	95684	92620	91705	90918	91101	90701	87873	84412	78823	75318	71807	66233
29	95441	92584	91669	90864	---	90737	87801	84045	78722	75173	71729	66173
30	95179	92547	91650	90846	---	90683	87712	83697	78623	75013	71651	66098
31	94992	---	91687	90791	---	90665	---	83352	---	74869	71542	---
MAX	98996	94748	92529	91669	91303	91101	90592	87658	82956	78524	74724	71432
MIN	94992	92547	91577	90791	90393	90665	87712	83352	78623	74869	71542	66098
a	705.22	703.90	703.43	702.94	703.11	702.87	701.23	698.75	695.96	693.66	691.56	687.99
b	-4158	-2445	-860	-896	+310	-436	-2953	-4360	-4729	-3754	-3327	-5444
c	2420	1582	1356	1036	1006	674	2493	2716	2559	2953	2617	2108

CAL YR 1988 b -32421
WTR YR 1989 b -33052

a Elevation, in feet, at end of month.
b Change in contents, in acre-feet.
c Diversions, in acre-ft, to Tecolote tunnel.

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 mi^2.

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 FOR CURRENT YEAR.--Maximum contents, 2,090 acre-ft, Oct. 1-6, maximum elevation, 596.82 ft, Oct. 1; minimum contents, 1,690 acre-ft, Sept. 24-30, minimum elevation, 591.88 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)

591	1,620
597	2,110

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2090	2050	2030	2030	2020	2030	2010	1960	1920	1880	1830	1740
2	2090	2050	2030	2030	2020	2030	2010	1960	1920	1870	1820	1720
3	2090	2050	2030	2030	2020	2030	2010	1960	1920	1870	1820	1720
4	2090	2050	2020	2030	2020	2030	2010	1960	1920	1870	1820	1720
5	2090	2050	2020	2030	2020	2030	2010	1960	1920	1870	1820	1710
6	2090	2050	2020	2030	2020	2030	2010	1960	1920	1870	1820	1710
7	2080	2050	2020	2030	2020	2020	2000	1960	1920	1870	1820	1710
8	2080	2050	2020	2030	2030	2030	2000	1950	1920	1870	1810	1710
9	2080	2040	2020	2030	2040	2020	2000	1960	1910	1860	1810	1710
10	2080	2040	2010	2030	2040	2020	2000	1950	1910	1860	1810	1710
11	2080	2040	2010	2030	2040	2020	1990	1950	1910	1860	1810	1710
12	2080	2040	2010	2030	2040	2020	1990	1950	1910	1860	1810	1710
13	2080	2040	2010	2030	2040	2020	1990	1950	1910	1860	1810	1700
14	2080	2040	2010	2030	2040	2020	1990	1950	1910	1860	1800	1700
15	2070	2040	2010	2030	2040	2020	1990	1950	1900	1850	1800	1700
16	2070	2040	2010	2030	2040	2020	1990	1950	1900	1850	1800	1700
17	2070	2040	2020	2030	2040	2020	1990	1950	1900	1850	1800	1700
18	2070	2040	2020	2030	2040	2020	1990	1950	1900	1850	1800	1700
19	2070	2030	2020	2030	2040	2020	1990	1940	1900	1850	1800	1700
20	2070	2030	2030	2030	2040	2020	1990	1940	1900	1850	1800	1700
21	2060	2030	2030	2030	2040	2010	1980	1940	1890	1840	1790	1700
22	2060	2030	2030	2030	2040	2010	1980	1940	1890	1840	1790	1700
23	2060	2030	2030	2030	2030	2010	1980	1940	1890	1840	1790	1700
24	2060	2030	2030	2030	2030	2010	1970	1940	1890	1840	1790	1690
25	2060	2030	2030	2030	2030	2020	1970	1940	1890	1840	1790	1690
26	2060	2030	2030	2030	2030	2020	1970	1930	1880	1840	1790	1690
27	2060	2030	2030	2030	2030	2010	1970	1930	1880	1830	1790	1690
28	2060	2030	2030	2020	2030	2010	1970	1930	1880	1830	1780	1690
29	2050	2030	2030	2020	---	2010	1960	1930	1880	1830	1780	1690
30	2050	2030	2030	2020	---	2010	1960	1930	1880	1830	1780	1690
31	2050	---	2030	2020	---	2010	---	1930	---	1830	1770	---
MAX	2090	2050	2030	2030	2040	2030	2010	1960	1920	1880	1830	1740
MIN	2050	2030	2010	2020	2020	2010	1960	1930	1880	1830	1770	1690
a	596.36	596.11	596.14	596.00	596.09	595.90	595.30	594.83	594.22	593.59	592.82	591.88
b	-40	-20	0	-10	+10	-20	-50	-30	-50	-50	-60	-80

CAL YR 1988 b -100
WTR YR 1989 b -400

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 mi^2.

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 poor. 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 ft^3/s, Jan. 25, 1969, estimated on basis of discharge measurements up to 81,000 ft^3/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, 95 ft^3/s, Sept. 10, gage height, 6.09 ft; maximum gage height, 6.12 ft, June 4; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	2.9	2.4	.77	.00	.00	.00	.00	.00	.00	.00
2	.00	7.0	2.7	2.2	.50	.00	.00	.00	1.6	.00	.00	.00
3	.00	36	2.4	2.1	.52	.00	.00	.00	48	.00	.00	.00
4	.00	6.9	2.4	2.1	1.3	.00	.00	.00	78	.00	.00	.00
5	.00	.43	1.9	2.3	.78	.00	.00	.00	54	.00	.00	.00
6	.00	.00	.72	2.3	.55	.00	.00	.00	25	.00	.00	.00
7	.00	.00	.07	2.3	.01	.00	.00	.00	12	.00	.00	.00
8	.00	.00	.00	2.2	.61	.00	.00	.00	7.3	.00	.00	.00
9	.00	.00	.00	2.3	3.3	.00	.00	.00	3.1	.00	.00	26
10	.00	.00	.00	2.4	2.8	.00	.00	.00	.36	.00	.00	76
11	.00	.00	.00	2.1	2.4	.00	.00	.00	.00	.00	.00	23
12	.00	.11	.00	2.1	1.9	.00	.00	.00	.00	.00	.00	15
13	.00	.42	.00	2.1	1.5	.00	.00	.00	.00	.00	.00	16
14	.00	1.3	.00	2.1	1.1	.00	.00	.00	.00	.00	.00	17
15	.00	1.8	.00	1.9	.70	.00	.00	.00	.00	.00	.00	44
16	.00	2.0	.00	1.6	.52	.00	.00	.00	.00	.00	.00	58
17	.00	2.5	2.6	1.6	.38	.00	.00	.00	.00	.00	.00	65
18	.00	2.4	3.4	1.5	.20	.00	.00	.00	.00	.00	.00	64
19	.00	2.6	2.5	1.2	.10	.00	.00	.00	.00	.00	.00	18
20	.00	2.7	2.3	1.1	.05	.00	.00	.00	.00	.00	.00	6.3
21	.00	2.7	4.9	1.1	.02	.00	.00	.00	.00	.00	.00	1.4
22	.00	2.7	3.6	1.2	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	2.9	3.1	1.2	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	3.0	3.4	.98	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	3.9	3.9	1.1	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	3.7	3.4	1.1	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	3.1	2.7	1.1	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	3.0	2.7	.81	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	2.8	2.3	1.2	---	.00	.00	.00	.00	.00	.00	.00
30	.00	2.8	2.2	.98	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	2.6	.94	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	96.76	58.69	51.61	20.01	0.00	0.00	0.00	229.36	0.00	0.00	429.70
MEAN	.000	3.23	1.89	1.66	.71	.000	.000	.000	7.65	.000	.000	14.3
MAX	.00	36	4.9	2.4	3.3	.00	.00	.00	78	.00	.00	76
MIN	.00	.00	.00	.81	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	192	116	102	40	.00	.00	.00	455	.00	.00	852

CAL YR 1988 TOTAL 2214.89 MEAN 6.05 MAX 215 MIN .00 AC-FT 4390
WTR YR 1989 TOTAL 886.13 MEAN 2.43 MAX 78 MIN .00 AC-FT 1760

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 mi^2.

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 above station. Small diversions for irrigation above station.

AVERAGE DISCHARGE.--48 years, 9.75 ft^3/s, 7,060 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,400 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 21	0200	*26	*1.57				

Minimum daily, 0.01 ft^3/s, for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.04	.11	.11	.85	.70	.60	.43	.12	.01	.01	.06	.01
2	.05	.11	.10	.79	.70	.85	.43	.11	.01	.03	.04	.01
3	.05	.11	.10	.70	.70	.99	.38	.08	.01	.05	.02	.01
4	.05	.11	.10	.70	1.1	.79	.41	.06	.01	.02	.02	.01
5	.06	.11	.11	.74	1.2	.66	.40	.05	.01	.01	.02	.01
6	.06	.08	.11	.86	.85	.61	.30	.07	.01	.01	.02	.01
7	.06	.09	.11	.93	.74	.65	.27	.07	.01	.01	.02	.01
8	.05	.09	.09	.81	.77	.68	.22	.07	.01	.01	.02	.01
9	.05	.10	.10	.81	1.8	.60	.18	.11	.01	.02	.02	.03
10	.04	.11	.11	.81	1.5	.60	.17	.15	.01	.02	.02	.04
11	.03	.11	.12	.73	.97	.62	.17	.11	.01	.02	.02	.04
12	.03	.11	.12	.70	.81	.60	.18	.07	.01	.02	.02	.04
13	.07	.11	.13	.70	.81	.60	.19	.06	.01	.02	.02	.04
14	.08	.13	.14	.71	.71	.60	.20	.06	.01	.02	.02	.08
15	.08	.12	.17	.70	.70	.60	.21	.05	.01	.02	.02	.08
16	.08	.12	.22	.73	.64	.64	.21	.05	.01	.02	.02	.09
17	.08	.12	.74	.81	.60	.66	.22	.04	.01	.02	.02	.08
18	.08	.12	.73	.81	.60	.59	.21	.04	.01	.03	.02	.08
19	.08	.11	.48	.74	.60	.65	.20	.03	.01	.04	.02	.08
20	.09	.12	.43	.70	.62	.64	.17	.03	.01	.04	.02	.08
21	.09	.12	5.4	.70	.60	.51	.16	.03	.01	.04	.02	.08
22	.09	.12	1.2	.70	.60	.51	.14	.02	.01	.04	.02	.08
23	.09	.14	.96	.72	.60	.51	.10	.02	.01	.04	.02	.08
24	.09	.14	2.7	.81	.60	.51	.10	.02	.01	.04	.02	.07
25	.09	.17	3.0	.77	.60	.63	.12	.02	.01	.04	.02	.07
26	.10	.17	1.4	.70	.60	.64	.13	.02	.02	.04	.02	.07
27	.11	.14	.93	.70	.60	.62	.11	.02	.02	.04	.02	.07
28	.11	.14	.81	.70	.60	.60	.08	.01	.02	.04	.02	.07
29	.11	.13	.76	.70	---	.50	.07	.01	.01	.04	.02	.07
30	.11	.12	.70	.70	---	.48	.10	.01	.02	.04	.01	.07
31	.11	---	.87	.70	---	.44	---	.01	---	.04	.01	---
TOTAL	2.31	3.58	23.05	23.23	21.92	19.18	6.26	1.62	0.34	0.88	0.66	1.57
MEAN	.075	.12	.74	.75	.78	.62	.21	.052	.011	.028	.021	.052
MAX	.11	.17	5.4	.93	1.8	.99	.43	.15	.02	.05	.06	.09
MIN	.03	.08	.09	.70	.60	.44	.07	.01	.01	.01	.01	.01
AC-FT	4.6	7.1	46	46	43	38	12	3.2	.7	1.7	1.3	3.1

CAL YR 1988 TOTAL 379.59 MEAN 1.04 MAX 64 MIN .03 AC-FT 753
WTR YR 1989 TOTAL 104.60 MEAN .29 MAX 5.4 MIN .01 AC-FT 207

11132500 SALSIPUEDES CREEK NEAR LOMPOC, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1978 to current year.
CHEMICAL DATA: Water year 1978 to current year.
pH: Water years 1982-83.
WATER TEMPERATURE: Water years 1982-83.

PERIOD OF DAILY RECORD.--
pH: October 1981 to September 1983.
WATER TEMPERATURE: October 1981 to September 1983.

INSTRUMENTATION.--Water-quality monitor from October 1981 to September 1983.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
OCT						
04...	1020	0.05	1420	7.50	13.0	1090
NOV						
01...	1145	0.03	1380	7.40	15.0	1140
30...	1215	0.14	1820	7.90	8.0	1270
JAN						
06...	0930	0.82	[1]1570	8.00	6.0	1080
FEB						
01...	0945	0.69	1590	7.90	9.5	1070
MAR						
03...	1050	1.1	1510	--	10.5	1020
APR						
04...	0940	0.54	1570	--	14.5	1030
MAY						
02...	1015	0.12	1620	--	15.0	1100
31...	1515	0.01	1650	--	--	1090
JUL						
06...	0925	0.02	1600	--	14.5	1070
AUG						
02...	0900	0.06	1570	--	16.0	1040
30...	1300	0.02	1600	7.80	20.5	1020

[1]Laboratory value.

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 mi^2.

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 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 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 ft^3/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 ft^3/s, from mean-depth study.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.67 ft^3/s, Mar. 8, gage height, 0.77 ft, from rating curve extended above 360 ft^3/s on basis of velocity-area study at gage height of 5.99 ft; no flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.31	.17	.00	.00	e.00	.00	.00
2	.00	.00	.00	.00	.00	.44	.08	.00	.00	e.00	.00	.00
3	.00	.00	.00	.00	.00	.50	.04	.00	.00	e.00	.00	.00
4	.00	.00	.00	.00	.00	.50	.02	.00	.00	e.00	.00	.00
5	.00	.00	.00	.00	.00	.55	.00	.00	.00	e.00	.00	.00
6	.00	.00	.00	.00	.00	.46	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.45	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.46	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.42	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.42	.43	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.43	.38	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.35	.39	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.32	.37	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.27	.37	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.22	.37	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.22	.37	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.23	.35	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.25	.32	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.27	.30	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.27	.30	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.23	.29	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.20	.26	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.21	.27	.00	.00	e.00	.00	.00	.00
24	.00	.00	.00	.00	.24	.27	.00	.00	e.00	.00	.00	.00
25	.00	.00	.00	.00	.26	.27	.00	.00	e.00	.00	.00	.00
26	.00	.00	.00	.00	.27	.26	.00	.00	e.00	.00	.00	.00
27	.00	.00	.00	.00	.30	.23	.00	.00	e.00	.00	.00	.00
28	.00	.00	.00	.00	.30	.19	.00	.00	e.00	.00	.00	.00
29	.00	.00	.00	.00	---	.22	.00	.00	e.00	.00	.00	.00
30	.00	.00	.00	.00	---	.22	.00	.00	e.00	.00	.00	.00
31	.00	---	.00	.00	---	.21	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	5.26	10.73	0.31	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.19	.35	.010	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.43	.55	.17	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.19	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	10	21	.6	.00	.00	.00	.00	.00

CAL YR 1988 TOTAL 1773.00 MEAN 4.84 MAX 293 MIN .00 AC-FT 3520
WTR YR 1989 TOTAL 16.30 MEAN .045 MAX .55 MIN .00 AC-FT 32

e Estimated.

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 mi^2.

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 fair. No regulation or diversion upstream from station; some pumping from wells along stream for irrigation.

AVERAGE DISCHARGE.--17 years (water years 1971-85, 1988-89) 1.72 ft^3/s, 1,250 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,210 ft^3/s, Jan. 26, 1983, gage height, 7.63 ft, from rating curve extended above 380 ft^3/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 ft^3/s.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 20	2230	*98	*1.12				

No flow for several days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.13	.03	.06	.43	.29	.34	.70	.12	.07	.02	.06	.00
2	.12	.03	.06	.38	.33	.52	.70	.10	.07	.02	.05	.01
3	.09	.03	.06	.33	.33	.33	.67	.10	.07	.02	.05	.02
4	.08	.03	.06	.33	.56	.26	.58	.10	.08	.02	.05	.02
5	.08	.02	.06	.43	.31	.23	.67	.09	.07	.03	.05	.01
6	.08	.03	.07	.30	.23	.23	.53	.09	.07	.01	.06	.00
7	.08	.03	.06	.35	.23	.25	.37	.08	.07	.01	.06	.00
8	.08	.04	.06	.33	.29	.23	.29	.10	.08	.01	.06	.00
9	.06	.03	.06	.33	.43	.23	.18	.19	.08	.01	.05	.00
10	.06	.04	.06	.33	.25	.25	.15	.12	.06	.02	.05	.00
11	.06	.05	.06	.33	.25	.30	.20	.11	.05	.02	.05	.00
12	.06	.05	.06	.28	.24	.39	.20	.12	.05	.02	.05	.00
13	.06	.05	.06	.23	.23	.43	.10	.16	.06	.03	.05	.01
14	.06	.09	.06	.23	.27	.43	.12	.16	.06	.02	.05	.00
15	.05	.05	.55	.23	.22	.43	.13	.20	.05	.02	.05	.00
16	.05	.07	1.9	.23	.23	.43	.16	.23	.05	.02	.05	.01
17	.05	.07	1.2	.23	.23	.45	.15	.21	.06	.02	.06	.00
18	.05	.06	.65	.23	.25	.48	.13	.13	.06	.03	.06	.04
19	.05	.06	.25	.23	.23	.57	.16	.12	.06	.02	.05	.01
20	.05	.06	3.6	.23	.23	.57	.18	.14	.07	.01	.05	.00
21	.05	.06	1.9	.23	.28	.58	.14	.15	.08	.01	.06	.00
22	.05	.06	.68	.24	.33	.69	.16	.14	.08	.01	.05	.00
23	.05	.13	.60	.33	.33	.70	.15	.16	.08	.01	.03	.01
24	.12	.07	3.2	.31	.33	.70	.17	.15	.08	.02	.03	.02
25	.05	.44	1.3	.30	.30	.76	.35	.14	.07	.02	.03	.02
26	.05	.08	.70	.28	.28	.68	.15	.12	.06	.02	.04	.02
27	.05	.06	.61	.23	.33	.62	.13	.11	.06	.02	.04	.02
28	.05	.07	.60	.23	.33	.60	.12	.09	.04	.02	.03	.06
29	.03	.06	.57	.23	---	.60	.12	.08	.03	.03	.02	.07
30	.03	.06	.43	.23	---	.60	.18	.07	.03	.04	.02	.03
31	.03	---	.43	.26	---	.64	---	.07	---	.04	.01	---
TOTAL	1.96	2.01	20.02	8.86	8.14	14.52	8.04	3.95	1.90	0.62	1.42	0.38
MEAN	.063	.067	.65	.29	.29	.47	.27	.13	.063	.020	.046	.013
MAX	.13	.44	3.6	.43	.56	.76	.70	.23	.08	.04	.06	.07
MIN	.03	.02	.06	.23	.22	.23	.10	.07	.03	.01	.01	.00
AC-FT	3.9	4.0	40	18	16	29	16	7.8	3.8	1.2	2.8	.8

CAL YR 1988 TOTAL 177.45 MEAN .48 MAX 29 MIN .02 AC-FT 352
WTR YR 1989 TOTAL 71.82 MEAN .20 MAX 3.6 MIN .00 AC-FT 142

11134800 MIGUELITO CREEK AT LOMPOC, CA--Continued

WATER QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: June 1980 to September 1986, October 1987 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
OCT						
04...	1350	0.08	1270	8.30	18.5	1020
DEC						
13...	1400	0.07	1340	8.40	11.0	921
JAN						
05...	1400	0.34	[1]1530	8.30	11.0	1030
FEB						
02...	1300	0.30	1720	8.50	11.0	1230
MAR						
07...	1430	0.36	1800	--	18.5	1280
APR						
05...	0950	0.84	1800	--	15.0	1290
MAY						
02...	0815	0.14	1930	--	13.0	1430
JUN						
01...	1445	0.10	1920	--	--	1320
JUL						
06...	0800	0.01	1650	--	14.0	1180
AUG						
01...	1415	0.05	1440	--	22.0	973
30...	0820	0.04	1660	8.40	23.0	1130

[1]Laboratory value.

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 Highway 101 at Los Alamos.

DRAINAGE AREA.--34.9 mi^2.

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.--Records poor. No regulation upstream from station. Pumping for irrigation of about 1,000 acres upstream from station.

AVERAGE DISCHARGE.--19 years, 1.68 ft^3/s, 1,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,230 ft^3/s, Mar. 1, 1983, gage height, 11.6 ft, from floodmarks, from rating curve extended above 150 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 20	2115	*1.8	*1.30				

No flow for most of year.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989
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	e.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.04	e.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.23	e.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.07	e.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.08	e.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.38	e.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.51	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.23	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	e.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	e.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	1.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.00	.00	.053	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAX	.00	.00	.51	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.0	.0	3.2	.0	.0	.0	.0	.0	.0	.0	.0	.0

CAL YR 1988 TOTAL 11.56 MEAN .032 MAX 4.8 MIN .00 AC-FT 23
WTR YR 1989 TOTAL 1.63 MEAN .004 MAX .51 MIN .00 AC-FT 3.2

e Estimated.

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 mi^2.

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.--34 years, 5.76 ft^3/s, 4,170 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,680 ft^3/s, Mar. 1, 1983, gage height, 14.32 ft, from rating curve extended above 1,100 ft^3/s on basis of slope-area measurement at gage height 12.93 ft; minimum daily, 0.10 ft^3/s, June 19, 20, 1957.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 24	2215	*89	*2.77				

Minimum daily, 0.14 ft^3/s, Nov. 5.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.36	.20	.26	.77	.84	.63	1.1	.85	.31	.17	.22	.18
2	.37	.20	.26	.76	.73	2.3	1.2	.94	.29	.22	.22	.16
3	.39	.20	.26	.81	.65	1.5	2.0	1.5	1.7	.26	.22	.17
4	.36	.16	.25	.73	1.4	.89	2.3	1.7	1.2	.22	.22	.18
5	.33	.14	.25	.83	1.6	.65	1.4	1.1	.73	.20	.22	.18
6	.30	.15	.23	.97	1.0	.55	1.0	1.4	1.2	.20	.22	.18
7	.26	.15	.25	.93	.71	.54	1.3	1.6	2.7	.20	.22	.15
8	.23	.15	.26	.86	.73	.57	.24	1.3	1.2	.20	.22	.15
9	.23	.16	.26	.73	.92	.73	.72	1.0	.44	.20	.22	.15
10	.22	.18	.28	.57	.82	1.6	.60	.58	.25	.23	.27	.17
11	.25	.17	.27	.58	.73	2.3	3.1	1.1	.20	.21	.28	.15
12	.26	.18	.35	.63	.70	1.7	1.8	1.1	.19	.23	.28	.16
13	.20	.24	.40	.65	.68	1.3	.35	1.3	.37	.26	.28	.16
14	.24	.37	.41	.80	.68	.88	.41	.81	.30	.21	.28	.16
15	.20	.24	.56	1.3	.62	.82	.60	.78	.41	.21	.28	.15
16	.19	.20	1.2	1.3	.67	2.1	.40	.45	.51	.22	.27	.16
17	.17	.23	1.4	1.0	.67	.77	.81	.56	.37	.21	.19	.17
18	.18	.22	.69	.77	.49	.41	.40	.81	.95	.26	.15	.16
19	.21	.20	.43	.73	.44	.37	.28	1.3	.38	.22	.15	.17
20	.26	.22	.29	.73	.44	.33	.65	.87	.26	.20	.15	.20
21	.23	.22	.31	.79	.44	.28	.60	.54	.22	.20	.15	.20
22	.20	.20	1.5	.88	.50	.26	.31	1.6	.20	.20	.15	.20
23	.20	.32	3.1	1.1	.44	.67	.33	1.3	.19	.20	.15	.19
24	.20	.34	10	1.1	.44	1.8	.85	2.1	.31	.20	.18	.19
25	.20	.96	25	.87	.46	2.7	1.6	1.3	.23	.19	.20	.19
26	.20	.50	2.5	.63	.57	.90	1.8	1.1	.21	.19	.16	.20
27	.20	.28	.96	1.0	.66	.41	1.1	1.0	.26	.22	.15	.20
28	.20	.26	1.1	.87	.57	.25	.53	.56	.25	.22	.19	.18
29	.20	.25	.88	.81	---	.21	.76	.64	.20	.22	.20	.60
30	.20	.26	.73	.78	---	.22	.81	.56	.16	.22	.20	.50
31	.20	---	.79	.76	---	.31	---	.33	---	.22	.17	---
TOTAL	7.44	7.55	55.43	26.04	19.60	28.95	29.35	32.08	16.19	6.61	6.46	5.96
MEAN	.24	.25	1.79	.84	.70	.93	.98	1.03	.54	.21	.21	.20
MAX	.39	.96	25	1.3	1.6	2.7	3.1	2.1	2.7	.26	.28	.60
MIN	.17	.14	.23	.57	.44	.21	.24	.33	.16	.17	.15	.15
AC-FT	15	15	110	52	39	57	58	64	32	13	13	12

CAL YR 1988 TOTAL 358.47 MEAN .98 MAX 38 MIN .14 AC-FT 711
WTR YR 1989 TOTAL 241.66 MEAN .66 MAX 25 MIN .14 AC-FT 479

11136100 SAN ANTONIO CREEK NEAR CASMALIA, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1978 to current year.
CHEMICAL DATA: Water year 1978 to current year.
pH: December 1981 to September 1983.
WATER TEMPERATURE: December 1981 to September 1983.

PERIOD OF DAILY RECORD.--
pH: 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 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
OCT						
12...	1325	0.31	1820	7.90	15.0	1350
31...	1400	0.12	1830	7.60	14.0	1340
NOV						
29...	1430	0.34	2110	7.80	10.0	1330
JAN						
05...	1100	0.69	[1]2290	7.80	7.5	1560
FEB						
07...	0915	0.66	2200	8.00	5.5	1510
28...	1000	0.56	2370	--	11.0	1550
APR						
12...	1415	0.80	1850	7.90	17.0	1200
MAY						
10...	1150	0.61	1580	--	16.0	988
JUN						
14...	0740	0.35	1840	--	14.5	1170
JUL						
19...	1015	0.23	2220	7.80	16.0	1380
AUG						
17...	1140	0.20	2180	--	17.0	1350
31...	0810	0.18	2230	7.90	15.5	1350

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT
APR											
12...	1415	0.80	1850	7.90	17.0	450	75	120	37	200	48
JUL											
19...	1015	0.23	2220	7.80	16.0	460	63	120	39	310	58

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)
APR											
12...	4	9.5	378	280	260	0.4	38	1200	1170	1.63	--
JUL											
19...	7	17	398	230	350	0.3	42	1380	1360	1.88	1.70

DATE	PHOSPHOROUS ORTHO, DISSOLVED (MG/L AS P)	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ALACHLOR TOTAL RECOVER (UG/L)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	AMETRYNE TOTAL	ATRAZINE, TOTAL (UG/L)
APR										
12...	--	1100	20	29	<1	<1.0	<0.1	<0.1	<0.1	<0.1
JUL										
19...	1.10	1800	30	70	<1	<1.0	<0.1	<0.1	<0.1	<0.1

See footnotes at end of table.

11136100 SAN ANTONIO CREEK NEAR CASMALIA, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)	CYANAZINE TOTAL (UG/L)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL (UG/L)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDOSULFAN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL (UG/L)
APR										
12...	<1.0	<0.1	0.4	1.0	0.6	<0.01	0.1	<0.1	<0.1	<0.01
JUL										
19...	1.0	<0.1	4.8	18	0.7	<0.01	0.6	<0.1	<0.1	<0.01

DATE	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	METOLACHLOR WATER WHOLE TOT.REC (UG/L)	METRIBUZIN WATER WHOLE TOT.REC (UG/L)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG)
APR										
12...	<0.1	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1
JUL										
19...	<0.1	<0.1	0.5	<0.01	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1

DATE	PARATHION, TOTAL (UG/L)	PERTHANE IN BOTTOM MATERIAL (UG/KG)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TRIFLURALIN TOTAL RECOVER (UG/L)	TOTAL TRITHION (UG/L)
APR										
12...	<0.01	<1.00	<0.1	<0.1	<0.1	<0.1	<0.1	<10	<0.1	<0.01
JUL										
19...	<0.01	<1.00	<0.1	<0.1	<0.1	<0.1	<0.1	<10	<0.1	<0.01

[1] Laboratory value.
< Actual value is known to be less than the value shown.

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 mi^2.

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.--32 years (water years 1904, 1905, 1960-89), 21.5 ft^3/s, 15,580 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,800 ft^3/s, Feb. 25, 1969, gage height, 13.70 ft, from rating curve extended above 4,900 ft^3/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 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 11	0300	*159	*7.02				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	1.1	.10	.79	.05	.07	.03	.01	.00	.01
2	.00	.00	.00	.83	.07	5.3	.05	.06	.02	.00	.00	.01
3	.00	.00	.00	.83	.17	4.1	.04	.05	.03	.00	.00	.01
4	.00	.00	.00	.87	7.8	2.2	.04	.05	.03	.00	.00	.01
5	.00	.00	.00	1.2	1.8	1.3	.03	.05	.02	.00	.00	.01
6	.00	.00	.00	1.1	.60	.81	.03	.06	.02	.00	.00	.01
7	.00	.00	.00	.78	.48	.59	.05	.06	.02	.00	.01	.01
8	.00	.00	.00	.63	1.2	.54	.07	.06	.02	.00	.01	.01
9	.00	.00	.00	.47	1.7	.46	.04	.14	.02	.00	.01	.01
10	.00	.00	.00	.47	9.7	.39	.04	.11	.02	.00	.01	.01
11	.00	.00	.00	.44	56	.38	.09	.09	.02	.00	.01	.01
12	.00	.00	.00	.40	10	.34	.10	.07	.02	.00	.01	.01
13	.00	.00	.00	.41	6.6	.26	.09	.08	.02	.00	.01	.01
14	.00	.00	.00	.39	3.9	.18	.08	.09	.02	.00	.01	.01
15	.00	.00	.13	.35	3.1	.12	.07	.08	.02	.00	.01	.01
16	.00	.00	.04	.32	1.9	.19	.06	.07	.02	.00	.01	.01
17	.00	.00	1.4	.30	1.1	.30	.07	.07	.02	.00	.01	.01
18	.00	.00	.05	.28	.59	.18	.07	.05	.02	.00	.01	.01
19	.00	.00	.01	.29	.34	.10	.06	.04	.01	.00	.01	.01
20	.00	.00	2.4	.30	.10	.07	.06	.04	.01	.00	.01	.01
21	.00	.00	13	.30	.03	.06	.05	.04	.01	.00	.01	.01
22	.00	.00	14	.28	6.0	.05	.05	.04	.01	.00	.01	.01
23	.00	.00	19	.47	1.5	.05	.05	.04	.01	.00	.01	.01
24	.00	.00	50	.78	1.1	.08	.06	.03	.01	.00	.01	.01
25	.00	.00	25	.37	3.3	.32	.19	.03	.01	.00	.01	.01
26	.00	.00	9.3	.29	.63	.32	.15	.03	.01	.00	.01	.01
27	.00	.00	4.6	.28	1.4	.09	.09	.03	.01	.00	.01	.01
28	.00	.00	3.3	.28	.93	.05	.08	.03	.01	.00	.01	.01
29	.00	.00	1.6	.24	---	.05	.08	.03	.01	.00	.01	.01
30	.00	.00	1.2	.14	---	.05	.07	.03	.01	.00	.01	.01
31	.00	---	1.6	.12	---	.05	---	.03	---	.00	.01	---
TOTAL	0.00	0.00	146.63	15.31	122.14	19.77	2.06	1.75	0.51	0.01	0.25	0.30
MEAN	.000	.000	4.73	.49	4.36	.64	.069	.056	.017	.000	.008	.010
MAX	.00	.00	50	1.2	56	5.3	.19	.14	.03	.01	.01	.01
MIN	.00	.00	.00	.12	.03	.05	.03	.03	.01	.00	.00	.01
AC-FT	.00	.00	291	30	242	39	4.1	3.5	1.0	.02	.5	.6

CAL YR 1988 TOTAL 699.19 MEAN 1.91 MAX 113 MIN .00 AC-FT 1390
WTR YR 1989 TOTAL 308.73 MEAN .85 MAX 56 MIN .00 AC-FT 612

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 1988 TO SEPTEMBER 1989

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)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
JAN						
03...	1230	0.76	[1]2130	8.20	9.5	1670
30...	1130	0.20	1940	8.20	10.5	1510
FEB						
27...	1250	1.5	2740	--	16.0	2270
APR						
11...	1230	0.17	1820	--	27.0	1390
MAY						
09...	1125	0.12	1810	--	15.5	1360
JUN						
12...	1230	0.04	1800	--	29.5	1410
SEP						
12...	1215	0.04	1800	--	20.0	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)	HARD-NESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JAN									
30...	1130	0.20	1940	8.20	10.5	850	590	180	97

DATE	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	ALKA-LINITY WAT WH TOT FET 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)
JAN								
30...	130	25	2	4.5	263	770	100	0.5

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)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	PHOS-PHOROUS 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)
JAN								
30...	12	1510	1450	<0.10	0.02	390	19	39

[1]Laboratory value.
< Actual value is known to be less than the value shown.

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 mi^2.

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 those for estimated daily discharges, which are poor. No regulation or diversion upstream from station.
AVERAGE DISCHARGE.--46 years, 43.2 ft^3/s, 31,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,200 ft^3/s, Dec. 6, 1966, gage height, 15.75 ft, from rating curve extended above 1,700 ft^3/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, 11,000 ft^3/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 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 250 ft^3/s and maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Feb. 9	1500	*178	*2.45				

Minimum daily, 0.04 ft^3/s, July 31.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	1.1	1.2	e2.0	2.1	19	7.7	2.9	1.8	e.50	.05	.13
2	1.0	1.1	1.2	e2.0	2.1	22	7.5	2.8	1.8	e.50	.05	.13
3	1.0	1.1	1.2	e2.0	2.3	36	6.8	2.6	1.9	e.50	.08	.13
4	1.0	1.0	1.2	e2.0	3.0	38	6.1	2.5	1.9	e.50	.09	.13
5	1.1	.99	1.2	2.1	2.3	27	5.6	2.5	1.8	e.50	.10	.11
6	1.1	1.0	1.2	2.0	2.3	24	5.1	2.4	1.8	e.50	.11	.12
7	1.1	1.0	1.1	2.0	2.3	21	4.9	2.5	1.8	e.50	.13	.12
8	1.0	1.1	1.2	2.0	2.5	21	4.5	2.5	1.6	e.50	.14	.10
9	.98	1.0	1.2	1.9	88	21	4.4	3.1	1.5	e.50	.15	.10
10	.98	1.0	1.2	1.9	94	20	4.3	2.9	1.5	e.40	.17	.13
11	1.0	1.1	1.2	1.7	49	19	4.4	2.8	1.6	e.40	.18	.13
12	1.0	1.0	1.2	1.7	34	18	4.3	2.8	1.5	e.40	.19	.13
13	1.0	1.0	1.2	1.7	26	16	4.2	2.9	1.6	e.40	.20	.13
14	1.1	1.1	1.2	1.7	22	15	4.1	3.0	1.6	e.30	.20	.13
15	1.0	1.0	4.1	1.7	18	14	4.1	2.9	1.3	e.30	.21	.12
16	.99	1.0	6.6	1.7	16	14	4.2	2.8	.99	e.30	.22	.13
17	.97	1.0	8.3	1.7	16	13	4.2	2.4	1.1	e.30	.22	.32
18	.98	1.0	6.2	1.7	15	12	4.0	2.4	1.1	e.30	.21	.29
19	1.0	.99	6.7	1.7	15	12	3.7	2.3	.95	.29	.20	.43
20	1.0	.99	7.5	1.7	14	11	3.6	2.2	.95	.25	.21	.31
21	1.1	.99	7.3	2.0	13	11	3.5	2.3	.70	.24	.20	.24
22	1.1	1.0	6.4	2.0	14	10	3.3	2.4	.72	.24	.20	.16
23	1.1	1.5	5.0	2.2	15	10	3.2	2.3	.67	.26	.18	.16
24	1.1	1.7	5.0	2.1	16	10	3.2	2.2	.89	.32	.17	.18
25	1.1	3.7	3.6	2.0	19	11	3.9	2.2	.95	.23	.16	.22
26	1.1	2.7	2.5	2.0	18	11	4.3	2.3	.79	.13	.17	.21
27	1.1	1.5	2.0	2.0	18	11	3.6	2.2	e.60	.09	.16	.18
28	1.1	1.3	2.0	2.1	19	9.8	3.2	1.9	e.60	.09	.18	.19
29	1.1	1.3	2.0	2.0	---	9.0	3.2	1.9	e.60	.09	.18	.63
30	1.1	1.2	e2.0	2.0	---	8.7	3.0	1.9	e.60	.08	.18	.39
31	1.0	---	e2.0	2.0	---	8.2	---	1.9	---	.04	.14	---
TOTAL	32.30	37.46	95.9	59.3	557.9	502.7	132.1	76.7	37.21	9.95	5.03	5.88
MEAN	1.04	1.25	3.09	1.91	19.9	16.2	4.40	2.47	1.24	.32	.16	.20
MAX	1.1	3.7	8.3	2.2	94	38	7.7	3.1	1.9	.50	.22	.63
MIN	.97	.99	1.1	1.7	2.1	8.2	3.0	1.9	.60	.04	.05	.10
AC-FT	64	74	190	118	1110	997	262	152	74	20	10	12

CAL YR 1988 TOTAL 3488.98 MEAN 9.53 MAX 524 MIN .69 AC-FT 6920
WTR YR 1989 TOTAL 1552.43 MEAN 4.25 MAX 94 MIN .04 AC-FT 3080

e Estimated.

11138500 SISQUOC RIVER NEAR SISQUOC, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Water year 1978 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
OCT						
11...	1400	1.0	965	--	20.5	819
NOV						
01...	1400	1.0	941	7.60	20.0	831
28...	1500	1.5	1140	8.30	16.5	824
JAN						
04...	1030	2.0	[1]1140	7.90	12.5	833
FEB						
06...	1245	2.4	1150	7.90	6.5	817
MAR						
01...	1020	20	1090	--	12.5	778
APR						
13...	1020	4.7	1120	--	17.0	827
MAY						
11...	1010	3.1	1100	--	15.5	820
JUN						
13...	1020	1.7	1140	--	17.0	816
JUL						
18...	1000	0.35	1170	--	17.0	833
AUG						
18...	0955	0.25	1130	8.10	21.5	854
SEP						
13...	0900	0.19	1160	7.80	17.5	838

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)
AUG									
18...	0955	0.25	1130	8.10	21.5	490	260	91	64

DATE	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)
AUG								
18...	65	22	1	2.5	235	430	22	0.4

DATE	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHOROUS ORTHO, DISSOLVED (MG/L AS P)	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG								
18...	23	854	839	<0.10	0.06	200	15	8

[1]Laboratory value
< Actual value is known to be less than the value shown.

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 mi^2.

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. No regulation above station. Pumping from wells along stream for irrigation of about 7,000 acres upstream from station.

AVERAGE DISCHARGE.--49 years, 42.7 ft^3/s, 30,940 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,600 ft^3/s, Mar. 1, 1983, gage height, 11.16 ft, from rating curve extended above 22,000 ft^3/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 water year 1989.

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 mi^2.

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.--Records fair except those for estimated discharges, which are 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.--18 years, 1.46 ft^3/s, 1,060 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 539 ft^3/s, Mar. 1, 1983, gage height, 4.59 ft, from rating curve extended above 69 ft^3/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 ft^3/s and maximum (*).

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec. 15	1945	124	2.69	Dec. 24	1000	114	2.64
Dec. 20	1915	*187	*3.08				

No flow Nov. 26, 27, and Dec. 19.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	.22	.75	e.19	2.0	2.1	1.1	.86	1.9	.99	.55	.93
2	1.2	.53	.73	e.32	1.0	5.7	1.4	1.4	.96	1.1	.56	.94
3	.15	.67	.89	e.30	1.9	.44	1.8	.80	.63	.28	.28	.76
4	.85	.25	.10	e.01	5.7	.01	2.8	.59	1.2	.88	.56	.73
5	1.4	.51	.11	e.41	.41	.01	2.5	1.5	.46	.74	1.3	.57
6	.59	.60	.82	e.30	.03	.27	.81	1.3	.81	1.6	.78	.18
7	.22	.55	1.7	e.15	.04	1.7	.82	.99	.08	1.0	.50	.28
8	.47	.58	1.5	e.07	1.7	1.5	1.5	1.0	1.1	1.5	.87	.28
9	.36	.73	1.9	e.26	.52	1.6	1.7	1.2	.76	.77	.52	.36
10	.76	.26	1.6	.03	.02	1.4	2.1	.13	.22	.54	1.9	.90
11	1.7	.04	1.2	.04	.21	2.1	1.7	.14	.17	.26	.89	.65
12	1.2	.87	.47	.74	.16	2.2	1.2	1.2	.28	.27	.73	.87
13	.29	.86	.91	1.6	.33	1.2	1.5	1.1	.01	1.4	1.7	1.3
14	.05	.39	.80	1.7	.71	2.4	.94	1.0	.91	1.1	.64	.24
15	.64	.29	19	2.6	1.2	2.4	.32	.15	.92	.65	.67	.11
16	1.0	.02	4.1	2.9	1.6	1.7	.53	.31	1.1	1.3	.52	.92
17	.55	.26	8.7	3.2	1.1	.74	.44	.75	.34	.54	.43	.72
18	1.2	.58	.29	2.9	.80	.82	.67	1.4	.42	.32	.25	.73
19	1.5	.36	.00	2.8	.52	1.1	2.4	1.2	.19	.33	.16	.24
20	1.3	.37	26	2.8	.74	1.5	1.4	1.7	.41	.36	.10	.67
21	.64	.34	7.0	.92	.42	1.0	1.4	1.5	1.2	.44	.12	1.1
22	1.0	.53	3.4	1.2	1.5	.62	1.1	.47	1.0	.32	.18	1.3
23	.80	1.2	.83	3.8	1.6	1.4	1.7	.96	.29	1.3	.52	.49
24	.49	.05	22	.12	1.9	1.7	1.1	1.4	.84	.64	.73	.24
25	.32	.63	2.9	.14	1.8	1.6	1.6	1.3	.90	.39	.56	.23
26	.53	.00	.01	.41	1.5	.07	.50	1.7	1.8	.30	.62	.17
27	.33	.00	.41	.12	1.2	.15	.52	1.5	1.0	.36	.43	.27
28	.82	.02	.36	.90	1.9	.51	.65	1.6	.67	.41	.33	1.7
29	.38	.20	.47	1.3	---	.39	1.2	1.7	.36	.66	.84	2.2
30	.26	.28	e.85	.68	---	1.1	1.9	1.4	.56	1.9	.96	.18
31	.03	---	e.99	1.4	---	1.2	---	1.5	---	1.0	1.2	---
TOTAL	22.53	12.19	110.79	34.31	32.51	40.63	39.30	33.75	21.49	23.65	20.40	20.26
MEAN	.73	.41	3.57	1.11	1.16	1.31	1.31	1.09	.72	.76	.66	.68
MAX	1.7	1.2	26	3.8	5.7	5.7	2.8	1.7	1.9	1.9	1.9	2.2
MIN	.03	.00	.00	.01	.02	.01	.32	.13	.01	.26	.10	.11
AC-FT	45	24	220	68	64	81	78	67	43	47	40	40

CAL YR 1988 TOTAL 595.58 MEAN 1.63 MAX 31 MIN .00 AC-FT 1180
WTR YR 1989 TOTAL 411.81 MEAN 1.13 MAX 26 MIN .00 AC-FT 817

e Estimated.

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 mi^2.

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.--7 years, 1.30 ft^3/s, 942 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,830 ft^3/s, Mar. 1, 1983, gage height, 7.53 ft, from floodmarks, from rating curve extended above 10 ft^3/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 ft^3/s and maximum (*).

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s	Gage height (ft)
Dec. 24	0530	*28	*3.96				

No flow for many days.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.06	.03	.02	.36	.02	.07	.02	.04	.18	.43	.00	.25
2	.05	.07	.02	.15	.02	.84	.02	.03	.14	.26	.13	.25
3	.05	.03	.02	.10	.03	.37	.02	.02	.16	.13	.02	.20
4	.05	.01	.02	.08	.57	.03	.01	.03	.15	.39	.00	.00
5	.05	.06	.02	.10	.20	.01	.02	.03	.09	.35	.00	.17
6	.05	.20	.03	.36	e.03	.01	.04	.03	.13	.37	.00	.04
7	.04	.03	.03	.11	e.02	.01	.02	.03	.08	.38	.02	.02
8	.05	.00	.03	.08	.50	.01	.03	.03	.17	.31	.41	.00
9	.13	.05	.03	.07	1.2	.01	.03	.03	.19	.19	.42	.00
10	.05	.01	.03	.08	.26	e.01	.03	.04	.15	.12	.36	.00
11	.04	.06	.03	.07	e.02	e.01	.03	.06	.18	.30	.37	.00
12	.05	.03	.03	.06	e.02	e.01	.03	.07	.22	.12	.35	.01
13	.06	.09	.05	.06	e.02	e.01	.02	.13	.17	.25	.20	.01
14	.06	.24	.03	.06	e.02	.01	.03	.13	.38	.28	.01	.00
15	.10	.01	.05	.05	e.02	.01	.03	.24	.34	.29	.01	.00
16	.17	.01	1.5	.06	e.02	.01	.03	.18	.41	.21	.04	.01
17	.04	.01	5.9	.05	e.02	.01	.04	.46	.36	.09	.00	.02
18	.11	.01	.64	.05	e.02	e.01	.03	.47	.45	.12	.00	.01
19	.09	.02	.01	.08	e.02	.01	.03	.46	.40	.27	.02	.01
20	.17	.01	1.1	.04	.02	.01	.02	.38	.51	.24	.04	.00
21	.07	.01	7.1	.04	.02	.01	.03	.40	.06	.38	.00	.00
22	.06	.01	1.3	.04	.02	.01	.03	.15	.19	.38	.04	.00
23	.10	.01	.58	.02	.02	.01	.02	.31	.36	.21	.01	.01
24	.03	.01	4.9	.02	.02	.18	.03	.26	.33	.12	.15	.00
25	.03	.02	2.0	.01	.02	.04	.04	.26	.19	.30	.16	.01
26	.10	.01	.74	.01	.02	.03	.04	.34	.14	.34	.11	.00
27	.10	.01	.47	.01	.02	.02	.02	.27	.37	.55	.18	.01
28	.02	.01	.43	.01	.02	.01	.03	.27	.13	.76	.01	.02
29	.01	.02	1.3	.01	---	.01	.03	.09	.45	.50	.23	.05
30	.01	.01	1.5	.02	---	.02	.06	.21	.40	.36	.01	.04
31	.01	---	.76	.02	---	.02	---	.20	---	.00	.22	---
TOTAL	2.01	1.10	30.67	2.28	3.21	1.83	0.86	5.65	7.48	9.00	3.52	1.14
MEAN	.065	.037	.99	.074	.11	.059	.029	.18	.25	.29	.11	.038
MAX	.17	.24	7.1	.36	1.2	.84	.06	.47	.51	.76	.42	.25
MIN	.01	.00	.01	.01	.02	.01	.01	.02	.06	.00	.00	.00
AC-FT	4.0	2.2	61	4.5	6.4	3.6	1.7	11	15	18	7.0	2.3

CAL YR 1988 TOTAL 237.58 MEAN .65 MAX 50 MIN .00 AC-FT 471
WTR YR 1989 TOTAL 68.75 MEAN .19 MAX 7.1 MIN .00 AC-FT 136

e Estimated.

11141050 ORCUTT CREEK NEAR ORCUTT, CA--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Water year 1983 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

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)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
OCT						
12...	1025	0.04	1860	7.60	15.0	1380
31...	1230	0.02	1800	7.20	17.5	1290
NOV						
29...	1115	0.04	2230	7.80	14.5	1320
JAN						
05...	0900	0.09	[1]2130	7.60	8.5	1340
FEB						
06...	1530	0.05	1710	8.00	13.5	1010
28...	1400	0.02	1990	--	19.0	1200
APR						
12...	1300	0.04	2050	--	18.0	1180
MAY						
10...	0900	0.03	2030	--	14.5	1240
JUN						
13...	1410	0.11	2120	--	19.0	1280
JUL						
18...	1340	0.02	2060	--	23.0	1260
AUG						
17...	0840	0.01	2150	--	17.0	1340
SEP						
12...	1400	0.01	2280	--	23.0	1350

[1]Laboratory value.

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 1989

Station no.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximums: Date	Annual maximums: Gage height (feet)	Annual maximums: 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 1976-89	--	--	0
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.	0.72	1959-60 1961-67* 1968-69 1976-89	--	--	0
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 U.S. Highway I-15, 4.3 mi east of Barstow.	0.24	1956-66 1967-73* 1976-89	--	--	0
		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.	0.48	1961-66* 1967-69 1971-73 1977-89	12-24-88	1.68	5.60
10264503	Barrell 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.	0.80	1989	01-04-89	9.28	0.02
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	12-16-88	4.06	1.04

See footnotes at end of table.

ANNUAL MAXIMUM DISCHARGE AT CREST-STAGE PARTIAL-RECORD STATIONS DURING WATER YEAR 1989--Continued

Station no.	Station name	Location	Drainage area (mi^2)	Period of record	Annual maximum: Date	Annual maximum: Gage height (feet)	Annual maximum: Discharge (ft^3/s)
		Antelope Valley					
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 county road, 8.5 mi northwest of Fairmont.	3.60	1959-64 1965-73* 1974 1978-89	12-16-88	a	0.10
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	03-25-89	1.25	0.13
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.	0.10	1989	--	--	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 Blvd., 1.75 mi south of Edwards.	0.76	1989	12-16-88	8.37	e0.30
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).	0.06	1961-73 1989	--	--	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* 1981-89	1-17-88	a	<109
		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 1981-89	--	a	<26
11133700	Purisima Creek near Lompoc, CA	Lat 34°41'34", long 120°25'51", in Purisima 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* 1976-89	12-21-88	1.60	18
11135200	Rodeo-San Pasqual 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 Highway 246 and 3.3 mi west of Lompoc.	7.80 1980-89	1971-72* 1973-78	--	a	<29

* Operated as a continuous-record station.
a Peak flow below crest-stage gage pin; flow estimated.
e Estimated.
< Actual value is known to be less than the value shown.

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 1989

Station No.	Station name	Location	Drainage area (mi^2)	Date	Time	Streamflow instantaneous (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	11-04-88	1730	0
				12-12-88	1000	0
				01-04-89	1400	0
				01-31-89	0955	0
				02-28-89	1405	0
				04-05-89	1105	0
				05-03-89	1600	0
				06-05-89	1105	0
				07-03-89	1300	0
				07-25-89	0920	0
				09-06-89	1315	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	11-04-88	1715	0
				12-12-88	1015	0
				01-04-89	1340	0
				01-31-89	0940	0
				02-28-89	1350	0
				04-05-89	1050	0
				05-03-89	1540	0
				06-05-89	1050	0
				07-03-89	1250	0
				07-25-89	0905	0
				09-06-89	1325	0

Discharge measurements and specific conductance and temperature data in the following table were made at miscellaneous sites throughout the area covered by this volume.

Measurements made at miscellaneous sites during water year 1989

Stream	Tributary to	Location	Measured previously (water years)	Date	Time	Stream flow instantaneous (ft^3/s)	Specific conductance ($\mu mhos$)	Temperature (deg C)
		Atascadero Creek Basin						
Maria Ygnacio Creek	Atascadero Creek	Lat 34°25'31", long 119°48'33", T.4 N., R.28 W., Santa Barbara County, Hydrologic Unit 18060013, 100 ft upstream from Atascadero Creek and 1.3 mi southeast of Goleta.	1988	10/05/88	--	0	--	--
				10/11/88	--	0	--	--
				10/24/88	--	0	--	--
				11/08/88	--	0	--	--
				12/09/88	--	0	--	--
				12/20/88	1340	.20	330	14.5
				01/10/89	--	0	--	--
				01/30/89	--	0	--	--
				02/27/89	--	0	--	--
				04/10/89	--	0	--	--
				04/26/89	--	0	--	--
				05/10/89	--	0	--	--
				05/25/89	--	0	--	--
				06/07/89	1410	.18	1070	23.0
				06/20/89	1420	.07	966	32.0
				07/13/89	1420	.04	1100	32.0
				07/19/89	1155	.01	1170	30.0
				08/09/89	1200	.04	1060	30.0
				08/22/89	1515	.06	1010	28.0
				09/06/89	1610	.08	1060	26.0
				09/19/89	1230	.03	1110	21.0
Maria Ygnacio Creek	Atascadero Creek	Lat 34°27'34", long 119°47'24", in SE 1/4 NE 1/4 sec.3, T.4 N., R.28 W., Santa Barbara County, Hydrologic Unit 18060013, 0.1 mi upstream from Old San Marcos Pass Road bridge, 300 ft upstream from East Fork, and 2.5 mi northeast of Goleta.	1983-88	10/05/88	--	0	--	--
				10/11/88	--	0	--	--
				10/24/88	--	0	--	--
				11/08/88	--	0	--	--
				12/09/88	1220	.08	1800	11.5
				12/20/88	1250	.29	1360	12.0
				01/10/89	1550	.18	1380	11.0
				01/30/89	1445	.16	1560	12.0
				02/27/89	1415	.24	1420	16.0
				04/10/89	1425	<.01	2060	16.0
				04/26/89	1245	.03	1620	15.0
				05/10/89	1300	.07	2060	18.5
				05/25/89	--	0	--	--
				06/07/89	1125	<.01	2040	16.5
				06/20/89	--	0	--	--
				07/13/89	--	0	--	--
				07/19/89	--	0	--	--
				08/09/89	--	0	--	--
				08/22/89	--	0	--	--
				09/06/89	--	0	--	--
				09/19/89	--	0	--	--
East Fork Maria Ygnacio Creek	Maria Ygnacio Creek	Lat 34°27'36" long 119°47'26", in SE 1/4 NE 1/4 sec.3, T.4 N., R.28 W., Santa Barbara County, Hydrologic Unit 18060013, 0.1 mi upstream from Old San Marcos Pass Road bridge, 50 ft upstream from confluence with Maria Ygnacio Creek, and 2.5 mi northeast of Goleta.	1984-88	10/05/88	0840	.02	1910	16.0
				10/11/88	1420	.01	1910	18.0
				10/24/88	1155	.02	1890	17.0
				11/08/88	1345	.01	1880	16.5
				12/09/88	1150	.02	1840	10.0
				12/20/88	1240	.05	1920	13.0
				01/10/89	1510	.02	2000	11.0
				01/30/89	1420	.02	2000	12.0
				02/27/89	1320	.04	2000	16.0
				04/10/89	1335	.02	1760	16.0
				04/26/89	1215	.03	1810	15.5
				05/10/89	1225	.02	1920	18.0
				05/25/89	1210	.74	922	23.0
				06/07/89	1000	.91	880	22.0
				06/20/89	1310	.85	889	26.5
				07/13/89	1010	.74	878	23.0
				07/19/89	1110	.78	908	22.0
				08/09/89	1140	.73	896	23.0
				08/22/89	1545	.53	894	23.0
				09/06/89	1245	.80	904	22.0
				09/19/89	1005	.04	1540	15.0

See footnote at end of table.

Measurements made at miscellaneous sites during water year 1989--Continued

Stream	Tributary to	Location	Measured previously (water years)	Date	Time	Stream flow Instantaneous (ft^3/s)	Specific conductance ($\mu mhos$)	Temperature (deg C)
		Atascadero Creek Basin--Continued						
East Fork, Maria Ygnacio Creek	Maria Ygnacio Creek	Lat 34°28'32", long 119°46'40" in SE 1/4 NE 1/4 sec.35, T.5 N., R.28 W., Santa Barbara County, Hydrologic Unit 18060013, 100 ft upstream from bridge on private road, 1.5 mi upstream from Maria Ygnacio Creek, and 4.0 mi northeast of Goleta.	1983-88	10/05/88	0730	<.01	730	15.0
				10/11/88	1330	.06	828	19.0
				10/24/88	1120	.06	814	16.0
				11/08/88	1205	.21	910	16.0
				12/09/88	1045	.02	805	10.5
				12/20/88	1200	.10	815	13.0
				01/10/89	1415	.04	812	11.0
				01/30/89	1250	.04	840	12.0
				02/27/89	1225	.06	1260	15.0
				04/10/89	1240	.01	913	15.5
				04/26/89	1015	.02	830	12.0
				05/10/89	1140	.01	825	13.5
				05/25/89	1110	.01	807	15.0
				06/07/89	0855	.02	747	14.5
				06/20/89	1200	<.01	765	19.5
				07/13/89	1000	.01	727	14.5
				07/19/89	1030	.01	763	19.0
				08/09/89	1030	.01	728	19.0
				08/22/89	--	.01	719	19.0
				09/06/89	1115	.01	736	16.0
				09/19/89	0900	.01	704	12.5
		Santa Maria River Basin						
Green Canyon Creek	Santa Maria River	Lat 34°57'27", long 120°37'54", Santa Barbara County, Hydrologic Unit 180060008, at culvert on Main Street, 3.6 mi southwest of Guadalupe.	1984-88	10/12/88	0840	14.5	--	--
				10/31/88	1020	6.72	--	--
				11/29/88	0855	2.14	--	--
				01/03/89	1425	4.28	--	--
				02/03/89	0800	5.92	--	--
				03/01/89	1335	9.41	--	--
				04/12/89	0830	17.6	--	--
				05/09/89	1510	12.5	--	--
				06/13/89	1510	5.96	--	--
				07/17/89	1410	7.45	--	--
				08/16/89	1350	7.10	--	--

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

SAN MATEO CREEK BASIN

11046370 SAN MATEO CREEK AT SAN ONOFRE, CA

LOCATION.--Lat 33°24'00", long 117°35'09", in SW 1/4 SW 1/4 sec.11, T.9 S., R.7 W., San Diego County, Hydrologic Unit 18070301, on Camp Joseph H. Pendleton Naval Reservation, on right bank 0.6 mi upstream from bridge on Interstate Highway 5, 1.2 mi upstream from mouth, and 1.9 mi downstream from Cristianitos Creek.

DRAINAGE AREA.--130 mi^2.

PERIOD OF RECORD.--
WATER TEMPERATURE: Water years 1982 to September 1989 (discontinued).
SEDIMENT DATA: Water years 1982 to September 1989 (discontinued). Records for October 1984 to September 1985, published in WDR CA-85-1, are unreliable and should not be used.

PERIOD OF DAILY RECORD.--
WATER DISCHARGE: October 1946 to September 1967, October 1984 to September 1985. Records for October 1984 to September 1985, published in WDR CA-85-1, are unreliable and should not be used.
WATER TEMPERATURE: December 1983 to September 1984.
SUSPENDED-SEDIMENT DISCHARGE: December 1983 to September 1984.

REMARKS.--Minor flows regulated by percolation basins. No flow during 1989 water year.

TOPANGA CREEK BASIN

11104000 TOPANGA CREEK NEAR TOPANGA BEACH, CA

LOCATION.--Lat 34°03'52", long 118°35'10", in NW 1/4 SW 1/4 sec.20, T.1 S., R.16 W., Los Angeles County, Hydrologic Unit 18070104, on right bank 1.8 mi north of Topanga Beach on Topanga Canyon Road.

DRAINAGE AREA.--18.0 mi^2.

PERIOD OF RECORD.--
CHEMICAL DATA: Water years 1982-88 (discontinued).
SEDIMENT DATA: Water year 1987 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
(NOT PREVIOUSLY PUBLISHED)

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)
MAR 1987					
06...	1515	2.7	14.0	25	0.18

MALIBU CREEK BASIN

11104400 MALIBU CREEK AT CORNELL, CA

LOCATION.--Lat 34°06'51", long 118°46'42", in SW 1/4 NW 1/4 sec.4, T.1 S., R.18 W., Los Angeles County, Hydrologic Unit 18070104, at Mulholland Highway Bridge, 0.2 mi west of Cornell.

DRAINAGE AREA.--37.6 mi^2.

PERIOD OF RECORD.--
CHEMICAL DATA: Water years 1983-84, 1986-88 (discontinued).
SEDIMENT DATA: Water years 1987-88 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1988
(NOT PREVIOUSLY PUBLISHED)

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	TEMPERATURE WATER (DEG C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
MAR 1987					
06...	0900	18	15.0	18	0.87
DEC					
17...	1000	116	10.5	46	14

MALIBU CREEK BASIN

11105410 COLD CREEK AT PIUMA ROAD, NEAR MONTE NIDO, CA

LOCATION.--Lat 34°04'45", long 118°41'54", in NW 1/4 SE 1/4 sec.18, T.1 S., R.17 W., Los Angeles County, Hydrologic Unit 18070104, at culvert under Piuma Road 0.2 mi upstream from mouth and 0.7 mi west of Monte Nido.
DRAINAGE AREA.--7.73 mi^2.
PERIOD OF RECORD.--
CHEMICAL DATA: Water years 1982-84, 1986, 1988 (discontinued).
SEDIMENT DATA: Water year 1987 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
(NOT PREVIOUSLY PUBLISHED)

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	TEMPERATURE WATER (DEG C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
DEC 1987					
17...	1400	4.9	10.5	181	2.4

MALIBU CREEK BASIN

11105500 MALIBU CREEK AT CRATER CAMP, NEAR CALABASAS, CA

LOCATION.--Lat 34°04'40", long 118°42'03", in SW 1/4 SE 1/4, sec.18, T.1 S, R.17 W., Los Angeles County, Hydrologic Unit 18070104, on right bank 0.4 mi southeast of intersection of Piuma and Malibu Canyon Roads.

DRAINAGE AREA.--105 mi^2.

PERIOD OF RECORD.--
CHEMICAL DATA: Water years 1982-88 (discontinued).
SEDIMENT DATA: Water year 1987 (discontinued).

WATER QUALITY DATA, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
(NOT PREVIOUSLY PUBLISHED)

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	TEMPERATURE WATER (DEG C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)
MAR 1987					
06...	1245	74	15.0	21	4.2

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 mi^2.

PERIOD OF RECORD.--Water years 1968-85, October 1988 to September 1989.
WATER TEMPERATURES: Water years 1968, 1969, 1971-81, 1982-85.
SEDIMENT RECORDS: Water years 1968-85, October 1988 to September 1989.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1967 to September 1969, October 1970 to September 1981, October 1982 to September 1985.
SEDIMENT RECORDS: October 1967 to September 1981, October 1982 to September 1985.

REMARKS.--Prior to October 1969, published as "at Saticoy" (station 11113920).

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST, CUBIC FEET PER SECOND	TEMPERATURE WATER (DEG C)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT. DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM	SED. SUSP. FALL DIAM. % FINER THAN .004 MM	SED. SUSP. FALL DIAM. % FINER THAN .008 MM
DEC								
22...	1040	45	11.0	1110	135	17	25	31
FEB								
10...	1440	27	17.0	774	56	--	--	--

DATE	SED. SUSP. FALL DIAM. % FINER .016 MM	SED. SUSP. FALL DIAM. % FINER .031 MM	SED. SUSP. FALL DIAM. % FINER .062 MM	SED. SUSP. SIEVE DIAM. % FINER .125 MM	SED. SUSP. SIEVE DIAM. % FINER .250 MM	SED. SUSP. SIEVE DIAM. % FINER .500 MM	SED. SUSP. SIEVE DIAM. % FINER 1.00 MM
DEC							
22...	34	35	35	36	50	91	100
FEB							
10...	--	--	--	--	--	--	--

PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST, CUBIC FEET PER SECOND	TEMPERATURE 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
DEC						
22...	1040	45	11.0		0	4

DATE	BED MAT. SIEVE DIAM. % FINER .500 MM	BED MAT. SIEVE DIAM. % FINER 1.00 MM	BED MAT. SIEVE DIAM. % FINER 2.00 MM	BED MAT. SIEVE DIAM. % FINER 4.00 MM	BED MAT. SIEVE DIAM. % FINER 8.00 MM	BED MAT SIEVE DIAM. % FINER 16.0 MM
DEC						
22...	35	76	92	97	99	100

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 year 1985 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)
JAN					
04...	1345	[1]647	8.20	12.5	387
30...	1515	353	9.10	17.5	229
MAR					
01...	1530	351	--	17.5	216

DATE	TIME	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	HARDNESS NONCARB WH WAT TOT FLD MG/L AS CACO3	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY LAB (MG/L AS CACO3)
JAN												
04...	1345	8.20	12.5	250	110	57	25	38	25	1	3.6	133

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHOROUS ORTHO, DISSOLVED (MG/L AS P)	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JAN											
04...	140	30	0.1	8.9	387	383	0.15	0.09	70	39	20

[1]Laboratory value.

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 1988 TO SEPTEMBER 1989

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND	SPECIFIC CONDUCTANCE (US/CM)	PH (STANDARD UNITS)	TEMPERATURE WATER (DEG C)	HARDNESS TOTAL (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM PERCENT	SODIUM ADSORPTION RATIO
APR											
12...	0905	18.0	2240	7.90	18.0	940	210	100	150	26	2
AUG											
16...	1440	7.10	2220	8.00	20.5	1000	220	110	140	23	2

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	ALKALINITY WAT WH TOT FET FIELD MG/L AS CACO3	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	SOLIDS, DISSOLVED (TONS PER AC-FT)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)
APR											
12...	6.5	347	570	140	0.5	29	1390	1420	1.89	--	--
AUG											
16...	8.1	338	760	160	0.4	31	1710	1710	2.33	15.0	0.52

DATE	BORON, DISSOLVED (UG/L AS B)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG)	PCN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ALACHLOR TOTAL RECOVER (UG/L)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	AMETRYNE TOTAL	ATRAZINE, TOTAL (UG/L)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG)
APR										
12...	260	30	90	<1	<1.0	<0.1	<0.1	<0.1	<0.1	<1.0
AUG										
16...	300	960	140	<1	<1.0	<0.1	0.3	<0.1	<0.1	<10

DATE	CYANAZINE TOTAL (UG/L)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG)	DIAZINON, TOTAL (UG/L)	DIELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	DISYSTON TOTAL (UG/L)	ENDOSULFAN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG)	ETHION, TOTAL (UG/L)
APR										
12...	<0.1	35	94	36	0.12	4.6	--	<0.1	9.2	<0.01
AUG										
16...	<0.1	54	96	28	0.33	2.1	<0.01	<0.1	<0.1	<0.01

DATE	HEPTACHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG)	HEPTACHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG)	MALATHION, TOTAL (UG/L)	METHOXYCHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARATHION, TOTAL (UG/L)	METHYL TRITHION, TOTAL (UG/L)	METOLACHLOR WATER WHOLE TOT.REC (UG/L)	METRIBUZIN WATER WHOLE TOT.REC (UG/L)	MIREX, TOTAL IN BOTTOM MATERIAL (UG/KG)
APR										
12...	<0.1	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1
AUG										
16...	<0.1	<0.1	<0.1	<0.01	<0.1	<0.01	<0.01	<0.1	<0.1	<0.1

See footnote at end of table.

SANTA MARIA RIVER BASIN

345727120375401 GREEN CANYON CREEK AT MAIN STREET, NEAR GUADALUPE, CA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	PARATHION, TOTAL (UG/L)	PERTHANE IN BOTTOM MATERIAL (UG/KG)	PROMETONE TOTAL (UG/L)	PROMETRYNE TOTAL (UG/L)	PROPAZINE TOTAL (UG/L)	SIMAZINE TOTAL (UG/L)	SIMETRYNE TOTAL (UG/L)	TOXAPHENE, TOTAL IN BOTTOM MATERIAL (UG/KG)	TRIFLURALIN TOTAL RECOVER (UG/L)	TOTAL TRITHION (UG/L)
APR										
12...	<0.01	<1.00	<0.1	0.1	<0.1	1.2	<0.1	<10	<0.1	<0.01
AUG										
16...	<0.01	<1.00	<0.1	0.3	<0.1	0.1	<0.1	<10	<0.1	<0.01

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

INDEX

October 1, 1978

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
	Length	
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)
	Area	
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)
	Volume	
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)
	Flow	
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)
	Mass	
tons (short)	9.072×10^{-1}	megagrams (Mg) or metric tons

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