STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

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REPORT OF

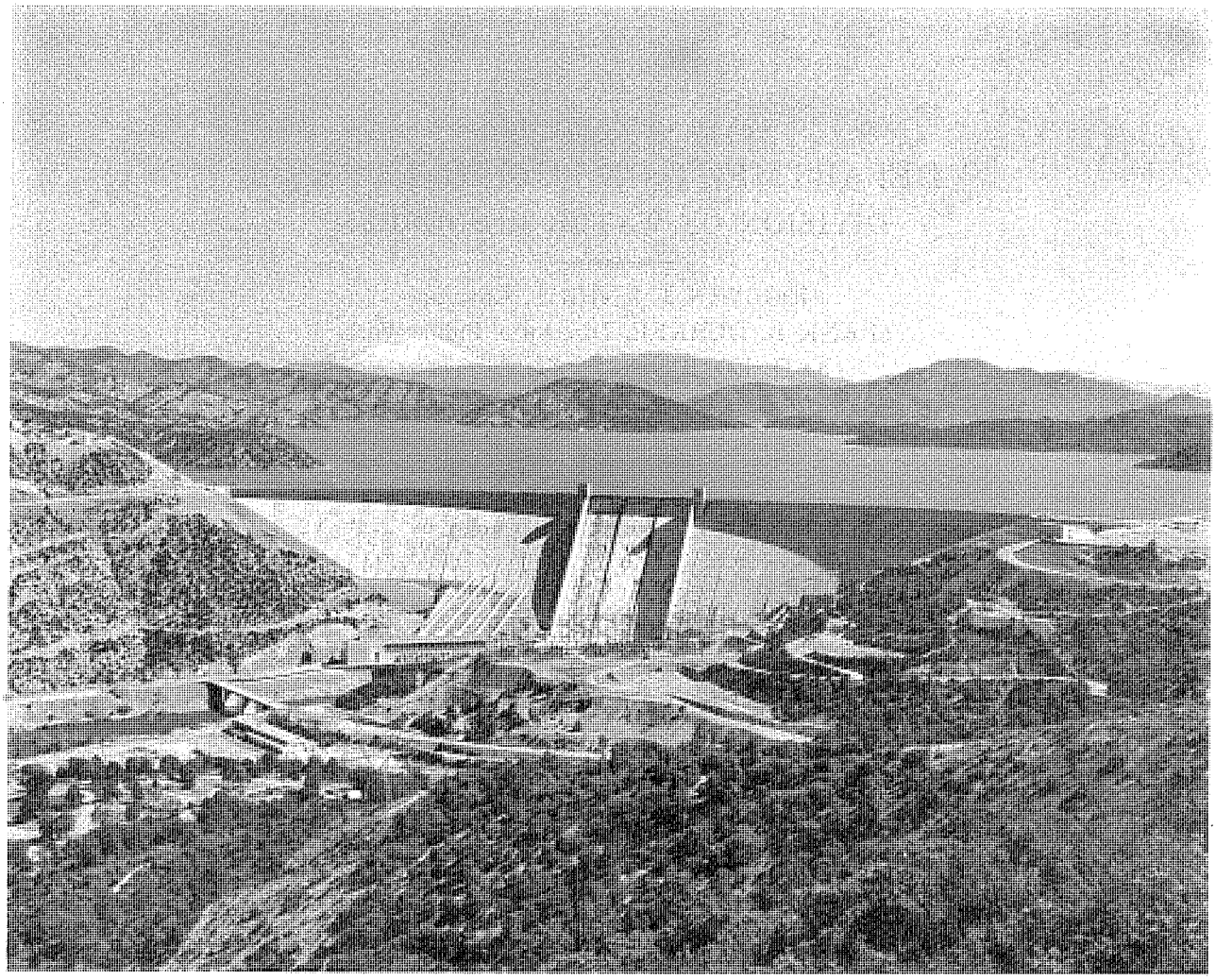
SACRAMENTO - SAN JOAQUIN

WATER SUPERVISION

FOR

1952

NOVEMBER 1953



Bureau of Reclamation Photograph

SHASTA DAM AND RESERVOIR

In May 1952 the reservoir was completely filled and this view shows the first flow over the Shasta Dam spillway.

Crest Length . . . . . 3,500 feet

Height . . . . . 528 feet

Capacity . . . . . 4,500,000 acre-feet

Reservoir Area . . . . . 29,600 acres

Elevation, crest of drum gates as shown in photograph (USGS datum) . .1065 feet

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ACKNOWLEDGMENT

Valuable assistance has been rendered by many individuals and by many public and private agencies in the conduct of the field work and the preparation of data for this report of the Sacramento-San Joaquin Water Supervision activities.

Landowners, water users, and the executives, engineers, managers, and superintendents of various water organizations throughout the territory covered by this work have cooperated fully in furnishing the many varied data requested.

The Pacific Gas and Electric Company and the Merced, Modesto, and Turlock irrigation districts have furnished a large number of electric power consumption records for use in the compilation of pumped diversions.

The United States Geological Survey, Department of Interior, has extended valuable cooperation in gathering and assembling stream flow data.

The United States Bureau of Reclamation, Department of Interior, has furnished data relating to inflows and operation releases of the Shasta Reservoir and Millerton Lake (Friant Reservoir).

The City of San Francisco Public Utilities Commission, Hetch Hetchy Water Supply, Kings River Water Association, San Joaquin Canal Company, Corcoran Irrigation District, Kern County Land Company, Tulare Lake Basin Water Storage District, and the United States Bureau of Reclamation have made available stream flow data for certain San Joaquin Valley streams.

The Modesto, Oakdale, and Turlock irrigation districts have assisted in observing and maintaining recording gages in the San Joaquin Valley area.

The United States Bureau of Reclamation provided the funds necessary to maintain the regular program of salinity observations in the Sacramento-San Joaquin Delta during 1952.

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FOREWORD

A contract was entered into between the United States and the Department of Public Works which provides for the performance by the Division of Water Resources of certain hydrographic work which has been formerly performed by the U. S. Bureau of Reclamation and the continuation of the Sacramento-San Joaquin Water Supervision activities of the Division of Water Resources. This contract, designated as U. S. Bureau of Reclamation Contract No. I75r-1596 and Division of Water Resources Contract No. 3-170, was originally executed on December 30, 1948, and became effective October 1, 1948. The original contract expired on March 31, 1952, and a new contract, providing for the same scope of work but with some minor revisions, was entered into on the same date. The latter contract designated as U. S. Bureau of Reclamation No. I75r-4504 and Division of Water Resources No. 3C-600 expires on March 31, 1955.

The work performed during 1952 by the Division of Water Resources under this contract includes the collection of data on stream flows and diversions for the Sacramento and San Joaquin rivers and their tributaries formerly obtained by both agencies and in addition data formerly obtained by the Bureau of Reclamation on measurements of inflows to Tulare Lake, temperatures of water, and detailed crop surveys of specified areas in the Sacramento Valley. In accordance with the terms of this contract, the Division transmitted to the Bureau of Reclamation periodic hydrographic reports for the latter's use in the operation of the Central Valley Project.

REPORT OF
SACRAMENTO-SAN JOAQUIN WATER SUPERVISION
FOR 1952

SACRAMENTO-SAN JOAQUIN WATER SUPERVISION

Water Supervision activities, resulting from the efforts of the first Sacramento-San Joaquin River Problems Conference and its Permanent Committee working with the former Division of Water Rights, were inaugurated in 1924. A complete description of the origin, history and conduct of the work is found in the 1924 and 1926 Biennial Reports of the former Division of Water Rights, in Bulletin Number 4 of that Division, and in Bulletin Number 23 of the succeeding Division of Water Resources. The latter bulletin brings together all data and measurements obtained in the first five-year period, 1924 to 1928, inclusive. Annual Water Supervision reports for subsequent years are in separately bound books similar to this report.

Objectives

At the outset, the objective of the work of Water Supervision in the valley floor areas along the Sacramento and San Joaquin river system was to afford relief to water users from the difficulties of obtaining irrigation supplies occasioned by uncoordinated diversions during years of substantially subnormal runoff. The situation called for voluntary regulation of diversions in order to alleviate as far as possible the damage from the serious shortages in the water supplies needed for irrigation, municipal consumption, salinity control in the Sacramento-San Joaquin Delta, and navigation purposes. Equitable coordination of diversions was accomplished primarily through the Water Supervision program.

There is no agreement between the water users under which a watermaster might distribute the natural water supply equitably to those entitled to receive it, but it appears inevitable that such an agreement, embracing a definite schedule of relative water rights, will be developed. Its realization will require, however, reliable data, covering a long period of years, on the actual diversions and uses of water, stream flows, stream accretions and salinity encroachment into the Sacramento-San Joaquin Delta. Looking toward that end, it has been the objective of the Division of Water Resources through its Water Supervision work, to collect and record all of the basic hydrographic data necessary to formulate an intelligent and practicable agreement defining the respective water rights of the parties affected in the area covered.

Scope of Work

The area embraced by the Sacramento-San Joaquin Water Supervision work lies on the Sacramento and San Joaquin Valley floors. It specifically covers all of the lands irrigated from the Sacramento River between Redding and Sacramento, including those irrigated from the Colusa Trough, Back Borrow Pit, Knights Landing Ridge Cut, and Yolo By-Pass above West Sacramento, from Lower Butte Creek and Butte Slough, from the Feather River

below Oroville, from the Yuba River below Smartville, from the Bear River below Wheatland, from the Sutter By-Pass and Sacramento Slough, from the American River below Fair Oaks, from the Cosumnes River below Michigan Bar, from the Mokelumne River below Clements, from the Calaveras River below Jenny Lind, from the San Joaquin River between Friant Dam and Mossdale Bridge, from the Merced River below Snelling, from the Tuolumne River below La Grange, from Dry Creek (tributary to Tuolumne River) below Oakdale-Waterford road, from the Stanislaus River below Knights Ferry, and from the Tule River below South Fork, and the irrigated areas lying on the "uplands" side of and receiving water from the San Joaquin River between Mossdale Bridge and Stockton, Old San Joaquin River and Tom Paine Slough. The area covered and its geographical relation to the Central Valley Drainage Basin are shown on Plate 1.

Water Supervision Activities

The work of the Sacramento-San Joaquin Water Supervision unit of the Division of Water Resources is divided into two portions, field work, mainly during the spring, summer and fall months, and office work during the winter and early spring months.

The field activities include:

(1) Measurement of stream flow passing the many recording stations along the river and drainage channels;

(2) Measurements of the amounts of water diverted and collection of records of use by each water user;

(3) Measurements of the amounts of water returned to natural channels, through drainage plants or gravity drains, for possible re-use;

(4) Obtaining an annual census of irrigated acreages and crops supplied by either a primary, or drainage water supply, or both;

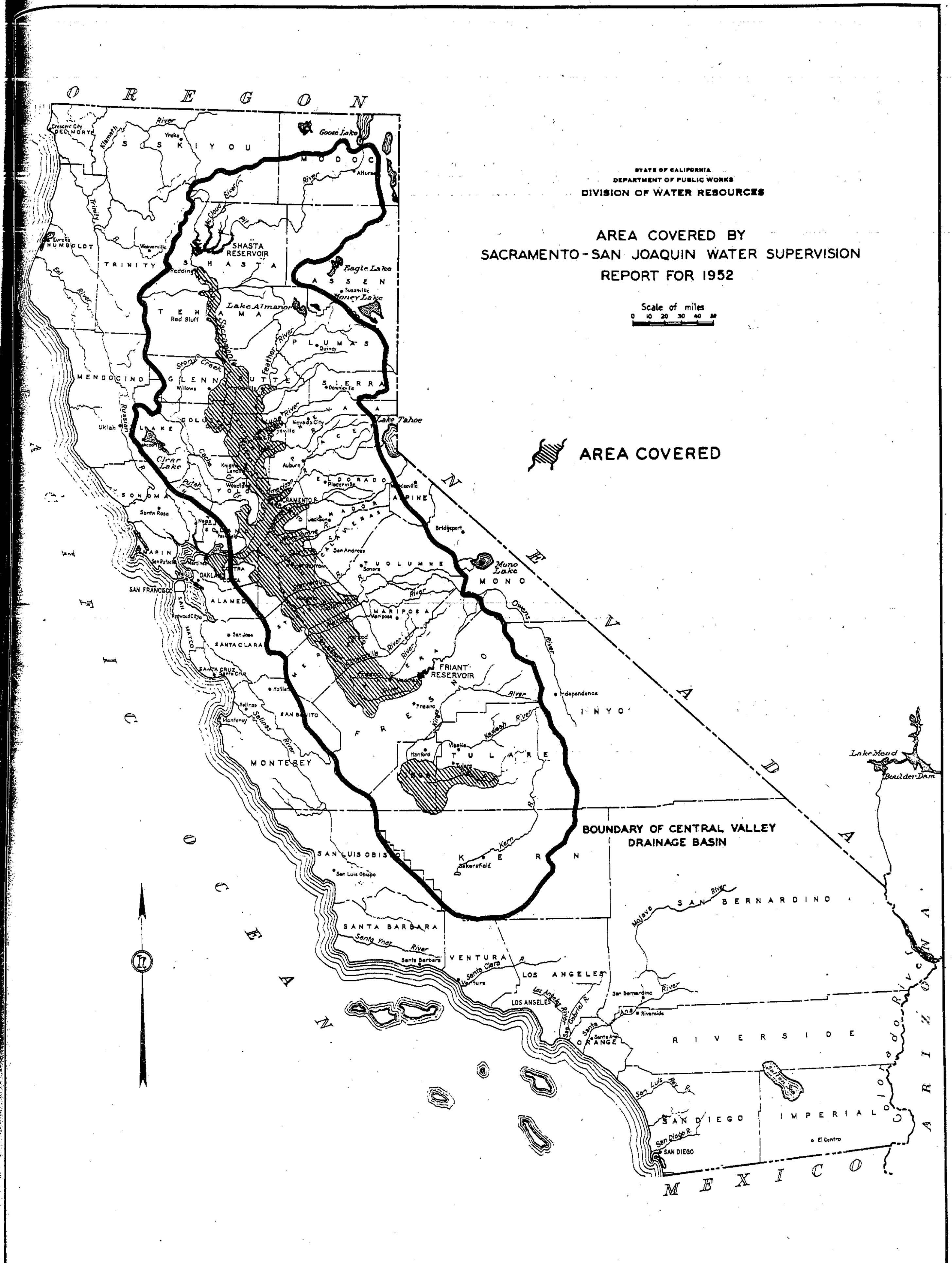
(5) Maintaining the Delta salinity observation program;

(6) Cooperation with and assistance to water users in connection with individual problems of diversion; and

(7) Assistance with hydrographic activities of cooperating public and private agencies, and of other units of the Division.

The office work comprises mainly the assembly, computation and analysis of hydrographic and other data collected during the field season for presentation in the annual report of Water Supervision. This report contains the basic records of water supply available to, and the water utilization by, each user of water from the streams covered in the area. The computation of stream flow, drainage and accretions involves the conversion of the recorded daily gage records to figures showing the daily flows in second-feet and monthly runoffs in acre-feet. The computation of the amounts of water diverted by each water user involves the reduction of data showing the operation of his diversion plant, its electric power consumption, and its efficiency. The results of these computations are then compiled in the tabulations in this report for the purpose of giving basic records

PLATE I


STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES
AREA COVERED BY
SACRAMENTO-SAN JOAQUIN WATER SUPERVISION
REPORT FOR 1952
Scale of miles
0 10 20 30 40 50
AREA COVERED
BOUNDARY OF CENTRAL VALLEY
DRAINAGE BASIN
OREGON
NEVADA
ARIZONA
MEXICO
PACIFIC OCEAN
SHASTA RESERVOIR
FRIANT RESERVOIR
Lake Tahoe
Mono Lake
Goose Lake
Eagle Lake
Honey Lake
Lake Almanor
Clear Lake
Lake Mead
Boulder Dam
SAN FRANCISCO
LOS ANGELES
SAN DIEGO

that are readily usable by all interested parties. The office work also includes the preparation of certain hydrographic data in form to be used as a guide in the ensuing season's field work.

In accordance with the provisions of Contract No. 3C-600 between the Division of Water Resources and the U. S. Bureau of Reclamation, the Division has computed, on a preliminary basis, the daily mean flows at 31 stream-flow stations, and the diversions, by reaches, from the main streams and tributaries in the Sacramento and San Joaquin valleys and has transmitted the results of these computations monthly to the Regional headquarters of the Bureau of Reclamation.

The office work in connection with the program of observing Delta salinity conditions consists of collating the results of the chlorine tests from samples taken at four-day intervals at each observation station. These salinity records are presented each month in a bulletin which is distributed to governmental agencies and to many individuals and organizations that are interested in the results.

Hydrographic Activities of Cooperating Agencies

The United States Geological Survey, Water Resources Branch, through continued cooperative agreements with the Division of Water Resources, has maintained a series of stream gaging stations in the Sacramento and San Joaquin valleys. A large amount of the stream-flow data contained in this report has been collected and computed by the Geological Survey, and much of this material has been specially completed for inclusion in this report prior to its official publication in Federal reports.

The Modesto Irrigation District, the Oakdale Irrigation District, the South San Joaquin Irrigation District, and the Turlock Irrigation District in the San Joaquin Valley have cooperated with the Water Supervision engineers by assisting in the installation of certain recorder equipped stream gaging stations. The Kings River Water Association, the Kern County Land Company, the Corcoran Irrigation District, and the Tulare Lake Basin Water Storage District have cooperated in furnishing records of stream flow for inclusion in this report.

The City of San Francisco Public Utilities Commission, Hetch Hetchy Water Supply, has continued to cooperate with the Water Supervision engineers by maintaining, operating and compiling records from a series of stream gaging stations on the San Joaquin and Tuolumne rivers in the San Joaquin valley.

The United States Bureau of Reclamation, through its offices at Sacramento and Fresno, cooperated by operating certain recorder equipped stations and by furnishing records of flow at certain stations.

The final computations of the diversion quantities, as shown in this report, are the result of giving full consideration to all measurements and records of operation during the entire season for each individual diversion.

The specific degree of cooperation by these agencies with the Water Supervision engineers is detailed in footnotes on the many stream-flow tabulations contained in this report.

SHASTA AND FRIANT RESERVOIR OPERATIONS

Shasta Reservoir on the Sacramento River above Redding was first used to store water for irrigation use during the winter of 1943-44 and releases for supplemental irrigation water along the Sacramento River commenced in the late spring of 1944. The release of water from the reservoir since 1944 has substantially changed the natural regimen of flow of the Sacramento River and in many respects greatly benefited conditions along that stream. However, it also has created added diversion problems.

Friant Reservoir (Millerton Lake) on the San Joaquin River near Friant was first used to store water for irrigation use during the winter and spring of 1943-44 and the first releases for supplemental irrigation water occurred during 1944. Friant Reservoir was operated during 1952 to divert water into Friant-Kern and Madera canals, and to regulate releases in coordination with deliveries through Delta-Mendota Canal.

The operations of the Shasta and Friant reservoirs are directed by the United States Bureau of Reclamation.

Reservoir Data

Shasta Reservoir is created by a gravity concrete dam, 528 feet high above streambed, located 13 miles upstream from Redding. The gross capacity of the reservoir with spillway gates closed is 4,500,000 acre-feet, of which a space of 4,000,000 acre-feet will be available for the active storage of water and 500,000 acre-feet of space will be reserved for silt deposits and to create head for the generation of power. The spillway steel drum gates were installed in 1948, thus providing a storage of 786,000 acre-feet above the 3,714,000 acre-feet at the fixed crest of the spillway. The ultimate storage capacity will be filled every year when the natural stream runoff from above the dam is equal to or exceeds the normal amount. Water from the reservoir is conveyed through the Sacramento Valley in the channel of the Sacramento River.

Friant Reservoir, on the San Joaquin River, is created by a gravity concrete dam about 275 feet high above streambed, and is located at the base of the foothills about 20 miles northeast of Fresno. The gross capacity of the reservoir with spillway gates closed, is 520,000 acre-feet, of which a space of 404,000 acre-feet between the top of the spillway gates at elevation 578 and the bottom of the Friant-Kern Canal outlet at elevation 459.4 feet will be available for the storage of water for flood control and to supply irrigation demands in the San Joaquin Valley. It is planned to ultimately convey the major portion of the water from Friant Reservoir through the Madera and Friant-Kern canals to lands north and south of the San Joaquin River in Madera, Fresno, Kings, Tulare and Kern counties. The

spillway gates on Friant Dam were completely installed in 1948, thus providing a storage of 84,000 acre-feet above the 350,000 acre-feet of space between the fixed crest of the spillway at elevation 560 feet and the bottom of the Madera Canal outlets at elevation 442.2 feet.

Shasta Reservoir Operation - 1952

The Shasta Reservoir has been constructed for multiple uses. It is designed to furnish water for (1) irrigation in the Sacramento and San Joaquin valleys, including the Sacramento-San Joaquin Delta area; (2) salinity control in the Delta by maintaining a flow in the lower Sacramento River sufficient to repel the intrusion of salt water from Suisun Bay; (3) navigation on the Sacramento River above Sacramento to Chico Landing; and (4) the generation of hydroelectric power. The reservoir will also be used to control floods in the Sacramento River originating above Shasta Dam.

Although the storage of water in the reservoir commenced in the early part of the winter of 1943-44, the ensuing season's subnormal runoff into it was not sufficient to fill the reservoir to the spillway lip. However, the United States Bureau of Reclamation was able to release sufficient stored water throughout the irrigation season of 1944 to augment the natural stream flows and thereby facilitate diversions of those natural flows by the diverters along the Sacramento River.

Since 1944, including 1952, the quantity of water in storage in Shasta Reservoir was sufficient to afford releases (1) to facilitate irrigation diversions by maintaining higher river levels along the Sacramento River, (2) to sustain minimum flow for navigation of approximately 5,000 second-feet upstream from Knights Landing, (3) to supplement irrigation supplies in the Delta area below Sacramento, (4) to control salinity, and (5) to supply water for exportation via the Delta-Mendota and Contra Costa canals. The Delta Cross Channel near Walnut Grove was operated during 1952 allowing approximately 3,000 second-feet of Sacramento River water to be transferred into the San Joaquin portion of the Delta. This flow afforded approximately 1,300 second-feet of water for exportation by the Delta-Mendota and Contra Costa canals and aided in maintaining the stream flow out of the Delta into Suisun Bay sufficient to hold the line of excess saline concentration (1000 ppm, chlorides) out of the lower Delta area.

The daily total mean-second-foot-flows into Shasta Reservoir during 1952 are given in Table 7. These inflows to the reservoir, as shown by the daily figures, represent the amounts of water that would have been flowing in the Sacramento River at the dam site if the dam had not been built. The inflow figures are computed by combining the effects of daily change in storage, reservoir evaporation, releases and spill.

A tabulation of the daily amounts of water in storage in Shasta Reservoir during 1952 is given in Table 8. The daily mean-second-foot-flows as measured below Shasta Dam at the United States Geological Survey station near Keswick are given in Table 9. The

flows at the Keswick station are the same as the releases from Shasta Reservoir except for the amounts of inflow between the station and Shasta Dam. The amounts of this inflow are small during the irrigation season, and can be ignored. so that the flows at the gaging station can be assumed the same as the releases from the reservoir during that period.

A chart depicting the operation of Shasta Reservoir for 1952, as prepared by the U. S. Bureau of Reclamation, giving the inflows to the reservoir, the amounts released, the water surface elevations, and the amounts of water in storage, is shown on Plate 2.

Friant Reservoir Operation - 1952

The Friant Reservoir will be used only for the storage of water for flood control and irrigation purposes. The daily total mean-second-foot inflows to Friant Reservoir during 1952 are given in Table 113. A tabulation of the daily amounts of water in storage in the reservoir during 1952 is given in Table 114. The daily mean-second-foot-flows, as measured at the United States Geological Survey gaging station below Friant, are given in Table 115. These flows are the same as the releases from Friant Reservoir except for the amounts of inflow between the station and Friant Dam. The amounts of this intermediate inflow are small during the irrigation season so that the measured flows at the gaging station are practically the same as the releases from the reservoir during that period. A chart depicting the operation of Friant Reservoir for 1952, as prepared by the U. S. Bureau of Reclamation, giving the same data as are shown by the chart for Shasta Reservoir, is also shown on Plate 2.

During the 1952 irrigation season, water stored in Friant Reservoir (Millerton Lake) was released into the Madera Canal, the Friant-Kern Canal, and into the channel of the San Joaquin River. Diversions by the Madera Canal served largely to aid in the replenishment of ground water supplies in the Madera area. The quantities of diversions into the Madera and Friant-Kern canals are shown in Table 191. The regulated releases flowing down the San Joaquin River served not only the irrigation requirements of the lands along that stream above the head of the Gravelly Ford Canal, but also the requirements of the numerous diversions below that point to Temple Slough in coordination with the deliveries of water through the Delta-Mendota Canal.

RUNOFF AND WATER SUPPLY

The variable flows of the streams entering the Sacramento and San Joaquin valleys on the north and east sides result from the rainfall runoff occurring each winter and spring season principally from December to April, the snow melt runoff occurring during the spring and summer seasons from March through June, and a combination of runoff from perennial springs and released stored water during the summer and fall seasons. Flood flows in the valley floor channels are caused by runoffs from rainfall and melting snow in the mountain areas in excess of mountain reservoir capacities, and by rain storm runoff from the vast area of minor

foothill watersheds and valley floor lands. Some incidental flood control is accomplished by reservoirs in many of the tributary watersheds including those of the Sacramento, Feather, Yuba, Stanislaus, Tuolumne, Merced, and San Joaquin rivers. The extent of the flood flows in 1952 is given by the tabulations of daily stream flows, Tables 9 through 167.

During the summer irrigation season, variations in flow of the streams on the valley floor are affected, (1) by the combination of diversions from the streams for irrigation and of accretions to the streams from both direct surface drainage and seepage from ground water, and (2) by releases of stored water for irrigation, navigation, salinity control, and the generation of electric power.

1952 Inventory of Runoff

A comprehensive summary and inventory of the monthly stream flows, diversions and accretions, in acre-feet, is contained in Tables 2, 3, and 4. This inventory is arranged to give these data for each reach of each stream covered by Water Supervision work in a summarized ready-reference form. The inventory is designed to give a picture of the complete disposition of the season's water supply, with stress upon the amounts of losses or gains in flow along each reach of each stream. Revisions in the monthly quantities as reported in the 1951 Water Supervision Report of the inventory for Tule River are shown at the end of Table 4.

1952 Runoff Comparisons

A comparison of the unimpaired flows for the period 1920-1952, in the major streams tributary to the Sacramento and San Joaquin valleys in per cent of a 60-year normal is given in Table 1. This table was re-computed in 1950 from original data furnished by the Snow-Survey section of this Division which was based on a 60-year (1889-1949) normal runoff. The annual runoff figures given in Table 1 have been modified by as much as 5 per cent from the corresponding figures given in Table 1 of the Water Supervision reports prior to 1950. These changes were the result of the change from a 50-year normal to a 60-year normal and of the omission of the runoff from the Calaveras, Cosumnes, and Bear rivers in the computations of the new 60-year normal runoff of Sacramento-San Joaquin rivers to Delta. As shown in Table 1, the 1952 unimpaired runoff may be summarized as follows:

Stream and Station	Percentage of 60-year normal
Sacramento River at Red Bluff	133 per cent
Sacramento River at Sacramento	153 per cent
San Joaquin River at Friant	162 per cent
San Joaquin River at Vernalis	156 per cent
Sacramento and San Joaquin rivers flow to the Delta	154 per cent

A comparison of the season's actual minimum flows is given in Table 213. The minimum 10-day-flows during 1952 are shown to have been:

Stream and Station	Average minimum 10-day flow
Sacramento River at Sacramento	9,880 second-feet
San Joaquin River at Vernalis	1,280 second-feet
Combined Sacramento and San Joaquin rivers flow to the Delta	11,180 second-feet

These comparisons indicate that the water supply available during the 1952 season was above normal. Observations of water utilization and the amounts of residual flows in the streams reaching the Delta in the 1952 growing season indicated that the demands for irrigation and salinity control in the Delta exceeded the natural flow supplies, and the releases of stored water from Shasta Reservoir were of primary importance in maintaining satisfactory river flows and fresh water conditions in the Delta.

Primary Irrigation Supplies

The flows onto the valley floor during the summer season through the major streams are considered to be the primary water supplies for irrigation. This primary water is differentiated from the flows available for irrigation in the lower reaches of the streams resulting from large accretions including the return of a substantial amount, through drainage, from the flows diverted for irrigation upstream. The amounts of primary water available for irrigation in the Sacramento Valley are given in the flow tabulations for those gaging stations located at the edge of the valley floor.

In the San Joaquin River service area, primary water supplies are almost entirely diverted from the upper reaches of the Stanislaus, Tuolumne, and Merced rivers by the large irrigation districts, and from the San Joaquin River at Friant Dam by the Friant-Kern and Madera canals. These upper diversions from the Stanislaus, Tuolumne, Merced, and San Joaquin rivers are included in Tables 196, 194, 193, and 191 respectively. Primary regulated water supplies in the San Joaquin River for irrigation below Friant are measured at the San Joaquin River gaging station below Friant, Table 115. These latter regulated water supplies are almost entirely diverted in the vicinity of Mendota by the large canal companies.

Accretions to Stream Flow

As evidenced by the data for stream flow and diversions, summarized in Tables 2, 3, and 4, there are large quantities of accretions to the flows of the streams and channels in their courses across the valley floors. These accretions are of major importance as available irrigation supplies. They are made up of measured flows from surface drains and of many other flows, not susceptible to direct measurement, from minor ephemeral streams, from scores of small surface drains, from seepage and return of percolated irrigation water, and from escaping underground water normally present as the result of percolated rainfall on the valley floor. The amount of total accretion along any stream reach is the summation of amounts of measured drains plus unmeasured accretions, as shown in these tabulations.

During the summer season a large portion of the accrete water is derived from upstream irrigation returning to the streams either as surface drainage or waste into open drains or as deep percolation to the ground water from which it finds its way to nearby streams or drains.

Throughout the year, along certain reaches of the stream, the flows are augmented by outflows from seepage of the natural ground water. This portion of the ground water, which is independent of irrigation as a source, is replenished from two other sources, (1) rainfall on the valley floor, a portion of which percolates to the water table during periods of abundant precipitation, and (2) infiltration and escape from stream channels through the banks during high flood flow conditions, later to partially return to that stream when its water levels recede to low flow conditions of the summer and fall.

The figures shown in all reports prior to 1947, giving the relation of "return water in per cent of diversion" as discussed under heading "Drainage and Return Water", may be misleading inasmuch as all accretions, heretofore referred to as "return water", actually may include substantial amounts of ground water seepage not derived from upstream irrigation and unmeasured contributions from small tributaries.

Sacramento Valley Accretions. In the Sacramento Valley all of the accretions to natural and regulated flows which are not diverted on lands north and west of the Sacramento Delta flow into the Delta and are available for use in that area. Practically all of the summer accrete flows in Colusa Trough, Back Borrow Pit, Knights Landing Ridge Cut, and Yolo By-Pass are mainly return waters derived from diversions from the Sacramento River. Since the Sacramento River is the main stream through the Sacramento Valley the accretions to that stream include substantial amounts of return water from irrigated areas served by water from other sources, particularly the Feather River. A large part of the summer return water flows reaching the Sacramento River through the Butte Slough Outfall Gates (Mile 84.0L) and from Sutter By-Pass through Sacramento Slough (Mile 21.2L) are of Feather River origin. However, the measured flows in Sacramento Slough, Table 57, include not only return water from Feather River diversions but also return water from Sacramento River diversions into Reclamation District No. 1500, Table 56. In Water Supervision reports prior to 1947 estimates are given showing that bank seepage into the West Borrow Pit of the Sutter By-Pass from R. D. 1500 amounts to 10 per cent of that district's diversions from the Sacramento River.

Along the Sacramento River between Colusa and Red Bluff there are no large well defined artificial drainage channels. Records or estimates of natural inflow to the Sacramento River from streams in this stretch were, however, obtained where available. Above Red Bluff to Redding there is considerable drainage water from the Anderson-Cottonwood Irrigation District, but it is not recorded.

Along the Feather River, during years of subnormal water supply, practically all of the primary regulated water is diverted upstream from, or at, the Sutter-Butte diversion dam, yet accretions accumulated below that point in amounts sufficient to afford a limited supply for all diversions.

Table 2 is designed to give a summary not only of monthly flows measured on the Sacramento Valley floor but also the computed monthly amounts of accretions (or losses, as shown by a minus sign preceding the figure) occurring along each reach of each stream between gaging stations. At the end of each series of data for one stream as shown in Table 2, there are summations of diversion and accretion quantities.

In order to compare 1952 season conditions along the Sacramento River with those of previous years, the following tabulation gives the seasonal accretions, July through September, in per cent of simultaneous diversions. This tabulation, in part, is excerpted from Table 147 in the 1946 Water Supervision Report. Since 1947 these figures were derived from the summation data in Table 2 in each report, but under the same provisions detailed in the "note" under the 1946 Table 150, except that additional tributary streams have been excluded from the unmeasured accretions and the method of computing the flow of the Sacramento River at Sacramento has been changed as detailed under "Notes on Certain Gaging Stations." These changes in computation procedure will not affect the comparative figures in the following tabulation more than 5 per cent because the contribution from the tributary creeks is a small percentage of the total accretions during the summer months.

Since 1947 the accretions used in computing the comparative accretions in per cent of diversion figures were obtained by taking the total unmeasured accretions, Red Bluff to Sacramento, from Table 2 in each report and adding to this total the measured flow in the definite return flow channels of Reclamation District drains of R. D. 70, 108, 787, 1500, 1000 and the return flow of Colusa Basin Drain including Knights Landing Ridge Cut and Sycamore Slough.

Comparative Seasonal Accretion Percentages - 1938-1952

Sacramento River - Red Bluff to Sacramento

Year	Seasonal Runoff at Red Bluff in per cent of 60-year Normal	Accretions in per cent of Diversions* July through September
1938	169	64
1939	50	36
1940	121	40
1941	165	56
1942	130	56
1943	98	53
1944	54	49
1945	77	43
1946	93	51
1947	59	52
1948	88	62
1949	70	58
1950	66	63
1951	105	57
1952	133	52

*Excludes City of Sacramento municipal.

It is apparent from the above tabulations that there are variations in the accretion percentages with relation to the seasonal runoffs. However, a definite trend in this relation indicates that summer accretions to stream flow on the Sacramento Valley floor are influenced not only by return water from irrigation but also by natural ground water seepage. Ground water seepage, as indicated by the above accretion ratio, is observed to be accelerated during those summer seasons which follow late and abundant spring rains on the valley floor.

San Joaquin Valley Accretions. The summer and fall season stream flows in the lower San Joaquin River and its tributaries on the valley floor consist mainly of accrete flows derived to a large extent, from irrigation water returning to the stream channels by way of percolation into the ground water and the latter's seepage into the channels. The exceptions to this condition are on the Tuolumne and Stanislaus rivers when irregular releases for power generation below upstream diversion points further augment the flows.

The channels of the Stanislaus, Tuolumne, and Merced rivers in their westward flow across the valley floor from the foothills are in deep degraded canyons between more or less sheer bluffs rising from 10 to 50 feet to the predominant level of the upper plains of the valley floor. The plains areas are intensively irrigated with regulated gravity water supplies derived from the upper reaches of the same streams. Thus, an abundant water supply in normal years, a deep and permeable soil and the deep river channels are all conducive to relatively steep slopes of the ground water table toward the rivers and the consequent high rate per mile of accretions to the stream flow.

The channel of the San Joaquin River between Friant and the valley trough near Mendota passes through the plains area in a deeply degraded canyon 10 feet to 100 feet deep between relatively sheer bluffs. The plains area along the south side of this reach is intensively irrigated with Kings River water through the Fresno Irrigation District distribution system. On the plains along the north side of this reach in Madera County, irrigation water is derived mainly from ground water, except where occasional parcels are served with pumped river water and with gravity supplies from Fresno River. In general the elevation of the ground water plane on the south side is above the riverbed and along the north side it is below the bed. Consequently, there are accretions from the south and losses to the north along this reach of the San Joaquin River.

The Tule River debouches onto the valley floor in the vicinity of Porterville through a shallow meandering channel. The bed of the channel as it crosses the valley floor is made up of unconsolidated sediments with high permeability. This latter fact accounts for the heavy channel losses along Tule River as shown in Table 4.

The magnitude and importance of these accrete waters in the San Joaquin Valley as a water supply is brought out in Table 3. There does not appear to be as definite a relation of accretions with respect to diversions along these San Joaquin Valley streams as exists in

the Sacramento Valley. This lack of a relation may be due, (1) to the considerable lag between the time diversions are made from the streams for storage in terminal reservoirs (Woodward, Dallas-Warner, and Owens) and the time a portion of those waters return to the stream channels after having been applied for irrigation, and (2) to the prevailing climatic effects upon rainfall, humidity, transpiration, and evaporation.

The ratio of accretion (including return water from irrigation) to diversions along the lower San Joaquin River and its tributaries, Stanislaus, Tuolumne, and Merced rivers, is considerably smaller than that for the Sacramento River. Analysis of pertinent data in Table 3 and comparison with the data contained in Table 147 of the 1946 Water Supervision report indicate this San Joaquin Valley ratio to vary between 19 and 35 per cent while the foregoing table shows the Sacramento Valley ratio to vary between 36 and 64 per cent. This difference may be attributed to the fact that, whereas, due to basin topography and geology, practically all drainage from the Sacramento River diversions is quickly returned to the river, considerable of the return water in the San Joaquin Valley may never reach the surface streams because of its percolation to ground water and its immediate recovery by drainage and deep well pumps in the areas of many of the irrigation districts for re-use through the irrigation canals.

Stream Flow Measurements

Many of the stream gaging stations, the records from which are reported herein, are maintained, operated, and rated, and the flows at them are computed, by agencies cooperating with the work of the Sacramento-San Joaquin Water Supervision. The methods used by all cooperating parties are standardized and the results obtained are equally good. In order to obtain uniformity, however, the Water Supervision engineers cooperate with the other agencies in obtaining and correlating the records for each of the cooperative stations.

During the 1952 season, 74 of the total of 158 gaging stations on streams and drainage channels for which records are reported herein were maintained, operated and rated, and the flows at them were computed, solely by the Division of Water Resources through the Water Supervision, Flood Control, and other functions.

An automatic water stage recorder is in operation at each of the gaging stations used in this work. The continuous records of water surface elevations at the stations serve two major purposes in the preparation of the data presented in this report. First, the actual water surface elevations at two adjacent stations on a stream afford the means of obtaining the water surface elevations at the pumping plants along the stream between those stations. These elevations give the pumping heads, which heads, in turn, become factors in determining the rates of diversion by the pumping plants. Second, the water surface elevation (gage height) is a factor in determining the flow of the stream, in second-feet, passing the station.

A stream-flow rating is made for each gaging station. This rating gives the flows in second-feet for each gage height at the station. Normally this gage height-flow relation, or rating, is more or less permanent where there is a fixed channel and a fixed flow regimen at the station. The rating varies however where the bed of the channel is of loose shifting sand, or heavy weed growth accumulates as the season progresses, or where there may be back-water effects from downstream conditions. In this latter case more frequent measurements of flow are made to obtain accurate records of the flows passing the stations.

Water surface elevations at any time at certain gaging stations may be derived by the reader by using Table 6 coupled with the appropriate stream-flow data in Tables 9 through 167. From the stream-flow table the flow on any desired day is interpolated into the specific station's rating table in Table 6 to give a gage height (or elevation) of the stream's water surface for that day.

Preliminary Data from Cooperating Agencies

Some of the stream-flow records submitted by cooperating agencies and included in this report must be considered "Preliminary Data" since this report is published prior to final preparation of the data for publication by those agencies. This condition is particularly true with respect to some data furnished by the U. S. Geological Survey.

Stream Flow Bulletins

During 1952, stream-flow bulletins were compiled from time to time and mailed to interested agencies and persons. The bulletins listed the results of stream-flow current meter measurements made along the Sacramento and San Joaquin river system on the valley floor by Division of Water Resources (Sacramento-San Joaquin Water Supervision) and U. S. Geological Survey engineers.

Notes on Certain Gaging Stations

Records are obtained and published in this report for 158 gaging stations in the Sacramento and San Joaquin valleys, including 6 stations not heretofore published in this series of reports. A brief description of each station is given at the bottom of the stream-flow data table. The location of each station is shown on Plate 3 in the pocket on the back cover of this report. Notes on the newly included stations, together with a repetition of notes on the Sacramento River at Sacramento, are believed desirable, however, for a better understanding of the records. These notes are as follows:

Sacramento River at Sacramento. The method of computing daily mean flows at this station, beginning with 1947, has been radically changed. Heretofore, as shown in reports prior to 1947, the low flows which are affected by tidal action, were derived from (1) the records of flows at Verona on the Sacramento River and at H Street Bridge on the American River and (2) records of diversions from and drainage to the rivers between those two upper stations and the I Street Bridge at Sacramento. The method previously used did not take into account unmeasured accretions or losses in the reach between Verona and I Street Bridge and in the American River below H Street.

The procedure employed in 1947 through 1952 involves the computation of daily mean Sacramento River flows passing Sacramento by the usual and standard practice of rating the stream at the I Street Bridge station by means of the slope-velocity method. This method requires a consideration of the gage heights recorded at the river gaging station at Snodgrass Slough (20 miles downstream from Sacramento) as well as the recorded gage heights at Sacramento. The adaptation of this method in 1947 as a means of direct rating, was accepted after Water Supervision engineers had measured and studied the problem with this method in mind for the previous three years.

The final relation for tidal influenced flow conditions at Sacramento involves the construction of a rating curve having as the ordinate the difference between the gage heights at Sacramento and at Snodgrass Slough and as the abscissa a function of velocity (fV) equalling the discharge (Q) divided by the gage height at Sacramento. Flows, in second-feet, passing Sacramento are obtained from this relation by multiplying the scale value of fV for any differential gage height, by the corresponding gage height at the I Street recorder. This relation is used for gage heights at Sacramento below 10.5 feet (a flow of 33,000 second-feet) below which tidal fluctuations are effective.

The flows for gage heights below 10.5 feet follow the exponential relation

$$Q = 1548 \text{ (I Street recorder G. H. + 3.10) (Differential - 0.60)}^{0.253}$$

where "Differential" = (I Street recorder G. H. + 3.10) minus (Snodgrass Slough G. H.).

The flows for gage heights above 10.5 feet follow the exponential relation

$$Q = 178 \text{ (I Street recorder G. H. + 9.50)}^{1.72}.$$

Tidal fluctuations cease above the 10.5-foot stage and this latter flow-stage relation exists.

During 1952, an investigation of the tidal-affected flow of the Sacramento River at Sacramento was undertaken under a cooperative agreement by the Division of Water Resources, the U. S. Bureau of Reclamation, and the U. S. Geological Survey. Principal features of the investigation were the continuous measurement of discharge at the Sacramento station throughout a 14-day tidal period, the operation of a recording current meter and a recording deflection meter as aids in studying the affect of tidal forces, and the making of additional tidal cycle measurements during the tidal flow period. Particular attention was also given to the rating of the upstream gaging stations to assure that these records were entirely dependable.

Under the terms of the cooperative agreement, the direction of the investigation and responsibility for the report thereon were assigned to the U. S. Geological Survey. Analysis and studies by the U. S. Geological Survey of the data made available by this investigation together with that obtained by the Division of Water Resources in earlier years show: (1) a factor termed "unbalanced wave-force head", introduced by tidal action, has not been taken into account, (2) neglecting the unbalanced wave-force head in the slope-velocity

method of computing the flows below 10,000 c.f.s. may introduce errors of considerable magnitude, (3) the neglect of the wave-force head in slope-velocity computations of flows in the range of about 10,000 to 18,000 c.f.s. does not introduce errors greater than might ordinarily be expected of many stream-flow records, and (4) for flows greater than 18,000 c.f.s., errors introduced by tidal activity are negligible.

The minimum flows at Sacramento during 1952 were in the neighborhood of 9,000 c.f.s. for only a short period of time and the average flows for the tidal period were above 10,000 c.f.s. Based upon the relatively large number of tidal flow measurements and the analysis of the data obtained during the 1952 season, the flows computed for the tidal-affected period by the slope-velocity method as shown in this report may be considered reliable and accurate.

Discontinued Stations. The flow records of three stream-flow stations located on the Sacramento River at Redding, and at Balls Ferry, and on the Colusa Trough (Back Borrow Pit) near College City were discontinued in April, 1952. The operation and maintenance of these stations was taken over by the Division of Water Resources from the U. S. Bureau of Reclamation under the terms of a cooperative contract initiated in October, 1948. When the contract was re-executed on April 1, 1952, these stations were specifically excluded.

The flow records for Cottonwood Creek near Friant, which was a U. S. Geological Survey and U. S. Bureau of Reclamation cooperative station is no longer included as a part of the records of this report since the operation of this station was discontinued in October, 1951.

Additional Stations Reported in 1952. The following stream-flow stations for which data have not been heretofore published in the reports of the Sacramento-San Joaquin Water Supervision, are included in the 1952 report. These stations, numbering 6 in total, were included to provide runoff data for the minor stream systems. Four of these stations are maintained and operated by the Division of Water Resources.

Goose Lake Canal near Lost Hills
San Joaquin River near Biola
Littlejohns Creek at Farmington
Ulatis Creek near Binghamton
Barker Slough near Dozier
Hass Slough near Maine Prairie

A brief description of the location, the cooperative agency involved, the drainage area where applicable, and the period of record may be found in the footnotes under the respective table of flows for each of the stations listed.

Precipitation

In the Central Valley of California direct precipitation is a negligible source of water supply for growing crops during the late spring, summer, and fall seasons. During the early irrigating season, however, the attendant cooler temperatures and higher humidities of

rain storms substantially reduce the demand for irrigation diversions, and are two of the main factors affecting the variations in demand in the same month from year to year.

The following tabulation gives the 1952 monthly total precipitation at representative valley floor rainfall stations and the monthly normals. Records are from U. S. Weather Bureau.

Station		Inches in Precipitation - 1952												
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Red Bluff	- 1952	6.32	1.60	4.31	.74	.49	.95	.20	.00	.03	.10	2.21	10.09	27.04
	- normal	4.76	4.01	3.25	1.70	1.13	.47	.03	.05	.80	1.33	2.97	4.40	24.90
Colusa	- 1952	6.71	.83	2.15	1.05	.00	.00	.00	.00	.00	.00	1.45	6.28	18.47
(High School)	- normal	3.24	2.96	2.14	1.08	.53	.27	.01	.01	.30	.66	1.65	3.25	16.10
Marysville	- 1952	9.47	2.84	4.36	1.09	.21	.68	.03	.00	.05	T	2.19	7.27	28.19
	- normal	3.86	3.50	2.76	1.47	.81	.24	.00	.01	.31	1.04	2.20	3.77	19.97
Sacramento	- 1952	8.65	1.65	4.50	1.41	.05	.45	.01	.00	.05	.00	2.04	7.27	26.08
(City)	- normal	3.72	3.09	2.57	1.51	.77	.15	T	.00	.38	.92	1.88	3.03	18.02
Modesto	- 1952	3.37	.92	2.91	1.97	.00	.08	.35	.00	.02	.00	.96	3.96	14.54
	- normal	2.18	1.80	1.74	.91	.46	.12	.01	.01	.16	.52	1.19	1.97	11.07
Merced	- 1952	5.44	.99	3.71	2.00	.16	.00	T	.00	.34	.10	.95	3.59	17.28
	- normal	2.30	1.91	1.87	1.01	.48	.11	.01	.02	.18	.49	1.17	1.80	11.35
Fresno	- 1952	3.59	.53	3.57	2.07	T	.01	T	.00	.09	.02	1.61	4.05	15.54
	- normal	1.73	1.48	1.58	.95	.44	.08	.01	.01	.21	.57	.93	1.45	9.44

Analysis of the above data show that the Central Valley floor precipitation averaged 133 per cent of normal for the 1952 calendar year.

USE OF WATER FOR IRRIGATION

The prevailing warm temperatures and a prolonged frost-free period during the summer season in the Sacramento and San Joaquin valleys favors the profitable production of wide variety of marketable crops in large quantities. The availability of irrigation water during the dry summer season affords continuous growing conditions necessary for the many crops.

The major irrigated crops in the Sacramento Valley include rice, alfalfa and clover, citrus and orchard fruits, nuts, grapes, hops, truck crops, and field crops; in the Delta area they include alfalfa, orchard fruits, corn and truck crops; and in the San Joaquin River and tributaries service area they include grapes, nuts, orchard fruits, cotton, alfalfa and clover, truck crops, corn, grain, flax, and pasture.

Irrigation Diversions

Measurements and records of diversions in 1952 have included all of the points of diversion on the valley floor along the Sacramento River and its tributaries; along the Cosumnes, Mokelumne, and Calaveras rivers; along the upland banks of the delta channels of Old San Joaquin River, Tom Paine Slough, and San Joaquin River; along the Stanislaus, Tuolumne, and Merced

rivers and Dry Creek tributary to Tuolumne River; along the San Joaquin River between Friant Dam and Durham Ferry Bridge (Vernalis); along Fresno Slough and Fresno Slough By-Pass; and along Tule River.

This report contains records of a total of 1,180 points of diversion segregated to various sources as follows: Sacramento River 323, Colusa Trough (above Colusa-Williams Highway Crossing) 34, Back Borrow Pit (extension of Colusa Trough along back levees of Reclamation Districts 108 and 787) 39, Knights Landing Ridge Cut 8, Yoly By-Pass 6, Cache Slough 1, Lower Butte Creek and Butte Slough 34, Sutter By-Pass and Sacramento Slough 59, Feather River 44, Yuba River 13, Bear River 5, American River 21, Cosumnes River 24, Mokelumne River 67, Calaveras River (including Mormon Slough) 75, Tom Paine Slough 8, Old San Joaquin River 19, San Joaquin River (below Vernalis gaging station) 63, San Joaquin River (between Vernalis gaging station and Fremont Ford Bridge) 39, San Joaquin River (between Fremont Ford Bridge and Friant Dam) 103, Fresno Slough and Fresno Slough By-Pass 15, Merced River 80, Tuolumne River 39, Dry Creek (tributary to Tuolumne River) 12, Stanislaus River 35, and Tule River 14. The locations of these points of diversion are shown on Plate 3 in the pocket at the back of this report.

All of the diversions, except 56 by gravity, are accomplished by pumping. The records of diversion by gravity are obtained by means of canal ratings established by flow measurements. In the case of the pumping diversions there are a few instances where the records are obtained by means of canal ratings but, in the main, the records are obtained from a relation established between electric power consumption, static head and plant efficiency. This is made possible by the fact that nearly all of the pumping plants are electrically operated. The relation between water pumped and power input is determined from current meter measurements of the discharge and the measured kilowatt input. At the larger pumping plants several measurements are made during each season. At the smaller plants a number of measurements are made initially to determine the ratings and thereafter measurements are made at intervals to discover any changes which may occur in the ratings. Due to intermittent operation of the smaller plants and the large area to be covered by the field engineers, it is not possible to make many discharge measurements at any one of them. However, it is believed that the rating, as initially determined, remains more or less constant and that over a period of time enough measurements are secured to determine any change in the rating. All rating measurements made by owners or cooperating agencies have been given full consideration in the final computations of the amounts of water diverted by each individual plant.

Prior to 1933 a daily diversion record for each plant was compiled. However, since that year, except for some of the larger plants, the monthly diversion records only are available. The diversions for 1952 have been computed on a monthly basis only, and the breakdown into daily records was not made. The monthly amounts of water diverted at the individual points of diversion along all of the streams covered by the Water Supervision work are given in Tables 171 through 197.

The monthly amounts of diversions in acre-feet by the large east-side irrigation districts from the Stanislaus, Tuolumne, and Merced rivers during 1952 are shown at the end of Tables 193, 194, and 196. The monthly amounts of diversions in acre-feet by the Friant-Kern and Madera canals from Friant Reservoir on the upper San Joaquin River are shown at the end of Table 191.

Fresno Slough and James By-Pass normally convey excess Kings River water flood flows into the San Joaquin River at a point above Mendota Dam, but during the irrigation season San Joaquin River water is backed up through those channels by the Mendota Dam to afford irrigation supplies to the James and Tranquillity irrigation districts and to certain other diverters. The diversion and irrigated acreage data for these streams shown in Table 192 were furnished by the U. S. Bureau of Reclamation.

Table 176, diversions and irrigated acreage by Reclamation District No. 2068 from Cache Slough, is included in this report to continue a similar record commenced in 1948. The irrigated area in the District lies outside of the established boundary of the Delta shown on Plates 3 and 4 and can be classed as a "Delta Uplands" area. The purpose of including Table 176 in this 1952 report is to present as full a record as is available of the use of water in and from the Delta, in conjunction with the Delta crop survey data in Table 198 of the 1950 report.

A seasonal summary of water utilization during the past ten years, 1942 through 1951 from the Sacramento River and its tributaries and the San Joaquin River and its tributaries as compared with the 1952 summary is shown in Table 170. This table presents an overall picture of the water utilization in these areas.

In Table 198 there are shown the average monthly diversions in per cent of the seasonal for the streams in the Sacramento and San Joaquin valleys. A summary of the monthly diversions from the Sacramento and San Joaquin valley streams for the eleven-year period, 1942 through 1952, is given in Tables 199 through 209. Table 210 shows, for the Sacramento River only, the seasonal diversions and acreages irrigated for the period 1942 through 1952, segregated to the different river sections.

Irrigated Acreage

Toward the end of the irrigating season in 1952, as was done in previous years, a complete canvass was made of acreages irrigated from each of the points of diversion covered by the Water Supervision work. The irrigated acreages for all of the points of diversion on the streams on the Sacramento and San Joaquin valley floors were plotted on suitable maps and are retained on file in the office of the Division of Water Resources for record.

The area irrigated through each individual point of diversion along the streams covered in this work is given in Tables 171 to 197 inclusive. These tabulations and the associated summarizing tables do not include data on diversions and use of water in the Delta.

The following is a summary of the total acreage irrigated during 1952 in the area covered by the Water Supervision work as shown in Table 5. This tabulation, as noted in the footnotes of Table 5, does not include the acreage of the large east-side irrigation districts in the lower San Joaquin Valley. Detailed acreage tabulations of the totals shown below, as well as those of the large irrigation districts mentioned, may be found in Tables 170 through 197 and in Table 198 (Delta Crop Survey) of the 1950 report.

Area	1952 Irrigated Acreage	
Sacramento Valley Floor above Sacramento	440,641	
San Joaquin Valley Floor above Delta	495,239	
Total area served by measured diversions		935,880
Sacramento-San Joaquin Delta - 1950 Survey		
Cropped	365,800	
Water Consuming--not cropped	82,500	
Total Delta		448,300
Grand Total		1,384,180

Table 211 shows a comparison of the acreage of rice irrigated during the period 1924 through 1952 from the stream channels within the Sacramento and San Joaquin valleys which are covered by Water Supervision work, and the total acreage of rice in California irrigated from all sources as reported by the Federal-State Crop Reporting Service.

In view of the methods of farming, which usually employ rotation of crops with summer-fallow, it is probable that the acreage of land under irrigation facilities in the area covered by the Water Supervision activities excluding the large east-side irrigation districts exceeds 1,400,000 acres.

1950 Sacramento-San Joaquin Delta Crop Survey

A complete survey of the acreages of crops, including both irrigated and non-irrigated, in the Sacramento-San Joaquin Delta was made during November and December of 1950 and January and February of 1951. as called for in the State-Federal contract described in the "Foreword" of this report. The crop segregations were plotted on a series of suitable maps of the Delta islands which are on file with the Division of Water Resources. Similar surveys of the Delta area had been made previously, the last one in 1948. All of the 1950 Delta acreage data are tabulated in Table 198 to be found in the pocket on the back cover of the 1950 report. That table gives the acreage of each cultivated or uncultivated crop segregated as to tracts and islands.

The total water consuming area of the Delta is segregated for 1950 as follows:

Total irrigated cultivated crops, not including double- or inter-crops	365,800 acres
Total idle lands below 5.0 feet in elevation, including interior water surfaces	42,900 acres
Total exterior channel water surfaces	37,600 acres
Small islands (est.)	300 acres
Total brush and trees in exterior channels (est.)	1,700 acres
Total water consuming area, 1950	448,300 acres

These data are similar and are comparable to data in Table 148 of the 1948 Water Supervision report.

Use of Water in Delta

Previous Water Supervision annual reports have included considerable analyses of the utilization of water in the Sacramento-San Joaquin Delta. The work of Water Supervision does not cover the delta area to the extent of measuring flows in the numerous interconnected channels or quantities of water diverted for irrigation, other than occasional special studies, but periodically, surveys have been made of crops and irrigated acreages. Special investigations of the Delta irrigation problems have been conducted and the results therefrom have been reported in previous reports.

In some previous reports, for years in which crop surveys were made, the total consumptive use of water has been segregated to show the use in each river delta. There was also shown a classification of the irrigated crops with respect to the peat and sedimentary soils on which they were produced.

Gross Duty of Water

The term "gross duty of water", as used in this report, is defined as being the total amount of water diverted to serve one acre of irrigated land. The gross duty for any particular period may be expressed as the amount of water diverted in acre-feet per acre irrigated, or, conversely stated, may be expressed as the number of acres irrigated per one second-foot average diversion rate. The gross duty of water does not include solely the net amount of water consumed by plants in their processes of transpiration and growth, but also includes all irrecoverable losses through evaporation and deep percolation, plus canal and conveyance losses, and those amounts of water which act as a necessary vehicle to carry irrigation heads across porous soils or to maintain fresh water ponds in the growing of rice and which return to some river or drainage channel, with little loss, to become available for re-use.

Gross duty of water figures for the individual stream channels covered by Water Supervision work are given for the Sacramento and San Joaquin valleys in Table 170.

SALINITY INVESTIGATIONS

The intrusion of salty water from San Francisco Bay into the channels of the Delta from which irrigation supplies are derived, is a matter of extreme importance and the Water Supervision work has included observations during 1952 of the saline content of the water at several stations throughout the Delta and upper San Francisco and Suisun Bay areas, with co-operation from the U. S. Bureau of Reclamation.

Purpose

The purpose of the salinity investigation, as outlined in previous reports, has been to record the occurrence and extent of salinity encroachment from San Francisco Bay, and to establish the relation between movement of salinity, stream flow to the Delta, and tidal action. As reported in Bulletin 27 of the Division of Water Resources, this relation was established for the conditions which obtained during the period of the special investigation for that bulletin and upon the basis of all data available at that time. Subsequent investigations. therefore, have been directed to the maintenance of an unbroken record of the salinity, tidal and stream flow variations, essential not only in the corroboration of the relation presently established, but as the basis for a check of possible modifications in the relation due to changes in channel and tidal conditions which may have taken place or will occur in the future. Also, during periods of low stream flow, the continuation of salinity sampling has been essential in keeping the Delta irrigators advised of conditions through periodic bulletins so that damage from the use of water of too high salt content might be averted. (Saline concentrations exceeding 1000 parts of chloride per million parts of water are toxic to the average plant and are objectionable for human consumption.)

During 1952 the continuous observations of salinity served as an important factor in determining the amounts of release from Shasta Reservoir as controlled by the U. S. Bureau of Reclamation.

Scope

The general scope of this investigation each season has been such as to insure that samples of water to be tested for salinity could be taken at regular intervals at a sufficient number of stations throughout the Delta and upper Bay region so that the advance and retreat of the salinity from early summer to late fall would be completely recorded. Plate 4 shows the limit of encroachment into the Delta of water having 1000 parts of chloride per million parts of water for the years 1931, 1938, 1943, 1944, 1945, 1946. 1947. 1948, 1949, 1950, 1951, and 1952. These certain years are chosen, first, to represent a range of runoff conditions prior to the commencement of releases from Shasta Reservoir, to wit, 31 per cent of normal runoff during 1931, 172 per cent of normal runoff during 1938, 114 per cent of normal runoff during 1943, and second, to represent the consecutive years concurrent with those releases. The salinity encroachment lines for each of the years 1920 to 1944, inclusive, may be found on the Delta map, Plate 5 in the 1944 annual Water Supervision report.

Due to curtailment of appropriations to the Division of Water Resources by the Legislature in the 1941-1942 budget, sampling for salinity at all stations in the Bay and Delta areas was stopped by the Division of Water Resources on July 15, 1941. Through cooperation of the Fontana Farms Company, the City of Antioch Water Department, the U. S. Bureau of Reclamation, the Dow Chemical Company at Pittsburg and the City of San Francisco, miscellaneous samples were taken during the 1943 season and the results of the analyses are presented in the 1943 report of Water Supervision. In that same report there are tabulated a large number of complete analyses of water from the channels of the Sacramento and San Joaquin valleys and the Delta as prepared by the U. S. Bureau of Reclamation.

A regular program of salinity sampling and testing was re-established early in 1944 as part of the activities of the Sacramento-San Joaquin Water Supervision, with the necessary funds therefor being provided by the U. S. Bureau of Reclamation under a cooperative contract. This regular program was continued throughout 1952. The records of water samples taken during 1952 from the active sampling stations are given in Table 215. A description of the location of each of these stations is contained in Table 214.

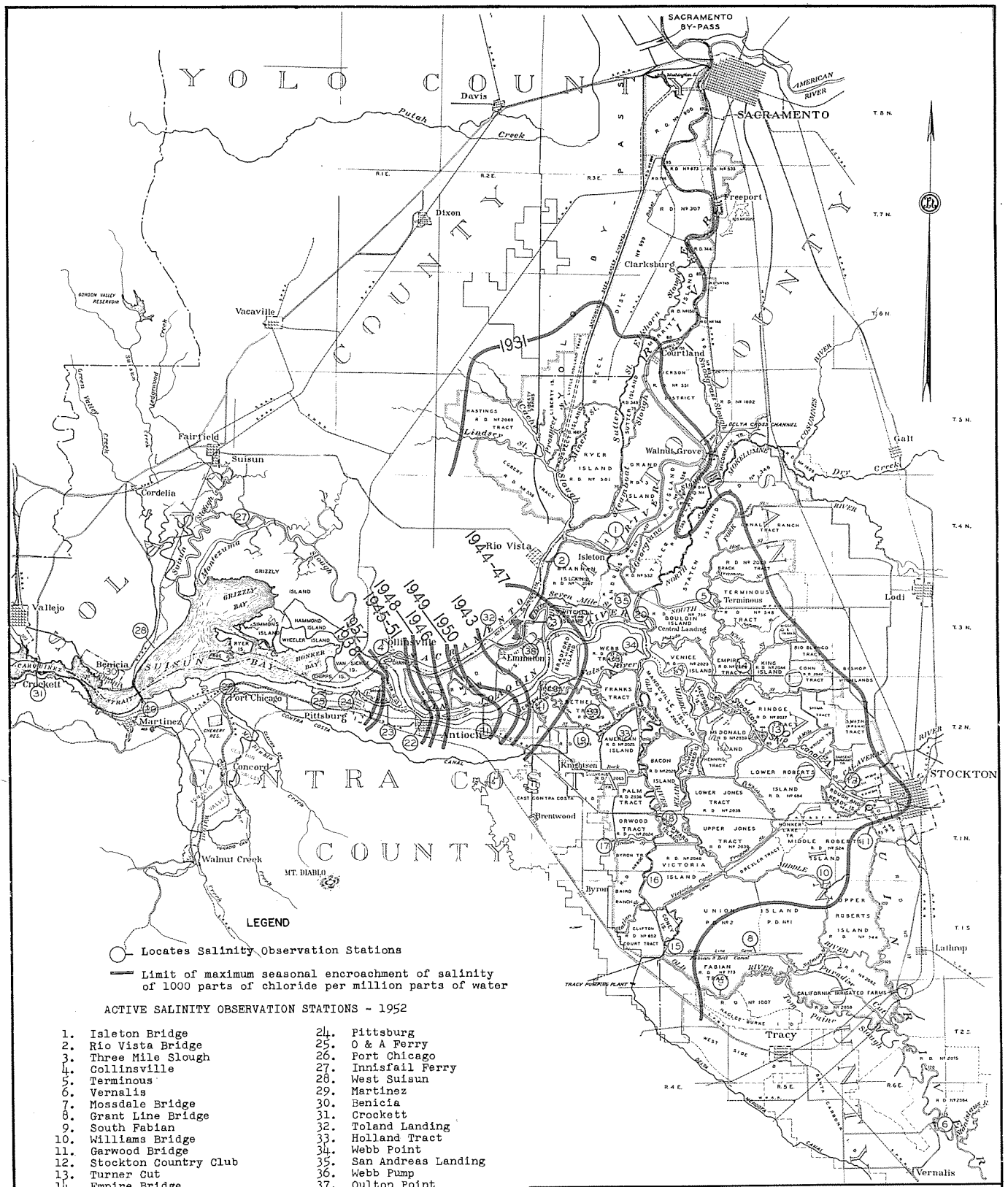
In previous Water Supervision reports, the salinity values were reported as the number of parts of chloride per 100,000 parts of water. In this report, the salinity values are reported as parts per million so as to be consistent with the analyses presented in other tables. Beginning in July, 1952, the laboratory determinations of chloride were carried out to the nearest part per million. Prior to July, 1952, the analyses were carried out to the nearest part per 100,000 but are reported as parts per million in this report.

Complete or Partial Analyses of Surface Flows

As a matter of record there is included in this report a tabulation of the results of complete or partial chemical analyses of samples of water taken at many points along the Sacramento and San Joaquin rivers and in the Delta during 1952. These results are contained in Tables 216 and 217. The results in Table 216 were furnished entirely by the U. S. Bureau of Reclamation. The results in Table 217 were furnished by the Water Quality function of the Division of Water Resources. The complete analyses reported in Table 217 were analyzed by the U. S. Geological Survey Laboratory under a cooperative agreement with the Division of Water Resources and must be considered as "preliminary data, subject to revision" since this report is published prior to final preparation of the data for publication by the U. S. Geological Survey. The methods of collecting the samples and of analysis are definitely different from the methods employed in determining the chloride component as part of the regular salinity observation activities in the Sacramento-San Joaquin Delta.

Station Maintenance and Records

The salinity sampling at all stations is done by local observers. Each observer is provided with a schedule showing the exact time for taking the samples, so that, throughout the Delta and upper bays all samples are taken at approximately one and one-half hours after the same high tide at four-day intervals.



LEGEND

Locates Salinity Observation Stations

Limit of maximum seasonal encroachment of salinity of 1000 parts of chloride per million parts of water

ACTIVE SALINITY OBSERVATION STATIONS - 1952

1. Isleton Bridge
2. Rio Vista Bridge
3. Three Mile Slough
4. Collinsville
5. Terminous
6. Vernalis
7. Mossdale Bridge
8. Grant Line Bridge
9. South Fabian
10. Williams Bridge
11. Garwood Bridge
12. Stockton Country Club
13. Turner Cut
14. Empire Bridge
15. Clifton Court Ferry
16. Victoria
17. East Contra Costa I.D.
18. Orwood Bridge
19. Dutch Slough
20. Opposite Central Landing
21. Millers Harbor
22. Antioch
23. Winter Island
24. Pittsburg
25. O & A Ferry
26. Port Chicago
27. Innisfail Ferry
28. West Suisun
29. Martinez
30. Benicia
31. Crockett
32. Toland Landing
33. Holland Tract
34. Webb Point
35. San Andreas Landing
36. Webb Pump
37. Oulton Point
38. Three Mile Slough, S.J.
39. Piper Slough
40. Webb Ferry
41. Jersey Island

Off Map. Grandview
Off Map. Point Davis
Off Map. Point Pinole
Off Map. Point Orient

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES
SACRAMENTO - SAN JOAQUIN WATER SUPERVISION

LINES OF SALINITY ENCROACHMENT

SACRAMENTO - SAN JOAQUIN DELTA AND UPPER BAYS
1952

Scale of miles

The observers are furnished with stamped containers for the sample bottles so that the latter can be mailed, as filled, to the laboratory at Sacramento. All analyses of the water were made at the Materials and Research Laboratory of the Division of Highways in Sacramento during the 1952 season.

In July, 1952, pursuant to a cooperative agreement with the U. S. Bureau of Reclamation, a revision was made in the salinity observation program wherein ten additional stations in the downstream reaches of the Delta were substituted for stations in the southeastern portion. The revision was made to provide a closer check on the salinity conditions resulting from the intrusion of salty water from San Francisco Bay.

The following is a list of the new salinity observation stations and those which were discontinued under the 1952 revised program.

Salinity Observation Stations

New	Discontinued
Toland Landing	Terminous
Jersey Island	Empire Bridge
Three Mile Slough, S. J.	Turner Cut
Oulton Point	Orwood Bridge
San Andreas	Victoria
Piper Slough	Stockton Country Club
Webb Ferry	Garwood Bridge
Webb Pump	South Fabian
Webb Point	Grant Line Bridge
Holland Tract	Williams Bridge

Table 214 gives the location and description of each station from which samples were received during 1952. Descriptions of inactive stations are not included in Table 214 but can be found in previous reports.

The maximum salinity as recorded at the stations in 1952 is shown in Table 212. For comparative purposes, this table shows also the maximum salinity recorded at these stations in representative years before and after Shasta Reservoir operation. Only presently indicative and active stations are included in this comparison.

Salinity Bulletins

During 1952 a salinity bulletin was mailed each month to many cooperating agencies and individuals giving the results of samples taken and analyzed at four-day intervals at all stations. The figures given were the laboratory determination of the number of parts of chloride per 100,000 parts of water.

Area of Salinity Encroachment

There is an apparent relation between the average stream flow to the Delta during the ten-day period of minimum flow and the area affected by salinity encroachment. Data amassed in this regard indicate that when the flow to the Delta drops below a certain amount the rate of advance of salinity encroachment greatly accelerates. A comparison of the average stream flows during the ten-day period of minimum flow and the affected acreage in the Delta is presented in Table 213. None of the area within the boundary of the Delta was affected by salinity encroachment of 1000 parts of chloride per million parts of water in 1952.

TIDE GAGES

The 28 recording tide gages located on the Delta channels and on the upper bays were continued during 1952. Previous Water Supervision reports contained detailed descriptions and locations of the gages. The Flood Control branch of the Division of Water Resources operates and maintains 18 of these tide gages. The remaining 10 are operated by Federal agencies.

TABLES

TABLE 1

ANNUAL RUNOFF IN PERCENT OF 60 YEAR NORMAL[a]

SACRAMENTO-SAN JOAQUIN RIVER SYSTEM

Water Year Ending September 30	Sacramento and San Joaquin Rivers to Delta	Sacramento River at Red Bluff	Sacramento River at Sacramento	Feather River near Oroville	Yuba River at Smartville	American River at Fair Oaks	Mokelumne River at Mokelumne Hill	Stanislaus River below Melones	Tuolumne River near La Grange	Merced River at Exchequer	San Joaquin River Friant	San Joaquin River Vernalis
Mean Annual Runoff (a) Thous. Ac. Ft.	(b) 25701	8667	(b) 18753	4778	2464	2844	789	1248	1972	1053	1885	(b) 6159
1920	53	49	49	46	53	52	59	59	68	65	70	66
1921	119	132	127	126	129	113	111	101	102	96	85	96
1922	104	77	96	106	121	115	117	115	125	135	125	125
1923	76	62	71	64	84	97	90	91	91	89	88	90
1924	29	38	31	27	24	19	24	21	28	24	24	24
1925	87	93	86	66	86	96	106	98	98	86	77	89
1926	61	65	63	66	65	49	48	49	57	58	62	57
1927	122	127	128	122	144	128	114	109	104	103	107	106
1928	85	88	90	89	99	89	81	76	77	70	62	71
1929	45	51	45	38	41	40	43	41	50	46	46	46
1930	67	70	72	82	74	58	58	59	59	49	47	53
1931	31	38	33	31	26	25	27	25	31	25	26	27
1932	80	59	70	69	86	91	94	108	107	106	109	108
1933	49	53	47	40	44	45	54	49	57	49	59	55
1934	44	52	46	42	40	40	38	34	41	34	37	37
1935	92	86	88	89	91	91	89	97	107	111	103	104
1936	96	82	92	90	105	119	114	106	110	109	99	106
1937	80	69	71	66	75	82	88	89	101	115	117	106
1938	172	169	169	178	164	159	157	164	174	197	196	183
1939	44	50	44	39	37	37	43	42	46	45	49	46
1940	116	121	119	118	116	120	109	112	113	104	100	107
1941	140	165	145	136	130	111	107	107	127	138	141	129
1942	131	130	134	139	138	138	125	119	120	122	119	120
1943	114	98	113	117	127	136	127	125	120	122	109	118
1944	57	54	55	58	57	51	57	54	67	65	64	63
1945	87	77	80	78	86	88	98	102	106	104	113	107
1946	93	93	93	87	97	101	95	94	96	89	92	93
1947	55	59	55	53	55	50	50	52	56	54	59	56
1948	80	88	84	81	82	79	80	72	72	65	64	68
1949	63	70	64	54	60	65	66	60	63	60	62	62
1950	77	66	77	80	85	94	95	86	79	68	70	76
1951	125	105	126	119	164	169	147	136	127	116	98	118
1952	154	133	153	165	172	175	168	154	156	148	162	156

(a) 60-year normal taken as 60-year (1889-1949) mean annual unimpaired flow (Oct.-Sept., incl.).

(b) Summation of unimpaired flow at foothill stations on major tributaries only, and does not include runoff from minor tributaries and from valley floor.

TABLE 2

SUMMARY AND INVENTORY OF MONTHLY STREAM FLOW- SACRAMENTO RIVER AND TRIBUTARIES - 1952

Item	Mileage	Record in Table No.	Quantities in Acre-Feet												Annual Total
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
								SACRAMENTO RIVER							
INFLOW TO SHASTA RESERVOIR (Computed)		7	748280	1140380	923130	1301360	826870	399190	301030	231950	228070	237720	236070	639230	7213280
Change in Storage		8	+139800	+28100	+324300	+461800	+60000	-138000	-297200	-404100	-226200	-95400	-39400	+226800	+40500
Unmeasured Accretions			+50120	+21720	+27570	+8340	+10730	+8710	-7530	+2550	+2930	+1180	+10130	+41570	+178020
AT KESWICK	250.5	9	658600	1134000	626400	847900	777600	545900	590700	638600	457200	334300	285600	454000	7350800
AT REDDING (a)	240.7L	10	633800	1066000	614500	NR									
CLEAR CREEK nr. IGO	237.1	22	62090	79070	61950	49310	30110	12080	6130	2900	2050	2070	4020	53610	365400
COW CREEK nr. MILLVILLE	228.8	23	165700	139800	90170	52550	55150	21020	7210	3470	3790	5190	9260	124800	678110
AT BALLS FERRY (a)	224.5	11	1005000	1384000	851600	NR									
COTTONWOOD CR. nr. COTTONWOOD	222.2R	24	184900	158000	145700	93840	56140	26570	12420	4960	4480	4770	8450	179800	880030
BATTLE CREEK nr. COTTONWOOD	221.5L	25	49680	51130	38400	48960	55710	37850	23880	15620	13380	14320	14660	44480	408070
PAYNES CREEK nr. RED BLUFF	201.5	26	25660	17360	14040	3380	1510	580	174	122	210	174	258	20570	84038
Diversions			155	146	161	26608	24235	27560	30256	30067	27824	12316	3833	159	183326
Unmeasured Accretions			+161525	+127786	+115504	+29668	+34618	+24860	+20342	+13395	+17704	+3192	+10785	+161899	+721278
NEAR RED BLUFF	198.6	12	1308000	1707000	1092000	1099000	986600	641300	630600	649000	471000	351700	329200	1039000	10304400
REDBANK CREEK nr. FOOTHILLS	191.2R	27	18620	4540	9477	1313	473	98	5	0	0	0	0	18360	52886
ANTELOPE CREEK nr. RED BLUFF (a)	180.7L	28	27360	25190	19190	16160	18970	8040	3270	2550	2330	2360	2550	22570	150540
ANTELOPE CREEK nr. MOUTH	180.7L	29	15320	13510	12310	5215	5058	1410	657	646	766	890	1008	24950	81740
NORTH FORK MILL CREEK nr. MOUTH	179.3L	32	729	718	270	238	81	130	126	143	173	241	15	422	3286
ELDER CREEK nr. GERBER	178.5	30	20420	19040	20110	14530	7750	1950	447	0	0	0	286	27600	112143
MILL CREEK nr. LOS MOLINOS (a)	178.0L	31	30720	42560	29900	41950	51990	33070	20130	10050	7990	7620	7580	25670	309230
MILL CREEK nr. MOUTH	178.0L	33	37620	38040	30870	36080	44120	26720	13360	3275	1593	1880	6831	25300	265689
THOMES CREEK at PASKENTA	173.2R	34	27380	68000	48060	72550	40630	10880	3400	930	405	401	1330	19350	293316
DEER CREEK nr. VINA (a)	168.5L	35	39910	60350	42240	64620	62620	25780	13560	10130	7720	7650	7660	32180	374420
DEER CREEK at HIGHWAY 99E	168.5L	36	51930	54480	42880	54200	52130	19210	4901	1248	762	2348	4842	27260	316191
Diversions			0	0	1	47	210	340	427	399	254	140	84	0	1882
Unmeasured Accretions			+250981	+212672	+97024	+11921	+38368	-9558	-15069	-16843	+7855	+11080	-2858	+104758	+690331
AT VINA BRIDGE	166.5	13	1731000	2118000	1353000	1295000	1175000	691800	638000	638000	482300	368400	340600	1287000	12118100
Diversions			0	0	96	30617	101618	127505	130763	131039	63843	52115	18201	0	675797
Unmeasured Accretions			-3000	-119000	+14096	+14617	+15618	-31595	+16063	+6539	-15657	-2385	+7501	+68000	-29203
AT HAMILTON CITY	149.5	14	1728000	1999000	1367000	1279000	1089000	532700	523300	513500	382800	313900	329900	1355000	11143100
CHICO CREEK nr. CHICO (a)	141.5L	37	27650	42160	53860	21500	10820	3760	2670	2020	1730	1730	2040	17720	187660
CHICO CREEK nr. MOUTH	141.5L	38	26030	35990	26190	19840	9150	2235	952	136	63	71	96	13540	133993
STONEY CREEK nr. HAMILTON CITY	136.3R	39	133400	148300	103600	63740	23550	3630	959	266	393	402	203	83980	562423
Diversions (b)			0	0	0	42269	24011	4241	4424	5440	2658	1097	575	0	84715
Unmeasured Accretions			+150570	+128710	+81210	+43989	-11689	+95376	+43813	+40338	+31002	+21024	+16276	+57480	+698099
AT ORD FERRY	130.8	15	2038000	2312000	1578000	1364000	1086000	629700	564600	548800	411600	334300	345900	1510000	12722900
Diversions			0	0	35	6159	18462	15206	15716	15638	9282	1910	735	0	83143
Unmeasured Accretions			-14000	+6000	+16035	+9159	+61462	-1294	-19984	-50162	+6682	+1010	-1365	-72000	-58457
AT BUTTE CITY	115.8	16	2024000	2318000	1594000	1367000	1129000	613200	528900	483000	409000	333400	343800	1438000	12581300
MOULTON WEIR	104.0L	41	9223	16860	0	0	0	0	0	0	0	0	0	0	26083
COLUSA WEIR	92.4L	42	307800	484000	76710	0	0	0	0	0	0	0	0	180500	1049510
Diversions			0	0	0	6017	19256	20689	24314	23639	8066	832	260	38	102111
Unmeasured Accretions			-139977	-35740	+30710	+9017	-18744	-21411	-6286	+5339	+6466	+15032	+9260	-28462	-174796
AT COLUSA	89.4	17	1567000	1785000	1548000	1370000	1091000	571100	498300	464700	407400	347600	352800	1229000	11231900
BUTTE CREEK nr. CHICO (a)	84.0L	40	54109	74620	54310	69130	60680	22810	12800	9120	8100	7590	7810	28970	410200
BUTTE SLOUGH to SACRAMENTO RIVER	84.0L	43	375	0	0	0	0	22960	12430	15740	28070	13130	10840	274	103823
R. D. 70 DRAIN	68.8L	44	5565	3463	1998	899	4211	3896	3326	2928	4199	481	205	1929	33100
TISDALE WEIR	64.2L	45	509000	687800	293200	140200	23230	0	0	0	0	0	0	219700	1873130
Diversions			0	9	0	27310	64676	82678	86847	84029	38925	6316	818	0	411616
Unmeasured Accretions			+252056	+160346	+13202	-22361	+57695	+63322	+25991	+30661	+1556	-9195	-11327	+57497	+619423
BELOW WILKINS SLOUGH	62.9	18	1316000	1261000	1270000	1181000	1045000	578600	453200	430000	402300	345700	351700	1069000	9703500
R. D. 108 DRAIN	44.0R	46	15970	7375	5746	5962	19660	23120	28210	29240	21520	2257	1420	10040	171520
R. D. 787 DRAIN	37.0R	47	3366	1539	1432	1279	2894	2253	1569	1781	1371	76	30	936	18526
COLUSA BASIN DRAIN	34.15R	51	0	0	0	0	0	10130	26790	37800	75730	29630	23860	21330	225270
SYCAMORE SLOUGH	34.15R	52	1039	307	298	341	1553	883	450	543	643	60	79	452	6648
Diversions			0	0	0	7002	34823	30358	33439	34836	16696	1301	65	0	158520
Unmeasured Accretions			+15625	+11779	+24524	+5420	-9284	-5428	-880	+14972	+32032	+26178	+18576	+20242	+153756
AT KNIGHTS LANDING	34.0	19	1352000	1282000	1302000	1187000	1025000	579200	473900	479500	519900	402600	395600	1122000	10120700
SACRAMENTO SLOUGH	21.2L	57	NR	NR	NR	NR	NR	NR	46300	48900	58610	20590	27470	NR	
FEATHER RIVER AT NICOLAUS	20.9L	63	1449000	1634000	1280000	2537000	2246000	1083000	329300	87270	113300	170800	175700	371900	11477270
COON CREEK at HIGHWAY 99E (a)	19.6L	71	41410	10990	18100	2900	1922	1071	547	606	920	971	2023	8118	89978
AUBURN RAVINE at HIGHWAY 99E (a)	19.6L	72	16580	7500	9933	1611	2558	3205	2696	2940	1875	451	792	3245	53386
NATOMAS CROSS CANAL at HEAD	19.6L	73	94570	252140	40010	14990	11260	1231	1237	242	2156	1668	2642	18600	2138146
R. D. 1001 DRAIN	19.6L	74	9523	1940	5333	1279	1301	903	178	0	0	0	14	1808	22279
FREMONT WEIR	23.0R	53	855700	960300	172100	627800	265200	0	0	0	0	0	0	0	2881100
Diversions			0	0	0	2361	11992	12493	14161	16362	10729	786	95	0	68979
Unmeasured Accretions			+1115607	+1213120	+494757	+152892	+166631	+109159	+108146	+3150	-19237	-14372	-6831	+264692	+3490414
AT VERONA	19.6	20	3165000	3196000	2950000	3263000	3173000	1761000	847600	602700	662000	580500	594500	1779000	22574300
R. D. 1000 (#3) DRAIN	6.85L	75	3039	2007	2782	1890	4134	3845	3298	3094	2217	781	904	1417	29378
R. D. 1000 (2nd BANNON SL.) DRAIN	2.1L	77	16990	5812	9683	2216	649	1468	347	0	4050	1789	0	4980	47984
LINDA CREEK nr. ROSEVILLE	1.3L	78	31660	10200	17590	1680	2723	1045	823	955	1359	1224	2287	9156	82682
AMERICAN RIVER at SACRAMENTO	1.1L	80	549400	555300	500700	828800	1167000	659200	233800	55770	32840	27930	32840	117800	4762380
SACRAMENTO WEIR	4.2R	76	0	0	0	0	0	0	0	0	0	0	0	0	0
Diversions (d)			2169	1999	2173	3633	23877	22358	29227	30093	15963	5019	4186	2120	142817
Unmeasured Accretions			+94080	+4680	+136448	-55953	-30629	+54800	-1641	-4926	-22883	-10205	-8245	-99233	+56293
AT SACRAMENTO	0.4	21	3858000	3772000	3615000	4040000	4293000	2459000	055000	628500	663600	597000	618100	1811000	27410200
SHASTA RESERVOIR TO SACRAMENTO															
Total Unmeasured Accretions			+1933587	+1732073	+1051080	+206689	+314776	+286941	+65665	+45013	+48450	+42539	+41902	+576443	+6345158
Total Diversions			2324	2154	2469	152031	343163	343428	369574	371542	214240	81832	28832	2317	1913906

NR No record.
(a) Not included in inventory or totals.
(b) Deer Creek at Highway 99 crossing after October 29, 1951.
(c) Includes diversions from Stony Creek by Glenn-Colusa Irrigation District.
(d) Includes diversions from the Feather River below Nicolaus.

TABLE 2 (CONT'D)

SUMMARY AND INVENTORY OF MONTHLY STREAM FLOW - SACRAMENTO RIVER AND TRIBUTARIES - 1952

Item	Mileage	Record in Table No.	Quantities in Acre-Feet												Annual Total
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
FEATHER RIVER															
NEAR OROVILLE	71.0	58	565000	909800	728600	1729000	1442000	659200	272500	175800	156200	158000	153400	287200	7236700
Diversions			0	0	0	29131	124684	135343	141070	127880	84504	40115	18139	60	700926
Unmeasured Accretions			+46000	+19200	-8600	+63131	+23684	-7657	-3130	+3570	+2594	+7915	+2739	-22040	+127406
NEAR GRIDLEY	49.7	59	611000	929000	720000	1763000	1341000	516200	128300	51490	74290	125800	138000	265100	6663180
SOUTH HONCUT CREEK at BANGOR ROAD	43.7L	64	18380	8580	10780	1570	540	166	30	1	0	0	135	2540	42722
Diversions			0	0	0	1	1905	1327	2385	5483	2600	256	25	0	13982
Unmeasured Accretions			+209170	+122420	+35520	+187931	+232365	+41161	+45955	+19342	+38010	+31956	+35790	+57160	+1057080
AT YUBA CITY	28.0	60	838550	1060000	766300	1952500	1572000	556500	171900	65350	109700	157500	173900	324800	7749000
YUBA RIVER at MARYSVILLE	27.3L	66	392700	525200	412500	618900	845600	518400	164080	31510	27260	29270	29260	69670	3664350
BELOW YUBA RIVER (a)	27.0	61	1137000	1455000	1106000	2295000	2191000	1078000	314300	89930	118500	177400	186500	364400	10513030
Diversions (b)			0	0	0	0	31	111	81	40	36	0	0	0	299
Unmeasured Accretions			+2750	+800	-800	+600	+431	+211	+101	+10	+76	+30	+40	+30	+4279
BELOW SHANGHAI BEND	23.0	62	1234000	1586000	1178000	2572000	2418000	1075000	336000	96830	137000	186800	203200	394500	11417330
BEAR RIVER nr. WHEATLAND	12.0L	70	167700	143300	111700	74050	30200	7820	3410	1180	2270	989	2420	19780	554819
DRY CREEK nr. WHEATLAND (a)	12.0L	69	41560	11950	19090	1390	448	111	61	25	23	53	482	4790	79983
Diversions (c)			0	0	0	48	5297	5386	5951	5792	4176	1592	634	0	28876
Unmeasured Accretions			+57300	-95300	-9700	-109002	-196903	+5866	-4159	-4948	-21794	-15397	-29286	-42380	-466003
AT NICOLAUS	9.3	63	1449000	1634000	1280000	2537000	2246000	1083000	329300	87270	113300	170800	175700	371900	11477270
OROVILLE to NICOLAUS															
Total Unmeasured Accretions			+315220	+47120	+16420	+142660	+59577	+39581	+38767	+17974	+18886	+24504	+9283	-7230	+722762
Total Diversions			0	0	0	29180	131917	142167	149487	139195	91316	41963	18798	60	744083
AMERICAN RIVER															
AT FAIR OAKS	19.2	79	555900	559400	501800	817900	1119000	660400	238400	56520	31300	28190	33030	120100	4721940
Diversions			0	0	0	20	436	807	1051	800	568	203	5	0	3890
Unmeasured Accretions			-6500	-4100	-1100	+10920	+48436	-393	-3549	+1050	+2108	-57	-185	-2300	+44330
AT SACRAMENTO	6.1	80	549400	555300	500700	828600	1167000	659200	233800	56770	32840	27930	32840	117800	4762380
SUTTER BY-PASS															
BUTTE SLOUGH TO SUTTER BY-PASS	29.4	54	615500	599200	196400	60830	30230	13230	11670	11960	9769	4451	7043	157400	1717683
WADSWORTH CANAL	25.7L	55	26260	NR	NR	4173	5453	8412	7049	7978	12690	NR	NR	10560	
TISDALE WEIR	18.9R	45	509000	687800	393200	140200	23230	0	0	0	0	0	0	219700	1873130
R. D. 1500 DRAIN	0.0R	56	32690	15730	13450	10420	25040	24620	27150	29990	28140	6536	1160	12670	227596
Diversions			0	0	0	2778	11213	13908	17467	18816	12853	1324	336	2	78717
Unmeasured Accretions									+17918	+17786	+18864				
SACRAMENTO SLOUGH	-1.0	57	NR	NR	NR	NR	NR	NR	46300	48900	56610	20590	27470	NR	
BACK BORROW PIT															
COLUSA TROUGH at COLUSA-WILLIAMS HWY.	37.0	48	162400	40440	29630	23230	37450	42910	36910	44900	68680	28260	23180	123600	661590
COLUSA TROUGH at COLLEGE CITY (a)	22.7	49	152500	48320	32040										
KNIGHTS LANDING RIDGE CUT	0.4R	50	195100	77750	32000	29300	33000	23320	2400	3622	2580	0	0	91910	490982
Diversions			0	0	0	2296	12665	14206	18123	15474	7761	2495	1975	115	75110
Unmeasured Accretions			+32700	+37310	+2370	+8366	+8215	+4746	+10403	+11996	+17391	+3865	+2655	-10245	+129772
COLUSA BASIN DRAIN	0.0	51	0	0	0	0	0	10130	26790	37800	75730	29630	23860	21330	225270
YUBA RIVER															
AT NARROWS DAM	20.5	65	261900	418200	292300	562900	819600	516200	183400	49080	41620	40410	34990	50040	3270640
DEER CREEK nr. SMARTSVILLE	20.0	67	39630	42300	35290	22530	7430	568	319	400	328	569	1090	8420	158874
DRY CREEK at VIRGINIA RANCH	12.7	68	47410	29620	29610	7410	3450	1390	480	187	293	305	331	7740	128226
Diversions			0	0	0	5959	22809	22506	22195	22598	20041	15580	13280	6321	151289
Unmeasured Accretions			+43760	+35080	+55300	+32019	+37929	+22748	+2076	+4441	+5060	+3566	+6129	+9791	+257899
AT MARYSVILLE	0.9	66	392700	525200	412500	618900	845600	518400	164080	31510	27260	29270	29260	69670	3664350
DELTA TRIBUTARIES															
CACHE CREEK nr. CAPAY (a)		81	264100	231900	130300	38480	35990	30790	30840	29800	14660	2410	900	92600	902770
CACHE CREEK nr. YOLO (a)		82	267600	228500	133700	34890	270	0	0	0	0	0	0	70590	735550
YOLO BY-PASS nr. WOODLAND		83	1275000	1166000	333900	602100	279500	27810	4000	3920	3330	1690	645	167300	3865195
SACRAMENTO WEIR		76	0	0	0	0	0	0	0	0	0	0	0	0	0
SACRAMENTO RIVER at SACRAMENTO		21	3858000	3772000	3615000	4040000	4293000	2459000	1055000	628500	663600	597000	618100	1811000	27410200
SALT CREEK nr. WINTERS		84	2115	438	1225	148	25	0	0	0	0	0	0	492	4443
PLEASANT CREEK nr. WINTERS (a)		85	5497	1396	2372	465	68	8	0	0	0	0	0	2578	12384
PUTAH CREEK nr. WINTERS (a)		86	243300	97370	86230	21780	8450	2530	1090	604	378	316	732	137100	599880
PUTAH CREEK nr. DAVIS		87	245900	89640	85020	22060	7570	1300	241	0	0	0	0	135200	586931
PUTAH CREEK at LIBERTY ISLAND ROAD (a)		88	252200	121600	116400	45810	7579	1056	672	0	0	0	0	NR	
SWEENEY CREEK nr. WINTERS (a)		89	3476	434	634	88	30	0	0	0	0	0	0	6056	10718
ULATIS CREEK nr. VACAVILLE (a)		90	1876	682	986	227	54	16	11	0	0	0	0	540	4372
ULATIS CREEK nr. BINGHAMPTON		91	NR	3229	3746	147	0	0	0	0	0	0	0	15870	
HAAS SLOUGH nr. MAINE PRAIRIE		93	3387	86	180	2	12	5	0	0	0	0	0	117	3789
BARKER SLOUGH nr. DOZIER		92	5485	310	658	0	0	0	0	10	0	0	0	1475	7938
COSUMNES RIVER at MCCONNELL		95	208200	129200	162800	146100	122500	47080	12500	2640	1660	1220	3440	17320	854660
DRY CREEK nr. GALT		96	86300	32640	67770	11570	3230	213	0	33	0	0	0	3610	205366
MOKELUMNE RIVER at WOODBRIDGE		99	98160	76500	95010	170300	245300	176000	44740	8190	14120	20940	30910	36120	1016290
BEAR CREEK nr. LOCKEFORD		100	7980	2630	4890	159	1	0	0	0	0	0	4	511	16175
CALAVERAS RIVER nr. STOCKTON		103	10360	6716	6982	1423	1882	1498	1008	700	678	0	0	2329	33576
STOCKTON DIVERTING CANAL		105	113100	35520	88390	10020	1840	1130	1110	2150	1460	0	3220	6140	264080
LITTLEJOHNS CREEK at FARMINGTON (a)		106	38960	15030	37200	2398	NR	NR	NR	NR	NR	123	325	839	
DUCK CREEK nr. FARMINGTON (a)		107	1358	327	783	0	52	98	0	0	0	0	0	296	2914
DUCK CREEK nr. STOCKTON		108	3540	544	1652	0	0	27	0	0	0	0	0	241	6004
LONE TREE CREEK nr. VALLEY HOME (a)		109	1323	24	819	254	769	1384	1374	1966	978	657	85	190	9823
LONE TREE CREEK nr. MANTECA (a)		110	5863	564	2968	2410	2140	2096	1603	1409	1528	1703	549	2434	25269
TEMPO CREEK nr. MANTECA (a)		111	3799	422	2428	840	1392	603	259	116	445	1195	345	961	12785
FRENCH CAMP SLOUGH nr. FRENCH CAMP		112	30550	9334	23880	1998	359	2592	1571	1306	1571	1891	538	3414	79004
SAN JOAQUIN RIVER nr. VERNALIS		124	544200	661900	845300	1202000	1699000	1389000	215100	83330	96400	114700	129100	225000	7205030
Total Measured Flow to Delta			6492277	5986687	5336403	6208027	6654219	4105655	1335270	730779	782819	737441	785957	2426139	41581673

NR No record.
(a) Not included in inventory or totals.

(b) Includes diversions from Yuba River below Simpson Lane Bridge.
(c) Includes diversions from the Bear River below Wheatland.

TABLE 3

SUMMARY AND INVENTORY OF MONTHLY STREAM FLOW - SAN JOAQUIN RIVER AND TRIBUTARIES - 1952

ITEM	Mileage	Record in Table No.	Quantities in Acre-Feet												Annual Total
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
SAN JOAQUIN RIVER															
INFLOW TO FRIANT RESERVOIR (Computed)		113	153957	121761	199712	353167	665526	568685	313160	130727	84742	75356	53020	82350	2802163
Change in Storage		114	+141100	-82000	-34300	-115800	+140600	+102300	+28500	-165100	-70200	-40500	+14600	+75800	-5000
MADERA CANAL			52	48	0	1325	14059	33654	47233	53703	29286	2001	0	0	181361
FRIANT-KERN CANAL			0	4725	2759	12123	28945	55675	126278	138466	69857	73015	17461	0	529304
Diversions			0	0	0	0	13	66	16	30	0	0	28	2	155
Unmeasured Accretions			+1985	-3288	+547	-2719	-7109	-1390	-2233	-1528	-179	-820	-811	+242	-17303
BELOW FRIANT	268.13	115	14790	195700	231800	452800	474800	375600	108900	102100	55620	40020	20120	6790	20790040
NEAR BIOLA (a)		116	NR	NR	NR	NR	NR	NR	NR	NR	NR	39890	21860	9040	
LITTLE DRY CREEK nr. FRIANT	264.0L	125	5690	2080	8370	2160	295	35	2	0	0	0	111	559	19302
Diversions			12	66	34	349	1168	2890	3274	3250	1424	511	158	23	13159
Unmeasured Accretions			-2482	-6749	-13683	-110935	-172757	-124613	-107	-6063	-1932	-4761	+1053	+336	-444693
AT WHITEHOUSE	219.83	117	17986	188965	226453	343676	301170	248132	105521	92787	52264	34748	21126	7662	1640490
JAMES BY-PASS (a)	208.9L	126	35800	6110	22400	20050	170800	150400	30910	8	0	0	0	0	436478
DELTA MENDOTA CANAL (b)			0	0	0	0	0	0	24450	47980	26360	23170	3582	3832	129374
Diversions (c)			1900	7709	33553	67872	134356	136322	131638	113926	52452	49673	19551	38144	752790
Unmeasured Accretions			+27694	-1456	+5400	+90596	+299786	+262690	+32107	-7081	-14792	-225	-577	+4310	+698452
NEAR MENDOTA	206.2	118	43780	179800	198300	366400	466600	374500	30440	19760	11380	8020	4580	11960	1715520
PANOCHE CREEK nr. PANOCHE (a)		127	3770	95	2790	387	41	0	0	0	0	0	96	1170	8349
Diversions			0	0	4469	14202	23127	24605	30038	22342	13172	9181	5544	2926	149606
Unmeasured Accretions			-5250	-2600	-1731	-7498	-11673	+8805	+7338	+2848	+2001	+1372	+1060	+2486	-28412
NEAR DOS PALOS	186.0	119	38530	177200	192100	344700	431800	358700	77140	266	209	211	96	11520	1563072
FRESNO RIVER nr. DAULTON (a)	184.0R	128	30950	12900	493140	23670	11820	8040	4940	849	463	587	1040	5170	1149769
CHOWCHILLA RIVER at BUCHANAN DAM SITE(a)	151.0R	130	42100	14240	47920	19440	7140	2180	633	121	62	116	587	5330	139869
SAN LUIS CREEK nr. LOS BANOS (a)		131	7160	567	2130	287	178	96	48	33	29	50	75	262	10915
SALT SLOUGH nr. LOS BANOS (a)		129	9540	35580	33070	66600	78640	70940	14480	6750	4360	2670	2940	5420	330990
Diversions			0	0	0	7	34	365	472	486	97	58	1	2	1522
Unmeasured Accretions			+91770	+1700	+7100	-103493	-190666	-133135	+30232	+16640	+17248	+11267	+6615	+9482	-235240
AT FREMONT FORD	129.5	120	130300	178900	199200	241200	241100	225200	37500	16420	17360	11420	6710	21000	1326310
MERCED RIVER nr. STEVINSON	123.75R	136	92040	81740	101200	164800	356100	246600	27530	16440	18500	11580	9920	35450	1164900
Diversions (d)			0	0	17	4	128	296	420	662	623	148	2	0	2300
Unmeasured Accretions			+28260	+56160	+86417	+119604	+89928	+153796	+6540	+2272	+1173	+2198	+352	+2340	+549040
NEAR NEWMAN	123.7	121	250600	316800	386800	525600	687000	625300	71150	34470	36410	28050	16980	58790	3037950
MERCED RIVER SLOUGH	122.2	137	8090	7500	14590	31800	98510	74120	166	0	0	0	0	0	234776
ORESTIMBA CREEK nr. NEWMAN		138	14370	1610	7250	1360	164	1	0	0	0	0	0	303	25058
Diversions			0	0	25	2352	10500	9719	11188	11131	7493	1467	137	3	54315
Unmeasured Accretions			-18124	+13621	-9808	+1146	-19551	+23118	+51633	+23977	+24324	+19186	+15051	+13763	+135336
NEAR GRAYSON	96.05	122	251936	339531	398807	557554	756623	712820	111461	47316	50241	45769	31894	72853	3378805
TUOLUMNE RIVER at TUOLUMNE CITY	91.0R	144	209871	168198	277468	390704	481467	302321	50033	26073	26539	41712	67279	132188	2173853
Diversions (e)			0	0	1226	4697	13601	12679	15542	13104	8108	2587	536	24	72107
Unmeasured Accretions			-19369	+38221	+23360	-1075	+178967	+3852	+25876	+16178	+10518	+3470	-4620	-29718	+245660
AT HETCH HETCHY CROSSING	82.65	123	445438	545950	698409	942486	1402453	1006314	171828	76463	79190	88364	94017	175299	5726211
STANISLAUS RIVER nr. MOUTH	79.7R	150	66010	105600	155700	233000	419800	300500	58790	13930	12230	13030	21670	37700	1437960
Diversions (f)			0	0	45	911	3941	3237	4236	4369	3258	1593	19	0	21609
Unmeasured Accretions			+32752	+10350	-8764	+27425	-119312	+85423	-11282	-2694	+8238	+11899	+13432	+12001	+62468
NEAR VERNALIS	76.7	124	544200	661900	845300	1202000	1699000	1389000	215100	83330	96400	114700	129100	225000	7205030
FRIANT RESERVOIR TO VERNALIS															
Total Unmeasured Accretions			+137236	+103959	+88838	+13051	+47613	+278546	+140104	+44549	+43599	+46586	+31555	+15242	+990878
Total Diversions (g)			1964	12548	42128	103842	229875	279508	370635	361469	185770	140234	43137	6824	1778234
MERCED RIVER															
AT EXCHEQUER		133	62800	68830	76520	193400	445700	296900	118400	105000	78110	24640	1560	33670	1505530
MERCED IRRIGATION DISTRICT CANAL			0	0	0	41612	87028	98860	105845	97233	68518	17705	0	0	516601
BELOW SNELLING (a)	42.1	134	NR	NR	NR	NR	371200	226100	9235	NR	NR	NR	NR	NR	
Diversions			0	0	2	61	922	1090	1111	1404	1061	454	8	0	6113
Unmeasured Accretions			+26590	+6150	+17972	+12173	+5450	+24350	+3046	-151	+508	+2107	+3286	+3210	+104691
AT CRESSEY	27.6	135	89390	74980	94490	163900	363200	221300	14690	6212	9039	8588	4838	36880	1087507
Diversions			0	0	18	177	1320	1791	2431	2336	1149	496	280	76	10074
Unmeasured Accretions			+2650	+6760	+6728	+1077	-5780	+27091	+15271	+12564	+10610	+6488	+5362	-1354	+87467
NEAR STEVINSON	4.6	136	92040	81740	101200	164800	356100	246600	27530	16440	18500	14580	9920	35450	1164900
EXCHEQUER TO STEVINSON															
Total Unmeasured Accretions			+29240	+12910	+24700	+13250	-330	+51441	+18317	+12113	+11118	+8595	+8648	+1856	+192158
Total Diversions			0	0	20	41850	89270	101741	109187	100973	70728	18655	288	76	532788
TUOLUMNE RIVER															
ABOVE LA GRANGE DAM		139	160100	159200	272400	486900	634000	446900	167100	118000	104400	86260	84060	113500	2832820
MODESTO IRRIGATION DISTRICT CANAL	53.5R		23	0	4091	47365	63060	71603	58679	41423	37047	25093	2934	154	351172
TURLOCK IRRIGATION DISTRICT	53.5L		172	403	6110	66160	107700	102300	99890	76640	61800	32620	22990	5170	581955
Unmeasured Accretions			-5005	+203	+8001	+5925	+9860	-6097	-589	+762	-446	-5177	-5136	+324	+2615
AT LA GRANGE	50.5	140	154900	159000	270200	379300	473100	266900	7962	699	5107	23370	53000	108500	1902038
Diversions			0	0	0	5	44	34	65	65	52	34	13	0	212
Unmeasured Accretions			+4200	-700	-8300	-14495	-10456	+14834	+4703	+2069	+3767	+9624	+13303	+8900	+17449
AT ROBERTS FERRY BRIDGE	39.9	141	159100	158300	261900	364800	462600	271700	12600	2703	8822	32960	66290	117400	1919175
Diversions			0	0	0	11	102	143	151	132	105	72	2	0	718
Unmeasured Accretions			+16100	+24700	+13100	+22011	+25302	+114443	+4171	+4956	+2593	+1942	-2598	-1500	+122220
AT HICKMAN BRIDGE	31.7	142	175200	183000	275000	386800	487800	283000	16620	7527	11310	34830	63690	115900	2040677
DRY CREEK nr. MODESTO	16.5R	145	30880	6720	22900	10360	7201	6184	5242	4929	5383	4802	2662	1491	111834
Diversions (h)			0	0	6	77	179	231	275	300	173	142	33	0	1416
Unmeasured Accretions			-5080	-15620	-15394	-5583	-2302	+11447	+13353	+8524	+7580	+3980	+871	+209	+1985
AT MODESTO	15.92	143	201000	174100	282500	391500	492600	300400	34940	20680	24100	43470	67190	120600	2153080
Diversions			10	10	1	46	226	322	386	384	270	148	77	25	1905
Unmeasured Accretions			+8881	-5892	-5031	-750	-10907	+22413	+15479	+5777	+2709	-1610	+166	+11613	+22678
AT TUOLUMNE CITY	3.35	144	209871	168198	277468	390704	481467	302321	50033	26073	26539	41712	67279	132188	2173853
ABOVE LA GRANGE TO TUOLUMNE CITY															
Total Unmeasured Accretions			+19096	+2691	-7624	+7108	+11497	+23870	+37137	+22088	+16203	+8759	+6606	+19546	+166977
Total Diversions			205	413	10208	113664	171311	174633	159446	118944	99447	58109	26049	5349	937778

NR No record.
(a) Not included in inventory or totals.
(b) Deliveries from Delta Mendota Canal to Mendota Pool as computed by U. S. Bureau of Reclamation.
(c) Includes diversions from Fresno Slough and James By-Pass.
(d) Includes diversions from Merced River below Stevinson.
(e) Includes diversions from Tuolumne River below Tuolumne City.
(f) Includes diversions from Stanislaus River below Mile 2.9.
(g) Includes diversions from Friant-Kern and Madera Canals.
(h) Includes diversions from Dry Creek below Clauss Road.

TABLE 3 (CONT'D)

SUMMARY AND INVENTORY OF MONTHLY STREAM FLOW - SAN JOAQUIN RIVER AND TRIBUTARIES - 1952

Item	Mileage	Record in Table No.	Quantities in Acre-Feet												Annual Total
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
STANISLAUS RIVER															
BELOW MELONES POWER HOUSE		146	71410	111000	136400	277500	561400	355500	127500	90090	54790	29180	17170	24830	1856770
OAKDALE CANAL	50.2		203	84	23	30512	47730	48259	49704	44335	34140	14796	238	84	270078
SOUTH SAN JOAQUIN CANAL	50.2		20716	1478	0	26254	44899	46412	47819	43698	20919	13322	4228	0	269545
Diversions			0	0	0	4	49	58	53	52	46	27	8	0	297
Unmeasured Accretions			+23539	+3532	+16523	-12130	-18022	-8171	+3656	+253	+2338	+1417	+1634	+7884	+22453
AT ORANGE BLOSSOM BRIDGE	44.7	147	74030	113000	152900	208600	450700	252600	33580	2458	2023	2452	14330	32630	1339303
Diversions			0	0	0	54	102	199	235	355	106	27	6	0	1074
Unmeasured Accretions			-5400	-2000	+3000	+5554	-6398	+16699	+12765	+6075	+4765	+0415	+4036	+2300	+47811
AT RIVERBANK	32.0	148	68630	111000	155900	214100	444200	269100	46110	8178	6682	8850	18360	34930	1386040
Diversions			0	0	0	14	58	558	512	618	567	186	0	0	3036
Unmeasured Accretions			+10120	+5600	-900	+10814	+29981	+26258	+11572	+8000	+7895	+7246	+2570	+100	+119256
AT RIPON BRIDGE	16.0	149	78750	116600	155000	224900	473600	294800	57170	15860	14010	15910	20930	35030	1502260
Diversions			0	0	0	1800	4331	3931	4758	4877	3334	2654	438	0	26123
Unmeasured Accretions			-12740	-11000	+700	+9900	-49459	+9631	+6378	+3247	+1554	-226	+1178	+2670	-38177
NEAR MOUTH	2.9	150	66010	105600	155700	233000	419800	300500	58790	13930	12230	13030	21670	37700	1437960
MELONES POWER HOUSE TO MOUTH															
Total Unmeasured Accretions			+15519	-3868	+19323	+14138	-43908	+44417	+34371	+17575	+16552	+14852	+9418	+12954	+151343
Total Diversions			20919	1532	23	58638	97692	99417	103081	93735	59112	31002	4918	84	570153
MORMON SLOUGH															
AT BELLOTA	0.05	104	120400	36650	96920	9930	1710	2044	2830	3124	2033	89	4322	7634	287686
Diversions			0	0	0	19	184	590	685	638	185	2	28	0	2331
Unmeasured Accretions			-7300	-1130	-8530	+109	+314	-324	-1035	-336	-368	-87	-1074	-1494	-21275
STOCKTON DIVERTING CANAL AT STOCKTON	17.6	105	113100	35520	88390	10020	1840	1130	1110	2150	1460	0	3220	6140	264080
CALAVERAS RIVER															
AT JENNY LIND	36.9	101	111800	36560	87170	10600	10110	9910	10240	10590	6310	30	5600	11610	310530
MORMON SLOUGH AT BELLOTA		104	120400	36650	96920	9930	1710	2044	2830	3124	2033	89	4322	7634	287686
Diversions			0	0	0	0	439	1025	968	973	427	137	1	0	3970
Unmeasured Accretions			+18428	+7423	+17269	+1877	-2132	+284	-1594	-1820	-589	+224	-955	-92	+38323
AT BELLOTA	25.25	102	9828	7333	7519	2547	5829	7125	4848	4673	3261	28	322	3884	57197
Diversions			0	0	0	85	817	1445	1784	1457	427	22	0	0	6037
Unmeasured Accretions			+532	-617	-537	-1039	-3130	-4182	-2056	-2516	-2156	-6	-322	-1555	-17584
NEAR STOCKTON	8.9	103	10360	6716	6982	1423	1882	1198	1008	700	678	0	0	2329	33576
JENNY LIND TO STOCKTON															
Total Unmeasured Accretions			+11660	+5676	+8202	+947	-4948	-4222	-4685	-4672	-3133	+131	-2351	-3141	-536
Total Diversions			0	0	0	85	1256	2470	2752	2430	854	159	1	0	10007
MOKELUMNE RIVER															
AT LANCHA PLANA		97	99880	77220	97550	193100	274000	195800	74150	32670	32910	33810	34160	34480	1179730
NEAR CLEMENTS	39.35	98	107900	79380	99970	187000	259300	188300	73420	30380	30670	31710	32780	34110	1154920
Diversions			0	90	54	5799	18894	23965	25182	24424	17732	12006	4538	0	132684
Unmeasured Accretions			-9650	-2826	+839	+2194	+9965	+12882	-4256	-4458	-4544	-6232	-1870	+2010	-5946
AT WOODBRIDGE	19.2	99	98160	76500	95010	170300	245300	176000	44740	8190	14120	20940	30910	36120	1016290
COSUMNES RIVER															
AT MICHIGAN BAR	34.3	94	140900	117200	131100	140700	110500	43470	12620	3890	2550	2370	4240	14690	730230
Diversions			0	0	0	0	802	1908	2291	1890	1014	140	3	0	8068
Unmeasured Accretion			+67300	+12000	+31700	+5400	+6802	+7518	+2171	+640	+124	-990	-797	+2630	+132498
AT MCCONNELL	10.7	95	208200	129200	162800	146100	122500	47080	12500	2640	1660	1220	3440	17320	854660

TABLE 4

SUMMARY AND INVENTORY OF MONTHLY STREAM FLOW - TULE RIVER AND TULARE LAKE AREA - 1952

Item	Mileage	Record in Table No.	Quantities in Acre-Feet												Annual Total
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
TULE RIVER															
NEAR PORTERVILLE	-1.0	153	25640	16330	34620	39710	45010	23050	7130	2600	1440	1340	3050	7220	207140
SOUTH FORK TULE RIVER nr. SUCCESS	0.0	154	8410	5440	17190	15090	13300	5580	1980	855	420	324	866	1810	71265
Diversions			534	111	184	262	1628	1531	1541	1501	1321	994	398	80	10085
Unmeasured Accretions			+6344	+4191	+8884	+4142	+188	-429	-645	-334	-111	-89	+80	-2738	+19483
AT WORTH BRIDGE	2.2	155	39860	25850	60510	58680	56870	26670	6924	1620	428	581	3598	6212	287803
FRIANT-KERN CANAL to TULE RIVER	11.3	160	0	0	0	0	0	6071	244441	27928	17064	15521	5897	0	96902
Diversions			11773	10529	11420	12007	15819	13784	6809	1434	385	473	2355	4118	90906
ABOVE LITTLE PIONEER DITCH	14.4	156	22880	11770	29740	NR	NR	NR	NR	NR	NR	NR	NR	NR	
FRIANT-KERN CANAL to PORTER SLOUGH		161	0	0	0	0	0	682	637	1079	1256	0	24	0	3678
ELK BAYOU above ELK BAYOU AVENUE		162	5371	421	9620	3531	11330	2690	26	225	32	0	0	62	33308
AT TURNBULL STATION	39.0	157	11850	2448	29370	20870	35440	4797	0	0	0	0	0	0	104775
INFLOW TO TULARE LAKE BASIN															
KINGS RIVER AT PIEDRA (a)		151	153400	88360	172300	317600	746900	684800	149200	107200	32900	19410	18580	37500	2828150
KINGS RIVER (S.F.)below EMPIRE WEIR #2		163	14456	1750	7813	20325	115723	91197	6304	0	0	0	0	0	257768
CROSS CREEK below LAKELAND CANAL #2		164	337	0	16228	14717	54011	27759	0	0	0	0	0	0	113052
KAWEAH RIVER at THREE RIVERS (a)		152	60990	39900	69110	105500	234100	171500	76760	21710	6870	4400	6830	13930	811600
TULE RIVER at TURNBULL STATION		157	11850	2448	29370	20870	35440	4797	0	0	0	0	0	0	104775
WHITE RIVER near DUCOR (a)		158	1980	882	8810	2800	1840	579	131	14	0	0	304	778	18118
KERN RIVER near BAKERSFIELD (a)		159	60370	53670	84730	222600	434800	302600	159900	68200	30670	23420	24870	35260	1501090
WEST-SIDE CANAL near LOST HILLS		166	1966	0	2	8742	115500	70560	0	0	0	0	0	0	196770
GOOSE LAKE CANAL near LOST HILLS		165	NR	NR	NR	NR	3872	16130	4209	5090	780	NR	NR	NR	
TOTAL INFLOW TO TULARE LAKE BED			28609	4198	55413	64654	324526	210443	10713	5090	780	0	0	0	704426
REVISED FIGURES FOR TULE RIVER FOR 1951 REPORT - TABL 4															
AT WORTH BRIDGE	2.2	151	13790	11420	16640	10120	11510	2045	189	0	0	1958	12660	18010	98342
FRIANT-KERN CANAL to TULE RIVER			0	0	1529	7793	0	10197	23395	20597	6920	0	0	0	70431
Diversions	11.3	156	6485	8573	7256	4580	8515	1820	126	0	0	28	417	5400	43200
Unmeasured Accretions			-6434	-2352	-3193	-1743	-2007	-352	+252	-166	-712	-1930	-12243	-7140	-39521
ABOVE LITTLE PIONEER DITCH			871	495	7720	11590	988	10070	23710	18930	6208	0	0	5470	86052

NR No record.
(a) Not included in inventory or totals.

TABLE 5

ANNUAL IRRIGATED ACREAGE 1943 - 1952

SACRAMENTO-SAN JOAQUIN RIVER SYSTEM SERVICE AREA
AS COVERED BY SACRAMENTO-SAN JOAQUIN WATER SUPERVISION

Stream	Year	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952
						SACRAMENTO RIVER SYSTEM					
Sacramento River Redding to Sacramento	General Rice	107366 115599	111871 122243	106545 115115	117556 124135	121590 123981	149734 124117	143495 137269	152817 108479	162233 140835	142931 139053
Colusa Trough (a) Above Highway 20	General Rice	600 2766	1540 4487	200 3882	3030 3694	1035 6574	3249 4745	3140 5561	4933 5150	4053 6640	5144 7279
Back Borrow Pit Highway 20 to Knights Landing	General Rice	2811 11684	965 9017	1585 5175	2062 7880	2295 9044	2455 7079	1272 9003	3227 5925	2855 6973	2698 5896
Knights Landing Ridge Cut Knights Landing to Yolo By-Pass	General Rice	400 1005	305 3230	230 3320	1170 2795	1975 1067	685 1265	880 1220	996 757	3174 1970	3052 540
Yolo By-Pass Above Highway 40	General Rice	1460 404	1235 1000	1594 500	620 200	1241 1895	1023 1000	860 930	650 1168	475 1390	715 0
Lower Butte Creek (a) and Butte Slough	General Rice	8729 2024	7754 1760	7824 2110	8247 1846	4524 1115	4647 660	7136 1875	7195 1537	6984 1702	8656 2850
Sutter By-Pass and (a) Sacramento Slough	General Rice	5384 3037	5889 4303	4712 6996	9380 4925	8841 3211	7918 2635	8303 6184	11651 4479	11118 6114	10060 5575
Feather River Oroville to Mouth	General Rice	24089 46566	25235 49843	25106 47865	27189 51082	28264 49749	29534 43258	31022 51131	34013 41331	31185 56503	30292 57888
Yuba River Smartville to Mouth	General Rice	6280 2310	7009 2401	8815 1085	8872 1956	8282 3630	8716 3115	8838 3300	10005 2641	9635 3415	9803 3003
Bear River Wheatland to Mouth	General Rice				NOT COVERED PRIOR TO 1949			974 0	705 0	725 0	50 0
American River Fairoaks to Mouth	General Rice	3112 0	3205 0	2935 0	2893 0	3670 0	3628 0	3865 0	4000 0	4834 0	4556 0
						SAN JOAQUIN RIVER SYSTEM					
San Joaquin River (b) Friant to Fremont Ford	General Rice		NOT COVERED PRIOR TO 1946		265888 9727	296245 10563	285884 8670	288751 14638	295874 11705	240107 9493	280397 17031
San Joaquin River Fremont Ford to Vernalis	General Rice	41143 342	42196 1464	41601 849	43094 1396	43076 1355	46385 535	45781 625	48114 390	48745 730	47394 623
Fresno Slough and James By-Pass	General Rice		NOT COVERED PRIOR TO 1946		19145 1868	17421 2698	19706 1579	22671 4081	19184 2815	23537 1700	24076 2996
Merced River (c) Snelling to Mouth	General Rice	3680 0	4509 0	4403 0	4484 0	5912 0	6494 0	7941 0	7912 0	8088 0	7465 0
Tuolumne River (c) LaGrange to Mouth	General Rice	1826 0	3161 0	3259 0	3564 0	3761 0	3745 0	4406 0	4690 0	4497 0	4788 0
Dry Creek Waterford to Mouth	General Rice				NOT COVERED PRIOR TO 1949			421 0	435 0	429 0	467 0
Stanislaus River (c) Melones to Mouth	General Rice	7360 0	7915 0	6872 0	6343 0	6598 0	7916 0	8548 0	8445 0	8336 0	7769 0
						DELTA UPLANDS AND TRIBUTARIES					
San Joaquin River - Delta Uplands Vernalis to Stockton	General Rice	19500 0	20729 0	19935 0	24505 0	25122 0	25551 0	26946 0	26604 0	26609 0	24752 0
Old San Joaquin River Delta Uplands	General Rice	(e)30475 0	32331 0	32139 0	34263 0	37859 0	40301 0	46101 0	45013 0	44811 0	
Tom Paine Slough Delta Uplands	General Rice	5058 150	5596 235	5165 221	5733 317	5278 546	5077 468	5207 383	5221 364	4745 411	5213 0
Cosumnes River Michigan Bar to Mouth	General Rice				NOT COVERED PRIOR TO 1949			1791 0	1608 0	1711 0	2110 0
Mokelumne River Clements to Delta	General Rice				NOT COVERED PRIOR TO 1949			(d) 344 0	(d) 331 0	18718 1645	18971 1585
Calaveras River Jenny Lind to Delta	General Rice				NOT COVERED PRIOR TO 1949			3571 0	4420 0	5300 0	6158 80
						TOTAL ABOVE DELTA					
Sacramento River System	General Rice	100231 185395	105008 198284	159546 186048	161019 198513	181717 200286	211589 167874	209785 216473	230192 171467	237271 225542	217957 222684
San Joaquin River System	General Rice	54009 342	57781 1464	56135 849	342518 12991	372013 14616	370130 10784	378519 19344	384654 14910	333739 11923	372356 20650
Delta Uplands and Tributaries	General Rice	55033 150	58656 235	57239 221	64501 317	68259 546	70929 468	83960 383	83197 364	101894 2055	100568 1665
Grand Totals	General Rice	269273 185887	281445 199983	272920 187118	588038 211821	622989 215448	652648 199126	672264 236200	698043 186741	672904 239520	690881 244999

(a) Figures for General Crops include acreage flooded for gun clubs.
(b) Figures exclude acreages irrigated from Madera and Friant-Kern Canals.
(c) Figures exclude acreage in Merced, Turlock, Modesto, Waterford, Oakdale and South San Joaquin Irrigation Districts.
(d) Woodbridge to Delta.

TABLE 6

RELATION OF GAGE HEIGHT TO STREAM FLOW - 1952 SEASON

SACRAMENTO-SAN JOAQUIN VALLEY STREAM GAGING STATIONS

STATION	Gage height, U.S.E.D. elevation, for rated flows of:								
	2000 cfs	3000 cfs	4000 cfs	5000 cfs	6000 cfs	7000 cfs	8000 cfs	9000 cfs	10000 cfs
Sacramento River at Sacramento	Flows under 30000 cfs are affected by tidal action and are rated by slope-velocity methods not applicable to this table.								
at Verona				11.0	11.7	12.4	13.0	13.6	14.1
at Wilkins Slough			24.9	26.4	27.9	29.2	30.5	31.8	33.1
at Colusa				39.8	40.9	41.9	42.9	43.9	44.8
at Butte City				70.3	70.7	71.2	71.7	72.1	72.6
near Red Bluff (a)				254.6	255.0	255.4	255.8	256.1	256.5
	200 cfs	500 cfs	1000 cfs	2000 cfs	3000 cfs	4000 cfs	5000 cfs	6000 cfs	7000 cfs
Feather River									
near Oroville (a)		185.7	187.3	189.5	191.3	192.9	194.4	195.9	197.2
at Nicolaus	20.0	20.7	21.4	22.6	23.6	24.5	25.2	25.9	26.6
American River									
at Fair Oaks (a)	65.6	66.4	67.0	67.9	68.4	68.9	69.4	69.8	70.3
San Joaquin River									
near Vernalis		14.3	15.3	16.8	18.2	19.3	20.2	21.1	21.8
at Hetch Hetchy Crossing			19.7	21.6	23.2	24.4	25.4	26.4	27.3
near Grayson	26.0	27.3	28.0	32.1	33.7	35.0	36.0	37.2	39.3
near Newman	52.8	53.8	55.0	56.8	58.4	59.7	60.8	61.8	62.8
at Fremont Ford	59.8	61.5	63.4	65.7	67.4	68.8			
Merced River									
at Cressy Bridge (b)	2.0	3.4	5.0	7.3	9.2	10.8	12.3	13.6	14.8
Tuolumne River									
at Modesto (a)		33.6	39.1	41.6	43.6	45.6	47.2	48.6	49.9
Stanislaus River									
near Mouth (b)	16.2	17.5	19.4	22.7	25.7	28.1			

(a) U.S.G.S. Datum. (b) Assumed Datum.

TABLE 7

INFLOW TO SHASTA RESERVOIR - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	15910	55610	13050	25720	18000	8750	6190	4210	2730	4890	3500	13680
2	12830	47260	12200	24690	16880	8490	6360	3670	3770	4970	1940	7060
3	11980	30560	12470	24810	16160	8260	6180	2360	4230	4220	3830	5340
4	10900	25670	10930	25560	15130	8360	6060	4310	4760	3550	4320	4840
5	10660	23970	10530	26980	14060	8170	6100	4800	4600	3030	3860	8870
6	10880	21770	12350	27860	13650	8020	5360	3960	3310	3910	3970	17630
7	10320	20410	10490	30080	18970	7600	4840	5100	2180	3890	4020	17710
8	7860	19760	10460	29740	20490	7630	4820	4600	3750	4240	3460	9660
9	8320	18600	10580	27040	16800	7700	5460	2530	4520	3790	2100	10500
10	10370	17600	12060	25320	14530	8130	5080	2100	3630	4000	4260	18300
11	12770	22520	12620	24370	15380	6850	6250	4680	3570	3390	4230	14600
12	11550	19220	12460	23260	14660	6980	5220	4320	4600	2180	4510	10640
13	8380	18290	11160	24240	14090	6800	3330	4510	2820	3340	8320	8440
14	16690	14150	14000	22560	13480	4740	4160	4710	2640	3720	5830	7210
15	11970	14060	12710	20510	13150	4470	4560	3900	4960	4000	4800	7000
16	10210	18520	12140	19730	13100	5810	5200	2470	4080	4110	3340	6630
17	8330	19080	14410	19740	13300	7210	5160	2630	3880	4710	4370	5900
18	7610	17710	21100	19020	12870	6000	4930	3460	3780	3770	3820	7100
19	8730	16270	17860	19680	12100	6650	4340	4190	4630	2110	4220	7630
20	13210	15200	14290	18450	12020	7250	2540	4690	4610	4430	4150	7360
21	10400	14380	12780	18150	11850	5300	4590	4340	2090	3850	4170	5010
22	9510	14380	11650	16980	11140	3750	4980	4310	4030	4010	3210	5350
23	9660	13940	11640	17700	11020	5650	4780	2610	4280	4730	2400	6120
24	18010	13400	12060	17360	11570	6010	5270	2060	4440	4220	4440	5730
25	17130	12810	17320	17300	10960	5070	5210	3940	4520	3840	3920	7020
26	19940	12280	20140	17120	10610	5180	3360	4440	4910	1700	4210	14120
27	14370	12150	21840	17260	10620	6670	2750	4290	3800	4250	4100	17760
28	13850	12130	23120	18580	10000	7280	4170	4340	2490	3660	3990	9900
29	12240	12240	25160	17230	9960	6340	4720	4250	2660	4160	3030	14030
30	14390	—	26610	19780	9230	6140	5130	2890	4510	4560	2700	25740
31	18280	—	25220	—	9100	—	4730	2270	—	4130	—	15400
Mean	12170	19826	15013	21894	13448	6709	4896	3772	3829	3866	3967	10396
Runoff in Ac.Ft.	748280	1140330	923130	1301360	826870	399190	301030	231950	228070	237720	236070	639230
	Water Year Total 7786150							Calendar Year Total 7213280				

This is the total mean second-feet flow inflowing to Shasta Reservoir as computed by taking a summation of the change in storage, release, spill and evaporation; and represents the natural flow passing the dam site if the dam had not been constructed. Drainage area is 6665 square miles. Records for 1952 computed by U. S. Bureau of Reclamation.

TABLE 8

DAILY CONTENT OF SHASTA RESERVOIR IN ACRE-FEET - 1952

Date	Figure given is amount in storage at end of day in thousands of acre-feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3500.7	3717.5	3655.8	4008.0	4438.6	4499.6	4350.8	4049.3	3643.4	3430.2	3332.8	3312.2
2	3508.3	3784.6	3664.0	4038.2	4440.4	4501.6	4343.0	4035.5	3633.0	3429.2	3327.0	3316.6
3	3510.8	3819.1	3667.7	4068.7	4443.3	4500.1	4336.0	4021.7	3622.7	3425.7	3324.8	3318.3
4	3510.8	3835.0	3668.7	4100.9	4444.5	4499.3	4320.3	4009.3	3613.7	3421.0	3323.1	3319.5
5	3508.3	3833.2	3667.7	4135.6	4443.6	4498.7	4322.4	3997.0	3604.0	3416.6	3320.7	3329.2
6	3508.3	3810.6	3670.6	4172.1	4445.7	4498.1	4315.7	3983.3	3594.5	3412.4	3318.8	3359.6
7	3508.3	3783.1	3671.1	4214.6	4460.3	4496.3	4307.4	3971.1	3581.7	3409.4	3316.6	3389.0
8	3502.0	3753.7	3671.1	4248.8	4475.1	4496.3	4298.7	3958.8	3571.6	3402.8	3313.9	3396.4
9	3495.7	3723.5	3673.1	4271.7	4481.0	4494.5	4288.6	3942.5	3563.9	3400.5	3308.1	3406.2
10	3494.5	3688.7	3676.2	4288.9	4483.3	4492.2	4278.3	3928.9	3553.8	3399.8	3306.9	3430.9
11	3498.5	3677.0	3680.7	4303.3	4486.8	4486.8	4271.7	3918.1	3543.6	3391.4	3305.5	3448.3
12	3499.0	3666.6	3682.7	4315.7	4489.8	4481.0	4263.1	3904.6	3536.0	3386.5	3304.8	3455.7
13	3491.5	3652.4	3682.7	4330.8	4490.7	4475.1	4253.4	3891.2	3525.9	3382.6	3312.2	3459.5
14	3501.7	3631.7	3687.4	4342.7	4494.2	4466.8	4243.1	3877.8	3515.8	3379.2	3315.9	3460.7
15	3504.5	3617.6	3691.3	4349.6	4497.8	4460.3	4231.7	3864.4	3508.3	3374.3	3317.1	3462.0
16	3503.0	3622.7	3697.3	4355.4	4501.6	4451.5	4222.0	3848.3	3503.2	3371.8	3315.1	3462.7
17	3498.2	3631.7	3705.7	4361.2	4504.6	4445.7	4212.6	3835.0	3495.7	3370.6	3315.1	3460.7
18	3492.0	3638.2	3727.2	4366.1	4504.6	4436.9	4203.3	3821.7	3488.2	3368.2	3314.2	3462.0
19	3493.2	3640.8	3742.9	4371.3	4502.8	4431.0	4191.9	3808.5	3481.2	3362.0	3313.4	3463.2
20	3505.0	3642.1	3751.6	4375.1	4501.0	4425.2	4180.6	3795.2	3478.2	3359.6	3312.2	3460.7
21	3506.3	3640.8	3755.8	4378.6	4502.2	4417.9	4170.2	3782.0	3407.7	3359.6	3310.5	3453.2
22	3509.3	3640.8	3759.5	4382.9	4501.6	4409.1	4159.5	3769.3	3463.5	3357.2	3307.7	3445.8
23	3510.0	3640.8	3767.4	4390.2	4500.7	4401.8	4148.2	3753.7	3459.5	3354.7	3303.8	3439.6
24	3530.2	3638.7	3770.1	4396.6	4501.6	4396.0	4139.0	3742.4	3455.0	3352.3	3303.8	3433.4
25	3547.7	3636.4	3784.9	4404.1	4501.6	4385.8	4130.0	3729.3	3453.2	3349.9	3303.8	3429.9
26	3569.8	3640.2	3805.8	4411.7	4499.0	4375.7	4117.4	3717.5	3449.3	3343.8	3302.8	3440.8
27	3580.7	3643.9	3829.7	4418.7	4499.6	4370.2	4106.2	3706.5	3445.8	3342.6	3302.8	3461.2
28	3589.4	3647.2	3859.0	4426.0	4498.4	4367.0	4094.8	3696.3	3440.8	3340.1	3302.8	3463.7
29	3593.5	3650.8	3899.2	4429.6	4497.8	4366.1	4083.9	3684.8	3433.4	3338.9	3299.0	3474.4
30	3604.8	—	3939.8	4436.9	4495.7	4358.9	4074.2	3671.8	3431.4	3337.7	3296.6	3510.5
31	3622.7	—	3975.1	—	4496.7	—	4061.7	3657.6	—	3336.0	—	3523.4
Monthly Change	+139.8	+28.1	+324.3	+401.8	+60.0	-138.0	-297.2	-404.1	-226.2	-95.4	-39.4	+226.8

Annual Gain or Loss in Storage: Calendar Year +40500; Water Year +874100 Acre-Feet.
Differences in Storage 1951 to 1952: Maximum +464400; Minimum +8301 Acre-Feet.

Reservoir water level recorder maintained by U. S. Bureau of Reclamation.

TABLE 9

FLOW OF SACRAMENTO RIVER AT KESWICK - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8290	10400	10700	8850	17800	7900	9560	10600	9680	5740	5060	6200
2	9570	14700	8650	8880	16400	8590	9460	10700	9670	5760	5010	4900
3	10300	15000	10800	9220	15100	8590	9570	10600	9160	5690	5080	4550
4	12000	17100	10900	9040	15100	8630	9490	10700	9270	5640	5080	4510
5	12200	25300	11500	9140	14400	8620	9490	10600	9110	5690	5050	4540
6	11400	33600	11800	9040	12900	8620	9520	10600	8620	5700	5080	4930
7	11600	34400	10800	9060	11900	8620	9560	10600	8650	5710	5010	4800
8	11700	34200	10500	9730	13300	8180	9570	10600	8620	5710	5060	5740
9	11100	34100	10500	16000	15100	8660	9590	10600	8580	5650	5080	6300
10	11700	33900	10400	17300	15600	9520	9540	10600	8680	5720	5020	7080
11	11900	29100	10600	17200	13800	9570	9510	10600	8710	5680	5070	6920
12	12500	25200	11600	17200	13400	9560	9510	10700	8650	5650	5060	6840
13	13100	25400	11700	17300	13600	9540	9490	10600	8100	5700	5040	6820
14	13700	25200	11900	17200	11200	9460	9590	10600	8170	5690	4540	6750
15	11900	21800	11800	17200	10800	9490	9570	10600	8140	5680	4570	6750
16	11000	16700	10600	17100	11500	9620	9570	10700	7830	5640	4510	6750
17	11400	15000	10500	17100	11600	9540	9590	10600	7280	5680	4470	6760
18	11200	15000	11000	17000	13600	9460	9600	10700	7220	5690	4510	6730
19	9250	14900	10800	17000	13400	9510	9590	10600	7240	5190	4980	7220
20	9420	15000	10700	17000	12600	9570	9570	10700	6760	5070	4890	9420
21	9420	15100	10700	17000	11400	9570	9620	10600	6790	5070	4680	9270
22	9250	14800	10300	15200	11500	9590	9590	10600	6770	5180	4620	9520
23	9350	15000	9390	13900	11400	9620	9590	10700	6750	5120	4640	9420
24	9420	15000	10400	13900	11400	9090	9620	9670	6490	5040	4500	9450
25	9620	12500	10300	13900	12200	9300	9600	9680	5960	5060	4400	9270
26	9890	11000	9830	14000	10700	9300	9620	9680	5920	5060	4400	9660
27	9970	10600	9210	14100	10600	9300	9620	9670	5890	5050	4610	9620
28	9880	10700	8660	14800	11100	9360	9620	9700	5900	5070	4650	9490
29	10900	10800	6390	16200	10600	9460	9620	9680	5960	5060	4670	9670
30	9480	—	6430	16900	9650	9380	9780	9670	5940	5100	4650	10000
31	9630	—	6460	—	8380	—	10600	9720	—	5060	—	8990
Mean	10710	19710	10190	14250	12650	9174	9607	10390	7684	5437	4800	7383
Runoff in Ac.Ft.	658600	1134000	626400	847900	777600	545900	590700	638600	457200	334300	285600	454000
	Water Year Total 7100500								Calendar Year Total 7350800			

U. S. Geological Survey and Division of Water Resources cooperative station located at Mile 250.5 above Sacramento. These flows include releases from Shasta Reservoir. Drainage area is 6,710 square miles. Period of record 1938 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 10

FLOW OF SACRAMENTO RIVER NEAR REDDING - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7810	10500	10200	8910								
2	8970	14700	8380	8970								
3	9760	14800	10300	9210								
4	11100	16600	10400	9090								
5	11400	23300	11000	9060								
6	11000	30000	11600	9120								
7	11000	30900	10700	9150								
8	11100	30700	10400	10500								
9	10500	30600	10100	14800								
10	11100	30400	10200	16300								
11	11900	26900	10200	16200								
12	12300	23600	11300	16200								
13	12600	23800	11400	16400								
14	14100	23500	11500	16300								
15	11500	21100	12100	16300								
16	10500	16700	10700	(a)								
17	10000	14500	10400									
18	10700	14400	10900									
19	8710	14400	10600									
20	9120	14400	10600									
21	9210	14500	10400									
22	8940	14400	10200									
23	9090	14700	9290									
24	9530	14500	10200									
25	9530	12300	10200									
26	9700	10500	9670									
27	9760	10400	9150									
28	9700	10100	8520									
29	10200	10300	6420									
30	9260	—	6420									
31	9440	—	6350	—		—			—		—	
Mean	10310	18530	9994									
Runoff in Ac.Ft.	633800	1066000	614500									
	Water Year Total								Calendar Year Total			

Division of Water Resources and U. S. Bureau of Reclamation cooperative station located at Mile 240.7 above Sacramento. Station is located below the diversion dam of Anderson-Cottonwood Irrigation District and is also known as Sacramento River above Churn Creek Pumps. Period of record 1945 to April. 1952. Records for 1952 computed by Division of Water Resources.
(a) Station discontinued April 16, 1952.

TABLE 11

FLOW OF SACRAMENTO RIVER AT BALLS FERRY - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	11800	26800	13200	10900								
2	12300	30000	11100	11300								
3	12600	24000	12800	11400								
4	13000	22500	13900	11400								
5	13800	27100	13700	11200								
6	14200	34700	15600	11500								
7	15100	36200	16000	11500								
8	14800	35600	14700	12200								
9	14000	35200	13400	16500								
10	15500	34700	13400	18000								
11	22500	32900	13000	17900								
12	26000	27200	14200	17900								
13	21400	26800	14000	18000								
14	29300	26300	15400	18200								
15	20600	24200	24100	(a)								
16	16700	23900	17100									
17	15400	19300	15300									
18	14500	18200	18300									
19	12000	19500	18100									
20	15400	20900	14800									
21	13700	18700	13700									
22	12600	18700	13000									
23	12300	22800	12000									
24	22600	19400	12600									
25	20600	17200	12900									
26	19000	14300	13000									
27	16000	13900	12200									
28	14600	13300	11200									
29	14400	13400	9130									
30	13700	—	8870									
31	16400	—	8630	—		—			—		—	
Mean	16350	24060	13850									
Runoff in Ac.Ft.	1005000	1384000	851600									
	Water Year Total								Calendar Year Total			

Division of Water Resources and U. S. Bureau of Reclamation cooperative station located at Mile 224.5 above Sacramento. Period of record 1945 to April, 1952. Records for 1952 computed by Division of Water Resources.

(a) Station discontinued April 15, 1952.

TABLE 12

FLOW OF SACRAMENTO RIVER NEAR RED BLUFF (IRON CANYON) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	14900	31300	15600	13600	22300	10300	10800	10800	9840	5750	5340	7910
2	14100	48500	14000	14400	20700	10200	11000	11000	9780	5800	5370	12100
3	14600	36100	14300	14400	18700	10600	10700	10900	9780	5860	5390	6670
4	14300	29700	16300	14500	18200	10500	10700	10900	9320	5840	5480	5930
5	15500	32400	15600	14500	17800	10400	10500	10800	9320	5910	5450	8820
6	16300	40000	17800	15100	16700	10400	10400	10800	8870	5930	5410	14700
7	17100	43800	21600	15300	15800	10600	10400	10800	8870	5860	5410	39900
8	17800	42800	18800	15400	19900	10300	10300	10800	8870	5910	5430	15400
9	17000	42300	16300	19200	19700	10200	10300	10800	8870	5860	5450	14200
10	18700	41600	16000	21300	19200	11300	10300	10800	8980	5860	5480	28900
11	27900	41000	15500	21300	19000	11400	10200	10900	8980	5930	5450	30200
12	40300	33100	16000	21200	16600	11300	10200	10800	8950	5890	5500	14800
13	31000	31900	16400	21300	17900	11100	10200	10800	8760	5860	5910	11900
14	44600	30900	18700	21900	15600	11000	10300	10700	8480	5860	7920	10700
15	31000	29300	35600	21100	14000	10900	10200	10800	8430	5910	6220	9980
16	22400	28700	25200	20800	14000	10900	10200	10700	8400	5860	5980	9580
17	19700	24200	22000	20500	14700	10800	10200	10800	7510	5840	5430	9320
18	19000	21900	23200	20500	15900	10800	10100	10800	7380	6100	5280	9150
19	16200	22400	21800	20800	16200	10600	10100	10800	7380	6030	5230	14000
20	18600	25800	19400	20600	16200	10600	10100	10700	7110	5570	5700	26400
21	17200	22200	17300	20300	14400	10700	10200	10700	6850	5480	5700	14900
22	15400	21300	16200	19700	14300	10700	10100	10700	6880	5750	5300	13200
23	14800	29200	15400	17500	14100	10700	9920	10700	6770	5640	5280	12500
24	29700	24000	15000	17600	13800	11100	10000	10200	6980	5590	5170	12000
25	32500	20900	16700	17700	14700	10700	10000	9840	6050	5390	5280	12300
26	25000	17000	17700	17800	14000	10500	9980	9780	6080	5340	5150	22900
27	21300	16600	16900	18000	12700	10400	10000	9810	6030	5370	5320	35700
28	18500	15900	15500	18300	13500	10800	9980	9860	5840	5370	5280	19800
29	16800	15700	14300	19600	13300	11900	9980	9780	5100	5340	5320	18400
30	17500	—	12900	19800	12200	11600	9950	9810	6000	5300	5280	36800
31	19900	—	12500	—	11300	—	10600	9810	—	5340	—	24700
Mean	21280	29670	17760	18470	16050	10780	10250	10550	7915	5721	5532	16900
Runoff in Ac.Ft.	1308000	1707000	1092000	1099000	986600	641300	630600	649000	471000	351700	329200	1039000
	Water Year Total 10183300								Calendar Year Total 10304400			

U. S. Geological Survey station located near the Iron Canyon dam site at Mile 198.6 above Sacramento. Drainage area is 9,300 square miles. Period of record 1902 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 13

FLOW OF SACRAMENTO RIVER AT VINA BRIDGE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	20000	42500	18500	15200	26200	12400	11800	10600	9800	6280	5640	9050
2	17800	77600	17800	16900	25600	11700	11700	10900	9860	6080	5660	15800
3	17800	56400	15900	17000	23200	12100	11600	10900	9920	6080	5620	8530
4	17100	44100	18500	17200	21500	12000	11400	10900	9420	6080	5700	6440
5	18100	42500	18100	17700	20900	11900	11000	10800	9420	6100	5720	10000
6	20900	48400	19900	18800	19800	11900	10900	10800	9420	6100	5700	10400
7	21400	51300	30000	19200	18700	11900	10800	10600	8960	6050	5700	58700
8	24100	47500	23800	18800	23500	11900	10600	10600	8980	6080	5700	24800
9	22000	46600	19800	20900	23700	11500	10500	10500	8930	6120	5700	17200
10	22400	45800	19800	23700	23000	12100	10500	10500	9090	6080	5660	30600
11	30400	46100	18700	24500	23000	12500	10400	10500	9170	6120	5520	35800
12	52400	40400	18100	24600	20600	12300	10200	10400	9170	6050	5660	19800
13	46900	36200	19100	24800	20600	12000	10200	10400	9070	6050	5900	11500
14	53400	35100	20900	25200	19600	11800	10200	10300	8530	6030	7250	12500
15	55000	34300	49900	24500	17300	11600	10200	10200	8530	6030	6960	11400
16	31200	32700	37100	23800	16800	11400	10100	10300	8480	6050	6420	10600
17	29900	35300	28400	23500	17700	11400	9980	10400	7900	6030	5810	10000
18	25900	28600	26000	23900	17300	11200	10000	10500	7620	6140	5550	9830
19	20300	27500	28400	24500	19000	11200	10000	10500	7490	6420	5470	16500
20	21400	30300	23700	24300	19100	11100	10000	10500	7520	6010	5860	37900
21	22900	27700	20400	23700	17700	11100	9950	10500	7060	5830	5770	19800
22	19200	25400	18800	23400	16800	11200	10000	10500	7080	5920	5490	15500
23	17800	30400	17500	21400	16400	11100	9890	10500	7010	6030	5430	14000
24	31900	31200	16400	21000	16400	11300	9980	10600	6420	5970	5430	12900
25	55100	26400	19600	21300	16700	11000	9950	9830	6700	5810	5470	12900
26	35900	21000	22600	21300	16900	10900	10000	9750	6350	5720	5360	25600
27	29800	19600	21900	21900	15200	10800	9920	9780	6350	5720	5280	49000
28	24700	18700	20000	22600	15400	10900	9860	9800	6300	5720	5410	28800
29	21800	18400	19300	23400	15600	11800	9950	9750	6330	5700	5430	20600
30	21600	—	17000	23800	14700	12800	9890	9750	6280	5660	5430	40100
31	23800	—	16200	—	13700	—	10200	9780	—	5680	—	39200
Mean	28160	36830	22000	21760	19120	11630	10380	10380	8105	5992	5723	20930
Runoff in Ac.Ft.	1731000	2118000	1353000	1295000	1175000	691800	638000	638000	482300	368400	340600	1287000
	Water Year Total 12097700								Calendar Year Total 12118100			

Division of Water Resources and U. S. Bureau of Reclamation cooperative station located at Mile 166.5 above Sacramento. Period of record 1945 to date. Records for 1952 computed by Division of Water Resources.

TABLE 14

FLOW OF SACRAMENTO RIVER AT HAMILTON CITY (GIANELLA BRIDGE) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	20900	34800	18600	16300	24700	10300	8710	8710	7530	5090	4860	7290
2	18000	65100	18000	17700	24800	9370	9280	8860	7500	4840	4910	17400
3	17600	52100	16200	17600	22600	9540	9060	8830	7530	4860	4910	9280
4	17100	39400	18200	17800	20800	9430	8940	8830	7190	4840	4970	7060
5	17800	36200	18100	18100	20000	9310	8910	8770	7240	4930	5000	8710
6	20200	40400	19300	19200	18900	9260	8660	8690	7240	5040	4970	22000
7	22000	45800	29600	19700	17900	9230	8540	8690	6770	5020	4970	55000
8	24400	45800	24300	19600	21700	9310	8490	8690	6800	5060	5000	32700
9	22300	44900	20300	20900	22600	8910	8540	8570	6770	5110	5040	17000
10	21600	44200	19800	23700	21700	9260	8570	8710	6930	5060	5040	31000
11	28400	44200	19200	24500	21500	9770	8660	8740	7060	5160	5090	37400
12	50400	40200	18200	24500	19600	9570	8490	8630	7160	5160	5130	22500
13	48400	35600	19300	24700	19500	9230	8710	8630	7190	5130	5670	15400
14	46500	34500	20000	25200	19600	8940	8800	8660	6770	5130	7010	13100
15	57500	33500	48100	24400	17500	8770	8740	8540	6720	5200	7470	11900
16	32200	31300	39600	23500	15700	8630	8600	8520	6690	5200	6690	11000
17	31500	35700	28600	23100	15800	8460	8570	8460	6490	5130	6050	10600
18	27000	28900	25300	23100	15600	8320	8520	8460	6030	5450	5720	10200
19	22700	27300	28400	23300	17000	8240	8460	8440	5930	5720	5600	14700
20	20800	29200	24000	23300	17000	8130	8410	8410	6000	5290	5960	43200
21	23400	27800	21100	22700	16600	8220	8460	8380	5690	5160	5930	22500
22	19800	25200	19600	22200	15100	8220	8350	8220	5670	5180	5690	16600
23	18300	28600	18300	20400	14700	8380	8300	8380	5720	5360	5570	14500
24	27100	31200	17100	19900	14500	8570	8190	8350	5790	5290	5550	13800
25	56100	26100	19400	20400	14300	8380	8220	7660	5910	5130	5570	13600
26	37500	22200	22200	20800	14900	8320	8160	7560	5380	5000	5550	23300
27	30100	20000	22400	21100	13500	8270	8160	7470	5500	4970	5480	48200
28	24900	19100	20800	21800	13200	8140	8130	7420	5450	4970	5640	32500
29	22200	18700	20000	22500	13400	9340	8050	7450	5270	4910	5600	21700
30	21800	—	18000	22300	12600	10400	8050	7560	5060	4890	5670	37400
31	22800	—	17200	—	11600	—	8100	7580	—	4950	—	41800
Mean	28100	34760	22230	21490	17710	8952	8511	8351	6433	5106	5544	22040
Runoff in Ac.Ft.	1728000	1999000	1367000	1279000	1089000	532700	523300	513500	382800	313900	329900	1355000
	Water Year Total 11223900								Calendar Year Total 11413100			

Division of Water Resources and U. S. Bureau of Reclamation cooperative station located at Mile 149.5 above Sacramento. Period of record 1945 to date. Records for 1952 computed by Division of Water Resources.

TABLE 15

FLOW OF SACRAMENTO RIVER AT ORD FERRY - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	24800	37100	20700	19800	23900	11400	11000	9160	8060	5870	5140	*6480
2	20900	87500	20200	20700	24700	10600	10400	9140	7960	5270	5100	*21200
3	19400	77300	18200	20500	22700	10600	10200	9270	8010	5330	5100	*12500
4	18700	52000	19500	20200	20600	10500	10000	9300	7830	5330	5120	*8000
5	18900	43300	19800	20700	19800	10500	9890	9160	7690	5330	5220	*7180
6	20700	45400	20300	21600	18800	10600	9680	9140	7600	5370	5200	*21500
7	24600	51200	32000	22400	17600	10700	9620	9080	7250	5450	5220	*64200
8	26200	52300	28100	22100	20100	10600	9520	9080	7250	5370	5240	*68000
9	24300	49800	23200	22200	22200	10300	9380	9010	7250	5430	5310	*16800
10	22200	48600	22100	25000	21200	10600	9220	9190	7340	5410	5310	*24500
11	27900	48400	21600	26200	20700	11300	9270	9160	7550	5390	5330	*34200
12	53300	46600	20600	26200	19400	11200	9060	9110	7600	5470	5330	*23600
13	61400	39500	22100	26300	18700	10900	9110	9190	7670	5470	5640	*17600
14	51900	37800	22200	26800	19500	10800	9220	9190	7370	5470	6790	*14500
15	78200	36500	52900	25900	17100	10700	9160	9140	7250	5470	7980	*13200
16	41300	34200	52800	24900	15400	10400	9110	9190	7230	5450	7020	*12500
17	38300	40300	34200	24200	15500	10500	9060	9060	7160	5450	6500	*11300
18	34100	33300	29500	24000	15500	10400	8980	9160	6550	5540	6150	*10800
19	28000	30600	32900	24100	16800	10100	8880	9060	6500	5870	5980	*11300
20	24000	*31600	28400	24200	17000	10000	8810	9140	6460	5720	6150	*49300
21	27900	*31300	24800	23600	16600	10100	8830	9040	6190	5490	6270	*19400
22	23800	27900	22800	23100	*15000	10200	8810	9080	6150	5490	6190	*17200
23	21400	29600	21300	21700	*15300	10100	8760	9160	6190	5680	5960	*16800
24	26600	34400	19900	20400	*15000	10300	8660	9220	6190	5600	5940	*15200
25	73100	28800	22200	20800	*14700	10300	8610	8380	6500	5490	5830	*14800
26	51700	25200	25500	21300	*15400	10500	8610	8310	*5910	5290	5810	*19700
27	37500	22500	26400	21400	14500	9950	8580	8180	*5890	5290	5790	*55200
28	30100	21600	24600	21900	13800	10200	8580	8130	*5910	5270	6000	*37500
29	26200	21000	23800	22400	14200	10900	8560	8110	*5680	5160	5870	*26800
30	24800	—	22000	22900	13500	12100	8510	8110	*5310	5160	5890	*42500
31	25100	—	20900	—	12400	—	8580	8060	—	5160	—	*47300
Mean	33140	40190	25660	22920	17660	10580	9182	8926	6917	5437	5813	24550
Runoff in Ac.Ft.	2038000	2312000	1578000	1364000	1086000	629700	564600	548800	411600	334300	345900	1510000
	Water Year Total 12517900								Calendar Year Total 12722900			

Division of Water Resources station located at Mile 130.8R above Sacramento. Records of flows in excess of 40,000 second-feet were computed by extending the rating curve. Period of record 1948 to date.

* Estimated

TABLE 16

FLOW OF SACRAMENTO RIVER AT BUTTE CITY - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	27500	31200	21400	20700	23300	12200	10500			5530	5170	6200
2	21800	65500	21100	21000	25100	11300	9830			5340	5170	14800
3	19700	87200	19400	21100	23700	11000	9530			5240	5240	12200
4	18800	62900	19600	20700	21600	11000	9280			5220	5240	8000
5	18300	45900	20400	20900	20600	10800	9300	--*8000		5220	5280	7190
6	19200	43300	20100	21600	19900	10700	9260		--*7500	5320	5320	16300
7	24000	48500	28200	22400	18900	10700	9100			5340	5300	37900
8	24400	52400	30300	22500	19600	10700	8840			5300	5300	56400
9	25000	50900	24800	21800	22800	10500	8770			5360	5360	24500
10	21600	49100	22300	24200	22100	10400	8620			5360	5360	26300
11	25800	48200	22300	25800	21400	11000	8730			5430	5380	35800
12	40500	48000	21100	26100	20800	11000	8530		7430	5490	5330	33200
13	61500	40500	21900	26200	19300	10700	8550	--*7900	7560	5470	5550	19300
14	52300	37500	21900	26500	20600	10500	8680		7500	5470	6430	15300
15	71000	36100	37100	26100	18700	10300	8600		7210	5490	7870	13600
16	55600	34700	56500	25100	16900	10100	8460		7170	5510	6990	11500
17	37500	37700	38000	24300	16200	10000	8420		7080	5510	6520	11600
18	36200	35000	31100	24000	16400	9730	8330		6580	5550	6080	11200
19	30100	31800	32600	23900	17100	9740	8380		6500	5780	5950	11600
20	24900	31400	30300	24200	17500	9620	8240		6390	5800	5890	35900
21	27600	32400	26700	23700	17400	9620	8270	--*7800	6350	5550	6140	35300
22	24800	29600	24000	23100	16100	9670	8200		6140	5510	6100	20100
23	22000	29100	22390	22200	15800	9580	8110		6200	5570	5800	16800
24	22600	33700	21100	20800	15500	9670	8070		6140	5570	5780	15200
25	54900	30600	21900	20900	15200	9760	8050		6480	5530	5720	14400
26	60700	27300	25200	21400	15800	9510	8050	7720	5930	5380	5800	18400
27	40500	23800	26900	21300	15100	9460	8020	7610	5910	5280	5700	36200
28	32600	22600	25700	21700	14100	9370	8050	7630	5930	5340	5850	48200
29	28100	21700	24500	22100	14400	9760	7940	7650	5700	5220	5780	30000
30	25600	——	23100	22800	14000	10700	7940	7650	5510	5220	5870	30400
31	25200	——	21800	——	13100	——	8020	7670	——	5170	——	51400
Mean	32910	40300	25920	22970	18350	10300	8602	7856	6874	5422	5777	23390
Runoff in Ac.Ft.	2024000	2318000	1594000	1367000	1129000	613200	528900	483000	409000	333400	343800	1438000
	Water Year Total 12402800								Calendar Year Total 12581300			

Station is maintained jointly by the Division of Water Resources and the U. S. Geological Survey. Station is at Butte City Bridge and is at Mile 115.8 above Sacramento. Period of record 1921 to date. Records for 1952 computed by U. S. Geological Survey.

* Estimated mean for period indicated.

TABLE 17

FLOW OF SACRAMENTO RIVER AT COLUSA - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	29100	26100	22300	22100	22300	12000	10200	7080	7480	5770	5440	5760
2	24200	32500	22100	21500	23300	11200	9690	7530	7450	5760	5420	9460
3	21000	36700	21700	21900	23300	10500	9370	7670	7450	5530	5430	13500
4	19400	35800	20500	21700	21900	10400	9130	7670	7430	5490	5420	9680
5	18000	33700	20900	21500	20700	10300	9020	7550	7250	5470	5490	7530
6	17700	32700	21200	22000	20000	10100	8900	7450	7200	5480	5500	10600
7	19900	33100	23400	22700	19100	10000	8700	7370	7200	5560	5510	21400
8	20800	33800	29800	23000	18200	10000	8550	7310	6960	5550	5510	33700
9	22100	33900	27500	22700	20600	9910	8420	7340	6890	5550	5520	29500
10	20200	33700	24100	23400	21400	9670	8350	7320	6890	5580	5540	22700
11	19800	33600	23300	25100	20900	9860	8300	7330	7000	5580	5540	28900
12	23800	33600	22600	25800	20600	10100	8260	7270	7170	5640	5580	31100
13	27400	32900	22200	25900	19600	9950	8150	7250	7300	5680	5570	25000
14	27100	32000	22900	26100	19400	9720	8180	7280	7390	5640	6000	18100
15	28400	31700	26300	26000	19000	9510	8180	7410	7300	5630	7340	14800
16	29900	31400	34600	25200	17300	9390	8070	7410	7180	5640	7770	13000
17	28400	31500	33700	24400	15800	9250	7960	7500	7110	5650	7200	12000
18	28600	31900	31100	23900	15700	9100	7880	7630	6990	5710	6750	11300
19	28100	30500	30200	23700	15600	8970	7780	7700	6630	5880	6380	10900
20	26200	29900	30300	23700	16200	8900	7710	7780	6520	6110	6200	19600
21	25600	30400	28300	23500	16400	8850	7630	7810	6570	5930	6390	32000
22	26100	29700	25500	23100	15900	8870	7540	7860	6430	5760	6310	25800
23	23900	28200	23600	22500	15000	8890	7460	8030	6340	5750	6120	18800
24	22600	30200	22400	21400	14700	8830	7380	8210	6350	5870	5860	16100
25	30500	30600	21900	20800	14500	8950	7320	8270	6370	5820	5760	14600
26	36300	28600	23700	21100	14500	8820	7260	7810	6410	5660	5690	14500
27	34100	25300	25900	21200	14600	8750	7270	7560	6100	5550	5680	21600
28	31400	23500	26200	21300	13800	8700	7260	7490	6060	5550	5620	33900
29	28900	22600	25100	21600	13400	8910	7180	7470	6050	5560	5670	31100
30	26000	——	24200	22000	13300	9510	7080	7470	5950	5460	5680	27000
31	24700	——	22900	——	12800	——	7050	7460	——	5430	——	32900
Mean	25490	31040	25170	23030	17740	9597	8104	7558	6847	5653	5930	19990
Runoff in Ac.Ft.	1567000	1785000	1548000	1370000	1091000	571100	498300	464700	407400	347600	352800	1229000
	Water Year Total 10930300								Calendar Year Total 11231900			

Station is maintained jointly by the Division of Water Resources and the U. S. Geological Survey. Station is at the Colusa Bridge below Colusa Weir and is at Mile 89.4 above Sacramento. Period of record 1921 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 18

FLOW OF SACRAMENTO RIVER BELOW WILKINS SLOUGH - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	22100	21200	20100	20100	19300	13200	9400	6310	6730	6150	5220	6210
2	21300	22000	20000	19900	19500	12600	9290	6730	6660	6110	5310	7840
3	20600	22800	19800	19900	19700	11800	8990	6080	6660	5900	5360	13400
4	20200	22900	19000	19900	19500	11400	8780	7050	6620	5770	5380	12000
5	19500	22600	19100	19800	19000	11200	8600	6980	6540	5700	5410	9390
6	19100	22300	19400	19900	18600	10900	8430	6920	6480	5640	5440	10000
7	20600	22300	19900	20100	18000	10800	8200	6820	6530	5620	5460	16200
8	20500	22400	21400	20200	17400	10700	7890	6800	6260	5600	5460	22400
9	20900	22400	21400	20200	18300	10500	7690	6780	6180	5570	5470	22400
10	20700	22300	20800	20300	19300	10300	7520	6820	6270	5600	5500	21700
11	20500	22300	20500	20600	19200	10200	7430	6850	6520	5580	5520	21200
12	21300	22300	20400	20700	19000	10500	7400	6860	6870	5600	5530	22500
13	22400	22200	20100	20700	18500	10200	7280	6860	7130	5620	5540	21800
14	22600	22100	20300	20700	18100	9890	7260	6900	7380	5520	5830	19900
15	22600	22000	20700	20700	18200	9560	7270	7010	7380	5480	6860	17300
16	22900	22000	22100	20600	17300	9310	7200	7020	7350	5550	7740	15300
17	22500	21900	22300	20400	16100	9060	7110	7140	7380	5560	7320	14100
18	22300	22000	22000	20300	15700	8840	7080	7200	7370	5530	6910	13300
19	22100	21900	21800	20100	15600	8690	6980	7240	7060	5660	6520	12900
20	21600	21800	21900	19900	16100	8570	6930	7320	6920	5840	6310	15600
21	21200	21800	21600	19700	16300	8470	6840	7380	6970	5740	6360	22200
22	21300	21700	21100	19400	16100	8410	6770	7430	6790	5570	6330	21800
23	20900	21500	20700	19100	15500	8370	6650	7450	6660	5520	6010	20100
24	20500	21600	20300	18800	15200	8310	6560	7540	6710	5660	5640	18000
25	21400	21800	20000	18600	14900	8330	6500	7520	6750	5700	5670	16600
26	22600	21600	20300	18700	14900	8350	6510	7000	6870	5660	5710	15900
27	22500	21100	20700	18900	15000	8210	6540	6840	6560	5520	5790	19300
28	22200	20600	20900	19000	14500	8180	6470	6740	6470	5440	5810	22500
29	21900	20300	20800	19100	14100	8230	6360	6710	6460	5430	5950	22600
30	21500	—	20600	19200	14100	8640	6310	6740	6300	5250	5960	21900
31	21200	—	20300	—	13800	—	6270	6770	—	5210	—	22500
Mean	21400	21920	20660	19850	16990	9724	7371	6994	6761	5622	5911	17380
Runoff in Ac.Ft.	1316000	1261000	1270000	1181000	1045000	578600	453200	430000	402300	345700	351700	1069000
	Water Year Total 9453500								Calendar Year Total 9703500			

Station is maintained jointly by the Division of Water Resources and the U. S. Geological Survey. Station is located at Mile 62.9 above Sacramento, 0.3 of a mile below Wilkins Slough pumping plant of Reclamation District 108, and 1.3 miles below Tisdale Weir. Period of record 1931 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 19

FLOW OF SACRAMENTO RIVER AT KNIGHTS LANDING - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	22200	21500	20900	20100	19900	12000	10000	6600	8220	7300	5940	6520
2	21400	21600	20800	19500	19900	11800	10200	7000	8100	7270	5950	6860
3	20800	22500	20700	19700	20100	11300	9900	7500	8190	7180	6090	12800
4	20700	23100	19900	19600	19900	11000	9600	7500	8250	6970	6080	14300
5	20500	22700	19600	19500	19200	10500	9300	7500	8260	6750	6040	11900
6	20200	22400	20200	19700	18900	10200	9000	7600	8190	6680	6090	10500
7	20500	22400	20400	19600	18200	10000	8600	7600	8470	6580	6170	15800
8	22200	22600	21500	19500	17300	9900	8300	7700	8300	6560	6270	22800
9	22600	22600	21900	19400	17800	9800	8000	7600	8210	6530	6140	23700
10	22600	22700	21200	19400	19600	9700	7800	7600	8210	6530	6100	22100
11	22300	22700	20800	20000	19800	10000	7700	7600	8570	6570	6200	22300
12	21400	22500	20900	20400	19400	10500	7600	7600	9030	6550	6240	22800
13	22200	22600	20700	20500	19000	10300	7600	7600	9310	6530	6200	22600
14	23400	22700	21400	20400	18200	10100	7500	7700	9760	6520	6320	21600
15	22800	22800	21100	20500	18700	10000	7400	7800	9990	6440	7050	19500
16	23100	22700	21700	20800	17300	9800	7400	7900	9890	6480	8380	17000
17	22700	22300	22400	20500	15000	9600	7400	8000	9860	6450	8450	16200
18	22600	22500	22300	20500	14800	9400	7300	8100	9950	6410	8070	15500
19	22500	22400	21800	20400	14500	9200	7200	8100	9660	6500	7440	14800
20	22500	22300	22200	20700	15200	9000	7200	8100	9320	6700	7180	13600
21	21800	22200	22000	20700	15600	8800	7100	8100	9290	6680	6960	22400
22	21900	22300	21600	20400	15900	8600	7000	8100	9100	6520	7080	23400
23	21600	21900	21200	20000	15200	8600	6900	8100	8730	6370	7010	22100
24	21600	22200	21000	19700	14500	8600	6800	8200	8620	6420	6760	20300
25	21000	22500	20800	19200	14300	8600	6700	8200	8510	6590	6630	18400
26	22400	21900	21000	19300	13800	8700	6600	8200	8570	6480	6540	17600
27	23200	21500	21600	19500	14000	8600	6600	8000	8300	6310	6590	18200
28	22900	21100	21700	19500	13100	8600	6600	7800	7930	6120	6450	20300
29	22500	21100	21300	19600	12500	9000	6600	7940	7780	6140	6500	21300
30	22000	—	21000	19900	12800	9800	6500	8150	7560	5980	6450	23200
31	21600	—	20600	—	12500	—	6500	8250	—	5890	—	22300
Mean	21990	22290	21170	19950	16670	9733	7706	7798	8738	6548	6649	18250
Runoff in Ac.Ft.	1352000	1282000	1302000	1187000	1025000	579200	473900	479500	519900	402600	395600	1122000
	Water Year Total 9816400								Calendar Year Total 10120700			

Station is maintained jointly by the Division of Water Resources and the U. S. Geological Survey. It is located at the Knights Landing Railroad Bridge, Mile 34.0 above Sacramento, below the point of discharge to the river of Colusa Basin drainage via the Back Borrow Pit of Reclamation Districts 108 and 787. Period of record 1921 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 20

FLOW OF SACRAMENTO RIVER AT VERONA - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	57900	53600	45600	52200	56300	45900	20800	9700	9820	10500	8720	9640
2	55500	54600	44200	52200	55900	45000	20500	9930	9680	10500	8790	10800
3	52800	58800	42900	52300	54500	43300	20400	10300	9660	10400	8720	16700
4	49900	61600	41500	52400	54300	41300	20300	10300	9660	10100	8920	19100
5	46100	60800	40600	52800	54600	38600	19800	10100	9570	10100	9110	16900
6	42000	59500	39800	53700	54300	37800	18900	9970	9550	9880	9060	15500
7	39700	58300	43000	54900	53100	38300	17800	9860	9750	9700	9140	20000
8	39400	57500	48600	56000	52300	36600	16900	9750	9880	9700	9320	29200
9	39400	57100	51100	56300	54200	35700	16600	9620	9880	9610	9250	33800
10	38900	56800	50400	56100	54800	37100	15900	9680	10000	9550	9160	35900
11	38600	56400	49000	55900	54200	35600	15300	9730	10300	9430	9110	37100
12	44300	56600	47300	55800	53100	33700	14600	9710	10800	9350	9210	39400
13	55700	56400	46100	55800	52700	30700	13800	9550	11300	9350	9280	40600
14	58100	55800	43700	56000	52300	27900	13000	9520	12300	9280	9610	38800
15	55400	55100	44900	56000	52200	25900	12700	9620	12200	9200	11600	33800
16	55800	54400	51800	55500	52100	24700	12800	9640	12400	9140	13400	29300
17	60000	55800	55500	55000	51000	24200	12700	9750	12600	9130	13200	26200
18	58500	56500	55300	54700	50000	23700	12200	9860	12700	9130	11900	23800
19	56600	56000	56000	55100	49800	24000	11800	9860	12600	9210	11600	22100
20	54700	55400	55400	55400	50000	24000	11600	9880	12500	9430	11200	25400
21	53400	55900	54000	55600	50000	23800	11100	9970	12500	9500	10800	32300
22	51900	55300	52300	55400	50600	23100	10700	9980	12300	9320	10700	34800
23	50100	54300	50200	55200	50200	22300	10300	9860	11900	9200	10700	34600
24	47700	53900	47700	54300	49200	21800	10100	9970	11700	9160	10100	32100
25	52600	53300	45100	53900	48500	22400	9750	10000	11800	9250	9680	29200
26	55900	52500	43400	54000	48600	21200	9540	9930	11900	9230	9610	27500
27	59800	51500	44400	55700	48700	20100	9550	9620	11600	9180	9470	28500
28	58700	49800	46500	55400	48200	19400	9550	9450	11200	8960	9450	33600
29	57000	47600	48700	55400	48500	19400	9450	9450	11000	8860	9480	36600
30	55300	—	50500	56300	48500	20200	9420	9540	10700	8690	9450	39100
31	53900	—	51700	—	46900	—	9480	9770	—	8640	—	44000
Mean	51470	55560	47970	54840	51600	29590	13790	9802	11120	9441	9991	28930
Runoff in Ac.Ft.	3165000	3196000	2950000	3263000	3173000	1761000	847600	602700	662000	580500	594500	1779000
	Water Year Total 22657800								Calendar Year Total 22574300			

Station is maintained jointly by the Division of Water Resources and the U. S. Geological Survey. It is located at Mile 19.6 above Sacramento at the mouth of "Natomas Cross Canal", main drain between Reclamation Districts 1000 and 1001, and below the mouth of the Feather River. Flows are measured below the mouth of Cross Canal. Drainage area is 21400 square miles. Period of record 1926 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 21

FLOW OF SACRAMENTO RIVER AT SACRAMENTO - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	69400	62900	54300	63600	70600	67100	26500	11000	10200	10600	9250	11800
2	65400	75000	52600	63300	70400	65100	26300	10800	10200	10600	9230	12000
3	61800	79100	50800	63000	72200	62600	26700	11300	10400	10700	9100	16900
4	57900	75400	49400	63200	72500	59700	26900	13000	10200	10500	8840	20200
5	53400	72300	48000	64400	70700	58200	26400	11000	9830	10500	8850	18800
6	48500	69700	47600	66300	69100	57700	25000	10600	10100	10400	9090	17500
7	45400	67400	53000	68700	68300	55400	23300	10500	9860	10200	9020	20000
8	44500	65600	59900	69900	69000	54600	22200	10500	10000	10000	9220	29800
9	43900	64700	62600	68900	68500	54500	21800	10300	10200	9660	9180	34100
10	43300	63900	62200	68200	68500	51500	20900	9880	10000	9550	9000	35900
11	43600	63600	60900	67200	69600	48200	20300	9850	9880	9430	8920	36600
12	61200	64700	58200	66600	70900	45200	19000	9850	10400	9280	9270	38100
13	75300	63800	56700	66900	71200	40500	17400	9600	11100	9360	9360	39400
14	73100	62800	54300	67600	71000	36800	16400	9760	11900	9340	10200	38700
15	81900	61800	54800	66500	70500	34500	16100	10100	12100	9340	12400	34900
16	84100	61200	66000	65400	69200	32200	15800	9990	12300	9280	13900	30600
17	76400	68000	69000	65400	68300	32400	15700	9800	12400	9240	14000	28000
18	71300	68200	68100	66300	68400	32600	15100	10000	12500	9460	12600	25400
19	66800	66100	72600	68200	68800	32900	14500	9980	12700	9280	12200	24200
20	63300	65400	70900	69000	68900	32700	14100	9930	12500	9590	11900	28100
21	61500	66900	66800	68400	70000	32100	13300	10100	12400	9900	11600	32600
22	59100	65700	63600	68100	69600	31200	12500	10100	12300	9940	11200	34400
23	56600	64200	60300	68800	69100	30200	11700	9930	12000	9840	10600	34200
24	54500	63600	57000	70000	69000	30400	11200	9880	11700	9710	10700	32500
25	66600	62600	54200	71300	69900	30400	10700	10000	11600	9680	10300	30100
26	78600	61400	53200	72300	70100	28600	10300	10000	11700	9710	10200	28700
27	75200	60400	54500	71300	70400	26200	10200	9820	11300	9640	10300	29200
28	70400	58700	56700	72700	71400	25200	9980	9670	11200	9480	10200	32500
29	66600	56400	59700	73100	71000	24900	10200	9660	11000	9240	10400	35400
30	63700	—	61600	72000	69200	25900	10500	9860	10600	9240	10600	38100
31	61700	—	63200	—	68000	—	10900	10100	—	9280	—	44100
Mean	62740	65570	53800	67890	69820	41320	17160	10220	11150	9710	10390	29450
Runoff in Ac.Ft.	3858000	3772000	3615000	4040000	4293000	2459000	1055000	628500	663600	597000	618100	1811000
	Water Year Total 27942800								Calendar Year Total 27410200			

Division of Water Resources and U. S. Geological Survey cooperative station located at Mile 0.4 above M Street Bridge. This represents the flow of the Sacramento River past Sacramento (below the City of Sacramento intake) to the Delta. Additional water flows to the Delta via East Borrow Pit of Yolo By-Pass (See Tables 76 and 83). Daily mean flows are computed from newly derived curves which take into account tidal fluctuations during low stages. Period of record 1904, 1905, 1921, 1924 to date. Records for 1952 computed by Division of Water Resources. (See discussion in text.)

TABLE 22

FLOW OF CLEAR CREEK NEAR IGO - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	929	3830	782	1010	704	262	195	78	33	25	42	814
2	789	4620	747	958	608	251	167	74	31	24	43	382
3	698	2070	728	922	560	240	156	66	31	23	43	205
4	632	2170	686	960	527	226	142	60	33	22	43	159
5	602	1800	632	1050	500	219	138	57	42	22	42	664
6	602	1530	698	1250	490	222	135	53	43	22	42	1790
7	620	1440	722	1100	842	219	128	51	42	23	42	2130
8	584	1340	722	1000	1040	205	120	50	41	25	42	768
9	538	1270	734	900	796	202	118	50	39	27	43	686
10	596	1200	761	850	692	216	112	50	39	29	43	1470
11	1010	1220	740	820	632	208	110	50	46	29	44	1380
12	1040	1170	728	800	590	199	110	49	50	28	50	910
13	887	1060	680	1000	554	195	108	49	46	27	154	614
14	1810	958	734	900	522	205	102	47	41	27	219	495
15	1110	908	817	800	490	199	95	46	38	27	216	425
16	831	1090	929	750	470	179	91	46	37	28	125	369
17	704	1160	1260	700	450	167	84	43	36	30	72	326
18	638	1060	2410	850	435	159	82	42	31	41	67	297
19	620	966	1580	800	420	156	78	41	30	53	64	405
20	1550	894	1230	760	405	151	74	41	30	49	62	495
21	982	810	1050	730	387	148	72	41	30	44	59	392
22	810	824	929	700	364	142	69	41	30	42	56	338
23	740	873	880	680	351	151	71	39	29	42	54	309
24	1790	810	936	660	338	159	71	37	30	43	53	277
25	1820	775	1240	638	326	153	69	37	28	43	51	317
26	1580	768	1570	620	309	151	69	38	26	43	51	881
27	1450	761	1420	620	297	151	67	39	27	42	51	2670
28	1280	761	1330	602	285	277	64	38	27	41	51	1330
29	1210	775	1280	566	270	425	60	37	26	41	51	1370
30	1270	—	1190	864	266	255	69	36	26	41	53	2960
31	1490	—	1090	—	258	—	67	35	—	42	—	1500
Mean	1010	1375	1008	829	490	203	99.8	47.1	34.6	33.7	67.6	872
Runoff in Ac.Ft.	62090	79070	61950	49310	30110	12080	6130	2900	2060	2070	4020	53610
	Water Year Total 396510								Calendar Year Total 365400			

U. S. Geological Survey and U. S. Army Corps of Engineers cooperative station located 9 miles upstream from the mouth. Clear Creek is a west-side tributary to the Sacramento River at Mile 237.1R. Drainage area is 231 square miles. Period of record 1940 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 23

FLOW OF COW CREEK NEAR MILLVILLE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1680	10700	1120	846	1180	526	251	74	55	54	101	846
2	1330	6830	936	834	1010	498	225	74	55	53	98	1090
3	1130	3890	1070	804	930	474	211	75	60	55	96	482
4	1000	2590	1390	816	858	446	193	67	60	57	95	260
5	924	2020	1010	864	798	438	183	60	60	60	96	1340
6	1150	1660	1810	918	775	454	169	52	60	60	100	2150
7	1350	1440	2240	990	1300	482	147	60	65	58	100	4690
8	1500	1280	1420	966	2340	442	134	61	70	67	95	1230
9	1340	1160	1140	906	1280	438	119	62	80	68	98	2490
10	1900	1070	1160	870	1090	462	121	64	87	67	100	8310
11	6660	1820	966	852	1030	458	117	57	87	69	105	3940
12	7250	1480	1170	852	990	410	121	56	79	67	117	1200
13	4100	1160	990	882	942	362	124	54	78	66	258	715
14	8030	1020	2340	924	912	326	121	53	71	69	882	522
15	3700	958	6260	810	858	316	106	53	69	67	280	430
16	2310	4130	2510	780	822	287	103	54	63	67	188	366
17	1540	2080	1700	786	828	257	101	58	60	74	157	319
18	1230	1610	2690	834	822	248	100	62	62	127	147	294
19	1090	2300	1880	888	828	233	96	55	62	160	140	2500
20	2430	3570	1360	846	816	222	88	50	62	112	136	2790
21	1530	2030	1100	810	770	230	90	48	62	105	130	960
22	1320	2200	960	804	720	225	82	48	58	105	128	635
23	1130	4360	870	834	715	251	75	49	58	103	126	494
24	7130	2280	840	876	720	350	82	48	58	103	126	418
25	4660	1760	900	900	715	277	79	50	53	103	128	1030
26	4590	1500	960	900	680	242	71	50	55	103	128	5550
27	2590	1300	942	990	660	236	75	45	55	103	130	4870
28	1830	1210	924	1040	655	319	71	50	57	101	128	1440
29	1520	1090	948	1020	625	382	57	50	52	103	126	2360
30	1890	—	948	1050	575	308	58	55	56	105	128	6560
31	3690	—	906	—	560	—	66	55	—	105	—	2630
Mean	2694	2431	1466	883	897	353	117	56.4	63.6	84.4	156	2029
Runoff in Ac.Ft.	165700	139800	90170	52550	55150	21020	7210	3470	3790	5190	9260	124800
	Water Year Total 748310								Calendar Year Total 678110			

U. S. Geological Survey and U. S. Bureau of Reclamation cooperative station located approximately five miles southwest of Millville. Cow Creek is an eastside tributary to the Sacramento River at Mile 228.8. Drainage area is 427 square miles. Period of record October, 1949, to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 24

FLOW OF COTTONWOOD CREEK NEAR COTTONWOOD - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2130	5410	1570	1980	1480	574	535	100	65	63	92	2?3
2	1760	10900	1530	1840	1270	551	420	116	73	68	90	610
3	1480	6230	1470	1740	1140	535	365	118	76	73	86	345
4	1300	4160	1450	1750	1070	517	350	111	76	68	92	263
5	1100	3340	1340	1890	998	493	340	102	73	68	94	976
6	1530	2960	2240	2110	932	499	325	94	78	68	96	4140
7	1460	2700	3260	2180	1070	505	320	90	75	66	96	13800
8	1690	2490	2240	2050	1510	481	280	90	73	66	92	3370
9	1570	2360	1860	1860	1220	481	250	88	72	68	88	2920
10	2320	2240	1660	1740	1090	523	230	84	78	70	86	5800
11	5520	2220	1580	1670	1020	481	220	83	88	73	88	3960
12	6470	2100	1510	1660	989	453	210	80	88	69	94	2200
13	4800	1920	1440	1690	964	420	210	76	92	70	123	1740
14	11300	1780	2220	1730	916	400	190	73	92	64	365	1520
15	5040	1700	4760	1540	860	395	170	76	100	64	400	1360
16	2670	1890	4400	1420	820	370	160	78	98	65	436	1230
17	2930	2370	3750	1380	788	355	150	78	78	78	239	1120
18	2600	2060	3690	1400	812	350	140	30	59	86	174	1060
19	2100	2030	3080	1470	836	350	130	80	69	100	151	2690
20	2690	1930	2480	1380	860	345	125	76	65	106	139	4780
21	2100	1660	2080	1270	812	340	120	73	66	108	130	2010
22	1830	1700	1890	1200	748	330	115	69	63	104	125	1570
23	1690	3280	1770	1230	712	320	110	68	70	78	120	1380
24	5310	2060	1840	1280	712	350	110	68	68	70	116	1270
25	5360	1770	2670	1390	712	340	105	65	69	63	113	1410
26	3190	1660	3160	1300	698	316	105	64	66	81	111	3760
27	2550	1610	2900	1330	698	306	100	64	66	94	111	6460
28	2170	1580	2640	1370	691	395	95	65	68	80	108	2800
29	2030	1560	2530	1270	670	900	90	65	72	31	106	3400
30	2090	—	2360	1280	621	719	96	63	69	92	106	3290
31	2380	—	2160	—	587	—	94	64	—	92	—	4160
Mean	3007	2747	2370	1577	913	446	202	80.7	75.3	77.6	142	2924
Runoff in Ac.Ft.	184900	158000	145700	93840	56140	26570	12420	4960	4480	4770	8450	179800
	Water Year Total 893840								Calendar Year Total 880030			

U. S. Geological Survey and U. S. Army Corps of Engineers cooperative station located 2 miles upstream from the mouth. Cottonwood Creek is a west-side tributary to Sacramento River at Mile 222.2R. Drainage area is 945 square miles. Period of record 1940 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 25

FLOW OF BATTLE CREEK NEAR COTTONWOOD - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	615	2420	565	695	968	822	477	318	226	214	236	1050
2	550	2520	536	695	878	794	454	310	226	223	226	588
3	504	1460	550	706	805	778	454	296	233	226	240	336
4	477	1100	575	734	756	756	459	292	229	226	233	292
5	446	932	522	794	728	766	464	282	226	223	236	977
6	526	844	625	827	717	772	450	282	217	233	233	1090
7	600	783	600	872	1030	794	446	278	217	233	229	1800
8	600	734	518	832	1410	778	442	267	226	236	236	522
9	540	700	500	783	980	844	450	264	223	236	229	1260
10	827	656	565	778	896	788	442	260	243	240	243	1960
11	1450	706	531	783	890	728	438	267	246	236	240	776
12	1790	668	531	805	884	673	418	257	246	226	250	482
13	1150	620	504	827	860	610	402	257	240	240	325	414
14	2370	609	876	810	860	570	422	250	229	226	394	370
15	962	585	1440	756	854	536	398	250	233	217	289	362
16	696	1080	766	739	844	531	382	243	229	223	253	343
17	590	914	625	750	872	526	370	240	223	226	246	328
18	536	794	625	805	908	531	370	243	226	246	233	328
19	504	800	590	860	926	526	362	240	220	250	229	1060
20	531	783	536	810	932	518	351	240	217	243	240	924
21	513	706	500	822	920	550	351	233	214	240	240	454
22	482	695	490	822	860	526	340	236	220	240	236	398
23	449	952	490	860	872	526	340	233	223	233	229	362
24	1870	712	500	884	914	575	332	229	220	233	243	343
25	1240	656	585	896	956	540	325	233	220	233	233	501
26	884	625	668	884	950	508	325	233	217	233	233	1070
27	722	595	673	938	950	500	321	233	217	240	233	1170
28	630	575	690	986	974	585	318	233	217	236	240	512
29	585	565	728	968	926	600	314	226	214	236	233	654
30	620	—	734	962	884	531	314	226	211	236	229	1050
31	787	—	722	—	884	—	310	223	—	236	—	650
Mean	808	889	625	823	906	636	388	254	225	233	246	723
Runoff in Ac.Ft.	49680	51130	38400	48960	55710	37850	23880	15620	13380	14320	14660	44480
	Water Year Total 419260								Calendar Year Total 408070			

U. S. Geological Survey and U. S. Army Corps of Engineers cooperative station located 3 miles upstream from the mouth. Battle Creek is an east-side tributary to Sacramento River opposite Mile 221.5L. Drainage area is 362 square miles. Period of record 1940 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 26

FLOW OF PAYNES CREEK NEAR RED BLUFF - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	170	1090	128	90	38	15	8.0	1.1	3.1	4.1	3.1	294
2	130	1030	117	87	34	14	7.5	1.5	2.9	4.1	3.1	178
3	106	566	110	81	34	15	6.3	1.5	2.9	4.3	2.9	46
4	90	412	121	78	32	13	6.3	1.5	2.9	4.3	3.1	30
5	74	317	113	76	31	13	5.9	1.5	2.9	3.1	3.1	491
6	94	250	194	78	30	14	4.1	1.5	2.9	1.3	3.1	584
7	167	207	279	78	45	14	2.2	1.6	2.9	1.5	3.1	1040
8	272	173	176	76	81	13	2.2	1.7	3.1	1.7	3.1	267
9	179	154	142	71	54	13	2.2	1.6	3.1	1.8	3.1	772
10	474	137	236	66	44	11	2.3	1.7	3.9	2.0	3.1	631
11	867	149	188	62	30	8.5	2.4	1.6	3.9	2.2	3.1	336
12	974	165	179	62	24	9.0	2.3	1.7	3.7	2.2	3.5	176
13	703	139	170	62	24	8.5	2.3	1.7	3.7	2.2	5.2	117
14	1390	126	535	64	22	8.5	2.2	1.8	3.7	2.3	14	87
15	648	117	1170	60	20	8.0	2.2	1.8	3.7	2.3	10	71
16	421	276	556	55	18	7.5	2.0	1.8	3.7	2.3	6.7	60
17	317	294	373	52	17	7.5	2.0	1.8	3.5	2.3	4.9	54
18	244	216	329	50	16	7.1	2.0	1.9	3.5	2.9	4.3	48
19	197	305	294	49	17	6.3	1.9	1.9	3.7	3.3	4.3	607
20	258	403	244	45	16	5.9	2.0	1.9	3.7	3.1	4.3	611
21	233	298	197	41	15	6.3	2.0	2.0	3.7	3.1	4.1	233
22	194	272	165	40	14	6.7	2.2	2.2	3.7	3.1	3.7	152
23	167	434	144	39	14	7.1	2.2	2.4	3.9	3.1	3.7	110
24	1000	317	126	35	14	8.0	2.2	2.3	3.9	3.3	3.7	87
25	1120	240	119	35	13	8.5	2.2	2.4	3.7	3.1	3.9	117
26	652	200	119	35	13	7.5	2.2	2.4	3.7	3.1	3.9	504
27	480	173	119	34	12	7.5	2.3	2.8	3.9	3.1	3.9	934
28	357	154	117	34	12	10	1.8	2.8	3.9	3.1	3.9	316
29	298	139	113	34	12	10	.6	2.9	4.1	3.1	4.1	337
30	275	—	106	37	10	9.0	.7	2.9	4.1	3.1	4.1	708
31	388	—	100	—	10	—	.9	3.1	—	3.1	—	373
Mean	417	302	228	56.9	24.6	9.75	2.83	1.98	3.53	2.83	4.34	335
Runoff in Ac.Ft.	25660	17360	14040	3380	1510	580	174	122	210	174	258	20570
	Water Year Total 86578								Calendar Year Total 84038			

U. S. Geological Survey and U. S. Bureau of Reclamation cooperative station located approximately one mile above mouth. Paynes Creek is an east-side tributary to the Sacramento River at Mile 201.5. Drainage area is 92.5 square miles. Period of record October 1949 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 27

FLOW OF REDBANK CREEK AT FOOTHILLS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	81	271	25	34	31	0.4	2					375
2	72	284	23	31	18	.4	0.4					63
3	66	187	24	27	15	.3	0					14
4	64	145	27	25	12	.2						3
5	61	125	22	24	11	0						988
6	116	106	294	23	10	0.1						1970
7	143	95	398	21	12	.4						681
8	197	81	213	23	22	.3						205
9	145	72	149	31	15	.2						245
10	251	67	108	31	12	0						370
11	470	64	82	29	10	0.5						227
12	466	58	74	27	9	.3	N	N	N	N	N	129
13	478	55	66	28	8	.1	0	0	0	0	0	97
14	1085	53	454	33	8	.1						75
15	388	51	615	25	6	0						63
16	268	48	438	22	6							55
17	667	48	313	21	6		F	F	F	F	F	48
18	418	46	303	20	5	N	L	L	L	L	L	45
19	329	43	205	17	4	0	0	0	0	0	0	635
20	495	41	151	17	4		W	W	W	W	W	251
21	303	39	121	16	3							121
22	248	37	99	15	3	F						81
23	205	72	86	15	2	L						64
24	790	45	84	15	2	O						53
25	426	37	84	14	1	W						81
26	297	33	75	16	0.9							493
27	233	31	63	15	.8							378
28	187	28	57	14	.6	0						179
29	163	27	50	12	.5	35						259
30	145	—	42	21	.5	11						634
31	132	—	37	—	.3	—			—		—	374
Mean	303	78.9	154	22.1	7.7	1.6	0.1	0	0	0	0	298
Runoff in Ac.Ft.	18620	4540	9477	1313	473	98	4.8	0	0	0	0	18360
	Water Year Total								Calendar Year Total 52886			

Division of Water Resources and U. S. Bureau of Reclamation cooperative station located approximately 15 miles above the mouth. Redbank Creek is a west-side tributary to the Sacramento River at Mile 191.2R. Period of record 1948 to date. Records for 1952 computed by Division of Water Resources.

TABLE 28

FLOW OF ANTELOPE CREEK NEAR RED BLUFF - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	300	2430	224	245	341	200	86	44	40	38	39	519
2	220	1490	204	238	315	202	79	44	40	38	39	278
3	180	739	192	232	293	195	74	41	40	38	39	117
4	150	511	207	238	272	187	71	43	40	38	39	61
5	140	399	204	261	258	184	68	43	40	38	39	657
6	150	330	257	281	253	182	65	42	40	38	39	996
7	170	294	315	293	366	178	61	42	40	38	39	1250
8	195	257	243	284	594	173	57	42	40	38	39	251
9	167	237	220	267	431	173	56	42	41	38	39	460
10	306	220	474	250	370	165	55	42	42	38	40	515
11	879	274	308	250	355	154	53	42	40	38	39	302
12	1030	277	274	250	341	145	51	42	40	38	40	178
13	680	237	240	258	324	135	50	42	39	38	48	132
14	1820	214	416	258	311	127	50	42	39	38	103	106
15	731	201	1230	240	308	123	49	42	39	36	55	92
16	373	592	512	232	299	115	48	42	39	37	45	84
17	274	510	359	238	305	113	48	42	39	38	42	78
18	217	388	411	258	305	107	48	41	39	39	42	74
19	182	376	355	284	308	105	47	41	39	40	41	360
20	277	373	293	278	299	101	46	41	39	39	41	762
21	224	315	242	267	293	101	45	41	38	39	41	222
22	195	291	220	270	278	95	45	40	38	39	40	157
23	164	376	207	281	281	93	45	40	38	39	40	124
24	1290	301	202	290	284	101	45	40	38	39	40	104
25	1080	247	230	299	284	101	45	40	38	39	40	109
26	645	224	270	296	272	92	44	40	38	39	40	570
27	438	207	267	311	264	84	44	40	39	39	40	1070
28	333	196	275	338	258	99	44	40	39	39	40	282
29	284	192	287	334	245	115	44	40	38	39	40	240
30	281	—	278	328	232	101	44	40	38	39	40	878
31	421	—	261	—	223	—	44	40	—	39	—	351
Mean	415	438	312	272	308	135	53.3	41.5	39.2	38.4	42.9	367
Runoff in Ac.Ft.	27360	25190	19190	16160	18970	8040	3270	2550	2330	2360	2550	22570
	Water Year Total 162600								Calendar Year Total 150540			

U. S. Geological Survey and U. S. Army Corps of Engineers cooperative station located six miles upstream from the mouth. Antelope Creek is an east-side tributary to the Sacramento River at Mile 180.3L. Drainage area is 124 square miles. Period of record 1940 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 29

FLOW OF ANTELOPE CREEK NEAR MOUTH - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	28	560	44	74	134	38	17	8.9	13	14	13	345
2	14	1210	43	72	115	35	16	8.6	12	12	13	253
3	8.4	684	40	75	92	32	16	9.5	13	11	14	73
4	6.3	332	46	72	79	31	16	9.2	14	14	12	36
5	4.1	320	51	73	75	30	14	9.7	14	15	14	541
6	88	*270	169	78	66	30	13	10	14	13	14	764
7	67	*210	350	81	82	29	11	8.9	13	13	14	1760
8	144	*180	158	80	201	28	11	9.5	14	12	14	184
9	61	*160	104	77	146	27	12	9.5	12	13	13	544
10	141	*145	266	96	117	26	10	11	12	13	14	730
11	357	*190	151	99	110	26	8.9	10	12	13	14	629
12	902	*200	113	97	96	25	9.2	9.5	13	12	14	103
13	691	*170	109	100	91	24	9.7	9.2	16	12	20	64
14	1180	*145	449	115	85	24	10	10	16	13	29	48
15	835	*130	1560	100	78	24	9.5	12	14	14	32	40
16	220	313	610	91	71	23	8.9	12	14	13	24	33
17	171	251	302	87	73	22	8.9	11	14	12	19	30
18	99	124	287	87	70	22	9.4	10	12	16	17	23
19	55	137	243	92	70	22	9.2	12	11	18	16	750
20	70	168	171	94	63	20	9.2	11	11	17	16	972
21	55	109	115	88	67	19	9.2	11	11	13	16	158
22	30	85	90	83	64	18	9.7	9.7	13	17	16	80
23	24	283	78	73	61	18	9.7	9.5	12	16	16	56
24	500	162	71	76	61	18	9.7	9.5	10	16	16	44
25	997	92	76	83	61	17	9.7	9.7	11	16	18	50
26	396	57	85	87	61	16	9.2	10	11	17	18	542
27	204	47	86	93	58	15	9.5	13	13	18	18	1540
28	115	41	84	98	57	16	9.5	13	14	16	18	243
29	79	38	86	104	52	18	9.5	13	14	15	18	223
30	62	—	84	104	47	18	9.2	14	13	14	18	1220
31	99	—	80	—	42	—	8.8	12	—	16	—	494
Mean	249	235	200	87.6	82.2	23.7	10.7	10.5	12.9	14.5	16.9	406
Runoff in Ac.Ft.	15320	13510	12310	5215	5058	1410	657	646	766	890	1008	24650
	Water Year Total 74872								Calendar Year Total 81740			

Division of Water Resources and U. S. Bureau of Reclamation cooperative station located approximately 2.3 miles above the mouth. Antelope Creek is an east-side tributary to the Sacramento River at Mile 180.3L. Period of record 1948 to date. Records for 1952 computed by Division of Water Resources.
* Estimated

TABLE 30

FLOW OF ELDER CREEK AT GERBER - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	179	1010	186	308	280	52	36				0	365
2	134	1420	180	287	211	48	22				0	216
3	104	618	171	270	180	42	13				0	89
4	90	451	168	276	159	38	16				0	60
5	79	392	154	311	148	36	14				0	303
6	182	360	314	342	142	37	13				0	1730
7	134	339	548	346	154	40	11				0	2770
8	333	318	276	325	186	32	10				0	441
9	176	308	218	294	154	31	9.5				0	387
10	236	297	211	263	142	37	8.8				0	603
11	617	304	192	256	140	31	8.8				0	420
12	481	283	177	253	142	28	10	N	N	N	0	224
13	379	250	168	256	142	26	9.5	O	O	O	0	162
14	1370	227	467	253	137	25	8.1				0	126
15	497	214	733	214	126	25	6.2				37	103
16	332	246	537	195	118	25	5.0				86	86
17	536	162	411	192	113	20	4.5	F	F	F	17	75
18	419	270	399	205	118	18	3.5	L	L	L	6.2	66
19	304	240	332	224	121	17	2.5	O	O	O	1.7	787
20	384	214	273	208	118	17	2.5	W	W	W	1.4	730
21	256	198	253	183	108	16	2.1				.1	246
22	205	186	240	180	94	15	1.4				0	186
23	174	253	230	195	89	15	1.4				0	154
24	705	182	276	208	89	15	1.1				0	131
25	462	171	479	208	86	16	.4				0	131
26	308	165	539	195	82	15	.1				0	469
27	256	165	463	214	77	15	0				0	738
28	230	168	415	234	71	22	.1				0	290
29	218	177	407	202	66	156	0				0	319
30	218	—	378	230	60	71	0				0	1080
31	256	—	346	—	54	—	0		—		—	376
Mean	332	331	327	244	126	32.7	7.27	0	0	0	4.98	449
Runoff in Ac.Ft.	20420	19040	20110	14530	7750	1950	447	0	0	0	296	27600
	Water Year Total 105387								Calendar Year Total 112143			

U. S. Geological Survey and U. S. Bureau of Reclamation cooperative station located 1.0 mile west of Gerber and 3.5 miles above the mouth. Elder Creek is a west-side tributary to the Sacramento River at Mile 178.5. Drainage area is 142 square miles. Period of record October 1949 to date. Records for 1952 computed by U. S. Geological Survey.
(Prior records are available at a site approximately 20 miles upstream.)

TABLE 31

FLOW OF MILL CREEK NEAR LOS MOLINOS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	450	3000	357	552	880	715	375	218	140	125	121	649
2	400	2500	317	524	782	705	375	212	138	125	119	296
3	350	1500	303	532	724	692	397	202	138	123	119	186
4	320	1100	314	572	661	684	424	193	138	123	119	147
5	300	900	300	674	620	715	428	186	138	123	119	656
6	330	780	382	751	640	706	412	180	138	123	119	969
7	300	700	428	774	944	728	409	178	136	123	119	1240
8	280	640	357	692	1350	778	416	173	134	125	119	332
9	250	580	339	625	942	823	420	170	136	125	117	452
10	300	550	626	594	846	674	416	168	145	125	117	500
11	400	620	416	616	855	534	393	168	147	125	119	428
12	750	600	386	648	836	508	371	166	147	123	123	283
13	700	500	357	679	800	452	353	163	142	123	152	230
14	800	430	534	625	800	432	357	161	138	123	199	207
15	500	350	1490	564	805	405	346	161	136	123	152	191
16	400	913	679	560	782	428	332	158	134	123	138	180
17	350	879	496	602	850	464	328	156	132	121	130	170
18	310	620	616	710	880	492	324	154	130	132	130	163
19	280	528	512	805	910	500	310	152	130	140	127	426
20	350	484	412	715	895	488	293	152	130	127	127	649
21	330	424	353	679	895	524	279	149	130	125	127	276
22	310	393	317	710	818	480	270	149	130	123	125	218
23	300	444	307	778	836	488	260	149	130	123	125	191
24	1300	390	346	805	875	500	247	147	130	123	123	176
25	1100	357	480	828	910	468	241	147	127	123	123	220
26	900	339	612	800	880	452	238	145	127	121	123	695
27	750	317	572	920	890	432	232	145	127	121	123	841
28	600	307	589	1020	910	488	227	142	127	121	123	346
29	500	314	643	920	832	472	224	142	127	121	123	206
30	480	—	643	875	787	397	224	140	125	121	123	903
31	800	—	594	—	778	—	227	140	—	121	—	428
Mean	500	740	486	705	846	556	327	163	134	124	127	418
Runoff in Ac.Ft.	30720	42560	29900	41950	51990	33070	20130	10050	7990	7620	7580	25670
	Water Year Total 323110								Calendar Year Total 309230			

U. S. Geological Survey and Division of Water Resources cooperative station located 5 miles upstream from the mouth. Mill Creek is an east-side tributary to the Sacramento River at Mile 179.0L. Drainage area 134 square miles. Period of record 1900 to 1913; 1928 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 32

FLOW OF NORTH FORK OF MILL CREEK NEAR MOUTH - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.8	139	1.2	3.1	2.5	1.3	4.6	1.9	2.5	3.3	1.2	14
2	3.1	83	0.8	2.5	2.2	1.2	3.8	1.7	3.7	2.4	0.9	1.7
3	2.0	28	0.5	2.2	1.9	1.2	1.9	1.7	3.3	2.8	0.7	0
4	1.5	13	0.6	2.9	0.9	1.1	1.4	1.3	2.4	1.7	.6	0
5	1.1	7.8	.6	4.6	.4	1.3	1.2	1.1	2.8	1.5	.4	10
6	3.7	5.5	1.6	6.7	.6	1.3	1.3	1.6	3.3	1.7	.3	18
7	2.5	4.2	3.1	7.5	1.6	3.1	1.3	2.6	1.7	1.5	.2	59
8	3.5	3.3	1.5	5.5	3.3	1.7	1.5	2.8	2.9	1.4	.1	2.4
9	1.9	2.5	1.2	3.7	0.7	1.7	2.2	2.2	2.2	1.4	0	3.5
10	2.8	2.2	7.0	3.3	1.1	2.5	2.2	2.0	2.4	2.5	0	5.8
11	15	3.5	2.5	3.5	0.4	4.2	2.1	2.6	1.2	2.9	0	2.6
12	33	3.7	1.7	4.8	.6	3.7	2.1	3.7	2.0	2.2	0	1.3
13	17	2.4	1.2	5.5	1.2	2.9	2.5	3.3	2.5	4.6	0	0.7
14	53	1.7	8.0	5.5	1.2	1.9	1.9	2.2	2.5	5.8	0.6	.6
15	18	1.3	43	4.6	1.2	2.2	1.1	2.0	3.7	5.8	1.7	.5
16	6.5	16	8.4	4.6	0.5	1.9	1.4	1.2	3.8	5.8	0.6	.4
17	5.3	16	3.8	4.6	.4	1.7	2.4	0.7	4.4	5.3	.1	.4
18	3.3	6.7	5.8	4.8	.7	1.3	2.4	1.9	4.2	6.7	0	.4
19	2.2	4.4	3.8	7.0	1.2	1.1	2.2	1.4	2.5	5.8	0	10
20	3.8	3.7	2.4	6.0	2.0	0.6	2.6	2.2	2.2	6.0	0	12
21	3.1	2.6	1.4	5.3	2.0	1.1	2.6	2.6	2.4	6.7	0	2.4
22	2.2	2.2	0.9	4.4	1.7	1.2	2.6	2.5	2.4	6.0	0	1.3
23	1.9	2.6	.6	1.3	1.6	1.9	2.1	3.3	3.8	6.0	0	1.2
24	65	2.1	.8	1.2	1.3	2.1	1.9	2.2	4.0	6.0	0	0.9
25	50	1.4	2.6	1.3	1.2	2.8	1.4	2.1	2.0	6.0	0	1.0
26	23	1.2	5.5	2.6	1.5	2.2	1.2	1.5	3.5	4.8	0	8.4
27	11	0.7	4.6	2.2	0.6	3.5	1.3	2.2	2.6	4.4	0	25
28	7.2	.5	5.0	2.8	1.5	3.3	2.0	4.6	3.7	3.8	0	3.5
29	5.8	.5	6.0	2.9	2.2	4.2	1.5	4.2	3.5	2.9	0	2.4
30	5.3	—	5.8	3.3	1.7	5.3	2.2	3.7	3.3	2.1	0	19
31	9.1	—	4.2	—	1.3	—	2.9	2.9	—	1.9	—	4.4
Mean	11.8	12.5	4.4	4.0	1.3	2.2	2.0	2.3	2.9	3.9	.2	6.9
Runoff in Ac.Ft.	729	718	270	238	81	130	126	143	173	241	15	422
	Water Year Total 1028⅘								Calendar Year Total 3286			

Division of Water Resources and U. S. Bureau of Reclamation cooperative station located approximately 0.5 mile above the mouth. This creek is an east-side tributary to the Sacramento River at Mile 179.3L. Period of record 1948 to date. Records for 1952 computed by Division of Water Resources.

TABLE 33

FLOW OF MILL CREEK NEAR MOUTH - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	*464	*2740	373	523	792	606	272	131	34	22	50	660
2	393	2370	333	481	666	598	267	123	33	22	50	308
3	347	1180	319	470	606	588	279	106	31	22	68	188
4	316	849	330	509	548	577	306	92	30	22	93	145
5	300	726	324	595	502	606	311	79	39	21	97	666
6	341	*610	396	674	509	595	295	68	38	21	100	863
7	314	*523	457	686	735	606	292	61	32	22	99	1250
8	330	*454	379	598	1260	646	292	58	29	24	99	364
9	298	*409	355	534	840	735	303	49	27	24	97	434
10	367	*373	610	502	722	573	298	57	28	26	99	488
11	798	*428	444	523	730	492	279	69	32	25	99	434
12	1150	*520	406	552	713	409	258	66	32	23	108	314
13	805	*409	379	577	670	358	243	60	26	23	138	255
14	1510	*376	522	534	666	338	246	54	25	24	203	229
15	832	367	1580	470	666	308	238	46	24	24	160	205
16	570	783	708	464	646	324	227	42	24	25	136	190
17	484	906	516	498	704	352	218	37	23	25	129	177
18	425	654	622	584	730	379	210	31	22	29	127	165
19	393	555	537	686	761	387	201	29	21	38	127	319
20	438	509	428	606	744	382	196	28	22	31	127	626
21	431	454	367	562	757	415	192	28	22	30	127	306
22	387	415	335	584	682	367	184	26	22	32	125	243
23	382	467	322	650	700	373	175	26	22	36	123	210
24	1620	409	358	686	739	387	156	32	22	40	123	186
25	1410	370	495	717	774	358	140	34	22	39	125	199
26	940	347	626	678	748	338	123	33	24	38	123	552
27	704	330	594	792	761	327	115	32	24	43	123	836
28	588	322	602	892	796	376	108	42	24	48	123	373
29	523	324	650	814	726	370	103	41	25	49	123	300
30	495	—	630	752	682	300	100	36	24	50	123	816
31	614	—	577	—	670	—	110	35	—	50	—	457
Mean	612	661	502	606	718	449	217	53.2	26.8	30.6	115	412
Runoff in Ac.Ft.	37620	38040	30870	36080	44120	26720	13360	3275	1593	1880	6831	25300
	Water Year Total								Calendar Year Total 265689			

Division of Water Resources and U. S. Bureau of Reclamation cooperative station located approximately 0.8 mile above the mouth. Mill Creek is an east-side tributary to the Sacramento River at Mile 179.0L. Period of record 1948 to date. Records for 1952 computed by Division of Water Resources.

TABLE 34

FLOW OF THOMES CREEK AT PASKENTA - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	500	5360	742	1260	1150	331	115	35	7.0	4.6	8.2	125
2	400	3860	670	1180	918	311	104	33	7.0	4.6	8.2	58
3	350	1950	609	1190	782	292	97	28	6.4	4.0	8.2	42
4	300	1540	553	1390	686	281	93	24	7.0	4.0	8.8	34
5	250	1300	484	1590	630	274	89	23	7.0	4.0	8.8	110
6	280	1180	532	1730	638	284	83	22	7.0	4.0	8.8	630
7	270	1110	518	1690	906	267	79	20	7.0	4.0	8.8	1250
8	280	1040	454	1510	846	267	73	18	7.6	4.6	8.8	376
9	290	1010	448	1360	702	292	70	18	7.0	5.2	8.8	250
10	400	995	518	1260	686	232	66	17	7.6	5.2	9.4	428
11	800	1010	460	1260	734	195	66	17	8.2	5.8	9.4	826
12	700	886	430	1290	726	167	66	16	8.8	5.2	10	390
13	600	774	395	1280	726	149	60	15	8.8	5.2	19	278
14	1500	702	420	1090	702	141	55	15	8.8	5.2	77	253
15	700	678	497	934	630	131	50	14	8.2	5.2	146	228
16	400	1410	484	926	600	122	49	14	7.0	5.8	49	201
17	380	1390	420	1060	654	124	46	13	7.0	5.8	30	139
18	310	1080	504	1230	742	127	42	12	7.0	5.2	22	175
19	256	918	478	1240	766	124	40	11	5.8	8.8	20	400
20	280	782	405	1040	718	119	38	10	5.8	8.2	21	225
21	220	670	371	977	616	115	36	9.4	6.4	8.8	23	157
22	185	616	366	1030	553	108	34	9.4	6.4	8.8	22	146
23	167	574	385	1130	560	106	33	8.8	5.8	8.8	20	141
24	372	525	388	1130	588	106	31	8.8	5.8	8.8	19	134
25	310	532	1980	1090	574	99	30	8.8	5.8	8.8	18	144
26	330	546	2120	1070	553	95	28	8.2	5.8	8.8	17	303
27	320	553	1790	1240	525	93	28	8.8	5.8	8.8	16	264
28	310	609	1720	1200	511	129	29	8.2	5.8	8.8	16	242
29	320	694	1670	968	436	260	30	8.2	5.2	8.2	15	299
30	402	—	1550	1190	366	146	24	7.6	5.2	7.6	16	969
31	1640	—	1370	—	353	—	29	7.6	—	8.2	—	490
Mean	445	1182	782	1210	661	183	55.3	15.1	6.8	6.52	22.4	315
Runoff in Ac.Ft.	27380	63000	48060	72550	40630	10880	3400	930	405	401	1330	19350
	Water Year Total 321563								Calendar Year Total 293316			

U. S. Geological Survey and Division of Water Resources cooperative station located 0.5 mile upstream from Paskenta. Thomes Creek is a west-side tributary to the Sacramento River at Mile 173.2R. Drainage area is 188 square miles. Period of record 1920 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 35

FLOW OF DEER CREEK NEAR VINA - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	579	4340	526	936	1260	680	300	190	140	119	123	956
2	490	4060	487	876	1170	640	280	185	138	119	123	340
3	430	2040	463	888	1060	608	274	182	136	119	121	195
4	387	1370	451	954	972	580	265	180	136	117	119	154
5	349	1070	427	1100	906	562	258	178	136	117	121	615
6	414	912	504	1200	900	554	252	178	136	117	121	1100
7	364	810	549	1220	1100	544	246	178	136	119	121	1760
8	349	735	479	1140	1720	522	243	175	134	121	119	447
9	307	680	493	1040	1360	518	237	175	132	121	119	427
10	376	635	621	1000	1240	513	237	175	142	121	119	650
11	716	828	554	1010	1210	479	232	175	147	121	121	450
12	961	755	526	1030	1160	455	226	175	144	121	123	350
13	770	645	500	1060	1080	423	223	172	140	121	154	250
14	1210	590	686	1000	1040	408	237	170	134	121	214	220
15	744	549	1590	924	1010	387	220	168	129	121	178	200
16	514	1350	817	924	978	370	212	165	129	121	149	190
17	478	1430	645	966	996	359	206	163	127	123	136	180
18	399	1060	840	1080	1000	348	204	160	125	132	129	170
19	357	892	700	1180	1010	342	198	158	123	151	129	500
20	526	775	562	1090	990	334	198	158	123	134	127	800
21	430	670	500	1030	978	334	193	156	123	129	127	500
22	387	621	467	1030	918	331	193	156	121	132	123	250
23	349	616	451	1100	900	345	190	154	121	129	121	220
24	1770	554	536	1140	900	356	188	151	121	129	119	200
25	1560	518	804	1200	894	328	188	151	121	129	119	250
26	1160	500	1010	1170	876	324	185	149	119	129	119	900
27	860	475	978	1320	852	310	185	149	121	127	117	1100
28	710	475	1000	1410	828	338	182	147	121	127	117	500
29	633	433	1080	1330	792	376	190	147	119	123	117	350
30	628	—	1060	1230	750	331	193	144	119	123	119	1300
31	912	—	1000	—	720	—	201	142	—	123	—	700
Mean	649	1049	687	1086	1018	433	221	165	130	124	129	523
Runoff in Ac.Ft.	39910	60350	42240	64620	62620	25780	13560	10130	7720	7650	7660	32180
	Water Year Total 394250								Calendar Year Total 374420			

U. S. Geological Survey and Division of Water Resources cooperative station located 9 miles northeast of Vina and 0.8 mile upstream from a diversion dam. Deer Creek is an east-side tributary to the Sacramento River at Mile 168.5L. Drainage area is 200 square miles. Period of record 1911 to 1915; 1920 to 1937; 1939 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 36

FLOW OF DEER CREEK AT HIGHWAY 99E[a] - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	851	2900	588	878	1060	566	*190	43	*13	14	60	*585
2	754	2860	550	817	988	530	*172	35	*12	13	60	343
3	678	1650	530	791	925	493	*160	37	*12	16	58	179
4	628	1130	519	838	851	467	*145	31	*13	14	54	142
5	577	974	478	931	791	448	*130	31	*13	13	58	516
6	673	858	539	1010	772	435	*123	25	*13	14	61	735
7	588	779	633	1020	898	430	*110	26	*12	13	65	1480
8	616	728	530	952	1340	412	*100	23	*12	19	65	467
9	519	697	530	884	1110	408	77	23	*12	21	66	440
10	561	667	644	844	1020	399	79	21	*17	24	70	498
11	824	804	588	851	1010	368	75	21	*18	26	72	498
12	1050	772	566	871	981	347	73	19	*17	27	75	352
13	878	691	545	891	925	319	77	19	*15	24	108	279
14	1150	644	672	844	884	298	88	17	*15	25	153	247
15	838	605	1420	791	858	283	84	14	*12	27	140	222
16	656	1090	871	785	831	265	70	14	*11	30	108	203
17	661	1310	691	804	831	250	63	13	11	34	99	191
18	588	1050	798	878	824	*242	60	13	11	36	95	179
19	561	904	741	959	824	*238	66	13	12	60	84	294
20	697	824	616	904	811	*232	58	13	12	61	*84	706
21	656	741	550	851	798	*230	51	20	12	65	*84	372
22	628	678	524	851	754	*230	43	17	12	61	*82	279
23	611	667	504	904	741	*238	41	15	12	63	*81	240
24	1760	616	530	931	741	*245	43	17	12	63	*81	209
25	1710	588	735	981	741	*215	40	*17	11	61	*80	200
26	1390	566	938	966	722	*210	40	*17	11	63	*80	488
27	1110	545	911	1060	703	*190	43	*17	12	61	*80	698
28	988	535	931	1130	684	*220	37	*15	12	58	*80	577
29	931	545	988	1090	644	*258	40	*15	14	61	*80	376
30	904	—	981	1020	628	*220	43	*14	13	60	*80	884
31	1140	—	931	—	594	—	45	*13	—	60	—	556
Mean	844	947	697	911	848	323	79.7	20.3	12.8	38.2	81.4	443
Runoff in Ac.Ft.	51930	54480	42880	54200	52130	19210	4901	1248	762	2348	4842	27260
	Water Year Total 358764								Calendar Year Total 316191			

Division of Water Resources and U. S. Bureau of Reclamation cooperative station located at the Highway 99 bridge. Deer Creek is an east-side tributary to the Sacramento River at Mile 168.5L. Period of record 1948 to date. Records for 1952 computed by Division of Water Resources.

(a) Recorder was moved to this location from a point 2 miles downstream during 1951.

TABLE 37

FLOW OF CHICO CREEK NEAR CHICO - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	387	3570	351	531	255	79	53	35	30	25	30	226
2	295	2750	322	480	243	76	51	35	30	25	30	192
3	249	1540	285	450	232	75	49	34	30	25	29	92
4	221	991	282	447	218	72	48	34	28	25	29	64
5	204	765	247	489	203	71	47	33	31	26	29	119
6	230	639	411	525	191	71	46	33	30	26	29	243
7	208	570	1210	534	198	70	44	32	30	26	29	876
8	206	522	1150	513	331	70	44	32	30	26	29	298
9	179	483	1130	471	345	69	45	32	30	27	29	255
10	203	441	1130	429	288	69	45	32	33	27	29	512
11	379	588	1070	402	251	69	45	32	33	28	29	591
12	734	609	823	381	230	69	45	34	33	27	30	285
13	522	498	1110	366	210	65	43	34	32	27	36	196
14	531	414	1230	366	192	64	45	33	31	27	67	163
15	483	357	1580	339	178	62	43	36	30	27	52	143
16	330	792	1440	315	166	59	45	36	30	27	40	124
17	312	1010	1320	298	157	56	44	32	30	27	37	110
18	245	700	1280	298	148	54	43	32	28	32	35	97
19	213	537	1230	310	140	54	43	33	28	35	34	167
20	278	465	1170	302	134	52	43	33	28	30	35	444
21	270	387	1090	288	128	52	42	33	28	30	34	241
22	241	348	776	270	119	50	41	33	28	30	34	176
23	225	366	465	260	112	54	41	32	28	30	34	144
24	866	330	336	255	107	56	41	32	28	30	34	122
25	1430	315	501	255	101	54	40	33	26	30	34	119
26	1170	320	962	265	97	55	40	32	26	30	34	299
27	863	310	1060	253	93	53	38	32	26	29	34	522
28	652	315	891	253	89	59	37	32	26	29	34	326
29	567	322	842	249	85	76	36	31	26	30	34	239
30	537	—	772	243	82	60	36	30	26	30	34	921
31	712	—	636	—	82	—	38	30	—	30	—	525
Mean	450	733	876	361	176	63.2	43.4	32.8	29.1	28.2	34.2	288
Runoff in Ac.Ft.	27650	42160	53860	21500	10820	3760	2670	2020	1730	1730	2040	17720
	Water Year Total 207240								Calendar Year Total 187660			

U. S. Geological Survey and Division of Water Resources cooperative station located 6 miles northeast of Chico. Chico Creek is an east-side tributary to the Sacramento River at Mile 141.5L. Drainage area is 68.3 square miles. Period of record 1930 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 38

FLOW OF CHICO CREEK NEAR MOUTH - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	437	2080	334	462	244	54	33	5.0	1.9	0	0	40
2	350	2560	315	418	223	51	26	4.4	.3	0	0	146
3	296	1400	288	399	206	48	25	3.5	0	0	0	45
4	258	885	288	405	190	47	23	2.9	2.1	0	0	24
5	233	659	262	441	178	45	22	1.7	.5	0	0	50
6	252	551	305	468	167	42	20	1.5	1.5	0	.8	107
7	233	496	403	479	178	44	19	1.5	1.5	0	1.0	738
8	233	452	307	454	346	41	18	0.6	1.5	0	1.2	255
9	201	422	305	407	300	35	18	1.7	1.2	0	1.5	171
10	214	405	342	372	260	41	18	2.1	2.6	0	1.5	281
11	295	483	344	354	226	40	18	2.1	4.4	0	1.7	479
12	340	547	322	341	202	38	16	2.6	4.7	0	2.1	254
13	508	458	344	334	178	35	16	3.5	4.1	0	5.3	160
14	452	395	371	339	163	32	16	2.9	2.9	0	19	123
15	475	348	918	308	147	32	16	.8	2.7	0	14	103
16	334	544	597	291	136	34	15	5.0	0	0	0.2	90
17	329	908	422	276	124	27	13	2.9	0	2.9	0	77
18	265	641	456	284	117	29	5	2.1	0	5.3	0	68
19	225	498	468	295	108	21	12	1.5	0	12.0	0	112
20	250	439	380	283	103	31	11	1.7	0	11.0	0	348
21	268	384	322	260	95	31	11	1.5	0	4.6	0	214
22	233	341	295	247	95	32	11	1.7	0	0	0	150
23	206	352	286	244	91	34	11	1.5	0	0	0	120
24	590	329	307	241	80	38	9.2	1.4	0	0	0	103
25	1470	313	502	252	75	37	6.1	1.4	0	0	0	98
26	1090	317	682	254	72	33	10	1.2	0	0	0	254
27	794	308	641	244	66	31	28	1.7	0	0	0	422
28	567	312	627	242	64	35	13	5.0	0	0	0	298
29	466	320	643	230	64	46	5.3	0	0	0	0	231
30	424	—	597	228	59	43	5.3	1.7	0	0	0	727
31	534	—	529	—	56	—	8.0	1.4	—	0	—	540
Mean	423	626	426	328	149	37.6	15.5	2.2	1.1	1.2	1.6	220
Runoff in Ac.Ft.	26010	35990	26190	19540	9150	2235	952	136	63	71	96	13540
	Water Year Total								Calendar Year Total		133993	

Division of Water Resources and U. S. Bureau of Reclamation cooperative station located approximately 1.5 miles above mouth. Chico Creek is an east-side tributary to the Sacramento River at Mile 141.5L. Period of record 1948 to date. Records for 1952 computed by Division of Water Resources.

TABLE 39

FLOW OF STONY CREEK NEAR HAMILTON CITY - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1690	3830	1180	2080	910	146	47	0.2	0	18	10	61
2	1270	10200	1140	1840	865	135	42	4.9	0	14	8.2	630
3	850	7870	838	1570	760	120	36	10	0	6.3	8.2	164
4	705	5300	700	1040	656	109	32	14	0.1	3.9	8.2	77
5	678	4160	595	1450	592	98	25	12	1.1	5.0	3.4	77
6	683	3440	590	1480	502	82	18	6.0	4.9	.8	0	892
7	738	2970	982	1530	458	77	13	3.1	4.0	.4	0	6910
8	904	2580	928	1490	538	77	22	4.0	3.8	.6	0	2210
9	732	1980	886	1330	574	77	24	16	5.8	1.9	0	1260
10	650	1950	1040	1220	498	75	27	20	13	4.6	0	1620
11	820	2010	1100	1140	466	70	21	14	8.9	1.6	2.1	1330
12	1960	2010	1040	1130	436	63	14	3.1	7.0	5.6	3.8	870
13	2410	1720	989	1160	412	58	9.6	1.2	9.6	7.0	4.3	520
14	3880	1630	1230	1170	394	56	8.9	0.8	5.2	7.6	6.5	360
15	5200	1580	3300	1050	338	58	11	3.5	2.9	7.6	7.0	258
16	3220	1710	3240	952	310	60	14	3.5	2.1	6.5	7.0	187
17	3890	2540	2430	900	266	51	11	1.7	0.8	6.5	7.0	145
18	3700	2280	2160	665	233	42	7.0	0.8	1.2	7.0	6.5	132
19	2700	2010	2330	670	248	29	15	0.4	1.6	7.6	5.6	765
20	2910	1590	2160	675	272	25	21	0.1	0.9	7.6	5.2	3120
21	2760	1440	1880	651	239	29	15	0	1.5	7.0	4.9	1280
22	2330	1370	1640	606	221	21	16	2.3	3.5	6.5	3.8	779
23	1790	1370	1490	597	215	24	15	1.0	6.0	6.5	0.4	568
24	2520	1320	1450	628	206	27	9.6	0.4	14	6.5	0	550
25	4060	1270	1980	690	194	32	4.0	0.1	15	7.0	0	457
26	3420	1240	2350	825	191	34	1.6	0	15	7.0	0	1050
27	2880	1150	2630	885	185	32	0.8	1.2	16	7.6	0	3160
28	2330	1130	2440	958	182	32	1.9	4	17	7.6	0	2930
29	1790	1140	2560	910	179	44	0.8	3	16	3.2	0	2400
30	1730	—	2540	845	173	47	0.2	2	17	8.9	0	1540
31	2050	—	2360	—	161	—	0	1	—	9.5	—	3540
Mean	2169	2579	1685	1071	383	61.0	15.6	4.33	6.60	6.53	3.40	1366
Runoff in Ac.Ft.	133400	148300	103600	63740	23550	3630	959	266	393	402	203	83980
	Water Year Total 529817								Calendar Year Total 562423			

U. S. Geological Survey and U. S. Army Corps of Engineers cooperative station located about 5 miles above the mouth and above the Glenn-Colusa Irrigation District canal crossing. The flow to the Sacramento River is cut off during irrigation season by an earth fill installed by Glenn-Colusa Irrigation District to transport water from their main canal across Stony Creek. Stony Creek is a west-side tributary to the Sacramento River at Mile 136.3R. Water diverted from Stony Creek by G.C.I.D. in acre-feet amounted to: April 41994, May 23550, June 3630, July 959, August 266, September 393, October 402, and November 203. Drainage area is 761 square miles. Period of record 1941 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 40

FLOW OF BUTTE CREEK NEAR CHICO - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	888	5120	761	1030	1420	593	287	180	130	141	112	360
2	740	3950	670	992	1280	579	270	174	130	132	96	405
3	640	2280	684	1010	1140	522	273	171	125	128	110	230
4	580	1690	684	1090	1040	528	235	135	135	125	110	180
5	500	1420	631	1180	984	523	243	132	138	135	108	260
6	550	1220	803	1240	952	498	240	156	138	125	112	478
7	520	1100	936	1310	1230	486	223	156	141	130	94	896
8	500	1020	761	1280	1690	474	232	150	141	138	122	435
9	460	984	719	1170	1320	450	230	153	135	125	100	370
10	516	928	709	1140	1210	436	225	141	144	130	118	558
11	886	1090	726	1150	1180	414	215	153	162	138	104	654
12	1670	1060	719	1150	1110	376	210	159	150	128	130	425
13	1110	920	712	1160	1050	335	218	153	159	128	156	325
14	1050	838	823	1110	1010	325	212	150	138	130	256	290
15	1140	789	1960	1020	968	302	202	156	141	130	230	286
16	768	1360	1170	1020	960	288	200	153	130	125	165	246
17	712	1420	896	1060	968	279	200	141	128	115	150	262
18	540	1130	1320	1180	936	262	195	150	132	102	144	206
19	474	992	912	1240	920	238	186	144	135	150	132	337
20	605	1020	754	1180	852	292	200	141	138	122	135	612
21	546	896	698	1110	880	302	174	141	138	120	130	500
22	456	852	644	1100	817	310	180	138	138	118	110	360
23	426	912	631	1140	824	315	180	144	128	125	122	290
24	1510	852	698	1160	810	340	183	144	132	115	141	250
25	2340	789	928	1240	796	304	180	138	130	115	128	240
26	1890	789	1130	1240	782	301	180	144	125	96	130	520
27	1370	726	1070	1290	754	294	180	141	132	125	122	900
28	1060	726	1120	1370	733	350	165	150	138	110	118	630
29	888	747	1150	1240	698	330	168	141	130	110	102	480
30	831	—	1140	1250	670	312	177	141	122	110	141	1400
31	1110	—	1070	—	638	—	180	130	—	103	—	1200
Mean	800	1297	883	1162	989	383	208	148	136	124	131	471
Runoff in Ac.Ft.	54100	74620	54310	69130	60840	22810	12800	9120	8100	7590	7810	28970
	Water Year Total 441250								Calendar Year Total 410200			

U. S. Geological Survey and Division of Water Resources cooperative station located 0.3 mile downstream from Little Butte Creek and 7.5 miles east of Chico. Butte Creek is a tributary to Butte Slough 0.6 mile above its junction with the Sacramento River. Flows into the Sacramento River are regulated by gates at the mouth of Butte Slough. (See notes on Tables 43 and 54.) Drainage area of Butte Creek near Chico is 148 square miles and period of record 1930 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 41

FLOW OVER MOULTON WEIR FROM SACRAMENTO RIVER TO BUTTE BASIN - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0										
2	0	0										
3	0	*6500										
4	0	*2000										
5	0	0										
6	0	0										
7	0	0										
8	0	0										
9	0	0										
10	0	0										
11	0	0										
12	0	0	N	N	N	N	N	N	N	N	N	N
13	300	0	0	0	0	0	0	0	0	0	0	0
14	80	0										
15	2400	0										
16	500	0										
17	0	0	F	F	F	F	F	F	F	F	F	F
18	0	0	L	L	L	L	L	L	L	L	L	L
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	W	W	W	W	W	W	W	W	W	W
21	0	0										
22	0	0										
23	0	0										
24	0	0										
25	170	0										
26	1200	0										
27	0	0										
28	0	0										
29	0											
30	0	—										
31	0	—		—		—			—		—	
Mean	150	293	0	0	0	0	0	0	0	0	0	0
Runoff in Ac.Ft.	9223	16860	0	0	0	0	0	0	0	0	0	0
	Water Year Total 49173								Calendar Year Total 26083			

Elevation of crest is 76.75 U.S.E.D. datum; length of crest is 500 feet. Weir is on left bank at Mile 104.0. Period of record 1940 to date. Records for 1952 computed by Division of Water Resources.

* Estimated

TABLE 42

FLOW OVER COLUSA WEIR FROM SACRAMENTO RIVER TO BUTTE BASIN - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	960	5.0	0									0
2	0	13300	0									0
3	0	32800	0									0
4	0	27200	0									0
5	0	16000	0									0
6	0	11600	0									0
7	0	13300	0									1940
8	0	16000	724									25000
9	0	16900	0									8500
10	0	16000	0									0
11	0	15100	0									5110
12	3200	15160	0	N	N	N	N	N	N	N	N	11600
13	17900	10880	0	0	0	0	0	0	0	0	0	443
14	18900	7770	0									0
15	21800	5700	1600									0
16	24000	5020	17900									0
17	9250	5020	12400	F	F	F	F	F	F	F	F	0
18	7080	6390	3350	L	L	L	L	L	L	L	L	0
19	1660	1770	1350	0	0	0	0	0	0	0	0	0
20	0	627	1350	W	W	W	W	W	W	W	W	65
21	0	1770	0									4460
22	0	392	0									0
23	0	0	0									0
24	0	1770	0									0
25	8040	1770	0									0
26	22900	85	0									0
27	14200	0	0									1110
28	5020	0	0									15100
29	287	0	0									5230
30	0	—	0									52
31	0	—	0	—		—			—		—	12400
Mean	5006	8351	1248	0	0	0	0	0	0	0	0	2936
Runoff in Ac.Ft.	307800	480400	76710	0	0	0	0	0	0	0	0	180500
	Water Year Total 1081710								Calendar Year Total 1045410			

Elevation of crest is 61.80 U.S.E.D. datum; length of crest is 1650 feet. Weir is on left bank at Mile 92.4. Period of record 1950 to date. Records for 1952 computed by Division of Water Resources.

TABLE 43

FLOW OF BUTTE SLOUGH TO SACRAMENTO RIVER - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0					*96	240	155	366	625	*108	100
2	0					*333	376	151	370	*695	*108	*38
3	0					*406	451	162	330	476	*110	0
4	191					273	466	171	261	*491	*113	0
5	0					*446	426	180	241	*451	117	0
6	0					*371	411	182	228	*401	*113	0
7	0					*426	349	171	222	*386	*111	0
8	0					*441	330	169	265	*259	*112	0
9	0					*511	263	178	259	*208	*110	0
10	0					*496	211	174	390	*120	110	0
11	0					*456	158	182	351	280	*104	0
12	0	N	N	N	N	*436	136	191	379	*196	*101	0
13	0	0	0	0	0	*416	136	205	444	*199	*102	0
14	0					*436	153	218	506	*181	*102	0
15	0					*431	157	246	566	*136	*93	0
16	0					*426	148	277	590	*129	264	0
17	0	F	F	F	F	*421	155	274	607	123	*434	0
18	0	L	L	L	L	*396	141	268	603	*70	*309	0
19	0	0	0	0	0	*401	128	298	553	*67	*293	0
20	0	W	W	W	W	*356	126	300	576	*67	*293	0
21	0					*346	122	300	576	*78	*296	0
22	0					*291	119	295	642	*90	*296	0
23	0					412	99	313	663	*91	*280	0
24	0					*344	88	334	653	*89	*263	0
25	0					*320	95	349	656	*90	*243	0
26	0					*336	121	366	465	*99	*219	0
27	0					*340	109	363	478	*102	*203	0
28	0					*379	111	372	525	*102	*188	0
29	0					*377	169	369	720	*103	166	0
30	0	—				*444	160	364	*665	*108	*103	0
31	0	—		—		—	113	356	—	*109	—	0
Mean	6.2	0	0	0	0	386	202	256	472	214	182	4.4
Runoff in Ac.Ft.	379	0	0	0	0	22960	12430	15740	28070	13130	10840	274
	Water Year Total 123426								Calendar Year Total 103823			

This is the discharge to the Sacramento River at Mile 84.0L and is measured at and regulated by the gravity culverts at the mouth of the slough. These flows, together with those shown in Tables 54 and 55 are, during the summer months, made up almost entirely of return water from lands irrigated by Feather River diversions. Discharge from the Sacramento to Butte Basin over Moulton and Colusa Weirs is shown in Tables 41 and 42. This is a Division of Water Resources station. Period of record 1924 to date.

* Estimated.

TABLE 44

FLOW OF RECLAMATION DISTRICT 70 DRAIN - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	14	76	36	2.2	38	61	103	*55	*40	*9.0	*0	*16
2	8.8	104	30	14	27	64	122	*48	*54	*4.6	*6.6	*0
3	22	126	27	17	46	73	107	*43	*73	*9.0	*6.6	18
4	21	93	40	17	115	77	92	*41	*63	*11	*6.6	30
5	30	47	27	13	97	63	83	*33	*49	*13	*2.9	30
6	30	88	34	5.5	66	60	78	*33	*49	*11	*2.9	5.0
7	26	66	43	16	52	60	78	*36	*51	*9.0	*2.9	*28
8	29	69	43	16	74	64	78	*38	*54	*9.0	*2.9	25
9	29	64	24	10	72	64	36	*40	*95	*6.6	*2.9	25
10	30	54	25	14	87	92	54	*36	*119	*6.6	*0	34
11	34	64	41	11	98	88	73	*48	*124	*5.6	*0	25
12	76	55	25	15	62	86	47	*54	*125	*2.9	*0	31
13	87	55	26	19	98	78	31	*77	*109	*22	0	25
14	129	46	29	10	95	76	*31	*67	*109	*11	0	*27
15	175	85	52	13	89	78	*40	*52	*126	*13	0	*29
16	183	52	24	11	73	84	*37	*38	*118	*9.6	0	*30
17	143	53	30	26	79	58	*40	*37	*110	*8.9	0	7.4
18	168	56	63	32	*73	52	*31	*55	*80	*2.8	0	30
19	116	45	36	27	*36	40	*53	*52	*92	*4.2	0	47
20	90	48	57	53	*42	39	*44	*52	*97	*4.2	*18	50
21	29	46	25	24	*75	46	*29	*52	*67	*14	*11	49
22	52	50	25	7.6	77	60	*32	*52	*82	*16	*6.9	62
23	81	39	35	19	*94	73	*41	*55	*77	*0	*1.6	11
24	117	51	34	0	*76	78	*41	*52	*78	*0	*3.6	69
25	174	62	38	0	*78	71	*42	*52	*53	*6.6	*3.6	*26
26	189	34	26	0	*38	78	*46	*29	*9.3	*4.6	*5.1	*29
27	188	43	26	0	*33	21	*32	*43	*4.8	*6.6	*3.6	27
28	166	36	25	14	*51	46	*37	*43	*6.6	*2.0	*5.1	25
29	150	39	25	22	*48	46	*36	*43	*2.2	*2.0	*3.6	64
30	135	—	25	27	*60	88	*36	*49	*0	*6.6	*6.9	49
31	84	—	5.5	—	74	—	*47	*71	—	*11	—	49
Mean	90.5	60.2	32.5	15.1	68.5	65.5	54.1	47.6	70.6	7.8	3.4	31.4
Runoff in Ac.Ft.	5565	3463	1998	899	4211	3896	3326	2928	4199	481	205	1929
	Water Year Total 32294								Calendar Year Total 33100			

This is the drainage from Reclamation District 70 returned to the Sacramento River at Mile 68.8L. This is a combination irrigation and drainage plant and discharges both to the Sacramento River and to an irrigation canal. The above flow includes gravity as well as pumped drainage. Period of record 1924 to date. Records for 1952 computed by Division of Water Resources.

* Estimated

TABLE 45

FLOW OVER TISDALE WEIR FROM SACRAMENTO RIVER TO SUTTER BY-PASS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	11200	5300	1350	1450	1750							0
2	6500	10200	990	850	2400							0
3	2250	18500	400	1100	3100							0
4	1000	19400	0	960	2250							0
5	30	18700	0	700	650							0
6	0	17300	0	950	10							0
7	260	16600	1000	1500	0							220
8	2400	17300	7200	2100	0							11200
9	4300	17300	7200	2100	0							11200
10	4000	17300	4200	2100	500							3200
11	2500	17200	2400	3900	600							7200
12	6100	17200	2100	5100	400	N	N	N	N	N	N	11200
13	17600	17100	1200	5100	50	0	0	0	0	0	0	5900
14	18500	14900	1850	5200	0							330
15	18000	13200	2900	5600	0							0
16	18800	12600	14400	5000	0							0
17	17000	11000	17600	4000	0	F	F	F	F	F	F	0
18	11600	12200	15200	3300	0	L	L	L	L	L	L	0
19	10100	10400	11000	3150	0	O	O	O	O	O	O	0
20	7800	9100	12000	3300	0	W	W	W	W	W	W	100
21	5200	8000	9200	3250	0							9800
22	6200	7900	6200	2450	0							6500
23	4900	6700	4300	1900	0							540
24	3150	6700	2400	1050	0							0
25	6250	8200	1050	400	0							0
26	16100	6850	1900	350	0							0
27	17400	5000	4100	650	0							1290
28	16000	2900	5200	750	0							13200
29	10100	1700	4400	1000	0							11200
30	6500	—	3650	1400	0							6500
31	4900	—	2450	—	0	—			—		—	11200
Mean	8279	11960	4769	2355	378	0	0	0	0	0	0	3613
Runoff in Ac.Ft.	509000	687800	293200	140200	23230	0	0	0	0	0	0	219700
	Water Year Total 1833830								Calendar Year Total 1873130			

Elevation of crest is 45.45 U.S.E.D. datum; length of crest is 1155 feet. Weir is on left bank at Mile 64.2L. Period of record 1940 to date. Records for 1952 computed by Division of Water Resources.

TABLE 46

FLOW OF RECLAMATION DISTRICT 108 DRAIN AT ROUGH AND READY BEND - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	140	224	91	66	184	495	446	428	601	100	54	0
2	0	258	74	65	168	378	452	428	481	121	0	153
3	139	209	81	46	147	350	409	598	481	99	0	110
4	87	108	75	74	*166	403	608	422	463	73	40	110
5	0	198	58	51	192	415	358	422	474	38	0	103
6	153	152	84	55	254	416	541	422	473	50	0	112
7	120	142	103	56	268	416	397	450	566	50	0	437
8	120	154	96	68	277	531	397	423	448	36	100	266
9	118	109	79	78	291	391	387	453	544	43	0	213
10	107	157	98	58	291	403	383	563	462	30	0	269
11	114	109	78	71	270	394	387	418	480	33	0	121
12	176	130	80	62	286	377	354	431	481	31	67	140
13	518	118	77	69	290	384	468	439	481	40	0	113
14	352	118	64	93	297	390	396	432	675	26	0	92
15	352	128	123	110	343	445	415	440	466	26	118	102
16	352	92	169	187	370	390	*415	471	465	35	29	89
17	352	112	159	110	316	396	422	624	450	30	36	87
18	363	120	113	116	427	372	422	454	446	26	0	61
19	374	92	158	93	302	396	422	460	440	0	0	110
20	578	107	104	213	318	376	465	467	435	47	52	386
21	291	87	*100	162	334	347	395	474	464	0	0	356
22	199	116	100	90	370	329	428	474	343	50	0	202
23	161	102	74	110	378	335	427	470	320	0	64	133
24	329	112	104	38	378	316	428	575	282	0	13	116
25	387	95	98	88	495	316	428	446	312	48	0	0
26	395	96	88	99	377	329	422	474	245	0	0	280
27	636	89	64	131	387	337	471	474	193	54	68	242
28	332	96	16	217	387	344	395	488	197	0	0	133
29	332	88	78	139	395	483	420	481	78	52	75	227
30	265	—	130	191	572	403	428	488	114	0	0	150
31	210	—	81	—	384	—	428	653	—	0	—	250
Mean	260	128	93.4	100	320	388	426	476	412	36.7	23.9	163
Runoff in Ac.Ft.	15970	7375	5746	5962	19660	23120	26210	29240	24520	2257	1420	10040
	Water Year Total 170225								Calendar Year Total 171520			

This is the drainage from Reclamation District 108 discharged to the Sacramento River at Mile 44.0R. Additional drainage from Reclamation District 108 is sometimes discharged to Back Borrow Pit at Mile 19.9L. Period of record 1924 to date. Records for 1952 computed by Division of Water Resources.

TABLE 47

FLOW OF RECLAMATION DISTRICT 787 DRAIN - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13	Records sufficient to compute only monthly flows.											
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30		—										
31		—		—		—			—		—	
Mean	54.7	27.7	23.3	21.5	47.1	37.9	25.5	29.0	23.0	1.24	.51	15.2
Runoff in Ac.Ft.	3366	1539	1432	1279	2894	2253	1569	1781	1371	76	30	936
	Water Year Total 17972								Calendar Year Total 18526			

This is the drainage from Reclamation District 787 discharged by pumping to the Sacramento River at Mile 37.0R. Additional drainage from Reclamation District 787 is discharged to the Back Borrow Pit below the Knights Landing Outfall Gates via Sycamore Slough, (See Table 52). Period of record 1949 to date. Records for 1952 computed by Division of Water Resources.

TABLE 48

FLOW OF COLUSA TROUGH AT COLUSA-WILLIAMS HIGHWAY - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	557	1770	245	182	639	807	1190	569	1010	622	405	339
2	465	1770	228	188	675	740	1060	597	1060	628	447	1388
3	405	1770	222	184	624	719	887	605	1010	573	431	1510
4	369	1830	230	165	549	763	803	593	995	545	415	1440
5	340	1540	222	159	469	796	687	577	1120	557	429	1180
6	443	1190	213	139	411	878	694	559	1190	545	449	1260
7	973	933	306	150	457	957	618	577	1240	551	395	1810
8	1160	782	455	137	807	942	567	614	1260	523	381	2040
9	1270	675	407	116	769	997	547	656	1330	497	425	2000
10	1090	599	306	109	633	979	535	652	1400	447	485	2280
11	940	573	256	192	541	908	501	681	1450	409	425	2500
12	1800	658	249	264	517	866	459	643	1480	421	381	2620
13	2310	577	235	270	519	778	507	670	1490	463	393	2510
14	2710	511	260	304	517	700	557	715	1440	485	507	2230
15	3850	469	917	294	375	692	533	748	1350	509	533	1960
16	5650	447	1470	332	328	742	521	792	1400	495	992	1660
17	6460	423	1500	321	332	654	547	836	1450	451	805	1250
18	6730	389	1450	340	413	585	489	815	1420	367	539	966
19	6430	353	1340	344	479	519	491	807	1390	389	499	1050
20	5860	338	944	734	553	531	489	744	1330	477	429	2073
21	4780	346	610	801	614	459	509	736	1230	485	328	2390
22	3510	319	435	571	694	461	511	744	1140	389	247	2530
23	2520	323	373	411	763	485	483	771	1050	351	243	2880
24	2230	332	336	431	803	495	497	757	977	340	205	2960
25	2520	342	311	545	788	497	513	838	906	377	176	2610
26	2890	313	281	887	780	529	499	799	796	357	161	2230
27	3300	290	258	940	746	535	465	786	769	367	125	2240
28	3270	270	243	832	727	593	503	832	736	389	137	2380
29	2790	256	230	670	721	895	597	933	637	481	150	2490
30	2290	—	211	702	794	1130	501	979	569	375	152	2660
31	1970	—	194	—	792	—	549	1010	—	385	—	2870
Mean	2641	703	482	390	609	721	591	730	1154	460	390	2010
Runoff in Ac.Ft.	162400	40440	29630	23230	37450	42910	36910	44900	68680	28260	23180	123600
	Water Year Total 591360								Calendar Year Total 661590			

Division of Water Resources station located 37.0 miles above the mouth of Back Borrow Pit of Reclamation District 108. This station is also known as Colusa Trough at Highway 20 and Colusa Trough at Tahoe-Ukiah Highway. The flow is return water flowing in the main drain of Reclamation District 2047; it is drainage chiefly from lands irrigated by Glenn-Colusa, Provident, Princeton-Codora-Glenn, Compton-Delevan, Maxwell, and Jacinto Irrigation Districts. Flow reaches Sacramento River, at Mile 34.15R. through the Knights Landing outfall gates via Back Borrow Pit. (see Table 51). Period of record 1924 to date.

TABLE 49

FLOW OF COLUSA TROUGH (BACK BORROW PIT) NEAR COLLEGE CITY - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	601	2680	252	234								
2	544	2340	272	236								
3	400	1980	482	226								
4	321	1820	295	229								
5	300	1700	303	216								
6	297	1500	398	229								
7	691	1240	284	229								
8	892	1060	398	206								
9	1050	882	440	196								
10	984	749	331	(a)								
11	953	662	277									
12	1880	653	305									
13	2340	562	274									
14	3220	520	678									
15	2770	514	619									
16	2830	514	1310									
17	3780	454	1570									
18	4620	451	1650									
19	5170	442	1460									
20	5330	434	1000									
21	5030	391	583									
22	4320	386	414									
23	3640	373	381									
24	3440	365	334									
25	3210	362	274									
26	3000	360	232									
27	2700	316	274									
28	3030	323	303									
29	3300	336	274									
30	3350	—	266									
31	2890	—	222	—	—				—		—	
Mean	2480	840	521									
Runoff in Ac.Ft.	152500	48320	32040									
	Water Year Total								Calendar Year Total			

Division of Water Resources and U. S. Bureau of Reclamation cooperative station located on Back Borrow Pit of Reclamation District 108 at Mile 22.7. This is return water derived chiefly from lands irrigated by Glenn-Colusa, Provident, Princeton-Codora-Glenn, Compton-Delevan, Maxwell, and Jacinto Irrigation Districts. Period of record 1946 to April 1952. Records for 1952 computed by Division of Water Resources.

(a) Station discontinued April 10, 1952.

TABLE 50

FLOW OF RIDGE CUT AT KNIGHTS LANDING - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1420	4300	366	256	645	738	84	50	77			0
2	1150	3810	330	261	598	759	91	51	71			0
3	912	3240	296	264	567	723	67	62	70			36
4	590	3270	302	260	542	693	51	66	63			261
5	438	3190	285	254	555	717	42	65	61			126
6	387	2800	270	246	456	796	42	62	75			32
7	483	2410	321	254	380	848	47	60	90			339
8	830	2050	360	280	435	924	41	55	83			1330
9	1020	1640	417	342	616	950	28	59	63			1620
10	1090	1200	430	370	654	975	23	66	66			1730
11	1060	894	370	363	598	981	21	66	72			1920
12	1670	759	327	411	564	882	21	61	74	N	N	2050
13	2080	698	302	428	537	654	21	55	85	0	0	2120
14	2130	663	240	438	542	339	28	57	95			2210
15	2850	669	560	430	508	172	29	58	75			2280
16	3240	626	1020	435	420	97	28	66	38			1970
17	3730	608	1130	428	354	65	31	74	31	F	F	1350
18	4320	616	1170	400	315	39	34	71	28	L	L	796
19	4750	630	1270	456	318	30	34	55	24	0	0	380
20	5240	608	1270	486	345	28	29	47	21	W	W	688
21	5890	603	1110	702	420	27	31	39	16			1460
22	6170	572	770	802	486	18	40	39	10			1750
23	6150	564	567	962	542	12	45	50	6.4			1970
24	5890	525	464	1100	616	11	40	54	3.6			2130
25	5820	513	406	1070	669	36	34	55	1.8			2200
26	5150	489	360	836	663	50	36	58	0.6			1930
27	4820	460	314	572	639	37	34	55	0.1			2350
28	4820	414	294	525	634	36	34	56	0			2780
29	4710	376	285	564	654	48	34	66	0			2800
30	4690	—	267	576	658	74	44	73	0			2800
31	4840	—	260	—	708	—	46	75	—		—	2930
Mean	3172	1352	520	492	537	392	39.0	58.9	43.4	0	0	1495
Runoff in Ac.Ft.	195100	77750	32000	29300	33000	23320	2400	3622	2580	0	0	91910
	Water Year Total 429716								Calendar Year Total 490982			

Knights Landing Ridge Cut diverts water from the Back Borrow Pit of Reclamation District 108, at a point above the outfall gates, into the Yolo By-Pass above Elkhorn. Winter flows are uncontrolled. Summer flows for irrigation are controlled at the outfall gates and at the junction with Yolo By-Pass by weir boards and gates. This is a Division of Water Resources station. Period of record 1933 to date.

TABLE 51

FLOW OF COLUSA BASIN DRAINAGE TO SACRAMENTO RIVER AT KNIGHTS LANDING - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1						0	879	396	961	*618	388	118
2						0	898	417	970	628	394	474
3						0	779	446	992	637	403	787
4						0	636	458	1010	617	413	971
5						0	490	454	1000	599	457	1370
6						0	471	446	1050	582	653	1420
7						0	523	454	1180	591	689	602
8						0	526	446	1400	582	495	0
9						0	491	460	1430	558	413	0
10						0	440	503	1520	539	406	0
11						0	362	560	1560	502	433	0
12	N	N	N	N	N	0	339	569	1580	467	400	0
13	0	0	0	0	0	0	336	550	1620	463	369	0
14						0	372	590	1640	484	403	0
15						0	381	614	1740	467	463	0
16						194	355	636	1810	446	513	544
17	F	F	F	F	F	360	359	686	1790	443	681	845
18	L	L	L	L	L	308	371	776	1770	467	686	923
19	0	0	0	0	0	336	367	775	1740	513	585	796
20	W	W	W	W	W	290	353	745	1730	505	488	835
21						336	314	711	1690	460	443	0
22						256	321	641	1130	436	363	0
23						212	366	632	1090	413	280	0
24						280	369	648	1020	391	243	0
25						208	350	694	950	366	215	165
26						366	352	731	872	366	186	690
27						365	350	722	808	337	166	214
28						377	329	725	762	340	143	0
29						476	317	792	710	366	131	0
30		—				744	354	875	*654	378	127	0
31		—		—		—	359	905	—	378	—	0
Mean	0	0	0	0	0	170	436	615	1273	482	401	347
Runoff in Ac.Ft.	0	0	0	0	0	10130	26790	37800	75730	29630	23860	21330
	Water Year Total 224490								Calendar Year Total 225270			

This is the drainage from Colusa Basin passing down the Back Borrow Pit of Reclamation Districts 108 and 787 and entering the Sacramento River at Mile 34.15R, just above the Knights Landing gaging station. Flows are controlled at the Knights Landing outfall gates and a portion of the flow of the Back Borrow Pit is diverted to the Knights Landing Ridge Cut. This diversion is shown in Table 50. Total flow to Sacramento River is sum of Tables 51 and 52. This is a Division of Water Resources station. Period of record 1924 to date.

TABLE 52

FLOW OF SYCAMORE SLOUGH NEAR KNIGHTS LANDING - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13	Records sufficient to compute only monthly flows.											
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30		—										
31		—		—		—			—		—	
Mean	16.9	5.5	4.8	5.7	25.2	14.8	7.3	8.8	10.8	.97	1.33	7.4
Runoff in Ac.Ft.	1039	307	298	341	1553	883	450	543	643	60	79	452
	Water Year Total 6392								Calendar Year Total 6648			

This water is discharged from Reclamation District 787 by pumping into Colusa Basin Drain below the outfall gates and is not included in the flow shown in Table 51. Daily distribution of flows are not available since the plant operates on an automatic float switch. See Table 47 for additional drainage from Reclamation District 787. Period of record 1940 to date. Records for 1952 computed by Division of Water Resources.

TABLE 53

FLOW OVER FREMONT WEIR FROM SACRAMENTO RIVER TO YOLO BY-PASS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	29000	5880	0	*2520	14400							
2	16900	19800	0	*2520	13100							
3	*6260	47900	0	*2520	13400							
4	*1000	50600	0	*2700	13400							
5	0	44600	0	*2900	10600							
6	0	34800	0	5280	7300							
7	0	27000	0	9340	3600							
8	0	22900	*67	13400	3100							
9	0	20700	*1560	15500	5880							
10	0	19400	*1080	14600	8700							
11	0	17700	0	13800	8000							
12	*205	18500	0	13400	7040	N	N	N	N	N	N	N
13	18100	17300	0	12900	7040	0	0	0	0	0	0	0
14	23800	14900	0	13800	5640							
15	35400	12000	0	13600	5400							
16	45900	9340	*3600	12400	3200							
17	38600	12700	14200	9980	*1480	F	F	F	F	F	F	F
18	29300	15700	14600	8700	0	L	L	L	L	L	L	L
19	20500	14200	17300	10600	0	O	O	O	O	O	O	O
20	12400	11700	15300	11700	*400	W	W	W	W	W	W	W
21	6780	12500	10500	11700	*800							
22	*3300	10600	*3920	11200	*1000							
23	*1220	7440	*1400	10100	*200							
24	0	6000	0	9020	0							
25	*4000	4580	0	8920	0							
26	29300	3200	0	11200	0							
27	36800	1980	0	13400	0							
28	30100	*225	0	14900	0							
29	21100	0	0	16500	0							
30	13300	—	*1080	16500	0							
31	8140	—	*2160	—	0	—			—		—	
Mean	13920	16690	2799	10550	4312	0	0	0	0	0	0	0
Runoff in Ac.Ft.	855700	960300	172100	627800	265200	0	0	0	0	0	0	0
	Water Year Total 3068000								Calendar Year Total 2881100			

Station is located on Sacramento River at Mile 28.0R. Elevation of crest is 33.5 U.S.E.D. datum; length is 9120 feet. Period of record 1947 to date. Records for 1952 computed by Division of Water Resources. Recent studies based on current meter measurements made since 1948, indicate that there has been a shift in the flow rating of Fremont Weir. Since this shift did not become apparent until 1952 the flow records for this station in the 1950 and 1951 Water Supervision reports may be higher than actual.

* Estimated

TABLE 54

FLOW OF BUTTE SLOUGH TO SUTTER BY-PASS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	19000	5550	2010	1670	593	396	251	203	162	179	109	171
2	12400	5450	1830	1630	593	342	248	203	164	159	106	305
3	7870	16400	1680	1600	590	291	239	199	143	127	114	518
4	5550	29800	1650	1550	592	281	227	197	129	96	126	515
5	4500	28900	1590	1510	592	276	215	200	124	83	135	400
6	3720	22800	1530	1460	588	263	200	192	130	75	130	450
7	3010	18800	1580	1450	575	260	179	191	129	62	125	1020
8	2600	17500	1610	1460	562	258	173	200	123	47	126	1600
9	2380	17300	1950	1450	559	260	166	203	123	38	120	5340
10	2290	16600	2460	1450	574	247	165	199	*128	26	110	5060
11	2350	14300	2770	*1350	593	250	170	202	*133	23	100	4400
12	2710	15200	2700	*1250	590	267	167	203	*138	35	92	4400
13	4850	14300	2530	*1150	583	253	170	204	*143	36	93	4500
14	13700	12100	2250	*1050	564	232	183	204	*148	29	118	3720
15	20200	9700	2260	*950	543	219	176	210	*153	16	182	2780
16	26500	7430	3560	*850	527	210	167	211	*158	15	273	2040
17	25200	6270	9810	*800	498	197	171	207	*163	26	258	1590
18	19500	5980	10100	*750	444	179	177	204	*168	39	168	1310
19	15100	5660	8070	644	398	173	184	212	*173	44	127	1120
20	10700	4910	6210	628	379	163	186	203	*178	56	111	1270
21	7490	4260	5350	616	355	154	185	197	*183	67	126	1960
22	5890	3740	4520	616	333	150	184	202	*188	86	127	3720
23	5000	3260	3710	604	342	156	178	204	*193	87	117	3540
24	4460	2820	3070	606	364	160	183	203	*198	88	92	3080
25	4270	2790	2620	597	384	164	193	195	*203	89	76	2550
26	10100	2980	2300	599	391	163	190	175	*208	98	58	2120
27	19600	2710	2080	599	397	162	188	165	*213	99	45	*2670
28	18400	2410	1920	595	416	165	195	164	*218	98	31	*3240
29	13800	2170	1830	593	426	174	199	163	224	101	48	*3890
30	9960	—	1770	593	452	207	187	159	187	109	108	*4640
31	7200	—	1720	—	442	—	187	158	—	111	--	*5460
Mean	10010	10420	3195	1022	492	222	190	194	164	72.4	118	2561
Runoff in Ac.Ft.	615500	599200	196400	60830	30230	13230	11670	11960	9769	4451	7043	157400
	Water Year Total 1754896								Calendar Year Total 1717683			

This is discharge from Butte Slough to Sutter By-Pass. During low flow periods gates at head of slough are regulated (Table 43) which forces water under Long Bridge as shown in this table. Normal summer flows are primarily from Feather River sources. During flood periods Sacramento River water enters Butte Basin above Butte City by bank spill and over Moulton and Colusa weirs. The purpose of the summer regulation is to make water available for use on Sutter By-Pass lands (below Long Bridge) and Butte Slough Irrigation Company in R. D. 70. This is a Division of Water Resources station. Period of record 1939 to date.
* Estimated.

TABLE 55

FLOW OF WADSWORTH CANAL TO SUTTER BY-PASS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	214			73	105	119	219	124	*94			*43
2	118			66	108	141	201	137	*92			139
3	102			61	137	146	178	138	*90			71
4	97			61	117	145	153	140	*90			43
5	108			57	83	153	155	109	*100			91
6	163			53	109	161	146	106	143			123
7	174	N	N	52	109	160	143	106	131	N	N	282
8	158	O	O	48	66	178	128	115	156	O	O	426
9	156			50	44	178	128	105	171			435
10	218			48	43	176	108	98	158			170
11	656			47	39	176	93	109	180			165
12	690	R	R	46	53	150	90	140	197	R	R	143
13	640	E	E	45	75	166	105	122	208	E	E	120
14	706	C	C	46	71	145	119	117	259	C	C	112
15	657	O	O	43	87	145	120	141	251	O	O	94
16	590	R	R	42	89	124	114	152	232	R	R	90
17	750	D	D	55	67	105	81	174	246	D	D	90
18	587			27	74	94	64	193	263			87
19	468			53	48	89	52	179	258			234
20	376			80	57	89	62	128	267			365
21	309			71	89	120	71	111	266			227
22	261	118		90	80	95	78	133	241			166
23	232	165		95	71	108	81	137	256			137
24	593	136		122	66	103	95	160	267			126
25	990	117		137	105	114	86	143	269			118
26	842	111		114	132	122	96	111	269			137
27	702	105		124	148	98	108	102	306			212
28	574	99		103	115	153	125	117	324			167
29	454	95		95	125	232	112	125	300			166
30	353	—		100	106	256	115	131	314			310
31	299	—		—	131	—	128	119	—		—	235
Mean	427			70.1	88.7	141	115	130	213			172
Runoff in Ac.Ft.	26260			4173	5453	8412	7049	7978	12690			10560
	Water Year Total								Calendar Year Total			

This is the discharge (measured at Weir #4) to the East Borrow Pit of the Sutter By-Pass at Mile 16.5 (north from Chandler). This flow is made up primarily of Feather River drainage or return flows. This flow and flow from Butte Slough (Table 54) makes up the entire Feather River contribution to the Sutter By-Pass. This is a Division of Water Resources station. Period of record 1939 to date.
* Estimated.

TABLE 56

FLOW OF RECLAMATION DISTRICT 1500 DRAIN - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	345	440	224	223	268	709	482	513	513	181	0	111
2	151	432	216	151	252	445	507	513	513	266	0	156
3	156	424	169	146	225	474	480	445	445	180	0	97
4	200	314	177	37	358	493	408	513	574	161	0	96
5	172	332	118	149	379	500	412	513	513	117		127
6	250	334	230	223	395	481	378	445	513	133	0	120
7	243	335	201	201	413	186	354	364	445	107	0	67
8	201	334	224	170	389	701	395	445	513	185	0	229
9	203	252	104	201	395	457	436	445	513	180	0	246
10	200	314	198	64	331	376	424	364	629	158	33	242
11	306	249	169	170	486	478	404	445	629	120	0	241
12	530	267	171	170	388	374	396	513	574	113	0	177
13	1090	292	172	85	423	406	367	513	548	108	0	177
14	1090	229	263	143	449	355	357	513	798	49	0	178
15	1080	298	317	170	529	441	362	513	516	122	0	162
16	979	242	464	166	499	372	396	513	548	120	198	158
17	1010	238	221	0	289	396	123	445	536	102	0	126
18	1000	192	272	233	518	403	513	513	553	84	66	199
19	619	233	271	231	400	166	364	445	555	84	66	264
20	491	169	280	319	451	370	445	513	505	60	57	275
21	411	111	285	146	408	330	445	513	516	72	66	511
22	274	370	173	143	502	293	445	513	390	109	0	190
23	409	111	236	140	472	347	445	574	345	108	99	244
24	668	491	298	168	156	368	513	445	387	105	0	0
25	962	163	177	189	677	396	513	513	376	84	0	400
26	1020	166	179	211	348	398	513	513	316	45	0	255
27	820	227	178	306	463	397	574	513	276	78	0	136
28	236	199	127	222	396	407	574	513	276	64	0	539
29	502	173	176	224	227	463	574	513	188	0	0	242
30	489	—	209	253	793	433	513	513	187	0	0	244
31	372	—	282	—	346	—	574	513	—	0	—	180
Mean	532	273	219	175	407	414	441	488	473	106	19.5	206
Runoff in Ac.Ft.	32690	15730	13450	10420	25040	24620	27150	29990	28140	6536	1160	12670
	Water Year Total 229161								Calendar Year Total 227596			

This is the drainage from Reclamation District 1500 discharged to West Borrow Pit of Sutter By-Pass and thence via Sacramento Slough (in the By-Pass) to Sacramento River. (see Table 57). Drainage is by pumping and gravity. Period of record 1930 to date. Records for 1952 computed by Division of Water Resources.

TABLE 57

FLOW OF SACRAMENTO SLOUGH TO SACRAMENTO RIVER - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	(a)		(a)			(a)	1000	732	841	642	336	451
2	(a)		(a)			(a)	1090	694	811	758	397	448
3	(a)		2280			958	1080	702	816	676	399	387
4	(a)		2220			2940	912	748	812	647	399	1100
5	(a)		2040			2890	958	764	824	646	405	1160
6	2160		2150			2480	772	815	790	574	418	1160
7	3040		2110			2700	983	792	764	500	454	1260
8	2870					2690	835	797	780	468	464	0
9	2780					2520	851	785	828	380	462	
10	3050					2520	875	744	944	378	442	
11	2970					2940	846	745	935	292	441	
12						3010	761	732	925	321	464	
13						2750	677	732	957	175	468	
14						2320	739	756	1320	0	437	
15						1820	629	770	984	286	534	
16	F	F	F	F	F	1440	632	764	1100	217	722	F
17	L	L	L	L	L	1340	627	*758	1160	0	694	L
18	O	O	O	O	O	1200	668	*772	1180	0	699	O
19	O	O	O	O	O	1060	627	*795	1230	0	701	O
20	D	D	D	D	D	1220	614	*866	1220	0	643	D
21	E	E	E	E	E	1140	645	*976	1250	179	520	E
22	D	D	D	D	D	1110	653	*968	1020	290	433	D
23						832	631	*841	1030	260	456	
24						1020	605	*832	995	260	431	
25						984	649	*820	973	341	320	
26						808	608	*832	920	319	288	
27						861	612	*804	904	383	383	
28						753	612	848	800	373	336	
29						701	681	846	747	302	317	
30		—				907	714	797	681	378	384	
31		—		—		—	757	826	—	336	—	
Mean							753	795	951	335	462	
Runoff in Ac.Ft.							46300	48900	56610	20590	27470	
	Water Year Total								Calendar Year Total			

This is the discharge to the Sacramento River at Mile 21.2L via Sacramento Slough. This is the entire outflow of the Sutter By-Pass area and R. D. 1500. During high water periods the slough is entirely submerged as it lies within the By-Pass area. Sharp rises in river elevation will cause zero or negative flow. See Tables 54, 55, 56, and 45, which, when combined, will give the measured flow entering the By-Pass area. This is a Division of Water Resources station. Period of record 1924 to date.

* Estimated.

(a) Flooded.

TABLE 58

FLOW OF FEATHER RIVER NEAR OROVILLE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	10800	34500	11400	22000	31600	17400	6560	3410	2650	2580	2570	3270
2	8850	47600	10700	22000	29700	16700	6380	3230	2630	2580	1910	3640
3	8020	31800	10500	23000	28700	16100	6520	2920	2660	2590	2550	3450
4	7330	23000	11100	25200	26300	15700	6100	3070	2640	2560	2550	2850
5	6620	19200	10100	28500	24200	15900	5660	3010	2620	2560	2520	3090
6	6960	17000	10500	31600	23300	15500	5200	3010	2660	2570	2550	3450
7	5860	15700	11500	35200	26000	14800	5410	2980	2660	2540	2550	7180
8	6100	14700	10400	34200	31400	15200	5580	2940	2630	2570	2550	6140
9	5700	13200	9970	31100	26100	15100	5310	2950	2630	2570	2550	5020
10	6000	12800	11000	28900	24600	13400	5180	2930	2650	2550	2440	5790
11	8210	13800	10600	28000	24900	12600	5040	2890	2700	2580	2550	6460
12	13700	13100	10400	27900	24400	11100	4640	2870	2760	2570	2340	5340
13	10600	12000	9880	28600	23500	10100	4350	2880	2750	2550	2650	4530
14	11200	11000	9700	27500	22700	9460	4190	2870	2700	2560	3730	3790
15	12200	10400	15800	25000	22100	9030	4460	2860	2640	2540	3660	3420
16	8650	10400	12600	24300	21600	8790	4350	2820	2540	2540	2390	3260
17	8340	17000	10600	25400	22600	8680	4070	2780	2590	2550	2270	3270
18	7100	14600	11800	27700	22800	9060	4160	2770	2590	2580	2740	4120
19	5670	13200	11200	30400	22600	8900	3890	2780	2570	2640	2690	4840
20	6710	13500	9900	29200	21800	8740	3670	2770	2560	2570	2640	5900
21	6690	12000	9170	27000	21800	8760	3480	2760	2630	2570	2730	4840
22	6230	11200	8650	26800	21000	8020	3420	2750	2620	2560	2740	4260
23	6280	11200	8260	28100	21000	8380	3370	2740	2570	2550	2250	4010
24	13300	10200	8340	30000	21200	8770	3160	2740	2600	2550	2500	3960
25	18900	10500	9750	31900	21300	8060	3250	2730	2590	2600	2610	4190
26	16300	10400	13100	34900	21200	7650	3230	2710	2590	2610	2330	4970
27	12300	10200	14500	36600	21200	7500	3300	2690	2560	2620	2580	6000
28	10400	10200	16100	37100	20700	7460	3250	2690	2610	2590	2610	4780
29	9480	10300	18800	33100	19500	8230	3250	2680	2580	2570	2630	4420
30	9030	—	19900	30400	18900	7280	3390	2700	2580	2560	1940	7580
31	11300	—	21100	—	18300	—	3550	2680	—	2550	—	6980
Mean	9188	15820	11850	29050	23450	11080	4431	2858	2625	2570	2577	4671
Runoff in Ac.Ft.	565000	909800	728600	1729000	1442000	659200	272500	175800	156200	158000	153400	287200
	Water Year Total 7600300								Calendar Year Total 7236700			

U. S. Geological Survey and Division of Water Resources cooperative station located at highway crossing about 4.5 miles above Oroville on right bank. at Mile 71.0. Drainage area is 3611 square miles. Period of record 1902 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 59

FLOW OF FEATHER RIVER NEAR GRIDLEY - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	12500	23300	10800	22300	31100	15600	4180	1170	849	1870	2020	2440
2	9800	52000	10700	22700	30100	14800	4220	1130	843	1880	1560	3710
3	8680	38600	10100	23300	28500	14200	3810	971	837	1930	1860	3310
4	7810	27500	10800	25500	26600	13300	3900	868	849	1940	2030	2850
5	7300	21900	10100	29100	23700	13400	3460	918	837	1930	2020	2900
6	6810	19000	9950	32300	22200	13000	2880	912	862	1980	2030	3190
7	6690	17100	12000	35800	22100	12400	2870	906	900	2050	2050	5560
8	6150	15700	10600	36400	30300	12500	3100	868	937	2110	2080	6260
9	6210	14000	9970	33500	26100	12800	2880	849	900	2120	2060	5340
10	6200	13100	10500	30800	23300	11300	2810	856	944	2100	1920	4740
11	7490	13500	10700	29800	23200	10400	2610	843	999	2120	2040	5970
12	15900	13600	10200	29200	23100	8970	2430	806	1100	2150	2070	5260
13	12900	12300	9820	29400	22100	7920	2040	783	1160	2120	1940	4530
14	11700	11100	9420	29000	21100	7210	1760	771	1200	2100	3050	3820
15	12000	10300	15200	26300	20400	6720	1810	771	1190	2030	3360	3420
16	9910	11600	14600	24700	19600	6430	2050	741	1140	2010	3050	3170
17	9650	17600	11300	25400	19900	6260	1700	724	1170	2010	1960	3140
18	8070	14900	11600	27400	20500	6450	1750	712	1220	2010	2720	3510
19	6260	13400	11500	30200	20600	6430	1610	706	1270	2060	2710	4110
20	6880	13300	10100	30100	19800	6260	1460	724	1360	2060	2650	5700
21	6850	12100	9230	27900	19800	6110	1280	741	1410	2050	2710	4850
22	6410	11100	8640	26800	18900	5740	1200	753	1510	2060	2750	4220
23	6340	11100	8100	27600	18600	5280	1130	765	1570	2060	2420	3900
24	11500	10300	8160	29400	18700	6330	900	794	1690	2070	2340	3710
25	23200	10100	9010	31000	19000	5520	985	830	1710	2100	2480	3690
26	19800	10200	11900	34400	18700	5050	925	856	1750	2120	2270	4200
27	14200	9880	13700	36000	18800	4920	992	837	1760	2110	2380	5120
28	11300	9840	15400	37300	18800	4780	971	818	1800	2090	2460	4760
29	9910	9950	18100	34300	17500	5260	944	837	1830	2070	2490	4030
30	9150	—	19900	30700	16800	4920	971	843	1860	2050	2110	5570
31	10500	—	20900	—	16400	—	1070	856	—	2070	—	6660
Mean	9936	16150	11710	29620	21820	8675	2087	837	1248	2046	2320	4311
Runoff in Ac.Ft.	611000	929000	720000	1763000	1341000	516200	128300	51490	74290	125800	138000	265100
	Water Year Total 7071880								Calendar Year Total 6663180			

Division of Water Resources Station located at Gridley Bridge, Mile 49.7 above mouth. Period of record 1944 to date.

TABLE 60

FLOW OF FEATHER RIVER AT YUBA CITY (5TH ST. BRIDGE) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	16900	10000	10300	21200	37600	17000	5590	1390	1160	2520	2590	2660
2	12500	42100	11000	22600	37100	15800	4850	1470	1190	2520	2500	4000
3	10500	71000	11100	22800	36000	14500	4580	1360	1280	2520	2080	3650
4	9070	51700	10400	23800	34500	14100	4750	1200	1370	2450	2500	3300
5	8390	34100	11200	26700	30800	11700	4280	1160	1360	2600	2540	3400
6	7610	24800	10400	30900	26600	12300	3890	1150	1390	2500	2540	4030
7	8510	19400	11000	36100	24600	13000	3640	1080	1410	2550	2600	6580
8	6660	17000	15900	40800	27200	11700	3620	1070	1480	2610	2600	7130
9	8300	15600	13100	41200	35300	11400	3640	1030	1540	2620	2610	6250
10	7350	14100	11100	37600	30600	12200	3500	995	1560	2620	2620	6050
11	7860	13000	11200	34200	27000	11400	3420	980	1600	2580	2550	7200
12	12000	13000	11200	32500	26900	10800	3340	1020	1670	2620	2680	6350
13	27500	13700	11300	32000	26500	9470	3080	980	1760	2610	2640	5800
14	17700	12700	11400	32800	25500	8420	2740	950	1820	2580	3310	4860
15	18300	12300	9630	31700	23800	7720	2400	950	1870	2520	4160	3930
16	20600	10300	21400	28200	22600	7410	2640	985	1900	2480	4160	3770
17	13400	12300	15800	26300	21500	7160	2610	980	1810	2440	2960	3740
18	13900	16100	11900	27400	22000	7070	2370	985	1840	2460	3090	5050
19	10600	14400	14100	30800	23600	7310	2360	965	1850	2500	3290	7090
20	8380	12300	12700	34000	23700	7240	2230	940	1980	2560	3240	6580
21	9280	14500	11800	34000	22600	6920	2060	985	2100	2550	3230	6550
22	8440	12800	11400	31000	22300	6900	1920	1000	2190	2540	3240	5600
23	7910	11300	10800	30300	20800	6180	1750	970	2240	2560	3230	5370
24	7210	12000	10400	31500	20400	6450	1710	1020	2250	2560	2880	5000
25	21200	11200	9530	34200	20900	6820	1390	1040	2430	2570	2990	4720
26	41000	11000	8980	37700	21600	6130	1400	1060	2470	2600	2970	4670
27	30100	10900	12000	41700	21100	5780	1360	1050	2420	2630	2840	5290
28	16900	10600	13400	44100	21000	5730	1460	1030	2440	2640	3000	6740
29	13000	10400	15100	45100	21000	5710	1380	1000	2480	2640	3040	5560
30	11300	—	17400	41200	19100	6240	1350	1050	2460	2640	3010	4900
31	10400	—	19400	—	17700	—	1360	1100	—	2640	—	7930
Mean	13640	18430	12460	32810	25570	9352	2796	1063	1844	2562	2923	5282
Runoff in Ac.Ft.	838550	1060000	766300	1952500	1572000	556500	171900	65350	109700	157500	173900	324800
	Water Year Total 8058800								Calendar Year Total 7749000			

Division of Water Resources station located at Yuba City-Marysville (5th St.) Bridge, Mile 28.0 above mouth. Backwater from the Yuba River at times affects the stage-discharge relationship of this station. Period of record 1944 to date. The flows at this station were estimated by subtracting flow of Yuba River at Marysville from the flow of the Feather River at Shanghai Bend because of the erroneous gage heights obtained from the recorder at the Yuba-Feather river junction prevented the use of the slope-discharge relationship.

TABLE 61

FLOW OF FEATHER RIVER BELOW YUBA RIVER - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	21200	22200	15500	28400	42400	30600	*9220	*2250	1470	2780	2750	*3110
2	15500	65500	16000	29000	43100	29100	*9020	*2180	1430	2810	2610	*4600
3	13200	68900	15100	29200	42200	27700	*9140	*1960	1360	2820	2320	*4160
4	11800	50900	15400	30400	40600	25800	*9380	*1740	1340	2980	2700	*3700
5	10900	37300	15400	33600	36900	25300	*8720	*1690	1390	3030	2730	*3800
6	10200	30200	14700	37700	33900	26600	*8040	*1650	1410	2890	2720	*4330
7	11400	26200	20400	42600	33100	25500	*7540	*1660	1430	2950	2760	*7490
8	10400	23700	21500	45800	38500	24200	*7580	*1490	1520	2950	2790	*7860
9	10600	21800	16900	44800	42200	24700	*7320	*1440	1600	2980	2780	*6900
10	9690	19800	15700	41600	37500	25000	*6980	*1400	1590	2960	2760	*6440
11	11200	19700	16400	38700	35500	22400	*6520	*1380	1640	2910	2740	*7680
12	27300	19900	15600	37500	36100	19600	*5980	*1380	1810	2860	2860	*6700
13	32400	19300	15300	37400	36000	16400	*5230	*1340	1910	2940	2830	*5960
14	25300	17300	14400	38400	35000	14700	*4690	*1320	1950	2900	3640	*5080
15	32400	15900	18800	36300	33800	13900	*4720	*1320	1990	2830	4370	*4340
16	25200	16800	29000	33400	32600	13600	*4960	*1320	2000	2810	4360	*4160
17	18400	27700	22900	32500	32600	13500	*4480	*1300	1970	2800	3140	*4140
18	16600	26400	19400	34200	34200	13400	*4120	*1300	2010	2820	3400	*4980
19	12600	22700	22000	37500	35100	14400	*3900	*1280	2040	2860	3530	*6410
20	11300	22900	18000	39800	34800	14500	*3620	*1270	2130	2910	3480	*3560
21	12000	23200	15100	38700	34500	14100	*3310	*1300	2320	2880	3510	*7150
22	10900	19600	13700	36500	33800	13700	*3050	*1300	2380	2880	3510	*6010
23	10200	19300	12900	36400	32900	12800	*2820	*1300	2420	2870	3560	*5460
24	12300	18400	12500	38200	33200	13100	*2540	*1330	2460	2860	*3160	*5160
25	38600	16400	13000	40900	34200	13500	*2280	*1360	2610	2870	*3240	*5000
26	47800	16000	15700	45200	34400	12000	*2260	*1380	2700	2870	*3130	*5280
27	33800	15500	18700	47700	34200	11200	*2220	*1360	2750	2900	*3130	*6440
28	22600	15100	20700	49800	34600	10800	*2240	*1330	2670	2890	*3250	*7290
29	17000	15100	23300	49500	33700	10700	*2140	*1340	2720	2840	*3250	*6220
30	15000	—	26000	45400	31900	10700	*2160	*1370	2720	2840	*3030	*7700
31	15300	—	27400	—	31000	—	*2200	*1400	—	2840	—	*11600
Mean	18490	25300	17980	38570	35630	18120	5110	1462	1991	2885	3135	5926
Runoff in Ac.Ft.	1137000	1455000	1106000	2295000	2191000	1078000	314300	89930	118500	177400	186500	364400
	Water Year Total 11138230								Calendar Year Total 10513030			

Station is maintained jointly by the Division of Water Resources and the U. S. Geological Survey. It is located on the right bank of the Feather River just below the mouth of the Yuba River at Mile 27.0R. Station is rated at high stages by simultaneously measuring the flows of the Feather River at 5th St. Bridge and the Yuba River at Simpson Lane Bridge. Period of record 1949 to date. Records for 1952 computed by Division of Water Resources.

* A sand bar developed over the recorder well intake pipe causing erroneous gage heights to be recorded during these periods. Period from July 1 to August 31, and November 23 to December 31 were estimated from records of Yuba River at Marysville and Feather River at Shanghai Bend.

TABLE 62

FLOW OF FEATHER RIVER BELOW SHANGHAI BEND - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	23100	22800	16300	29300	48700	31500	9930	2360	1580	2980	3030	3220
2	17200	74600	16600	30300	49600	29200	9340	2350	1610	2990	2940	*4750
3	14100	85800	16400	30600	48500	27000	8530	2160	1690	2990	2530	*4330
4	12600	61900	16000	32200	46400	24900	9800	1910	1770	3090	2950	*3930
5	11500	43600	16300	36100	41900	25000	8130	*1810	1770	3200	2990	*4050
6	10600	33300	15800	41500	37400	26000	8540	*1770	1800	2950	2990	*4750
7	12000	27200	20200	47400	36200	24700	7970	*1650	1820	3020	3050	*8000
8	10800	24400	22200	51800	42500	23800	7340	*1590	1890	3080	3060	*8300
9	11200	22700	18800	51200	48600	24400	7700	*1530	1970	3100	3060	*7350
10	10000	20900	17300	47400	42800	24200	7320	*1470	2000	3100	3060	*7100
11	11500	20400	17600	43900	39600	21600	6920	*1450	2060	3050	2990	*8300
12	27800	21900	17200	42200	40400	18800	6430	*1480	2160	3090	3130	*7250
13	36200	20300	17000	41900	40300	16100	5750	*1440	2250	3080	3100	*5600
14	26400	18800	16500	43100	38900	14900	5180	*1410	2320	3030	3840	*5600
15	34500	18000	19300	41000	37200	14100	5010	*1410	2370	2970	4740	*4600
16	28300	17900	29800	37000	35500	14000	5250	*1440	2400	2930	4730	*4460
17	20300	26100	27000	35500	35000	13800	4930	*1430	2300	2900	3480	*4440
18	18600	26100	20600	37400	37200	14000	4430	*1430	2320	2940	3600	*5750
19	14000	22900	23200	41700	38300	14900	4280	*1410	2320	2970	3800	*7900
20	12000	22500	20000	45000	38300	14800	4010	*1380	2460	3050	3760	*9000
21	12900	23300	17900	44000	37600	14200	3700	*1420	2590	3030	3740	*8000
22	11800	20300	16700	41200	36800	14300	3410	*1430	2670	3020	3760	*6700
23	10900	19700	15700	40700	35300	13000	3130	*1400	2710	3030	3820	*6200
24	12700	19200	14900	42900	35600	13900	2940	*1440	2720	3030	3430	5800
25	39700	17900	14600	46300	36900	13600	2480	*1460	2900	3030	3490	5520
26	55200	17300	16300	51200	37400	11900	2490	*1480	2940	3060	3480	5520
27	39300	16900	19700	55000	37000	11100	2410	*1460	2890	3090	3360	6530
28	24300	16400	21600	57400	37400	10800	2480	*1440	2910	3100	3520	8280
29	19100	16300	23300	58100	36200	10700	2360	1420	2950	3090	3520	6980
30	16600	—	26000	53200	33400	11000	2350	1470	2930	3090	3480	7360
31	16700	—	27800	—	32200	—	2350	1520	—	3100	—	12300
Mean	20060	27570	19160	43220	39330	18060	5464	1575	2302	3038	3414	6415
Runoff in Ac.Ft.	1234000	1586000	1178000	2572000	2418000	1075000	336000	96830	137000	186800	203200	394500
	Water Year Total 12001530								Calendar Year Total 11417330			

Division of Water Resources station located on the right bank at Mile 23.0 above mouth. Station is rated above 30,000 c.f.s. by means of simultaneous measurements of Yuba River and Feather River at Marysville with appropriate time lag between Marysville and Shanghai Bend. Period of record 1944 to date.

* Estimated

TABLE 63

FLOW OF FEATHER RIVER AT NICOLAUS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	29500	20800	17100	29800	47000	29800	10300	2070	1370	2660	2670	2850
2	20000	56300	18200	30800	46200	28700	9490	2090	1380	2610	2610	3930
3	15600	79500	17400	31200	46000	27300	9880	1940	1320	2720	2270	4510
4	13400	64900	17500	32200	44100	25800	10200	1760	1280	2770	2530	4100
5	12000	50200	18500	35800	40900	24700	9610	1560	1300	3040	2620	3710
6	10600	38900	17300	40300	37000	25800	9000	1510	1350	2800	2600	4050
7	11700	31400	25700	45600	35000	25100	8180	1470	1390	2820	2600	5060
8	10800	26300	29000	51300	36300	23800	7960	1420	1470	2800	2630	8780
9	11000	24300	21800	52100	43100	23900	7920	1380	1540	2900	2640	7210
10	10100	22500	17600	48900	40700	24300	7500	1370	1550	2890	2610	6800
11	11200	21600	18000	45200	37400	22400	7090	1360	1580	2860	2550	7130
12	27400	23100	17400	43000	37200	20100	6450	1340	1670	2880	2660	7640
13	47600	22000	17600	42600	37300	16900	5660	1320	1790	2890	2660	6950
14	36600	20300	17100	43100	36400	15000	4930	1280	1860	2860	3060	6050
15	42500	18800	20500	42400	35200	14200	4680	1280	1880	2790	3990	4830
16	45600	18300	33300	38000	34000	14000	4900	1300	1930	2720	4050	4210
17	30400	26700	30400	35200	33000	13900	4750	1290	1940	2690	3450	4150
18	23900	29400	23000	36400	33800	13900	4140	1250	1980	2740	2920	4310
19	18400	25400	26500	40000	34600	14900	3930	1220	1990	2750	3280	4890
20	15400	24300	22800	43300	35000	14900	3660	1240	2060	2790	3250	8470
21	15300	26200	18500	43300	34200	14500	3370	1220	2190	2780	3230	9130
22	13700	23000	16200	41200	34000	14200	3020	1250	2270	2770	3250	6530
23	12400	21300	14700	40000	33000	13300	2720	1260	2330	2760	3310	5560
24	12500	20900	13900	40900	32700	13700	2550	1260	2340	2740	3040	5180
25	31300	18900	14000	43600	33000	14100	2100	1350	2490	2730	3000	5010
26	59300	18100	16500	47800	33600	12200	2090	1390	2540	2740	3080	5240
27	50700	17300	20800	52400	33200	11300	2030	1380	2560	2760	2910	6380
28	32800	16500	22900	54700	33300	11000	2060	1360	2570	2750	3030	8240
29	22500	16600	24900	56200	33200	11000	1940	1350	2610	2710	3060	7110
30	18800	—	27300	51800	31500	11400	1920	1380	2610	2700	3000	7270
31	17600	—	28800	—	30300	—	1970	1350	—	2700	—	12200
Mean	23570	28410	20810	42640	36520	18200	5355	1419	1905	2778	2952	6048
Runoff in Ac.Ft.	1449000	1634000	1280000	2537000	2246000	1083000	329300	87270	113300	170800	175700	371900
	Water Year Total 12183270								Calendar Year Total 11477270			

Station is maintained jointly by Division of Water Resources and U. S. Geological Survey. It is located on left bank at Mile 9.3 above mouth. Period of record 1921 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 64

FLOW OF SOUTH HONCUT CREEK NEAR BANGOR - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	68	854	67	51	23	4.8	2.4	0.1			0	7.3
2	51	389	59	48	15	5.1	1.9	.1			0	16
3	41	200	64	45	13	5.5	1.4	.1			0	6.9
4	35	145	96	43	12	3.9	1.2	.1			0	4.2
5	30	119	68	41	11	3.8	.9	0			0	17
6	90	101	167	40	11	3.5	.8	0			.1	67
7	86	89	406	43	20	3.5	.6	0			.1	236
8	90	80	219	39	20	3.0	.5	0			.1	25
9	71	72	152	35	13	2.9	.5	0			.2	23
10	87	67	233	31	12	2.8	.4	0			.2	45
11	459	98	139	32	11	2.5	.4	0			.2	35
12	1440	75	155	30	9.5	2.4	.4	0	N	N	.2	12
13	569	64	125	30	8.6	2.4	.4	0	O	O	.4	8.4
14	749	60	132	29	8.9	2.4	.4	0			8.9	6.6
15	581	56	884	23	7.9	2.3	.4	0			9.5	5.7
16	262	68	377	21	7.4	2.2	.3	0			7.4	5.3
17	265	67	222	18	6.9	2.5	.3	0	F	F	4.8	4.8
18	159	58	481	16	5.7	1.9	.3	0	L	L	3.9	4.2
19	111	68	288	14	5.5	1.6	.2	0	O	O	4.2	125
20	203	317	181	14	6.0	1.4	.2	0	W	W	4.4	139
21	111	198	135	13	5.3	1.3	.2	0			3.8	24
22	90	175	113	12	4.8	1.3	.2	0			3.8	13
23	79	292	100	12	4.1	1.3	.2	0			3.3	9.7
24	1050	159	92	12	3.8	1.9	.1	0			3.5	8.1
25	1200	118	85	16	3.5	2.1	.1	0			2.3	7.9
26	518	99	78	24	4.1	1.7	.1	0			1.5	19
27	245	90	71	17	3.9	1.6	.1	0			1.2	137
28	164	77	68	15	3.3	1.6	.1	0			1.1	35
29	125	70	64	13	3.6	6.8	.1	0			1.3	20
30	110	—	59	14	3.9	3.8	.1	0			1.5	166
31	129	—	54	—	4.6	—	.1	0	—		—	48
Mean	299	149	175	26.4	8.78	2.79	0.49	0.01	0	0	2.27	41.3
Runoff in Ac.Ft.	18380	8580	10780	1570	540	166	30	1.0	0	0	135	2540
	Water Year Total 48880								Calendar Year Total 42722			

U. S. Geological Survey and Division of Water Resources station located approximately 2.5 miles southeast of Bangor and 16 miles above the mouth. Honcut Creek is an east-side tributary to the Feather River at Mile 43.7L. Drainage area is 68.6 square miles. Prior records available at a site 8 miles downstream. Period of record 1950 to date. Records for 1952 computed by the U. S. Geological Survey.

TABLE 65

FLOW OF YUBA RIVER AT NARROWS DAM - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5130	14300	4570	7520	10600	14100	4260	1300	715	690	570	525
2	4130	29000	4330	7220	11700	13300	4820	1170	710	690	627	570
3	3230	14400	4010	7360	11800	12300	5440	1080	710	685	625	579
4	2730	9560	4010	7880	11100	10900	5270	983	710	680	625	582
5	2530	7960	3670	9020	10000	13500	5160	935	712	630	620	582
6	2330	6860	3760	9940	10300	13300	4920	915	715	675	618	582
7	2730	6190	4630	10700	11600	11500	4580	890	685	670	615	620
8	2430	5760	4100	9640	14200	11800	4500	829	710	670	610	648
9	2030	5360	3760	8800	11900	13300	4380	805	710	670	608	625
10	2030	5110	4460	8440	11300	11500	4090	755	710	670	604	622
11	2730	5760	4330	8200	12300	9630	3650	734	712	670	599	623
12	5920	5580	4120	8320	13100	7430	3200	739	712	665	595	644
13	5230	4800	4120	8760	13100	6250	2720	742	712	665	595	648
14	5700	4370	3600	8560	13000	6060	2900	741	710	665	602	647
15	7720	4080	5290	7640	12900	6210	3040	729	705	660	608	700
16	5230	7430	4940	7480	12300	6660	2860	713	700	660	610	665
17	4230	11100	4110	8120	13400	6640	2560	710	695	660	615	665
18	2740	7610	5690	9240	14300	7820	2360	707	695	660	615	695
19	2340	6420	5580	10300	14800	8180	2240	707	695	660	615	663
20	2730	6650	4430	9680	14300	7990	2120	707	690	655	612	700
21	2630	5780	3740	9020	14900	7630	2010	707	685	650	612	674
22	2430	5110	3380	9240	13900	7270	1820	710	685	650	608	690
23	2430	5360	3240	10000	14400	7230	1710	715	685	645	550	711
24	4730	4800	3240	10900	15100	7950	1650	715	685	645	545	676
25	10700	4500	3980	11700	16100	6250	1590	715	685	640	540	696
26	9730	4330	5970	13100	15500	5700	1510	715	685	640	540	706
27	7140	4170	6160	12100	15700	5380	1480	715	690	635	535	687
28	5230	4180	6990	13100	16300	5020	1370	715	690	630	535	993
29	4210	4300	7760	11400	14700	4850	1430	715	690	630	460	1410
30	3820	—	7760	10400	14100	4580	1400	715	690	630	530	2470
31	5110	—	7640	—	14500	—	1400	715	—	630	—	2930
Mean	4259	7270	4754	9459	13300	8674	2982	798	699	657	588	814
Runoff in Ac.Ft.	261900	418200	292300	562900	819600	516200	183400	49080	41620	40410	34990	50040
	Water Year Total 3482590								Calendar Year Total 3270640			

U. S. Geological Survey and Division of Water Resources cooperative station located above spillway of Narrows Dam. For total flow of Yuba River near Smartville combine with flows in Table 67. Drainage area is 1110 square miles. Period of record 1941 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 66

FLOW OF YUBA RIVER AT MARYSVILLE (SIMPSON LANE BRIDGE) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6210	12800	6010	8070	11100	14500	4340	970	423	465	436	555
2	4720	32500	5650	7740	12500	13400	4490	870	419	469	436	749
3	3560	14800	5330	7850	12500	12500	4950	803	410	465	452	679
4	3530	10200	5060	8420	11900	10800	5050	711	400	642	452	627
5	3110	9460	5140	9400	11100	13300	4850	651	410	600	452	651
6	2990	8530	5350	10600	10300	13700	4650	616	407	449	452	719
7	3490	7820	9190	11300	11600	11700	4330	566	413	469	455	1420
8	3140	7410	6310	11000	15300	12100	4220	523	413	469	455	1170
9	2900	7090	5730	10000	13300	13000	4060	502	429	475	449	1100
10	2650	6900	6240	9760	12200	12000	3820	475	442	478	445	1050
11	3640	7410	6400	9650	12600	10200	3500	470	455	472	442	1100
12	15800	9050	6030	9670	13500	8030	3080	465	488	475	445	900
13	8670	8590	5710	9870	13300	6630	2870	460	488	469	465	800
14	8690	7600	5150	10300	13400	6480	2840	460	502	455	530	744
15	16200	5740	9670	9330	13400	6380	2610	460	493	455	577	667
16	7660	7620	8420	8830	12900	6590	2610	455	498	445	566	691
17	6920	13300	6250	9160	13500	6640	2320	450	492	462	520	703
18	4670	9970	8660	10000	14300	6930	2060	445	482	478	512	703
19	3350	8450	9140	10900	14700	7590	1920	445	469	485	512	812
20	3620	10200	7260	11000	14600	7560	1780	440	475	485	520	2430
21	3620	8780	6100	10600	15000	7280	1640	435	488	482	512	1450
22	3360	7500	5280	10200	14500	7100	1490	430	478	478	520	1100
23	2990	8380	4850	10400	14500	6820	1330	430	469	465	589	826
24	5490	7230	4500	11400	15200	7450	1230	425	469	465	552	803
25	18500	5730	5070	12100	16000	7780	1090	420	472	462	502	798
26	14200	6270	7320	13500	15800	5770	1090	415	472	459	509	846
27	9230	5970	7660	13300	15900	5320	1050	410	475	462	520	1240
28	7370	5350	8180	13300	16400	5070	1020	407	472	455	520	1540
29	6050	5350	8740	13000	15200	4890	930	419	469	455	485	1420
30	5340	—	8620	12000	14300	4760	1000	423	465	455	472	2160
31	7300	—	8450	—	14500	—	995	423	—	455	—	4370
Mean	6337	9131	6709	10400	13750	8712	2668	512	458	476	492	1133
Runoff in Ac.Ft.	389700	525200	412500	618000	845600	518400	164080	31510	27260	29270	29260	69670
	Water Year Total 3915020								Calendar Year Total 3664350			

Station is maintained jointly by the Division of Water Resources and the U. S. Geological Survey. Station is at 7th Street Bridge at Mile 0.5L above mouth. Stage-discharge relationship is affected at times by variable backwater from the Feather River. Period of record 1939 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 67

FLOW OF DEER CREEK NEAR SMARTVILLE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	122	2190	431	190	365	6.0	15	6.1	5.4	5.4	7.8	119
2	90	1920	416	173	310	7.4	10	6.7	5.4	5.4	7.4	142
3	79	1120	422	171	289	5.6	6.7	5.6	5.0	5.4	7.8	50
4	74	785	467	166	277	5.6	5.8	5.8	4.8	5.6	6.1	33
5	65	642	440	157	136	5.6	5.2	6.0	4.6	5.6	8.4	85
6	134	563	780	171	124	6.4	4.8	5.8	5.0	5.8	10	84
7	188	510	1310	390	173	6.0	4.4	6.7	5.0	6.0	11	743
8	169	476	747	500	193	6.4	4.4	6.4	5.0	6.7	10	169
9	113	446	606	518	211	6.4	4.2	6.7	5.0	8.1	11	171
10	150	425	549	546	213	5.7	4.6	7.8	5.4	9.5	8.4	161
11	926	627	673	497	198	5.6	4.3	8.4	8.4	10	10	100
12	3280	507	528	476	197	5.8	4.4	7.8	11	10	13	66
13	982	431	473	500	134	5.2	4.4	7.8	8.8	10	21	56
14	2030	405	473	500	173	7.8	5.0	7.4	6.7	10	93	50
15	2510	405	1530	455	149	7.0	4.0	6.7	5.2	11	47	46
16	589	992	821	428	118	7.4	3.9	6.0	4.4	12	33	44
17	449	375	564	419	103	5.8	3.9	6.7	4.6	13	24	40
18	259	670	1450	416	107	4.0	3.9	6.7	4.6	15	20	37
19	193	642	780	425	77	3.9	3.8	6.7	5.0	13	19	374
20	333	1490	507	405	36	3.9	4.0	6.7	5.4	11	18	443
21	253	815	425	385	21	4.4	3.9	6.0	5.4	11	16	100
22	199	650	378	370	21	4.6	3.7	5.8	5.0	10	15	68
23	156	546	359	368	19	4.8	3.5	7.0	4.6	10	14	54
24	1500	576	348	358	5.3	11	3.6	5.8	5.2	11	14	49
25	2050	510	342	395	5.4	13	3.9	5.6	5.4	13	13	46
26	1170	479	342	416	5.6	27	4.2	5.8	5.0	11	19	102
27	443	455	332	408	5.6	26	4.7	5.8	4.8	9.2	22	225
28	308	443	325	400	5.0	10	7.0	6.0	5.0	8.4	19	92
29	253	431	310	385	5.8	45	5.0	5.8	5.0	8.1	13	65
30	275	—	315	370	5.8	22	5.4	6.0	5.4	8.4	16	301
31	465	—	305	—	6.0	—	5.4	5.4	—	8.4	—	131
Mean	644	735	574	379	121	9.54	5.18	6.50	5.52	9.26	18.3	137
Runoff in Ac.Ft.	39630	42300	35290	22530	7430	568	319	400	328	569	1090	8420
	Water Year Total 169345								Calendar Year Total 158874			

U. S. Geological Survey and Division of Water Resources cooperative station located 1 mile upstream from the mouth. Deer Creek is tributary to the Yuba River 1 mile below Narrows Dam. For total flow of Yuba River near Smartville combine with flows in Table 65. Drainage area is 13.5 square miles. Period of record 1935 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 68

FLOW OF DRY CREEK AT VIRGINIA RANCH - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	186	2880	260	217	110	28	21	2.3	4.3	4.9	4.7	19
2	141	1330	228	204	83	23	18	2.5	4.3	4.7	4.5	18
3	116	765	237	194	72	27	16	2.5	4.3	4.7	4.3	14
4	102	504	419	184	67	26	15	3.0	4.5	4.7	4.3	14
5	92	426	281	175	62	25	14	3.6	4.5	4.7	4.3	21
6	195	372	429	168	59	26	12	3.4	4.5	4.7	3.3	30
7	194	336	790	175	129	26	11	3.4	4.9	4.9	3.1	447
8	204	304	504	164	143	25	11	3.4	4.9	4.9	3.1	133
9	153	275	392	151	83	26	11	3.4	4.9	4.7	3.1	126
10	245	254	565	145	71	26	8.3	3.6	5.1	4.7	3.1	212
11	1270	532	422	139	64	23	7.7	3.4	5.6	4.7	3.0	160
12	3520	379	444	134	58	24	7.7	3.3	5.6	4.7	3.3	73
13	1030	278	379	153	55	23	7.4	3.3	5.4	4.7	3.6	49
14	1810	245	356	168	53	22	7.4	3.1	5.1	4.5	6.1	40
15	1690	225	1720	111	50	21	7.0	2.8	4.9	4.7	6.4	35
16	635	399	790	23	47	20	6.4	2.6	4.9	5.1	5.1	32
17	560	358	512	91	45	19	5.6	2.2	4.9	4.9	4.5	30
18	365	266	1460	102	43	18	5.4	2.2	4.9	5.4	4.7	28
19	272	323	776	99	43	18	4.9	2.2	4.9	5.4	4.9	266
20	504	878	529	92	44	17	4.9	2.5	4.9	5.4	4.9	393
21	336	512	419	83	40	17	6.1	3.0	5.1	5.4	4.7	90
22	260	449	369	75	37	17	4.5	3.1	5.1	5.1	4.5	58
23	220	730	346	73	35	18	4.0	3.1	5.1	5.6	4.3	47
24	2720	456	333	72	34	24	3.4	3.1	5.1	5.4	4.3	40
25	3120	372	333	86	33	21	3.3	3.1	5.1	5.4	10	39
26	1490	333	317	126	32	19	3.1	3.1	5.1	5.4	11	128
27	685	297	297	91	30	18	3.4	3.3	4.9	5.1	11	370
28	484	285	281	83	30	18	2.6	3.3	4.9	5.1	11	139
29	402	269	266	75	30	49	4.3	3.4	4.9	5.1	11	87
30	359	—	245	81	28	32	3.0	3.4	4.9	4.5	11	586
31	534	—	231	—	28	—	2.6	3.8	—	4.5	—	187
Mean	771	515	482	124	56.1	23.4	7.81	3.05	4.92	4.96	5.57	126
Runoff in Ac.Ft.	47410	29620	29610	7410	3450	1390	480	187	293	305	331	7740
	Water Year Total 146148								Calendar Year Total 128226			

U. S. Geological Survey station located 0.4 mile south of Virginia Ranch and 2.9 miles southwest of Oregon House. Dry Creek is a north-side tributary to the Yuba River at Mile 11.0. Drainage area is 71.5 square miles. Period of record 1948 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 69

FLOW OF DRY CREEK NEAR WHEATLAND - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	179	918	56	36	15	4.7	4.2	0.3	0	22	0	40
2	137	834	50	33	15	3.0	4.4	.1	0	4.7	0	80
3	112	279	44	32	12	.6	3.9	.3	0	0	0	35
4	94	163	74	30	12	.1	2.5	.2	0	0	0	18
5	84	117	60	28	12	.6	2.5	.6	0	0	0	22
6	147	94	771	26	11	1.5	2.2	.6	.1	0	0	40
7	374	80	1520	28	10	1.5	1.7	.6	0	0	0	220
8	425	66	592	32	19	.6	1.7	.3	0	0	0	90
9	258	56	270	27	16	.1	.6	.2	0	0	0	56
10	263	49	165	26	14	0	.3	0	0	0	0	80
11	603	107	165	26	15	0	.2	0	.3	0	0	54
12	4080	103	261	24	14	0	.3	0	.3	0	0	35
13	1340	58	187	24	11	.6	.3	.2	.3	0	0	26
14	1640	49	163	32	3.9	.6	0	.5	.5	0	60	20
15	2930	43	1520	26	2.2	1.3	.1	.8	.3	0	55	17
16	730	122	706	22	1.7	3.0	.3	1.0	0	0	40	14
17	1170	160	322	19	1.5	3.7	1.7	.8	0	0	25	14
18	350	72	957	18	1.5	5.4	2.0	.6	0	0	17	12
19	192	71	584	22	1.3	2.5	1.3	.2	.8	0	10	100
20	267	901	282	18	1.3	1.5	0	.6	.3	0	7	472
21	182	472	174	19	1.2	1.0	0	.8	.2	0	6	91
22	133	225	126	18	.8	1.0	0	.6	.1	0	5	56
23	107	360	104	16	2.0	1.3	0	.3	0	0	4	41
24	788	190	92	13	3.7	2.0	0	.8	0	0	3	34
25	2130	126	80	15	3.9	2.2	0	.5	.8	0	2.5	31
26	1070	93	66	25	2.5	1.8	0	.2	0	0	2	48
27	392	84	57	21	3.0	1.5	0	.2	0	0	2	151
28	214	71	52	18	2.5	1.8	0	.2	0	0	1.5	96
29	156	62	46	15	5.7	6.0	0	.1	.8	0	1.5	58
30	129	—	41	14	5.0	6.3	0	.1	6.6	0	1.5	228
31	276	—	38	—	6.3	—	.5	0	—	0	—	127
Mean	675	208	310	23.4	7.29	1.87	0.99	0.41	0.38	0.86	8.10	77.9
Runoff in Ac.Ft.	41560	11950	19090	1390	448	111	61	25	23	53	482	4790
	Water Year Total 90456								Calendar Year Total 79983			

U. S. Geological Survey and Division of Water Resources cooperative station located 2300 feet upstream from Highway 99E bridge and 1.3 miles northwest of Wheatland. Dry Creek is a north-side tributary to the Bear River at Mile 4.5 above the mouth. Drainage area is 99.5 square miles. Period of record October 1946 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 70

FLOW OF BEAR RIVER NEAR WHEATLAND - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1600	7000	1230	1630	834	261	140		19	9.4	13	68
2	1200	10000	1150	1550	834	244	160		16	9.0	14	335
3	1000	7000	899	1540	762	256	140		11	9.0	16	140
4	800	3500	1180	1550	730	252	92		9.8	9.0	16	103
5	740	2500	1040	1600	670	239	117		12	9.4	12	121
6	760	1900	1930	1620	455	223	67		16	10	15	218
7	740	1600	2970	1670	274	114	41		15	13	13	702
8	620	1480	2210	1580	331	41	62		16	12	11	304
9	580	1400	1830	1470	435	24	37		16	13	9.8	432
10	800	1320	1380	1440	570	21	46		13	13	11	806
11	1200	1550	1200	1390	691	28	54	*20	18	14	15	675
12	5000	1620	1400	1360	675	140	40		20	16	19	615
13	3450	1330	1460	1370	650	140	36		19	15	56	540
14	4910	1160	1430	1510	605	168	29		19	14	213	223
15	11500	1140	3480	1330	570	156	26		38	14	132	110
16	4590	2190	3130	1220	530	140	34		132	14	103	84
17	2900	3710	2060	1160	510	86	34		128	16	54	75
18	1720	2080	3420	1120	495	114	28		121	20	41	70
19	1270	1930	3340	1020	455	114	28		110	22	38	284
20	1320	3120	2340	947	455	58	36		99	25	36	964
21	1290	2360	1770	917	430	117	70	19	86	25	36	261
22	1140	1740	1500	875	430	86		19	75	26	31	181
23	1020	2130	1360	863	344	33		18	37	21	34	172
24	2430	1830	1270	887	354	124		18	22	22	34	136
25	7930	1550	1330	935	358	140		19	19	22	56	128
26	5800	1430	1490	1070	340	117	*40	18	13	19	58	185
27	3420	1330	1570	995	331	48		16	12	22	36	322
28	2700	1240	1660	953	313	106		16	12	22	34	248
29	2200	1220	1740	899	295	181		15	11	16	33	172
30	2000	—	1700	863	261	172		16	10	14	33	569
31	2500	—	1740	—	239	—		19	—	13	—	730
Mean	2565	2492	1816	1244	491	131	55.4	19.1	38.2	16.1	40.8	322
Runoff in Ac.Ft.	157700	143300	111700	74050	30200	7820	3410	1180	2270	989	2420	19780
	Water Year Total 623100								Calendar Year Total 554819			

U. S. Geological Survey and Division of Water Resources cooperative station located on Highway 99E bridge 11.3 miles above the mouth. The Bear River flows into the Feather River above Nicolaus at Mile 12.0L. Drainage area is 295 square miles. Period of record 1928 to date. Records for 1952 computed by U. S. Geological Survey.

* Estimated mean for period indicated.

TABLE 71

FLOW OF COON CREEK AT HIGHWAY 99E - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	114	536	85	62	59	15	44	8.3	10	10	9.7	115
2	90	370	78	58	56	14	34	8.8	9.7	11	11	166
3	76	259	75	54	49	16	30	10	10	12	10	63
4	69	198	90	52	46	12	27	12	11	12	7.6	54
5	63	169	78	48	46	12	25	12	12	13	7.2	130
6	101	146	260	46	45	12	21	12	12	12	10	119
7	252	128	1660	47	49	14	17	12	14	12	11	332
8	259	117	544	48	65	12	15	11	11	12	7.9	*180
9	166	107	309	42	52	17	14	8.8	13	15	9.2	*236
10	121	98	236	41	46	21	17	11	16	15	9.7	*163
11	405	146	230	39	40	19	17	12	22	15	9.7	*130
12	4200	140	324	37	38	15	18	14	29	15	12	*108
13	1130	101	261	39	35	17	16	12	30	16	51	*89
14	1920	94	215	46	34	15	17	10	27	21	155	*72
15	3680	92	907	40	30	12	15	11	24	25	126	*56
16	948	190	683	41	27	12	13	8.8	21	28	80	*44
17	993	242	327	52	25	11	11	10	22	31	56	*34
18	417	135	699	42	24	10	9.2	9.2	21	26	51	30
19	303	126	489	42	22	10	9.2	7.9	18	27	41	288
20	309	500	303	39	21	12	9.2	9.2	14	26	39	538
21	237	351	218	40	20	13	8.8	9.2	16	26	36	124
22	249	215	177	36	14	15	8.3	8.8	12	17	35	83
23	201	271	146	36	15	15	9.2	6.9	12	16	34	70
24	652	204	128	40	14	22	9.7	8.8	11	12	31	61
25	1990	151	112	49	16	24	8.8	8.8	9.7	12	30	54
26	614	133	99	78	17	22	9.2	7.6	11	10	29	66
27	344	119	89	72	17	15	9.7	6.5	8.3	8.3	28	117
28	273	105	80	72	12	22	11	9.7	14	8.8	28	81
29	218	96	76	65	13	65	*8.3	9.2	11	7.9	28	69
30	190	—	72	59	12	49	*7.9	10	12	8.3	27	241
31	242	—	66	—	10	—	7.9	10	—	9.2	—	180
Mean	673	191	294	48.7	31.2	18.0	15.4	9.8	15.4	15.8	34.0	132
Runoff in Ac.Ft.	41410	10990	18100	2900	1922	1071	947	606	920	971	2023	8118
	Water Year Total 101952								Calendar Year Total 89978			

Division of Water Resources station located at the Highway 99E bridge. Coon Creek is an east-side tributary to the Sacramento River at Mile 19.6L. via "Natomas Cross Canal", to the main drain between Reclamation Districts 1000 and 1001. Drainage area is 82.5 square miles. Period of record 1947 to date. Records for 1952 computed by Division of Water Resources.

* Estimated

TABLE 72

FLOW OF AUBURN RAVINE AT HIGHWAY 99E - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	102	210	88	48	32	63	60	52	42	9.5	8.0	38
2	87	198	64	45	21	62	55	51	42	*5.2	7.2	38
3	78	153	82	42	19	62	47	52	97	4.5	7.4	23
4	72	134	92	40	16	62	37	54	39	4.2	6.6	17
5	68	123	81	33	13	61	36	52	37	4.5	7.4	46
6	107	111	193	30	8.7	62	33	54	38	4.7	7.2	34
7	113	106	520	34	13	62	33	53	39	4.7	7.4	170
8	134	103	331	33	16	63	32	52	40	4.8	6.8	63
9	99	99	206	28	14	63	31	48	42	5.0	6.8	77
10	102	93	181	29	12	53	33	51	45	5.1	6.8	55
11	173	137	166	27	13	44	38	55	49	5.2	7.8	36
12	1030	106	234	26	13	43	43	53	49	5.4	11	28
13	461	95	129	28	28	43	42	49	49	5.8	30	24
14	587	90	120	31	33	42	43	49	49	5.8	56	23
15	*940	85	351	22	39	40	43	45	46	5.8	46	24
16	*420	151	276	18	53	38	42	44	40	5.8	23	22
17	*440	138	174	13	56	36	42	47	30	6.6	17	21
18	*220	108	300	8.3	52	46	42	48	27	6.4	15	19
19	*170	103	305	13	52	44	42	46	20	5.8	14	130
20	*170	251	209	18	59	44	40	45	16	6.2	11	182
21	*160	203	140	18	67	42	40	45	15	11	11	63
22	161	151	111	16	66	42	51	47	13	13	10	49
23	141	168	100	18	66	48	52	46	12	18	9.4	38
24	272	134	94	25	68	50	50	46	14	11	9.2	36
25	722	120	80	30	67	55	48	48	13	9.2	9.8	31
26	402	114	71	33	68	63	48	41	11	8.6	9.6	37
27	263	105	66	28	66	63	47	41	8.0	9.0	10	53
28	200	98	62	24	66	66	50	44	7.6	9.3	9.8	54
29	163	94	58	25	70	82	50	42	7.6	9.8	9.2	34
30	144	—	54	29	62	72	52	40	8.3	9.0	8.8	96
31	157	—	50	—	61	—	57	42	—	7.8	—	70
Mean	270	130	162	27.1	41.6	53.9	43.8	47.8	31.5	7.3	13.3	52.8
Runoff in Ac.Ft.	16580	7500	9933	1611	2558	3205	2696	2940	1875	451	792	3245
	Water Year Total 60199								Calendar Year Total 53386			

Division of Water Resources station located at the Highway 99E bridge. Auburn Ravine is an east-side tributary to the Sacramento River at Mile 19.6L via "Natomas Cross Canal", the main drain between Reclamation Districts 1000 and 1001. Drainage area is 34.6 square miles. Period of record 1947 to date.

TABLE 73

FLOW OF NATOMAS CROSS CANAL AT HEAD[(a)] - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	452	457	180	181	302	36	105	*1	*15	58	*12	43
2	376	818	156	181	259	6.7	84	*1	*16	37	*13	174
3	304	776	143	181	278	23	68	*1	*17	33	*14	244
4	234	672	143	179	264	*15	45	*1	*18	30	*16	132
5	187	572	153	181	236	22	39	*1	*19	30	*17	105
6	156	488	156	207	201	20	34	*1	*20	28	*18	194
7	388	446	2270	232	224	19	33	*1	*21	26	*19	284
8	568	398	2580	254	188	25	28	*1	*22	25	*21	544
9	600	370	1310	282	226	23	*23	*1	*23	24	*22	373
10	361	335	666	283	247	22	*19	*1	*24	27	*24	451
11	350	356	474	266	226	26	*18	*1	*25	28	*26	319
12	3090	392	451	270	233	24	*16	*1	29	27	*28	188
13	5920	364	686	268	233	*19	*15	*1	41	26	*30	138
14	3320	338	393	250	250	*15	*14	*1	66	24	31	110
15	5680	278	1480	256	240	*12	*12	*1	62	22	117	95
16	6040	306	2660	272	213	*12	*11	*1	60	23	168	88
17	4080	413	1060	249	171	*12	*10	*1	66	25	126	74
18	2380	410	715	253	149	*12	*9	*1	61	27	90	70
19	1010	363	1200	253	146	12	*8	*2	58	30	73	97
20	725	384	781	256	156	12	*7	*3	53	29	66	1420
21	705	885	484	267	152	14	*6	*4	39	28	59	905
22	*535	564	363	269	144	14	*5	*5	40	29	55	324
23	*384	454	280	247	129	15	*4	*6	59	33	40	*184
24	*618	455	242	250	114	16	*3	*7	34	30	36	*68
25	*3960	378	204	252	97	16	*2	*8	32	28	35	*22
26	*1940	315	164	258	104	25	*1	*9	32	*24	36	*8.6
27	*1100	279	153	297	104	26	*1	*10	29	*22	36	*188
28	*750	246	135	318	110	28	*1	*11	30	*20	32	*1420
29	*549	212	139	336	116	30	*1	*12	30	*18	36	*236
30	480	—	164	309	98	69	*1	*13	41	*16	36	*180
31	438	—	188	—	66	—	*1	*14	—	*14	—	699
Mean	1538	439	651	252	183	20.7	20.1	3.9	36.2	27.1	44.4	302
Runoff in Ac.Ft.	94570	25240	40010	14990	11260	1231	1237	242	2156	1668	2642	18600
	Water Year Total 223649								Calendar Year Total 213846			

Division of Water Resources station located approximately 5 miles northeast of Verona on Pacific Avenue Highway bridge. Natomas Cross Canal is an east-side tributary to the Sacramento River at Mile 19.6L. Period of record December 1949 to date. Record of flow during 1951 is given in Table 16C of this report.

(a) Formerly listed as Reclamation District 1001 Drain at Head of Cross Canal.

* Estimated

TABLE 74

FLOW OF RECLAMATION DISTRICT 1001 DRAIN INTO NATOMAS CROSS CANAL[a] - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	9.7	71	22	20	22	21	0				0	3.8
2	0	75	34	20	27	19	0				0	16
3	16	60	28	18	20	14	0				0	15
4	7.5	33	29	18	15	14	14				0	7.5
5	12	27	16	2[illegible]	13	9.4	7.2				0	11
6	0	22	9.7	17	22	17	0				0	15
7	16	23	243	24	20	18	7.4				0	67
8	21	28	185	19	18	21	0				0	37
9	19	27	88	20	20	24	0				0	28
10	28	29	49	23	22	15	0				0	28
11	11	33	59	2[illegible]	22	21	0				0	32
12	437	28	56	21	25	25	15	N	N	N	0	20
13	316	26	36	33	21	22	0	0	0	0	0	19
14	345	24	87	15	16	16	15				0	11
15	351	26	393	20	16	13	16				7.0	0
16	336	29	382	22	18	14	0				0	0
17	360	19	222	20	29	17	15	F	F	F	0	3.2
18	376	15	156	22	26	0	0	L	L	L	0	0
19	354	24	150	19	22	22	0	0	0	0	0	66
20	223	31	94	18	29	0	0	W	W	W	0	92
21	92	63	55	18	21	14	0				0	78
22	79	37	52	15	23	14	0				0	39
23	17	39	42	18	24	21	0				0	18
24	154	37	43	22	20	14	0				0	24
25	381	28	24	41	26	14	0				0	26
26	318	33	22	24	24	14	0				0	33
27	188	25	28	23	14	14	0				0	33
28	107	44	24	19	24	14	0				0	41
29	101	22	21	22	16	0	0				0	49
30	59	—	21	30	17	14	0				0	47
31	67	—	18	—	19	—	0		—		—	52
Mean	155	33.7	86.7	21.5	21.2	15.2	2.9	0	0	0	0.2	29.4
Runoff in Ac.Ft.	9523	1940	5333	1279	1301	903	178	0	0	0	14	1808
	Water Year Total 21653								Calendar Year Total 22279			

This is drainage return to the Sacramento River via the cross canal by pumping and gravity. Period of record 1940 to date. Records for 1952 computed by Division of Water Resources.

(a) Natomas Cross Canal is the main drain between Reclamation Districts 1000 and 1001 and joins the Sacramento River at Mile 19.6L.

TABLE 75

FLOW OF RECLAMATION DISTRICT 1000 DRAIN (#3 PLANT) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12	Records sufficient to compute only monthly flows.											
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30		—		—		—			—		—	
31		—										
Mean	49.4	34.9	44.7	31.8	67.2	64.6	53.6	50.3	37.3	12.7	15.2	23.0
Runoff in Ac.Ft.	3039	2007	2752	1890	4134	3845	3298	3094	2217	781	904	1417
	Water Year Total 29066								Calendar Year Total 29378			

This is drainage from Reclamation District 1000 return to Sacramento River by pumping and gravity at Mile 6.85L. Daily distribution of flows are not available since the plant operates automatically on float switch. Additional water was returned to Sacramento River from same district at Mile 2.1L (see Table 77). An undetermined amount of water was also returned to the Sacramento River by the Pritchard Lake Plant at Mile 16.0L. Period of record 1940 to date. Records for 1952 computed by Division of Water Resources.

TABLE 76

PLOW OVER SACRAMENTO WEIR FROM SACRAMENTO RIVER TO YOLO BY-PASS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15	No flow in 1952.											
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30		—										
31		—		—		—			—		—	
Mean	0	0	0	0	0	0	0	0	0	0	0	0
Runoff in Ac.Ft.	0	0	0	0	0	0	0	0	0	0	0	0
	Water Year Total 0								Calendar Year Total 0			

Elevation of fixed crest is 25.0 U.S.E.D. Movable crest (top of needles) 31.0 U.S.E.D. Weir has 48 gates, each 38 feet in length. Weir is on right bank at Mile 4.2R above Sacramento. Period of record 1926 to date.

TABLE 77

FLOW OF RECLAMATION DISTRICT 1000 DRAIN (2ND BANNON SLOUGH) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	142	54	57	0	44	90		0	98		0
2	68	192	0	53	21	74	85		0	95		0
3	65	123	71	57	0	56	0		0	96		54
4	0	126	52	56	0	78	0		0	139		58
5	56	127	59	56	0	80	0		3.1	86		57
6	37	130	290	0	0	59	0		36	89		57
7	62	132	486	58	34	59	0		57	83		76
8	59	133	274	52	58	0	0		17	82		89
9	56	132	59	52	24	93	0		70	69		113
10	57	12	115	53	35	0	0		34	65		108
11	169	89	90	54	0	0	0		0	0		65
12	542	84	104	30	0	35	0	N	38	0	N	57
13	541	63	100	0	25	0	0	0	50	0	0	57
14	547	56	218	53	0	0	0		27	0		43
15	416	57	585	53	25	0	0		59	0		59
16	402	88	564	55	24	0	0		138	0		56
17	562	40	337	54	23	0	0	F	141	0	F	40
18	576	54	266	0	0	0	0	L	87	0	L	29
19	584	55	247	65	0	0	0	0	141	0	0	214
20	583	76	134	39	0	0	0	W	141	0	W	240
21	416	240	138	51	0	0	0		49	0		62
22	283	136	138	0	0	0	0		140	0		103
23	140	138	60	0	0	0	0		89	0		78
24	316	137	79	0	0	0	0		120	0		66
25	553	136	59	0	0	0	0		86	0		48
26	521	50	59	43	0	0	0		89	0		59
27	338	66	53	0	0	0	0		110	0		82
28	204	59	59	44	0	0	0		137	0		96
29	136	57	62	20	0	66	0		94	0		167
30	139	—	0	53	23	96	0		89	0		138
31	140	—	70	—	35	—	0		—	0	—	140
Mean	276	101	157	37.2	10.5	24.7	5.6	0	68.1	20.1	0	81.0
Runoff in Ac.Ft.	16990	5812	9683	2216	649	1468	347	0	4050	1789	0	4980
	Water Year Total 45746								Calendar Year Total 47984			

This is drainage from Reclamation District 1000 returned to the Sacramento River by pumping at Mile 2.1L. Additional water was returned to the Sacramento River at Mile 6.85L (See Table 75) and an undetermined amount was returned to the Sacramento River from the Pritchard Lake Plant at Mile 16.0L. Period of record 1925 to date. Records for 1952 computed by Division of Water Resources.

TABLE 78

FLOW OF LINDA CREEK NEAR ROSEVILLE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	149	*265	119	94	84	17	41	12	18	15	21	88
2	129	*265	112	88	86	15	30	9.6	17	13	25	184
3	118	*265	109	81	85	14	22	9.2	16	12	38	57
4	108	*265	127	75	80	14	18	8.7	14	10	37	40
5	104	*153	114	67	*75	13	13	8.9	17	11	37	101
6	143	149	202	55	*75	15	12	9.1	20	10	40	115
7	258	142	}	84	*75	19	11	9.4	21	13	40	363
8	272	135	}---*530	90	72	16	10	9.9	22	17	39	239
9	157	131		75	72	16	10	9.6	23	20	37	257
10	144	125		69	67	17	13	11	30	22	41	195
11		178	}	62	*52	15	15	15	48	24	39	99
12		*156	*306	60	*50	18	14	16	51	25	44	91
13		*136	213	57	*48	17	14	17	42	26	58	*71
14		*131	}	86	*50	16	13	16	33	24	114	*54
15	}---*900	*125		78	49	16	12	15	28	26	117	*49
16		184	}---*500	55	42	16	10	14	25	28	65	*47
17		210		48	*35	13	11	17	26	27	36	*50
18		140		46	*32	11	11	21	23	26	31	49
19		131		40	*28	11	11	24	21	*25	27	421
20		308	*297	36	*26	11	9.6	22	20	*23	25	509
21	*240	344	*240	36	*22	11	9.6	21	19	*22	24	193
22	213	176	*204	32	22	13	11	19	17	19	26	124
23	194	184	*178	28	21	14	11	18	16	*17	24	95
24	319	163	*153	25	21	17	10	18	16	15	24	87
25	1550	148	*143	40	17	18	11	18	16	21	24	81
26	1020	143	*137	74	15	18	10	18	16	18	24	82
27	*672	137	129	63	16	19	11	18	15	24	23	128
28	*378	130	121	}	14	24	10	19	15	19	23	105
29	}	125	114	}---*70	13	44	10	19	15	22	25	85
30	}---*265	—	103	}	13	49	9.9	20	15	22	25	316
31	}	—	96	—	16	—	11	19	—	21	—	241
Mean	515	177	286	61.8	44.3	17.6	13.4	15.5	22.5	19.9	38.4	149
Runoff in Ac.Ft.	31660	10200	17590	3680	2723	1045	823	955	1339	1224	2287	9156
	Water Year Total 85871								Calendar Year Total 82682			

Division of Water Resources station located at Antelope Road bridge 0.5 mile downstream from Highway 99E. Linda Creek is an east-side tributary to the Sacramento River at Mile 1.3L via the Back Borrow Pit of Reclamation District 1000. Period of record 1949 to date.

* Estimated mean for period indicated.

TABLE 79

FLOW OF AMERICAN RIVER AT FAIR OAKS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6850	11100	6610	10400	14400	18500	5820	2280	508	518	336	586
2	5200	30500	6420	9980	17400	17200	5920	1810	516	494	330	1350
3	4400	18600	5940	10100	19200	16400	6540	1630	452	526	318	1520
4	3820	13300	6010	10700	18200	16000	6630	1470	444	518	306	1230
5	3440	10900	5660	12200	15800	18100	6330	1380	468	534	300	1140
6	3380	9480	5820	13800	15900	17900	5990	1270	460	542	324	1280
7	3610	8620	8710	15400	16100	14700	5600	1240	428	494	318	2640
8	3500	7820	8110	13800	17800	17400	5620	1150	460	486	324	4410
9	3140	7460	7230	12500	14900	17200	5430	1070	468	494	356	3320
10	2900	7070	7320	11800	15200	12100	5110	970	508	478	330	2530
11	4640	7750	7180	11100	17500	11700	4780	1000	484	462	318	2410
12	27700	7940	6910	11300	19200	9650	4180	970	625	462	324	2110
13	14000	6810	6700	12100	18900	8590	3990	910	679	440	432	1700
14	12300	6330	6220	12100	19100	8520	4140	860	634	448	1140	1560
15	27500	5990	8950	10600	18100	8400	4060	796	589	425	1880	1580
16	17700	7750	12400	10400	16600	8450	3620	652	540	432	1120	1470
17	9870	15100	8950	11500	18000	9290	3570	697	524	448	793	1490
18	7080	10600	11000	13500	19100	9770	3430	706	508	425	712	1400
19	5740	9070	13400	15300	19900	9980	3280	688	524	455	604	1670
20	5370	9820	10200	14500	19100	9240	2860	706	548	425	640	3280
21	5410	9820	8020	13800	20400	8900	2510	616	556	494	667	2380
22	5030	8620	6790	14300	18000	8710	2360	643	524	502	604	1830
23	4660	8660	6120	15800	18400	8470	2180	607	548	455	510	1570
24	6880	8280	5730	17600	19100	9650	2050	556	572	440	455	1540
25	22000	7560	6450	19000	20700	7820	1920	589	540	494	440	1440
26	20000	7200	8620	18400	19200	6630	1860	564	548	440	559	1470
27	12500	6790	9380	16800	20200	6100	1740	540	548	425	526	1650
28	9380	6560	9960	19800	21700	5850	1760	634	532	382	559	1710
29	7720	6540	10700	17400	19300	5660	1900	500	532	330	559	1520
30	6800	—	10800	16400	18000	6080	2430	500	516	402	568	2250
31	7750	—	10700	—	18800	—	2600	492	—	343	—	4490
Mean	9041	9726	8162	13750	18200	11100	3878	919	526	458	555	1952
Runoff in Ac.Ft.	555900	559400	501800	817900	1119000	660400	238400	56520	31300	28190	33030	120100
	Water Year Total 5030230								Calendar Year Total 4721940			

U. S. Geological Survey station located on right bank at Mile 19.2 above mouth. Drainage area is 1921 square miles. Period of record 1904 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 80

FLOW OF AMERICAN RIVER AT SACRAMENTO (H ST. BRIDGE) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8360	10300	6630	10200	15300	18800	5600	2500	525	525	339	544
2	6200	26700	6650	9540	17500	17800	5710	1880	535	449	334	1260
3	5010	21100	6100	9700	20200	17000	6230	1640	458	564	323	1640
4	4280	14300	6490	10500	19500	16300	6490	1430	417	525	323	1330
5	3690	11400	6350	12200	17000	16900	6140	1390	478	516	318	1110
6	3600	9710	6140	14000	16300	16900	5890	1210	468	564	339	1290
7	4110	8940	9220	15400	17000	15100	5500	1210	430	496	334	1960
8	3950	8140	7750	14400	19400	16200	5370	1120	458	478	334	4360
9	3680	7630.	6850	12800	16300	16200	5250	1020	468	496	360	3310
10	3320	7140	6760	10200	15800	13300	4960	892	516	516	355	2600
11	4880	7570	6800	11200	17900	12100	4620	950	496	440	329	2420
12	20000	8310	6420	11200	20200	10600	4070	950	632	478	329	2210
13	15800	6860	6480	12000	20000	9180	3830	904	714	424	404	1850
14	11800	6270	5800	12600	20400	8770	3860	846	714	424	870	1610
15	25300	6010	7820	10800	19800	8610	3940	791	663	424	1990	1430
16	19300	6740	13600	10500	18300	8420	3540	714	612	404	1200	1470
17	11200	15800	9070	11700	19100	9130	3460	704	593	440	824	1460
18	8030	11100	9500	13900	19600	9560	3380	683	554	391	714	1350
19	6300	8970	14300	15800	20000	9720	3240	724	564	430	593	1530
20	5770	9370	10800	15400	19900	9110	3000	683	583	417	622	2950
21	5850	9960	8450	14100	20600	8750	2600	612	583	440	653	2490
22	5380	8380	6830	14400	19600	8560	2440	642	554	506	612	1880
23	4650	8240	5360	16100	19400	8120	2250	622	583	449	525	1560
24	5090	7860	5350	18100	19600	9340	2140	564	593	440	449	1510
25	18500	7130	5980	18600	20300	7850	1980	603	574	468	430	1390
26	20800	6890	8730	19200	20100	6700	1960	583	574	458	516	1390
27	12100	6390	9810	17500	20200	6020	1810	544	574	430	487	1600
28	8810	6370	10100	20500	21000	5750	1760	653	564	398	525	1690
29	6990	6370	10700	18200	20000	5620	1860	525	535	344	564	1510
30	6450	—	10900	17100	18900	5960	2280	535	544	398	564	1850
31	7790	—	10700	—	19000	—	2700	496	—	349	—	4840
Mean	8935	9653	8143	13930	18970	11080	3802	923	552	454	552	1916
Runoff in Ac.Ft.	549400	555300	500700	828800	1167000	659200	233800	56770	32840	27930	32840	117800
	Water Year Total 5081240								Calendar Year Total 4762380			

Station is maintained jointly by Division of Water Resources and the U. S. Geological Survey. Station is located at the "H" Street Bridge and is 6.0 miles above the mouth. The American River flows into the Sacramento River at Mile 1.1L. Period of record 1921, 1926 to date. Record for 1952 computed by U. S. Geological Survey.

TABLE 81

FLOW OF CACHE CREEK NEAR CAPAY - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1290	6630	839	1120	229	514	482	522	389	85	8.0	221
2	955	11700	716	1080	229	514	466	506	382	80	7.0	1010
3	765	7240	662	1050	241	458	450	498	382	65	6.0	268
4	645	5800	708	1020	288	446	458	510	385	61	6.0	161
5	565	5220	623	1000	415	482	482	510	374	61	6.0	267
6	1340	4840	662	980	564	502	486	531	367	61	5.0	712
7	1580	4580	870	975	658	506	502	531	367	60	4.0	10900
8	2460	4360	1320	965	694	486	527	502	367	60	4.0	2240
9	2240	4190	1480	925	694	527	510	490	367	60	4.0	990
10	2230	4040	1430	596	676	539	478	490	357	61	5.0	1780
11	3760	3970	1170	450	667	543	466	478	346	61	5.0	1510
12	6420	4120	1100	411	685	522	478	474	333	53	5.0	1020
13	4970	3900	1080	396	685	482	494	474	310	46	8.0	676
14	10400	3760	2080	407	676	474	502	470	294	43	16	502
15	9140	3660	3860	374	685	474	514	470	291	39	30	412
16	6420	3600	4430	360	667	482	510	474	288	39	37	350
17	5630	3710	4030	326	672	506	522	470	278	36	34	332
18	4840	3590	4400	313	685	527	522	490	256	32	29	324
19	4370	3490	4870	297	708	531	522	502	196	27	24	464
20	4740	3480	4380	284	730	543	535	494	143	25	21	2300
21	4910	3370	3950	268	730	564	522	490	114	22	19	738
22	4440	2540	3750	419	716	573	535	490	112	21	18	516
23	4080	2620	3610	569	694	573	527	498	97	20	18	443
24	6100	2580	3570	569	658	573	522	502	82	18	19	390
25	8190	2510	1850	573	640	543	506	494	69	15	19	362
26	6670	2460	1640	930	611	527	502	490	61	14	19	6010
27	5690	2290	1490	1070	585	527	490	450	76	13	19	4060
28	4970	1360	1370	1050	502	543	486	462	102	12	19	1860
29	4600	1290	1320	382	482	535	494	438	104	10	20	1140
30	4380	—	1250	241	478	506	527	419	102	9.0	20	2730
31	4340	—	1180	—	502	—	531	404	—	8.0	—	2000
Mean	4294	4031	2119	647	585	517	502	485	246	39.3	15.1	1506
Runoff in Ac.Ft.	264100	231900	130300	38480	35990	30790	30840	29800	14660	2410	900	92600
	Water Year Total 889497								Calendar Year Total 902770			

U. S. Geological Survey and U. S. Bureau of Reclamation cooperative station located 3 miles northwest of Capay and 2 miles upstream from Clear Lake Water Company diversion dam. Cache Creek is a west-side tributary to Yolo By-Pass opposite Mile 7.0 north of Sacramento By-Pass. Drainage area is 1052 square miles. Period of record 1944 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 82

FLOW OF CACHE CREEK AT YOLO - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1330	5000	1430	1100	56							0
2	932	12800	1240	1100	47							366
3	692	7470	1200	1050	29							284
4	564	5780	1180	1050	4.0							129
5	465	5130	1170	1000	0							87
6	830	4720	1160	1000	0							365
7	1480	4420	1160	980	0							7660
8	2060	4210	1160	980	0							3660
9	2240	4040	1250	940	0							1180
10	2250	3880	1330	600	0							1580
11	3700	3870	1340	460	0							1390
12	7000	4160	1270	410	0	N	N	N	N	N	N	1050
13	5800	3800	1220	400	0	0	0	0	0	0	0	650
14	8720	3640	1560	410	0							453
15	10600	3530	3550	380	0							349
16	6780	3490	4180	364	0							284
17	6100	3670	3840	340	0	F	F	F	F	F	F	235
18	5100	3510	3980	320	0	L	L	L	L	L	L	186
19	4510	3370	4730	273	0	0	0	0	0	0	0	210
20	4630	3360	4340	245	0	W	W	W	W	W	W	1900
21	4960	3270	3860	228	0							794
22	4420	2670	3640	256	0							461
23	4050	2530	3500	412	0							361
24	4800	2510	3450	420	0							298
25	8780	2440	2250	392	0							252
26	7020	2380	1690	539	0							325
27	6100	2320	1550	740	0							3290
28	5250	1690	1440	725	0							2080
29	4790	1540	1300	392	0							1220
30	4510	—	1250	83	0							2100
31	4430	—	1200	—	0	—			—		—	2390
Mean	4351	3972	2175	586	4.39	0	0	0	0	0	0	1148
Runoff in Ac.Ft.	267600	228500	133700	34890	270	0	0	0	0	0	0	70590
	Water Year Total 729200								Calendar Year Total 735550			

U. S. Geological Survey and Division of Water Resources cooperative station located 0.5 mile south of Yolo. Cache Creek is a west-side tributary to Yolo By-Pass opposite Mile 7.0 north of Sacramento By-Pass. Drainage area is 1150 square miles. Period of record 1903 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 83

FLOW OF YOLO BY-PASS NEAR WOODLAND - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	32500	15800	1760	2610	16400	827	77	71	69	82	11	5
2	20800	26400	1360	2730	14100	814	77	64	66	60	10	12
3	9250	58000	1170	2710	13800	788	77	60	62	48	9.7	31
4	4740	62700	1070	2690	14200	751	78	63	61	51	9.4	130
5	2360	54700	1050	2320	11800	725	83	66	60	52	9.4	233
6	1170	40500	1080	3510	7490	733	77	63	60	51	9.4	223
7	1360	29000	1220	5910	4880	760	82	63	60	48	11	335
8	1950	22500	1290	11000	3160	791	82	61	57	45	12	6300
9	2780	19400	1760	16200	3220	823	74	60	55	42	13	4750
10	2950	17600	2330	16200	5560	839	70	61	54	34	12	3650
11	3170	17600	1960	14700	6460	872	64	61	54	26	11	3920
12	4510	17200	1640	14000	5880	881	65	60	54	21	10	4000
13	10500	17200	1520	13200	5520	853	63	58	53	18	9.4	3770
14	24600	16400	1500	13600	5110	728	60	59	53	17	10	3470
15	41800	15000	2880	14200	4640	606	60	62	54	15	11	3390
16	60400	14300	5110	12600	3630	486	61	61	55	14	12	3220
17	52400	15300	15200	9500	2020	323	58	66	55	13	13	2740
18	41400	19400	20400	7340	1070	211	57	70	56	12	14	2050
19	30100	18900	23000	7670	913	161	56	66	56	12	14	1510
20	21800	16300	22400	9420	886	130	58	66	54	13	15	1490
21	18500	16200	17400	10200	966	114	60	66	53	12	17	3010
22	15100	15300	11700	10300	1110	108	54	62	53	12	16	2910
23	12300	10900	7040	9220	1030	100	55	60	53	13	13	2800
24	10400	8120	5220	8080	902	89	53	60	53	27	10	2790
25	15300	6780	4430	8120	891	87	52	62	49	32	9.4	2850
26	36200	5680	3030	9420	902	87	52	61	48	23	7.7	2700
27	49600	4880	2220	12900	908	88	55	63	46	16	7.1	3130
28	42600	3650	1940	16600	886	82	61	69	45	12	6.3	5130
29	30800	2240	1760	18000	881	82	64	71	49	11	6.8	4620
30	23300	—	1720	18100	872	80	64	70	80	10	5.4	4190
31	18000	—	2200	—	827	—	70	70	—	12	—	4970
Mean	20730	20274	5431	10118	4546	467	65.1	63.7	55.9	27.5	10.8	2720
Runoff in Ac.Ft.	1275000	1166000	333900	602100	279500	27810	4000	3920	3330	1690	645	167300
	Water Year Total 3924709								Calendar Year Total 3865195			

Station is maintained jointly by the Division of Water Resources and the U. S. Geological Survey. This station is also known as Yolo By-Pass at Elkhorn. The flow of this station is referred to the recorder at the end of the Sacramento By-Pass except during periods of high water when it is referred to the recorder at the Woodland-Elkhorn highway crossing. To get total flow through Yolo By-Pass below Sacramento, combine this flow with the flow in Tables 76 and 87. The flow in this table includes the flows of Cache Creek (Table 82), Knights Landing Ridge Cut (Table 50), and Fremont Weir (Table 53). Period of record 1930 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 84

FLOW OF SALT CREEK NEAR WINTERS (SCOTT'S RANCH) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.4	40	2.8	5.3	1.4							4.3
2	1.0	18	2.8	4.5	1.1							0
3	0.8	12	2.2	4.3	1.1							0
4	.8	12	2.1	3.9	1.1							0
5	.7	9.6	2.4	3.6	1.0							2.7
6	2.2	8.1	7.9	3.2	*0.8							7.5
7	3.4	7.9	5.9	3.4	*.7							60
8	7.4	7.6	5.7	3.1	*.5							2.8
9	3.1	7.6	4.3	2.8	*.5							*0.3
10	2.5	7.4	4.1	3.0	*.5							0
11	*110	11	3.1	2.6	*.5							0
12	*198	7.4	6.4	2.4	.5	N	N	N	N	N	N	0
13	43	6.7	7.1	2.4	.5	0	0	0	0	0	0	0
14	*156	5.9	*190	2.4	.4							0
15	41	5.5	82	2.2	.4							0
16	58	5.3	45	2.1	.4							0
17	40	*4.9	32	1.9	.3	F	F	F	F	F	F	0
18	19	*4.7	60	1.8	.3	L	L	L	L	L	L	0
19	13	*5.7	31	1.8	.2	0	0	0	0	0	0	59
20	13	*6.2	20	2.1	.2	W	W	W	W	W	W	6.4
21	21	3.7	15	1.8	.2							2.2
22	14	3.6	14	1.8	.1							2.0
23	11	3.4	12	1.6	0							1.9
24	107	3.1	11	1.5	0							1.6
25	98	2.8	9.6	1.5	0							2.0
26	30	2.6	8.1	1.8	0							21
27	18	2.6	6.9	1.5	0							45
28	16	2.6	6.7	1.5	0							6.7
29	15	2.8	6.2	1.4	0							4.7
30	12	—	5.7	1.3	0							18
31	10	—	5.7	—	0	—			—		—	0.1
Mean	34.4	7.6	19.9	2.5	0.4	0	0	0	0	0	0	8.0
Runoff in Ac.Ft.	2115	438	1225	148	25	0	0	0	0	0	0	492
	Water Year Total 4490								Calendar Year Total 4443			

Division of Water Resources station located about six miles northwest of Winters and approximately 1.0 mile east of Scott Ranch. Flow of Salt Creek reaches the Yolo By-Pass via Willow Slough. Drainage area is 10.8 square miles. Period of record, October, 1951, to date.

* Estimated.

TABLE 85

FLOW OF PLEASANTS CREEK NEAR WINTERS (GONZALES RANCH) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.9	144	13	16	2.5	0.4						10
2	5.2	68	12	14	2.3	.8						0.5
3	4.5	42	11	14	2.1	.6						0
4	4.2	35	10	13	2.1	.5						0
5	4.0	32	11	12	2.3	.2						6.6
6	6.6	30	33	12	1.9	.2						*136
7	6.9	26	23	13	1.9	.5						*511
8	18	24	20	11	1.7	.2						12
9	11	22	18	11	1.4	0						8.3
10	9.0	20	16	10	1.4	0						8.3
11	*162	21	14	9.4	1.4	0						6.6
12	*331	18	18	8.6	1.4	0.1	N	N	N	N	N	4.5
13	119	18	14	9.4	0.9	.1	0	0	0	0	0	3.2
14	*574	14	*190	8.6	.9	.1						3.0
15	217	14	*129	8.3	.9	.1						2.6
16	118	14	*72	6.9	.9	.1						2.1
17	105	15	57	6.6	.9	.1	F	F	F	F	F	1.4
18	63	12	119	6.2	.8	0	L	L	L	L	L	1.2
19	46	12	72	5.2	1.1	0	0	0	0	0	0	154
20	48	16	52	5.0	1.0	0	W	W	W	W	W	20
21	36	13	43	4.5	.3	0						9.0
22	29	11	36	4.2	.6	0						6.6
23	26	11	33	3.8	.7	0						5.2
24	266	11	31	3.5	.7	0						5.2
25	247	12	28	3.2	.6	0						5.2
26	100	13	25	3.2	.6	0						19
27	66	12	22	3.2	.5	0						*153
28	43	11	20	3.2	.2	0						29
29	36	13	19	2.6	.1	0.1						22
30	32	—	18	2.8	.1	.1						120
31	31	—	17	—	.2	—			—		—	34
Mean	89.4	24.3	38.6	7.8	1.1	0.1	0	0	0	0	0	41.9
Runoff in Ac.Ft.	5497	1396	2372	465	68	8	0	0	0	0	0	2578
	Water Year Total								Calendar Year Total 12384			

Division of Water Resources station located approximately 1 mile above the mouth. Pleasants Creek is a south-side tributary to Putah Creek. Drainage area is 16.2 square miles. Period of record, November 1951 to date.

* Estimated

TABLE 86

FLOW OF PUTAH CREEK NEAR WINTERS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1450	5940	574	620	233	58	60	9.0	6.7	1.7	6.1	425
2	1100	9500	529	594	264	58	51	8.5	6.7	1.4	4.6	2140
3	834	3630	508	555	227	56	41	8.5	11	1.8	2.3	376
4	728	2590	422	526	208	55	35	12	10	2.9	3.8	192
5	628	2110	526	499	197	54	32	9.4	9.4	2.3	5.4	757
6	808	1800	975	474	189	52	27	9.4	8.1	2.1	6.1	1760
7	1080	1590	1390	479	187	50	22	10	6.5	5.0	6.7	22000
8	1570	1410	1000	476	192	55	17	7.4	5.2	4.2	6.1	3320
9	1060	1250	800	443	192	52	16	6.1	4.6	3.1	5.8	1690
10	995	1140	700	435	182	53	16	7.2	4.6	3.2	6.7	2370
11	3750	1310	650	411	169	51	15	9.7	3.4	3.6	6.1	2500
12	10600	1440	600	386	160	48	14	10	4.4	5.6	5.8	1390
13	7250	1120	650	383	151	44	14	9.4	5.2	8.5	5.2	912
14	14300	1000	1000	409	149	44	14	9.0	5.0	8.8	9.9	671
15	10000	924	5500	369	142	42	13	8.5	5.0	7.8	16	524
16	6640	942	3000	345	133	41	12	7.4	5.0	7.8	12	426
17	5940	1070	2200	325	125	38	11	6.5	4.4	7.6	8.1	362
18	3780	897	3000	309	110	35	11	9.0	5.2	7.6	6.7	312
19	2760	866	4300	290	106	32	11	9.2	8.8	8.8	7.6	985
20	3850	1090	2830	272	102	32	11	14	9.0	9.4	10	3910
21	3200	1100	2000	262	100	30	11	12	9.7	8.8	13	1240
22	2500	920	1690	254	95	28	9.4	12	7.4	7.6	17	817
23	2020	970	1400	245	90	27	8.1	13	6.5	5.6	16	632
24	6100	938	1200	242	80	26	7.8	12	6.5	3.2	22	512
25	11300	825	1100	238	75	25	7.2	13	6.5	2.1	24	457
26	5070	760	1000	242	75	26	8.1	14	7.8	2.0	25	1250
27	3790	704	900	243	70	26	10	14	7.8	2.1	26	6540
28	2780	650	850	233	70	36	12	12	5.2	6.3	26	2320
29	2240	604	750	215	65	46	11	8.8	3.2	6.7	27	1430
30	1910	—	700	208	60	54	11	6.5	1.8	6.3	32	4460
31	1720	—	650	—	60	—	9.9	6.9	—	5.6	—	2440
Mean	3957	1693	1402	366	137	42.5	17.7	9.82	6.35	5.15	12.3	2230
Runoff in Ac.Ft.	243300	97370	86230	21780	8450	2530	1090	604	378	316	732	137100
	Water Year Total 588014								Calendar Year Total 599880			

U. S. Geological Survey and Division of Water Resources cooperative station located 6 miles west of Winters. Putah Creek is a west-side tributary to Yolo By-Pass below Sacramento By-Pass. Drainage area is 577 square miles. Period of record 1930 to date. (Records 6 miles downstream available 1905 to 1931). Records for 1952 computed by U. S. Geological Survey.

TABLE 87

FLOW OF PUTAH CREEK NEAR DAVIS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1250	3150	500	643	205	34	28					0
2	946	10300	480	607	250	32	32					1900
3	754	4200	445	577	223	37	24					600
4	625	2900	495	547	202	36	17					238
5	542	2260	480	518	192	34	11					218
6	516	1840	570	491	179	29	6.0					1640
7	880	1550	1220	491	172	26	2.9					21800
8	1080	1340	955	491	169	30	.6					4340
9	864	1170	747	458	172	33	0					1800
10	675	1040	634	436	166	32	0					2080
11	1710	1060	570	420	158	36	0					2250
12	11100	1340	555	392	144	33	0	N	N	N	N	1400
13	8800	1010	515	381	135	30	0	0	0	0	0	941
14	12700	884	896	403	128	26	0					670
15	12200	801	5100	381	122	26	0					520
16	7060	765	3560	355	117	26	0					424
17	6990	896	2230	325	112	22	0	F	F	F	F	363
18	4250	783	2640	306	105	21	0	L	L	L	L	315
19	3080	735	3920	288	93	17	0	0	0	0	0	632
20	3320	819	3270	274	88	12	0	W	W	W	W	4010
21	3660	942	2170	254	86	11	0					1510
22	2720	783	1730	246	82	9.6	0					906
23	2110	777	1460	234	80	7.5	0					692
24	3300	801	1310	230	71	4.1	0					577
25	12400	705	1200	234	63	4.1	0					489
26	7000	644	1080	234	63	4.1	0					904
27	4300	606	962	246	58	3.7	0					5950
28	3080	560	884	234	53	2.9	0					2790
29	2410	530	812	220	46	12	0					1740
30	1970	—	754	205	44	22	0					3560
31	1680	—	691	—	40	—	0		—		—	2880
Mean	3999	1558	1383	371	123	21.8	3.92	0	0	0	0	2198
Runoff in Ac.Ft.	245900	89640	85020	22060	7570	1300	241	0	0	0	0	135200
	Water Year Total 565841								Calendar Year Total 586931			

U. S. Geological Survey, U. S. Bureau of Reclamation and Division of Water Resources cooperative station located about 1 mile upstream from Highway 40. Putah Creek is a west-side tributary to Yolo By-Pass below Sacramento By-Pass. Drainage area is 636 square miles. Period of record 1948 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 88

FLOW OF PUTAH CREEK AT LIBERTY ISLAND ROAD - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2020	3300	1110	1210	201	26	32					NR
2	1630	10000	1050	1180	236	24	68					NR
3	1410	3910	1020	1130	226	25	58					NR
4	1160	3100	1250	1080	201	25	55					NR
5	*1080	2640	1550	1050	192	26	46					NR
6	*1520	2340	1580	1020	183	22	34					NR
7	*1210	2110	1680	990	177	19	22					NR
8	1660	1940	1640	990	174	19	11					NR
9	1580	1810	1420	990	174	20	6.8					NR
10	1320	1700	1330	959	171	22	3.7					NR
11	2130	1760	1240	928	165	23	1.8					NR
12	10600	2050	1210	916	148	24	.6	N	N	N	N	NR
13	*8260	1760	1210	893	140	23	0	0	0	0	0	NR
14	*11900	*1640	1420	863	132	20	0					NR
15	*10000	*1580	4870	840	122	18	0					NR
16	*7960	*1500	3480	794	119	18	0					NR
17	*7370	*1440	2560	754	116	16	0	F	F	F	F	NR
18	*3980	*1440	3000	703	114	14	0	L	L	L	L	(a)310
19	3170	*1440	3920	651	97	12	0	0	0	0	0	NR
20	3390	1500	3470	629	95	12	0	W	W	W	W	NR
21	3360	1580	2590	619	88	16	0					NR
22	2860	1460	2200	608	86	18	0					NR
23	2400	1390	1940	598	82	20	0					NR
24	4260	1410	1800	587	74	18	0					NR
25	10600	1390	1700	576	74	13	0					NR
26	6020	1370	1620	566	16	10	0					NR
27	3920	1360	1520	560	56	9.4	0					NR
28	3150	1240	1440	0	51	5.7	0					NR
29	2700	1170	1370	210	41	4.6	0					NR
30	2370	—	1300	204	37	9.7	0					NR
31	2160	—	1210	—	33	—	0		—		—	NR
Mean	4102	2115	1894	770	123	17.7	10.9	0	0	0	0	
Runoff in Ac.Ft.	252200	121600	116400	45810	7579	1056	672	0	0	0	0	
	Water Year Total								Calendar Year Total			

Division of Water Resources station located approximately 3 miles southeast of Davis at Solano-Yolo County line road. Putah Creek is a west-side tributary to Yolo By-Pass below Sacramento By-Pass. Period of record November 1951 to date.

* Estimated.
(a) Current meter measurement.

TABLE 89

FLOW OF SWEENEY CREEK NEAR WINTERS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	*5.8	78	2.7	2.5	0.7							40
2	*5.4	18	2.7	2.4	.7							1.8
3	*4.8	10	2.7	2.4	.7							0.4
4	*4.6	9.2	2.7	2.2	.7							.3
5	*4.6	7.4	3.0	2.2	.7							68
6	*4.3	6.4	22	2.0	.7							*382
7	14	5.4	7.7	2.2	.7							*1810
8	14	4.8	12	2.2	.7							*17
9	6.1	4.3	3.9	1.9	.7							11
10	5.8	4.1	2.7	1.9	.7							10
11	*179	6.4	*2.0	1.8	.7							6.1
12	*190	3.9	*3.2	1.8	.7	N	N	N	N	N	N	4.6
13	36	4.1	1.6	1.9	.7	0	0	0	0	0	0	3.6
14	*419	3.4	*121	1.8	.7							3.2
15	67	3.4	32	1.9	.7							2.4
16	62	4.3	8.8	1.6	.6							2.0
17	33	3.6	5.1	1.4	.6	F	F	F	F	F	F	2.0
18	20	3.6	33	1.2	.6	L	L	L	L	L	L	2.0
19	15	3.4	9.2	1.2	.6	0	0	0	0	0	0	*277
20	21	6.4	4.8	1.0	.6	W	W	W	W	W	W	17
21	22	3.9	4.1	0.8	.6							6.4
22	13	3.4	3.9	.8	.6							3.9
23	13	4.6	3.9	.7	.2							3.0
24	*346	3.6	3.9	.6	0							2.4
25	148	2.7	3.6	.6	0							2.4
26	33	2.7	3.2	.7	0							10
27	22	2.5	3.0	.7	0							*217
28	14	2.5	3.0	.8	0							12
29	12	2.7	2.7	.7	0							8.8
30	9.2	—	2.7	.7	0							*116
31	8.8	—	2.7	—	0	—			—		—	11
Mean	56.5	7.5	10.3	1.5	0.5	0	0	0	0	0	0	98.5
Runoff in Ac.Ft.	3476	434	634	88	30	0	0	0	0	0	0	6056
	Water Year Total								Calendar Year Total			10718

Division of Water Resources station located approximately 5 miles north of Vacaville. Sweeney Creek is a tributary to Ulatis Creek. Drainage area is 8.4 square miles. Period of record November 1951 to date.

* Estimated.

TABLE 90

FLOW OF ULATIS CREEK NEAR VACAVILLE (CAMPOS RANCH) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.6	45	5.6	7.5	1.5	0.2	0.3					7.2
2	5.0	30	5.6	7.2	1.4	.2	.3					0.1
3	4.4	22	5.6	7.2	1.4	.2	.2					0
4	3.8	18	5.4	6.0	1.2	.2	.3					0
5	3.6	17	5.0	6.0	0.9	.2	.2					*3.4
6	4.8	15	8.7	5.8	.6	.2	.2					*42
7	3.8	14	7.2	5.6	.8	.2	.3					42
8	5.8	13	8.1	5.0	.8	.2	.3					5.2
9	4.6	12	7.5	4.8	.6	.3	.3					3.6
10	4.6	11	8.4	4.6	.6	.3	.3					4.4
11	24	12	7.5	4.6	.6	.3	.3					4.2
12	*89	9.8	8.7	4.2	.6	.3	.3	N	N	N	N	2.6
13	49	8.7	8.1	4.6	.5	.3	.3	0	0	0	0	2.4
14	*108	8.1	48	4.0	.5	.3	.2					2.6
15	65	7.5	53	3.6	.4	.3	.2					*2.0
16	44	8.7	37	3.4	.4	.3	.2					*2.4
17	39	8.4	29	3.0	.4	.3	.2	F	F	F	F	*2.8
18	27	6.9	44	2.6	.4	.3	.1	L	L	L	L	*3.0
19	20	6.6	32	2.6	.3	.3	.1	0	0	0	0	26
20	20	10	25	2.6	.3	.3	.1	W	W	W	W	14
21	29	8.7	20	2.4	.3	.3	.1					6.3
22	24	8.4	18	2.4	.3	.3	.1					4.6
23	22	7.8	16	2.2	.3	.3	.1					3.2
24	64	6.6	15	2.0	.4	.3	.1					2.6
25	102	6.0	13	1.8	.2	.3	.1					2.6
26	56	5.8	11	1.8	.2	.3	.1					5.0
27	38	5.8	11	1.8	.2	.3	.1					25
28	25	5.6	9.8	1.8	.2	.3	0					9.4
29	21	5.6	8.4	1.6	.2	.3	0					7.8
30	18	—	7.8	1.6	.2	.3	0					24
31	16	—	7.8	—	.2	—	0		—		—	12
Mean	30.5	11.9	16	3.8	.5	.3	.2	0	0	0	0	8.8
Runoff in Ac.Ft.	1876	682	986	227	34	16	11	0	0	0	0	540
	Water Year Total								Calendar Year Total			4372

Division of Water Resources station located approximately 5 miles northwest of Vacaville. Ulatis Creek is a west-side tributary to Cache Slough. Drainage area is 4.3 square miles. Period of record November 1951 to date.

* Estimated

TABLE 91

FLOW OF ULATIS CREEK NEAR BINGHAMTON - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1		155	6.8	8.4								0
2		908	*6.1	8.0								9.0
3		143	*6.8	7.1								7.1
4		65	11	6.8								2.5
5		*42	7.1	6.4								44
6		*33	14	5.5								91
7		29	193	5.0								2200
8		*26	134	5.0								572
9		22	62	3.7								122
10		18	24	3.5								182
11		18	14	3.2								60
12		21	9.0	2.5	N	N	N	N	N	N	N	27
13		14	10	1.8	0	0	0	0	0	0	0	14
14		13	9.8	0.6								7.4
15		12	598	1.6								3.2
16		12	242	1.6								2.3
17		*16	98	1.3	F	F	F	F	F	F	F	2.3
18		12	144	1.1	L	L	L	L	L	L	L	2.1
19		13	108	0.6	0	0	0	0	0	0	0	628
20		24	*49	.2	W	W	W	W	W	W	W	1180
21		33	30	0								148
22		18	20	*0								39
23		16	16	*0								20
24		17	14	*0								12
25		14	12	*0								7.4
26		10	9.0	*0								27
27		9.0	8.4	*0								1020
28		7.7	8.4	*0								272
29		7.1	8.4	*0								63
30		—	8.0	*0								975
31	36	—	7.7	—		—			—		—	262
Mean		56.1	60.9	2.5	0	0	0	0	0	0	0	258
Runoff in Ac.Ft.		3229	3746	147	0	0	0	0	0	0	0	15870
	Water Year Total								Calendar Year Total			

Division of Water Resources station located approximately 0.7 mile south of Binghamton and one-quarter mile downstream from the Dixon highway. Ulatis Creek is a west-side tributary to Cache Slough.

* Estimated
(a) Beginning of record January 31, 1952.

TABLE 92

FLOW OF BARKER SLOUGH NEAR DOZIER - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	(a) 6.4	13	0					0				0
2	1.7	83	0					0				0
3	0.5	25	0					0				0
4	.1	8.4	0					0				0
5	0	4.0	0					0				0.4
6	.4	2.1	3.6					0				2.8
7	16	1.2	73					0				73
8	*64	0.5	48					0				22
9	*30	.2	24					1.4				9.3
10	*12	.1	6.1					1.7				12
11	99	0	1.3					2.1				5.3
12	644	0	0.3	N	N	N	N	0	N	N	N	1.4
13	141	0	0	0	0	0	0	0	0	0	0	0.2
14	263	0	0					0				0
15	269	0	46					0				0
16	78	0	63					0				0
17	78	0	21	F	F	F	F	0	F	F	F	0
18	30	0	15	L	L	L	L	0	L	L	L	0
19	11	0	20	0	0	0	0	0	0	0	0	36
20	7.4	0.5	8.4	W	W	W	W	0	W	W	W	203
21	6.9	11	1.8					0				66
22	14	3.8	0.2					0				6.6
23	6.9	1.5	0					0				1.3
24	138	1.5	0					0				0.3
25	703	0.5	0					0				0
26	101	.1	0					0				2.0
27	23	0	0					0				82
28	9.3	0	0					0				36
29	5.6	0	0					0				11
30	3.8	—	0					0				122
31	2.4	—	0	—		—		0	—		—	51
Mean	89.2	5.4	10.7	0	0	0	0	0.2	0	0	0	24
Runoff in Ac.Ft.	5485	310	658	0	0	0	0	10	0	0	0	1475
	Water Year Total								Calendar Year Total			7938

Division of Water Resources station located approximately one-half mile west of Dozier on a County road bridge. Barker Slough is a west-side tributary to Lindsey Slough.

(a) Beginning of record January 1, 1952.

* Estimated.

TABLE 93

FLOW OF HASS SLOUGH NEAR MAINE PRAIRIE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	(a) 1.4	4.8	0.2	0	0.1	0.1						0
2	0.5	21	.1	0	0	.1						0
3	.2	7.1	.1	0	0	0						0
4	.1	*3.5	.2	0	0.3	0						0
5	0	1.7	.2	0	.2	0						0.1
6	0	0.9	5.2	0	.1	0						.4
7	0.5	.6	18	0.2	.3	0						7.6
8	5.8	.3	10	.1	.3	0						4.3
9	3.6	.2	5.0	.1	.2	0						2.3
10	1.8	.1	2.0	.1	.2	0						1.7
11	*44	.1	0.3	.1	0	0						0.8
12	*512	.1	.4	.1	0.6	0	N	N	N	N		.3
13	94	.1	.2	.1	.3	0	0	0	0	0		.2
14	*163	.1	.2	.1	.6	0						.1
15	*111	.1	11	.1	1.1	0						.1
16	*33	.1	14	0	0.3	0					0.1	0
17	38	.1	4.4	0	.1	0	F	F	F	F	.1	0
18	12	.1	6.0	0	0	0	L	L	L	L	0	0
19	4.8	.1	6.8	0	0	0	0	0	0	0	0	0.6
20	3.2	.2	3.2	0	0	0.2	W	W	W	W	0	9.6
21	2.4	.2	1.5	0	0.1	.1					0	2.4
22	1.9	.2	0.6	0	.3	.6					0	0.7
23	1.3	.2	.3	0	.2	.6					0	.4
24	59	.2	.2	0	.1	.7					0	.1
25	*541	.3	.1	0	0	.1					0	.1
26	54	.3	0	0	0	.1					0	.1
27	9.0	.2	0	0	0	0					0	4.6
28	4.4	.2	0	0	0.2	0					0	3.3
29	*2.8	.2	0	0	.2	0					0	1.3
30	1.6	—	0	0.2	0	0					0	11
31	1.1	—	0	—	0.2	—			—		—	6.8
Mean	55.1	1.5	2.9	0.04	0.2	0.09	0	0	0	0	.01	1.9
Runoff in Ac.Ft.	3387	86	180	2	12	5	0	0	0	0	0	117
	Water Year Total								Calendar Year Total			3789

Division of Water Resources station located approximately one mile east of Maine Prairie School. Hass Slough is a west-side tributary to Cache Slough.

(a) Beginning of record January 1, 1952.

* Estimated.

TABLE 94

FLOW OF COSUMNES RIVER AT MICHIGAN BAR - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1390	2640	1310	2180	2100	1340	361	108	39	38	40	78
2	1020	6600	1290	2100	2220	1270	348	101	39	38	41	161
3	831	3960	1220	2080	2250	1200	334	91	38	39	41	172
4	702	2850	1250	2140	2220	1130	325	88	38	36	44	134
5	628	2340	1160	2330	2100	1150	313	84	40	35	46	119
6	757	1980	1250	2440	2050	1140	305	81	38	34	45	159
7	890	1800	2520	2540	2070	1030	289	79	39	35	46	307
8	750	1650	2020	2580	2290	984	274	76	40	34	46	574
9	628	1510	1670	2560	2040	962	267	73	40	35	46	415
10	580	1390	1800	2530	2000	880	267	68	47	38	45	301
11	1230	1760	1730	2420	2070	822	260	68	45	39	45	256
12	8300	1760	1660	2290	2140	718	239	67	52	39	46	213
13	3320	1430	1580	2330	2100	663	226	67	67	39	54	175
14	3000	1290	1430	2480	2030	628	213	64	61	39	123	156
15	7170	1220	3710	2170	1980	594	207	62	53	39	256	144
16	5400	1460	4340	2050	1870	561	195	60	48	38	154	136
17	2500	2880	2730	2080	1830	554	178	57	45	38	108	134
18	1720	2080	3720	2220	1830	568	167	57	46	38	90	130
19	1270	1880	4830	2390	1860	561	156	54	44	38	79	198
20	1330	2180	3320	2360	1860	542	154	53	42	39	74	400
21	1240	2220	2370	2280	1840	529	144	51	41	41	73	297
22	1050	1860	1950	2260	1720	505	136	51	40	42	70	216
23	920	1800	1730	2360	1660	511	130	49	40	42	67	186
24	1800	1700	1590	2480	1650	542	125	47	40	42	64	162
25	6150	1510	1700	2690	1700	475	116	47	39	40	62	154
26	5910	1400	1870	2760	1630	442	114	45	39	40	67	164
27	3080	1330	1940	2560	1620	415	112	44	37	40	67	195
28	2180	1290	1980	2600	1620	400	106	44	35	40	67	181
29	1830	1320	2050	2410	1530	400	101	42	37	40	66	162
30	1560	—	2140	2280	1440	400	97	41	36	40	67	593
31	1910	—	2250	—	1390	—	102	40	—	39	—	734
Mean	2292	2038	2133	2365	1895	731	205	63.2	42.8	38.5	71.3	239
Runoff in Ac.Ft.	140900	117200	131100	140700	116500	43470	12620	3800	2550	2370	4240	14690
	Water Year Total 781780								Calendar Year Total 730230			

U. S. Geological Survey and Division of Water Resources cooperative station located at the road bridge at Michigan Bar. Drainage area is 537 square miles. Period of record 1907 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 95

FLOW OF COSUMNES RIVER AT McCONNELL - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2280	2250	1300	2310	2240	1440	416	92	21	16	22	50
2	1400	5520	1300	2220	2250	1350	371	88	22	17	24	72
3	1040	6640	1190	2160	2340	1290	346	68	23	16	27	155
4	838	3890	1200	2200	2340	1220	343	69	20	18	26	143
5	716	2810	1150	2320	2220	1200	335	68	19	16	27	112
6	656	2290	1080	2500	2150	1230	317	65	24	15	29	117
7	1440	1950	3970	2800	2100	1160	300	62	24	14	27	173
8	1110	1730	4370	3030	2390	1080	288	57	25	15	29	518
9	955	1540	2490	2730	2190	1030	266	53	29	14	30	473
10	716	1410	2020	2630	2090	982	266	46	30	17	30	354
11	1040	1470	2200	2550	2140	910	266	43	34	20	27	282
12	7040	2180	1820	2380	2230	838	252	42	34	20	27	235
13	12400	1520	1970	2330	2220	750	233	43	41	22	30	196
14	5310	1330	1630	2550	2200	690	221	44	52	21	45	167
15	7700	1190	2470	2250	2110	656	206	41	46	22	182	147
16	11500	1210	6670	2100	1990	614	191	37	39	21	214	135
17	6000	3010	4880	2080	1930	604	167	38	36	20	139	127
18	3040	2440	3010	2200	1930	596	151	38	33	20	99	121
19	1780	2040	6060	2360	1940	590	141	35	33	21	78	133
20	1440	2040	6420	2400	1940	576	141	29	30	21	71	520
21	1710	3290	3360	2340	1950	554	131	26	30	22	65	688
22	1250	2310	2420	2320	1840	534	121	26	29	23	61	336
23	1040	1980	2050	2380	1750	516	119	23	26	23	58	244
24	1280	1900	1840	2510	1730	565	112	24	24	24	57	202
25	5500	1710	1850	2670	1760	527	97	26	24	24	52	177
26	10600	1480	1960	2950	1720	476	92	26	22	24	52	167
27	6440	1380	2080	2740	1690	444	86	28	20	24	54	179
28	3010	1300	2190	2680	1700	434	92	30	17	22	53	206
29	2180	1310	2330	2570	1640	434	83	24	16	21	52	202
30	1770	—	2400	2410	1550	447	74	21	15	22	48	312
31	1800	—	2380	—	1490	—	78	19	—	22	—	1790
Mean	3386	2246	2647	2456	1992	791	203	42.9	27.9	19.9	57.8	282
Runoff in Ac.Ft.	208200	129200	162800	146100	122500	47080	12500	2640	1660	1220	3440	17320
	Water Year Total 920500								Calendar Year Total 854660			

U. S. Geological Survey. U. S. Bureau of Reclamation, and Division of Water Resources cooperative station located on Highway 99 bridge 10.7 miles above the mouth. When flow in main channel reaches 4600 cfs water starts to by-pass station. Figures here given include all overflow. Drainage area is 730 square miles. Period of record 1942 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 96

FLOW OF DRY CREEK NEAR GALT - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	716	800	288	326	102	5.2		0				0
2	448	1200	257	306	99	2.3		0				0
3	307	876	226	308	95	6.6		0				0
4	216	691	264	277	89	5.7		0.3				0
5	173	581	240	255	36	5.7		1.1				0
6	193	507	236	239	78	5.5		1.6				0
7	586	448	1530	245	78	6.2		2.2				0
8	421	386	1070	278	111	8.1		1.6				169
9	296	331	750	235	89	6.9		2.2				85
10	227	295	698	250	77	7.4		2.2				56
11	411	376	855	250	70	9.6		.9				38
12	4580	554	701	215	67	5.7	N	0	N	N	N	24
13	4300	363	794	203	63	6.3	0	.1	0	0	0	16
14	1540	290	676	238	53	6.9		1.7				11
15	4500	254	917	203	55	4.4		.4				8.7
16	4750	264	5060	183	51	5.7		1.0				16
17	1670	908	2090	163	47	5.1	F	0	F	F	F	9.3
18	940	652	1360	150	43	3.4	L	0	L	L	L	4.9
19	694	546	4850	140	40	.5	O	0	O	O	O	31
20	611	598	3840	134	40	.2	W	1.6	W	W	W	209
21	618	1200	1390	128	42	.1		.3				142
22	501	836	995	122	38	0		0				66
23	438	692	820	117	25	0		0				42
24	594	636	722	111	22	0		0				30
25	3460	538	684	123	14	0		0				25
26	5470	474	597	156	9.9	0		0				23
27	1880	450	538	134	16	0		0				26
28	933	380	471	124	13	0		0				28
29	738	338	425	114	5.4	0		0				24
30	650	—	383	106	0	0		0				135
31	650	—	351	—	3.7	—		0	—		—	600
Mean	1404	567	1102	194	52.5	3.58	0	0.53	0	0	0	58.7
Runoff in Ac.Ft.	86300	32640	67770	11570	3230	213	0	33	0	0	0	3610
	Water Year Total 229686								Calendar Year Total 205366			

U. S. Geological Survey, U. S. Bureau of Reclamation, and Division of Water Resources cooperative station. Station is also known as Dry Creek at Dustin Road and is located at Dustin Road Bridge. Drainage area is 325 square miles. Period of record 1926 to 1933; 1944 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 97

FLOW OF MOKELUMNE RIVER AT LANCHA PLANA - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1920	1510	1090	2800	4630	4890	635	473	493	650	458	481
2	1920	2150	1110	2590	3570	5080	635	630	645	660	670	682
3	1920	2600	1040	1990	3280	5080	1600	544	635	660	530	676
4	1350	1920	994	2170	4780	5080	3320	524	640	660	670	676
5	1200	1540	994	2550	4870	5080	2400	625	635	191	670	682
6	1210	1540	1020	2670	4870	5090	1600	625	655	452	670	682
7	950	1230	1070	2930	4890	5110	2380	640	202	655	670	298
8	779	1230	994	3060	4890	4590	2280	540	488	655	665	479
9	784	1150	1000	2900	3970	4960	1450	640	245	660	245	660
10	784	1100	1010	2870	2890	5090	1670	307	650	660	479	676
11	790	1110	1060	2850	3490	5110	1820	490	645	495	670	676
12	1510	1110	1270	2730	4240	4970	1760	462	650	193	670	537
13	1940	1100	1350	2400	4420	4750	1600	665	373	462	670	498
14	1930	1100	1340	2540	3760	3160	1360	556	275	660	670	366
15	2010	1100	1520	2620	3760	2910	1520	650	487	660	418	519
16	2030	1110	2150	2260	3460	2460	1230	655	650	660	324	676
17	2020	1230	1760	2190	4200	2060	1120	178	650	660	466	676
18	2020	1520	1810	2340	4640	1710	382	473	650	544	670	676
19	2010	1490	2300	3170	4690	1540	898	459	650	238	670	682
20	2010	1580	2310	3250	4910	1540	917	461	650	487	670	348
21	1520	1540	2140	3310	4930	1540	704	474	216	655	670	178
22	1230	1300	1830	3690	4950	1550	738	560	510	660	676	511
23	1220	1100	1480	4300	4960	1590	655	650	650	665	172	660
24	1220	1100	1220	4400	4970	1910	599	215	548	665	532	670
25	2070	1110	1480	4670	4730	2090	630	573	551	485	676	676
26	3070	1090	1830	4850	4810	2090	520	650	645	172	676	676
27	2640	1090	1940	4600	5020	2080	346	505	471	502	676	325
28	1730	1090	2310	4690	4890	2090	531	524	431	547	639	340
29	1510	1090	2560	4720	4890	2080	532	650	533	539	533	524
30	1550	—	2570	4730	4610	1440	524	555	670	576	350	630
31	1510	—	2630	—	5060	—	528	418	—	569	—	547
Mean	1624	1342	1587	3245	4455	3291	1206	531	553	550	574	561
Runoff in Ac.Ft.	99880	77220	97550	193100	274000	195800	74150	32670	32910	33310	34160	34480
	Water Year Total 1202560								Calendar Year Total 1179730			

U. S. Geological Survey and Division of Water Resources cooperative station located 3 miles downstream from Pardee Dam. Drainage area is 584 square miles. Period of record 1926 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 98

FLOW OF MOKELUMNE RIVER NEAR CLEMENTS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1990	1560	1110	2690	4460	4540	705	375	398	635	388	421
2	1960	1920	1120	2630	4060	4720	680	625	620	645	670	675
3	1930	2500	1070	2020	2780	4730	1030	528	620	650	524	675
4	1920	2200	1030	2050	4360	4730	2980	495	625	655	665	670
5	1640	1570	1020	2480	4570	4730	2780	625	625	237	665	690
6	1260	1540	1060	2560	4600	4750	1480	610	640	189	665	685
7	*1340	1320	1440	2830	4610	4750	2290	630	264	650	665	356
8	*890	1260	1090	2990	4620	4440	2350	635	229	655	665	365
9	*830	1200	1040	2850	4300	4510	1740	630	625	650	246	675
10	*830	1140	1060	2810	2910	4750	1380	407	645	655	306	680
11	*830	1180	1080	2790	3200	4750	1840	215	645	458	660	685
12	*1140	1140	1260	2720	3710	4670	1710	453	645	260	670	524
13	*2480	1120	1380	2420	4440	4670	1630	655	430	157	675	552
14	*2460	1120	1350	2440	3660	3470	1430	547	106	645	695	352
15	*2410	1120	1700	2640	3680	2840	1380	645	361	655	379	458
16	*2260	1120	2340	2360	3410	2660	1400	650	645	655	301	665
17	*2080	1260	1920	2120	3710	2030	1140	242	645	655	361	670
18	2040	1500	1860	2590	4360	1840	1000	202	650	524	665	675
19	2010	1520	2480	3050	4430	1540	885	434	650	260	675	720
20	2020	1750	2370	3150	4610	1540	955	402	650	370	675	533
21	1740	1640	2220	3240	4620	1540	795	411	229	650	670	154
22	1280	1460	1810	3420	4640	1540	760	538	283	655	675	237
23	1280	1150	1600	4040	4650	1570	695	640	635	665	237	660
24	1360	1140	1270	4240	4640	1740	635	273	524	665	264	670
25	2030	1130	1400	4400	4440	2020	605	319	524	533	670	675
26	2980	1120	1790	4660	4460	2020	495	630	640	158	675	670
27	2810	1120	1860	4500	4660	2040	215	453	444	215	675	287
28	1920	1110	2160	4470	4560	2020	462	477	356	519	675	237
29	1540	1110	2490	4530	4550	2020	510	630	453	510	458	481
30	1560	—	2480	4590	4370	1760	491	524	655	566	315	750
31	1560	—	2540	—	4670	—	566	416	—	580	—	650
Mean	1754	1380	1626	3143	4217	3164	1194	494	515	516	551	555
Runoff in Ac.Ft.	107900	79380	99970	187000	259300	188300	73420	30380	30670	31710	32780	34110
	Water Year Total 1190110								Calendar Year Total 1154920			

Division of Water Resources station located 1 mile north of Clements, 700 feet upstream from the highway bridge. Drainage area is 630 square miles. Period of record 1904 to date.

* Estimated.

TABLE 99

FLOW OF MOKELUMNE RIVER AT WOODBRIDGE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1780	1420	1100	2430	4460	4390	834	95	77	375	344	388
2	1770	1480	1090	2540	4340	4400	274	98	114	367	325	562
3	1750	2070	1090	2280	3580	4500	344	219	202	382	435	682
4	1740	2240	1030	1890	3160	4550	1460	102	233	393	405	680
5	1290	1620	1010	1860	4170	4560	2260	124	278	354	507	692
6	1190	1450	1020	2270	4450	4580	1540	202	292	89	494	699
7	1280	1370	1270	2420	4490	4580	1290	138	226	200	492	692
8	948	1220	1160	2620	4500	4580	1610	208	52	397	496	383
9	851	1210	1050	2690	4510	4350	1440	241	74	414	453	550
10	825	1120	1030	2610	3850	4350	805	241	298	412	152	670
11	847	1120	1030	2590	2810	4510	1250	91	324	400	335	687
12	1150	1140	1100	2570	3230	4560	1180	58	318	308	510	657
13	1890	1100	1280	2460	3640	4520	1130	63	310	105	518	582
14	1840	1100	1280	2240	4020	4370	957	195	108	221	564	502
15	2070	1100	1320	2390	3410	3420	801	151	44	431	537	407
16	2090	1100	1980	2350	3340	2740	981	237	112	433	373	570
17	1930	1220	2060	2010	3170	2060	638	209	339	440	234	675
18	1870	1320	1650	2080	3690	1770	672	50	339	449	960	685
19	1840	1440	2110	2600	4120	1300	465	43	346	385	743	726
20	1820	1470	2410	2830	4240	1220	510	49	402	149	709	752
21	1800	1730	2270	2890	4400	1230	431	49	320	362	699	430
22	1340	1530	2010	2790	4420	1170	302	48	76	464	697	266
23	1210	1240	1800	3110	4450	1130	278	112	248	455	572	542
24	1210	1160	1420	3620	4320	1160	233	160	320	467	281	661
25	1380	1140	1310	4000	3560	1400	188	46	294	429	543	680
26	2270	1120	1570	4190	3390	1440	183	60	296	304	675	685
27	2700	1110	1720	4340	4150	1440	166	155	307	92	685	642
28	2330	1110	1830	4360	4350	1480	76	105	227	240	687	381
29	1580	1100	2200	4350	4360	1520	89	170	220	335	611	369
30	1450	—	2340	4490	4350	1450	84	251	322	344	548	570
31	1450	—	2360	—	4250	—	83	160	—	359	—	745
Mean	1596	1330	1545	2862	3990	2958	728	133	237	340	519	587
Runoff in Ac.Ft.	98160	76500	95010	170300	245300	176000	44740	8190	14120	20940	30910	36120
	Water Year Total 1033770								Calendar Year Total 1016290			

U. S. Geological Survey and Division of Water Resources cooperative station located 0.4 mile below diversion dam of Woodbridge Irrigation District. Drainage area is 644 square miles. Period of record 1924 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 100

FLOW OF BEAR CREEK NEAR LOCKEFORD - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	50	54	7.0	5.3	0.4						0	0
2	21	123	6.3	4.2	.1						0	.1
3	13	69	5.4	3.9	0						0	.1
4	9.0	40	9.4	3.3	0						0	0
5	7.0	22	9.4	3.0	0						0	0
6	41	16	40	3.0	0						0	.1
7	168	14	422	3.6	0						0	11
8	102	12	87	6.2	0						0	15
9	52	10	34	4.5	0						0	5
10	24	9.0	18	4.2	0						0	2
11	113	23	13	7.1	0						0	.8
12	762	55	35	3.6	0	N	N	N	N	N	0	.4
13	200	16	54	3.0	0	0	0	0	0	0	0	.2
14	322	9.0	27	2.7	0						0	.1
15	505	7.0	287	3.3	0						1.3	.1
16	164	17	430	2.4	0						.5	.1
17	65	117	75	2.2	0	F	F	F	F	F	.1	0
18	45	28	165	2.0	0	L	L	L	L	L	.1	0
19	40	15	382	1.1	0	O	O	O	O	O	0	.5
20	59	227	184	1.0	0	W	W	W	W	W	0	50
21	77	209	60	1.0	0						0	10
22	47	87	40	.6	0						0	5
23	25	55	29	.6	0						0	2
24	111	34	25	.6	0						0	1
25	520	17	21	.8	0						0	.9
26	222	13	17	2.2	0						0	.8
27	90	10	14	2.7	0						0	.9
28	65	8.6	12	1.1	0						0	.8
29	47	7.4	11	.6	0						0	.7
30	30	—	8.1	.4	0						0	100
31	25	—	6.6	—	0	—			—		—	50
Mean	130	45.7	79.5	2.67	.02	0	0	0	0	0	0.67	8.31
Runoff in Ac.Ft.	7980	2630	4890	159	1.0	0	0	0	0	0	4.0	511
	Water Year Total 18450								Calendar Year Total 16175			

U. S. Geological Survey and Division of Water Resources cooperative station located at County Road bridge 0.8 mile southeast of Lockeford. Drainage area is 48.4 square miles. Period of record 1930 to 1933; 1943 to date. (Prior records available at a site 3 miles downstream.) Records for 1952 computed by U. S. Geological Survey.

TABLE 101

FLOW OF CALAVERAS RIVER AT JENNY LIND - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1250	715	24	1080	16	191	128	200	150	10	100	36
2	641	1600	24	1750	16	186	126	200	150	5	250	51
3	1460	1430	24	1360	18	180	126	202	148	0	150	123
4	394	980	27	755	21	174	128	202	145	0	140	134
5	255	774	27	16	29	171	128	200	148	0	140	94
6	252	670	30	14	38	169	126	200	148	0	140	88
7	457	589	348	14	62	166	126	194	148	0	130	238
8	421	537	90	15	112	161	126	191	145	0	120	815
9	347	489	52	14	118	158	126	197	145	0	120	402
10	284	441	64	17	109	156	126	191	145	0	110	215
11	364	417	54	17	135	153	126	188	143	0	110	153
12	2370	645	79	14	143	153	128	188	140	0	110	119
13	3510	513	69	12	148	183	130	188	140	0	100	94
14	3330	433	375	13	183	243	133	188	138	0	100	79
15	5220	390	1780	14	258	240	135	186	135	0	86	70
16	6050	418	1900	17	252	237	135	186	135	0	21	67
17	4440	622	1840	17	249	237	156	183	133	0	3.6	61
18	3220	166	2000	16	249	240	214	180	133	0	10	58
19	2720	162	2990	15	246	194	216	180	70	0	287	60
20	1080	207	3560	14	246	128	222	177	8.8	0	170	227
21	805	150	3490	14	243	126	219	174	1.1	0	93	364
22	609	334	3330	14	240	128	219	174	0	0	58	200
23	505	706	3110	14	237	128	214	171	49	0	51	136
24	751	1410	2830	14	234	128	214	171	103	0	37	107
25	3360	1160	2630	17	231	126	214	169	105	0	32	93
26	3820	1390	2500	20	222	128	211	169	100	0	30	88
27	3190	1030	2410	17	219	128	205	109	80	0	30	86
28	2420	30	2340	17	214	128	202	38	50	0	30	91
29	1320	24	2260	16	208	128	202	59	25	0	31	104
30	805	—	2180	16	202	128	202	135	20	0	36	232
31	692	—	1510	—	197	—	202	150	—	0	—	1170
Mean	1817	636	1418	178	164	167	167	172	106	0.5	94.2	188
Runoff in Ac.Ft.	111800	36560	87170	10600	10110	9910	10240	10590	6310	30	5600	11610
	Water Year Total 333567								Calendar Year Total 310530			

U. S. Geological Survey and Division of Water Resources cooperative station located 0.2 mile south of Jenny Lind at Milton Road bridge. Drainage area is 395 square miles. Period of record 1907 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 102

FLOW OF CALAVERAS RIVER AT BELLOTA - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	156	138	*47	109	8.0	122	118			0	0	
2	55	177	*46	151	5.6	117			*76	0		
3	81	183	*50	149	11	113				0	0	
4	118	157	*55	130	17	113	*88		76	0	0	
5	101	143	54	80	17	112				0	0	*20
6	101	135		68	13	111				0	0	
7	114	130		35	21	110				0	0	
8	111	124	*74	18	56	111	71			0	0	
9	101	120		57	64	109				0	0	41
10	104	116		57	75	108				1.8	0	100
11	113	117	*81	57	97	107				2.8	0	91
12	187	129	86	57	106	107	*73			3.2	0	86
13	185	122	94	57	104	112			*75	0.6	0	82
14	178	115	87	57	106	141				0.7	0	78
15	230	111	154	31	127	144		*76		1.0	0	75
16	328	111	121	12	141	143	76			4.0	0	66
17	272	135	152	17	142	145				0	0	59
18	249	97	167	23	141	148				0	0	59
19	233	94	200	22	140	146				0	0	61
20	180	106	196	22	137	122				0	0	78
21	152	118	186	21	138	115				0	7.8	95
22	138	103	180	10	137	119			*35	0	34.0	86
23	127	117	177	2.0	135	116	*76			0	61	79
24	138	163	173	1.7	131	113				0	32	76
25	228	*158	168	1.6	127	113			0	0	5.9	73
26	152	*165	163	3.6	125	112			0	0	5.3	71
27	162	175	161	6.8	124	112			0	0	4.8	71
28	187	*82	159	6.6	125	114			0	0	4.3	71
29	186	*56	158	10	123	120			0	0	3.9	73
30	150	—	156	12	123	117			0	0	3.6	88
31	138	—	150	—	122	—			—	0	—	139
Mean	150	127	122	42.8	94.8	120	78.8	76.0	54.8	0.4	5.4	63.2
Runoff in Ac.Ft.	9328	7333	7519	2547	5829	7125	4848	4673	3261	28	322	3884
	Water Year Total								Calendar Year Total		57197	

Division of Water Resources station located just above the highway bridge at Bellota. Flows in the Calaveras River and in Mormon Slough are regulated by headgates near Bellota. Period of record 1948 to date.

* Estimated mean for period indicated.

TABLE 103

FLOW OF CALAVERAS RIVER NEAR STOCKTON - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	172	130	*16	*113	0	42	25	7.3	17			0
2	*120	*152	*17	*110	0	34	25	12	12			0
3	*100	178	*18	131	0	21	3.3	25	16			0
4	116	162	*21	125	0	20	19	29	19			0
5	109	137	25	*99	0	24	20	19	16			0
6	97	121	24	*57	0	27	20	11	17			0
7	132	112	91	*28	0	17	23	17	13			0
8	137	106	147	*9.2	0	20	22	17	15			28
9	118	99	*76	1.5	0	25	25	15	9.3			67
10	97	94	*61	2.5	0	22	8.7	20	14			66
11	105	90	*58	6.9	11	20	10	20	16			57
12	174	110	53	6.2	30	18	15	3.9	24	N	N	53
13	*242	118	68	6.1	38	15	14	0.9	22	O	O	50
14	*229	101	68	5.9	37	21	19	3.9	17			50
15	*245	97	87	5.4	38	35	4.9	3.6	17			47
16	319	93	207	4.0	50	44	1.4	7.9	17			46
17	301	104	176	0.4	51	38	0	19	20	F	F	37
18	256	115	*155	0.1	55	51	*1.2	14	18	L	L	34
19	240	76	215	0.1	56	*50	5.9	13	18	O	O	36
20	213	74	237	0.8	58	*42	26	14	17	W	W	40
21	184	184	190	2.0	59	*33	22	11	6.7			54
22	157	118	173	1.8	57	*25	11	11	0.6			59
23	128	99	166	1.2	56	*16	15	6.5	0.1			55
24	116	124	163	0.3	55	10	21	11	0			51
25	*147	157	159	0	55	14	21	6.9	0			48
26	*147	147	154	0	*51	5.9	28	2.6	0			47
27	178	160	138	0	*40	3.8	31	5.4	0			46
28	175	*113	142	0	37	5.5	26	16	0			45
29	187	*25	141	0	40	20	19	0.5	0			45
30	158	—	139	0	38	36	12	2.4	0			49
31	127	—	135	—	37	—	14	7.1	—		—	64
Mean	169	117	114	23.9	30.6	25.2	16.4	11.4	11.4	0	0	37.9
Runoff in Ac.Ft.	10360	6716	6982	1423	1882	1498	1008	700	678	0	0	2329
	Water Year Total								Calendar [illegible]		33576	

Division of Water Resources station located upstream from Solari Road bridge and 3.5 miles above the mouth of Stockton Diverting Canal. Flows in the Calaveras River are regulated by headgates near Bellota. Period of record 1948 to date.

* Estimated

TABLE 104

FLOW OF MORMON SLOUGH AT BELLOTA - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1980	652	*44	*410	0	53	*0			12	0	*35
2	182	1330	*33	*1350	0	51	*23			11	239	*42
3	1710	1600	*23	*1990	0	49	*31			10	157	*53
4	471	1030	*15	*1180	0	49	*28	---*75		7.8	116	*102
5	*245	779	15	*120	0	47	*23			1.7	116	*00
6	*165	652	24	*22	0	47	*19			0.9	107	*70
7	*690	567	770	*11	0	43	*15			1.3	105	*200
8	*500	511	168	*4.2	0	40	*16			0.4	105	*500
9	330	458	81	*3.0	0	38	*17		---*35	0	102	*320
10	258	406	69	*2.4	0	36	*17			0	99	*200
11	296	437	*61	*1.5	0	35	*17			0	92	*120
12	*1900	588	*45	*1.1	0	36	*17			0	89	*70
13	*3750	492	*270	*0.7	0	39	*18			0	85	*50
14	*3450	403	*105	*0.5	0	63	*18	---*50		0	87	*35
15	*4680	353	*1390	0	*1.2	74	*20			0	80	*22
16	*5300	342	*3150	0	*6.1	70	*23			0	55	17
17	*4800	680	*2250	0	*14	70				0	21	19
18	*3600	212	*2350	0	*26	74				0	13	15
19	*2300	175	3560	0	*40	74				0	*45	29
20	*1800	434	3930	0	*56	*29			*0	0	*120	116
21	*1100	406	3700	0	78	*12			0	0	*71	257
22	*810	291	3520	0	72	*1.8			0	0	*50	137
23	*630	480	3310	0	59	0			0	0	*35	75
24	*680	1310	3050	0	68	0	---*75	---*35	3.8	0	*24	53
25	*3750	1140	2820	0	69	.0			80	0	30	39
26	*4550	1190	2660	0	66	0			87	0	27	31
27	*3580	1300	2560	0	63	0			87	0	26	30
28	*2880	188	2470	0	62	0			59	0	27	33
29	*2000	*70	2380	0	58	0			27	0	27	39
30	*1010	—	2280	0	58	0			16	0	29	157
31	*790	—	1760	—	56	—			—	0	—	893
Mean	1958	637	1576	167	27.8	34.4	46.0	50.8	34.2	1.4	72.6	124
Runoff in Ac.Ft.	120400	36650	96920	9930	1710	2044	2830	3124	2033	89	4322	7634
	Water Year Total 314765								Calendar Year Total 287686			

Division of Water Resources station located just below the Bellota-Escalon Road bridge. Flows in Mormon Slough and Calaveras River are regulated by headgates near Bellota. Period of record 1948 to date.

* Estimated mean for period indicated.

TABLE 105

FLOW OF STOCKTON DIVERTING CANAL AT STOCKTON - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2360	647	3.8	500	0	31	0.1	40	20		0	6.1
2	206	1190	.2	1300	0	34	21	36	17		0	7.1
3	1410	1590	0	1790	0	18	8.6	44	11		191	13
4	592	1090	0	1240	0	15	.1	50	16		100	63
5	234	797	0	151	0	14	0	42	22		93	67
6	167	647	0	22	0	15	0	43	25		85	45
7	697	552	773	2.6	0	12	4.5	38	20		83	51
8	522	475	366	23	0	11	3.7	38	33		82	371
9	361	410	89	12	0	15	3.6	37	25		80	450
10	256	362	42	5.0	6.8	3.8	0	47	28		75	204
11	272	352	46	7.1	5.0	2.3	0	52	36		67	98
12	1820	558	26	1.2	0	2.2	0	50	28	N	64	59
13	3670	510	265	0	0	4.0	.2	46	27	0	63	33
14	3300	380	90	0	0	19	6.0	32	30		65	14
15	4520	316	1230	0	30	61	6.1	27	35		63	6.2
16	5180	290	3000	0	61	68		30	31		56	2.6
17	4440	685	1910	0	62	61		38	30	F	23	1.2
18	3270	227	2020	0	65	61		44	30	L	7.1	.6
19	2520	119	3360	0	65	64	--*27	36	31	0	9.8	.4
20	1500	253	3830	0	65	37		38	28	W	188	76
21	958	827	3300	0	64	6.0		36	1.2		116	204
22	689	262	3110	0	61	2.4		39	0		60	178
23	515	425	2930	0	60	1.9		35	0		15	217
24	569	1100	2720	0	52	2.4	32	34	0		1.4	47
25	3440	1130	2510	0	54	2.4	32	38	0		.6	29
26	4410	1060	2350	0	57	1.9	30	29	52		13	18
27	3230	1380	2260	0	49	1.4	32	33	68		10	14
28	2590	251	2200	0	46	1.2	43	28	64		8.7	10
29	1680	23	2140	0	44	.4	44	1.9	23		4.8	12
30	932	—	2060	0	41	.3	38	0	5.0		.1	59
31	695	—	1930	—	37	—	38	0	—		—	738
Mean	1839	618	1437	168	29.9	19.0	18.0	34.9	24.5	0	54.2	99.8
Runoff in Ac.Ft.	113100	35520	88390	10020	1840	1130	1110	2150	1460	0	3220	6140
	Water Year Total 294389								Calendar Year Total 264080			

U. S. Geological Survey, U. S. Bureau of Reclamation, and Division of Water Resources cooperative station located at Sanguinetti Lane bridge near the mouth of the canal. Period of record 1944 to date. Records for 1942 computed by U. S. Geological Survey.

* Estimated mean for period indicated.

TABLE 106

FLOW OF LITTLEJOHNS CREEK AT FARMINGTON - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	370	613	127	120						*2.0	*1.0	3.0
2	360	370	110	93						*2.0	*2.0	3.0
3	345	365	98	66						*2.0	*3.0	3.0
4	350	359	88	57						*2.0	*4.0	3.0
5	345	351	87	48						*2.0	*5.0	2.0
6	430	339	87	42						*2.0	*6.0	2.0
7	420	320	264	40						*2.0	7.0	4.0
8	330	255	340	41						*2.0	6.0	11
9	330	139	342	42						*2.0	5.0	6.0
10	320	122	339	64						*2.0	6.0	12
11	300	117	336	60						*2.0	6.0	12
12	540	145	333	47	N	N	N	N	N	*2.0	5.0	9.0
13	370	129	342	42	O	O	O	O	O	*2.0	4.0	8.0
14	460	115	346	38						*2.0	5.0	9.0
15	410	103	719	40						*2.0	5.0	7.0
16	400	94	426	35						*2.0	6.0	6.0
17	713	130	912	32	R	R	R	R	R	*2.0	5.0	5.0
18	1170	143	904	30	E	E	E	E	E	*2.0	4.0	4.0
19	1140	135	567	27	C	C	C	C	C	*2.0	10	5.0
20	1140	207	1090	26	O	O	O	O	O	*2.0	12	8.0
21	696	525	1060	23	R	R	R	R	R	*2.0	10	7.0
22	674	351	1040	22	D	D	D	D	D	*2.0	9.0	14
23	625	351	1020	22						*2.0	7.0	17
24	792	348	1020	22						*2.0	6.0	17
25	874	342	1040	23						*2.0	5.0	14
26	946	333	1000	21						*2.0	6.0	14
27	1080	315	980	25						*2.0	4.0	13
28	1050	290	980	23						*2.0	4.0	11
29	1040	170	959	20						*2.0	3.0	9.0
30	960	—	924	18						*2.0	3.0	80
31	665	—	873	—		—			—	*2.0	—	105
Mean	634	201	605	40.2						2.0	5.5	13.6
Runoff in Ac.Ft.	38960	15030	37200	2398						123	325	839
	Water Year Total									Calendar Year Total		

U. S. Corps of Engineers station located approximately 300 feet downstream from Farmington-Escalon road. Station was moved to this location in June 1952 from its former location approximately one mile upstream. The flows recorded by this station since June 1952 include flows entering Littlejohns Creek via the Duck Creek diversion canal. Period of record December 1945 to date. Records for 1952 computed by U. S. Corps of Engineers.

* Estimated

TABLE 107

FLOW OF DUCK CREEK AT FARMINGTON - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.9	2.3	0			2.5						0
2	4.0	20	0			1.2						0
3	3.2	6.0	0			.5						0
4	2.1	3.4	0			1.6						0
5	1.2	1.9	0.1			1.9						0
6	4.0	1.2	.1			2.6						0
7	9.0	.8	62			2.9						3.4
8	10.0	.6	9.1			2.1						4.0
9	7.8	.4	3.3			1.7						2.2
10	4.8	.1	1.6			2.0						.9
11	13	1.6	1.7			2.2						0
12	84	11	1.9	N	N	1.9	N	N	N	N	N	0
13	44	4.2	49	O	O	2.2	O	O	O	O	O	0
14	42	1.9	6.4			2.7						0
15	90	.8	34			3.4						0
16	47	.5	66	F	F	2.3	F	F	F	F	F	0
17	12	5.7	8.9	L	L	2.6	L	L	L	L	L	0
18	8.2	4.1	13	O	O	2.9	O	O	O	O	O	0
19	5.1	2.6	93	W	W	2.6	W	W	W	W	W	0.4
20	5.6	13	34		0	1.9						37
21	13	61	5.9		1.4	2.2						7.1
22	5.8	8.6	2.6		1.8	2.0						3.3
23	3.8	4.9	1.2		1.0	1.1						1.1
24	45	3.5	.5		2.0	0						.4
25	117	2.2	.2		2.2	0						.1
26	68	1.3	.1		3.1	0						0
27	12	.8	0		3.2	0						0
28	6.0	.4	0		2.9	0						0
29	4.2	.1	0		2.9	0						0.3
30	3.2	—	0		2.8	0						40
31	2.5	—	0	—	3.1	—			—		—	49
Mean	22.1	5.7	12.7	0	0.8	1.6	0	0	0	0	0	4.8
Runoff in Ac.Ft.	1358	327	783	0	52	98	0	0	0	0	0	296
	Water Year Total									Calendar Year Total		2914

Division of Water Resources station located 0.5 mile northwest of Farmington, 300 feet west of Bellota-Escalon Road. Duck Creek is an east-side tributary to the San Joaquin River at Mile 46.1R. via French Camp Slough. Period of record 1950 to date.

TABLE 108

FLOW OF DUCK CREEK NEAR STOCKTON (MARIPOSA ROAD) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	59	4.1	0			0						0
2	28	3.9	0			0						0
3	14	21	0			0.2						0
4	9	14	0			0						0
5	6	5.8	0			0						0
6	4.3	2.6	0			0						0
7	64	0.9	21			0						0
8	77	0.5	76			0.1						1.0
9	41	0	20			0						16
10	38	0	6.5			0						13
11	16	0	3.3			0						6.2
12	82	0	1.9	N	N	0.2	N	N	N	N	N	2.4
13	178	15	7.9	0	0	.4	0	0	0	0	0	.5
14	86	7.2	35			.4						0
15	164	3.0	18			.7						0
16	134	1.0	146			1.3						0
17	61	.2	60	F	F	1.5	F	F	F	F	F	0
18	33	0	27	L	L	1.3	L	L	L	L	L	0
19	26	6.0	110	O	O	3.0	O	O	O	O	O	0
20	16	3.9	191	W	W	2.5	W	W	W	W	W	0
21	16	82	69			.7						11
22	24	62	24			1.2						30
23	13	22	9.6			.1						14
24	11	9.6	4.3			0						6.2
25	161	5.1	1.9			0						2.5
26	197	2.8	.4			0						0.8
27	88	1.3	0			0						0.1
28	98	.2	0			0						0
29	19	0	0			0						0
30	10	—	0			0						0
31	6.7	—	0	—		—			—		—	18
Mean	57.6	9.4	26.9	0	0	0.4	0	0	0	0	0	3.9
Runoff in Ac.Ft.	3540	544	1652	0	0	27	0	0	0	0	0	241
	Water Year Total 7929								Calendar Year Total 6034			

Division of Water Resources station located 0.3 mile east of Highway 99, 150 feet downstream from Mariposa Road bridge. Duck Creek is an east-side tributary to the San Joaquin River at Mile 46.1R via French Camp Slough. During high-flow periods Duck Creek water enters Mormon Slough at a point approximately 2 miles east of the head of the Stockton Diverting Canal. Period of record 1950 to date.

TABLE 109

FLOW OF LONE TREE CREEK NEAR VALLEY HOME - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	*9.4	0.4	0	0	3.5	13	27	36	18	16	3.4	0.1
2	*2.0	1.6	0	0	5.2	12	37	33	16	12	2.3	*4.2
3	*0.2	1.0	0	0	5.1	21	29	31	11	20	3.1	0.4
4	0	0.2	0	0	13	17	18	48	17	23	1.9	0
5	0	0	0	0.7	15	26	27	38	22	31	0.9	0
6	0	0	0	.8	10	30	31	43	21	26	.8	*0
7	17	0	11	5.6	11	18	16	50	11	25	1.4	*4.9
8	9.2	0	7.0	5.9	21	31	11	25	14	31	1.4	*10
9	2.6	0	1.2	2.6	13	25	18	34	12	22	0.9	1.8
10	0.8	0	0.2	14	11	25	21	36	10	24	.6	1.2
11	6.1	0	.7	7.7	5.2	25	23	41	19	19	.7	0.8
12	*66	0	3.8	4.9	5.9	19	19	38	22	15	2.8	.7
13	*127	0	12	2.2	5.6	28	14	59	17	14	6.8	.7
14	*34	0	5.8	3.6	3.9	23	13	78	16	14	7.9	.6
15	34	0	132	1.7	7.0	22	14	61	14	16	*2.8	*.6
16	14	0	113	0.6	4.2	19	9.0	43	12	7.9	*1.8	*.9
17	6.1	0	24	.2	8.3	23	3.6	40	5.1	2.2	*1.4	*5.2
18	3.4	0	19	.2	16	28	21	34	14	1.0	0.6	*11
19	1.3	0	45	.2	15	21	19	31	16	0.6	.6	*9.0
20	1.4	0	26	5.6	15	28	18	28	15	.5	.3	*3.9
21	3.4	6.4	7.2	9.9	15	14	19	19	17	.5	.2	*1.0
22	1.1	2.0	2.7	5.4	15	30	26	22	16	.5	.2	*0.4
23	0.2	0.4	1.1	5.6	14	35	23	15	13	.5	.1	*.5
24	15	.1	0.6	8.5	15	25	25	14	16	1.2	0	*.5
25	*123	0	.2	17	11	19	29	17	16	*1.8	0	*.5
26	*84	0	.1	9.6	12	24	15	11	24	*1.7	0	*.5
27	*54	0	.1	6.6	26	24	23	11	24	*1.7	0	*.5
28	*31	0	.1	5.2	27	21	39	13	26	3.5	0	*.8
29	*15	0	0	2.2	19	29	37	14	23	3.1	0	*.9
30	*5.1	—	0	1.4	21	23	31	13	16	3.0	0	*18
31	0.7	—	0	—	19	—	37	15	—	3.4	—	*16
Mean	21.5	0.4	13.3	4.3	12.5	23.3	22.3	32	16.4	10.7	1.4	3.1
Runoff in Ac.Ft.	1323	24	819	254	769	1384	1374	1966	978	657	85	190
	Water Year Total 16826								Calendar Year Total 9823			

Division of Water Resources station located 1.5 miles west of Valley Home 300 feet north of Lone Tree Road. Lone Tree Creek is an east-side tributary to the San Joaquin River at Mile 46.1R. via French Camp Slough. Period of record 1950 to date.

* Estimated.

TABLE 110

FLOW OF LONE TREE CREEK NEAR MANTECA (AUSTIN ROAD) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	*131	15	1.8	1.4	65	46	47	19	14	28	17	*13
2	*81	12	1.6	1.6	64	40	44	18	16	17	12	*21
3	*58	9.5	1.4	1.5	80	22	40	22	13	16	8.4	*26
4	33	12	1.3	1.3	54	21	35	16	13	28	14	*38
5	16	11	1.2	5.5	46	23	22	14	8.8	29	7.8	*51
6	12	7.9	1.2	27	53	36	50	20	20	30	7.0	*66
7	32	6.0	7.9	36	52	42	35	27	28	40	7.4	*92
8	85	4.8	36	53	44	20	16	23	22	42	5.4	*105
9	82	4.0	48	69	38	36	24	20	14	45	5.3	105
10	64	4.2	23	70	35	32	24	12	25	45	5.9	75
11	45	3.7	9.9	84	48	41	22	33	38	42	6.1	*58
12	64	3.4	6.0	75	28	43	17	32	27	42	6.3	*44
13	227	3.5	4.4	61	46	38	23	35	37	49	4.6	*26
14	266	4.2	22	47	27	30	20	34	28	45	3.6	*17
15	231	4.5	35	43	19	37	21	37	34	52	*20	*4.5
16	224	4.0	156	50	25	49	18	58	28	50	*29	*27
17	142	3.4	222	40	21	32	27	39	25	43	*34	*60
18	90	3.2	189	16	24	24	23	23	16	36	24	*75
19	62	2.7	125	19	19	44	18	13	17	24	*18	*72
20	41	2.9	201	29	8.9	46	22	6.3	31	11	*11	*59
21	27	6.3	197	26	16	41	24	9.3	46	11	*7.4	*49
22	21	51	96	31	31	25	29	13	30	10	*5.2	*41
23	18	48	55	32	28	*28	20	26	28	11	*3.2	13
24	18	28	26	32	15	*30	16	32	18	23	*2.4	7.8
25	132	13	10	41	2?	*32	21	25	24	11	*2.0	6.1
26	245	6.6	5.5	55	35	*35	24	18	40	9.1	*2.0	4.6
27	239	4.3	4.1	69	28	*38	32	22	42	*8.5	*2.0	3.5
28	*131	3.0	2.9	63	26	*40	21	22	34	7.5	*2.0	2.9
29	*71	2.3	2.4	68	31	*42	30	13	32	9.3	*2.0	2.8
30	*44	—	1.9	68	26	*45	28	15	21	26	*2.0	5.3
31	*24	—	1.6	—	24	—	15	14	—	18	—	57
Mean	95.4	9.8	48.3	40.5	34.8	35.3	26.1	22.9	25.7	27.7	9.2	39.5
Runoff in Ac.Ft.	5863	564	2968	2410	2140	2098	1603	1409	1528	1703	549	2434
	Water Year Total 23942								Calendar Year Total 25269			

Division of Water Resources station located 4 miles north and 2 miles east of Manteca at Austin Road bridge. Lone Tree Creek is an east-side tributary to the San Joaquin River at Mile 46.1R via French Camp Slough. Period of record 1950 to date.

* Estimated.

TABLE 111

FLOW OF TEMPO CREEK NEAR MANTECA (JACK TONE ROAD) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	84	12	*1.3	*0.4	21	*16	8.2	*0.5	*3.7	*3.7	8.0	*0
2	54	8.9	*1.0	.4	24	*16	9.4	*2.6	3.8	*0.8	7.4	1.0
3	32	6.5	*0.7	.4	42	4.9	*3.2	*1.9	*1.0	6.1	7.1	3.3
4	15	7.1	*.7	.4	31	8.5	*3.7	*2.3	*0.5	31	6.7	4.4
5	8.2	7.1	*.7	.4	35	11	6.9	*2.2	*0.9	27	4.7	5.3
6	16	4.4	*.7	.3	33	20	9.9	*2.2	4.4	32	5.1	3.7
7	43	*2.7	8.2	*11	28	23	*8.0	*2.2	*3.5	40	4.2	14
8	59	*2.0	33	*18	26	13	*3.8	*2.2	*2.3	36	3.5	72
9	50	*1.7	28	*17	31	9.4	5.1	*2.4	*0.5	40	4.9	136
10	38	*1.7	14	*16	33	6.1	*4.0	*2.6	*4.5	45	6.5	72
11	27	*1.7	9.6	*15	32	5.9	*2.9	*3.5	*5.1	42	7.4	50
12	50	*1.7	5.3	*14	34	15	*2.4	3.8	8.0	34	8.0	12
13	133	*1.7	5.3	*13	33	16	*2.3	4.0	6.3	41	6.5	8.9
14	134	*1.7	19	*12	31	19	*2.0	2.2	4.2	32	4.0	6.3
15	139	*1.7	48	12	25	16	*2.0	*1.9	*2.7	28	7.6	*6
16	126	*1.7	134	12	16	19	*5.9	*3.7	*3.7	34	11	*6
17	84	*1.9	158	12	30	16	*2.7	3.8	*2.0	25	20	*6
18	55	*1.9	*141	16	*16	19	*3.3	3.8	*2.0	21	20	*6
19	36	*1.9	*136	16	*11	14	12	*3.5	4.4	10	9.6	*6
20	25	*1.9	*137	11	*8.7	5.7	14	*0.1	10	5.1	5.3	*6
21	17	*3.5	*134	18	*9.2	3.7	*3.5	*.1	11	6.5	4.4	*6
22	12	33	*97	17	*10	3.8	*0.5	*1.9	11	4.2	*3.3	*6
23	12	45	*60	12	*12	*0	*.5	*3.7	10	3.7	*1.9	6.5
24	13	31	*29	11	*13	*0	*.5	*1.0	11	6.5	*1.0	5.1
25	81	14	*8.9	12	*14	*0	*.5	*0.2	14	8.0	*1	4.4
26	171	6.1	*4.0	27	*18	*0	*.5	*.1	22	6.5	*1	3.8
27	159	3.8	*3.3	28	*17	*4.5	*3.8	*0	23	6.0	*1	3.7
28	113	*2.6	*2.4	32	*17	8.0	*4.2	*0	21	5.5	*1	3.2
29	69	*1.9	*1.9	39	*17	5.1	*1.0	*0	19	5.9	*1	2.2
30	41	—	*1.3	30	*17	5.5	*3.5	*0	8.7	7.4	*1	2.0
31	19	—	*0.7	—	*17	—	*0.5	*0	—	7.8	—	6.7
Mean	61.8	7.3	39.5	14.1	22.6	10.1	4.2	1.9	7.5	19.4	5.8	15.3
Runoff in Ac.Ft.	3799	422	2428	840	1392	603	259	116	445	1195	345	941
	Water Year Total								Calendar Year Total 12785			

Division of Water Resources station located 5.5 miles northeast of Manteca at Jack Tone Road bridge. Tempo Creek is an east-side tributary to the San Joaquin River at Mile 46.1R via Lone Tree Creek and French Camp Slough. Period of record October 1950 to date.

* Estimated.

TABLE 112

FLOW OF FRENCH CAMP SLOUGH NEAR FRENCH CAMP (SHARPS LANE) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	446	525	38	213	25	*0	52	23	0	18	19	0
2	370	406	18	177	24	*0	44	21	15	28	17	0
3	324	263	9.4	48	34	44	46	19	11	30	9.4	13
4	290	254	5.4	16	25	44	44	16	0	41	11	19
5	268	243	3.8	8.8	11	42	32	23	0	48	11	13
6	254	229	3.4	19	14	50	21	22	25	34	8.9	7.2
7	347	215	61	19	19	52	42	28	34	45	12	*68
8	313	188	250	22	4.2	*52	27	28	29	47	20	*191
9	296	100	250	38	0.3	*54	21	26	32	49	13	*226
10	270	40	227	55	5.0	*56	38	16	13	49	11	*170
11	241	27	212	62	11	*56	28	28	42	49	4.6	*99
12	282	27	206	56	0.6	*56	22	7.2	38	*42	5.4	*65
13	576	37	220	37	*1.8	*56	27	21	25	*50	3.8	*40
14	487	26	225	23	*1	*56	18	28	27	51	1.3	*23
15	571	19	264	19	*1	*56	5.9	40	*17	51	*19	*11
16	485	12	553	23	*1	*58	14	45	31	49	*19	*19
17	452	10	674	19	*1	47	20	46	21	45	*37	*32
18	714	40	815	3.0	*1	24	32	32	19	35	28	*48
19	706	34	761	3.4	*1	45	23	25	15	32	15	56
20	686	38	821	3.4	0	56	22	14	41	19	4.9	130
21	599	266	824	4.2	0	55	8.6	0	49	12	1.0	173
22	530	254	731	1.2	0	53	22	0.4	36	12	0	90
23	516	259	681	2.4	0	41	30	4.6	25	10	0	32
24	424	243	648	10	0	17	24	26	27	20	0	24
25	537	227	644	*18	0	32	6.7	28	26	28	0	23
26	786	213	636	*18	0	27	27	22	49	15	0	17
27	*872	200	629	*18	0	25	33	22	51	7.3	0	13
28	796	179	624	*18	0	47	15	19	41	13	0	8.4
29	704	132	525	*27	*0	53	1.7	21	28	5.6	0	6.8
30	668	—	255	26	*0	53	22	5.9	25	11	0	9.0
31	594	—	227	—	*0	—	23	1.5	—	7.2	—	95
Mean	497	162	388	33.6	5.8	43.6	25.5	21.2	26.4	30.8	9.0	55.5
Runoff in Ac.Ft.	30550	9334	23880	1998	359	2592	1571	1306	1571	1891	538	3414
	Water Year Total 90874								Calendar Year Total 79004			

Division of Water Resources station, sometimes referred to as Littlejohns Creek near French Camp, located 1.5 miles southeast of French Camp at Sharps Lane Bridge. French Camp Slough is an east-side tributary to the San Joaquin River at Mile 46.1R. Period of record 1950 to date.

* Estimated

TABLE 113

INFLOW TO MILLERTON LAKE AT FRIANT - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1639	2723	1620	4097	7271	12229	5063	4447	993	1496	984	1048
2	1807	3319	1898	4826	9045	11316	5461	3641	1450	1399	719	1102
3	1769	2273	1899	5066	8913	12112	6063	3030	1517	1321	983	843
4	1560	2123	1728	5333	7967	13642	5994	3039	1527	1322	924	844
5	1582	2505	1513	5848	8881	15921	5627	2951	1673	1188	1119	905
6	1485	2166	1795	6040	9552	16166	6076	2303	1470	1229	1096	1112
7	1611	2366	2077	6828	9315	14469	7164	2476	1330	1260	1076	1544
8	1464	2107	1787	5416	8175	14553	7425	2511	1387	1242	747	1837
9	1521	2173	1656	5046	7847	13932	6554	2484	1537	1212	803	1688
10	1130	2046	2098	5436	8611	10953	5762	2068	1637	1311	816	1056
11	1107	2262	2398	5349	9610	10446	5555	2193	1592	1128	1049	1337
12	1926	2447	2272	4646	10794	8071	4735	2125	1634	792	1062	1279
13	2059	2199	2170	4577	11120	7208	4016	1990	1564	1040	964	1180
14	1883	2202	2514	5017	11972	7370	4316	2016	1208	1392	1122	1032
15	5267	2079	6050	4550	12293	7361	4435	1872	1335	1494	1183	1412
16	5059	2158	4986	4513	10639	7835	4334	1880	1667	1350	599	1314
17	2693	2545	3898	5010	9995	8902	4372	1780	1429	1493	950	1365
18	2697	2138	3918	5754	10385	9563	4824	1783	1367	1394	844	1405
19	2033	1930	4647	5961	11600	9936	5184	1873	1367	1112	903	1401
20	2163	1923	3682	6208	12095	9068	4969	1783	1347	1385	901	1761
21	2028	1873	3248	6274	11146	9070	4717	1814	811	1263	871	1678
22	1822	1553	3027	6720	11129	8682	4367	1827	1366	1244	919	1643
23	1728	1425	2602	7182	12046	8408	4003	1741	1463	1170	609	1368
24	3872	1929	3259	7800	12746	7402	3847	1211	1490	1244	1001	1424
25	10733	1850	3869	8121	13217	6752	4077	1696	1487	1107	932	1188
26	3732	1645	5000	7732	13084	5928	5073	1736	1236	858	852	1123
27	2455	1846	5537	6333	13265	5109	4288	1720	1461	1251	657	1330
28	2382	1778	5118	7525	14058	4845	4603	1685	1389	999	690	1112
29	2234	1805	5656	7182	12830	4561	4159	1764	1577	1199	820	1205
30	2067	—	4725	7929	12799	4902	4782	1279	1355	1065	531	1911
31	2112	—	4041	—	13136	—	6040	1190	—	1032	—	2041
Mean	2504	2117	3248	5944	10824	9557	5093	2126	1422	1226	891	1339
Runoff in Ac.Ft.	153957	121761	199712	353167	665526	568685	313160	130727	84742	75356	53020	82350
	Water Year Total 2789957								Calendar Year Total 2802163			

This is the total mean second-feet flow inflowing to Friant Reservoir as computed by the U. S. Bureau of Reclamation, taking into account change in storage, release, spill and evaporation; and represents the natural flow passing the dam site if the dam had not been constructed. Drainage area is 1671 square miles.

TABLE 114

DAILY CONTENT OF FRIANT RESERVOIR (MILLERTON LAKE) IN ACRE-FEET - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	246.7	386.1	299.8	263.2	150.3	301.4	396.5	423.1	252.5	188.2	147.0	164.7
2	250.0	388.7	297.2	258.5	151.4	307.7	399.3	420.6	247.3	187.5	145.3	166.6
3	253.3	389.2	295.7	253.6	152.2	315.4	403.2	416.8	242.4	186.7	145.0	168.1
4	256.2	389.4	294.6	249.2	151.3	326.1	407.1	413.1	237.6	186.0	144.6	169.6
5	259.1	390.4	293.1	245.6	152.2	341.3	411.4	409.2	233.2	185.3	144.7	171.1
6	261.8	390.7	292.2	242.5	154.3	357.0	416.8	404.0	228.8	184.8	144.8	173.1
7	264.7	390.1	292.2	241.0	155.9	369.3	423.2	399.2	224.5	184.3	144.9	176.0
8	267.4	388.3	291.7	237.5	155.3	381.9	430.8	394.4	220.7	183.8	144.4	179.4
9	270.2	385.4	291.0	233.2	153.9	393.2	436.5	389.7	217.2	183.2	144.1	182.5
10	272.1	381.5	291.2	229.1	154.1	398.7	440.7	383.9	213.9	182.8	143.7	184.4
11	274.1	378.1	292.0	224.2	156.1	402.8	444.1	378.5	210.9	181.6	143.8	186.8
12	277.7	374.9	292.5	218.2	160.3	401.4	445.5	372.9	208.0	179.9	144.3	189.2
13	281.5	371.2	291.8	212.2	165.1	398.2	444.3	367.1	205.3	178.0	144.7	191.3
14	285.0	367.4	290.8	206.5	171.7	395.2	442.4	361.2	202.5	175.9	145.2	193.1
15	295.2	363.5	296.8	199.3	178.8	391.8	440.6	355.1	200.2	173.8	146.5	195.8
16	305.0	359.7	300.7	192.1	182.5	388.7	439.1	349.0	198.7	171.3	146.8	198.2
17	310.1	356.7	302.4	185.7	184.9	387.3	437.9	342.8	197.2	169.2	147.9	200.7
18	315.2	352.7	303.4	180.7	188.1	387.2	437.5	336.6	195.9	167.0	148.8	203.2
19	319.0	348.1	304.6	176.1	193.6	388.8	437.8	330.6	194.7	164.2	149.8	205.8
20	323.0	343.3	303.3	171.9	200.1	389.5	437.4	324.5	193.7	162.1	150.9	209.1
21	326.8	338.4	300.1	167.9	204.7	391.1	436.5	318.7	191.6	160.0	152.1	212.2
22	330.2	332.9	296.5	164.5	209.2	392.6	435.1	312.8	191.0	158.6	153.5	215.2
23	333.4	327.2	292.1	162.1	215.6	394.4	433.1	306.8	190.7	157.5	154.3	217.7
24	340.8	322.6	288.2	160.9	223.1	395.4	430.7	299.6	190.7	156.5	155.9	220.3
25	361.8	318.0	284.6	160.3	232.5	396.1	428.6	293.4	190.7	155.3	157.3	222.5
26	369.0	313.3	283.3	159.0	242.5	396.9	428.0	287.5	190.3	153.6	158.6	224.5
27	373.6	308.9	282.6	155.2	252.8	397.2	425.6	281.8	190.3	152.7	159.5	226.9
28	378.0	305.2	279.7	155.9	264.7	396.9	424.2	276.3	189.6	151.3	160.6	228.9
29	382.2	302.7	277.2	153.5	274.1	395.8	422.0	271.1	189.4	150.5	162.0	231.1
30	384.5	—	273.5	152.6	283.3	395.5	421.6	265.1	188.7	149.4	162.8	234.7
31	384.7	—	268.4	—	293.2	—	424.0	258.9	—	148.2	—	238.6
Monthly Change	+141.1	-82.0	-34.3	-115.8	+140.6	+102.3	+28.5	-165.1	-70.2	-40.5	+14.6	+75.8

Annual Gain or Loss in Storage: Calendar Year -5000; Water Year +43200 Acre-Feet
Difference in Storage 1951 to 1952: Maximums -5100; Minimums +3700 Acre-Feet.

Reservoir water level recorder maintained by U. S. Bureau of Reclamation. Period of record 1941 to date.

TABLE 115

FLOW OF SAN JOAQUIN RIVER BELOW FRIANT - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	115	2060	2920	6800	7910	6950	2170	1730	1210	199	500	100
2	129	2100	2920	7200	7920	6980	1720	1730	1210	211	500	105
3	115	2050	2360	7460	7920	7010	1720	1730	1230	211	500	105
4	115	2040	1980	7440	7920	7030	1590	1720	1230	213	495	105
5	115	2040	1980	7430	7920	7060	1080	1720	1240	213	460	110
6	115	2030	1980	7400	7940	7040	891	1710	1240	213	396	112
7	124	2620	2010	7360	7960	7040	1400	1710	1240	213	396	119
8	120	2980	1990	7040	7960	7040	1140	1700	1240	213	396	112
9	118	3600	1980	7030	7940	7060	1110	1700	1250	213	396	112
10	115	3990	1990	7330	7920	7060	1090	1700	1240	297	396	110
11	115	3990	2010	7540	7920	7190	1050	1710	1240	460	396	110
12	118	3980	2000	7490	7960	7480	1210	1730	1240	455	396	112
13	120	4010	2480	7430	7960	7480	1760	1740	1240	751	396	110
14	122	3990	2970	7650	7910	7490	2370	1750	1250	1300	400	110
15	192	3980	3160	7960	7910	7650	2520	1760	1240	1350	404	110
16	186	3980	3250	7860	7910	7940	2160	1760	1210	1430	400	110
17	156	3980	3100	7880	7890	7940	2020	1760	1040	1340	400	108
18	154	3940	3560	7910	7910	7920	2020	1760	962	1320	396	110
19	141	3950	4190	7880	7910	7460	2020	1760	884	1310	391	113
20	148	3920	4400	7920	7910	7080	2020	1760	884	1260	330	123
21	152	3910	4920	7890	7890	6520	2020	1760	807	1180	233	113
22	139	3890	4740	7940	7880	6050	1970	1760	658	822	203	110
23	137	3880	4710	7890	7890	5670	1880	1760	577	592	203	106
24	250	3870	5260	7920	7910	5080	1880	1760	414	586	203	106
25	470	3870	5670	7990	7400	4520	1950	1760	409	586	203	106
26	218	3850	5640	7990	6980	3620	2140	1630	409	586	203	108
27	186	3840	5810	7970	6980	3050	2140	1430	409	592	203	110
28	171	3410	6560	6820	7000	3040	2140	1320	409	562	160	110
29	162	2930	7000	7960	6980	3040	2140	1230	218	500	92	110
30	889	—	6680	7920	7000	2880	1870	1220	211	500	95	113
31	2050	—	6660	—	6980	—	1730	1210	—	500	—	126
Mean	241	3403	3770	7610	7722	6312	1772	1661	935	651	338	110
Runoff in Ac.Ft.	14790	195700	231800	452800	474800	375600	108900	102100	55620	40020	20120	6790
	Water Year Total 2083990								Calendar Year Total 2079040			

U. S. Geological Survey station located at Mile 268.13L and 1.5 miles downstream from Friant Dam. Drainage area is 1675 square miles. Period of record 1938 to date. (Prior records available at sites 2.5 and 4.5 miles upstream.) Records for 1952 computed by U. S. Geological Survey.

TABLE 116

FLOW OF SAN JOAQUIN RIVER NEAR BIOLA - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1										(a) 246	496	159
2										223	496	162
3										228	496	153
4										222	488	147
5										216	480	144
6										209	464	147
7										209	410	153
8										209	402	153
9										209	402	147
10										209	395	144
11										280	388	144
12										400	395	141
13										402	402	138
14										744	418	147
15										1270	432	156
16										1360	440	150
17										1420	410	144
18										1390	402	138
19										1380	402	138
20										1370	388	153
21										1280	346	159
22										1200	289	147
23										789	251	144
24										630	237	141
25										622	232	138
26										605	228	135
27										596	223	135
28										596	223	138
29										571	214	135
30		—								520	170	141
31		—		—	—				—	504	—	185
Mean										649	367	147
Runoff in Ac.Ft.										39890	21860	9040
	Water Year Total								Calendar Year Total			

U. S. Geological Survey and U. S. Bureau of Reclamation cooperative station located at Mile 236.4R and 1.8 miles downstream from Skaggs Bridge. Drainage area is 1805 square miles. This station is at approximately the same location as a former Southern California Edison Company station known as San Joaquin River Below Skaggs Bridge for which records are available for the period 1926 through 1938. Records for 1952 computed by U. S. Geological Survey.

(a) Beginning of record October 1, 1952.

TABLE 117

FLOW OF SAN JOAQUIN RIVER AT WHITEHOUSE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	165	1780	2850	6040	5220	4570	2770	1600	1100	247	476	145
2	168	1980	2940	6070	5180	4540	2170	1600	1080	223	476	142
3	170	2230	2840	6070	5170	4460	1730	1600	1060	205	472	132
4	162	2030	2530	6070	5160	4410	1710	1600	1070	199	472	120
5	148	2030	2130	6060	5060	4400	1620	1570	1070	193	464	115
6	138	2030	2080	6040	5000	4390	1270	1560	1070	190	456	115
7	155	2000	2090	6000	5000	4330	1040	1530	1080	190	440	130
8	145	2440	2130	5990	5040	4330	1340	1530	1080	193	384	128
9	135	2980	2120	5940	5040	4330	1150	1520	1060	190	380	122
10	130	3360	2070	5920	5020	4400	1090	1510	1070	187	384	118
11	130	3860	2070	5990	5000	4400	1070	1520	1080	184	377	112
12	130	3870	2120	6000	5000	4460	1030	1530	1090	262	366	112
13	130	3940	2090	5980	4980	4500	1070	1520	1090	352	366	110
14	130	3980	2480	5960	4960	4520	1470	1530	1090	378	377	110
15	168	3980	3000	5980	4940	4540	2070	1550	1110	861	416	122
16	191	3940	3880	5970	4940	4580	2340	1560	1100	1070	416	130
17	457	3940	3960	5870	4930	4610	2050	1560	1090	1220	398	120
18	391	3920	3320	5840	4920	4590	1880	1590	1090	1200	380	115
19	310	3870	3720	5810	4880	4590	1880	1570	905	1180	380	112
20	265	3850	4600	5740	4830	4470	1870	1550	805	1180	374	120
21	229	3850	4710	5660	4820	4400	1880	1550	780	1170	377	140
22	217	3830	4950	5560	4800	4230	1870	1550	765	1080	335	145
23	199	3800	4900	5480	4790	4100	1830	1560	670	927	259	130
24	196	3760	4350	5420	4780	3900	1810	1560	569	646	232	128
25	254	3720	5110	5430	4770	3710	1800	1600	468	587	217	125
26	1460	3690	5490	5390	4670	3460	1750	1580	412	569	208	122
27	830	3660	5510	5360	4570	3080	1030	1480	394	560	199	118
28	569	3620	5590	5290	4560	2870	1060	1320	384	552	196	125
29	444	3330	5950	5030	4620	2880	1960	1270	380	548	196	120
30	384	—	6060	5260	4600	2900	1960	1120	338	500	178	128
31	468	—	6030	—	4590	—	1780	1090	—	476	—	152
Mean	293	3290	3680	5780	4900	4170	1720	1510	878	565	355	125
Runoff in Ac.Ft.	17986	188965	226453	343676	301170	248132	105521	92787	52264	34748	21126	7662
	Water Year Total 1641936								Calendar Year Total 1640490			

San Joaquin Canal Company station located at Mile 219.83R, below the head of Gravelly Ford Canal. Period of record 1901 to date. Records for 1952 computed by San Joaquin Canal Company.

TABLE 118

FLOW OF SAN JOAQUIN RIVER NEAR MENDOTA - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	172	1510	2820	5570	6540	8770	971	366	258	206	97	77
2	830	1910	2640	5500	6610	8770	922	353	244	232	97	117
3	1020	2190	2570	5490	6790	8770	784	338	242	232	86	301
4	477	2220	2380	5460	6960	8770	702	340	237	227	52	306
5	223	2470	1830	5390	6980	8630	699	346	233	225	28	303
6	132	3000	1090	5320	6920	8380	677	348	224	212	27	301
7	138	2660	825	5440	6980	8300	614	350	220	193	27	296
8	121	2240	1230	5780	7020	8210	564	353	218	143	27	359
9	116	2590	1440	5970	7170	8270	522	348	220	136	27	409
10	113	2810	1400	6120	7320	8470	489	340	222	134	27	395
11	94	3310	1450	6230	7380	8380	411	343	207	138	27	374
12	72	3570	1480	6190	7450	8430	331	346	194	141	27	356
13	71	3650	1450	6350	7320	8400	409	346	187	121	45	264
14	68	3630	1520	6490	7200	8100	376	348	185	96	68	189
15	67	3600	2000	6530	7070	7690	368	348	160	88	82	108
16	67	3610	2360	6570	7190	7130	378	350	148	86	114	22
17	68	3630	2760	6610	7300	6570	388	348	173	85	114	16
18	386	3700	3850	6560	7510	6180	393	326	173	85	113	27
19	1480	3680	4900	6410	7580	5720	388	297	162	88	113	80
20	1690	3640	5330	6450	7600	5480	378	312	146	93	109	80
21	1100	3570	5490	6530	7710	5370	343	331	166	96	109	78
22	694	3590	5520	6530	7850	5300	358	343	166	97	108	199
23	412	3560	5490	6360	8060	5130	388	360	144	99	106	565
24	306	3500	5130	6180	8240	4670	409	331	124	99	106	415
25	274	3460	4630	6110	8380	4190	464	309	132	99	106	163
26	510	3410	4460	6270	8670	2770	443	281	175	99	106	107
27	1570	3350	4420	6460	8630	987	440	211	200	99	106	36
28	2230	3330	4410	6630	8630	1060	435	187	181	99	99	25
29	2810	3240	4650	6690	8770	979	445	215	190	99	80	22
30	2750	—	5050	6540	8730	941	456	274	204	99	74	21
31	2010	—	5390	—	8700	—	401	272	—	97	—	21
Mean	712	3125	3225	6158	7589	6294	495	321	191	130	76.9	195
Runoff in Ac.Ft.	43780	179800	198300	366400	466600	374500	30440	19760	11380	8020	4580	11960
	Water Year Total 1710880								Calendar Year Total 1715520			

U. S. Geological Survey and U. S. Bureau of Reclamation cooperative station located 2.5 miles below Mendota Dam at Mile 206.2L. Drainage area is 4310 squere miles. Period of record 1939 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 119

FLOW OF SAN JOAQUIN RIVER NEAR DOS PALOS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	184	1670	3100	5350	6210	8070	614	4.6	3.8	4.0	3.3	.8
2	248	1580	2750	5350	6210	8090	667	4.4	4.0	4.0	3.3	11
3	673	1930	2650	5250	6250	8120	543	4.2	3.5	4.6	3.1	102
4	792	2130	2550	5190	6440	8150	430	4.4	3.3	4.8	3.1	250
5	424	2330	2230	5070	6550	8170	347	4.4	3.3	4.8	2.6	286
6	266	2600	1770	5010	6460	7960	351	4.4	3.8	4.6	1.6	292
7	195	3120	801	5000	6440	7790	299	4.4	3.3	4.6	1.1	297
8	181	2420	980	5170	6400	7720	208	4.2	3.5	4.4	.7	297
9	160	2280	1430	5480	6510	7710	167	4.0	3.3	3.8	.4	359
10	151	2630	1500	5770	6660	7780	90	4.0	3.3	3.5	.2	387
11	144	2930	1380	5910	6800	7810	58	4.4	3.5	3.5	.2	384
12	131	3410	1390	5960	6860	7840	17	4.8	3.3	3.3	.2	371
13	109	3610	1400	5970	6810	7910	24	4.6	3.3	3.5	.2	347
14	103	3650	1370	6120	6680	7810	13	5.0	3.3	3.5	.4	244
15	99	3630	1550	6210	6600	7550	4.0	4.8	3.3	3.1	1.5	189
16	99	3600	2070	6110	6560	7180	3.5	4.8	3.1	2.9	1.6	86
17	96	3620	2470	6200	6700	6660	3.5	4.6	3.1	3.1	1.8	30
18	97	3640	2860	6240	6860	6170	3.5	4.6	3.3	2.9	2.1	11
19	468	3710	4240	6120	7030	5870	3.5	4.6	3.5	2.9	2.2	8.9
20	1340	3670	4780	5980	7160	5260	3.8	4.4	3.5	2.9	2.2	24
21	1410	3630	5140	6000	7280	5200	3.8	4.6	3.3	2.7	2.2	26
22	970	3560	5290	6040	7410	5000	3.8	4.6	3.3	2.9	2.1	61
23	605	3580	5440	6020	7530	4930	3.8	4.6	3.8	2.7	2.0	252
24	401	3520	5330	5960	7660	4730	4.0	4.6	3.8	2.7	1.8	496
25	330	3470	4920	5670	7780	4330	4.4	4.6	3.8	2.6	1.6	329
26	288	3420	4500	5790	7910	3750	5.3	4.6	3.5	2.6	1.5	198
27	604	3360	4400	5970	7930	1260	4.8	4.0	3.8	2.7	1.4	149
28	1500	3330	4280	6250	7960	685	4.8	3.3	4.0	3.1	1.4	99
29	2220	3310	4400	6390	7990	708	5.0	2.9	3.8	3.3	1.4	79
30	2680	—	4750	6340	8010	627	5.0	3.1	3.8	3.3	1.1	73
31	2460	—	5120	—	8040	—	5.3	3.8	—	3.3	—	69
Mean	627	3081	3124	5793	7022	6028	126	4.33	3.51	3.44	1.61	187
Runoff in Ac.Ft.	38530	177200	192100	344700	431800	358700	7740	266	209	211	96	11520
	Water Year Total 1554495								Calendar Year Total 1563072			

U. S. Geological Survey and U. S. Bureau of Reclamation cooperative station located 800 feet downstream from the head of Temple Slough at Mile 186.0L. Drainage area is 5630 square miles. Period of record 1940 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 120

FLOW OF SAN JOAQUIN RIVER AT FREMONT FORD BRIDGE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	733	3670	3010	3980	3990	4110	1480	305	269	241	106	119
2	1140	3600	2940	3950	3960	4130	1320	291	267	236	101	132
3	1300	3420	2850	3970	3930	4190	1230	287	321	219	100	136
4	1180	3140	2720	3970	3900	4220	1130	293	257	229	101	143
5	1150	2960	2600	3970	3880	4200	1020	293	230	234	107	137
6	1110	2870	2530	3950	3890	4190	913	269	241	229	103	129
7	967	2840	2420	3960	3900	4220	832	241	234	238	101	211
8	853	2830	2140	3940	3830	4220	811	245	243	231	100	285
9	994	2870	1740	3940	3870	4200	768	267	243	218	97	323
10	1230	2810	1860	3990	3850	4100	680	267	238	203	97	375
11	1190	2720	2110	4020	3830	4100	635	273	247	211	96	397
12	997	2720	2200	4080	3820	4100	583	293	271	219	92	431
13	913	2790	2300	4130	3840	4100	560	286	300	224	87	436
14	955	2930	2490	4150	3880	4100	543	233	325	212	91	424
15	1350	3060	2590	4180	3920	4000	519	279	352	241	105	408
16	1780	3160	2660	4190	3940	4000	505	273	368	231	134	381
17	2350	3200	2900	4190	3920	4000	478	273	340	266	160	354
18	3060	3210	3390	4190	3900	4000	457	269	350	201	144	321
19	3420	3230	3760	4180	3880	4000	417	273	365	172	133	288
20	3330	3260	3970	4160	3850	3900	406	271	374	162	130	277
21	3090	3290	4100	4160	3860	3900	396	257	348	147	125	268
22	2950	3300	4250	4130	3890	3800	365	251	368	132	123	309
23	2870	3280	4380	4080	3910	3800	361	245	363	122	120	386
24	2820	3250	4460	4040	3900	3600	346	241	337	116	119	392
25	2770	3230	4460	4020	3900	3400	329	228	304	116	122	517
26	2820	3200	4440	4020	3950	3200	318	224	273	122	123	600
27	3360	3170	4390	4040	3990	3000	310	253	228	118	119	595
28	3780	3110	4320	4020	4020	2700	310	271	219	119	116	522
29	3800	3060	4230	4000	4060	2300	304	259	238	115	116	453
30	3740	—	4150	3990	4100	1760	289	259	238	118	115	412
31	3710	—	4050	—	4120	—	291	255	—	118	—	424
Mean	2120	3110	3239	4053	3920	3785	610	267	292	186	113	341
Runoff in Ac.Ft.	130300	178900	199200	241200	241100	225200	37500	16420	17360	11420	6710	21000
	Water Year Total 1309360								Calendar Year Total 1326310			

U. S. Geological Survey, U. S. Bureau of Reclamation and Division of Water Resources cooperative station located at highway bridge on road between Gustine and Stevinson. Mile 129.5 above mouth of San Joaquin River and 5.7 miles above the confluence of the Merced River. Drainage area is 8090 square miles. Period of record 1937 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 121

FLOW OF SAN JOAQUIN RIVER NEAR NEWMAN - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1340	6960	5230	7730	10300	13100	3040	616	540	532	288	288
2	1620	6880	5150	7980	10200	13200	2370	596	512	552	273	300
3	1800	6690	5050	8050	10300	13200	2120	596	568	510	276	306
4	1770	6240	4890	8010	10300	12900	1960	612	500	513	270	350
5	2160	5760	4700	8030	10500	12600	1790	592	536	564	276	350
6	2280	5480	4590	7980	10600	12800	1670	560	500	584	276	360
7	2220	5310	4530	8140	10500	13000	1550	520	536	620	273	410
8	2240	5210	4280	8360	10500	13000	1480	508	564	616	270	480
9	2360	5180	3800	8580	10400	12800	1430	544	564	588	273	540
10	2520	5150	3590	8330	10200	12600	1320	568	528	580	282	520
11	2520	4990	3830	8410	9840	12500	1240	576	544	572	270	652
12	2360	4860	4000	8760	9920	11800	1180	596	604	556	261	660
13	2360	4870	4100	8820	10400	11300	1180	580	648	528	249	668
14	2610	4980	4350	8820	10800	10800	1150	568	638	488	255	644
15	2810	5140	4630	8980	11100	10500	1040	580	700	499	276	620
16	4400	5300	5050	9220	11400	10500	970	530	724	544	309	580
17	5280	5400	5880	8740	11500	10400	902	568	676	552	339	548
18	5060	5430	5870	8440	11400	10400	844	584	648	464	327	528
19	5490	5430	6380	8240	11200	10600	772	556	664	415	297	954
20	5940	5430	7400	8080	11200	10600	776	540	724	387	294	1290
21	5900	5460	7880	8480	11300	10500	776	544	728	366	288	1430
22	5730	5500	8170	9070	11500	10100	704	572	754	345	294	1470
23	5510	5530	8780	9410	11500	9530	684	560	736	327	297	1580
24	5330	5500	9370	9640	11400	8820	672	548	700	309	291	1620
25	5390	5480	9650	9790	11400	7670	636	528	664	306	294	1700
26	6280	5470	9650	9980	12000	7150	596	512	640	312	300	1860
27	6000	5420	9520	10200	12500	6800	628	524	548	312	300	1860
28	6270	5370	9250	10300	12900	6480	628	548	528	306	300	1810
29	6830	5320	8960	10100	13000	5600	592	528	552	297	282	1730
30	7010	—	8480	10300	13200	4000	556	524	540	297	282	1690
31	6970	—	8020	—	13100	—	616	552	—	300	—	1840
Mean	4076	5508	6291	8832	11170	10510	1157	561	612	456	285	956
Runoff in Ac.Ft.	250600	316800	386800	525600	687000	625300	71150	34470	36410	28050	16980	58790
	Water Year Total 2996390								Calendar Year Total 3037950			

U. S. Geological Survey and Division of Water Resources cooperative station located at Hills Ferry bridge, Mile 123.7 above mouth of San Joaquin River and just below the mouth of the Merced River. Combine flow with Merced River Slough (Table 137) to give total flow passing this point. Drainage area is 9990 square miles. Period of record 1912 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 122

FLOW OF SAN JOAQUIN RIVER AT GRAYSON (LAIRD SLOUGH) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1500	7725	5610	8500	10980	15360	4900	830	825	790	520	590
2	1525	7700	5570	7920	10930	15560	4000	800	780	790	520	630
3	1725	7580	5440	8150	10730	15830	3325	800	725	780	510	620
4	1875	7460	5250	8230	10720	15540	3000	810	700	775	500	630
5	1975	6920	4970	8170	10980	15060	2875	825	675	740	500	640
6	2250	6210	4760	8150	11230	14260	2675	800	710	810	500	640
7	2350	5750	4750	8180	11410	14630	3000	780	725	875	500	730
8	2350	5420	4580	8460	11390	15200	2300	720	800	930	510	780
9	2425	5280	4080	8840	11310	15310	2100	725	775	930	490	820
10	2575	5260	2980	9370	11230	14620	2075	790	775	875	490	880
11	2675	5220	3120	9130	11020	14010	1900	825	790	870	510	910
12	3075	5060	3360	9220	10560	13530	1750	810	890	870	490	930
13	3575	4990	3560	9660	10600	12810	1730	825	810	860	490	940
14	3300	5060	3770	9880	10650	12030	1720	800	940	870	510	940
15	3775	5110	4970	9860	11310	11320	1660	810	925	840	510	930
16	3000	5300	5560	9960	11990	10910	1675	810	900	910	540	910
17	4240	5650	5690	10160	12760	10800	1400	775	810	910	560	900
18	4850	5800	6130	9790	13090	10630	1320	845	875	830	600	880
19	4800	5800	6180	9350	12960	10660	1250	790	870	740	590	920
20	5410	5775	6435	9030	12680	10860	1200	725	950	670	580	1240
21	5930	5890	7220	8640	12620	11020	1170	690	1020	660	570	1480
22	5940	5960	8000	8710	12630	10500	1100	730	1020	630	550	1560
23	5340	5680	8960	9500	13150	10760	1050	710	990	600	550	1630
24	5670	5720	9730	9790	13400	10370	1000	720	950	570	560	1740
25	5670	5730	10390	10190	13220	9780	960	720	910	560	500	1790
26	*5900	5780	10570	10490	13440	8840	910	770	900	570	590	1900
27	*6280	5850	10450	10740	13900	8070	870	660	890	580	590	2000
28	*6420	5810	10270	11020	14600	7560	880	700	840	570	580	2040
29	6690	5690	9980	11160	14820	7350	830	760	800	570	580	2030
30	7320	—	9630	10850	15150	6200	790	740	760	560	590	2030
31	7620	—	9100	—	15500	—	730	790	—	540	—	2100
Mean	4146	5903	6486	9370	12289	11979	1813	770	844	734	536	1185
Runoff in Ac.Ft.	254936	339531	398807	557554	755623	712820	111461	47316	50241	45769	31894	72853
	Water Year Total 3324348								Calendar Year Total 3378805			

Station is maintained jointly by City of San Francisco (Hetch Hetchy Water Supply), Division of Water Resources, Modesto Irrigation District, and Turlock Irrigation District. Station is at Laird Slough Bridge, Mile 96.05 above mouth of San Joaquin River and 5 miles above the confluence of the Tuolumne River. High flows by-passing this station through old channel of San Joaquin River are included in this Table. Period of record 1931 to date. Records for 1952 computed by the City of San Francisco.

TABLE 123

FLOW OF SAN JOAQUIN RIVER AT HETCH HETCHY CROSSING - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4500	10900	8450	16670	18720	25050	7540	1350	1125	1175	1275	1975
2	3425	10800	8175	15700	18710	25150	6175	1375	1125	1150	1250	2075
3	3100	11100	7950	15530	18480	24250	5370	1350	1150	1150	1250	2125
4	3250	11250	8025	15580	18340	23350	4940	1350	1125	1125	1225	2075
5	3225	11175	7950	15500	18620	21900	4650	1350	1125	1100	1225	2100
6	3500	10600	7825	15400	19100	20590	4230	1325	1100	1125	1250	2125
7	3460	10250	7825	15700	19150	20740	3900	1300	1100	1150	1225	2150
8	3600	10600	7900	15940	19240	21870	3640	1300	1100	1275	1250	2200
9	3750	10625	7950	16300	19150	21970	3340	1275	1125	1550	1225	2300
10	3960	10450	7800	17080	19000	21690	3100	1275	1125	1650	1225	2400
11	4150	9750	7700	17360	19480	20250	2900	1275	1125	1650	1250	2510
12	4480	9375	7925	17180	18240	18640	2640	1275	1125	1675	1250	2540
13	5150	8950	8200	16500	18070	16510	2450	1250	1150	1700	1225	2510
14	5600	8250	8440	15740	19040	15230	2320	1250	1350	1700	1275	2510
15	5650	8375	9130	15640	20870	14730	2160	1250	1750	1700	1300	2375
16	8200	8250	10730	15820	22650	14580	2575	1250	1775	1850	1350	2475
17	9350	8200	12060	15820	25270	14400	2250	1250	1775	1900	1450	2650
18	9050	8175	12120	15820	26540	14380	2100	1250	1750	1775	1875	2650
19	8375	8325	12710	15140	26690	14260	2000	1250	1675	1625	2000	2725
20	8875	8475	13980	14600	27030	14310	1875	1250	1575	1550	2000	3000
21	8250	9550	15080	14500	27400	14480	1800	1200	1525	1475	2000	3260
22	8350	9025	15270	14730	27730	14550	1750	1200	1600	1450	2000	3400
23	8275	9600	13880	14900	28160	14260	1675	1200	1500	1400	2000	3550
24	8075	9625	13080	15280	27070	13850	1600	1175	1425	1375	1975	3750
25	8850	9500	13210	15530	25570	12860	1525	1175	1375	1350	1975	3600
26	12100	9250	13890	13670	25620	12030	1475	1150	1300	1350	2050	3600
27	14150	8725	15200	16460	26360	11270	1400	1150	1275	1350	2050	3800
28	14300	8575	20220	14920	27740	10740	1375	1125	1250	1325	2000	3950
29	13350	8525	16540	17760	27710	10250	1375	1125	1225	1300	1975	3875
30	12075	—	16630	16380	26220	9210	1350	1125	1200	1300	2000	3950
31	11150	—	16270	—	25100	—	1350	1125	—	1300	—	4175
Mean	7245	9491	11359	15839	22809	16912	2795	1244	1331	1437	1580	2851
Runoff in Ac.Ft.	445438	545950	698409	942486	1402453	1006314	171828	76463	79100	88364	94017	175299
	Water Year Total 5660911								Calendar Year Total 5726211			

Station is maintained jointly by City of San Francisco (Hetch Hetchy Water Supply) and Division of Water Resources. Station is at Mile 82.65 above mouth of San Joaquin River and 2.9 miles above the confluence of the Stanislaus River. Period of record 1936 to date. Records for 1952 computed by the City of San Francisco.

TABLE 124

FLOW OF SAN JOAQUIN RIVER NEAR VERNALIS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6370	12800	10100	20600	24100	33700	9170	1600	1520	1490	1760	2600
2	5300	12700	9900	20300	24400	33600	7270	1510	1490	1490	1750	2660
3	4710	13200	9620	20100	23900	33000	6180	1420	1380	1510	1710	2760
4	4640	14000	9550	20000	23800	32700	5670	1440	1330	1470	1700	2740
5	4520	14100	9580	19900	24100	32000	5250	1390	1300	1510	1700	2750
6	4680	13300	9460	19700	24600	31600	4800	1290	1290	1570	1700	2770
7	4600	12700	9460	19900	24700	31600	4710	1300	1390	1590	1700	2810
8	4700	12900	9610	20100	24800	31600	5110	1350	1510	1700	1670	2940
9	4880	13000	9660	20500	24800	30200	4570	1320	1560	1920	1670	3240
10	5000	12800	9500	21100	24700	30200	4340	1350	1480	2110	1690	3260
11	5140	12200	9340	21300	24100	29000	4170	1360	1560	2080	1780	3500
12	5380	11600	9620	21300	23800	26700	3860	1340	1550	2140	1820	3520
13	6200	11200	9880	20700	24100	24100	3710	1350	1620	2120	1830	3540
14	7070	10200	10200	20000	25400	21900	3590	1360	1720	2150	1880	3550
15	6780	9860	10700	19800	27200	20600	3490	1390	1970	2130	1940	3460
16	9740	9860	12800	19900	28800	20000	3120	1400	1990	2280	2000	3310
17	11300	9960	15000	20000	29800	19500	2850	1440	1970	2340	2100	3400
18	10900	9940	14800	20000	29900	19300	2610	1440	1970	2160	2430	3430
19	11100	9970	15000	19600	30200	19300	2460	1380	1880	2040	2580	3520
20	10900	10200	16400	19000	30600	19400	2280	1320	1790	1920	2690	3700
21	10100	10300	17700	18600	31200	19500	2190	1260	1350	1850	2760	3990
22	10100	10800	18700	18600	31600	19400	2110	1250	1880	1850	2780	4190
23	10100	11400	18300	18700	31600	19300	1990	1270	1690	1820	2780	4250
24	9980	11400	17100	18900	30200	18600	1900	1270	1650	1830	2760	4480
25	10500	11300	16800	19200	29300	17300	1760	1320	1600	1830	2760	4560
26	14000	11000	17200	19800	28800	15700	1710	1270	1550	1860	2730	4590
27	16100	10500	18400	20500	29000	14200	1640	1270	1550	1850	2660	4680
28	16300	10300	19600	21400	29400	13100	1550	1240	1560	1850	2600	4760
29	15800	10200	20500	22700	31600	12100	1520	1320	1520	1820	2550	4640
30	14300	—	20900	23600	33200	11000	1440	1360	1480	1800	2600	4750
31	13200	—	20800	—	33100	—	1420	1430	—	1760	—	5100
Mean	8851	11510	13750	20200	27640	23340	3498	1355	1620	1866	2169	3660
Runoff in Ac.Ft.	544200	661900	845300	1202000	1699000	1389000	215100	83330	96400	114700	129100	225000
	Water Year Total 7143630								Calendar Year Total 7205030			

This station is maintained jointly by the Division of Water Resources and the U. S. Geological Survey. It is located at Durham Ferry Bridge, 3 miles below the confluence of the Stanislaus River and is at Mile 76.7 above the mouth of the San Joaquin River. Drainage area is 14010 square miles. Period of record 1922 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 125

FLOW OF LITTLE DRY CREEK NEAR FRIANT - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	11	57	19	50	12	0.8	0.2				0	0.8
2	6.4	111	20	41	12	.8	.2				0	2.3
3	4.7	61	18	36	11	.7	.2				0	.9
4	3.6	52	30	34	10	.6	.1				0	.6
5	3.2	47	15	30	9.5	.6	.1				0	1.0
6	2.8	43	29	27	7.9	.5	.1				0	1.0
7	9.5	39	127	53	8.2	.6	.1				0	2.1
8	8.2	35	88	47	8.2	.6	0				0	10
9	6.1	31	69	38	7.0	.5	0				0	2.7
10	5.0	28	95	112	7.3	.8	0				0	1.5
11	4.7	43	153	111	7.0	.8	0				0	1.3
12	20	58	113	59	5.9	.8	0	N	N	N	0	1.2
13	45	35	106	47	5.2	.9	0	0	0	0	0	1.2
14	26	30	91	61	4.7	.8	0				.1	1.2
15	384	27	613	38	4.0	.8	0				.7	1.1
16	159	27	507	29	3.4	.7	0				.7	1.1
17	79	53	217	26	2.8	.6	0	F	F	F	2.0	1.1
18	79	31	256	23	2.5	.6	0	L	L	L	6.3	1.1
19	52	27	403	21	2.7	.7	0	0	0	0	16	1.5
20	54	25	244	20	2.4	.6	0	W	W	W	14	24
21	56	30	148	20	2.2	.6	0				10	9.0
22	39	24	109	18	2.2	.6	0				3.6	4.7
23	32	22	88	16	2.0	.6	0				.4	2.9
24	415	20	95	15	1.8	.4	0				.3	1.9
25	736	20	102	13	1.5	.4	0				.3	1.5
26	196	19	98	32	1.2	.3	0				.3	1.3
27	126	18	93	20	1.0	.2	0				.3	1.3
28	97	17	80	18	.8	.2	0				.3	1.5
29	79	17	73	15	.8	.2	0				.3	1.9
30	69	—	65	12	.8	.2	0				.3	45
31	61	—	58	—	.8	—	0		—		—	153
Mean	92.6	36.1	136	36.2	4.80	0.58	0.03	0	0	0	1.36	9.09
Runoff in Ac.Ft.	5690	2080	8370	2160	295	35	2	0	0	0	111	559
	Water Year Total 18964								Calendar Year Total 19302			

U. S. Geological Survey and U. S. Bureau of Reclamation cooperative station located 4 miles above the mouth. Little Dry Creek enters the San Joaquin River at Mile 264.0L. Drainage area is 58 square miles. Period of record 1937 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 126

FLOW OF JAMES (FRESNO SLOUGH) BY-PASS NEAR SAN JOAQUIN, CALIFORNIA - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	658	283	0	413	806	4460	647	0.6				
2	1410	207	0	213	985	4380	620	.6				
3	365	231	0	88	1160	4380	927	.5				
4	27	413	0	22	1140	4150	1360	.4				
5	9.9	708	0	19	1400	3880	1560	.4				
6	3.4	425	0	20	1670	3830	1600	.3				
7	1.3	305	0	254	1940	3860	1590	.2				
8	0	186	0	443	2140	3980	1480	.2				
9	0	72	0	545	2280	4130	1360	.2				
10	0	35	0	574	2300	4150	1400	.2				
11	0	30	0	210	2180	3980	1150	.1				
12	0	27	0	204	1760	3730	592	.1	N	N	N	N
13	0	17	0	507	1640	3270	448	.1	0	0	0	0
14	0	12	0	266	1840	2720	433	.1				
15	0	12	0	233	2030	1720	291	.1				
16	0	13	0	301	2340	1120	62	.1				
17	227	12	302	141	2670	1110	19	0	F	F	F	F
18	1450	16	1680	28	3130	1170	13	0	L	L	L	L
19	1880	26	2350	25	3440	1720	8.8	0	0	0	0	0
20	904	23	1600	306	3390	2110	6.1	0	W	W	W	W
21	540	13	1280	408	3350	2160	4.4	0				
22	269	5.7	1360	295	3680	1880	3.1	0				
23	99	5.7	842	106	3920	1590	2.2	0				
24	57	4.0	359	212	3960	1460	1.8	0				
25	41	1.2	159	335	3960	1390	1.4	0				
26	261	.1	37	544	4310	1330	1.3	0				
27	1600	0	15	789	4560	1060	1.0	0				
28	3160	0	48	1060	4560	368	1.0	0				
29	2830	0	275	923	4500	211	1.0	0				
30	1510	—	476	624	4500	535	1.0	0				
31	747	—	512	—	4580	—	.7	0	—		—	
Mean	582	106	364	337	2778	2528	503	0.14	0	0	0	0
Runoff in Ac.Ft.	35800	6110	22400	20050	170800	150400	30910	8	0	0	0	0
	Water Year Total 436478								Calendar Year Total 436478			

U. S. Geological Survey and U. S. Bureau of Reclamation cooperative station, also known as Fresno Slough By-Pass and Fresno Slough Cut-off. Station is located below Kerman-San Joaquin highway crossing on James By-Pass 5.8 miles above its confluence with Fresno Slough. James By-Pass enters Fresno Slough at Mile 11.3R above mouth of Fresno Slough. Period of record (including a station operated by King's River Water Association a short distance upstream) 1927 to 1932; 1935 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 127

FLOW OF PANOCHE CREEK NEAR PANOCHE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.9	2.7	1.2	4.4	1.9						0	72
2	1.6	2.1	1.3	4.1	1.9						0	40
3	1.6	1.9	1.0	3.6	1.8						0	12
4	1.2	1.8	1.1	3.6	1.8						0	3.4
5	1.2	1.8	.9	2.6	1.6						0	12
6	5.7	1.8	1.1	1.4	1.6						0	6
7	16	1.8	7.1	10	1.6						0	30
8	4.0	1.8	9.6	11	1.7						0	5
9	1.7	1.5	4.9	15	1.4						0	2
10	1.1	1.4	3.3	41	1.1						0	
11	1.0	1.4	11	16	1.0						0	
12	622	1.5	4.6	11	.9	N	N	N	N	N	0	
13	100	1.4	3.4	6.2	.8	0	0	0	0	0	0	*1
14	47	1.4	4.4	4.6	.6						0	
15	370	1.4	966	4.4	.5						43	
16	71	1.4	158	3.9	.4						1	
17	28	1.7	44	3.5	.1	F	F	F	F	F		
18	22	1.8	27	3.3	0	L	L	L	L	L		
19	13	2.0	40	3.1	0	0	0	0	0	0		3
20	8.5	1.9	32	3.1	0	W	W	W	W	W		40
21	6.8	2.4	16	2.9	0							15
22	4.6	1.8	11	2.8	0						*0.3	5
23	3.4	1.7	9.1	2.7	0							4
24	37	1.5	8	2.7	0							3
25	449	1.3	8	5.9	0							2
26	42	1.3	6.8	9.1	0							2
27	16	1.2	6.8	4.9	0							3
28	10	1.1	5.3	3.6	0							260
29	5.7	1.0	5.3	2.7	0							5.7
30	4.9	—	4.6	2.2	0							23
31	3.6	—	4.4	—	0	—			—		—	34
Mean	61.4	1.65	45.4	6.51	0.67	0	0	0	0	0	1.61	19.1
Runoff in Ac.Ft.	3770	95	2790	387	41	0	0	0	0	0	96	1170
	Water Year Total 7715								Calendar Year Total 8349			

U. S. Geological Survey and U. S. Bureau of Reclamation cooperative station located approximately 10 miles east of Panoche. Period of record October 1949 to date. Records for 1952 computed by U. S. Geological Survey.

* Estimated mean for period indicated.

TABLE 128

FLOW OF FRESNO RIVER NEAR DAULTON - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	236	292	234	435	248	150	114	54	5.8	8.0	9.0	23
2	160	466	236	420	248	147	106	45	5.8	8.0	10	54
3	108	349	187	405	251	136	106	24	5.8	10	10	56
4	84	289	187	381	244	135	109	17	6.2	9.0	10	41
5	80	269	180	366	233	136	109	17	6.2	8.0	9.0	40
6	77	249	194	352	229	142	102	17	6.2	8.0	9.0	46
7	105	233	456	446	226	144	97	17	6.6	8.0	9.0	102
8	101	220	415	525	233	144	97	16	6.6	8.0	10	236
9	78	204	312	386	222	142	97	13	6.6	9.0	11	104
10	63	192	409	554	222	150	102	13	6.6	10	12	67
11	61	212	588	616	219	142	93	13	8.0	10	12	58
12	100	315	525	460	219	147	88	13	11	11	12	52
13	427	228	510	425	215	147	90	13	11	11	14	43
14	281	223	425	638	212	150	93	12	10	9.0	24	36
15	1900	202	2870	465	212	150	90	11	8.0	7.0	59	36
16	1610	194	3170	415	198	150	88	11	6.6	9.0	45	40
17	651	236	1440	400	183	144	86	12	6.6	8.0	24	38
18	421	217	1260	376	170	136	80	11	6.6	8.0	17	34
19	321	190	2170	362	158	131	73	10	6.6	10	17	34
20	295	180	1570	343	150	126	65	9.0	7.0	13	17	186
21	335	228	1040	325	144	126	61	9.0	6.6	12	17	153
22	260	197	878	312	142	124	59	8.0	11	10	17	84
23	233	182	762	299	136	124	58	8.0	10	10	18	61
24	476	174	696	295	150	124	58	8.0	9.0	10	18	54
25	3760	164	660	307	164	124	58	8.0	9.0	9.0	20	52
26	1270	155	678	445	161	114	58	7.0	8.0	9.0	20	50
27	628	152	666	338	156	116	52	7.0	10	11	18	45
28	462	145	622	303	158	116	46	6.2	9.0	12	18	61
29	379	145	566	278	158	118	50	6.2	9.0	12	20	56
30	338	—	505	255	153	118	48	6.2	8.0	10	18	111
31	305	—	465	—	147	—	56	6.2	—	9.0	—	552
Mean	503	224	802	398	192	135	80.3	13.8	7.78	9.55	17.5	84.0
Runoff in Ac.Ft.	30950	12900	49340	23670	11820	8040	4940	849	463	587	1040	5170
	Water Year Total 151290								Calendar Year Total 149769			

U. S. Geological Survey and U. S. Bureau of Reclamation cooperative station located 5 miles southeast of Daulton. Drainage area 270 square miles. Fresno River is an east-side tributary to the San Joaquin River at Mile 184.0R. Period of record October 1941 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 129

FLOW OF SALT SLOUGH NEAR LOS BANOS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	83	650	623	828	1250	1350	369	146	71	49	36	65
2	82	558	592	828	1230	1380	339	139	72	52	36	69
3	81	411	525	840	1220	1390	293	142	77	49	36	72
4	77	378	479	852	1220	1390	299	147	77	47	56	69
5	77	435	458	918	1220	1380	294	140	73	50	49	65
6	77	465	369	973	1220	1340	297	134	68	58	48	73
7	81	486	237	997	1220	1320	308	112	64	60	48	86
8	85	549	179	1020	1230	1290	297	111	63	70	45	91
9	88	558	156	1040	1260	1250	282	114	57	52	44	93
10	88	472	156	1110	1280	1230	279	109	60	48	40	91
11	85	462	178	1170	1280	1230	273	125	69	48	38	91
12	87	505	174	1220	1280	1240	275	116	70	49	36	90
13	91	580	170	1260	1280	1260	279	110	78	46	36	86
14	96	657	194	1260	1280	1270	283	107	96	45	40	82
15	115	712	209	1250	1280	1260	274	103	113	45	44	78
16	132	742	224	1230	1280	1270	243	104	88	45	55	77
17	141	752	351	1210	1280	1260	233	104	87	42	55	76
18	143	752	594	1200	1280	1260	218	102	89	38	51	78
19	142	755	703	1180	1280	1230	207	114	98	32	48	85
20	140	772	760	1150	1290	1190	207	98	88	30	50	88
21	136	785	805	1150	1300	1180	182	89	93	32	51	90
22	139	772	838	1150	1290	1200	174	86	86	36	52	91
23	157	755	855	1170	1290	1200	168	97	80	34	52	93
24	161	708	868	1170	1300	1190	155	95	70	33	59	100
25	209	676	872	1180	1320	1190	146	94	63	32	62	103
26	248	659	865	1210	1320	1180	150	110	55	34	65	103
27	231	652	845	1240	1320	1130	152	107	49	38	64	105
28	238	646	825	1250	1330	811	157	101	47	39	62	108
29	269	635	830	1260	1340	489	150	92	53	39	63	109
30	429	—	885	1260	1340	406	148	83	46	38	62	113
31	600	—	855	—	1340	—	167	73	—	37	—	113
Mean	155	619	538	1119	1279	1192	235	110	73.3	43.5	49.4	88.2
Runoff in Ac.Ft.	9540	35580	33070	66600	78640	70940	14480	6750	4360	2670	2940	5420
	Water Year Total 327110								Calendar Year Total 330990			

U. S. Geological Survey and U. S. Bureau of Reclamation cooperative station located at San Luis Ranch approximately 7 miles north of Los Banos. Salt Slough is an overflow channel of the San Joaquin River. Period of record 1941 to date. Record for 1952 computed by U. S. Geological Survey.

TABLE 130

FLOW OF CHOWCHILLA RIVER AT BUCHANAN DAM SITE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	266	345	248	432	184	54	23	5.7	0.5	1.1	3.1	13
2	170	558	218	414	180	54	22	5.7	.5	.9	3.3	34
3	130	394	172	390	174	51	20	4.6	.5	.8	3.6	39
4	109	330	174	371	169	48	19	3.8	.5	.7	3.7	27
5	95	299	164	348	161	45	17	3.3	.5	.7	4.0	23
6	91	274	175	330	156	43	16	2.9	.5	.6	4.1	27
7	217	252	468	406	158	45	15	2.7	.5	.6	4.0	112
8	164	236	449	411	174	44	14	2.4	.5	.7	4.0	318
9	126	218	330	333	154	43	13	2.3	.5	.8	4.1	87
10	109	206	781	422	148	47	14	2.1	1.0	1.0	4.1	52
11	104	245	734	450	141	43	14	2.0	1.5	1.3	4.4	39
12	329	310	530	342	136	42	13	2.0	2.5	1.7	4.8	34
13	699	225	491	318	130	41	11	2.0	2.0	1.8	5.9	30
14	459	204	425	654	126	39	10	2.0	1.5	1.7	12	27
15	2390	205	2250	394	122	38	9.8	2.0	1.5	1.6	33	26
16	3020	205	2640	333	116	36	8.8	1.8	1.5	1.8	34	24
17	806	310	1310	304	109	34	8.4	1.7	1.5	1.8	22	23
18	496	250	1110	285	103	31	7.6	1.5	1.5	2.0	15	22
19	358	210	2550	267	98	29	6.5	1.4	1.5	2.1	13	23
20	333	220	1590	262	95	27	6.1	1.2	1.5	2.3	12	179
21	379	260	1010	243	92	26	5.4	1.1	1.4	2.5	11	129
22	267	220	819	229	87	25	5.2	1.0	1.1	2.8	10	65
23	236	190	722	221	82	26	5.0	.8	1.1	3.0	10	50
24	742	180	663	212	77	27	5.0	.8	1.1	3.0	11	42
25	4950	174	646	229	71	27	4.8	.7	1.1	2.9	10	37
26	1580	169	659	330	67	27	4.6	.6	.8	3.0	9.9	34
27	772	162	650	245	64	27	4.6	.6	.8	3.1	9.9	32
28	580	156	621	227	60	27	4.1	.6	.6	3.1	9.9	49
29	476	172	575	208	58	27	3.8	.6	.5	3.0	9.9	47
30	411	—	518	191	56	26	4.0	.5	.6	3.0	10	235
31	361	—	468	—	54	—	4.4	.5	—	3.0	—	807
Mean	685	248	779	327	116	36.6	10.3	1.96	1.04	1.88	9.86	86.6
Runoff in Ac.Ft.	42100	14240	47920	19440	7140	2180	633	121	62	116	587	5330
	Water Year Total 146907								Calendar Year Total 139869			

U. S. Geological Survey and Division of Water Resources cooperative station located 5 miles west of Raymond. Drainage area 238 square miles. Chowchilla River is an east-side tributary to the San Joaquin River at Mile 151.0R. Period of record October 1921 to September 1923, October 1930 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 131

FLOW OF SAN LUIS CREEK NEAR LOS BANOS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	22	19	4.4	5.4	3.9	2.5	1.4	0.6	0.1	0.4	1.0	1.5
2	7.6	48	4.4	5.4	3.9	2.5	1.4	.5	.1	.5	1.0	1.5
3	4.1	28	3.9	5.4	3.9	2.5	1.4	.5	.4	.5	1.0	1.3
4	3.2	21	3.9	5.4	3.9	2.1	1.4	.4	.4	.5	1.0	1.3
5	2.7	17	3.9	5.4	3.4	1.8	1.4	.2	.6	.5	1.2	1.7
6	3.0	14	5.4	5.4	3.4	2.1	1.4	.1	.6	.5	1.2	1.5
7	5.8	13	21	6.0	3.9	2.1	1.4	.1	.6	.6	1.2	52.0
8	6.4	10	19	6.5	3.4	2.1	1.2	.1	.6	.6	1.2	17.0
9	5.5	7.5	10	6.5	3.4	1.8	.6	.2	.6	.6	1.2	4.6
10	5.0	5.4	7.0	9.1	3.4	1.5	.3	.5	.8	.6	1.2	1.3
11	4.5	4.9	8.0	6.0	2.9	0.8	.4	.6	1.0	.6	1.2	1.2
12	201	5.4	7.0	4.9	3.4	1.0	.5	.8	.8	.7	1.2	1.2
13	124	4.4	14	4.4	3.4	1.5	1.0	.8	.6	.7	1.3	1.0
14	476	4.4	13	4.4	2.9	1.8	1.0	.8	.2	.8	1.3	1.3
15	644	4.4	67	4.4	2.5	1.6	1.0	.8	.2	.8	2.2	1.0
16	427	4.9	94	3.9	2.5	1.6	.8	1.0	.2	.8	1.7	1.0
17	137	4.9	48	3.9	2.9	1.5	.8	.8	.4	.8	1.3	1.0
18	62	4.4	42	3.9	2.9	1.5	.8	.8	.6	.7	1.3	1.0
19	34	4.4	279	4.4	2.5	1.5	.8	.8	.6	.8	1.3	1.3
20	31	4.9	184	3.4	1.4	1.5	.8	1.0	.6	.8	1.3	1.3
21	34	11	73	3.4	1.5	1.5	.8	.8	.5	.8	1.3	1.2
22	25	8.0	44	3.4	1.5	1.5	.6	1.0	.4	.8	1.2	1.0
23	21	7.0	30	3.9	1.6	1.5	.6	1.0	.4	1.0	1.2	1.0
24	93	6.0	22	3.9	2.1	1.5	.5	1.0	.6	1.2	1.2	1.2
25	788	4.9	16	3.9	2.9	1.5	.2	.5	.5	1.2	1.2	1.2
26	211	4.9	13	4.9	2.9	1.5	.2	.4	.5	1.3	1.2	1.0
27	90	4.9	10	4.9	2.9	1.0	.2	.2	.5	1.3	1.2	1.2
28	54	4.9	8.5	4.4	2.9	.8	.2	.1	.4	1.3	1.3	1.2
29	38	4.4	7.0	3.9	2.5	.8	.2	0	.4	1.3	1.3	1.2
30	29	—	6.5	3.9	2.5	1.4	.4	.1	.4	1.2	1.3	3.8
31	22	—	6.0	—	2.5	—	.6	0	—	1.0	—	23
Mean	116	9.86	34.7	4.82	2.89	1.61	0.78	0.53	0.49	0.81	1.26	4.26
Runoff in Ac.Ft.	7160	567	2130	287	178	96	48	33	29	50	75	262
	Water Year Total 11550								Calendar Year Total 10915			

U. S. Geological Survey and U. S. Bureau of Reclamation cooperative station located approximately 12 miles west of Los Banos. San Luis Creek is a west-side tributary to the San Joaquin River via Los Banos Creek. Period of record October 1949 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 132

FLOW OF BEAR CREEK ABOVE SAN JOAQUIN RIVER - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	937	2090	1180	1770	1920	2000	410	48	106	153	42	22
2	1400	1950	1120	1760	1910	2070	420	42	109	141	41	33
3	1110	1720	1060	1740	1880	2080	430	56	107	136	38	36
4	920	1610	1010	1720	1850	2080	400	55	98	134	33	34
5	730	1530	990	1730	1800	2040	370	48	98	127	32	26
6	530	1410	920	1670	1790	2060	290	31	101	143	29	29
7	470	1340	860	1630	1800	2100	256	38	112	160	28	48
8	560	1320	720	1690	1760	2110	285	48	128	140	27	66
9	975	1230	790	1740	1780	2100	227	47	138	123	26	88
10	1160	1070	990	1960	1780	2100	183	53	142	132	25	130
11	890	1120	1000	1980	1780	2080	152	56	152	150	23	140
12	700	1180	1090	2080	1800	2050	130	59	170	152	19	151
13	640	1270	1290	2110	1810	2090	126	60	172	143	18	125
14	860	1330	1410	2140	1820	2090	103	64	190	159	21	109
15	1580	1370	1450	2100	1760	2110	103	68	203	187	35	97
16	2080	1350	1570	2130	1740	2160	102	72	208	148	62	91
17	3640	1340	2540	2150	1730	2160	101	78	216	164	61	79
18	4030	1320	2980	2140	1700	2100	90	81	222	121	35	67
19	3040	1340	2680	2070	1690	1960	84	87	237	110	41	61
20	2510	1360	2620	2030	1730	1860	82	84	237	108	34	69
21	2170	1400	3100	2010	1740	1690	77	79	238	88	32	81
22	2010	1360	3100	1920	1730	1530	79	80	249	70	31	200
23	2000	1340	2890	1720	1690	1460	76	78	248	65	32	227
24	1830	1350	2770	1700	1790	1390	72	66	224	67	30	222
25	1920	1330	2550	1730	1830	1380	67	53	206	71	29	410
26	2840	1270	2560	1850	1870	1350	60	50	156	68	22	262
27	4090	1280	2270	1920	1900	1260	60	81	131	63	18	216
28	2910	1220	2280	2010	1970	697	57	97	158	62	18	162
29	2600	1220	1980	1970	2010	450	51	80	172	59	18	125
30	2390	—	1820	1950	2000	440	49	79	165	53	18	135
31	2190	—	1790	—	1970	—	46	95	—	47	—	177
Mean	1797	1380	1786	1904	1817	1768	162	65	170	114	31	120
Runoff in Ac.Ft.	110505	79380	109846	113298	111730	105219	9993	4013	10116	7030	1821	7375
	Water Year Total 666668								Calendar Year Total 670326			

U. S. Bureau of Reclamation station located about one mile above the mouth. Bear Creek is an east-side tributary to the San Joaquin River at Mile 140.5R. Period of record 1940 to date. Record of flow during 1951 is given in Table 168 of this report.

TABLE 133

FLOW OF MERCED RIVER AT EXCHEQUER - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	48	1180	1190	3060	4680	9390	2010	1860	1530	1150	49	24
2	224	1220	1190	2190	4850	7850	2010	1810	1530	1160	49	24
3	1020	1210	1190	2670	5530	7430	2010	1800	1530	1160	49	24
4	1010	1190	1180	2640	5980	7270	2010	1780	1540	1190	37	24
5	1010	1190	1180	2920	5840	9350	2020	1800	1580	1230	26	24
6	999	1200	1180	3210	5580	9170	2020	1800	1580	1270	23	24
7	1010	1210	1180	3710	5710	7960	2010	1830	1570	1310	23	26
8	1010	1180	1180	4260	5270	7060	2000	1800	1570	1320	23	25
9	990	1190	1180	2520	4590	7430	2000	1790	1520	1030	23	24
10	990	1200	1180	3240	4560	5610	2000	1780	1460	267	23	24
11	991	1210	1180	2980	5830	4600	2000	1740	1410	66	23	27
12	1010	1190	1190	2450	6910	4170	1970	1720	1340	66	22	36
13	1010	1190	1190	2500	7820	3780	1920	1720	1290	66	23	39
14	1030	1200	1170	3090	8090	3770	1870	1740	1220	66	23	34
15	1070	1200	1220	2030	7920	3830	1920	1770	1190	66	23	33
16	1110	1200	1220	1390	6940	3890	1860	1730	1190	66	23	484
17	1110	1200	1230	1390	6900	4380	1840	1660	1190	66	23	1040
18	1110	1200	1240	1370	7060	4880	1840	1650	1190	66	23	1100
19	1100	1220	1250	1610	8060	4950	1870	1640	1190	66	23	1090
20	1120	1200	1250	3490	8260	4850	1870	1640	1180	66	23	1090
21	1110	1190	1250	3900	8120	4110	1860	1620	1170	66	23	1080
22	1100	1190	1240	4320	7340	4040	1850	1600	1170	66	23	1080
23	1110	1200	1240	4770	8000	2880	1860	1620	1160	66	23	1080
24	1130	1190	1250	3850	8850	2480	1870	1620	1170	66	23	1070
25	1170	1190	1250	5300	9450	2480	1880	1620	1160	66	23	1070
26	1170	1180	1260	4840	9300	2480	1880	1640	1150	66	23	1070
27	1180	1190	1260	3930	9210	2480	1880	1640	1150	66	23	1070
28	1190	1200	1260	4730	9810	2480	1880	1640	1150	66	23	1060
29	1180	1190	1200	4880	9130	2480	1890	1640	1150	60	23	1060
30	1170	—	1200	4290	9190	2140	1900	1630	1150	43	23	1060
31	1180	—	2200	—	9930	—	1900	1590	—	44	—	1060
Mean	1021	1197	1245	3251	7249	4989	1926	1707	1313	401	26.1	548
Runoff in Ac.Ft.	62800	68830	76520	193400	445700	296900	118400	105000	78110	24640	1560	33670
	Water Year Total 1455220								Calendar Year Total 1505530			

U. S. Geological Survey and Merced Irrigation District cooperative station located 0.5 mile downstream from Lake McClure. Drainage area is 1035 square miles. Period of record 1922 to date. (Prior records available at a site 1 mile upstream.) Records for 1952 computed by U. S. Geological Survey.

TABLE 134

FLOW OF MERCED RIVER BELOW SNELLING - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	38	NR	NR	NR	4310	8510	339	23	NR			
2	31	NR	NR	NR	4350	6440	335	27	NR			
3	833	NR	NR	NR	4860	5930	285	27	NR			
4	1020	NR	NR	NR	5430	4940	273	NR	NR			
5	990	NR	NR	NR	5170	8330	252	NR	(a)10.2			
6	982	NR	NR	NR	4760	8030	249	NR	NR			
7	1140	NR	NR	NR	4710	7470	266	NR	NR			
8	1050	NR	176	NR	4450	6050	277	(a)14.2	NR			
9	974	NR	192	NR	3620	6300	259	NR	NR			
10	950	NR	203	2510	3310	5500	236	NR	NR			
11	934	NR	220	2730	4550	3850	216	NR	NR			
12	1060	NR	233	2010	5720	3550	200	NR	NR	N	N	N
13	950	(a)410	259	1980	6780	2880	171	NR	NR	O	O	O
14	966	NR	300	2350	7130	2810	154	NR	NR			
15	1430	NR	192	2030	6970	2840	154	NR	NR			
16	NR	NR	130	777	5500	2900	125	NR	NR			
17	NR	NR	NR	725	5600	3200	111	NR	NR	R	R	R
18	NR	NR	NR	673	5380	3710	105	NR	NR	E	E	E
19	NR	NR	NR	537	6150	3830	99	NR	NR	C	C	C
20	NR	NR	NR	2380	6680	3740	90	NR	NR	O	O	O
21	NR	NR	(a)451	3000	6730	3260	72	NR	NR	R	R	R
22	NR	NR	NR	3620	6000	2930	81	NR	NR	D	D	D
23	NR	NR	NR	4160	6170	1630	74	NR	(a)19.0			
24	NR	NR	NR	4390	6970	870	41	NR	NR			
25	NR	NR	NR	4760	7690	822	34	NR	NR			
26	NR	NR	NR	5290	7940	814	31	NR	NR			
27	NR	NR	NR	3940	7860	708	29	(a)10.5	NR			
28	NR	NR	NR	4040	8300	770	27	NR	NR			
29	NR	NR	NR	4920	8090	758	24	NR	NR			
30	NR	—	NR	3920	7740	537	23	NR	NR			
31	NR	—	NR	—	8240	—	24	NR	—		—	
Mean					6037	3800	150					
Runoff in Ac.Ft.					371200	226100	9235					
	Water Year Total								Calendar Year Total			

Division of Water Resources station located at Merced-Snelling highway bridge Mile 42.1 above mouth. This station was formerly known as Merced River at Yosemite Valley Railroad Crossing. Period of record 1930 to date. The highway bridge on which this recorder is located was under reconstruction during 1952 making it impossible to obtain a continuous record of the flows.

NR No record.
(a) Current meter measurement.

TABLE 135

FLOW OF MERCED RIVER AT CRESSEY BRIDGE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	349	1320	1280	2560	4070	8490	577	98	115	167	81	84
2	220	1340	1280	2490	4330	6960	494	98	138	171	80	92
3	260	1350	1280	2140	4520	6330	435	98	112	190	76	90
4	989	1310	1280	2300	5150	5610	388	94	110	189	75	91
5	1080	1300	1280	2120	5170	7840	376	82	103	193	75	91
6	1090	1300	1290	2480	4900	7800	340	87	111	207	73	93
7	1260	1280	1340	2660	4660	7530	358	90	112	216	74	94
8	1390	1290	1420	3370	4660	5960	388	82	117	227	94	102
9	1240	1290	1360	2080	3820	5700	383	84	117	242	99	105
10	1150	1280	1340	2260	3280	5600	356	88	115	227	91	104
11	1100	1290	1360	2840	3840	3570	323	91	124	195	87	98
12	1120	1330	1360	2380	5030	3160	303	80	142	169	80	94
13	1710	1330	1410	2120	6150	2460	280	91	143	145	76	94
14	1300	1300	1400	2200	6820	2340	252	96	153	124	75	93
15	3180	1290	1730	2760	6920	2320	203	96	159	112	82	93
16	4080	1280	3060	1250	5880	2400	209	97	146	111	87	92
17	1750	1290	1860	1050	5990	2520	166	100	158	112	85	92
18	1460	1330	1610	982	5410	3070	153	107	153	115	82	844
19	1350	1310	2140	880	5830	3340	142	119	164	108	80	1110
20	1310	1310	2080	1540	6660	3340	142	135	181	104	80	1250
21	1510	1320	1660	2780	6730	3110	128	131	191	100	79	1170
22	1380	1320	1540	3250	6240	2630	117	119	191	100	81	1170
23	1280	1300	1500	3810	5830	2450	119	98	193	96	80	1170
24	1290	1300	1480	4120	6620	1200	114	102	181	96	80	1180
25	3290	1290	1460	4280	7530	1060	103	112	186	92	80	1210
26	2010	1290	1460	5010	7980	1000	91	99	190	94	80	1160
27	1500	1280	1460	4380	7670	972	90	100	200	88	81	1180
28	1400	1290	1680	3660	7890	964	90	110	190	87	84	1200
29	1360	1290	1470	4670	8150	940	94	111	181	82	81	1200
30	1340	—	1380	4230	7380	919	94	119	181	81	81	1240
31	1320	—	1390	—	7990	—	96	118	—	81	—	1210
Mean	1454	1303	1537	2755	6906	3720	239	101	152	140	81.3	600
Runoff in Ac.Ft.	89390	71980	94490	163900	363200	221300	14690	6212	9039	8538	4338	36880
	Water Year Total 1059002								Calendar Year Total 1087507			

Division of Water Resources station located at Cressey Bridge, Mile 27.6 above mouth. Period of record 1941 to date.

TABLE 136

FLOW OF MERCED RIVER NEAR STEVINSON - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	622	1560	1340	1700	4080	8260	997	266	273	306	151	174
2	442	1540	1330	2560	4140	8670	765	263	260	271	152	178
3	349	1540	1340	2230	4250	7300	692	273	263	263	156	179
4	451	1530	1350	2220	4570	6550	648	284	261	290	152	176
5	865	1470	1350	2280	4950	5920	601	266	262	318	153	176
6	974	1450	1350	2240	4930	7630	594	263	278	345	154	179
7	1030	1430	1350	2550	4670	7950	567	257	311	354	156	183
8	1290	1420	1400	2800	4590	7500	540	263	316	350	157	188
9	1270	1420	1410	3100	4380	6180	522	272	319	324	172	189
10	1210	1410	1360	2230	3750	5940	516	296	303	339	178	190
11	1150	1400	1350	2650	3530	5340	502	301	315	329	167	188
12	1140	1400	1340	2820	4220	3890	510	290	338	298	161	182
13	1390	1450	1390	2400	5040	3350	534	257	341	259	161	178
14	1560	1420	1400	2320	5750	2920	506	254	340	241	165	175
15	1630	1400	1420	2580	6400	2830	451	257	333	244	175	175
16	3670	1400	2120	2460	6800	2810	394	270	332	279	186	174
17	2930	1390	2620	1610	6170	2760	375	267	310	228	182	175
18	1750	1400	1790	1480	5940	2930	357	269	298	202	174	212
19	1570	1410	1770	1400	5660	3350	342	233	296	193	171	703
20	1500	1390	2250	1310	5970	3450	340	230	328	182	168	981
21	1520	1390	2000	2220	6530	3390	335	251	328	171	168	1100
22	1620	1390	1810	2880	6750	3050	311	275	338	164	168	1090
23	1470	1400	1790	3370	6390	2810	290	269	331	158	171	1120
24	1430	1380	1850	3780	6190	2070	281	267	337	154	171	1140
25	1980	1370	1870	4060	6700	1400	263	283	340	154	168	1150
26	3160	1370	1870	4420	7470	1260	258	270	338	156	174	1150
27	1950	1370	1830	4760	8000	1200	294	269	305	158	175	1160
28	1670	1360	1880	4090	7830	1220	296	264	310	156	176	1170
29	1630	1350	1830	3990	8060	1230	274	262	318	154	169	1180
30	1600	—	1670	4580	8180	1180	257	267	307	152	172	1190
31	1580	—	1580	—	7660	—	268	281	—	158	—	1470
Mean	1497	1421	1645	2770	5792	4145	448	267	311	237	167	577
Runoff in Ac.Ft.	92040	81740	101200	164800	356100	246600	27530	16440	18500	14580	9920	35450
	Water Year Total 1141060								Calendar Year Total 1164900			

U. S. Geological Survey, U. S. Bureau of Reclamation, and Division of Water Resources cooperative station, also known as Merced River below Stevinson Drain, located at Mile 4.6R above mouth. Drainage area is 1274 square miles. Period of record 1944 to date (Prior records available at a site 3.5 miles downstream). Records for 1952 computed by U. S. Geological Survey.

TABLE 137

FLOW OF MERCED RIVER SLOUGH NEAR NEWMAN - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.0	253	106	324	838	3070	48					
2	.8	243	101	433	841	3410	14					
3	.1	230	97	402	861	2770	5.9					
4	.1	192	94	392	912	2270	2.8					
5	2.9	147	87	405	1010	1910	1.3					
6	6.3	124	84	396	1020	2500	1.2					
7	9.2	113	83	442	971	2820	1.1					
8	28	106	82	486	936	2750	1.0					
9	28	104	73	544	903	2080	.8					
10	24	104	63	419	772	1850	.7					
11	19	96	63	468	703	1640	.7					
12	17	92	65	519	819	1100	.7	N	N	N	N	N
13	39	97	72	472	1000	852	.7	0	0	0	0	0
14	69	99	81	461	1300	674	.7					
15	73	104	91	499	1640	637	.5					
16	466	112	212	515	2040	633	.4					
17	398	116	345	384	1830	621	.4	F	F	F	F	F
18	163	121	208	350	1650	639	.4	L	L	L	L	L
19	148	121	233	327	1490	718	.4	O	O	O	O	O
20	163	121	370	306	1540	744	.3	W	W	W	W	W
21	163	121	378	429	1800	725	.3					
22	168	125	375	548	1990	648	.3					
23	131	128	419	637	1900	572	.2					
24	115	124	473	725	1720	455	.2					
25	168	121	503	784	1920	313	.2					
26	432	121	502	858	2400	259	.2					
27	247	117	484	950	2860	226	.1					
28	224	113	466	841	2900	210	.1					
29	253	118	433	800	3000	172	.1					
30	262	—	379	918	3200	99	.1					
31	257	—	332	—	2900	—	.1		—		—	
Mean	132	130	237	534	1602	1246	2.71	0	0	0	0	0
Runoff in Ac.Ft.	8090	7500	14590	31800	98510	74120	166	0	0	0	0	0
	Water Year Total 234776								Calendar Year Total 234776			

U. S. Geological Survey, U. S. Bureau of Reclamation, and Division of Water Resources cooperative station, also known as Merced River Slough near Hills Ferry Road Bridge. located 500 feet downstream from the head of the slough between Merced River and San Joaquin River. This station records the flow which at high stages in the Merced River by-passes the Hills Ferry Road bridge and reaches the San Joaquin River at Mile 122.2 at a point below the Newman gaging station. Period of record 1941 to date. Records for 1952 computed by the U. S. Geological Survey.

TABLE 138

FLOW OF ORESTIMBA CREEK NEAR NEWMAN - 1952.

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	51	60	12	32	8.0	0.1						0
2	32	74	11	30	7.6	.1						0
3	19	58	10	29	7.2	.1						0
4	12	48	10	27	6.8	0						0
5	8.4	44	10	26	6.4	0						0
6	8.0	41	23	24	5.8	0						0
7	12	37	137	30	5.5	0						37
8	17	33	74	41	5.2	0						20
9	17	30	51	29	4.8	0						0
10	15	28	40	64	4.5	0						0
11	15	27	34	48	3.6	0						0
12	1450	25	30	33	2.9	0	N	N	N	N	N	0
13	460	23	30	28	2.3	0	0	0	0	0	0	0
14	799	21	214	27	2.1	0						0
15	887	20	1070	23	1.9	0						0
16	406	20	400	21	1.3	0						0
17	267	20	212	19	1.1	0	F	F	F	F	F	0
18	183	19	183	18	.9	0	L	L	L	L	L	0
19	124	18	216	15	.7	0	O	O	O	O	O	O
20	97	18	168	13	.6	0	W	W	W	W	W	7.0
21	78	22	127	12	.7	0						14
22	60	20	101	11	.6	0						4.1
23	51	18	88	11	.4	0						1.9
24	110	18	76	12	.3	0						1.0
25	1090	15	65	11	.3	0						.2
26	383	15	56	12	.3	0						0
27	196	14	50	12	.3	0						0
28	134	13	45	10	.2	0						0
29	105	12	41	9.7	.2	0						.1
30	86	—	37	8.9	.2	0						2.7
31	73	—	34	—	.1	—			—		—	65
Mean	234	28.0	118	22.9	2.67	0.01	0	0	0	0	0	4.94
Runoff in Ac.Ft.	14370	1610	7250	1360	164	1	0	0	0	0	0	303
	Water Year Total 26385								Calendar Year Total 25058			

U. S. Geological Survey and Division of Water Resources cooperative station located at highway bridge five miles west of Newman. Orestimba Creek is a west-side tributary to the San Joaquin River at Mile 115. Period of record 1932 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 139

FLOW OF TUOLUMNE RIVER ABOVE LA GRANGE DAM - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	982	3060	1940	8120	9500	10100	3570	3200	1710	1710	1380	1630
2	1500	3030	1880	8090	9470	10100	3570	2260	1910	1730	1320	1550
3	1390	2890	2220	8120	9460	10100	3570	2070	1880	1660	1410	1530
4	1440	3020	2240	8100	9820	10000	3550	2050	1850	1570	1410	1530
5	1410	3030	2230	8360	10000	10000	3210	1950	1870	1460	1330	1560
6	1170	3560	2190	8740	10000	10100	3210	1960	1860	1630	1400	1510
7	1470	4180	2180	9020	10000	10000	3180	2000	1770	1490	1430	1420
8	1340	4190	2620	9050	10000	10000	3170	1980	1860	1460	1350	1520
9	1620	3830	2940	9110	9980	9980	3140	1910	1880	1380	1270	1630
10	1680	2960	3300	9080	9960	9950	2620	1890	1880	1460	1500	1620
11	1670	3060	3320	8450	9950	9600	2270	1930	1890	1310	1360	1660
12	1750	2340	3300	7100	9920	7880	2260	1930	1820	1170	1420	1650
13	1500	2180	3300	6640	10300	7240	2250	1880	1660	1480	1410	1670
14	1880	2200	3300	7000	10600	7240	2250	1800	1620	1420	1400	1590
15	2260	2220	3690	6980	11100	7240	2240	1840	1710	1420	1380	1840
16	3020	2140	4080	6890	11300	7240	2240	1790	1690	1320	1280	2020
17	3350	1920	5200	6900	11200	7250	2240	1780	1700	1310	1400	2040
18	3870	2210	5870	6890	11200	7250	2370	1820	1830	1210	1410	2000
19	2430	2210	7160	6700	11200	7260	3250	1830	1780	1110	1430	2060
20	1820	2210	8150	7250	11300	7310	2420	1840	1780	1320	1430	1940
21	1980	2900	6760	8100	11300	7300	2370	1830	1750	1330	1440	1900
22	1980	3230	3440	8260	11000	6470	2400	1830	1770	1360	1430	2080
23	1990	3260	2970	8520	10700	5670	2060	1850	1810	1350	1320	2140
24	2610	3030	3300	8520	10100	4830	2050	1830	1630	1360	1490	2160
25	5400	2590	4480	8520	10000	4810	2050	1800	1680	1330	1520	2080
26	7730	2160	6410	9200	9980	4690	2040	1840	1700	1230	1560	2160
27	6950	2220	7220	9420	10000	4690	2050	1810	1640	1360	1410	2130
28	5000	2220	8100	9470	10000	3880	2280	1810	1360	1390	1570	2070
29	3390	2230	7790	9460	10100	3560	3160	1800	1670	1400	1480	2160
30	3060	—	7730	9420	10100	3570	3890	1780	1700	1380	1390	2180
31	3050	—	8020	—	10100	—	3300	1620	—	1380	—	2170
Mean	2603	2768	4430	8183	10310	7510	2717	1920	1755	1403	1413	1845
Runoff in Ac.Ft.	160100	159200	272400	486900	634000	446900	167100	118000	104400	86260	84060	113500
	Water Year Total 2764870								Calendar Year Total 2832820			

U. S. Geological Survey station located 0.5 mile downstream from Don Pedro Dam and 3.5 miles upstream from La Grange Dam. Drainage area is 1540 square miles. Period of record 1915 to date. (Prior records available at a site 3.5 miles downstream.) Records for 1952 computed by U. S. Geological Survey.

TABLE 140

FLOW OF TUOLUMNE RIVER AT LA GRANGE BRIDGE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	996	3010	2020	7000	7590	7180	420	17	17	15	474	1480
2	1300	3000	1990	6980	7610	7120	576	10	11	15	478	1400
3	1310	2870	2360	7000	7610	7050	701	9.3	12	16	492	1400
4	1330	2940	2360	7000	7910	7020	644	9.3	12	15	478	1410
5	1380	3020	2360	7110	7870	7020	344	10	12	15	478	1430
6	1040	3420	2370	6930	7720	7000	247	10	11	18	487	1390
7	1430	4080	2390	6970	7630	7000	126	10	11	299	482	1270
8	1280	4080	2630	7040	7580	6970	84	11	12	469	487	1390
9	1490	3790	3200	7040	7560	6980	84	11	12	469	487	1430
10	1600	2910	3590	7190	7470	6980	21	11	14	469	492	1500
11	1540	2990	3600	6780	7400	6810	19	11	16	474	492	1540
12	1670	2380	3630	5430	7380	4850	18	11	69	469	505	1550
13	1440	2120	3640	4970	7800	4200	18	11	469	469	514	1580
14	1900	2130	3610	5360	8030	4200	17	11	428	464	510	1510
15	2370	2190	4140	5360	8340	4200	16	11	464	469	505	1770
16	2990	2080	4550	5290	8630	4180	16	11	464	474	929	1970
17	3260	1900	5390	5280	8450	4190	16	12	288	469	1300	1980
18	3880	2150	6030	5280	8360	4180	15	12	24	474	1300	1960
19	2450	2170	7110	5090	8380	4200	15	12	20	474	1300	2010
20	1780	2200	8050	5560	8340	4200	16	12	20	474	1320	1880
21	1910	2860	6980	6130	8360	4200	15	12	19	474	1330	1810
22	1880	3250	3940	6110	7940	3530	67	12	20	478	1300	1990
23	1890	3280	3380	6310	7700	2800	14	13	18	478	1210	2080
24	2440	3340	3710	6060	7230	1810	9.3	13	18	478	1370	2140
25	4780	2820	4610	6000	7020	1680	7.2	12	19	474	1380	2070
26	7110	2230	6160	6620	7000	1670	7.2	12	18	474	1390	2100
27	6420	2300	6140	7040	7000	1620	7.2	11	18	482	1240	2080
28	4870	2310	6130	7180	7040	868	7.2	11	18	482	1410	2040
29	3440	2340	6450	7540	7140	424	22	12	23	478	1350	2100
30	3460	—	6650	7590	7230	424	404	11	18	482	1230	2260
31	3460	—	7070	—	7180	—	41	11	—	492	—	2160
Mean	2519	2764	4395	6375	7694	4485	129	11.4	85.8	380	891	1764
Runoff in Ac.Ft.	154900	159300	270200	379300	473100	266900	7962	699	5107	23370	53000	108500
	Water Year Total 1854508								Calendar Year Total 1902038			

Division of Water Resources station located at Mile 50.5 above mouth. Period of record 1937 to date.

TABLE 141

FLOW OF TUOLUMNE RIVER AT ROBERTS FERRY BRIDGE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1360	2980	2030	6860	7340	7100	626	73	49	73	716	1600
2	1370	2980	1970	6820	7340	7080	689	55	53	68	709	1590
3	1420	2860	2170	6810	7320	7040	846	47	51	66	722	1540
4	1400	2960	2240	6810	7560	7060	824	43	49	71	735	1590
5	1460	2980	2240	6860	7710	7060	608	39	51	71	729	1620
6	1200	3220	2280	6910	7450	7080	427	36	51	73	729	1590
7	1450	4080	2300	6750	7390	7080	296	38	53	198	735	1560
8	1320	4090	2410	6810	7390	7040	191	39	55	626	742	1570
9	1450	4010	2400	6820	7260	7100	169	39	57	626	742	1620
10	1650	2930	3340	7020	7230	7120	152	38	57	639	742	1730
11	1620	3010	3440	6770	7150	6910	78	41	59	645	756	1750
12	1750	2580	3460	5390	7130	5280	64	39	61	645	756	1750
13	1620	2110	3430	4750	7450	4210	61	38	470	645	776	1800
14	1800	2140	3420	5030	7580	4190	55	39	561	657	783	1750
15	2740	2180	3780	5060	8130	4220	55	41	596	657	790	1870
16	3090	2120	4480	5000	8500	4220	55	41	596	657	1010	2130
17	3140	1970	4920	4980	8400	4240	51	39	567	657	1420	2120
18	4040	2140	5800	4980	8250	4240	53	43	149	664	1500	2090
19	2680	2190	6950	4800	8290	4220	55	43	85	664	1510	2140
20	1870	2210	8030	5110	8290	4220	53	45	75	664	1510	2040
21	1950	2640	7410	5900	8270	4160	55	47	73	670	1530	2000
22	1940	3220	4010	5750	8010	3650	106	45	71	676	1520	2060
23	1940	3210	3170	6070	7580	2930	73	43	71	676	1470	2200
24	2410	3080	3420	5820	7210	1880	55	45	71	683	1510	2210
25	4540	2900	3970	5740	6860	1730	49	45	66	683	1590	2160
26	7360	2200	5820	6180	6910	1710	45	43	68	683	1590	2140
27	6740	2250	6280	6750	6860	1670	47	43	71	683	1550	2170
28	5260	2270	7020	6810	6880	1250	45	49	71	696	1550	2110
29	3010	2280	6580	7280	6990	651	41	49	68	696	1550	2130
30	3040	—	6510	7300	7120	645	156	49	73	696	1450	2300
31	2980	—	6740	—	7100	—	275	49	—	709	—	2250
Mean	2587	2751	4259	6131	7524	4566	205	44.0	148	536	1114	1909
Runoff in Ac.Ft.	159100	158300	261900	364800	462600	271700	12600	2703	8822	32960	66290	117400
	Water Year Total 1853355								Calendar Year Total 1919175			

Division of Water Resources station located at Mile 39.9 above mouth. Period of record 1930 to date.

TABLE 142

FLOW OF TUOLUMNE RIVER AT HICKMAN BRIDGE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1510	3400	2360	7170	7770	7500	660	121	123	129	720	1490
2	1270	3410	2230	7140	7720	7450	705	121	123	129	710	1570
3	1490	3290	2360	7140	7720	7390	878	123	123	129	720	1530
4	1470	3320	2500	7150	7880	7390	838	123	123	131	725	1580
5	1560	3420	2490	7090	8170	7390	655	123	123	131	710	1610
6	1330	3580	2500	7370	7840	7400	472	123	123	131	720	1590
7	1560	4650	2520	7230	7810	7370	342	125	125	144	725	1590
8	1480	4650	2530	7320	7700	7340	223	125	125	636	725	1530
9	1570	4680	3220	7230	7660	7390	199	125	125	660	725	1600
10	1800	3470	3410	7480	7620	7420	188	125	127	665	720	1700
11	1760	3440	3590	7390	7580	7230	140	125	123	675	735	1700
12	1900	3160	3620	6060	7510	5780	133	125	123	675	725	1720
13	1830	2520	3600	5180	7770	4280	129	121	321	680	745	1740
14	1890	2570	3590	5380	8270	4270	129	119	485	690	756	1700
15	2820	2610	3840	5500	8460	4270	129	121	506	788	761	1730
16	3480	2550	4660	5430	9050	4250	129	121	511	720	750	2070
17	3420	2430	4920	5350	8910	4260	131	121	519	690	1270	2080
18	4320	2540	5970	5420	8720	4250	131	123	314	690	1470	2060
19	3200	2610	7170	5110	8720	4270	131	123	140	690	1450	2110
20	2150	2610	8300	5280	8740	4270	131	123	131	690	1450	2050
21	2150	2920	7990	6220	8740	4260	133	123	129	695	1470	1990
22	2180	3700	4400	5960	8550	3890	142	123	129	690	1490	1970
23	2170	3670	3270	6340	7970	3130	136	123	129	695	1450	*2100
24	2490	3530	3410	6080	7700	1980	136	123	129	690	1380	*2170
25	4420	3340	3860	6040	7210	1780	133	121	127	690	1540	*2160
26	8090	2550	5930	6350	7240	1760	133	121	127	700	1540	*2160
27	7770	2550	6440	7090	7230	1730	136	121	129	700	1560	*2160
28	6210	2560	7310	7140	7260	1470	136	121	131	705	*1440	*2130
29	4200	2550	6900	7660	7360	715	136	121	131	705	1500	*2160
30	3410	—	6780	7700	7530	675	154	121	129	705	1430	2350
31	3410	—	7000	—	7510	—	534	121	—	710	—	2330
Mean	2849	3182	4473	6500	7933	4752	270	122	190	566	1070	1885
Runoff in Ac.Ft.	175200	183000	275000	386800	487800	283000	16620	7527	11310	34830	63690	115900
	Water Year Total 1989157								Calendar Year Total 2040677			

Division of Water Resources station located at Mile 31.7 above mouth. Period of record 1932 to date.

* Estimated.

TABLE 143

FLOW OF TUOLUMNE RIVER AT MODESTO - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2640	3330	2440	7030	7900	7610	1170	505	332	332	781	1470
2	1510	3320	2180	6990	7790	7570	1110	395	317	356	778	1720
3	1690	3480	2300	6970	7680	7470	1300	392	305	329	784	1610
4	1600	3260	2420	7010	7680	7420	1330	379	288	332	784	1600
5	1650	3310	2420	6960	8160	7410	1220	332	273	319	772	1620
6	1560	3290	2500	7410	7860	7400	922	319	288	314	772	1650
7	1450	4010	2550	7060	7780	7400	826	372	317	314	778	1650
8	1820	4260	2600	7500	7780	7370	634	364	317	637	778	1560
9	1800	4250	3200	7420	7730	7350	509	334	300	745	778	1670
10	2000	3660	3400	7720	7730	7490	492	324	334	816	769	1780
11	1920	3160	3600	8110	7680	7410	470	336	346	840	778	1750
12	1950	3220	3650	7100	7640	6610	424	346	344	854	775	1780
13	2670	2390	3670	5690	7600	4680	405	322	342	858	784	1780
14	2350	2400	3740	5510	8200	4480	405	332	766	882	805	1780
15	3260	2440	3980	5750	8340	4450	392	332	772	962	826	1720
16	5750	2430	6440	5730	8940	4440	364	314	819	1040	826	2020
17	4580	2380	5420	5570	9050	4390	364	322	822	872	1270	2140
18	4170	2180	5790	5460	8950	4400	374	305	700	836	1510	2180
19	3940	2420	7420	5350	8900	4410	359	324	470	822	1520	2180
20	2610	2440	8920	5190	8950	4450	379	302	443	799	1520	2220
21	2300	2500	8870	5930	8920	4470	392	329	382	793	1530	2130
22	2470	3500	6000	5870	8910	4390	366	307	359	787	1540	2100
23	2290	3500	3700	6080	8390	3640	408	293	329	793	1530	2300
24	2320	3400	3390	6030	8060	2940	377	310	326	784	1460	2320
25	4460	3200	3620	5920	7450	2360	359	342	317	793	1590	2320
26	9490	2660	5040	6210	7320	2300	349	314	300	790	1590	2200
27	8580	2430	6110	7140	7250	2240	334	312	307	781	1600	2300
28	6980	2480	6820	7230	7240	2220	326	295	322	787	1475	2280
29	4780	2460	6900	7580	7310	1430	302	329	312	787	1620	2210
30	3570	—	6630	7840	7550	1260	326	324	300	781	1550	2380
31	3400	—	6690	—	7610	—	630	317	—	781	—	2380
Mean	3270	3026	4594	6579	8011	5049	568	336	405	707	1129	1961
Runoff in Ac.Ft.	201000	174100	282500	391500	492600	300400	34940	20680	24100	43470	67190	120600
	Water Year Total 2115700								Calendar Year Total 2153080			

Station is maintained jointly by Division of Water Resources and the U. S. Geological Survey. Station is located at the Tidewater Southern Railroad bridge at Mile 15.92 above the mouth of the Tuolumne River and 0.6 mile downstream from the confluence of Dry Creek. Period of record 1940 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 144

FLOW OF TUOLUMNE RIVER AT TUOLUMNE CITY - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2900	3210	2310	6990	7740	7460	1320	750	380	325	700	*1560
2	1730	3200	2050	7080	7810	7470	1490	510	370	350	700	*1860
3	1740	3340	1970	7090	7840	7740	1780	490	370	350	690	*1750
4	1675	3180	2270	7100	7640	7260	1800	500	360	340	700	*1760
5	1675	3180	2320	7100	7950	7500	1820	450	350	340	700	*1750
6	1700	3210	2360	7310	7950	8240	1500	430	360	340	690	*1775
7	1510	3710	2390	7170	7820	7940	1330	460	375	340	670	*1750
8	1840	4440	2480	7510	7800	6850	1125	460	370	380	670	*1675
9	1890	4470	2950	7460	7720	7140	900	430	350	660	670	*1790
10	2040	4050	2750	7670	7820	7840	830	420	370	760	670	*1910
11	2050	3070	3560	8010	7790	7310	800	420	375	825	670	*1875
12	2060	3120	3690	7410	7820	6910	670	425	375	830	670	*1975
13	2540	2460	3730	6490	7730	5070	630	420	375	850	670	*1980
14	2680	2320	3910	5450	8030	4520	600	410	590	870	710	*1910
15	2875	2380	3750	5690	8050	4480	580	420	790	920	700	*1850
16	5000	2320	6290	5660	8500	4360	575	390	850	1125	750	*2200
17	4975	2240	6100	4450	8820	4340	530	410	870	920	1125	*2325
18	4510	2140	5990	5490	8710	4310	540	400	850	825	1575	*2390
19	4660	1870	7060	5530	8710	4250	525	390	525	800	1640	*2370
20	3760	2270	8950	5080	8770	4270	525	380	470	775	1670	*2420
21	3280	2290	9090	5970	8710	4270	530	370	450	760	1675	*2300
22	3440	2950	6860	6980	8650	4270	510	380	410	760	1680	*2300
23	3300	3360	3760	6030	6090	3520	520	370	375	750	1670	*2450
24	3240	3320	3180	6100	7910	3160	510	370	370	740	1575	*2530
25	4110	3090	3350	5910	7370	2310	490	390	370	750	1700	*2500
26	7280	2600	4510	6130	7190	2310	480	390	350	750	1740	*2440
27	7870	2290	5820	6870	7150	2190	470	390	340	725	1750	*2540
28	7260	2430	6510	7160	7030	2110	450	380	340	725	1640	*2520
29	5220	2290	6850	7380	7020	1730	430	380	325	725	1710	*2390
30	3720	—	6540	7710	7260	1390	425	380	325	720	1680	*2625
31	3280	—	6640	—	7340	—	540	380	—	700	—	*3175
Mean	3413	2924	4513	6566	7830	5081	814	424	446	678	1131	2150
Runoff in Ac.Ft.	209871	168198	277468	390704	481467	302321	50033	26073	26539	41712	67279	132188
	Water Year Total 2133817								Calendar Year Total 2173853			

Station is maintained jointly by Division of Water Resources, City of San Francisco (Hetch Hetchy Water Supply), and Turlock Irrigation District. Station is at highway bridge, 3.35 miles above the mouth. Period of record 1930 to date. Records for 1952 computed by City of San Francisco.

* Estimated.

TABLE 145

FLOW OF DRY CREEK NEAR MODESTO (CLAUSS ROAD BRIDGE) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	480	149	72	90	207	114	*116	84	95	90	47	35
2	210	148	70	128	184	117	*116	84	94	88	46	37
3	129	*148	69	86	149	104	114	81	88	79	45	40
4	76	*145	68	115	112	98	110	74	80	81	44	43
5	59	*150	67	115	111	94	110	76	78	91	43	41
6	49	*140	68	122	113	104	92	74	82	81	40	37
7	48	*125	76	153	116	105	102	84	88	83	38	40
8	300	*112	354	228	123	100	90	81	98	89	40	79
9	275	95	227	221	128	106	77	77	103	90	41	100
10	171	87	137	285	126	*104	74	73	115	91	38	72
11	89	81	112	322	169	*105	77	77	115	95	38	63
12	81	74	223	276	180	*102	85	81	109	94	42	55
13	836	70	351	245	140	*100	79	78	93	94	42	49
14	444	75	397	231	100	*98	86	80	92	91	40	44
15	1310	69	737	193	101	*93	85	76	82	88	49	40
16	2480	63	2390	169	97	*95	84	82	78	91	83	38
17	*939	58	1010	152	92	*92	87	82	93	93	89	36
18	*750	55	429	122	111	*88	82	84	103	89	96	35
19	*600	*118	1380	122	119	*90	74	92	95	82	48	36
20	*450	*185	1200	149	109	*95	71	82	103	71	41	38
21	*160	*236	566	160	118	*95	76	86	102	71	38	61
22	*150	312	305	120	118	*97	76	82	86	73	36	86
23	*160	162	217	107	94	*100	68	76	82	67	35	86
24	*150	112	180	116	84	*103	81	71	78	65	35	63
25	*1100	96	155	120	95	*109	83	84	71	67	36	51
26	2440	88	139	134	86	*112	80	81	70	61	35	43
27	630	82	126	257	84	*124	76	79	80	56	34	45
28	359	78	117	249	88	*133	73	74	89	56	34	41
29	262	75	107	221	97	*121	70	79	84	51	35	39
30	209	—	101	213	98	*120	73	86	88	52	34	43
31	173	—	95	—	122	—	76	85	—	51	—	748
Mean	502	117	372	174	118	104	85.2	80.2	90.5	78.1	44.7	73.0
Runoff in Ac.Ft.	30880	6720	22900	10360	7281	6184	5242	4929	5383	4802	2662	4491
	Water Year Total 117269								Calendar Year Total 111834			

Division of Water Resources station located at Clauss Road bridge. 5.4 miles above Modesto. Dry Creek enters the Tuolumne River above the Modesto gaging station at Mile 16.5R. Period of record (including a former station located 2.9 miles above mouth) 1930 to date.

* Estimated

TABLE 146

FLOW OF STANISLAUS RIVER BELOW MELONES POWERHOUSE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1460	1760	1540	4090	6210	10400	1960	1610	1330	693	306	220
2	952	3060	1540	4080	7120	9760	1870	1610	1320	716	329	223
3	775	3680	1540	4050	7330	9080	1800	1600	1310	706	335	240
4	775	3120	1500	4060	7580	8840	1800	1590	1300	652	329	233
5	770	2360	1520	4030	7310	9800	1900	1590	1300	639	240	233
6	770	2330	1520	4140	7620	10400	1320	1580	1290	634	240	233
7	775	2310	1510	4180	7730	8990	2050	1590	1290	634	226	609
8	790	2300	1520	4240	7330	9500	2760	1590	1290	630	240	399
9	785	2300	1500	4290	6530	9310	2930	1580	1290	630	397	780
10	775	2290	1490	4300	6910	7310	2850	1580	1130	634	240	714
11	770	2270	1500	4320	8460	5970	2660	1580	1090	634	245	700
12	805	2000	1540	4320	9520	5270	2550	1570	920	450	247	713
13	810	1540	1540	4320	9840	4310	2470	1580	765	402	241	591
14	825	1540	1540	4330	10300	4280	2300	1580	755	406	240	266
15	845	1540	1650	4330	9700	4460	2240	1580	750	410	243	235
16	850	1540	1820	4320	8570	4460	2130	1580	740	472	242	266
17	1130	1540	1680	4330	8840	4830	2060	1580	735	366	243	318
18	1530	1540	1700	4360	9360	5320	1930	1580	720	370	456	309
19	1520	1540	1780	4410	9940	5650	1870	1350	716	370	471	309
20	1520	1540	2190	4470	10400	5020	1800	1320	706	374	471	416
21	1510	1540	2700	4530	10600	5010	1710	1300	702	374	472	428
22	1500	1540	2960	4560	9680	4840	1700	1300	693	382	465	447
23	1490	1540	2900	4620	9760	4630	1660	1290	693	446	460	455
24	1490	1540	2870	4710	10100	4450	1640	1290	688	418	220	455
25	1520	1520	2980	4840	11100	3660	1650	1290	688	350	143	443
26	1530	1550	2960	3940	10700	3370	1620	1290	684	314	141	438
27	1540	1550	3250	6270	11000	2740	1620	1280	680	339	145	169
28	1540	1550	3700	7390	11600	2580	1600	1290	683	317	206	434
29	1540	1550	4110	7010	10500	2740	1600	1290	684	317	209	434
30	1550	—	4110	7040	10400	2270	1610	1300	680	317	213	336
31	1560	—	4100	—	11000	—	1630	1280	—	317	—	473
Mean	1161	1930	2218	4664	9130	5976	2074	1465	921	475	288	404
Runoff in Ac.Ft.	71410	111000	136400	277500	561400	355500	127500	90090	54790	29180	17170	24830
	Water Year Total 1866840								Calendar Year Total 1856770			

U. S. Geological Survey and Pacific Gas and Electric Company cooperative station located 1 mile downstream from Melones Dam. Drainage area is 898 square miles. Period of record 1931 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 147

FLOW OF STANISLAUS RIVER AT ORANGE BLOSSOM BRIDGE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1620	1360	1510	4040	4780	8500	494	*44		*28	48	482
2	*1280	2860	1510	4000	5160	7170	456	*42		*21	48	293
3	883	3600	1510	3880	5630	7670	237	*42		*18	51	287
4	818	3470	1530	3540	5900	8050	237	*48		18	51	310
5	*680	2470	1510	3440	5560	7410	222	*48		15	53	297
6	*494	2440	1530	3450	5810	6540	1340	*42		22	40	318
7	*614	2410	1970	3550	5840	7620	1800	*42		23	30	677
8	*538	2380	1660	3540	5810	7540	1330	*40		23	31	554
9	*463	2350	1580	3040	4830	7490	1410	*38		21	159	818
10	292	2340	1710	2930	5040	5900	1370	*38		21	291	813
11	281	2320	1800	2840	6430	4320	1250	*38		23	234	780
12	1030	2230	1860	2820	7610	3680	1090	*38		*18	239	770
13	733	1510	1850	2880	8140	2770	1040	*38		*23	244	696
14	1050	1490	1770	3090	8580	2570	912	*38		*26	271	522
15	2830	1480	3070	3110	8220	2700	758	*40	----*34	*31	281	233
16	1160	1480	3140	3320	7260	2740	674	*40		42	289	266
17	758	1540	1950	3430	7200	3010	552	*40		69	266	338
18	1190	1510	2380	3150	7680	3390	490	42		22	369	366
19	1110	1520	2820	3010	8140	3700	324	*42		22	527	372
20	1170	1690	2450	3040	8630	3300	252	*42		25	535	697
21	1130	2030	2930	3030	8840	3160	146	*40		51	535	530
22	1100	1650	3330	2930	7960	3130	86	*40		76	528	529
23	1310	1600	3240	2860	7870	2930	66	*40		100	528	528
24	1950	1570	3180	2900	8150	2750	57	*38		127	416	518
25	3740	1540	3120	3160	9000	2180	53	*38		100	237	514
26	1960	1550	3090	2530	8840	1880	50	*38		59	154	511
27	1540	1530	3230	4460	8940	1410	50	*37		44	146	394
28	1430	1520	3640	5860	9550	1140	48	*37		40	154	397
29	1390	1520	4070	5840	8690	1270	46	*37		40	235	527
30	1370	—	4080	5500	8340	1040	46	*36		46	235	1054
31	1360	—	4060	—	8800	—	44	*36	—	42	—	1061
Mean	1204	1964	2486	3506	7330	4245	546	40	34.0	40	241	531
Runoff in Ac.Ft.	74030	113000	152900	208600	450700	252600	33580	2458	2023	2452	14330	32630
	Water Year Total 1381821								Calendar Year Total 1339303			

Division of Water Resources station located at highway bridge, Mile 44.7 above mouth or 5.7 miles above Oakdale. Period of record 1930 to date.

* Estimated mean for period indicated.

TABLE 148

FLOW OF STANISLAUS RIVER AT RIVERBANK (BURNEYVILLE BRIDGE) - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1400	1320	1610	4130	5400	8710	*1200	*200	107	120	146	314
2	1280	2020	1620	4120	4870	8060	*1080	*190	106	121	154	352
3	833	3170	1600	4040	5750	7540	*940	*185	106	121	154	360
4	778	3390	1620	3760	5940	7090	*940	*175	109	123	154	365
5	647	2540	1610	3570	5840	7290	*820	*170	107	111	154	358
6	490	2300	1620	3570	5850	8210	*820	*165	110	117	148	371
7	594	2280	1910	3600	6030	7890	*1190	*158	110	121	135	442
8	563	2270	1800	3750	6160	7270	*1510	*152	109	123	126	867
9	538	2250	1700	3440	5210	7690	*1490	*146	114	106	153	578
10	423	2230	1740	3100	4850	6720	*1390	*140	121	118	360	852
11	404	2220	1900	3080	5600	4870	*1320	*138	123	121	294	775
12	445	2220	1830	2990	6030	4130	*1210	135	114	124	309	785
13	606	1740	1980	2090	7650	3303	*1060	129	111	126	319	778
14	569	1550	1820	3180	8050	2780	*960	130	111	142	345	687
15	2230	1540	2630	3250	8160	2880	*870	124	114	185	371	451
16	1590	1530	3550	3340	7510	2920	*790	124	111	156	368	363
17	778	1560	2210	3530	6940	3010	*700	123	109	176	337	402
18	992	1550	2000	3320	7320	3370	*640	117	111	145	337	448
19	1050	1560	2940	3100	7740	3690	*570	114	117	121	462	459
20	1040	1590	2740	3080	8300	3670	*520	114	127	118	529	566
21	1100	2040	2820	3100	8650	3210	*460	111	117	135	535	634
22	1020	1720	3340	3010	8230	3280	*415	109	114	160	535	578
23	1150	1660	3320	2920	7770	3090	*375	110	114	183	541	585
24	1300	1640	3250	2900	7890	2920	*335	113	113	228	535	585
25	3510	1620	3190	3100	8540	2610	*300	109	111	224	360	582
26	2180	1600	3170	3140	8840	*2200	*280	110	109	190	270	566
27	1560	1620	3170	3460	8760	*1980	*265	107	110	158	260	585
28	1430	1610	3630	5530	9150	*1780	*245	106	111	150	260	384
29	1390	1610	3990	6150	9010	*1750	*230	103	110	145	298	582
30	1360	—	4140	5680	8340	*1740	*220	109	113	146	309	637
31	1340	—	4140	—	8520	—	*210	107	—	148	—	1320
Mean	1116	1929	2535	3598	7224	4522	750	133	112	144	309	568
Runoff in Ac.Ft.	68630	111000	155900	214100	444200	269100	46110	8178	6682	8850	18360	34930
	Water Year Total 1409320								Calendar Year Total 1386040			

Division of Water Resources station located at Mile 32.0 above mouth. Period of record 1940 to date.

* Estimated.

TABLE 149

FLOW OF STANISLAUS RIVER AT RIPON - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1820	1450	1640	4140	5970	9430	1460	232	262	234	246	348
2	1570	1610	1630	4140	5550	9090	1120	264	247	224	233	382
3	1190	2650	1620	4130	5500	8140	1030	264	247	214	238	399
4	966	3310	1620	4070	5890	7440	915	261	223	233	233	391
5	864	3190	1620	3800	6140	7130	866	236	210	219	229	393
6	703	2560	1620	3650	6070	7910	866	234	274	258	246	391
7	644	2480	1700	3700	6140	8740	1820	245	247	248	219	429
8	719	2450	1940	3930	6270	7440	1880	245	266	246	200	750
9	682	2420	1730	3940	6250	7700	1650	249	247	255	192	644
10	593	2390	1680	3640	5640	7540	1710	245	242	245	245	781
11	524	2380	1830	3480	5570	6020	1640	264	270	238	342	800
12	516	2370	1800	3380	6300	4980	1500	251	262	245	337	783
13	1170	2180	1950	3330	7960	4300	1380	272	257	224	357	788
14	844	1740	1870	3390	8690	3470	1310	286	232	229	368	719
15	1530	1680	2050	3490	9150	3320	1150	276	242	272	393	574
16	2180	1660	3290	3510	8720	3350	1050	264	213	299	444	427
17	1190	1660	2810	3640	7600	3340	942	266	259	335	408	416
18	1000	1660	2110	3720	7310	3520	883	262	234	297	382	444
19	1180	1640	2590	3490	7830	3840	741	251	221	255	427	462
20	1140	1660	3000	3340	8510	4060	660	249	236	234	520	510
21	1190	1910	3300	3380	9230	3710	606	242	245	228	534	682
22	1150	1970	3500	3370	9550	3500	518	244	224	240	538	580
23	1170	1770	3400	3270	8370	3520	456	234	213	265	545	582
24	1330	1720	3210	3180	8140	3310	410	234	228	294	549	578
25	2370	1690	3180	3290	8640	3130	358	266	195	312	478	570
26	3240	1660	3130	3630	9700	2600	372	261	210	305	380	566
27	2020	1660	3130	3220	9520	2400	341	221	208	296	323	568
28	1670	1650	3370	4510	9760	1950	320	240	215	303	308	458
29	1560	1640	3720	5600	10500	1800	298	242	199	283	303	492
30	1510	—	3990	6030	9340	1840	286	242	236	253	333	562
31	1470	—	4110	—	8980	—	284	251	—	236	—	1190
Mean	1281	2028	2521	3780	7703	4954	930	253	235	259	352	570
Runoff in Ac.Ft.	78750	116600	155000	224900	473600	294800	57170	15560	14010	15910	20930	35030
	Water Year Total 1529140								Calendar Year Total 1502260			

Station maintained jointly by Division of Water Resources and the U. S. Geological Survey. Station is at Highway 99 and is 16 miles above mouth of river. Period of record 1940 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 150

FLOW OF STANISLAUS RIVER NEAR MOUTH - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	*1290	*1380	1740	4080	5550	8210	1930	297	248	170	221	353
2	*1080	*1450	1710	4000	5580	8220	1510	277	229	189	227	365
3	*957	*1600	1660	3910	5370	7810	1310	281	181	191	218	398
4	*785	*2000	1660	3920	5400	7500	1220	*281	183	189	209	394
5	*720	*2200	1660	3820	5520	7200	1140	238	185	196	221	394
6	*671	*2100	1640	3720	5680	7160	1090	198	191	183	218	381
7	*618	*2000	1640	3790	5690	7470	1370	208	202	185	221	401
8	*642	*1980	1740	3920	5750	7490	1670	221	219	198	179	540
9	*644	*1960	1710	4100	5830	7320	1470	233	238	210	164	764
10	*642	*1940	1660	4220	5720	7430	1460	259	227	223	167	680
11	*626	*1900	1650	4250	5480	6920	1430	219	244	229	286	817
12	*650	*1850	1720	4200	5470	6050	1370	221	253	227	327	799
13	*882	*1800	1770	3980	5840	5260	1260	229	244	210	346	796
14	*1070	*1760	1840	3750	6560	4360	1200	253	229	206	375	778
15	*995	1710	1920	3700	7060	3860	1120	240	225	202	398	694
16	*990	1710	2460	3720	7440	3700	1030	238	212	227	437	506
17	*1050	1720	2860	3780	7420	3640	952	290	170	246	460	431
18	*1070	1720	2680	3800	7290	3620	852	244	194	236	417	437
19	*1100	1720	2740	3660	7380	3660	766	198	214	227	421	477
20	*1050	1760	3050	3530	7600	3740	687	212	238	202	523	516
21	*1040	1790	3250	3460	7920	3730	647	231	238	167	581	652
22	*1020	1950	3460	3460	8120	3680	610	204	208	155	608	698
23	*1100	2000	3400	3470	7970	3660	528	217	166	164	615	680
24	*1220	1990	3190	3500	7650	3520	471	210	168	194	608	718
25	*1640	1970	3140	3560	7620	3330	423	214	198	227	601	732
26	*1800	1920	3210	3690	7890	3040	411	191	156	258	480	740
27	*1860	1820	3430	3870	7950	2790	392	170	175	273	385	746
28	*1650	1770	3640	4340	7930	2560	345	154	204	270	346	760
29	*1660	1760	3970	4950	8440	2370	341	181	183	255	327	666
30	*1400	—	4160	5340	8410	2220	327	198	145	236	340	750
31	*1360	—	4140	—	8110	—	308	214	—	224	—	943
Mean	1074	1836	2532	3916	6827	5051	956	226	206	212	364	613
Runoff in Ac.Ft.	66010	105600	155700	233000	419800	300500	58790	13930	12230	13030	21670	37700
	Water Year Total 1465980								Calendar Year Total 1437960			

Division of Water Resources station located 2.9 miles above the mouth. Period of record September 1951 to date. (Prior records available at other sites for 1930 to 1950.) The former station located 4.3 miles above the mouth was destroyed in the flood of November 1950.

* Estimated

TABLE 151

FLOW OF KINGS RIVER AT PIEDRA - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2000	2010	1420	3900	8030	14500	10300	4400	705	393	238	323
2	1850	3210	1820	3960	9810	14000	10600	3280	690	371	238	445
3	1460	2380	1290	4230	10300	14900	10500	2990	700	364	244	417
4	1280	2160	1250	4630	10600	14600	10500	2770	695	354	238	389
5	962	1970	1270	5080	10600	15200	10400	2590	725	347	229	393
6	896	1660	1270	5550	10700	15500	10300	2510	695	340	232	421
7	969	1590	2130	5840	10700	15200	10700	2470	695	417	235	827
8	997	1770	1740	4920	10100	15000	10900	2460	665	449	244	1500
9	922	1590	1690	4040	8650	14800	10400	2330	625	457	260	730
10	732	1370	2080	5170	9390	13800	10100	2150	591	457	253	645
11	693	1520	2520	4690	10000	11800	10100	2050	615	437	244	610
12	794	1910	2060	3740	10800	9780	9840	1870	625	409	238	582
13	2220	1180	1740	4170	11400	8780	9640	1750	586	336	235	568
14	1010	1400	1900	3980	12000	8810	9530	1630	542	296	282	578
15	6300	1360	6720	3640	12400	9170	9000	1490	492	285	461	591
16	6680	1190	5680	3810	12600	10100	5860	1410	470	279	457	591
17	2430	1310	3840	4610	12600	10700	5060	1370	453	276	397	568
18	2300	1820	3150	5190	12700	10800	4990	1330	433	276	401	542
19	1870	1190	3740	5500	12900	10400	4960	1330	417	272	417	519
20	1540	1040	3350	4810	13300	10100	4750	1330	449	266	421	810
21	1520	1470	2410	5400	13500	10200	4570	1260	524	263	409	800
22	1130	1200	2380	5980	13500	10200	4220	1190	578	260	397	660
23	1040	1150	2130	6750	13700	10200	3840	1130	532	253	382	596
24	2920	1150	2130	7800	13900	10100	3680	1080	488	250	340	586
25	13000	1150	2320	7700	14100	9280	4080	1020	461	250	319	568
26	7550	1140	3870	7430	14300	8920	4330	938	437	244	330	550
27	3240	1150	3810	5720	14600	9360	4280	884	441	241	316	542
28	2910	1170	4550	6820	14900	9640	4240	822	441	238	306	537
29	2200	1340	4330	6980	14800	9560	4700	772	417	238	306	519
30	1830	—	4180	8080	14700	9870	4400	745	401	235	299	567
31	2090	—	4110	—	15000	—	5480	715	—	232	—	932
Mean	2495	1536	2803	5337	12150	11510	7305	1744	553	316	312	610
Runoff in Ac.Ft.	153400	88360	172300	317600	746900	684800	449200	107200	32900	19410	18580	37500
	Water Year Total 2855980								Calendar Year Total 2828150			

U. S. Geological Survey and Division of Water Resources cooperative station located 0.5 mile downstream from highway bridge at Piedra. The Kings River flows into the Tulare Lake area and during high stages into the San Joaquin River via James By-Pass. Drainage area 1694 square miles. Period of record 1895 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 152

FLOW OF KAWEAH RIVER NEAR THREE RIVERS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	823	871	794	1520	2320	4240	1700	784	145	85	71	121
2	646	1600	678	1570	2750	4070	1760	691	140	80	70	217
3	540	1000	620	1600	2980	4070	1910	636	138	76	62	164
4	475	883	615	1780	2950	4120	1850	590	135	75	64	148
5	429	823	590	1940	2980	4520	1810	550	140	73	64	150
6	400	783	580	2030	2980	4360	1790	525	135	73	64	153
7	396	756	859	2130	2860	3930	1710	515	132	75	64	552
8	365	722	734	1720	2550	3860	1610	505	125	76	78	628
9	335	695	717	1550	2510	3590	1540	466	121	78	78	298
10	329	684	1110	1760	2860	2810	1440	434	119	78	67	234
11	319	706	964	1520	3240	2860	1330	398	135	76	73	212
12	486	690	853	1380	3520	2530	1270	373	145	73	67	200
13	643	678	835	1430	3620	2560	1250	353	135	71	67	194
14	444	595	772	1370	3910	2600	1200	325	121	70	165	203
15	2040	575	1820	1260	3910	2580	1190	302	110	68	257	218
16	2640	570	1950	1390	3590	2720	1190	288	104	68	232	215
17	1170	673	1360	1600	3520	2840	1150	280	100	70	158	203
18	932	600	1160	1790	3820	2860	1080	277	91	68	145	191
19	734	560	1450	1830	4320	2760	1060	270	93	70	158	180
20	630	550	1220	1620	4600	2660	1010	260	102	70	158	298
21	555	630	1030	1790	4050	2720	915	251	108	70	158	277
22	491	575	938	1920	4080	2490	870	235	108	71	150	215
23	463	550	889	2150	4360	2340	814	223	102	71	140	197
24	1080	555	907	2230	4640	2060	820	211	98	73	125	185
25	5690	560	1080	2390	4830	2050	902	202	93	71	125	183
26	2210	560	1460	2170	4980	1880	978	190	91	68	123	171
27	1500	550	1770	1890	5170	1640	915	178	110	67	119	169
28	1180	555	1900	1890	5170	1630	889	170	104	65	117	166
29	1010	565	1860	1940	5080	1550	929	161	93	64	112	158
30	919	—	1760	2030	5060	1660	936	153	89	61	114	197
31	877	—	1570	—	4830	—	882	148	—	62	—	326
Mean	992	694	1124	1773	3808	2882	1248	353	115	71.5	115	227
Runoff in Ac.Ft.	60990	39900	69110	105500	234100	171500	76760	21710	6870	4400	6830	13930
	Water Year Total 824990								Calendar Year Total 811600			

U. S. Geological Survey and Division of Water Resources cooperative station located 3 miles southwest of Three Rivers post office. Kaweah River is a tributary of the Tulare Lake area. Period of record 1936 to date. Prior records available at a site 2 miles upstream. Records for 1952 were computed by the U. S. Geological Survey.

TABLE 153

FLOW OF TULE RIVER NEAR PORTERVILLE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	500	343	716	676	620	663	194	73	26	22	29	58
2	350	774	430	676	680	625	188	68	26	18	32	103
3	250	537	319	672	740	593	185	63	24	17	32	78
4	200	445	312	730	770	581	175	63	22	17	32	73
5	170	393	286	789	766	581	169	59	22	17	32	74
6	150	360	273	812	766	597	161	56	23	18	34	79
7	150	336	666	856	726	573	153	54	24	18	33	283
8	130	312	434	780	663	533	150	52	24	19	32	414
9	120	289	354	672	625	505	144	49	24	20	32	155
10	120	280	652	663	645	445	137	48	24	21	32	117
11	117	289	613	625	690	418	132	49	29	22	32	103
12	166	302	481	565	730	385	130	47	30	20	32	98
13	262	255	485	565	735	364	127	47	30	20	32	95
14	166	232	400	557	753	354	123	45	25	21	69	95
15	748	218	922	509	758	341	112	42	24	18	103	95
16	1320	213	1170	525	712	329	106	40	26	19	108	94
17	518	249	730	569	686	322	98	39	23	21	75	91
18	502	232	561	621	704	322	89	36	21	21	69	89
19	343	206	625	658	758	313	85	34	20	20	65	84
20	289	190	585	600	825	304	82	33	22	22	64	136
21	264	240	445	630	794	295	80	32	26	24	62	139
22	213	208	396	670	748	281	79	30	26	24	60	105
23	193	190	361	720	748	270	79	30	24	24	58	96
24	338	188	361	790	753	264	76	30	24	24	57	90
25	2230	190	434	860	776	254	74	32	22	24	57	89
26	929	190	593	780	784	241	73	30	24	24	56	85
27	607	188	735	680	766	234	76	30	23	25	55	84
28	473	188	812	610	771	219	76	28	22	29	54	84
29	403	198	807	580	758	210	75	26	24	29	55	82
30	364	—	789	580	730	203	85	24	23	29	56	97
31	343	—	708	—	712	—	80	24	—	29	—	274
Mean	417	284	563	667	732	387	116	42.4	24.2	21.8	51.3	117
Runoff in Ac.Ft.	25640	16330	34620	39710	45010	23050	7130	2600	1440	1340	3050	7220
	Water Year Total 211502								Calendar Year Total 207140			

U. S. Geological Survey and Division of Water Resources cooperative station located at highway bridge 1 mile upstream from the South Fork. Drainage area is 266 square miles. Period of record 1901 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 154

FLOW OF SOUTH FORK OF TULE RIVER NEAR SUCCESS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	100	110	270	323	218	162	55	22	8.3	4.8	9.0	16
2	73	208	174	319	240	151	52	20	8.0	4.2	9.4	32
3	60	147	141	309	251	145	50	20	8.0	3.8	9.4	22
4	52	127	145	316	248	133	48	19	8.6	3.8	8.6	18
5	46	117	132	326	242	132	46	18	9.8	3.2	8.3	20
6	44	110	127	330	240	131	42	17	9.0	3.2	8.3	23
7	46	104	251	326	231	125	40	17	8.6	3.8	8.0	82
8	40	98	181	316	216	117	40	16	7.2	4.0	8.3	115
9	36	95	160	268	206	114	37	17	6.8	4.5	8.6	37
10	36	92	302	277	213	108	34	17	6.8	5.6	8.6	27
11	35	96	316	256	226	102	33	17	8.6	7.2	9.0	24
12	46	105	266	229	229	98	33	16	9.4	5.6	9.4	22
13	68	89	248	229	231	93	32	16	6.2	5.0	9.8	21
14	52	82	208	229	234	89	31	16	8.3	5.0	26	22
15	207	79	425	201	231	89	30	14	6.8	5.0	37	23
16	558	77	617	201	224	82	28	13	6.8	5.2	30	23
17	178	89	401	211	216	77	27	13	6.2	5.2	21	22
18	160	81	299	224	216	74	25	12	5.8	5.2	18	21
19	116	76	322	234	221	72	24	12	5.6	5.6	18	18
20	106	73	299	208	229	72	23	12	6.2	6.2	18	38
21	105	86	248	213	226	69	22	11	6.0	5.8	17	32
22	85	78	218	211	213	68	24	11	7.6	5.6	16	24
23	78	74	199	221	206	67	24	10	6.8	5.6	16	22
24	123	76	199	226	201	68	23	9.8	5.8	5.8	15	20
25	824	76	234	251	199	67	23	10	5.2	5.8	15	21
26	280	74	309	251	196	64	23	9.8	5.0	5.2	15	19
27	185	73	396	248	192	62	24	9.4	5.8	5.2	15	18
28	147	74	425	229	185	60	26	9.4	5.6	5.6	15	18
29	131	77	415	216	183	58	25	9.4	5.0	6.2	15	18
30	117	—	396	208	174	58	28	8.6	5.0	8.0	15	25
31	108	—	386	—	168	—	25	8.6	—	8.6	—	72
Mean	137	94.6	280	254	216	93.7	32.2	13.9	7.06	5.27	14.6	29.5
Runoff in Ac.Ft.	8410	5440	17190	15090	13300	5580	1980	855	420	324	866	1810
	Water Year Total 72896								Calendar Year Total 71265			

U. S. Geological Survey and U. S. Bureau of Reclamation cooperative station located 5 miles upstream from the mouth. Drainage area is 106 square miles. Period of record 1930 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 155

FLOW OF TULE RIVER AT WORTH BRIDGE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	532	554	1170	1150	867	792	210	57	6.7	6.0	N	60
2	352	1160	734	1150	959	740	201	49	8.0	5.3	O	137
3	289	872	537	1110	1020	713	197	46	7.5	6.7	R	96
4	238	713	528	1160	1010	686	190	45	5.6	7.5	E	88
5	210	629	477	1250	990	681	186	42	6.3	7.0	C	92
6	194	585	447	1300	971	697	178	41	6.7	5.3	D	109
7	192	541	1150	1340	934	660	171	39	6.7	5.3	R	229
8	176	502	766	1220	878	620	165	38	6.3	6.7	D	477
9	165	469	616	1070	835	598	160	34	4.6	8.5	34	122
10	163	454	1090	1060	856	519	152	34	3.9	10	37	73
11	154	447	1140	984	897	484	142	33	9.0	11	39	60
12	176	502	891	872	934	447	135	33	14	9.5	39	54
13	356	410	915	867	946	425	131	33	14	8.0	37	50
14	231	376	724	856	965	407	119	31	10	10	73	50
15	863	356	1590	777	959	393	111	27	7.5	8.5	156	54
16	2470	339	2150	787	922	379	100	25	7.5	7.5	166	57
17	884	396	1320	835	884	373	91	23	7.0	9.5	109	54
18	856	373	1000	884	903	369	80	22	6.0	11	92	50
19	568	330	1100	946	946	369	73	20	6.0	10	88	44
20	458	302	1050	851	1020	352	67	19	6.3	9.5	84	105
21	462	383	824	872	984	336	58	17	9.0	10	80	142
22	373	326	718	851	928	320	56	16	10	10	73	84
23	339	299	656	915	928	302	54	16	8.5	11	73	73
24	458	289	647	934	909	292	53	14	7.0	12	66	66
25	3630	289	745	984	928	286	51	13	5.0	12	66	66
26	1570	286	1010	1020	928	264	51	12	6.7	11	63	63
27	1050	280	1240	934	915	257	56	10	4.6	12	63	60
28	808	280	1360	891	891	238	58	8.0	4.3	13	60	63
29	692	289	1350	867	872	226	56	7.0	6.7	*13	60	63
30	620	—	1340	846	851	219	72	6.7	4.6	NR	63	66
31	568	—	1200	—	840	—	67	6.3		NR		325
Mean	648	449	984	986	925	448	113	26.4	7.2	9.4	60.5	101
Runoff in Ac.Ft.	39860	25850	60510	58680	56870	26670	6924	1620	428	581	3598	6212
	Water Year Total 310040								Calendar Year Total 287803			

Division of Water Resources and U. S. Bureau of Reclamation cooperative station located 1 mile above the head of Porter Slough and 2.2 miles downstream from the junction of South Fork. Period of record 1944 to date. Records for 1952 computed by Division of Water Resources.

TABLE 156

FLOW OF TULE RIVER ABOVE LITTLE PIONEER DITCH - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	257	578	659								
2	0	600	398	652								
3	0	508	*217	587								
4	0	381	*127	689								
5	0	*317	*124	667								
6	0	*312	*136	704								
7	0	*307	*569	696								
8	0	*307	292	469								
9	0	*307	16	(a)								
10	0	*302	246									
11	0	*302	697									
12	0	*287	*398									
13	93	*208	*393									
14	91	*144	243									
15	124	*124	527									
16	2080	*108	1420									
17	*659	*108	726									
18	*567	*108	427									
19	*593	*108	501									
20	*541	91	696									
21	*494	102	439									
22	*445	111	*369									
23	*398	97	*352									
24	*358	83	*337									
25	*2030	80	*317									
26	1210	86	521									
27	*501	83	756									
28	*410	73	882									
29	*342	33	832									
30	317	—	782									
31	282	—	674	—		—			—		—	
Mean	372	205	484									
Runoff in Ac.Ft.	22880	11770	29740									
	Water Year Total								Calendar Year Total			

Division of Water Resources and U. S. Bureau of Reclamation cooperative station located 0.8 mile upstream from Ottle Bridge and 14.4 miles downstream from junction of South Fork. Period of record 1942 to April 1952. Records for 1952 computed by Division of Water Resources.

(a) Station discontinued April 9, 1952.

TABLE 157

FLOW OF TULE RIVER AT TURNBULL STATION - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	112	30	.2	611	276	532						
2	54	30	1.3	535	*361	492						
3	13	64	24	496	524	411						
4	9.2	202	11	507	584	301						
5	6.2	173	7.4	561	666	222						
6	4.1	157	9.4	561	632	191						
7	4.0	138	79	614	647	109						
8	2.9	156	339	659	569	33						
9	2.1	76	303	650	471	55						
10	1.4	36	207	504	444	41						
11	1.0	19	342	433	450	22						
12	.8	30	671	380	534	9.3	N	N	N	N	N	N
13	.6	32	517	271	582	0	0	0	0	0	0	0
14	.4	20	433	204	592	0						
15	.4	18	408	192	604	0						
16	110	12	763	168	640	0						
17	852	4.1	1420	114	614	0	F	F	F	F	F	F
18	445	2.7	1390	106	592	0	L	L	L	L	L	L
19	188	1.8	849	109	592	0	0	0	0	0	0	0
20	59	1.0	802	108	640	0	W	W	W	W	W	W
21	14	.6	862	111	679	0						
22	9.4	3.3	556	94	697	0						
23	8.9	11	378	140	627	0						
24	12	8.0	307	237	614	0						
25	125	3.6	278	303	640	0						
26	1270	2.3	309	396	676	0						
27	1250	1.5	477	512	673	0						
28	647	.9	710	386	634	0						
29	364	.4	826	273	579	0						
30	249	—	799	287	517	0						
31	160	—	730	—	517	—			—		—	
Mean	193	42.6	478	351	576	80.6	0	0	0	0	0	0
Runoff in Ac.Ft.	11850	2448	29370	20870	35440	4797	0	0	0	0	0	0
	Water Year Total			104829					Calendar Year Total		104775	

Division of Water Resources and U. S. Bureau of Reclamation cooperative station located just above the Corcoran-Angiola Highway bridge, 39.0 miles downstream from the junction of South Fork. This station measures inflow to Tulare Lake area and at times the flows are a combination of direct Tule River water, Kaweah River water via Elk Bayou (See Table 162), and Kings River water via Homeland Canal, and waste water from Tulare Irrigation District. Period of record 1942 to date. Records for 1952 computed by Division of Water Resources.

* Estimated.

TABLE 158

FLOW OF WHITE RIVER NEAR DUCOR - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	22	9.6	129	65	36	18	4.4	3.5			0	13
2	12	26	97	60	41	17	3.4	2.0			0	33
3	9.6	23	70	60	43	15	2.6	1.0			0	17
4	7.9	21	82	60	43	14	1.8	.5			0	11
5	7.6	17	64	60	39	13	1.9	0			0	8.8
6	7.2	17	48	60	33	13	1.9	0			0	8.2
7	7.6	15	134	60	32	12	1.9	0			0	8.2
8	7.2	15	113	60	32	13	1.9	0			0	32
9	6.6	14	88	60	32	12	1.9	0			0	11
10	6.3	13	190	58	31	12	1.9	0			0	7.7
11	6.0	13	259	58	32	13	1.9	0			0	6.6
12	6.6	22	190	51	31	13	1.9	0	N	N	0	6.2
13	14	16	175	47	30	14	1.9	0	0	0	0	5.9
14	13	15	122	49	31	12	1.9	0			0	5.9
15	27	13	383	44	32	12	1.9	0			.7	5.9
16	232	13	440	41	31	10	1.8	0			11	5.9
17	68	15	240	41	29	8.8	1.8	0	F	F	8.2	5.5
18	64	17	187	39	29	7.1	1.8	0	L	L	6.9	5.5
19	41	14	187	39	29	6.1	1.7	0	O	O	7.7	5.3
20	28	13	196	36	30	5.7	1.7	0	W	W	9.0	12
21	31	16	139	35	30	5.9	1.6	0			10	20
22	19	15	124	32	27	5.5	1.6	0			10	11
23	13	14	103	33	27	4.8	1.6	0			11	9.0
24	15	14	86	33	27	4.8	1.5	0			11	8.2
25	129	14	80	37	25	5.2	1.5	0			11	7.7
26	60	13	85	47	25	5.0	1.5	0			10	7.4
27	44	13	100	42	24	5.0	1.4	0			11	7.1
28	35	12	95	36	21	4.8	1.4	0			12	7.1
29	28	12	85	36	20	5.2	3.5	0			12	6.1
30	17	—	80	35	20	5.0	4.5	0			12	6.9
31	12	—	70	—	18	—	4.0	0	—		—	87
Mean	32.1	15.3	143	47.1	30.0	9.73	2.13	0.23	0	0	5.12	12.6
Runoff in Ac.Ft.	1980	882	8810	2800	1840	579	131	14	0	0	304	778
	Water Year Total 17498								Calendar Year Total 18118			

U. S. Geological Survey and U. S. Bureau of Reclamation cooperative station located 500 feet downstream from bridge at Gilliam Ranch and 8 miles southeast of Ducor. White River is a tributary of the Tulare Lake Basin. Period of record 1944 to date. Records for 1952 computed by U. S. Geological Survey.

TABLE 159

FLOW OF KERN RIVER NEAR BAKERSFIELD - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1494	1100	834	2997	5250	8036	2906	2180	631	467	356	448
2	1084	1459	996	2926	6034	7286	2963	1972	618	459	357	489
3	838	1795	898	3018	6995	6693	3067	1807	585	449	359	506
4	760	1494	867	3153	7453	6437	3235	1683	563	427	357	495
5	702	1336	841	3361	7204	6327	3333	1572	560	419	350	496
6	642	1227	834	3573	6977	6806	3307	1489	580	396	353	544
7	581	1157	876	3842	6790	7066	3219	1431	585	365	353	594
8	564	1082	944	3700	6415	6731	3196	1390	562	378	360	668
9	519	1007	874	3398	5957	6243	3054	1363	549	389	361	735
10	485	952	949	3263	5783	6076	2997	1286	534	386	367	667
11	469	911	1135	3174	5900	5275	2879	1208	521	384	372	636
12	472	924	1107	3026	6306	5033	2761	1136	527	386	368	611
13	501	912	1003	3075	6624	4646	2643	1073	539	380	363	578
14	515	841	1071	3150	6945	4531	2499	1041	535	375	376	566
15	474	794	1046	3026	7317	4491	2409	991	513	373	422	574
16	1065	769	1393	3004	7388	4328	2383	960	497	371	509	579
17	1117	754	1363	3173	6939	4443	2364	928	476	373	466	576
18	929	783	1321	3385	6559	4707	2319	890	474	369	479	580
19	904	754	1378	3650	6649	4796	2216	870	474	365	480	570
20	815	725	1444	3737	7290	4651	2251	873	491	369	491	595
21	793	707	1335	3823	7984	4465	2205	873	510	367	498	642
22	738	699	1248	4026	7604	4416	2165	855	502	358	496	605
23	681	680	1215	4327	7332	4415	2044	835	485	357	489	563
24	658	683	1202	4932	7434	4378	1979	807	466	356	469	561
25	2599	684	1287	5530	7590	3918	2045	776	457	358	448	548
26	3133	693	1726	5351	7808	3671	2231	745	459	358	458	555
27	1784	698	2445	4843	7810	3426	2462	712	446	357	457	546
28	1549	703	2633	4509	7957	3171	2506	677	438	352	450	554
29	1312	737	2642	4454	8190	3102	2387	653	434	352	439	547
30	1164	—	2804	4818	8354	2970	2297	660	452	356	436	549
31	1094	—	3005	—	8358	—	2272	648	—	355	—	600
Mean	982	933	1378	3741	7071	5085	2600	1109	515	381	418	573
Runoff in Ac.Ft.	60370	53670	84730	222600	434800	302600	159900	68200	30670	23420	24870	35260
	Water Year Total 1479024								Calendar Year Total 1501090			

Kern County Land Company station located 5 miles northeast of Bakersfield. Drainage area 2420 square miles. Kern River is a tributary of the Tulare Lake Basin. Period of record 1893 to date. Records for 1952 computed by Kern County Land Company.

TABLE 160

DELIVERY FROM FRIANT-KERN OANAL TO TULE RIVER - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1						0	319	447	447	239	227	
2						0	344	448	441	250	227	
3						0	360	442	444	248	230	
4						0	366	447	447	255	236	
5						0	367	450	446	258	241	
6						0	374	450	427	263	242	
7						0	387	446	412	262	241	
8						0	394	446	412	265	241	
9						0	385	451	413	269	242	
10						0	382	458	406	265	244	
11						0	392	465	408	262	241	
12	N	N	N	N	N	0	395	470	388	263	241	N
13	O	O	O	O	O	0	398	464	378	262	120	O
14						26	395	465	386	260	0	
15						42	394	469	80	262	0	
16						47	390	469	0	261	0	
17	F	F	F	F	F	73	401	476	0	267	0	F
18	L	L	L	L	L	88	400	478	0	272	0	L
19	O	O	O	O	O	136	401	475	75	273	0	O
20	W	W	W	W	W	197	404	449	211	273	0	W
21						170	414	440	238	257	0	
22						190	415	444	248	245	0	
23						223	411	447	252	245	0	
24						227	415	449	245	244	0	
25						238	418	449	232	247	0	
26						245	419	444	232	233	0	
27						262	424	448	232	226	0	
28						272	428	450	238	225	0	
29						304	438	450	233	224	0	
30		—				321	442	444	232	224	0	
31		—		—		—	440	450	—	226	—	
Mean	0	0	0	0	0	102	297	454	287	252	99	0
Runoff in Ac.Ft.	0	0	0	0	0	6071	24421	27928	17064	15521	5897	0
	Water Year Total 75484								Calendar Year Total 96902			

This flow is the delivery from Friant-Kern Canal into Tule River under contract agreements with the U. S. Bureau of Reclamation. This point of delivery is located on the Tule River approximately four miles west of Porterville. Records for 1952 computed by U. S. Bureau of Reclamation.

TABLE 161

DELIVERY FROM FRIANT-KERN CANAL TO PORTER SLOUGH - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1						0	15	28	39		0	
2						0	12	31	45		0	
3						0	4	34	45		0	
4						0	0	12	15		0	
5						0	0	0	0		0	
6						0	0	0	0		0	
7						0	0	0	0		0	
8						0	0	0	0		0	
9						0	0	0	0		0	
10						0	0	19	0		0	
11						0	0	31	0		0	
12	N	N	N	N	N	0	0	32	0	N	8	N
13	O	O	O	O	O	0	0	28	0	O	4	O
14						11	0	28	0		0	
15						17	0	28	26		0	
16						17	0	28	40		0	
17	F	F	F	F	F	17	13	28	40	F	0	F
18	L	L	L	L	L	17	17	11	40	L	0	L
19	O	O	O	O	O	17	17	0	40	O	0	O
20	W	W	W	W	W	17	17	0	41	W	0	W
21						17	17	0	44		0	
22						20	17	0	44		0	
23						25	17	0	41		0	
24						24	17	0	39		0	
25						22	17	20	39		0	
26						22	17	31	39		0	
27						28	17	31	16		0	
28						30	23	31	0		0	
29						23	28	31	0		0	
30		—				20	28	31	0		0	
31		—		—		—	28	31	—		—	
Mean	0	0	0	0	0	11	10	18	21	0	0.4	0
Runoff in Ac.Ft.	0	0	0	0	0	682	637	1079	1256	0	24	0
	Water Year Total 4250								Calendar Year Total 3678			

This flow is the delivery from Friant-Kern Canal into Porter Slough under contract agreements with the U. S. Bureau of Reclamation. This point of delivery is at the intersection of Porter Slough with the Friant-Kern Canal approximately four miles west of Porterville. Records for 1952 computed by U. S. Bureau of Reclamation.

TABLE 162

FLOW OF ELK BAYOU ABOVE ELK BAYOU AVENUE - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	129	21	0	112	78	235	0	4.0	2.8			0
2	74	14	0	87	82	199	0	4.8	1.3			0
3	42	65	9.8	81	127	156	0	6.4	1.8			0
4	30	55	6.0	78	164	140	0	6.9	0.4			0
5	23	22	3.1	74	157	120	0	6.0	0.6			0
6	12	15	1.6	84	148	120	0	5.6	2.6			0
7	4.6	13	0	101	125	124	0	4.5	1.8			0
8	21	3.7	34	132	113	108	0	1.8	1.6			0
9	19	3.2	28	123	120	66	0	0.8	1.1			0
10	10	0.2	21	100	107	59	0	0.9	1.1			0
11	7.8	0	141	109	121	19	0	5.0	0.6			0
12	7.4	0	199	81	168	7.3	0	4.8	0.2	N	N	0
13	11	0	128	46	171	3.2	0	4.8	0.2	0	0	0
14	76	0	113	40	186	0	0	3.0	0			0
15	55	0	87	29	198	0	0	2.8	0			0
16	226	0	489	13	214	0	0	2.6	0			0
17	382	0	582	4.6	188	0	0	9.0	0	F	F	0
18	160	0	366	7.5	166	0	0	11	0	L	L	0
19	107	0	247	0.6	185	0	0	8.7	0	0	0	0
20	52	0	306	1.8	209	0	0	4.6	0	W	W	0
21	27	0	205	2.8	246	0	0	0.9	0			0
22	13	0	187	4.2	224	0	0	0	0			0
23	3.1	0	204	6.6	206	0	0	1.2	0			0
24	1.6	0	211	19	211	0	0	0.8	0			0
25	40	0	221	28	232	0	0	3.2	0			0
26	436	0	197	58	259	0	0	0.8	0			4.0
27	351	0	154	101	261	0	0	0.8	0			6.6
28	181	0	189	78	257	0	0	0.5	0			6.2
29	103	0	199	86	269	0	0	1.1	0			5.3
30	63	—	175	92	268	0	0.8	3.1	0			4.6
31	41	—	146	—	252	—	7.3	3.0	—		—	4.8
Mean	87	7	156	59	184	45	0.4	3.7	0.5	0	0	1.2
Runoff in Ac.Ft.	5371	421	9620	3531	11330	2690	26	225	32	0	0	62
	Water Year Total 34065								Calendar Year Total 33308			

U. S. Bureau of Reclamation station located 1 mile east of Elk Bayou Avenue and 3.6 miles downstream from Highway 99. The flows passing this station, mainly of Kaweah River origin, can enter Tule River above the Turnbull gaging station. At times Tule River water enters Elk Bayou above this station via Porter Slough. Period of record 1942 to date. Records for 1952 computed by U. S. Bureau of Reclamation.

TABLE 163

FLOW OF SOUTH FORK KINGS RIVER BELOW EMPIRE WEIR #2 - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	308	0	0	50	748	2980	325					
2	56	0	0	50	930	3120	365					
3	51	0	0	50	1258	3120	215					
4	0	149	0	50	1730	3040	187					
5	0	296	0	155	1820	3200	162					
6	0	137	0	240	1860	3270	164					
7	0	110	0	333	1870	3260	145	N	N	N	N	N
8	0	86	0	600	1890	3300	120	0	0	0	0	0
9	0	61	0	675	1870	3300	82					
10	0	35	0	515	1765	3300	105					
11	0	10	0	330	1565	3385	116					
12	0	0	50	490	1575	3320	98	F	F	F	F	F
13	0	0	268	519	1665	2690	237	L	L	L	L	L
14	0	0	310	303	1720	1276	380	0	0	0	0	0
15	0	0	450	249	1760	217	345	W	W	W	W	W
16	31	0	535	138	1850	272	219					
17	432	0	813	175	1850	353	20					
18	698	0	475	75	1885	392	0					
19	169	0	250	160	2015	300	0					
20	0	0	150	372	2125	120	0					
21	0	0	100	448	1960	107	0					
22	0	0	75	212	1820	145	0					
23	0	0	50	70	2015	185	0					
24	60	0	50	300	2175	205	0					
25	184	0	50	438	2070	180	0					
26	590	0	50	408	2050	193	0					
27	1458	0	50	955	2175	144	0					
28	2023	0	50	860	2340	125	0					
29	1026	0	50	482	2540	230	0					
30	215	—	50	563	2690	330	0					
31	0	—	50	—	2860	—	0		—		—	
Mean	236	30	127	342	1885	1535	106	0	0	0	0	0
Runoff in Ac.Ft.	14456	1750	7813	20325	115723	91197	6504	0	0	0	0	0
	Water Year Total 257828								Calendar Year Total 257768			

Kings River Water Association station located 1 mile southwest of Stratford. This station measures inflow of Kings River water to the Tulare Lake area. Period of record 1937 to date. Records for 1952 computed by Kings River Water Association.

TABLE 164

FLOW OF CROSS CREEK BELOW LAKELAND CANAL #2 - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	170		0	460	255	1470						
2	0		0	350	185	1460						
3	0		0	200	230	1375						
4	0		0	150	370	1225						
5	0		0	200	570	1130						
6	0		0	330	665	1135						
7	0		0	470	750	1170						
8	0		0	510	795	1220						
9	0		0	505	775	1165						
10	0		0	395	680	1050						
11	0		0	225	510	940						
12	0	N	0	250	510	680	N	N	N	N	N	N
13	0	O	0	230	640	75	0	0	0	0	0	0
14	0		0	70	790	0						
15	0		0	0	920	0						
16	0		95	0	1000	0						
17	0	F	625	0	1090	0	F	F	F	F	F	F
18	0	L	1120	0	1110	0	L	L	L	L	L	L
19	0	O	985	100	1060	0	O	O	O	O	O	O
20	0	W	770	220	1050	0	W	W	W	W	W	W
21	0		790	240	1100	0						
22	0		810	185	1145	0						
23	0		630	200	1160	0						
24	0		410	195	1100	0						
25	0		290	210	1080	0						
26	0		260	250	1125	0						
27	0		265	315	1195	0						
28	0		455	400	1255	0						
29	0		610	420	1315	0						
30	0	—	570	340	1370	0						
31	0	—	505	—	1430	—			—		—	
Mean	5.5	0	300	247	878	466	0	0	0	0	0	0
Runoff in Ac.Ft.	337	0	18228	14717	54011	27759	0	0	0	0	0	0
	Water Year Total 115469								Calendar Year Total 115052			

Corcoran Irrigation District station located below the Cross Creek weir, 4 miles east of Guernsey. Cross Creek is a tributary of Tulare Lake area. At times the flow is a combination of Kaweah River water, Kings River water and Cottonwood Creek water. Period of record 1921 to date. Records for 1952 computed by Corcoran Irrigation District.

TABLE 165

FLOW OF GOOSE LAKE CANAL NEAR LOST HILLS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1					54	338	*97	47	0	27	NR	NR
2					71	386	*92	59	0	30	NR	NR
3					98	413	*87	53	0	29	NR	NR
4					109	444	*83	66	0	22	NR	NR
5					70	472	*78	63	0	20	NR	NR
6					12	428	*73	60	0	19	NR	NR
7					11	397	*68	34	0	22	NR	NR
8					16	383	*63	94	0	30	NR	NR
9				(a)0.9	18	370	*58	144	0	28	NR	NR
10				3.8	18	371	*53	160	0	22	NR	NR
11				NR	33	369	47	191	0	30	NR	0
12				NR	40	358	60	223	0	37	NR	0
13				NR	26	350	66	263	0	42	NR	0
14				NR	23	326	71	291	0	46	NR	0
15				NR	25	303	91	283	0	55	*23	0
16				NR	21	278	97	137	0	64	36	0
17				NR	14	250	80	56	0	45	45	0
18				6.5	15	217	52	71	0	26	41	0
19				30	19	196	36	78	0	*18	26	0
20				58	19	178	59	52	15	NR	*14	0
21				74	19	164	86	48	28	NR	12	0
22				80	13	155	80	66	45	NR	12	0
23				28	17	144	58	27	62	NR	NR	NR
24				19	43	146	57	0	58	NR	NR	NR
25				32	68	127	78	0	44	NR	NR	NR
26				38	83	122	73	0	32	NR	NR	NR
27				71	115	*117	59	0	27	NR	NR	NR
28				94	149	*112	50	0	27	NR	NR	NR
29				108	190	*107	60	0	28	NR	NR	NR
30		—		76	245	*102	59	0	27	NR	NR	NR
31		—		—	298	—	51	0	—	NR	—	NR
Mean					63.0	271	68.4	82.8	13.1			
Runoff in Ac.Ft.					3872	16130	4209	5090	780			
	Water Year Total								Calendar Year Total			

Division of Water Resources and U. S. Bureau of Reclamation cooperative station located approximately one-half mile north of the Wasco-Lost Hills road and below the confluence of Goose Lake and main drainage canals. This station measures inflow of Kern River water to the Tulare Lake area. Period of record 1944 to date. Records for 1952 computed by Division of Water Resources.

(a) Beginning of record April 9, 1952.

* Estimated.

TABLE 166

FLOW OF WEST-SIDE CANAL NEAR LOST HILLS - 1952

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0		0	33	1000	2450						
2	0		0	24	1090	2450						
3	0		0	29	1170	2410						
4	0		0	20	1470	2180						
5	0		0	3.4	1740	1920						
6	0		0	0.8	1920	1920						
7	0		0	4.7	1940	1780						
8	0		0	15	1920	2070						
9	0		0	29	1820	2180						
10	0		0	10	1730	1990						
11	0		0	6.8	1710	1940						
12	0	N	0	12	1400	1800	N	N	N	N	N	N
13	0	0	0	17	1460	1530	0	0	0	0	0	0
14	0		0	6.8	1530	1390						
15	0		0	1.1	1800	*1230						
16	0		0	0.9	1780	*1150						
17	0	F	0	12	1880	*1090	F	F	F	F	F	F
18	359	L	0	7.1	1990	*1020	L	L	L	L	L	L
19	362	O	0	1.3	2030	980	O	O	O	O	O	O
20	128	W	0	.7	1940	739	W	W	W	W	W	W
21	43		0	9.8	1940	437						
22	6.1		0	6.4	2010	241						
23	0.6		0	1.2	2140	200						
24	0.1		0	0.2	2200	251						
25	0		0.3	0	2130	227						
26	37		0	414	2300	0						
27	46		0	732	2370	0						
28	8.7		0	959	2410	0						
29	0.8		0	1030	2430	0						
30	0	—	0	1020	2450	0						
31	0	—	0.5	—	2470	—			—		—	
Mean	32.0	0	0	147.0	1878	1186	0	0	0	0	0	0
Runoff in Ac.Ft.	1966	0	2.0	8742	115500	70560	0	0	0	0	0	0
	Water Year Total 196770								Calendar Year Total 196770			

Division of Water Resources and U. S. Bureau of Reclamation cooperative station, also known as Main Drain at Hart's Station, located at bridge on State Highway between Wasco and Lost Hills. This station measures inflow of Kern River water to the Tulare Lake area. Period of record 1944 to date. Records for 1952 computed by Division of Water Resources.

* Estimated.

TABLE 167

DAILY ELEVATION OF TULARE LAKE IN KINGS COUNTY - 1952

Date	Daily Elevation in Feet(a)											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	(b)	184.30	185.04	188.73	188.60	194.93	190.70	189.04	187.30	186.56	186.08	186.00
2		184.70	185.10	188.88	188.65	195.15	190.68	189.00	187.30	186.55	186.07	186.00
3		185.19	185.07	189.04	188.75	194.38	190.65	188.87	187.30	186.54	186.06	186.00
4		185.24	185.00	189.16	188.87	193.60	190.65	188.81	187.30	186.48	186.05	186.00
5		185.29	184.94	189.22	189.00	193.05	190.62	188.74	187.16	186.43	186.05	186.00
6		185.34	184.90	189.28	189.30	192.50	190.56	188.63	187.15	186.42	186.04	186.00
7		185.39	184.87	189.34	189.55	192.00	190.53	188.58	187.10	186.41	186.03	186.06
8		185.44	184.81	189.20	189.67	191.50	190.51	188.55	187.05	186.40	186.02	186.10
9		185.49	184.84	189.18	189.80	191.00	190.45	188.44	187.00	186.40	186.01	186.18
10		185.54	184.90	189.17	189.90	190.97	190.41	188.44	186.96	186.36	186.00	186.24
11		185.59	184.88	188.97	190.02	190.95	190.41	188.39	186.94	186.34	186.00	186.34
12		185.63	184.90	188.95	190.15	190.93	190.36	188.31	186.92	186.32	186.01	186.44
13		185.67	185.00	188.83	190.25	190.92	190.31	188.25	186.88	186.30	186.01	186.56
14		185.71	185.07	188.68	190.42	190.91	190.26	188.19	186.84	186.28	186.01	186.68
15		185.74	185.17	188.58	190.55	190.90	190.24	188.15	186.79	186.27	186.02	186.82
16		185.77	185.34	188.48	190.72	190.90	190.22	188.15	186.78	186.25	186.02	186.96
17		185.80	185.70	188.40	190.90	190.90	190.12	188.10	186.77	186.24	186.02	187.10
18	179.00	185.76	186.50	188.38	191.15	190.90	190.10	188.05	186.76	186.23	186.02	187.22
19	179.10	185.71	187.00	188.30	191.36	190.90	190.04	188.01	186.76	186.22	186.02	187.32
20	179.60	185.67	187.50	188.20	191.66	190.90	189.98	187.96	186.74	186.20	186.02	187.40
21	180.20	185.62	187.55	188.18	191.90	190.88	189.86	187.91	186.73	186.19	186.02	187.48
22	180.80	185.58	187.60	188.16	192.15	190.87	189.78	187.86	186.71	186.18	186.01	187.52
23	180.90	185.53	187.66	188.16	192.42	190.85	189.66	187.81	186.70	186.18	186.01	187.56
24	181.00	185.49	187.60	188.15	192.68	190.83	189.64	187.76	186.70	186.18	186.01	187.62
25	181.20	185.44	187.70	188.15	192.96	190.82	189.52	187.71	186.68	186.17	186.01	187.64
26	181.60	185.40	187.78	188.26	193.24	190.81	189.42	187.66	186.67	186.16	186.01	187.66
27	182.10	185.37	187.90	188.36	193.52	190.81	189.36	187.50	186.65	186.14	186.00	187.70
28	182.60	185.36	188.02	188.46	193.78	190.80	189.30	187.47	186.63	186.12	186.00	187.74
29	183.00	185.20	188.16	188.54	194.05	190.78	189.30	187.40	186.62	186.10	186.00	187.78
30	183.50	—	188.37	188.58	194.36	190.76	189.16	187.40	186.56	186.10	186.00	187.92
31	183.90	—	188.58	—	194.62	—	189.08	187.38	—	186.09	—	187.98

Station is maintained and operated by Tulare Lake Water Storage Basin District. Station is located approximately 6 miles southwest of Corcoran on the south end of El Rico Bridge. Records are available at this and other sites from 1937 to date.

(a) U.S.G.S. datum.
(b) Lake dry to January 17, 1953.

TABLE 168 (a)

FLOW OF BEAR CREEK ABOVE SAN JOAQUIN RIVER - 1951

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	595	1080	540	86	475	48	32	14	58	75	18	26
2	510	1050	490	80	460	42	28	14	58	70	15	27
3	422	1070	460	78	465	37	26	14	60	78	12	27
4	375	1090	470	91	415	37	24	15	63	88	12	54
5	365	1080	440	110	355	40	23	18	57	118	13	92
6	395	1170	525	113	350	40	22	19	66	72	14	251
7	360	1550	570	117	280	43	22	20	70	38	15	400
8	355	1570	640	119	226	47	22	23	83	24	15	350
9	305	1430	600	116	177	49	22	28	88	16	15	295
10	285	1300	500	121	130	50	22	33	100	16	16	227
11	290	1210	370	112	108	51	22	35	92	15	18	161
12	366	1270	260	101	87	51	21	33	79	13	17	127
13	719	1410	320	88	70	53	22	28	73	18	16	108
14	1270	1750	280	86	67	47	20	28	69	42	11	92
15	1180	1670	255	85	40	42	19	32	74	35	11	81
16	1030	1070	220	87	36	40	19	33	78	21	10	69
17	900	1170	207	97	40	38	19	32	75	15	11	61
18	830	1000	195	101	42	37	18	31	78	16	10	66
19	970	870	185	100	42	38	18	31	79	18	12	72
20	1420	810	175	104	40	37	18	33	77	26	27	72
21	1300	810	163	102	44	37	17	33	89	28	38	74
22	1770	770	158	103	44	37	16	34	100	21	40	72
23	1620	740	150	100	42	40	15	33	95	16	34	78
24	1500	730	143	89	39	44	14	34	84	19	31	115
25	1360	690	132	92	35	44	12	44	75	26	31	183
26	1320	680	105	99	35	52	16	58	66	33	33	129
27	1230	690	91	105	39	53	17	57	61	24	35	122
28	1160	630	114	117	62	46	14	57	56	19	36	149
29	1110		120	233	88	42	14	57	51	21	30	181
30	1080	—	118	400	72	37	14	57	70	18	25	316
31	960	—	87	—	57	—	14	55	—	18	—	581
Mean	898	1084	293	114	144	43	19	33	74	34	21	150
Runoff in Ac.Ft.	55244	60219	18016	6807	8850	2577	1194	2049	4411	2097	1232	9239
	Water Year Total 267322								Calendar Year Total 171935			

This record was not available at the time of publication of the 1951 Water Supervision Report.

(a) Table 128 of 1951 Report.

TABLE 169

FLOW OF NATOMAS CROSS CANAL AT HEAD(a) - 1951

Date	Daily Mean Flow in Second Feet											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	176	244	168	36	84	17	*1	*1	15	32	67	135
2	151	194	148	35	68	13	*1	*1	16	35	69	917
3	150	174	143	39	64	13	*1	*1	16	49	66	762
4	208	174	134	41	156	*10	*1	*1	15	76	68	1710
5	244	907	294	42	559	*9	*1	*1	14	77	69	1090
6	190	807	388	41	214	*8	*1	*1	14	66	67	653
7	164	403	530	37	126	*7	*1	*1	16	54	66	410
8	154	389	498	32	98	*6	*1	*1	20	49	57	272
9	145	372	314	32	75	*5	*1	*1	22	48	49	176
10	213	338	306	28	62	*4	*1	*1	18	46	45	154
11	1250	367	228	32	45	*2	*1	*1	15	43	45	143
12	1590	609	196	33	43	*1	*1	*1	22	39	53	128
13	470	540	184	33	43	*1	*1	*1	24	39	58	123
14	382	412	170	32	34	*1	*1	*1	27	36	94	106
15	314	402	156	27	28	*1	*1	*1	35	34	84	97
16	618	373	148	22	25	*1	*1	*1	54	34	65	97
17	498	345	142	18	21	*1	*1	*1	56	33	57	92
18	572	330	106	14	19	*1	*1	*1	59	33	50	90
19	2140	322	91	13	15	*1	*1	*2	62	31	55	96
20	834	282	89	9.0	24	*1	*1	*4	68	28	102	114
21	576	275	82	*9.0	26	*1	*1	*6	66	27	266	106
22	2070	269	77	*9.0	22	*1	*1	*8	61	25	246	97
23	2210	240	77	*9.0	25	*1	*1	*10	38	22	178	91
24	972	211	74	*9.0	29	*1	*1	*11	30	24	130	88
25	592	161	73	*9.0	27	*1	*1	*12	31	49	114	88
26	523	137	68	*9.0	22	*1	*1	*13	43	178	101	94
27	461	151	62	15	15	*1	*1	*14	34	128	97	150
28	394	178	55	18	17	*1	*1	*15	34	108	110	208
29	343		46	26	21	*1	*1	*15	37	96	111	1740
30	298	—	41	70	13	*1	*1	15	35	84	104	1320
31	284	—	39	—	17	—	*1	16	—	72	—	707
Mean	619	343	165	26.0	65.7	3.8	*1	5.1	33.2	54.7	91.4	389
Runoff in Ac.Ft.	38060	19050	10170	1545	4040	224	61	315	1978	3362	5441	23910
	Water Year T[illegible]1 196286								Calendar Year Total 108157			

This record was not available at the time of publication of the 1951 Water Supervision Report.

(a) Table 73 of the 1951 Report.
* Estimated.

TABLE 170

SUMMARY OF WATER UTILIZATION OF SACRAMENTO-SAN JOAQUIN VALLEYS

	Year	Acreage			Diversion Acre-Feet	Irrigation Draft Average c.f.s. July	Gross Duty of Water		Runoff in % of Normal Sacto. R. at Red Bluff
		General	Rice	Total			Ac. Ft. per Acre	Acres per Sec. Ft.	
							(a)	(a)	
Sacramento River	1942	111200	107700	218900	1279000	4662	5.7	85	130
	1943	107400	115600	223000	1417000	4699	6.2	78	98
Redding	1944	111900	122200	234100	1678000	5502	7.1	69	54
	1945	106500	115100	221600	1676000	5766	7.4	65	77
to	1946	117600	124100	241700	1778000	5560	7.2	67	93
	1947	121600	124000	245600	1707000	5600	6.8	71	59
Sacramento	1948	149700	124100	273800	1593000	5947	5.7	85	88
	1949	143500	137300	280800	1873000	6344	6.6	74	70
	1950	152800	108500	261300	1794000	5944	6.7	72	66
	1951	162200	140800	303000	1975000	6653	6.4	76	105
	Av. 1942 to 1951	128400	122000	250400	1677000	5668	6.6	74	84
	1952	142900	139100	282000	1805000	5987	6.3	77	133
									Sacto. R. at Red Bluff
					(b)		(b)	(b)	
Colusa Trough	1942	270	1520	1790	28300	104	15.8	31	130
	1943	600	2770	3370	40700	160	12.1	40	98
above	1944	1540	4490	6030	53700	198	8.9	55	54
	1945	200	3880	4080	48500	171	11.9	41	77
Highway 20 Bridge	1946	3030	3690	6720	71200	256	10.6	46	93
	1947	1040	6570	7610	80500	281	10.6	46	59
	1948	3250	4740	7990	67500	275	8.4	58	88
	1949	3140	5560	8700	90200	310	10.4	47	70
	1950	4930	5150	10080	108100	353	10.7	45	66
	1951	4050	6640	10690	130200	417	12.2	40	105
	Av. 1942 to 1951	2210	4500	6710	71900	253	10.7	45	84
	1952	5140	7280	12420	162300	519	13.1	37	133
									Sacto. R. at Red Bluff
Back Borrow Pit	1942	2760	5650	8410	37800	179	4.5	108	130
	1943	2810	11680	14490	74600	279	5.1	94	98
Knights Landing	1944	960	9020	9980	65800	240	6.6	74	54
Outfall Gates	1945	1580	5180	6760	38500	161	5.7	85	77
	1946	2060	7880	9940	70900	256	7.1	68	93
to	1947	2300	9040	11340	73900	254	6.5	75	59
	1948	2460	7080	9540	59100	257	6.2	78	88
Highway 20 Bridge	1949	1270	9000	10270	69500	230	6.8	72	70
	1950	3230	5920	9150	64400	203	7.0	69	66
	1951	2860	6970	9830	73500	241	7.5	65	105
	Av. 1942 to 1951	2230	7740	9970	62800	230	6.3	77	84
	1952	2700	5900	8600	73000	295	8.5	57	133
									Sacto. R. at Red Bluff
	1942	1730	880	2610	12400	52	4.8	102	130
	1943	1860	1410	3270	18700	84	5.7	85	98
Yolo By-Pass	1944	1540	4230	5770	33400	126	5.8	84	54
	1945	1820	3820	5640	35800	141	6.3	77	77
and	1946	1790	3000	4790	30300	112	6.3	77	93
	1947	3220	2980	6200	27200	110	4.4	111	59
Knights Landing Ridge Cut	1948	1710	2260	3970	27800	93	7.0	69	88
	1949	1740	2150	3890	34600	83	8.9	55	70
	1950	1650	1920	3570	29300	84	8.2	59	66
	1951	3650	3360	7010	40700	141	5.8	84	105
	Av. 1942 to 1951	2070	2600	4670	29000	103	6.2	78	84
	1952	3770	540	4310	12200	40	2.8	172	133
									Feather R. near Oroville
	1942	8720	1040	9760	31900	65	3.3	149	139
	1943	8730	2020	10750	35900	77	3.3	146	117
Lower Butte Creek	1944	7750	1760	9510	33700	60	3.5	137	58
	1945	7820	2110	9930	39600	88	4.0	122	78
and	1946	8250	1850	10100	45600	123	4.5	108	87
	1947	4520	1120	5640	19800	58	3.5	138	53
Butte Slough	1948	4650	660	5310	27600	106	5.2	93	81
	1949	7140	1880	9020	65200	205	7.2	67	54
	1950	7200	1540	8740	50500	187	5.8	84	80
	1951	6980	1700	8680	53400	206	6.2	79	119
	Av. 1942 to 1951	7170	1570	8740	40300	118	4.6	105	87
	1952	8660	2850	11510	52400	181	4.6	107	165

(a) Excluding Municipal diversions, the City of Sacramento and the City of Redding.
(b) Includes an undetermined amount of water used by cooperative plants and is not indicative of use.

TABLE 170

SUMMARY OF WATER UTILIZATION OF SACRAMENTO-SAN JOAQUIN VALLEYS

	Year	Acreage			Diversion Acre-Feet	Irrigation Draft Average c.f.s. July	Gross Duty of Water		Runoff in % of Normal Feather R. near Oroville
		General	Rice	Total			Ac. Ft. per Acre	Acres per Sec. Ft.	
East and West Borrow Pits of Sutter By-Pass and Sacramento Slough	1942	5550	1790	7340	22700	88	3.1	157	139
	1943	5380	3040	8420	33100	133	3.9	124	117
	1944	5890	4300	10190	51100	195	5.0	97	58
	1945	4710	7000	11710	54700	199	4.7	104	78
	1946	9380	4920	14300	59200	217	4.1	117	87
	1947	8840	3210	12050	48400	180	4.0	121	53
	1948	7920	2640	10560	36200	149	3.4	142	81
	1949	8300	6180	14480	77600	252	5.4	91	54
	1950	11650	4480	16130	89100	329	5.5	88	80
	1951	11120	6110	17230	103200	405	6.0	81	119
	Av. 1942 to 1951	7870	4370	12240	57500	215	4.7	103	87
	1952	10060	5580	15640	78400	284	5.0	97	165
									Feather R. near Oroville
Feather River Mouth to Oroville Bridge	1942	25100	38500	63600	540000	2042	8.5	57	139
	1943	24100	46600	70700	621000	2135	8.8	55	117
	1944	25200	49800	75000	713000	2312	9.5	51	58
	1945	25100	47900	73000	698000	2313	9.5	51	78
	1946	27200	51100	78300	745000	2362	9.5	51	87
	1947	28300	49700	78000	674000	2245	8.6	56	53
	1948	29500	43300	72800	586000	2292	8.0	60	81
	1949	31000	51100	82100	716000	2241	8.7	56	54
	1950	34000	41300	75300	662000	2229	8.8	55	80
	1951	31200	56500	87700	727000	2319	8.3	59	119
	Av. 1942 to 1951	28100	47600	75700	669000	2249	8.8	55	87
	1952	30300	57900	88200	727000	2438	8.2	59	165
									Yuba R. at Smartville
Yuba River Mouth to Smartville	1942	6660	1120	7780	74700	243	9.6	51	138
	1943	6280	2310	8590	93800	280	10.9	45	127
	1944	7010	2400	9410	93300	273	9.9	49	57
	1945	8820	1080	9900	84200	229	8.5	57	86
	1946	8870	1960	10830	98700	278	9.1	53	97
	1947	8280	3630	11910	100100	282	8.4	58	55
	1948	8720	3120	11840	92800	281	7.5	62	82
	1949	8840	3300	12140	106800	316	8.8	55	60
	1950	10000	2640	12640	127400	342	10.1	48	85
	1951	9640	3420	13060	110300	313	8.4	58	164
	Av. 1942 to 1951	8310	2500	10810	98200	284	9.1	53	95
	1952	9800	3600	13400	131800	362	9.8	49	172
							(a)	(a)	American R. at Fairoaks
American River Mouth to Fairoaks	1942	3130		3130	4170	23	1.3	373	138
	1943	3110		3110	4580	25	1.9	257	136
	1944	3200		3200	4820	25	1.6	296	51
	1945	2940		2940	3860	17	1.3	375	88
	1946	2890		2890	4120	18	1.8	275	101
	1947	3670		3670	5910	19	1.7	291	50
	1948	3630		3630	5880	28	1.9	255	79
	1949	3860		3860	5510	24	2.6	186	65
	1950	4000		4000	4600	18	2.5	192	94
	1951	4830		4830	5450	21	2.0	249	169
	Av. 1942 to 1951	3530		3530	4890	22	1.8	264	97
	1952	4560		4560	3950	17	1.7	293	175
							(b)	(b)	Sacto. R. at Red Bluff
Sacramento River System Sacramento River and Tributaries	1942	165100	158200	323300	2031000	7458	6.2	78	130
	1943	160300	185400	345700	2342000	7872	6.7	72	98
	1944	165000	198200	363200	2727000	8931	7.5	65	54
	1945	159500	186100	345600	2679000	9085	7.7	63	77
	1946	181100	198500	379600	2903000	9182	7.6	64	93
	1947	181800	200200	382000	2737000	9029	7.1	68	59
	1948	211500	187900	399400	2496000	9428	6.2	78	88
	1949	208800	216500	425300	3038000	10005	7.1	68	70
	1950	229500	171400	400900	2929000	9689	7.3	67	66
	1951	236500	225500	462000	3219000	10716	6.9	70	105
	Av. 1942 to 1951	189900	192800	382700	2710000	9140	7.0	69	84
	1952	217900	222700	440600	3046000	10123	6.9	71	133

(a) Excludes diversion and acreage of Carmichael Irrigation District.
(b) Excluded Municipal and Carmichael Irrigation District diversions and acreage of Carmichael Irrigation District.

TABLE 170

SUMMARY OF WATER UTILIZATION OF SACRAMENTO-SAN JOAQUIN VALLEYS

	Year	Acreage			Diversion Acre-Feet	Irrigation Draft Average c.f.s. July	Gross Duty of Water		Runoff in % of Normal San Joaquin R. near Vernalis
		General	Rice	Total			Ac. Ft. per Acre	Acres per Sec. Ft.	
Old San Joaquin River and Tom Paine Slough Delta Uplands (a)	1942	33110		33110	61900	254	1.9	260	120
	1943	35530	150	35680	76100	267	2.1	228	118
	1944	37930	240	38170	105700	325	2.8	175	63
	1945	37300	220	37520	106400	369	2.8	171	107
	1946	40000	320	40320	126100	374	3.1	155	93
	1947	43140	550	43690	136800	423	3.1	155	56
	1948	45380	470	45850	135600	427	3.0	164	68
	1949	51310	380	51690	157700	480	3.1	159	62
	1950	50230	360	50590	161200	491	3.2	153	76
	1951	49560	410	49970	152000	477	3.0	160	118
	Av. 1942 to 1951	42350	310	42660	122000	389	2.9	170	88
	1952	48580		48580	135400	459	2.8	174	156
									San Joaquin R. near Vernalis
San Joaquin River Stockton to Vernalis	1942	17930		17930	42200	198	2.4	206	120
	1943	19500		19500	51700	189	2.7	183	118
	1944	20730		20730	59300	185	2.9	170	63
	1945	19940		19940	62300	213	3.1	156	107
	1946	24500		24500	77200	250	3.2	154	93
	1947	25120		25120	84500	251	3.4	144	56
	1948	25550		25550	66600	226	2.6	188	68
	1949	26950		26950	78600	243	2.9	167	62
	1950	26600		26600	84600	277	3.2	153	76
	1951	26610		26610	74900	242	2.8	173	118
	Av. 1942 to 1951	23340		23340	68200	227	2.9	166	88
	1952	24750		24750	58700	199	2.4	205	156
									San Joaquin R. near Vernalis
San Joaquin River Vernalis to Fremont Ford	1942	41930	580	42510	104400	461	2.5	199	120
	1943	41140	340	41480	121700	486	2.9	166	118
	1944	42200	1460	43660	138300	440	3.2	153	63
	1945	41600	850	42450	131400	495	3.1	157	107
	1946	43090	1400	44490	160000	520	3.6	135	93
	1947	43080	1360	44440	181400	554	4.1	119	56
	1948	46380	540	46920	141800	471	3.1	157	68
	1949	45780	620	46400	166900	551	3.6	135	62
	1950	48110	390	48500	175100	537	3.6	135	76
	1951	48740	730	49470	172700	571	3.5	139	118
	Av. 1942 to 1951	44200	830	45030	149700	509	3.3	146	88
	1952	47400	620	48020	147300	508	3.1	158	156
									Merced R. at Exchequer
Merced River Mouth to Yosemite Valley Railroad Crossing (b)	1942	3300		3300	8400	44	2.5	191	122
	1943	3680		3680	11700	50	3.2	153	122
	1944	4510		4510	13500	42	3.0	182	65
	1945	4400		4400	11800	50	2.7	181	104
	1946	4480		4480	14400	59	3.2	151	89
	1947	5910		5910	21100	71	3.6	136	54
	1948	6490		6490	17800	80	2.7	177	65
	1949	7940		7940	25600	92	3.2	151	60
	1950	7910		7910	23900	78	3.0	161	68
	1951	8090		8090	22200	78	2.7	177	116
	Av. 1942 to 1951	5670		5670	17000	64	3.0	162	87
	1952	7460		7460	18100	64	2.4	200	148
									Tuolumne R. near La Grange
Tuolumne River Mouth La Grange Dam (c)	1942	1620		1620	2770	10	1.7	284	120
	1943	1830		1830	2020	9	1.4	339	120
	1944	3160		3160	4100	13	1.3	375	67
	1945	3260		3260	3560	12	1.1	445	106
	1946	3560		3560	4920	15	1.4	352	96
	1947	3760		3760	7470	20	2.0	245	56
	1948	3740		3740	6230	21	1.7	292	72
	1949	4410		4410	6440	18	1.5	333	63
	1950	4690		4690	6100	18	1.3	374	79
	1951	4500		4500	4620	14	1.0	473	127
	Av. 1942 to 1951	3450		3450	4880	15	1.4	344	91
	1952	4790		4790	5080	18	1.1	458	156

(a) Excluding diversions and acreages of Delta Mendota Canal.
(b) Excluding diversion and acreage of Merced Irrigation District.
(c) Excluding diversion and acreage of Modesto, Turlock and Waterford Irrigation Districts.

TABLE 170

SUMMARY OF WATER UTILIZATION OF SACRAMENTO-SAN JOAQUIN VALLEYS

	Year	Acreage			Diversion Acre-Feet	Irrigation Draft Average c.f.s. July	Gross Duty of Water		Runoff in % of Normal Stanislaus R. below Melones
		General	Rice	Total			Ac. Ft. per Acre	Acres per Sec. Ft.	
Stanislaus River	1942	7100	130	7230	20000	75	2.8	176	119
	1943	7360		7360	22100	73	3.0	162	125
	1944	7920		7920	21800	69	2.8	177	54
Mouth	1945	6870		6870	21700	72	3.2	154	102
	1946	6340		6340	26800	82	4.2	115	94
to	1947	6600		6600	30100	88	4.6	107	52
	1948	7920		7920	29700	99	3.8	130	72
Goodwin Dam	1949	8550		8550	34000	106	4.0	122	60
(a)	1950	8440		8440	33400	102	4.0	123	86
	1951	8340		8340	34700	99	4.2	117	136
	Av. 1942 to 1951	7550	10	7560	27400	86	3.6	134	90
	1952	7770		7770	30200	91	3.9	125	154
San Joaquin River System									San Joaquin near Vernalis
	1942	105000	700	105700	240000	1042	2.3	214	120
San Joaquin River	1943	109000	500	109500	286000	1074	2.6	186	118
	1944	116400	1700	118100	343000	1074	2.9	167	63
Stockton-Fremont Ford	1945	113300	1100	114400	337000	1211	2.9	165	107
	1946	122000	1700	123700	409000	1300	3.3	147	93
and Tributaries	1947	127600	1900	129500	461000	1407	3.6	137	56
	1948	135500	1000	136500	401000	1324	2.9	165	68
(b)	1949	144900	1000	145900	469000	1490	3.2	151	62
	1950	146000	700	146700	484000	1503	3.3	147	76
	1951	145900	1100	147000	461000	1481	3.1	155	118
	Av. 1942 to 1951	126600	1100	127700	389000	1291	3.0	160	88
	1952	140800	600	141400	395000	1339	2.8	174	156
Combined above Delta							(c)	(c)	Sacramento and San Joaquin Rivers to Delta
	1942	270100	158900	429000	2271000	8500	5.3	92	131
Sacramento River	1943	269300	185900	455200	2628000	8946	5.7	85	114
and Tributaries	1944	281400	199900	481300	3070000	10005	6.3	77	57
and	1945	272800	187200	460000	3016000	10296	6.5	75	87
San Joaquin River	1946	303100	200200	503300	3312000	10482	6.5	74	93
Stockton-Fremont Ford	1947	309400	202100	511500	3196000	10436	6.2	78	55
and Tributaries	1948	347000	188900	535900	2897000	10752	5.4	90	80
	1949	353700	217500	571200	3507000	11495	6.1	80	63
(b)	1950	375500	172100	547600	3413000	11192	6.2	78	77
	1951	382400	226600	609000	3680000	12197	6.0	81	125
	Av. 1942 to 1951	316500	193900	510400	3099000	10430	6.0	80	88
	1952	358600	223400	582000	3441000	11462	5.9	82	154

(a) Excluding diversions and acreages of South San Joaquin Irrigation District and Oakdale Irrigation District.
(b) Excluding diversions and acreages of Merced Irrigation District on Merced River, Modesto Irrigation District and Turlock Irrigation District on Tuolumne River, South San Joaquin Irrigation District and Oakdale Irrigation District on Stanislaus River.
(c) Excluding municipal diversions on Sacramento River, the City of Sacramento and the City of Redding. Also excluding diversion and acreage of the Carmichael Irrigation District on American River.

TABLE 171

DIVERSIONS AND ACREAGES IRRIGATED - SACRAMENTO RIVER - 1952

Water User	Mile and Bank above Sacramentc	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--"M" STREET BRIDGE--	0.0												
--"I" STREET BRIDGE--	0.4												
--GAGING STATION-SACRAMENTO RIVER AT SACRAMENTO--	0.43L												
City of Sacramento	0.8L	(a)3-18" 2-20" 2-24"	2173	2609	3953	4080	5006	4931	4155	3349	(b)30256	Municipal	
--AMERICAN RIVER--	1.1L												
--BACK BORROW PIT RECLAMATION DISTRICT 1000	1.3L												
E. Fourness	1.45R	1-8"			8	50	61	109	45		273	153	
--RECLAMATION DISTRICT 1000 DRAIN--	2.1L												
Elmer F. Christophel	2.15L	1-8"				25	46	9	19		99	36	
D. D. Parr	3.15L	1-6"					14				14	26	
Rose Orchard	3.55R	1-16"				358	251	13			622	170	
Evergreen Farms	3.75R	1-6"				NO DIVERSION							
M. Owyang (c)	4.0R	1-10"				34	59	67			160	70	
--SACRAMENTO WEIR--	4.2												
Reese and Greer	4.65R	1-7"			27	84	52	18			181	98	
George W. Reed (d)	5.05R	1-14"					10	4	1		15	14	
Mary S. Seydel Estate (e)	5.25R	1-8"			41	61	44	85	44	1	276	170	
A. R. Merkley	5.3R	1-6"				37	12	30			79	59	
Lucy Casselman	5.5R	1-6"				21	13	9			43	30	
A. A. Casselman	5.55R	1-6"				25	31	1			57	40	
J. E. Bandy	6.0R	1-6"				NO DIVERSION							
Riverside Mutual Water Company	6.1L	2-18"			372	890	1194	1407	510	417	4790	1492	
W. W. White	6.6R	1-6"				NO DIVERSION							
--RECLAMATION DISTRICT 1000 DRAIN #3--	6.85L												
Fred C. Jones	7.5L	1-8"				26	9	42	11		88	100	
A. Marty and F. Inderkum (f)	(g)7.7R	1-8"					112	69	24		205	165	
M. R. Williamson	7.8L	1-10"				83	17	14			114	86	
E. D. Willey	7.9L	1-10"					148	49			197	140	
A. Marty and F. Inderkum (h)	8.25R	1-8"				1	48	87			136	(i)130	
A. Marty and F. Inderkum (j)	8.3R	1-8"				10	81	95	20		206	(i)	
Blauth Estate	8.5R	1-7"			7	46	47	18			118	50	
H. Waldeck	8.7R	1-6"					43	25	14	32	114	40	
Fong Yen, et al. and Fong Shee (k)	9.3L	1-10"				96	202	156	86	2	542	227	
Henry Amen	9.35R	1-14"				203	285	302	219		1009	335	
F. C. Jones	9.8L	1-8"				18	8	43	18	3	(m)90	(n)32	
Carl Casselman	9.9R	1-12"				124	18	62	18		222	128	
Lloyd M. Robbins	10.25L	1-14"		7	71	68	103	115	59	19	(n)442	472	
Leona Hughes (p)	10.65R	1-12"			1	62	73	57	19		212	142	
Edward Russell	10.75L	(q)1-3" 1-12"				4	5	3			12	5	
W. A. Ten Eyck	11.1R	1-12"			25	70	118	184	127		524	192	
--ELKHORN FERRY--	11.9												
Conaway Ranch	12.0R	4-36"			9852	7308	9423	9701	4711	498	(r)41493	2661	(s)5450
Thomas O'Connor Estate	12.5R	1-12"						103	37		140	100	

(a) Formerly listed as 1-18" and 3-20" units.
(b) Additional acre-feet diverted: January 2169, February 1999, November 2252 and December 2120.
(c) Formerly listed as M. C. C. Van Loben Sells.
(d) Formerly listed as Jack R. Damron.
(e) Formerly listed as R. S. Seydel.
(f) Formerly listed as A. Marty.
(g) Formerly listed as Mile 7.9R.
(h) New installation in 1952.
(i) Combined acreage of plants at Miles 8.25R and 8.3R.
(j) Formerly listed as M. Marty.
(k) Formerly listed as Fong Yen, et al.
(m) Additional acre-feet diverted: November 6.
(n) Plant at Mile 10.25L, furnished an undetermined amount of water in May to 11 acres under plants at Mile 9.8L.
(p) Formerly listed as Ray Hughes.
(q) The 3" unit was a temporary installation for 1952.
(r) Additional acre-feet diverted: November 1927.
(s) Includes 1230 acres outside of Conaway Ranch.

TABLE 171

DIVERSIONS AND ACREAGES IRRIGATED - SACRAMENTO RIVER - 1952 (Cont'd)

Water User	Mile and Bank above Sacramento	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
William Plumb, Jr.	12.7R	1-6"					16	13			29	40	
Lewis Thornton	12.95L	1-3"				1	1	1			3	4	
S. C. Farms Inc. (a)	13.1R	1-12"			12	70	123	43	25	69	342	(b)103	
S. C. Farms Inc. (c)	13.25R	(d)1-10" 1-12"			45	68	55		149	14	331	(e)113	
Elkhorn Mutual Water Co. (Natomas)	14.1L	(f)1-24" 1-30"			280		2243	2797	1510	206	7036	(g)2550	
Joseph Veress	14.25R	1-14"						63			63	33	
D. J. Damron (h)	15.1R	1-10"					40	189	73		302	215	
Natomas Central Mutual Water Company	16.0L	1-24" 2-32" 2-38"		1016	8750	7781	8203	8427	3854	250	(g)38281	(i)2210	(i)6100
Hershey Estate (j)	16.27R	1-20"					52	96	5		153	170	
Sacramento River Ranch	16.62R	1-14"				57	22	61		39	179	(k)240	
Sacramento River Ranch	17.0R	1-14"						16			16	(k)	
Frank and Ruth Lang	17.4R	1-16"				24	213	31			268	129	
California Western States Life Insurance Company	17.75R	1-16"				NO DIVERSION							
Jose Alves and Sons	18.0R	1-20"		1	372	539	506	332	105	19	1874	825	
H. C. Lauppe	18.2L	2-10"			58	17	109	63	23		270	350	
M. and J. Scheiber	18.45L	1-12"					89	64	54	100	307	183	
J. L. Brannely (m)	18.7L	1-8"						79	13		92	80	
SACRAMENTO TO VERONA Totals			2173	3633	23874	22341	29205	30083	15948	5018	132275	14608	11550
Average cubic feet per second			35	61	388	375	475	489	268	82	272		
Monthly use in per cent of seasonal			1.6	2.7	18.1	16.9	22.1	22.7	12.1	3.8			
--GAGING STATION-SACRAMENTO RIVER AT VERONA--	19.6L												
--CROSS CANAL-RECLAMATION DISTRICTS 1000 AND 1001--	19.6L												
Arthur Drown	*(0.05S)	1-20"				4	80	56	18	13	171	122	
Natomas Central Mutual Water Company (Bennett Subd. Plant)	*(1.0S)	1-24"		134	2341	1804	2191	2389	1736	60	10655	107	1410
Natomas Central Mutual Water Company	*(2.0S)	1-20" 1-24"		1754	5477	4767	5436	5450	2714		25598	436	3184
B. J. Ukropina	(n)*(3.35N)	1-16"		246	323	293	252	272	508	8	1902	(p)812	(p)240
Roy C. Osterli	*(3.35N)	1-14"			541	412	606	618	439		(p)2616		269
--FEATHER RIVER--	20.9L												
--SACRAMENTO SLOUGH--	21.2L												
West Coast Life Insurance Co.	21.7R	1-15"				44	225	308	80		657	375	
Sacramento River Ranch	22.5R	1-22"			294	1183	676	1511	1513	295	5472	(q)160	590
A. F. Johnston	26.8L	1-16"				NO DIVERSION							
Anthony Furlan	26.8L	1-16"						60			60	57	
--FREMONT WEIR--	28.0												
Gus Inglin (r)	28.2R	1-6"				18	23	11	17		69	20	
Ralph White (s)	28.9L	1-8"					27	8			35	10	
Hershey Estate	29.0R	1-12" 2-16"			299	584	810	980	729	1	3403	52	228
Russell Brothers	29.2R	1-12"				26	65	85			176	130	
Sebastian Yturralde (t)	29.9L	1-12"				7	26	37			70	100	
M. R. Richardson	(u)30.1R	1-8"				NO DIVERSION							

* Cross Canal - The main drain between R.D. 1000 and R.D. 1001 joins the Sacramento River at Mile 19.6L. Distance from Sacramento River and bank are shown in ().

(a) Formerly listed as Frank F. Newman.
(b) Of this figure, 32 acres were double cropped.
(c) Formerly listed as V. Santoni.
(d) The 12" unit replaced an 8" unit in 1952. The 10" unit was a temporary installation during the season.
(e) Of this figure, 40 acres were double cropped.
(f) These units replaced 1-20" and 1-24" units formerly listed at this location.
(g) Plant at Mile 16.0L furnished an undetermined amount of water to plant at Mile 14.1L.
(h) Formerly listed as J. A. Damron.
(i) This acreage also received an undetermined amount of water from controlled drainage.
(j) Formerly listed as Henry Rich (Hershey Ranch)
(k) Combined acreage of plants at Miles 16.62R and 17.0R.
(m) Formerly listed as J. R. Brannely.
(n) Formerly listed as Natomas Company (Ben May Plant).
(p) Roy C. Osterli plant at Mile (3.35N) furnished an undetermined amount of water to B. J. Ukropina plant at Mile (3.35N).
(q) This acreage also received an undetermined amount of water from plant on Knights Landing Ridge Cut at Mile 6.3L.
(r) Formerly listed as Gustaf Inglin.
(s) New installation in 1952.
(t) Formerly listed as Sebastine Yturralde.
(u) Formerly listed as Mile 29.7R.

TABLE 171

DIVERSIONS AND ACREAGES IRRIGATED - SACRAMENTO RIVER - 1952 (Cont'd)

Water User	Mile and Bank above Sacramento	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Leo Giovanetti	30.2L	1-5"				NO DIVERSION							
Anthony Furlan	30.5L	1-14"				75	36	86			197	90	
M. R. Richardson	30.7R	1-10"				66	72	58	24		220	70	
Albert Nusz (a)	30.75R	1-6"				7	12	21	6	6	52	22	
Alice E. West	30.9L	1-6"				NO DIVERSION							
A. C. Huston, Jr. and Mrs. E. Huston (b)	21.5R	1-12"			2	50	44	36			132	157	
M. R. Richardson	31.75R	1-20"				NO DIVERSION							
M. Alonso	31.8L	1-6"					1	7			8	32	
Sutter Mutual Water Company (Portuguese)	32.0L	1-20" 2-24"		227	2196	2152	2238	2442	1744	188	(c)11187	1366	600
J. F. Waters and E. Furlan (d)	32.4L	1-12"			37		77	73	8		195	75	
Collier Brothers	32.5R	1-10"				39	6	37	14		96	102	
W. H. Zeigler and H. Carlson	33.2L	(e)1-8" 2-10"			482	523	611	626	458		2700	385	240
J. G. Knox	33.35L	1-10" 1-12"				NO DIVERSION							
Clarence Du Bois	33.5R	1-12"				80	63	77	61		281	100	
P. K., G. J. and W. N. Leiser and L. J. Mansager	33.75L	1-14" (f)1-4"				153	91	160	119	1	524	376	
Neil Wilson	33.85R	1-6"				16	22				38	30	
--SOUTHERN PACIFIC RAILROAD BRIDGE--	33.95												
VERONA TO KNIGHTS LANDING Totals			0	2361	11992	12303	13690	15408	10188	572	66514	5186	6761
Average cubic feet per second			0	40	195	207	223	251	171	9	137		
Monthly use in per cent of seasonal			0	3.5	18.0	18.5	20.6	23.2	15.3	0.9			
--GAGING STATION-SACRAMENTO RIVER AT KNIGHTS LANDING--	34.0L												
--KNIGHTS LANDING BRIDGE--	34.1												
--COLUSA BASIN DRAIN--	34.15												
River Farms Company	34.5R	1-16" 1-20" 1-24"		149	2396	1204	1660	2304	705	142	(g)8560	937	555
Wallace Ernst and A. Johnson	34.85L	1-8" 1-12"				101		50	16		167	100	
Walter Raymond	35.2L	1-12"				NO DIVERSION							
Knox and Anderson	35.8L	1-10"				NO DIVERSION							
J. Goffitzer	35.85L	1-6"				10	5	7	5	9	36	27	
Kilgore and Rossi	36.2L	1-12" 1-14"			285	247	252	288	284		1356	110	165
Earl H. Gray	36.45L	1-8"				NO DIVERSION							
--RECLAMATION DISTRICT #787 DRAINAGE PLANT--	37.0R												
Albert Nuttall	37.2L	1-14"				NO DIVERSION							
Maybelle J. Bundock	37.75L	1-8"					6	22			28	47	
Alice Reel and Mabel Green	38.4L	1-10"				NO DIVERSION							
C. L. Reel	38.8L	1-10"					37	37			74	110	
Ivan Shuey	39.4L	1-12"				NO DIVERSION							
C. L. Reel	39.8L	1-10"					43				43	50	
William Duffy, Jr.	39.9L	1-5" 1-6"					17				17	20	

(a) Formerly listed as Albert Nuez.
(b) Formerly listed as A. C. Huston.
(c) Additional acre-feet diverted: November 53.
(d) Formerly listed as J. F. Waters.
(e) This 8" unit was installed in 1952.
(f) This 4" unit was a temporary installation during irrigation season.
(g) Additional acre-feet diverted: November 65.

TABLE 171

DIVERSIONS AND ACREAGES IRRIGATED - SACRAMENTO RIVER - 1952 (Cont'd)

Water User	Mile and Bank above Sacramento	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Sutter Mutual Water Company (State Ranch Bend)	40.6L	2-24" 1-36"		1625	3744	4231	4489	4715	2011	205	21020	2648	1766
River Farms Company	41.0R	1-14" 1-16"				27	23	12	16		78	24	
Buell Ranch (B.E. Dean)	42.2L	1-6"					17	15			32	20	
El Dorado Ranch	(a)42.3R	1-14" 1-16"			10	149	267	356	9	5	796	698	
Mrs. N. Lorenzetti (b)	42.3L	1-8"					46	32			78	50	
Kramer Ranch	43.1L	1-12"					57	72			129	100	
El Dorado Ranch	43.1R	1-18"				NO DIVERSION							
Reclamation District #2047	43.1R	(c)3-50"		4171	19271	14255	16004	15241	7290	283	76515	(d)149	7189
Bill Erdman (e)	43.4R	1-10"					39	30			69	90	
--RECLAMATION DISTRICT #108 DRAINAGE PLANT--	44.0R												
John Clauss	44.2L	1-18"			167	22	209	90	143		631	287	
John Clauss (Fuchlin)	45.6L	1-14" 1-16"				4	195	30			229	(f)252	
Geo. J., Jr. and J. R. Henle	46.5L	1-14" 1-20"		28	300	98	319	332	347	71	(f)1495	537	
P. J. Hiatt	48.7L	2-20"		255	1422	1187	948	918	633		(g)5363	430	110
G. J. Hiatt	49.7L	1-14"		5	102	17	45	29			198	(g)30	(g)75
Reclamation District #108	51.1R	2-24" 1-36"		381	3057	3972	2828	4647	1961		16846	906	(h)1837
Holmes and Westover Company	51.2L	2-16"		313	1366	1297	1367	1176	658		6177	285	230
Fritz Erdman	51.9R	1-12"				NO DIVERSION							
Thomas Nelson	52.0L	1-16"			94	218	260	360	22		954	(i)358	
George Van Ruiten	52.9L	1-10"				52		50	12		114	(j)356	
River Farms Company	53.8R	(k)1-12" 1-15"			33	235	239	117	204	464	1292	356	
George Van Ruiten	53.9L	1-12"				133	58	122	34		347	(j)	
Broomieside Farm	55.1L	1-20"			5	6	3		1	3	18	10	
Broomieside Farm	56.3L	1-16"				12	17				29	30	
Reclamation District #108	56.4R	1-12" 1-18" 2-22"			169	385	814	814	383		2565	1153	
C. M. Miller	56.42R	1-6"				NO DIVERSION							
Jacob Miller	56.65R	1-12"				NO DIVERSION							
Broomieside Farm (S.C. Crawford)	56.95L	1-20"			239		232				471	200	
L. M. Miller	57.0R	1-10"					93	79	10	36	218	135	
Lamb Brothers	57.5L	1-16"				NO DIVERSION							
J. A. Neilson Estate (m)	58.2L	1-15"		15	70	199	271	321	142	53	1071	279	(n)30
Alex Grant	58.9L	1-16"				NO DIVERSION							
I. G. Zumwalt	59.1R	1-12"					54	130	65		249	236	
Lamb Brothers	59.8L	(p)1-14"				NO DIVERSION							
W. A. Larner	60.4L	1-14" 1-16"			1228	1387	1475	1637	1154		6881	(q)545	(q)525
Dr. A. G. Richter	60.5L	1-12"		59	88	57	189	120	60		573	228	
Richard Moore	61.5R	1-12"					40	17	43		100	91	
Dr. A. G. Richter (r)	(s)61.8L	1-12"								30	30	100	

(a) Formerly listed as Mile 42.0R.
(b) Formerly listed as Matteoli and Fracchia.
(c) One unit was not listed prior to 1952.
(d) Includes acreage irrigated as follows: R. D. #108 - Rice 5097, River Farms Company - Rice 2092, General 149.
(e) New Installation in 1952.
(f) Plant at Mile 46.5L furnished 116 acre-feet of water to acreage under plant at Mile 45.6L.
(g) Plant at Mile 48.7L furnished an undetermined amount of water to acreage under plant at Mile 49.7L.
(h) Of this figure 320 acres also received an undetermined amount of water from controlled drainage.
(i) Includes 40 acres of G. Van Ruiten Lands.
(j) Combined acreage of plants at Miles 52.9L and 53.9L.
(k) This 12" unit was installed in 1952.
(m) Formerly listed as J. A. Neilsen.
(n) This acreage also received an undetermined amount of water from wells.
(p) This unit replaced units formerly listed at this location.
(q) Includes 325 acres of general crops and 275 acres of rice of Sutter Basin Corporation lands.
(r) Formerly listed as Robert Lane.
(s) Formerly listed as Mile 61.35L.

TABLE 171

DIVERSIONS AND ACREAGES IRRIGATED - SACRAMENTO RIVER - 1952 (Cont'd)

Water User	Mile and Bank above Sacramento	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Wayne Hine	62.3R	1-10"			17	33	28	24	36		138	(a)88	
John Mack (b)	62.3L	1-14"		1	760	813	760	638	452		3424	205	140
Jake Locovitch Estate (c)	62.6R	1-8"				7	33	4			44	49	
KNIGHTS LANDING TO WILKINS SLOUGH Totals			0	7002	34823	30358	33439	34836	16696	1301	158455	12326	12622
Average Cubic feet per second			0	118	566	510	544	567	281	21	326		
Monthly use in per cent of seasonal			0	4.4	22.0	19.2	21.1	22.0	10.5	0.8			
--GAGING STATION-SACRAMENTO RIVER AT WILKINS SLOUGH--	62.9R												
Reclamation District #108 (Wilkins Slough)	63.2R	5-42"		14555	27074	28664	24621	23700	6340		124954	(d)1319	(d)14821
R. L. Young	63.3L	1-12"				33	37	6	7		83	56	
Meister Ranch (e)	63.65L	(f)1-5" 1-8"				11	74	125	64	21	295	106	
Sutter Mutual Water Company (Tisdale Plants #1 & #2)	63.75L	6-42" 2-48"		9493	41679	34673	40545	41190	20592	5469	(g)1936841	17389	14409
Robert E. Seaman	63.9L	2-14"		227	557	903	932	865	646		4130	270	280
--TISDALE WEIR--	64.2L												
Ornbaum Livestock Company	64.3R	1-12"					8	9	23		40	20	
Lamb Brothers	(h)64.35L	1-14"			96	118	234	211	206		865	70	80
Tisdale Irrigation and Drainage Company	64.4L	1-12"			250	513	485	415	406	238	(i)2307	296	290
Van Horn Ranch	64.9R	1-14"					4	27			41	50	
Juan Valsyves	65.1R	1-4"				5	3	16			24	20	
Fred Schohr	(j)65.6R	1-16"				NO DIVERSION							
Walter Ettl	65.7L	1-8"				NO DIVERSION							
J. L. Browning	66.4R	1-18"				NO DIVERSION							
Tisdale Irrigation and Drainage Company	67.1L	1-16" 1-22"		149	612	882	831	719	509		(k)3702	(m)1547	(i)256
Newhall Land and Farming Company	67.5L	1-12" 1-24"		368	2594	3022	3111	3273	2502	311	15181	1921	801
--RECLAMATION DISTRICT #70 DRAIN PLANT--	68.8L												
J. L. Browning	69.0R	1-14" 1-22"			197	274	265	272	60		(n)1068	441	
Faxon, Morton and P. Andreotti	69.2R	(p)1-10" 1-18"				38	84	38	4		164	190	
--EDDY'S FERRY SITE (GRIMES)--	69.45												
J. E. Hollenbeck	69.8	1-4"				NO DIVERSION							
H. F. Daly	70.4L	1-10"				36	42	31	24	4	(q)137	(r)98	
Hoffman, Beckley, Ritchie, Poundstone & Andreotti	70.4R	1-6" 1-20" 1-24"		109	1385	1088	1060	1019	332		4993	65	520
Meridian Farms Water Company #4	71.1L	1-24"		329	1939	1507	1559	1868	1015		8217	1144	582
A. B. Armstrong	71.9R	1-14"			86	114	52	188	93	13	(s)546	(t)350	
H. and A. Andreotti	72.1L	2-14"			163	160	404	106			833	460	
C. T. Froh	73.6R	1-10"					4	12			16	13	
Meridian Farms Water Company #3	74.8L	1-18"		482	817	842	914	941	665		4661	503	35
L. B. Westfall	75.3R	1-10"					19	1	66	16	102	84	
J. H. Yates Estate	76.1L	1-10"			21		66	71			158	(u)145	
Robert Chesney	76.15L	1-10"			8	54	48	17	11		138	96	
M. S. Davis and C. K. Anderson	76.2L	1-8"				13	25	7	4		49	60	

(a) Includes 40 acres of I. G. Zumwalt lands.
(b) Formerly listed as Jake Broyles.
(c) Formerly listed as Jake Locovitch.
(d) Combined acreage of this plant and plant on the Back Borrow Pit at Mile 19.9L. This acreage also received 2029 acre feet of water by controlled drainage.
(e) Formerly listed as Haward and Files.
(f) The 5" unit was a temporary installation in 1952.
(g) Additional acre-feet diverted: November 261.
(h) Formerly listed as Mile 64.2L.
(i) Plant at Mile 64.4L furnished an undetermined amount of water to 60 acres of Rice under plant at Mile 67.1L.
(j) Formerly listed as Mile 65.8R.
(k) Additional acre-feet diverted: November 109.
(m) Includes 400 acres of Winship land which is outside of district.
(n) Additional acre-feet diverted: November 10.
(p) The 10" unit was installed in 1942.
(q) Additional acre-feet diverted: November 5.
(r) Includes 45 acres of Rohleter lands.
(s) Additional acre-feet diverted: November 13.
(t) Includes 100 acres of Steidlmayer lands.
(u) Includes 20 acres on George Kauffman lands.

TABLE 171

DIVERSIONS AND ACREAGES IRRIGATED - SACRAMENTO RIVER - 1952 (Cont'd)

Water User	Mile and Bank above Sacramento	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Steidlmayer Brothers	76.5R	1-16"				NO DIVERSION							
Olive Percy Davis, et al (a)	(b)77.8R	1-16"				NO DIVERSION							
J. J. Hankins	77.9L	1-16"				97	154				251	255	
Olive Percy Davis, et al (a)	78.75R	2-12" 1-16"			389	112	332	635	317		(c)1785	337	
Olive Percy Davis, et al (a)	78.8R	1-24"		349	2648	2522	2460	1911	1401		11291		(c)1600
Steidlmayer Brothers	(d)78.9R	1-12"				NO DIVERSION							
C. E. Reische	79.0L	1-10"			6	40	65	43	6		160	(e)163	
Mayfair Packing Company	79.3R	1-10"					37				37	80	
J. J. Hankins	79.5L	1-8"					26				26	40	
A. M. Wood	79.7L	1-10"				17	31	9			57	(f)69	
--MERIDIAN BRIDGE RECORDING GAGE--	79.85												
Meridian Farms Water Company #1 and #2	80.0L	1-10" 1-20" 1-24"		1236	3000	4459	4832	4209	2583	14	20333	2986	1695
Roger C. Wilbur	80.3R	1-8"				58	70		13	48	189	65	
Wayne Hall and E. J. Burrows	81.5L	1-16"				74	44	48	25		191	150	
Wayne Hall	81.8L	1-16"			496	630	697	730	451	17	(g)3021	45	(h)234
F. T. Reische and L. F. Wood	82.5L	1-12"					25	7	4		36	40	
Steidlmayer Brothers	83.0R	1-20"				125	576	373	12	145	(i)1231	600	
J. E. Clark	83.3L	1-14"			324	325	432	424	265		1770	(j)57	(j)128
J. E. Clark	83.5L	1-10"			62	1	4				67	(j)	(j)
--BUTTE SLOUGH OUTFALL GATES--	84.0L												
Butte Creek Farms (k)	85.3L	1-8"			163	169	213	193	113		851		35
Steidlmayer Brothers	85.6R	1-12"				109	75				184	120	
Clifford Reichel	85.8L	1-8"				33					33	27	
W. H. Halsey	86.1R	1-12"		21	95	203	139	43	105		606	278	
Lydell Peck	86.1L	1-8"				44					44	70	
Olive Percy Davis, et al (m)	86.2R	1-18"				113	161	180			454	197	
Mitchel Lobrovich and John Brayovich	86.8L	1-8"				46	39				85	45	
Roger Wilbur	86.9R	1-10"				23	29	8	23	20	103	145	
Roger Wilbur	87.4R	1-10"				51	39		38		128	40	
Jacobsen and O'Rourke	87.6L	1-8"				24					24	12	
Swinford Tract Irrigation Company	87.7R	1-12"			15	127	115	18			275	124	
J. Azevedo	88.0R	1-6"					51				51	25	
Nagel and Locovitch	88.2L	1-10"				22	47				69	44	
Mafair Packing Company	88.7L	1-14"				25	71				96	114	
Colusa Irrigation Company	89.2R	1-20"				81	477	71			629	312	
Grace S. Arnold	89.25L	1-8"				75	60				135	81	
Reclamation District #1004	89.25L	1-12" 1-18"									(n)	(p)	
W. H. Halsey and M. Yerxa	89.26L	1-12"				123	109				232	116	
WILKINS SLOUGH TO COLUSA													
Totals			0	27318	84676	82678	86847	84029	38925	6316	410789	33350	35766
Average cubic feet per second			0	459	1377	1389	1412	1367	654	103	845		
Monthly use in per cent of seasonal			0	6.7	20.6	20.1	21.1	20.5	9.5	1.5			

(a) Formerly listed as Sebia Davis Estate.
(b) Formerly listed as Mile 78.2R.
(c) Plant at Mile 78.75R furnished an undetermined amount of water to acreage under plant at Mile 78.8R
(d) Formerly listed as Mile 79.0R.
(e) Includes 29 acres of Goodnow lands, - 19 acres of Rockholdt lands, 29 acres Staas lands.
(f) Includes 34 acres of Burtis lands.
(g) Additional acre-feet diverted: November 29.
(h) Includes 60 acres on C. Reische lands.
(i) Additional acre-feet diverted: February 9, November 59.
(j) Combined acreage of plants at Miles 83.3L and 83.5L.
(k) New installation in 1952.
(m) Formerly listed as Howell Davis.
(n) Acre-feet diverted: November 332.
(p) 370 acres of rice land served by plant on Butte Creek at Mile 4.3R was reused for duck club and served by this plant in November.

TABLE 171

DIVERSIONS AND ACREAGES IRRIGATED - SACRAMENTO RIVER - 1952 (Cont'd)

Water User	Mile and Bank above Sacramento	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--COLUSA BRIDGE - GAGING STATION SACRAMENTO RIVER AT COLUSA --	89.4R												
Lillian and Hattie Boggs	89.7L	1-10"				NO DIVERSION							
Roberts Ditch Company	90.7R	1-18" 1-20"			547	775	898	721	338	506	(a)3785	1197	
I. G. Zumwalt	91.0R	1-6"				NO DIVERSION							
Paul R. Westfall	91.1L	1-8"						17	16		33	30	
I. G. Zumwalt	91.6R	1-12"				93	9		18	39	159	200	
--COLUSA WEIR--													
George P. Ahlf	92.5L	1-6" 1-10"				NO DIVERSION							
W. H. Halsey and M. Yerxa	93.0R	1-8"					20	4			24	20	
Paul R. Westfall	93.4L	1-10"					66	59	12		137	111	
Tuttle Land Company	94.3R	1-20"			70	250	333	183	192		1028	(b)306	
Roger Wilbur	95.25L	1-12" 1-18"		310	847	946	929	1042	335		(c)4409	145	350
Ezra N. Lewis 4 V	95.6L	1-20"			433	635	669	741	65		2543		400
J. G. Griffin (d) 3 C	95.8L	1-18"		6		14	15	40	9	4	88	81	
W. G. Graham (e)	95.85L	1-18"			1208	744	1343	1179	711		(f)5185		600
I. G. Zumwalt	96.8R	1-15"				80	120		34	110	344	285	
H. Heitman	97.7R	1-12"			42	94	136	92	77	28	(g)469	94	
Frank N. Beckley	98.0L	1-10"				22	33				55	50	
J. L. Erisey	98.3R	1-10"					19	20			39	55	
Otterson and Boggs Rice	98.6L	1-15"				NO DIVERSION							
D. Boggs	98.8L	1-18"		19	11	21	25	36	18	10	(h)140	80	
Elizebeth Reimer (i)	99.0R	1-14"			33	115	46	144	17		355	180	
J. E. Boggs 11.5 C	99.1L	1-10"			8	16	32	7	1	1	65	40	
Hollis Sartain Rice	99.2L	1-20"		317	948	1082	990	1131	479		4947	20	630
L. W. Seaver 6 C	99.3R	1-10" 1-12"		21	84	203	304	129	138	57	(j)936	(k)316	
Dave George	99.8L	1-16"		32	829	828	954	791	291		3725	34	290
St. Patrick Home Ranch	101.1R	1-20"			134	99	243	101			577	(m)380	(m)200
Nettie, George and Ella Packer 9 V 7 V	102.8R	1-20" 2-12"			10	56	308	197	56	3	630	452	
Charles W. Welch	103.7R	1-16"				62	10	130	41	38	281	65	
Charles W. Welch	103.8R	1-14"				NO DIVERSION							
C. W. Tuttle	103.9R	1-12" 1-18"		385	1519	1731	1466	1423	281		6805		720
--MOULTON WEIR--	104.0L												
I. G. Zumwalt	104.8L	1-12"				59					59	110	
Lawrence Boyd	105.5L	1-10"				NO DIVERSION							
Thousand Acre Ranch (H. W. Keller)	106.0R	1-14"		34	224	370	350	287	40		1305	237	43
Olive Percy Davis, et al (n)	106.5R	1-16"				257	272	341			870	230	
Princeton Ranch Company	110.0R	1-12"				83	121				204	180	
I. G. Zumwalt	110.7L	1-12"					129				129	155	
Princeton Ranch Company	111.2R	1-6"					17				17	18	
--PRINCETON FERRY--	112.0												
I. G. Zumwalt	112.05L	1-12"					32				32	65	
Reclamation District #1004	112.1L	2-30" 1-50"		3006	7306	8031	10143	10881	4142		43509	(p)2475	(p)6660

(a) Additional acre-feet diverted: November 98, December 38.
(b) Includes 10 acres of Halsey Lands, and 26 acres of Mayfair lands.
(c) Additional acre-feet diverted: November 81.
(d) Formerly listed as Bridget Graham Ranch.
(e) New installation in 1952.
(f) Additional acre-feet diverted: November 14.
(g) Additional acre-feet diverted: November 18.
(h) Additional acre-feet diverted: November 7.
(i) Formerly listed as B. H. Mitchell Estate.
(j) Additional acre-feet diverted: November 42.
(k) Includes 26 acres of Middlecamp and Seaver lands and 80 acres of Reimer lands.
(m) The acreage also received an undetermined amount of well water.
(n) Formerly listed as Howell Davis.
(p) This is the combined acreage of this plant and plants on Butte Creek at Miles 11.8R and 14.4R. Includes 955 acres of rice and 190 acres of general crop lands reused for duck ponds - Includes 320 acres of rice lands outside of district.

TABLE 171

DIVERSIONS AND ACREAGES IRRIGATED - SACRAMENTO RIVER - 1952 (Cont'd)

Water User	Mile and Bank above Sacramento	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Princeton-Codora-Glenn I. D.	112.4R	3-24"		1887	4953	3899	3974	3753	579	35	19080	(a)2266	(a)5421
I. G. Zumwalt	112.6L	1-10"				8	99		19		126	240	
Opal L. Cushman	115.5L	1-12"			50	105	188	190	157		690	160	
L. B. Lucas (b)	115.5R	1-4"				11	21			1	33	31	
COLUSA TO BUTTE CITY													
Totals			0	6017	19256	20689	24314	23639	8066	832	102813	10308	15314
Average cubic feet per second			0	101	313	348	395	384	136	14	212		
Monthly use in per cent of seasonal			0	5.9	18.7	20.1	23.7	23.0	7.8	0.8			
--BUTTE CITY BRIDGE--	115.8												
--GAGING STATION - SACRAMENTO RIVER AT BUTTE CITY--	115.8L												
L. B. Lucas (c)	(d)115.8R	1-1½"			4	16	17	17	8	1	(e)63	11	
R. H. Gebicke	115.85L	1-4"				NO DIVERSION							
A. J. Stone	116.37L	1-12"	35	192	128	206	204	22	95	13	895	160	
Cronin Estate	116.9L	1-16"		20	121	266	329	68	14	65	(f)883	170	
W. P. Wright, Jr.	(g)117.5R	1-6"				7	33	22	21	35	118	139	
W. H. Stewart, Jr. (h)	120.3R	1-10"				8	6		1		15	35	
Robert T. Millar	122.3R	1-10"				NO DIVERSION							
Clarence Reed	123.7R	1-6"			40	21	12	22	15	11	(i)121	35	
Howard Leach	123.8R	1-4"					1				1	4	
Princeton-Codora-Glenn Irrigation District	123.9R	5-24"		3912	9824	9349	9483	9985	6377	1571	50501	(j)	(j)
Provident Irrigation District	124.2R	2-24" 1-36" 2-42"		1903	7974	5000	5201	5069	2582		(k)27729	(m)1318	(m)7705
J. Bertapelle	124.3R	1-12"		89	264	214	259	267	94	211	1398	240	
Joe Thomas	(n)125.6R	1-12"				13	13	35	4		65	50	
Duart Geise	(p)128.3R	1-6"				16	38	46	3	3	106	94	
F. S. Reager	130.75R	1-8"		43	107	90	120	85	68		(q)513	247	
--GAGING STATION - SACRAMENTO RIVER AT ORD FERRY--	130.8R												
E. S. Ballard	133.45L	(r)1-6"				23	77	29			129	70	
E. S. Ballard	133.5L	1-5"				32	51				83	50	
--STONY CREEK--	138.0R												
M. and T. Inc. and Parrott Investment Company	141.5L	1-20" 4-24"		187	258	421	3094	4927	2121	609	(s)11617	(t)1753	(t)2720
--CHICO CREEK--	141.5L												
--OLD CHICO LANDING RAILROAD BRIDGE SITE--	142.1												
W. H. Fischer (u)	142.8R	1-14"			12	76	125	130	87	36	466	(v)91	
Leonard Horning	(w)143.6R	1-10"				14	56	58	48	40	216	55	
J. O. Bentz	143.8L	1-6"				33	44			9	86	42	
Glenn Beagle	(x)146.3L	1-6"				1	3	13			17	17	
Leonard Horning	(y)146.8R	1-3"				8	11	12	5	1	37	9	
Holly Sugar Corporation	148.9R	(z)1-2" 1-10"				3	4	5	4		16	10	

(a) This is the combined acreage for this plant, the plant on the Sacramento River at Mile 123.9R, and the plant on Colusa Trough at Mile 17.2L.
(b) New installation in 1952.
(c) Formerly listed as F. G. Gillispie.
(d) Formerly listed as Mile 115.68R.
(e) Additional acre-feet diverted: November 1.
(f) Additional acre-feet diverted: November 3.
(g) Formerly listed as Mile 116.7R.
(h) Formerly listed as W. H. Stewart.
(i) Additional acre-feet diverted: November 3.
(j) See plant at 112.4R.
(k) Additional acre-feet diverted: November 700. Includes 2952 acre-feet served to 369 acres of rice of the Glenn-Colusa Irrigation District plant at Mile 154.8R, and includes an undertermined amount of water served to 5000 acres of Gun Club Lands of Willow Creek Mutual Water Company, by this plant and plants on Colusa Trough opposite Miles 24.2R (1.5w) and 27.2R (2.6W).
(m) Combined acreage of this plant and plants on Colusa Trough opposite Miles 20.5R(2.4w), 24.2R(1.5w), 27.2R(2.6w) and at Mile 27.2R(0.1). Includes 38 acres of general crops that received an undetermined amount of water from plant at Mile 154.75R.
(n) Formerly listed as Mile 125.1R.
(p) Formerly listed as Mile 129.35R.
(q) Additional acre-feet diverted: November 28.
(r) One 6" unit was removed in 1952.
(s) Additional acre-feet diverted: November 372.
(t) This acreage is segregated as follows: M. and T. Inc., 1020 rice and 1066 general crops; Parrott Investment Co., 1700 rice and 687 general crops.
(u) Plant installed prior to 1952. Not previously listed.
(v) This acreage also received an undetermined amount of well water.
(w) Formerly listed as Mile 146.1R.
(x) Formerly listed as Mile 144.8L.
(y) Formerly listed as Mile 147.1R.
(z) This 2" unit was installed in 1952.

TABLE 171

DIVERSIONS AND ACREAGES IRRIGATED - SACRAMENTO RIVER - 1952 (Cont'd)

Water User	Mile and Bank above Sacramento	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Wallace E. Ferrin and George A. Zundel	149.5L	1-12"		88	191						279	161	
--GAGING STATION - SACRAMENTO RIVER AT HAMILTON CITY - (GIANELLA BRIDGE)--	149.5L												
J. A. and A. E. Lewis	149.7L	1-14"					34	18	9		61	(a)232	
James A. Lewis	150.0L	1-10"			12	48	69	103	59	10	301	(a)	
V. G. Strain 12 V	150.8R	1-12" 1-16"	95	115	161	249	243	171	129	163	(b)1346	619	
Joe E. Johnsen (c)	152.2R	1-6"				12	17	17	10	3	(d)59	32	
W. M. Edwards and Son	152.4R	1-6"				NO DIVERSION							
Jessie and McClain	154.6R	1-5"				10	10	5			25	12	
G. G. Maas	154.7R	1-4"				2	2	2			6	10	
Jacinto Irrigation District	154.75R	1-36" 1-48"		558	7063	7201	7784	7411	8435	7352	(e)45804	9036	
Glenn-Colusa Irrigation District	*154.8R	1-48" 1-54" 4-66" 3-72" 1-100"		29935	88056	112886	114497	115142	69727	44571	(f)574814	(g)30695	(g)42310
Compton-Delevan Irrigation District	*154.8R	*			4808	5340	6140	6160	4200		26648		3331
Provident Irrigation District	*154.8R	*			960	1065	1224	1230	841		5320	100	569
Princeton-Codora-Glenn Irrigation District	*154.8R	*				NO DIVERSION							
Maxwell Irrigation District	*154.8R	*			510	650	700	700	400		2960		370
J. Ewert	155.6R	1-2½			2	3	2	3	3		13	10	
R. Pheiffer	155.7R	1-2½		4	5	7	8	5	4	3	36	9	
F. Williams	156.0R	1-6"	1	4	5	9	11	14	5	1	(n)50	12	
H. H. Penner (i)	156.02R	1-6"								2	2	13	
O. L. Shearman	156.6R	1-2½		1	1	1	2	2	2	1	10	4	
Taresh Ranch	158.8R	1-10"			14	17	17	20	19	9	96	60	
Jonathan Garst	161.7L	1-8"			1	5	3	36			45		(j)35
--GAGING STATION - SACRAMENTO RIVER AT VINA BRIDGE--	166.5R												
E. L. Dietz	166.7R	1-3"			1	1	3	3	3	3	14	6	
Russell L. Deckman	166.8R	1-2"			1	1	1	1	1	1	(k)6	9	
Ernest Peterson	166.9R	1-6"		2		12	10	9	2		35	32	
--DEER CREEK--	168.5L												
A. J. McFadden (i)	168.5L	1-8"				4	22	61	26	3	116	75	
C. F. O'Connor (i)	169.1R	1-10"			32	10	36	13	17	1	109	53	
Dr. O. T. Wood (i)	173.7L	1-8"			12	8	16	15	8		59	30	
Dutro Brothers	(m)176.6R	(n)1-5"		12	12			23	6	30	83	40	
--TEHAMA BRIDGE--	177.5												
--MILL CREEK--	179.0L												
La Vere Barneson (p)	180.0R	1-7"		10	10	11	10	10	11		62	30	
--ANTELOPE CREEK--	180.3L												
Los Molinos Mutual Water Co.	187.6L	1-12"				127	49	20			196	519	
Henry Tieden	188.5L	1-1½		1	3	2	5	4	3	2	20	5	
J. M. Drew (i)	188.51L	1-2½			15	45	57	34	34	2	(q)187	45	
Morris Packer	188.6L	1-8"				PLANT REMOVED							
Henry Kerber (p)	•188.8L	1-10"	1	8	77	34	107	109	54	30	420	126	

* This is a common point of diversion for Glenn-Colusa, Compton-Delevan, Provident, Princeton-Codora-Glenn and Maxwell Irrigation Districts. See Glenn-Colusa Irrigation District plant at Mile 154.8R.

(a) Combined acreage of plants at Miles 149.7L and 150.0L.

(b) Additional acre-feet diverted: November 54.

(c) Formerly listed as A. Holecek.

(d) Additional acre-feet diverted: November 1.

(e) Additional acre-feet diverted: November 1129. An undetermined amount of water was exchanged between this plant and Glenn-Colusa I. D. plant at Mile 154.8R. Includes and undetermined amount of water served to 38 acres of general crops of plant at Mile 124.2R.

(f) Additional acre-feet diverted: November 17013. Additional acre-feet diverted by gravity from Stony Creek: April 41994, May 23550, June 3630, July 959, August 266, September 393, October 402 and November 203. An undetermined amount of water was exchanged between this plant and plant at Mile 154.75R.

(g) Includes the following acreage and water served outside the district. 1635 acres of rice received 13080 acre-feet. Includes 369 acres of rice in district which received 2952 acre-feet of water from plant at Mile 124.2R.

(h) Additional acre-feet diverted: November 4.

(i) New Installation in 1952.

(j) This acreage also received an undetermined amount of water from drains.

(k) Additional acre-feet diverted: November 1.

(m) Formerly listed at Mile 183.4R.

(n) This is a portable unit which also operates at Mile 175.5R. However, the diversion and acreage listed is the total and is not segregated for the two locations.

(p) Installed in 1951, not previously listed.

(q) Additional acre-feet diverted: November 28.

TABLE 171

DIVERSIONS AND ACREAGES IRRIGATED - SACRAMENTO RIVER - 1952 (Cont'd)

Water User	Mile and Bank above Sacramento	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--RED BLUFF BRIDGE--	193.4L												
Dave Singletary	196.5L	1-2½"				NO DIVERSION							
S. and E. Erickson	196.6L	1-5"			12	13	32	9	8		74	34	
Diamond Match Company	197.0L	1-8"		13	15	18	11	20	15	23	(a)115	25	
J. W. Bulkely (b)	197.5L	1-1¼"		1	3	3	3	4	3	2	19	4	
C. A. Droz (c)	198.0L	1-3"			17	51	65	64	63	43	(d)303	48	
BUTTE CITY TO RED BLUFF Totals Average cubic feet per second Monthly use in per cent of seasonal			132 2 0	37098 623 4.9	120751 1964 16.0	143662 2414 19.0	150371 2445 19.9	152250 2476 20.2	95644 1607 12.7	54860 892 7.3	754768 1553	46686	57040
--GAGING STATION - SACRAMENTO RIVER NEAR RED BLUFF--	198.6												
--BEND FERRY BRIDGE--	207.0												
D. Mills	(e)207.3L					NO DIVERSION							
D. Mills (c)	207.5L	1-12"		61	73	127	141	156	87	62	707	210	
G. Tetzlaff	209.0L	1-3"				NO DIVERSION							
Table Mountain Gun Club	210.0R	1-2½"							5	2	(f)7	10	
J. F. Nunes	213.0R	1-7"				NO DIVERSION							
F. L. Jelly	213.5L	1-3"		6	10	7	12	16	10	3	(g)64	20	
J. F. Nunes	216.0R	1-5"		4	16	30	48	46	29	1	174	40	
W. A. Hunaeus	216.4L	1-3"					5	2	2		9	11	
--JELLY FERRY BRIDGE--	216.0												
Haakonson Brothers	217.5L	1-3½"		6	19	25	30	20	25	16	141	66	
J. L. Haskins	217.9L	1-6"		9	38	87	83	59	13		(h)289	58	
J. L. Haskins	218.0L	1-5"				NO DIVERSION							
Rio Alto Rancho	221.0R	1-10"		64	70	139	134	100	225	88	(i)820	200	
--BATTLE CREEK--	221.5L												
--COTTONWOOD CREEK--	222.2R												
--GAGING STATION - SACRAMENTO RIVER AT BALLS FERRY--	224.5												
--ANDERSON BRIDGE--	232.9												
J. H. Trisdale (c)	228.0R	1-16"			1	51	59				111	90	
--CLEAR CREEK--	237.1R												
William Menzel Company, Inc.	240.2L	1-12"		173	140	99	365	468	144		1389	157	
L. Gerard	240.3L	1-2"		2	8	5	10	8	8	8	(j)49	6	
W. A. and Lucy Keagy	240.4L	1-4"			1	1	1	1	1		5	7	
Anderson-Cottonwood I. D.	240.5L	4-16"		2716	2812	2847	3662	4139	3483	1848	(k)21507	(m)19570	
--GAGING STATION - SACRAMENTO RIVER NEAR REDDING--	240.7												
--HIGHWAY 44 BRIDGE--	242.0												
--HIGHWAY 99 BRIDGE--	245.9												
Anderson Cottonwood I. D.	246.0R	Gravity		23315	20701	23758	25103	24389	23299	9942	(n)150507		
--SOUTHERN PACIFIC R.R. BRIDGE--	246.25												
I. and M. Diestelhorst	246.3R	1-8"		2	15	33	60	77	37	7	231	22	
--OLD REDDING-YREKA BRIDGE--	246.4												
City of Redding	246.7R	3-8"	164	250	334	351	543	586	456	339	(p)3023	Municipal	
--GAGING STATION - SACRAMENTO RIVER AT KESWICK--	250.5												
RED BLUFF TO REDDING Totals Average cubic feet per second Monthly use in per cent of seasonal			164 3 0.1	26608 447 14.9	24238 394 13.5	27560 463 15.4	30256 492 16.9	30067 489 16.8	27824 468 15.5	12316 200 6.9	179033 368	20467	0
SACRAMENTO TO REDDING Totals Average cubic feet per second Monthly use in per cent of seasonal			2469 40 0.2	110037 1849 6.1	319610 5198 17.7	339591 5707 18.8	368122 5987 20.5	370312 6022 11.8	213291 3585 4.5	81215 1321	1804647 3714	142931	139053

(a) Additional acre-feet diverted: November 14.
(b) Installed in 1951, not previously listed.
(c) New installation in 1952
(d) Additional acre-feet diverted: November 21.
(e) Formerly listed as Mile 208.75L.
(f) Additional acre-feet diverted: November 3.
(g) Additional acre-feet diverted: November 1.
(h) Additional acre-feet diverted: November 20.
(i) Additional acre-feet diverted: November 32.
(j) Additional acre-feet diverted: November 3.
(k) Additional acre-feet diverted: November 168.
(m) Combined acreage of plants at Miles 240.5L and 246.0R.
(n) Additional acre-feet diverted: November 3402.
(p) Additional acre-feet diverted January 155, February 146, November 204 and December 159.

TABLE 172

DIVERSIONS AND ACREAGES IRRIGATED - COLUSA TROUGH* - 1952

Water User	Mile and Bank **	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--GAGING STATION - COLUSA TROUGH AT COLUSA-WILLIAMS HIGHWAY--	0.0												
I. G. Zumwalt	2.2L	4-20"		336	2999	2027	2345	2318	828	1246	(a)12099	3945	(b)860
J. H. Cave (c)	2.98R	1-10"			62	208	213	403	432		(d)1318		(e)87
A. E. Zaniboni and L. W. Seaver (f)	3.0L	2-16"	166	296	623	723	783	655	371	295	(g)3912	(h)575	(i)180
J. H. Cave	3.5R	1-14"			149	333	411	511	402	9	1815		160
Lloyd W. Seaver and F. J. Byington	4.5L	3-16"			990	1492	1410	1813	1038		6743		840
Coffman and Camel	5.6L	1-16"				NO DIVERSION							
Watt Brothers	6.4R	1-12"			16	146	259	204	186	23	834		104
S. Ash	8.0L	1-16"				NO DIVERSION							
Compton Water District	8.0R	1-15" 1-16"		57	832	754	598	758	656		3655		360
El Dorado Sportsmans Club	9.5R	1-16"			467	430	691	992	694	145	(j)3419	(k)50	120
I. G. Zumwalt	9.75L	1-24"		290	868	620	683	755	424		3640		(m)456
Lloyd Kahn	(n)10.5L (0.4)	2-16"		229	873	650	692	708	37		(p)3189		400
Compton Water District	11.7L (0.3)	1-12"				NO DIVERSION							
Compton Water District	11.7R (0.8)	1-14" 1-16" 2-20"		851	3848	3357	3250	3779	1307		(q)16392		2000
Del Valley Farms, Inc.	12.1R	1-10"		168	287	376	420	435	209	34	(r)1929	(k)50	75
Lynn and Bohne	12.58L (0.9)	1-10" 1-12"		108	473	360	283	282	75		1581		265
Lynn and Bohne	12.59R	1-10"								15	(s)15	(k)82	
Helphstine Rice Lands	12.69L	1-16"				NO DIVERSION							
E. Butler, E. Meyer and J. Jones	12.7L	1-14"			251	240	253	296	53	28	(t)1121	(k)17	55
Manuel Barrett	Opp. 16.6R (1.3W)	1-12"			111	35	97	291	78		612		(u)180
Princeton-Codora-Glenn Irrigation District (v)	17.2L	2-18"		305	2765	2884	2642	3039	822		12457	(w)	(w)
John S. Lopes (v)	17.9R	1-12"			72	54	61	87	52		326		24
J. P. Cardoza (v)	18.0R	1-4"		1	31	12	11	26	17		(x)98	12	13
--LATERAL HIGHWAY - BUTTE CITY TO WEST SIDE--	20.5												
Provident Irrigation District (Willow Creek Plant)	Opp. 20.5R (2.4W)	1-24" 1-36"			314	466	654	452			1886	(y)	(y)
Walter McGowan	21.4L	2-16"			540	385	567	586	158		2236		400
Joe Navarro	22.0R	1-18"		49	530	454	442	490	226		(z)2191	100	300
Provident Irrigation District (Drain #55)	Opp. 24.2R (1.5W)	Gravity		1566	6270	6008	6757	7087	6989	4743	(y)(aa)39420	(y)	(y)
I. G. Zumwalt (v)	25.4L	1-16"		108	189	182	158	197	114	84	(bb)1032	158	
Terril Knight (v)	26.2L	1-16"			192	345	426	517	367		1847		300
J. Azevedo	27.1L	1-12" 1-14"		25	186	266	308	234	206	42	(cc)1267	155	100
Provident Irrigation District (Colusa Drain)	27.2R (0.1)	1-20" 1-24"		562	946	1265	2623	2908	1550	348	10202	(y)	(y)
Provident Irrigation District (Drain #13)	Opp. 27.2R (2.6W)	(dd)1-16" 1-20" 1-24"		1277	5127	4778	4862	5527	3906	1539	(y)(ee)27016	(y)	(y)
Totals			166	6228	30011	28850	31899	35350	21197	8551	162252	5144	7279
Average cubic feet per second			3	105	488	485	519	575	356	139	334		
Monthly use in per cent of seasonal			0.1	3.8	18.5	17.8	19.6	21.8	13.1	5.3			

* Main Drain of Reclamation District 2047.
** Mileage along Colusa Trough above Colusa-Williams Highway.
(a) Additional acre-feet diverted: November 498.
(b) Includes 60 acres of Seaver lands.
(c) New installation in 1952.
(d) Includes an undetermined amount of water returned to Colusa Trough by spill. Additional acre-feet diverted: November 216.
(e) All of this acreage was reused for gun club.
(f) Formerly listed as F. Buffum and L. W. Seavers.
(g) Additional acre-feet diverted: November 71.
(h) Acreage reported in 1951 should have been 579.
(i) Includes 90 acres which also received an undetermined amount of water from drains.
(j) Includes an undetermined amount of water returned to Colusa Trough by spill. Additional acre-feet diverted: November 174, December 51.
(k) All gun club lands.
(m) Acreage reported in 1951 as 427 should have been 456.
(n) Formerly listed as Mile 10.5L (0.5E).
(p) Includes an undetermined amount of water returned to Colusa Trough by spill. Additional acre-feet diverted: November 201.
(q) Additional acre-feet diverted: November 174.
(r) Includes an undetermined amount of water returned to Colusa Trough by spill. Additional acre-feet diverted: November 70.
(s) Additional acre-feet diverted: November 116.
(t) Additional acre-feet diverted: November 36.
(u) This acreage also received an undetermined amount of water from Willow Creek Mutual Water Company.
(v) Installed prior to 1952, not previously listed.
(w) See the plant on the Sacramento River at Mile 112.4R.
(x) Additional acre-feet diverted: November 13.
(y) See the plant on the Sacramento River at Mile 124.2R.
(z) Additional acre-feet diverted: November 57, December 9.
(aa) Additional acre-feet diverted: November 500, December 500. Includes an undetermined amount of water served to 15 acres of gun club lands of the Glenn-Colusa I. D. plant on the Sacramento River at Mile 154.8R.
(bb) Additional acre-feet diverted: November 35.
(cc) Additional acre-feet diverted: November 10.
(dd) The 16" unit was installed in 1952.
(ee) Additional acre-feet diverted: November 776, December 676.

TABLE 173

DIVERSIONS AND ACREAGES IRRIGATED - BACK BORROW PIT* - 1952

Water User	Mile and Bank **	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--GAGING STATION - COLUSA BASIN DRAIN AT KNIGHTS LANDING (KNIGHTS LANDING OUTFALL GATES--	0.0												
E. E. Nuttal	0.2R	1-6"				NO DIVERSION							
River Farms Company	0.3L	1-10" 1-20"				NO DIVERSION							
--KNIGHTS LANDING RIDGE CUT JUNCTION--	0.4R												
John J. Anderson	1.45R	2-16"		247	469	473	467	486	142		2284		271
B. C. and T. D. Tolson	(a)4.2R (0.8)	(b)1-18"		231	818	850	951	929	527		4306		(c)340
John C. Cooling	(d)4.2R (0.1)	1-16"			101	88	143	209	24		565	301	
W. Crawford	4.35R	1-20"			586	1089	1197	1190	770	37	(e)4869		(f)530
Cornelia Walker (Heidrick Brothers)	7.2R	1-8" 2-16"				NO DIVERSION							
George E. Youngmark	8.8R	1-14" 1-16"			480	565	584	584	179		2392		350
Hershey Estate	11.15R	1-14" 1-16"			1682	1512	1498	1611	850		(g)7153		(h)800
Hershey Estate	13.75R	1-16"				NO DIVERSION							
C. M. Mumma	14.75R	1-10" (i)1-14"			354	237	276	289	169		1325		200
--COUNTY LINE BRIDGE--	15.25												
J. V. Doherty (j)	15.5R	1-16"			154	534	639	568	292		2187		80
M. T. Emmert	15.75R	1-12"				NO DIVERSION							
H. B. West, Jack Hughes and Dr. R. C. West (k)	18.1R	1-15" 1-20"		30	900	611	685	732	109		3067		320
Hilary Farms Inc. (j)	18.5R (0.8)	1-14"			63	89	84	84	71	17	(m)408	140	
--RECLAMATION DISTRICT 108 GRAVITY DRAIN--	19.9L												
Reclamation District 108	(n)19.9L	1-16" 1-24" 1-30"					2289				2289	(p)	(p)
William West	20.0R	1-15"			382	448	286	445	192		1753		253
B. W. Whitmire and D. S. Adams	21.35R	2-16"			56	37				35	(q)128	35	
Albert Brandenburg (r)	22.15R	1-12"		107	415	395	433	428	136		1914		(s)200
Aileen B. Armstrong	22.65L	1-16" 1-20"		1136	1536	1517	1639	1447	323		7598		580
--GAGING STATION - BACK BORROW PIT NEAR COLLEGE CITY--	22.7												
Aileen Browning Armstrong	22.75R (0.1)	1-16"				NO DIVERSION							
--SOUTHERN PACIFIC RAILROAD BRIDGE--	23.6												
Balsdon Ranch	(t)Opp. 24.6L (0.3E)	2-16" 1-20"			260	638	730	529	64	8	(u)2229	1405	
Balsdon Ranch	(v)24.6R (0.3)	(w)1-16"		104	175	173	122	195	10	162	941	200	
A. M. Dobrosky and Henry Olin	24.7L	1-12"				NO DIVERSION							
Luta King	25.1R	1-10"				NO DIVERSION							
Gertrude M. Sherer	25.3L	1-16"				46	64	52			162	110	
Gertrude M. Sherer	25.5R	1-10"				NO DIVERSION							
--GRIMES - COLLEGE CITY CAUSEWAY--	25.5												
Fred Schutz	25.9L (0.2)	1-16"		362	510	1240	1378	1231	229		4950	(x)60	(y)530
Roy E. Kittz	26.4R (0.1)	1-18"			128	84	95	92	36		435		(z)60
C. W. and M. E. Struckmeyer	27.25L (0.3)	1-16"				137	238	259	47		681	207	

* Carries return water from Colusa Basin along west border of Reclamation Districts 108 and 787 and thence discharges to Sacramento River at Knights Landing or partial diversion via Knights Landing Ridge Cut.

** Mileage along Borrow Pit from outfall gates just above junction of Borrow Pit with Sacramento River at Knights Landing.

(a) Formerly listed as Mile 3.4R.
(b) This unit replaces the 16" unit formerly listed at this location.
(c) Includes 90 acres of Taylor lands.
(d) Formerly listed as Mile 3.8R.
(e) Additional acre-feet diverted: November 171 and December 39.
(f) Of this figure 200 acres was reused for duck ponds.
(g) Additional acre-feet diverted: November 43.
(h) Of this figure 50 acres was reused for duck club lands.
(i) The 14" unit was installed in 1952.
(j) New installation in 1952.
(k) Formerly listed as Kate West (L. B. West and Son).
(m) Additional acre-feet diverted: November 4.
(n) Formerly listed as Mile 20.2L.
(p) See plant on the Sacramento River at Mile 63.2R.
(q) Additional acre-feet diverted: November 31 and December 31.
(r) Formerly listed as Bean and Brandenburg.
(s) Includes 33 acres of L. Arcand lands.
(t) Formerly listed as Mile 24.6L
(u) Additional acre-feet diverted: November 30.
(v) Formerly listed as Mile 24.6lR.
(w) One 16" unit was removed in 1952.
(x) Includes 60 acres of A. Christian lands.
(y) Includes 240 acres of F. Grevie lands and 160 acres of A. Christian lands.
(z) Includes 60 acres of G. Sherer lands.

TABLE 173

DIVERSIONS AND ACREAGES IRRIGATED - BACK BORROW PIT* - 1952 (Cont'd)

Water User	Mile and Bank **	Number and Size of Pump	Monthly Diversion in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
William P. Wallace Ranch	28.0R	(a)1-12" 1-16"			589	653	776	774	435		3227		(b)200
--WALLACE CROSSING (OLD MERIDIAN-WILLIAMS BRIDGE)--	29.2												
Olive Percy Davis, et al (c)	29.8R	1-16"			575	614	676	632	496		2993		170
Olive Percy Davis, et al (d)	31.5L	1-24"				NO DIVERSION							
Olive Percy Davis, et al (d)	32.1R	1-16"			906	834	948	785	528		4001		(e)325
Federal Fish and Wild Life	32.6R	1-16"			289	317	488	490	487	485	(f)2556	(g)200	(g)137
J. G. Olvey	(h)32.6L	1-14"				NO DIVERSION							
Arata Bros.	32.9L	1-8"				22	17	21	12	52	(i)124	(j)25	
Richard Moore	33.5L	1-16" 1-18"				NO DIVERSION					(k)	(j)15	
Federal Fish and Wildlife Service	36.65R	1-15" 1-20"			983	667	1063	1062	1279	1352	(m)6406		(g)410
Federal Fish and Wildlife Service	37.0L (0.1)	1-15"		79	254	336	357	350	354	347	(n)2077		(g)140
--COLUSA-WILLIAMS HIGHWAY GAGING STATION--	37.0												
Totals			0	2296	12665	14206	18123	15474	7761	2495	73020	2698	5896
Average cubic feet per second			0	39	206	239	295	252	130	41	150		
Monthly use in per cent of seasonal			0	3.1	17.4	19.5	24.8	21.2	10.6	3.4			

* Carries return water from Colusa Basin along west border of Reclamation Districts 108 and 787 and thence discharges to Sacramento River at Knights Landing or partial diversion via Knights Landing Ridge Cut.
** Mileage along Borrow Pit from outfall gates just above junction of Borrow Pit with Sacramento River at Knights Landing.
(a) The 14" and 20" units formerly listed at this location were removed in 1952.
(b) Includes 20 acres of Sebia Davis lands.
(c) Formerly listed as Sebia Davis Estate.
(d) Formerly listed as A. Davis Estate.
(e) Includes 40 acres of Federal Fish and Wildlife Service lands.
(f) Additional acre-feet diverted: November 485 and December 35.
(g) All duck refuge lands.
(h) Formerly listed as Mile 32.7L.
(i) Additional acre-feet diverted: November 36 and December 10.
(j) All duck club lands.
(k) Additional acre-feet diverted: November 31.
(m) Additional acre-feet diverted: November 947
(n) Additional acre-feet diverted: November 197.

TABLE 174

DIVERSIONS AND ACREAGES IRRIGATED - KNIGHTS LANDING RIDGE CUT - 1952

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversion in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
E. L. Wallace	0.8R	1-16" 1-20"		1044	1621	1460	1408	1438	351		7322	(a)588	540
M. R. Richardson	0.82L	1-14"			110	11	16	106	32		275	220	
Ralph W. Pollock	3.5L	Gravity				NO DIVERSION							
--RECLAMATION DISTRICT 730 DRAIN PLANT #2--	3.8												
Ralph W. Pollock	4.55L	1-12"					59	66	46		171	92	
Albert Bacchini	4.7R	1-6"		7	32	11	2				52	22	
Layton D. Knaggs	5.25R	1-16"				NO DIVERSION							
--WEST LEVEE YOLO BY-PASS--	6.3												
Henry Rich	6.3L	Gravity				191	694	1350	1074		(b)(c)3309	(d)2130	
E. L. Wallace	6.3R	Gravity				NO DIVERSION							
Totals			0	1051	1763	1673	2179	2960	1503	0	11129	3052	540
Average cubic feet per second			0	18	29	28	35	48	25	0	23		
Monthly use in per cent of seasonal			0	9.5	15.8	15.0	19.6	26.6	13.5	0			

* Mileage downstream from head on Back Borrow Pit near Knights Landing. Flow is principally Colusa Basin drainage diverted to the Ridge Cut by checking at Knights Landing Outfall Gates on Back Borrow Pit of Reclamation District 787.
(a) Of this figure, 324 acres also received an undtermined amount of water from wells.
(b) This plant furnished an undetermined amount of water to plant on Sacramento River at Mile 22.5R.
(c) This figure is partially estimated.
(d) Includes 970 acres in Reclamation District 1600.

TABLE 175

DIVERSIONS AND ACREAGES IRRIGATED - YOLO BY-PASS (EAST BORROW PIT OR TULE CANAL) - 1952

Water User	Mile and Bank (a)	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Robert Swanston	*1.8S	1-16" 1-18"				NO DIVERSION							
Robert Swanston	*1.1S	1-18" 1-20"				NO DIVERSION							
Robert Swanston	*0.7S	1-16"				NO DIVERSION							
Robert Swanston	*0.5S	1-16"				NO DIVERSION							
--NORTH LEVEE SACRAMENTO BY-PASS RECORDING GAGE--	0.0												
Robert Swanston	*1.8N	1-20"											
Ensher, Alexander and Barsoom	2.4N	1-20"		58	129	133	334	376	18	8	1056	(b)715	
--SACRAMENTO-WOODLAND HIGHWAY-	6.18N												
--SACRAMENTO-WOODLAND RAILROAD BRIDGE--	6.2N												
--CACHE CREEK--	7.0N												
--KNIGHTS LANDING RIDGE CUT--	9.6N												
--RECLAMATION DISTRICT 1600 DRAINAGE PLANT--	10.0N												
Totals			0	58	129	133	334	376	18	8	1056	715	0
Average cubic feet per second			0	1	2	2	5	6	0	0	2		
Monthly use in per cent of seasonal			0	5.5	12.2	12.6	31.6	35.6	1.7	0.8			

* Asterisk indicates that land irrigated is within By-Pass Area.
(a) Mileage is given northerly or southerly from North Levee of Sacramento By-Pass. Diversions from East Borrow Pit of Yolo By-Pass are primarily from water diverted through Knights Landing Ridge Cut.
(b) This acreage also received an undetermined amount of water from wells.

TABLE 176

DIVERSIONS AND ACREAGES IRRIGATED - DELTA UPLANDS FROM CACHE SLOUGH - 1952

Water User	Location	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Reclamation District #2068	SW¼ NE¼ Sec. 34 T6N, R1E	2-30" 1-36"		2977	6641	7545	8478	8338	6246	3816	(a)44041	(b)11239	
Totals			0	2977	6641	7545	8478	8338	6246	3816	44041	11239	0
Average cubic feet per second			0	50	108	127	138	136	105	62	91		
Monthly use in per cent of seasonal			0	6.8	15.1	17.1	19.2	18.9	14.2	8.7			

(a) Additional acre-feet diverted: November 419.
(b) Includes 540 acres irrigated outside of District. Also includes 525 acres of Duck Club land.

TABLE 177

DIVERSIONS AND ACREAGES IRRIGATED - LOWER BUTTE CREEK AND BUTTE SLOUGH - 1952

Water User	Mile and Bank	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
	*					Lower Butte Creek							
Reclamation District 833	3.3L	1-16"				75	407	619	192		1293	625	
Colusa Shooting Club (a)	4.1L	1-12"					19	87			106	100	
West Butte Farms Company	4.25L	1-18"					265	329	33		627	450	
Reclamation District 1004	4.3R	1-20" 1-24"			1133	1565	1713	1458	729	31	(b)6629	(c)1795	(d)910
El Anzar, Incorporated	5.7L	1-12"			36						36		(e)
Field and Tule	7.5L	1-8" 1-16"			818	754	510	532	118		2732		(e)440

* Mileage on Butte Creek is approximate mileage from junction with Butte Slough at Mile 0.6E.
(a) New installation in 1952.
(b) Additional acre-feet diverted: November 96, December 114.
(c) Of this figure, 180 acres was reused for duck ponds.
(d) See plant on Sacramento River at Mile 89.25L.
(e) Combined acreage of plants at Miles 5.7L and 7.5L.

TABLE 177

DIVERSIONS AND ACREAGES IRRIGATED - LOWER BUTTE CREEK AND BUTTE SLOUGH - 1952 (Cont'd)

Water User	Mile and Bank	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
	*					Lower Butte Creek							
Reclamation District 1004	11.8R (2.6)	Gravity			2120	3500	3319	2292	3073	3394	(a)17698	(b)	(b)
White Mallard Duck Club	11.8R	Gravity				NO DIVERSION							
White Mallard Duck Club	11.8R (0.5)	1-12" 1-16"				30	23	24	21		(c)98	80	
Reclamation District 1004	Opp. 14.4R (0.2W)	Gravity		169	198						367	(b)	(b)
Murdock Land Co.	Opp. 14.4R (0.4W)	1-14"			19	42	82	30	86		259	200	
--GRIDLEY ROAD--	15.4												
Butte Basin Gun Clubs	15.6L	Gravity									(d)	(e)4000	
Murdock Land Company	19.3R	1-16"		30	69	75	93	73	76	56	472	120	
--BIGGS-AFTON ROAD--	19.4												
Murdock Land Company	Opp. 19.6R (0.8W)	1-14"								5	(f)5	(g)70	
Baker and Kemper	Opp. 20.7R (0.8W)	(h)1-12" 1-18"		123	593	418	383	350	281		2148	10	200
McGowan Brothers	Opp. 20.9R (0.5W)	1-16"			156	214	207	259	218		1054		(i)120
McGowan Brothers	21.0R	1-20"			1253	802	742	754	436		3987		(i)260
R. H. Hulen Estate	Opp. 21.4R (1.0W)	1-16"		280	436	448	402	412	205		2183		180
McGowan Brothers	Opp. 22.4R (0.7W)	1-16"				NO DIVERSION							
--RICHVALE-BUTTE CITY ROAD--	22.5												
McGowan Brothers	23.0R	2-16"			982	1253	1335	1173	882		5625		(i)485
McGowan Brothers	Opp. 23.0R (0.75)	1-16"				NO DIVERSION							
McGowan Brothers	(j)	(j)1-14"			375		187	42			604		(j)
	**					Butte Slough							
--SACRAMENTO RIVER JUNCTION--	0.0												
Butte Slough Irrigation Co.	0.0	Gravity									(k)	(m)	(m)
M. Marty	0.3W	1-12"			23	17	61	57	162	13	333	212	
--BUTTE CREEK--	0.6E												
George Smith Estate	0.9E	1-7"				40	88	67			195	(n)248	
Joe Marty	1.0W	1-7"			12	25	8	79	65	27	216	40	
George Smith Estate	1.4E	1-8"				28	61	84	23		196	(n)	
Fred Tarke (p)	1.9W	1-14"			127	543	559	544	276		2049		120
--MAWSON BRIDGE--	2.1												
C. W. Rawley	2.5W	1-14"		281	452	484	511	503	283		2514	110	135
J. E. Smith	3.0W	1-10"				106		80			186	117	
Pearl Clark and Alice Brewer	3.5W	1-10"			1	36	34	36	18		125	91	
P. A. Reische	3.7W	1-10"				9		6			15	14	
Granniman and Fieth	4.08W	1-6"					3				3	7	
P. A. Reische	4.1W	1-10"				57	2	47	2		108	83	
W. J. Hankins	4.8W	1-10"				81	37	37	8		(q)163	105	
P. B. Hensen	5.1W	1-12"			36	71	68	114	38		327	(q)179	
Totals			0	883	8839	10673	11119	10088	7225	3526	52353	8656	2850
Average cubic feet per second			0	15	144	179	181	164	121	57	108		
Monthly use in per cent of seasonal			0	1.7	16.9	20.4	21.2	19.3	13.8	6.7			

* Mileage on Butte Creek is approximate mileage from junction with Butte Slough at Mile 0.6E.

** Mileage on Butte Slough is from its junction with Sacramento River at Mile 84.0L.

(a) Additional acre-feet diverted: November 3000, December 3000.
(b) See plant on Sacramento River at Mile 112.1L.
(c) Additional acre-feet diverted: December 63.
(d) Estimated acre-feet diverted in November 3000 and December 3000.
(e) All gun club lands. This acreage is partially estimated.
(f) Additional acre-feet diverted: November 219.
(g) All duck club lands.
(h) The 12" unit was installed in 1952.
(i) This acreage also received an undetermined amount of water from the 14" portable unit.
(j) This is a portable unit which pumped at Mile 21.0R, 23.0R and Opp.20.9R (0.5W) during 1952 season.
(k) Flow in Butte Slough, derived from Butte Creek, is controlled by Outfall Gates at its junction with Sacramento River and is thereby retained in Butte Slough to discharge into East and West Borrow Pits of Sutter By-Pass near "Long Bridge". The Outfall Gates aremaintained by teh Division of Water Resources and are cooperatively operated with the Butte Slough Irrigation Company. See Sutter By-Pass Diversions.
(m) See acreages under rediversion--West Borrow Pit Sutter By-Pass.
(n) Combined acreage of plants at Miles 0.9E and 1.4E.
(p) New installation in 1952.
(q) Plant at Mile 4.8W furnished an undetermined amount of water to 96 acres under plant at Mile 5.1W.

TABLE 178

DIVERSIONS AND ACREAGES IRRIGATED - SUTTER BY-PASS AND SACRAMENTO SLOUGH - 1952

Water User	Mile and Bank	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
	(a)		West Borrow Pit of Sutter By-Pass**										
--SOUTHERN PACIFIC RAILROAD CROSSING--	2.5												
C. Fred Holmes	8.0R	1-18"	NO DIVERSION										
--KNIGHTS LANDING-MARYSVILLE CAUSEWAY--	12.7												
Sutter Basin Corp., Ltd.	(b)17.5R	1-18"	NO DIVERSION										
--SOUTH LEVEE TISDALE BY-PASS--	18.9												
--RECLAMATION DISTRICT 1660 GRAVITY DRAIN--	19.3												
G. Guisti & Sons	23.7R	1-24"		286	1368	1481	1603	1243	794		6775	80	810
Butte Slough Irrigation Company, Ltd.	25.0R	Gravity		41	529	420	407	324			1721	(c)4250	(c)515
Butte Slough Irrigation Company, Ltd.	28.4R	Gravity		873	1909	1687	1965	1875	495		8804	(c)	(c)
Fred Tarke	28.6R	1-12"				8	14	8			30	53	
Frye Brothers	29.0R	1-7"	NO DIVERSION										
--NEW COLUSA-MARYSVILLE HIGHWAY--	29.1												
--NORTHERN ELECTRIC RAILROAD CROSSING--	29.15												
Fred Tarke	29.2R	1-10"				1	5		2		8	37	
	(d)		East Borrow Pit of Sutter By-Pass**										
R. E. Hughes #8	*0.9SS	1-16"				24	163	468		18	673	595	
T. H. Richards	0.5S	1-18"			103	613	1055	1203	1211	254	4439	215	(e)550
--WILLOW SLOUGH--	0.0												
R. E. Hughes #7	*0.5N	1-16"				73	380	704	206		1363	350	
--RECLAMATION BOARD DRAINAGE PLANT #1--	1.4N												
Cliff P. Childers	(f) (0.3)	1-16"	NO DIVERSION										
Cliff P. Childers	(f)(g) (1.29)	1-16"			473	579	523	492	242		(h)2309		280
E. H. Christensen & Sons	(f) (1.3)	1-16"		227	581	556	499	419	342		2624		(i)1290
E. H. Christensen & Sons	(f) (1.75)	1-16"		46	637	434	459	425	104		2105		400
E. H. Christensen	(f) (3.3)	1-16"		244	551	428	720	599	433		2975		(i)
E. H. Christensen	(f) (3.3)	1-12"		88	189	259	446	358	279	35	(j)1654		(i)
E. H. Christensen	(f) (4.0)	1-18"		449	786	728	878	691	450		3982		(i)
R. E. Hughes #6	*1.5N	1-14"					141	562	260		963	475	
R. E. Hughes #5	*2.9N	1-14"						376	303		679	(k)700	
Leona Hughes	*4.0N	1-14"						496	437		933	(k)	
--SUTTER CAUSEWAY--	4.3N												
R. E. Hughes #3	*4.5N	1-14"					254	363			617	190	
Ira Mulligan	5.7N	1-16"				83	725	257			1065	375	
R. J. Hughes #2	*5.9N	1-14"						572	218		790	250	
C. O. Orrick	(m) 6.9N	2-16"	NO DIVERSION										
Ira Milligan	7.1N	1-16"	NO DIVERSION										
--GILSIZER SLOUGH--	8.0N												
Leona Hughes	8.0N (0.5)	1-6"	NO DIVERSION										
Crepps and Middleton	8.4N	1-12" 1-16"	NO DIVERSION										
Crepps and Middleton	(n) 9.99N	1-15"	NO DIVERSION										
--RECLAMATION BOARD DRAINAGE PLANT #2--	10.0N												

* Asterisk indicates area irrigated is within By-Pass Area.
** Water used for irrigation in Sutter By-Pass is mainly Feather River return water which enters East and West Borrow Pits via Butte Creek, Butte Slough and Wadsworth Canal.
(a) Mileages of West Borrow Pit are given northerly from drainage plant of Reclamation District 1500. Mile 9.15 West Borrow Pit is opposite Chandler.
(b) Formerly listed as Mile 18.5R.
(c) Combined acreage of plants at Miles 25.0R and 28.4R.
(d) Mileages of East Borrow Pit are given northerly or southerly from Chandler.
(e) This acreage also received 514 acre-feet from plant on Feather River at Mile 9.75R.
(f) Plant is on main drain canal for Drainage Plant #1 that joins East Borrow Pit at Mile 1.4N. Figure in () indicates miles along drain from By-Pass.
(g) Formerly listed as Mile (1.3).
(h) Includes an undetermined amount of water returned to drainage canal by spill.
(i) Combined acreage of plants at Mile (1.3) (3.3) and (4.0).
(j) Additional acre-feet diverted: November 63.
(k) Combined acreage of plants at Miles 2.9N and 4.0N.
(m) Formerly listed as Mile 7.1N.
(n) Formerly listed as Mile 9.9N.

TABLE 178

DIVERSIONS AND ACREAGES IRRIGATED - SUTTER BY-PASS AND SACRAMENTO SLOUGH - 1952 (Cont'd)

Water User	Mile and Bank	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
	(a)		East Borrow Pit of Sutter By-Pass** (Cont'd)										
Crepps and Middleton	10.0N	1-16"						149	671	403	(b)1223	350	
Crepps and Middleton	(c) (0.5)	1-12"	NO DIVERSION										
Dettling Brothers	(c) (0.9)	1-20"	NO DIVERSION										
Sutter Extension Water District (d)	(c) (2.0)	2-16"		118	732	478	835	1273	999		4435		345
Bridge Investment Co.	(c) (2.6)	1-16" 1-20"		101	128	335	428	429	223	107	1751	404	
Bridge Investment Co.	(c) (2.65)	1-14" 1-20"		177	338	308	387	508	340		2058	320	
Bridge Investment Co.	(c) (3.0)	1-12"		48	78	117	101	143	55		542	80	
Percy Davis (d)	(c) (4.5)	1-12"			33	31	27	30	26	1	(e)148	40	
Sutter Home Investment Co.	11.5N	1-15"	NO DIVERSION										
Sutter Home Investment Co.	12.0N	1-15"	NO DIVERSION										
Federal Fish and Wildlife Service	*16.3N	1-20"			430	862	953	783	1013	197	4238	150	400
R. A. Schnabel	*16.4N	(f)1-14"				86	134	6	37	89	(g)352	(h)75	
--WADSWORTH CANAL--	16.5N												
R. A. Schnabel (d)	(i) (1.0L)	1-16"			153	668	731	814	904	79	3349		160
Fred S. Betty	(i) (1.0R)	1-10"			82	73	91	59	97	11	413	68	
H. T. and H. D. Brown	(i) (1.35R)	1-12"			161	187	214	233	242		1037		(j)220
A. H. Muns	(i) (1.36R)	1-12"			331	485	482	478	449		2225		(j)
Vesper Kellogg	(i) (1.5L)	1-14"			125	372	389	398	317		(k)1601		106
Epperson, Kennedy and Joaquin	(i) (2.5R	2-10" 1-14"	NO DIVERSION										
Clara Farrington (d)	(i) (2.5R)	1-10"				83	78	71	65		297		30
Youill Joaquin	(i) (3.0L)	1-14"	NO DIVERSION										
Gilbert Williamson	(i) (3.6R)	1-16"		80	205	140	156	162	99	12	(m)854	97	45
--RECLAMATION BOARD DRAINAGE PLANT #3--	16.7N												
Fred S. Betty	(n) (0.9)	1-8"			14	34	31	17	72	14	182	100	
Fred S. Betty	(n) (1.3)	1-14"			275	523	490	518	422		2228		110
Fred S. Betty (p)	(n) (1.4)	1-16"			248	679	766	772	764	64	3293		200
Phillip Niesen	(n) (1.5)	1-20"	NO DIVERSION										
H. C. and C. H. Epperson	(n) (1.5)	1-16"			314	210					(q)524		
Elden Tarke	(n) (3.0)	1-14"			239	254	334	322	248		1397		(q)114
Edward Dean	*16.7N	1-12"				45	58	30	34	40	(r)207	75	
Edward Dean	16.75N	1-16"	NO DIVERSION										
Epperson, Myers, DeWitt and Middleton	19.1N	1-14"			201	564	565	186			1516	(s)731	
--NEW COLUSA MARYSVILLE HIGHWAY--	19.98N												
--NORTHERN ELECTRIC RAILROAD CROSSING--	20.0W												
	(t)		Sacramento Slough										
C. Fred Holmes	1.4R	1-12"	NO DIVERSION										
Totals			0	2778	11213	13908	17487	18816	12853	1324	78379	10060	5575
Average cubic feet per second			0	47	182	234	284	306	216	22	161		
Monthly use in per cent of seasonal			0	3.5	14.3	17.8	22.3	24.0	16.4	1.7			

* Asterisk indicates area irrigated is within By-Pass area.
** Water used for irrigation in Sutter By-Pass is mainly Feather River return water which enters East and West Borrow Pits via Butte Creek, Butte Slough and Wadsworth Canal.
(a) Mileages of East Borrow Pit are given northerly or southerly from Chandler.
(b) Additional acre-feet diverted: November 142.
(c) Plant is on main drain canal for Drainage Plant #2 of East Borrow Pit Sutter By-Pass that joins East Borrow Pit at Mile 10.0N. Figure in () is distance along drain from East Borrow Pit.
(d) New installation in 1952.
(e) Additional acre-feet diverted: November 11.
(f) Formerly listed as a 12" unit.
(g) Additional acre-feet diverted: November 69.
(h) This acreage was reused for gun club lands.
(i) Plant is on Wadsworth Canal which joins East Borrow Pit-Sutter By-Pass at Mile 16.5N. Figure in () is distance along Wadsworth Canal from By-Pass.
(j) Combined acreage of plants at Miles 1.35R and 1.36R.
(k) Additional acre-feet diverted: November 5.
(m) Includes an undetermined amount of water furnished to Y. Joaquin lands.
(n) Plant is on Poodle Creek which joins East Borrow Pit-Sutter By-Pass at Mile 16.7N. This mileage was formerly listed as 16.5N. Figure in () indicates distance along Poodle Creek from By-Pass.
(p) Formerly listed as Myers, Niesen, Stohlman and Epperson at Mile (1.6).
(q) Plant at Mile (1.5) furnished 524 acre-feet to acreage served by the plant at Mile (3.0).
(r) Additional acre-feet diverted: November 46, December 2.
(s) Includes 70 acres of Maden lands and 80 acres of Nall lands.
(t) Mileages of Sacramento Slough are given easterly from drainage plant of Reclamation District 1500 which is at head of Slough.

TABLE 179

DIVERSIONS AND ACREAGES IRRIGATED - FEATHER RIVER - 1952

Water User	Mile and Bank above Mouth	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Walter Raymond	0.6R	1-20"						44			44	100	
Walter Raymond (a)	1.0R	1-16"						65	51		116	470	
Walter Raymond	2.6R	2-20"					46	381	121		548	450	
White Oak Ranch	5.6L	1-14"				27	95	113	74	129	438	(b)161	
A. L. Haymore	6.4L	1-10"				89	138	147	86	24	(c)484	(d)155	
M. Scheiber	7.7L	1-10"				74	192	204	209	61	740	141	
--GAGING STATION-FEATHER RIVER AT NICOLAUS--	9.3L												
--NICOLAUS BRIDGE--	9.4												
T. H. Richards	9.75R	1-20"			514						514		(e)
--MOUTH OF BEAR RIVER--	12.0L												
Garden Highway Mutual Water Company	13.1R	2-20" 2-24"		48	3469	3036	3310	3243	1610	312	(f)15028	(b)1245	(b)1765
Farm Lands Company	17.5L	(g)1-15" 1-20"			1113	1383	1936	1901	1927	1205	(h)9465	629	895
Oswald Water District	21.4R	2-16"			201	946	703	639	631	75	3195	696	
--GAGING STATION-FEATHER RIVER BELOW SHANGHAI BEND--	23.0R												
Alfred Montna	25.2R				12	80	45	16	21		174	96	
--GAGING STATION-FEATHER RIVER BELOW YUBA RIVER--	27.0R												
--MOUTH OF YUBA RIVER--	27.3L												
--5TH STREET HIGHWAY BRIDGE--	28.0												
--10TH STREET HIGHWAY BRIDGE--	28.2												
A. C. Rackerby	32.3R	1-10"						44	44	88	70		
G. D. Prindiville	33.3R	1-10"				40	80	37	11		168	130	
A. A. Sligar and Son	(i)33.2L	1-3"				NO DIVERSION							
J. L. Sullivan, Jr.	33.9R	1-10"		1	91	147	101	71	5		416	200	
Sutter Extension Water District	38.1R	1-26" 2-42"			1380	212	395	3285	1962		7234	(j)3496	(j)9637
La Finca Orchard	38.5L	1-4"					4	2			6	17	
--HONCUT SLOUGH--	43.7L												
Mathews, Sullivan and Prindiville	*(0.4L)	1-18"			128	203	216	33			580	265	
Jesse Frakes	*(1.2L)	1-8"			10	47	48	14	7		126	62	
Ray Washburn	*(1.25L)	1-8"			7	58	79	51	60	14	(k)269	80	
W. R. Madsen	(m)44.0R	(n)1-4"						15			15	43	
W. Earl Willey	44.5R	1-7"					3	12	4		19	27	
Arnold Christenson	46.3L	1-20" 1-24"			287	472	1117	1479	408	203	(p)3966	(q)1360	
Manuel Aguiar (r)	47.4L	1-7"					39	32	21		92	40	
Manuel Aguiar (r)	47.9L	1-12"				26	13	71	78	39	227	187	
Robert S. Biggs	48.0L	1-7"				61	97	291			449	(s)378	
Robert S. Biggs	48.3L	1-10"					141	38			179	(s)	
Edward Dunning	49.0L	1-8"			2	61	52	8			123	75	
--GRIDLEY BRIDGE-GAGING STATION FEATHER RIVER NEAR GRIDLEY--	49.7												
M. A. Pedroza and Sons	(t)50.7L	1-6"			70	70	63	77	38	14	332	86	
S. T. Machado	50.7R	1-8" 1-10				213	136	176	81		606	221	
Frank E. Norton	51.0R	1-6"				24	17	33			74	24	
A. E. Bettencourt	(u)51.0L	1-6"			9	17	13	16	7		62	32	
Steadman Orchards	51.4R	1-10"					68				68	40	
Chester L. Hoar	51.6R	1-6"				NO DIVERSION							

* Honcut Slough - Plant diverts Feather River water back into Slough. Mouth of Slough at Mile 43.7L. Distance from Feather River and bank is shown in ().

(a) New installation in 1952.
(b) This acreage also received an undetermined amount of water from controlled drainage.
(c) Additional acre-feet diverted: November 42.
(d) Of this figure, 20 acres also received an undetermined amount of well water.
(e) See plant on Sutter By-Pass East Borrow Pit at Mile 0.5S.
(f) Additional acre-feet diverted: November 240.
(g) A 14" unit and a 16" unit were installed temporarily during the 1952 season.
(h) Additional acre-feet diverted: November 394.
(i) Formerly listed as Mile 33.5L.
(j) This is the combined acreage for this plant, the Sutter Extension Water District diversion at Mile 58.1R, and the plant on Sutter By-Pass, East Borrow Pit at Mile 10.0N (2.0W). This This acreage also received an undetermined amount of water from controlled drainage.
(k) Additional acre-feet diverted: November 8.
(m) Formerly listed as Mile 43.5R.
(n) This unit replaces the 7" unit formerly listed at this location.
(p) Additional acre-feet diverted: November 17.
(q) This acreage also received an undetermined amount of water from Honcut Creek in May.
(r) Formerly listed as A. P. Barba.
(s) Combined acreage of plants at Miles 48.0L and 48.3L.
(t) Formerly listed as Mile 51.1L.
(u) Formerly listed as Mile 51.6L.

TABLE 179

DIVERSIONS AND ACREAGES IRRIGATED - FEATHER RIVER - 1952 (Cont'd)

Water User	Mile and Bank above Mouth	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
S. J. and J. R. Fratus	52.1L	1-10"				2	26	39	1		68	97	
Mart Butler	52.5L	(a)1-5"			18	35	39	36	17	8	153	72	
A. K. Johnson (b)	52.7L	1-8"				47	14	21	12		94	89	
Hearst Magazines, Inc.	55.1L	1-14"			114	203	156	220	102	2	797	315	
Henry Haselbusch	57.9R	1-9"				32	19				51	48	
--SUTTER BUTTE CANAL COMPANY DAM--	57.9												
Sutter Butte Canal Company	(c)58.1R	Gravity		7154	28530	28366	28606	24919	17098	8777	(d)143450	13668	2277
Biggs-West Gridley Water District	(c)58.1R	Gravity		7602	30316	30142	30397	26479	18169	9326	(e)152431	3367	8396
Richvale Irrigation District	(c)58.1R	Gravity		7235	28854	28688	28931	25202	17293	8877	(f)145080	432	13621
Sutter Extension Water District	(c)58.1R	Gravity		5159	20572	20453	20627	17968	12329	6328	(g)103436	(h)	(h)
--WESTERN CANAL COMPANY DAM--	61.1												
Western Canal Company	61.2R	Gravity		1981	16201	27051	31958	32694	19357	6783	(i)136025	1228	21297
--OROVILLE-RICHVALE HIGHWAY BRIDGE--	62.6												
--OROVILLE HIGHWAY-CHICO HIGHWAY BRIDGE--	65.0												
--U.S.G.S. GAGING STATION-FEATHER RIVER NEAR OROVILLE--	71.0												
Totals			0	29180	131898	142305	149920	140116	91834	42177	727430	30292	57888
Average cubic feet per second			0	490	2145	2392	2438	2279	1543	686	1497		
Monthly use in per cent of seasonal			0	4.0	18.1	19.6	20.6	19.3	12.6	5.8			

(a) This unit replaced the 10" unit, formerly listed at this location, during the irrigation season.
(b) Formerly listed as R. K. Johnson.
(c) This is a common point of diversion for the Sutter Butte Canal Company Biggs-West Gridley Water District, Richvale Irrigation District, and the Sutter Extension Water District.
(d) Additional acre-feet diverted: November 2917.
(e) Additional acre-feet diverted: November 3100.
(f) Additional acre-feet diverted: November 2951.
(g) Additional acre-feet diverted: November 2104.
(h) See plant at Mile 38.1R.
(i) Includes 5585 acre-feet in October for gun club. Additional acre-feet diverted for gun club: November 7067 and December 60.

TABLE 180

DIVERSIONS AND ACREAGES IRRIGATED - YUBA RIVER - 1952

Water User	Mile and Bank	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--HIGHWAY 99E BRIDGE (D STREET BRIDGE)--	0.0												
C. Wesley Reed	0.9L	1-10"			19	31	36	24	15		125	60	
--GAGING STATION - YUBA RIVER AT MARYSVILLE (SIMPSON LANE BRIDGE)--	0.9												
Ben Williams	1.4R	1-4"			2	2	3	3	1	1	12	2	
M. Lively	1.6L	1-10"				PLANT REMOVED							
W. B. Harrington	1.8R	1-6"					39	47	21		107	60	
W. B. Harrington	(a)2.2L	1-4" 1-5"				NO DIVERSION							
River Bend Ranch	3.0L	1-10"			18	38					56	(b)40	
E. O. Rubke	4.1L	1-14"			62	145	116	199	172		694	(c)280	
E. O. Rubke	4.3L	1-10"			82	214	161	143	175		775	(c)	
Di Giorgio Fruit Corporation	4.75L	1-6"				70	37				107	50	
Scott Hendricks	6.2L	1-16"				NO DIVERSION							
--DAGUERRE POINT DAM--	11.0												
Hallwood Irrigation Company	11.0R	Gravity		4159	13122	12576	12238	12757	12755	10029	(d)77636	5488	1130
Cordua Irrigation District	11.0R	Gravity		1800	9523	9461	9601	9449	6917	5550	(e)52301	(f)3823	(f)2473
Yuba Consolidated Gold Field Company	14.5L	Gravity				NO AGRICULTURAL USE							
Totals			0	5959	22828	22537	22231	22622	20056	15580	131813	9803	3603
Average cubic feet per second			0	100	371	379	362	368	337	253			
Monthly use in per cent of seasonal			0	4.5	17.3	17.1	16.9	17.2	15.2	11.8			

(a) Formerly listed as Mile 2.6L.
(b) This acreage also received an undetermined amount of water from wells.
(c) Combined acreage of plants at Miles 4.0L and 4.3L. Includes 150 acres of Hendrick lands and 25 acres of Chiem Estate lands.
(d) Additional acre-feet diverted: November 7163.
(e) Additional acre-feet diverted: November 6117, December 6321.
(f) Includes 916 acres of rice and 310 acres of general crop lands reused for duck ponds. Includes 195 acres of rice and 110 acres of duck pond lands outside of district. Includes 182 acres of duck pond lands inside district.

TABLE 181

DIVERSIONS AND ACREAGES IRRIGATED - BEAR RIVER - 1952

Water User	Mile and Bank above Mouth *	Number and Size of Pump	Monthly Diversions in Acre Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--MARYSVILLE - NICOLAUS COUNTY ROAD BRIDGE--	*2.7												
--SACRAMENTO NORTHERN RAILROAD BRIDGE--	*3.4												
--WESTERN PACIFIC RAILROAD BRIDGE--	*3.9												
--TROW BRIDGE - WHEATLAND COUNTY ROAD BRIDGE--	*6.8												
Whitney Warren	*7.8R	1-6"				NO DIVERSION							
W. H. Gilbert	*8.1R	1-6"				21	2	9	8		40	(a)50	
California Packing Corporation	*9.0L	1-10"				NO DIVERSION							
C. W. Stineman	*9.4R	1-6"				PLANT REMOVED							
California Packing Corporation	*10.7L	1-10"				NO DIVERSION							
--HIGHWAY 99E BRIDGE--	*11.3												
--GAGING STATION - BEAR RIVER NEAR WHEATLAND--	*11.3												
--SOUTHERN PACIFIC RAILROAD BRIDGE--	*11.35												
Totals Average cubic feet per second Monthly use in per cent of seasonal						21 0 52.5	2 0 5.0	9 0 22.5	8 0 20.0		40 0	50	0

* Designated Mileages changed in 1952. See 1951 Water Supervision Report for former mileages.

(a) This acreage also received an undetermined amount of well water.

TABLE 182

DIVERSIONS AND ACREAGES IRRIGATED - AMERICAN RIVER - 1952

Water User	Mile and Bank above Mouth	Number and Size of Pump	Monthly Diversions in Acre Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--GARDEN HIGHWAY BRIDGE--	0.2												
--HIGHWAY 40 AND 99E BRIDGE (16TH STREET)--	1.9												
--SACRAMENTO - NORTHERN RAILROAD BRIDGE--	2.0												
--WESTERN PACIFIC RAILROAD BRIDGE--	2.1												
Joe Gomez	2.4L	1-5"			3	3	9	7	5	1	(a)28	7	
North Sacramento Lands Company	2.65R	1-7"				NO DIVERSION							
North Sacramento Lands Company	2.75R	1-5"				14	13	3	10		40	20	
--SOUTHERN PACIFIC RAILROAD BRIDGE--	3.5												
C. Swanston and Sons	4.2R	1-10"				NO DIVERSION							
C. Swanston and Sons	5.3R	1-10"				NO DIVERSION							
--GAGING STATION (H STREET) AMERICAN RIVER AT SACRAMENTO--	6.1												
E. Clemens Horst Company	6.5R	1-6"			2	51	40				93	(b)445	
E. Clemens Horst Company	7.5R	1-8"				98	62				160	(b)	
J. J. Haas, Incorporated	7.7R	1-4"			9	90	101	27		21	248	83	
T. A. Farrell	8.95R	1-4"				PLANT REMOVED							
W. J. Wissemann (c)	9.0L	1-6"				42	51	25			118	37	
G. L. Browning	9.05R	1-5"			28	13	14	17	21	7	(d)100	12	
J. G. and F. F. Dauenhauer	9.2L	1-8"			11	55	20	10			96	(e)72	
Ruth Coleman	9.4L	1-5"					20	21			41	(e)130	
Sweem Brothers	10.2R	1-8"			105	28	72	66	89	59	419	70	
Gold Nugget Orchard Company	10.4R	1-5"		14	15	14	16	11	15	3	88	17	
Mucke Sand and Gravel Company	11.2L	1-6"		6	8	15	11	14	11	8	(a)73	25	
J. T. Gore	11.5L	1-4"				NO DIVERSION							
William A. Meyer	11.7L	1-4"				10	11	5	3	1	30	27	
C. W. Deterding and Mrs. May McDonnell	13.9R	1-6"				NO DIVERSION							
J. R. Deterding	15.1R	1-4"			13	25	27	28	26	23	142	61	
Carmichael Irrigation District	16.0R	1-6" 2-12"			245	366	606	576	403	81	2277	(h)3550	

(a) Additional acre-feet diverted: November 1.
(b) Combined acreage of plants at Miles 6.5R and 7.5R. This acreage also received an undetermined amount of well water.
(c) Formerly listed as J. H. Kerby.
(d) Additional acre-feet diverted: November 4.
(e) This acreage also received an undetermined amount of well water.
(f) Includes 100 acres irrigated outside of district. District is suburban land and no segregation of irrigated acreage is available. This acreage also received 3947 acre-feet of water from wells.

TABLE 182

DIVERSIONS AND ACREAGES IRRIGATED - AMERICAN RIVER - 1952 (Cont'd)

Water User	Mile and Bank above Mouth	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--GAGING STATION - AMERICAN RIVER AT FAIROAKS--	19.2												
Totals Average cubic feet per second Monthly use in per cent of seasonal			0 0 0	20 0 0.5	439 7 11.1	824 14 20.8	1073 17 27.1	810 13 20.5	583 10 14.8	204 3 5.2	3953 8	4556	0

TABLE 183

DIVERSIONS AND ACREAGES IRRIGATED - COSUMNES RIVER - 1952

Water User	Mile and Bank above Mouth *	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--WESTERN PACIFIC RAILROAD BRIDGE--	*0.4												
--STATE HIGHWAY 104 BRIDGE--	*5.3												
--SOUTHERN PACIFIC RAILROAD BRIDGE--	*10.6												
--U. S. 50 AND 99 HIGHWAY BRIDGE--	*10.7												
--GAGING STATION - COSUMNES RIVER AT McCONNELL--	*10.7												
Alvin Bartholamew	14.3R	1-6"				PLANT REMOVED							
J. C. Carli	*14.3R	1-10"				29	42	18			89	90	
J. C. Carli	*14.4R	(a)1-10"				NO DIVERSION							
--COUNTY ROAD BRIDGE (FREEMAN ROAD)--	*14.9												
Oliver A. Roden	14.9R	1-6"				PLANT REMOVED							
H. Saner (b)	15.4R	1-8"					25				25	30	
D. M. Doyle	15.5R	1-6" 1-8"				PLANT REMOVED							
William R. Saxon	16.0R	1-10"				PLANT REMOVED							
Harvey Blodgett	16.4R	1-8" 1-12"				PLANT REMOVED							
--COUNTY ROAD BRIDGE (WILTON ROAD)--	16.8												
--CENTRAL CALIFORNIA TRACTION COMPANY RAILROAD BRIDGE--	16.8												
George Beitzel (b)	18.2R	1-12"			5	20	10				35	55	
Bright Estate (Mike Marinelli)	*20.1R	1-15"			114	190	198	171	133	76	882	300	
Joseph Audisio	20.5R	1-12"				PLANT REMOVED							
J. I. Haas	*20.9R	1-12"				101	58	2			161	72	
Rooney Brothers	*23.7R	1-12"			53	41	96				190	140	
W. Jared Sheldon	*24.4R	1-8"				94	107	66	69	27	(c)363	171	
P. Westerberg	*25.5R	1-14"			8	115	62			57	242	155	
R. F. and R. M. Grimshaw	*25.9R	1-8"				3	35	21			59	35	
A. V. Signorotti	*26.3R	(d)1-5"				11	13	5			29	15	
F. Morse Grimshaw	*26.4R	1-6"				6	8	4			18	10	
G. C. Johnson	*26.5L	1-5"			10	29	18	8			65	27	
G. C. Johnson	*27.3L	1-6"				35	31	18			84	(e)147	
F. Silva, Jr. (f)	*27.8L	1-6" 1-8"			3	25	18	11			57	80	
R. C. Catlett (b)	*29.4R	1-5"				4	7	4			15	15	
--STATE HIGHWAY SIXTEEN BRIDGE--	*31.3												
A. Granlees (g)	*32.6R	1-3"			14	15	26	25	19		99	20	
--GRANLEES DAM--	*33.0												
Cosumnes River Water District	*33.0R	Gravity			595	1190	1537	1537	793		(h)5652	748	
--GAGING STATION - COSUMNES RIVER AT MICHIGAN BAR--	*34.3												
Totals Average cubic feet per second Monthly use in per cent of seasonal			0 0 0	0 0 0	802 13 9.9	1908 32 23.7	2291 37 28.4	1890 31 23.4	1014 17 12.6	160 3 2.0	8065 17	2110	0

* Mileage designations revised in 1952. See 1951 Water Supervision Report for former mileages.
(a) Formerly listed as a 12" unit.
(b) New installation in 1952.
(c) Additional acre-feet diverted: November 3.
(d) Formerly listed as a 6" unit.
(e) This acreage also received an undetermined amount of water from wells.
(f) Formerly listed as G. C. Johnson.
(g) Formerly listed as A. Grandlee.
(h) This figure is partially estimated.

TABLE 184

DIVERSIONS AND ACREAGES IRRIGATED - MOKELUMNE RIVER - 1952

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreages Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--FRANKLIN-THORNTON HIGHWAY BRIDGE--	4.9												
--COSUMNES RIVER--	5.0												
--WESTERN PACIFIC RAILROAD BRIDGE--	5.4												
--GALT-THORNTON HIGHWAY BRIDGE--	7.0												
S. and J. Frandy	10.4L	1-12"				1	13	10	6		30	12	
M. R. Steffans	10.6	1-12"		90	175	330	370	310	190	75	(a)1540	450	
A. Taddei	15.6R	1-6"	1	2	15	16	28	4	1		67	53	
R. J. Lange	16.8R	1-6"				29	59	28			116	106	
--GAGING STATION-MOKELUMNE RIVER AT WOODBRIDGE--	19.2												
--SACRAMENTO ROAD BRIDGE--	19.8												
--WOODBRIDGE IRRIGATION DISTRICT DAM--	19.9												
Woodbridge Irrigation District	19.9L	Gravity		5530	18120	22720	23400	22510	16910	11750	(b)120940	(c)14633	(c)1585
LeMoin Beckman	21.1L	1-5"				6	13	12	5		36	20	
LeMoin Beckman	21.3L	1-5"				NO DIVERSION							
Lewis D. Bridge	21.85R	1-6"			13	31	30	10			84	33	
E. and M. Mayer	22.5R	1-5"				NO DIVERSION							
J. R. Benty	22.9R	1-6"				NO DIVERSION							
L. R. Sangueniti	23.4L	1-6"				5	1				6	7	
J. and M. Mumbert	23.4R	1-4"		11	4	9	3				27	13	
--SOUTHERN PACIFIC RAILROAD BRIDGE--	23.5												
M. M. Bender	23.6R	1-4"				DOMESTIC USE ONLY							
Ben Bechthold	24.0L	1-4"				10	8	3		3	24	13	
--HIGHWAY 99 BRIDGE--	24.2												
Matt Barr	24.45L	1-6"		1	1	5	3	3	1		14	9	
Lawrence Ranch	24.5L	1-8" 1-18"		26	2	44	122	34	6		234	177	
S. and M. Miller	24.6L	1-6"					1	6	7		14	12	
T. and M. Kirschenmann	25.2R	1-6"		56	31	4	9	10			110	(d)66	
M. and M. Palmer	25.5L	1-4"					9	17	9		35	33	
--CENTRAL CALIFORNIA TRACTION COMPANY BRIDGE--	25.6												
T. C. Green	27.5L	1-5"		6	37	4	4				51	26	
R. J. Linde	27.6L	1-8"			11	13	6	4			34	21	
A. E. Jones	27.9L	1-10"	52	46	11						(e)109	125	
P. T. Nakagawa, et al	28.6R	1-3" 1-6"		1		42	91	89	37		260	109	
L. M. Peterson	28.9L	1-4"						7	11	5	23	15	
W. E. Mehlhoff	29.9R	1-8"			35	13		12			60	67	
E. Bender	30.0L	1-10"						9	9	8	26	9	
--COUNTY ROAD BRIDGE--	30.0												
V. and E. Hoffman	30.15R	1-5"			41	48	47	29	7		172	66	
N. H. Davis	30.35R	1-7"		1	7	18	21	26	13		86	66	
J. J. Schmiedt	30.95L	1-8"				NO DIVERSION							
L. Schenmann	31.0L	1-12"				13	96	13	3		125	155	
Rosa D. Soucie	31.7L	1-4"				NO DIVERSION							
L. M. Peterson	32.5L	1-5"	2		6	15	13	15	13	4	68	22	
Schuman Company (f)	32.75R	1-6"			4	3	21	10			38	(g)105	
C. Locke	33.25L	1-10"					16	86	36		138	130	
Campo Vineyards	33.45R	1-8"					12	15	4		31	22	
Campo Vineyards	33.6R	1-8"			30	60	53	46	14		203	138	
Neil C. Locke	33.7L	1-12"			25	81	230	197	69		602	325	

* Mileage listed is approximate mileage above New Hope Landing Bridge.
(a) This figure is partially estimated.
(b) Additional acre-feet diverted: November 4510.
(c) Includes 5908 acres outside of district.
(d) This acreage also received an undetermined amount of water from wells. Includes 22 acres of B. C. Pokert lands.
(e) Additional acre-feet diverted: February 89.
(f) Formerly listed as J. Langford.
(g) This acreage also received an undetermined amount of water from wells.

TABLE 184

DIVERSIONS AND ACREAGES IRRIGATED - MOKELUMNE RIVER - 1952 (Cont'd)

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
H. C. Russell (a)	33.75L	1-10"					19	81	27		127	75	
T. and E. Schmierer	33.8R	1-4"				2	7	12	8	5	34	15	
C. J. Ssibel	34.05R	1-4"			5	8	11	5			29	13	
A. and M. Knoll	34.1R	1-4"				19	15	3			37	23	
N. D. and D. D. Knoll	34.3R	1-4"		1	6	8	5	15	4	4	43	24	
--COUNTY ROAD BRIDGE--	34.35												
J. B. Ward	34.5R	1-4"					5	9	9	2	25	16	
H. C. Russell (a)	34.55L	1-8"		40	59	63	82	126	122	79	(b)571	120	
H. C. Russell (a)	34.75L	1-12"			9	29	33	74	10	10	(c)165	125	
E. R. Thomas	35.15R	1-7"			43	68	69	60	33	4	277	(d)150	
E. M. Locke	35.2L	1-8"		1	18	31	40	54	30	12	(e)186	95	
J. N. Borroughs	35.4L	1-10"			20	29	34	27	23		133	(f)104	
E. R. Thomas	35.5R	1-8"			1	9	22	14			46	(g)155	
C. L. Allen	35.7L	1-8"				17	16	39	11		83	70	
P. Montgomery	35.9L	1-12"				35		69	15		119	71	
W. S. Montgomery	36.0L	1-8"			4	19	40	52	3		118	(f)63	
E. R. Thomas	36.2R	1-8"		27	30	32	67	57	8		221	(g)	
O. Parker	36.45L	1-12"		38	17	30	69	82	4		240	125	
W. L. Moffat	36.95R	1-10"		9	25	30	32	33	23	5	157	50	
J. R. Wiederrich	37.15L	1-10"					NO DIVERSION						
W. L. Moffat	37.45R	1-10"		5	15	26	38	45	17	3	149	70	
W. L. Moffat	37.65L	1-10"			24	46	60	68	21		219	90	
Marie Costa	37.7R	1-12"				8	25	22			55	40	
M. G. and H. L. Thompson	38.0L	1-8"				36	44	54			134	70	
P. L. and V. A. Stabel	38.3L	1-8"				18	11	30	14		73	45	
Gertrude W. Chrisman	38.5L	1-12"					NO DIVERSION						
Clements Estate	39.0L	1-12"			240	258	229	230	196	112	1265	324	
R. S. Featherston	39.3R	1-14"					NO DIVERSION						
--GAGING STATION - MOKELUMNE RIVER NEAR CLEMENTS	39.35												
Totals			55	5891	19084	24341	25652	24776	17929	12081	129809	18971	1585
Average Cubic Feet per second			1	99	310	409	417	403	301	196	267		
Monthly use in per cent of seasonal			0	4.5	14.7	18.8	19.8	19.1	13.8	9.3			

* Mileage listed is approximate mileage above New Hope Landing Bridge.
(a) Formerly listed as C. G. Patman.
(b) Additional acre-feet diverted: November 21.
(c) Additional acre-feet diverted: November 6.
(d) Of this figure, 65 acres also received an undetermined amount of water from wells.
(e) Additional acre-feet diverted: February 1 and November 1.
(f) This acreage also received an undetermined amount of water from wells.
(g) Combined acreage of plants at Miles 35.5R and 36.2R.

TABLE 185

DIVERSIONS AND ACREAGES IRRIGATED - CALAVERAS RIVER - 1952

Water User	Mile and Bank above Mouth	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--WESTERN PACIFIC RAILROAD BRIDGE--	4.9												
--SOUTHERN PACIFIC RAILROAD BRIDGE--	5.3												
--STOCKTON DIVERTING CANAL--	5.3L												
--U.S. 50 AND 99 HIGHWAY BRIDGE--	6.8												
--CENTRAL CALIFORNIA TRACTION COMPANY RAILROAD BRIDGE--	7.9												
--GAGING STATION-CALAVERAS RIVER NEAR STOCKTON--	8.9												
Pezzi Dam	11.8	Gravity			30	60	90	70	10		(a)260	135	
Murphy Dam	12.4	Gravity			40	70	110	80	10		(a)310	162	
--STATE HIGHWAY 88 BRIDGE--	12.7												

(a) This figure is partially estimated.

TABLE 185

DIVERSIONS AND ACREAGES IRRIGATED - CALAVERAS RIVER - 1952 (Cont'd)

Water User	Mile and Bank above Mouth	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
A. Girardi (a)	15.4R	1-12"			45	59	58	22	35		219	160	
J. Tone	(b)15.7L	(c)1-10"			30	73	71	48	15		237	(d)90	
John Plotz (e)	16.0R	1-5"						8			8	40	
T. Cademartori	(f)16.2L	1-6"			12	35	47	37	11		142	65	
C. Paoletti	16.6L	1-5"			8	21	20	2	11		62	34	
Lawrence Zolezzi	16.8L	1-6"			6	36	34	30	13		119	62	
John Boggiano	17.3L	1-6"			12	38	63	48	13		174	80	
Steve Solari	18.4L	1-10"			11	116	147	59			333	200	
Joe Landoni (e)	19.3R	1-5"					30	28	12		70	(d)38	
W. E. Lynch	19.8L	1-4"				2	2	1	1		6	6	
E. F. Messick (a)	19.8R	1-5"						1			1	(d)5	
L. Vaccarezza	20.1L	(g)1-5"			5	12	17	12	11	6	63	31	
Frank G. Rossi	20.9L	1-5"					8	11			19	20	
Guernsey Ranch (a)	20.9R	1-8"			34	32	33	28	21	16	164	(d)72	
G. Arboco	21.0L	1-4"		2	7	16	12	32			69	37	
Clements Road Dam	21.1	Gravity			80	100	130	120	20		(h)450	228	
Mailand Ferrill	21.3L	1-5"				5					5	(d)20	
D. Giordano (e)	21.4L	1-4"				9	5	5	2		21	10	
Domonick Figone	21.4L	1-4"	NO DIVERSION										
--NORTH SLOUGH--	21.6R												
J. Tone (a)	*(5.9R)	1-12"				38	33	47	35		153	135	
A. Girardi (a)	*(6.1L)	1-16"			4	23	43	35	13		(h)118	60	
J. W. Hannah (a)	*(7.8L)	1-8"		72	268	253	258	265	106		1222		80
Webster Ranch (a)	21.7R	1-8"			43	54	87	59			243	(d)132	
Ralph Houston	21.9R	1-8"		10	32	31	34	35	24		166	80	
Andrew Cuneo	21.9L	1-12"			13	103	105	108			329	(d)140	
Nick Genetti	22.1L	1-4"		1	4	8	11	10	2		36	16	
J. DeMartini	22.2R	1-8"			18	44	54	41	13		170	78	
Carroll and Anderson	22.3L	1-8"			16	38	34	42			130	(d)95	
John Boggiano			NO DIVERSION										
C. DeMartini	(i)22.7R	1-12"				51	81	50	34		216	126	
Fine Ranch	22.9R	1-6"	PLANT REMOVED										
Louis Tassano (e)	22.9L	1-8"				31	17	27	15		90	75	
Frank DeBenedetti (j)	23.1L	1-7"				9		7			16	(d)39	
Fred Podesta	23.8L	1-10"	NO DIVERSION										
Fred Podesta	24.4L	1-14"			99	78	150	89			416	450	
--STATE HIGHWAY 8 BRIDGE--	25.2												
--GAGING STATION - CALAVERAS RIVER AT BELLOTA--	25.25												
--CALAVERAS RIVER - MORMON SLOUGH CONTROL GATES--	25.28												
Armaninio Brothers	25.3R	1-10"			63	67	67	56	42	12	307	(d)120	
--MORMON SLOUGH--	25.3L												
--GAGING STATION -MORMON SLOUGH AT BELLOTA--	*(0.05)												
--FARMINGTON-BELLOTA COUNTY ROAD BRIDGE--	*(0.2)												
J. G. Watkins	*(0.3R)	1-8"				43	23	27			93	(d)60	
A. Solari	*(0.5L)	1-8"			3	56	29	55			143	84	
Fred Casella	*(0.9L)	1-6"			17	22	17	12	4		71	(d)89	
Linden Orchard	*(1.4R)	1-12"			41	163	243	191	17		655	300	
Sadaki Higashi	*(1.5L)	1-8"				23	40	35	18		116	65	

* North Slough - North Slough diverts from Calaveras River at Mile 21.6R. Distance from Calaveras River and the bank is shown in ().

(a) Installed prior to 1952. Not previously listed.
(b) Formerly listed as Mile 15.6L.
(c) Formerly listed as an 8" unit.
(d) This acreage also received an undetermined amount of water from wells.
(e) New Installation in 1952.
(f) Formerly listed as Mile 15.7L.
(g) Formerly listed as a 7" unit.
(h) This figure is partially estimated.
(i) Formerly listed as Mile 22.6R.
(j) Formerly listed as De Benedotti and Toscano.

TABLE 185

DIVERSIONS AND ACREAGES IRRIGATED - CALAVERAS RIVER - 1952 (Cont'd)

Water User	Mile and Bank above Mouth	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
E. Marugliano (a)	*(1.8R)	1-10"			4	24	17	20	15		80	42	
C. and F. Sanuinetti	*(2.0L)	1-8"				38	64	41	4		147	84	
Frank Solari (b)	*(2.7L)	1-5"				16	9	9	7		41	20	
C. DeMartini	*(3.4R)	1-10"				21	39	19	5		84	41	
John Avansino (b)	*(3.5L)	1-5"					13	26	5		44	(c)30	
V. Lagorio	*(3.6R)	1-6"			9	20	30	27	9		95	40	
John A. Lagorio (b)	*(5.8L)	1-7"					9	13	8		30	36	
C. and F. Sanguinetti	*(6.1L)	1-6"			9	48	31	30	15		133	80	
A. and R. Lagorio	*(6.9L)	1-8"		9	20	21	29	33			112	(d)176	
A. and R. Lagorio	*(7.1L)	1-8"		10	22	21	24	16			93	(d)	
--END OF MORMON SLOUGH- BEGINNING OF STOCKTON DIVERTING CANAL--	*(13.0)												
Homer D. Riddle	*(13.3R)	1-6"			60	74	68	84	78	2	(e)366	(c)220	
--STATE HIGHWAY 8 BRIDGE--	*(14.9)												
--U.S. 50 AND 99 HIGHWAY (FREEWAY) BRIDGE--	*(16.0)												
--U.S. 50 AND 99 HIGHWAY BRIDGE--	*(17.2)												
--GAGING STATION - STOCKTON DIVERTING CANAL AT STOCKTON--	*(17.6)												
Albert A. Anderson	25.5L	1-12"			19	92	63	50			224	(c)115	
L. F. Grimsley	25.9L	1-14"				103	87	80			270	(c)203	
Vignolo and Pallavicino	26.3R	1-10"			19	32	33	49	36		169	(c) 95	
Field Brothers	26.8L	1-6"			36	50	61	67	36		250	107	
McGurk Ranch	26.8R	1-8"			50	77	88	83	53		351	130	
Saverio Nogare	27.5L	1-10"			29	50	36	51	20		186	(c)100	
Saverio Nogare (b)	27.5R	1-12"			13	46	74	80	47		260	100	
E. E. Cady	28.3L	1-6"			36	22	38	30	6		132	80	
L. and A. V. Lagorio	28.9L	1-12"				25	17	24			66	50	
Garavano and Maffeo	29.0L	1-6"				16	13	18			47	50	
O. R. Shelley	29.3L	1-8"			18	45	48	53	39		203	94	
O. R. Shelley	29.3R	1-5"				NO DIVERSION							
M. N. Yocum	29.4L	1-8"				31	28	49	19		127	(c)90	
A. G. Watkins	30.1R	1-10"			93	119	149	115	101	114	691	135	
L. and D. Hoag	30.6R	1-14"			47	89	65	17			218	(c)95	
Lynn Barnett	30.7R	1-7"				5	11	8			24	25	
Lois E. Hunt	31.1R	1-8"			4	47	16	56		3	126	80	
S. M. Gregory	31.3R	1-10"				27	20	27	15		89	(f)128	
S. M. Gregory	31.6R	1-6"				49	11	7	2		69	(f)	
Eva Hunt	32.5R	1-6"			12	12	12	11	9	8	(g)64	18	
Eva Hunt	32.6L	1-6"				21	31	42	2		96	55	
--GAGING STATION - CALAVERAS RIVER AT JENNY LIND--	36.9												
Totals			0	104	1140	3060	3437	3068	1039	161	12309	6158	80
Average cubic feet per second			0	2	23	51	56	50	17	3	25		
Monthly use in per cent of seasonal			0	0.9	11.7	24.9	27.9	24.9	8.4	1.3			

* Mormon Slough - Mormon Slough diverts from Calaveras River at Mile 25.3L, and rejoins river through Stockton Diverting Canal. Distance from Calaveras River and bank is shown in ().

(a) Formerly listed as E. Maurigliano.
(b) New Installation in 1952.
(c) This acreage also received an undetermined amount of water from wells.
(d) Combined acreage for plants at Miles 6.9L and 7.1L. This acreage also received and undetermined amount of water from wells.
(e) Additional acre-feet diverted: November 28.
(f) Combined acreage for plants at Miles 31.3R and 31.6R.
(g) Additional acre-feet diverted: November 1.

TABLE 186

DIVERSIONS AND ACREAGES IRRIGATED - OLD SAN JOAQUIN RIVER DELTA UPLANDS - 1952

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Contra Costa Canal	(a)30.5L	2-30" 2-42"	1601	1839	2406	2791	3479	3630	3786	2247	(b)21779	(c)4805	
Leo Fallman	(d)36.5L	1-16"		26	217	242	235	232	163	92	(e)1207	270	
East Contra Costa Irrigation District	(d)36.5L	2-18" 2-24" 2-30"			3759	6256	6461	4578	2463	443	23960	(f)15226	
Augustus Sarija	(d)36.5L	2-6"	3	8	62	49	60	60	46	19	307	81	
--STATE HIGHWAY 4 BRIDGE--	38.8												
Byron-Bethany Irrigation District	(d)40.9L	1-24" 1-30"		379	4631	5565	5497	5735	2737	3009	(g)27553	8716	
--CLIFTON COURT FERRY--	43.8												
--DELTA-MENDOTA CANAL--	44.6L												
M. R. Furtado	44.6L			8	111	131	135	155	108	43	691	322	
George Covert (h)	47.2L	1-12" (i)1-16"		5	198	46	121	44	36	23	473	(j)265	
Lucio J. Costa	47.2L	1-14"			142	68	139	164	118	59	690	(j)115	
West Side Irrigation District	(k)47.65L	7-15"		1983	5892	5154	5787	5757	3391	1749	(m)29713	(n)10094	
Johnny Costa (p)	(q)47.65L	1-8"							47	24	71	80	
Vance Brown	48.4L	1-12"			25	11	13	15	4	7	(r)75	23	
Salles Brothers	49.5L	1-4"				NO DIVERSION							
Naglee Burke Irrigation District	50.4L	1-16" 1-18"		167	1462	1459	1642	1426	1398	490	(s)8044	2464	
Freemont Irrigation Assn.	50.9L	1-16"		36	300	300	370	305	203	24	1538	(t)654	
Joe M. Freitas	51.0L	1-8"			27	18	25	46	14		130	36	
Attilio Casserini	51.2L	1-10"				7	7	4	10		28	36	
Excelsior Ranch #2	52.4L	1-10"		1	40	27	38	24	13	2	(u)145	120	
A. L. Galli	53.0L	1-8"			37	35	27	27	12	8	(v)146	57	
--RECORDING GAGE--	53.0												
--MOUTH OF TOM PAINE SLOUGH--	54.3												
Totals			1604	4452	19309	22159	24036	22202	14549	8239	116550	43364	0
Average cubic feet per second			26	75	314	372	391	361	245	134	240		
Monthly use in per cent of seasonal			1.4	3.8	16.6	19.0	20.6	19.0	12.5	7.1			
Delta-Mendota Canal	44.6L			5925	3586	7666	31815	59978	32120	25587	(w)166677		

* Distance from mouth of San Joaquin River 43 Miles below Antioch (mileage as established by War Department Survey of 1913-15).
(a) This is the point of diversion of the U. S. Bureau of Reclamation Contra Costa Canal at head of Rock Slough.
(b) Additional acre-feet diverted: January 2331, February 1503, November 2896, December 2015.
(c) In addition to this acreage, also served Industrial and Municipality.
(d) Indian Slough joins the Old San Joaquin River at this mile. Pumping plant is located on intake canal which joins Indian Slough.
(e) Additional acre-feet diverted: November 23.
(f) This acreage also received 2442 acre-feet of well water.
(g) Additional acre-feet diverted: November 139.
(h) Formerly listed as H. Lindeman.
(i) The 16" unit replaced the 12" unit in August.
(j) This acreage also received an undetermined amount of controlled drainage water.
(k) Pumping plant is located on intake canal which joins Old San Joaquin River at this mile.
(m) Additional acre-feet diverted: November 280.
(n) Of this figure 218 acres were double cropped.
(p) New installation in 1952.
(q) Pumping plant is located on West Side Irrigation District intake canal which joins Old San Joaquin River at this mile.
(r) Additional acre-feet diverted: November 4.
(s) Additional acre-feet diverted: November 29.
(t) This figure includes 8 acres in Clover Irrigation District.
(u) Additional acre-feet diverted: November 1.
(v) Additional acre-feet diverted: November 2.
(w) Additional acre-feet diverted: November 1815.

TABLE 187

DIVERSIONS AND ACREAGES IRRIGATED - TOM PAINE SLOUGH DELTA UPLANDS - 1952

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Independent Mutual Water Corporation and Company	0.7S	2-18"	27	263	481	461	859	818	274	77	3260	1059	
Independent Mutual Water Corporation and Company	1.5S	1-18"		173	84	62	152	161	30		(a)662	227	
--HOLLY SUGAR CORPORATION DREDGER CUT--	2.1S												
George J. Lake	**(0.5W)	1-10"		70	37	32					139	170	
Holly Sugar Corporation	**(1.2W)	1-12" 1-14"		76	244	232	319	346	327	338	(b)1882	608	

* Distance along Tom Paine Slough from its mouth which is at Mile 54.3 on Old San Joaquin River. (War Department Survey of 1913-15).
** Holly Sugar Corporation dredger cut joins Tom Paine Slough at Mile 2.1S. Distance along dredger cut and bank is shown in ().
(a) Additional acre-feet diverted: February 106.
(b) Additional acre-feet diverted: November 327 and December 109. Includes an undetermined amount of water used for industrial purposes.

TABLE 187

DIVERSIONS AND ACREAGES IRRIGATED - TOM PAINE SLOUGH DELTA UPLANDS - 1952 (Cont'd)

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--RECORDING GAGE--	2.2S												
Pescadero Reclamation District 2058 (#1)	2.9S	1-12"		53	289	158	214	211	150	42	1117	219	
Pescadero Reclamation District 2058 (#3)	6.3S	1-12" 1-20" 1-24"		539	2134	1573	2282	1784	1335	424	10071	2398	
Pescadero Reclamation District 2058 (#5)	8.3S	1-12"		68	174	137	203	196	99	61	938	286	
--RECORDING GAGE --	8.7S												
Pescadero Reclamation District 2058 (#5A)	9.0S	1-12"		67	196	111	169	142	38	30	(a)753	246	
Totals			27	1309	3639	2766	4198	3658	2253	972	18822	5213	0
Average cubic feet per second			0	22	59	46	68	59	38	16	39		
Monthly use in per cent of seasonal			0.1	7.0	19.3	14.7	22.3	19.4	12.0	5.2			

* Distance along Tom Paine Slough from its mouth which is at Mile 54.3 on Old San Joaquin River. (War Department Survey of 1913-15).

** Holly Sugar Corporation dredger cut joins Tom Paine Slough at Mile 2.1S. Distance along dredger cut and bank is shown in ().

(a) Additional acre-feet diverted: November 2.

TABLE 188

DIVERSIONS AND ACREAGES IRRIGATED - SAN JOAQUIN RIVER DELTA UPLANDS - 1952
(Stockton to Vernalis)

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--GARWOOD BRIDGE--	45.3												
Carolyn Weston	46.1R	1-4"				NO DIVERSION							
Carolyn Weston	46.2R	1-6"				35	10	5	9	1	(a)60	35	
Carolyn Weston	46.3R	1-12"			1	222	150	89	117	62	(b)641	205	
Ivy Ranney	46.65R	1-10"				NO DIVERSION							
Frank West	46.85R	1-10"		1	48	7	58	75	8		(a)197	160	
F. Asano	47.2R	1-6"		8	16	6	17	13	7	3	(a)70	27	
Wolfinger Brothers	47.3R	1-10"			12	16	6	17	29		80	47	
C. C. Long	47.55R	1-10"						156			156	110	
Waldo C. Haack	48.0R	1-14"							87		(a)87	200	
Chow L. Young	48.3R	1-4½"		2	2	2	11	12	4	2	35	24	
Chow L. Young	48.5R	1-3"				NO DIVERSION							
Joe Calcagno	48.5R	1-6"		4	12	32	30	22	9	10	119	90	
Beulah L. Carr	48.55R	1-6"				5		16	1	7	29	10	
Calcagno Brothers	48.66R	(d)1-12"		6	14	17	100	65	46	4	(e)252	(c)157	
Minna M. and Ema J. C. Ott	49.0R	1-12"			28	33	26	66	57	44	(f)254	75	
Herbert Spangenberg and S. B. Chapman	49.3R	1-14"			98	146	187	190	112	131	(e)864	185	
Herbert Spangenberg and S. B. Chapman	49.5R	1-12"			17	8	17	14	11	3	70	40	
A. A. Rodgers	50.1R	1-10"		1	1	21	43	42	40	32	(g)180	(h)80	
--BRANDT BRIDGE--	50.2												
A. Hirata	50.4R	1-10"		8	10	12	20	16	12	4	82	40	
K. R. and F. Watanabe	50.6R	1-6"		1	25	18	18	42	19	1	124	53	
D. Toscano	50.8R	1-6"		5	18	17	22	23	21	15	(e)121	40	
Pastorino Brothers	50.9R	1-12"			76	102	32	142	90	28	(i)470	150	
Pastorino Brothers	51.0R	1-6" 1-10"				NO DIVERSION							
Felipe Esteban	51.2R	1-12"		4	9	14	90	100	56	4	(i)277	95	
J. Burchel	52.1R	1-10"				NO DIVERSION							
G. Santini	52.4R	1-5"		1	1			9	4	3	18	17	
D. J. Macedo	52.65R	1-10"		20	43	19	49	67	7		205	96	

* Distance along San Joaquin River from its mouth 4½ miles below Antioch. (Mileage as established by War Department Survey 1913-15).

(a) Additional acre-feet diverted: November 1.
(b) Additional acre-feet diverted: November 28.
(c) Of this figure, 50 acres was double cropped.
(d) The 12" unit replaced an 8" unit formerly listed at this location.
(e) Additional acre-feet diverted: November 2.
(f) Additional acre-feet diverted: November 16.
(g) Additional acre-feet diverted: November 12.
(h) This acreage also received an undetermined amount of drain water.
(i) Additional acre-feet diverted: November 4.

TABLE 188

DIVERSIONS AND ACREAGE IRRIGATED - SAN JOAQUIN RIVER DELTA UPLANDS - 1952
(Stockton to Vernalis)
(Cont'd)

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
J. Widmer	53.2R	1-12"		8	25	84	108	84	78	46	(a)433	354	
William Nishimura	53.4R	1-8"			3	13	15	14	8	3	56	32	
John Domingo	53.6R	1-4"					6	7	3	1	17	13	
John Domingo	53.7R	1-12" 1-14"		17	95	133	104	82	58	14	(b)503	222	
I. N. Robinson, Jr.	53.8R	1-14"		52	80	73	220	194	189	64	(c)872	388	
R. E. Albertson	54.9R	1-10"			67	99	59	56	45	21	(d)347	136	
--JUNCTION WITH MIDDLE RIVER--	56.2L												
Oakwood Stock Farm	57.0R	1-14"			152	146	226	203	122	41	890	188	
James Tobin	57.15R	1-7"				NO DIVERSION							
Frank Dewar, et al	57.38R	1-4"					1	1			2	2	
G. Gardella and Company	57.5R	1-4"		1	2	4	4	2	1		14	20	
A. Queirolo	57.65R	1-3"				NO DIVERSION							
A. Queirolo	58.6R	1-3"				3	1	1	1		6	36	
R. Mauro	58.7R	1-4"				NO DIVERSION							
--SOUTHERN PACIFIC RAILROAD BRIDGE--	58.8												
--MOSSDALE BRIDGE (U.S. HIGHWAY 50) - RECORDING GAGE--	58.9												
Mertle Abersold	59.25R	1-6"	1	5	17	6	19	22	10	11	(e)91	16	
M. H. Madruga	59.3R	1-15"			154	164	164	320	88		890	254	
Eugene J. Rossi, et al	59.5L	1-14"		20	110		77	55			262	(f)167	
--WESTERN PACIFIC RAILROAD BRIDGE--	59.5												
M. H. Madruga	60.1R	1-6"					27	23	13		63	30	
James and Leslie Little	60.4L	1-4"						3	3		6	7	
A. F. Windeler	60.5L	(g)1-8" 1-12"			10		20	92	16		(h)138	80	
E. Pecchi and Son	60.5R	1-8"						34	36		70	68	
E. Pecchi and Son	(i)61.4R	1-12"						53	42		95	219	
A. F. Windeler	61.5L	1-8"				NO DIVERSION							
Bernice Von Sosten	62.0L	1-12"			36	6	24	61	7	50	(j)184	160	
--PARADISE DAM (HEAD OF PARADISE CUT)--	62.2L												
Paradise Mutual Water Company	(k)62.2L	1-14" 1-20"		152	556	663	526	675	207	53	2832	813	
Dethlefsen Brothers	63.0L	2-20"			147	490	294	915	296	102	2244	1490	
H. H. Grimes	63.6R	1-12"						13	11		24	40	
Dethlefsen Brothers	64.6L	1-10"						49	36	18	(m)103	50	
Manuel Brazil	66.7L	1-8"		43	9	31	37	43	10		173	139	
Banta-Carbona Irrigation District	67.5L	2-10" 2-16" 2-20" 3-24" 1-36"		3384	8410	6818	9323	7621	4622	2309	(n)42487	(p)17025	
Bradford S. Crittendon	70.0L	1-6"					21	69	85	44	(q)219	135	
Richard Burnley	70.5R	1-10"				NO DIVERSION							
Reclamation District 2075	71.0R	2-16"		35	11		81	301	217	85	730	457	
E. Pilippini	71.0R	1-4"				NO DIVERSION							
H. J. Mortensen and Barker	73.2R	1-8" 1-12"						91	103	40	(r)234	105	
San Joaquin River Club	74.7L	1-6"	5	1						90	(s)96	50	
E. A. Tassi	75.6R	1-16"		12			11	88	75	55	(d)241	120	
--DURHAM FERRY BRIDGE-U.S.G.S. GAGING STATION-SAN JOAQUIN RIVER NEAR VERNALIS--	76.7												
STOCKTON TO VERNALIS Totals			6	3791	10315	9465	12254	12353	7128	3401	58713	24752	0
Average cubic feet per second			0	64	168	159	199	201	120	55	121		
Monthly use in per cent of seasonal			0	6.5	17.6	16.1	20.9	21.0	12.1	5.8			

* Distance along San Joaquin River from its mouth 4⅛ miles below Antioch. (Mileage as established by War Department Survey 1913-15).

(a) Additional acre-feet diverted: February 39 and November 1.
(b) Additional acre-feet diverted: November 9.
(c) Additional acre-feet diverted: November 23.
(d) Additional acre-feet diverted: November 15.
(e) Additional acre-feet diverted: November 3.
(f) This acreage also received an undetermined amount of drainage water.
(g) The 8" unit was a temporary installation for 1952.
(h) Additional acre-feet diverted: November 8.
(i) Plant moved to this location from Mile 61.3R in 1952.
(j) Additional acre-feet diverted: November 82.
(k) Plant is located on south side of Paradise Cut, 0.9 Mile from junction with San Joaquin River.
(m) Additional acre-feet diverted: November 17.
(n) Additional acre-feet diverted: November 415.
(p) This figure includes the following acreages outside the district: Banta Farms 718, Kasson District 599, and outside contracts 1037. Of this figure 415 acres was double cropped in the district. This acreage also received an undetermined amount of controlled drainage water.
(q) Additional acre-feet diverted: November 14.
(r) Additional acre-feet diverted: November 7.
(s) Additional acre-feet diverted: January 70, February 32, November 86, December 55.

TABLE 189

DIVERSIONS AND ACREAGES IRRIGATED - SAN JOAQUIN RIVER 1952
(Vernalis to Fremont Ford Bridge)

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--DURHAM FERRY BRIDGE - U.S.G.S. GAGING STATION - SAN JOAQUIN RIVER NEAR VERNALIS--	76.7												
A. J. Chisholm	78.9R	1-10"				NO DIVERSION							
Cruze, Kirby and Moresco (a)	79.4R	1-20"						29	14		43	20	
--STANISLAUS RIVER--	79.7R												
W. C. Blewett Estate	80.7L	1-12"				NO DIVERSION							
W. C. Blewett Estate	81.8L	2-12"				NO DIVERSION							
--GAGING STATION-- SAN JOAQUIN RIVER AT MAZE ROAD BRIDGE--	81.85												
Blewett Mutual Water Company	81.95L	3-12"		248	1162	600	793	858	562	17	4240	1141	
El Solyo Water Co.	82.0L	1-10" 3-18"	45	663	2779	2637	3443	3482	2682	1576	(b)17307	(c)3450	
--GAGING STATION - SAN JOAQUIN RIVER AT HETCH HETCHY WATER SUPPLY CROSSING--	82.65												
E. T. Mapes	89.9R	1-4"				NO DIVERSION							
--TUOLUMNE RIVER--	91.0R												
--RECORDING GAGE--	91.8L												
--WEST STANISLAUS IRRIGATION DISTRICT INTAKE CANAL--	91.8L												
West Stanislaus Irrigation District	91.8L	1-12" 1-24" 6-26"	1226	4645	12989	12190	14646	12030	6925	2030	(d)66681	(e)23224	
J. B. Erkenbrecher #1	**(0.6S)	1-14"				NO DIVERSION							
Frank Sarmento #1	**(0.7N)	2-16"		52	204	138	142	111	202	24	873	(f)872	
Frank Sarmento #2	**(1.1N)	1-14" 1-16"			217	179	216	230	335	41	1218	(f)	
J. B. Erkenbrecher #2	**(2.2S)	1-16"				NO DIVERSION							
Frank Sarmento #3	**(2.3N)	2-16"			87	139	79	102			407	292	
Rancho Dos Rios #1 (g)	94.7R	1-12"					159	312	298	199	(h)968	373	
Rancho Dos Rios #2	95.5R	1-10"					243	220	302	293	(i)1058	(j)281	
Bostick Brothers (k)	95.8R	1-10"			107	33	57	99	46		342	75	
W. F. Cook	96.0L	1-18"				NO DIVERSION							
--LAIRD SLOUGH BRIDGE - GAGING STATION-SAN JOAQUIN RIVER AT GRAYSON--	96.05												
Rancho El Pescadero	98.9L	1-18"			529	370	164	40	211	12	(n)1326	(m)750	
--PATTERSON BRIDGE - RECORDING GAGE--	104.4												
Patterson Water Company	104.4L	1-14" 2-18" 3-20" 1-36"		1588	8436	7898	9110	8378	5476	833	41719	(p)13863	228
Chase Brothers	104.5R	1-10"			86	27	19	21	20	6	179	142	
M. L. Simmons	104.52L	1-5"							5		5	11	
Harry Black	104.7L	(q)1-3" 1-4"					1	2	2	2	7	3	
Chase Brothers	106.5R	1-10"			30	59	120	244	137	57	(r)647	500	
Tony Spinelli	109.1R	(s)1-12"				NO DIVERSION							
Twin Oaks Irrigation District	109.8L	1-12" 3-16"		439	1057	940	1260	1708	1017	315	6736	1237	395
T. J. Henderson	109.9R	1-8"					110	46	20		(t)176	(j)110	
J. Holtzman (u)	112.5L	1-4"					2	6	5	2	(v)15	20	
Roy Ustick	112.55L	1-16"		141	103	104	189	226	258	30	(w)1051	362	
Frank C. Mosier	113.4R	1-10"			45	44	57	57	33	10	246	110	

* Mileage along San Joaquin River from its mouth 4½ miles below Antioch. (Mileage established by War Department Survey of 1911-15).

** West Stanislaus Irrigation District Intake Canal - The Intake Canal joins the San Joaquin River at Mile 91.8L. Distance from the San Joaquin River and the bank is shown in ().

(a) Formerly listed as Cruze, Kirby and Genova.
(b) Additional acre-feet diverted: November 19.
(c) This acreage also received an undetermined amount of controlled drainage water.
(d) Additional acre-feet diverted: November 261 and December 9.
(e) This acreage also received 2067 acre-feet of Delta Mendota Canal water as follows: June 304, July 1101, and August 662 acre-feet. Of this figure 1652 acres were double cropped. This figure includes 2075 acres irrigated outside of district.
(f) Combined acreage for plants at Miles **0.7N and **(1.1N).
(g) Formerly listed as Rancho Dos Rios (#3RB).
(h) Additional acre-feet diverted: November 89.
(i) Additional acre-feet diverted: November 186 and December 15.
(j) This acreage also received an undetermined amount of Turlock Irrigation District water.
(k) Formerly listed as Rancho Dos Rios (#1RB).
(m) This acreage also received an undetermined amount of well water.
(n) Additional acre-feet diverted: November 64 and December 3.
(p) Of this figure 1344 acres were double cropped.
(q) The 3" unit was installed in 1952.
(r) Additional acre-feet diverted: November 27.
(s) The 12" unit replaced a 6" unit formerly listed at this location.
(t) Additional acre-feet diverted: November 18.
(u) Installed prior to 1952, not previously listed.
(v) Additional acre-feet diverted: November 3.
(w) Additional acre-feet diverted: November 2.

TABLE 189

DIVERSIONS AND ACREAGES IRRIGATED - SAN JOAQUIN RIVER - 1952
(Vernalis to Fremont Ford Bridge)
(Cont'd)

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--CROWS LANDING BRIDGE - RECORDING GAGE--	113.5												
A. J. Silveria	113.85R	1-6"				NO DIVERSION							
A. J. Silveria	114.35R	1-7"					4	4	6		14	15	
Frank C. Mosier	114.63R	1-8"				64	44	35	56	18	217	90	
Manuel A. Serpa (a)	114.9R	1-10"				NO DIVERSION							
Hazel P. Crow (b)	115.0L	1-10"					14	34	10		58	26	
Roy F. Crow	115.8L	1-10"		76	12	34	135	137	88	92	(c)574	(d)154	
L. B. Crow	116.05L	1-14"	25	108	188	172	229	171	128	90	1111	210	
John W. Greer	116.5R	(e)1-12"							10		10	20	
D. L. McCoy	(f)116.95R	(g)1-10" 1-12"			14	7	30	22	11		84	(h)43	
--MERCED RIVER SLOUGH--	122.2R												
--U.S.G.S. GAGING STATION - SAN JOAQUIN RIVER NEAR NEWMAN--	123.7												
--MERCED RIVER--	123.75R												
Emil Giovannoni	123.9L	1-4"				NO DIVERSION							
--GAGING STATION - SAN JOAQUIN RIVER AT FREMONT FORD BRIDGE--	129.5												
VERNALIS TO FREMONT FORD BRIDGE Totals Average cubic feet per second Monthly use in per cent of seasonal			1296 21 0.9	7960 134 5.4	28045 456 19.1	25635 431 17.4	31266 508 21.2	28604 465 19.4	18859 317 12.8	5647 92 3.8	147312 303	47394	623

* Mileage along San Joaquin River from its mouth 4⅛ miles below Antioch. (Mileage established by War Department Survey of 1913-15).
(a) Formerly listed as G. L. Dutcher.
(b) Formerly listed as Hazel D. Crow.
(c) Additional acre-feet diverted: November 23.
(d) Of this figure 43 acres also received an undetermined amount of San Joaquin Canal Company water.
(e) The 12" unit replaces a 10" unit formerly listed at this location.
(f) Pumping plants are located on drain which joins the San Joaquin River at this mile.
(g) Installed prior to 1952. Not previously listed.
(h) This acreage also received an undetermined amount of controlled drainage water.

TABLE 190

DIVERSIONS AND ACREAGES IRRIGATED - SAN JOAQUIN RIVER - 1952
(Fremont Ford to Gravelly Ford)

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversion in Acre-Feet												Total Diversion January to December Acre-Feet	Acreage Irrigated	
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.		General	Rice
Stevenson Corporation (a)	125.7R	1-14"				7	34	43	73	97	3	58	1	2	318	300	
Erreca Farms	161.9R	1-20"						11	39	25	19				94	(b)174	
Dye Farms	163.2R	1-12"						310	311	310	75				1006	(b)260	
Erreca Farms	**(0.3)	Gravity						PLANT REMOVED									
D. L. McNamara	**(1.4)	1-16"						1	49	54					104	130	
--GAGING STATION - SAN JOAQUIN RIVER NEAR DOS PALOS--	186.0																
San Luis Canal Company	(c)186.6L	Gravity			4469	14202	23127	24605	30038	22342	13172	9181	5544	2926	149606	(b)39601	(b)2201
--FIREBAUGH BRIDGE--	198.4																
Antone Zaninovich	206.02R							NO DIVERSION									
--GAGING STATION - SAN JOAQUIN RIVER NEAR MENDOTA--	206.2																
--MENDOTA DAM--	208.63																
--DELTA-MENDOTA CANAL--	208.63																
San Joaquin Canal Company	(d)208.63L	Gravity	1900	5766	17486	47268	97979	97719	94502	76988	35722	21331	15922	3148	(e)515731	(f)150039	7497
Firebaugh Canal Company	(d)208.63L	2-24" 2-36" 2-42"		659	3947	8218	13781	13101	14951	13053	5157	2019	1267	236	76389	(b)18053	(b)4856

* Distance along San Joaquin River from its mouth 4⅛ miles below Antioch. (Mileage as established by War Department Survey 1913-1915).
** Plant is located on East Side Canal which leaves the San Joaquin River at Mile 163.6R. Distance from the river along East Side Canal is shown in ().
(a) Plant installed prior to 1952. Not previously listed.
(b) This acreage also received an undetermined amount of water from wells.
(c) Point of diversion is at head of Temple Slough.
(d) Point of diversion is considered to be Mendota Pool.
(e) Does not include certain government water transported by the San Joaquin Canal Company.
(f) Of this figure, an undetermined amount of acreage was double cropped or interplanted.

TABLE 190

DIVERSIONS AND ACREAGE IRRIGATED - SAN JOAQUIN RIVER - 1952
(Fremont Ford to Gravelly Ford)
(Cont'd)

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversions in Acre-Feet												Total Diversion January to December Acre-Feet	Acreage Irrigated	
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.		General	Rice
Grass Lands Water Assn. (a)	(b) 208.63L	Gravity									1483	23000			24483	(c)20000	
Panoche Water Distribution Assn. (a)	(b)208.63L	Gravity		1025	5968	5592	4646	7925	6708	4320	148				36332	29881	818
Claire Mott Incorporated (a)	(b)208.63L	Gravity			347	295	553	710	254						2159	(d)	
--FRESNO SLOUGH--	208.93L																
--LONE WILLOW SLOUGH--	219.8R																
Columbia Canal Company	219.8R	Gravity		252	4677	5252	8382	8896	9527	9060	4504	2852	2362	460	(e)56224	(f)13207	(f)1642
Ray Flanagan (a)	219.8R	Gravity				131	8277	7079							15487	(d)	
--GAGING STATION - SAN JOAQUIN RIVER AT WHITEHOUSE--	219.83																
Horseshoe Bend Water Assn. (a)	220.33L	1-4"										2	10	10	22	(d)	
Rose Campbell	232.55L	1-4"					1	13	13	13	3	2			45	20	
Gravelly Ford Water Assn. (a)	232.8R	Gravity						668	155	123					946	4900	17
--HEAD OF GRAVELLY FORD CANAL--	232.8R																
FREMONT FORD TO GRAVELLY FORD Totals			1900	7702	36894	80965	156780	161081	156620	126385	60286	58445	25106	6782	878946	276565	17031
Average cubic feet per second			31	134	600	1361	2550	2707	2547	2055	1013	950	422	110	1211		
Monthly use in per cent of seasonal			0.2	0.9	4.2	9.2	17.8	18.3	17.8	14.4	6.9	6.6	2.9	0.8			

* Distance along San Joaquin River from its mouth 4⅛ miles below Antioch. (Mileage as established by War Department Survey 1913-15).
(a) Pertinent data furnished by U.S. Bureau of Reclamation.
(b) Point of diversion is considered to be Mendota Pool.
(c) Skattered flooding of an estimated acreage of grazing land and duck ponds.
(d) Acreage not available.
(e) Includes gravity diversions in Lone Willow Slough and Mowry Canal Diversion.
(f) This acreage also received an undetermined amount of water from wells.

TABLE 191

DIVERSIONS AND ACREAGES IRRIGATED - UPPER SAN JOAQUIN RIVER - 1952
(Gravelly Ford to Friant Dam)

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversions in Acre-Feet												Total Diversion January to December Acre-Feet		
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.		General	Rice
--HEAD OF GRAVELLY FORD CANAL--	232.8R																
Roland Betzer	233.66R	1-6"	1	28	1	3	7	17	42	38	10				147	60	
W. A. Kochergen	234.00R	1-6"						NO DIVERSION									
M. Nazaroff	234.62L	1-5"						PLANT REMOVED									
Ernest D. Hart	235.03L	1-3"						NO DIVERSION									
C. G. Newbacker (a)	235.33R	1-5"		4	8	18	39	36	71	72	44	25			317	(b)93	
Ruben Guinonez (c)	236.28R	1-6"			1				42	44	33	4			124	(b)42	
Morello Winery	237.33L	1-8"					80								80	(d)235	
Lorraine Beatty	237.43L	1-6"						1	5	5					11	3	
Milton A. Peterson	237.98R	1-6"					16	26	50	35	18				145	68	
--SKAGGS BRIDGE--	238.18																
--BOWSER RECORDING GAGE--	242.41L																
A. & M. Overgaard (e)	243.84R	1-5" 1-6"		24	13	20	96	114	122	105	83	33			610	154	
C. B. Hines	244.03L	1-5"				1	2	1	3	2	1				10	5	
Y. H. Donny (f)	244.86L	1-7"				25	6	2	17	4		10	10		74	(d)140	
C. L. Hammar	245.36R	1-6"			1	17	41	46	42	31	22	8			208	79	
George Mordeca	245.63R	1-1½"					1		1		1				3	1	
Y. H. Donny (f)	245.81L	1-6"				20									20	(d)40	
Jasper Ranch	246.15L	1-5"				3	7	8	13	7	6				44	14	
Jasper Ranch	246.34L	1-8"						NO DIVERSION									
H. W. Valentine	246.73L	1-5"						NO DIVERSION									
Vincent Jura	246.98L	1-4"						NO DIVERSION									
--U. S. 99 HIGHWAY BRIDGE--	247.38																

* Distance along San Joaquin River from its mouth 4⅛ miles below Antioch.
(a) Formerly listed as E. F. Carlson.
(b) This acreage also received an undetermined amount of well water.
(c) Formerly listed as William Tolmosoff.
(d) This acreage also received an undetermined amount of Fresno Irrigation District.
(e) Formerly listed as Anderson and Thurman.
(f) Formerly listed as Y. H. Donny and Martin Avakian.

TABLE 191

DIVERSIONS AND ACREAGES IRRIGATED - UPPER SAN JOAQUIN RIVER - 1952
(Gravelly Ford to Friant Dam)
(Cont'd)

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversions in Acre-Feet												Total Diversion January to December Acre-Feet	Acreage Irrigated	
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.		General	Rice
Sam Deanda	247.50R	1-5"						NO DIVERSION									
G. Oberti and Sons (a)	247.64R	1-5"						36	20	22	18	5			101	(b)132	
G. Oberti and Sons (a)	247.65R	1-4"						NO DIVERSION									
San Joaquin Light and Power Company	247.82R	1-3"					12	11	10	13	8				54	30	
--HERNDON RECORDING GAGE--	248.31L																
Bud Bradburn	248.51L	1-3"				3	17	16	13	12	1				62	14	
--SANTA FE RAILROAD BRIDGE--	249.23																
Moosios, Moosios and Vlahos (c)	249.51R	1-4"						NO DIVERSION									
Moosios, Moosios and Vlahos (c)	250.56R	1-6"						NO DIVERSION									
Moosios, Moosios and Vlahos (c)	250.76R	1-7"						NO DIVERSION									
Sandstone Land and Cattle Co.	251.46L	1-5"			7		48	6	77	129	47	38	10	4	366	75	
J. W. Carrell	253.10L	1-6"				2	5	4	6	8	8				33	9	
J. W. Carrell	253.30L	1-4"				7	47	45	31	43	38	29		1	241	21	
Fred Russell	253.79R	1-6"			1	2	10	29	11	23	6	2	5		89	50	
L. L. Howard	254.57R	1-5"						PLANT REMOVED									
L. L. Howard	254.82R	1-5" 1-6"					22	33	55	73	7				190	(d)80	
L. L. Howard	254.93R	1-6"					28	25	46	71					170	(d)	
Greiner and Wright (e)	254.98L	1-7"				32	36	25	27						120	(b)154	
Edwald A. Larson #6	**255.00	1-3"			1	8	6	10	9	12	9	6	7		68	16	
Fresno State College	255.05L	1-4"						NO DIVERSION									
Edwald A. Larson #5	255.34R	1-6"						6	85	56					147	52	
Edwald A. Larson #4	**255.84	1-5"				12	54	82	101	41					290	35	
Edwald A. Larson #3	255.93R	1-4"						18	4						22	7	
Edwald A. Larson #2	256.52R	1-6"						96	94	100					290	54	
Holland Ranch and Development Corporation (f)	257.1L	1-8"							42	138					180	(g)	
Hollend Ranch and Development Corporation	257.70L	(h)1-12"						79	170	73					322	(g)171	
L. D. Cobb	258.08R	(i)1-6" 1-7"				4	49	122	63	53	42	11	4		348	145	
--NEW LANES BRIDGE--	258.33																
R. J. Curtis	258.39L	1-7"					7	32	76	68	40				223	76	
W. E. Roberts	258.50L	1-4"						NO DIVERSION									
W. E. Roberts	258.80L	1-6"	11	8		4	69	29	55	25	13	33	7	6	260	(j)139	
W. E. Roberts	258.90L	1-12"				62	36	108	83	97	101	100	9		596	(j)	
J. E. Cobb	259.30R	1-6"						NO DIVERSION									
J. E. Cobb	259.39R	1-6" 1-7"						33	116	150	7				306	178	
--SITE OF OLD LANES BRIDGE--	259.78																
Marjorie E. Sims	259.80L	1-6"					34	43	40	37	27				181	37	
Duane M. Folsom	261.10L	1-2½"					1	4	6	5	5	3			24	15	
R. C. Arnold	261.53R	1-4"					18	18	17	12	16				81	45	
Duane M. Folsom (f)	261.70L	1-6"						45	123	135	35				338	135	
E. G. Rank	**261.90	1-5"					9	33	30	30	14				116	(k)70	
Isabel Burnham	262.00R	1-3"						PLANT REMOVED									
E. G. Rank	**262.07	1-6"					34	24	33	33	15				139	(k)	
Duane M. Folsom	262.27L	1-7"					5	51	85	120	44				305	84	
A. Brown	262.43L	1-5"						20	39	45	12				116	72	
E. G. Rank	262.48L	1-5"					2	9	34	52	10				107	(b)61	
Dale McCoon (f)	262.60R	1-6"						34	43	41	12				130	(m)140	
--SAMPLES RANCH RECORDING GAGE--	262.66																
Holland Ranch and Development Corporation	262.66L	1-7"					1	36	83	83	29				232	109	
E. M. Beebe								NO DIVERSION									

* Distance along San Joaquin River from its mouth 4½ miles below Antioch.
** Point of diversion and place of use is on island in midstream.
(a) Formerly listed as Frank, James, and Adolph Oberti.
(b) This acreage also received an undetermined amount of well water.
(c) Plants at Miles 249.51R, 250.56R, and 250.76R have been abandoned, but pumps are still in place.
(d) Combined acreage for plants at Miles 254.82R and 254.93R.
(e) Formerly listed as Mi-Key Ranches.
(f) New installation in 1952.
(g) Combined acreage for plants at Miles 257.1L and 257.7L. This acreage also received an undetermined amount of well water.
(h) The 12" unit replaced a 7" unit formerly listed at this location.
(i) The 6" unit replaced a 5" unit formerly listed at this location.
(j) Combined acreage for plants at Miles 258.80L and 258.90L.
(k) Combined acreage for plants at Miles 261.90 and 262.07.
(m) Plant at Mile 263.40R furnished an undetermined amount of water to acreage under plant at Mile 262.60R.

TABLE 191

DIVERSIONS AND ACREAGES IRRIGATED - UPPER SAN JOAQUIN RIVER - 1952
(Gravelly Ford to Friant Dam)
(Cont'd)

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversions in Acre-Feet												Total Diversion January to December Acre-Feet	Acreage Irrigated	
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.		General	Rice
Dale McCoon (a)	263.40R	1-7"					51	146	177	242	120	1	22		(b)759	20	
Dale McCoon (c)	263.48R	1-6"					7	51	74	85	40	11			268	103	
Richard Jensen (d)	263.76R	1-5"		1		88	75	88	98	90	90	66	25		621	80	
Pacific Coast Aggregate Company	264.00L	1-7" 1-8"	INDUSTRIAL USE ONLY														
H. W. Ball #1	(e)264.00L	1-6"					23	39	70	36	9				177	15	
H. W. Ball #3 (f)	(e)264.00L	1-3"						13	19	21	9	1			63	(g)40	
H. W. Ball #2	(e)264.00L	1-5"					8	17	22	17	20	8			92	(g)	
H. W. Ball #4	264.08L	1-6"					35	44	94	34	47				254	(g)	
Ike D. Ball (f)	264.60R	1-6"				12	40	114	99	108	86	70	25		554	12	
W. F. Ball	264.83L	1-4"		1	1	1	33	45	69	73	62	25	17		327	53	
V. D. Roullard (f)	265.38L	1-6"						106	84	86	48				324	70	
V. D. Roullard	265.40L	1-5"					11	15	40	39	17	4			126	18	
Durando and Bellin	267.56L	(h)1-7"				5	39	118	125	140	91	14	7	2	541	240	
--GAGING STATION - SAN JOAQUIN RIVER BELOW FRIANT--	268.13L																
--FRIANT BRIDGE--	268.88																
Wishon-Watson Company	269.18R	1-5"					13	66	16	30			28	2	155	41	
--COTTONWOOD CREEK--	269.53R																
--FRIANT DAM--	269.63																
GRAVELLY FORD TO FRIANT DAM Totals			12	66	34	349	1180	2275	3122	3144	1421	507	176	15	12301	3832	0
Average cubic feet per second			0	1	1	6	19	38	51	51	24	8	3	0	17		
Monthly use in per cent of seasonal			0.1	0.5	0.3	2.8	9.6	18.5	25.4	25.6	11.6	4.1	1.4	0.1			
Friant-Kern Canal (i)	269.63L	Gravity	0	4725	2759	12123	28945	55675	126278	38466	69857	73015	17461		529304		
Madera Canal (i)	269.63R	Gravity	52	48	0	1325	14059	33654	47233	53703	29286	2001			181361		

* Distance along San Joaquin River from its mouth 44 miles below Antioch.
(a) Formerly listed as Isabel Burnham.
(b) Plant at Mile 263.40R furnished an undetermined amount of water to acreage under plant at Mile 262.60R.
(c) This plant was listed as removed in 1948.
(d) Formerly listed as Andrew Jensen.
(e) Pump is located on land whose major source of supply is from the Pacific Coast Aggregate Company plant located at this mile.
(f) New installation in 1952.
(g) Combined acreage for plants at Miles 264.00L (#3), 264.00L (#2), and 264.08L (#4).
(h) The 7" unit replaces the 6" unit formerly listed at this location.
(i) Pertinent data furnished by U.S. Bureau of Reclamation.

TABLE 192

DIVERSIONS AND ACREAGES IRRIGATED - FRESNO SLOUGH AND JAMES BY-PASS (a) - 1952
(The following table arranged from data furnished by U.S. bureau of Reclamation)

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversions in Acre-Feet												Total Diversion January to December Acre-Feet	Acreage Irrigated	
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.		General	Rice
Farmers Water District W. J. Fortier	2.04R	1-8"	PLANT DISCONTINUED														
Borland Water District	6.45L	(b)1-6" 1-8"				111	168	129	216	275	168	19			1086	(c)2665	(c)400
Borland Water District	7.10L	1-24"										199			199	(c)	(c)
Borland Water District	8.20L	1-30" 1-36"			70	204	295	188	514	602	1603				3476	(c)	(c)
Traction Ranch	9.60R	1-20"							284	614	124				1022	(d)499	(d)800
--JAMES BY-PASS--	11.80R																
Traction Ranch	**(0.75)	1-20"							1070	552	198				1820	(d)	(d)
James Irrigation District "P" Booster	**(4.4)	1-14" 1-16"		7	462	87			596	1417	677	180			3426	(e)14540	
Kerman Cattle Company	**(4.5)	1-12"						329	228						557	(f)	
James Irrigation District "N" Booster	13.25R	1-14" 1-20" 1-24"							15	16					31	(c)	
J. W. Wilson	13.50L	1-12			36		98	137	140	213					624	(f)	
Tranquillity Irrigation District	14.10L	1-24" 1-20"			214	231	162	109	778	1317	556	4			3371	(g)6372	(g)1796
Tranquillity Irrigation District	15.90L	2-24" 2-30"			346	483	15		1855	5499	2112	69			10379	(g)	(g)
Totals			0	7	1128	1116	738	892	5696	10505	5438	471	0	0	25991	24076	2996
Average cubic feet per second			0	0	18	19	12	15	93	171	91	8	0	0	36		
Monthly use in per cent of seasonal			0	0	4.4	4.3	2.9	3.4	21.9	40.4	20.9	1.8	0	0			

* Mileages listed are miles above the mouth of Fresno Slough. Mouth of Fresno Slough is at Mile 208.93 above mouth of San Joaquin River.
** Plant diverts Fresno Slough water at this mile. Figure in () indicates mileage along James By-Pass from Fresno Slough.
(a) The water in Fresno Slough and James By-Pass is mainly derived from the San Joaquin River (Mendota Pool backwater created by Mendota Dam) and is occasionally augmented by flows from the Kings River via James By-Pass.
(b) The 6" unit was installed in 1952.
(c) Combined acreage of plants at Mile 6.45L, 7.10L and 8.20L.
(d) Combined acreage of plants at Miles 9.60R and ** (0.75).
(e) Combined acreage of plants at Miles ** (4.4) and 13.25R.
(f) Acreage not available.
(g) Combined acreage of plants at Miles 14.10L and 15.90L.

TABLE 193

DIVERSIONS AND ACREAGES IRRIGATED - MERCED RIVER - 1952

Water User	Mile and Bank above Mouth	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
--HILLS FERRY BRIDGE--	1.1												
Stevinson Water District #1	1.8R	1-16"						64	63		127	200	
Stevinson Water District #2	3.8R	1-20"		4	128	296	409	553	546	115	(a)2051	680	
Milton Gordon	4.3L	1-10"	17				11	45	14	33	120	52	
--GAGING STATION - MERCED RIVER NEAR STEVINSON--	4.6												
Salvador De Angelis	4.8L	1-12"	6				15	3	14	17	55	33	
Maria De Angelis	5.8L	1-12"	10		21	59	34	3	9	17	153	93	
Lydell Peck	6.1L	1-15"				NO DIVERSION							
Stevinson Water District #3	7.7L	1-20"			6	54	55	281	86		482	(b)1041	
Manuel Clemintino	8.5L	1-12"		5	33	34	49	44	16	12	(c)193	100	
Manuel Clemintino	8.9L	1-12"				41	52	44			(d)137	100	
Samuel B. McCullagh	9.4L	1-12"			95	161	137	115	93	27	628	229	
J. R. Jacinto	9.6L	1-12"			47	58	90	82	46	17	340	113	
R. W. Adams and Mrs. J. B. Silva	10.35L	(e)1-10"			183	186	287	234	106	142	(f)1138	409	
R. E. Prusso	10.8R	1-6"						20			20	25	
Manuel Freitas	10.9L	1-12"			78	85	68	80	84	50	445	80	
R. E. Prusso and John Vierra	10.9L	1-5" 1-12"		5	76	68	164	217	40	25	(c)595	(g)219	
Tony Vierra	11.6L	1-6" 1-8"			151	126	151	163	56	24	671	122	
J. R. Silva (h)	11.6L	1-12"		55	70	110	39	66	78		418	133	
--MILLIKEN BRIDGE--	11.65												
M. Turner	11.7R	(i)1-4"				NO DIVERSION							
E. and J. Gallo Winery Ranch	12.35L	1-10"		7		44	44	9		9	(j)113	(k)140	
Soren Husman	12.4L	1-6"				18	21	22	19	2	82	26	
M. Turner	12.8R	(i)1-4"						6			6	30	
E. and J. Gallo Winery Ranch	12.85L	1-10"		20	44	104	213	63		1	445	(k)220	
M. Turner	13.4R	(i)1-4"				NO DIVERSION							
Anthony C. Pires (m)	14.3R	1-6"						20	11		(n)31	45	
J. M. Souza	14.5L	1-10"				54	61	41	70	4	230	81	
Anthony C. Pires (m)	14.8R	(p)1-6"					7	6	2		15	41	
Conie Koehn	14.8L	1-5"				NO DIVERSION							
Anthony C. Pires (m)	15.4R	2-6"				NO DIVERSION							
William J. Silva (q)	16.2R	1-7"				2	20	24	7		53	25	
E. and J. Gallo Winery Ranch	16.5L	1-10"		32	53	100	205	25		21	(r)436	150	
--RECORDING GAGE--	(s)16.55												
C. J. Carpenter	17.05L	1-7"					11	11	3		(t)25	35	
Ervey Schmidt	17.7L	1-5"					5	9	2	1	17	19	
J. H. Thomas	17.85L	1-6"	1			4	22	30	23	8	(u)88	27	
John Francis	18.1R	(v)1-6"		5	2		3	3			13	(w)22	
C. P. Hockett	18.5L	1-4"					4	6	5	1	(n)16	14	
John Francis	18.6R	(v)1-6"					10	20	5		35	14	
S. P. Magsalay	19.8L	1-6"		2	2	8	7	5	2	2	(n)28	(u)20	
Howard A. Jones	19.8L	1-6"			7	10	11	15	8	7	58	20	
John Francis	20.3R	(v)1-5"					18				18	18	
H. P. Juneman	20.4L	1-7"			34	38	45	33	44	12	206	(x)85	
G. L. Carlson	20.6R	1-6"			5	5	18	14	11	12	65	31	
G. L. Carlson	20.65R	1-4"				NO DIVERSION							
--HIGHWAY 99 BRIDGE--	21.04												
--SOUTHERN PACIFIC RAILROAD BRIDGE (MAIN LINE)--	21.05												
A. C. Jorgensen #1	21.05R	1-6"				1	5				6	27	

(a) Additional acre-feet diverted: November 2.
(b) This acreage also received an undetermined amount of East Side Canal water.
(c) Additional acre-feet diverted: November 6.
(d) Additional acre-feet diverted: November 14.
(e) The 10" unit replaced an 8" unit and a 10" unit formerly listed at this location.
(f) Additional acre-feet diverted: November 17.
(g) Of this figure, 76 acres were double cropped.
(h) Formerly listed as J. Regello.
(i) This is a portable unit which diverts water at Miles 11.7R, 12.8R and 13.4R.
(j) Additional acre-feet diverted: November 88 and December 37.
(k) This acreage also received an undetermined amount of well water.
(m) Formerly listed as Leonard Sward.
(n) Additional acre-feet diverted: November 1.
(p) One 6" unit was removed in 1952.
(q) Formerly listed as Frank Cole.
(r) Additional acre-feet diverted: November 135 and December 39.
(s) Gage was installed at this mile to replace gage at Mile 17.1.
(t) Additional acre-feet diverted: November 5.
(u) Additional acre-feet diverted: November 3.
(v) This unit replaces the 5" and 6" units (portable) formerly listed at this location.
(w) This acreage was double cropped.
(x) Of this figure, 20 acres also received an undetermined amount of well water.

TABLE 193

DIVERSIONS AND ACREAGES IRRIGATED - MERCED RIVER - 1952
(Cont'd)

Water User	Mile and Bank above Mouth	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Ben Bartlett	21.5L	1-6"				NO DIVERSION							
A. C. Jorgensen #2	22.2R	1-16"		39	216	108	171	164	104	2	804	287	
A. C. Jorgensen #3	22.8R	1-12" 1-15"				96	111	140	49		396	240	
A. C. Jorgensen #4	23.6R	1-8"				NO DIVERSION							
C. H. Passadori, Jr.	24.2R	1-6"					2	22	2	27	53	40	
Warren F. McConnell	24.2L	1-5"				NO DIVERSION							
T. Nishihara	24.3R	1-5"				NO DIVERSION							
Warren F. McConnell	24.5L	1-6"				57	22	38	19		136	42	
T. Nishihara	24.6R	1-6"				NO DIVERSION							
T. Nishihara	25.0R	1-5"				NO DIVERSION							
T. Nishihara	25.5R	1-6"		3	31		6	8	4		52	(a)67	
Merced River Farms Association	26.3R	1-8"			153	140	202	211	101	45	852	100	
W. C. Magneson	26.55R	1-5" 1-6"	1	4	4	11	12	17	5	2	(b)56	16	
Carl Cunningham	26.8L	1-8"				NO DIVERSION							
--SANTA FE RAILROAD BRIDGE--	27.05												
W. C. Magneson	27.5R	1-10"			9	9	34	22	25	9	108	135	
--GAGING STATION - MERCED RIVER AT CRESSY BRIDGE--	27.6												
T. Nishihara	27.8R	1-4" 1-6"			8	2	12	13	4	2	(b)41	30	
M. Uyekubo	28.1R	1-5"		2	2	3	6	8	3	1	(c)25	20	
John Farie	28.4R	1-5"	1	3	4	3	8	7	2	1	(c)29	18	
J. Campadonica	28.6R	1-6"						8		6	14	12	
Oliver Alves	28.6R	1-8"						79	87	14	180	86	
Anthony Demchille	29.1R	1-7"					5	4	23		32	48	
Anthony Demchille	29.75R	1-6"	1			5	11	2	13		32	47	
Manuel Silva (High Lift)	29.9R	1-6"				NO DIVERSION							
Manuel Silva (Low Lift)	29.9R	1-6"				43	7	73	35	6	164	70	
Rose and Shaffer	30.7L	1-6"		6	16		3	14			39	(d)60	
Manuel Silva	30.95R	1-12"				47	96	125	37	6	(c)311	185	
Rose and Shaffer	31.1L	1-8"				95	59	128	10	32	(b)(d)324	80	
Manuel Silva	31.5R	1-6"				NO DIVERSION							
Jack Pretzer (e)	31.6R	1-6"				6	8	23	16		53	40	
--SOUTHERN PACIFIC RAILROAD BRIDGE (OAKDALE BRANCH)--	32.52												
Jack Pretzer	33.1R	1-6"			119	134	108	136	77	84	658	100	
A. L. Felling	33.2L	1-4"				3	9	10	4	3	29	11	
Jack Pretzer	33.55R	1-6"					6		1		7	18	
W. F. Bettencourt, P. Halaris and Cowel Land and Cement Co.	36.9L	Gravity		50	773	749	773	774	749	299	4167	994	
Reinero Brothers	39.2L	1-24"				NO DIVERSION							
E. M. Davis	40.2L	1-4"				NO DIVERSION							
--GAGING STATION - MERCED RIVER BELOW SNELLING--	42.1L												
Totals			37	242	2370	3177	3962	4402	2833	1098	18121	7465	0
Average cubic feet per second			1	4	39	53	64	72	48	18	37		
Monthly use in per cent of seasonal			0.2	1.3	13.1	17.5	21.9	24.3	15.6	6.1			
Merced Irrigation District	(f)46.0	Gravity											
Totals - Main Canal			0	39849	83509	94419	100740	93068	65325	16564	493474	(g)103288	(g)5064
Average cubic feet per second			0	670	1358	1587	1638	1514	1098	269	1015		
Monthly use in per cent of seasonal			0	8.1	16.9	19.1	20.4	18.9	13.2	3.4			
Totals - Northside Canal			0	1763	3519	4441	4905	4165	3193	1141	23127	(g)	(g)
Average cubic feet per second			0	30	57	75	80	68	54	19	48		
Monthly use in per cent of seasonal			0	7.6	15.2	19.2	21.2	18.0	13.8	5.0			

(a) Of this fugure, 16 acres were double cropped.
(b) Additional acre-feet diverted: November 1.
(c) Additional acre-feet diverted: November 2.
(d) Plant at Mile 31.1L furnished an undetermined amount of water to acreage under plant at Mile 30.7L.
(e) New installation in 1952.
(f) Approximate mileage of Crocker-Hoffman Diversion Dam.
(g) Total acreage served by the Main and Northside Canals.

TABLE 194

DIVERSIONS AND ACREAGES IRRIGATED - TUOLUMNE RIVER - 1952

Water User	Mile and Bank above Mouth	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
E. T. Mapes	(a)1.3R	1-20"			85	88	59	92	51	59	(b)434	(c)2650	
J. V. Steenstrupt (d)	1.9L	1-12"				65	60	50			175	70	
J. DeSouza and J. B. Silva	2.2R	1-6"				NO DIVERSION							
J. V. Steenstrupt (e)	2.9L	1-12"			56	62	81	50	36		285	80	
--GAGING STATION - TUOLUMNE RIVER AT TUOLUMNE CITY--	3.35												
Russel Murray	3.4L	1-5"				NO DIVERSION							
Bancroft Fruit Farms	4.1R	1-12"					32	42	37	3	114	76	
Bancroft Fruit Farms	5.0R	1-10"	1	3	36	85	112	95	46	31	(f)409	183	
R. L. Maxfield	6.9R	1-7"						5	32	1	38	22	
Eugene Boone, Galen Hartwich and Tony Lemos	7.1R	1-10"			6	57	15	37	28	12	155	160	
W. F. Duffy	7.2R	1-7"			14	16	27	15	8	15	95	49	
Ella T. Rahilly	7.8L	1-10"				2	9				11	8	
W. F. Duffy	8.4R	1-10"		41	55	54	111	112	50	42	(g)465	117	
Ella T. Rahilly (e)	8.5L	1-10"					2	4	4	6	16	20	
A. C. Watkins	9.4L	1-12"		2	97	48					147	90	
Tuolumne Cooperative Farms Inc.	10.2R	(h)1-14"			18	56	61	72	64	38	(i)309	69	
G. B. and L. D. Podesto	15.75R	1-3"				4	17	2	1		24	20	
--SOUTHERN PACIFIC RAILROAD BRIDGE (MAIN LINE)--	15.8												
--GAGING STATION - TUOLUMNE RIVER AT MODESTO--	15.92												
--HIGHWAY 99 BRIDGE--	16.05												
--DRY CREEK CONFLUENCE--	16.5R												
Modesto Terminal Company	20.1R	1-8"				NO DIVERSION							
Joseph Sanguinetti (j)	20.3R	1-10"	6	37	37	3	34	53	29	25	(k)224	70	
L. J. Foit	20.4L	1-5"				NO DIVERSION							
H. W. Ortman (m)	20.5R	1-12"		20	25	28	29	33	5		140	80	
--SANTA FE RAILROAD BRIDGE--	21.6												
G. R. Trent	23.5R	1-6"						2	9		11	21	
C. S. Blakesley	23.6R	1-6"			2	4	7	4	4	3	24	16	
M. A. Goodman and Sons	25.6R	1-2"					2	5	6		13	14	
H. W. Low (e)	26.6L	1-4"		8	23	24	20	22	23	13	(n)133	50	
H. W. Low	27.0L	1-4"		10	28	32	28	28	29	14	(p)169	50	
George H. Johnson	27.1R	1-8"				NO DIVERSION							
Paul J. Ferguson	27.3R	1-10"					13	7	6		26	20	
B. and L. Ranch	27.9R	1-12"					3	8		22	33	40	
Ronald R. Painter	28.3R	1-7"					6			7	13	28	
Michel Investment Company	28.8R	1-12"			33	86	82	96	38	26	(q)361	150	
J. W. and Lola May Short	29.4L	1-7"				NO DIVERSION							
Firpo Ranch	30.2L	1-10"		1	29	50	48	38	20	30	(r)216	105	
Oscar Jones	30.4R	1-4"		1	2	4	3	4	4	2	20	4	
--SOUTHERN PACIFIC RAILROAD BRIDGE (OAKDALE BRANCH)--	31.5												
--GAGING STATION - TUOLUMNE RIVER AT HICHMAN BRIDGE--	31.7												
A. G. Laughlin	34.2R	1-6"			8	5	5	6	3	3	30	17	
Donald Ketcham	38.4R	1-5"				1	3	3	2	1	10	5	
A. E. Ketcham	39.4R	1-8"		1	36	48	52	43	40	23	(p)243	95	
George H. Sawyer	39.8L	1-6"		10	58	89	91	80	60	45	433	(s)359	
--GAGING STATION - TUOLUMNE RIVER AT ROBERTS FERRY BRIDGE--	39.9												

(a) Formerly listed as Mile 1.9R.
(b) Additional acre-feet diverted: November 177.
(c) This acreage also received an undetermined amount of controlled drainage water from the Modesto Irrigation District.
(d) Installed prior to 1952, not previously listed.
(e) New installation in 1952.
(f) Additional acre-feet diverted: January 10, February 10.
(g) Additional acre-feet diverted: November 38, December 25.
(h) The 10" unit formerly listed at this location was removed in 1952.
(i) Additional acre-feet diverted: November 39.
(j) Formerly listed as James H. Wayland.
(k) Additional acre-feet diverted: November 15.
(m) Formerly listed as R. L. Heimann.
(n) Additional acre-feet diverted: November 3.
(p) Additional acre-feet diverted: November 2.
(q) Additional acre-feet diverted: November 7.
(r) Additional acre-feet diverted: November 6.
(s) This acreage also received an undetermined amount of well water.

TABLE 194

DIVERSIONS AND ACREAGES IRRIGATED - TUOLUMNE RIVER - 1952
(Cont'd)

Water User	Mile and Bank above Mouth	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Dolling Brothers	46.3R	1-8"		5	44	34	65	65	52	34	(a)299	50	
--GAGING STATION - TUOLUMNE RIVER AT LA GRANGE--	50.5												
Totals			7	139	692	945	1077	1073	687	455	5075	4788	0
Average cubic feet per second			0	2	11	16	18	17	12	7	10		
Monthly use in per cent of seasonal			0.1	2.8	13.6	18.6	21.2	21.2	13.5	9.0			
TURLOCK IRRIGATION DISTRICT	(b)53.5L	Gravity											
Totals			6110	66160	107700	102300	99890	76640	61800	32620	(c)553220	(d)165034	0
Average cubic feet per second			99	1112	1752	1719	1625	1246	1039	530	1138		
Monthly use in per cent of seasonal			1.1	12.0	19.5	18.5	18.0	13.8	11.2	5.9			
MODESTO IRRIGATION DISTRICT	(b)53.5R	Gravity											
Totals			4091	42673	55273	63724	51199	34997	31909	21298	(e)305164	(f)69226	466
Average cubic feet per second			67	717	899	1071	833	569	536	346	628		
Monthly use in per cent of seasonal			1.3	14.0	18.1	20.9	16.8	11.5	10.4	7.0			
WATERFORD IRRIGATION DISTRICT	(b)53.5R	Gravity											
Totals			0	4692	7787	7879	7480	6426	5138	3795	43197	(g)6815	0
Average cubic feet per second			0	79	127	132	122	105	86	62	89		
Monthly use in per cent of seasonal			0	10.9	18.0	18.2	17.3	14.9	11.9	8.8			

(a) Additional acre-feet diverted: November 13.
(b) This is the approximate mileage of La Grange Dam.
(c) Additional acre-feet diverted: January 172, February 403, November 22990, and December 5170.
(d) Of this figure 17502 acres were double cropped.
(e) Additional acre-feet diverted: January 23, November 2934, and December 154.
(f) Of this figure 7896 acres were double cropped.
(g) Of this figure 304 acres were double cropped.

TABLE 195

DIVERSIONS AND ACREAGES IRRIGATED - DRY CREEK - 1952

Water User	Mile and Bank above Mouth	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
Podesto and Arata	0.4R	1-6"				16	11	8	2		37	(a)125	
--MODESTO EMPIRE TRACTION COMPANY RAILROAD BRIDGE--	0.7												
--HIGHWAY 132 BRIDGE (YOSEMITE BOULEVARD)--	0.8												
--LA LOMA BOULEVARD BRIDGE--	1.2												
James L. Melrose #1	5.0L	1-3"			2	2	4				8	(b)7	
James L. Melrose #2	5.3L	1-6"				NO DIVERSION							
--GAGING STATION - DRY CREEK NEAR MODESTO (CLAUSS ROAD BRIDGE)--	5.4												
--SANTA FE RAILROAD BRIDGE--	6.4												
--CHURCH STREET BRIDGE--	7.2												
--WELLS FORD ROAD BRIDGE--	8.7												
Roy Brant	10.6R	1-5"				3	8	6	6	9	32	(b)23	
--ALBERS ROAD BRIDGE--	11.0												
--MODESTO IRRIGATION DISTRICT CANAL CROSSING--	11.1												
Lucksinger Brothers	12.1R	1-6"					11	5			16	12	
John Luiz (c)	12.6R	1-4"			5	13	17	9	9	9	(d)62	(e)100	
Lucksinger Brothers	12.7R	1-6"					11	8	2	2	(f)23	(e)32	
W. C. Hopper	12.9L	1-4"					NO DIVERSION						
Lucksinger Brothers (g)	13.4L	1-7"					4	6	4	5	(f)19	(b)40	
Harold D. Carver	14.4L	1-4"			2	3	3	4	3	2	17	(h)16	
Joe Fagundes	14.7R	1-10"	5	14	163	131	106	85	106	52	(i)662	(h)90	
H. H. French	17.2R	1-8"		5	10	7	8	14	5	3	52	22	
Totals			5	19	182	175	183	145	137	82	928	467	0
Average cubic feet per second			0	0	3	3	3	2	2	1	2		
Monthly use in per cent of seasonal			0.6	2.0	19.6	18.9	19.7	15.6	14.8	8.8			

(a) This acreage also received an undetermined amount of controlled drainage water from Modesto Irrigation District.
(b) This acreage also received an undetermined amount of Modesto Irrigation District water.
(c) Formerly listed as John Lewis.
(d) Additional acre-feet diverted: November 11.
(e) This acreage also received an undetermined amount of Oakdale Irrigation District water.
(f) Additional acre-feet diverted: November 2.
(g) New installation in 1952.
(h) This acreage also received an undetermined amount of Waterford Irrigation District water.
(i) Additional acre-feet diverted: November 3.

TABLE 196

DIVERSIONS AND ACREAGES IRRIGATED - STANISLAUS RIVER - 1952

Water User	Mile and Bank above Mouth	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
A. S. Machado	1.1R	1-6"				NO DIVERSION							
E. W. Hawkins	1.8R	1-6"					15	24	10	7	(a)56	28	
A. J. Chisholm	2.9R	1-8"					31	37	13	30	111	40	
--GAGING STATION - STANISLAUS RIVER NEAR MOUTH--	2.9												
C. M. Carroll	3.0R	1-6"		3	3	16	18	48	38	31	(b)157	24	
A. Bianchi	4.4R	1-18"				99	119	173	59	52	502	(c)340	
Overton Ranch (D.F. Koetitz)	5.25L	2-12"		69	108	203	225	457	143	147	1352	510	
Reclamation District #2064	5.9R	1-14" 1-16" 1-20"		418	1218	885	1220	1245	868	578	(c)(d)6432	1640	
Reclamation District #2075	5.95R	2-16" 1-20"		1044	2344	1951	2272	2181	1604	1296	(e)12692	(f)2511	
Henry Pelucca	6.7L	1-15"			11	22	52	24	1	9	119	37	
C. C. Updike	8.2L	1-12"				NO DIVERSION							
Ekelund Ripon Ranch	9.8R	1-16"		156	166	234	322	286	242	171	(g)1577	333	
H. E. Cannon	10.0R	1-10"		103	335	280	249	165	141	203	(h)1476	215	
D. F. Koetitz	10.1L	1-10"			137	226	260	216	204	155	1198	341	
--RECORDING GAGE--	10.2												
Joseph Hertle	10.5L	1-10"		7	9	15	21	36	28	11	127	68	
G. S. Tornell	13.1R	1-12"						32			(i)32	40	
R. V. Konenyburg	13.9R	1-8"						14	6	1	21	54	
--SOUTHERN PACIFIC RAILROAD BRIDGE (MAIN LINE)--	15.9												
--GAGING STATION - STANISLAUS RIVER NEAR RIPON--	16.0												
--HIGHWAY 99 BRIDGE--	16.0												
A. Girardi	17.0L	1-16"			111	247	185	208	188	34	973	(j)239	
Edward B. Regan	18.8R	1-14"				NO DIVERSION							
Edward B. Regan	19.4R	1-6"				NO DIVERSION							
Allen Ranch	20.75R	1-14"		14	470	299	254	303	317	136	1793	250	
Heath Ranch	20.9L	1-5"						7	8	7	22	10	
B. Bonora	21.6R	1-6"							2		2	10	
B. Bonora	21.75R	1-10"				12	73	100	52	9	246	40	
John Birdwell	22.5L	1-7"				PLANT REMOVED							
Ruth M. Ladd	23.4L	1-4"				NO DIVERSION							
George Dahlgren	25.5R	1-5" 1-10"				PLANT REMOVED							
--MODESTO - ESCALON HIGHWAY BRIDGE--	28.15												
--SANTA FE RAILROAD BRIDGE--	31.85												
--GAGING STATION - STANISLAUS RIVER AT RIVERBANK	32.0												
O. B. Trette	32.1R	1-2" 1-4"				NO DIVERSION							
R. P. Barton	34.1R	1-6"				NO DIVERSION							
R. P. Barton	34.6R	1-7"				1	11	45	1		58	160	
Oakdale Irrigation District (Crawford Pump)	(k)35.9L	1-14"		21	63	122	163	230	90	16	(n)705	(m)546	
Oakdale Irrigation District (Brady Pump)	(k)37.0L	1-12"		33	39	76	61	80	15	1	305	(p)244	
--OAKDALE - STOCKTON HIGHWAY BRIDGE--	38.9												
--SOUTHERN PACIFIC RAILROAD BRIDGE (OAKDALE BRANCH)--	39.0												
--GAGING STATION - STANISLAUS RIVER AT ORANGE BLOSSOM BRIDGE BRIDGE--	44.7												
Harry Rimes	46.1L	1-6"		1	8	17	16	21	7	2	72	25	

(a) Additional acre-feet diverted: November 13.
(b) Additional acre-feet diverted: November 19.
(c) Plant at Mile 5.9R furnished an undetermined amount of water to to acreage under plant at Mile 4.4R.
(d) Additional acre-feet diverted: November 46.
(e) Additional acre-feet diverted: November 203.
(f) Of this figure 12 acres were double cropped.
(g) Additional acre-feet diverted: November 52.
(h) Additional acre-feet diverted: November 4.
(i) Additional acre-feet diverted: November 114.
(j) Of this figure 35 acres also received an undetermined amount of Modesto Irrigation District water.
(k) Oakdale Irrigation District for season of 1952 maintained plants at Mile 35.9L and 37.0L to supplement District gravity supply.
(m) Of this figure 194 acres were double cropped.
(n) Additional acre-feet diverted: November 6.
(p) Of this figure 56 acres were double cropped.

TABLE 196

DIVERSIONS AND ACREAGES IRRIGATED - STANISLAUS RIVER - 1952
(Cont'd)

Water User	Mile and Bank above Mouth	Number and Size of Pump	Monthly Diversions in Acre-Feet								Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.		General	Rice
H. J. Schwatkin (a)	46.8L	1-6"		3	18	19	18	17	18	6	(b)99	20	
Walter B. Wilms	47.5L	1-10"			23	22	19	14	21	19	(b)118	44	
Totals			0	1872	5063	4746	5604	5963	4076	2921	30245	7769	0
Average cubic feet per second			0	31	82	80	91	97	69	48	62		
Monthly use in per cent of seasonal			0	6.2	16.7	15.7	18.5	19.7	13.5	9.7			
SOUTH SAN JOAQUIN I. D.	(c)50.2	Gravity											
Totals			0	26254	44899	46412	47819	43498	20919	13322	(d)243123	(e)63643	10
Average cubic feet per second			0	441	730	780	778	707	352	217	500		
Monthly use in per cent of seasonal			0	10.8	18.4	19.1	19.7	17.9	8.6	5.5			
OAKDALE IRRIGATION DISTRICT	(c)50.2	Gravity											
Totals - Northside			23	12637	18117	18037	18598	16615	12962	5779	(f)102768	(g)22740	0
Average cubic feet per second			0	212	295	303	302	270	218	94	211		
Monthly use in per cent of seasonal			0	12.3	17.6	17.6	18.1	16.2	12.6	5.6			
Totals - Southside			0	17875	29613	30222	31106	27720	21178	9017	166731	(h)34380	0
Average cubic feet per second			0	300	482	508	506	451	356	147	343		
Monthly use in per cent of seasonal			0	10.7	17.8	18.1	18.7	16.6	12.7	5.4			

(a) Formerly listed as William R. Williamson.
(b) Additional acre-feet diverted: November 4.
(c) This is the approximate mileage of Goodwin Dam.
(d) Additional acre-feet diverted: January 20716, February 1478, and November 4228.
(e) Of this figure, 1806 acres were double cropped. Includes 6202 acres served by subirrigation. This acreage also received an undetermined amount of water from controlled drainage and deep wells.
(f) Additional acre-feet diverted: January 203, February 54, November 238, and December 84.
(g) Of this figure, 122 acres were double cropped.
(h) Of this figure, 750 acres were double cropped.

TABLE 197

DIVERSIONS AND ACREAGES IRRIGATED - TULE RIVER - 1952

Water User	Mile and Bank *	Number and Size of Pump	Monthly Diversions in Acre-Feet												Total Diversion March to October Acre-Feet	Acreage Irrigated	
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.		General	Rice
S. W. Templeton	0.2R	1-2½"				7	9	10	16	15	13	10			80	50	
Pioneer Ditch	0.3R	Gravity	534	111	184	248	1609	1498	1498	1458	1281	963	398	80	9862	(a)1738	
S. W. Templeton	0.4L	1-4"						NO DIVERSION									
Rosedale Water Company	1.5L	2-4"				7	10	23	27	28	27	21			143	(b)162	
--GAGING STATION - TULE RIVER AT WORTH BRIDGE--	2.2																
Campbell-Moreland Ditch	3.2L	Gravity	1385	1940	412	1006	1282	1598	1106	510	385	473	884	820	(c)11801	1040	
Porter Slough	3.2R	Gravity	8835	6158	8755	7039	9706	6900	887	58			1259	2611	(d)52208	(e)	
Porter Slough Ditch	(f)3.2R	Gravity	38	3	88	450	613	919	365						2476	(g)1068	
Vandalia Ditch	3.9L	Gravity	460	357	250		450	409	331	173			212	335	2977	(h)158	
--SANTA FE RAILROAD BRIDGE--	5.9																
Poplar Ditch	6.6L	Gravity	989	1555	1374	2231	2582	3044	2936	287				350	15348	(i)4888	
--HIGHWAY 65 BRIDGE--	6.7																
--SOUTHERN PACIFIC RAILROAD BRIDGE--	6.8																
Hubbs-Miner Ditch	7.2R	Gravity	66	516	456	923	870	629	799	281				2	(j)4542	(k)2133	
Rhodes-Pine Ditch	9.2L	Gravity			85	358	316	285	385	125					1554	1034	
--OLIVE AVENUE BRIDGE--	10.7																
--FRIANT-KERN CANAL CROSSING--	11.3																
--ROCKFORD AVENUE BRIDGE--	12.6																
--HUBBS-MINER SPILL--	12.9R																
--GAGING STATION - TULE RIVER ABOVE LITTLE PIONEER DITCH--	14.4																
Little Pioneer Ditch	15.0L	Gravity	10	18	60	174	230	497	388	417	190	123	54		(m)2161	735	
--OTTLE BRIDGE--	15.2																
Totals			12317	10658	11664	12443	17677	15812	8738	3352	1896	1590	2807	4198	103152	13006	0
Average cubic feet per second			200	185	190	209	287	266	142	55	32	26	47	68	142		
Monthly use in per cent of seasonal			11.9	10.3	11.3	12.1	17.1	15.3	8.5	3.3	1.8	1.6	2.7	4.1			
Poplar Ditch near Poplar (n)			23		326	8		196	186	161	5	48			953		

* Mileage indicated in miles downstream from junction with south fork of Tule River.
(a) This acreage is partially estimated.
(b) This acreage also received an undetermined amount of well water.
(c) Includes an undetermined amount of water served to Vandalia Irrigation District.
(d) This figure is measured flow at head of Porter Slough minus diversion of Porter Slough Ditch.
(e) Use other than for replenishing ground water is negligible.
(f) The point of diversion is on Porter Slough, 4.5 miles from head of slough.
(g) Includes 753 acres which also received an undetermined amount of water from Friant-Kern Canal.
(h) This acreage also received an undetermined amount of water from Campbell Moreland Ditch. This acreage is pasture land used as a well field by Vandalia Irrigation District.
(i) Of this amount 3616 acres also received an undetermined amount of water from Friant-Kern Canal.
(j) This amount is measured diversion at head minus measured spill to River at Mile 12.9R. Hubbs-Miner Ditch Co. receives approximately 71.4 per cent of measured diversion at head while Gilliam-McGee Ditch Co. receives approximately 28.6 per cent.
(k) Includes 951 acres which also received an undetermined amount of water from the Friant-Kern Canal. Includes 1810 acres in the Hubbs-Miner Ditch Co., and 323 acres in the Gilliam-McGee Ditch Co.
(m) The source of water diverted by Little Pioneer Ditch may be from Tule River or Friant-Kern Canal. No segregation is made in 1952.
(n) This is amount of water leaving the Porterville Irrigation District via Poplar Ditch and includes Tule River and Friant-Kern Canal water.

TABLE 198

AVERAGE MONTHLY DIVERSIONS IN PER CENT OF SEASONAL FOR SACRAMENTO AND SAN JOAQUIN VALLEY STREAMS

	Period of Record	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
SACRAMENTO VALLEY									
Sacramento River - Redding to Sacramento	1942 to 1952	0.5	7.7	17.8	18.6	20.7	19.7	11.1	3.9
Feather River - Oroville to Mouth	1942 to 1952	0.1	5.2	18.2	19.6	20.7	18.8	11.9	5.5
Yuba River - Smartville to Mouth	1942 to 1952	0.1	5.4	15.2	16.8	17.7	17.4	15.1	12.3
American River - Fairoaks to Mouth	1942 to 1952	0.8	1.4	6.1	20.6	27.3	23.1	16.4	4.3
DELTA UPLANDS									
Old San Joaquin River	1942 to 1952	3.0	9.4	16.5	17.0	19.7	17.4	11.5	5.5
Tom Paine Slough	1942 to 1952	1.3	9.7	15.4	16.3	19.7	19.1	14.1	4.4
San Joaquin River - Vernalis to Stockton	1942 to 1952	3.4	13.0	15.7	14.9	20.5	18.4	10.1	4.0
SAN JOAQUIN VALLEY									
San Joaquin River - Fremont Ford Bridge to Vernalis	1942 to 1952	3.6	12.5	15.7	15.4	20.9	18.2	10.9	2.8
Merced River - Yosemite Valley Railroad Crossing to Mouth	1942 to 1952	1.3	6.8	14.0	18.5	23.1	19.6	12.7	4.0
Tuolumne River - La Grange Dam to Mouth	1942 to 1952	2.7	8.4	14.4	17.3	19.3	19.4	13.2	5.3
Stanislaus River - Goodwin Dam to Mouth	1942 to 1952	2.0	9.3	15.0	17.2	19.3	18.6	12.8	5.8

TABLE 199

ANNUAL COMPARATIVE MONTHLY DIVERSIONS IN ACRE-FEET 1942 to 1952

SACRAMENTO RIVER - SACRAMENTO TO REDDING

Year(a)	March	April	May	June	July	August	September	October	Seasonal Diversions
1942	1991	11727	187657	268091	286655	274848	186708	61298	1278975
1943	1769	61409	257673	276759	288930	288024	190456	51915	1416935
1944	3236	155666	310227	305633	338429	318184	180858	65917	1678150
1945	2134	117302	316912	305333	346868	326148	200601	60473	1675771
1946	7968	187267	333991	328508	341952	326956	179671	71666	1777979
1947	2743	167131	346326	313389	344334	326100	170785	36296	1707104
1948	53935	16451	251478	271737	365701	351666	217464	65042	1593474
1949	2389	167438	344764	349497	390112	359905	173367	85391	1872863
1950	3072	187703	336767	321253	365503	333194	172902	73766	1794160
1951	6356	254102	303045	380961	409062	373947	177260	69993	1974726
1952	2469	110037	319610	339591	368122	370312	213291	81215	1804647
Average Acre-Feet	8006	130567	300768	314614	349606	331753	187578	65725	1688617
Average c.f.s.	130	2194	4891	5287	5686	5395	3152	1069	3475
Monthly Diversion in per cent of seasonal	0.5	7.7	17.8	18.6	20.7	19.7	11.1	3.9	

(a) See 1946 Water Supervision Report for prior years.

TABLE 200

ANNUAL COMPARATIVE MONTHLY DIVERSIONS IN ACRE-FEET 1942 to 1952

FEATHER RIVER - OROVILLE TO MOUTH

Year(a)	March	April	May	June	July	August	September	October	Seasonal Diversions
1942	0	0	61352	113416	125530	122146	86814	30435	539693
1943	0	13290	101539	125280	131283	123403	93318	35528	623641
1944	205	43792	130779	126206	142128	133130	85924	50747	712911
1945	0	26056	130729	133918	142224	132832	92953	39682	698394
1946	47	53967	156398	140210	145235	132948	82010	33985	744800
1947	90	30240	152827	130731	138055	124426	77161	20873	674403
1948	3181	5717	66373	127596	140904	120658	85122	36722	586273
1949	0	57396	146342	141278	137822	126739	59327	47400	716304
1950	164	35170	138368	134088	137034	113954	65197	38076	662051
1951	18	94369	131356	141610	142619	124035	60440	32875	727322
1952	0	29180	131898	142305	149920	140116	91834	42177	727430
Average Acre-Feet	337	35380	122542	132422	139341	126762	80009	37136	673929
Average c.f.s.	5	595	1993	2225	2266	2062	1345	604	1387
Monthly Diversion in per cent of seasonal	0.1	5.2	18.2	19.6	20.7	18.8	11.9	5.5	

(a) See 1946 Water Supervision Report for prior years.

TABLE 201

ANNUAL COMPARATIVE MONTHLY DIVERSIONS IN ACRE-FEET 1942 to 1952

YUBA RIVER - SMARTVILLE TO MOUTH

Year(a)	March	April	May	June	July	August	September	October	Seasonal Diversions
1942	0	36	5703	14736	14955	14841	13086	11349	74706
1943	0	1903	10622	15237	17203	16972	16610	15252	93799
1944	1665	7327	13857	15601	16786	15532	13311	9185	93264
1945	0	4338	9815	15479	14112	13848	13046	13590	84228
1946	0	7222	15231	15845	17082	16356	13940	13010	98686
1947	0	3820	17316	16339	17364	19152	15577	10517	100085
1948	33	23	12350	13849	17305	17954	16994	14256	92764
1949	0	9062	18933	17288	19416	17890	13338	10920	106847
1950	0	7306	22080	20741	21023	20372	19401	16461	127384
1951	0	13225	20513	19885	19266	17756	12477	7202	110324
1952	0	5959	22828	22537	22231	22622	20056	15580	131813
Average Acre-Feet	154	5475	15386	17049	17886	17572	15258	12484	101264
Average c.f.s.	3	92	250	287	291	286	256	203	208
Monthly Diversion in per cent of seasonal	0.1	5.4	15.2	16.8	17.7	17.4	15.1	12.3	

(a) See 1946 Water Supervision Report for prior years.

TABLE 202

ANNUAL COMPARATIVE MONTHLY DIVERSIONS IN ACRE-FEET 1942 to 1952

AMERICAN RIVER - FAIROAKS TO MOUTH

Year(a)	March	April	May	June	July	August	September	October	Seasonal Diversions
1942	0	0	13	678	1396	1187	789	104	4167
1943	0	0	54	941	1513	1226	753	94	4581
1944	0	6	113	980	1566	1211	790	153	4819
1945	0	8	119	909	1017	894	760	149	3856
1946	0	10	228	1022	1104	889	766	105	4124
1947	308	422	483	1113	1193	1086	1071	237	5913
1948	92	34	209	866	1737	1420	1030	495	5883
1949	0	58	574	1269	1448	1239	724	200	5512
1950	9	128	546	1096	1110	819	584	307	4599
1951	4	52	450	1194	1297	1404	829	217	5447
1952	0	20	439	824	1073	810	583	204	3953
Average Acre-Feet	38	67	293	990	1314	1108	789	206	4805
Average c.f.s.	1	1	5	17	21	18	13	3	10
Monthly Diversion in per cent of seasonal	0.8	1.4	6.1	20.6	27.3	23.1	16.4	4.3	

(a) See 1946 Water Supervision Report for prior years.

TABLE 203

ANNUAL COMPARATIVE MONTHLY DIVERSIONS IN ACRE-FEET 1942 to 1952

OLD SAN JOAQUIN RIVER - DELTA UPLANDS

Year(a)	March	April	May	June	July	August	September	October	Seasonal Diversions
1942	0	516	7175	11077	13143	11425	6740	2878	52954
1943	0	2048	11293	12463	13745	11945	7568	3104	62166
1944	2921	11827	13918	13224	16911	15667	10753	4694	89915
1945	595	7544	16791	17092	19809	14818	10873	4433	91955
1946	4640	14371	17736	16948	19662	18238	9914	4927	106436
1947	2923	17121	21435	18016	22248	17672	12494	4880	116789
1948	11808	4765	18259	15460	21943	21547	14574	7029	115385
1949	1941	17522	22945	23207	25229	19779	14272	9521	134416
1950	7658	16785	21483	22108	26290	23206	15775	7462	140767
1951	1301	11955	20232	25003	24990	24612	15115	6196	129406
1952	1604	4452	19309	22159	24036	22202	14549	8239	116550
Average Acre-Feet	3217	9901	17325	17887	20728	18283	12057	5760	105158
Average c.f.s.	52	166	282	301	337	297	203	94	216
Monthly Diversion in per cent of seasonal	3.0	9.4	16.5	17.0	19.7	17.4	11.5	5.5	

(a) See 1946 Water Supervision Report for prior years.

TABLE 204

ANNUAL COMPARATIVE MONTHLY DIVERSIONS IN ACRE-FEET 1942 to 1952

TOM PAINE SLOUGH - DELTA UPLANDS

Year(a)	March	April	May	June	July	August	September	October	Seasonal Diversions
1942	0	0	1292	1852	2434	1930	1158	278	8944
1943	0	891	2526	2728	2629	2578	2041	589	13982
1944	84	1630	2186	2466	3046	2852	2487	1019	15770
1945	34	539	2527	2792	2891	3153	2114	377	14427
1946	874	2588	2756	3145	3324	3732	2490	798	19707
1947	74	3064	3136	3319	3735	3487	2816	414	20045
1948	629	998	2795	2866	4327	4222	3422	953	20212
1949	155	3534	3114	3570	4324	4017	3226	1362	23302
1950	737	2286	3081	3163	3860	3542	2601	1147	20417
1951	81	2321	3434	3581	4371	4653	3261	886	22588
1952	27	1309	3639	2766	4198	3658	2253	972	18822
Average Acre-Feet	245	1742	2771	2932	3558	3438	2534	800	18020
Average c.f.s.	4	29	45	49	58	56	43	13	37
Monthly Diversion in per cent of seasonal	1.3	9.7	15.4	16.3	19.7	19.1	14.1	4.4	

(a) See 1946 Water Supervision Report for prior years.

TABLE 205

ANNUAL COMPARATIVE MONTHLY DIVERSIONS IN ACRE-FEET 1942 to 1952

SAN JOAQUIN RIVER-DELTA UPLANDS - STOCKTON TO VERNALIS

Year(a)	March	April	May	June	July	August	September	October	Seasonal Diversions
1942	188	2232	5210	6602	12203	9651	4014	2085	42185
1943	0	3169	10172	8940	11617	10886	5142	1793	51719
1944	1110	10346	8439	8039	11349	11489	6261	2275	59308
1945	7	6476	11947	9629	13025	12417	7045	1780	62326
1946	5246	13974	10681	9238	15347	13071	6727	2875	77159
1947	5322	13358	14176	11626	15454	14698	7794	2053	84481
1948	6012	4564	9919	8251	13912	13356	7911	2682	66607
1949	1227	13434	11893	13141	14933	12382	7857	3768	78635
1950	5746	13092	12205	11860	17047	13272	7855	3558	84635
1951	279	12239	11485	13346	14860	12649	6640	3181	74879
1952	6	3791	10315	9465	12254	12353	7128	3401	58713
Average Acre-Feet	2286	8789	10586	10012	13818	12384	6780	2677	67332
Average c.f.s.	37	148	172	168	225	201	114	44	139
Monthly Diversion in per cent of seasonal	3.4	13.0	15.7	14.9	20.5	18.4	10.1	4.0	

(a) See 1946 Water Supervision Report for prior years.

TABLE 206

ANNUAL COMPARATIVE MONTHLY DIVERSION IN ACRE-FEET 1942 to 1952

SAN JOAQUIN RIVER - VERNALIS TO FREMONT FORD BRIDGE

Year(a)	March	April	May	June	July	August	September	October	Seasonal Diversions
1942	573	2044	14158	17059	28352	25384	12575	4235	104380
1943	0	4417	20849	20115	29913	25046	16595	4789	121724
1944	4790	21177	22013	20102	27066	24430	14554	4128	138260
1945	1327	14036	21325	21383	30463	25540	15202	2087	131363
1946	6967	21399	24961	23751	32002	28792	17026	5144	160042
1947	11658	31645	28072	27725	34079	27812	17318	3049	181358
1948	12902	18449	21675	15491	28962	27906	15977	3423	144785
1949	852	27448	26456	27787	33889	26998	18376	5054	166860
1950	15118	26342	25420	26245	33028	28227	15748	4963	175091
1951	4051	30310	24320	27237	35082	30422	16901	4333	172656
1952	1296	7960	28045	25635	31266	28604	18859	5647	147312
Average Acre-Feet	5412	18657	23390	22957	31282	27197	16285	4259	149439
Average c.f.s.	88	314	380	386	509	442	274	69	308
Monthly Diversion in per cent of seasonal	3.6	12.5	15.7	15.4	20.9	18.2	10.9	2.8	

(a) See 1946 Water Supervision Report for prior years.

TABLE 207

ANNUAL COMPARATIVE MONTHLY DIVERSION IN ACRE-FEET 1942 to 1952

MERCED RIVER - YOSEMITE VALLEY RAILROAD CROSSING TO MOUTH

Year(a)	March	April	May	June	July	August	September	October	Seasonal Diversions
1942	0	14	475	1619	2716	2005	1207	363	8399
1943	0	198	1782	2249	3077	2258	1680	474	11718
1944	84	1117	1844	2535	2564	2466	2071	820	13501
1945	30	558	1696	2292	3058	2500	1552	132	11818
1946	231	1380	1595	2393	3608	2787	1720	684	14398
1947	228	2863	3128	3372	4342	4095	2518	529	21075
1948	931	328	2321	2634	4899	4162	1953	534	17762
1949	62	2479	3696	5296	5676	3652	2998	1778	25637
1950	676	2086	4050	4793	4809	4336	2673	455	23878
1951	161	1590	3347	4572	4825	4298	2678	739	22210
1952	37	242	2370	3177	3962	4402	2833	1098	18121
Average Acre-Feet	222	1169	2391	3176	3958	3360	2171	691	17138
Average c.f.s.	4	20	39	53	64	55	36	11	35
Monthly Diversion in per cent of seasonal	1.3	6.8	14.0	18.5	23.1	19.6	12.7	4.0	

(a) See 1946 Water Supervision Report for prior years.

TABLE 208

ANNUAL COMPARATIVE MONTHLY DIVERSION IN ACRE-FEET 1942 to 1952

TUOLUMNE RIVER - LA GRANGE DAM TO MOUTH

Year(a)	March	April	May	June	July	August	September	October	Seasonal Diversions
1942	7	75	443	462	645	683	343	112	2770
1943	0	116	354	541	542	520	360	183	2616
1944	80	304	517	665	778	801	656	300	4101
1945	33	463	535	630	748	723	376	47	3555
1946	216	565	765	734	940	889	559	254	4922
1947	283	893	1132	1112	1245	1135	1229	439	7468
1948	299	280	822	889	1275	1404	1032	233	6234
1949	39	645	962	1255	1137	1173	806	423	6440
1950	305	588	970	1107	1121	1170	580	259	6100
1951	154	477	586	979	866	890	503	160	4615
1952	7	139	692	945	1077	1073	687	455	5075
Average Acre-Feet	130	413	707	847	943	951	648	261	4900
Average c.f.s.	2	7	11	14	15	15	11	4	10
Monthly Diversion in per cent of seasonal	2.7	8.4	14.4	17.3	19.3	19.4	13.2	5.3	

(a) See 1946 Water Supervision Report for prior years.

TABLE 209

ANNUAL COMPARATIVE MONTHLY DIVERSION IN ACRE-FEET 1942 to 1952

STANISLAUS RIVER - GOODWIN DAM TO MOUTH

Year(a)	March	April	May	June	July	August	September	October	Seasonal Diversions
1942	240	356	2533	4242	4590	3972	2721	1360	20014
1943	3	873	3439	4241	4458	3935	3518	1598	22065
1944	186	2013	3266	3565	4246	4292	2659	1603	21830
1945	0	2664	3013	3869	4431	4136	2866	681	21660
1946	862	3316	3780	4563	5046	4832	2754	1655	26808
1947	1206	4320	4933	4644	5417	5085	3462	1008	30075
1948	1261	1114	4631	4826	6089	6070	4259	1455	29705
1949	41	4747	4661	6152	6531	5648	4251	1940	33971
1950	1313	3240	5385	5493	6266	6254	4055	1382	33388
1951	1163	3733	5043	6101	6076	6333	4240	1970	34659
1952	0	1872	5063	4746	5604	5963	4076	2921	30245
Average Acre-Feet	570	2568	4159	4768	5341	5138	3533	1598	27675
Average c.f.s.	9	43	68	80	87	84	59	26	57
Monthly Diversion in per cent of seasonal	2.0	9.3	15.0	17.2	19.3	18.6	12.8	5.8	

(a) See 1946 Water Supervision Report for prior years.

TABLE 210

COMPARATIVE SEASONAL DIVERSIONS AND ACREAGES IRRIGATED - SACRAMENTO RIVER - 1942-1952

Year		Sacramento to Verona	Verona to Knights Ldg.	Knights Ldg. to Wilkins Slu	Wilkins Slu to Colusa	Colusa to Butte City	Butte City to Red Bluff	Red Bluff to Redding	Total Sacramento to Redding
1942	Seasonal diversion acre-feet	89760	26820	116200	335431	37714	553834	119216	1278975
	Average cubic feet per second	185	55	239	690	78	1140	245	2632
	Acreage irrigated - general	7898	1476	5425	30095	5123	47696	13513	111226
	Acreage irrigated - rice	6664	660	8957	39415	2668	49299	0	107663
	Acre-feet per acre (a)	4.6	12.6	8.1	4.8	4.8	5.7	8.7	5.7
1943	Seasonal diversion acre-feet	116503	35934	136688	333715	60963	594046	139086	1416935
	Average cubic feet per second	240	74	281	687	126	1222	286	2916
	Acreage irrigated - general	9052	1250	4594	29580	4765	43763	14362	107366
	Acreage irrigated - rice	9817	1115	9299	35777	4275	55316	0	115599
	Acre-feet per acre (a)	4.9	15.2	9.8	5.1	6.7	6.0	9.6	6.2
1944	Seasonal diversion acre-feet	150171	31565	142341	405665	77255	715850	155303	1678150
	Average cubic feet per second	309	65	293	835	159	1473	319	3453
	Acreage irrigated - general	8781	1997	8086	32591	4478	40614	15324	111871
	Acreage irrigated - rice	11687	1573	14459	32161	5743	56620	0	122243
	Acre-feet per acre (a)	6.1	8.8	6.3	6.3	7.6	7.4	10.0	7.1
1945	Seasonal diversion acre-feet	162521	21776	162825	409292	85269	690859	143229	1675771
	Average cubic feet per second	334	45	335	842	175	1422	295	3448
	Acreage irrigated - general	9266	2506	9757	28843	4680	36103	15390	106545
	Acreage irrigated - rice	12476	795	13094	34461	5574	48715	0	115115
	Acre-feet per acre (a)	6.3	6.6	7.1	6.5	8.3	8.1	9.2	7.4
1946	Seasonal diversion acre-feet	185716	38680	159077	402022	98953	729606	163925	1777979
	Average cubic feet per second	382	80	327	827	204	1502	337	3659
	Acreage irrigated - general	10722	2024	10923	30861	8719	38934	15373	117556
	Acreage irrigated - rice	17187	2485	13995	30828	6445	53195	0	124135
	Acre-feet per acre (a)	5.7	8.6	6.4	6.5	6.5	7.9	10.5	7.2
1947	Seasonal diversion acre-feet	157490	56993	140736	405829	103476	704544	138036	1707104
	Average cubic feet per second	324	117	290	835	213	1450	284	3513
	Acreage irrigated - general	13658	2982	11070	33853	4361	38149	17517	121590
	Acreage irrigated - rice	13687	2688	12549	31584	7393	56080	0	123981
	Acre-feet per acre (a)	4.7	10.1	6.0	6.2	8.8	7.5	7.7	6.8
1948	Seasonal diversion acre-feet	137292	56342	132701	387490	92661	632230	154758	1593474
	Average cubic feet per second	283	116	273	797	191	1301	318	3279
	Acreage irrigated - general	18117	3947	12685	35760	7860	52944	18421	149734
	Acreage irrigated - rice	15145	1568	12125	33503	8299	53477	0	124117
	Acre-feet per acre (a)	3.3	10.2	5.3	5.6	5.7	5.9	8.3	5.7
1949	Seasonal diversion acre-feet	182069	69658	189604	396587	96498	758697	179750	1872863
	Average cubic feet per second	375	143	390	816	199	1561	370	3854
	Acreage irrigated - general	14341	5511	12431	37584	6532	48721	18375	143495
	Acreage irrigated - rice	15606	7337	14891	35148	8080	56207	0	137269
	Acre-feet per acre (a)	5.1	5.4	6.9	5.5	6.6	7.2	9.6	6.6
1950	Seasonal diversion acre-feet	158567	60217	186229	370134	87246	751503	180264	1794160
	Average cubic feet per second	326	124	383	762	180	1546	371	3692
	Acreage irrigated - general	15284	4936	12706	39099	11163	50542	19087	152817
	Acreage irrigated - rice	10897	5274	13359	26757	9107	43085	0	108479
	Acre-feet per acre (a)	4.9	5.9	7.1	5.6	4.3	8.0	9.3	6.7
1951	Seasonal diversion acre-feet	169060	77772	207624	400587	116568	830331	172784	1974726
	Average cubic feet per second	348	160	427	824	240	1709	356	4064
	Acreage irrigated - general	19516	4905	15151	41097	10307	51394	19863	162233
	Acreage irrigated - rice	16665	3434	15061	32823	14243	58609	0	140835
	Acre-feet per acre (a)	3.8	9.3	6.9	5.4	4.7	7.5	8.5	6.4
1952	Seasonal diversion acre-feet	132275	66514	158455	410789	102813	754768	179033	1804647
	Average cubic feet per second	272	137	326	845	212	1553	368	3714
	Acreage irrigated - general	14608	5186	12326	33350	10308	46686	20467	142931
	Acreage irrigated - rice	11550	6761	12622	35766	15314	57040	0	139053
	Acre-feet per acre (a)	3.9	5.6	6.4	5.9	4.0	7.3	8.6	6.3
Average 1942 - 1952									
	Seasonal diversion acre-feet	149220	49297	157498	387049	87220	701479	156853	1688617
	Average cubic feet per second	307	101	324	796	179	1444	323	3475
	Acreage irrigated - general	12840	3338	10469	33883	7118	45050	17063	129760
	Acreage irrigated - rice	12853	3063	12765	33475	7922	53422	0	123499
	Acre-feet per acre (a)	4.7	7.7	6.8	5.7	5.8	7.1	9.1	6.5
	Per cent of total diversion	8.8	2.9	9.3	22.9	5.2	41.6	9.3	

(a) Excluding such diversions for municipal use as the City of Sacramento and the City of Redding.

TABLE 211

RICE ACREAGE IN CALIFORNIA

A Comparison of Total Rice Acreage in California with Rice Acreage Irrigated from the Sacramento and San Joaquin River Systems covered by Sacramento-San Joaquin Water Supervision

Year	Total in State (a)	Irrigated from Sacramento & San Joaquin River Systems (b)	Ratio in Per Cent (c)	Year	Total in State (a)	Irrigated from Sacramento & San Joaquin River Systems (b)	Ratio in Per Cent (c)	Year	Total in State (a)	Irrigated from Sacramento & San Joaquin River Systems (b)	Ratio in Per Cent (c)
1924	90000	89000	99	1934	108000	92000	85	1944	246000	212000	83
1925	103000	95000	92	1935	100000	78000	78	1945	239000	187000	78
1926	149000	129000	87	1936	138000	104000	75	1946	255000	200000	78
1927	160000	123000	77	1937	149000	109000	73	1947	250000	215000	86
1928	132000	101000	77	1938	125000	95000	76	1948	238000	199000	84
1929	95000	74000	78	1939	120000	104000	87	1949	298000	236000	79
1930	110000	88000	80	1940	118000	94000	80	1950	240000	187000	78
1931	125000	126000	100	1941	153000	120000	78	1951	319000	240000	75
1932	110000	91000	83	1942	212000	159000	75	1952	335000	245000	73
1933	108000	87000	81	1943	237000	186000	78				

(a) As reported by Federal-State Crop Reporting Service.

(b) Does not include the rice acreage of Merced, Turlock, Modesto, Waterford, Oakdale and South San Joaquin Irrigation Districts, and Friant Kern and Madera Canals. Prior to 1947, the rice acreage in the reach from Fremont Ford to Friant Dam of the San Joaquin River was not included.

(c) Ratio of rice acreage in Sacramento and San Joaquin River Systems to total rice acreage in State.

TABLE 212

MAXIMUM RECORDED SALINITY AT PRESENTLY INDICATIVE BAY AND DELTA STATIONS

(Releases of stored water from Shasta Reservoir commenced in 1944.)

YEAR (a)	1931	1934	1938	1939	1944	1946	1947	1948	1949	1950	1951	1952
Sacramento-San Joaquin Runoff in percent of Normal (b)	31	44	172	44	57	93	55	80	63	77	125	154
Station (c)	Maximum Recorded Salinity in Parts of Chloride per Million											
				San Francisco, San Pablo and Suisun Bays								
Point Orient	18700	18400	17000	19200	17300	17400	18800	17400	17700	17600	17700	16700
Point Pinole						15300	16800	15000	15700	15400	15500	14200
Point Davis	18100	18000	*14600	18400	15200	16600	16500	*14200	15100	14400	14600	12700
Grand View	18700				15300	15000	18000	13300	14600	13800	15900	12100
Crockett						14000	17900	13300	14600	15200	15100	13200
Benicia					13900	12000	15100	11300	12400	12500	12200	10400
Martinez (Bulls Head Point)	16900	16400	11600	16400		11100	13400	12600	11600	11500	10100	8900
West Suisun						10200	13500	11800	10000	10300	10800	7900
Port Chicago						9500	12400	9300	10600	10100	8700	6900
O & A Ferry	13900	12000	2560	11800	7300	3500	6100	3600	4000	4800	4400	2800
Innisfail Ferry	14000	12600	3300	13600	7900	4500	8200	4400	5300	4700	4400	4200
Pittsburg						2100	5000	1700	3300	2200	2400	1200
				Sacramento River Delta								
Collinsville	12600	10800	860	10400	4700	1700	4500	1790	2500	2800	1750	783
Three Mile Slough Bridge	8600	6600		5900	1610	80	1250	130	200	150	600	175
Rio Vista Bridge	7400	5200		4050	550	50	270	120	150	200	70	175
Isleton Bridge	6350	3100		2500	50	50	50	70	50	50	60	125
				Mokelumne River Delta								
Terminous	1820	520		320				110	110	140	70	(e)
Southwest Point	3900	1070		860				60	(d)60			
				San Joaquin River Delta								
Antioch	12400	9600	510	9200	4000	1090	4700	1500	1920	1330	970	354
Millers Harbor						930	3000	440	1600	1390	(d)	(d)
Webb Pump	6800	*3500	80	2650	520	80	450	100	140	(d)		(d)
Opposite Central Landing	4250	*1250	100	1380	200	80	200	90	100	80	80	250
Dutch Slough	5100	2800	110	2250	690	130	840	120	340	230	170	88
Orwood Bridge	2770	1070		540				180	160	180	140	(e)
East Contra Costa I. D.		730		320	140	200	190	320	210	200	190	152
Victoria (Victoria Island)				350		110	190	200	210	170	140	(e)
Clifton Court Ferry	1300	400		190			160	230	180	170	120	112
Empire Bridge (King Island Pump)	2610	1040		790						230	110	(e)
Turner Cut											140	(d)
Rindge Pump	1980	940	150	620	80					170	(d)	
Stockton Country Club	1220	440		320				260	170	170	170	(e)
Garwood Bridge	920	380						150	180	210	170	(e)
South Fabian (Whitehall)	310	120					190	260	210	190	(d)	
Williams Bridge	1180	430						150	190	170	170	(e)
Grant Line Bridge							170	220	190	200	180	(e)
Mossdale	120	250	120	160	130	120	180	250	180	170	190	122
Vernalis (Durham Ferry Bridge)							*180	240	170	160	220	121

* Estimated.
(a) For maximum salinities recorded and not shown in this table, see previous reports.
(b) Normal taken as 60-year (1889-1949) mean annual unimpaired flow (Oct.-Sept., Incl.) at foothill stations of major tributaries.
(c) For location and Description see Table 214.
(d) Record incomplete.
(e) Station discontinued during 1952.

TABLE 213

COMPARATIVE ANNUAL MINIMUM 10-DAY FLOW TO DELTAS OF SACRAMENTO AND SAN JOAQUIN RIVERS AND AREA OF EACH AFFECTED BY SALINITY ENCROACHMENT GREATER THAN 1000 PARTS OF CHLORIDE PER MILLION PARTS OF WATER

Year	Flow for Minimum 10-day period (b)					Runoff in % of Normal (a)			Area Affected by Salinity					
	Sacramento River at Sacramento		San Joaquin River at Vernalis		Sacramento and San Joaquin to Delta	Sacramento and San Joaquin to Delta	At Sacramento	At Vernalis	All Deltas		Sacramento and Mokelumne		San Joaquin	
	Date	c.f.s.	Date	c.f.s.	c.f.s.				% of Total	Acres (c)	% of Total	Acres (d)	% of Total	Acres
1920		(e)540		(e)450		53	49	66	15.1	65800	7.7	33500	7.4	32300
1921						119	127	96	2.1	9150	2.0	8715	0.1	435
1922						104	96	125	2.9	12600	2.4	10420	0.5	2180
1923						76	71	90	2.1	9150	2.0	8715	0.1	435
1924	7/14	858	7/26	407	1280	29	31	24	50.0	217500	18.4	80100	31.6	137400
1925	8/7	2860	8/29	743	3730	87	86	89	3.6	15630	3.1	13450	0.5	2180
1926	7/28	1460	8/21	586	2080	61	63	57	18.5	80500	8.5	37000	10.0	43500
1927	8/23	3560	8/23	1300	4850	122	128	106	2.9	12600	2.4	10420	0.5	2180
1928	8/15	2660	8/22	866	3550	85	90	71	5.7	24800	3.7	16100	2.0	8700
1929	7/18	2460	8/12	590	3090	45	45	46	7.1	30900	4.2	18300	2.9	12600
1930	8/5	2500	8/9	735	3230	67	72	53	5.4	23500	3.8	16500	1.6	7000
1931	7/20	-79	7/21	211	131	31	33	27	73.8	321000	30.2	131000	43.6	190000
1932	8/11	1980	9/10	1030	3030	80	70	108	5.7	24800	3.4	14800	2.3	10000
1933	8/21	1450	8/14	607	2070	49	47	55	9.8	42600	5.2	22600	4.6	20000
1934	7/20	1150	8/14	346	1530	44	46	37	37.5	163000	17.8	77500	19.7	85500
1935	8/12	2920	8/12	922	3940	92	88	104	2.9	12600	2.4	10420	0.5	2180
1936	8/20	2540	8/17	1040	3600	96	92	106	2.6	11600	2.2	9840	0.4	1760
1937	8/16	1720	8/24	1020	2820	80	71	106	3.5	15200	2.6	11280	0.9	3920
1938	8/12	5190	8/27	2130	7365	172	169	183	0	0	0	0	0	0
1939	8/5	630	7/25	610	1315	44	44	46	29.0	126000	17.0	74000	12.0	52000
1940	8/12	2550	8/9	1080	3620	116	119	107	4.2	18300	3.0	13000	1.2	5300
1941	8/24	4190	9/14	1480	5800	140	145	129	1.2	5100	1.2	5100	0	0
1942	8/22	3740	8/20	1520	5300	131	134	120	1.2	5100	1.2	5100	0	0
1943	8/17	2600	8/4	1480	4140	114	113	118	2.8	12200	2.2	9600	0.6	2600
1944	8/13	2790	8/9	1033	3830	57	55	63	7.2	31300	4.8	20800	2.4	10500
1945	8/24	6560	8/1	1530	8180	87	80	107	0.2	1000	0.2	1000	0	0
1946	8/7	6460	8/5	1160	7640	93	93	93	0.6	2500	0.6	2500	0	0
1947	7/7	4700	7/21	477	5270	55	55	56	7.5	32400	5.0	21500	2.5	10900
1948	7/24	7550	8/9	(f)606	8260	80	84	68	0.3	1200	0.3	1200	0	0
1949	7/18	6460	8/1	452	6970	63	64	62	2.3	10100	2.0	8500	0.4	1600
1950	8/20	7080	7/31	502	7670	77	77	76	1.1	5000	1.1	4500	0.1	500
1951	7/8	7100	8/5	572	8130	125	126	118	0.4	1800	0.4	1800	0	0
1952	8/14	(g)9880	8/24	1280	(g)11190	154	153	156	0	0	0	0	0	0

(a) Normal = 60-year (1889-1949)mean annual unimpaired flow (Oct.-Sept.,incl.).
(b) Does not include inflows from Mokelumne and Calaveras rivers, Yolo By-Pass and other minor tributaries.
(c) Delta area taken at 435,000 acres which includes all lands, levees, water surfaces, etc., within Delta boundary.
(d) Sacramento and Mokelumne deltas combined as the Sacramento River contributes a large flow to Mokelumne River Delta through Georgiana and Three Mile sloughs.
(e) No continuous record. Lowest discharge measured.
(f) Figure shown in minimum 10-day flow during summer. Minimum 10-day flow for year occurred March 8 with average flow of 357.
(g) Figure shown is minimum 10-day flow during summer. Minimum 10-day flow for year occurred in November.

TABLE 214

DESCRIPTION OF ACTIVE SALINITY OBSERVATION STATIONS - 1952

(Refer to previous Water Supervision Reports for description of stations which have been discontinued.)

STATION	Miles from Golden Gate (a)	Time Interval (b) Hours	Time Interval (b) Mins.	LOCATION
				SAN FRANCISCO, SAN PABLO AND SUISUN BAYS
Point Orient	12.3	2	20	North end of San Francisco Bay, East Shore, one-half mile south of Point San Pablo Wharf of Standard Oil Company.
Point Pinole	19.0	2	50	South Shore of San Pablo Bay, at Point Pinole on wharf of Atlas Powder Company.
Point Davis	25.2	3	15	East end San Pablo Bay, South Shore, Oleum Wharf of Union Oil Company.
Grand View	25.2	3	15	Northwest shore of San Pablo Bay at mouth of Petaluma Creek.
Crockett	27.7	3	30	West end of Carquinez Strait, South Shore, 0.2 mile east of Carquinez Bridge on wharf of C. and H. Sugar Refining Corporation.
Benicia	32.5	3	50	East end of Carquinez Strait, North Shore, 1.1 mile west of Southern Pacific Company railroad bridge, at Benicia Arsenal.
Martinez	32.7	3	50	East end of Carquinez Strait, South Shore, 1.0 mile west of Southern Pacific Company railroad bridge, at Municipal Ferry Slip. (Bulls Head Point)
West Suisun	37.0	4	10	West end of Suisun Bay, North Shore, 2.5 miles northeast of Southern Pacific railroad bridge at service pier of U. S. Maritime Commission, Reserve Fleet Mooring area.
Port Chicago	41.0	4	20	South Shore of Suisun Bay at U. S. Naval ammunition loading wharf below Port Chicago.
O & A Ferry	46.5	4	40	Upper end Suisun Bay between Mallard Station and Chipps Island at Sacramento Northern Railroad Ferry Crossing.
Innisfail Ferry	47.3	4	50	Montezuma Slough, about one mile east of junction with Cutoff Slough near North end of Grizzly Island.
Pittsburg	48.0	5	00	East end of Suisun Bay, South Shore, at Pittsburg Yacht Harbor.
				SACRAMENTO RIVER DELTA
Collinsville	50.8	5	25	Sacramento River, north bank at junction with San Joaquin River.
Toland Landing (c)	57.2	5	45	Sacramento River, west bank 5.3 miles downstream from Rio Vista at Dozier Ranch.
Three Mile Slough Bridge	60.0	5	55	At junction of Slough and Sacramento River.
Rio Vista Bridge	63.5	6	05	At Highway Bridge near northerly limits of Rio Vista.
Isleton Bridge	68.7	6	30	Sacramento River, one mile upstream from Isleton.
				MOKELUMNE RIVER DELTA
Terminous (d)	83.4	7	50	South Fork Mokelumne River at Terminous.
				SAN JOAQUIN RIVER DELTA
Antioch	54.9	5	55	San Joaquin River, at City Water Works pumping plant.
Millers Harbor	58.2	6	10	South Shore San Joaquin River at Antioch Bridge.
Jersey Island (c)	61.4	6	20	San Joaquin River, left bank, one mile below mouth of False River.
Three Mile Slough (S.J.)(c)	64.2	6	30	Three Mile Slough, west bank at junction of Slough with the San Joaquin River.
Oulton Point (c)	67.2	6	40	San Joaquin River, right bank, three miles upstream from junction of Three Mile Slough.
San Andreas Landing (c)	70.3	6	55	San Joaquin River, right bank, one mile below the mouth of the Mokelumne River.
Opposite Central Landing	72.0	7	00	Mokelumne River, on Andrus Island directly opposite Central Landing on Bouldin Island.
Dutch Slough	73.0	7	05	At Bethel Island Bridge.
Piper Slough (c)	73.0	7	00	Piper Slough at Delta Fishing Resort on Bethel Island one-half mile north of Sand Mound Slough junction.
Webb Ferry (c)	68.0	6	40	False River at Junction with Fisherman's Cut.
Webb Pump (c)	72.0	7	00	False River, north bank, two miles below Old River junction.
Webb Point (c)	72.6	7	05	San Joaquin River at the mouth of Old River.
Holland Tract (c)	77.5	7	35	Old River two miles north of Rock Slough junction.
Empire Bridge (d)	84.2	8	00	Honker Cut between Empire Tract and King Island at Empire Bridge.
Turner Cut (d)	85.0	8	10	San Joaquin River, left bank at junction with Turner Cut.
Orwood Bridge (d)	86.3	8	10	Old River, at Santa Fe Railroad Crossing, Orwood.

(a) Mileage measured to station along main channel. For stations off the main channel, the mileage shown is the same distance along the main channel to a point whereon the time of the occurrence of the tidal phase is the same as that of the observation station.
(b) Time interval between high tide at Golden Gate and time for taking samples at station.
(c) Station added during 1952.
(d) Station discontinued during 1952

TABLE 214

DESCRIPTION OF ACTIVE SALINITY OBSERVATION STATIONS - 1952
(Cont'd)

(Refer to previous Water Supervision Reports for description of stations which have been discontinued.)

STATION	Miles from Golden Gate (a)	Time Interval (b) Hours	Time Interval (b) Mins.	LOCATION
				SAN JOAQUIN RIVER DELTA
East Contra Costa I. D.	86.7	8	20	Indian Slough, at East Contra Costa Irrigation District Pumping Plant.
Victoria (d)	89.6	8	35	Old River at Borden Highway Crossing.
Clifton Court Ferry	94.2	9	10	Old River just below junction with Grant Line Canal.
Stockton Country Club (d)	94.8	9	15	Near Head of Stockton Channel at Wharf of California Transportation Company.
Garwood Bridge (d)	95.3	9	15	San Joaquin River, at Drawbridge one mile above Santa Fe Railroad Crossing.
South Fabian (d)	100.0	9	40	Old River, two miles East of Bethany.
Grant Line Bridge (d)	101.0	9	50	Grant Line Canal. 5.5 miles above junction with Old River, at Tracy Road Crossing.
Williams Bridge (d)	101.6	9	55	Middle River, about four miles below Salmon Slough Junction.
Mossdale Bridge	108.5	10	50	San Joaquin River at U. S. 50 Highway Crossing about three miles southwest of Lathrop.
Vernalis (Durham Ferry Bridge)	127.0	11	00	San Joaquin River at Durham Ferry Bridge, above tidal influence.

(a) Mileage measured to station along main channel. For stations off the main channel, the mileage shown is the same distance along the main channel to a point whereon the time of the occurrence of the tidal phase is the same as that of the observation station.
(b) Time interval between high tide at Golden Gate and time for taking samples at station.
(c) Station added during 1952.
(d) Station discontinued during 1952.

TABLE 215

SALINITY OBSERVATIONS, SACRAMENTO-SAN JOAQUIN DELTA AND UPPER BAYS

Samples taken by local observers approximately one and one-half hours after high high tide.
Salinity expressed in parts of chloride per million parts of water.

STATION	January - 1952							
	2	6	10	14	18	22	26	30
				San Francisco, San Pablo and Suisun Bays				
Point Orient	13600	9800	11500	5200	7000	7700	7900	8500
Point Pinole						1300		
Point Davis		4700	5000	2500	1600	1100		1700
Grand View	6800	5600	3800	2300	600	1200	1000	800
Crockett			(a)2700	1300	600	1800	1500	
Benicia	800	3300	2700	600	200	1300	700	100
Martinez	300	2200	3600	500	200	400	100	100
West Suisun	400	1600			100			100
Innisfail Ferry	(a)900		600	600	300	200	400	(a)200
Port Chicago	400	200	100	200		100	200	200
O & A Ferry	100	100	200	200	(a)100	400	200	(a)200
Pittsburg	100	100	200	100	100	200	100	100
				Sacramento River Delta				
Collinsville		100	(b)200	100	100	100	100	100
Three Mile Slough					20	20	20	20
Rio Vista Bridge	30	30	20	20	20	40	20	20
Isleton	10	10	20	20	20	(a)10	20	20
				Mokelumne River Delta				
Terminous	(a)40	(a)10	(a)20	20	(a)20	(a)90	40	(a)50
				San Joaquin River Delta				
Antioch		100	(a)100	(a)100	100	200	(a)100	(a)100
Opposite Central Landing	20	10	20	(a)40	20	20	30	20
Dutch Slough	90	90	90	(a)70	90	(*c)100	(a)70	80
Orwood Bridge	90	bkn		80	60	50	50	40
East Contra Costa I. D.	(b)170	170	170	(a)90	90	(b)110	(a)110	(a)80
Victoria	70	60	60	50	60	60	50	50
Clifton Court Ferry								
Empire Bridge	70	50	90	40	30	60	80	60
Turner Cut	20	50	40	(a)20		30	(bd)30	20
Stockton Country Club	50	30	(bd)30	(b)40	20	30	(ab)20	20
Garwood Bridge	30	30	40	20	30	30	30	20
Williams Bridge							(a)40	20
Grant Line Bridge	60	(ae)40	100	50	20	30	20	(a)20
Mossdale	40	30	(a)30	(a)20	(a)30	(a)20	(a)20	20
Vernalis			20	20	30	40	20	

(*) Presumed.
(a) Taken at Low High Tide.
(b) Taken on following day.
(c) Taken two days later.
(d) Taken over 1 hour off scheduled time.
(e) Taken on preceding day.

TABLE 215

SALINITY OBSERVATIONS, SACRAMENTO-SAN JOAQUIN DELTA AND UPPER BAYS

Samples taken by local observers approximately one and one-half hours after high high tide.
Salinity expressed in parts of chloride per million parts of water.

Station	February - 1952							
	2	6	10	14	18	22	26	30
				San Francisco, San Pablo and Suisun Bays				
Point Orient	5600	8500	9200	6800	9600	8900	8800	
Point Pinole						6400	4400	
Point Davis	1200		2600	3400	4300	5500	3700	
Grand View	800	1500		1500	2300	2800	2300	
Crockett	700	1000		2300		2700	1600	
Benicia	400				200		900	
Martinez	100	100	100	100	700	1000	100	
West Suisun		100	100	100		200	100	
Innisfail Ferry	200			(a)200	(a)200		300	
Port Chicago	200	100	(a)100	100	(a)100		100	
C & A Ferry	200	100	300	(a)100	100	100	300	
Pittsburg	300	100	bkn	(a)200	300	300	100	
				Sacramento River Delta				
Collinsville	100	100		30	100	100	100	
Three Mile Slough	30	20	20	20	20	20	20	
Rio Vista Slough	20	20	10	20	20	20	bkn	
Isleton	20	20	10	20		20	20	
				Mokelumne River Delta				
Terminous	60	(a)50		(a)50	(a)60	(a)60	60	
				San Joaquin River Delta				
Antioch	100	100	100	(a)100	100	100	100	
Opposite Central Landing	20	20	30	20	20			
Dutch Slough	60	60	(a)70	50	60	50	(a)50	
Orwood Bridge	(ab)40	40		30	40	40	30	
East Contra Costa I. D.	90	100	60	(a)60	(b)70	80	(a)60	
Victoria	40	30	40	40	30	40	20	
Clifton Court Ferry								
Empire Bridge	90	50	60	40	30	50	60	
Turner Cut		(b)20	(a)40	30		20	(a)20	
Stockton Country Club	30	(a)20	20	20		20		
Garwood Bridge	20	30	20	30	20	20	20	
Williams Bridge	40		(e)30		30	(b)30	30	
Grant Line Bridge	(a)20	(a)30	30	20	(a)30	(a)20	20	
Mossdale	20	(a)20	(a)20	20	20	(a)20	(a)20	
Vernalis	(e)20	(e)30	(e)30	(f)20	(b)20	(b)30	20	
	March - 1952							
				San Francisco, San Pablo and Suisun Bays				
Point Orient	6100	10100	10200	10200	7300	8000		8100
Point Pinole		7700	5500					
Point Davis	1600	4600	4100	5300	2300		2800	1500
Grand View	2300	3400	3200	4200	3100	3300	3300	3000
Crockett		4900		2900	1400		(a)700	
Benicia	400	2500		1200	300	100	700	400
Martinez	100	3400	500	500	800	100	(a)100	100
West Suisun	100	400	200	bkn	100		100	
Innisfail Ferry	(a)300		300	300	(a)200	200		(a)200
Port Chicago	(a)100	1100		100	200	(a)100	100	(b)100
C & A Ferry	100	300	200	(a)100	200	100	(a)100	100
Pittsburg	100	100	200	(a)100	100	100	(a)100	100
				Sacramento River Delta				
Collinsville	30	100	50		100		(a)30	30
Three Mile Slough	20	20	20	20	(ab)20	20	20	
Rio Vista Bridge	20	20	20	20	20	20	20	20
Isleton	20	20	20	(*)20	20	20	20	20
				Mokelumne River Delta				
Terminous	(a)20	(a)50	50	(a)50	(a)60	(a)40	(a)40	(a)40
				San Joaquin River Delta				
Antioch	100	100	100	100	100	100	(a)100	100
Opposite Central Landing	20	20	20	100		20	20	20
Dutch Slough	50	50	50	50	60	50	40	30
Orwood Bridge	(ab)30	30	40	30	30		20	(ab)20
East Contra Costa I. D.	50	60	(a)80	80	70	50	(b)50	20
Victoria	30	40	30	40	30	20	60	30
Clifton Court Ferry								
Empire Bridge	30	60	30	40	60	60	(a)40	30
Turner Cut	30	30	20	30	30	(b)20	40	20
Stockton Country Club	20	(e)30		20	30	(c)20		20
Garwood Bridge	30	20	20	30	20	20	20	20
Williams Bridge			(ab)30	30				20
Grant Line Bridge	20	20	40	20	20	(a)20	40	20
Mossdale	20	(a)30	(a)20	20	20	(a)30	20	20
Vernalis	(e)20	(f)20	(f)20	(b)20				(e)20

(*) Presumed.
(a) Taken at Low High Tide.
(b) Taken on following day.
(c) Taken two days later.
(d) Taken over one hour off scheduled time.
(e) Taken on preceding day.
(f) Taken two days earlier.

TABLE 215

SALINITY OBSERVATIONS, SACRAMENTO-SAN JOAQUIN DELTA AND UPPER BAYS

Samples taken by local observers approximately one and one-half hours after high high tide.
Salinity expressed in parts of chloride per million parts of water.

Station	April - 1952							
	2	6	10	14	18	22	26	30
				San Francisco, San Pablo and Suisun Bays				
Point Orient	7000	(e)7300	9700	8400	11100	9800	10800	6200
Point Pinole					4600			
Point Davis		3600	2800	1300			1800	2600
Grand View	3200	3700	4000	4200	3800	5000	4600	4000
Crockett	(a)1800	4000	3500	(a)800	1300	(a)1800	2200	
Benicia	400	2700	1000	100	500	1600	800	100
Martinez	400	(a)700	(a)100	600	300	(a)100	100	100
West Suisun	100	400	100	100		100	100	100
Innisfail Ferry	100							
Port Chicago	100	(b)100	(a)100	100		100		
O & A Ferry	100	(a)100	bkn	(a)100	100	(a)100	(a)200	100
Pittsburg	100	(a)100	(a)400	100	100	(a)100	(a)100	100
				Sacramento River Delta				
Collinsville	20	(a)20	(a)20	(a)20	20			20
Three Mile Slough	(a)20	(a)20	20	(a)20	20	(a)20	20	20
Rio Vista Bridge	20	20	20	20	20	20	20	20
Isleton	20	20	20	20	20	20	20	20
				Mokelumne River Delta				
Terminous	(a)30	20	(a)20	(a)20	(a)20	30	(a)20	(a)20
				San Joaquin River Delta				
Antioch	100	(a)100	(a)100	100	100	(a)100	100	100
Opposite Central Landing	20	(a)20	(a)10	20	20	(a)20	20	20
Dutch Slough	20	(a)20	20	20	20	(a)20	30	20
Orwood Bridge	20	20	20	20	20	20	20	20
East Contra Costa I. D.	20	(b)30	20	20	20	(a)30	20	20
Victoria	20	30	40	20	20	20	20	30
Clifton Court Ferry								
Empire Bridge	60	40	(a)30	20	30	40	20	20
Turner Cut	20		20	20	20	20	20	20
Stockton Country Club	(bd)20	20	20	(*)20		20	20	
Garwood Bridge	20	20	20	20	20	20	20	20
Williams Bridge		(ab)20						
Grant Line Bridge	20	20			20	(a)20	20	20
Mossdale	20	20	20	20	20	20	20	20
Vernalis	(e)20	20	(f)20	(f)20	(f)20	20	30	

Station	May - 1952							
				San Francisco, San Pablo and Suisun Bays				
Point Orient	6200	(e)6900	9400	10800	9900	8700	7400	5000
Point Pinole		(a)4000					(a)4700	
Point Davis	1100	(a)1900	bkn	800	3300		1000	1200
Grand View		3300	3100	3700	3500	3700	3400	2500
Crockett	2600			(a)300	3700			1900
Benicia	100	900	1800	200		1400		1500
Martinez		200	400	100	100	200	100	100
West Suisun	100	100	100	100	(b)100	100	100	20
Innisfail Ferry								
Port Chicago	(a)100		100	100	(b)100	(b)100		20
O & A Ferry	(a)100	(a)100	(a)100	100	(a)100	(a)100	(a)20	(a)10
Pittsburg	(a)100	(a)100	(a)100	(a)100	(a)100	(a)400	(a)20	(a)500
				Sacramento River Delta				
Collinsville	(a)20	(*)20		20			10	(a)10
Three Mile Slough	(b)20	20	(a)20	20	(b)20		10	
Rio Vista Bridge	(b)20	20	20	20	(b)20	30	10	(b)20
Isleton	(b)20	(a)20	20	20	(b)20	20	20	20
				Mokelumne River Delta				
Terminous	(a)20	20	(a)20	(a)20	20	(a)20	(a)20	10
				San Joaquin River Delta				
Antioch	(a)100	(a)100	(a)100	100	(a)100		100	(a)10
Opposite Central Landing	(a)20	(a)20	20	20	(a)20	(a)20	20	(a)10
Dutch Slough	20	(a)20	20	20	(a)20	(a)30	20	(a)10
Orwood Bridge	(a)20	30		20	(b)20	20	20	(a)10
East Contra Costa I. D.	(a)20	30	30	30	(b)30	20	10	(a)10
Victoria	(b)20	20	20	20		20	20	(b)10
Clifton Court Ferry								
Empire Bridge	(b)30	20	20	20	(b)20	(a)30	30	(b)20
Turner Cut	(a)20	20	20	20	(a)20	20	20	
Stockton Country Club			20	(d)30	(*)20	(bd)20		(ab)20
Garwood Bridge	(a)20	20	20	20	(a)20	20	10	(a)10
Williams Bridge						20	20	
Grant Line Bridge	20	(*)20	(a)20	20	bkn	(a)20	(a)10	10
Mossdale	(a)20	20	20	20	20	20	(a)20	(a)60
Vernalis	(b)20	(b)20	20	(e)20	(e)30	(f)20	(b)10	(e)10

(*) Presumed.
(a) Taken at Low High Tide.
(b) Taken on following day.
(d) Taken over one hour off scheduled time.
(e) Taken on preceding day.
(f) Taken two days earlier.

TABLE 215

SALINITY OBSERVATIONS, SACRAMENTO-SAN JOAQUIN DELTA AND UPPER BAYS

Samples taken by local observers approximately one and one-half hours after high high tide.
Salinity expressed in parts of chloride per million parts of water.

Station	June - 1952							
	2	6	10	14	18	22	26	30
				San Francisco, San Pablo and Suisun Bays				
Point Orient	6600	10000	10500	9800	(e)9900	11000	10600	8500
Point Pinole					(a)7900			
Point Davis	2400	(e)2600	(b)1800	3000	(e)5800	2500	2900	bkn
Grand View	2400	(e)2500	2500	5300	(e)4700	4900	6300	5600
Crockett	1900	(a)800	(a)650	2750			2600	5300
Benicia	(b)1400	1900	700	2300	4000	1500	800	3600
Martinez	80	500	500	190	(e)560	580	680	2000
West Suisun		200	100	60	60	30	190	2500
Innisfail Ferry								
Port Chicago	(a)10	1000	200	20	(b)790	20	bkn	1540
O & A Ferry	(a)10	(a)500	(a)10	10	(a)10	(a)10	(a)10	10
Pittsburg	(a)200	(a)300	(a)10	(a)60	(a)10	(a)20	20	(a)10
				Sacramento River Delta				
Collinsville	(a)10	(a)20	(a)10			(a)10		(a)10
Three Mile Slough	(b)10	20				10	10	
Rio Vista Bridge	(b)20	10	10	(b)10	10	10	10	(b)10
Isleton	(b)10	10	(a)20	(a)10	10	(a)10	10	(b)10
				Mokelumne River Delta				
Terminous	10	20	(a)10	10	(a)10	(a)10	(a)10	30
				San Joaquin River Delta				
Antioch	(a)10	(a)100	200	10	10	(a)10	10	(a)10
Opposite Central Landing	(a)10	(a)10	10	(a)10	(a)10	10	10	(a)10
Dutch Slough	(a)10	(a)20	20	(a)10	(a)10	10	10	(a)20
Orwood Bridge	(b)10	20	30	(a)10	10	10	10	(b)10
East Contra Costa I. D.	(a)20	20	30	(a)10	10	10	(b)10	(a)30
Victoria	(b)10	20	30	(b)10	10	10	10	(b)30
Clifton Court Ferry								
Empire Bridge	(a)20	30	10	(b)20	20	10	20	30
Turner Cut	(a)20	(a)20	20	(a)10	(a)10	10	20	(a)20
Stockton Country Club		(*b)10	10	(a)10	(a)10	10	10	(bd)20
Garwood Bridge	(a)10	10	30	(a)10	10	10	10	(a)20
Williams Bridge	(a)10	30						
Grant Line Bridge	10	(a)20	10	10	(a)10	(a)10	(a)10	(a)30
Mossdale	(a)10	20	10	(a)10	10	10	10	(a)20
Vernalis		(b)10	20	(a)10	(e)10	(c)10	(c)20	(b)30
	July - 1952							
				San Francisco, San Pablo and Suisun Bays				
Point Orient	11100	13700	14100	12700	(e)13500	14000	14400	
Point Pinole	(a)7900							
Point Davis	6600	8100						
Grand View		6400	7200	6600	(e)8400	8100	8400	8500
Crockett	7900			6800		7300	7300	
Benicia	4500	5800	bkn	5700		6100	(a)4800	8400
Martinez	4900	5200	3100	3000	(e)3600	4700	2500	7000
West Suisun	(b)4350		1500	4600	4700	3600		
Innisfail Ferry								
Port Chicago	(b)3500	(a)2800	1200	(*)2400	(e)3500	2500	(a)1900	4600
O & A Ferry	(a)36	(a)12	(a)60	179	394	470	(a)136	823
Pittsburg	12	100	(a)24			(a)74	(a)66	
				Sacramento River Delta				
Collinsville		(a)9	15	(a)10		(a)27	(a)32	(a)31
Three Mile Slough	(b)7	8	9	(b)8	11	15		13
Rio Vista Bridge	(b)6	19	13	(b)9	7	15	10	(b)15
Isleton	(b)10	9	8	(b)8	9	12	12	(b)12
				Mokelumne River Delta				
Terminous	14	15	(a)14	16	13	8	9	15
				San Joaquin River Delta				
Antioch	(a)11	(a)13	19	(a)16	(a)21	27	(a)35	(a)30
Opposite Central Landing	(a)7	(a)15	10	(a)6	(a)9	17	(a)14	(a)15
Dutch Slough	(a)15	(a)15	19	(a)23	(a)23	(a)24	(a)24	(a)24
Orwood Bridge	(b)23	32	51	(a)58	61	57	(a)57	(a)52
East Contra Costa I. D.	(e)26	(b)45	62	(a)74	68	70	73	72
Victoria	(e)31		(ab)68	(b)66	65	65	(b)67	(b)55
Clifton Court Ferry								
Turner Cut	(a)23	26	46		(a)46	56	(a)59	(a)64
Empire Bridge		(a)35	32	(a)29	33	46	47	29
Stockton Country Club	(bd)23	44	57	(bd)63	(d)68	(*)71	(*a)85	(a)86
Garwood Bridge	(b)43	59	53	(a)70	73	87	93	108
Williams Bridge	(a)40		62	(ab)66	(ab)82	(a)116	(ab)107	(a)105
Grant Line Bridge	(a)36	57	75	(a)65	73	95	(a)104	(a)144
Mossdale	(a)39	60	64	(a)64	77	104	(a)56	(a)108
Vernalis	(e)30	(e)62	(c)67	(b)66	(b)87	92	112	(e)102

(*) Presumed.
(a) Taken at Low High Tide.
(b) Taken on following day.
(c) Taken two days later.
(d) Taken over one hour off scheduled time.
(e) Taken on preceding day.

TABLE 215

SALINITY OBSERVATIONS, SACRAMENTO-SAN JOAQUIN DELTA AND UPPER BAYS

Samples taken by local observers approximately one and one-half hours after high high tide.
Salinity expressed in parts of chloride per million parts of water.

Station	August - 1952							
	2	6	10	14	18	22	26	30
				San Francisco, San Pablo and Suisun Bays				
Point Orient	(e)14800	15200	15700	15600	15700	(a)15200	(a)15000	15300
Point Pinole								
Point Davis								
Grand View	(e)9600	9100	8900	10300	10600	11000	(b)11200	11200
Crockett				9500	(a)9400	(a)12500	(c)10900	
Benicia	8400	9300	7800	(*)8600		8600	8300	9500
Martinez	(e)6300	6400	7000	6400	(a)4200	6100	6800	6800
West Suisun						5600	7100	7600
Innisfail Ferry								
Port Chicago	(*)5500	5800	4000	5500	5800	(a)5000	6700	6400
O & A Ferry	1900	1200	1600	(a)900	(a)1090	(a)1030	1200	1200
Pittsburg	201	(a)312	(a)232	(a)408	(a)470	(a)370	(a)360	
				Sacramento River Delta				
Collinsville		657	(a)346	(a)221	(a)300	480	(a)250	
Toland Landing**		(a)30	(a)15		(a)15			
Three Mile Slough	19	(a)14		(*b)16	(a)23		18	(a)26
Rio Vista Bridge	11	12	12	(b)12	13	24	14	(b)14
Isleton	11	28	10	(b)10	13	4	13	(b)13
				Mokelumne River Delta				
Terminous***	30	(a)18	32					
				San Joaquin River Delta				
Antioch	(a)44	(a)194	286	(a)109	(a)182	255	146	(a)200
Millers Harbor**		(a)30	(a)37	(b)56	(a)62	63	59	(a)153
Jersey Island**			(a)29	(a)29	(a)32	(a)53		(a)38
Three Mile Slough**		(a)18		(a)13	16	(a)30	bkn	
Oulton Point**				(a)22	(a)21	(a)23	(a)25	(a)23
San Andreas**			(a)29	(a)26	(a)20	(a)22	(a)28	(a)22
Opposite Central Landing	(a)17	29	(a)16	(a)19	(a)42	19	(a)17	(a)16
Dutch Slough	(a)24	24	(a)20	(a)27	(a)31	(a)31	(a)32	(a)34
Piper Slough**		21	(a)22	(a)24	26	24	(a)27	(a)27
Webb Ferry**		26	23	(a)21	23	41	25	(ab)25
Webb Pump**		(b)24	(a)22	(a)22	(c)35	25	(a)26	(a)27
Webb Point (Hdqs.)**		(b)20	(a)23	(a)21	(ac)23	22	(a)22	(a)23
Holland Tract**		(c)30	(ac)30	(c)24	(c)25		(ae)25	(e)26
Orwood Bridge***		40	(a)39					
East Contra Costa I. D.	67	61	83	(a)83	58	65	63	(a)52
Victoria	63	62		(b)39	37	44	37	(b)45
Clifton Court Ferry								
Empire Bridge***								
Turner Cut***	56	47	62					
Stockton Country Club***	(b)89	92	98					
Garwood Bridge***	105	102	(a)100					
Williams Bridge***	(a)89	97						
Grant Line Bridge	(a)114	105	(a)111	(a)115	107	109	121	(a)114
Mossdale	(a)99	97	103	(a)114	(a)104	109	(a)106	(a)103
Vernalis		(b)118		(b)108	(b)104	(b)110	(b)100	112

(*) Presumed.
(**) Station established during the year.
(***) Station discontinued during the year.
(a) Taken at Low High Tide.
(b) Taken on following day.
(c) Taken two days later.
(d) Taken over one hour off scheduled time.
(e) Taken on preceding day.

TABLE 215

SALINITY OBSERVATIONS, SACRAMENTO-SAN JOAQUIN DELTA AND UPPER BAYS

Samples taken by local observers approximately one and one-half hours after high high tide.
Salinity expressed in parts of chloride per million parts of water.

Station	September - 1952							
	2	6	10	14	18	22	26	30
San Francisco, San Pablo and Suisun Bays								
Point Orient	15500	15100	16000	(e)15140	15370	15380	15500	(e)16000
Point Pinole	(a)13500		(a)13250					
Point Davis							11600	(e)11100
Grand View	11200		11720	(e)12100	12080	11710	11800	11700
Crockett		13200			12280	10030		(a)10100
Benicia	10400	8900	8275	(*)9650	8260	7940	8300	9200
Martinez	7600	5800	8375	(a)6130	5680	5740	7600	(e)6300
West Suisun		6175	5800	5860	6070	6400	7500	
Innisfail Ferry		2000	2275		2248	2150	2100	(a)2000
Port Chicago	(a)5400	5830	4875	(a)5355	4100	4130	5700	5000
O & A Ferry	2000	1360	1475	(a)1520	975	(a)498	(a)700	1100
Pittsburg	(a)530	910			551		355	(a)198
Sacramento River Delta								
Collinsville		(a)750	700		500	(a)195	397	(a)101
Toland Landing			(a)29					
Three Mile Slough	(d)23	23	175	30	(ad)31	27	(a)32	26
Rio Vista Bridge	13	14	175	21	23	24	bkn	24
Isleton	13	14	125	22	24	23	23	21
San Joaquin River Delta								
Antioch	(a)200	354	(a)244	(a)162	180	152	(a)84	(a)98
Millers Harbor	(a)73	(a)220	(ab)275	(a)64	117	(a)47	(a)37	(a)36
Jersey Island		(a)83	(ab)225		38	(a)35		(a)35
Three Mile Slough	(a)29	(*)29		(a)34	(d)28	(a)27	26	(a)30
Oulton Point	(a)27	(a)30	(a)150	(a)34	35	(a)33	(a)32	(a)30
San Andreas	(a)22	24	(a)175	(a)32	(a)29	(a)32	(a)28	(a)26
Opposite Central Landing	(a)18	(a)25	(a)250	(a)23	23	(a)23	(a)22	(a)20
Dutch Slough	(a)36	(a)40		(a)45	45	(a)44	(a)46	(a)44
Piper Slough	(a)27	(a)28	(a)30	(a)40	43	(a)38	(a)35	(a)36
Webb Ferry		49	39	35	(a)32	36		
Webb Pump	(a)32	33	(bd)41	(a)35	(a)36	(a)34	(a)36	(a)41
Webb Point (Headquarters)	(a)24	24	(bd)39	(a)31	(a)32	(a)33	(a)39	(a)31
Holland Tract	34	(a)29	40	(a)41	37	(a)42	41	(a)42
East Contra Costa I. D.	67	(a)65	(b)82	(a)98	(a)132	(ab)137	133	
Victoria	65	(a)52	(a)74	83	111	111	(b)105	100
Clifton Court Ferry								
Grant Line Bridge	(a)112	(a)100	(a)114	109	(a)96	(a)74	(a)100	99
Mossdale	96	(a)108	(a)107	100	(a)71	(a)81	(a)99	104
Vernalis	107	108			(c)75	(b)85	(b)102	121

Station	October - 1952							
San Francisco, San Pablo and Suisun Bays								
Point Orient	16500	16700	14400	14800	15200	15300	14800	16500
Point Pinole				13300		14200		
Point Davis	12100		(a)11500	10700	11100	11800	11600	(a)12700
Grand View	11700	11600	(b)11700	10700		11800	11600	11600
Crockett	12000	12000		11400	11800	12400	10900	(a)10500
Benicia	7500		6900	(*a)9500		9200	8100	9400
Martinez	6800	6400	(b)5900	5500	6400	7400	6100	6100
West Suisun		6800	6200			7900	6300	
Innisfail Ferry	1900	2100	(b)2000	1900	2100	2100	2000	2100
Port Chicago	4600	5500	(a)3600	4100	5200	6600	4800	5700
O & A Ferry	1100	(a)800	1000	(a)600	(a)700	(a)600	900	(a)1100
Pittsburg		380	(a)310	160	(b)300	(a)400	300	600
Sacramento River Delta								
Collinsville	291	642	370		394		(a)278	472
Toland Landing	bkn							
Three Mile Slough	28	24	(*)10	16	20	24	20	bkn
Rio Vista Bridge	24	19	10	20	18	19	14	18
Isleton	23	18	10	14	11	16	15	15
San Joaquin River Delta								
Antioch	(a)161	(ab)142	120	80	125	165	147	141
Millers Harbor	41	41	36	32	80	(a)63	(a)67	38
Jersey Island		(a)34	(a)28			(a)33		
Three Mile Slough	(a)29	(a)24	(a)20	(a)20	(a)26	38		(a)33
Oulton Point		(a)33	(a)24	29	29	(a)27	(b)28	(b)31
San Andreas		(a)26	(a)28	24	25	(a)31	32	32
Opposite Central Landing	22	(a)16	(a)16	12	17	(a)17	(a)13	17
Dutch Slough	41	(a)39	(a)40	40	41	(a)43	(a)44	49
Piper Slough	(a)38	39	32	28	37	(a)43	(a)37	42
Webb Ferry			24	24	28	31	33	33
Webb Pump	33	(a)33		32	(a)35			
Webb Point (Headquarters)	31	(a)32		24	(a)32			
Holland Tract	(c)42		(af)44	(e)44	(a)55	48	(a)59	57
East Contra Costa I. D.	125	129	(b)128	152	118	(a)123	(a)143	(b)122
Victoria	92	92	(a)88	105	89	88	(b)79	96
Clifton Court Ferry		96	100	91		(a)76		(a)113
Grant Line Bridge	(a)104	114	bkn	76	(a)78	(a)81	(a)114	(a)113
Mossdale	(a)117	(a)122	(a)76	(a)68	(a)78	(a)94	(a)105	(a)111
Vernalis	(b)106	(b)119	(b)76	76	74	(e)87	(e)106	(d)109

(*) Presumed.
(a) Taken at Low High Tide.
(b) Taken on following day.
(c) Taken two days later.
(d) Taken over one hour off scheduled time.
(e) Taken on preceding day.
(f) Taken two days earlier.

TABLE 215

SALINITY OBSERVATIONS, SACRAMENTO-SAN JOAQUIN DELTA AND UPPER BAYS

Samples taken by local observers approximately one and one-half hours after high high tide.
Salinity expressed in parts of chloride per million parts of water.

Station	November - 1952							
	2	6	10	14	18	22	26	30
				San Francisco, San Pablo and Suisun Bays				
Point Orient	15000	14400	14800	14800	14900	14200	14500	bkn
Point Pinole					12600			
Point Davis				10700	10900		11200	
Grand View	bkn	11500		10200	10200	10200		10200
Crockett	12800	10900	(a)9900	(a)11300	9500		(b)11100	
Benicia	7500	8600						
Martinez	7800	8900	8200	7900	6300	5300	bkn	7800
West Suisun								6600
Innisfail Ferry	2100	4200	2100	2200	2500	2300	2300	2300
Port Chicago	(a)6400	4800	(a)4700	6900	5000		4900	5700
O & A Ferry	(a)1000	(a)2800	1014	1800	1100	(a)670	1000	2700
Pittsburg	900		400	400	500	(a)229	200	1200
				Sacramento River Delta				
Collinsville	567	608	303		(b)333	223		783
Toland Landing								
Three Mile Slough	21		20	19	20	13	16	18
Rio Vista Bridge	16	14	15	13	14	18	18	12
Isleton	19	13	14	11	13	34	9	11
				San Joaquin River Delta				
Antioch	223	278	113	228	146	141	96	234
Millers Harbor	(a)40	38	(ab)39		37	39	35	47
Jersey Island			31	39				50
Three Mile Slough		28	28	(a)28	26	32	36	(a)16
Oulton Point	36	(ab)27	38	27	29		35	27
San Andreas	31	(a)34	33	29	29		36	40
Opposite Central Landing	(a)18	(a)16	21	24	(a)13	(a)18	18	15
Dutch Slough	48	(a)51	(a)53	47	53	(a)57	(a)51	49
Piper Slough	40	(a)47	41	44	39	(a)49	42	76
Webb Ferry	36	33	29		31	36	(b)36	34
Webb Pump								
Webb Point (Headquarters)								
Holland Tract	(ab)61	(ab)58	(b)58	(ab)84	(b)59		78	60
East Contra Costa I. D.	(a)123	(a)127	123	(b)124	(a)133	(a)131	131	(a)134
Victoria	110							
Clifton Court Ferry		(a)112	102	108	(a)98			
Grant Line Bridge	(a)111	bkn	106	104	(a)90	(ae)71	58	(a)62
Mossdale	(a)110	(a)110	114	(a)95	(a)90	(a)61	(a)61	(a)65
Vernalis	105	(f)120	(f)97		(e)90	(e)55	(f)55	(f)62

Station	December - 1952							
				San Francisco, San Pablo and Suisun Bays				
Point Orient	14100	14600	10700	10600	12600	12300	11400	11500
Point Pinole			7300		9900			9000
Point Davis				8700	7500	4400	8400	6800
Grand View	9600	9500	7000	5800	6000	4700	4500	4400
Crockett	11700	8900	6200	7000	6600	(a)3300	6400	5500
Benicia			4300	4000	4600	2100	4600	3700
Martinez	7400	(f)7800	3600	4800	2600	900	bkn	2800
West Suisun	6500	3600	1800	1800	1400		1600	780
Innisfail Ferry	2300	2200	(b)1800	(f)1200	413	1000	800	358
Port Chicago	6100	4300	1500		1200	(a)76	1940	639
O & A Ferry	1300	(a)207	66	79	74	36	53	44
Pittsburg	(b)300		70	34	(b)37	44	42	40
				Sacramento River Delta				
Collinsville	714	(a)74	40		18	29	22	22
Toland Landing								
Three Mile Slough	25	23	17	12	20	24	22	17
Rio Vista Bridge	14	10	14	12	26	16	15	13
Isleton	11	20	23	12	16	11	21	9
				San Joaquin River Delta				
Antioch	246	134	52	37	36	(a)54	40	39
Millers Harbor	64	51	49	53	52	52	52	51
Jersey Island	60	(a)50	51		47		44	47
Three Mile Slough		44	46	(a)22	(a)30	42		(a)25
Oulton Point	(a)37	(a)41	39	34	(a)35	36	35	38
San Andreas	39	(a)38		35	36	34	41	34
Opposite Central Landing	(a)19	(a)14	22	24	(a)15	33	23	27
Dutch Slough	54	(a)66	88	76	67	82	72	70
Piper Slough	47	(a)63	70	50	(a)61	62	49	66
Webb Ferry	40	39	42	41	45	38	(e)45	(a)48
Webb Pump								
Webb Point (Headquarters)								
Holland Tract		(a)74	72	69	68	84		
East Contra Costa I. D.	(ab)114	(a)115	(b)121	121	(a)115	(b)142	145	(a)129
Victoria**								
Clifton Court Ferry	(a)70	(a)71	72	(a)63	(a)55		46	
Grant Line Bridge**	(a)64							
Mossdale	(a)65	(a)67	64	(a)50	(a)53	(a)39	(a)34	(a)35
Vernalis	63	(e)66	(c)51	(b)48	(c)51	28	32	36

(**) Station discontinued during the month.
(*) Presumed.
(a) Taken at Low High Tide.
(b) Taken on following day.
(c) Taken two days later.
(d) Taken over one hour off scheduled time.
(e) Taken on preceding day.
(f) Taken two days earlier.

TABLE 216

COMPLETE OR PARTIAL ANALYSIS OF THE WATERS OF THE SACRAMENTO, SAN JOAQUIN RIVERS, THEIR TRIBUTARIES AND THEIR DELTAS - 1952

DATA COPIED FROM UNITED STATES BUREAU OF RECLAMATION COMPILATION
(Daylight Saving Time effective April 27 through September 28)

Date of Sample	Time of Sample	G. H.	c.f.s.	Temp. Degrees F.	Parts per Million											
					Ca	Mg	Na	K	CO_3	HCO_3	SO_4	Cl	B	NO_3	Total Solids	Kx10^6
SACRAMENTO RIVER BELOW SHASTA DAM T33N. R5W. Sec. 15																
1/14	0845	588.35	12060		9.9	5.2	6.8	1.1	0	64	6.6	3.5		0	88	120
2/11	0830	596.22	38521	46	13	6.3	7.8	1.1	0	67	7.0	9.1		0.2	130	96
3/10	1320	585.2	9828	44	13	5.2	8.0	1.2	0	70	12	1.4		0.4	120	130
4/14	1000	589.7	16200	47	13	5.0	4.5	1.1	0	58	3.3	6.3		0.2	120	120
5/12	1500	589.00	15234	48	11	3.1	5.6	1.2	0	50	8.6	4.2		0	120	120
6/9	1300	587.20	12712	46	12	5.0	5.7	1.1	0	57	4.5	8.3		0.2	110	110
7/14	1300	585.40	12404	49	11	5.2	5.0	1.0	0	53	3.7	7.0		0.2	80	110
8/11	1500	585.70	13165	50	9.3	3.9	7.1	1.0	0	49	2.9	9.7		0.2	71	99
9/8	1300	586.58	10746	53	9.6	4.4	3.7	1.2	0	47	4.5	6.3		0.4	76	110
10/13	0800	583.19	8341	53	8.7	4.8	4.7	1.5	0	52	1.6	4.8		0	88	110
11/10	0800	582.3	4721	54	12	3.7	5.6	1.3	0	59	0.8	6.8		0	50	110
12/8	0800	580.05	3462	51	13	5.2	8.6	1.3	0	65	0.8	14		0	68	130
SACRAMENTO RIVER AT SACRAMENTO WEIR T9N, R4E, Sec. 29																
1/22	1135	4.6		45			11					20				160
2/25	1145	25.2		47			6.7					9.7				140
AMERICAN RIVER AT FAIR OAKS BRIDGE T9N, R6E, Sec. 13																
1/22	1010			44			4.8					11				87
7/25	1125			74			4.7					9.7				57
9/26	1050	1.56		72			4.5					8.3				81
SACRAMENTO RIVER AT SACRAMENTO (M STREET BRIDGE) T9N. R4E. Sec. 35																
1/22	1115	19.5		44			5.4					14				160
2/25	1120	20.1		47			6.9					6.3				140
SACRAMENTO RIVER AT HEAD OF SNODGRASS SLOUGH T6N, R4E. Sec. 22																
2/21	1320	9.2		46	12	7.2	6.2	1.0	0	66	7.0	12		0	120	120
3/24	1315	12.9		50	11	7.9	9.0	1.0	0	69	4.1	15		0.2	110	150
4/24	1045	15.6		56	6.7	4.6	3.0	0.5	0	37	2.5	8.3		0	74	83
5/21	1045			59	7.7	1.3	2.9	0.7	0	28	1.6	4.9		0	54	79
6/26	1100			64	7.7	3.9	6.0	0.9	8.1	24	4.9	7.7		0.2	95	110
7/24	1400			74	12	9.0	13	1.0	0	73	4.9	22		0.4	130	180
8/25	1455			72	16	8.7	16	1.0	0	93	8.2	22		0.2	120	240
9/25	0910			70	18	10	19	1.0	0	100	8.6	24		0.4	170	250
9/25	0920			70												
10/29	1115				13	7.4	16	1.4	0	80	7.0	18		0.2	110	180
11/25	1030			48	16	9.2	14	1.6	0	79	30	12		0.2	150	190
12/30	1015			48	11	5.0	12	1.7	4.4	52	6.6	13		0.4	120	140
SACRAMENTO RIVER AT WALNUT GROVE T6N, R4E, Sec. 22																
1/21	1350	7.5		44	11	9.6	8.4	1.3	0	56	12	14		9.3	140	140
2/21	1400	8.1		46	11	7.9	6.7	1.0	0	64	6.6	11		0	130	120
CACHE CREEK NEAR CAPAY T5N. R4E. Sec. 35																
1/22	1305			46			19					20	0.5			390
PUTAH CREEK NEAR WINTERS T8N. R2W. Sec. 28																
1/22	1345			47			8.6					12	0.04			310
2/25	1300			51			15					12	0.1			480
3/24	1100			53			6.2					11				470
6/24	1115	4.2		70			24					20				720
9/26	1225			74			41					33	0.8			790
12/29	1130			51			15					21				330
CACHE SLOUGH BELOW LINDSEY SLOUGH T5N. R3E. Sec. 31																
4/24	1145			59			11					17				200
7/25	1102			74			14					22				190
10/29	1415			64			13					11				190
SACRAMENTO RIVER AT JUNCTION POINT (NEAR RIO VISTA) T4N, R3E, Sec. 17																
1/21	1155			45			3.7					14				220
SACRAMENTO RIVER AT RIO VISTA T4N, R3E, Sec. 30																
8/26	0925			70			17					26			94	250
9/25	1140			72			20					22			170	270
SACRAMENTO RIVER AT TOLAND LANDING T3N, R2E, Sec. 21																
7/30	1010			70											130	180
8/26	1103			70											140	230
9/25	1240			70											160	270
10/29	1305														140	240
11/25	1400			50											150	190
SACRAMENTO RIVER AT COLLINSVILLE T3N, R1E, Sec. 27																
1/21	1055	6.4		45			13					18				190
2/21	1130	7.0		47			9.2					8.3				160
6/12	1409			61			11					11			68	110
6/26	1450	3.0		66			8.7					4.9			94	110
7/24	1530			70			12					23			110	160
8/26	1240			70			86					150			330	670
9/23	1335			68			36					55			220	390
10/29	1440						120					210			520	900
11/25	1440			52			34					56			210	340

TABLE 216

COMPLETE OR PARTIAL ANALYSIS OF THE WATERS OF THE SACRAMENTO, SAN JOAQUIN RIVERS, THEIR TRIBUTARIES AND THEIR DELTAS - 1952

DATA COPIED FROM UNITED STATES BUREAU OF RECLAMATION COMPILATION
(Daylight Saving Time effective April 27 through September 28)

Date of Sample	Time of Sample	G. H.	c.f.s.	Temp. Degrees F.	Parts per Million											
					Ca	Mg	Na	K	CO_3	HCO_3	SO_4	Cl	B	NO_3	Total Solids	$Kx10^6$
POSO CREEK AT MONS STATION													T28S, R28E, Sec. 3			
2/28	1150	1.43	20	57	46	9.4	81	3.2	18	84	42	140	.2	0	460	720
6/18	1135	1.10	22	74	37	7.2	84	2.8	0	110	27	130	.7	0	380	680
7/15	1210	0.90	8	90	67	14	250	4.7	0	130	45	420	1.1	0	970	1800
8/15	1215	0.78	6	88	94	16	240	4.6	0	170	86	410	2.6	0.2	1000	1800
9/16	1030		6	73	94	18	250	4.2	0	170	62	430	4.4	0	1000	1800
10/15	1015	1.01	8	77	82	16	290	4.4	0	170	55	490	1.0	0	1100	2000
11/4	1000	1.22	12.0	63	80	13	260	4.0	0	160	51	470	0.7	0	950	1700
12/4	0900	1.50	30.0	48	54	11	130	2.4	0	150	41	220	0.3	0	580	980
KAWEAH RIVER AT MCKAYS POINT													T18S, R27E, Sec. 4			
1/5	1545			44	14	3.3	5.6	1.3	0	59	6.2	3.5		0.4	140	120
SAN JOAQUIN RIVER BELOW FRIANT DAM													T11S, R21E, Sec. 7			
1/29	1535	2.62	187	48	7.7	3.7	8.5	1.2	0	39	5.8	9.8		0.9	87	98
2/25	0910	6.94	3852	45	5.1	0.4	5.1	0.9	0	20	2.1	7.0		0	100	50
3/28	0815	8.44	6500	46	5.3	3.3	3.4	1.0	2.3	18	0.4	11		0	90	60
4/25	1040	9.64	8058	52	3.3	2.0	2.2	0.9	0	21	0.8	2.8		0	69	51
5/26	1300	9.02	7000	54	1.8	3.7	1.4	0.4	0	11	1.6	9.0		0	32	27
6/23	1015	8.42	6000	56	0.6	1.7	6.9	0.4	0	9.5	2.9	9.0		0	25	25
7/25	1620	5.42	2142	55	3.0	0.9	1.5	0.6	0	14.0	0	2.8		0.2	34	27
8/22	0950	5.16	1770	56	1.8	1.1	3.6	0.1	0	11	0.8	4.2		0.4	22	27
9/22	1510	3.78	658	66	2.3	1.1	2.3	0.7	0	7.1	0.8	6.3		0.4	27	32
10/31	1420	3.51	501	65			6.0					11				40
11/21	1045	2.89	249	58	5.4	2.6	3.6	0.6	0	21	6.2	6.1		0.2	64	54
12/29	0920	2.38	133	50	7.9	5.0	13	1.6	0	37	6.2	25		0.4	76	92
SAN JOAQUIN RIVER AT MENDOTA POOL													T13S R15E. Sec. 19			
1/28	0955			58	8.7	3.3	2.8	1.8	0	34	9.9	4.2		0.4	150	84
2/25	1255	11.86		48	5.3	1.1	4.8	0.9	0	24	1.7	6.3		0.2	110	52
3/24	0925	12.81		51	12	7.2	6.3	1.4	1.2	46	5.8	20		0	110	96
4/28	1115	14.06		57	4.5	3.7	1.3	1.1	0	26	3.3	4.9		0	70	65
5/26	0932	9.32		72	3.1	2.6	2.6	0.9	0	21	2.5	2.8		0	34	45
6/23	0915	14.43		67	0.8	1.5	6.7	0.6	0	14	4.9	4.2		0	32	34
7/28	1445	13.65		77	1.8	0.9	1.6	0.4	0	8.3	0	3.5		0.2	42	30
8/25	1500	13.78		72	1.2	1.1	4.8	0.3	0	8.3	0.8	6.3		0.4	18	37
9/22	1437	14.48		75	4.3	3.3	9.6	0.7	0	24	1.2	17		0.2	52	110
10/27	1445	13.65		65	3.8	1.5	4.5	1.0	0	17	1.6	8.2		0.5	34	54
11/24	1405	11.77		50	8.4	4.1	17	0.8	0	37	23	16		0.2	110	170
12/29	1420	7.45		52	13	4.8	13	1.8	0	60	7.4	20		0	100	140
SAN JOAQUIN RIVER AT TEMPLE SLOUGH													T11S, R13E, Sec. 12			
1/29	0915			42	9.1	4.6	7.3	2.1	0	47	11	5.6		0.4	110	120
2/26	0906			48	12	1.1	5.6	1.0	0	43	2.1	7.0		0	100	52
3/25	0950		4970	53	5.3	4.4	6.1	1.1	9.3	12	4.1	13		0	86	81
4/29	0845	13.03	6270	57	3.0	1.1	3.8	1.0	0	18	1.6	3.5		0	58	65
5/27	0850	13.89	8010	69	2.6	3.3	3.6	0.9	0	18	1.6	10		0	45	46
6/24	0850	610.74		65	0.6	2.4	3.6	0.6	0	11	4.1	5.6		0	36	35
7/29	0920	2.44		78	4.5	1.3	4.9	0.8	0	20	0	7.7		0.2	60	61
8/26	0935	2.40		73	3.3	1.5	9.9	0.8	0	19	3.3	12		0.4	81	81
9/23	0850			73	5.4	1.3	11	1.0	0	25	4.1	15		0	53	110
11/25	1020	2.49		46	12	5.7	22	1.4	0	40	36	23		0.2	150	200
12/30	1127	3.40	68	51	17	7.0	42	2.2	3.3	66	21	57		0	180	270
POSO DRAIN ABOVE BELMONT DRAIN CROSSING													T9S, R12E, Sec. 31			
1/29	0930	7.30	20	51			109					190				1100
2/26	1057	6.80	10.7	55			110					180				1100
3/25	1320		63.1	63			41					32				250
4/29	1110	9.14	80.5	55			35					35				430
5/27	0945	9.54	105	74			45					42				440
6/24	1110	9.56	117	70			53					47				470
7/29	0855	8.73	89	81.5			45					45				380
8/26	1537	3.18		78			51					70				480
9/23	1105	7.2	28.2	72			51					70				480
10/28	0905	6.14	1.64	68			87					130				810
11/25	1245	6.38	5.62	49			89					150				880
12/30	1130	6.43	6.4	51			120					210				1100
SALT SLOUGH AT SAN LUIS RANCH													T9S, R11E, Sec. 7			
1/29	1400	4.74	275	51			88					130				800
2/26	1425	7.10	633	54			50					42				290
3/25	1400	8.02	856	60			20					29				220
4/29	1530	9.36	810	54			13					17				160
5/27	1310	9.53	1380	74	9.0	5.7	12	1.5	0	39	11	22		0.4	120	150
6/24	1455	9.13	1294	69			12					13				140
7/29	1220	3.77	148	82.5			55					74				510
8/26	1200	3.39		75			61					100				600
9/23	1520	2.90	93.2	78			75					110				690
10/28	1205	2.25	39.0	61			140					220				1200
11/25	1335	2.57	59.9	49			130					190				1100
12/30	1258	3.14	112	53			240					300				1800

TABLE 216

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DATA COPIED FROM UNITED STATES BUREAU OF RECLAMATION COMPILATION
(Daylight Saving Time effective April 27 through September 28)

Date of Sample	Time of Sample	G. H.	c.f.s.	Temp. Degrees F.	Parts per Million										
					Ca	Mg	Na	K	CO_3	HCO_3	SO_4	Cl	B	NO_3	Total Solids	Kx10^6
SALT SLOUGH ABOVE CUT SLOUGH T7S, R10E, Sec. 29																
7/30	1115			76			89					150				800
8/27	1445			78			Sample Lost									
9/24	1120		98.82	72			110					180				950
10/29	915		44.1	64			210					330				1600
11/26	1110		68.6	44			160					240				1300
BEAR CREEK NEAR MOUTH T8S, R11E, Sec. 6																
1/30	1530	12.82	2410	48			21					11				180
3/26	1625	13.83	2694	68			23					10				230
4/30	1548	12.86	1800	66			8.6					6.3				140
5/28	1430	13.22	1980	78			7.7					7.6				89
6/25	1550	11.41	1318	72			7.4					12				81
7/30	1210	1.54	40	75			51					36				420
8/27	1055	2.03		78			41					30				370
9/24	1600	3.41	219.12	73			28					17				260
10/29	1117	1.74	58.4	62			40					34				370
11/26	1335	1.26	20.7	47			81					66				620
12/31	1225	3.00	161	50			35					23				340
SAN JOAQUIN RIVER AT FREMONT FORD T7S, R9E, Sec. 24																
1/30	1630	68.54	3550	50	16	7.2	17	2.6	0	85	15	13	0.4	190	190	
2/20	1020	67.66	3350	50	12	3.7	15	1.4	0	46	27	9.7	0	140	120	
3/26	1730			67	13	6.8	8.6	2.4	0	67	4.9	13	1.9	110	150	
4/30	1615			66	11	4.1	4.2	1.2	0	44	7.4	7.7	0	88	110	
5/28	1545			78	6.7	2.6	5.9	1.3	0	30	4.1	9.0	0.2	82	86	
6/25	1730	68.52		73	3.7	3.1	7.2	1.3	0	14	22	2.8	0	74	81	
7/30	1405	60.43		77	49	17	100	3.0	0	130	69	170	0.4	510	920	
8/27	1250	60.16		74	38	16	99	2.5	0	140	65	150	0.9	430	850	
9/24	1655	60.46		75	28	14	55	2.3	0	130	25	72	0.4	310	480	
10/29	1040	59.36		62	54	28	150	1.4	0	170	97	240	0.7	700	1200	
11/26	1135	59.2		46	58	25	160	3.5	0	170	110	240	0.2	710	1300	
12/31	0930	60.70		48	37	18	77	3.0	0	140	69	100	0.2	440	620	
SAN JOAQUIN RIVER ABOVE MOUTH OF MERCED RIVER T7S, R9E, Sec. 3																
1/30	1245			50			27					25				270
2/26	1100	10.23		49			19					24				200
3/25	1428	14.15		59			20					26				240
4/22	1035			64			9.7					17				140
5/22	1355			72			11					15				130
6/25	1020			70	6.5	1.1	8.3	1.1	0	27	6.2	9.0	0.2	110	99	
7/25	1100			80			160					240			1300	
8/26	1150			76			150					240	0.3		1200	
9/26	1020			74			85					110			740	
10/27	1110			64			210					310			1700	
11/26	1100			46			210					320			1700	
12/30	1045			51			110					130			840	
MERCED RIVER AT STEVINSON DRAIN T6S, R9E, Sec. 36																
1/30	1300	7.30		49			14					17				170
2/26	1000	6.53		48			11					17				160
3/25	1520	8.20		57			12					19				180
4/22	0955	10.38		56			4.2					9.7				110
5/22	1300			60			1.9					6.3				56
6/25	0945	7.72		66	7.7	1.1	6.1	0.9	0	34	2.9	5.6	0.2	74	86	
7/25	1000	2.88		73			23					25			240	
8/26	1105	2.72		73			94					24	0.2		190	
9/26	1000			73			24					24			230	
10/27	1040	1.84		63			33					25			300	
11/26	1020	1.74		51			34					25			310	
12/30	1015	5.46		52			6.2					11			110	
SAN JOAQUIN RIVER BELOW MOUTH OF MERCED RIVER (AT HILLS FERRY BRIDGE) T7S, R9E, Sec. 3																
1/30	1235	11.82		50			31					27				300
2/26	1100	10.23		49			22					24				210
3/25	1422	14.15		61			23					23				230
4/22	1025	13.62		59			8.1					14				130
5/22	1340	15.60		72			5.4					9.7				82
6/25	1010	12.70		70			11					9.7				99
7/25	1030			76	42	19	97	2.4	0	120	83	150	0.4	450	860	
8/26	1135	2.80		73			19					140			830	
9/26	1030	3.4		73			61					81			540	
10/27	1100	2.4		64			100					130			850	
11/26	1050	2.38		48			130					180			1000	
12/30	1030	5.45		51			72					84			590	
VIVIAN SLOUGH AT NORTH LINE OF SECTION 16 (AT OLLINGERS PUMP) T6S, R9E, Sec. 16																
1/29	1125			49			120					160				780
2/27	0935			53			240					360				1600
3/25	0940			59			270					470				1800
4/22	1105			68			290					470				2000
5/22	1140			69			250					443				1800

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Date of Sample	Time of Sample	G. H.	c.f.s.	Temp. Degrees F.	Parts per Million											
					Ca	Mg	Na	K	CO_3	HCO_3	SO_4	Cl	B	NO_3	Total Solids	$Kx10^6$
PATTERSON DRAIN AT SAN RAMON LAKE													T5S, R8E, Sec. 27			
1/30	1210			54			270					330				2500
2/26	1310			50			240					250				2300
3/25	1342			56			230					260				2200
5/22	1430			72			210					240				1900
6/25	1125			71			180					200				1800
7/25	1200		7	70			190					210	0.9			1800
8/26	1230			68	120	58	200	2.7	0	280	430	220		0.4	1200	1900
9/26	1130		5	72			180					190				1800
10/27	1215			63			200					190				2000
11/26	1140			57			190					150				2000
12/30	1125			56			240					210				4600
SAN JOAQUIN RIVER AT PATTERSON WATER COMPANY INTAKE													T5S, R8E, Sec. 15			
1/30	1205	47.4		51			23					20				240
2/26	1330			50			19					26				190
3/25	1330	49.50		58			19					17				210
4/22	1145	48.85		64			12					18				150
5/22	1450	51.05		69			11					15				95
6/25	1135	48.9		71			12					14				120
7/25	1230	39.2		77			73					140				820
8/26	1245	37.25		76			89					120				740
9/26	1145	38.4		75			67					81				540
10/27	1225	36.5		66			150					220				1200
11/26	1155	37.30		50			150					190				1200
12/30	1140	40.25		51			52					65				430
PATTERSON WATER COMPANY DRAIN SPILL													T6S, R8E, Sec. 1			
4/22	1130		2	72			32					31				320
6/25	1110			71			20					29				250
9/26	1100		3	76			85					110				810
SAN JOAQUIN RIVER NEAR LAIRD SLOUGH BRIDGE													T4S, R7E, Sec. 25			
1/30	1140	39.50		51			25					25				230
2/26	1440	37.78		51			22					28				200
3/25	1246	41.40		60			20					17				220
4/22	1340	41.20		64			13					24				170
5/22	0945	43.30		67			5.3					10				97
6/25	1210	40.90		72			10					17				110
7/25	1325	29.20		77			110					170				990
8/26	1330	28.28		77	39	15	100	2.4	0	150	77	140		0.4	420	850
9/26	1245			75			71					95	0.1			640
10/27	1325	28.0		67			150					220				1300
11/26	1245	27.7		51			140					200				1200
12/30	1245	31.7		51			52					63				440
SAN JOAQUIN RIVER AT WEST STANISLAUS I. D. DIVERSION													T4S, R7E, Sec. 10			
1/29	1445	36.65		52			24					22				240
2/27	1430	33.32		54			20					24				200
3/25	1325	37.10		58			18					17				210
4/22	1425	37.95		65			12					19				160
5/22	1600	39.87		70	7.1	2.4	7.7	1.2	0	33	4.1	10		0	84	100
6/25	1320	36.60		72			11					19				130
7/25	1430	25.05		76			110					160				980
8/26	1425	24.0		78			96					130				870
9/26	1300	25.5		74			72					90				650
10/28	1050			64			150					220	0.4			1300
11/26	1345	26.0		50			140					190				1200
12/30	1330	28.85		51			50					59				420
TUOLUMNE RIVER AT TUOLUMNE CITY													T4S, R8E, Sec. 7			
1/30	1130	37.11		48			8.4					15				130
2/26	1500			49			10					21				140
3/25	1232	37.90		53			10					15				140
4/22	1355	39.85		57			5.5					15				78
5/22	0925	42.40		58	3.5	1.5	3.9	0.5	0	14	0.4	9.0		0	46	56
6/25	1225	36.9		62			13					26				150
7/25	1345	29.1		77			61					120				630
8/26	1355	28.72		76			51					99				540
9/26	1230			74			64					130				670
10/27	1350	29.75		66			31					63				330
11/26	1305	31.65		54			18					36				170
12/30	1255	33.03		51			16					38				170
SAN JOAQUIN RIVER AT CROWS LANDING BRIDGE													T6S, R9E, Sec. 7			
6/25	1045	55.3		70			9.3					8.3				92
7/25	1120	45.5		78			96					140				840
8/26	1210			74			87					120				740
9/26	1050			75			57					72				500
10/27	1140			64			120					170				1100
11/26	1120			49			120					170				1000
12/30	1110			52			41					52				370

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Date of Sample	Time of Sample	G. H.	c.f.s.	Temp. Degrees F.	Parts per Million											
					Ca	Mg	Na	K	CO_3	HCO_3	SO_4	Cl	B	NO_3	Total Solids	Kx10^6
SAN JOAQUIN RIVER AT EL SOLYO PUMPS												T3S, R7E, Sec. 29				
1/30	1115	30.2		50			15					21				200
2/26	1500	28.0		52			16					24				180
3/25	1200			56			18					17				190
4/22	1450			64	15	4.8	9.6	1.2	0	54	4.9	22		0.5	120	160
5/22	1635			70			11					24				150
6/25	1340			72			13					22				140
7/25	1500	21.05		77			110					190	0.4			960
8/26	1515			76			87					140				810
9/26	1345			76			67					110				680
10/27	1440			65			82					130				740
11/26	1415			54			49					80				450
12/30	1400			51			32					46				290
STANISLAUS RIVER AT BRET HARTE PUMP												T3S. R7E, Sec. 9				
1/30	0955			48			5.6					7.7				150
2/26	1205			49			6.7					9.0				120
3/25	1047			56			12					2.1				130
4/23	1000	29.75		56	5.5	4.4	2.4	0.5	0	34	0.4	5.6		0.2	70	72
5/23	0915	36.52		58			4.9					9.0				55
6/25	1420	30.10		65			3.5					2.1				67
7/25	1620			72			16					13	0.7			230
8/27	1235			73			15					15	0.1			240
9/26	1400			74			18					12				270
10/28	1130			63			14					11				220
11/26	1500			51			9.4					16				170
12/30	1445			50			11					14				160
SAN JOAQUIN RIVER NEAR VERNALIS												T3S. R6E, Sec. 13				
1/30	1045	18.35		50			13					15				180
2/26	1415	16.23	11000	52			15					18				180
3/25	1110	19.70		55			16					17				190
4/23	0940	20.73		60			9.3					13				120
5/23	0845	24.90		67			7.7					22				120
6/25	1400	20.10		70			11					17				130
7/25	1555			77	39	15	76	3.2	0	140	40	120		0.4	400	700
8/26	1540			77	38	13	74	3.1	0	140	40	120	0.3	0.4	400	670
9/23	1420	9.3		73	39	12	54	2.7	0	130	24	89		0.4	370	560
10/27	1455			66	35	14	68	2.7	3.8	110	35	110		0.2	300	650
11/26	1435	9.3		53	23	11	42	1.8	0	76	35	69		0.2	250	410
12/30	1420	11.4		51	17	6.6	33	2.0	0	64	14	52		0.9	180	260
SAN JOAQUIN RIVER AT BANTA CARBONA I. D. DIVERSION												T2S. R6E, Sec. 34				
1/30	1055	22.7		51			19					19				230
2/26	1440	20.2		52			18					26				350
3/25	1125			55			29					25				350
4/23	0910			62			7.8					17				130
5/23	1000			64			6.7					13				83
6/25	1455			70			11					17				130
7/25	1530			77			77					130	0.2			730
8/27	1205			75			72					120				720
9/26	1445			75			62					96				620
10/27	1525			66			69					110				640
11/26	1530			52			40					68				410
SAN JOAQUIN RIVER AT MOSSDALE BRIDGE												T2S. R6E, Sec. 3				
1/21	1355	8.4		49			18					21				200
2/21	1015	8.1		50			17					22				190
3/24	0840	12.35		52			14					21				190
4/25	0840	13.0		60			8.9					17				120
5/22	0845	17.1		64			4.5					13				87
6/24	0841	15.0		68			10					14				120
7/25	1435			78			69					120				670
8/25	1325			76			72					130				670
9/29	0935			75			66					100				620
10/28	1205			65			67					110				660
11/26	1550	3.8		52			41					70				390
12/29	1515	4.72		52			27					41				240
SAN JOAQUIN RIVER AT BRANDT BRIDGE												T1S, R6E, Sec. 9				
5/22	1244			66			5.7					14				88
8/25	1345			77			75					130				740
11/24	1550			52			37					56				370
STOCKTON SHIP CHANNEL AT BURNS CUT-OFF												T1N, R5E, Sec. 1				
1/21	0905	6.2		47			12					17				180
2/21	0910	5.3		49			16					24				210

TABLE 216

COMPLETE OR PARTIAL ANALYSIS OF THE WATERS OF THE SACRAMENTO, SAN JOAQUIN RIVERS.
THEIR TRIBUTARIES AND THEIR DELTAS - 1952

DATA COPIED FROM UNITED STATES BUREAU OF RECLAMATION COMPILATION
(Daylight Saving Time effective April 27 through September 28)

Date of Sample	Time of Sample	G. H.	c.f.s.	Degrees F.	Parts per Million											
					Ca	Mg	Na	K	CO_3	HCO_3	SO_4	Cl	B	NO_3	Total Solids	Kx10^6
MIDDLE RIVER AT SANTA FE RAILROAD T1N. R4E, Sec. 15																
5/21	1515			66			4.8					13				99
8/25	1040			79			30					51				350
11/24	1415			52			68					110				650
OLD RIVER AT CLIFTON COURT FERRY T1S, R4E, Sec. 21																
1/21	1305	6.7		48			19					30				240
2/21	1030	4.9		40			19					28				250
3/24	0930	4.8		51			17					26				240
4/25	0915	6.4		60			7.1					16				130
5/22	0950	6.6		65			7.1					10				100
6/24	0920	6.4		68			10					16				110
7/25	1400	3.35		78			63					110				620
8/25	1245	3.85		77			52					72				540
9/29	1015	2.08		75			64					97				620
10/28	1305	3.50		65			71					120				670
11/24	1520	4.50		51			46					66				430
12/29	1430	5.15		51			30					44				280
HOLLAND TRACT AT OLD RIVER T2N, R4E, Sec. 19																
3/24	1005			50			26					39			240	290
4/24	1410			63			15					26			110	190
5/21	1415			67			6.9					13			78	100
6/30	1020			67			13					22			100	150
7/25	1255			75			30					49			190	310
8/29	1505			74			22					39			140	250
9/26	1240			72			29					42			210	340
10/30	1145						53					71			240	450
11/26	1345			50			48					73			270	470
12/30	1340	6.20		49			56					79			330	530
MOKELUMNE RIVER AT WOODBRIDGE T4N, R6E, Sec. 28																
2/25	1000	11.05		48			4.7					8.3				88
COSUMNES RIVER AT McCONNELL STATION T6N, R6E. Sec. 20																
2/25	1025	35.7		48			3.6					5.6				95
MOKELUMNE RIVER BELOW COSUMNES RIVER T5N, R5E, Sec. 29																
6/24	1440			62			2.3					4.2				48
7/25	1000			74			6.0					11				80
8/25	1030			73			6.5					12				110
9/26	1440			72			4.2					6.3				74
10/28	1450			62			5.0					6.1				62
11/24	1140			50			4.2					2.0				81
MOKELUMNE RIVER AT NEW HOPE BRIDGE T4N, R4E, Sec. 15																
2/21	1500	4.5		46			4.2					2.8				100
MOKELUMNE RIVER BELOW GEORGIANA SLOUGH T3N, R4E, Sec. 7																
5/21	0905			60			2.0					4.2				72
6/24	0905			64			7.4					6.3				110
7/25	1140			75			14					16				180
8/25	0940			72			17					20				250
9/26	1515			73			18					19				260
10/29	1250			63			13					14				180
11/24	1300			50			14					14				200
MOKELUMNE RIVER BELOW CENTRAL LANDING T3N, R4E, Sec. 20																
1/21	1030			47			6.5					13				150
2/21	1010			46			8.6					11				120
SAN JOAQUIN RIVER NEAR WEBB POINT (OPPOSITE MOKELUMNE RIVER MOUTH) T3N, R4E, Sec. 19																
1/21	1020			47			13					21				220
2/21	0940			48			16					11				210
SAN JOAQUIN RIVER AT SAN ANDREAS LANDING T3N, R3E, Sec. 13																
3/26	0945			53	12	8.3	6.5	1.2	0	62	7.0	15	0.2	160	160	
4/24	0945			55	8.5	4.8	3.3	0.5	0	43	0.8	9.7	0.2	85	88	
5/21	0925			60	7.1	1.5	3.7	0.7	3.5	20	2.1	5.6	0	49	81	
6/26	1305	3.80		65	8.7	2.6	6.2	1.0	0	36	6.2	9.7	0.2	100	110	
7/24	1200	3.60		73	12	6.3	14	1.1	0	58	8.2	23	0.2	100	190	
8/25	1550			75	15	13	17	1.1	0	91	7.4	29	0.2	140	240	
9/25	1035			71	20	9.4	24	1.0	0	100	9.9	33	0.4	170	280	
10/29	1310	5.72		64	16	9.4	23	1.8	0	90	14	29	0.2	130	270	
11/25	1225			51	21	11	26	1.8	0	75	20	50	0.2	230	300	
12/30	1145			48	16	6.3	26	2.1	13	48	19	33	0.9	180	280	

TABLE 216

COMPLETE OR PARTIAL ANALYSIS OF THE WATERS OF THE SACRAMENTO, SAN JOAQUIN RIVERS, THEIR TRIBUTARIES AND THEIR DELTAS - 1952

DATA COPIED FROM UNITED STATES BUREAU OF RECLAMATION COMPILATION
(Daylight Saving Time effective April 27 through September 28)

Date of Sample	Time of Sample	G. H.	c.f.s.	Temp. Degrees F.	Parts per Million											
					Ca	Mg	Na	K	CO_3	HCO_3	SO_4	Cl	B	NO_3	Total Solids	Kx10^6
					SAN JOAQUIN RIVER AT TWITCHELL ISLAND (OULTON POINT)							T3N, R3E, Sec. 17				
7/24	1250			74											120	180
8/25	1625			76											130	250
9/25	1110			72											170	290
10/29	1315														160	270
11/25	1300			52											180	270
					SAN JOAQUIN RIVER AT JERSEY POINT							T2N, R3E, Sec. 6				
7/25	1210			73											110	180
8/29	1330			71											140	300
9/26	1120			70											130	280
10/30	1110														140	290
11/26	1145			51											210	310
					SAN JOAQUIN RIVER AT ANTIOCH							T2N, R2E. Sec. 18				
1/21	1125	3.2		47		21						39				280
2/21	1245	3.85		49		17						29				240
3/24	1250			50		20						36			220	270
4/24	1305	1.9		60		11						17			76	160
5/21	1300	1.83		67		4.8						11			60	110
6/27	1410	2.29		68		11						12			130	120
7/25	1035			70		23						42			140	240
8/29	1135			70		76						140			350	620
9/26	0955			70		40						54			170	390
10/30	1010					37						53			200	340
11/26	1010			52		47						71			300	430
12/29	1130	3.87		49		32						50			220	350

Note - The total solids shown in similar tables in previous Water Supervision reports were obtained by applying a constant factor of 0.7 to the conductivity (Kx10^6) for those samples which did not have a complete chemical analysis.

TABLE 217

COMPLETE OR PARTIAL ANALYSIS OF THE WATERS OF THE SACRAMENTO, SAN JOAQUIN RIVERS, THEIR TRIBUTARIES AND THEIR DELTAS - 1952

Date of Sample	Time of Sample	G. H.	c.f.s.	Temp Degrees C.	Parts per Million										
					HCO_3	CO_3	Cl	NO_3	SO_4	Ca	Mg	K	Na	B	Total Solids	Kx10^6
SACRAMENTO RIVER AT DELTA T36N, R5W, Sec. 35																
2/18	1326	6.92	2170	5.0			1.4									82.3
3/11	1455	6.27	1570	6.5			2.5									90.2
4/15	1535	7.46	2870	10	44		0									76
5/12	1300	7.37	2800	10.5	43	0	0.7	0.6	2.0	3.6	6.1	0.3	1.9	0.04		72.7
6/12	1220	5.52	918	10	54		1.0									99.9
7/16	1355	4.58	400	21	71		5.0									141
8/12	0900	4.15	245	18.9	76		5.0									141
10/16	1535	3.935	187	15.0	79	0	8.1	0.4	3.2	9.0	7.4	1.0	12	0.12		153
11/14	1530	4.50	401	5.5	66		7.0									143
12/18	1030	5.01	646	5.6	58		1.0									121
SACRAMENTO RIVER AT KESWICK T32N, R5W, Sec. 28																
2/13	1600	20.53	25600	7.5			2.3									111
3/17	1140	14.03	11300	6.5			3.5									121
4/19	1435	17.00	16800	7.8	62		2.0									117
5/20	0915	15.40	13400	9.0												
6/16	1105	14.45	11500	10	59		1.0									117.6
7/16	1114	14.42	11400	12	59		1.0									121
8/11	1100	15.26	13100	5.6	54		1.0									106
10/21	0912	9.53	4570	11.0	55	0	1.8	0.3	4.8	10	3.6	1.1	6.3	0.05		103
11/25	1330	7.85	3800	11.5	60		1.0									118
12/22	1003	13.62	10700	9.4	69		0									137
SACRAMENTO RIVER AT REDDING T31N, R4W, Sec. 6																
2/19	1345	46.00		6.0			2.4									116
3/17	1715	44.90	11420	6.6			2.2									118
4/14	1530	46.38	16300	9	58		1.0									112
5/19	0935	45.35	12850	10	58	0	1.3	0.4	6.1	10	4.1	1.1	5.5	0.02		110
6/12	1020	44.40	9880	9	61		1.0									119.9
7/16	0940	44.2		16	59		1.0									118
8/11	1400	45.22	12460	12.2	56		1.0									107
10/15	1000	42.93	5940	12.0	56	0	1.8	0.3	4.3	8.6	4.5	1.4	5.8	0.03		98.1
11/25	0930	42.3		10	60		2.0									119
12/22	0830	44.63		8.9	70		0									137
SACRAMENTO RIVER AT HAMILTON CITY T22N, R1W, Sec. 17																
1/8	1400	34.50	28400	5.0			2.0									119
2/14	0730	35.62	33740	8.0			2.5									129
3/12	1030	32.08	18450	9.0			3.0									140
4/18	1230	33.20	23100	11.2	66		1.0									117
5/14	0825	32.43	19600	13.0	58	0	2.0	0.1	6.8	10	4.6	1.0	5.2	0.00		109
6/12	1100	30.40	12230	11.2	64		1.0									118
7/9	1345			18.0	48		3.0									122
8/13	1100	29.24	8714	16	62		2.0									111
9/10	1030	40.10	6950	14.2	62		1.3									111
10/15	1115	27.65	4710	16.0	66	0	2.8	0.2	4.4	12	4.3	1.4	6.5	0.06		120
11/19	1330	27.90	5270	11.6	76		4.0									142
12/11	1100	136.97	40700	9.5	44		0									111
SACRAMENTO RIVER AT KNIGHTS LANDING T11N, R2E, Sec. 14																
1/15	1415	37.70	23490	8.0			3.0									110
2/21	1700	36.64	23130	8.7			6.0									169
3/19	0945	36.87	22800	9.0			3.8									137
4/18	1600	36.20	20700	12.2	70		3.0									134
5/16	0915		18270	16.0	65	0	3.8	0.4	10	12	5.0	1.1	8.0	0.07		138
6/9	1100		11200	14.2	82		8.0									176
7/11	0830			20	82		7.0									190
8/22	1500		7780	21.5	96		10.0									214
9/22	1700	20.0	9020	21.0	107		10									231
10/23	1000	17.72	6400	15.8	72	0	57	1.2	3.2	21	5.5	2.6	31	0.06		294
11/10	1600	17.50	6150	12.0	84		6									174
12/9	1100		24250	8.0	42		2									119
SACRAMENTO RIVER AT SACRAMENTO T9N, R4E, Sec. 35																
1/21	1500	20.10	63770	8.0			7.0									154
2/21	0955	21.62	69390	8.2			4.1									124
3/11	1430	19.10	60250	10.0			9.0									152
4/23	1330	22.49	72700	11.6	46		1.0									89
5/22	0900	22.34	70300	15.0	39		1.3	0.6	5.4	6.8	3.4	0.9	3.8	.04		82.5
6/18	0800	11.18	34600	16.5	52		3.0									115
7/16	1445	5.39		23	78		12.0									192
8/22	0830	4.60	10000	22	100		12.0									214
9/23	0800	4.15	12100	20.0	111		11									241
10/28	1500	3.60	9040	17.0	84	0	8.8	1.5	18	15	6.5	1.5	15	0.06		179
11/24	1330	4.45	10600	9.0	76		10									202
12/18	1400	8.62	25800	8.0	85		11									219
SACRAMENTO RIVER AT SNODGRASS SLOUGH (NEAR COURTLAND) T6N, R4E, Sec. 27																
9/25	1430	4.05		22	108		14									239
10/20	1430	6.75		17.0	81	0	7.1	0.8	4.6	13	6.5	1.6	11	0.06		167
11/3	1430			14.0	81	0	7.5	0.8	7.7	13	7.3	1.7	11	0.03		163
11/21	1600			10.5	79		11	4.7	13	14	7.2	1.9	14	0.01		188
12/3	1330			9.0	75	C	7.5			17	3.5	1.2	9.2			156
12/17	1630			9.5	74	0	8.5	1.3	11	13	5.7	1.5	11	0.05		162

TABLE 217

COMPLETE OR PARTIAL ANALYSIS OF THE WATERS OF THE SACRAMENTO, SAN JOAQUIN RIVERS, THEIR TRIBUTARIES AND THEIR DELTAS - 1952

Date of sample	Time of Sample	G. H.	c.f.s.	Temp. Degrees C.	Parts per Million HCO_3	CO_3	Cl	NO_3	SO_4	Ca	Mg	K	Na	B	Total Solids	$Kx10^6$
					DELTA-CROSS CHANNEL NEAR WALNUT GROVE											
9/25	1345	1.80		25	110		18									252
10/28	1300	2.41		18.0	83	0	11	0.6	10	14	7.0	1.4	15	0.10		175
11/21	1510			12.5	78		9									182
12/17		8.75		10.0	70		9									175
					SACRAMENTO RIVER AT RIO VISTA									T4N. R3E, Sec. 31		
1/18	1500	5.40		8.2			6.0									165
2/20	1400	5.60		9.0			6.5									149
3/24	1445	7.00		10.5			14.0									239
4/22	1045	3.85		14.5	70		6.0									149
5/21	0950	2.90		16.5	45	0	5.5	0.8	8.6	9.2	5.1	0.9	6.8	0.06		122
6/16	1115			13.9	62		10.0									157.4
7/15	1440	4.05		22.0	68		8.0									161
8/18	0900	2.10		21.8	110		13.0									251
9/18	0830	3.00		19.5	164		15									326
10/28	1115	5.78		17.5	84	0	10	8.7		14	6.9	1.7	12			182
11/21	1315			12.0	82		9									190
12/15	1145	7.91		9.0	59		6									162
					PIT RIVER AT MONTGOMERY CREEK									T35N, R1W. Sec. 32		
4/20	1245			15.5	66		1.0									114
6/25	0948			17.2	81		1.0									153.3
7/15	1105	4.83	4090	20	91		4.0									166
8/12	1630	1.78	500	20	86		3.0									154
9/9	1435	4.72	3900	17.7	90		3.0									160
10/17	1250	4.70	3860	15.3	91	0	3.6	0.3	3	11	6.5	1.8	12	0.03		157
11/26	1404	4.43	3390	6.5	94		3									165
					PIT RIVER AT OANBY									T41N. R9E Sec. 10		
4/16	0930	5.85	1960	10.2	76		0									127
5/13	1015	4.43	958	15.5	83	0	1.2	0.6	49	14	4.4	2.3	9.1	0.03		149
6/11	0930	3.85	678	12.8	100		3.0									179
7/8	1325	3.06	222	26.0	106		3.0									190
9/14	1020	2.59	67	21.5	120		6.0									216
9/11	0910	2.57	62	11.8	125		1.1									222
10/16	1245	2.70	95	15.0	138	0	6.2	1.0	12	20	8.0	4.5	27	0.1		254
11/18	1115	2.88	146	2.5	124		5									244
					BURNEY CREEK AT BURNEY									T35N, R3E, Sec. 18		
4/16	1400			8.3	32		0									50
5/13	1250			10.0	2.4		0.4	0.0	0.7	4.1	1.4	0.5	1.4	0.02		38.7
6/11	1200			10.0	32		1.0									54.8
7/8	1530			21.0	52		0									88
8/14	0730			14.1	76		0.0									120
9/11	1750			10.0	72		0.5									114
10/16	1015	0.14	74	8.0	99	0	4.4	0.3	6.3	19	6.2	1.7	9.6	0.08		108
11/18	1400	0.46		4.0	66		0									113
					INDIAN CREEK AT CRESCENT MILLS									T26N. R9E. Sec. 25		
4/15	1430	9.48	4080	9.8	40		0									69
5/12	1740	8.82	3460	12.5	37	0	0.5	0.1	1.6	6.8	2.2	1.1	2.7	0.04		64.2
6/10	1410	6.18	1330	11.5	45		1.0									80.6
7/7	1700	4.02	340	22.0	67		1.0									121
8/15	0825	2.40	80	19.5	98		1.0									167
9/11	1345	2.23	61	11.5	110		2.0									194
10/17	1030	2.35		12.9	99	0	4.4	0.3	6.3	19	1.7	9.6	6.2	0.0		181
11/17	1530	3.15	180	4.0	86		5									180
					McCLOUD RIVER AT SHASTA RESERVOIR									T36N, R3W, Sec. 28		
1/17	1155			5.5			4.0									99
4/20	1830			7.4	48		0									82
6/25	1643	11.78		12.2	68		1.0									101.8
7/15	1520	11.57		14	59		8.0									112
8/12	1130	11.37		12.8	56		1.0									101
10/17	1535			11.0	57	0	1.5	0.1	1.6	10	2.9	1.5	5.8	0.03		93.9
					COTTONWOOD CREEK AT COTTONWOOD									T29N. R3W, Sec. 7		
1/9	1000	3.66		4.5			8.0									202
2/13	1800	3.80	1900	10.0			3.8									233
3/11	1700	3.41	1500	9.5			4.8									254
4/18	1000	3.50	1540	11.8	112		3.0									196
5/13	1545	2.99	13400	18.5	90	0	3.0	0.5	10	20	3.0	0.8	5.4	0.04		182
6/12	1000	2.26	444	12.0	101		1.0									199
7/9	0830	1.98	342	25.5	117		5.0									218
8/13	1400	1.30	1.74	25.7	124		6.0									229
9/10	1400	1.24	73	15.2	71		0.6									137
11/19	0930	1.58	147	8.0	122		19.0									234
12/11	1400	5.59	3400	10.0	63		1.0									158

TABLE 217

COMPLETE OR PARTIAL ANALYSIS OF THE WATERS OF THE SACRAMENTO, SAN JOAQUIN RIVERS, THEIR TRIBUTARIES AND THEIR DELTAS - 1952

Date of Semple	Time of Sample	G. H.	c.f.s.	Temp. Degrees C.	Parts per Million HCO_3	CO_3	Cl	NO_3	SO_4	Ca	Mg	K	Na	B	Total Solias	$Kx10^6$
					MILL CREEK NEAR LOS MOLINOS								T25N, R2W, Sec. 5			
7/9	1030	2.65	440	20	32		5.0									112
8/					54		11.0									153
9/22	1000		10	19.0	60		15									170
10/15	1515	-1.17	13	18.0	61	0	18	0.1	11	12	4.9	2.5	15	0.39		175
11/19	1030			7.0	62		21									217
12/11	1500	1.25	271	10.0	47		10									140
					DEER CREEK NEAR VINA								T24N, R2W, Sec. 14			
8					76		2.0									124
9/22	1040	0.21		21.0	80		3.6									138
10/15	1445	1.38		19.0	82	0	5.0	0.2	2.9	11	5.3	2.0	12	0.10		143
11/19	1100			8.0	88		4									160
12/11	1530	1.93	93	10.0	54		1									107
					STONY CREEK AT HAMILTON CITY								T22N, R2W, Sec. 36			
1/8	1445	7.72		5.0			22.0									255
2/14	0815	8.42		8.0			9.8									251
3/12	0915	7.77		9.0			14.0									300
4/18	1245	6.67		14.8	108		6.0									198
5/14	0925	6.15		18.0	126	0	9.2	0.6	15	28	9.5	0.7	8.5	0.10		252
6/12	1145	5.05		15.0	84		4.0									157
7/0	1630	4.88		23.5	164		14.0									321
8/13	1010	4.46		27.8	168		4.0									325
10/15	1030	4.84		21.0	184	0	18.0	0.2	14	36	16	0.9	17	0.31		357
11/19	1430	5.00	25	12.0	186		20.0									374
12/11	1000	8.18		11.0	132		31.0									355
					BUTTE CREEK NEAR CHICO								T22N, R2E, Sec. 36			
7/9	1455	2.34	288	23	56		8									94
8/13	1200	1.92	90	20	68		0									108
9/22	1300	1.90	170	18.5	68		1.0									109
10/22	1145	1.58	75	13.5	74	0	2.8	0.1	3.2	12	6.0	0.9	5.4	0.00		125
11/19	1220	1.70	105	2.5	72		1									125
12/12	0910	2.46	390	7.0	53		1									103
					CHICO CREEK NEAR CHICO											
7/9	1300	2.78	41	25	94		7.0									177
8/13	1240	2.70	29	24	106		3.0									189
9/22	1130	2.65	29.5	20.0	106		9.2									198
10/22	1300	2.66	29	15.5	74	0	4.8	0.6	4.9	12	5.9	1.1	9.2	0.00		140
11/19	1145	2.70	34	7.0	104		11									206
12/11	1600	5.02	486	9.0	37		2									75.1
					COLUSA TROUGH (BACK BORROW PIT) NEAR COLUSA											
7/9	1800	3.15		26.0	202		31.0									501
8/13	0850	3.88		21.4	214		27.0									501
9/10	0945	6.93	1397	18.0	192		25									465
10/15	0945	2.17	351	17.0	167	0	28	0.7	63	26	17	2.3	44	0.04		479
11/19	1600	2.88		12.0	224		43									641
12/10	1530	10.45	2220	10.0	96		31									383
					SACRAMENTO SLOUGH AT KNIGHTS LANDING								T11N, R3E, Sec. 20			
1/15	1330	35.95		8.2			6.0									143
2/21	1620	34.49		11.5			9.0									157
3/19	1030	34.87		8.8			3.2									106
4/14	1530	34.50		12.0	74		6.0									145
5/16	1020	33.67	Flooded	20	21	165	1.5	0.1	86	32	21	1.6	45	0.18		567
6/9	1200	27.65	2230	14.2	72		5.0									134
7/11	0930	18.08		23	182		12.0									338
8/22	1400	15.45	745	26.5	216		23.0									376
9/22	1600	16.0	1097	24.0	219		20									404
10/23	1045	14.63	219	17.5	251	0	38	0.4	11	36	26	2.2	34	0.15		509
11/10	1500		442	16.0	222		34									446
12/9	1145			8.0	139		35									375
					FEATHER RIVER AT OROVILLE								T19N, R4E, Sec. 5			
1/8	1245	13.18		4.0			2.0									103
2/13	1400	20.88	12000	7.0			1.1									86.9
3/12	1145	19.32	10500	8.0			1.2									96.0
4/15	1200	31.35	24800	10.4	44		0									78
5/12	1530	30.86	24100	12.5	33		0.6	0.2	1.2	5.4	2.5	0.8	1.9	0.03		56.6
6/10	1300	22.25	13500	11.8	35		0									68.5
7/7	1430	13.45		19.5	44		0									78
8/15	1030	8.85	2820	14.5	58		1.0									105
9/12	0800	8.85	2730	14.5	62		0.5									102
10/17	1330	8.55	2550	16.5	61	0	1.5	0.3	1.8	10	4.5	0.9	5.0	0.0		103
11/17	1300	9.00	2820	11.5	66		1									130
12/12	1015	12.35	4920	6.0	49		1									99.3

TABLE 217

COMPLETE OR PARTIAL ANALYSIS OF THE WATERS OF THE SACRAMENTO, SAN JOAQUIN RIVERS, THEIR TRIBUTARIES AND THEIR DELTAS - 1952

Date of Sample	Time of Sample	G. H.	c.f.s.	Temp. Degrees C.	Parts per Million										
					HCO_3	CO_3	Cl	NO_3	SO_4	Ca	Mg	K	Na	B	Total Solids	$Kx10^6$
FEATHER RIVER AT NICOLAUS															T12N, R3E. Sec. 12	
1/11	1100	30.63	13160	5.5			1.0									100
2/21	1530	37.67	28650	8.5			1.8									89.8
3/13	0930	34.13	15200	8.5			1.5									98.4
4/14	1400	40.92	44890	10.6	42		0									75
5/16	1200	38.50	33500	14.5	32	0	0.8	0.3	2.2	6.0	2.2	0.6	2.0	0.03		56.6
6/9	1300	35.44	23220	12.2	31		2.0									57.4
7/11	1115	26.73	7090	20.0	43		0									86.5
8/22	0945	21.87	1250	26.8	70		2.0									127
9/17	1200	22.58	1942	22.0	69		2.3									125
10/23	1245	23.62	2530	16.5	65	0	3.5	0.2	3.4	11	5.6	1	5.2	0.0		115
11/10	1100	23.65	2560	15.0	66		1									118
12/9	1330	28.28	8590	7.0	49		3									1110
YUBA RIVER AT MARYSVILLE															T15N, R4E, Sec. 18	
1/8	0945	49.37	3240	6.0			2.0									86
2/13	1100			7.0			1.1									64.7
3/13	1145	51.67	5410	8.8			1.2									76.0
4/14	1300	57.89	13445	11.2	34		0									63
5/12	1215	57.91	13460	11.5	24	0	0.9	0.2	3.2	5.5	1.6	0.5	1.2	0.02		49.9
6/9	1600	55.75	10330	11.5	23		1.0									43.7
7/7	0950	49.87		18.5	31		1.0									62
8/22	1230	44.07		24	48		0.0									94.0
9/16	0730	43.80		19.5	56		0.9									103
10/23	1400	44.71		18.5	60	0	2.5	0.2	7	13	4.1	1.0	4.5	0.07		113
11/10	1400	43.65		11.0	62		1									119
12/12	1400	46.24		10.0	52		1									117
YUBA RIVER AT SMARTVILLE															T16N, R6E, Sec. 14	
1/8	1030		3114	5.5			2.0									78
2/13	1145		1454				1.5									62.2
3/12	1345		4000	9.0			1.5									73.1
4/15	0900		7790	10.0	32		1.0									66
5/12	1330			12.0	25	0	0.4	0.1	2.2	5.4	1.6	0.4	1.1	0.02		47.2
6/10	0900		12067	11.0	22		0.0									43.6
7/7	1100			18.5	26		0									54
8/15	1500		725	21.6	40		0.0									77.1
9/12	1300		729.5	18.5	57		0.6									104
10/22	1545		656	19.5	60	0	2.5	0.2	7	14	3.9	0.7	4.1	0.07		85.5
11/17	1100		628	12.0	52		1									108
12/12	1230			8.0	52		0									114
SOUTH HONCUT CREEK NEAR BANGOR															T18N, R5E, Sec. 35	
7/7	1330	1.90	0.6	30	96		8.0									205
9/12	0920	0.96	0.9	17.5	192		34									475
11/17	1230	2.30	4.6	13.5	76		10									207
12/12	1115	2.62	15	8.0	53		3									128
BEAR RIVER NEAR WHEATLAND															T13N, R5E, Sec. 3	
1/11	0945	5.06	1000	5.0			1.0									124
2/21	1000	6.96	2430	6.0			2.0									80.6
3/13	1045	5.56	1390	8.9			2.5									101
4/11	1100	5.74	1590	10.8	32		2.0									71
5/16	1300	3.97	500	19.0	29	0	1.0	0.1	6.8	6.0	2.7	0.5	2.0	0.02		63.2
6/9	1400	2.80	26	16.0	64		1.0									153
7/11	1300	2.83	171	28.5	76		3.0									169
8/22	1145	2.60	16	26	106		6.0									210
10/23	1445	2.58	19	19.0	95	0	11	1.4	9.1	15	8.4	1.6	14	0.26		201
11/10	1200	2.49	10	12.0	130		102									284
12/9	1420	3.47	775	8.0	61		8									194
AMERICAN RIVER AT SACRAMENTO															T8N, R5E. Sec. 3	
1/10	1530	19.90	3240	5.0			2.0									93
2/21	1155	26.10	9240	8.0			1.5									74.3
3/14	1530	23.70	7270	9.5			3.5									84.7
4/23	1430	28.02	24250	11.2	24		0									44
5/22	1030	28.34	17500	11.2	18	0	0.5	0.3	3.1	4.4	0.7	0.7	1.2	0.01		37.3
6/18	0910	22.82	9820	14.8	23		0.0									37
7/16	1545	19.69		23.0	24		0									52
8/19	1415	17.78	694	26	40		3.0									97.9
9/23	0930	17.65	421	21.0	39		3.0									82.9
10/28	1430		251	11.6	41	0	3.7	0.2	4.0	9.9	2.0	1.0	5.0	0.03		84.6
11/24	1500	17.53	446	9.0	38		4									114
12/18	1500	18.37	1300	7.5	36		3									89.5
CLEAR LAKE, NORTH END, CLEAR LAKE OAKS															T14N, R10W, Sec. 24	
1/10	1000	6.65		6.0			7.0									318
3/11	1300	7.30		9.0			7.0									270
4/10	1000	7.40		10.0	148		4.0									249
5/15	0725	7.10		16.0	144	0	4.5	2.6	12	21	15	2.1	9.7	0.76		263
6/13	1000	5.80		14.5	155		7.0									347
7/10	1045	4.90		25.0	139		6.0									270
8/8	0900	3.70		27	160		7.0									272
9/16	1000	2.05			166		6.2									289
10/14	1730	1.6		21.0	161	0	7.5	1.0	9.2	24	16	1.8	12	0.82		285
11/20	1145			15.6	178		7									308
12/10	1300	3.20		10.0	162		6									295

TABLE 217

COMPLETE OR PARTIAL ANALYSIS OF THE WATERS OF THE SACRAMENTO, SAN JOAQUIN RIVERS, THEIR TRIBUTARIES AND THEIR DELTAS - 1952

Date of Sample	Time of Sample	G. H.	c.f.s.	Temp. Degrees C.	Parts per Million HCO_3	CO_3	Cl	NO_3	SO_4	Ca	Mg	K	Na	B	Total Solids	$Kx10^6$
					CLEAR LAKE, WEST SIDE, LAKEPORT										T14N. R8W. Sec. 28	
1/10	0900	6.65		5.0			6.0									281
2/14	1200	7.50		6.4			6.0									247
3/11	1145	7.30		9.0			6.5									253
4/9	0800	7.40		11.0	138		4.0									236
5/15	0900	7.10		16.5	142	0	4.8	1.8	10	21	14	1.9	9.3	0.72		254
6/13	0800	5.80		14.5	154		8.0									272
7/10	1200	4.90		26	136		6.0									270
8/8	1000	3.70		27	150		5.0									268
9/16	1100	2.05		22.5	162		3.5									294
10/14	1630	1.6		24.0	163	0	8.0	0.2	9.1	21	17	2.3	13	0.93		289
11/7	1030	1.58		14	184		6									310
12/10	1245	3.20		9.0	126		7									242
					CLEAR LAKE, SOUTH END, LOWER LAKE										T13N, R6W, Sec. 31	
1/10	1045	6.65		6.0			7.0									326
2/14	1330	5.0	930	7.0			9.0									340
3/11	1030	3.99	453	9.0			8.5									317
4/10	1100	3.86	412	12.5	176		6.0									292
5/14	1350	4.21	532	20.0	165	0	6.2	2.4	12	2.4	17	2.3	10	1.0		293
6/13	1215	3.81	397	17.0	164		6.0							1.1		289
7/10	0915	3.89	425	26	166		7.0							1.1		285
8/20	1100	4.07	484	27.5	170		6.0									296
9/16	1230	3.87	419	21.8	177		5.0									302
10/14	1500	1.49	26	19.7	172	0	8.0	2.4	9.1	2.5	18	2.3	14	0.96		308
11/20	1400	0.55	3.2	14	198		7									335
12/10	1130	3.20		8.0	46		3									137
					NORTH FORK CACHE CREEK NEAR LOWER LAKE										T14N, R6W, Sec. 31	
1/10	1145	3.93	522	7.5			13.0									297
2/14	1030	3.77	463	9.0			7.0									259
3/11	1400	3.29	303	9.8			10.0									283
4/10	1500	2.83	183	13.3	180		10.0									306
5/14	1245	1.87	40	22.0	229	0	20.0	0.6	18	32	27	1.4	19	1.4		428
6/12	1500	1.43	8.1	23.2	260		34.0							2.1		510
7/10	0815	1.07	0.1	23	248		49.0							3.4		558
8/20	1230	0.68	1.56	25	274		60.0									621
9/16	0900	0.64	1.2	22.0	282		71									660
10/14	1330	0.63	1	22.8	278	0	96	0.5	17	46	39	2.2	49	4.4		742
11/20		0.87	5.6	12.4	276		9									755
12/10	1030	4.55	950	9.0	107		13									238
					CACHE CREEK NEAR CAPAY										T10N, R2W, Sec. 8	
1/15	1130	11.04	8000	0.5			9.0									252
2/15	1130	7.79	3380	8.0			13.0									377
3/19	1200	8.77	4460	11.0			12.0									317
4/11	1300	3.03	430	17.2	270		41.0									566
5/9	1300	3.63	620	17.0	226	0	23.0	1.0	24	32	25	2.5	24	1.3		450
6/18	1630	3.24	464	18.6	200		20.0							1.3		388
7/3	1315	3.05	398	27	199	0	22.0	0.9	16					1.8		389
8/20	1400	3.13	490	24	188		12.0									336
9/9	1430	2.84	374	23.2	193	0	13							0.65		360
10/20	1515			20	270	0	68	0.2	25	24	41	2.5	50	1.5		659
11/14	1430			13.0	279	8	87	0.9	31	50	33	2.6	55	1.7		743
12/15	1330			9.0	202	0	55	2.2	22	32	27	2.3	42	1.2		541
					PUTAH CREEK NEAR WINTERS										T8N, R2W, Sec. 28	
1/15	0945	15.49	10200	8.8			2.0									170
2/15	1200	8.31	930	8.0			8.2									470
3/10	1515	7.89	752	10.8			10.0									460
4/11	0900	6.89	429	17	332		10.0									540
5/9	1000	6.81	408	16.6	375	0	12.0	0.3	41	30	61	1.3	18	0.56		624
6/18	1515	4.44	37	17.1	416		19.0							0.65		691
7/3	1215	4.52	42	26.6	409	0	18.0	0.7	32	33	63	1.5	23	1.0		664
8/20	1445	3.97	8	25.6	430		25.0									74.5
9/9	1330			24.7	398	16	27							1.1		760
10/20	1400			21.5	392	16	34	0.1	55	38	65	1.9	39	0.97		776
11/14	1315			12.0	395	12	28	0.8	50	41	62	1.5	38	1.1		747
12/15	1455			9.0	195	0	9.8	2.7	23	19	32	1.3	12	0.18		366
					MOKELUMNE RIVER AT WOODERIDGE										T4N, R6E, Sec. 34	
1/18	1000	14.03	1959	8.5			1.0									66
2/20	0930	12.35	1491	9.0			2.5									67.8
3/12	1500	10.94	1128	9.7			4.5									77.3
4/21	1115	17.02	2907	12.2	28		2.0									58
5/21	0900	20.93	4330	13.0	0	19	0.7	0.1	1.3	3.6	1.2	0.8	1.5	0.02		38.7
6/16	0920	16.32	2680	15.0	26		1.0									36
7/14	1430	10.72		19.8	16		1.0									40
8/20	1330	4.66	17	22	22		1.0									73.8
9/15	1630	4.50	15	20.5	27		1.7									56.1
10/23	1330	7.79	490	16.0	20	0	1.8	0.0	3.6	3.8	1.4	0.9	2.4	0.02		42.7
11/12	1130	8.04	503	14.0	22		1									55.4

TABLE 217

COMPLETE OR PARTIAL ANALYSIS OF THE WATERS OF THE SACRAMENTO, SAN JOAQUIN RIVERS, THEIR TRIBUTARIES AND THEIR DELTAS - 1952

Date of Sample	Time of Sample	G. H.	c.f.s.	Temp. Degrees C.	Parts per Million										
					HCO_3	CO_3	Cl	NO_3	SO_4	Ca	Mg	K	Na	B	Total Solids	Kx10^6
MOKELUMNE RIVER AT LANCHA PLANA															T4N, R10E, Sec. 4	
1/18	1130	5.54	2020	9.2			2.0									60
3/12	1200	4.80	1360	9.0			2.0									76.9
4/21	1300	6.85	3320	12.0	28		0									57
5/21	1500	8.28	4930	13.3	18	0	0.6	0.0	1.8	3.6	1.0	0.8	1.5	0.03		37.8
6/16	1045	5.99	2440	13.0	21		1.0									31.9
7/14	1100	4.66	1250	19.7	16		2.0									44.4
8/20	1030	3.66	642	15	10		0.0									56.4
9/16	1015	3.30	475	14.5	18		1.1									40.4
10/23	1100	3.70	665	14.0	17		1.1	0.1	3.5	3.4	1.3	0.6	2.2	0.02		35.1
11/12	1300	3.70		15	20	0	0									46.4
12/17	1130	3.73	682	10.5	19		0									50.3
COSUMNES RIVER NEAR MICHIGAN BAR															T8N, R8E, Sec. 36	
7/14	0930	3.0	206	22.4	34		2.0									760
8/20	0840	2.24	47	24	38		1.0									82.4
9/15	0900	3.24	286	20.5	42		1.8									76.9
10/23	0945	2.14	35	16.0	46	0	3.8	0.0	0.0	9.4	2.1	0.9	5.0	0.00		84.0
11/21	1510	2.37	72	8.0	40		2									79.6
12/18	0900	2.68	129	9.0	40		3									103
CALAVERAS RIVER AT JENNY LIND															T3N, R10E, Sec. 22	
1/18	1300	8.26	3100	9.0			0									101
2/20	1100	2.71	118	9.0			3.4									162
3/12	1300	5.68	1370	11.5			5.5									224
4/21	1415	1.88	13	21.0	168		8.0									309
5/21	1200	3.02	200	18.7	74	0	1.1	0.0	7.2	14	6.6	1.2	4.2	0.03		140
6/16	1205	3.22	258	18.0	78		4.0									148
7/14	1200	2.78	135	21.5	93		4.0									173
8/20	1150	2.93	174	24.0	100		3.0									197
9/15	1500	2.77	140	20.6	108		3.8									201
10/23	2200	1.93	29	18.5	123	0	6.5	0.5	7.7	25	9.7	1.6	7.4	0.06		224
11/12	1400	2.47	90	13.0	124		5									235
12/18	1200	2.23	50	10.0	101		6									228
LITTLE POTATO SLOUGH NEAR TERMINOUS																
9/24	0815	5.90		20	81		22									223
10/24	1015	6.03		16.0	83	0	15	0.5	9.1	14	7.8	1.3	13	0.00		493
11/13	0945	4.35		13.0	52		21									176
12/18	1500	7.27		10.0	55		24									210
STOCKTON SHIP CHANNEL NEAR RINDGE PUMP																
9/24	0930	2.40		21	148		97									608
10/24	1130	2.39		19.0	134	0	88	2.7	33	33	14	4.0	62	0.43		568
11/13	1100	1.00		14.0	132		94									582
12/17	0940	2.10		10.5	90		68									452
SAN JOAQUIN RIVER NEAR GARWOOD BRIDGE																
9/24	1030			22.5	144		78									541
10/24	1315			18.5	129	0	79	2.7	33	30	11	3.3	56	0.01		533
11/13	1245			14.0	134		105									626
12/17	1130	6.18		10.0	84		47									350
SAN JOAQUIN RIVER NEAR MOSSDALE BRIDGE																
9/24	1100	2.60		23	134		81									549
10/24	1400	3.00		18.5	124	0	124	1.6	45	35	15	3.3	78	0.13		692
11/13	1330	1.85		14.0	118		95									572
12/17	1300	3.82		10.5	78		52									356
OLD RIVER NEAR SOUTH TIP FABIAN TRACT (TRACY)																
10/27	1030			18.0	138	0	116	2.6	49	38	15	4.2	78	0.17		697
11/13	1420			14.0	134		110									648
12/17	1400			11.2	86		50									368
OLD RIVER NEAR CLIFTON COURT FERRY																
9/24	1220	4.35		23	124		72									490
10/27	1120	2.91		19.0	128	0	108	1.4	50	34	14	2.6	71	0.10		648
11/14	1045	3.53		14.0	126		109									644
12/16	1330	4.78		10.5	85		54									389
DELTA-MENDOTA CANAL NEAR MENDOTA															T13S, R15E, Sec. 19	
7/10	0845			27.2	104		60.0									1031
8/13	1500			25	130		118.0									694
9/10	1100			21.5	140		77									789
10/17	0900			18.5	155	0	116	0.0	77	42	17	4.1	84	0.26		766
11/19	1630			14.0	124		89									642
12/11	1100			12.0	114		105									684

TABLE 217

COMPLETE OR PARTIAL ANALYSIS OF THE WATERS OF THE SACRAMENTO, SAN JOAQUIN RIVERS, THEIR TRIBUTARIES AND THEIR DELTAS - 1952

Date of Sample	Time of Sample	G. H.	c.f.s.	Temp. Degrees C.	Parts per Million HCO_3	CO_3	Cl	NO_3	SO_4	Ca	Mg	K	Na	B	Total Solids	$Kx10^6$
					DELTA-MENDOTA CANAL AT TRACY PUMPING PLANT								T1S, R4E, Sec. 31			
7/11	1600			23	84		58.0									372
8/15	1030			22.5	112		82.0									505
9/19	1140			24.5	144		100									631
10/22	1100			18.5	124	0	92	2.2	49	31	14	2.7	6.5	0.18		594
11/13	1445			14.0	146		117									714
12/16	1430			11.0	96		71									469
					ITALIAN SLOUGH NEAR BYRON-BETHANY I.D. PUMPING PLANT (BYRON)											
9/24	1325			23.5	142		104									655
10/27	1230			18.0	144	0	115	1.6	41	33	14	3.2	81	0.71		693
11/13	1515			13.9	192		264									1210
					ITALIAN SLOUGH NEAR MOUTH											
9/24	1300			24	126		79									525
10/27	1145			17.5	120	0	84	1.5	41	30	13	2.7	64	0.05		547
11/14	1115			13.9	126		105									631
					INDIAN SLOUGH NEAR BRENTWOOD											
9/25	1200			22.5	160		130									803
10/27	1330			20	170	0	142	3.7	78	42	24	2.8	94	0.72		869
11/14	1215			13.9	324		219									1400
12/16	1215			12.0	330		171									1190
					OLD RIVER NEAR ORWOOD BRIDGE											
9/25	1030			23	122		86									568
10/27	1400			19.0	115	0	77	1.6	38	30	11	2.8	53	0.18		517
11/14	1300			14.0	126		103									630
12/16	1030			12.0	330		171									1190
					ROCK SLOUGH NEAR KNIGHTSEN											
9/24	0920			22	95		56									398
10/27	1515			19.5	124	0	86	1.3	46	32	14	3.2	60	0.17		570
11/14	1400			14.0	128		101									616
12/16	0915			9.7	116		93									621
					LINDSAY SLOUGH NEAR RIO VISTA											
10/28	1030	5.30		17.0	91	0	12	1.4	11	15	8.2	1.7	15	0.10		208
11/21	1400	5.30		12.5	90		10									202
12/15	1000	8.00		10.0	97		19									287
					SAN JOAQUIN RIVER AT FRIANT								T11S. R21E, Sec. 7			
1/15	1030	2.67	194	10.5			8.0									100
2/14	0835	7.03	3969	8.0			2.8									49.9
3/18	0800	6.33	3076	7.5			3.5									56.0
4/16	1100	9.56		10.2	20		3.0									60
5/14	1100	9.60	7940	11.2	14	0	0.6	0.4	1.2	2.7	0.3	0.7	2.3	0.07		30.1
6/9	1900	9.04	7040	12.5	12		1.0									26.2
7/8	1000	4.46	1138	13.6	11		2.0									30
8/13	1245	5.11	1720	15.5	34		0									21.4
9/10	1400	4.60	1250	16.5	13		0.3									21.2
10/15	0730	4.65	1295	16.0	12	0	1.8	0.1	1.0	2.1	0.7	0.6	2.2	0.01		24.2
11/19	1400	3.27	387	16.0	16		2									46.2
12/9	1000	2.35	128	12.0	18		2									50
					SAN JOAQUIN RIVER AT MENDOTA								T13S, R15E, Sec. 7			
2/15	1215	8.82	3620	9.0			3.0									55.6
3/19	1130	10.30	4930	10.0			3.5									76.8
4/16	0945	11.85	6570	13.7	28		2.0									58
5/14	1300	12.30	2210	16.8	19	0	1.5	0.3	1.8	2.9	1.0	0.8	3.3	0.03		38.2
6/12	1000	12.57	8130	16.0	16		2.0									33.9
7/10	0830	3.76	482	24.0	18		4.0									44.4
8/13	1440	2.86	346	24.5	19		8.0									53
9/10	1130	2.14	220	20.0	18		0.4									31.4
10/17	0930	1.18	76	20.0	2.1	0	3.4	0.4	2.2	4.2	0.9	0.6	4.3	0.02		47.1
11/19	1550	1.32		12.0	26		3									61.1
12/11	0945	2.26	376	10.0	75		94									569
					SAN JOAQUIN RIVER AT DOS PALOS								T11S, R13E, Sec. 12			
2/15	1345	10.39	3590	9.3			3.5									55.5
3/19	1230	11.25	4410	11.0			3.2									76
4/16	0845	13.02	6130	13.5	24		1.0									60
5/14	1400	13.26	6690	18.2	21	0	2.0	0.3	5.6	4.0	1.0	0.9	4.5	0.02		54.3
6/12	1115	13.06	7830	17.0	17		2.0									37
7/10	1000	3.35	79	24.0	30		6.0									79.3
8/13	1600	2.43	5.0	25.5	28		8.0									95.2
9/10	0945	2.40	3.5	20.5	32		5.2									96.2
10/17	1030	2.51	3.1	18.0	98	0	54	0.2	29	23	8.5	2.6	43	0.12		398
11/20	1000			9.0	36		12									119
12/11	1230	4.25	382	10.0	98		83									595

TABLE 217

COMPLETE OR PARTIAL ANALYSIS OF THE WATERS OF THE SACRAMENTO, SAN JOAQUIN RIVERS, THEIR TRIBUTARIES AND THEIR DELTAS - 1952

Date of Sample	Time of Sample	G. H.	c.f.s.	Temp. Degrees C.	Parts per Million HCO_3	CO_3	Cl	NO_3	SO_4	Ca	Mg	K	Na	B	Total Solids	Kx10^6
							SAN JOAQUIN RIVER AT GRAYSON										T4S, R7E, Sec. 24
1/18	1100	37.46	4960	8.0			16.0									191
2/18	1330	37.50		9.8			20.0									206
3/14	1000	36.80		10.0			35.0									307
4/14	1515	41.77		16.5	56		13.0									177
5/16	1015	43.00	12000	18.8	35	0	6.0	0.8	5.8	7.2	2.4	14	7.6	0.06		95.2
6/12	1500	43.40		20.0	35		8.0									91.4
7/11	1000	31.8		25	107		114.0									555
8/14	1230	28.6		24	144		127.0									808
9/18		28.88	860	21.0	140		79									592
10/21	1100	28.2	675	18.0	182	0	153	2.4	116	44	25	3.2	123	0.23		988
11/20	1430	27.90	575	12.0	196		161									1003
12/12	1100	29.02		12.0	172		130									862
							SAN JOAQUIN RIVER AT MAZE ROAD BRIDGE									T3S, R7E, Sec. 33
1/18	1230	27.43	70.63	8.0			16.0									159
2/19	1200	27.32	6972	9.5			22.0									204
3/17	1300	30.40	10000	10.0			18.0									199
4/14	1430	32.94		15	44		15.0									159
5/16	1130	35.86		17.2												
6/13	0850	34.45		16.0	31		5.0									96.7
7/11	1300	8.54		24.2	114		108.0									555
8/14	1415			25	160		136.0									743
9/18	0915	21.39	1400	21.0	110		71									464
10/21	1300	20.80	1125	19.0	119	0	95	1.8	48	31	13	3.2	64	0.16		604
11/20	1545	21.57	1500	12.0	84		69									429
12/12	1400	22.15		12.0	91		65									440
							SAN JOAQUIN RIVER AT VERNALIS									T3S, R6E, Sec. 13
1/18	1300	15.76	11290	8.5			14.0									149
2/19	1130	15.46	10780	9.0			17.0									184
3/14	1200	15.64	11100	11.0			22.0									205
4/14	1330	21.47	20200	14.3	38		12.0									154
5/16	1215	24.37	29000	17.0	36	0	14.0	1.1	10	8.8	3.4	1.8	9.4	0.07		136
6/13	0920	23.40	24900	17.0	32		0.2									92.3
7/11	1415	12.46		23.5	55		18.0									159
8/15	0900	8.98	1490	22.5	146		102.0									551
9/18	0815	9.24	2170	21.5	111		62									443
10/21	1450	9.10	1850	18.0	119	0	83	2.4	41	29	13	3.5	64	0.14		549
11/21	1000	9.59	2820	11.0	82		50									332
12/12	1515	10.27	3609	13.0	82		49									365
							SAN JOAQUIN RIVER AT ANTIOCH									T2N, R2E, Sec. 12
1/17	1515	2.22		8.2			37.0									324
2/19	1400	1.31		9.5			25.0									251
3/24	1330	3.27		10.2			28.0									258
4/22	0915	0.22		15.5	54		13.0									149
5/21		0.80		19.0	33	0	8.2	0.4	7.0	8.0	3.2	1.2	7.1	0.05		106
6/16	1200	1.91		15.0	35		10.0									101
7/15	1350	1.40		22.0	89		64.0									400
8/18	1000	-0.7		23.8	130		18.0									334
9/18	0930	0.26		20.0	92		76									443
10/21	1545	3.63		18.5	104	0	119	0.4	30	20	16	4.2	75	0.11		604
11/21	1200	1.16		14.7	96		124									613
12/15	1400	3.90		11.5	72		29									266
							STANISLAUS RIVER AT MOUTH									T3S, R7E, Sec. 11
1/18	1430	21.65	2625	8.5			4.0									133
2/19	1030	21.70	2830	8.9			3.0									120
3/17	1200	25.26	2740	9.0			1.5									110
4/14	1245		3452	14.7	40		0									75
5/16	1300	87.80		16.7	30	0	0.5	0.4	2.3	5.6	1.9	1.2	2.2	0.00		58.6
6/13	1030		4580	15.0	31		0									59.7
7/11	1500	20.96		20.5	40		3.0									79
8/15	0825	16.64	226	21.5	122		6.0									236
9/18	0745	16.29		20.0	121		4.7									245
10/21	1530	16.03	179	19.0	125	0	8.5	2.1	8.2	22	9.0	2.1	14	0.08		239
11/21	1045	17.25	565	10.0	76		3									148
12/12	1600	17.75		11.0	64		3									152
							TUOLUMNE RIVER AT HICKMAN									T3S, R11E, Sec. 34
1/17	1315	78.0	3110	11.0			6.0									87
2/13	1145	76.46	1715	8.8			5.4									95.5
3/13	1100	75.25	889	9.0			4.0									81.6
4/15	0800	79.46	4760	11.5	22		2.0									64
5/15	1100	81.20	7120	12.6	17	0.0	0.6	0.4	1.2	2.8	1.2	0.7	1.6	0.01		32.3
6/9	1330	81.00	6830	15.0	12		2.0									32.4
7/7	1300	73.95		23	41		36.0									1851
8/11	1300	73.05	48	25	106		110.0									537
9/18	1215	73.56		22.0	44		54									266
10/14	1200	77.63	2750	18.5	32	0	19	0.0	2.0	7.4	2.8	1.3	11	0.00		114
11/17	1245	75.13		14.0	24		11									108
12/8	1230	75.25		12.2	27		11									94

TABLE 217

COMPLETE OR PARTIAL ANALYSIS OF THE WATERS OF THE SACRAMENTO, SAN JOAQUIN RIVERS, THEIR TRIBUTARIES AND THEIR DELTAS - 1952

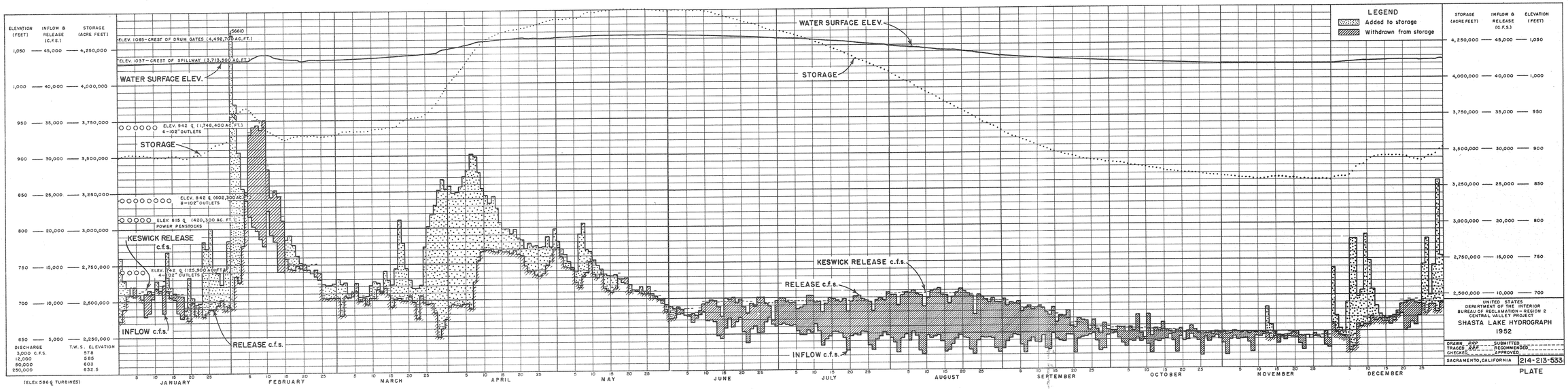
Date of Sample	Time of Sample	G. H.	c.f.s.	Temp. Degrees C.	Parts per Million										
					HCO_3	CO_3	Cl	NO_3	SO_4	Ca	Mg	K	Na	B	Total Solids	$Kx10^6$
					TUOLUMNE RIVER AT TUOLUMNE CITY							T4S, R8E, Sec. 12				
1/18	1200	36.3	4200	8.0			16.0									122
2/18	1400	33.95	2230	9.4			25.0									181
3/14	0900	37.70	4050	9.5			15.0									128
4/14	1545	39.80	5340	12.5	30		9.0									93
5/16	1045	42.25	7940	14.7	20	0	5.4	0.6	1.4	3.6	1.9	0.9	3.8	0.01		54.0
6/12	1535	41.30	6190	15.5	20		7.0									59.8
7/11	1115	29.84	800	7.3	114		80.0									446
8/14	1325	28.80	470	24	155		116.0									589
9/18	1100	28.78	512	21.5	73		55									311
10/21	1200	28.80	901	18.0	104	0	11	3.4	6.7	16	4.8	2.1	24	0.22		220
11/20	1500	31.60			44		30									183
12/12	1200	31.89			44		27									181
					TUOLUMNE RIVER AT DON PEDRO DAM							T3S, R14E, Sec. 3				
1/17	1200	10.1	3290	7.5			4.0									72
2/13	1320	9.20	2500	9.0			1.6									71.4
3/13	1300	10.30	3470	9.6			10.0									154
4/15	0945		6880	9.5	24		0									44
5/15	1330	15.80	10120	14.8	15	0	0.4	0.6	1.3	2.2	1.1	0.6	1.3	0.01		26.6
6/9	1515		9220	14.0	8		1.0									24.4
7/7	1430	9.99	3110	14	12		0									29
8/11	1430	8.60	2000	20	12		0									20.5
9/18	1345		1760	18.5	14		0.2									27.9
10/14	1300	7.50	1210	18.5	14	0	2.0	0.8	1.5	2.4	0.7	1.0	2.4	0.00		32.5
11/17	1400	7.70	1360	14.5	12		0									31.9
					MERCED RIVER AT STEVINSON							T6S, R9E, Sec. 36				
1/18	0900	7.74	1796	7.0			10.0									135
2/18	1200	6.63	1374	9.4			10.0									144
3/17	1400	9.63	2665	10.0			16.0									141
4/15	1500	9.98	2840	15.0	54		6.0									117
5/16	0900	15.40	6440	15.0	28	0	1.8	0.4	3.3	6.4	1.2	1.3	2.7	0.00		58.8
6/12	1400	12.11	4300	16.7	26		2.0									51.2
7/10	1230			23.0	64		11.0									156
8/14	1045	2.66	238	22	82		29.0									268
9/19	0900	2.64	271	21.0	89		17									214
10/17	1400	2.16	220	18.5	118	0	10	0.0	22	28	11	0.8	8.4	0.14		251
11/20	1250	1.72	156	13.0	136		21									310
12/11	1430	1.80	179	13.2	131		16									290
					MERCED RIVER AT EXCHEQUER DAM							T4S, R15E, Sec. 23				
1/17	0945	3.62	1340	8.5			4.0									86
2/13	1500	3.78	1460				3.0									94.5
3/13	1430	3.76	1440	9.0			2.8									92.4
4/15	1145	3.98	1600	10.5	50		1.0									93
5/15	1430	9.71	8100	14.7	22	0	0.6	0.5	2.1	4.2	1.3	0.7	1.8	0.02		42.9
6/9	1645	9.38	7610	13.8	14		0.0									34.1
7/7	1615	4.52	2010	13	16		1.0									307
8/11	1545	4.19		16	16		0.0									31.3
9/18	1500	3.33	1174	20.0	18		0.3									60.3
10/14	1430	0.45	64	19.0	32	0	1.4	0.5	1.7	7.2	1.9	0.6	3.1	0.03		30.5
11/17	1530	0.50		16.0	34		2									77.9
12/8	1430	0.05	23	13.0	39		2									90.3
					BEAR CREEK NEAR STEVINSON							T7S, R10E, Sec. 36				
8/14	0945	1.81		22.5	171		10.0									339
10/17	1300	2.96		18.0	149	0	12	1.2	8.2	22	8.0	3.3	2.8	0.05		282
					KINGS RIVER ABOVE NORTH FORK							T12S, R26E, Sec. 27				
3/18	1030	3.22	1300	6.7			1.2									84.9
4/17	1045	4.28	2540	10.8	24		0									46
5/13	1630	5.78	6110	11.0	10	0	0.4	0.6	1.1	2.1	0.3	0.6	1.1	0.02		19.9
6/10	0955	6.06	7060	9.0	16		0									26.9
7/8	1400	5.45	5050	12.2	11		1.0									21.8
8/12	0935	3.52	1630	17.5	18		0									30.8
9/12	0915	2.09	498	13.0	21		0.3									43.2
10/15	1000	1.36	232	16.5	30	0	2.0	0.2	4.9	8.0	0.8	1.1	3.8	0.03		66.0
11/18	1025	1.60	308	6.5	28		2									69.8
12/9	1330	2.91	1060	6.0	26		1									67.6
					KINGS RIVER AT PIEDRA							T13S, R24E, Sec. 8				
1/15	1300	9.58		11.0			4.0									86
2/14	1115	4.07	1396	8.8			2.1									79.7
3/18	1200	5.67	3061	10.0			2.5									112
4/17	0845	6.94	4952	12.7	20		0									65
5/13	1500	9.67	11670	15.0	13	0	1.0	0.1	1.4	2.6	0.7	0.9	1.1	0.12		27.1
6/10	1225	10.55	14470	13.0	10		0									23.7
7/8	1600	9.41	10090	17.8	14		2.0									24.3
8/12	1130	4.32	1618	21.5	22		0									38.5
9/12	1130	2.65	492	17.5	30		0.5									57.8
10/15	0830	2.65	492	18.0	42	0	2.8	0	3.5	9.0	1.8	1.0	5.0	0.04		81.0
11/18	1215	2.06		8.0	38		3									86.2
12/9	1200	2.79	686	11.6	42		2									99.1

TABLE 217

COMPLETE OR PARTIAL ANALYSIS OF THE WATERS OF THE SACRAMENTO, SAN JOAQUIN RIVERS, THEIR TRIBUTARIES AND THEIR DELTAS - 1952

Date of Sample	Time of Sample	G. H.	c.f.s.	Temp. Degrees C.	Parts per Million										
					HCO_3	CO_3	CL	NO_3	SO_4	Ca	Mg	K	Na	B	Total Solids	Kx10^6
KINGS RIVER AT PEOPLE WEIR												T17S, R22E, Sec. 1			
1/15	1300	9.58		11.0			4.0									86
2/15	0915	4.38	765	9.0			2.4									100
3/19	0930	9.14		11.0			2.0									119
4/18	0945	6.88		15.5	32		0									57
5/12	1600	13.21		14.7	15	0	0.5	0.3	1.9	3.2	0.5	1.0	1.6	0.06		27.8
6/11	1325	15.61		15.0	14		0									27.5
7/8	1500	9.72		18.0	14		3.0									27.4
8/13	0745	4.51		23	42		1.0									75.2
9/19	1530	3.22		20.5	74		0.8									145
10/16	1500			20	69	0	5.5	1.0	5.4	14	3.1	1.9	9.8	0.03		139
11/19	1130	3.90		10.0	60		4									124
12/10	1600	4.61		8.0	47		3									108
KAWEAH RIVER AT THREE RIVERS												T17S, R28E, Sec. 33			
1/15	1530	7.38		7.0			10.0									93
2/14	1400	5.09	562	9.2			1.8									98
3/18	1430	5.95	1110	9.5			2.5									128
4/17	1545	6.36	1520	15	34		0									66
5/13	1130	7.83	3240	11.2	17	0	0.8	0.4	1.6	4.5	0.3	0.7	1.3	0.01		35.4
6/10	1500	7.24	2580	13.0	19		0									36.9
7/8	1800	6.26	1380	19.0	22		4.0									44
8/12	1415	4.59	400	24	38		2.0									78.6
9/11	1230	3.85	138	19.0	56		2.5									105
10/15	1430	3.50	68	14.8	1.098	0	0.226	0.0	3.5	17	1.6	1.5	8.4	0.01		138
11/18	1445	3.83	132	9.0	68		6									143
12/10	0900	4.24	251	6.0	59		4									127
TULE RIVER NEAR PORTERVILLE												T21S, R28E, Sec. 25			
7/9	1000	2.72	130	19.5	101		3.0									174
8/12	1600	1.95	46	25	178		8.0									312
9/11	1015	1.77	30.8	17.5	224		8.2									375
10/16	0830	1.45	12	17.0	236	0	13	0.1	5.8	30	22	4.0	22	0.12		402
11/18	1600	2.17	69	10.0	230		13									396
12/10	1100	2.56	110	8.0	165		9									309
KERN RIVER AT BAKERSFIELD												T29S, R28E, Sec. 2			
1/16	0900	2.59		7.0			10.0									205
2/14	1630	1.95	520	9.0			7.5									191
4/18	0730	3.90		12.5	50		3.0									125
5/12	1820	6.32	6550	16.2	40	0	2.0	0.6	4.8	8.0	1.5	1.6	6.2	0.21		82.5
6/10	1730	4.85	6000	15.0	29		1.0									63.2
7/9	1200	3.02		19.2	16		4.0									65
8/12	1745	2.10		23.5	56		4.0									116
9/11	0815	1.90		16.5	68		6.3									163
10/16	1030	2.3		17.0	89	0	8.8	0.2	17	20	1.6	1.6	20	0.14		202
11/19	0915	1.90		6.5	120		10									261
12/10	1300	2.61		8.0	102		7									228

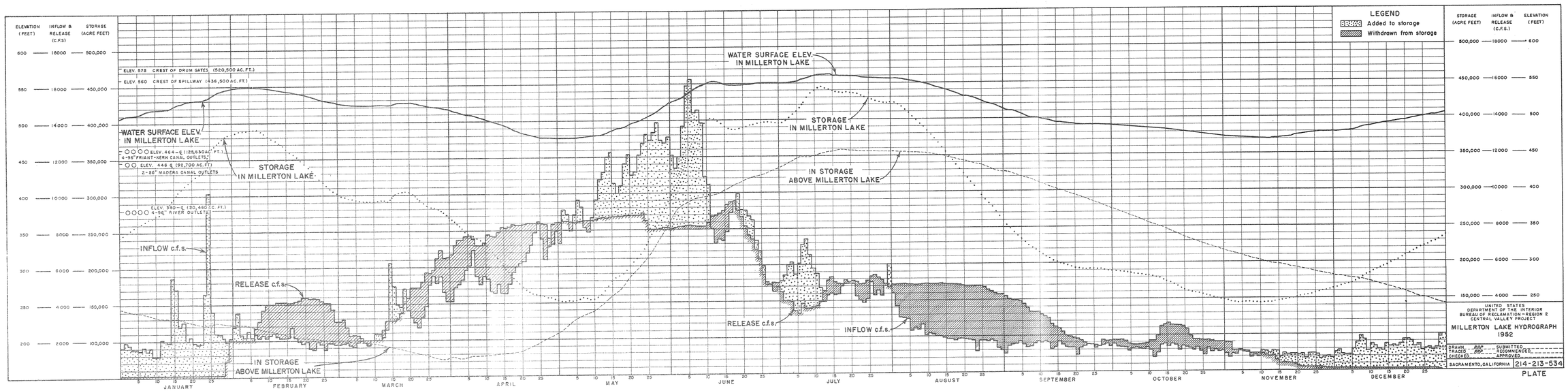
PLATE 2



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION - REGION 2
CENTRAL VALLEY PROJECT

SHASTA LAKE HYDROGRAPH
1952

DRAWN RRP SUBMITTED
TRACED RRP RECOMMENDED
CHECKED APPROVED
SACRAMENTO, CALIFORNIA 214-213-533
PLATE



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION - REGION 2
CENTRAL VALLEY PROJECT

MILLERTON LAKE HYDROGRAPH
1952

DRAWN RRP SUBMITTED
TRACED RRP RECOMMENDED
CHECKED APPROVED
SACRAMENTO, CALIFORNIA 214-213-534
PLATE