

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

UNITED STATES SECTION

JOSEPH F. FRIEDKIN, *Commissioner*
El Paso, Texas
WILLARD L. ERICSON, *Resident Engineer*
Yuma, Arizona
JOSEPH F. BURKHOLDER, *Resident Engineer*
San Diego, California

MEXICAN SECTION

DAVID HERRERA JORDAN, *Commissioner*
Cd. Juarez, Chihuahua
ALFONSO CASTRO R., *Resident Engineer*
Mexicali, Baja California

WESTERN WATER BULLETIN 1975

Flow of
The Colorado River
and other
Western Boundary Streams
and
Related Data

COLORADO RIVER
TIJUANA RIVER
SANTA CRUZ RIVER
SAN PEDRO RIVER
WHITEWATER DRAW

1975

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FOREWORD

This bulletin is the sixteenth annual compilation of stream discharges and other hydrographic data relating to the international aspects of the Colorado River below Imperial Dam, the Tijuana River and other streams crossing the western land boundary of the United States and Mexico. The compilation was prepared jointly by the United States and Mexican Sections of the International Boundary and Water Commission, solely for the purpose of presenting statistical data relating to stream flow and kindred subjects for the Colorado River from Imperial Dam to the Gulf of California, the Tijuana River and its important tributaries in the United States and Mexico, and other streams, including the Alamo and New Rivers which cross the California-Baja California boundary, and the Santa Cruz River and Whitewater Draw which cross the Arizona-Sonora boundary. This volume contains the information for the year 1975.

Stream gaging on the Colorado River below Imperial Dam began in 1902 when the station at Yuma, Arizona was established. Stage records were obtained at this station from January 1878 until December 1973, when it was discontinued. Continuous stream gaging on the Tijuana River and its important tributaries in the United States and in Mexico began in 1936. Each government operates the gaging stations located within its own country.

Colorado River below Imperial Dam

Below Imperial Dam, the Colorado River flows southward 10 miles to the mouth of the Gila River, thence westward 11 miles to Pilot Knob Mountain, and south 1 mile to the point where the northerly international land boundary, between California and Baja California, intersects the river. From this point the river continues to flow southward and forms the boundary between the United States and Mexico for a distance of about 22 miles to the point where the southerly international land boundary between Arizona and Sonora intersects the river. From this point the river continues to flow southward about 90 miles to discharge into the Gulf of California.

The ordinary flows of Colorado River below Imperial Dam are largely controlled by releases at Hoover Dam, completed in 1935. The releases are further regulated at Davis Dam, completed in 1950, and by Parker and Imperial Dams, completed in 1938. Small amounts of runoff may occasionally be contributed to the flow in the lower river from the usually dry arroyos draining the 10,900 square miles along the river from Hoover Dam to the mouth of the Gila River, not including 5,500 square miles in the Bill Williams River watershed. In addition, flows ranging from usually minor amounts to infrequent torrential floods may enter the lower Colorado River from the Bill Williams River and from the Gila River, draining about 7,300 square miles below Painted Rock Dam and Reservoir, completed in January 1960.

At Imperial Dam, diversions are made to Gila Gravity Main Canal and All-American Canal for irrigation projects in Arizona, including the Yuma Valley, Gila and Wellton-Mohawk projects, and in California, including the Imperial Valley, Coachella Valley and Reservation Division of Yuma Project. Also, under the provisions of the 1944 Water Treaty, there may be diverted to the All-American Canal at Imperial Dam for delivery to Mexico in the Alamo Canal, or substitute canal, at the northerly boundary, a portion of Mexico's guaranteed annual allotment of waters of the Colorado River. No such diversions were made in 1975.

Below Laguna Dam, measured and unmeasured flows are returned to the river principally as waste and drainage water from the irrigation projects in the United States. Waste and drainage waters from irrigation projects in the United States also cross the boundary into Mexico near San Luis, Arizona without returning to the river in the United States.

In the limitrophe section of the river, 1.1 miles downstream from the northerly boundary, Morelos Dam, the principal diversion structure for Mexico, was completed and placed in operation on November 8, 1950. Since that date almost all the Colorado River flows that cross the northerly boundary (except emergency deliveries to Tijuana beginning in August 1972) have been diverted to the Alamo Canal at Morelos Dam.

Tijuana River Basin

The total drainage area of the Tijuana River basin is 1,731 square miles, of which 27 percent lies in the United States and 73 percent in Mexico. This river is formed by the principal tributaries, Cottonwood Creek, which rises in the United States and Rio de las Palmas, which rises in Mexico. Cottonwood Creek crosses the international land boundary 21 miles from the Pacific Ocean to join the Rio de las Palmas in Mexico. From the confluence of these tributaries, the Tijuana River flows northwesterly 5 miles to cross the land boundary into the United States near San Ysidro, California, and Tijuana, Baja California, and then flows westerly 6 miles to discharge into the Pacific Ocean 2 miles north of the boundary. The flow of Cottonwood Creek is partially controlled by Barrett and Morens Reservoirs in the United States and the flow of the Rio de las Palmas is partially controlled by Rodriguez Reservoir in Mexico.

Whitewater Draw near Douglas, Arizona

Whitewater Draw rises in the United States and flows south into Mexico crossing the international boundary near Douglas, Arizona, eventually discharging into the Gulf of California through the Yaqui River in Mexico. The total drainage area above the Douglas Gaging Station is 1,023 square miles. A number of mountain streams in the upper reaches of the basin are diverted for irrigation, but they would normally sink or go to ground water before reaching the main water course.

FOREWORD

San Pedro River at Palominas, Arizona

The San Pedro River rises in Mexico and flows north into the United States crossing the boundary near Palominas, Arizona, and thence northwesterly into the Gila River. The river in the vicinity of the international boundary drains an area of 741 square miles of which 649 square miles are in Mexico.

Santa Cruz River near Nogales and Lochiel, Arizona

The Santa Cruz River rises in the United States and flows south into Mexico crossing the international boundary near Lochiel, Arizona, and returns to the United States near Nogales, Arizona, eventually discharging into the Gila River southwest of Phoenix, Arizona. The drainage area of the Santa Cruz River above Nogales station is 533 square miles. Of this amount, 348 square miles lie in Mexico. There are a few ground water irrigation diversions above the Lochiel station in Arizona and an unknown amount of water diverted for irrigation in Mexico.

Acknowledgments

Other agencies which have contributed to the data published herein include the Bureau of Reclamation and the Geological Survey of the U. S. Department of the Interior; the National Weather Service, Department of Commerce; the Yuma County Water Users' Association; the Imperial Irrigation District; the city of San Diego, California; the Otay Municipal Water District; and the Ministry of Hydraulic Resources of Mexico. Specific notation is made of each of the above-named agencies, where the data appear. The courtesy and cooperation of those who have made these contributions are acknowledged with appreciation.

Units of Measure

Data collected by the Mexican Section are computed and published in a Spanish version of the water bulletin in metric units. The Mexican data are converted and reported in this bulletin in English units. Conversion factors conform generally to those in the National Bureau of Standards Miscellaneous Publication 285 "Units of Weight and Measure (United States Customary and Metric) - Definitions and Tables of Equivalents". However, for convenience some of the factors have been shortened and modified to facilitate conversion, reconversion to the original units when necessary, and checking of data. Conversion of the mean daily discharges, the monthly average discharge, and the monthly and annual volumes from metric to English units is direct. For this reason the monthly average discharge in cubic feet per second and monthly volumes in acre-feet shown for gauging stations operated by the Mexican Section cannot necessarily be obtained in the usual manner from the total monthly flow in second-foot days. For the same reason, evaporation and rainfall data, when totaled, may not be equivalent to the direct conversion from metric to English units. The following factors have been used for data in this bulletin:

<u>METRIC UNITS</u>		<u>ENGLISH UNITS</u>
	<u>LENGTHS</u>	
1 Centimeter		0.393701 Inch
1 Meter		3.28084 Feet
1 Kilometer		0.621371 Mile
	<u>AREAS</u>	
1 Square Meter		10.76391 Square Feet
1 Hectare		2.471054 Acres
1 Square Kilometer		0.386102 Square Mile
	<u>VOLUMES</u>	
1 Cubic Meter		61023.74 Cubic Inches
1 Cubic Meter		35.31467 Cubic Feet
1 Cubic Meter		1.35795 Cubic Yards
1000 Cubic Meters		0.81071 Acre-Foot
1 Liter		0.264172 U.S. Gallon
	<u>WEIGHTS</u>	
1 Kilogram		2.204623 Pounds
1 Metric Ton		2204.623 Pounds
1 Metric Ton		1.102311 Short Tons (2000 lbs.)

GENERAL HYDROLOGIC CONDITIONS FOR 1975

Colorado River

Normally, there is no measurable amount of runoff from the portion of the Colorado River basin in the United States and Mexico below Hoover Dam, not including Bill Williams and Gila Rivers. There was no significant amount in 1975. The average seasonal (October 1974-September 1975) rainfall over the upper basin, as gaged at 13 index stations, was about 12.5 inches compared to a seasonal average of about 14.0 inches for the 53 seasons (1923-1975). In the lower basin of the Colorado River in Mexico, from Morelos Diversion Dam to the Gulf of California, the average precipitation (1975) measured at 6 index stations was 0.87 inches compared to an average of 2.40 inches during the last 17 years (1959-1975).

The flow of the Colorado River reaching Imperial Dam was 6,160,700 acre-feet, about 76% of the 41-year average (1935-1975) of 8,114,466 acre-feet. At the northerly international boundary, the total flow of the river during 1975 was 1,395,899 acre-feet, about 39% of the 1935-1975 average of 3,612,563 acre-feet. At the southerly international boundary, the flow during 1975 was 150,501 acre-feet, or about 5% of the 1935-1975 average of 2,765,743 acre-feet. The total flow of the Colorado River reaching the M. C. Rodriguez gaging station, 24.5 miles downstream from the southerly international boundary, and 4.5 miles upstream from the Sonora-Baja California railroad bridge, was 64,785 acre-feet in 1975, about 6% of the 1951-1975 average of 1,020,077 acre-feet.

The total of all flows of the Colorado River entering Mexico in 1975 amounted to 1,727,573 acre-feet, 41% of the 1935-1975 average of 4,216,749 acre-feet, as measured 1) in the Colorado River at the northerly international boundary, 2) in the Wellton-Mohawk Main Outlet Drain Extension near Morelos Dam, 3) in the wasteways that discharge into the limittrophe section of the river from the United States bank, 4) in the canal which discharges waste and drainage waters from the Yuma Project across the southerly land boundary into Mexico near San Luis, Arizona, and 5) emergency delivery of Colorado River water for use in Tijuana, Baja California.

No flood peaks of importance occurred in streams of the lower Colorado River basin during 1975. A maximum instantaneous flow of 5,760 second-feet occurred in the Colorado River at the northerly boundary station on April 11, 1975.

Stored waters at the end of the year in the three major reservoirs on the Colorado River below Lee's Ferry amounted to 22,179,600 acre-feet, 78% of the usable capacity of 28,538,400 acre-feet. The greater part (20,092,000 acre-feet) of the storage was contained in Lake Mead (Hoover Dam). There were no reported shortages of Colorado River water for irrigation during 1975 due to drought or accident to the irrigation system.

The total reported acreage irrigated from waters of the Colorado River below Imperial Dam in 1975 was 1,151,708 acres; 681,702 acres in the United States and 470,006 acres in Mexico. An estimated 37% of acreage in Mexico is served by pumping from ground water.

The suspended sediment load passing the northerly boundary station in 1975 was 82.7 acre-feet, about 34% of the 1956-1975 average of 244 acre-feet.

Tijuana River Basin

During 1975, the temperatures at Barrett Dam, California (elevation 1,750 feet) in the upper portion of the basin in the United States averaged 59.1 degrees, 2.1 degrees below the 45-year mean. In the extreme upper portion of the basin in Mexico at San Juan de Dios, Baja California (elevation 3,280 feet), the recorded temperatures during the year averaged 54 degrees, 2° below the mean of many years, and at Rodriguez Dam, Baja California (elevation 459 feet), the recorded temperatures averaged 63 degrees, equal to the normal of many years.

At Barrett Dam in the upper portion of the basin in the United States, the recorded precipitation was 13.18 inches, 77% of normal, and at Chula Vista near the lower end of the basin, 6.42 inches, or 69% of normal. The recorded precipitation at San Juan de Dios in the upper portion of the basin in Mexico, was 9.96 inches, approximately 70% of the normal during the 20-year period, and at Rodriguez Dam in the lower portion of the basin in Mexico, 7.68 inches, 97% of the 38-year average.

Runoff in the basin during 1975 averaged less than 5% of normal. Above Morena Reservoir the runoff was 376 acre-feet, or about 7% of the 39-year 1937-1975 mean of 5,397 acre-feet. At Rodriguez Reservoir, the runoff was 152 acre-feet, or about 1.2% of the 38-year mean of 12,500 acre-feet.

The flow of the Tijuana River at the international boundary was 981 acre-feet during 1975, and the flow in the Tijuana River near Nestor was 49.9 acre-feet.

Whitewater Draw

During 1975, the average annual temperature over the watershed was slightly below normal, and the annual precipitation was below normal. Runoff for the year at the gaging station near Douglas, Arizona, of 5,188 acre-feet was about 76% of average.

GENERAL HYDROLOGIC CONDITIONS FOR 1975

San Pedro River

During 1975, the average annual temperature was below normal. The annual precipitation, as measured at Coronado National Monument Headquarters, was 99% of the 1961-1975 mean of 19.45 inches. The stream flow at the international boundary was 15,937 acre-feet, 76% of the 1951-1975 normal.

Santa Cruz River

During 1975, the average annual temperature over the watershed was somewhat below normal, and the annual precipitation was about 95% of the 37-year 1939-1975 mean. Runoff measured at the Nogales gaging station where the stream re-enters the United States was 20,850 acre-feet. The total runoff for the year measured at the gaging station near Lochiel, Arizona, where the stream enters Mexico from the United States was 1,355 acre-feet. Therefore, neglecting stream flow depletions in Mexico, the records indicate a contribution of about 19,495 acre-feet from the loop of the river lying in Mexico, or approximately 94% of the flow reaching the Nogales station.

Alamo and New Rivers

During 1975 the average annual temperature over the drainage area of the Alamo River, as recorded at El Centro, California, was 69.8 degrees, 2.4 degrees below normal; and over the drainage area of the New River, as recorded at Mexicali, Baja California, it was 70.0 degrees, 2 degrees below the mean of many years.

At El Centro, the precipitation was 0.97 inches, about 41% of the 45-year average, and in Mexicali, the annual precipitation was 2.80 inches, 96% of the 50-year average. The total flow of the New River at the international boundary in 1975 was 99,789 acre-feet, which was about 127% of the 1943-1975 normal.

Salton Sea

During 1975, the average annual temperature around the Salton Sea was about 96% of the long-term average, while the annual precipitation recorded at Brawley, California was approximately 61% of the long-term mean of 2.29 inches. The water surface of the Salton Sea remained more or less the same during the year. The maximum stage, 230.2 feet below mean sea level, was recorded on June 1-16, inclusive. The minimum stage, 232.0 feet below mean sea level, was recorded December 12-19.

EMERGENCY DELIVERIES OF COLORADO RIVER WATERS FOR USE IN TIJUANA, BAJA CALIFORNIA

DESCRIPTION: Delivery water is measured at a metering station located adjacent to the international boundary near Tijuana, and approximately 2.5 miles east of International Boundary Monument #253. The metering station consists of two venturi tubes, 20 inches and 18 inches, and two BIF recorders.

RECORDS: Based on totalizer readings read at approximately 8:00 a.m. each day and on continuous chart readings furnished by the Otay Municipal Water District. Records available since August 13, 1972. These records reflect a 12% loss incurred in conveying the water from the point of diversion above Parker Dam to the international boundary.

REMARKS: Emergency deliveries of Colorado River waters for use in Tijuana began August 13, 1972 pursuant to Minute No. 240 of this Commission. The deliveries are conveyed approximately 323 miles using the following conveyance works: The diversion works from Lake Havasu above Parker Dam and the Colorado River Aqueduct, the San Diego Aqueducts, the Otay Reservoir and facilities of the Otay Municipal Water District. Furthermore, the following additional facilities were constructed as provided in Minute 240; new pumps at the Otay Pumping Station, approximately 5,800 feet of 24-inch pipe and various valves, meters, and accessories near the international boundary. The facilities were developed to circumvent serious water shortages predicted for Tijuana.

Mean Daily Discharge in Second-Foot 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	13.4	11.1	11.4	3.7	11.3	13.4	13.1	13.7	11.0	8.7	11.8	11.6
2	13.3	11.1	11.6	0	11.0	13.2	13.0	13.5	10.5	10.9	11.8	11.8
3	13.4	11.1	11.4	0	11.2	13.2	13.1	13.9	10.8	11.4	11.6	11.7
4	13.4	11.2	11.1	6.7	11.1	13.2	13.3	12.7	10.6	11.4	11.6	11.8
5	13.5	11.1	11.2	11.2	10.6	13.2	13.1	11.5	10.6	11.4	11.6	11.8
6	13.5	11.2	11.3	11.2	11.1	13.2	13.4	11.2	10.8	11.7	11.4	11.8
7	13.5	11.1	11.2	11.2	11.0	13.4	13.1	11.0	10.9	11.7	11.7	11.9
8	13.5	11.1	11.2	11.2	10.8	13.5	13.1	11.1	10.5	11.5	11.5	11.6
9	13.4	11.0	11.2	11.2	11.0	13.5	13.2	11.0	10.6	11.4	11.8	11.5
10	13.4	10.9	11.1	11.2	10.8	13.3	13.2	11.2	10.4	11.5	11.5	11.6
11	13.6	10.9	11.1	11.2	10.8	13.3	13.2	11.5	10.4	11.7	11.5	11.6
12	13.6	11.1	11.0	11.2	11.0	13.3	13.1	11.1	10.3	11.7	11.6	11.9
13	10.5	10.9	11.2	11.0	11.0	13.3	13.4	11.0	10.4	11.5	11.4	11.6
14	7.6	11.0	11.2	11.0	10.8	13.5	13.1	11.0	10.5	11.5	11.5	11.8
15	7.4	11.0	11.0	11.2	11.1	13.5	13.2	11.1	11.8	11.5	11.5	11.8
16	7.6	11.0	11.0	11.0	11.0	13.3	13.2	11.0	11.9	11.4	11.7	11.8
17	7.4	11.1	11.1	11.2	11.1	13.2	13.3	11.1	11.1	11.3	11.5	11.4
18	10.1	13.9	11.2	11.4	11.1	13.2	13.2	10.8	11.0	11.6	11.4	11.3
19	11.6	15.3	11.1	11.0	11.1	13.3	13.2	10.7	11.0	11.7	11.7	11.2
20	10.7	15.2	11.1	11.1	11.0	13.3	13.5	10.8	11.1	11.4	11.4	11.3
21	11.3	12.7	11.1	11.0	11.0	13.5	13.2	10.9	11.2	11.4	11.4	11.2
22	11.4	11.4	11.1	10.8	11.0	13.5	13.2	10.9	11.2	11.4	11.4	11.2
23	11.4	11.4	11.2	10.6	11.0	13.3	13.2	11.0	10.9	11.3	11.7	11.2
24	11.4	11.4	7.9	11.1	11.1	13.3	13.5	11.2	10.9	11.3	11.6	11.2
25	11.4	11.4	8.4	10.9	11.0	13.3	13.7	7.8	11.0	11.4	11.5	11.2
26	11.1	11.2	11.1	11.1	11.1	13.2	13.7	3.2	7.5	11.8	11.5	10.9
27	11.2	11.2	11.1	11.1	12.2	13.1	13.9	3.4	5.7	11.0	11.9	11.3
28	11.2	11.2	11.2	11.1	13.4	13.3	13.7	3.2	5.8	12.1	11.7	11.1
29	11.0		11.2	10.7	13.3	13.3	13.7	6.7	5.7	11.6	11.8	11.1
30	11.2		11.2	10.9	13.3	13.3	13.7	11.5	5.7	11.7	11.9	11.0
31	11.2		11.2		13.2		13.7	11.1		11.7		11.0
Sum	358.2	324.2	340.4	298.2	351.7	399.4	413.2	321.8	301.8	353.6	347.9	355.2
Current Year 1975								Period 1973-1975				
Month	Extreme Gage Feet		* $\bar{\phi}$ Extreme Second-Foot				Average Second-Foot	Total	Acre-Foot			
	High	Low	Day	High	Day	Low	Acres-Foot	Average	Maximum	Minimum		
Jan.			†11	13.6	†15	7.4	11.6	710	720	846	603	
Feb.			19	15.3	†10	10.9	11.6	643	678	765	626	
Mar.			2	11.6	24	7.9	11.0	675	736	849	675	
Apr.			13	11.4	† 2	0	9.9	591	728	825	591	
May			28	13.4	† 5	10.8	11.3	698	784	833	698	
June			† 8	13.5	27	13.1	13.3	792	826	986	700	
July			27	13.9	2	13.0	13.3	820	874	1,021	783	
Aug.			3	13.9	†26	3.2	10.4	638	802	907	638	
Sept.			16	11.9	†27	5.7	10.1	599	704	768	599	
Oct.			28	12.1	1	8.7	11.4	701	790	852	701	
Nov.			†27	11.9	† 6	11.4	11.6	690	766	823	690	
Dec.			† 7	11.9	26	10.9	11.5	705	710	814	610	
Yearly				15.3		0	11.4	8,262	9,118	9,687	8,262	

$\bar{\phi}$ Mean daily

† And other days

* Includes 12% losses

RESERVATION MAIN DRAIN NO. 4 (CALIFORNIA DRAIN)

DESCRIPTION: Water-stage recorder (digital) located 1,000 feet upstream from railroad culvert and one mile northwest of Yuma, Arizona. Discharge measurements are made from a footbridge immediately below the gage. The drainage canal discharges into the outfall channel of the Yuma Main Canal Wasteway 200 feet downstream from the spillway structure, and thence into the Colorado River on the right bank, 1,000 feet upstream from Colorado River below Yuma Main Canal Wasteway, and 6.5 miles upstream from the northerly international boundary. Prior to October 1955, published as "California Drainage Canal near Yuma, Arizona."

RECORDS: Based on current meter measurements and a continuous record of gage heights. Records are computed and furnished by the U. S. Geological Survey. Records available: Monthly discharge, January 1913 to April 1920, October 1921 to March 1925, and January 1934 to September 1947; daily and monthly discharge, October 1947 through 1975.

REMARKS: Reservation Main Drain No. 4 collects drainage and wastewater from the area east of the Yuma Main Canal on the Reservation Division of the Yuma Project, located in California. Since 1939, collection of seepage from the All-American Canal has caused large increases in drainage flows. Average annual flow prior to 1937 was 12,500 acre-feet. Monthly and annual averages since 1937 are shown in the table below.

EXTREMES: Prior to 1937: Maximum annual flow 20,190 acre-feet, 1916; minimum annual flow 0,920 acre-feet, 1913.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	58	46	48	65	62	51	49	56	57	70	65	59
2	51	48	58	57	68	63	50	56	58	69	56	59
3	53	47	54	60	68	46	51	56	59	66	59	59
4	59	48	46	58	66	47	51	61	58	69	53	57
5	61	56	47	58	58	59	51	56	56	69	54	58
6	55	51	47	65	55	60	57	52	58	58	58	57
7	53	47	49	65	61	62	48	57	67	56	61	60
8	56	50	50	56	61	59	48	53	65	56	68	57
9	56	55	52	70	62	48	49	54	56	60	62	56
10	55	50	52	68	74	53	50	57	55	58	60	57
11	53	51	50	64	61	54	55	61	54	62	64	57
12	54	53	55	59	62	46	55	55	53	59	63	56
13	48	52	52	60	60	49	56	53	53	60	62	57
14	57	48	53	68	69	44	50	59	54	59	63	59
15	48	46	56	56	69	57	53	62	52	58	63	56
16	46	44	54	62	72	57	50	55	54	62	67	54
17	44	52	61	68	67	56	47	57	55	62	64	55
18	56	46	56	67	64	52	51	56	54	60	62	58
19	50	47	56	56	58	56	51	55	51	60	63	57
20	48	47	56	60	57	53	51	53	56	64	67	57
21	42	46	53	63	60	51	51	55	54	72	62	63
22	46	45	53	66	62	52	50	59	56	65	54	55
23	44	46	52	54	58	54	51	57	56	59	54	57
24	44	52	51	59	51	58	50	65	58	63	52	58
25	41	48	54	57	58	56	52	59	61	66	56	53
26	45	50	55	62	55	57	50	60	64	66	54	53
27	40	46	57	74	59	63	48	55	67	66	56	52
28	40	46	58	58	58	55	48	57	74	63	53	51
29	42	60	60	60	65	54	52	56	69	60	59	56
30	41	58	59	67	67	48	51	58	68	61	56	52
31	46	61	61	61	51	51	51	62	61	61	61	51
Sum	1,534	1,363	1,664	1,854	1,918	1,620	1,577	1,767	1,752	1,939	1,790	1,746
Current Year 1975								Period 1937-1975				
Month	Extreme Gage Feet		Extreme Second Feet		Average Second Feet	Total Acre Feet	Acre Feet					
	High	Low	Day	Day			Average	Maximum	Minimum			
Jan.			5	61	†27	40	49.5	3,043	3,192	4,780	877	
Feb.			5	56	16	44	48.7	2,703	3,031	4,320	563	
Mar.			†17	61	4	46	53.7	3,300	3,685	5,240	1,240	
Apr.			27	74	23	54	61.8	3,677	3,741	5,250	1,160	
May			10	74	†24	51	61.9	3,804	3,863	5,590	992	
June			† 2	63	14	44	54.0	3,213	3,721	5,580	885	
July			6	57	17	47	50.9	3,128	3,998	6,550	816	
Aug.			24	65	6	52	57.0	3,505	3,969	6,810	861	
Sept.			28	74	19	51	58.4	3,475	3,758	6,220	889	
Oct.			21	72	† 7	56	62.5	3,846	3,794	5,740	1,040	
Nov.			8	68	24	52	59.7	3,550	3,538	5,490	994	
Dec.			21	63	†28	51	56.3	3,463	3,421	4,960	860	
Yearly				74		40	56.2	40,707	43,711	63,700	12,840	

β Mean daily † And other days

YUMA MAIN CANAL WASTEWAY TO COLORADO RIVER AT YUMA, ARIZONA

DESCRIPTION: The wasteway receives water from the Yuma Main Canal at the check structure on the canal, 1,645 feet upstream from the intake of the Colorado River siphon, and 3.2 miles downstream from the Siphon Drop Power Plant. This wasteway discharges into the Colorado River on the California side, 1,000 feet upstream from Colorado River below Yuma Main Canal Wasteway, and 6.5 miles upstream from the northerly international land boundary.

RECORDS: Discharge is computed as the difference between the measured discharge of the Yuma Main Canal at the Siphon Drop Power Plant upstream and that of the same canal below the Colorado River siphon, with deductions for small irrigation diversions from the canal between the two gaging stations. 1975 records good except those below 125 second-feet, which are fair. Records obtained and furnished by U. S. Geological Survey. Records available: April 1913 through 1975.

REMARKS: The wasteway discharges to the river the flow in excess of irrigation water in the Yuma Main Canal. This excess flow, in addition to the irrigation water, was diverted from the All-American Canal into the Yuma Main Canal and utilized for power purposes at the Siphon Drop Power Plant.

EXTREMES: Prior to 1935, when storage began in Lake Mead: Average annual flow, 297,800 acre-feet; maximum annual flow, 913,700 acre-feet, 1932; minimum annual flow, 114,900 acre-feet, 1917. Since 1935: Maximum mean daily discharge, 2,020 second-feet, December 24-25, 1948; minimum mean daily discharge, no flow on numerous occasions.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	255	82	19	16	26	518	16	15	17	242	447	815
2	148	63	20	17	26	561	16	15	17	125	78	813
3	152	30	20	22	26	757	15	15	17	130	2.8	804
4	173	100	20	22	23	959	15	15	17	107	3.1	800
5	142	121	18	22	21	714	15	15	16	106	4.1	352
6	127	130	16	22	20	17	15	15	16	109	124	18
7	110	90	14	23	20	20	14	15	16	162	220	18
8	111	76	14	24	19	126	14	15	16	200	214	18
9	41	87	16	23	19	622	14	14	16	179	194	18
10	36	102	14	22	109	605	14	14	16	187	236	19
11	53	44	13	22	295	592	16	14	16	179	367	19
12	112	243	13	24	329	634	17	22	16	194	399	19
13	124	266	15	24	295	641	17	16	24	262	411	20
14	128	479	13	24	381	713	17	16	18	279	513	20
15	117	520	12	25	397	838	17	16	18	293	485	20
16	155	587	12	26	341	19	17	16	25	271	480	20
17	119	662	13	27	303	19	16	16	567	259	481	21
18	53	15	13	26	408	19	16	16	614	302	511	21
19	53	17	14	27	606	19	16	16	577	307	629	21
20	60	18	14	29	625	18	16	16	542	333	604	22
21	53	19	14	30	596	18	16	16	458	267	700	23
22	67	19	15	30	719	18	16	16	505	212	905	21
23	91	19	16	30	662	17	17	16	483	175	896	22
24	121	20	15	30	590	16	17	19	452	280	876	22
25	105	23	15	26	516	16	34	17	461	722	899	22
26	90	23	16	26	380	16	16	17	407	676	866	27
27	140	21	15	26	323	16	16	17	348	792	868	23
28	134	19	15	26	294	16	16	17	321	786	858	23
29	131	17	15	26	303	16	16	17	371	815	633	23
30	130	15	15	26	274	16	16	17	395	810	105	22
31	50	15	15	26	465	16	16	17	17	749	21	21
Sum	3,384	3,897	467	743	9,401	8,576	509	498	6,782	10,530	13,980.0	4,127
Current Year 1975								Period 1935-1975				
Month	Extreme Gage Feet		Extreme Second Feet			Average Second Feet	Total Acre Feet	Acre Feet				
	High	Low	Day	High	Low			Average	Maximum	Minimum		
Jan.			1	255	10	36	109	6,712	56,992	110,700	3,230	
Feb.			17	662	18	15	139	7,730	50,030	89,140	2,856	
Mar.			† 2	20	115	12	15.1	926	50,972	90,190	469	
Apr.			22	30	1	16	24.8	1,474	51,513	86,580	986	
May			22	719	† 8	19	303	18,647	59,934	88,280	5,480	
June			4	959	† 24	16	286	17,010	52,221	86,960	1,857	
July			25	34	† 7	14	16.4	1,010	50,459	91,220	452	
Aug.			12	22	† 9	14	16.1	988	51,031	89,890	456	
Sept.			18	614	† 5	16	226	13,452	53,836	83,660	12,419	
Oct.			29	815	5	106	340	20,886	50,525	90,950	2,176	
Nov.			22	906	3	2.8	466	27,729	50,614	101,500	3,850	
Dec.			1	815	† 6	18	133	8,186	55,874	103,800	918	
Yearly				959		2.8	173	124,750	634,001	1,042,850	75,950	

β Mean daily

† And other days

**COLORADO RIVER BELOW YUMA MAIN CANAL WASTEWAY
AT YUMA, ARIZONA - DISCHARGES**

DESCRIPTION: Water-stage recorder located in California on the right bank of the river, 1,000 feet downstream from the mouth of the Yuma Main Canal Wasteway, 0.6 mile downstream from the abandoned gaging station on the Colorado River at Yuma, 5.2 miles downstream from the mouth of the Gila River, 19.6 miles downstream from Imperial Dam, and 6.4 miles upstream from the northerly international boundary. Zero of the gage is 101.99 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on current meter measurements and a continuous record of gage heights. Computations by shifting control methods. Records obtained and furnished by U. S. Geological Survey. Records available: October 1963 through 1975. Records from January 1951 through September 1963 deduced from "Colorado River at Yuma" plus flows from "Reservation Main Drain No. 4" and "Yuma Main Canal Wasteway."

REMARKS: Reservoirs on the Colorado River, power developments, transmountain diversions, reservoirs on the Gila River, irrigation diversions, and return flows modify the river flow at this station.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,320	1,050	480	630	560	1,590	577	584	603	886	818	1,260
2	1,270	1,100	496	633	559	1,560	594	591	601	735	694	1,240
3	1,270	1,070	492	594	566	1,550	587	643	600	766	566	1,230
4	1,300	1,040	476	588	573	1,530	881	1,040	615	766	559	1,230
5	1,280	1,100	472	879	574	1,450	567	857	616	755	619	856
6	1,280	1,110	484	883	563	626	541	688	779	685	660	510
7	1,270	1,100	493	790	633	595	552	680	811	695	641	529
8	1,280	1,100	488	659	692	647	638	664	793	710	660	529
9	1,280	1,150	484	657	702	1,510	888	670	740	705	646	505
10	1,070	1,390	556	978	831	1,520	879	670	690	705	659	471
11	987	1,170	598	1,850	1,460	1,520	766	649	648	725	792	487
12	999	1,230	599	2,070	1,350	1,520	612	644	637	735	800	512
13	998	1,190	576	2,090	1,330	1,580	609	633	617	800	812	529
14	1,040	1,210	593	1,320	1,340	1,510	614	623	652	805	899	529
15	997	1,210	594	753	1,330	1,460	612	619	540	821	894	523
16	934	1,210	604	814	1,210	605	611	596	625	802	888	515
17	936	1,210	608	1,060	1,180	602	606	610	1,530	809	888	522
18	935	463	588	814	1,200	616	611	605	1,480	801	902	519
19	915	453	584	675	1,430	603	619	610	1,510	844	1,030	524
20	907	458	587	692	1,430	591	617	610	1,480	1,040	1,020	521
21	820	508	596	654	1,470	531	617	638	1,290	1,010	1,120	528
22	814	508	714	636	1,570	524	613	822	1,310	994	1,340	525
23	782	508	710	610	1,500	522	580	821	1,300	969	1,340	536
24	797	508	630	616	1,540	518	577	803	1,230	963	1,320	537
25	803	508	605	614	1,540	531	593	738	1,250	1,040	1,340	582
26	782	488	599	625	1,580	542	563	622	1,230	1,040	1,320	832
27	794	480	578	623	1,530	818	543	613	1,160	1,170	1,310	528
28	802	480	592	607	1,500	854	573	623	1,150	1,140	1,290	527
29	795	600	603	603	1,540	593	581	610	1,190	1,180	1,200	521
30	794	600	600	594	1,480	563	619	623	1,210	1,170	592	566
31	754	700	700		1,600		583	628		1,120		724
Sum		25,002		25,571		29,141		20,827		27,386		19,947
	31,006		17,776		36,413		19,428		28,787		27,619	
Current Year 1975								Period 1951-1975				
Month	Extreme Gage Feet		Extreme Second Feet				Average Second Feet	Total Acre Feet	Acre Feet			
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum	
Jan.	11.27	10.09	1	1,320	31	754	1,000	61,500	212,988	979,890	29,857	
Feb.	11.52	9.66	10	1,390	19	453	893	49,591	160,065	826,600	33,790	
Mar.	10.25	9.66	22	714	5	472	573	35,258	174,751	1,073,270	35,002	
Apr.	12.70	9.89	13	2,090	44	588	852	50,719	166,064	843,010	33,687	
May	11.97	9.89	31	1,600	2	559	1,175	72,224	161,408	863,860	56,493	
June	11.53	9.66	1	1,590	24	518	971	57,800	149,717	833,970	33,856	
July	10.68	9.73	9	888	6	541	627	39,535	159,652	649,820	34,413	
Aug.	10.76	9.86	4	1,040	1	584	672	41,310	165,105	670,050	36,426	
Sept.	11.74	9.72	17	1,530	15	540	960	57,998	142,299	775,930	43,182	
Oct.	11.00	10.01	29	1,180	6	685	883	54,319	117,188	802,210	34,965	
Nov.	11.18	9.61	122	1,340	4	559	921	54,781	136,354	911,370	34,832	
Dec.	11.10	9.43	1	1,260	10	471	643	39,564	172,681	1,114,550	33,023	
Yearly	12.70	9.43		2,090		453	848	612,699	1,918,272	10,220,870	513,755	

β Mean daily † And other days

**COLORADO RIVER BELOW YUMA MAIN CANAL WASTEWAY
AT YUMA, ARIZONA - STAGES**

(See Preceding Page For Description)

Mean Daily Gage Height in Feet 1975

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	11.24	10.81	9.70	10.02	9.95	11.71	9.82	9.87	9.91	10.52	10.32	10.97
2	11.15	10.90	9.74	10.02	9.95	11.66	9.86	9.89	9.90	10.24	10.08	10.93
3	11.15	10.84	9.72	9.94	9.95	11.65	9.86	9.99	9.90	10.29	9.82	10.92
4	11.20	10.80	9.69	9.93	9.96	11.62	10.42	10.72	9.93	10.28	9.80	10.93
5	11.18	10.89	9.67	10.50	9.95	11.49	9.81	10.40	9.93	10.25	9.92	10.20
6	11.18	10.91	9.69	10.50	9.91	10.03	9.77	10.09	10.25	10.11	9.98	9.53
7	11.16	10.89	9.71	10.33	10.05	9.96	9.79	10.07	10.31	10.13	9.93	9.58
8	11.17	10.89	9.70	10.08	10.16	10.05	9.97	10.04	10.27	10.15	9.96	9.58
9	11.17	10.98	9.69	10.07	10.18	11.58	10.46	10.05	10.17	10.14	9.92	9.52
10	10.82	11.39	9.86	10.68	10.42	11.61	10.45	10.05	10.07	10.13	9.94	9.44
11	10.68	11.02	9.95	12.22	11.51	11.60	10.23	10.01	9.98	10.17	10.18	9.48
12	10.70	11.12	9.95	12.58	11.32	11.60	9.93	10.00	9.95	10.18	10.18	9.54
13	10.70	11.05	9.90	12.61	11.29	11.70	9.92	9.97	9.91	10.30	10.20	9.58
14	10.76	11.09	9.94	11.32	11.30	11.59	9.93	9.95	9.77	10.30	10.35	9.58
15	10.69	11.09	9.94	10.35	11.29	11.49	9.93	9.94	9.74	10.33	10.34	9.57
16	10.59	11.09	9.96	10.46	11.08	9.89	9.93	9.90	9.91	10.30	10.33	9.55
17	10.59	11.05	9.97	10.91	11.04	9.88	9.92	9.93	11.61	10.31	10.33	9.56
18	10.59	9.70	9.93	10.46	11.07	9.91	9.93	9.92	11.53	10.29	10.36	9.56
19	10.55	9.67	9.92	10.20	11.44	9.88	9.95	9.93	11.59	10.37	10.58	9.57
20	10.54	9.68	9.93	10.15	11.54	9.77	9.94	9.93	11.54	10.72	10.56	9.56
21	10.38	9.80	9.95	10.16	11.51	9.72	9.94	9.98	11.22	10.67	10.73	9.58
22	10.37	9.80	10.19	10.12	11.69	9.71	9.93	10.34	11.25	10.64	11.09	9.57
23	10.31	9.80	10.18	10.07	11.57	9.70	9.86	10.34	11.22	10.60	11.10	9.59
24	10.34	9.79	10.02	10.08	11.63	9.69	9.85	10.31	11.11	10.59	11.08	9.60
25	10.35	9.79	9.96	10.07	11.64	9.72	9.90	10.18	11.15	10.72	11.10	9.69
26	10.31	9.73	9.95	10.10	11.70	9.75	9.83	9.95	11.11	10.71	11.06	10.19
27	10.33	9.71	9.91	10.09	11.62	10.30	9.78	9.93	11.00	10.94	11.06	9.58
28	10.35	9.70	9.94	10.06	11.57	10.37	9.85	9.95	10.98	10.88	11.02	9.57
29	10.34	*	*	10.05	11.63	9.86	9.86	9.93	11.05	10.96	10.86	9.56
30	10.33	*	*	10.03	11.53	9.79	9.95	9.95	11.09	10.94	9.74	9.66
31	10.25	*	*		11.72		9.87	9.96		10.85		9.99
Avg.	10.69	10.50		10.47	11.01	10.58	9.95	10.05	10.58	10.45	10.40	9.80

* Data missing

**YUMA MESA OUTLET DRAIN
TO COLORADO RIVER NEAR YUMA, ARIZONA**

DESCRIPTION: Venturi meter with recorder 0.3 mile from outlet to Colorado River, 0.5 mile west of Joe Henry Memorial Park in Yuma, Arizona. Outlet is 1.7 miles downstream from the mouth of Yuma Main Canal Wasteway. RECORDS: Records are furnished by U. S. Geological Survey. Monthly discharge July 1970 through 1975. Prior to July 21, 1972, records furnished by U. S. Bureau of Reclamation. REMARKS: Records show water pumped from wells on the Yuma Mesa and conveyed by underground conduit to Colorado River.

Mean Daily Discharge in Second-Foot 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	85	85	84	83	83	82	82	78	76	76	75	74
2	85	85	83	83	83	81	81	69	76	76	75	74
3	85	85	84	83	83	82	81	70	76	76	75	74
4	85	85	84	83	83	82	81	72	76	76	75	74
5	85	85	84	83	83	81	81	79	76	76	75	73
6	85	85	82	83	82	81	81	79	76	76	75	74
7	85	85	84	83	83	81	81	78	76	76	75	74
8	85	85	83	83	83	81	76	78	76	75	75	74
9	85	85	84	49	83	81	74	79	76	74	75	74
10	85	84	84	0	83	81	74	79	76	76	75	74
11	85	85	83	0	83	81	77	79	76	76	75	72
12	85	85	83	0	82	81	76	79	76	70	75	73
13	85	85	83	0	82	81	76	79	76	59	75	62
14	85	85	82	4.6	81	81	79	79	76	65	74	73
15	83	84	83	82	79	81	81	79	76	73	74	73
16	85	84	83	84	78	81	81	79	75	76	74	73
17	85	84	83	84	78	80	81	79	75	75	74	73
18	85	84	83	84	78	80	81	79	75	76	74	73
19	85	84	83	84	78	81	81	79	74	76	74	73
20	85	84	83	83	78	81	81	78	76	76	74	73
21	85	72	83	83	67	81	81	77	76	75	74	73
22	72	85	83	83	78	81	81	79	75	72	74	73
23	79	85	83	83	78	79	80	78	76	69	74	73
24	85	83	83	83	78	82	80	77	76	71	74	73
25	85	85	83	83	78	81	80	77	76	75	74	73
26	85	84	79	83	78	82	80	76	76	75	73	73
27	85	84	80	83	78	81	80	76	76	75	74	73
28	85	84	82	83	80	82	80	76	76	75	74	73
29	85		82	79	82	82	80	76	76	75	74	73
30	84		82	83	82	82	80	76	72	74	74	73
31	48		82		82		80	76		74		73
Sum	2,576	2,355	2,567	2,044.6	2,487	2,434	2,468	2,394	2,270	2,289	2,232	2,260
Current Year 1975								Period 1971-1975				
Month	Extreme Gage Feet		Extreme Second-Foot				Average Second-Foot	Total Acre-Feet	Acre-Feet			
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum	
Jan.			† 1	85	31	48	83.1	5,109	2,999	5,840	0	
Feb.			† 1	85	21	72	84.1	4,671	2,918	4,830	0	
Mar.			† 1	84	26	79	82.8	5,092	3,274	5,430	4	
Apr.			† 16	84	† 10	0	68.2	4,055	2,842	5,120	242	
May			† 1	83	21	67	80.2	4,933	2,734	4,933	0	
June			† 1	82	23	79	81.1	4,828	2,801	4,828	0	
July			† 1	82	† 9	74	79.6	4,895	3,717	5,510	692	
Aug.			† 5	79	2	69	77.2	4,748	4,016	6,030	180	
Sept.			† 1	76	30	72	75.7	4,502	4,086	5,880	0	
Oct.			† 1	76	13	59	73.8	4,540	3,839	5,360	157	
Nov.			† 1	75	26	73	74.4	4,427	4,018	5,290	313	
Dec.			† 1	74	13	62	72.9	4,483	4,273	5,970	0	
Yearly				85		0	77.8	56,283	41,517	58,680	1,753	

β Mean daily † And other days

DRAIN NO. 8-B (ARAZ DRAIN)

DESCRIPTION: This drain discharges into the Colorado River 3.9 miles downstream from Colorado River below Yuma Main Canal Wasteway, and 2.5 miles upstream from the northerly international boundary. Prior to October 1955, published as "Araz Drain".

RECORDS: Records are furnished by U. S. Geological Survey from current meter measurements during the year. Records available: May 1948 through 1975.

REMARKS: Drain 8-B, which was constructed in February 1948, collects seepage water in the westerly section of the Reservation Division of the Yuma Project which lies in California. Flow in the drain between the mouth and the U. S. Highway No. 80 culvert, about 3,200 feet upstream, is affected by backwater from the river during ordinary high stages.

EXTREMES: Mean daily discharge: Maximum, 24 second-feet on September 1, 1953; minimum, 0.1 second-foot several days in February 1966.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.5	1.9	1.9	2.2	2.2	2.4	2.1	3.0	3.7	3.8	3.4	4.9
2	2.5	1.9	1.9	2.2	2.2	2.4	2.2	3.0	3.7	3.8	3.5	4.8
3	2.4	1.9	1.9	2.2	2.2	2.4	2.2	3.1	3.7	3.8	3.6	4.7
4	2.4	1.9	1.9	2.2	2.2	2.4	2.3	3.1	3.7	3.8	3.6	4.7
5	2.4	1.9	2.0	2.2	2.2	2.4	2.3	3.1	3.8	3.7	3.7	4.6
6	2.3	1.9	2.0	2.2	2.2	2.4	2.4	3.1	3.8	3.7	3.7	4.5
7	2.3	1.9	2.0	2.2	2.3	2.4	2.4	3.1	3.8	3.7	3.8	4.5
8	2.3	1.9	2.0	2.2	2.3	2.4	2.4	3.2	3.8	3.7	3.9	4.4
9	2.2	1.9	2.0	2.2	2.3	2.4	2.5	3.2	3.8	3.7	3.9	4.3
10	2.2	1.9	2.0	2.2	2.3	2.4	2.5	3.2	3.8	3.6	4.0	4.3
11	2.2	1.9	2.0	2.2	2.3	2.3	2.6	3.2	3.8	3.6	4.0	4.2
12	2.1	1.9	2.0	2.2	2.3	2.3	2.6	3.2	3.8	3.6	4.1	4.1
13	2.1	1.9	2.0	2.2	2.3	2.2	2.6	3.3	3.8	3.6	4.2	4.1
14	2.1	1.9	2.1	2.2	2.4	2.2	2.7	3.3	3.8	3.5	4.2	4.0
15	2.0	1.9	2.1	2.2	2.4	2.2	2.7	3.3	3.8	3.5	4.3	4.0
16	2.0	1.9	2.1	2.2	2.4	2.1	2.8	3.3	3.8	3.5	4.4	3.9
17	2.0	1.9	2.1	2.2	2.4	2.1	2.8	3.3	3.8	3.5	4.4	3.8
18	1.9	1.9	2.1	2.2	2.4	2.0	2.8	3.4	3.8	3.4	4.5	3.8
19	1.9	1.9	2.1	2.2	2.4	2.0	2.9	3.4	3.8	3.4	4.6	3.7
20	1.9	1.9	2.1	2.2	2.4	2.0	2.9	3.4	3.8	3.4	4.6	3.7
21	1.9	1.9	2.1	2.2	2.4	1.9	3.0	3.4	3.8	3.4	4.7	3.6
22	1.9	1.9	2.1	2.2	2.4	1.9	3.0	3.5	3.8	3.4	4.8	3.6
23	1.9	1.9	2.2	2.2	2.4	1.8	3.0	3.5	3.8	3.4	4.8	3.6
24	1.9	1.9	2.2	2.2	2.4	1.8	3.0	3.5	3.8	3.4	4.9	3.6
25	1.9	1.9	2.2	2.2	2.4	1.8	3.0	3.5	3.8	3.4	4.9	3.6
26	1.9	1.9	2.2	2.2	2.4	1.8	3.0	3.5	3.8	3.4	4.9	3.6
27	1.9	1.9	2.2	2.2	2.4	1.8	3.0	3.6	3.8	3.4	4.9	3.6
28	1.9	1.9	2.2	2.2	2.4	1.8	3.0	3.6	3.8	3.4	4.9	3.6
29	1.9		2.2	2.2	2.4	1.8	3.0	3.6	3.8	3.4	4.9	3.6
30	1.9		2.2	2.2	2.4	1.8	3.0	3.6	3.8	3.4	4.9	3.6
31	1.9		2.2		2.4		3.0	3.6		3.4		3.6
Sum	64.6	53.2	64.3	66.0	72.5	63.6	83.7	103.1	113.6	109.7	129.0	124.6
Current Year 1975									Period 1948-1975			
Month	Extreme Gage Feet		Extreme Second Feet			Average Second Feet	Total Acre Feet	Acre Feet				
	High	Low	Day	High	Low			Average	Maximum	Minimum		
Jan.			† 1	2.5	†18	1.9	2.1	128	340	899	39.3	
Feb.			† 1	1.9	† 1	1.9	1.9	106	295	746	40.5	
Mar.			†23	2.2	† 1	1.9	2.1	128	360	853	73.8	
Apr.			† 1	2.2	† 1	2.2	2.2	131	380	1,000	66.8	
May			†14	2.4	† 1	2.2	2.3	144	382	966	61.5	
June			† 1	2.4	†23	1.8	2.1	126	397	1,030	67.4	
July			†21	3.0	† 1	2.1	2.7	166	452	1,260	72.8	
Aug.			†27	3.6	† 1	3.0	3.3	204	504	1,350	73.8	
Sept.			† 5	3.8	† 1	3.7	3.8	225	484	1,370	53.6	
Oct.			† 1	3.8	†18	3.4	3.5	218	493	1,220	55.3	
Nov.			†24	4.9	† 1	3.4	4.3	256	447	1,240	57.7	
Dec.			† 1	4.9	†21	3.6	4.0	247	405	1,050	51.0	
Yearly				4.9		1.8	2.9	2,079	4,939	12,429	834	

∅ Mean daily

† And other days

PILOT KNOB POWER PLANT AND WASTEWAY NEAR PILOT KNOB, CALIFORNIA

DESCRIPTION: The Pilot Knob Power Plant and Wasteway is located on the All-American Canal, 20.8 miles downstream from the intake at Imperial Dam, 6 miles west of Yuma, about one mile north of the northerly international boundary and empties into the old Alamo Canal in the United States and thence into the Colorado River through Rockwood gates, about one mile upstream from the northerly international boundary. Water-stage recorder is located in forebay on right bank of the All-American Canal, 550 feet upstream from wasteway gates and 1,800 feet from entrance to the power plant. Datum of gage is 150.00 feet above mean sea level. Tail-race gage is on left bank, 680 feet downstream from power plant with automatic recording equipment in control house. All bypass gates are fitted with calibrated openings which are read on all gate changes. Datum of tailrace gage is at mean sea level; elevation of sill of wasteway gates is 147.88 feet, U. S. C. & G. S. datum. Prior to October 1956, this station was published as "Pilot Knob Wasteway near Pilot Knob, California."

RECORDS: Daily discharge is computed from flowmeter equipment and head and openings on wasteway gates or from head and gate opening on wicket and wasteway gates. Records furnished by the U. S. Geological Survey. Records available: July 1944 through 1975. The wasteway was operated for the purpose of diverting Colorado River water to the Alamo Canal for use in Mexico from July 1944 to November 8, 1950, in accordance with arrangements between the United States and Mexico for emergency use of the All-American Canal facilities. Records since 1950 show water released through Pilot Knob Power Plant and Wasteway from the All-American Canal and returned to the Colorado River through Rockwood gates.

REMARKS: Pilot Knob Wasteway was completed in 1938 and the first flow occurred on February 5, 1939. Pilot Knob Power Plant was completed in January 1957 and the first flow occurred on January 14, 1957.

EXTREMES: Maximum mean daily discharge, 8,350 second-feet on January 26, 1958; minimum mean daily discharge, no flow during long periods.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	1,260	2,200	1,670	0	1,630	2,090	1,280	0	0	0
2	0	0	1,230	2,410	1,380	0	1,650	2,090	1,300	0	0	0
3	0	0	1,030	2,530	1,390	0	1,720	2,040	1,260	0	0	0
4	0	0	1,080	2,550	1,420	0	1,480	1,700	1,250	0	0	0
5	0	0	1,080	2,320	1,440	0	1,750	1,780	1,250	0	0	565
6	0	0	1,080	2,230	1,360	1,040	1,780	1,950	1,240	0	0	1,010
7	0	0	1,030	2,250	1,290	1,030	1,810	1,950	1,110	0	0	1,010
8	0	0	1,080	2,370	1,260	1,130	1,830	1,960	1,080	0	0	1,010
9	0	0	1,150	2,990	1,260	0	1,560	1,980	1,100	0	0	1,010
10	0	0	1,390	3,720	994	0	1,640	1,980	1,050	0	0	1,010
11	0	0	1,610	3,560	41	0	1,720	1,970	996	0	0	1,020
12	0	0	1,690	1,980	0	0	1,860	1,990	1,030	0	0	1,070
13	0	0	1,680	1,760	0	0	2,020	2,010	1,030	0	0	1,070
14	0	0	1,680	1,570	0	0	2,098	1,900	986	0	0	1,060
15	0	0	1,670	2,060	0	0	2,090	1,870	966	0	0	1,250
16	0	0	1,680	2,050	0	1,160	2,120	1,870	950	0	0	1,280
17	0	206	1,670	1,740	0	1,180	2,100	1,820	0	0	0	1,330
18	0	998	1,650	1,980	0	1,160	2,100	1,730	0	0	0	1,370
19	0	1,009	1,660	2,120	0	1,150	2,100	1,760	0	0	0	1,380
20	0	1,050	1,700	2,160	0	1,230	2,120	1,750	0	0	0	1,410
21	0	1,060	1,960	2,050	0	1,350	2,100	1,630	0	0	0	1,380
22	0	1,250	1,840	2,140	0	1,380	2,070	1,480	0	0	0	1,530
23	0	1,430	1,820	2,120	0	1,380	2,090	1,480	0	0	0	1,520
24	0	1,390	1,890	2,110	0	1,410	2,120	1,430	0	0	0	1,500
25	0	1,430	1,970	2,130	0	1,440	2,080	1,410	0	0	0	1,520
26	0	1,590	2,000	2,030	0	1,460	2,100	1,500	0	0	0	1,240
27	0	1,560	2,000	2,010	0	1,150	2,090	1,550	0	0	0	1,610
28	0	1,550	2,000	1,970	0	1,120	2,070	1,540	0	0	0	1,640
29	0	1,990	1,980	0	0	1,340	2,040	1,560	0	0	39	1,780
30	0	1,960	1,910	0	0	1,510	2,040	1,580	0	0	940	1,780
31	0	1,940	1,940	0	0	2,140	2,140	1,560	0	0	0	1,370
Sum	0	14,514	49,420	66,920	13,505	22,670	60,110	54,870	17,778	0	979	34,665
Current Year 1975								Period 1944-1975				
Month	Extreme Gage Feet		Extreme Second Feet				Average Second Feet	Total Acre Feet	Acre Feet			
	High	Low	Day	High	Day	Low	Average		Maximum	Minimum		
Jan.				0		0	0	41,187	400,200	0		
Feb.			26	1,590	† 1	0	518	23,788	149,500	0		
Mar.			† 26	2,000	3	1,030	1,594	93,023	74,311	279,300		
Apr.			10	3,720	14	1,570	2,231	132,734	98,621	260,900		
May			1	1,670	† 2	0	436	26,787	18,432	165,400		
June			30	1,510	† 1	0	756	44,965	62,317	204,300		
July			31	2,140	4	1,480	1,939	119,226	114,157	260,000		
Aug.			† 1	2,090	25	1,410	1,770	103,833	115,929	270,100		
Sept.			2	1,300	† 7	0	593	35,262	50,113	173,300		
Oct.				0		0	0	0	10,126	51,460		
Nov.			30	940	† 1	0	32.6	1,942	13,940	182,600		
Dec.			† 29	1,780	† 1	0	1,118	63,757	39,124	319,700		
Yearly				3,720		0	916	665,317	658,950	1,944,700	0	

† Mean daily † And other days

COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY - DISCHARGES

DESCRIPTION: Water-stage recorder on the left (Arizona) bank and cableway at the point where the northerly international land boundary (California-Baja California) intersects the Colorado River, about 6.4 miles downstream from Colorado River below Yuma Main Canal Wasteway, 5 miles west of Yuma, Arizona, 1.1 miles upstream from Morelos Diversion Structure, and about one mile downstream from Rockwood Gate. Zero of the gage is at mean sea level, U. S. C. & G. S. datum. Station is operated by the United States Section of the Commission.

RECORDS: Based on 257 current meter measurements during the year, 197 by the United States Section, 48 by the Mexican Section of the Commission, 12 by the U. S. Geological Survey, and a continuous record of gage heights. Discharges are computed on the basis of a water-stage recorder 1,680 feet upstream from the northerly international boundary where the remains of an old weir serve as a partial controlling section. A continuous gage height record is available November 15, 1948 through 1975; daily discharge records available January 1, 1950 through 1975.

REMARKS: Reservoirs on the Colorado River, including Lake Mead above Hoover Dam, where storage began in 1935, reservoirs on the Gila River, and many irrigation diversions and return flows regulate the river flow at this station except for infrequent flood flows. During 1975, the flow at this point, and the emergency deliveries for Tijuana, Baja California shown on page 8, represented the total amount of the Colorado River water which crossed the northerly international boundary.

EXTREMES: Prior to January 1935: Maximum instantaneous discharge estimated about 250,000 second-feet, January 22, 1916; minimum discharge, no flow several days during August and September 1934; average annual flow 13,443,000 acre-feet; maximum annual flow 25,480,000 acre-feet, 1907; minimum annual flow 1,174,000 acre-feet, 1934. Since January 1935: Maximum mean daily discharge, about 33,000 second-feet, February 7, 1942; minimum discharge, no flow during April 1935.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,450	1,160	2,000	3,020	2,390	1,710	2,400	2,800	2,020	1,140	1,090	1,510
2	1,450	1,280	1,950	3,330	2,110	1,710	2,400	2,800	2,050	945	909	1,490
3	1,420	1,270	1,780	3,400	2,120	1,710	2,480	2,770	2,020	945	779	1,500
4	1,450	1,210	1,790	3,390	2,120	1,710	2,510	2,790	2,030	955	761	1,490
5	1,450	1,260	1,770	3,400	2,190	1,710	2,490	2,760	2,030	945	815	1,660
6	1,440	1,240	1,800	3,320	2,100	1,810	2,490	2,770	2,020	875	832	1,670
7	1,420	1,260	1,810	3,250	2,080	1,760	2,490	2,770	2,030	875	833	1,660
8	1,440	1,240	1,800	3,250	2,100	1,800	2,600	2,790	1,990	875	835	1,670
9	1,450	1,280	1,860	3,710	2,100	1,640	2,590	2,790	1,970	890	825	1,670
10	1,260	1,520	2,170	4,670	1,890	1,680	2,640	2,790	1,960	885	815	1,660
11	1,120	1,380	2,420	5,450	1,630	1,660	2,640	2,770	1,840	895	945	1,670
12	1,150	1,360	2,490	4,280	1,450	1,640	2,620	2,760	1,850	885	955	1,750
13	1,150	1,370	2,480	3,940	1,450	1,720	2,750	2,790	1,820	945	965	1,760
14	1,180	1,360	2,480	3,210	1,410	1,700	2,840	2,660	1,670	975	1,040	1,720
15	1,160	1,370	2,490	2,970	1,450	1,700	2,840	2,590	1,670	985	1,050	1,950
16	1,080	1,360	2,460	2,980	1,330	1,940	2,850	2,610	1,680	975	1,050	1,930
17	1,080	1,630	2,480	2,950	1,320	1,940	2,860	2,570	1,520	985	1,050	2,030
18	1,080	1,710	2,450	2,980	1,310	1,930	2,870	2,460	1,600	975	1,060	2,050
19	1,060	1,710	2,450	2,970	1,510	1,930	2,840	2,480	1,630	995	1,180	2,060
20	1,070	1,750	2,490	2,970	1,600	1,930	2,840	2,490	1,620	1,190	1,170	2,110
21	975	1,790	2,720	2,870	1,590	2,010	2,870	2,370	1,440	1,180	1,260	2,110
22	955	1,960	2,720	2,880	1,660	2,030	2,860	2,380	1,450	1,170	1,470	2,230
23	935	2,170	2,710	2,860	1,660	2,030	2,830	2,380	1,450	1,150	1,500	2,270
24	945	2,140	2,720	2,870	1,640	2,080	2,840	2,380	1,400	1,160	1,490	2,240
25	965	2,180	2,720	2,860	1,670	2,060	2,830	2,290	1,410	1,230	1,510	2,280
26	955	2,310	2,760	2,770	1,700	2,120	2,800	2,300	1,410	1,230	1,510	2,320
27	945	2,290	2,750	2,770	1,670	2,110	2,790	2,320	1,340	1,360	1,490	2,330
28	975	2,280	2,720	2,720	1,640	2,100	2,790	2,320	1,320	1,340	1,500	2,340
29	975		2,710	2,720	1,630	2,110	2,760	2,350	1,360	1,370	1,500	2,450
30	975		2,710	2,660	1,630	2,220	2,770	2,380	1,410	1,370	1,670	2,490
31	902		2,700		1,690		2,840	2,370		1,360		2,310
Sum	35,862	44,840	73,370	97,420	53,840	56,220	84,020	79,850	51,020	33,085	33,859	60,380
Current Year 1975									Period 1935-1975			
Month	Extreme Gage Feet		Extreme Second Feet				Average Second Feet	Total Acre Feet	Acre Feet			
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum	
Jan.	103.61	102.39	1	1,890	31	835	1,157	71,131	408,826	1,644,000	31,900	
Feb.	103.98	102.39	126	2,440	1	895	1,601	88,939	342,681	1,378,000	60,400	
Mar.	104.27	103.32	126	2,830	3	1,720	2,367	145,527	349,193	1,120,000	19,400	
Apr.	108.70	103.81	11	5,760	14	2,270	3,247	193,230	275,348	823,850	0	
May	104.21	102.88	1	2,710	117	1,260	1,737	106,790	274,000	1,151,000	71,405	
June	103.99	103.02	30	2,420	9	1,380	1,874	111,511	260,753	1,175,000	8,500	
July	104.56	103.84	31	3,080	1	2,280	2,710	166,651	256,719	763,800	24,400	
Aug.	104.47	103.75	1	2,950	27	2,230	2,576	158,380	271,351	791,600	43,800	
Sept.	103.81	102.78	1	2,310	17	1,160	1,701	101,197	240,074	1,029,000	53,851	
Oct.	103.05	102.37	29	1,420	1	835	1,067	65,623	241,129	1,186,000	42,956	
Nov.	103.42	102.23	30	1,860	4	743	1,129	67,153	301,172	1,422,000	41,403	
Dec.	104.13	102.99	30	2,590	1	1,320	1,948	119,762	391,317	1,832,000	42,000	
Yearly	108.70	102.23		5,760		743	1,926	1,395,899	3,612,563	10,596,900	722,100	

† And other days

COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY - STAGES

(See Preceding Page for Description)

Mean Daily Gage Height in Feet 1975

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	103.14	102.77	103.60	104.40	103.93	103.34	103.96	104.31	103.54	102.76	102.71	103.17
2	103.13	102.92	103.56	104.67	103.70	103.32	103.96	104.31	103.56	102.51	102.48	103.15
3	103.10	102.91	103.39	104.73	103.71	103.32	104.03	104.29	103.59	102.51	102.30	103.16
4	103.13	102.86	103.39	104.72	103.71	103.32	104.05	104.29	103.57	102.53	102.25	103.15
5	103.13	102.91	103.38	104.73	103.77	103.33	104.04	104.27	103.57	102.52	102.31	103.28
6	103.12	102.90	103.40	104.66	103.70	103.41	104.04	104.28	103.55	102.42	102.35	103.32
7	103.10	102.92	103.41	104.59	103.68	103.38	104.05	104.28	103.57	102.42	102.36	103.32
8	103.12	102.91	103.40	104.61	103.69	103.42	104.14	104.29	103.54	102.41	102.36	103.31
9	103.12	102.95	103.46	105.12	103.68	103.26	104.13	104.30	103.53	102.44	102.34	103.31
10	102.92	103.19	103.72	106.47	103.49	103.30	104.18	104.29	103.51	102.43	102.34	103.30
11	102.78	103.02	103.94	107.91	103.26	103.27	104.18	104.29	103.40	102.45	102.50	103.30
12	102.79	103.00	103.99	106.31	103.07	103.27	104.16	104.26	103.43	102.44	102.50	103.39
13	102.79	103.03	103.98	105.37	103.06	103.35	104.28	104.28	103.40	102.51	102.51	103.40
14	102.83	103.01	103.98	104.67	103.03	103.32	104.37	104.16	103.26	102.53	102.62	103.36
15	102.80	103.04	103.99	104.39	103.07	103.33	104.35	104.09	103.25	102.55	102.63	103.56
16	102.72	103.03	103.98	104.41	102.95	103.56	104.36	104.10	103.26	102.54	102.62	103.55
17	102.70	103.27	103.99	104.38	102.94	103.55	104.36	104.06	103.10	102.56	102.63	103.64
18	102.72	103.36	103.97	104.41	102.93	103.54	104.36	103.97	103.18	102.55	102.63	103.65
19	102.69	103.36	103.97	104.41	103.13	103.53	104.34	103.98	103.22	102.58	102.77	103.68
20	102.69	103.40	104.00	104.41	103.22	103.54	104.34	103.99	103.21	102.79	102.77	103.72
21	102.56	103.41	104.20	104.33	103.22	103.62	104.38	103.88	103.03	102.78	102.85	103.73
22	102.54	103.58	104.19	104.34	103.29	103.64	104.35	103.90	103.06	102.77	103.08	103.80
23	102.52	103.77	104.19	104.33	103.28	103.64	104.34	103.89	103.05	102.75	103.14	103.81
24	102.53	103.75	104.19	104.34	103.26	103.68	104.35	103.89	103.00	102.75	103.13	103.79
25	102.55	103.77	104.19	104.33	103.30	103.68	104.34	103.81	103.02	102.84	103.15	103.83
26	102.54	103.87	104.21	104.25	103.31	103.71	104.32	103.81	103.02	102.84	103.14	103.86
27	102.52	103.85	104.21	104.27	103.30	103.70	104.31	103.84	102.96	102.98	103.14	103.87
28	102.55	103.84	104.17	104.22	103.26	103.68	104.30	103.83	102.95	102.96	103.15	103.88
29	102.55		104.16	104.22	103.25	103.70	104.27	103.85	102.99	102.92	103.16	103.99
30	102.56		104.16	104.16	103.26	103.80	104.28	103.87	103.04	103.01	103.30	104.03
31	102.48		104.16		103.32		104.34	103.86		102.99		103.88
Avg.	102.79	103.24	103.89	104.74	103.35	103.48	104.23	104.08	103.28	102.65	102.71	103.55

COLORADO RIVER IMMEDIATELY ABOVE MORELOS DAM - STAGES

DESCRIPTION: Water-stage recorder located on the right bank of the Colorado River in Mexico attached to the upstream abutment of the gates of the Intake Canal at Morelos Dam, 1.1 miles downstream from the northerly international boundary, and about 7.5 miles downstream from the Colorado River below Yuma Main Canal Wasteway. Since April 17, 1969, zero of the gage is at mean sea level, U. S. C. & G. S. datum; prior to that date zero of the gage was 0.16 foot below mean sea level.

RECORDS: Records obtained and furnished by the Mexican Section of the Commission. Records available: Staff gage height records November 8, 1950 to June 3, 1951; a continuous record of gage heights June 4, 1951 through 1975.

REMARKS: Prior to June 4, 1951, when a continuous water-stage recorder was installed, mean daily gage height records were determined from hourly readings of a staff gage.

EXTREMES: Since November 8, 1950: Maximum mean daily elevation above mean sea level, 112.70 on January 2, 1953; minimum mean daily elevation above mean sea level, 101.51 on February 17, 1957.

Mean Daily Gage Height in Feet 1975

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	102.53	102.23	102.76	103.35	103.15	102.72	103.12	103.31	102.82	102.30	102.20	102.53
2	102.49	102.30	102.72	103.51	102.99	102.69	103.08	103.31	102.82	102.07	102.07	102.62
3	102.46	102.30	102.62	103.51	102.99	102.69	103.15	103.31	102.82	102.07	101.94	102.62
4	102.49	102.23	102.62	103.51	102.99	102.69	103.15	103.31	102.82	102.07	101.94	102.62
5	102.49	102.30	102.62	103.54	103.05	102.72	103.15	103.31	102.82	102.07	101.97	102.76
6	102.49	102.30	102.62	103.51	102.99	102.76	103.15	103.31	102.82	102.00	101.97	102.76
7	102.49	102.30	102.62	103.51	102.95	102.76	103.15	103.31	102.82	102.03	102.00	102.76
8	102.49	102.30	102.62	103.51	102.99	102.76	103.22	103.35	102.79	102.03	102.00	102.76
9	102.49	102.30	102.66	104.04	102.95	102.69	103.22	103.31	102.79	102.03	102.00	102.76
10	102.36	102.46	102.85	105.84	102.82	102.69	103.25	103.35	102.76	102.03	102.00	102.76
11	102.30	102.36	102.99	107.55	102.69	102.66	103.28	103.31	102.72	102.03	102.10	102.76
12	102.30	102.36	103.05	105.45	102.56	102.66	103.25	103.28	102.72	102.07	102.10	102.82
13	102.26	102.36	103.02	104.07	102.53	102.72	103.31	103.31	102.69	102.07	102.10	102.82
14	102.26	102.36	103.05	103.67	102.49	102.69	103.38	103.25	102.62	102.10	102.17	102.79
15	102.23	102.40	103.05	103.48	102.53	102.72	103.35	103.18	102.59	102.10	102.20	102.82
16	102.20	102.36	103.05	103.44	102.43	102.82	103.35	103.22	102.62	102.10	102.17	102.76
17	102.20	102.56	103.05	103.41	102.43	102.79	103.38	103.18	102.53	102.10	102.17	102.82
18	102.20	102.59	103.05	103.41	102.40	102.82	103.38	103.12	102.59	102.10	102.17	102.85
19	102.17	102.62	103.05	103.44	102.56	102.79	103.38	103.12	102.59	102.13	102.23	102.82
20	102.17	102.62	103.08	103.44	102.62	102.82	103.38	103.15	102.59	102.26	102.23	102.85
21	102.10	102.66	103.22	103.41	102.59	102.85	103.38	103.05	102.49	102.26	102.26	102.89
22	102.10	102.76	103.22	103.44	102.66	102.89	103.38	103.05	102.49	102.26	102.40	102.92
23	102.07	102.89	103.22	103.44	102.66	102.89	103.35	103.05	102.49	102.26	102.46	102.95
24	102.07	102.89	103.22	103.44	102.62	102.89	103.35	103.05	102.46	102.26	102.46	102.95
25	102.07	102.89	103.22	103.44	102.66	102.89	103.35	103.02	102.46	102.26	102.46	102.95
26	102.07	102.95	103.22	103.38	102.69	102.92	103.35	103.02	102.46	102.30	102.46	102.99
27	102.07	102.95	103.22	103.38	102.69	102.92	103.35	103.02	102.43	102.36	102.43	102.99
28	102.10	102.92	103.22	103.38	102.66	102.92	103.35	103.02	102.43	102.36	102.46	103.02
29	102.10		103.22	103.38	102.66	102.92	103.31	103.02	102.46	102.40	102.46	103.08
30	102.10		103.22	103.35	102.66	102.99	103.28	103.02	102.49	102.40	102.59	103.12
31	102.03		103.22		102.69		103.35	103.02		102.36		103.02
Avg.	102.26	102.53	102.99	103.77	102.72	102.79	103.28	103.18	102.62	102.17	102.20	102.82

INTAKE CANAL AT MORELOS DIVERSION STRUCTURE - DISCHARGES

DESCRIPTION: Water-stage recorder and staff gage on left bank of Intake Canal, 200 feet downstream from the intake at Morelos Dam, 1,350 feet upstream from the point where it joins the old Alamo Canal, 2.2 miles upstream from Matamoras Check, and about one mile south of the northerly international boundary. The zero of the gage is 0.16 foot below mean sea level, U. S. C. & G. S. datum.

RECORDS: The records are deduced from the flows arriving in the limnographic section of the Colorado River at the northerly international boundary, the flows that pass downstream from the structure, and leakage through the structure. Records available: November 8, 1950 through 1975. Records obtained and furnished by the Mexican Section of the Commission.

REMARKS: The canal is operated with a minimum hydraulic slope to permit the maximum retention of silt above Matamoras Check, and the lower velocities in the canal do not permit measuring the flow with a current meter. Records for this station show the amounts of Colorado River water diverted at Morelos Diversion Dam to the Intake Canal and thence to the Alamo Canal for use in Mexico. Water for use in Mexico may also be diverted to the Alamo Canal in the United States directly from the river at Rockwood Heading or by means of Imperial Dam, the All-American Canal, and certain facilities of the Imperial Irrigation District under conditions set forth in the 1944 Water Treaty. No diversions of the above nature have been made during the years 1951 through 1975 and consequently the records reported below show the total water diverted from the Colorado River to the Alamo Canal during those years.

EXTREMES: Maximum mean daily discharge, 6,540 second-feet, August 3, 1958; maximum mean daily gage height, 107.22 feet November 8, 1950. Minimum daily discharge, no flow on various occasions.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,440	1,160	2,000	3,010	2,380	1,710	2,400	2,790	2,010	1,140	1,090	1,500
2	1,440	1,280	1,960	3,330	2,100	1,700	2,400	2,790	2,040	943	904	1,490
3	1,420	1,270	1,770	3,400	2,110	1,710	2,480	2,760	2,010	943	773	1,500
4	1,440	1,210	1,900	3,390	2,110	1,710	2,510	2,780	2,030	950	756	1,480
5	1,440	1,250	1,770	3,400	2,180	1,700	2,480	2,750	2,030	939	812	1,650
6	1,430	1,240	1,790	3,320	2,090	1,810	2,490	2,770	2,020	869	823	1,670
7	1,410	1,260	1,800	3,240	2,070	1,750	2,480	2,760	2,020	872	819	1,650
8	1,430	1,240	1,800	3,230	2,090	1,800	2,590	2,780	1,980	869	826	1,670
9	1,440	1,280	1,850	3,390	2,090	1,630	2,580	2,780	1,970	886	816	1,660
10	1,250	1,510	2,160	3,740	1,380	1,670	2,630	2,780	1,960	879	809	1,660
11	1,110	1,370	2,420	3,710	1,620	1,650	2,630	2,770	1,840	886	939	1,660
12	1,140	1,360	2,480	3,450	1,440	1,630	2,610	2,750	1,860	879	950	1,740
13	1,140	1,370	2,480	3,850	1,440	1,710	2,740	2,780	1,820	939	957	1,750
14	1,140	1,350	2,470	3,180	1,400	1,690	2,830	2,650	1,670	971	1,030	1,710
15	1,150	1,370	2,490	2,960	1,440	1,700	2,830	2,680	1,670	978	1,040	1,940
16	1,070	1,360	2,450	2,970	1,310	1,930	2,820	2,610	1,680	968	1,040	1,920
17	1,070	1,630	2,470	2,940	1,310	1,930	2,850	2,570	1,510	975	1,050	2,020
18	1,080	1,710	2,450	2,970	1,300	1,920	2,860	2,450	1,600	978	1,050	2,040
19	1,060	1,710	2,440	2,960	1,490	1,920	2,830	2,470	1,630	989	1,170	2,050
20	1,070	1,750	2,480	2,960	1,580	1,920	2,840	2,490	1,620	1,190	1,170	2,100
21	971	1,790	2,720	2,860	1,580	2,000	2,860	2,360	1,440	1,180	1,250	2,100
22	953	1,960	2,710	2,870	1,650	2,020	2,850	2,380	1,450	1,170	1,470	2,210
23	936	2,170	2,710	2,850	1,660	2,020	2,810	2,380	1,440	1,150	1,500	2,250
24	943	2,140	2,710	2,860	1,640	2,070	2,830	2,380	1,390	1,160	1,480	2,230
25	961	2,180	2,720	2,850	1,670	2,070	2,820	2,280	1,410	1,230	1,500	2,270
26	953	2,310	2,750	2,760	1,700	2,120	2,790	2,290	1,410	1,230	1,500	2,310
27	943	2,290	2,740	2,760	1,670	2,100	2,780	2,310	1,340	1,360	1,490	2,320
28	971	2,270	2,720	2,710	1,640	2,090	2,780	2,310	1,320	1,330	1,500	2,320
29	975		2,700	2,710	1,630	2,110	2,760	2,350	1,360	1,400	1,500	2,440
30	971		2,670	2,660	1,630	2,210	2,770	2,370	1,410	1,370	1,670	2,480
31	901		2,700		1,690		2,830	2,360		1,360		2,300
Sum		44,775		93,263		56,009		79,656		32,970		60,081
	35,696		73,161		53,583		83,777		50,913		33,680	
Current Year 1975										Period 1950-1975		
Month	Extreme Gage Feet		Extreme Second Feet				Average Second Feet	Total Acre Feet	Acre Feet			
	High	Low	Day	High		Low	Feet	Acre Feet	Average	Maximum	Minimum	
				Day	Day							
Jan.	101.87	100.13	† 1	1,440	31	901	1,150	70,802	64,609	116,737	966	
Feb.	102.26	100.23	26	2,310	1	1,160	1,600	88,811	61,299	101,685	9,232	
Mar.	102.30	100.59	26	2,750	5	1,770	2,360	145,113	167,961	216,994	97,902	
Apr.	103.90	101.90	13	3,850	30	2,660	3,110	184,983	192,380	264,127	153,792	
May	102.49	100.26	1	2,380	18	1,300	1,730	106,280	93,858	159,010	66,207	
June	102.53	101.38	30	2,210	† 9	1,630	1,870	111,092	157,003	269,632	102,000	
July	102.99	102.17	21	2,860	† 1	2,400	2,700	166,169	223,037	304,263	141,807	
Aug.	102.95	102.33	† 1	2,790	25	2,280	2,570	157,994	221,242	341,044	130,298	
Sept.	102.69	101.48	2	2,040	28	1,320	1,700	100,984	124,232	198,095	53,633	
Oct.	101.87	100.56	29	1,400	† 6	869	1,060	65,394	49,756	90,639	10,453	
Nov.	101.97	99.93	30	1,670	4	756	1,120	66,803	38,984	103,954	7,516	
Dec.	102.66	101.57	30	2,480	4	1,480	1,940	119,168	67,543	131,440	8,825	
Yearly	103.90	99.93		3,850		756	1,910	1,383,593	1,464,534	1,961,556	1,272,332	

‡ Mean daily † And other days

INTAKE CANAL AT MORELOS DIVERSION STRUCTURE - STAGES

(See Preceding Page for Description)

Mean Daily Gage Height in Feet 1975

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	101.51	100.82	102.00	102.20	102.10	101.80	102.56	102.82	102.40	101.54	101.41	101.67
2	101.57	101.38	101.77	102.49	101.77	101.84	102.43	102.89	102.17	100.98	101.31	101.64
3	101.54	101.54	101.38	102.56	101.74	101.87	102.30	102.89	102.10	101.21	101.31	101.67
4	101.61	101.51	100.85	102.56	101.64	101.84	102.30	102.89	102.13	101.41	100.98	101.64
5	101.61	101.44	100.66	102.53	101.64	101.90	102.26	102.89	102.07	101.21	100.46	101.74
6	101.61	101.35	100.66	102.43	101.48	102.07	102.26	102.85	102.00	100.89	100.30	101.87
7	101.61	101.51	100.62	102.36	101.41	101.97	102.30	102.85	102.00	100.72	100.03	101.94
8	101.64	101.54	100.62	102.56	101.38	102.00	102.36	102.85	101.90	100.66	100.03	101.97
9	101.64	101.51	100.72	102.89	101.38	101.94	102.56	102.89	101.90	100.59	100.33	101.94
10	101.61	101.67	101.08	103.08	101.15	101.90	102.66	102.89	101.87	100.75	100.75	101.80
11	101.38	101.57	101.51	103.02	100.85	101.87	102.66	102.85	101.64	100.79	101.02	101.80
12	101.05	101.54	101.61	103.15	100.52	101.90	102.59	102.82	101.54	100.85	100.85	101.74
13	100.85	101.51	101.64	103.67	100.52	101.94	102.72	102.85	101.57	100.92	100.75	101.74
14	101.12	101.44	101.67	103.12	100.49	101.94	102.85	102.79	101.80	101.35	100.95	101.64
15	101.18	101.35	101.71	102.59	100.56	101.90	102.82	102.72	101.87	101.35	101.08	101.94
16	101.12	101.25	101.84	102.46	100.36	102.17	102.82	102.76	101.87	101.38	100.82	102.00
17	101.08	101.51	101.87	102.46	100.36	102.13	102.85	102.72	101.71	101.25	100.59	102.17
18	101.02	101.71	101.84	102.56	100.33	102.10	102.85	102.66	101.84	101.35	100.59	102.26
19	100.85	101.67	101.77	102.82	100.62	101.77	102.85	102.66	101.77	101.41	100.79	102.23
20	100.89	101.71	101.74	102.95	100.82	101.80	102.85	102.69	101.77	101.57	100.82	102.23
21	100.72	101.38	101.97	102.85	100.89	101.87	102.89	102.53	101.61	101.41	100.89	102.13
22	100.52	101.61	102.10	102.85	100.98	101.87	102.89	102.49	101.67	101.44	101.28	102.07
23	100.33	101.90	102.00	102.82	101.12	102.10	102.89	102.43	101.71	101.35	101.87	101.97
24	100.33	101.90	102.00	102.82	101.15	102.30	102.89	102.53	101.61	101.35	101.71	101.87
25	100.36	101.97	102.00	102.76	101.21	102.26	102.85	102.53	101.67	101.41	101.61	102.10
26	100.39	102.03	102.03	102.59	101.35	102.26	102.85	102.56	101.67	101.48	101.67	102.36
27	100.46	101.97	102.00	102.59	101.57	102.26	102.85	102.56	101.61	101.48	101.64	102.40
28	100.46	102.10	101.94	102.56	101.74	102.23	102.82	102.56	101.61	101.51	101.64	102.26
29	100.36		101.97	102.49	101.74	102.26	102.85	102.56	101.61	101.54	101.64	102.46
30	100.39		102.00	102.46	101.71	102.33	102.69	102.56	101.64	101.54	101.77	102.56
31	100.30		101.97		101.67		102.69	102.59		101.54		102.40
Avg.	101.02	101.57	101.61	102.72	101.18	102.00	102.69	102.72	101.80	101.25	101.02	102.00

COLORADO RIVER IMMEDIATELY BELOW MORELOS DAM - STAGES

DESCRIPTION: Water-stage recorder located on the right bank of the Colorado River in Mexico immediately downstream from Morelos Dam, 1.1 miles downstream from the northerly international boundary, and about 7.5 miles downstream from the Colorado River below Yuma Main Canal Wasteway. Since April 17, 1969, zero of the gage is at mean sea level, U. S. C. & G. S. datum; prior to that date zero of the gage was 0.16 foot below mean sea level.

RECORDS: Records obtained and furnished by the Mexican Section of the Commission. Records available: Staff gage heights, February 20, 1951 to June 6, 1966; continuous record of gage heights June 7, 1966 through 1975.

REMARKS: On June 7, 1966 a continuous water-stage recorder was installed; prior to this date mean daily gage heights were determined from hourly readings of staff gage.

EXTREMES: Maximum mean daily gage height, 112.63 feet on January 2, 1958; minimum mean gage height, 98.13 feet several days during March and April 1967.

Mean Daily Gage Height in Feet 1975

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	101.08	101.15	101.21	99.80	101.15	100.98	101.15	101.28	101.25	101.31	101.18	101.44
2	101.15	101.12	101.21	99.80	101.15	100.92	101.18	101.18	101.31	101.35	101.18	101.41
3	101.18	101.18	101.21	99.77	101.15	100.98	101.18	101.15	101.31	101.41	101.25	101.41
4	101.15	101.18	101.18	99.77	101.18	101.05	101.21	101.15	101.31	101.38	101.28	101.41
5	101.15	101.15	101.18	99.67	101.15	101.05	101.25	101.18	101.31	101.38	101.31	101.41
6	101.18	101.15	101.21	99.64	101.15	101.15	101.25	101.25	101.31	101.41	101.31	101.41
7	101.18	101.18	101.21	99.93	101.08	101.18	101.28	101.25	101.25	101.41	101.35	101.38
8	101.21	101.18	101.18	100.33	101.05	101.18	101.28	101.21	101.25	101.35	101.35	101.38
9	101.21	101.18	101.21	102.10	101.15	101.18	101.25	101.18	101.21	101.28	101.35	101.38
10	101.25	101.18	101.18	105.74	101.15	101.18	101.28	101.15	101.28	101.38	101.35	101.38
11	101.25	101.18	101.21	107.38	101.12	101.18	101.28	101.21	101.31	101.35	101.35	101.38
12	101.25	101.12	101.18	105.18	101.12	101.12	101.25	101.28	101.31	101.31	101.31	101.38
13	101.21	101.18	101.18	101.51	101.08	101.15	101.25	101.31	101.31	101.31	101.35	101.35
14	101.25	101.21	101.18	101.21	101.05	101.18	101.25	101.28	101.28	101.28	101.38	101.31
15	101.21	101.21	101.18	101.25	101.02	101.18	101.25	101.28	101.31	101.31	101.38	101.31
16	101.21	101.15	101.18	101.25	101.12	101.18	101.41	101.25	101.28	101.31	101.35	101.35
17	101.15	101.15	101.18	101.25	101.05	101.21	101.25	101.28	101.31	101.31	101.31	101.31
18	101.08	101.15	101.18	101.21	101.02	101.21	101.28	101.35	101.28	101.25	101.35	101.31
19	101.08	101.18	101.25	101.15	100.98	101.18	101.31	101.35	101.28	101.31	101.35	101.31
20	101.05	101.18	101.21	101.21	100.89	101.15	101.28	101.31	101.35	101.31	101.35	101.35
21	101.08	101.18	101.21	101.18	100.92	101.18	101.31	101.25	101.35	101.35	101.35	101.35
22	101.12	101.15	101.18	101.15	100.92	101.25	101.25	101.25	101.31	101.31	101.31	101.35
23	101.21	101.15	101.18	101.18	100.98	101.25	101.28	101.28	101.31	101.21	101.35	101.35
24	101.25	101.18	101.21	101.15	101.02	101.18	101.31	101.31	101.35	101.18	101.38	101.35
25	101.21	101.21	101.21	101.12	101.02	101.18	101.35	101.31	101.38	101.21	101.38	101.35
26	101.18	101.18	101.18	101.15	101.05	101.21	101.21	101.31	101.44	101.28	101.38	101.31
27	101.18	101.18	101.15	101.12	101.02	101.21	101.12	101.31	101.48	101.28	101.38	101.31
28	101.15	101.21	101.08	101.12	101.05	101.18	101.08	101.28	101.44	101.25	101.41	101.28
29	101.15		101.02	101.15	100.95	101.18	101.15	101.31	101.41	101.28	101.44	101.28
30	101.18		100.23	101.15	100.98	101.18	101.31	101.28	101.38	101.28	101.41	101.31
31	101.18		99.80		101.02		101.28	101.25		101.25		101.31
Avg.	101.18	101.18	101.12	101.35	101.05	101.15	101.25	101.25	101.31	101.31	101.35	101.35

WELLTON-MOHAWK DRAINAGE WATER DISCHARGED TO COLORADO RIVER BELOW MORELOS DAM

DESCRIPTION: Water-stage recorder located on downstream end of the Wellton-Mohawk Drainage Extension Channel on the Arizona bank of the Colorado River at the east end of the weir section of Morelos Dam, 1.1 miles downstream from the northerly international boundary. The elevation of the zero of the gage has not been determined.

RECORDS: Based on discharge measurements and a continuous record of gage heights. Station is operated by the United States Section of the Commission. Records available: November 15, 1965 through 1975.

REMARKS: Pursuant to Minute 218 of the Commission, an extension to the Wellton-Mohawk Drainage Conveyance Channel was constructed along the left bank of the Colorado River to a point immediately below Morelos Dam, a distance of about 12 miles, and placed in operation on November 16, 1965. Drainage flows may be discharged to the Gila River and thence to the Colorado River at the diversion structure, Main Outlet Drain Extension No. 1, at the upstream end of the extension; directly to the Colorado River at Main Outlet Drain Extension No. 2, 1.9 miles upstream from Morelos Dam; and directly to the Colorado River immediately below Morelos Dam at this station, Main Outlet Drain Extension No. 3. On July 14, 1972, Minute 241 of the Commission became effective. The Minute called for discharge of all Wellton-Mohawk drainage waters to be made below Morelos Dam.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	302	307	305	15.9	305	275	300	307	304	302	305	316
2	302	302	307	2.9	304	265	298	295	310	309	302	316
3	304	305	305	.6	305	278	298	292	312	316	310	319
4	302	304	300	.4	305	287	307	292	317	316	316	317
5	304	302	304	.2	304	290	309	297	314	321	319	316
6	302	305	305	3.9	297	305	312	302	319	319	314	316
7	300	307	302	11.1	290	309	316	302	305	321	310	314
8	304	309	307	1.79	290	305	317	293	302	309	312	314
9	307	307	302	1.83	297	305	309	295	302	307	310	314
10	310	305	300	1.92	300	304	312	292	309	317	309	316
11	312	307	304	2.19	293	305	310	298	317	314	307	316
12	310	300	302	2.59	293	295	305	307	316	316	304	310
13	310	310	302	2.76	290	305	307	310	312	312	307	310
14	310	310	298	2.92	283	307	307	307	307	309	312	310
15	307	310	304	3.07	282	307	307	307	307	310	310	310
16	302	305	300	3.07	285	310	307	307	307	310	304	309
17	295	305	298	3.07	280	312	309	316	310	302	307	305
18	288	305	302	3.09	276	314	312	319	302	302	307	305
19	287	305	305	3.00	271	307	314	316	309	305	305	309
20	282	309	297	3.07	254	300	314	314	316	307	305	312
21	288	312	302	3.02	268	310	316	310	316	309	305	314
22	297	305	297	3.04	265	314	305	312	310	307	305	307
23	310	302	300	3.04	276	310	309	317	309	307	309	307
24	307	305	295	3.02	282	307	312	319	309	305	309	309
25	309	307	300	3.02	282	307	316	317	312	307	310	309
26	309	307	300	3.05	283	310	305	317	314	317	312	310
27	307	305	298	3.04	283	307	293	314	317	317	312	310
28	304	305	290	3.04	285	298	288	312	314	309	319	304
29	304		278	3.07	273	302	309	314	312	314	317	305
30	307		110	3.09	280	298	319	310	304	310	314	304
31	310		9.1		285		310	305		310		307
Sum	9,392	8,567	8,828.1	6,614.9	8,866	9,048	9,552	9,515	9,314	9,636	9,287	9,640
Current Year 1975								Period 1966-1975				
Month	Extreme Gage Feet		Extreme Second Feet				Average Second Feet	Total Acre Feet	Acre Feet			
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum	
Jan.	3.35	3.14	113	316	20	280	303	18,629	15,680	18,629	11,029	
Feb.	3.36	3.23	113	317	12	295	306	16,992	12,509	16,992	6,978	
Mar.	3.31	.22	† 8	309	† 30	2.5	285	17,510	7,634	18,506	6.9	
Apr.	3.52	.05	20	367	† 5	0	220	13,120	5,899	18,061	247	
May	3.20	2.77	† 1	310	20	241	286	17,585	10,783	18,976	3,160	
June	3.25	2.92	118	319	2	263	302	17,946	7,741	18,756	2,998	
July	3.27	3.04	10	324	28	287	308	18,946	8,214	18,946	0	
Aug.	3.26	3.04	23	324	4	287	307	18,873	8,622	18,873	34.9	
Sept.	3.26	3.09	6	324	30	295	310	18,474	12,933	18,474	3,575	
Oct.	3.34	3.11	7	337	1	297	311	19,113	19,113	19,113	17,599	
Nov.	3.29	3.14	29	324	17	298	310	18,420	18,001	18,478	17,234	
Dec.	3.27	3.15	† 3	319	28	298	311	19,121	16,105	19,121	11,050	
Yearly	3.52	0.05		367		0	297	214,729	142,536	214,781	100,028	

† And other days

COOPER WASTEWAY (VALLEY DIVISION, YUMA PROJECT)

DESCRIPTION: Water-stage recorder and control weir on wasteway for discharging regulatory waste water from the Cooper Canal to the Colorado River. This wasteway is located 0.5 mile downstream from the northerly international boundary and 0.6 mile upstream from Morelos Diversion Dam. Prior to July 14, 1971, the wasteway was located 0.4 mile downstream from Morelos Diversion Dam. This wasteway discharges waste water from the Valley Division of the Yuma Project in the United States into the Colorado River. Since July 14, 1971 zero of the gage is 117.64 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Flow is computed from head on the weir measured by the water-stage recorder and weir rating determined by current meter measurements. Station operated by the United States Section of the Commission. Records available: Daily discharge, March 1950 through 1975, obtained by the United States Section; monthly discharge, January 1934 through March 1950, by the Bureau of Reclamation.

EXTREMES: Prior to March 1950, maximum monthly discharge 914 acre-feet in January 1940; minimum monthly discharge, zero for various months. Since March 1950, maximum instantaneous discharge, 79.3 second-feet on June 19, 1965, at a maximum gage height of 114.13 feet (old datum); minimum instantaneous discharge, zero during parts of each month.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	4.5	3.1	0.5	0.5	2.2	0.4	4.5	0.1	5.5	1.3	0.2
2	0	1.1	.6	4.0	.5	.1	4.1	.6	.8	1.8	1.1	.1
3	2.8	.1	.2	.5	.6	0	5.9	0	.2	1.2	.1	0
4	1.4	0	.1	.1	.5	0	2.4	0	2.6	0	.1	0
5	.5	0	.1	0	.4	0	.1	0	.4	0	0	.3
6	.2	.2	0	0	1.7	4.2	.2	0	0	0	0	4.6
7	3.2	1.9	1.2	0	.5	2.9	.1	0	0	0	0	2.5
8	2.4	.6	.1	0	.1	7.2	.1	0	0	0	0	6.7
9	.3	2.9	1.1	0	0	.1	.9	0	0	0	0	.5
10	.4	3.5	.5	0	0	0	3.2	0	0	0	3.2	.1
11	.2	.8	1.3	2.8	0	.7	4.1	1.9	.2	0	8.4	1.0
12	.1	1.1	1.0	0	0	0	.1	.3	.4	0	6.0	.4
13	0	1.1	2.9	0	0	1.1	1.9	0	2.6	.7	.6	.3
14	0	.1	.6	0	3.7	1.2	1.0	0	1.1	1.5	.1	.1
15	0	4.3	.2	0	6.1	4.1	0	0	.1	.5	0	.1
16	0	1.9	.4	0	1.5	.3	0	1.3	0	.1	0	.1
17	0	.8	.8	0	.1	0	2.6	0	0	1.2	0	2.4
18	4.9	1.5	1.5	1.2	.1	0	1.5	0	.1	5.9	0	.9
19	.9	3.7	.1	.3	.1	0	2.6	0	2.3	.4	0	.2
20	.3	.4	.1	0	.1	0	3.5	4.5	.1	.1	1.3	.2
21	.1	.4	1.7	.1	0	0	0	.5	0	1.5	.2	4.4
22	0	3.9	2.8	.2	0	0	0	2.5	2.6	.2	2.9	.3
23	3.6	5.0	3.0	.6	0	0	.3	.2	.6	0	2.7	.9
24	.2	3.3	0	.6	0	0	1.3	.1	0	2.6	.3	8.4
25	0	.2	3.1	0	2.5	0	0	.1	0	.4	.1	.6
26	0	2.5	.9	0	1.6	3.0	0	.1	0	.2	.4	.3
27	0	2.1	0	.7	.1	0	0	3.0	0	1.1	.3	0
28	.5	.7	5.6	2.0	2.7	3.0	0	.2	1.2	.1	.1	1.0
29	1.1	.8	1.6	.3	.1	1.6	0	3.4	1.2	2.7	5.7	.2
30	.7	3.6	4.6	0	1.6	1.6	0	2.0	1.0	11.8	1.5	.2
31	.1	3.6	3.6	0	0	0	0	.3	0	.2	0	3.2
Sum	24.0	48.6	41.0	19.8	23.7	33.3	36.3	25.5	17.6	39.7	36.4	40.4
Current Year 1975								Period 1935-1975				
Month	Extreme Gage Feet		Extreme Second Feet			Average Second Feet	Total Acre Feet	Acre Feet				
	High	Low	Day	High	Low			Average	Maximum	Minimum		
Jan.	1.53	0	23	26.2	† 1	0.8	47.6	174	914	0		
Feb.	1.26	0	22	19.5	† 4	1.7	96.4	154	400	6.0		
Mar.	2.27	0	23	41.5	† 2	1.3	81.3	167	517	0		
Apr.	2.27	0	30	41.5	† 4	.7	39.3	175	425	27.8		
May	1.44	0	26	23.2	† 8	.8	47.0	170	440	40.3		
June	1.75	0	28	29.9	† 2	1.1	66.0	160	595	43.8		
July	1.64	0	19	27.5	† 5	1.2	72.0	147	516	0		
Aug.	1.70	0	1	28.8	† 1	.8	50.6	113	617	0		
Sept.	.91	0	28	12.4	† 6	.6	34.9	112	462	0		
Oct.	1.90	0	30	33.2	† 2	1.3	78.7	141	490	0		
Nov.	1.78	0	10	30.6	† 5	1.2	72.2	162	462	9.0		
Dec.	1.85	0	8	32.1	† 2	1.3	80.1	187	592	33.7		
Yearly	2.27	0		41.5		1.1	766	1,862	4,500	638		

† And other days

COLORADO RIVER AT MORELOS GAGING STATION - DISCHARGES

DESCRIPTION: Water-stage recorder on the left (Arizona) bank of the river, and cableway 1.8 miles downstream from the northerly international boundary, 0.7 mile downstream from Morelos Diversion Dam, and about 9 miles downstream from Yuma, Arizona, along the river levee. Zero of gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on current meter measurements and a continuous record of gage heights. Computations by shifting control methods. Records available: Daily discharges, January 1, 1954 through 1975; continuous record of gage heights, July 20, 1952 through 1975.

REMARKS: Reservoirs, diversions in the United States and Mexico, drainage returns, and waste flows modify the river flow at this station. The record at this station, less Main Outlet Drain Extension No. 3, represents the river flow passing Morelos Diversion Dam.

EXTREMES: Maximum instantaneous discharge, 22,240 second-feet on January 4, 1955; maximum gage height, 112.18 feet on January 28, 1958. Minimum discharge, no flow on various occasions.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	307	310	310	23.8	315	281	304	317	311	303	310	325
2	308	306	310	8.5	314	274	306	304	317	312	307	320
3	311	308	311	3.5	315	281	306	302	319	320	315	323
4	310	307	304	4.0	314	293	312	300	320	321	320	324
5	311	307	307	2.5	311	297	315	304	317	325	323	324
6	310	310	311	5.1	307	311	317	308	317	326	324	325
7	310	310	311	11.6	303	319	323	310	310	325	324	324
8	314	313	311	193	299	316	325	302	306	316	321	323
9	316	311	311	498	307	316	320	302	306	312	320	323
10	322	314	307	1,120	303	314	320	298	307	323	319	321
11	322	313	311	1,950	304	315	323	304	316	321	320	323
12	318	306	310	1,090	304	307	316	316	316	320	316	321
13	318	314	310	362	303	312	315	319	315	319	316	321
14	318	316	307	319	298	317	319	317	310	315	320	320
15	316	316	310	323	295	316	320	317	310	316	320	319
16	311	310	308	321	304	320	337	314	310	317	316	323
17	306	308	307	319	295	321	319	319	314	312	312	321
18	296	308	308	320	290	320	323	324	307	306	315	317
19	293	308	313	315	286	316	323	325	312	310	312	320
20	287	311	307	319	271	308	323	323	317	311	312	321
21	289	313	308	317	278	314	324	319	320	312	312	325
22	293	306	307	316	274	320	316	319	315	312	312	325
23	306	304	304	319	281	319	324	320	314	311	316	324
24	311	308	304	317	285	315	326	324	313	310	317	324
25	308	310	307	316	285	314	328	324	315	310	317	324
26	310	310	307	315	288	314	313	325	319	315	317	324
27	310	310	306	315	285	315	300	324	320	320	317	324
28	307	310	299	316	289	307	294	320	317	320	323	321
29	306		292	317	276	306	302	321	315	319	323	317
30	311		157	319	281	304	323	319	308	319	320	319
31	313		14.2		284		317	314		316		319
Sum	9,568	8,677	9,089.2	10,781.4	9,149	9,282	9,833	9,754	9,413	9,794	9,516	9,984
Current Year 1975								Period 1954-1975				
Month	Extreme Gage Feet		Extreme Second Feet			Average Second Feet	Total Acre Feet	Acre Feet				
	High	Low	Day	High	Day			Average	Maximum	Minimum		
Jan.	100.83	100.60	†10	323	20	286	309	18,978	144,609	969,540	949	
Feb.	100.82	100.70	†13	320	† 2	303	310	17,211	74,712	414,310	977	
Mar.	100.80	98.03	11	317	31	9.2	293	18,028	48,758	630,230	659	
Apr.	107.44	97.86	11	2,500	† 6	1.0	359	21,305	37,982	532,320	804	
May	100.99	100.41	16	340	20	262	295	18,147	45,623	375,970	460	
June	100.81	100.48	17	324	2	271	309	18,411	12,815	119,980	834	
July	101.57	100.63	16	430	28	289	317	19,503	12,894	89,430	654	
Aug.	100.96	100.69	26	330	† 4	297	315	19,347	19,819	125,590	702	
Sept.	101.07	100.80	25	329	† 7	304	314	18,670	18,089	87,830	113	
Oct.	101.00	100.83	7	330	1	299	316	19,426	44,023	172,940	9,750	
Nov.	101.08	100.80	30	326	† 1	306	317	18,875	74,704	356,390	4,869	
Dec.	101.12	100.89	1	332	†18	317	322	19,803	100,650	643,850	1,111	
Yearly	107.44	97.86		2,500		1.0	315	227,784	634,758	3,957,730	101,758	

† And other days

COLORADO RIVER AT MORELOS GAGING STATION - STAGES

(See Preceding Page For Description)

Mean Daily Gage Height in Feet 1975

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	100.72	100.76	100.77	98.23	100.74	100.57	100.73	100.86	100.83	100.91	100.84	101.07
2	100.73	100.73	100.77	98.01	100.73	100.51	100.74	100.76	100.88	100.95	100.81	101.02
3	100.75	100.75	100.78	97.92	100.75	100.55	100.74	100.74	100.90	100.98	100.86	101.03
4*	100.74	100.74	100.73	97.93	100.74	100.62	100.78	100.73	100.91	100.97	100.90	101.04
5	100.75	100.73	100.74	97.89	100.72	100.63	100.80	100.76	100.89	100.98	100.93	101.04
6	100.74	100.75	100.76	97.93	100.70	100.72	100.81	100.79	100.89	100.97	100.97	101.05
7	100.74	100.75	100.76	99.20	100.67	100.77	100.85	100.80	100.84	100.96	101.00	101.04
8	100.77	100.76	100.76	99.94	100.65	100.75	100.87	100.74	100.81	100.89	101.01	101.03
9	100.78	100.75	100.76	101.57	100.71	100.75	100.83	100.73	100.81	100.86	101.02	101.02
10	100.82	100.77	100.73	105.03	100.73	100.73	100.83	100.70	100.83	100.93	101.01	101.01
11	100.82	100.76	100.76	106.60	100.70	100.74	100.85	100.75	100.90	100.92	101.02	101.01
12	100.80	100.71	100.75	104.61	100.70	100.68	100.80	100.84	100.90	100.90	101.00	101.00
13	100.80	100.78	100.75	101.19	100.70	100.72	100.79	100.85	100.89	100.89	101.00	100.99
14	100.81	100.79	100.73	100.89	100.66	100.76	100.82	100.84	100.85	100.87	101.04	100.97
15	100.80	100.79	100.74	100.92	100.64	100.75	100.83	100.84	100.85	100.89	101.05	100.96
16	100.78	100.75	100.73	100.89	100.71	100.78	100.95	100.81	100.84	100.91	101.02	100.97
17	100.74	100.74	100.72	100.85	100.65	100.79	100.82	100.85	100.86	100.88	100.99	100.96
18	100.67	100.74	100.73	100.84	100.62	100.79	100.85	100.89	100.80	100.85	101.01	100.92
19	100.65	100.75	100.76	100.78	100.59	100.76	100.85	100.90	100.83	100.88	100.98	100.94
20	100.61	100.77	100.72	100.80	100.48	100.71	100.85	100.89	100.86	100.89	100.98	100.94
21	100.62	100.78	100.73	100.78	100.54	100.75	100.86	100.87	100.87	100.90	100.98	100.96
22	100.65	100.73	100.72	100.76	100.52	100.81	100.81	100.87	100.83	100.89	100.97	100.96
23	100.74	100.72	100.70	100.77	100.57	100.80	100.87	100.88	100.82	100.87	100.99	100.95
24	100.78	100.75	100.70	100.75	100.60	100.78	100.90	100.91	100.84	100.85	101.00	100.95
25	100.76	100.77	100.72	100.74	100.60	100.77	100.91	100.91	100.89	100.84	101.00	100.95
26	100.77	100.77	100.72	100.73	100.62	100.78	100.81	100.92	100.96	100.88	101.00	100.95
27	100.77	100.77	100.71	100.73	100.60	100.79	100.71	100.91	101.01	100.92	101.00	100.95
28	100.74	100.77	100.66	100.74	100.63	100.74	100.67	100.88	101.01	100.92	101.04	100.93
29	100.73		100.61	100.75	100.53	100.73	100.73	100.90	101.01	100.91	101.05	100.89
30	100.77		99.48	100.76	100.57	100.73	100.89	100.88	100.98	100.91	101.03	100.91
31	100.78		93.10		100.59		100.86	100.85		100.89		100.91
Avg.	100.75	100.75	100.61	100.65	100.64	100.73	100.82	100.83	100.88	100.91	100.98	100.98

ELEVEN MILE WASTEWAY (VALLEY DIVISION, YUMA PROJECT)

DESCRIPTION: Water-stage recorder and control weir on wasteway for discharging water from the West Main Canal to the Colorado River. This wasteway is located in Arizona, 4.3 miles downstream from the northerly international boundary and 3.2 miles downstream from Morelos Diversion Dam. It is the largest of three wasteways discharging waste water from the Valley Division of the Yuma Project in the United States into the limittrophe section of the Colorado River.

RECORDS: Flow is computed from head on the weir measured by the water-stage recorder and weir rating determined by current meter measurements. Station operated by the United States Section of the Commission. Records available: Daily discharge, January 1951 through 1975, obtained by the United States Section; monthly discharge, January 1924 through 1950, by Bureau of Reclamation.

EXTREMES: Prior to January 1951, maximum monthly discharge, 9,740 acre-feet in August 1940; minimum monthly discharge, zero in April 1941. Since January 1, 1951, maximum instantaneous discharge, 800 second-feet on December 3, 1961, at a maximum gage height of 117.60 feet; minimum instantaneous discharge, zero during parts of most years.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.3	0.2	0.2	0.4	0.3	49.8	0.2	0.3	0.3	0.3	0.4	21.6
2	.3	50.9	49.3	.3	.2	21.1	.2	2.4	.3	.3	45.1	* 1.2
3	.2	15.5	23.1	.3	.2	.6	.2	45.4	.3	.2	13.6	† .4
4	.2	1.6	1.3	.3	.3	.2	.2	19.2	.3	* .3	1.9	† .3
5	.2	.3	.5	.2	.3	.1	.2	.3	.3	† .3	.4	* .2
6	.3	.1	.1	18.8	.4	.1	.2	.1	.4	† .3	.2	.1
7	.3	.2	0	6.5	.4	.1	.2	.2	.4	* .3	.3	.2
8	.3	.2	0	3.1	.4	.2	.2	.1	.4	* .2	.3	.3
9	.4	.1	.1	1.7	.3	.3	.2	.2	.4	*14.3	.4	.2
10	.4	.2	.2	.1	.4	.2	.2	.2	.3	* .2	.3	.2
11	.4	.2	.2	0	.4	.2	.2	.2	.3	.2	.2	.2
12	.4	.2	.2	0	.4	.2	.2	14.7	.2	.3	.2	.2
13	.4	.2	.3	.1	.4	.2	.2	.4	.2	.3	.1	.2
14	.4	.2	.2	.2	.4	.2	.2	.3	.2	.3	.2	.3
15	.4	.2	.2	.3	.4	.2	.2	.4	.2	.2	.3	.3
16	.4	.2	.4	.3	.4	.3	.2	.4	.4	.2	.3	.3
17	.4	.3	.4	.3	.4	.2	.2	.4	.4	.2	.2	.3
18	.4	.3	.3	.2	.4	.2	.3	* .4	.4	.2	.2	.4
19	.4	.2	.2	.3	.4	.2	.3	* .5	.3	.2	.2	.3
20	.4	.2	.2	.3	.3	.2	.3	.5	.3	.3	.2	.3
21	.4	.2	.2	.4	.3	.2	.3	.5	.4	.2	.4	.3
22	.4	.2	.2	.3	.4	.2	.3	.5	.4	.2	.4	.4
23	.4	.2	.2	.2	.3	.2	.2	.5	.5	.3	* .4	.2
24	.4	.2	.3	.3	.3	.3	.2	.8	.4	.3	† .3	.3
25	.4	.2	.2	.2	.3	.2	.2	.5	.4	* .3	* .3	.3
26	.4	.2	.1	.3	.4	.2	.3	.4	.3	† .3	.4	.3
27	.3	.1	.2	.4	.3	.2	.3	.3	.3	† .4	.4	.3
28	.3	.2	.2	.4	.3	.2	.3	.3	.4	* .4	.3	.4
29	.2	.2	.2	.3	.4	.2	.2	.3	.3	.3	.4	.4
30	.2	.4	.4	.3	.4	.3	.2	.3	.3	.3	54.0	.4
31	.3		.4		.3		.2	.3		.4		.4
Sum	10.6	73.0	80.0	36.8	10.8	77.0	7.0	91.3	10.0	22.5	122.3	31.2

Current Year 1975									Period 1935-1975		
Month	Extreme Gage Feet		Extreme Second Feet			Average Second Feet	Total Acre Feet	Acre Feet			
	High	Low	Day	High	Day			Average	Maximum	Minimum	
Jan.	111.80	111.74	†10	0.6	† 4	0.1	0.3	21.0	3,266	9,570	20.0
Feb.	116.14	111.73	2	331	5	.1	2.6	145	2,631	8,430	14.5
Mar.	115.45	111.72	2	236	† 6	0	2.6	159	2,481	6,230	145
Apr.	114.80	111.72	6	179	†10	0	1.2	73.0	2,289	6,300	0
May	111.79	111.75	26	.5	† 2	.2	.3	21.4	2,740	9,320	11.3
June	115.99	111.73	1	308	† 5	.1	2.6	153	2,605	7,440	81.3
July	111.77	111.74	28	.4	† 4	.1	.2	13.9	2,627	8,320	13.9
Aug.	115.51	111.72	3	242	6	0	2.9	181	2,251	9,740	120
Sept.	111.79	111.75	† 6	.5	†12	.2	.3	19.8	1,639	6,140	6.0
Oct.	113.60	111.75	9	104	† 1	.2	.7	44.6	2,232	5,680	36.9
Nov.	115.97	111.73	30	306	.3	.1	4.1	243	2,663	8,220	18.8
Dec.	113.80	111.73	1	116	† 6	.1	1.0	61.9	3,524	9,430	61.9
Yearly	116.14	111.72		331		0	1.6	1,137	30,948	82,900	942.7

* Partially estimated † Estimated ‡ And other days

COLORADO RIVER AT ELEVEN MILE GAGE - STAGES

DESCRIPTION: Water-stage recorder on the left (Arizona) bank of the river, 4.3 miles downstream from northerly international boundary, 3.2 miles downstream from Morelos Diversion Dam, about 50 feet downstream from the mouth of Eleven Mile Wasteway of the Yuma Project, and 11 miles downstream from Yuma, Arizona, along the river levee. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Mean daily gage heights based on continuous water-stage records. Records available: Continuous record of gage heights, November 1947 through 1975; once weekly readings obtained by the U. S. Bureau of Reclamation, January 1940 through October 1947.

REMARKS: This station is maintained by the United States Section of the Commission as part of the continuing study of channel conditions in the limitrophe section of the river.

EXTREMES: Since November 1947, maximum mean daily gage height, 108.20 feet on January 2, 1958; minimum mean daily gage height, 94.95 feet on June 22, 1968.

Mean Daily Gage Height in Feet 1975

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	97.29	97.35	97.39	95.85	97.52	97.63	97.54	97.58	97.61	97.68	97.86	98.16
2	97.29	97.53	97.59	95.69	97.50	97.51	97.53	97.52	97.64	97.71	98.01	97.98
3	97.31	97.47	97.57	95.61	97.51	97.40	97.52	97.70	97.64	97.74	97.98	97.99
4	97.30	97.36	97.39	95.60	97.52	97.44	97.55	97.65	97.66	97.74	97.90	97.99
5	97.31	97.34	97.39	95.58	97.52	97.44	97.58	97.52	97.65	97.76	97.89	97.99
6	97.31	97.35	97.40	95.74	97.49	97.50	97.59	97.54	97.66	97.76	97.87	97.98
7	97.31	97.36	97.39	96.36	97.46	97.53	97.61	97.54	97.63	97.78	97.87	97.97
8	97.32	97.35	97.40	96.87	97.44	97.52	97.62	97.50	97.61	97.75	97.87	97.96
9	97.33	97.36	97.40	97.55	97.47	97.51	97.60	97.50	97.62	97.75	97.87	97.96
10	97.35	97.36	97.39	100.70	97.48	97.51	97.59	97.48	97.64	97.76	97.86	97.96
11	97.36	97.36	97.39	101.96	97.46	97.51	97.60	97.51	97.69	97.75	97.87	97.95
12	97.35	97.33	97.39	101.42	97.45	97.49	97.57	97.63	97.69	97.77	97.85	97.94
13	97.35	97.36	97.39	98.01	97.45	97.51	97.57	97.57	97.68	97.76	97.86	97.94
14	97.35	97.38	97.38	97.63	97.42	97.53	97.58	97.57	97.65	97.74	97.80	97.94
15	97.34	97.39	97.40	97.64	97.40	97.53	97.57	97.57	97.66	97.79	97.95	97.94
16	97.33	97.37	97.40	97.62	97.44	97.54	97.64	97.56	97.65	97.90	97.95	97.95
17	97.30	97.37	97.38	97.61	97.42	97.56	97.58	97.59	97.67	97.90	97.94	97.93
18	97.26	97.36	97.38	97.60	97.40	97.58	97.59	97.62	97.64	97.87	98.01	97.91
19	97.26	97.38	97.39	97.56	97.38	97.56	97.60	97.62	97.66	97.88	97.98	97.93
20	97.24	97.38	97.36	97.56	97.34	97.53	97.60	97.61	97.68	97.88	97.98	97.93
21	97.25	97.40	97.37	97.55	97.38	97.55	97.61	97.60	97.69	97.89	97.98	97.94
22	97.28	97.40	97.39	97.54	97.37	97.58	97.55	97.60	97.69	97.87	97.97	97.92
23	97.32	97.38	97.38	97.54	97.40	97.58	97.57	97.61	97.68	97.89	97.99	97.92
24	97.35	97.39	97.36	97.53	97.42	97.55	97.59	97.65	97.69	97.87	97.99	97.92
25	97.34	97.39	97.38	97.53	97.42	97.55	97.60	97.63	97.70	97.89	97.98	97.92
26	97.35	97.39	97.40	97.55	97.42	97.57	97.56	97.64	97.72	97.92	97.98	97.91
27	97.35	97.39	97.39	97.53	97.42	97.57	97.49	97.64	97.73	97.93	97.99	97.92
28	97.33	97.39	97.36	97.52	97.43	97.54	97.47	97.62	97.72	97.89	98.02	97.88
29	97.32		97.34	97.53	97.38	97.54	97.49	97.64	97.71	97.89	98.02	97.89
30	97.35		96.73	97.53	97.41	97.53	97.59	97.63	97.71	97.91	98.18	97.89
31	97.35		95.91		97.42		97.58	97.62		97.90		97.90
Avg.	97.32	97.38	97.33	97.52	97.44	97.53	97.57	97.59	97.67	97.82	97.95	97.95

TWENTY-ONE MILE WASTEWAY (VALLEY DIVISION, YUMA PROJECT)

DESCRIPTION: Water-stage recorder and control weir on wasteway for discharging water from the West Main Canal to the Colorado River. Prior to May 1, 1971, water-stage recorder and control weir were located at a site 200 feet upstream on wasteway. This wasteway is located in Arizona 18.5 miles downstream from the northerly international boundary, 17.4 miles downstream from Morelos Diversion Dam, and 2.2 miles upstream from the southerly international boundary. It is the farthest downstream of the two wasteways discharging waste water from the Valley Division of the Yuma Project in the United States into the limtrophe section of the Colorado River. The elevation of the zero of the gage at the new location has not been determined.

RECORDS: Flow is computed from head on the weir measured by the water-stage recorder and weir rating determined by current meter measurements. Station operated by the United States Section of the Commission. Records available: Daily discharge, January 1951 through 1975, obtained by the United States Section; monthly discharge, March 1939 through 1950, by Bureau of Reclamation.

REMARKS: This wasteway was completed and flow began March 14, 1939. Since May 13, 1944, waste water from the West Main Canal which previously discharged across the southerly land boundary has been returned to the Colorado River through this wasteway.

EXTREMES: Prior to January 1951, maximum monthly discharge, 2,860 acre-feet in January 1946; minimum monthly discharge, 122 acre-feet in September 1950. Since January 1, 1951, maximum instantaneous discharge, 102 second-feet on January 24, 1954, at a maximum gage height of 95.46 feet (old datum); minimum instantaneous discharge, zero during a part of most months.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	.8	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	1.4	0	0	0	0	0	0	0
6	0	0	0	0	.9	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	.1	0
8	0	0	0	0	.1	0	0	0	0	0	0	0
9	0	0	0	0	.1	0	0	0	0	0	0	0
10	.2	0	0	0	.1	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	.2	0	.1	0	0	0	0	0	0
15	0	0	0	.2	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	.3	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	.1	0	0	0	0	0	0
21	0	0	0	0	0	.1	0	0	0	0	0	0
22	0	0	0	0	0	.1	0	0	0	0	0	0
23	0	0	0	.1	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0
Sum	0.2	0	0	0.5	2.6	0.4	0.8	0	0	0.3	0.1	0

Month	Extreme Gage Feet		Extreme Second Feet				Average Second Feet	Total Acre Feet	Acre Feet		
	High	Low	Day	High	Day	Low	Acre Feet	Average	Maximum	Minimum	
Jan.	0.72	0	10	13.7	† 1	0	0	0.4	815	2,860	0
Feb.	0	0		0		0	0	0	701	2,510	0
Mar.	0	0		0		0	0	0	647	1,660	0
Apr.	.09	0	14	.5	† 1	0	0	1.0	696	1,940	0
May	.25	0	5	2.3	† 1	0	.1	5.2	846	2,470	0
June	.48	0	24	6.6	† 1	0	0	.8	739	2,350	0
July	.92	0	3	20.7	† 1	0	0	1.6	638	1,950	.4
Aug.	0	0		0		0	0	0	670	2,530	0
Sept.	0	0		0		0	0	0	601	2,180	0
Oct.	.78	0	16	15.8	† 1	0	0	.6	729	2,100	0
Nov.	.01	0	6	.1	† 1	0	0	.2	842	2,380	0
Dec.	0	0		0		0	0	0	929	2,680	0
Yearly	0.92	0		20.7		0	0	9.8	8,853	24,370	4.8

† And other days

EAST MAIN CANAL WASTEWAY (VALLEY DIVISION, YUMA PROJECT)

DESCRIPTION: Water-stage recorder and control weir located about 300 feet north of the international boundary near San Luis, Arizona, and 1.5 miles east of the Colorado River.

RECORDS: Wasteway discharges computed by United States Section of the Commission beginning November 1, 1953, from head on control weir as measured by water-stage recorder and weir ratings as determined by current meter measurements. Records available: October 1946 through 1975. Records of monthly discharges also are available for the periods January 1924 through June 1928, January 1932 through 1933, and April 1935 through September 1946.

REMARKS: Wasteway discharges from the East Main Canal comprise regulatory waste and drainage waters from the eastern half of the Valley Division of the Yuma Project and are considered as part of the volumes arriving at the limitrophe section of the Colorado River.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	18.2	19.4	10.8	3.7	6.2	9.8	15.5	2.1	15.2	4.2	16.4	3.1
2	13.1	6.5	3.2	14.3	4.3	3.9	19.8	19.5	19.0	15.0	35.5	6.8
3	17.4	2.1	2.3	10.4	7.1	.4	3.2	11.6	10.6	8.3	20.1	6.4
4	12.8	16.8	20.8	3.7	20.4	1.7	9.3	1.5	13.5	16.6	2.7	1.7
5	5.6	4.2	6.7	14.3	30.9	10.7	3.7	0	19.8	5.7	.4	6.5
6	7.7	9.8	0	24.7	18.7	10.3	2.4	0	11.6	10.9	0	3.7
7	10.5	5.3	7.1	14.3	5.7	13.2	13.7	3.4	4.7	18.0	14.3	.2
8	12.4	3.8	16.1	9.2	.4	9.0	6.8	13.5	22.3	6.9	15.7	24.0
9	4.3	9.8	25.1	2.5	8.1	13.0	10.1	20.1	21.0	7.8	14.6	12.8
10	24.3	12.9	4.1	13.3	1.3	* 2.5	2.2	31.9	15.9	4.7	11.5	1.1
11	17.4	8.5	.2	15.7	10.5	‡ 3.8	4.2	24.1	4.9	5.3	7.8	2.1
12	5.6	1.4	1.1	4.7	27.3	* 9.0	14.4	16.2	14.3	14.4	12.8	12.9
13	4.2	8.7	11.0	6.7	15.0	20.7	.8	6.4	23.2	18.7	14.2	7.0
14	1.7	6.0	1.5	1.4	26.4	10.9	24.3	2.2	27.3	5.0	1.2	10.6
15	6.2	3.5	1.8	5.0	24.0	24.9	18.7	20.5	14.8	4.7	10.4	14.9
16	12.2	11.3	3.9	4.1	21.4	23.3	4.8	24.6	6.6	14.7	* 19.3	3.8
17	10.2	9.8	30.5	3.8	6.7	1.8	4.0	21.9	13.0	14.4	‡ 11.0	.8
18	.7	2.3	3.4	2.0	7.8	0	8.8	19.9	10.3	20.4	* 4.1	.6
19	13.1	.7	.4	.8	.5	.4	5.7	2.9	8.2	19.3	‡ 5.1	9.6
20	21.1	0	.2	4.9	1.9	3.4	4.7	.3	20.4	1.4	‡ 4.0	20.0
21	10.0	13.8	20.3	9.4	15.9	.9	26.8	.4	4.9	10.4	* 3.5	8.3
22	15.0	5.7	8.5	1.2	6.1	4.3	10.2	9.7	4.5	7.3	20.1	5.3
23	9.4	9.0	5.4	0	30.8	5.8	9.3	13.5	8.5	13.7	15.8	2.2
24	.7	9.1	2.7	0	33.6	3.8	29.6	16.6	24.2	18.0	4.7	7.9
25	3.4	.7	18.0	18.1	21.7	20.9	1.8	14.3	6.6	20.8	9.8	14.2
26	3.8	15.0	3.7	11.7	27.1	12.7	5.6	14.9	13.5	11.6	8.3	29.0
27	3.9	18.0	2.5	11.2	10.3	3.2	9.0	31.7	24.2	12.7	10.5	3.4
28	13.5	14.7	20.0	2.8	7.8	.4	41.9	13.7	19.4	10.0	16.6	4.4
29	23.1	9.2	5.6	4.3	4.3	2.9	14.9	29.0	12.2	12.3	13.2	19.5
30	14.5	2.0	9.8	7.3	7.3	3.3	.6	11.4	13.1	15.6	7.9	36.0
31	11.5		0		30.0		4.0	15.8		6.7		19.0
Sum	327.5	228.8	242.5	229.3	439.5	230.9	330.8	413.6	427.7	355.5	331.5	297.8

Current Year 1975							Period 1935-1975				
Month	Extreme Gage Feet		Extreme Second Feet			Average Second Feet	Total Acre Feet	Acre Feet			
	High	Low	Day	High	Low			Average	Maximum	Minimum	
Jan.	90.83	90.15	30	49.2	† 15	0	10.6	650	1,170	3,360	280
Feb.	90.86	90.15	23	53.4	† 3	0	8.2	454	984	3,170	298
Mar.	90.92	90.15	28	61.8	† 3	0	7.8	481	1,136	2,920	190
Apr.	90.88	90.15	† 10	56.2	† 1	0	7.6	455	1,100	3,170	197
May	90.90	90.15	5	59.0	† 4	0	14.2	872	1,220	3,040	245
June	90.95	90.15	15	66.0	† 3	0	7.7	458	1,041	3,660	175
July	90.84	90.15	12	50.6	† 5	0	10.7	656	1,128	3,590	182
Aug.	91.19	90.15	15	51.9	† 5	0	13.3	820	1,148	3,960	169
Sept.	91.11	90.15	30	45.8	† 5	0	14.3	848	1,054	3,170	159
Oct.	91.17	90.16	25	50.4	11	.1	11.5	705	1,107	3,280	357
Nov.	91.09	90.15	7	44.3	6	0	11.0	658	1,213	3,570	313
Dec.	91.33	90.16	26	63.1	† 7	.1	9.6	591	1,186	3,080	292
Yearly	91.33	90.15		63.1		0	10.5	7,648	13,487	38,310	3,967

† And other days * Partly estimated ‡ Estimated

YUMA MAIN DRAIN (VALLEY DIVISION, YUMA PROJECT)

DESCRIPTION: Water-stage recorders located in the forebay and afterbay, with flow meters in the four discharge pipes at the Boundary Pumping Plant on the Main Drain about 200 feet north of the international boundary near San Luis, Arizona, 1.3 miles east of the Colorado River.

RECORDS: Main Drain discharges are lifted 10 to 12 feet at the pumping plant. Prior to April 1, 1969, discharges were computed from pump ratings and the differential head measured by the two gages. Beginning April 1, 1969 discharges were computed from flow meter charts. Pump ratings and flow meter discharges are checked by current meter measurements. Records obtained and computed by the United States Section of the Commission. Records available: Monthly discharges, June 1919 through 1951; daily discharges January 1952 through 1975.

REMARKS: Flows in the Main Drain are principally drainage waters from the Valley Division of the Yuma Project. The Main Drain, the East Main Canal Wasteway, and West Main Canal Wasteway discharge into Mexico at the international land boundary near San Luis, Sonora. The water is used for irrigation in Mexico on the left (Sonora) bank of the Colorado River and is considered as part of the volumes arriving at the limitrophe section of the river.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	110	117	134	99.8	139	130	130	126	133	138	132	118
2	113	117	122	118	124	136	134	130	128	149	150	115
3	108	121	105	130	136	135	135	135	120	152	142	117
4	115	112	120	122	147	137	128	128	125	149	125	125
5	117	121	118	128	125	128	137	126	136	147	117	116
6	118	124	115	123	129	133	133	114	119	147	125	113
7	115	132	121	121	116	136	132	118	121	137	125	106
8	128	113	127	120	146	132	137	131	127	140	143	119
9	113	109	97.8	122	144	131	138	129	118	145	133	121
10	113	114	102	131	134	147	136	138	139	137	124	103
11	114	99.1	124	126	142	147	136	121	138	143	124	131
12	109	124	104	126	144	141	127	118	149	141	116	122
13	102	132	130	131	133	143	128	124	140	140	130	123
14	108	129	125	129	144	154	131	131	135	138	135	122
15	122	127	133	126	138	144	128	134	142	137	131	136
16	134	132	138	129	154	148	127	134	152	144	134	115
17	123	131	138	128	143	129	121	132	149	157	125	111
18	116	112	116	122	142	115	131	144	146	142	129	114
19	108	104	112	123	143	129	137	142	152	135	122	117
20	113	115	123	134	139	130	134	130	144	135	124	113
21	128	135	115	140	152	130	142	113	142	133	134	130
22	118	96.7	132	128	142	128	130	131	168	135	126	120
23	120	76.6	132	118	148	131	129	151	151	135	117	119
24	115	80.3	135	114	141	142	130	137	159	144	114	123
25	121	111	130	134	131	134	139	149	157	137	113	127
26	120	128	115	126	123	134	132	137	164	132	121	113
27	108	123	116	126	146	123	123	128	146	135	125	113
28	114	130	130	126	131	135	139	133	161	127	123	102
29	115		126	128	145	130	134	141	147	128	131	121
30	125		128	119	139	131	132	139	143	131	115	124
31	117		118		136		128	135		134		116
Sum	3,600	3,265.7	3,781.8	3,747.8	4,296	4,043	4,098	4,079	4,251	4,324	3,805	3,675
Current Year 1975								Period 1935-1975				
Month	Extreme Gage Feet		Extreme Second Feet				Average Second Feet	Total Acre Feet	Acre Feet			
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum	
Jan.			16	134	13	102	116	7,140	7,865	11,203	1,740	
Feb.			21	135	23	76.6	117	6,477	7,755	11,988	1,640	
Mar.			16	138	9	97.8	122	7,501	8,870	12,430	1,940	
Apr.			21	140	1	99.8	125	7,434	8,659	11,890	1,920	
May			16	154	7	116	139	8,521	8,866	13,140	1,950	
June			14	154	18	115	135	8,019	8,211	12,040	2,290	
July			21	142	17	121	132	8,128	8,043	11,830	2,530	
Aug.			23	151	21	113	132	8,091	7,963	11,960	2,560	
Sept.			22	168	9	118	142	8,432	7,997	11,568	2,280	
Oct.			17	157	28	127	139	8,577	8,976	12,385	2,940	
Nov.			2	150	25	113	127	7,547	8,635	12,010	2,800	
Dec.			15	136	28	102	119	7,289	8,314	11,480	2,450	
Yearly				168		76.6	129	93,156	100,154	139,380	27,040	

† And other days

‡ Mean daily

WEST MAIN CANAL WASTEWAY (VALLEY DIVISION, YUMA PROJECT)

DESCRIPTION: Water-stage recorder located about 0.3 mile upstream from outlet to Yuma Main Drain, which is 175 feet upstream from East Main Canal Wasteway and 0.4 mile west of San Luis, Arizona. Prior to August 1, 1975, the recorder was located about 150 feet upstream from outlet to Yuma Main Drain.

RECORDS: Wasteway discharges computed by United States Section of the Commission beginning February 23, 1971, from water-stage recorder and ratings as determined by current meter measurements. Records available: March 1971 through 1975.

REMARKS: Wasteway discharges from West Main Canal Wasteway comprise regulatory waste from the West Main Canal.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.6	" 5.1	8.6	10.1	3.2	11.8	1.5	6.3	0.6	18.2	3.2	44.0
2	1.6	" 32.0	18.6	7.4	1.0	37.2	7.6	6.3	3.1	13.7	34.4	3.6
3	1.3	* 28.3	32.4	12.9	2.4	2.3	1.3	27.2	1.8	2.3	30.5	.5
4	2.0	2.3	3.0	19.9	12.9	.3	5.5	45.0	3.1	6.7	1.2	1.6
5	2.6	.3	.5	2.2	15.3	2.8	21.3	1.9	8.1	5.5	.2	14.4
6	5.5	6.2	6.9	5.7	4.5	7.3	10.7	.2	9.8	6.0	0	9.3
7	5.3	11.6	31.7	18.0	4.3	10.8	1.7	1.9	3.7	2.5	2.6	9.6
8	5.5	3.3	21.9	.7	12.6	3.6	.6	4.1	18.8	1.0	8.4	24.7
9	4.7	* 24.9	16.5	6.0	11.3	.5	1.6	4.8	11.2	.1	7.6	8.3
10	16.9	" 2.3	2.9	4.7	9.8	.6	1.4	.4	5.3	.5	.4	16.3
11	3.3	* 2.2	13.0	21.3	10.1	.6	3.1	6.6	5.8	5.7	7.4	15.1
12	3.9	* .1	10.9	21.3	8.3	3.1	3.6	4.8	3.1	12.8	.4	3.9
13	.9	" 1.6	16.7	26.8	.9	10.4	2.7	1.5	8.7	3.5	.4	1.0
14	1.0	* 11.2	14.4	15.0	2.7	12.6	.5	1.1	6.1	2.9	16.7	.6
15	.5	5.0	20.3	19.0	6.7	16.5	7.0	.2	22.0	1.6	6.3	.4
16	14.8	1.7	13.2	16.0	9.3	11.8	14.2	3.6	12.9	13.5	6.9	5.8
17	5.9	5.9	17.8	1.0	1.6	4.9	.5	7.5	4.5	17.7	7.3	4.8
18	9.1	1.7	13.0	5.0	.8	2.6	5.9	2.4	4.1	12.1	.8	6.8
19	5.3	9.6	20.9	10.6	5.4	8.3	11.5	.9	6.0	12.8	2.9	11.0
20	11.8	20.8	11.1	18.9	16.2	7.5	9.6	6.9	5.8	9.0	1.6	2.4
21	4.5	12.2	18.9	17.8	9.1	2.2	7.8	6.3	5.2	12.7	8.6	.8
22	4.5	5.7	20.0	13.4	16.2	2.8	9.8	3.8	2.0	9.4	16.9	5.2
23	4.3	4.0	16.4	1.8	10.8	11.3	2.2	14.1	6.5	6.4	15.8	4.2
24	6.9	13.6	11.2	8.0	6.5	4.9	3.1	6.5	2.7	.2	2.0	18.6
25	12.0	1.9	20.9	10.4	9.4	11.4	13.4	8.8	20.5	3.3	1.3	24.4
26	9.0	.1	15.3	10.3	6.9	4.0	19.3	3.0	4.8	.9	6.9	11.2
27	3.3	0	5.2	24.4	2.1	5.5	.3	.1	6.3	.9	13.5	1.6
28	1.1	2.3	21.9	5.3	1.0	3.2	4.3	2.4	12.4	5.7	23.6	.5
29	24.1	16.8	.7	3.7	3.4	3.4	10.4	5.5	7.3	4.2	5.9	3.5
30	* 21.1	22.0	.2	6.4	.9	6.4	1.8	11.3	4.3	9.9	21.4	15.8
31	* 15.4	10.3		1.6			8.4	2.3		12.2		7.6
Sum	212.7	216.1	473.2	334.8	213.0	205.1	192.6	197.7	216.5	213.9	255.1	277.5

Month	Extreme Gage Feet		Extreme Second Feet				Average Second Feet	Total Acre Feet	Period 1971-1975 Acre Feet		
	High	Low	Day	High	Day				Average	Maximum	Minimum
					Low	Day					
Jan.	2.00	0.08	31	55.4	12	0.1	6.9	422	354	506	237
Feb.	1.74	.04	3	44.2	† 11	0	7.7	429	492	563	429
Mar.	1.84	.06	7	48.4	1	.1	15.3	939	546	939	203
Apr.	1.93	.06	6	52.3	30	.1	11.2	664	417	664	175
May	2.15	.03	5	62.2	7	0	6.9	422	330	422	217
June	2.05	.03	2	57.6	† 10	0	6.8	407	372	480	253
July	1.79	.03	26	46.3	† 9	0	6.2	382	373	556	242
Aug.	2.60	0	4	66.4	† 6	0	6.4	392	369	536	166
Sept.	1.83	0	16	35.5	† 1	0	7.2	429	407	568	190
Oct.	1.88	0	6	37.3	† 1	0	6.9	424	440	728	270
Nov.	2.17	0	2	48.3	† 5	0	8.5	506	490	541	390
Dec.	2.28	0	1	52.8	† 4	0	9.0	550	404	550	188
Yearly	2.60	0		66.4	0		8.2	5,966	4,993	5,966	# 3,070

* Partly estimated " Estimated † And other days # Not for full year

TOTAL FLOWS CROSSING INTERNATIONAL BOUNDARY INTO MEXICO NEAR SAN LUIS, SONORA

DESCRIPTION: The tabulated data below are the combined flows of the East Main Canal Wasteway, West Main Canal Wasteway, and the Yuma Main Drain and represent the total water crossing the international land boundary into the Sanchez Mejorada Canal near San Luis, Arizona. The Mexican Section maintains a water-gage recorder in Mexico on right bank of Sanchez Mejorada Canal and obtains check measurements on a bridge located 0.2 mile downstream from the international boundary, 1.2 miles east of the Colorado River and 0.6 mile west of San Luis, Sonora.

RECORDS: Records obtained and computed by the United States Section of the Commission. Records available: East Main Canal Wasteway and Yuma Main Drain from January 1935 through 1975. West Main Canal Wasteway from February 23, 1971 through 1975.

REMARKS: Descriptions and flows of the individual stations, East Main Canal Wasteway, West Main Canal Wasteway and the Yuma Main Drain, are published separately in this bulletin on pages 29, 31, and 30.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	133	142	153	114	148	152	147	134	149	160	152	165
2	128	156	144	140	129	177	161	156	150	178	220	125
3	127	151	140	153	146	138	140	174	132	163	193	124
4	130	131	144	146	180	139	143	174	142	172	129	128
5	125	126	125	144	171	142	162	128	164	158	118	137
6	131	140	122	153	152	151	146	114	140	164	125	126
7	131	149	160	153	126	160	147	123	129	158	142	116
8	146	120	165	130	159	145	144	149	168	148	167	168
9	122	144	139	130	163	144	150	154	150	153	155	142
10	154	129	109	149	145	150	140	170	160	142	136	125
11	135	110	137	163	163	151	143	152	149	154	139	148
12	118	126	116	152	180	153	145	139	166	168	129	139
13	107	142	158	164	149	174	132	132	172	162	145	131
14	111	146	141	145	173	178	156	134	168	146	153	133
15	129	136	155	150	169	185	154	155	179	143	148	151
16	161	145	155	149	185	183	146	162	172	172	160	125
17	139	147	186	133	151	136	126	161	166	189	143	117
18	126	116	132	129	151	118	146	166	160	174	134	121
19	126	114	133	134	149	138	154	146	166	167	130	138
20	146	136	134	158	157	141	148	137	170	145	130	140
21	142	161	154	167	177	133	177	120	152	156	146	139
22	138	108	160	143	164	135	150	144	174	152	163	130
23	134	89.6	154	120	190	148	140	179	166	155	149	125
24	123	103	149	122	181	151	163	160	186	162	121	150
25	136	114	169	162	162	166	154	172	184	161	124	166
26	133	143	134	148	157	151	157	155	182	144	136	153
27	115	141	124	162	158	132	132	160	176	149	149	118
28	129	147	172	134	140	139	185	149	193	143	163	107
29	162	152	134	153	136	159	176	166	144	150	144	144
30	161	152	129	153	135	135	134	162	160	156	144	176
31	144		128		168		140	153		153		143
Sum	4,142	3,712.6	4,496	4,310	4,949	4,481	4,621	4,690	4,891	4,891	4,393	4,250
Current Year 1975									Period 1935-1975			
Month	Extreme Gage Feet		Extreme Second Feet				Average Second Feet	Total Acre Feet	Acre Feet			
	High	Low	Day	High	Low	Average			Maximum	Minimum		
							Day	Day			Day	
Jan.			29	162	13	107	134	8,212	9,389	12,131	* 2,123	
Feb.			21	161	23	89.6	133	7,360	9,231	12,970	* 2,023	
Mar.			17	186	10	109	145	8,921	10,552	13,704	* 2,322	
Apr.			21	167	1	114	144	8,553	10,176	12,982	2,117	
May			23	190	7	126	160	9,815	10,416	13,900	2,473	
June			15	185	18	118	149	8,884	9,624	12,570	2,525	
July			28	185	17	126	149	9,166	9,544	12,420	2,927	
Aug.			23	179	6	114	151	9,303	9,479	12,657	2,989	
Sept.			28	193	7	129	163	9,709	9,458	12,450	2,602	
Oct.			17	189	10	142	158	9,706	10,523	13,898	3,444	
Nov.			2	220	5	118	146	8,711	10,338	12,712	3,407	
Dec.			30	176	28	107	137	8,430	9,904	12,050	2,888	
Yearly				220		89.6	147	106,770	118,634	149,010	31,840	

β Mean daily

* Partly estimated

COLORADO RIVER AT SOUTHERLY INTERNATIONAL BOUNDARY - DISCHARGES

DESCRIPTION: Water-stage recorder located in Mexico on the right bank of the river about 1,000 feet upstream from the southerly international boundary, 2 miles west of San Luis, Arizona, and 19.4 miles downstream from Morelos Dam. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Records obtained and furnished by the United States Section of the Commission. Computations by shifting control methods. Records available: Daily discharges, January 1950 through 1975; continuous record of gage heights, January 1947 through 1975. Monthly flows for this station have been derived for the period January 1935 through 1949 based on the computed records of monthly flows of the Colorado River at the northerly international boundary combined with the measured monthly flows from the wasteways discharging into the boundary section of the river from the Yuma Project in Arizona.

REMARKS: Reservoirs, diversions in the United States and Mexico, drainage returns, and waste flows modify the river flow at this station.

EXTREMES: Since January 1950: Maximum instantaneous discharge, 28,610 second-feet on December 18, 1952; maximum gage height, 84.84 feet on November 29, 1957. Minimum discharge, no flow on several occasions since September 1, 1956.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	217	209	224	24.1	226	188	198	202	188	196	206	240
2	222	211	220	17.5	220	211	196	202	184	192	204	235
3	224	233	246	6.2	222	190	196	196	186	194	213	218
4	226	226	230	.7	220	184	192	204	188	196	216	220
5	224	215	207	0	217	186	198	199	188	198	208	218
6	224	211	204	0	220	190	200	190	188	198	208	218
7	224	215	200	.2	215	200	202	190	192	196	206	218
8	224	217	198	63.6	211	202	202	190	190	196	206	220
9	224	217	198	104	211	202	204	186	186	198	208	220
10	228	217	198	258	217	202	200	188	184	200	212	220
11	228	215	200	584	222	198	200	184	186	200	214	222
12	230	213	204	1,120	220	198	200	186	192	202	216	222
13	228	209	205	864	215	194	198	194	196	202	216	230
14	226	215	207	320	211	196	198	190	196	202	218	232
15	222	215	209	258	205	198	198	190	192	200	224	228
16	220	211	213	250	202	196	196	190	190	198	224	228
17	215	209	213	243	198	200	204	190	190	200	220	230
18	209	209	217	243	* 194	200	200	192	190	202	220	230
19	205	211	224	243	‡ 186	200	202	194	190	200	218	226
20	200	213	228	234	‡ 194	200	202	192	192	204	218	228
21	198	217	217	234	‡ 177	196	202	190	194	204	218	228
22	196	211	217	230	‡ 180	194	202	190	194	207	218	230
23	202	211	213	230	‡ 186	194	196	190	194	204	218	224
24	207	211	215	232	‡ 190	200	200	192	194	200	218	222
25	211	213	207	228	‡ 192	198	202	194	196	198	218	222
26	215	215	202	226	‡ 192	198	204	194	198	202	214	222
27	215	215	205	230	* 190	200	198	194	200	205	214	224
28	213	220	202	232	188	200	192	194	200	207	216	220
29	209	198	224	188	188	198	188	192	200	204	218	214
30	209	184	226	182	198	198	190	192	200	204	218	212
31	209		87.2		186		200	192		204		210
Sum	6,704	6,004	6,392.2	7,125.3	6,267	5,911	6,160	5,963	5,758	6,213	6,450	6,931
Current Year 1975									Period 1935-1975			
Month	Extreme Gage Feet		Extreme Second Feet			Average Second Feet	Total Acre Feet	Acre Feet				
	High	Low	Day	High	Low			Average	Maximum	Minimum		
Jan.	76.09	75.65	‡10	230	22	194	216	13,297	374,807	1,672,000	1,821	
Feb.	76.35	76.07	3	254	1	207	214	11,909	311,969	1,385,000	2,040	
Mar.	76.41	74.33	3	270	31	34.0	206	12,679	250,940	1,127,000	798	
Apr.	78.80	73.74	12	1,280	‡ 4	0	238	14,133	160,194	700,900	36.7	
May	75.66	* 75.43	1	228	21	* 173	202	12,430	219,950	1,160,000	1,045	
June	75.84	75.60	2	230	‡ 3	180	197	11,724	169,155	1,180,000	143	
July	75.74	75.63	9	207	29	186	199	12,218	124,021	772,800	0	
Aug.	75.82	75.62	4	213	‡ 9	184	192	11,827	138,087	796,000	0	
Sept.	75.76	75.66	28	202	‡ 2	182	192	11,421	167,427	1,033,000	0	
Oct.	75.96	75.73	‡27	207	3	190	200	12,323	214,312	1,192,000	9,120	
Nov.	76.13	75.95	3	232	2	202	215	12,793	281,056	1,428,000	7,180	
Dec.	76.21	75.98	1	262	31	210	224	13,747	353,825	1,839,000	2,320	
Yearly	78.80	73.74		1,280		0	208	150,501	2,765,743	10,688,800	83,792	

* Partly estimated ‡ Estimated † And other days

COLORADO RIVER AT SOUTHERLY INTERNATIONAL BOUNDARY - STAGES

(See Preceding Page For Description)

Mean Daily Gage Height in Feet 1975

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	75.66	76.09	76.17	74.19	75.65	75.62	75.70	75.71	75.69	75.74	75.96	76.10
2	75.68	76.11	76.15	74.09	75.63	75.75	75.69	75.71	75.67	75.73	75.96	76.08
3	75.69	76.24	76.28	73.89	75.64	75.65	75.69	75.68	75.67	75.75	76.05	76.00
4	75.70	76.20	76.21	73.77	75.63	75.62	75.67	75.74	75.68	75.77	76.05	76.00
5	75.70	76.15	76.09	73.74	75.62	75.63	75.70	75.72	75.68	75.79	76.01	75.99
6	75.70	76.13	76.05	73.74	75.63	75.65	75.71	75.65	75.68	75.80	76.01	75.99
7	75.70	76.15	76.01	73.75	75.61	75.70	75.72	75.65	75.71	75.80	76.00	75.99
8	75.70	76.16	75.98	74.63	75.58	75.72	75.72	75.65	75.70	75.81	75.99	76.00
9	75.71	76.16	75.96	75.01	75.58	75.72	75.73	75.63	75.68	75.82	75.99	75.99
10	75.73	76.16	75.94	75.79	75.61	75.72	75.71	75.64	75.67	75.83	76.00	75.99
11	75.74	76.14	75.93	77.03	75.63	75.70	75.71	75.62	75.68	75.84	75.99	76.00
12	75.75	76.13	75.93	78.41	75.61	72.70	75.71	75.63	75.71	75.85	75.98	76.00
13	75.75	76.10	75.92	77.80	75.59	75.68	75.70	75.67	75.73	75.85	75.98	76.04
14	75.76	76.13	75.91	76.24	75.57	75.69	75.70	75.66	75.73	75.85	76.00	76.06
15	75.76	76.12	75.91	75.88	75.55	75.70	75.70	75.66	73.71	75.85	76.02	76.04
16	75.77	76.10	75.92	75.81	75.53	75.70	75.69	75.67	75.70	75.85	76.02	76.04
17	75.77	76.08	75.91	75.76	75.52	75.72	75.72	75.67	75.70	75.87	76.00	76.05
18	75.76	76.07	75.92	75.75	*75.51	75.72	75.70	75.69	75.70	75.88	76.00	76.05
19	75.76	76.08	75.94	75.74	†75.48	75.73	75.71	75.70	75.70	75.88	75.99	76.04
20	75.75	76.10	75.95	75.69	†75.48	75.73	75.71	75.70	75.71	75.90	75.99	76.05
21	75.77	76.12	75.90	75.69	†75.45	75.71	75.71	75.69	75.72	75.91	75.99	76.05
22	75.79	76.10	75.89	75.66	†75.48	75.71	75.71	75.69	75.72	75.93	75.99	76.06
23	75.85	76.10	75.87	75.66	†75.52	75.71	75.68	75.69	75.72	75.92	75.99	76.03
24	75.91	76.11	75.87	75.67	†75.55	75.73	75.70	75.70	75.72	75.90	76.00	76.03
25	75.96	76.12	75.83	75.65	†75.57	75.72	75.71	75.71	75.73	75.90	76.00	76.03
26	76.01	76.13	75.80	75.64	†75.58	75.72	75.72	75.71	75.74	75.92	75.98	76.03
27	76.04	76.13	75.81	75.66	*75.58	75.72	75.69	75.71	75.75	75.95	75.98	76.04
28	76.05	76.15	75.79	75.67	75.58	75.72	75.66	75.71	75.75	75.96	75.99	76.02
29	76.05		75.76	75.64	75.59	75.71	75.64	75.70	75.75	75.95	76.00	76.00
30	76.07		75.64	75.65	75.57	75.71	75.65	75.71	75.75	75.95	76.00	75.99
31	76.08		74.90		75.60		75.70	75.71		75.96		75.98
Avg.	75.81	76.13	75.91	75.44	75.57	75.70	75.70	75.68	75.71	75.86	76.00	76.02

* Partly estimated

† Estimated

WASTEWAY TO COLORADO RIVER AT KILOMETER 27 IN MEXICO

DESCRIPTION: Water-stage recorder and cableway located on the left bank of the canal wasteway immediately upstream from where it discharges into the Colorado River, 0.6 mile downstream from the wasteway gates on Canal de Conexion, 16.8 miles downstream from Morelos Dam, and 0.2 mile south of the junction of the Mexicali-San Luis and Algodones-Pescaderos highways.

RECORDS: Data obtained and computed by the Colorado River Irrigation District of the Ministry of Hydraulic Resources and furnished by the Mexican Section of the Commission. Records shown in table below are waste returns to the Colorado River. Records available: April 1956 through 1975.

REMARKS: The Colorado River Irrigation District transports water for irrigation of land on the left bank of the Colorado River by the Canal de Conexion to a point called Kilometer 27. At this point, flows may be returned to the river through the wasteway or diverted to the Bacanora-Monumentos Canal system through the Sanchez Mejorada Siphon, which was placed in operation on June 28, 1963. As part of the rehabilitation works, started in 1968, of the Colorado River Irrigation District, the Canal de Conexion was enlarged and lined, and is now known as the Central Feeder Canal.

Monthly Discharge in Acre-Feet

Month	Current Year 1975	Period 1956-1975		
		Average	Maximum	Minimum
January	51.1	5,692	69,527	0
February	1,900	1,363	8,679	0
March	0	6,085	35,492	0
April	2,357	13,351	68,714	0
May	56.7	5,712	22,072	0
June	135	9,124	28,915	0
July	0	14,303	46,139	0
August	28.4	15,588	55,497	0
September	1,366	9,393	37,194	0
October	0	4,008	20,512	0
November	0	8,034	69,415	0
December	498	5,164	70,213	0
Yearly	6,392	91,259	346,339	0

COLORADO RIVER AT MIGUEL C. RODRIGUEZ IN MEXICO - DISCHARGES

DESCRIPTION: Water-stage recorder and cableway located in Mexico on the left bank of the Colorado River about 24.5 miles downstream from the southerly international boundary, 44.5 miles downstream from Morelos Dam and 4.5 miles upstream from the Sonora-Baja California railroad bridge. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 25 current meter measurements made during the year and a continuous record of gage heights. Data obtained and furnished by the Mexican Section of the Commission. From June 1951 to July 1954, discharges were computed from gage height records based on daily gage readings at 0:00 a.m., Pacific Standard Time. A continuous record of gage heights obtained since July 21, 1954. Records available: June 1951 through 1975.

REMARKS: Because of the discharge of drainage waters to the Colorado River immediately below Morelos Dam, the diversion by pumps along both banks of the river has been suspended. Since the use of irrigation waters has reduced the waste returns to a minimum, the flow at Rodriguez station consists mostly of the drainage waters mentioned above, and seepage from canals which run parallel and adjacent to the river at a higher elevation. Rainfall occurs during the months of December and January, which may increase the normal flow of the river, making discharge measurements from the cable necessary. The rest of the year the flow is low and discharge measurements are made by wading.

EXTREMES: Since January 1, 1952: Maximum mean daily gage height, 53.28 feet on January 4, 1958 with a discharge of 18,500 second-feet; minimum mean daily gage height, 37.73 feet on July 18, 1970 with a discharge of 2.8 second-feet; maximum mean daily discharge, 20,200 second-feet on December 19, 1952 with a gage height of 52.30 feet; minimum mean daily discharge, no flow on various occasions.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	153	107	107	50.9	108	71.7	61.1	59.0	60.7	85.1	73.5	98.5
2	150	107	105	43.8	107	71.0	61.1	58.6	61.4	80.9	73.8	97.8
3	146	106	106	36.7	106	70.6	61.1	58.3	61.8	76.6	74.5	97.1
4	143	106	106	29.7	105	70.6	61.4	57.9	62.2	72.7	78.8	96.8
5	139	106	105	23.0	103	70.6	61.4	57.9	62.5	68.5	83.0	96.1
6	136	106	105	15.9	102	70.3	61.4	57.6	63.2	64.3	87.2	95.3
7	133	106	104	8.8	101	69.9	61.4	57.2	63.6	64.3	91.5	94.6
8	129	105	104	33.9	99.9	69.9	61.4	56.9	63.9	64.6	95.7	93.9
9	126	106	103	59.0	98.2	69.9	61.4	56.9	68.2	64.5	99.9	93.6
10	123	106	103	83.7	96.8	69.6	61.4	56.5	72.4	65.0	104	92.9
11	119	107	103	109	95.0	69.2	61.8	56.2	76.6	65.0	108	92.2
12	116	107	103	134	93.6	69.2	61.8	56.2	80.5	65.3	113	91.5
13	113	107	104	159	91.8	69.2	61.8	56.5	84.8	65.3	117	91.1
14	112	107	104	233	90.4	68.9	61.8	56.5	89.0	65.3	121	90.4
15	112	107	105	600	88.6	68.5	61.8	56.5	93.2	65.7	125	89.7
16	111	107	105	219	87.2	68.5	61.4	56.9	97.5	65.7	130	90.4
17	111	107	105	134	85.5	67.8	61.4	56.9	102	66.0	134	91.1
18	111	108	105	131	84.0	67.5	61.4	56.9	106	66.0	131	91.8
19	110	108	105	127	82.3	67.1	61.1	57.2	110	66.4	129	92.5
20	109	108	106	123	81.6	66.4	61.1	57.2	114	66.4	126	93.2
21	109	108	106	119	80.5	65.7	60.7	57.6	118	67.1	124	93.9
22	109	108	106	118	79.8	65.3	60.7	57.6	123	67.5	121	94.6
23	108	109	106	117	79.1	65.0	60.7	57.6	118	68.2	119	95.3
24	108	109	107	116	78.4	64.3	60.4	57.6	114	68.9	116	95.1
25	107	108	99.6	115	77.3	63.6	60.4	57.9	110	69.2	114	96.8
26	107	108	92.5	114	76.6	63.2	60.4	58.3	106	69.9	111	97.5
27	107	108	85.8	113	75.9	62.9	60.0	58.6	102	70.3	109	98.2
28	107	107	78.8	111	74.9	62.2	60.0	59.3	97.5	71.0	106	98.9
29	107		71.7	110	74.2	61.4	59.7	59.7	93.2	71.7	103	99.6
30	107		64.6	109	73.5	61.1	59.3	60.0	89.3	72.0	101	101
31	107		57.6		72.7		59.3	60.4		72.7		102
Sum	3,685	3,002	3,069.9	3,496.2	2,749.2	2,021.1	1,890.7	1,788.0	2,664.1	2,132.3	3,220.3	2,943.8
Current Year 1975								Period 1951-1975				
Month	Extreme Gage Feet		Extreme Second Feet				Average Second Feet	Total Acre Feet	Acre Feet			
	High	Low	Day	High	Low	Average			Maximum	Minimum		
Jan.	41.40	40.94	1	153	†27	107	119	7,309	202,300	1,047,732	426	
Feb.	41.34	40.94	†23	109	†3	106	107	5,954	127,509	696,461	317	
Mar.	41.34	40.78	†1	107	31	57.6	98.9	6,089	89,989	807,342	0	
Apr.	44.09	39.44	15	600	†9	8.8	117	6,935	59,214	588,983	0	
May	40.94	40.65	1	108	31	72.7	88.6	5,453	38,015	732,815	0	
June	41.24	40.72	1	71.7	30	61.1	67.5	4,009	36,153	555,460	0	
July	41.37	41.14	†10	61.8	†30	59.3	61.1	3,750	19,606	264,561	0	
Aug.	41.24	40.88	31	60.4	†11	56.2	57.6	3,546	28,846	309,320	0	
Sept.	41.96	40.98	22	123	1	60.7	88.5	5,284	44,925	572,551	0	
Oct.	41.86	41.47	†28	85.1	2	64.3	68.9	4,229	74,628	769,939	2,459	
Nov.	42.13	41.86	17	134	1	73.5	107	6,388	122,855	909,399	5,185	
Dec.	42.09	41.73	31	102	15	89.7	95.0	5,839	165,570	1,060,767	687	
Yearly	44.09	39.44		600		8.8	89.7	64,785	1,020,077	7,923,600	25,036	

∅ Mean daily

† And other days

COLORADO RIVER AT MIGUEL C. RODRIGUEZ IN MEXICO - STAGES

(See Preceding Page For Description)

Mean Daily Gage Height in Feet 1975

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	41.40	40.94	41.34	40.03	40.85	40.72	41.27	41.14	41.04	41.57	41.90	41.99
2	41.40	40.94	41.08	39.96	40.85	40.72	41.27	41.17	41.01	41.50	41.90	42.03
3	41.40	40.94	40.94	39.90	40.85	40.91	41.27	41.21	41.04	41.47	41.93	42.09
4	41.34	40.94	40.98	39.83	40.85	41.01	41.27	41.17	41.08	41.47	41.93	42.06
5	41.34	40.98	40.98	39.70	40.81	40.85	41.27	41.14	41.08	41.47	41.99	42.03
6	41.31	40.94	40.94	39.63	40.81	40.81	41.31	41.17	41.04	41.47	41.99	41.99
7	41.14	41.01	40.94	39.53	40.88	40.81	41.31	41.04	41.01	41.50	41.99	41.99
8	41.11	40.98	40.94	39.50	40.94	40.88	41.34	41.01	41.04	41.50	41.99	41.99
9	41.11	40.98	40.91	39.53	40.91	40.94	41.34	41.01	41.08	41.54	41.99	41.96
10	41.11	40.98	40.91	39.70	40.88	40.98	41.37	40.98	41.04	41.57	41.99	41.96
11	41.08	40.94	40.94	40.42	40.91	41.01	41.34	40.94	41.04	41.60	41.99	41.96
12	41.08	40.94	40.91	41.21	40.91	41.01	41.31	40.91	41.08	41.60	41.99	41.93
13	41.08	40.94	40.88	41.70	40.88	41.01	41.34	40.91	41.08	41.60	41.99	41.93
14	41.08	40.94	40.88	42.68	40.85	40.98	41.31	40.98	41.14	41.67	41.99	41.90
15	41.08	40.98	40.88	43.77	40.85	40.98	41.31	41.01	41.14	41.70	41.99	41.90
16	41.08	40.94	40.85	42.55	40.81	40.94	41.31	40.98	41.14	41.73	41.99	41.86
17	41.11	40.98	40.85	41.34	40.81	40.94	41.34	40.94	41.11	41.70	42.03	41.90
18	41.08	41.01	40.85	41.08	40.85	40.98	41.34	40.94	41.11	41.70	42.06	41.83
19	41.03	41.01	40.81	41.04	40.85	41.08	41.37	40.94	41.17	41.73	42.03	41.93
20	41.04	41.04	40.81	41.01	40.78	41.14	41.34	40.98	41.34	41.73	42.03	41.90
21	41.08	41.08	40.81	41.01	40.72	41.11	41.31	40.98	41.70	41.73	42.03	41.96
22	41.04	41.11	40.81	41.11	40.65	41.14	41.34	40.98	41.90	41.77	42.03	41.90
23	40.98	41.14	40.78	41.08	40.72	41.14	41.34	40.98	41.63	41.80	41.99	41.90
24	40.94	41.14	40.78	41.04	40.72	41.17	41.31	40.98	41.70	41.77	41.96	41.86
25	40.94	41.17	40.78	41.01	40.72	41.17	41.27	41.01	41.67	41.80	41.96	41.83
26	40.94	41.27	40.81	40.98	40.72	41.21	41.27	41.04	41.60	41.83	41.99	41.83
27	40.94	41.31	40.88	40.94	40.75	41.21	41.27	41.04	41.63	41.83	42.03	41.93
28	40.94	41.34	40.94	41.01	40.75	41.21	41.27	41.04	41.77	41.86	42.09	41.83
29	40.94		40.88	41.01	40.75	41.21	41.24	41.04	41.67	41.86	42.03	41.73
30	40.94		40.88	40.94	40.75	41.21	41.21	41.04	41.60	41.86	41.96	41.73
31	40.94		40.85		40.72		41.14	41.04		41.86		41.80
Avg.	41.11	41.04	40.91	40.81	40.81	41.01	41.31	41.01	41.27	41.67	41.99	41.93

WASTEWAY TO COLORADO RIVER AT KILOMETER 38 IN MEXICO

DESCRIPTION: Wasteway to the Colorado River on the left bank of new Barrote Canal at old dam and bridge at Kilometer 19+251 (old Kilometer 38+000). The wasteway is located in the Colonia Bojorquez 0.8 miles upstream from the Sonora-Baja California railroad bridge, 3.7 miles downstream from the Miguel C. Rodriguez gaging station, and 28.1 miles downstream from the southerly international boundary.

RECORDS: The records are computed by the Ministry of Hydraulic Resources and based upon gate openings. Records available: January 1964 through 1975.

REMARKS: The wasteway structure on the left bank of the Colorado River has two manually operated radial gates 9.8 feet wide. It discharges into a dirt canal 656 feet long with a total capacity of 459 cubic feet which discharges to the river.

Monthly Discharge in Acre-Feet

Month	Current Year 1975	Period 1964-1975		
		Average	Maximum	Minimum
January	0	156	1,453	0
February	0	99.7	953	0
March	0	85.9	572	0
April	0	0	0	0
May	0	31.5	378	0
June	0	0	0	0
July	0	0	0	0
August	85.1	7.1	85.1	0
September	0	0	0	0
October	1,381	170	1,381	0
November	43.8	113	413	0
December	0	54.6	655	0
Yearly	1,510	719	3,853	0

COLORADO RIVER AT EL MARITIMO IN MEXICO - STAGES

DESCRIPTION: Water-stage recorder and cableway in Mexico, 47.6 miles downstream from the southerly international boundary, 18.6 miles downstream from the Sonora-Baja California railroad bridge and 3.7 miles east of Kilometer 70 of the Mexicali-San Felipe Highway. The recorder is located on the right bank of the Colorado River. The zero of the gage is 9.84 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Records obtained and computed by the Mexican Section of the Commission. Records available: Mean daily discharges from January 1960 through 1968. Incomplete record of gage heights, March 1, 1946 through November 1947; twice daily readings of gage heights, January 1, 1948 through December 1949; continuous record of gage heights since installation of water-stage recorder February 8, 1956. Mean daily gage heights, January 1960 through 1975.

REMARKS: In former years the flow past this station was affected by the tides in the Gulf of California. After July 1968, measurement by current meter was suspended; beginning in 1969, twice daily readings of gage heights and no record of mean daily discharges.

EXTREMES: January 1960 through 1968; Maximum daily discharge, 4,380 second-feet, January 21 and December 7 and 8, 1960; minimum discharge, no flow on various occasions. Maximum monthly discharge, 225,224 acre-feet, January 1960; minimum monthly discharge, zero during various months of several years. Annual maximum discharge, 503,260 acre-feet during 1960; minimum 59,335 acre-feet in 1968. January 1960 through 1975; Maximum instantaneous gage height, 18.73 feet on January 21, 1960; minimum gage height, 12.47 feet on August 31 and September 1, 1960.

Mean Daily Gage Height in Feet 1975

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	15.09	15.03	15.03	15.03	15.03	14.90	14.70	14.70	14.70	14.70	14.70	14.80
2	15.09	15.03	15.03	15.03	15.03	14.90	14.70	14.70	14.70	14.70	14.70	14.80
3	15.09	15.03	15.03	14.96	14.99	14.90	14.70	14.70	14.70	14.70	14.70	14.76
4	15.09	15.03	15.03	14.96	14.96	14.90	14.70	14.70	14.70	14.70	14.70	14.80
5	15.09	15.03	15.03	14.93	14.96	14.86	14.70	14.70	14.70	14.63	14.70	14.80
6	15.12	15.03	15.03	14.96	14.96	14.86	14.70	14.70	14.70	14.63	14.70	14.83
7	15.12	15.03	15.03	14.96	14.93	14.86	14.70	14.70	14.70	14.63	14.70	14.86
8	15.12	15.03	15.03	15.03	14.96	14.83	14.70	14.70	14.70	14.63	14.70	14.90
9	15.12	15.03	15.03	15.03	14.96	14.83	14.70	14.70	14.70	14.63	14.70	14.90
10	15.12	15.03	15.03	15.06	14.96	14.83	14.70	14.70	14.70	14.63	14.70	14.90
11	15.09	15.03	15.03	15.06	14.96	14.83	14.70	14.70	14.70	14.63	14.70	14.93
12	15.09	15.03	15.03	15.09	14.96	14.83	14.70	14.70	14.70	14.63	14.70	14.96
13	15.09	15.03	15.03	15.09	14.96	14.83	14.70	14.70	14.73	14.63	14.70	14.96
14	15.09	15.03	15.03	15.09	14.96	14.80	14.70	14.70	14.73	14.63	14.70	14.96
15	15.09	14.99	14.99	15.12	14.96	14.76	14.70	14.70	14.73	14.63	14.67	14.96
16	15.09	14.99	14.99	15.16	14.96	14.76	14.70	14.76	14.76	14.63	14.67	14.96
17	15.06	14.99	14.99	15.16	14.96	14.76	14.67	14.70	14.76	14.63	14.63	14.96
18	15.06	15.03	14.99	15.16	14.96	14.76	14.67	14.70	14.76	14.63	14.63	14.96
19	15.06	15.03	15.03	15.16	14.93	14.76	14.67	14.70	14.73	14.63	14.63	14.96
20	15.06	15.03	15.03	15.16	14.93	14.76	14.63	14.70	14.73	14.63	14.63	14.96
21	15.06	15.03	15.03	15.16	14.93	14.76	14.67	14.70	14.70	14.63	14.63	14.96
22	15.06	15.03	15.03	15.16	14.93	14.76	14.67	14.70	14.70	14.63	14.63	14.96
23	15.03	15.03	15.03	15.16	14.93	14.76	14.70	14.70	14.70	14.63	14.63	14.96
24	15.03	15.03	15.03	15.12	14.93	14.73	14.70	14.70	14.70	14.70	14.63	14.96
25	15.03	15.03	15.03	15.09	14.90	14.73	14.70	14.70	14.70	14.70	14.67	14.96
26	15.03	15.03	15.03	15.09	14.90	14.73	14.70	14.70	14.70	14.70	14.70	14.96
27	15.03	14.99	15.03	15.09	14.90	14.73	14.70	14.70	14.70	14.70	14.73	14.96
28	15.03	15.03	15.03	15.09	14.90	14.70	14.70	14.70	14.70	14.70	14.76	14.99
29	15.03	15.03	15.03	15.09	14.90	14.70	14.70	14.70	14.70	14.70	14.76	14.96
30	15.03	15.03	15.03	15.09	14.90	14.70	14.70	14.70	14.70	14.70	14.80	14.96
31	15.03	15.03	15.03	15.09	14.90	14.70	14.70	14.70	14.70	14.70	14.80	14.96
Avg.	15.06	15.03	15.03	15.09	14.93	14.80	14.70	14.70	14.70	14.67	14.70	14.93

STORED WATER IN LARGE RESERVOIRS OF THE COLORADO RIVER

Data are presented below for all large storage reservoirs in the Colorado River basin below Lee's Ferry, all of which are located in the United States. The monthly figures represent usable contents on the last day of the month, in thousands of acre-feet. The capacities indicated are usable capacities at the top of the spillway gates in closed position, for those dams having controlled spillways; for all others, capacities indicated are at spillway level. Records furnished by the U. S. Geological Survey.

In Thousands of Acre-Feet

Month	LAKE MEAD (Capacity 26,159.0)		LAKE MOHAVE (Capacity 1,810.0)		HAVASU LAKE (Capacity 619.4)		TOTAL IN UNITED STATES RESERVOIRS (Capacity 28,588.4)	
	1975	Average 1935-1975	1975	Average 1951-1975	1975	Average 1939-1975	1975	Estimated Average
Jan.	19,975	16,742	1,593	1,647	543.4	554.4	22,111.4	18,943.4
Feb.	19,928	16,457	1,657	1,675	551.0	558.5	22,136.0	18,690.5
Mar.	19,764	16,177	1,604	1,671	554.1	573.2	21,922.1	18,421.2
Apr.	19,383	16,328	1,547	1,679	602.2	603.6	21,532.2	18,610.6
May	19,316	17,315	1,620	1,735	610.8	603.2	21,546.8	19,653.2
June	19,421	18,692	1,632	1,627	601.2	605.5	21,654.2	20,924.5
July	19,743	18,895	1,538	1,490	597.4	593.6	21,878.4	20,978.6
Aug.	19,899	18,657	1,442	1,419	574.9	576.0	21,915.9	20,652.0
Sept.	20,154	18,350	1,385	1,400	573.4	570.5	22,112.4	20,320.5
Oct.	20,196	18,073	1,401	1,424	559.2	572.9	22,156.2	20,069.9
Nov.	20,094	17,828	1,482	1,505	554.6	561.7	22,130.6	19,894.7
Dec.	20,092	17,544	1,542	1,596	545.6	556.3	22,179.6	19,696.3
Avg.	19,830	17,588	1,537	1,572	572.3	577.4	21,939.6	19,737.4
Max.	20,196	27,780	1,657	1,803	610.8	688.7	22,179.6	28,235.0
Min.	19,316	* 10,727	1,385	1,186	543.4	76.9	21,532.2	13,082.6

* Minimum since 1940

SUSPENDED SILT

The following tables are based on determinations of gravimetric percentages of dry silt in water samples taken at each station by one of the following methods:

A. By lowering a D-43 depth integrating sampler at verticals located at centers of sections of equal discharge in the river cross section, being careful to approach but not strike the bottom. The samples obtained in the section are combined to comprise a composite sample for that date.

B. By lowering a D-43 depth integrating sampler at verticals located at centers of each span of the service bridge across the Alamo Canal, being careful to approach but not strike the bottom. The samples obtained in the section are combined to comprise a composite sample for that date.

C. By sampling at the stream surface with a separate bottle at each of three points, spaced 1/6, 1/2, and 5/6 of the stream width. The gravimetric percentage in each sample is determined, a coefficient of 1.10 is applied to the average of the three, and the product applied to the volume of the stream flow represented by that set of samples.

For ease of comparison, the assumption is made that 1,847 tons of deposited silt would occupy a volume of one acre-foot, or one cubic foot of deposited silt would weigh 85 pounds.

Month	1975						Period of Record		
	Tons		No. of Samples	Gravimetric Percentages			Acre-Feet at 1,847 Tons Per Acre Foot		
	Water	Silt		Average	Maximum Sample	Minimum Sample	Average	Maximum	Minimum

Colorado River at Northerly International Boundary

Period 1956-1975

Jan.	96,667,000	2,500	4	0.0026	0.0032	0.0016	1.4	29.2	336	1.4
Feb.	120,868,000	5,700	4	.0047	.0091	.0022	3.1	13.7	116	1.6
Mar.	197,771,000	18,900	4	.0095	.0158	.0036	10.2	44.6	499	8.8
Apr.	262,600,000	38,200	4	.0145	.0365	.0047	20.7	41.1	434	7.9
May	145,128,000	6,100	4	.0042	.0050	.0033	3.3	14.9	201	2.3
June	151,543,000	7,900	4	.0052	.0059	.0042	4.3	15.2	92.6	4.3
July	226,479,000	16,000	5	.0071	.0146	.0052	8.7	20.9	89.3	6.1
Aug.	215,238,000	40,100	4	.0186	.0618	.0029	21.7	20.7	103	6.2
Sept.	137,527,000	6,100	4	.0044	.0091	.0023	3.3	8.6	43.6	1.6
Oct.	89,182,000	2,600	5	.0029	.0044	.0020	1.4	4.0	20.0	.5
Nov.	91,268,000	2,300	4	.0025	.0038	.0012	1.2	10.6	89.9	.5
Dec.	162,757,000	6,200	5	.0038	.0052	.0025	3.4	20.8	174	.6
Yearly	1,897,028,000	152,600	51	0.0080	0.618	0.0012	82.7	244.3	2,198	59.2

Samples by U. S. Section and analyses by United States Bureau of Reclamation, Method A

Intake Canal at Morelos Diversion Structure

Period 1952-1975

Jan.	96,268,000	4,507	4	0.0047	0.0069	0.0038	2.4	5.4	22.3	0.2
Feb.	120,755,000	4,933	4	.0041	.0046	.0031	2.7	5.7	19.4	.9
Mar.	197,308,000	9,814	4	.0050	.0053	.0046	5.3	41.8	154	5.3
Apr.	251,519,000	24,632	5	.0098	.0190	.0041	13.3	38.1	121	7.5
May	144,507,000	8,330	4	.0058	.0151	.0036	4.5	10.5	51.2	1.5
June	151,050,000	6,392	4	.0042	.0055	.0034	3.5	29.0	109	3.5
July	225,937,000	9,692	5	.0043	.0048	.0037	5.3	41.9	156	5.3
Aug.	214,823,000	9,553	4	.0044	.0051	.0037	5.2	38.8	135	5.2
Sept.	137,307,000	6,139	4	.0045	.0051	.0039	3.3	16.0	64.7	1.9
Oct.	88,916,000	3,402	4	.0038	.0048	.0033	1.9	4.1	12.0	.3
Nov.	90,830,000	2,856	4	.0031	.0038	.0027	1.5	2.1	9.3	.2
Dec.	162,031,000	5,713	5	.0035	.0039	.0031	3.1	4.7	14.8	1.1
Yearly	1,881,251,000	95,963	51	0.0048	0.0190	0.0027	52.0	238	696	51.4

Samples and analyses by Mexican Section, Method B

SUSPENDED SILT

Month	1975						Period of Record		
	Tons		No. of Samples	Gravimetric Percentages			Acre-Feet at 1,847 Tons Per Acre Foot		
	Water	Silt		Average	Maximum Sample	Minimum Sample	Average	Maximum	Minimum

Colorado River at Southerly International Boundary

Period 1946-1975

Jan.	18,071,000	2,000	1	0.0110	0.0147	0.0082	1.1			
Feb.	16,184,000	1,100	1	.0068	.0081	.0062	.6			
Mar.	17,231,000	1,000	1	.0058	.0062	.0053	.5			
Apr.	19,207,000	1,400	2	.0073	.0076	.0060	.8			
May	16,892,000	1,400	1	.0083	.0093	.0076	.8			
June	15,933,000	1,300	0	.0081	.0089	.0075	.7			
July	16,604,000	1,100	1	.0066	.0074	.0045	.6			
Aug.	16,073,000	500	1	.0031	.0044	.0020	.3			
Sept.	15,521,000	500	0	.0032	.0041	.0027	.3			
Oct.	16,747,000	800	1	.0048	.0060	.0042	.4			
Nov.	17,386,000	1,200	1	.0069	.0070	.0062	.6			
Dec.	18,682,000	1,400	1	.0075	.0107	.0054	.8			
Yearly	204,531,000	13,700	11	0.0067	0.0147	0.0020	7.5			

Samples by U. S. Section and analyses by United States Bureau of Reclamation, Method A

Colorado River at Miguel C. Rodriguez Gaging Station

Period 1960-1975

Jan.	9,937,000	312	2	0.0031	0.0034	0.0031	0.2	17.8	251	0
Feb.	8,095,000	249	2	.0031	.0040	.0020	.2	2.7	13.9	0
Mar.	8,279,000	211	2	.0025	.0031	.0020	.1	.5	4.1	0
Apr.	9,429,000	737	2	.0078	.0100	.0033	.4	.2	1.1	0
May	7,414,000	449	2	.0061	.0083	.0042	.2	.3	1.5	0
June	5,451,000	153	3	.0028	.0041	.0020	.1	.1	.7	0
July	5,099,000	131	2	.0026	.0032	.0020	.1		.2	0
Aug.	4,822,000	231	2	.0048	.0063	.0033	.2	.1	.2	0
Sept.	7,185,000	285	2	.0040	.0051	.0029	.2	.3	4.5	0
Oct.	5,751,000	177	2	.0031	.0042	.0020	.1	2.0	20.8	.1
Nov.	8,685,000	235	2	.0027	.0032	.0021	.2	3.2	36.0	.1
Dec.	7,939,000	226	3	.0028	.0032	.0022	.2	3.0	13.0	0
Yearly	88,087,000	3,397	26	0.0038	0.0100	0.0020	1.9	30.2	289	1.6

Samples and analyses by Mexican Section, Method C

CHEMICAL ANALYSES OF WATER SAMPLES 1975

The table below is based on chemical analyses of weekly samples from the Colorado River at the Northerly International Boundary taken by the United States Section of the Commission and analyzed by the U.S. Geological Survey.

To convert milligram equivalents to parts per million by weight, multiply each ion by its appropriate conversion factor. These factors are: Ca, 20.04; Mg, 12.16; Na, 22.99; (CO₃ plus HCO₃) expressed as CO₃, 30.00; SO₄, 48.03; Cl, 35.45; NO₃, 62.00. To convert tons per acre-foot to parts per million, multiply tons per acre-foot by 735.5. Electrical conductivity, reported in the tables as ECx10⁶ at 25°C, is a relative measure of the total salt concentration.

Month	No. of Samples	Dissolved Solids		ECx10 ⁶ @25°C	Boron p. p. m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter						
		Tons Per Acre-Foot	Total Tons						Ca	Mg	Na	CO ₃ + HCO ₃	SO ₄	Cl	NO ₃

Colorado River at Northerly International Boundary

Jan.	4	1.38	98,100	1,605		8.0	50	31	5.27	2.97	8.17	3.39	7.97	5.17	
Feb.	4	1.35	120,000	1,567		8.0	49	31	5.22	2.97	7.87	3.32	7.87	4.96	
Mar.	5	1.31	190,000	1,535		8.0	48	30	5.23	2.90	7.59	3.30	7.69	4.82	
Apr.	4	1.26	244,000	1,469		8.0	47	30	5.11	2.90	7.09	3.20	7.48	4.48	
May	4	1.33	142,000	1,545		8.0	48	30	5.34	2.80	7.66	3.35	7.74	4.84	
June	5	1.32	147,000	1,531		8.0	48	30	5.26	2.81	7.58	3.33	7.71	4.73	
July	4	1.25	208,000	1,452		8.0	47	29	5.04	2.82	6.97	3.11	7.43	4.33	
Aug.	4	1.26	199,000	1,462		8.1	47	30	4.97	2.90	7.06	3.10	7.45	4.47	
Sept.	5	1.31	133,000	1,533		8.1	49	30	5.04	2.99	7.62	3.23	7.72	4.80	
Oct.	4	1.41	92,400	1,634		8.1	50	31	5.34	3.02	8.41	3.45	8.11	5.29	
Nov.	4	1.44	96,700	1,687		8.1	51	32	5.67	2.87	8.76	3.57	8.25	5.58	
Dec.	5	1.36	163,000	1,572		8.0	49	31	5.22	2.94	7.92	3.30	7.86	4.98	
Mean @	β52	1.33	β1,833,200	1,549		8.0	49	30	5.23	2.91	7.72	3.30	7.77	4.88	
Period Avg.		1.63	2,360,414	1,973		7.9			5.96	3.65	10.24	3.32	8.42	8.12	
Tons of Constituents				1975					199,000	67,200	337,000	188,000	708,000	329,000	
Avg. Tons				Period 1962-1975					234,000	87,300	465,000	194,000	790,000	576,000	

** Percent of total cations *** Percent of total anions @ Weighted mean β Total

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1975

The following tables show electrical conductivity, expressed in mhos per centimeter $\times 10^6$ at 25°C, of individual water samples taken at Colorado River stations and in Mexican canals. Samples were taken at the northerly international boundary by both Sections of the Commission and at the southerly international boundary by the United States Section. Conductivity determinations were made by the United States Geological Survey. Samples for the Intake Canal at Morelos Dam, Sanchez Mejorada Canal, and Miguel C. Rodriguez Gaging Station were taken by the Mexican Section of the Commission, who also made determinations for the Sanchez Mejorada Canal. Determinations for the Intake Canal at Morelos Dam and Miguel C. Rodriguez Gaging Station were made by the Ministry of Hydraulic Resources of Mexico.

Electrical conductivity is a relative indication of the concentration of dissolved solids in the water samples.

Date	ECx10 ⁶ @25°C										
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Colorado River at Northerly International Boundary

January	February	April	May	July	August	October	November
1 1,550	15 1,600	1 1,450	16 1,600	1 1,450	16 1,410	1 1,610	16 1,730
2 1,590	16 1,590	2 1,480	17 1,610	2 1,500	17 1,420	2 1,700	17 1,720
3 1,580	17 1,560	3 1,430	18 1,610	3 1,490	18 1,430	3 1,640	18 1,690
4 1,550	18 1,580	4 1,440	19 1,590	4 1,510	19 1,430	4 1,620	19 1,600
5 1,550	19 1,590	5 1,480	20 1,550	5 1,530	20 1,420	5 1,630	20 1,600
6 1,570	20 1,580	6 1,470	21 1,540	6 1,530	21 1,430	6 1,670	21 1,590
7 1,600	21 1,550	7 1,480	22 1,560	7 1,500	22 1,460	7 1,700	22 1,560
8 1,580	22 1,550	8 1,480	23 1,560	8 1,460	23 1,480	8 1,690	23 1,560
9 1,640	23 1,560	9 1,490	24 1,560	9 1,440	24 1,510	9 1,610	24 1,600
10 1,670	24 1,540	10 1,440	25 1,560	10 1,450	25 1,500	10 1,670	25 1,570
11 1,650	25 1,560	11 1,300	26 1,550	11 1,470	26 1,470	11 1,700	26 1,570
12 1,640	26 1,500	12 1,360	27 1,530	12 1,440	27 1,480	12 1,690	27 1,610
13 1,630	27 1,490	13 1,430	28 1,520	13 1,470	28 1,470	13 1,670	28 1,630
14 1,590	28 1,490	14 1,440	29 1,520	14 1,440	29 1,480	14 1,640	29 1,700
15 1,580	March	15 1,540	30 1,540	15 1,430	30 1,510	15 1,630	30 1,640
16 1,620	1 1,450	16 1,590	31 1,550	16 1,430	31 1,500	16 1,630	December
17 1,600	2 1,570	17 1,570	June	17 1,430	September	17 1,640	1 1,670
18 1,560	3 1,580	18 1,550	1 1,570	18 1,430	1 1,490	18 1,670	2 1,670
19 1,590	4 1,540	19 1,460	2 1,560	19 1,450	2 1,440	19 1,670	3 1,670
20 1,600	5 1,530	20 1,480	3 1,550	20 1,440	3 1,440	20 1,640	4 1,700
21 1,650	6 1,500	21 1,470	4 1,580	21 1,430	4 1,450	21 1,640	5 1,640
22 1,650	7 1,540	22 1,460	5 1,560	22 1,460	5 1,430	22 1,590	6 1,630
23 1,640	8 1,540	23 1,450	6 1,560	23 1,410	6 1,450	23 1,580	7 1,560
24 1,630	9 1,530	24 1,480	7 1,540	24 1,420	7 1,520	24 1,600	8 1,610
25 1,620	10 1,550	25 1,480	8 1,580	25 1,440	8 1,500	25 1,560	9 1,590
26 1,640	11 1,530	26 1,490	9 1,530	26 1,410	9 1,520	26 1,670	10 1,580
27 1,650	12 1,500	27 1,500	10 1,530	27 1,440	10 1,510	27 1,620	11 1,580
28 1,640	13 1,540	28 1,470	11 1,510	28 1,430	11 1,540	28 1,620	12 1,590
29 1,610	14 1,570	29 1,450	12 1,520	29 1,430	12 1,510	29 1,600	13 1,570
30 1,580	15 1,570	30 1,450	13 1,490	30 1,430	13 1,540	30 1,600	14 1,600
31 1,600	16 1,600	May	14 1,500	31 1,420	14 1,560	31 1,610	15 1,590
February	17 1,560	1 1,490	15 1,560	August	15 1,570	November	16 1,600
1 1,570	18 1,580	2 1,500	16 1,550	1 1,460	16 1,540	1 1,660	17 1,570
2 1,530	19 1,560	3 1,500	17 1,540	2 1,510	17 1,570	2 1,770	18 1,530
3 1,570	20 1,520	4 1,500	18 1,540	3 1,500	18 1,590	3 1,730	19 1,550
4 1,580	21 1,490	5 1,500	19 1,520	4 1,480	19 1,530	4 1,770	20 1,530
5 1,610	22 1,480	6 1,490	20 1,510	5 1,480	20 1,520	5 1,730	21 1,530
6 1,630	23 1,520	7 1,520	21 1,510	6 1,470	21 1,580	6 1,780	22 1,530
7 1,630	24 1,490	8 1,500	22 1,550	7 1,470	22 1,590	7 1,770	23 1,520
8 1,640	25 1,480	9 1,490	23 1,520	8 1,460	23 1,550	8 1,740	24 1,530
9 1,640	26 1,470	10 1,530	24 1,510	9 1,450	24 1,560	9 1,750	26 1,610
10 1,590	27 1,460	11 1,540	25 1,520	10 1,490	25 1,530	10 1,770	27 1,520
11 1,620	28 1,490	12 1,590	26 1,500	11 1,450	26 1,530	11 1,740	28 1,540
12 1,550	29 1,500	13 1,560	27 1,510	12 1,440	27 1,560	12 1,730	29 1,530
13 1,540	30 1,490	14 1,610	28 1,500	13 1,440	28 1,570	13 1,730	30 1,510
14 1,560	31 1,510	15 1,570	29 1,530	14 1,450	29 1,560	14 1,690	31 1,520
			30 1,490	15 1,420	30 1,560	15 1,700	

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1975

Date	ECx10 ⁶ @25°C										
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Intake Canal at Morelos Diversion Structure

January	February	April	May	July	August	October	November
1 1,560	15 1,600	1 1,460	16 1,590	1 1,480	16 1,420	1 1,610	16 1,710
2 1,600	16 1,620	2 1,470	17 1,610	2 1,520	17 1,440	2 1,710	17 1,720
3 1,600	17 1,560	3 1,440	18 1,610	3 1,510	18 1,440	3 1,640	18 1,720
4 1,550	18 1,590	4 1,450	19 1,600	4 1,520	19 1,430	4 1,650	19 1,630
5 1,550	19 1,590	5 1,480	20 1,550	5 1,530	20 1,440	5 1,640	20 1,650
6 1,570	20 1,590	6 1,490	21 1,550	6 1,550	21 1,440	6 1,680	21 1,630
7 1,600	21 1,560	7 1,490	22 1,570	7 1,510	22 1,460	7 1,700	22 1,580
8 1,600	22 1,550	8 1,480	23 1,550	8 1,460	23 1,500	8 1,690	23 1,560
9 1,660	23 1,550	9 1,510	24 1,590	9 1,460	24 1,510	9 1,630	24 1,610
10 1,650	24 1,550	10 1,450	25 1,590	10 1,460	25 1,530	10 1,720	25 1,600
11 1,660	25 1,550	11 1,300	26 1,560	11 1,480	26 1,500	11 1,720	26 1,580
12 1,650	26 1,490	12 1,370	27 1,530	12 1,450	27 1,490	12 1,690	27 1,640
13 1,650	27 1,470	13 1,440	28 1,520	13 1,490	28 1,470	13 1,670	28 1,650
14 1,590	28 1,490	14 1,440	29 1,530	14 1,450	29 1,500	14 1,650	29 1,740
15 1,570	March	15 1,530	30 1,540	15 1,450	30 1,520	15 1,630	30 1,670
16 1,610	1 1,500	16 1,590	31 1,550	16 1,450	31 1,500	16 1,640	December
17 1,600	2 1,560	17 1,580	June	17 1,440	September	17 1,650	1 1,680
18 1,560	3 1,600	18 1,560	1 1,580	18 1,430	1 1,500	18 1,670	2 1,730
19 1,580	4 1,550	19 1,470	2 1,570	19 1,460	2 1,460	19 1,670	3 1,680
20 1,610	5 1,540	20 1,470	3 1,550	20 1,460	3 1,460	20 1,640	4 1,720
21 1,650	6 1,500	21 1,490	4 1,590	21 1,450	4 1,450	21 1,640	5 1,660
22 1,660	7 1,550	22 1,460	5 1,570	22 1,460	5 1,440	22 1,610	6 1,630
23 1,650	8 1,530	23 1,440	6 1,580	23 1,400	6 1,470	23 1,600	7 1,570
24 1,650	9 1,530	24 1,490	7 1,550	24 1,420	7 1,540	24 1,600	8 1,620
25 1,620	10 1,550	25 1,470	8 1,600	25 1,450	8 1,510	25 1,580	9 1,600
26 1,640	11 1,540	26 1,490	9 1,540	26 1,420	9 1,520	26 1,670	10 1,580
27 1,650	12 1,520	27 1,500	10 1,530	27 1,440	10 1,510	27 1,640	11 1,600
28 1,640	13 1,530	28 1,480	11 1,540	28 1,430	11 1,550	28 1,620	12 1,610
29 1,610	14 1,570	29 1,440	12 1,540	29 1,440	12 1,530	29 1,610	13 1,550
30 1,590	15 1,560	30 1,450	13 1,500	30 1,440	13 1,560	30 1,610	14 1,610
31 1,620	16 1,620	May	14 1,520	31 1,430	14 1,570	31 1,620	15 1,620
February	17 1,570	1 1,470	15 1,570	August	15 1,580	November	16 1,610
1 1,570	18 1,570	2 1,490	16 1,570	1 1,460	16 1,560	1 1,590	17 1,600
2 1,540	19 1,550	3 1,510	17 1,550	2 1,510	17 1,590	2 1,790	18 1,540
3 1,570	20 1,530	4 1,520	18 1,550	3 1,510	18 1,590	3 1,750	19 1,560
4 1,580	21 1,490	5 1,510	19 1,550	4 1,500	19 1,550	4 1,800	20 1,540
5 1,580	22 1,480	6 1,510	20 1,510	5 1,500	20 1,520	5 1,770	21 1,540
6 1,650	23 1,530	7 1,530	21 1,500	6 1,490	21 1,590	6 1,740	22 1,540
7 1,640	24 1,500	8 1,490	22 1,540	7 1,480	22 1,610	7 1,770	23 1,530
8 1,610	25 1,470	9 1,500	23 1,530	8 1,460	23 1,570	8 1,740	24 1,550
9 1,660	26 1,480	10 1,540	24 1,530	9 1,450	24 1,550	9 1,760	25 1,550
10 1,610	27 1,470	11 1,540	25 1,520	10 1,510	25 1,550	10 1,770	26 1,610
11 1,640	28 1,520	12 1,600	26 1,510	11 1,460	26 1,540	11 1,740	27 1,630
12 1,560	29 1,500	13 1,560	27 1,520	12 1,450	27 1,570	12 1,740	28 1,540
13 1,550	30 1,510	14 1,610	28 1,510	13 1,450	28 1,590	13 1,740	29 1,550
14 1,540	31 1,500	15 1,580	29 1,540	14 1,460	29 1,580	14 1,700	30 1,510
			30 1,500	15 1,460	30 1,570	15 1,700	31 1,520

Colorado River at Southerly International Boundary

January	February	April	May	June	August	October	November
7 5,720	25 5,640	8 5,200	6 5,650	27 5,660	5 5,420	10 5,380	25 5,690
21 5,570	March	10 2,470	27 5,530	July	19 5,370	November	December
February	12 5,730	12 1,950	June	15 5,670	September	11 5,520	9 5,660
12 5,380	18 5,770	22 5,690	10 5,480		9 5,560		23 5,480

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1975

Date	ECx10 ⁶ @25°C										
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Sánchez Mejorada Canal

January		February		April		May		July		August		October		November	
7	2,300	28	2,300	15	2,160	30	2,200	8	2,010	26	2,300	7	2,110	25	2,490
14	2,100	March	22	2,300		June	15	2,200	29	2,080	14	2,330	28	2,310	
21	2,000	4	2,120	25	2,160	3	2,100	22	2,190	September	21	2,200	December		
28	2,090	11	2,250	29	2,300	10	2,300	25	2,050	2	2,000	28	2,040	2	2,400
February	18	2,010	May	17	2,150	29	2,130	9	2,210	9	2,210	31	2,170	9	2,380
4	2,200	25	2,050	6	2,130	24	2,210	August	16	2,100	November	16	2,420	16	2,420
11	2,050	April	13	2,200	27	2,050	5	1,520	23	2,050	4	2,470	23	2,390	
18	2,160	1	2,100	20	2,280	July	12	2,100	26	2,160	11	2,460	30	2,400	
25	2,400	8	2,210	27	2,120	1	2,130	19	2,190	31	2,170	18	2,350		

Colorado River at Miguel C. Rodriguez Gaging Station

January		February		April		May		June		August		September		November	
13	5,380	24	5,260	7	5,200	19	5,500	30	5,150	11	5,210	22	5,090	3	5,160
27	5,200	March	21	5,120		June	2	5,320	14	5,200	25	5,400	October	17	5,660
February	10	5,320	May	2	5,320	14	5,200	July	28	5,140	September	6	5,300	December	
10	5,400	24	5,150	8	5,600	16	5,100	28	5,140	8	5,260	20	5,070	15	5,670
														29	5,590

RAINFALL ON THE COLORADO RIVER WATERSHED IN INCHES

Tabulated below are monthly records of rainfall at stations located in California and Arizona in the United States and in Baja California and Sonora in Mexico, with averages for their periods of record. Records of daily rainfall amounts, where available, are on file in the offices of the United States or Mexican Sections of the Commission. For location, elevation, period of record, and the observer, see alphabetical listings of these stations on page 51 in this bulletin.

In United States

Month	Brawley, California		El Centro, California		Blythe, California		Davis Dam No. 2, Arizona		Yuma Citrus Station, Arizona	
	1975	Average 1931-1975	1975	Average 1931-1975	1975	Average 1931-1975	1975	Average 1955-1975	1975	Average 1931-1975
Jan.	0.04	0.31	0	0.34	0.02	0.43	0.02	0.39	0	0.35
Feb.	.02	.28	T	.32	0	.38	.12	.41	.01	.32
Mar.	.11	.17	.20	.17	.19	.40	.52	.46	.38	.24
Apr.	1.09	.10	.40	.11	.63	.15	.21	.29	.31	.12
May	0	.01	0	0	0	.01	0	.12	0	.01
June	0	.01	0	.01	0	.04	0	.05	0	.02
July	.03	.04	.07	.09	.10	.17	.20	.20	0	.15
Aug.	T	.29	0	.29	T	.75	.35	.47	0	.41
Sept.	T	.31	.27	.24	.98	.32	.35	.28	.03	.36
Oct.	0	.22	0	.24	.02	.30	.16	.32	0	.42
Nov.	0	.15	0	.16	.06	.26	.24	.49	.03	.19
Dec.	.11	.40	.03	.41	.11	.50	.30	.50	.52	.39
Yearly	1.40	2.29	0.97	2.38	2.11	3.71	2.47	3.98	1.33	2.98

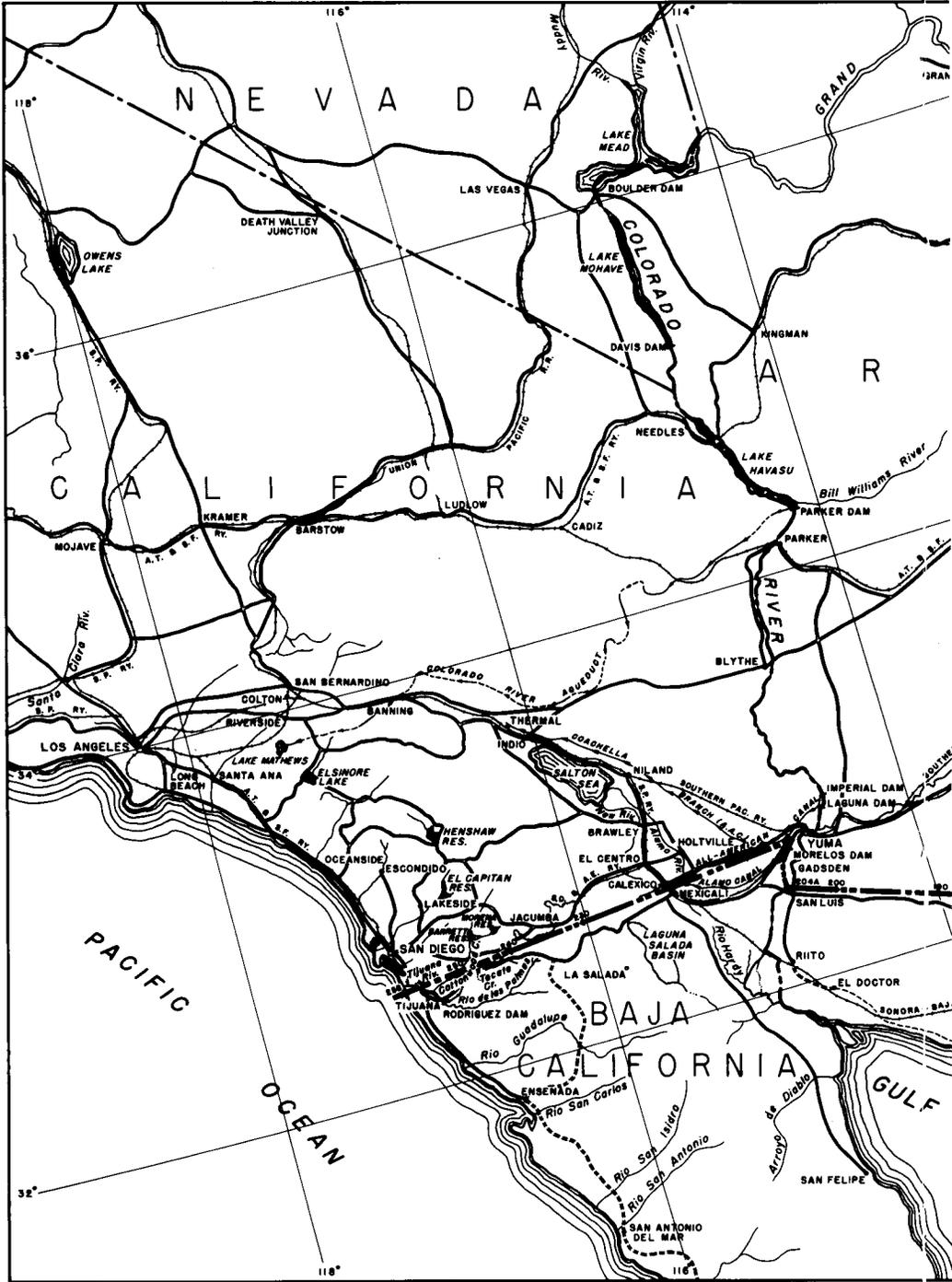
In Mexico

Month	Los Algodones, Baja California		Mexicali, Baja California		Bataques, Baja California		San Luis, R. C., Sonora		Delta, Baja California	
	1975	Average 1948-1975	1975	Average 1926-1975	1975	Average 1948-1975	1975	Average 1949-1975	1975	Average 1948-1975
Jan.	0	0.35	T	0.35	0	0.31	T	0.24	T	0.31
Feb.	T	.16	T	.31	0	.08	.04	.20	T	.03
Mar.	.24	.12	.12	.20	.12	.08	.16	.16	.04	.12
Apr.	.35	.08	.94	.12	.71	.03	.16	.04	.51	.08
May	0	T	0	T	0	0	0	T	0	0
June	0	T	0	T	0	.04	0	.04	0	T
July	T	.03	.24	.12	0	.04	T	.20	T	.04
Aug.	0	.20	.28	.28	0	.12	T	.43	T	.16
Sept.	T	.20	.91	.35	.24	.04	.47	.20	.16	.16
Oct.	0	.31	0	.31	0	.31	0	.43	0	.31
Nov.	0	.16	T	.16	0	.16	.08	.55	T	.16
Dec.	.24	.28	.31	.75	.16	.20	.39	.47	T	.24
Yearly	0.83	1.93	2.80	2.91	1.22	1.42	1.30	2.40	0.71	1.61

Month	Colonia Juarez, Baja California		Laguna Salada, Baja California		Riito, Sonora		El Mayor, Baja California		San Felipe, Baja California	
	1975	Average 1952-1975	1975	Average 1974-1975	1975	Average 1959-1975	1975	Average 1949-1975	1975	Average 1948-1975
Jan.	T	0.51	0		T	0.20	*	0.20	0	0.28
Feb.	.04	.24	0		.04	.12	0	.12	.12	.12
Mar.	.03	.28	T		.20	.12	T	.12	0	.16
Apr.	.08	.12	.08		.08	.04	.31	.04	.08	.08
May	0	.04	0		0	T	0	T	0	.04
June	0	T	0		T	.04	0	T	0	.08
July	.04	.12	0		.04	.08	0	.08	0	.12
Aug.	.08	.31	.04		T	.20	0	.31	0	.31
Sept.	T	.24	2.30		.12	.51	.12	.51	T	.43
Oct.	T	.51	.08		.55	.55	.12	.43	0	.24
Nov.	0	.28	.08	.04	T	.28	T	.16	0	.16
Dec.	.08	.31	.04	.04	.24	.31	.20	.31	.47	.35
Yearly	0.39	2.17	3.11		1.26	2.48		2.32	0.67	2.40

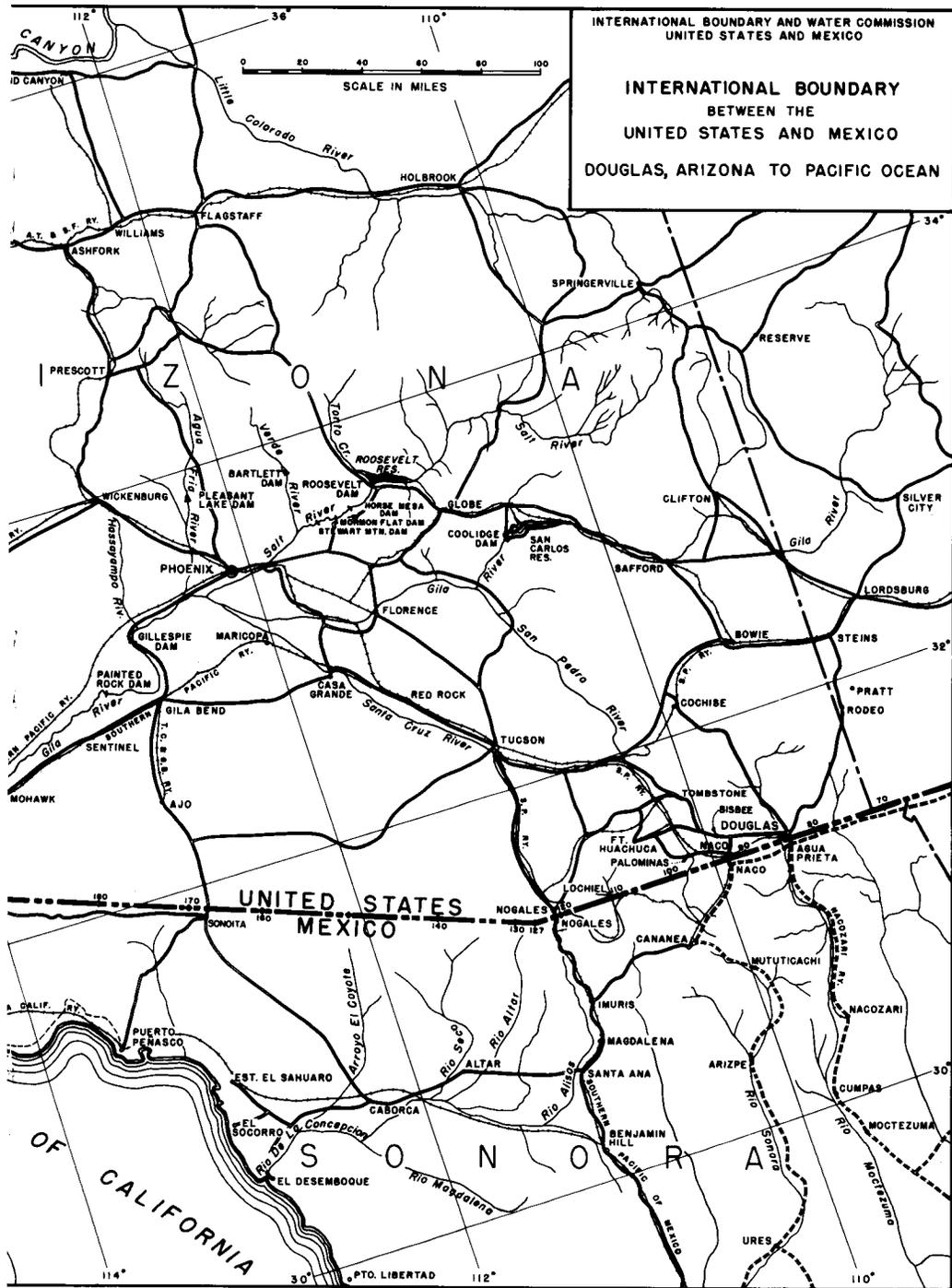
T Trace

* Missing record



INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

INTERNATIONAL BOUNDARY
BETWEEN THE
UNITED STATES AND MEXICO
DOUGLAS, ARIZONA TO PACIFIC OCEAN



**RAINFALL ON THE COLORADO RIVER WATERSHED
IN INCHES**

In Mexico

Month	Santa Clara, Sonora								
	1975	Average 1971-1975							
Jan.	0	T							
Feb.	0	.12							
Mar.	.16	.12							
Apr.	0	.08							
May	0	0							
June	0	T							
July	0	0							
Aug.	0	.09							
Sept.	1.18	.43							
Oct.	0	.67							
Nov.	0	T							
Dec.	.53	.24							
Yearly	1.97	1.59							

T Trace

LOCATION OF RAINFALL STATIONS ON THE COLORADO RIVER WATERSHED

The precipitation records of the stations listed alphabetically below began on the date shown and extend through 1975.

In United States

NAME OF STATION	LATI- TUDE	LONGI- TUDE	§ ELEV. (FT.)	RECORD BEGAN	OBSERVER
* Blythe, California	33° 37'	114° 36'	268	1909	State Division of Forestry
Brawley, California	32° 57'	115° 33'	100	1908	Agricultural Research Service
* Davis Dam No. 2, Arizona	35° 12'	114° 34'	657	1954	U. S. Bureau of Reclamation
El Centro, California	32° 46'	115° 34'	30	1930	El Centro Water Department
Yuma Citrus Station, Arizona	32° 37'	114° 39'	191	1923	University of Arizona Experimental Farm

In Mexico

NAME OF STATION	LATI- TUDE	LONGI- TUDE	§ ELEV. (FT.)	RECORD BEGAN	OBSERVER
Bataques, Baja California	32° 33'	115° 04'	** 66	1948	Hydraulic Resources
Delta, Baja California	32° 21'	115° 11'	** 39	1948	Hydraulic Resources
El Mayor, Baja California	32° 08'	115° 15'	** 33	1949	Hydraulic Resources
Colonia Juarez, Baja California	32° 15'	115° 03'	49	1952	Hydraulic Resources
Laguna Salada, Baja California	32° 12'	115° 44'	236	1974	Hydraulic Resources
Los Algodones, Baja California	32° 42'	114° 44'	115	1948	Hydraulic Resources
Mexicali, Baja California	32° 40'	115° 28'	13	1926	Hydraulic Resources
Riito, Sonora	32° 10'	114° 57'	** 39	1959	Hydraulic Resources
* San Felipe, Baja California	31° 02'	114° 53'	33	1948	Hydraulic Resources
San Luis, R.C., Sonora	32° 28'	114° 47'	131	1949	Hydraulic Resources
Santa Clara, Sonora	31° 42'	114° 29'	49	1971	Hydraulic Resources

* Not shown on map § Elevation above mean sea level except Brawley and El Centro which are elevations below mean sea level

** Elevations obtained from International Boundary and Water Commission topographic maps

EVAPORATION IN THE COLORADO RIVER BASIN IN INCHES

Tabulated below are records of evaporation observed at two stations in Arizona and at ten stations in Baja California and Sonora, Mexico. The stations in the United States are operated by the U. S. Bureau of Reclamation and by the University of Arizona Experimental Farm. The stations in Mexico are operated by the Ministry of Hydraulic Resources. The type of pan used at all these stations was the National Weather Service standard pan of 4-foot diameter. For specific location of these stations, refer to data opposite the same station name shown in "Location of Rainfall Stations," page 51 in this bulletin.

In United States

Month	Davis Dam No. 2, Arizona		Yuma Citrus Station, Arizona	
	1975	Average 1955-1975	1975	Average 1931-1975
	Jan.	8.83	7.39	4.79
Feb.	6.94	7.55	4.31	4.87
Mar.	8.50	10.14	6.61	7.60
Apr.	11.22	13.38	9.06	10.23
May	15.30	16.29	11.79	13.21
June	22.00	19.78	13.17	14.40
July	19.81	20.24	15.00	15.57
Aug.	19.23	18.11	13.20	13.80
Sept.	14.05	14.91	9.81	10.94
Oct.	11.20	12.04	6.94	7.69
Nov.	10.35	8.71	5.17	5.01
Dec.	9.36	7.32	3.69	3.68
Yearly	156.84	156.36	103.54	110.94

In Mexico

Month	Los Algodones, Baja California		Mexicali, Baja California		Bataques, Baja California		San Luis, R. C., Sonora		Delta, Baja California	
	1975	Avg. 1949-55 1961-1975	1975	Average 1926-1975	1975	Average 1963-1975	1975	Average 1953-1975	1975	Average 1959-1975
	Jan.	5.31	4.33	3.15	2.64	4.06	3.82	4.13	3.43	3.31
Feb.	5.12	5.20	3.86	3.50	4.45	4.84	4.21	4.06	3.39	4.33
Mar.	8.15	7.40	6.69	5.91	6.69	7.17	6.34	6.34	5.83	6.26
Apr.	9.29	10.04	7.56	7.95	8.23	9.13	7.64	8.43	7.56	8.15
May	13.86	12.64	10.87	10.55	11.06	11.89	11.97	11.10	12.32	10.39
June	15.83	13.35	12.76	11.57	12.83	12.32	13.90	12.68	13.35	11.38
July	15.28	13.39	12.44	11.81	12.48	12.56	15.35	14.13	13.82	11.65
Aug.	14.29	12.17	11.18	10.12	12.09	10.75	13.27	12.68	14.41	10.59
Sept.	11.89	10.12	8.31	8.19	10.16	9.17	9.76	9.88	13.07	8.58
Oct.	9.13	7.91	14.02	5.79	7.32	6.22	6.97	6.57	11.77	6.18
Nov.	7.20	5.08	4.29	3.39	4.80	4.69	4.57	4.25	10.51	4.13
Dec.	4.37	4.13	3.03	2.48	3.39	3.46	3.15	3.27	5.91	3.15
Yearly	119.72	107.20	98.15	83.90	97.56	96.02	101.26	97.99	115.24	89.09

Month	Colonia Juarez, Baja California		Laguna Salada, Baja California		Riito, Sonora		San Felipe, Baja California		Santa Clara, Sonora	
	1975	Average 1970-1975	1975	Average 1974-1975	1975	Average 1963-1975	1975	Average 1952-1975	1975	Average 1971-1975
	Jan.	4.06	3.43	4.13	4.13	3.78	3.23	4.92	5.08	5.20
Feb.	4.45	4.09	4.61	4.61	4.41	4.17	4.53	5.79	4.92	4.92
Mar.	6.46	6.30	7.17	7.17	6.30	6.02	5.87	7.01	7.01	5.94
Apr.	6.73	7.56	8.62	8.62	7.40	7.60	7.24	8.35	8.27	7.56
May	10.00	9.96	12.68	12.68	11.18	10.08	8.94	10.47	6.85	8.23
June	11.50	11.10	13.62	13.62	12.83	11.34	8.62	10.83	11.22	12.01
July	12.64	11.54	13.94	13.94	13.43	12.24	11.42	11.77	11.54	11.22
Aug.	11.89	10.51	13.74	13.74	11.65	10.16	11.30	10.98	10.51	11.38
Sept.	9.84	8.74	6.10	6.10	9.37	8.11	8.94	9.80	9.49	9.45
Oct.	7.36	5.98	7.32	7.32	6.54	5.39	7.83	8.43	8.03	7.52
Nov.	5.63	4.29	5.43	4.96	4.69	3.54	6.89	6.22	6.06	5.39
Dec.	3.54	3.31	3.50	3.54	2.72	2.83	5.08	5.08	5.39	5.43
Yearly	94.09	86.85	100.87	100.87	94.29	87.56	91.57	101.06	94.49	94.96

0 One year missing

TEMPERATURE IN THE COLORADO RIVER BASIN IN DEGREES FAHRENHEIT

The maximum, minimum, and monthly mean temperature observations for United States stations are from daily readings of thermometers generally exposed in a shelter located a few feet above sod-covered ground. The maximum and minimum temperatures shown for the stations in Mexico are from daily maximum and minimum thermometer observations, with maximum and minimum for their periods of record. For specific location, elevation, period of record, and the observer, refer to data opposite same station name as shown in "Location of Rainfall Stations", page 51 in this bulletin.

In United States

Month	Blythe, California			Davis Dam No. 2, Arizona				Yuma Citrus Station, Arizona				
	1975			Average 1951-75	1975			Average 1955-75	1975			Average 1931-75
	Mean	Max.	Min.		Mean	Max.	Min.		Mean	Max.	Min.	
Jan.	51.4	79	26	52.4	51.3	75	30	52.2	52.3	81	29	53.0
Feb.	54.4	88	29	57.2	53.5	75	33	56.4	54.9	84	30	57.0
Mar.	59.1	88	33	63.0	59.1	85	38	62.1	60.0	89	33	**62.2
Apr.	61.9	90	34	70.0	62.9	88	43	69.2	62.4	90	36	68.6
May	75.8	* 106	* 47	77.5	76.4	102	44	78.6	73.0	103	43	75.9
June	85.0	112	59	85.1	87.5	112	61	88.5	82.7	108	52	83.4
July	92.7	* 116	* 71	92.2	95.0	117	70	94.9	90.2	113	71	91.1
Aug.	90.7	116	60	91.1	91.8	117	67	93.2	89.6	116	60	90.5
Sept.	85.8	109	56	85.1	87.8	109	63	85.8	85.8	109	58	85.1
Oct.	70.2	102	37	73.1	72.7	102	47		70.3	104	37	73.5
Nov.	58.8	89	32	60.1		87			59.4	92	31	61.4
Dec.	53.6	77	29	53.1	55.7	75	39	53.7	53.9	81	32	54.5
Yearly	70.0	116	26	71.7		117			69.5	116	29	71.4

Month	Brawley, California			El Centro, California								
	1975			Average 1931-75	1975			Average 1931-75				
	Mean	Max.	Min.		Mean	Max.	Min.					
Jan.	52.5	82	26	53.6	52.4	82	24	53.6				
Feb.	55.0	82	30	57.9	56.1	84	29	57.8				
Mar.	59.9	86	37	63.3	59.1	86	35	63.1				
Apr.	61.6	87	37	70.0	60.8	90	36	69.6				
May	73.3	100	48	77.5	73.8	105	42	77.3				
June	83.0	111	55	85.0	83.1	110	50	84.9				
July	90.1	116	65	92.0	90.4	117	63	91.9				
Aug.	89.6	117	59	91.6	89.8	119	62	91.2				
Sept.	86.5	110	52	86.3	85.8	112	60	85.7				
Oct.	71.4	104	39	74.9	71.7	105	43	74.5				
Nov.	60.4	93	11	62.4	60.7	97	32	62.1				
Dec.	54.3	84	27	54.9	54.0	84	28	54.6				
Yearly	69.8	117	11	72.4	69.8	119	24	72.2				

In Mexico

Month	Laguna Salada, Baja California				Los Algodones, Baja California				Mexicali, Baja California			
	1975		1974-1975		1975		1948-1975		1975		1926-1975	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
Jan.	81	18	81	18	79	32	88	23	82	25	93	19
Feb.	88	27	88	27	86	34	95	28	86	32	93	23
Mar.	90	32	90	32	86	37	100	32	88	37	100	30
Apr.	95	36	95	36	86	37	109	37	90	41	106	34
May	106	39	106	39	102	46	117	43	104	48	117	43
June	115	54	115	54	108	55	126	52	109	57	120	48
July	118	54	118	54	113	68	118	61	113	66	118	55
Aug.	118	61	118	61	115	63	120	61	113	61	118	54
Sept.	111	59	111	59	108	63	122	54	108	63	122	48
Oct.	104	36	104	36	106	39	111	32	102	39	109	32
Nov.	93	28	93	28	91	36	100	27	104	34	104	28
Dec.	82	23	82	19	79	36	90	28	82	30	90	23
Yearly	118	18	118	18	115	32	126	23	113	25	122	19

* Blythe FAA Airport

** March 1963 estimated

TEMPERATURE IN THE COLORADO RIVER BASIN IN DEGREES FAHRENHEIT

In Mexico

Month	Bataques, Baja California				San Luis, R. C., Sonora				Delta, Baja California			
	1975		1948-1975		1975		1949-1975		1975		1948-1975	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
Jan.	77	28	113	16	82	30	100	19	84	30	104	27
Feb.	91	32	99	21	90	32	109	27	90	34	104	28
Mar.	90	36	113	25	91	36	108	28	91	39	113	28
Apr.	88	34	118	16	91	37	115	37	91	39	118	32
May	104	43	124	34	108	46	115	41	103	50	129	32
June	113	55	135	43	111	57	126	45	113	54	133	36
July	115	59	133	45	117	68	126	59	117	68	135	45
Aug.	113	61	129	46	118	66	122	55	118	61	140	52
Sept.	109	59	135	39	111	61	118	50	111	63	135	39
Oct.	102	36	118	32	106	39	118	32	108	45	117	34
Nov.	93	34	115	32	95	36	113	30	93	36	120	32
Dec.	82	28	97	25	82	28	102	23	82	32	104	27
Yearly	115	28	135	16	118	28	126	19	118	30	140	27

Month	Colonia Juarez, Baja California				Riito, Sonora				El Mayor, Baja California			
	1975		1964-1975		1975		1949-1975		1975		1949-1975	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
Jan.	77	28	91	19	79	27	91	19	#	#	108	18
Feb.	88	34	97	21	88	28	95	21	100	28	100	27
Mar.	88	37	99	25	90	39	100	25	88	37	102	32
Apr.	88	39	115	30	88	36	109	36	88	39	108	36
May	106	45	117	36	104	41	115	41	108	45	113	37
June	111	55	122	39	111	52	124	45	111	52	122	37
July	118	66	128	45	113	63	140	52	117	57	122	39
Aug.	117	63	118	50	115	57	122	46	117	61	122	41
Sept.	108	61	122	39	109	57	118	39	111	64	120	34
Oct.	104	39	118	36	104	37	115	30	106	45	120	37
Nov.	91	36	104	25	93	32	118	27	93	34	120	34
Dec.	81	34	97	19	82	28	86	21	81	27	106	19
Yearly	118	28	122	19	115	27	140	19	*117	* 27	122	18

Month	San Felipe, Baja California				Santa Clara, Sonora							
	1975		1948-1975		1975		1971-1975					
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.				
Jan.	75	34	99	30	82	28	90	18				
Feb.	72	36	102	32	77	39	88	23				
Mar.	84	43	104	32	86	43	90	37				
Apr.	79	41	113	34	86	46	102	46				
May	95	46	120	41	100	52	104	50				
June	108	55	124	50	100	64	117	57				
July	104	61	124	50	104	77	106	64				
Aug.	106	63	135	41	102	75	106	68				
Sept.	106	59	126	37	108	68	108	63				
Oct.	104	43	117	41	97	52	100	41				
Nov.	90	43	118	21	90	43	91	43				
Dec.	79	37	97	28	82	37	82	25				
Yearly	108	34	135	21	108	28	117	18				

Missing record

* Estimated

IRRIGATED AREAS ALONG COLORADO RIVER BELOW IMPERIAL DAM

1975

The total drainage area within the Colorado River basin is about 246,000 square miles, of which 184,600 square miles lie above Imperial Dam and about 61,400 square miles are below the dam. Of the area below Imperial Dam, 59,400 square miles are in the United States and about 2,000 square miles are in Mexico. The area below Imperial Dam includes the Gila River watershed with a total area of about 58,200 square miles, of which about 1,100 square miles are in Mexico.

The irrigated areas tabulated below comprise the areas in the United States and Mexico which are served by diversions from the Colorado River at or below Imperial Dam. The diversions are supplemented by some pumping from wells in both countries. The areas in the United States include: 1) those within the U. S. Bureau of Reclamation Projects and in the North and South Gila Valleys located near Yuma, Arizona, the data for which are furnished by the U. S. Bureau of Reclamation; 2) those within the Coachella Valley, California, the data for which are furnished by the Coachella Valley County Water District and State of California Department of Water Resources; and 3) those within the Imperial Valley, California, the data for which are furnished by the Imperial Irrigation District. The areas in Mexico include those in the Mexicali Valley located in the states of Baja California and Sonora, the data for which are furnished by the Ministry of Hydraulic Resources of Mexico. The areas tabulated below refer to the total areas farmed, and insofar as possible, duplication of irrigated areas because of double cropping has been eliminated.

Point of Diversion from Colorado River and Designation of Areas	Total Irrigated Areas Acres
IN UNITED STATES:	
Imperial Dam	
Yuma Valley Division	44,152
Reservation Division	11,932
Yuma Mesa	18,412
Yuma Aux. Project Unit "B" (Yuma Mesa)	3,196
South Gila Valley	10,152
North Gila Valley	6,065
Wellton-Mohawk	65,529
Coachella Valley	55,369
Imperial Valley	456,715
Warren Act	80
Non-Project lands adjacent to Colorado River	10,100
Total in United States	681,702
IN MEXICO:	
Morelos Dam	
Mexicali Valley	* 470,006
Total in United States and Mexico	1,151,708

* An estimated 37% of total acreage is served by pumping from ground water in Mexicali

ALAMO RIVER AT INTERNATIONAL BOUNDARY

DESCRIPTION: Staff gage located on the right bank of the river, about 7 miles east of Calexico, California, immediately downstream from the international land boundary between the United States and Mexico and a few feet upstream from a 4-foot Cipolletti weir set in the throat of a twin-tube concrete culvert which carries the river flow under the All-American Canal.

RECORDS: Computed on the basis of head on the Cipolletti weir from daily staff gage readings, and weir ratings as determined by monthly current meter measurements. Records obtained and furnished by Imperial Irrigation District. Records available: June 1942 through 1975.

REMARKS: The flow at this station normally comprises seepage from the All-American Canal and drainage water from the Mexicali Valley which enters the United States.

EXCEPMENTS: Maximum mean daily discharge, 258 second-feet (estimated), April 13, 1946; minimum discharge, no flow July 22-23, 29-30, 1949. Prior to the period of record, and since 1900, considerably higher flows occurred. During the years 1905 to 1907, when the Colorado River flowed into the Salton Sea, a part of its flow passed through the Alamo River channel.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.39	2.02	2.34	0.28	2.54	2.54	2.13	1.64	1.74	2.44	1.46	1.64
2	1.89	1.92	2.23	.31	2.54	2.54	2.13	2.23	1.92	2.13	1.55	1.64
3	1.66	2.23	3.24	4.49	2.75	2.44	1.92	2.02	1.92	2.75	1.55	1.64
4	1.79	1.37	3.79	3.24	2.44	2.44	1.92	1.92	1.92	2.34	1.55	1.64
5	1.79	1.37	2.23	2.96	2.23	2.54	2.13	1.92	1.92	1.74	1.55	1.55
6	2.55	1.37	1.74	2.13	2.54	2.44	2.75	1.92	1.92	1.64	1.46	1.55
7	1.89	1.28	2.13	2.23	2.54	2.44	2.75	2.34	2.86	1.83	1.46	1.64
8	1.68	1.28	3.38	3.10	2.54	2.75	5.86	1.92	4.21	1.83	1.64	1.64
9	1.68	1.74	2.13	3.38	2.44	2.65	2.75	1.92	2.54	1.83	1.64	1.55
10	2.79	1.28	2.23	2.86	2.44	2.65	2.65	2.13	2.34	1.92	1.55	1.55
11	2.79	2.75	3.52	3.65	2.54	2.65	2.75	2.34	2.34	1.92	1.55	1.55
12	2.67	2.75	3.38	4.07	2.34	2.65	2.13	2.96	2.13	2.02	1.46	1.55
13	2.79	1.92	2.54	3.79	2.34	3.24	3.30	2.34	2.34	1.74	1.46	1.64
14	1.89	2.44	2.23	3.24	2.54	4.21	2.02	2.44	2.02	1.83	1.46	2.44
15	1.79	1.83	2.34	2.86	2.44	2.96	1.92	2.23	1.92	1.55	1.55	2.23
16	2.10	1.83	2.02	2.44	2.34	2.13	1.92	1.92	1.92	1.55	1.55	1.64
17	2.00	1.74	2.13	2.13	2.65	2.13	2.02	2.23	2.34	1.55	1.55	1.55
18	3.54	1.64	2.65	2.75	2.54	2.13	2.02	1.92	2.13	1.64	1.64	1.74
19	4.20	1.55	2.23	2.34	2.65	2.02	1.74	2.34	2.13	1.64	1.64	1.74
20	4.20	1.64	2.02	2.75	2.54	3.65	1.46	1.92	2.65	1.64	1.64	1.92
21	2.44	1.55	3.24	2.96	2.65	2.75	2.13	1.92	1.74	1.64	1.64	1.92
22	3.93	2.54	2.54	2.23	3.79	2.75	2.96	1.74	2.54	1.64	1.64	1.92
23	1.92	1.64	2.86	2.75	2.75	2.75	3.65	1.55	1.74	1.74	1.74	1.74
24	1.28	2.23	2.44	2.65	5.03	2.86	1.74	2.02	1.92	1.55	1.64	1.74
25	1.28	1.92	.35	2.65	2.75	2.65	2.13	1.55	1.83	1.28	1.55	1.74
26	1.37	1.83	.35	2.65	2.65	2.65	1.83	1.74	1.92	1.37	1.55	1.64
27	1.37	2.13	.35	3.10	2.65	2.75	1.83	1.64	2.23	1.55	1.55	1.64
28	1.37	2.65	.31	2.75	4.62	4.07	1.74	1.74	2.13	1.64	1.64	2.44
29	2.02		.35	2.65	2.44	4.35	1.64	1.74	2.23	1.55	1.64	1.64
30	2.13		.35	2.54	2.44	4.07	1.55	1.92	1.74	1.55	1.64	1.64
31	1.74		.35		3.24		1.64	1.74		1.46		1.64
Sum	68.61	52.44	63.99	81.93	84.93	84.85	71.19	61.90	65.23	54.50	47.14	53.74

Month	Current Year 1975						Period 1943-1975					
	Extreme Gage Feet		Extreme Second Feet				Average Second Feet	Total Acres Feet	Acres Feet			
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum	
Jan.	0.46	0.22	f19	4.20	f24	1.28	2.21	136	356	2,790	99	
Feb.	.38	.23	f11	2.75	f 7	1.28	1.87	104	323	2,822	90.2	
Mar.	.46	.09	4	3.79	28	.31	2.06	127	362	3,154	87.1	
Apr.	.51	.08	3	4.49	1	.28	2.73	163	388	2,222	97	
May	.55	.33	24	5.03	5	2.23	2.74	168	300	1,799	73	
June	.50	.31	29	4.35	19	2.02	2.83	168	298	1,686	61	
July	.61	.25	8	5.86	20	1.46	2.30	141	274	1,712	59	
Aug.	.40	.26	12	2.96	f23	1.55	2.00	123	326	1,672	65.7	
Sept.	.49	.28	8	4.21	f 1	1.74	2.17	129	308	1,406	83.5	
Oct.	.38	.23	3	2.75	f5	1.28	1.76	108	333	1,845	91.2	
Nov.	.28	.25	23	1.74	f 1	1.46	1.57	93.5	341	2,080	86	
Dec.	.35	.26	f14	2.44	f 5	1.55	1.73	107	316	1,686	80	
Yearly	0.61	0.08		5.86		0.28	2.16	1,568	3,925	22,146	1,226	

♢ Mean daily

f And other days

NEW RIVER AT INTERNATIONAL BOUNDARY

DESCRIPTION: Water-stage recorder located on the left (west) bank of the river in the limits of the city of Calexico, California, 1,400 feet downstream (north) from the international land boundary between the United States and Mexico. Measurements are made from a foot bridge at the gage.

RECORDS: Based on a continuous record of gage heights and weekly current meter measurements, supplemented by additional measurements during periods of high flow by the Imperial Irrigation District. Measurements are also made quarterly by the United States Section of the Commission. Records computed and furnished by the District. 1975 records good. Records available: June 1942 through 1975.

REMARKS: The New River flows northward from Mexico into the United States and thence into the Salton Sea. The flow at this station normally comprises 1) a portion of the waste and drainage water from the irrigation system in the Mexicali Valley, and 2) sewage and other wastes from Mexicali, Baja California. Flood waters enter the river from local drainage in Mexico and such waters can reach damaging rates during violent desert storms. Waste flows from the Mexican system of canals are limited to an average annual quantity of 35,000 acre-feet during any successive five-year period under the provisions of Minute No. 197 of the Commission.

EXTREMES: Maximum mean daily discharge, 691 second-feet on December 3, 1962; minimum mean daily discharge, 2 second-feet on May 14, 1945. Prior to the period of record, and since 1900, much higher flows occurred. During the years 1905 to 1907, when the Colorado River flowed into the Salton Sea, a considerable part of its flow passed through the New River channel.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	195	152	165	176	169	133	113	124	128	112	107	115
2	193	153	164	192	166	133	116	124	121	112	104	115
3	169	156	169	173	169	132	118	120	108	107	100	119
4	163	158	178	168	164	132	118	118	108	108	106	120
5	167	160	184	162	163	131	118	117	115	113	115	120
6	164	161	175	159	169	127	114	120	116	114	114	122
7	168	157	169	155	172	121	116	123	151	116	111	124
8	176	158	162	169	168	121	116	124	145	121	106	125
9	175	158	153	243	163	120	114	120	145	121	99	121
10	167	161	151	195	165	123	112	120	138	120	97	121
11	162	160	157	204	165	127	112	113	132	122	97	123
12	163	158	160	205	163	126	111	117	132	113	104	118
13	161	159	159	197	162	121	111	116	132	110	105	117
14	156	155	158	200	158	121	114	120	140	109	109	115
15	151	155	158	197	150	120	121	129	142	108	108	115
16	151	158	165	193	149	122	128	129	128	108	109	117
17	153	152	174	181	149	121	129	127	132	106	109	118
18	153	158	176	173	140	123	131	122	124	108	111	117
19	152	158	182	172	142	123	125	122	123	110	110	116
20	153	156	178	173	141	125	124	122	124	111	112	112
21	159	158	181	171	141	126	122	128	124	109	113	109
22	162	161	173	177	137	127	116	128	124	107	112	116
23	158	158	165	178	139	132	112	127	121	102	115	121
24	155	161	165	173	145	127	110	125	114	103	119	140
25	152	157	161	171	149	123	106	128	114	98	120	170
26	151	157	154	167	152	120	108	127	119	100	113	169
27	159	159	160	168	157	118	108	124	118	103	115	144
28	159	164	158	174	156	116	108	118	118	113	114	139
29	155	161	161	179	151	113	116	120	118	117	113	139
30	152	167	177	177	145	112	131	129	114	113	111	138
31	150	175	175	142	142	112	129	127	108	108	111	134
Sum	5,004	4,418	5,157	5,422	4,801	3,716	3,627	3,808	3,768	3,422	3,278	3,889

Month	Current Year 1975						Period 1943-1975				
	β Extreme Gage ** Feet		β Extreme Second Feet			Average Second Feet	Total Acre Feet	Acre Feet			
	High	Low	Day	High	Day			Average	Maximum	Minimum	
Jan.	41.37	41.82	1	195	31	150	161	9,925	7,482	20,160	1,751
Feb.	41.66	41.82	28	164	† 1	152	158	8,763	6,246	17,845	1,258
Mar.	41.52	41.76	5	184	10	151	166	10,229	6,980	12,960	1,008
Apr.	40.87	41.76	9	243	7	155	181	10,754	7,187	14,489	1,390
May	41.63	42.04	7	172	22	137	155	9,523	6,362	10,618	629
June	42.03	42.25	† 1	133	30	112	124	7,371	5,467	9,689	1,067
July	42.06	42.27	† 18	131	25	106	117	7,194	5,413	9,390	817
Aug.	42.06	42.24	† 15	129	11	113	123	7,553	6,399	11,145	1,139
Sept.	41.88	42.31	7	151	† 3	108	126	7,474	6,549	12,688	1,795
Oct.	42.21	42.39	11	122	25	98	110	6,787	6,899	13,902	2,081
Nov.	42.22	42.41	25	120	† 10	97	109	6,502	6,532	12,323	2,483
Dec.	41.65	42.28	25	170	21	109	125	7,714	7,177	21,205	1,763
Yearly	40.87	42.41		243		97	138	99,789	78,693	138,906	24,573

β Mean daily ** Feet below mean sea level † And other days

WASTES FROM MEXICALI POTABLE WATER PLANT TO NEW RIVER IN MEXICO

DESCRIPTION: The Potable Water Plant of Mexicali, Baja California discharges waste water into a canal, approximately 2.5 miles long, that empties into the Rivera Drain (Drain 134) and then into New River, approximately 0.9 mile above the international boundary. The measurements are taken in the wasteway canal 0.4 mile above the confluence with Rivera Drain, 1.2 miles below the plant, and 1.2 miles south of the international boundary.

RECORDS: No current meter measurements made during the year. Data obtained and furnished by the Mexican Section of the Commission. Data available: January 1968 through 1975.

REMARKS: The Potable Water Plant is operated by the State Commission of Public Services of Mexicali and water is obtained from the West Main Canal which is a part of Mexico's system of canals in the Colorado River Irrigation District. The plant was completed in 1963 and began operation on September 28, 1963. Prior to 1968, the volumes wasted were small and infrequent.

EXTREMES: Maximum instantaneous discharge 81.9 second-feet on March 26, 1969; minimum discharge, not measurable February 18 and 19, 1972 and November 11, 1975.

Mean Daily Discharge in Second-Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	10.9	5.7	2.8	4.9	5.7	5.7	7.1	6.0	11.7	9.2	7.8	4.2
2	9.2	6.4	3.2	5.7	4.2	7.1	9.2	6.0	9.2	4.9	8.1	.7
3	4.9	4.9	4.9	7.1	6.4	5.7	9.9	6.0	6.0	2.5	5.7	1.8
4	6.0	4.9	6.4	6.0	8.1	4.9	9.2	12.7	4.6	3.2	3.5	1.4
5	9.9	4.6	6.4	9.2	7.8	6.0	10.6	7.8	7.8	4.9	6.0	1.4
6	6.4	3.5	7.1	11.7	5.7	7.1	9.2	9.2	6.0	5.7	5.7	1.4
7	6.0	3.2	9.2	9.2	6.0	4.6	13.4	7.8	16.2	4.9	5.7	1.4
8	12.0	3.2	7.8	7.1	5.7	8.1	9.9	7.8	28.3	10.9	6.4	1.4
9	6.4	3.5	6.4	9.9	4.9	7.8	9.2	7.1	8.8	9.9	6.0	1.4
10	6.0	4.9	6.0	8.1	5.7	6.0	10.6	8.1	4.6	8.8	3.2	1.4
11	5.7	4.9	7.8	8.8	4.9	5.7	10.9	8.8	3.5	8.8	3.9	2.8
12	10.6	4.9	4.9	10.6	4.6	4.6	8.8	7.8	4.9	9.9	4.6	4.2
13	8.1	4.9	5.7	6.4	4.9	4.6	10.6	8.8	4.6	4.9	3.5	2.5
14	8.8	3.2	5.7	9.2	4.9	4.6	12.7	6.4	12.7	4.6	5.7	1.4
15	7.1	4.9	4.6	7.1	6.4	4.6	10.9	7.8	5.7	6.0	7.8	1.4
16	6.0	6.4	5.7	5.7	7.1	7.8	10.6	10.6	4.9	6.0	3.2	2.1
17	7.1	4.6	5.7	6.0	8.8	4.9	9.2	11.7	7.1	6.0	3.5	.4
18	4.9	7.1	4.2	5.7	8.8	9.2	6.0	7.1	3.2	3.5	3.9	1.4
19	6.0	7.1	4.6	5.7	8.1	7.8	6.0	6.0	4.6	5.7	4.2	1.8
20	5.7	6.0	4.6	7.8	9.2	8.8	7.1	8.8	4.9	6.0	4.6	2.5
21	7.1	7.1	8.8	5.7	8.1	10.9	8.1	7.1	5.0	5.7	2.5	1.8
22	4.9	5.7	5.7	6.0	7.8	12.7	4.9	5.7	5.7	6.4	2.5	2.1
23	4.2	4.6	4.9	4.6	7.1	10.6	5.7	4.6	5.3	5.7	3.5	1.1
24	4.9	4.9	4.9	4.6	7.1	7.1	4.9	5.7	4.9	5.7	3.5	1.4
25	3.2	6.0	5.7	5.7	6.4	6.0	5.7	4.9	4.6	5.3	2.5	1.8
26	4.6	4.6	7.1	7.8	8.8	6.4	5.7	4.9	7.1	5.3	1.4	2.5
27	9.2	4.9	6.0	6.0	7.8	6.4	8.8	4.2	5.7	5.3	2.8	1.8
28	8.1	4.9	8.8	6.0	7.1	7.1	7.8	4.6	7.8	4.9	6.4	3.5
29	5.7		8.1	6.4	6.4	7.1	6.0	6.4	7.8	4.9	4.2	2.1
30	5.7		8.8	4.9	6.0	6.4	6.4	12.0	7.1	6.0	3.2	1.4
31	4.6		6.4		6.0		9.2	12.7	7.1	7.1		1.4
Sum	209.4	141.6	188.6	209.0	206.2	205.9	265.9	234.8	221.1	188.6	135.3	57.9
Current Year 1975									Period 1968-1975			
Month	Extreme Gage Feet		Extreme Second-Foot			Average Second-Foot	Total Acre-Feet	Acre-Feet				
	High	Low	Day	High	Day			Low	Average	Maximum	Minimum	
Jan.	1.44	0.26	19	22.6	† 9	1.8	6.7	415	294	520	166	
Feb.	1.15	.23	16	16.2	6	1.4	4.9	281	229	311	157	
Mar.	2.00	.26	21	34.3	†21	1.3	6.0	374	344	871	132	
Apr.	1.41	.26	5	21.9	†23	1.8	7.1	414	288	431	135	
May	1.41	.26	19	21.9	6.7	1.8	6.7	409	343	435	238	
June	1.38	.30	23	21.2	† 7	2.1	6.7	409	302	409	116	
July	1.90	.30	7	32.1	1	2.1	8.5	528	352	528	198	
Aug.	1.67	.30	5	31.3	†23	2.1	7.4	466	403	596	200	
Sept.	2.36	.23	8	41.7	18	1.4	7.4	439	409	549	131	
Oct.	1.64	.20	† 8	27.5	17	1.4	6.0	374	364	507	139	
Nov.	1.71	.03	2	23.5	11	*	4.6	268	304	504	151	
Dec.	1.12	.07	12	15.5	† 1	.4	1.8	115	305	597	115	
Yearly	2.36	0.03		41.7			6.0	4,491	3,937	5,359	2,745	

† And other days

* Record missing

WISTERIA WASTEWAY TO NEW RIVER IN MEXICO

DESCRIPTION: Staff gage located near operator's house upstream from wasteway gates, 1,000 feet downstream from the confluence of the Cerro Prieto and West Main Canals of the Colorado River Irrigation District in Colonia Wisteria, 4.3 miles upstream from the international boundary, 1.9 miles east of the highway to Tijuana at the Tijuana-San Felipe Junction, 3.0 miles west of the highway to San Felipe, and 3.1 miles south of Mexicali. The wasteway structure is composed of three rectangular gates, two of which operate manually and one automatically.

RECORDS: Based on gate openings and water surface elevations upstream from the wasteway gates obtained by the Ministry of Hydraulic Resources and check measurements and observations of zero flow during the year at various locations by the Mexican Section of the Commission. Records computed and furnished by the Mexican Section of the Commission. Records available: January 1951 through 1975. Records reported below are part of the waste flows from the Mexican system of canals discharging into the territory of the United States, which wastes are not to exceed an average annual quantity of 35,000 acre-feet during any successive five-year period under the provisions of Minute No. 197 of the Commission. Since April 1973 the wasteway has not discharged to New River but to a lagoon near Bosque which has been used for a settling basin. The water eventually evaporates.

EXTREMES: Maximum instantaneous discharge, 675 second-feet on January 24, 1962; minimum discharge, no flow on various occasions.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0
Sum	0	0	0	0	0	0	0	0	0	0	0	0
Current Year 1975									Period 1951-1975			
Month	Extreme Gage Feet		Extreme Second Feet			Average Second Feet	Total Acre Feet	Acre Feet				
	High	Low	High	Day	Low			Average	Maximum	Minimum		
Jan.			0		0	0	0	1,428	8,735	0		
Feb.			0		0	0	0	874	7,218	0		
Mar.			0		0	0	0	638	2,568	0		
Apr.			0		0	0	0	616	4,433	0		
May			0		0	0	0	434	1,892	0		
June			0		0	0	0	257	1,450	0		
July			0		0	0	0	201	2,040	0		
Aug.			0		0	0	0	390	1,926	0		
Sept.			0		0	0	0	540	2,915	0		
Oct.			0		0	0	0	858	2,993	0		
Nov.			0		0	0	0	865	3,768	0		
Dec.			0		0	0	0	1,220	8,669	0		
Yearly			0		0	0	0	8,320	27,083	0		

WASTE WATERS FROM MEXICAN SYSTEM OF CANALS ENTERING THE UNITED STATES

DESCRIPTION: During 1975, the discharge to the New River in Mexico was from Wisteria Wasteway, located 4.3 miles upstream from the international boundary in Colonia Wisteria, and from the Mexicali Potable Water Plant which discharges, by canal, into the Rivera Drain (Drain 134) thence to New River.

RECORDS: Computations of flows from Wisteria Wasteway are based on gate openings and water-stage elevations upstream from the wasteway made by the Ministry of Hydraulic Resources, and of weekly measurements taken downstream from the weir by the Mexican Section of the Commission. Computation of flows from the Potable Water Plant are based on weekly readings from the discharge canal. Data obtained and furnished by the Mexican Section of the Commission. Records available: Wisteria Wasteway, January 1951 through 1975; Sifon Wasteway, January 1952 through April 1964; Pueblo Nuevo Wasteway, January 1956 through 1965; and the Potable Water Plant, January 1968 through 1975.

REMARKS: Mean daily discharges for Wisteria Wasteway and the Potable Water Plant are shown on pages 59 and 58, respectively in this bulletin. Records for Pueblo Nuevo and Sifon Wasteways are shown in previously published bulletins, 1960 through 1965; flows from these two wasteways are used for irrigation and no longer reach New River.

Monthly Discharge in Acre-Feet

Month	Current Year 1975	Period 1956-1975		
		Average	Maximum	Minimum
January	415	1,398	8,758	15.4
February	281	927	7,231	19.6
March	374	601	2,610	21.7
April	414	458	2,843	16.1
May	409	349	1,141	9.1
June	409	273	1,477	0
July	528	222	528	0
August	466	394	1,413	0
September	439	450	2,081	21.0
October	374	707	3,474	8.4
November	268	792	3,784	0
December	115	1,282	8,691	0
Yearly	4,491	7,853	27,430	399

SALTON SEA - ELEVATIONS OF WATER SURFACE

DESCRIPTION: Water-stage recorder and staff gage located on the western shore of the Salton Sea, 15.5 miles northwest of Westmoreland, Imperial County, California. The Salton Sea is the sink of a closed basin which has a drainage area of 8,360 square miles. Zero of the gage is 250.00 feet below mean sea level, U. S. C. & G. S. datum.

RECORDS: Records of water surface elevations available from November 1904 through 1975. From January 1925 to October 22, 1951, once monthly records of elevations were collected by Imperial Irrigation District from a bench mark at Figtree John's Spring about 22 miles northwest along the western shore from the present gage. Since October 24, 1951, a continuous record of gage heights has been obtained by the U. S. Geological Survey at new gaging station published as "Salton Sea near Westmoreland, California." The elevation of the old station is at a datum of one foot higher than that of the present station. All records reported below and the area and capacity table are adjusted to the datum of the present station.

REMARKS: Runoff from the basin, irrigation drainage and waste water from Imperial and Coachella Valleys in the United States, and drainage and waste water from part of the Mexicali Valley in Mexico discharge into the Salton Sea. Water from Mexico enters the United States in the Alamo and New River channels. The bottom of the sea is 277.7 feet below mean sea level, U. S. C. & G. S. datum.

EXTREMES: Maximum elevation during year, 230.2 feet below mean sea level. Minimum elevation during year, 232.0 feet below mean sea level. Extremes for period of record, maximum elevation 195.9 feet below mean sea level, February 10 to March 29, 1907; minimum elevation since 1906, 251.6 feet below mean sea level in November 1924.

Mean Daily Water Surface Elevation in Feet below Mean Sea Level - 1975

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	231.3	231.0	230.8	230.6	230.4	230.2	230.4	230.6	230.8	230.9	231.1	231.1
2	231.3	231.0	230.8	230.6	230.4	230.2	230.5	230.6	230.8	230.9	231.1	231.0
3	231.3	231.0	230.8	230.6	230.4	230.2	230.5	230.6	230.8	230.9	231.1	231.0
4	231.3	231.0	230.8	230.6	230.4	230.2	230.4	230.6	230.8	230.9	231.1	231.0
5	231.3	231.0	230.7	230.6	230.4	230.2	230.4	230.6	230.8	230.9	231.1	231.0
6	231.3	231.0	230.7	230.6	230.4	230.2	230.4	230.6	230.8	231.0	231.1	231.0
7	231.3	230.9	230.7	230.6	230.4	230.2	230.4	230.6	230.8	231.0	231.0	231.0
8	231.3	230.9	230.7	230.6	230.4	230.2	230.4	230.6	230.8	231.0	231.0	231.0
9	231.3	230.9	230.7	230.5	230.4	230.2	230.4	230.6	230.8	231.0	231.0	231.0
10	231.3	230.9	230.7	230.5	230.4	230.2	230.4	230.6	230.8	231.0	231.0	231.0
11	231.3	230.9	230.7	230.5	230.3	230.2	230.4	230.6	230.8	231.0	231.0	231.6
12	231.3	230.9	230.7	230.5	230.3	230.2	230.4	230.6	230.8	231.0	231.0	232.0
13	231.2	230.9	230.6	230.5	230.3	230.2	230.4	230.6	230.8	231.0	231.0	232.0
14	231.2	230.9	230.6	230.5	230.3	230.2	230.5	230.6	230.8	231.0	231.0	232.0
15	231.2	230.9	230.6	230.5	230.3	230.2	230.5	230.7	230.8	231.0	231.0	232.0
16	231.2	230.9	230.6	230.5	230.3	230.2	230.5	230.7	230.8	231.1	231.0	232.0
17	231.2	230.9	230.6	230.5	230.3	230.3	230.5	230.7	230.8	231.1	231.0	232.0
18	231.2	230.9	230.6	230.5	230.3	230.4	230.5	230.7	230.8	231.0	231.0	232.0
19	231.2	230.8	230.6	230.5	230.3	230.4	230.5	230.7	230.8	231.0	231.0	232.0
20	231.2	230.8	230.6	230.4	230.3	230.4	230.5	230.7	230.8	231.0	231.0	231.9
21	231.1	230.8	230.6	230.4	230.3	230.4	230.5	230.8	230.8	231.0	231.0	231.9
22	231.1	230.8	230.6	230.4	230.3	230.4	230.6	230.8	230.8	231.0	231.1	231.9
23	231.1	230.8	230.6	230.4	230.3	230.4	230.6	230.8	230.8	231.0	231.1	231.9
24	231.1	230.8	230.6	230.4	230.3	230.4	230.6	230.8	230.9	231.0	231.1	231.9
25	231.1	230.8	230.6	230.4	230.3	230.4	230.6	230.8	230.9	231.1	231.1	231.9
26	231.1	230.8	230.6	230.4	230.3	230.4	230.6	230.8	230.9	231.1	231.1	231.9
27	231.1	230.8	230.6	230.4	230.3	230.4	230.6	230.8	230.9	231.1	231.1	231.9
28	231.1	230.8	230.6	230.4	230.3	230.4	230.6	230.8	230.9	231.1	231.1	231.9
29	231.1	230.6	230.6	230.4	230.3	230.4	230.6	230.8	230.9	231.1	231.1	231.9
30	231.1	230.6	230.6	230.4	230.3	230.4	230.6	230.8	230.9	231.1	231.1	231.9
31	231.1	230.6	230.6	230.4	230.3	230.4	230.6	230.8	230.9	231.1	231.1	231.9
Avg.	231.2	230.9	230.7	230.5	230.3	230.3	230.5	230.7	230.8	231.0	231.0	231.6

Month	Current Year 1975		Period 1935-1975			Area and Capacity Table		
	Ø Extreme Elevation Feet		Elevation Feet			Elevation	Area	Capacity
	High	Low	# Average	# Maximum	‡ Minimum	Feet Below M.S.L.	Acres	Acres-Feet
Jan.	231.1	231.3	237.97	231.2	249.3	277.7	0	0
Feb.	230.8	231.0	237.65	230.9	248.8	274.0	20,600	25,700
Mar.	230.6	230.8	237.39	230.7	248.6	270.0	62,900	188,700
Apr.	230.4	230.6	237.20	230.5	248.7	266.0	94,600	510,600
May	230.3	230.4	237.18	230.3	248.5	260.0	122,600	1,170,000
June	230.2	230.4	237.34	230.3	248.8	256.0	134,700	1,684,000
July	230.4	230.6	237.50	230.5	249.1	252.0	148,800	2,250,000
Aug.	230.6	230.8	237.70	230.7	249.4	244.0	179,700	3,562,000
Sept.	230.8	230.9	237.90	230.8	249.4	240.0	196,900	4,315,000
Oct.	230.9	231.1	237.95	230.0	249.8	235.0	221,800	5,360,000
Nov.	231.0	231.1	237.97	231.0	250.0	230.0	230,000	6,504,000
Dec.	231.0	232.0	237.83	231.4	249.6	220.0	262,000	8,993,000
						210.0	288,500	11,740,000
						200.0	315,500	14,760,000
Yearly	230.2	232.0	237.63	230.7	250.0			

Ø Mean daily # Mean monthly ‡ Reading near first day of month

CHEMICAL ANALYSES OF WATER SAMPLES 1975

The tables below are based on quarterly samples from the Alamo River taken and analysed by the State of California Department of Water Resources. Beginning December 1971, not all constituents analysed. New River samples are collected monthly and analysed by the U. S. Geological Survey.

Samples from the Alamo River are taken north of the international boundary at upstream end of box culvert under the All-American Canal. Flow at this point includes drainage flows across international boundary and flows from drain intercepts along toe of south bank of All-American Canal. Samples from New River are taken from the right bank at road bridge 450 feet north of international boundary. Records of sampling extend from April 1951 through 1975.

To convert milligram equivalents to parts per million by weight, multiply each ion by its appropriate conversion factor. These factors are: Ca, 20.04; Mg, 12.16; Na, 22.99; (CO₃ plus HCO₃) expressed as CO₃, 30.00; SO₄, 48.03; Cl, 35.45; NO₃, 62.00. To convert tons per acre-foot to parts per million, multiply tons per acre-foot by 735.5. Electrical conductivity, reported in the tables as EC x 10⁶ at 25°C, is a relative measure of the total salt concentration.

Month	No. of Samples	Dissolved Solids		ECx10 ⁶ @25°C	Boron p. p. m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter					
		Tons Per Acre-Foot	Total Tons						Ca	Mg	Na	CO ₃ + HCO ₃	SO ₄	Cl

Alamo River

Jan.																	
Feb.	1	1.34	170	1,501		7.4								7.54		4.29	
Mar.																	
Apr.																	
May																	
June	1	5.39	906	5,724		8.2								23.75		32.37	
July																	
Aug.																	
Sept.	1	3.88	501	4,239		8.0								17.70		22.78	
Oct.																	
Nov.																	
Dec.	1	4.10	439	4,529		8.1								18.79		23.28	

New River

Jan.	1	5.30	53,000	6,180		7.9	60	68	13.97	10.69	37.41	4.38	15.82		42.31	
Feb.	1	5.49	48,000	6,390		8.0	65	67	11.48	10.69	40.89	4.72	17.07		45.13	
Mar.	1	5.75	59,000	6,250		7.6	66	68	11.48	10.69	43.06	4.75	16.24		45.13	
Apr.	1	6.43	69,000	7,230		8.3	66	72	13.47	11.51	47.85	4.98	16.03		53.60	
May	1	6.36	61,000	7,800		7.7	62	67	13.47	12.34	42.63	4.95	18.53		47.95	
June	1	6.13	45,000	7,070		7.5	67	69	12.97	10.69	47.85	5.11	17.28		50.78	
July	1	6.30	45,000	7,160		7.7	70	70	12.48	8.22	47.85	4.49	17.70		50.78	
Aug.	1	5.86	44,000	5,200		7.6	66	70	11.48	10.69	43.06	4.23	16.45		47.95	
Sept.	1	5.90	44,000	6,000		6.9	66	69	11.48	10.69	43.50	4.74	16.66		47.95	
Oct.	1	5.79	39,000	6,600		7.8	67	70	11.43	9.87	43.50	4.69	16.24		47.95	
Nov.	1	6.43	42,000	6,400		7.6	70	71	12.97	9.87	52.20	5.93	17.07		56.42	
Dec.	1	6.23	48,000	5,200		7.8	70	73	12.48	9.87	52.20	5.03	15.20		53.60	

** Percent of total cations

*** Percent of total anions

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1975

The following table shows electrical conductivity, expressed in mhos per centimeter $\times 10^6$ at 25°C , of individual water samples from the New River in Mexico at the international boundary. Samples were taken by the Mexican Section of the Commission, who also made the determinations.

Electrical conductivity is a relative indication of the concentration of dissolved solids in the water samples.

Date	ECx10 ⁶ @25°C												
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New River at International Boundary

January		February		April		May		July		August		October		November		
8	6,900	24	6,990	7	6,980	27	6,910	8	6,870	19	6,700	6	6,600	25	7,330	
13	7,000			15	6,890			15	6,620	25	6,700	14	6,700			
21	6,820	4	6,960	21	6,990	2	6,990	22	6,730			20	6,670	1	7,880	
27	6,900	10	6,700	29	7,000	10	7,010	25	6,700	2	6,680	28	6,720	9	7,560	
		February	18	6,990		May	16	6,960	29	6,740	8	6,720		November	15	7,690
4	6,890	24	6,900	6	6,980	24	7,200			August	16	6,700	3	6,600	23	7,100
10	6,960			13	7,020	30	7,150	5	6,710	23	6,730	11	7,150	29	6,970	
18	7,000	1	7,010	19	6,990			11	6,690	30	6,690	17	7,180			

COTTONWOOD CREEK ABOVE MORENA DAM, CALIFORNIA

DESCRIPTION: Staff gage located on east side of outlet tower immediately upstream from face of Morena Dam. The dam is located on Cottonwood Creek 1.8 miles upstream from the mouth of Hauser Creek, 8.5 miles upstream from Barrett Dam, and about 20 miles upstream from the international boundary. The zero of the gage is 2,882.4 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Reservoir inflows shown below were computed from monthly reservoir records of storage, releases, spills, leakage, evaporation, and rainfall, by the International Boundary and Water Commission, United States Section. They represent all water reaching Morena Reservoir, including rainfall on reservoir water surface. Basic data were furnished by the city of San Diego, California. Records available: April 1911 through 1975.

REMARKS: Storage began in Morena Reservoir March 1910. Reservoir capacity and area ratings date from 1910 when Morena Dam was completed. Records for 1975 computed on basis of area-capacity curves determined from 1948 resurvey. Various changes have been made to the spillway section since construction of the dam. Elevation of present crest of ungated spillway is 157.00 feet, gage datum. Reservoir capacity at spillway crest, 1948 survey, is 50,210 acre-feet. The entire capacity of Morena Reservoir is used to furnish a part of the water supply of the city of San Diego, California. Water is released from Morena Reservoir down Cottonwood Creek to Barrett Reservoir as required.

EXTREMES: Prior to 1937, maximum monthly inflow, 37,200 acre-feet, January 1916; minimum, no flow during parts of many years.

Monthly Discharge in Acre-Feet

Month	Current Year 1975	Period 1937-1975		
		Average	Maximum	Minimum
January	18.7	419	3,520	0
February	43.4	1,022	16,700	8.0
March	144	1,547	13,220	19.3
April	91.0	970	11,490	3.3
May	9.7	341	3,550	0
June	11.0	175	1,660	0
July	.1	123	1,010	0
August	0	89.7	1,260	0
September	16.9	61.8	1,070	0
October	1.2	73.3	1,270	0
November	32.5	134	1,380	0
December	7.3	441	3,590	4.4
Yearly	376	5,397	39,439	121

COTTONWOOD CREEK BELOW MORENA DAM, CALIFORNIA

DESCRIPTION: Two water-stage recorders, one on the upstream side of the southeast abutment of Morena Dam for measuring head on the spillway crest and one immediately below the dam with a rectangular control weir for measuring ordinary reservoir releases, and cableway located about 0.8 mile downstream from the dam. Discharge measurements made at the cableway include leakage, controlled releases, and spillway discharges.

RECORDS: Monthly records shown below represent the water available immediately below Morena Dam, consisting of spillway waste, draft, and leakage from the dam. They are computed by the International Boundary and Water Commission, United States Section, from basic data furnished by the city of San Diego, California. Records available: January 1911 through 1975.

REMARKS: Flows at this station are regulated by Morena Dam; storage began March 1910. Water is released from Morena Reservoir as required and flows down the natural channel of Cottonwood Creek to Barrett Reservoir. There are no major diversions above Morena Dam.

EXTREMES: Prior to 1937, maximum monthly discharge, 21,400 acre-feet, February 1916; minimum, no flow during several months of various years.

Monthly Discharge in Acre-Feet

Month	Current Year 1975	Period 1937-1975		
		Average	Maximum	Minimum
January	0	112	1,700	0
February	0	312	4,250	0
March	0	254	1,731	0
April	0	775	12,950	0
May	0	211	3,040	0
June	0	290	7,360	0
July	0	166	2,340	0
August	0	137	1,550	0
September	0	270	5,830	0
October	0	80.4	529	0
November	0	109	1,260	0
December	0	300	5,350	0
Yearly	0	3,016	24,825	0

COTTONWOOD CREEK ABOVE BARRETT DAM, CALIFORNIA

DESCRIPTION: Staff gage located immediately upstream from face of dam on west side of outlet tower. Barrett Dam is located on Cottonwood Creek 8.5 miles downstream from Morena Dam, 1 mile downstream from the mouth of Pine Valley Creek and about 12 miles upstream from the international boundary. Zero of gage is 1,446.12 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Records reported below represent all water reaching Barrett Dam from the sub-basin below Morena Dam including rainfall on the reservoir water surface. Leakage, releases, and spills from Morena Reservoir are not included. The inflows were computed from monthly Reservoir records of storage, releases, spills, leakage, evaporation, and rainfall furnished by the city of San Diego, California. Records available: January 1921 through 1975. Records of stream flow for a station at the dam site are also available for the periods 1906-1915 and 1917-1920.

REMARKS: Storage began at Barrett Reservoir in January 1921. The area-capacity-elevation curves used in the inflow calculations are dated 1948, 1951, and 1955 and were furnished by the city of San Diego, California. Capacity of reservoir at top of flash gates on spillway (gage height 168.88 feet) is 44,755 acre-feet. Capacity at spillway crest (gage height 160.88 feet) is 37,950 acre-feet. Dead storage, 719 acre-feet below lowest outlet (gage height 58.88 feet) is included in these capacities. The entire capacity of Barrett Reservoir is used to furnish a part of the water supply of the city of San Diego, California.

EXTREMES: Prior to 1937, maximum monthly discharge, 54,800 acre-feet, February 1927; minimum, no flow during several months of various years.

Monthly Discharge in Acre-Feet

Month	Current Year 1975	Period 1937-1975		
		Average	Maximum	Minimum
January	15.3	550	3,430	5.2
February	42.4	1,495	26,790	7.6
March	345	2,532	18,860	14.1
April	481	1,651	21,630	10.2
May	85.5	508	5,130	0
June	5.6	212	1,730	0
July	3.0	139	1,010	0
August	0	78.5	579	0
September	1.8	88.6	759	0
October	1.0	57.3	645	.1
November	19.2	122	1,200	0
December	11.8	450	3,380	1.7
Yearly	1,012	7,883	59,387	129

DULZURA CONDUIT BELOW BARRETT DAM, CALIFORNIA

DESCRIPTION: Water-stage recorder 0.5 mile downstream from Barrett Dam on right bank of Dulzura Conduit 50 feet upstream from road crossing to Barrett Dam. Elevation of gage has not been determined.

RECORDS: Computed on basis of head on control section of flume, as measured by water-stage recorder, and rating curve determined from current meter measurements. Records obtained and furnished by the city of San Diego, California. Records available: January 1909 through 1975.

REMARKS: Barrett Dam was completed in 1921. Prior to this date the intake of Dulzura Conduit was located 1.5 miles upstream. The conduit carries diversions from Barrett Reservoir on Cottonwood Creek westerly across the divide into Otay Reservoir for municipal use by the city of San Diego. Prior to September 30, 1958, station was located 8 miles along the conduit from Barrett Dam, being reported as "Dulzura Conduit near Dulzura" and the draft from Barrett Reservoir was computed from the discharges obtained at the conduit gaging station, multiplied by the factor 1.05 to allow for channel losses in the reach from the reservoir to the gaging station.

EXTREMES: Since 1937: Maximum mean daily discharge, 55 second-feet on March 15, 1954; minimum discharge, no flow for long periods on many occasions.

Mean Daily Discharge in Second-Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	13.1	4.1	0	0	0	0	0	0	0
2	0	0	0	10.5	3.8	0	0	0	0	0	0	0
3	0	0	0	8.4	3.4	0	0	0	0	0	0	0
4	0	0	0	6.8	3.3	0	0	0	0	0	0	0
5	0	0	0	9.7	3.1	0	0	0	0	0	0	0
6	0	0	0	8.4	3.0	0	0	0	0	0	0	0
7	0	0	0	8.6	2.9	0	0	0	0	0	0	0
8	0	0	0	8.6	2.8	0	0	0	0	0	0	0
9	0	0	0	10.9	2.7	0	0	0	0	0	0	0
10	0	0	0	14.6	2.5	0	0	0	0	0	0	0
11	0	0	0	14.4	2.4	0	0	0	0	0	0	0
12	0	0	0	12.3	2.2	0	0	0	0	0	0	0
13	0	0	0	11.4	2.1	0	0	0	0	0	0	0
14	0	0	0	13.8	0	0	0	0	0	0	0	0
15	0	0	0	11.9	0	0	0	0	0	0	0	0
16	0	0	0	9.5	0	0	0	0	0	0	0	0
17	0	0	0	12.8	0	0	0	0	0	0	0	0
18	0	0	0	11.9	0	0	0	0	0	0	0	0
19	0	0	0	10.0	0	0	0	0	0	0	0	0
20	0	0	0	10.1	0	0	0	0	0	0	0	0
21	0	0	0	9.0	0	0	0	0	0	0	0	0
22	0	0	0	8.7	0	0	0	0	0	0	0	0
23	0	0	0	8.0	0	0	0	0	0	0	0	0
24	0	0	0	7.5	0	0	0	0	0	0	0	0
25	0	0	0	6.8	0	0	0	0	0	0	0	0
26	0	0	16.9	6.5	0	0	0	0	0	0	0	0
27	0	0	16.0	5.9	0	0	0	0	0	0	0	0
28	0	0	15.1	5.5	0	0	0	0	0	0	0	0
29	0	0	13.9	5.0	0	0	0	0	0	0	0	0
30	0	0	13.1	4.5	0	0	0	0	0	0	0	0
31	0	0	16.2	0	0	0	0	0	0	0	0	0
Sum	0	0	91.2	285.6	38.3	0	0	0	0	0	0	0
Current Year 1975									Period 1937-1975			
Month	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet			
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum	
Jan.				0		0	0	364	2,350	0		
Feb.				0		0	0	372	2,130	0		
Mar.			26	16.9	† 1	0	2.9	181	536	2,330	0	
Apr.			10	14.6	30	4.5	9.5	566	844	2,860	0	
May			1	4.1	† 14	0	1.2	75.0	944	3,040	0	
June				0		0	0	960	2,920	0		
July				0		0	0	784	2,920	0		
Aug.				0		0	0	656	2,820	0		
Sept.				0		0	0	425	2,320	0		
Oct.				0		0	0	325	2,450	0		
Nov.				0		0	0	448	2,760	0		
Dec.				0		0	0	413	2,305	0		
Yearly				16.9		0	1.1	823	7,071	27,170	0	

† Mean daily

† And other days

COTTONWOOD CREEK BELOW BARRETT DAM, CALIFORNIA

DESCRIPTION: Water-stage recorder and cableway located about 2.5 miles downstream from Barrett Dam and 0.5 mile upstream from Rattlesnake Canyon for measuring Barrett Dam spills; and staff gage and control weir located immediately below the dam for measuring leakage. The elevation of the gage is about 1,000 feet (from topographic map).

RECORDS: Data furnished by the city of San Diego, California. Prior to January 1953, the records were furnished by the city of San Diego and reviewed and revised by the United States Section of the Commission. The recorder is to be operated only when Barrett Reservoir is near or above spillway level. There have been no spillway discharges since May 1943. Spillway discharges included in the period record below were computed by the city of San Diego from the head on the spillway crest, read on the reservoir gage, and applied to a broad-crested weir formula. Records available: January 1921 through 1975. Storage began in Barrett Reservoir in January 1921.

REMARKS: Records reported below represent the water available in the natural channel of Cottonwood Creek immediately below Barrett Dam. Records of draft from Barrett Reservoir are not included inasmuch as all releases are made to Dulzura Conduit which transports water outside the basin. Leakage is mainly through the spillway gates.

EXTREMES: Prior to 1937, maximum monthly discharge 38,400 acre-feet February 1927; minimum, no flow during several months of various years.

Monthly Discharge in Acre-Feet

Month	Current Year 1975	Period 1937-1975		
		Average	Maximum	Minimum
January	0	15.4	590	0
February	0	26.3	990	0
March	0	710	13,390	0
April	0	1,042	33,400	0
May	0	236	7,520	0
June	0	33.2	890	0
July	0	1.8	21	0
August	0	1.6	21	0
September	0	1.3	21	0
October	0	1.2	21	0
November	0	.9	15	0
December	0	1.4	21	0
Yearly	0	2,071	50,364	0

COTTONWOOD CREEK ABOVE TECATE CREEK NEAR DULZURA, CALIFORNIA

DESCRIPTION: Water-stage recorder and cableway located 1.6 miles upstream from the international land boundary between the United States and Mexico, 0.8 mile upstream from the confluence with Tecate Creek, and 5.1 miles south of Dulzura, California. Low water discharge measurements are made by wading at the gage; high water measurements are made from the cableway which is located 700 feet downstream from the gage. Zero of gage is 569.40 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on a continuous record of gage heights and current meter measurements or observation of no flow generally made twice each month. Records obtained and furnished by the U. S. Geological Survey. Records available: October 1936 through 1975.

REMARKS: Flow is largely controlled by Barrett and Morena Reservoirs, 10 and 18 miles, respectively, upstream from this station. During 1975, there were no releases or spills to the natural channel of Cottonwood Creek at Barrett Dam, the lowermost dam in Cottonwood Creek Basin.

EXTREMES: Maximum discharge 4,340 second-feet February 7, 1937 (gage height 9.65 feet), from rating curve extended above 1,500 second-feet by logarithmic plotting. Minimum discharge, no flow during part of each year.

Mean Daily Discharge in Second-Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0.95	0.56	0	0	0	0	0	0	0
2	0	0	0	.88	.51	0	0	0	0	0	0	0
3	0	0	0	.76	.43	0	0	0	0	0	0	0
4	0	0	0	.65	.36	0	0	0	0	0	0	0
5	0	0	0	.76	.36	0	0	0	0	0	0	0
6	0	0	.08	1.4	.32	0	0	0	0	0	0	0
7	0	0	.26	2.3	.23	0	0	0	0	0	0	0
8	0	0	.23	2.4	.14	0	0	0	0	0	0	0
9	0	0	.76	4.6	.09	0	0	0	0	0	0	0
10	0	0	.71	4.4	.04	0	0	0	0	0	0	0
11	0	0	4.3	3.6	.02	0	0	0	0	0	0	0
12	0	0	2.8	3.1	.01	0	0	0	0	0	0	0
13	0	0	1.7	2.6	0	0	0	0	0	0	0	0
14	0	0	2.1	2.3	0	0	0	0	0	0	0	0
15	0	0	1.7	2.2	0	0	0	0	0	0	0	0
16	0	0	1.4	1.9	0	0	0	0	0	0	0	0
17	0	0	1.2	2.3	0	0	0	0	0	0	0	0
18	0	0	1.0	2.2	0	0	0	0	0	0	0	0
19	0	0	.82	1.8	0	0	0	0	0	0	0	0
20	0	0	.76	1.6	0	0	0	0	0	0	0	0
21	0	0	.51	1.4	0	0	0	0	0	0	0	0
22	0	0	.95	1.3	0	0	0	0	0	0	0	0
23	0	0	1.1	1.2	0	0	0	0	0	0	0	0
24	0	0	.76	1.1	0	0	0	0	0	0	0	0
25	0	0	.88	1.0	0	0	0	0	0	0	0	0
26	0	0	1.6	1.0	0	0	0	0	0	0	0	0
27	0	0	1.2	.88	0	0	0	0	0	0	0	0
28	0	0	.95	.82	0	0	0	0	0	0	0	0
29	0	0	.82	.76	0	0	0	0	0	0	0	0
30	0	0	.76	.65	0	0	0	0	0	0	0	0
31	0	0	.82	0	0	0	0	0	0	0	0	0
Sum	0	0	30.27	52.81	3.07	0	0	0	0	0	0	0
Current Year 1975									Period 1937-1975			
Month	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet			
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum	
Jan.				0		0	0	181	1,190	0		
Feb.				0		0	0	579	9,940	0		
Mar.			11	4.3	† 1	0	.98	60.0	1,558	20,880	0	
Apr.			9	4.6	† 4	.65	1.76	105	1,452	40,240	0	
May			1	.56	† 13		.10	6.1	336	10,040	0	
June				0		0	0	64.4	1,590	0		
July				0		0	0	7.2	206	0		
Aug.				0		0	0	.4	7.7	0		
Sept.				0		0	0	1.9	72	0		
Oct.				0		0	0	3.7	101	0		
Nov.				0		0	0	20.4	440	0		
Dec.				0		0	0	130	1,316	0		
Yearly				4.6		0	0.24	171	4,334	66,700	0	

‡ Mean daily

† And other days

CAMPO CREEK NEAR CAMPO, CALIFORNIA

DESCRIPTION: Water-stage recorder and broad-crested weir on left bank, 0.5 mile upstream from the international land boundary between the United States and Mexico, just upstream from the bridge on California State Highway 94, 3.5 miles southwest of Campo, California. Zero of gage is 2,178.92 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on current meter measurements and observation of no flow. Records obtained and furnished by the U. S. Geological Survey. Records available: October 1936 through 1975.

REMARKS: Campo Creek originates in the United States and flows southwestward into Mexico where it joins Tecate Creek. The flow at this station is partially regulated by a small conservation reservoir a quarter of a mile upstream, completed in August 1956.

EXTREMES: Maximum instantaneous discharge during 1975, 1.7 c.f.s. on March 11 (gage height 1.41 feet); no flow for part of the year. Maximum discharge 880 second-feet, February 6, 1937 (gage height 4.80 feet, present datum), from rating curve extended above 110 second-feet on basis of velocity-depth relation and cross-section area at the control. Minimum discharge, no flow during part of most years.

Mean Daily Discharge in Second-Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.01	0.02	0.02	0.08	0.04	0.02	0.05	0.01	0	0	0	0
2	.01	.01	.03	.07	.04	.02	.05	.01	0	0	0	0
3	.01	.04	.03	.08	.04	.02	.11	0	0	0	0	0
4	.01	.01	.05	.08	.06	.02	.31	0	0	0	0	0
5	.01	.01	.05	.07	.06	.02	.20	0	0	0	0	0
6	.01	0	.03	.11	.06	.02	.02	0	0	0	0	0
7	.01	0	.02	.08	.07	.02	.02	0	.15	0	0	0
8	.01	0	.06	.08	.07	.02	.03	0	.13	0	0	0
9	.02	.01	.02	.10	.05	.02	.03	.02	.09	0	0	0
10	.01	.01	.07	.07	.04	.02	.03	.01	.01	0	0	0
11	0	.01	.17	.07	.03	.01	.02	.01	0	0	0	0
12	0	0	.06	.07	.03	.01	.03	.01	0	0	0	.05
13	.01	.01	.03	.07	.03	.01	.02	.01	0	0	0	.01
14	.01	.01	.07	.07	.04	.01	.02	0	0	0	0	0
15	.01	.01	.03	.08	.07	.01	.02	0	0	0	0	0
16	.01	.01	.03	.09	.07	.01	.02	0	0	0	0	0
17	.01	.01	.03	.09	.05	.02	.02	0	0	0	0	0
18	0	.01	.04	.05	.05	.03	.03	0	0	0	0	0
19	0	0	.05	.05	.05	.02	.02	0	0	0	0	0
20	0	.01	.06	.04	.07	.03	.02	0	0	0	0	0
21	.01	.01	.06	.05	.07	.02	.02	0	0	0	0	0
22	0	0	.09	.07	.05	.05	.02	0	0	0	0	0
23	.01	0	.07	.07	.05	.05	.01	0	0	0	0	0
24	.01	0	.07	.07	.03	.03	.01	0	0	0	0	0
25	.01	.01	.07	.09	.03	.03	.01	0	0	0	0	0
26	.01	.02	.08	.08	.03	.03	.01	0	0	0	0	0
27	.01	.02	.05	.07	.03	.07	.01	0	0	0	.07	0
28	.02	.02	.05	.04	.03	.07	.01	0	0	0	.27	0
29	.02	.05	.05	.04	.03	.05	.01	0	0	0	.16	0
30	.02	.05	.04	.03	.03	.05	.01	0	0	0	.05	0
31	.02	.07	.07	.02	.02	.01	.01	0	0	0	0	0
Sum	0.30	0.27	1.66	2.12	1.42	0.81	1.20	0.08	0.38	0	0.55	0.07
Current Year 1975									Period 1937-1975			
Month	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet			
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum	
Jan.			† 9	0.02	† 11	0	0.010	0.6	121	906	0	
Feb.			3	.04	† 6	0	.010	.5	212	1,730	0	
Mar.			11	.17	† 1	.02	.054	3.3	305	2,360	0	
Apr.			6	.11	† 20	.04	.071	4.2	214	3,250	0	
May			† 7	.07	31	.02	.046	2.8	98.4	1,540	0	
June			† 27	.07	† 11	.01	.027	1.6	38.8	719	0	
July			4	.31	† 23	.01	.039	2.4	15.9	361	0	
Aug.			9	.02	† 3	0	.003	.2	11.5	321	0	
Sept.			7	.15	† 1	0	.013	.8	10.9	264	0	
Oct.				0	0	0	0	0	18.8	543	0	
Nov.			28	.27	† 1	0	.007	1.1	34.7	542	0	
Dec.			12	.06	† 1	0	.021	.1	96.2	808	0	
Yearly				0.31		0	0.024	17.6	1,177	11,141	0	

† Mean daily † And other days

COTTONWOOD CREEK NEAR INTERNATIONAL BOUNDARY

DESCRIPTION: Water-stage recorder and cableway, 0.6 mile upstream from the international land boundary between the United States and Mexico, 0.5 mile downstream from the confluence of Cottonwood Creek and Tecate Creek, and 5.5 miles south of Dulzura, California. Low water discharge measurements are made by wading at the gage. The zero of the gage is 542.42 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on a continuous record of gage heights and current meter measurements or observation of no flow. Records obtained and furnished by the U. S. Geological Survey. Records available: October 1936 through 1975.

REMARKS: Flow is partially controlled by Barrett and Morena Reservoirs, 11 and 19 miles respectively, upstream from this station. The flow at this station represents the amount of water passing the Marron Dam site.

EXTREMES: Maximum discharge, 4,700 second-feet, February 7, 1937 (gage height 8.50 feet) from rating curve extended above 300 second-feet on basis of velocity, mean-depth and area computations. Minimum discharge, no flow for part of most years.

Mean Daily Discharge in Second-Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.0	1.2	0.78	1.5	0.43	0.23	0.17	0.10	0.16	0.08	0.11	0.14
2	1.0	1.2	.79	1.5	.37	.23	.17	.10	.16	.09	.10	.13
3	1.0	1.2	.77	1.4	.36	.23	.18	.11	.16	.10	.11	.13
4	1.2	1.3	.75	1.1	.34	.23	.17	.11	.17	.10	.11	.13
5	1.2	1.4	.61	.55	.32	.22	.16	.11	.17	.09	.11	.13
6	1.1	1.3	.94	.74	.29	.23	.16	.11	.17	.09	.10	.12
7	1.1	1.3	.94	1.8	.29	.23	.16	.10	.19	.10	.10	.12
8	1.1	1.3	1.1	2.2	.28	.22	.18	.10	.18	.10	.10	.11
9	1.4	1.4	1.5	7.4	.26	.23	.16	.11	.18	.10	.10	.11
10	1.4	1.5	1.4	9.8	.26	.21	.15	.12	.18	.10	.10	.12
11	1.4	1.4	12.0	6.2	.26	.21	.15	.11	.16	.10	.10	.13
12	1.3	1.3	14.0	4.3	.26	.22	.15	.12	.17	.10	.10	.16
13	1.1	1.4	3.6	3.3	.25	.23	.15	.12	.16	.10	.10	.18
14	1.1	1.1	5.3	2.6	.25	.22	.15	.12	.17	.10	.10	.18
15	1.1	.97	4.2	2.0	.26	.19	.14	.11	.17	.10	.10	.17
16	1.3	1.0	2.5	1.4	.24	.19	.14	.11	.16	.10	.10	.16
17	1.3	.95	1.9	2.0	.24	.18	.16	.11	.15	.10	.10	.15
18	1.2	.83	1.6	2.5	.23	.19	.17	.13	.14	.10	.10	.14
19	1.1	.81	1.5	1.9	.23	.18	.16	.13	.13	.12	.10	.14
20	1.0	.75	1.5	1.6	.26	.18	.14	.13	.13	.12	.10	.14
21	1.1	.63	1.3	1.4	.24	.17	.14	.12	.12	.12	.10	.14
22	.92	.64	1.5	1.3	.24	.16	.14	.12	.07	.12	.10	.13
23	.86	.78	1.7	1.2	.23	.16	.13	.11	.06	.12	.10	.12
24	.84	.77	1.2	1.1	.23	.16	.13	.12	.06	.11	.10	.14
25	.83	.71	1.2	.98	.23	.16	.12	.12	.07	.11	.10	.14
26	.93	.67	2.0	.90	.22	.15	.13	.13	.07	.12	.11	.14
27	.98	.74	2.0	.74	.22	.15	.12	.12	.07	.12	.12	.14
28	1.0	.74	1.6	.61	.21	.16	.12	.12	.08	.11	.16	.14
29	1.1	1.4	1.4	.54	.23	.16	.13	.14	.08	.11	.17	.14
30	1.1	1.4	1.4	.49	.23	.17	.11	.14	.08	.11	.14	.14
31	1.2	1.3	1.3		.22		.11	.15		.12		.14
Sum	34.26	29.29	74.28	65.05	8.17	5.85	4.53	3.65	4.02	3.26	3.24	4.30
Current Year 1975								Period 1937-1975				
Month	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet			
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum	
Jan.			† 9	1.4	25	0.83	1.11	68.0	390	2,750	0	
Feb.			† 10	1.5	21	.63	1.05	58.1	1,046	13,680	0	
Mar.			† 12	14.0	5	.61	2.40	147	2,496	27,140	0	
Apr.			† 10	9.8	30	.49	2.17	129	1,989	51,060	0	
May			† 1	.43	28	.21	.26	16.2	502	14,110	0	
June			† 1	.23	126	.15	.20	11.6	105	2,630	0	
July			† 3	.18	129	.11	.15	9.0	17.6	332	0	
Aug.			† 1	.15	† 1	.10	.12	7.2	6.6	171	0	
Sept.			† 7	.19	† 3	.06	.13	8.0	9.0	152	0	
Oct.			† 19	.12	† 1	.08	.11	6.5	22.2	705	0	
Nov.			† 29	.17	† 2	.10	.11	6.4	54.9	839	0	
Dec.			† 13	.18	† 8	.11	.14	8.5	327	3,330	0	
Yearly				14.0		0.06	0.66	476	6,965	97,900	0	

† Mean daily

† And other days

INFLOWS TO RODRIGUEZ RESERVOIR, BAJA CALIFORNIA

DESCRIPTION: Rodriguez Dam is located in Mexico on Rio de las Palmas, the principal tributary to the Tijuana River, about 5.5 miles upstream from its confluence with Cottonwood Creek, 11 miles upstream from the point where the Tijuana River crosses the international boundary between the United States and Mexico, and 10 miles southeast of Tijuana, Baja California.

RECORDS: Computed from monthly reservoir records of storage, releases, spills, leakage, evaporation, rainfall and including Emergency Deliveries of Colorado River Water to Tijuana beginning in August 1972. The Emergency Deliveries of Colorado River Water to Tijuana are made pursuant to Minute 240 of this Commission. Records obtained by the Ministry of Hydraulic Resources through May 1961; from June 1961 through March 1966 by the Junta de Agua Potable y Alcantarillado del Distrito Urbano of Tijuana, Baja California, and from April 1966 by the State of Baja California Commission of Public Services for Tijuana. Records furnished by the Mexican Section of the Commission. Records available: May 1937 through 1975. Storage began in Rodriguez Reservoir on September 22, 1936.

REMARKS: Records of runoff represent all water reaching Rodriguez Reservoir including rainfall on the reservoir water surface. Area-capacity-elevation rating for reservoir used in the computations is dated 1927 when the reservoir area was initially surveyed. Elevation of crest of spillway 380.08 feet above mean sea level; at top of spillway gates 410.10 feet above mean sea level. Reservoir capacity at spillway crest 76,210 acre-feet; at top of spillway gates 111,070 acre-feet.

EXTREMES: Maximum monthly inflow, 77,790 acre-feet, April 1941; minimum, no flow during part of most years.

Monthly Discharge in Acre-Feet

Month	Current Year 1975			Period 1938-1975		
	Natural Inflow	* Otay Aqueduct	Total	Average	Maximum	Minimum
January	35.1	144	179	790	6,569	0
February	30.5	113	144	2,148	41,295	5.8
March	74.9	73.5	148	5,381	68,321	4.2
April	64.7	37.5	102	2,790	77,790	0
May	24.7	25.1	49.8	363	9,962	0
June	18.9	7.5	26.3	72.2	891	0
July	8.0	3.2	11.2	79.3	326	0
August	0	2.5	2.5	56.7	770	0
September	.2	0	.2	57.9	466	0
October	4.5	6.0	10.5	69.6	344	0
November	28.7	1.6	30.3	156	1,940	0
December	5.3	3.1	8.4	844	15,686	8.4
Yearly	296	413	713	12,808	177,668	254

* Inflow from the supply of water from Otay Aqueduct for the city of Tijuana

DIVERSIONS FROM RODRIGUEZ RESERVOIR, BAJA CALIFORNIA

DESCRIPTION: Sparling flow meter located immediately below the dam in the pipe line which carries water released from Rodriguez Reservoir to the North and South Canals.

RECORDS: Direct recording by Sparling flow meter. Records obtained by the Ministry of Hydraulic Resources through May 1961; from June 1961 through March 1966 by the Junta de Agua Potable y Alcantarillado del Distrito Urbano de Tijuana, Baja California, and from April 1966 by the State of Baja California Commission of Public Services for Tijuana. Records furnished by the Mexican Section of the Commission. Records available: May 1937 through 1975.

REMARKS: Since the dam was completed in 1937, water has been diverted directly into the aqueduct for domestic use for Tijuana, Baja California and into the North and South Canals for irrigation in Mexico. The North Canal delivers water to lands in the Tijuana Valley north of the Rio de las Palmas and the South Canal delivers water to lands in the valley south of the Rio de las Palmas and the Tijuana River. During 1975, no water was released for irrigation of farm lands.

EXTREMES: Maximum monthly diversion, 1,963 acre-feet, July 1944; minimum, no flow March and April 1941, August 1960, and December 1962.

Monthly Discharge in Acre-Feet

Month	Current Year 1975	Period 1938-1975		
		Average	Maximum	Minimum
January	2.3	220	782	1.5
February	2.0	244	1,132	.8
March	27.9	294	1,223	0
April	39.5	416	1,602	0
May	32.2	567	1,676	1.8
June	58.2	659	1,857	1.9
July	122	700	1,963	1.9
August	184	606	1,859	0
September	243	491	1,420	1.9
October	105	421	1,187	1.9
November	151	323	1,037	1.9
December	118	285	981	0
Yearly	1,036	5,224	15,317	29.3

TIJUANA RIVER AT INTERNATIONAL BOUNDARY

DESCRIPTION: Water-stage recorder on right bank about 550 feet downstream from the international boundary and about 0.8 mile west of the international gate at San Isidro, California. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on current meter measurements and observations of no flow and a continuous record of gage heights. Records obtained and furnished by the United States Section of the Commission. Records available: May 1947 through 1975.

EXTREMES: Since May 1947: Maximum instantaneous discharge, 2,570 second-feet, March 15, 1952; minimum discharge, no flow during part or all of each year since 1951.

Mean Daily Discharge in Second-Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.2	1.3	0.3	.2	.2	0	0	0	0	0	0	0
2	.6	.9	.2	.2	.1	0	0	0	0	0	0	0
3	.6	2.3	.2	.1	.1	0	0	0	0	0	0	0
4	.6	5.3	.2	.2	.1	0	0	0	0	0	0	0
5	.5	2.0	1.7	1.1	.1	0	0	0	0	0	0	0
6	.4	.8	38.7	21.7	.1	0	0	0	0	0	0	0
7	1.6	.7	1.8	40.9	.1	0	0	0	0	0	0	0
8	1.0	.5	43.4	4.0	.1	0	0	0	0	0	0	0
9	.6	2.6	7.4	99.4	.1	0	0	0	0	0	0	0
10	.5	6.3	39.2	5.4	.1	0	0	0	0	0	0	0
11	.5	1.4	55.5	1.6	.1	0	0	0	0	0	0	0
12	.5	.9	13.1	1.3	.1	0	0	0	0	0	0	0
13	.4	.9	1.5	1.1	.1	0	0	0	0	0	0	0
14	.4	.9	34.1	.4	# 0	0	0	0	0	0	0	0
15	.5	.8	2.7	.4	# 0	0	0	0	0	0	0	0
16	.5	.9	2.0	.5	# 0	0	0	0	0	0	0	0
17	.4	.7	1.1	2.4	0	0	0	0	0	0	0	0
18	.5	.6	.5	* .8	0	0	0	0	0	0	0	0
19	.5	.8	.4	# .4	0	0	0	0	0	0	0	0
20	.4	.8	.4	# .4	0	0	0	0	0	0	0	0
21	.4	.9	.3	# .4	0	0	0	0	0	0	0	0
22	.4	.7	4.6	# .3	0	0	0	0	0	0	0	0
23	.3	.5	.7	# .4	0	0	0	0	0	0	0	0
24	.3	.5	.3	# .4	0	0	0	0	0	0	0	0
25	.4	.5	.4	* .4	0	0	0	0	0	0	0	0
26	.4	.5	.6	.4	0	0	0	0	0	0	0	0
27	.3	.5	.3	.4	0	0	0	0	0	0	0	0
28	.3	.4	.2	.3	0	0	0	0	0	0	0	0
29	.4		.2	.3	0	0	0	0	0	0	0	0
30	1.1		.2	.4	0	0	0	0	0	0	0	0
31	2.7		.1		0	0	0	0	0	0	0	0
Sum	19.2	35.9	252.3	186.2	1.4	0	0	0	0	0	0	0
Current Year 1975									Period 1947-1975			
Month	Extreme Gage Feet		Extreme Second-Feet			Average Second-Feet	Total Acre-Feet	Acre-Feet				
	High	Low	Day	High	Low			Average	Maximum	Minimum		
Jan.	46.76	46.19	31	4.6	28	0.3	0.62	38.1	372	4,603	0	
Feb.	47.15	46.15	10	14.6	28	.4	1.3	71.2	261	1,496	0	
Mar.	48.45	46.05	6	119	31	.1	8.1	500	799	13,309	0	
Apr.	48.62	46.07	9	148	3	.1	6.2	369	230	2,926	0	
May	46.21	45.95	1	.6	117	0	.05	2.8	37.2	312	0	
June	45.95	45.95		0	0	0	0	0	23.6	309	0	
July	45.95	45.95		0	0	0	0	0	18.1	239	0	
Aug.	45.95	45.95		0	0	0	0	0	15.9	193	0	
Sept.	45.95	45.95		0	0	0	0	0	20.9	216	0	
Oct.	45.95	45.95		0	0	0	0	0	34.9	305	0	
Nov.	45.95	45.95		0	0	0	0	0	93.1	1,084	0	
Dec.	45.95	45.95		0	0	0	0	0	265	2,725	0	
Annularly	48.62	45.95		148		0	1.36	981	2,176	19,882	0	

* Partially missing # Estimated # Flow between 0 and 0.05 c.f.s. † And other days

TIJUANA RIVER NEAR NESTOR, CALIFORNIA

DESCRIPTION: Water-stage recorder on county road bridge 4.1 miles downstream from the international land boundary between the United States and Mexico, 2.9 miles upstream from mouth of the river, and 1.7 miles south of Nestor, California. The zero of the gage is 15.14 feet above mean sea level, U. S. C. & G. S. datum. From April 10, 1953 to August 5, 1958, station was located 2 miles upstream at different datum.

RECORDS: Based on current meter measurements or observation of no flow. Records obtained and furnished by the U. S. Geological Survey. Records available: October 1914 through September 1915, and October 1922 through 1975 (October 1922 through May 1936 are from city of San Diego, California).

REMARKS: The flow at this station is partially controlled by Morena and Barrett Reservoirs on Cottonwood Creek in the United States and by Rodriguez Reservoir on Río de las Palmas in Mexico. Some diversions for irrigation are normally made in Mexico whenever surface runoff occurs in the river or in its two principal tributaries.

EXTREMES: Since October 1, 1936: Maximum discharge, 17,700 second-feet, February 7, 1937 (gage height 8.20 feet), obtained from rating curve extended above 2,000 second-feet on basis of velocity-depth relationship, and cross section after peak of the flood. Minimum discharge, no flow during parts of most years.

Mean Daily Discharge in Second-Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	3.0	0	0	0	0	0	0	0	0
8	0	0	.20	.01	0	0	0	0	0	0	0	0
9	0	0	.31	12	0	0	0	0	0	0	0	0
10	0	0	2.1	.57	0	0	0	0	0	0	0	0
11	0	0	4.0	0	0	0	0	0	0	0	0	0
12	0	0	1.5	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	1.5	0	0	0	0	0	0	0	0	0
15	0	0	.25	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0	0
Sum	0	0	9.56	15.58	0	0	0	0	0	0	0	0
Current Year 1975									Period 1937-1975			
Month	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet			
	High	Low	Day	High	Low	Day			Average	Maximum	Minimum	
Jan.				0	0	0	0	662	4,070	0		
Feb.				0	0	0	0	3,639	66,920	0		
Mar.			11	4	f 1	.31	19	6,360	107,000	0		
Apr.			9	12	f 1	.52	30.9	5,438	181,900	0		
May				0	0	0	0	607	18,340	0		
June				0	0	0	0	102	3,060	0		
July				0	0	0	0	20.4	523	0		
Aug.				0	0	0	0	14.4	242	0		
Sept.				0	0	0	0	21.2	234	0		
Oct.				0	0	0	0	72.9	1,340	0		
Nov.				0	0	0	0	123	1,490	0		
Dec.				0	0	0	0	667	7,930	0		
Yearly				12	0	0.07	49.9	17,727	332,749	0		

Ø Mean daily

f And other days

STORED WATER IN RESERVOIRS, TIJUANA RIVER BASIN

Data are presented below for all storage reservoirs in the Tijuana River Basin. The data represent contents on the last day of the month in acre-feet. The reservoir capacities indicated are total capacities at the top of the spillway gates in closed position on the controlled spillways of Barrett and Rodriguez Dam, and at spillway level for Morena Dam, which has had an uncontrolled spillway since the spillway gates were removed in 1942. The records of storage reported below for Morena, Barrett, and Rodriguez Reservoirs are based on the capacities as determined by the following surveys: Morena 1948; Barrett 1948, 1951, and 1955; and Rodriguez 1927, when the reservoir area was initially surveyed.

Records for Morena and Barrett Reservoirs are obtained and furnished by the city of San Diego, the U. S. Geological Survey, and the National Weather Service. Records for Rodriguez Reservoir obtained and furnished by the State of Baja California Commission of Public Services for Tijuana.

In Acre-Feet

Month	MORENA RESERVOIR, CALIFORNIA (Capacity 50,210)		BARRETT RESERVOIR, CALIFORNIA (Capacity 44,760)		RODRIGUEZ RESERVOIR, BAJA CALIFORNIA (Capacity 111,880)		TOTAL IN TIJUANA RIVER BASIN RESERVOIRS (Capacity 206,850)	
	1975	Average 1937-1975	1975	Average 1937-1975	1975	Average 1937-1975	1975	Average 1937-1975
Jan.	2,894	14,839	733	10,411	3,889	29,016	7,516	54,266
Feb.	2,927	15,460	768	11,738	3,960	29,695	7,655	56,893
Mar.	3,043	16,617	922	13,191	3,993	32,469	7,958	62,277
Apr.	3,095	16,618	826	13,638	3,967	32,454	7,888	62,710
May	3,009	16,468	813	12,956	3,863	32,611	7,685	62,035
June	2,916	16,014	792	12,210	3,714	31,597	7,422	59,821
July	2,796	15,580	762	11,447	3,463	30,547	7,021	57,574
Aug.	2,666	15,182	728	10,752	3,146	29,595	6,540	55,529
Sept.	2,608	14,694	703	10,492	2,760	28,786	6,071	53,972
Oct.	2,530	14,478	688	10,173	2,579	28,111	5,797	52,762
Nov.	2,513	14,376	695	9,854	2,371	27,653	5,579	51,883
Dec.	2,508	14,430	701	10,128	2,183	27,951	5,392	52,509
Average	2,792	15,396	761	11,416	3,324	30,040	6,877	56,852
Maximum	3,095	# 61,670	922	0 45,920	3,993	109,608	7,958	213,600
Minimum	2,508	10	688	106	2,183	0	5,392	1,264

March 31, 1941 - Prior to removal of spillway gates

0 April 30, 1937 - Sandbags were placed on crest of spillway

RAINFALL ON THE TIJUANA RIVER WATERSHED IN INCHES

Tabulated below are monthly records of rainfall with averages for their periods of record at stations located in California and Baja California. Daily records, where available, are on file in the offices of the United States and Mexican Sections of the Commission. For location, elevation, period of record, and the observer, see alphabetical listing of these stations on page 79.

In United States

Month	Morena Dam, California		Barrett Dam, California		Marron Valley, California		Potrero, California		Sawday Ranch, California	
	1975	Average 1906-1975	1975	Average 1907-1975	1975	Average 1951-1975	1975	Average 1914-1975	1975	Average 1950-1975
Jan.	0.49	3.69	0.61	3.26	0.80	2.46	0.52	3.30	0.58	2.89
Feb.	1.39	3.66	1.49	3.28	1.40	1.83	1.39	3.55	1.87	2.17
Mar.	4.09	3.34	5.44	2.91	4.40	2.33	5.21	2.95	4.14	2.73
Apr.	2.61	1.75	2.49	1.58	3.20	1.41	2.25	1.90	2.57	1.70
May	.18	.61	.08	.55	.10	.38	.24	.63	.10	.40
June	.16	.14	.09	.07	.30	.07	.16	.10	.05	.07
July	.01	.36	0	.10	0	.03	.05	.20	0	.43
Aug.	0	.52	0	.19	0	.10	T	.18	0	.72
Sept.	1.37	.35	.07	.24	0	.18	.50	.25	.53	.36
Oct.	.10	.89	.03	.72	.10	.43	.13	.75	.02	.53
Nov.	1.95	1.57	2.31	1.38	1.40	1.52	2.34	1.50	2.36	1.77
Dec.	.62	3.21	.52	2.86	.70	2.21	.45	3.12	.66	2.36
Yearly	12.97	20.09	13.18	17.14	12.40	12.95	13.24	18.33	12.89	16.13

Month	Campo, California		Chula Vista, California		Lower Otay Dam, California		Brown Field, California			
	1975	Average 1900-1975	1975	Average 1930-1975	1975	Average 1950-1975	1975	Average 1964-1975		
Jan.	0.40	2.93	0.33	1.72	0.37	1.92	0.26	1.30		
Feb.	1.02	3.20	.70	1.64	.74	1.28	.61	.97		
Mar.	3.40	2.72	2.54	1.48	3.62	1.82	2.45	1.56		
Apr.	1.58	1.46	1.96	.84	2.00	1.09	2.10	1.06		
May	.11	.52	.03	.23	.13	.27	.11	.19		
June	.12	.07	T	.05	.08	.08	.05	.09		
July	.09	.52	T	.02	0	.04	T	.07		
Aug.	T	.50	0	.07	0	.07	0	.02		
Sept.	.18	.32	.04	.15	.03	.19	.02	.07		
Oct.	.07	.64	.21	.40	.04	.33	.14	.27		
Nov.	2.15	1.36	.37	1.04	.86	1.32	.67	1.64		
Dec.	.63	2.53	.24	1.67	.34	1.47	.28	1.82		
Yearly	9.75	16.77	6.42	9.31	8.21	9.88	6.69	9.06		

In Mexico

Month	La Ramorosa, Baja California		Tecate, Baja California		Tijuana, Baja California		Rodriguez Dam, Baja California		Valle de Las Palmas, Baja Calif.	
	1975	Average 1945-1975	1975	Average 1946-1959 1961-1975	1975	Average 1948-1959 1961-1975	1975	Average 1938-1975	1975	Average 1948-1975
Jan.	0.47	0.71	0.79	2.20	0.39	1.69	0.71	1.42	0.31	1.38
Feb.	.28	.39	.79	1.42	.47	1.18	.39	1.18	.79	.94
Mar.	1.14	.51	*	1.97	2.52	1.26	2.97	1.42	1.77	1.14
Apr.	.71	.31	*	1.10	1.97	.63	2.09	.75	1.77	.63
May	0	.08	*	.28	.04	.20	.08	.12	0	.12
June	0	.04	*	.12	T	T	T	.04	0	.04
July	.08	.31	0	.12	0	.04	T	T	0	.04
Aug.	0	.59	0	.12	0	.04	0	.04	0	.08
Sept.	1.18	.28	.28	.12	0	.12	T	.20	.08	.12
Oct.	.04	.43	.04	.35	.24	.31	.08	.31	0	.20
Nov.	.16	.47	*	1.22	.83	1.06	1.06	.91	1.22	.79
Dec.	.04	.63	*	2.09	.20	1.34	.39	1.57	.20	.98
Yearly	4.09	4.76	*	11.81	6.65	8.27	7.68	7.91	6.14	6.57

T Trace

* Recorder inoperative

RAINFALL ON THE TIJUANA RIVER WATERSHED IN INCHES

In Mexico

Month	El Pinal, Baja California		San Juan de Dios, Baja California						
	1975	Average 1964-1975	1975	Average 1956-1975					
Jan.	0.79	1.77	0.47	1.93					
Feb.	2.60	2.09	1.14	1.81					
Mar.	4.61	2.52	2.76	1.81					
Apr.	3.50	1.77	2.32	1.14					
May	.09	.35	0	.24					
June	0	.04	.04	.16					
July	0	.79	.16	1.14					
Aug.	.24	.59	.75	.71					
Sept.	2.32	.63	.51	.47					
Oct.	.04	.24	.04	.63					
Nov.	2.68	1.85	1.22	1.30					
Dec.	.75	3.15	.55	1.85					
Yearly	17.60	15.59	9.96	14.21					

LOCATION OF RAINFALL STATIONS ON THE TIJUANA RIVER WATERSHED

In United States

NAME OF STATION	LATI- TUDE	LONGI- TUDE	8 ELEV. (FT.)	RECORD BEGAN	OBSERVER
Barrett Dam, California	32° 41'	116° 40'	1,750	1907	City of San Diego
Brown Field, California	32° 34'	116° 59'	515	1964	City of San Diego
Campo, California	32° 37'	116° 28'	2,630	1877	Archie C. Leach
Chula Vista, California	32° 36'	117° 06'	9	1930	Western Salt Company
Lower Otay Dam, California	32° 37'	116° 56'	540	1950	City of San Diego
Marron Valley, California	32° 34'	116° 46'	550	1951	County of San Diego
Morena Dam, California	32° 41'	116° 32'	3,010	1906	City of San Diego
Potrero, California	32° 37'	116° 36'	2,400	1914	County of San Diego
Sawday Ranch, California	32° 45'	116° 29'	3,200	1950	William Tulloch

In Mexico

NAME OF STATION	LATI- TUDE	LONGI- TUDE	8 ELEV. (FT.)	RECORD BEGAN	OBSERVER
El Pinal, Baja California	" 32° 11'	" 116° 17'	" 4,429	1964	Hydraulic Resources
La Rumorosa, Baja California	32° 31'	116° 04'	3,937	1945	Hydraulic Resources
Rodriguez Dam, Baja California	32° 26'	116° 55'	459	1938	Hydraulic Resources
San Juan de Dios, Baja California	31° 59'	116° 00'	" 3,280	1956	Hydraulic Resources
Tecate, Baja California	32° 33'	116° 39'	1,690	1946	Hydraulic Resources
Tijuana, Baja California	32° 31'	117° 02'	180	1948	Hydraulic Resources
Valle de las Palmas, Baja California	32° 23'	116° 40'	148	1948	Hydraulic Resources

8 Elevation above mean sea level

" Estimated from topographic maps

EVAPORATION IN THE TIJUANA RIVER BASIN IN INCHES

Tabulated below are records of evaporation observed at four stations in California and at four stations in Baja California, with averages for their periods of record. The stations in California are observed by Western Salt Company, city of San Diego, California, and the United States Section of the Commission; those in Baja California are observed by the Ministry of Hydraulic Resources. For specific location of these stations, refer to data opposite same station name shown in "Location of Rainfall Stations", page 79 in this bulletin.

Types of pans used:

1. Barrett Reservoir: January 1921 through September 1926, square 3-foot by 3-foot by 18-inch deep floating pan. October 1926 through 1975, square 3-foot by 3-foot by 18-inch deep land pan set 15 inches in ground.
2. Chula Vista: September 1918 through 1975, National Weather Service 4-foot diameter pan, 10 inches deep, set on 2 by 4-inch-timber grill.
3. Morena Reservoir: October 1915 through December 1921, square 3-foot by 3-foot by 18-inch deep floating pan. January 1922 through August 1926 records are the average of evaporation in a square 3-foot by 3-foot by 18-inch deep floating pan and a land pan of the same dimensions. September 1926 through 1975, square 3-foot by 3-foot by 18-inch deep land pan set 15 inches in ground.
4. Lower Otay Dam: January 1950 through 1975, square 3-foot by 3-foot by 18-inch deep land pan set 15 inches in ground.

In United States

Month	Morena Dam, California		Barrett Dam, California		Chula Vista, California		Lower Otay Dam, California	
	1975	Average 1916-1975	1975	Average 1921-1975	1975	Average 1919-1975	1975	Average 1950-1975
Jan.	2.09	2.22	1.88	1.85	3.02	2.83	2.52	1.94
Feb.	.68	2.27	1.85	2.21	3.05	3.35	1.60	2.40
Mar.	1.73	3.52	2.20	3.52	4.49	4.98	2.88	3.47
Apr.	2.35	4.82	2.60	4.80	5.74	5.95	3.11	4.72
May	5.34	6.77	5.50	6.87	6.40	6.84	4.82	6.35
June	6.78	8.65	6.53	8.36	6.07	6.93	6.14	6.91
July	7.79	10.08	8.28	10.01	7.14	7.60	7.70	8.51
Aug.	7.24	9.35	8.19	9.46	7.32	7.33	7.01	8.11
Sept.	5.06	7.55	7.04	7.69	6.08	6.09	5.49	6.65
Oct.	2.99	5.31	4.24	5.39	5.12	4.91	4.13	4.92
Nov.	3.73	3.48	3.23	3.39	4.00	3.62	3.27	2.90
Dec.	.49	2.45	1.53	2.06	2.50	2.75	1.97	2.14
Yearly	46.27	66.47	53.07	65.61	60.93	63.18	50.64	59.02

In Mexico

Month	Tecate, Baja California		Tijuana, Baja California		Rodriguez Dam, Baja California		Valle de Las Palmas, Baja California	
	1975	Average 1961-1973	1975	Avg. 1952-59 1961-1975	1975	Avg. 1939-42 1946-1975	1975	Average 1952-1975
Jan.	*	3.27	3.70	2.91	4.49	4.72	3.86	3.58
Feb.	*	3.31	2.99	3.46	2.72	3.78	3.03	3.50
Mar.	*	4.29	3.46	3.94	3.58	4.34	4.25	5.08
Apr.	*	5.20	4.37	4.80	3.74	5.75	4.21	6.46
May	*	6.14	6.34	5.75	5.91	7.17	8.23	7.64
June	*	6.38	6.02	5.75	5.87	7.80	8.50	9.21
July	*	8.62	6.93	6.69	7.68	8.86	*	10.87
Aug.	*	8.27	7.09	6.97	7.13	8.19	*	10.12
Sept.	*	6.81	5.87	5.91	6.61	6.93	*	8.74
Oct.	*	6.38	4.65	4.76	4.65	5.79	*	6.34
Nov.	*	3.86	5.75	3.43	4.92	4.80	3.19	4.41
Dec.	*	3.54	2.83	2.95	3.23	3.70	3.70	3.86
Yearly		67.87	60.00	56.30	60.51	71.69	0	79.76

* Recorder inoperative

0 Partly estimated

**TEMPERATURE IN THE TIJUANA RIVER BASIN
IN DEGREES FAHRENHEIT**

The maximum, minimum, and monthly average temperature observations for United States stations are from daily readings of thermometers generally exposed in a shelter located a few feet above sod-covered ground. The maximum and minimum temperatures shown for the stations in Mexico are from daily maximum and minimum thermometer observations, with maximum and minimum for their periods of record. For specific location, elevation, period of record, and the observer, refer to data opposite same station name as shown in "Location of Rainfall Stations", page 79 in this bulletin.

In United States

Month	Barrett Dam, California				Chula Vista, California				Campo, California			
	1975			Average 1931- 1975	1975			Average 1931- 1975	1975			Average 1951- 1975
	Mean	Max.	Min.		Mean	Max.	Min.		Mean	Max.	Min.	
Jan.	48.9	85	23	48.5	52.4	74	35	52.4	47.9	84	15	46.8
Feb.	47.1	78	26	50.3	52.2	68	34	53.8	46.1	81	21	47.9
Mar.	49.2	81	30	53.2	53.4	67	38	55.2	47.3	78	24	49.4
Apr.	50.3	78	31	57.5	54.8	67	43	57.8	48.1	74	24	
May	60.4	91	34	62.7	58.4	65	43	60.5	57.9	91	25	58.2
June	65.9	96	43	68.1	61.3	70	52	62.9	63.1	95	35	64.8
July	74.4	101	45	76.0	65.3	74	54		72.5	103	36	73.3
Aug.	74.0	104	45	76.2	65.9	75	55		70.5	102	35	73.3
Sept.	73.4	102	49	72.2	67.9	102	59		70.2	99	40	68.9
Oct.	61.2	98	33	63.9	61.8	80	47	62.8	57.3	93	27	60.5
Nov.	54.1	90	26	55.7	56.9	78	39		52.5	86	20	52.5
Dec.	49.7	84	25	50.3	52.7	74	37	54.1	48.4	77	21	
Yearly	59.1	104	23	61.2	58.6	102	34		56.8	103	15	

Month	Potrero, California												
	1975			Average 1975									
	Mean	Max.	Min.										
Jan.	*55.1	84	23	55.1									
Feb.	48.5	84	23	48.5									
Mar.	47.4	79	28	47.4									
Apr.	48.2	76	30	48.2									
May	†53.6	94	34	58.6									
June	66.6	99	39	66.6									
July	75.1	102	46	75.1									
Aug.	75.5	103	46	75.5									
Sept.	74.8	98	46	74.8									
Oct.	61.6	98	36	61.6									
Nov.	57.1	88	28	57.1									
Dec.	51.4	82	21	51.4									
Yearly	60.0	103	21	60.0									

In Mexico

Month	La Rumorosa, Baja California				Tecate, Baja California				Tijuana, Baja California			
	1975		1946-1975		1975		1946-59 & 61-75		1975		1948-59 & 61-75	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
Jan.	79	25	81	5	84	21	100	16	84	37	93	27
Feb.	73	25	82	10	79	27	100	18	79	39	102	32
Mar.	72	28	88	16	#	#	97	25	81	39	90	34
Apr.	75	28	91	23	#	#	100	28	77	43	97	34
May	86	34	97	28	#	#	100	36	84	50	97	43
June	91	41	113	34	#	#	104	32	86	50	99	41
July	97	59	104	39	97	46	115	36	91	59	120	46
Aug.	99	54	102	46	99	45	113	34	90	57	106	52
Sept.	97	52	104	34	102	46	115	36	102	57	120	46
Oct.	86	34	93	25	99	37	106	27	97	50	117	41
Nov.	79	27	88	14	#	#	97	27	99	41	108	34
Dec.	68	30	81	10	#	#	97	23	86	36	99	25
Yearly	99	25	113	5			115	16	102	36	120	25

* Record began Jan. 14, 1975

† One or more days missing

Record missing

**TEMPERATURE IN THE TIJUANA RIVER BASIN
IN DEGREES FAHRENHEIT**

In Mexico

Month	Rodriguez Dam, Baja California				Valle de Las Palmas, Baja California				El Pinal, Baja California			
	1975		1938-1975		1975		1948-1975		1975		1964-1975	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
Jan.	86	34	88	27	82	28	91	12	73	19	73	12
Feb.	82	36	91	32	86	28	99	23	73	25	75	21
Mar.	73	36	83	32	82	34	100	28	73	25	82	19
Apr.	75	41	93	36	84	34	104	32	68	25	82	18
May	82	43	99	37	95	37	108	36	86	28	90	27
June	90	50	108	46	102	45	118	39	* 97	* 36	99	28
July	93	52	104	48	106	48	120	45	93	37	102	36
Aug.	93	52	106	52	104	48	111	48	95	36	104	36
Sept.	102	54	109	48	102	48	117	43	90	28	102	25
Oct.	91	46	105	34	102	39	108	32	88	27	95	27
Nov.	91	37	99	30	90	34	100	19	79	23	84	23
Dec.	86	34	93	27	88	32	91	21	68	21	79	18
Yearly	102	34	109	27	106	28	120	12	* 97	19	104	12

Month	San Juan de Dios, Baja California											
	1975		1956-1975									
	Max.	Min.	Max.	Min.								
Jan.	72	36	88	7								
Feb.	72	16	84	16								
Mar.	75	16	84	14								
Apr.	72	21	102	19								
May	86	23	91	19								
June	90	28	106	28								
July	97	39	120	36								
Aug.	97	36	106	32								
Sept.	90	34	100	25								
Oct.	88	27	100	18								
Nov.	82	18	99	12								
Dec.	75	23	88	12								
Yearly	97	16	120	7								

* Estimated

**DRAINAGE AREAS ABOVE GAGING STATIONS AND IRRIGATED AREA^c
ALONG TIJUANA RIVER AND TRIBUTARIES**

1975

The total area within Tijuana River basin is 1,731 square miles, as determined from the best available maps from both the United States and Mexico. The drainage areas shown below are tabulated according to their downstream sequence.

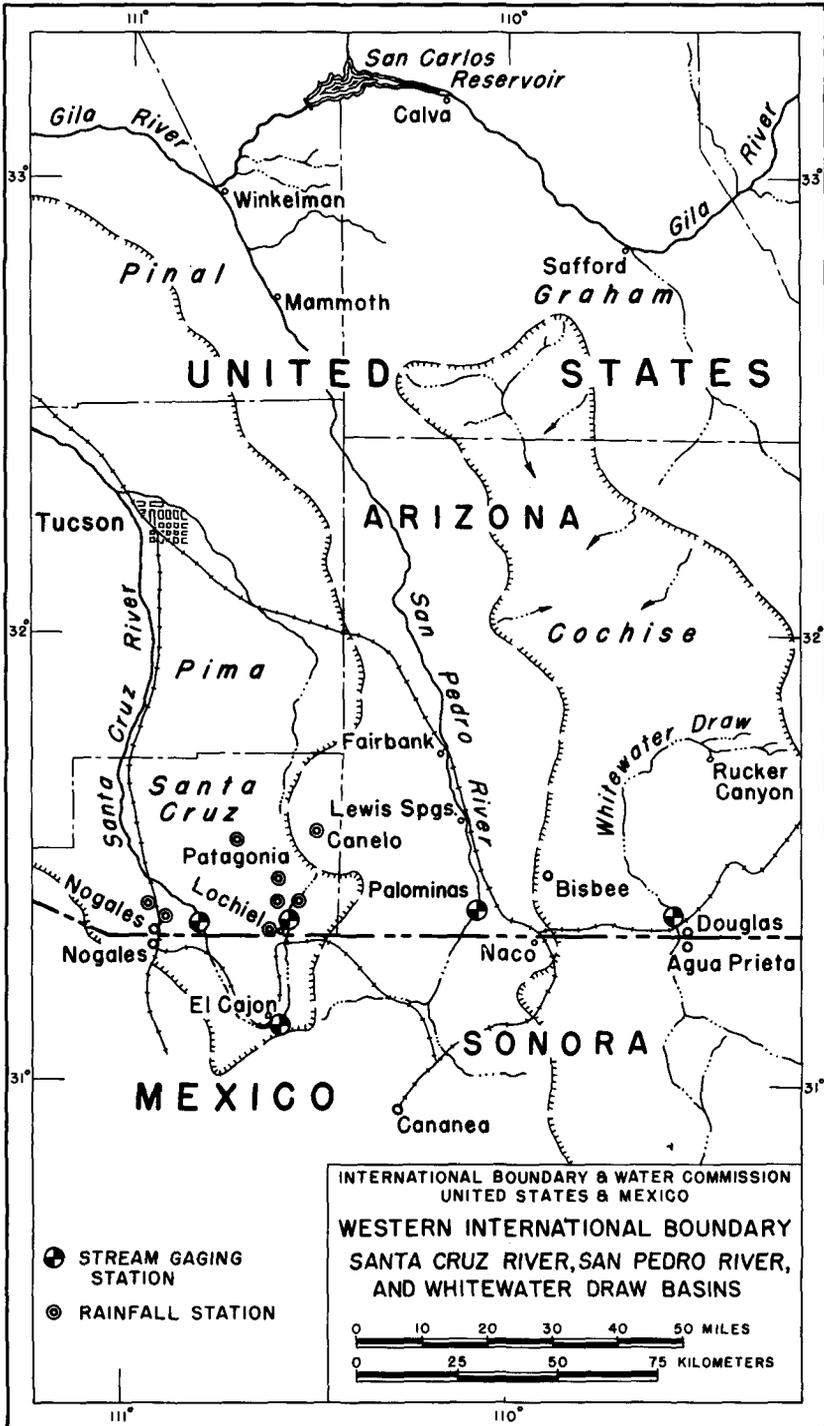
The irrigated areas, tabulated in downstream sequence, are from the most reliable sources available. Those in the United States were furnished by the United States Department of Agriculture and the State Engineer, State of California, or estimated from aerial photographs. Those in Mexico were furnished by the Ministry of Hydraulic Resources of Mexico through the Mexican Section of the Commission. All irrigation in the Tijuana Basin in 1975 was by pumping from ground water.

Designation of Areas	Drainage Basin-Square Miles			Irrigated Areas-Acres		
	United States	Mexico	Total	United States	Mexico	Total
Cottonwood Creek above Morena Dam	114	0	114	(a) 75	0	(a) 75
Morena Dam to Barrett Dam	133	0	133	0	0	0
above Barrett Dam	247	0	247	(a) 75	0	(a) 75
below Barrett Dam and above Tecate Creek	65	0	65	(a) 145	0	(a) 145
above Tecate Creek	312	0	312	(a) 220	0	(a) 220
Campo Creek above International Boundary	82	4	86	(a) 320	0	(a) 320
Tecate Creek above International Boundary (not including Campo Creek)	19	64	83	0	0	0
Cottonwood Creek above International Boundary Station	413	68	481	(a) 540	0	(a) 540
Rio de las Palmas above Rodriguez Dam	7	981	988	0	(b) 0	0
Tijuana River above Nestor Gaging Station	458	1,266	1,724			
above the Mouth	462	1,269	1,731	3,000	(c) 0	3,000

(a) Estimated. During extremely dry years these areas may be materially reduced.

(b) Areas in upper valleys may be irrigated by pumping from ground water.

(c) There was no irrigation in 1975 in the Tijuana Irrigation District, Tijuana Valley, Baja California, Mexico, from the Rodriguez Reservoir.



WHITEWATER DRAW NEAR DOUGLAS, ARIZONA

DESCRIPTION: Water-stage recorder located on U. S. Highway 80 bridge between Douglas and Bisbee, Arizona, about 450 feet upstream from the Southern Pacific Railroad bridge, 1.5 miles upstream from the international boundary, and 2 miles west of Douglas, Arizona. Zero of gage is 3,909.14 feet above mean sea level, U. S. C. & G. S. datum of 1929. Location April 26, 1972 to April 10, 1974 was 200 feet upstream from bridge. Datum 4.40 feet higher.

RECORDS: Based on current meter measurements or observations of no flow during the year. Computations by shifting control methods. Records obtained and furnished by the U. S. Geological Survey. Records poor. Records available: August to October 1911 (gage heights and discharge measurements only), July to October 1912, January to June 1913, October 1913, December 1913 to June 1914, February to June 1915, October 1915 to September 1919, October 1919 to April 1922 (gage heights and discharge measurements only), June 1930 to December 1933, May 1935 to July 1947, October 1947 through 1975 (July 1954 to March 1955 monthly discharge only).

REMARKS: Diversions above this station are mainly by pumping from ground water for irrigation. Records show flow at the international boundary into Mexico except for some smelter waste water entering the stream a short distance below this station.

EXTREMES: Prior to 1936: Maximum recorded discharge, 3,450 second-feet August 10, 1931 (gage height 12.15 feet); maximum estimated discharge, 4,050 second-feet July 27, 1919; minimum discharge, no flow for several days of many years. Since 1936: Maximum discharge, 5,060 second-feet August 7, 1955; maximum gage height 16.55 feet July 29, 1966; minimum daily discharge, no flow at times during most years.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	20	0	0	0	0
2	0	0	0	0	0	0	4.4	12	.70	0	0	0
3	0	0	0	0	0	0	2.3	4.8	9.4	0	0	0
4	0	0	0	0	0	0	.30	2.6	12	0	0	0
5	0	0	0	0	0	0	0	2.0	2.1	0	0	0
6	0	0	0	0	0	0	19	1.4	59	0	0	0
7	0	0	0	0	0	0	33	.60	15	0	0	0
8	0	0	0	0	0	0	22	.10	10	0	0	0
9	0	0	0	0	0	0	12	0	2.1	0	0	0
10	0	0	0	0	0	0	1.1	0	28	0	0	0
11	0	0	0	0	0	0	.35	2.2	65	0	0	0
12	0	0	0	0	0	0	30	.70	82	0	0	0
13	0	0	0	0	0	0	246	.10	135	0	0	0
14	0	0	0	0	0	0	15	0	206	0	0	0
15	0	0	0	0	0	0	5.0	0	6.7	0	0	0
16	0	0	0	0	0	0	1.0	0	1.5	0	0	0
17	0	0	0	0	0	0	.50	0	1.0	0	0	0
18	0	0	0	0	0	0	0	0	.70	0	0	0
19	0	0	0	0	0	0	0	0	.50	0	0	0
20	0	0	0	0	0	0	0	0	.30	0	0	0
21	0	0	0	0	0	0	0	0	.20	0	0	0
22	0	0	0	0	0	0	15	4.0	0	0	0	0
23	0	0	0	0	0	0	585	3.2	0	0	0	0
24	0	0	0	0	0	0	385	.70	0	0	0	0
25	0	0	0	0	0	0	261	.10	0	0	0	0
26	0	0	0	0	0	0	93	0	0	0	0	0
27	0	0	0	0	0	0	69	0	0	0	0	0
28	0	0	0	0	0	0	47	0	0	0	0	0
29	0	0	0	0	0	0	35	0	0	0	0	0
30	0	0	0	0	0	0	21	0	0	0	0	0
31	0	0	0	0	0	0	21	0	0	0	0	0
Sum	0	0	0	0	0	0	1,923.95	54.50	637.20	0	0	0
Current Year 1975												
Month	Extreme Gage Feet		Extreme Second Feet			Average Second Feet	Total Acre Feet	Period 1936-1975				
	High	Low	Day	High	Day			Average	Maximum	Minimum		
Jan.				0	0	0	0	40.3	451	0		
Feb.				0	0	0	0	21.4	132	0		
Mar.				0	0	0	0	31.2	295	0		
Apr.				0	0	0	0	21.4	173	0		
May				0	0	0	0	15.5	138	0		
June				0	0	0	0	135	1,590	0		
July			23	595	f 1	0	62.1	3,816	# 2,160	8,110	39	
Aug.			1	20	f 9	0	1.76	108	# 3,313	14,480	0	
Sept.			14	206	f 1	0	21.2	1,264	# 769	3,170	0	
Oct.				0	0	0	0	177	0	2,210	0	
Nov.				0	0	0	0	39.9	0	352	0	
Dec.				0	0	0	0	129	0	2,363	0	
Yearly				585	0	0	7.17	5,188	6,853	22,321	900	

Ø Mean daily f And other days # 1947 records not available

SEWAGE INFLUENT, DOUGLAS, ARIZONA INTERNATIONAL TREATMENT PLANT

DESCRIPTION: Parshall flume in influent line to the international treatment plant, equipped with Simplex digital meter for measuring combined sewage flows from Douglas, Arizona and Agua Prieta, Sonora; and Parshall flume with recorder for measuring the sewage from Douglas. Flows from Douglas, Arizona and Agua Prieta are deduced from total flows and the city of Douglas flows; however, since April 8, 1968, all sewage flows from Agua Prieta have been diverted to new oxidation ponds located in Mexico, 1.6 miles south of the international boundary.

RECORDS: Continuous monthly records since March 1948; daily records from March 18, 1948 through 1950 and from January 1952 through 1975.

REMARKS: The Douglas-Agua Prieta International Treatment Plant was constructed by the governments of the United States and Mexico in 1947 to correct a serious international sanitation problem. The plant is located in the United States adjacent to the international boundary about one mile west of the Douglas-Agua Prieta Port of Entry. Prior to December 1970, the treatment of sewage was complemented by the use of old oxidation ponds in Mexico adjacent to the international boundary. Since December 1970, sewage effluent from the plant flows into Mexico and then across to the right bank of the Agua Prieta Arroyo, by means of a canal bridge, to be used for irrigation.

Month	Total Monthly Flows			Mean Daily Flows-Millions of Gallons Per Day					
	Millions of Gallons			Current Year 1975			Period 1952-1975		
	U.S.	Mexico	Total	Maximum	Minimum	Mean	Maximum	Minimum	Mean
Jan.	35,840	0	35,840	1.495	0.760	1.156	1.618	0.619	1.062
Feb.	31,560	0	31,560	1.400	1.000	1.127	1.784	.584	1.066
Mar.	32,470	0	32,470	1.130	.970	1.047	1.598	.590	1.069
Apr.	32,000	0	32,000	1.180	.760	1.067	1.536	.619	1.069
May	32,480	0	32,480	1.160	.990	1.048	1.595	.619	1.070
June	31,558	0	31,558	1.200	.980	1.052	1.784	.626	1.124
July	34,895	0	34,895	1.320	1.010	1.126	3.209	.619	1.177
Aug.	35,600	0	35,600	1.300	.990	1.148	1.985	.619	1.199
Sept.	35,750	0	35,750	1.310	.970	1.192	1.884	.626	1.162
Oct.	35,650	0	35,650	1.230	1.020	1.150	1.667	.626	1.109
Nov.	33,346	0	33,346	1.190	.980	1.112	1.586	.619	1.082
Dec.	34,944	0	34,944	1.220	1.010	1.127	1.736	.619	1.078
Yearly	406,093	0	406,093	1.495	0.760	1.113	3.209	0.584	1.106

SEWAGE INFLUENT, AGUA PRIETA, SONORA INTERNATIONAL OXIDATION PONDS

DESCRIPTION: Parshall flume equipped with staff gage in influent line to oxidation ponds. Since April 8, 1968, all sewage from Agua Prieta, Sonora has been diverted to oxidation ponds, which are located in Mexico; if necessary, sewage from Douglas, Arizona may be included, but this has never been done.

RECORDS: Discharges are computed from daily 11:00 a.m. readings of the staff gage by applying an index for that hour, determined from 7 days of hourly measurements from which the relationship between mean daily readings and 11:00 a.m. readings was developed. Records available: Mean daily flows from April 8, 1968 through 1975.

REMARKS: The construction of the international oxidation ponds in Agua Prieta, Sonora was completed in April 1968 by the government of Mexico, fulfilling an international agreement to solve the problem of insufficient capacity at the international treatment plant in Douglas, where the combined flows from Douglas and Agua Prieta were treated. If necessary, sewage from Agua Prieta may be treated in this plant, but since the completion of the oxidation ponds, this has never been done. The ponds are located 1.5 miles south of international monument 85a.

Month	Total Monthly Flows			Mean Daily Flows-Millions of Gallons Per Day					
	Millions of Gallons			Current Year 1975			Period 1968-1975		
	U.S.	Mexico	Total	Maximum	Minimum	Mean	Maximum	Minimum	Mean
Jan.	0	14.053	14.053	0.507	0.394	0.453	0.640	0.394	0.485
Feb.	0	12.646	12.646	.507	.394	.451	.726	.394	.502
Mar.	0	14.165	14.165	.589	.394	.457	.666	.394	.482
Apr.	0	14.177	14.177	.589	.394	.472	.666	.394	.483
May	0	14.703	14.703	.507	.394	.474	.666	.394	.502
June	0	14.992	14.992	.589	.394	.499	.617	.394	.493
July	0	15.290	15.290	.589	.394	.510	.691	.259	.496
Aug.	0	16.133	16.133	.589	.394	.520	.967	0	.436
Sept.	0	14.707	14.707	.589	.394	.490	.617	0	.513
Oct.	0	15.120	15.120	.589	.394	.488	.595	0	.464
Nov.	0	14.643	14.643	.589	.394	.488	.717	.394	.504
Dec.	0	15.283	15.283	.589	.394	.493	.709	.394	.478
Yearly	0	175.912	175.912	0.589	0.394	0.483	0.967	0	0.487

SAN PEDRO RIVER AT PALOMINAS, ARIZONA

DESCRIPTION: Water-stage recorder located near left bank on the downstream side of bridge pier on Highway 92, 0.7 mile east of Palominas, 2.5 miles upstream from Green Brush Draw, 4.5 miles downstream from international boundary, and 12 miles southwest of Bisbee, Arizona. Zero of gage is 4,137.62 feet above mean sea level (State Highway bench mark).

RECORDS: Based on current meter measurements or observations of no flow during the year. Records available: May 1930 to October 1933, May 1935 to July 1941, and July 1950 through 1975. Records obtained and furnished by U. S. Geological Survey.

REMARKS: There are some small diversions for irrigation of a few hundred acres above this station, mostly in Mexico. Record shows approximate flow of river at international boundary.

EXTREMES: Maximum daily discharge, 22,000 second-feet on August 14, 1940 (gage height, 16.16 feet present datum), from rating curve extended above 5,600 second-feet on basis of slope-area measurement of peak flow; no flow at times in most summers. Greatest flood known occurred on September 28, 1925 (gage height, about 23.9 feet present datum, from flood marks; discharge not determined).

Mean Daily Discharge in Second-Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.0	2.3	1.6	1.4	0.72	1.1	0.08	6.8	1.5	1.0	0.25	0.40
2	2.0	2.1	1.5	1.3	.93	1.3	0	4.6	1.2	.78	.23	.38
3	2.0	2.0	1.5	1.4	.62	.75	.14	3.5	.66	.42	.33	.39
4	2.0	2.0	1.2	1.3	.63	.31	.04	2.7	1.1	.38	.30	.47
5	2.5	1.9	.84	1.0	.97	.46	.15	2.5	14	.39	.16	.69
6	3.0	1.9	.60	1.2	1.2	.45	.08	2.0	37	.46	.29	1.2
7	4.0	1.8	.49	1.9	.91	.59	.30	1.5	111	.35	.31	1.1
8	5.0	1.8	.58	1.2	.52	.75	.19	1.5	20	.50	.32	.96
9	3.0	1.8	.43	1.4	.22	1.4	.50	167	112	.29	.28	1.3
10	2.5	1.7	.39	.88	.31	1.4	.02	99	13	.51	.27	1.2
11	2.0	1.7	.48	.94	.25	1.7	0	5.1	4.0	.44	.25	1.4
12	2.0	1.7	.54	.73	.85	.95	223	4.0	19	.44	.30	1.0
13	2.0	1.8	.61	.66	.56	.70	460	2.3	517	.45	.36	1.2
14	2.0	1.8	.57	.43	.55	.80	4.7	1.5	1,700	.43	.36	1.2
15	2.0	1.8	.61	.46	.53	.65	.12	4.0	107	.43	.39	1.5
16	2.0	1.8	.71	.63	.67	1.0	.27	1.1	34	.42	.41	2.5
17	2.0	1.8	.67	.65	.89	.47	.20	.61	16	.36	.41	3.3
18	2.0	1.9	.64	.72	1.0	.70	377	.92	10	.48	.36	2.1
19	2.0	1.9	.35	.85	.81	.16	172	.50	7.8	.51	.29	2.3
20	1.8	2.0	.41	.74	.69	.75	13	.48	6.4	.46	.33	1.8
21	1.7	2.0	.44	.65	.42	.90	11	.32	5.0	.42	.36	1.3
22	1.6	2.0	.52	.74	.34	1.4	1,010	20	3.1	.25	.31	1.6
23	1.6	2.1	.77	1.0	.45	.85	1,160	114	2.2	.22	.42	2.1
24	1.6	1.9	.68	1.1	.52	.75	639	51	2.0	.22	.37	2.0
25	1.6	2.1	.53	.92	.86	.14	169	5.9	1.4	.41	.39	2.0
26	1.5	1.9	.50	.74	1.0	.65	49	2.5	1.1	.32	.34	2.1
27	1.5	1.8	.37	.41	1.1	1.7	19	2.2	.90	.34	.48	1.8
28	1.6	1.7	.74	.43	.86	2.0	10	1.6	.93	.34	.54	1.4
29			1.1	.77	.51	1.9	61	.89	.65	.38	.41	2.6
30	2.5		1.2	.90	.66	2.2	65	1.1	.63	.43	.37	2.9
31	2.2		1.3		.99		34	1.4		.36		3.1
Sum	67.2	53.0	22.88	27.45	20.94	28.88	4,478.79	512.12	2,750.57	13.19	10.20	49.29
Current Year 1975									Period 1951-1975			
Month	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet			
	High	Low	Day	High	Low	Day	Average	Acre-Feet	Average	Maximum	Minimum	
Jan.			8	5.0	f26	1.5	2.17	133	603	7,813	2.6	
Feb.			1	2.3	f10	1.7	1.89	105	428	2,767	3.0	
Mar.			1	1.6	19	.36	.74	45.4	356	2,512	13.3	
Apr.			7	1.9	27	.41	.92	54.4	92.5	373	0	
May			6	1.2	9	.22	.68	41.5	29.1	183	0	
June			30	2.2	25	.14	.96	57.3	155	1,391	0	
July			23	1,160	f 2	0	144	8,884	6,410	17,238	184	
Aug.			9	167	21	.32	16.5	1,016	9,916	36,369	165	
Sept.			14	1,700	30	.63	91.7	5,456	1,848	16,344	11.3	
Oct.			1	1.0	f23	.22	.43	26.2	246	2,166	0	
Nov.			23	.54	5	.16	.34	20.2	143	609	0	
Dec.			17	3.3	2	.38	1.59	97.8	771	10,959	6.2	
Yearly				1,700		0	21.8	15,937	20,998	55,364	4,400	

β Mean daily

f And other days

SANTA CRUZ RIVER NEAR LOCHIEL, ARIZONA

DESCRIPTION: Water-stage recorder located in the United States near left bank on the downstream side of concrete bridge pier of county highway bridge, 2.5 miles northeast of Lochiel, Arizona, and 1.7 miles upstream from the international land boundary. The elevation of the zero of the gage has not been determined but topographic maps indicate the elevation of the stream bed at the gage is about 4,620 feet.

RECORDS: Based on current meter measurements or observations of no flow during the year. Records obtained and furnished by the U. S. Geological Survey. Records available: January 1949 through 1975.

REMARKS: There are small diversions by ground water pumping for irrigating about 200 acres above this station.

EXTREMES: Maximum discharge, 4,810 second-feet on September 12, 1965 (gage height 8.90 feet); minimum discharge, no flow for several days of each year.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.58	0.23	0.18	0.25	0.18	0.02	0	0.27	0.44	0.29	0.30	0.33
2	.55	.23	.18	.26	.17	.03	0	.25	6.5	.26	.31	.35
3	.53	.22	.18	.24	.17	.01	0	.22	2.7	.24	.31	.36
4	.52	.22	.19	.23	.15	0	0	.20	7.2	.22	.30	.34
5	.50	.22	.18	.23	.14	0	0	.19	17	.23	.30	.33
6	.50	.23	.18	.22	.14	.01	0	.17	3.0	.24	.29	.32
7	.51	.24	.18	.29	.13	.03	0	.14	.78	.24	.28	.32
8	.47	.23	.19	.25	.11	.01	1.1	.15	.72	.24	.28	.32
9	.52	.23	.18	.24	.11	.01	.07	.22	.57	.22	.28	.33
10	.47	.24	.19	.26	.10	0	0	.21	.52	.20	.27	.33
11	.44	.24	.20	.24	.08	0	5.6	50	.43	.16	.27	.33
12	.42	.24	.20	.25	.07	0	.13	2.6	.45	.15	.26	.33
13	.39	.24	.19	.24	.07	0	.03	2.2	.63	.17	.26	.38
14	.41	.25	.19	.22	.08	0	0	.97	1.4	.21	.28	.35
15	.41	.24	.20	.21	.06	0	0	.51	.51	.20	.29	.34
16	.37	.21	.19	.19	.05	0	0	.32	.47	.22	.30	.37
17	.33	.21	.20	.19	.06	0	0	.26	.44	.23	.30	.37
18	.31	.21	.20	.20	.06	0	8.0	.23	.41	.23	.29	.36
19	.29	.22	.21	.19	.05	0	.14	.25	.39	.25	.29	.35
20	.28	.22	.21	.19	.05	0	.03	.35	.37	.25	.29	.36
21	.26	.21	.22	.19	.05	0	.02	.30	.31	.24	.30	.42
22	.22	.18	.22	.19	.05	0	268	.26	.29	.27	.29	.38
23	.23	.19	.21	.19	.04	0	204	.26	.28	.27	.32	.41
24	.23	.20	.22	.20	.03	0	11	.26	.28	.27	.32	.38
25	.23	.21	.19	.21	.04	0	12	.20	.29	.27	.34	.38
26	.23	.19	.24	.19	.05	0	.55	.20	.30	.29	.33	.38
27	.21	.18	.24	.19	.04	0	.44	.20	.30	.30	.33	.41
28	.21	.18	.24	.19	.04	0	.40	.19	.30	.29	.42	.38
29	.27	.25	.25	.19	.03	0	.35	.16	.31	.28	.50	.35
30	.28	.26	.26	.19	.03	0	.30	.15	.33	.29	.33	.38
31	.24	.25	.25	.25	.03	0	.28	.16	.30	.30	.41	.41
Sum	11.41	6.11	6.36	6.52	2.46	0.12	512.44	62.05	47.92	7.52	9.23	11.15
Current Year 1975								Period 1949-1975				
Month	Extreme Gage Feet		Extreme Second Feet				Average Second Feet	Total Acre Feet	Acre Feet			
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum	
Jan.			1	0.58	†27	0.21	0.37	22.6	45.0	226	1.3	
Feb.			14	.25	†22	.18	.22	12.1	38.3	261	1.8	
Mar.			30	.26	†1	.18	.21	12.6	34.1	250	.7	
Apr.			7	.29	†16	.19	.22	12.9	19.6	148	0	
May			1	.18	†24	.03	.079	4.9	8.9	49.5	0	
June			†2	.03	†4	0	.004	.2	9.2	169	0	
July			22	268	†1	0	16.5	1,016	490	4,270	1.6	
Aug.			11	50	†7	.14	2.00	123	998	10,120	.03	
Sept.			5	17	†23	.28	1.60	95.0	307	2,634	0	
Oct.			†27	.30	†12	.15	.24	14.9	81.9	448	0	
Nov.			29	.50	†12	.26	.31	18.3	41.0	182	0	
Dec.			21	.42	†6	.32	.36	22.1	65.8	693	0	
Yearly				268		0	1.84	1,355	2,139	12,633	126	

‡ Mean daily

† And other days

SANTA CRUZ RIVER NEAR NOGALES, ARIZONA

DESCRIPTION: Water-stage recorder, cable with sit-down cable car located 5.5 miles east of Nogales, Arizona, 0.8 mile downstream from the international land boundary and 6 miles upstream from the Santa Cruz bridge on State Highway No. 82. Zero of gage is 3,702.54 feet above sea level, U.S.C. & G.S. datum (levels by International Boundary and Water Commission).

RECORDS: Based on current meter measurements or observation of no flow during the year. Records obtained and furnished by the U. S. Geological Survey. 1975 records fair. Records available: March to November 1907 and April 1909 to December 1912 (discharge measurements and fragmentary gage height record); January 1913 to June 1922 (October 1915 to September 1916, monthly discharges only); May 1930 to December 1933; and July 1935 through 1975.

REMARKS: Diversions in both countries affect the flow at this station. The major diversions occur in Mexico for domestic and irrigation uses. There are no storage dams above the station as of December 1975.

EXTREMES: Maximum discharge, 15,200 second-feet on December 20, 1967 (gage height 13.5 feet); minimum discharge, no flow for several days of many years.

Mean Daily Discharge in Second Feet 1975 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.7	2.1	1.7	1.7	0.60	0.10	0	5.8	376	2.8	0.70	6.4
2	1.8	2.0	1.7	1.7	.60	0	0	5.1	96	2.3	.70	5.4
3	1.7	2.0	1.8	1.6	.60	0	0	5.1	14	2.0	.70	5.4
4	1.7	2.0	1.8	1.4	.50	0	0	4.8	37	1.8	.80	5.4
5	1.7	2.0	2.0	1.4	.50	0	0	4.1	33	1.7	1.0	5.4
6	1.6	2.0	1.8	1.4	.50	0	0	2.8	62	1.6	.90	5.4
7	1.3	2.0	2.0	2.0	.40	0	0	2.6	46	1.6	.80	5.4
8	1.3	2.0	2.1	2.0	.40	0	41	129	28	1.4	1.0	5.4
9	1.3	2.0	2.0	1.8	.40	0	0	108	20	1.4	1.1	5.1
10	1.3	2.0	2.1	2.0	.40	0	0	16	16	1.4	1.1	4.8
11	1.3	2.0	2.2	1.8	.40	0	20	310	14	1.3	1.1	4.6
12	1.2	2.0	2.3	1.7	.40	0	5.0	49	13	1.1	1.1	3.9
13	1.3	2.0	2.2	1.7	.40	0	40	19	983	1.1	1.2	3.7
14	1.3	2.0	2.1	1.7	.30	0	5.0	8.0	301	1.0	1.2	3.5
15	1.4	2.0	2.0	1.6	.20	0	0	5.4	49	1.0	1.3	3.0
16	1.4	2.0	2.0	1.4	.20	0	10	6.1	30	1.0	1.3	2.6
17	1.4	2.0	1.8	1.4	.20	0	5.0	3.5	22	.90	1.1	2.5
18	1.7	2.0	1.8	1.4	.20	0	1.0	2.5	16	.90	1.4	2.5
19	1.7	2.0	1.8	1.3	.20	0	0	1.8	16	.80	1.4	2.5
20	1.7	1.8	2.0	1.3	.20	0	20	1.8	14	.80	1.7	2.3
21	1.7	1.8	2.0	1.3	.20	0	5.0	1.8	12	.80	1.8	2.3
22	1.7	1.8	2.0	1.2	.20	0	3,500	2.6	11	.80	1.7	2.3
23	1.7	1.7	2.0	1.2	.10	0	1,250	39	7.7	.70	1.8	2.3
24	1.7	1.7	2.0	1.2	.10	0	598	59	6.1	.70	2.1	2.3
25	1.8	1.7	1.8	1.2	.10	0	265	10	5.1	.60	2.1	2.1
26	1.8	1.7	1.8	1.2	.10	0	70	6.1	4.6	.70	2.2	2.0
27	2.0	1.7	2.0	1.1	.10	0	872	6.1	4.4	.70	2.6	1.7
28	2.0	1.7	2.0	1.1	.10	0	257	4.1	4.1	.70	3.9	1.4
29	2.2	2.0	2.0	1.1	.10	0	34	3.3	3.5	.70	9.5	1.1
30	2.6	1.8	1.8	.70	.10	0	16	2.2	2.8	.70	7.4	1.1
31	2.3	1.7	1.7		.10		8.5	2.0		.70		1.1
Sum	51.3	53.7	60.3	43.60	8.90	0.10	7,022.5	826.6	2,247.3	35.70	56.70	104.9
Current Year 1975								Period 1936-1975				
Month	Extreme Gage Feet		Extreme Second Feet				Average Second Feet	Total Acre Feet	Acre Feet			
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum	
Jan.			30	2.6	12	1.2	1.65	102	1,119	16,720	0	
Feb.			1	2.1	†23	1.7	1.92	107	915	11,129	0	
Mar.			12	2.3	† 1	1.7	1.95	120	885	12,454	0	
Apr.			† 7	2.0	30	.70	1.85	86.5	234	1,308	0	
May			† 1	.60	†23	.10	.29	17.7	67.0	338	0	
June			1	.10	† 2	0	0	.20	63.2	1,020	0	
July			22	3,500	† 1	0	227	13,929	2,728	15,610	45	
Aug.			11	310	†19	1.8	26.7	1,640	6,132	45,790	91	
Sept.			13	983	30	2.8	74.9	4,457	1,398	7,507	0	
Oct.			1	2.8	25	.60	1.15	70.8	367	2,616	0	
Nov.			29	9.5	† 1	.70	1.89	112	278	1,213	0	
Dec.			1	6.4	†29	1.1	3.38	208	1,720	28,559	0	
Yearly				3,500		0	28.5	20,850	15,906	57,671	3,499	

β Mean daily † And other days

SEWAGE INFLUENT, NOGALES INTERNATIONAL TREATMENT PLANT

DESCRIPTION: Three 12-inch Parshall flumes, each with a recording flow meter and continuous totalizer, one located at the international boundary for measuring effluent from Nogales, Sonora, one located in the influent line to the treatment plant and one on the plant effluent line. Nogales International Treatment Plant is located approximately 6 miles north of the international boundary.

RECORDS: Flows from the United States are deduced from total plant influent less the flows measured crossing the international boundary from Mexico. Records available: Continuous monthly record for plant influent since August 1951, daily records for plant influent, January 1952 through 1975.

REMARKS: Prior to December 18, 1971 the plant was located along the right bank of Nogales Wash approximately two miles north of the international boundary. Nogales International Treatment Plant treats combined sewage from Nogales, Arizona and Nogales, Sonora by means of primary and secondary sedimentation, sludge digestion, and trickling filters. Chlorination of plant effluent, which may be used for irrigation of lands lying north of the plant, is carried out by the United States at its expense.

Month	Total Monthly Flows			Mean Daily Flows-Millions of Gallons Per Day					
	Millions of Gallons			Current Year 1975			Period 1952-1975		
	U.S.	Mexico	Total	Maximum	Minimum	Mean	Maximum	Minimum	Mean
Jan.	62,800	50,660	113,460	4,213	2,987	3,660	* 4.800	0.650	2.460
Feb.	55,033	48,085	103,118	3,977	3,391	3,683	* 6.130	.650	2,510
Mar.	60,169	50,660	110,829	3,971	3,021	3,575	5,342	.750	2,447
Apr.	55,934	50,776	106,710	3,915	2,835	3,557	4,572	.700	2,407
May	57,008	51,699	108,707	3,705	3,167	3,507	4,697	.550	2,323
June	51,611	48,747	100,358	3,538	2,941	3,345	4,055	.700	2,192
July	56,107	54,973	111,080	4,127	2,685	3,583	4,127	.700	2,245
Aug.	83,551	40,615	124,166	4,393	3,089	4,005	4,928	.750	2,530
Sept.	87,380	39,554	126,934	4,789	3,209	4,231	4,789	.800	2,828
Oct.	82,387	40,345	122,732	4,300	3,699	3,959	4,300	.700	2,680
Nov.	75,032	38,784	113,866	5,079	3,081	3,796	5,079	.800	2,500
Dec.	87,513	34,916	122,429	4,353	3,351	3,949	* 5,200	.350	2,511
Yearly	814,575	549,814	1,364,389	5,079	2,685	3,738	* 6.130	0.350	2.470

* Partly estimated

RAINFALL ON THE SANTA CRUZ RIVER WATERSHED IN INCHES

Tabulated below are the monthly records of rainfall with averages for their periods of record at stations located in Arizona and one in Sonora, Mexico. Four stations are operated and maintained by the United States Section of the Commission, three by the National Weather Service and one by the Mexican Section of the Commission. For location, elevation, period of record, type of gage in use, and the observer, see alphabetical listing of stations on page 93.

In United States

Month	* San Rafael #1, Arizona		San Rafael #2, Arizona		Canelo, Arizona		Patagonia, Arizona		Jones Ranch, Arizona	
	1975	Average 1952-1975	1975	Average 1973-1975	1975	Average 1930-1975	1975	Average 1930-1975	1975	Average 1952-1975
Jan.	1.40	0.81	1.35	1.31	1.04	1.03	1.06	1.16	1.10	
Feb.	0	.51	0	.85	.02	1.03	.07	1.00	.20	
Mar.	.80	.84	.91	.99	1.21	.78	1.45	.86	.85	
Apr.	.76	.22	1.10	.37	.81	.35	1.12	.33	.65	.20
May	0	.09	0	0	0	.13	0	.16	0	.05
June	0	.61	0	.57	0	.83	0	.52	0	
July	5.18	4.72	6.18	5.46	6.23	4.34	3.88	4.50	6.10	5.64
Aug.	1.52	4.39	.87	2.07	1.16	4.36	2.95	4.14	2.40	
Sept.	3.95	1.63	4.66	3.10	2.72	1.74	3.39	1.96	2.22	
Oct.	0	.82	0	.79	.05	.90	.04	.89	0	
Nov.	.70	.50	1.10	.46	1.23	.74	1.10	.78	.85	
Dec.	.33	1.07	.41	.19	.43	1.34	.44	1.36	.25	1.12
Yearly	14.64	16.21	16.58	16.16	14.90	17.62	15.50	17.56	14.62	

Month	Nogales, Arizona		Nogales Sanitation Plant 6A, Arizona						
	1975	Average 1914-1975	1975	Average 1953-1975					
Jan.	1.00	1.01	0.81	0.86					
Feb.	.07	.82	.10	.63					
Mar.	1.08	.77	.65	.76					
Apr.	.88	.29	.59	.14					
May	0	.14	T	.09					
June	0	.46	0	.41					
July	5.30	4.25	6.89	4.85					
Aug.	1.48	3.90	2.43	3.92					
Sept.	3.13	1.64	4.03	1.56					
Oct.	T	.77	T	.98					
Nov.	1.25	.69	.70	.59					
Dec.	.54	1.27	.41	1.24					
Yearly	14.73	16.01	16.61	16.03					

In Mexico

Month	San Lazaro, Sonora								
	1975	Average 1961-1975							
Jan.	1.02	0.71							
Feb.	0	.59							
Mar.	.71	.71							
Apr.	.55	.39							
May	0	.12							
June	0	.51							
July	6.34	4.57							
Aug.	1.81	3.19							
Sept.	1.31	1.61							
Oct.	0	.83							
Nov.	2.24	.63							
Dec.	.35	1.26							
Yearly	14.84	13.66							

* Formerly Meigs Ranch

T Trace

LOCATION OF RAINFALL STATIONS ON THE SANTA CRUZ WATERSHED

The precipitation records of the stations listed alphabetically below begin on the date shown and extend through 1975.

In United States

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (FT.)	RECORD BEGAN	OBSERVER
Canelo, Arizona	S	31° 33'	110° 32'	4,985	1930	R. E. Ewing
Jones Ranch, Arizona	S	31° 22'	110° 36'	4,960	Mar. 1952	I. B. & W. C.
Nogales, Arizona	R	31° 21'	110° 55'	3,808	1914	Milford L. Noon
Nogales Sanitation Plant 6N, Arizona	S	31° 25'	110° 57'	3,560	June 1952	I. B. & W. C.
Patagonia, Arizona	S	31° 33'	110° 45'	4,044	1930	O. J. Rothrock
San Rafael #1, Arizona	S	31° 26'	110° 36'	4,836	Mar. 1952	I. B. & W. C.
San Rafael #2, Arizona	S	31° 22'	110° 38'	4,860	Jan. 1975	I. B. & W. C.

In Mexico

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (FT.)	RECORD BEGAN	OBSERVER
San Lazaro, Sonora	S	*	*	4,199	Mar. 1954	I. B. & W. C. Mexican Section

S Standard 8" rain gage

R Recording rain gage

* Unavailable

TEMPERATURE, HUMIDITY, EVAPORATION, AND WIND IN THE SANTA CRUZ RIVER BASIN

Tabulated below are monthly records of temperature, humidity, evaporation and wind at the station located at the Nogales Sanitation Plant in Arizona six miles north of the international boundary. December 18, 1971 the station was moved to correspond with a new Nogales Sanitation Plant. Prior to this date, the station was located 2 miles north of the international boundary, at the old Nogales Sanitation Plant. This station is operated and maintained by the United States Section of the Commission. Also tabulated below are the monthly records of temperature and evaporation for a station at San Lazaro, Sonora, located approximately 6.5 miles southwest of Santa Cruz, Sonora, and approximately 22 miles southeast of Nogales, Sonora. This station is operated and maintained by the Mexican Section of the Commission. The equipment at the Nogales Sanitation Plant - 6N consists of: Standard 8-inch rain gage, 48-inch diameter evaporation pan with stillwell and hook gage, maximum and minimum thermometer, anemometer (registers miles), hygrothermograph, and psychrometer, hand turbine type. The equipment at the station at San Lazaro, Sonora, consists of: Maximum and minimum thermometer, standard 8-inch rain gage and a 48-inch diameter evaporation pan.

For specific location of these two stations, refer to data opposite same station name shown in "Location of Rainfall Stations", page 93 of this bulletin.

In United States

Temperature - Degrees Fahrenheit

Month	Nogales Sanitation Plant - 6N		
	1975		
	Mean	Max.	Min.
Jan.	43.0	78	11
Feb.	43.6	78	11
Mar.	51.9	84	22
Apr.	51.8	85	7
May	62.3	95	25
June	72.1	101	41
July	76.8	105	55
Aug.	74.7	104	38
Sept.	71.5	98	25
Oct.	61.6	97	27
Nov.	51.8	85	17
Dec.	47.6	79	19
Yearly	59.2	105	7

Mean Relative Humidity-Percent

Month	Nogales Sanitation Plant - 6N	
	1975	
	Max.	Min.
Jan.	100	26
Feb.	100	0
Mar.	100	47
Apr.	94	24
May	100	18
June	100	36
July	100	65
Aug.	95	46
Sept.	100	37
Oct.	100	34
Nov.	84	22
Dec.	92	33
Yearly	100	0

Evaporation - Inches

Month	Nogales Sanitation Plant - 6N	
	1975	Average 1953-1975
Jan.	* 3.53	3.53
Feb.	† 3.83	4.62
Mar.	6.02	7.32
Apr.	† 7.93	9.65
May	11.62	12.50
June	† 12.81	13.86
July	11.02	10.35
Aug.	† 12.06	8.10
Sept.	† 11.06	8.08
Oct.	† 8.50	7.07
Nov.	† 5.26	4.51
Dec.	* 3.11	3.27
Yearly	96.75	92.86

Mean Wind Speed - Miles per Hour

Month	Nogales Sanitation Plant - 6N	
	1975	Average 1953-1975
Jan.	* 2.0	2.0
Feb.	2.0	2.3
Mar.	2.5	2.6
Apr.	2.7	2.6
May	2.5	2.5
June	2.6	2.4
July	2.1	1.6
Aug.	1.9	1.0
Sept.	1.9	1.2
Oct.	2.4	1.6
Nov.	2.3	1.6
Dec.	1.9	1.8
Yearly	2.2	1.9

In Mexico

Temperature - Degrees Fahrenheit

Month	San Lazaro, Sonora			
	1975		1961-1975	
	Max.	Min.	Max.	Min.
Jan.	77	18	93	10
Feb.	81	21	88	16
Mar.	81	28	99	19
Apr.	81	30	106	27
May	90	34	117	28
June	95	50	124	41
July	97	50	126	50
Aug.	97	61	117	52
Sept.	93	45	115	39
Oct.	90	34	111	32
Nov.	84	25	102	21
Dec.	79	23	95	10
Yearly	97	18	126	10

Evaporation - Inches

Month	San Lazaro, Sonora	
	1975	Average 1961-1975
	Jan.	4.45
Feb.	4.61	4.49
Mar.	7.48	7.05
Apr.	8.66	9.72
May	11.77	11.97
June	13.74	12.76
July	7.56	8.39
Aug.	8.39	7.32
Sept.	7.01	7.32
Oct.	8.11	7.05
Nov.	5.71	4.65
Dec.	3.78	3.58
Yearly	91.26	88.54

* Estimated 10-year average

† Adjusted to full month

**DRAINAGE AREAS ABOVE GAGING STATIONS AND IRRIGATED AREAS ALONG
SANTA CRUZ RIVER, SAN PEDRO RIVER, AND WHITEWATER DRAW**

1975

The drainage basin areas tabulated below are derived from the best available maps from both the United States and Mexico.

Data on irrigated areas in the Whitewater Draw Basin were furnished by the Soil Conservation Service at Douglas, Arizona.

Designation of Areas	Drainage Basin-Square Miles			Irrigated Areas-Acres		
	United States	Mexico	Total	United States	Mexico	Total
Santa Cruz River:						
Above Lochiel, Arizona Gaging Station	82	0	82	200	0	200
Above El Cajon, Mexico Gaging Station	179	125	304	200	2,352	2,552
Above Nogales, Arizona Gaging Station	185	348	533	200	2,696	2,896
San Pedro River:						
Above Palominas, Arizona Gaging Station	92	649 *	741	413	3,459	3,872
Whitewater Draw:						
Above Douglas, Arizona Gaging Station	1,023	0	1,023	24,460	0	24,460

* An additional 47 square miles in Mexico is tributary to the San Pedro River downstream from this station

CORRECTIONS TO PREVIOUS WATER BULLETINS

<u>Water Bulletin and Page Numbers</u>	<u>Heading</u>	<u>Reference</u>	<u>Published As</u>	<u>Correction</u>
1964-81 1965-81 1966-77 1967-75 1968-75 1969-74 1970-73 1971-74 1972-74 1973-73 1974-72	Inflows to Rodriguez Reservoir, Baja California	Textual heading, EXTREMES	Maximum monthly inflow, 77,320 acre-feet, April 1941;	Maximum monthly inflow, 77,790 acre-feet, April 1941;
1969-40 1970-40 1971-41 1972-41 1973-40 1974-39	Colorado River at El Meritimo in Mexico - Stages	Textual heading, EXTREMES, first line	Maximum daily discharge, 4,410 second-feet,	Maximum daily discharge, 4,380 second-feet
1974-31	Total Flows Crossing Inter- national Boundary into Mexico near San Luis, Sonora	<u>Period Summary Table</u> <u>Averages in Acre-Feet</u> January February Yearly	9,314 9,170 118,502	9,397 9,296 118,711