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WESTERN WATER BULLETIN 2000

**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

2000

CONTENTS

Foreword and Acknowledgments	4
General Hydrologic Conditions for 2000	6
Map of Western Boundary - Douglas, Arizona to Pacific Ocean	44

I - COLORADO RIVER - IMPERIAL DAM TO GULF OF CALIFORNIA

Map of Lower Colorado River, United States and Mexico	Following Page	85
-----------------------------------------------------------------	----------------	----

QUANTITY OF WATER

Stream-Flow and Stage Records		
Tributary - Reservation Main Drain No. 4 (California Drain)		8
Yuma Main Canal Wasteway to Colorado River at Yuma, Arizona		9
Colorado River below Yuma Main Canal Wasteway at Yuma, Arizona - Discharges		10
below Yuma Main Canal Wasteway at Yuma, Arizona - Stages		11
Tributary - Yuma Mesa Outlet Drain to Colorado River near Yuma, Arizona		12
Drain No. 8-B (Araz Drain)		13
Pilot Knob Power Plant and Wasteway near Pilot Knob, California		14
Colorado River at Northerly International Boundary - Discharges		15
at Northerly International Boundary - Stages		16
Tributary - Cooper Wasteway (Valley Division, Yuma Project)		17
Colorado River immediately above Morelos Dam - Stages		18
Diversions from the Colorado River - Intake Canal at Morelos Diversion Structure - Discharges		19
at Morelos Diversion Structure - Stages		20
Colorado River immediately below Morelos Dam - Stages		21
Tributary - Wellton-Mohawk Drainage Water Discharged to Colorado River below Morelos Dam		22
Tributary - Eleven Mile Wasteway (Valley Division, Yuma Project)		23
Colorado River at Eleven Mile Gage - Stages		24
Tributary - Twenty-one Mile Wasteway (Valley Division, Yuma Project)		25
East Main Canal Wasteway (Valley Division, Yuma Project)		26
Yuma Main Drain (Valley Division, Yuma Project)		27
West Main Canal Wasteway (Valley Division, Yuma Project)		28
242 Well Field near San Luis, Arizona		29
Total Flows Crossing International Boundary into Mexico near San Luis, Sonora		30
Colorado River at Southerly International Boundary - Discharges		31
at Southerly International Boundary - Stages		32
Wellton-Mohawk Bypass Drain at Southerly International Boundary		33
Tributary - Wasteway to Colorado River at Kilometer 27 in Mexico		34
Tributary - Wasteway to Colorado River at Kilometer 38 in Mexico		35
Stored Water in Large Reservoirs of the Colorado River		36

QUALITY OF WATER

Suspended Silt in the Colorado River and Intake Canal at Morelos Diversion Structure	37
Chemical Analyses of Water Samples	38
Specific Conductance of Water Samples	39

CLIMATOLOGICAL DATA AND IRRIGATED AREAS

Rainfall on the Colorado River Watershed	41
Location of Rainfall Stations on the Colorado River	42
Evaporation in the Colorado River Basin	43
Temperature in the Colorado River Basin	46
Irrigated Areas along the Colorado River below Imperial Dam	48

II - ALAMO AND NEW RIVERS

QUANTITY OF WATER

Stream-Flow and Stage Records		
Alamo River at International Boundary		49
New River at International Boundary		50
Tributary - Wastes from Mexicali Potable Water Plant to New River in Mexico		51
Waste Waters from Mexican System of Canals Entering the United States		52
Salton Sea - Elevations of Water Surface		53

CONTENTS

QUALITY OF WATER

Chemical Analyses of Water Samples	54
Specific Conductance of Water Samples	57

III - TIJUANA RIVER

Map of Tijuana River Drainage Basin	58
-----------------------------------------------	----

QUANTITY OF WATER

Stream-Flow Records	
Cottonwood Creek above Morena Dam, California	59
below Morena Dam, California	60
above Barrett Dam, California	61
Diversions from Cottonwood Creek - Dulzura Conduit below Barrett Dam, California	62
Cottonwood Creek below Barrett Dam, California	63
above Tecate Creek near Dulzura, California	64
Tributary - Campo Creek near Campo, California	65
Inflows to Rodriguez Reservoir, Baja California	66
Diversions from Rodriguez Reservoir, Baja California	67
Tijuana River at International Boundary	68
Stored Water in Reservoirs, Tijuana River Basin	69

CLIMATOLOGICAL DATA AND DRAINAGE BASIN AND IRRIGATED AREAS

Rainfall on the Tijuana River Watershed	70
Location of Rainfall Stations on the Tijuana River Watershed	72
Evaporation in the Tijuana River Basin	73
Temperature in the Tijuana River Basin	74
Drainage Areas above Gaging Stations and Irrigated Areas along Tijuana River and Tributaries	75

IV - WHITEWATER DRAW, SAN PEDRO, AND SANTA CRUZ RIVERS

Map of Western Boundary - Santa Cruz River, San Pedro River, and Whitewater Draw Basins	76
---------------------------------------------------------------------------------------------------	----

QUANTITY OF WATER

Stream-Flow Records	
Whitewater Draw near Douglas, Arizona	77
Sewage Influent, Douglas, Arizona International Treatment Plant	78
San Pedro River at Palomins, Arizona	79
Santa Cruz River near Lochiel, Arizona	80
near Nogales, Arizona	81
Sewage Influent, Nogales International Treatment Plant	82

CLIMATOLOGICAL DATA

Rainfall and Location of Rainfall Stations on the Santa Cruz River Watershed	83
Temperature in the Santa Cruz River Basin	84
Drainage Areas above Gaging Stations and Irrigated Areas along Santa Cruz River, San Pedro River, and Whitewater Draw	85

FOREWORD

This bulletin is the forty-first annual compilation of stream discharges and other hydrographic data relating to 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 bulletin contains information for the year 2000.

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 16 kilometers to the mouth of the Gila River, thence westward 18 kilometers to Pilot Knob Mountain, and south 1.6 kilometers 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 35 kilometers 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 145 kilometers 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 28,200 square kilometers along the river from Hoover Dam to the mouth of the Gila River. In addition, flows ranging from usually minor amounts to infrequent torrential floods may enter the lower Colorado River from the Bill Williams River, draining about 1,857 square kilometers below Alamo Dam and Lake, completed in 1963; and from the Gila River, draining about 18,900 square kilometers 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 scheduled deliveries of waters of the Colorado River, which in 2000 amounted to 2,096,931 thousand cubic meters, in accordance with Article 10 of the 1944 Water Treaty. No diversions were made to a substitute canal in 2000.

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, 1.8 kilometers 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 Colorado River waters diverted by Mexico (except emergency deliveries to Tijuana from August 1972 to August 1980) have been diverted to the Alamo Canal at Morelos Dam.

TIJUANA RIVER BASIN

The total drainage area of the Tijuana River basin is 4,483 square kilometers, 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 34 kilometers from the Pacific Ocean to join the Rio de las Palmas in Mexico. From the confluence of these tributaries, the Tijuana River flows northwesterly 8 kilometers to cross the land boundary into the United States near San Ysidro, California and Tijuana, Baja California, and then flows westerly 10 kilometers to discharge into the Pacific Ocean 3 kilometers north of the boundary. The flow of Cottonwood Creek is partially controlled by Barrett and Morena 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 2,650 square kilometers. 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 1,919 square kilometers, of which 1,681 square kilometers 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 returning 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 1,380 square kilometers. Of this amount, 901 square kilometers 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 Agriculture and 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

This Bulletin is published in System International (SI) units which are based on the metric system. The following conversion constants may be used to convert to the English system of measurement. Data collected by the Mexican Section are computed and published in a Spanish version of the water bulletin in metric units.

METRIC TO ENGLISH CONVERSION CONSTANTS

METRIC UNITS		ENGLISH UNITS	
<u>LENGTH</u>			
Millimeters	x	0.03937	= Inches
Meters	x	3.28084	= Feet
Kilometers	x	0.62137	= Miles
<u>AREA</u>			
Square Meters	x	10.76391	= Square Feet
Hectares	x	2.47105	= Acres
Square Kilometers	x	0.38610	= Square Miles
<u>VOLUME</u>			
1,000 Cubic Meters	x	35.31467	= Cubic Feet
Cubic Meters	x	0.81071	= Acre-Feet
<u>WEIGHT</u>			
Kilograms	x	2.20462	= Pounds
Megagrams	x	1.10231	= Tons (2,000 lbs.)
<u>TEMPERATURE</u>			
Degrees Celsius	x	1.8 + 32	= Degrees Fahrenheit

GENERAL HYDROLOGIC CONDITIONS FOR 2000

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 2000. In the lower basin of the Colorado River in Mexico, from Morelos Diversion Dam to the Gulf of California, the average precipitation during 2000 measured at 3 index stations was 39 millimeters, compared to an average of 51 millimeters during the last 42 years (1959 to 2000).

The flow of the Colorado River reaching Imperial Dam was 8,029,461 thousand cubic meters, about 81% of the 66-year average (1935-2000) of 9,930,532 thousand cubic meters. At the Northerly International Boundary, the total flow of the river during 2000 was 2,342,200 thousand cubic meters, about 50% of the 1935-2000 average of 4,703,639 thousand cubic meters. At the Southerly International Boundary, the flow during 2000 was 289,705 thousand cubic meters, about 9% of the 1935-2000 average of 3,193,808 thousand cubic meters.

The total of all flows of the Colorado River entering Mexico in 2000 amounted to 2,645,322 thousand cubic meters, 50% of the 1935-2000 average of 5,283,944 thousand cubic meters, 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 limitrophe 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, 5) in the Wellton-Mohawk Bypass Drain at the southerly land boundary near San Luis, Arizona, and 6) from the 242 Well Field near San Luis, Arizona.

During 2000, other waters arrived at the Mexican points of diversion and amounted to 415,859 thousand cubic meters. These waters consisted mainly of excess waters released from reservoirs on the Colorado River. A maximum instantaneous flow of 161 cubic meters per second occurred in the Colorado River at the Northerly International Boundary station on October 25, 2000.

Stored waters at the end of the year in the three major reservoirs on the Colorado River below Lee's Ferry amounted to 30,231.7 million cubic meters, 86% of the usable capacity of 35,263.2 million cubic meters. The greater part (27,578.1 million cubic meters) of the storage was contained in Lake Mead (Hoover Dam). There were no reported shortages of Colorado River water for irrigation during 2000 due to drought or accident to the irrigation system.

The total reported area irrigated from waters of the Colorado River below Imperial Dam in 2000 was 406,487 hectares; 275,512 hectares in the United States and 130,975 hectares in Mexico. An estimated 33% of the total area irrigated in Mexico is served by pumping from ground water.

TIJUANA RIVER BASIN

During 2000, the temperatures at Barrett Dam, California (elevation 533.40 meters) in the upper portion of the basin in the United States averaged 17.7 degrees Celsius, 1.1 degree Celsius above the 70-year mean. In the extreme upper portion of the basin in Mexico at El Pinal, Baja California (elevation 1394.96 meters), the recorded temperatures during the year could not be determined due to incomplete records. At Rodriguez Dam, Baja California (elevation 139.90 meters), the recorded temperatures averaged 20 degrees Celsius, about 1 degree Celsius below the normal for many years.

At Barrett Dam, in the upper portion of the basin in the United States, the recorded precipitation was 238 millimeters, 53% of normal; and at Lower Otay Dam near the lower end of the basin, 195 millimeters, or 68% of normal. The recorded precipitation at El Pinal in the upper portion of the basin in Mexico could not be determined due to incomplete records. At Rodriguez Dam, in the lower portion of the basin in Mexico, the recorded precipitation was 151 millimeters, 65% of the 62-year average.

Runoff above Barrett and Rodriguez Reservoirs during 2000 was about 34% of normal. Above Morena Reservoir, the runoff was 4,719 thousand cubic meters, or about 35% of the 64-year 1937-2000 mean of 13,063 thousand cubic meters. Above Barrett Reservoir, the runoff was 17,512 thousand cubic meters, or about 101% of the 64-year 1937-2000 mean of 17,332 thousand cubic meters. At Rodriguez Reservoir, the runoff was 8.7 thousand cubic meters, or about 0% of the 63-year mean of 33,562 thousand cubic meters.

The flow of the Tijuana River at the international boundary was 4,999 thousand cubic meters during 2000.

WHITEWATER DRAW

During 2000, the average annual temperature over the watershed was 1.2 degrees Celsius above normal, while the annual precipitation was 108% of normal. Runoff for the year at the gaging station near Douglas, Arizona, was 7,968 thousand cubic meters, or about 122% of average.

GENERAL HYDROLOGIC CONDITIONS FOR 2000

SAN PEDRO RIVER

During 2000, the average annual temperature was 0.5 degree Celsius above normal. The annual precipitation, as measured at Coronado National Monument Headquarters, was 148% of the 1961-2000 mean of 527 millimeters. The stream flow at the international boundary was 80,483 thousand cubic meters, 302% of the 1951-2000 average.

SANTA CRUZ

During 2000, the average annual temperature over the watershed averaged 17.2 degrees Celsius, 1.0 degree Celsius above the long term average. The annual precipitation was about 152% of the 62-year 1939-2000 mean. Runoff measured at the Nogales gaging station, where the stream re-enters the United States, was 42,905 thousand cubic meters. The total runoff for the year measured at the gaging station near Lochiel, Arizona, where the stream enters Mexico from the United States, was 7,588 thousand cubic meters. Therefore, neglecting stream flow depletions in Mexico, the records indicate a contribution of about 35,317 thousand cubic meters from the loop of the river lying in Mexico, or approximately 82% of the flow reaching the Nogales Station.

ALAMO AND NEW RIVERS

During 2000, the average annual temperature over the drainage areas of the Alamo and New Rivers, as recorded at El Centro, California, was 23.5 degrees Celsius, 1.0 degree Celsius above normal; and over the drainage area of the New River as recorded at Mexicali, Baja California, it was 24 degrees Celsius, 2 degrees Celsius above the 75-year average.

At El Centro, the precipitation was 20 millimeters, about 29% of the 70-year average; and in Mexicali, the annual precipitation was 9 millimeters, 11% of the 75-year average. The total flow of the New River at the international boundary in 2000 was 194,782 thousand cubic meters, which was about 133% of the 1943-2000 average.

SALTON SEA

During 2000, the average annual temperature around the Salton Sea was 0.2 degree Celsius below the long-term average, while the annual precipitation recorded at Brawley, California was approximately 3% of the long-term mean of 68 millimeters. The water surface of the Salton Sea dropped slightly during the year. The maximum stage, 69.280 meters below mean sea level, was recorded on April 30 through May 17, and May 24 through June 6 inclusive. The minimum stage, 69.645 meters below mean sea level, was recorded on November 19 through November 28 inclusive.

09-5300.00 RESERVATION MAIN DRAIN NO. 4 (CALIFORNIA DRAIN)

DESCRIPTION: Water-stage recorder (digital) located 152 meters upstream from railroad culvert and 1.6 kilometers 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 61.0 meters downstream from the spillway structure, and thence into the Colorado River on the right bank, 305 meters upstream from Colorado River below Yuma Main Canal Wasteway, and 10.5 kilometers 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 2000.

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 15,789 TCM. Monthly and annual averages since 1937 are shown in the table below.

EXTREMES: Prior to 1937: Maximum annual flow 24,904 TCM, 1916; minimum annual flow 11,003 TCM, 1913.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.04	1.70	2.07	2.12	2.35	2.61	2.29	2.10	2.44	1.78	2.07	1.98
2	2.01	1.84	2.07	2.15	2.41	2.69	2.12	2.21	2.41	1.78	2.04	2.01
3	2.12	1.78	2.04	2.15	2.49	2.44	2.04	2.35	2.01	1.76	2.07	2.01
4	2.07	1.76	2.15	2.07	2.52	2.35	2.04	2.32	1.78	1.76	2.10	1.98
5	2.01	1.90	2.15	2.07	2.46	2.44	2.04	2.32	2.15	1.78	2.07	1.93
6	2.04	1.76	2.18	2.12	2.49	2.41	2.04	1.76	2.29	1.84	2.04	1.90
7	2.07	1.81	2.18	2.15	2.61	2.29	2.04	1.93	1.84	1.78	2.04	1.93
8	2.10	1.87	2.15	2.15	2.52	2.01	2.21	2.55	1.81	1.84	2.04	1.95
9	2.12	1.93	2.15	2.10	2.61	1.81	2.10	2.01	1.78	1.95	2.01	1.95
10	1.95	1.87	2.12	2.12	2.58	1.70	2.21	1.93	1.84	1.98	2.07	1.93
11	2.01	1.81	2.12	2.15	2.61	1.64	2.01	1.70	1.84	2.04	2.04	1.93
12	2.12	1.87	2.10	2.15	2.55	1.59	2.01	1.78	1.84	1.98	2.04	1.90
13	2.01	1.81	1.95	2.18	2.55	1.59	2.07	1.81	1.76	2.29	2.01	1.90
14	1.98	1.81	2.01	2.18	2.61	1.56	2.10	2.15	1.70	1.90	2.04	1.95
15	1.98	1.84	1.93	2.24	2.63	1.56	2.21	2.32	1.87	1.81	2.04	1.93
16	2.07	2.01	2.01	2.32	2.61	1.59	2.18	2.41	1.76	1.87	2.01	1.93
17	1.95	1.90	2.10	2.32	2.61	1.56	2.12	2.38	1.95	1.78	2.04	1.95
18	1.90	1.87	2.07	2.29	2.49	1.67	2.15	2.38	1.90	1.78	2.01	1.93
19	1.84	1.84	2.12	2.29	2.58	1.56	2.15	2.29	1.90	1.87	2.01	1.93
20	2.01	1.87	2.04	2.29	2.58	1.67	2.12	2.32	1.84	1.93	2.01	1.93
21	1.84	1.95	2.04	2.29	2.69	2.01	2.15	2.29	1.81	1.90	2.01	1.95
22	1.93	1.98	2.15	2.38	2.66	2.21	2.21	2.41	1.87	1.84	2.01	1.95
23	1.90	2.18	2.12	2.44	2.63	2.15	2.10	2.41	1.84	1.95	2.04	1.93
24	1.78	2.10	2.07	2.38	2.58	2.21	2.21	2.38	1.81	2.15	2.01	1.95
25	1.76	1.90	2.04	2.27	2.49	2.18	2.12	2.41	1.81	2.49	2.01	1.95
26	1.76	1.90	2.10	2.46	2.49	1.98	2.15	2.38	1.76	1.87	1.98	1.87
27	1.87	1.98	2.15	2.44	2.46	1.81	2.15	2.38	1.78	1.93	1.98	1.87
28	1.76	1.95	2.15	2.41	2.41	1.95	2.07	2.27	1.81	1.98	1.98	1.87
29	1.87	2.01	2.18	2.38	2.41	1.98	2.04	2.24	1.81	2.01	1.98	1.84
30	1.70	2.18	2.18	2.32	2.49	2.27	2.01	2.27	1.78	2.04	2.01	1.90
31	1.67	2.12	2.12	2.44	2.44	1.98	1.98	2.44	2.04	2.04	2.01	1.93
Sum	60.24	54.80	65.01	67.38	78.61	59.49	65.44	68.90	56.79	59.70	60.81	59.86
Current Year 2000										Period 1937-2000		
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters				
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum	
Jan.			1	3	2.12	31	1.67	1.94	5,205	4,181	6,054	711
Feb.			23		2.18	1	1.70	1.89	4,735	3,865	5,493	456
Mar.			1	6	2.18	15	1.93	2.10	5,617	4,743	6,617	1,005
April			26		2.46	1	4	2.25	5,822	4,745	6,476	940
May			21		2.69	1	4	2.54	6,792	4,951	6,895	804
June			2		2.69	14	1.56	1.98	3,140	4,745	6,883	717
July			1		2.29	31	1.98	2.11	5,654	4,998	8,079	662
Aug.			8		2.55	11	1.70	2.22	3,953	5,007	8,400	698
Sept.			1		2.44	14	1.70	1.89	4,907	4,758	7,672	721
Oct.			25		2.49	1	3	1.93	5,158	5,008	7,080	843
Nov.			4		2.10	126	1.98	2.03	5,254	4,718	7,367	806
Dec.			1	2	2.01	29	1.84	1.93	5,172	4,509	6,241	783
Yearly					2.69		1.56	2.07	65,409	56,226	78,573	10,410

φ Mean daily

1 And other days

09-5250.00 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, 501 meters upstream from the intake of the Colorado River siphon, and 5.1 kilometers downstream from the Siphon Drop Power Plant. This wasteway discharges into the Colorado River on the California side, 305 meters upstream from Colorado River below Yuma Main Canal Wasteway, and 10.5 kilometers 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. Records obtained and furnished by U. S. Geological Survey. Records available: April 1913 through 2000.

REMARKS: The wasteway discharges to the river the flow in excess of irrigation water in the Yuma Main Canal.

EXTREMES: Prior to 1935, when storage began in Lake Mead: Average annual flow, 367,333 TCM; maximum annual flow, 1,127,040 TCM, 1932; minimum annual flow, 141,728 TCM, 1917. Since 1935: Maximum mean daily discharge, 57.2 CMS, December 24-25, 1948; minimum mean daily discharge, no flow on numerous occasions.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.83	5.15	3.14	3.12	5.44	9.01	7.31	7.42	18.3	3.65	1.30	3.26
2	5.69	5.07	2.44	1.25	1.93	11.44	7.25	7.82	15.7	14.5	.28	3.68
3	6.77	5.58	2.83	.40	1.78	9.77	6.85	8.04	8.07	19.2	.28	4.08
4	3.82	5.01	4.11	3.06	3.71	10.8	6.83	8.24	4.47	17.4	.28	3.46
5	3.26	5.89	4.25	1.61	3.68	10.0	6.66	6.40	3.17	18.4	.28	8.41
6	3.51	6.83	6.74	2.24	4.30	4.53	7.22	2.07	3.43	18.4	.28	8.92
7	3.03	5.95	4.62	2.24	7.28	1.61	7.50	2.24	3.60	19.2	.28	6.43
8	3.20	4.81	3.31	3.03	5.41	1.61	7.19	4.30	3.26	19.7	1.93	4.56
9	3.79	4.56	3.85	1.90	5.07	3.51	7.36	5.35	3.34	20.2	2.41	3.82
10	3.54	3.37	3.65	.74	5.18	3.88	8.16	3.96	3.29	16.9	3.14	4.47
11	3.29	3.54	6.63	1.59	4.79	3.77	6.46	1.16	3.09	15.1	2.27	6.17
12	4.67	4.08	7.96	1.56	2.18	2.04	6.51	2.69	2.61	20.1	3.09	8.07
13	5.69	6.77	5.75	1.39	3.82	1.25	6.43	3.06	2.32	15.1	2.04	8.67
14	5.83	4.64	3.71	2.75	5.49	1.61	6.97	14.5	2.78	9.69	2.12	4.19
15	4.62	5.13	3.71	2.97	3.40	2.69	8.27	21.2	3.68	11.9	2.49	2.75
16	3.79	5.69	4.30	.14	.96	1.36	9.35	17.1	3.06	11.1	2.72	2.83
17	2.75	5.32	4.08	2.66	3.40	1.33	7.28	20.6	3.09	7.93	2.58	3.26
18	2.41	5.47	1.73	1.73	3.79	2.46	6.60	21.2	2.89	5.38	2.78	3.31
19	2.72	5.44	1.84	2.35	7.42	.62	6.80	18.6	2.55	5.10	2.38	3.77
20	3.23	4.84	1.64	1.29	8.81	.28	7.14	18.0	3.03	3.51	2.38	2.15
21	4.13	3.99	1.53	1.90	4.64	.45	7.28	18.1	3.06	2.07	2.44	2.38
22	3.46	3.31	2.46	2.92	3.60	7.59	7.65	18.2	6.66	.93	1.73	3.34
23	3.57	3.40	3.62	.57	3.48	10.4	8.92	19.2	2.78	.14	2.52	2.55
24	4.36	8.47	4.79	2.97	2.49	11.2	9.80	21.7	4.08	.14	3.40	4.11
25	4.19	4.56	3.37	2.66	3.34	10.8	7.84	18.9	1.78	.06	2.80	4.98
26	3.77	4.76	2.75	1.30	5.81	7.82	7.96	17.9	2.69	.37	2.21	2.83
27	4.11	3.20	2.75	1.81	6.85	5.78	7.65	18.4	3.00	.14	2.38	1.87
28	4.39	2.92	3.65	1.73	4.67	7.25	7.99	19.0	2.49	.08	2.83	2.58
29	4.33	3.37	4.02	1.78	2.97	7.62	8.69	17.9	3.00	.88	3.34	2.29
30	4.70		3.29	1.98	5.44	7.36	8.16	16.7	2.27	1.61	2.97	3.20
31	4.22		3.06		2.58		7.90	16.9		.96		3.79
Sum	126.67	141.12	115.58	58.84	133.71	159.80	233.98	397.05	127.54	279.84	62.61	130.18

Current Year 2000								Period 1935-2000			
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.			3	6.77	18	2.41	4.09	10,944	53,751	136,546	550
Feb.			24	8.47	28	2.92	4.87	12,193	43,861	109,952	444
Mar.			12	7.96	21	1.53	3.73	9,986	43,494	111,248	440
April			1	3.12	16	.14	1.96	5,084	43,028	106,795	402
May			20	8.81	16	.96	4.31	11,553	50,898	108,892	411
June			2	11.4	20	.28	5.33	13,807	44,619	107,263	422
July			24	9.80	13	6.43	7.55	20,216	41,703	112,518	455
Aug.			24	21.7	11	1.16	12.8	34,305	45,369	110,878	455
Sept.			1	18.3	25	1.78	4.25	11,019	50,158	103,193	440
Oct.			9	20.2	25	.06	9.03	24,178	44,875	111,075	699
Nov.			24	3.40	2	.28	2.09	5,410	45,359	125,198	882
Dec.			6	8.92	27	1.87	4.20	11,248	52,135	134,203	570
Yearly				21.7		0.06	5.37	169,943	559,250	1,286,335	8,226

φ Mean daily ! And other days

09-5211.00 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, 305 meters downstream from the mouth of the Yuma Main Canal Wasteway, 1.0 kilometers downstream from the abandoned gaging station on the Colorado River at Yuma, 8.4 kilometers downstream from the mouth of the Gila River, 31.5 kilometers downstream from Imperial Dam, and 10.3 kilometers upstream from the northerly international boundary. Zero of the gage is 31.09 meters 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 2000. 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 CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	24.8	23.3	34.0	25.9	23.2	36.2	46.4	32.6	39.1	23.3	24.8	24.9
2	30.0	23.6	35.1	24.7	23.5	38.2	32.6	36.8	36.2	33.4	23.9	25.2
3	37.7	21.6	34.6	30.3	27.8	32.6	31.2	42.8	27.9	39.1	23.2	26.2
4	24.8	19.6	36.2	22.4	30.9	33.1	30.6	39.4	24.2	39.1	24.6	27.6
5	23.1	20.3	36.8	21.7	23.8	37.1	30.6	39.4	32.9	43.9	24.6	31.4
6	22.7	21.7	41.3	21.8	23.8	39.6	31.2	25.5	36.8	49.0	24.1	31.2
7	22.8	23.1	46.4	22.1	25.7	30.3	31.2	30.9	25.1	41.9	24.0	28.0
8	22.2	24.0	51.5	23.3	31.7	23.6	35.7	45.9	23.7	49.8	23.6	27.0
9	22.3	24.5	62.0	24.9	38.5	25.3	31.7	32.3	23.3	58.9	23.1	26.9
10	21.2	23.0	40.5	22.5	36.2	25.9	32.9	27.2	23.5	67.1	24.2	27.5
11	20.6	23.1	34.6	22.9	28.3	25.6	30.9	23.0	23.1	69.1	23.0	28.6
12	21.5	24.8	27.7	23.4	27.6	23.5	30.9	24.1	22.1	63.4	21.5	30.3
13	22.6	27.5	22.7	23.0	25.5	22.4	30.9	24.4	20.8	78.4	21.0	30.0
14	24.3	25.7	18.6	22.5	27.1	22.6	31.2	34.0	20.5	56.6	24.0	26.1
15	24.0	21.2	18.9	23.1	42.2	23.3	37.4	45.3	22.6	48.1	24.4	24.4
16	23.0	22.5	20.1	44.2	39.4	22.4	36.8	38.8	21.7	53.5	24.1	24.6
17	22.2	21.1	20.9	43.9	36.2	22.1	33.1	41.1	30.3	43.6	24.4	25.4
18	21.2	19.9	18.9	27.5	27.2	23.8	34.8	41.6	29.2	37.9	25.3	25.0
19	21.0	19.8	19.7	29.5	34.0	22.5	35.1	49.6	29.2	32.0	25.2	25.3
20	21.0	20.2	20.0	25.6	46.7	24.9	32.9	45.3	23.7	28.1	24.6	23.3
21	21.4	22.0	21.2	25.9	30.3	33.4	35.1	51.0	23.3	28.6	23.7	23.8
22	20.8	34.0	21.4	48.1	38.5	36.8	42.2	40.2	27.3	33.4	23.9	25.2
23	21.3	45.3	23.1	50.7	27.2	34.6	33.7	40.2	23.1	65.7	24.5	24.4
24	21.7	40.8	24.7	36.5	25.0	34.8	39.6	42.2	23.9	81.8	24.7	25.9
25	22.1	25.6	23.1	25.4	25.2	34.8	33.4	40.2	22.5	87.5	24.0	26.5
26	22.1	25.0	26.3	24.9	27.6	31.4	34.8	43.9	21.4	43.0	24.6	24.2
27	23.5	23.0	41.6	23.7	28.3	27.5	34.3	41.9	24.5	26.8	23.8	23.1
28	23.9	31.2	34.0	23.0	26.3	28.6	32.0	54.7	24.0	25.5	24.4	23.7
29	24.0	32.9	41.3	22.9	27.2	29.2	31.4	60.0	23.4	25.5	24.8	23.3
30	24.6	44.5	22.5	34.8	43.6	29.7	29.7	54.9	22.5	25.9	24.0	24.5
31	23.4	30.3		34.0		29.5	39.6			24.3		25.1
Sum	721.8	730.3	972.0	828.8	943.7	889.7	1,043.8	1,228.8	771.8	1,424.2	721.0	808.6

Current Year 2000

Period 1951-2000

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.			3	37.7	11	20.6	23.3	62,364	266,269	1,317,479	36,828
Feb.			23	45.3	4	19.6	25.2	63,098	217,463	1,228,424	41,083
Mar.			9	62.0	14	18.6	31.4	83,981	239,390	1,610,496	42,683
April			23	50.7	5	21.7	27.6	71,608	214,097	1,119,312	41,552
May			20	46.7	1	23.2	30.4	81,536	212,357	1,065,554	43,373
June			30	43.6	17	22.1	29.7	76,870	207,972	1,113,679	36,996
July			1	46.4	31	29.5	33.7	90,184	234,248	2,013,773	37,956
Aug.			29	60.0	11	23.0	39.6	106,168	239,796	2,073,958	41,457
Sept.			1	39.1	14	20.5	25.7	66,684	215,854	1,669,785	53,264
Oct.			25	87.5	1	23.3	45.9	123,051	186,562	1,789,911	43,129
Nov.			18	25.3	13	21.0	24.0	62,294	188,662	1,292,035	42,965
Dec.			5	31.4	27	23.1	26.1	69,863	220,158	1,374,775	40,733
Yearly				87.5		18.6	30.3	957,701	2,642,828	13,065,596	633,707

φ Mean daily

! And other days

09-5211.01 COLORADO RIVER BELOW YUMA MAIN CANAL WASTEWAY
AT YUMA, ARIZONA - STAGES

(See Preceding Page for Description)

MEAN DAILY GAGE HEIGHT IN METERS 2000

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.455	3.415	3.660	3.485	3.430	3.660	3.845	3.555	3.695	3.415	3.430	3.390
2	3.560	3.425	3.680	3.460	3.440	3.685	3.560	3.645	3.650	3.595	3.410	3.400
3	3.725	3.380	3.675	3.580	3.525	3.585	3.525	3.775	3.510	3.690	3.395	3.415
4	3.450	3.340	3.705	3.405	3.580	3.595	3.515	3.705	3.440	3.690	3.420	3.440
5	3.410	3.355	3.715	3.385	3.450	3.665	3.510	3.705	3.585	3.795	3.420	3.510
6	3.405	3.385	3.805	3.390	3.445	3.720	3.525	3.420	3.665	3.890	3.410	3.510
7	3.405	3.410	3.890	3.395	3.485	3.545	3.525	3.525	3.455	3.750	3.410	3.455
8	3.390	3.430	3.985	3.425	3.595	3.420	3.620	3.835	3.430	3.905	3.395	3.435
9	3.390	3.445	4.150	3.460	3.715	3.450	3.535	3.560	3.420	4.065	3.385	3.430
10	3.365	3.410	3.785	3.405	3.680	3.465	3.565	3.460	3.425	4.205	3.405	3.445
11	3.355	3.410	3.670	3.410	3.535	3.455	3.515	3.375	3.415	4.235	3.380	3.465
12	3.375	3.455	3.530	3.420	3.520	3.410	3.520	3.400	3.395	4.145	3.350	3.505
13	3.400	3.515	3.415	3.415	3.480	3.390	3.520	3.410	3.370	4.385	3.340	3.500
14	3.440	3.475	3.335	3.410	3.510	3.390	3.525	3.595	3.365	4.020	3.400	3.425
15	3.430	3.375	3.340	3.420	3.785	3.405	3.660	3.825	3.405	3.865	3.405	3.390
16	3.410	3.400	3.360	3.840	3.730	3.385	3.650	3.690	3.390	3.960	3.395	3.400
17	3.385	3.375	3.375	3.825	3.670	3.375	3.570	3.740	3.550	3.780	3.400	3.415
18	3.370	3.350	3.340	3.510	3.510	3.410	3.610	3.750	3.530	3.670	3.415	3.405
19	3.365	3.345	3.355	3.555	3.620	3.380	3.610	3.905	3.530	3.570	3.415	3.410
20	3.365	3.360	3.360	3.470	3.865	3.430	3.565	3.825	3.425	3.500	3.400	3.375
21	3.370	3.395	3.380	3.480	3.565	3.580	3.610	3.930	3.420	3.510	3.385	3.385
22	3.360	3.655	3.385	3.915	3.710	3.655	3.765	3.720	3.490	3.590	3.385	3.410
23	3.370	3.875	3.425	3.960	3.505	3.605	3.585	3.720	3.415	4.165	3.395	3.400
24	3.380	3.785	3.460	3.690	3.465	3.610	3.705	3.760	3.430	4.410	3.400	3.430
25	3.390	3.480	3.420	3.470	3.465	3.610	3.575	3.720	3.400	4.505	3.385	3.445
26	3.385	3.465	3.490	3.465	3.510	3.540	3.605	3.795	3.375	3.760	3.395	3.400
27	3.420	3.415	3.800	3.440	3.525	3.470	3.595	3.755	3.440	3.470	3.375	3.375
28	3.430	3.595	3.655	3.425	3.485	3.485	3.545	4.000	3.430	3.445	3.385	3.390
29	3.430	3.635	3.805	3.425	3.500	3.500	3.535	4.095	3.415	3.445	3.390	3.380
30	3.445		3.855	3.420	3.630	3.790	3.500	4.000	3.400	3.450	3.400	3.410
31	3.415		3.585		3.615		3.495	3.710		3.420		3.420
Avg.	3.415	3.460	3.595	3.510	3.565	3.520	3.580	3.705	3.460	3.815	3.395	3.425

09-5302.00 YUMA MESA OUTLET DRAIN
TO COLORADO RIVER NEAR YUMA, ARIZONA

DESCRIPTION: Venturi meter with recorder 0.5 kilometer from outlet to Colorado River, 0.8 kilometer west of Joe Henry Memorial Park in Yuma, Arizona. Outlet is 2.7 kilometers downstream from the mouth of Yuma Main Canal Wasteway.
RECORDS: Records are furnished by U. S. Geological Survey. Records available: July 1970 through 2000. 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 CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.10	1.42	1.67	1.76	1.67	1.76	1.70	1.53	1.30	1.39	1.08	1.22
2	1.10	1.42	1.59	1.76	1.61	1.76	1.70	1.53	1.27	1.39	1.08	1.27
3	1.10	1.42	1.64	1.76	1.70	1.76	1.70	1.53	1.30	1.39	1.08	1.27
4	1.10	1.42	1.76	1.76	1.76	1.76	1.70	1.53	1.27	1.39	1.08	1.27
5	1.10	1.42	1.76	1.76	1.76	1.76	1.70	1.53	1.30	1.39	1.08	1.27
6	1.10	1.42	1.76	1.76	1.76	1.76	1.70	1.53	1.30	1.27	1.08	1.27
7	1.10	1.42	1.76	1.76	1.76	1.76	1.70	1.53	1.30	1.27	1.08	1.27
8	1.10	1.42	1.76	1.76	1.76	1.76	1.70	1.53	1.30	1.27	1.08	1.27
9	1.10	1.42	1.76	1.76	1.76	1.76	1.70	1.53	1.30	1.27	1.08	1.27
10	1.10	1.42	1.76	1.76	1.76	1.76	1.70	1.53	1.30	1.27	1.08	1.27
11	1.10	1.42	1.76	1.76	1.76	1.76	1.70	1.53	1.30	1.27	1.08	1.22
12	1.10	1.42	1.76	1.76	1.76	1.76	1.70	1.53	1.30	1.27	1.08	1.19
13	1.10	1.42	1.76	1.76	1.76	1.76	1.70	1.53	1.30	1.27	1.08	1.19
14	1.19	1.42	1.76	1.76	1.76	1.76	1.70	1.53	1.30	1.27	1.08	1.22
15	1.27	1.42	1.76	1.76	1.76	1.76	1.70	1.53	1.30	1.27	1.08	1.27
16	1.27	1.42	1.61	1.76	1.76	1.76	1.70	1.53	1.30	1.36	1.08	1.27
17	1.27	1.42	1.53	1.76	1.76	1.76	1.70	1.53	1.30	1.36	1.08	1.27
18	1.27	1.42	1.53	1.50	1.76	1.76	1.70	1.53	1.30	1.39	1.08	1.27
19	1.27	1.42	1.53	1.50	1.76	1.76	1.70	1.53	1.42	1.39	1.08	1.22
20	1.27	1.42	1.53	1.50	1.76	1.76	1.70	1.53	1.44	1.39	1.08	1.16
21	1.27	1.42	1.53	1.59	1.76	1.76	1.70	1.53	1.44	1.39	1.08	1.16
22	1.27	1.42	1.53	1.59	1.76	1.76	1.70	1.53	1.44	1.39	1.08	1.16
23	1.27	1.42	1.53	1.59	1.76	1.76	1.70	1.53	1.44	1.39	1.08	1.16
24	1.36	1.42	1.53	1.64	1.76	1.76	1.70	1.50	1.44	1.39	1.08	1.16
25	1.42	1.42	1.53	1.64	1.76	1.76	1.70	1.44	1.44	1.39	1.08	1.16
26	1.42	1.42	1.42	1.64	1.76	1.76	1.70	1.44	1.44	1.39	1.08	1.16
27	1.42	1.42	1.39	1.64	1.76	1.76	1.70	1.44	1.44	1.39	1.08	1.16
28	1.42	1.42	1.39	1.64	1.76	1.76	1.70	1.44	1.44	1.39	1.08	1.16
29	1.42	1.27	1.39	1.64	1.76	1.76	1.70	1.39	1.39	1.39	1.08	1.16
30	1.42	1.39	1.39	1.64	1.76	1.76	1.70	1.30	1.30	1.39	1.08	1.16
31	1.42	1.39	1.39	1.64	1.76	1.76	1.44	1.30	1.39	1.39	1.08	1.16
Sum	38.22	41.03	49.77	50.67	54.26	52.80	52.44	46.44	40.41	41.83	32.40	37.69
Current Year 2000										Period 1971-2000		
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters				
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum	
Jan.			125	1.42	1	1.10	1.23	3,302	2,881	7,204	0	
Feb.			1	1.42	29	1.27	1.41	3,545	2,727	5,958	0	
Mar.			14	1.76	127	1.39	1.61	4,300	3,103	6,698	4.9	
April			1	1.76	118	1.50	1.69	4,378	3,025	6,315	299	
May			14	1.76	2	1.61	1.75	4,688	2,996	6,085	0	
June			1	1.76	1	1.76	1.76	4,562	2,772	5,955	0	
July			1	1.70	31	1.44	1.69	4,531	2,982	6,796	613	
Aug.			1	1.53	130	1.30	1.50	4,012	3,083	7,401	222	
Sept.			120	1.44	1	1.27	1.35	3,491	2,960	7,253	0	
Oct.			1	1.39	1	1.27	1.35	3,614	3,046	6,611	194	
Nov.			1	1.08	1	1.08	1.08	2,799	3,087	6,525	386	
Dec.			1	1.27	120	1.16	1.22	3,256	3,305	7,364	0	
Yearly				1.76		1.08	1.47	46,478	35,967	72,381	2,162	

φ Mean daily ! And other days

09-5270.00 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, 33.5 kilometers downstream from the intake at Imperial Dam, 9.7 kilometers west of Yuma, about 1.6 kilometers 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 1.6 kilometers upstream from the northerly international boundary. Water-stage recorder is located in forebay on right bank of the All-American Canal, 168 meters upstream from wasteway gates and 549 meters from the entrance to power plant. Datum of gage is 45.72 meters above mean sea level. Tailrace gage is on left bank, 207 meters downstream from power plant with automatic recording equipment in control house. All bypass gates are equipped with calibrated openings which are read on all gate charges. Datum of tailrace gage is at mean sea level; elevation of sill of wasteway gates is 45.07 meters, 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 2000. 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, 281 CMS on October 6, 1985; minimum daily discharge, no flow during long periods.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	45.3	59.2	51.5	64.0	48.7	32.0	41.1	31.2	61.7	34.3	29.5	58.9
2	49.8	60.3	49.8	63.7	48.4	28.6	41.1	31.2	41.3	15.5	35.7	58.6
3	36.5	60.6	49.8	67.1	50.7	26.0	37.7	31.2	36.5	0	54.7	48.4
4	51.5	60.6	51.5	65.1	52.7	26.0	35.4	31.2	30.9	0	56.4	58.1
5	51.5	60.6	53.8	64.3	48.4	28.1	35.4	31.2	31.4	0	48.7	54.4
6	52.7	60.3	57.8	64.6	47.6	31.4	35.4	32.0	39.1	0	32.9	59.2
7	46.7	60.3	45.9	66.6	47.6	37.9	35.4	38.8	49.3	0	33.1	54.4
8	45.9	60.3	34.6	66.6	42.8	41.1	35.4	39.9	39.9	0	39.6	57.2
9	45.9	60.3	29.5	66.6	42.5	44.2	35.4	39.9	31.7	0	46.4	56.9
10	47.0	60.6	60.0	63.2	42.5	41.1	36.5	40.2	28.2	0	44.2	65.7
11	47.6	62.3	66.8	63.2	41.6	41.3	36.5	33.7	28.2	0	38.5	63.7
12	49.6	64.0	87.2	63.2	39.6	42.5	36.5	28.3	28.3	0	56.4	48.7
13	54.7	63.7	64.6	63.2	39.6	42.5	36.5	28.3	25.6	8.38	50.7	62.0
14	53.8	63.4	64.9	63.2	39.6	42.5	36.5	13.7	28.3	28.3	52.7	66.6
15	49.8	62.3	66.6	63.2	39.6	42.8	36.2	0	28.9	32.3	60.0	66.8
16	47.6	62.0	66.0	62.9	39.6	43.6	36.2	0	28.3	36.8	49.0	53.0
17	47.6	62.3	65.7	62.6	35.7	43.0	36.5	0	28.3	51.0	30.6	45.0
18	47.9	62.3	64.0	63.2	28.9	43.0	36.5	0	28.3	44.7	30.0	45.3
19	47.6	62.3	64.0	63.2	34.3	46.2	36.5	0	28.3	28.3	39.6	53.2
20	49.3	62.3	64.0	61.2	47.0	46.2	36.5	0	28.3	28.3	40.8	48.4
21	51.5	62.3	64.0	53.2	34.3	46.2	36.5	0	30.0	28.3	41.6	46.2
22	51.5	62.0	64.0	60.9	29.2	42.5	36.2	0	31.7	28.3	42.8	46.2
23	51.5	61.7	64.0	83.8	33.4	37.4	40.2	0	23.6	32.0	58.9	52.7
24	51.5	83.5	63.7	53.5	35.4	41.1	39.9	0	42.5	45.3	52.4	81.6
25	51.5	73.6	63.7	53.5	35.4	41.1	40.2	0	25.5	66.3	45.3	62.9
26	51.5	67.7	63.7	53.5	35.4	41.1	40.2	0	22.7	94.0	38.5	68.5
27	51.5	67.7	63.7	53.2	35.4	41.3	40.2	0	28.2	62.3	54.1	47.6
28	51.5	57.8	63.7	51.8	35.4	41.1	40.2	0	28.1	47.9	56.4	46.7
29	51.5	57.2	63.7	51.0	35.4	41.1	40.2	6.51	25.8	59.5	48.1	47.6
30	51.5		63.7	51.0	35.4	41.1	40.2	36.2	25.5	36.8	51.5	44.7
31	51.5		63.7		35.4		40.2	43.9	31.2			55.8
Sum		1,823.5		1,846.3		1,184.0		537.41		839.78		1,725.0
	1,534.8		1,859.6		1,237.5		1,167.4		954.4		1,359.1	

Current Year 2000

Period 1944-2000

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.			13	54.7	3	36.5	49.5	132,607	115,206	643,620	0
Feb.			24	83.5	29	57.2	62.9	157,550	93,542	579,127	0
Mar.			12	87.2	9	29.5	60.0	160,669	146,409	501,939	0
April			23	83.8	129	51.0	61.5	159,520	152,866	447,013	0
May			4	52.7	18	28.9	39.9	106,920	77,051	454,461	0
June			119	46.2	13	26.0	39.5	102,298	115,633	501,523	0
July			1	41.1	14	35.4	37.7	100,863	164,349	512,385	0
Aug.			1	43.9	18	0	17.3	46,432	160,429	498,782	0
Sept.			1	61.7	26	22.7	31.8	82,460	101,981	591,679	0
Oct.			26	94.0	13	0	27.1	72,557	72,989	617,269	0
Nov.			15	60.0	1	29.5	45.3	117,426	72,027	609,196	0
Dec.			24	81.6	30	44.7	55.6	149,040	110,353	700,894	0
Yearly				94.0		0	43.9	1,388,342	1,382,835	6,000,505	0

φ Mean daily

! And other days

09-5220.00 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 10.3 kilometers downstream from Colorado River below Yuma Main Canal wasteway, 8.0 kilometers west of Yuma, Arizona, 1.8 kilometers upstream from Morelos Diversion Structure, and about 1.6 kilometers downstream from Rockwood Gate. Zero of the gage is at mean sea level, U. S. C. & G. S. datum. On May 1, 1988, the gage was relocated 52 meters upstream of the old gage on the left bank. Zero of the new gage is at mean sea level, U. S. C. & G. S. datum. Elevation of the new gage is equal to that of the old gage. Station is operated by the United States Section of the Commission.

RECORDS: Based on 211 current meter measurements during the year, 118 by the United States Section, 92 by the Mexican Section of the Commission, 1 by the U. S. Geological Survey, and a continuous record of gage heights. Discharges are computed on the basis of a water-stage recorder 512 meters 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 2000; daily discharge records available January 1, 1950 through 2000.

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 2000 the flow at this point 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 7,080 CMS, January 22, 1916; minimum discharge, no flow several days during August and September 1934; average annual flow 16,581,806 TCM; maximum annual flow 31,429,325 TCM, 1907; minimum annual flow 1,448,117 TCM, 1934. Since January 1935: Maximum instantaneous discharge 1,150 CMS on August 20, 1983, minimum discharge, no flow during April 1935.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	78.9	77.2	91.3	91.5	75.7	70.5	94.0	61.2	83.5	53.0	58.3	84.2
2	82.2	75.9	88.7	93.2	75.7	69.6	76.1	67.5	73.7	47.7	55.2	84.4
3	87.1	72.7	87.8	103	82.8	57.5	65.8	74.3	64.6	36.4	72.9	73.7
4	76.0	83.7	92.5	89.4	83.1	53.8	63.7	69.9	56.3	37.1	61.3	86.9
5	73.9	84.0	96.2	87.7	68.5	65.8	66.1	72.3	59.7	43.4	53.1	86.9
6	75.4	85.9	101	87.6	67.7	67.1	68.1	55.5	71.0	52.9	62.4	88.8
7	70.2	87.4	93.6	87.6	72.0	59.1	69.2	62.7	69.3	45.5	69.3	81.5
8	67.9	87.5	95.4	87.6	76.5	65.2	73.0	82.3	62.6	51.0	57.7	78.6
9	68.3	85.2	98.4	87.7	80.7	69.5	67.6	71.8	56.3	63.3	70.5	77.9
10	66.7	80.2	111	87.0	82.0	68.5	69.0	65.2	52.3	64.4	70.4	81.4
11	70.2	81.1	109	86.9	73.5	66.0	66.6	53.3	53.5	71.9	72.1	85.1
12	73.1	84.4	117	88.0	71.2	64.4	65.3	52.7	53.0	71.4	74.0	72.0
13	80.3	89.2	94.6	87.7	66.4	62.2	64.1	57.8	47.6	69.6	67.8	84.8
14	82.7	86.5	87.5	86.1	70.4	65.8	63.3	52.4	45.6	64.5	70.0	86.2
15	78.8	84.5	87.5	87.5	82.6	65.4	71.6	48.0	54.2	74.4	74.2	84.6
16	73.1	87.5	87.5	102	83.0	69.8	74.1	40.2	53.2	91.0	64.5	71.7
17	71.3	84.7	87.5	107	76.6	68.6	66.8	37.3	58.9	93.9	46.0	66.8
18	69.2	83.4	87.5	93.0	60.4	70.7	70.2	44.9	59.1	79.8	43.1	66.6
19	68.5	83.4	87.5	95.4	73.1	72.7	69.2	47.3	59.0	59.9	53.6	73.1
20	70.4	83.3	87.5	88.1	90.6	74.0	67.4	50.0	55.7	53.7	71.1	68.9
21	73.6	83.1	87.5	79.6	71.5	82.6	69.4	53.7	52.8	53.7	70.0	61.8
22	73.2	99.5	85.3	99.0	70.0	83.0	79.5	42.2	57.9	53.7	70.9	62.4
23	73.0	112	90.6	115	62.9	74.2	74.4	37.5	47.1	69.9	81.2	64.3
24	72.9	117	94.6	96.1	66.4	76.6	80.0	44.4	62.0	117	76.9	88.4
25	73.6	91.3	92.1	79.3	65.5	78.1	72.9	43.4	50.1	141	68.2	73.0
26	72.3	90.6	92.8	78.5	67.9	74.3	74.7	45.2	49.3	130	75.5	76.1
27	73.8	86.6	115	77.3	69.6	68.0	73.8	47.5	52.9	101	76.0	63.3
28	73.7	89.9	107	76.1	67.8	69.8	69.4	57.6	56.0	96.0	79.2	62.4
29	74.1	94.3	109	75.7	67.1	70.5	66.9	65.6	52.9	103	71.4	62.7
30	75.1		114	75.5	73.4	84.3	65.0	86.1	51.8	81.4	75.2	62.6
31	72.9		96.4		73.5		63.7	78.6		95.5		64.9
Sum	2,292.4	2,532.0	2,976.3	2,676.1	2,268.1	2,087.6	2,180.9	1,768.4	1,721.9	2,267.1	2,012.0	2,326.0

Current Year 2000									Period 1935-2000			
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Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume--Thousand Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	33.235	32.920	3	111	10	61.5	73.9	198,063	492,686	2,027,841	39,348
Feb.	33.285	32.840	24	137	1	64.7	87.3	218,765	422,396	1,705,506	74,502
Mar.	33.325	32.115	12	145	1	87.5	96.0	257,152	452,194	1,642,378	23,930
April	33.140	31.910	23	118	28	74.7	89.2	231,215	372,332	1,322,616	0
May	33.185	31.890	4	123	23	53.2	73.2	195,964	354,189	1,419,735	88,077
June	33.180	32.825	9	103	7	48.4	69.6	180,369	353,042	1,629,906	10,485
July	33.175	32.865	1	98.9	3	55.8	70.4	188,430	375,090	2,303,937	30,097
Aug.	33.290	32.710	30	93.8	17	30.4	57.0	152,790	383,655	2,485,718	54,026
Sept.	33.300	32.675	1	92.3	21	33.5	57.4	148,772	341,654	2,286,076	66,424
Oct.	33.195	31.615	25	161	12	31.7	73.1	195,877	330,823	2,417,702	52,985
Nov.	33.195	31.930	24	99.6	117	41.3	67.1	173,837	365,625	1,889,976	51,070
Dec.	33.220	32.890	11	108	21	61.6	75.0	200,966	459,953	2,259,735	51,806
Yearly	33.325	31.615		161		30.4	74.1	2,342,200	4,703,639	19,033,104	890,696

! And other days

09-5220.01 COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY - STAGES

(See Preceding Page for Description)

MEAN DAILY GAGE HEIGHT IN METERS 2000

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	32.985	33.010	32.990	32.965	31.935	32.995	33.120	32.950	33.215	33.015	32.360	33.080
2	33.045	33.000	32.950	32.990	31.930	32.995	33.015	33.010	33.145	32.975	32.290	33.085
3	33.110	32.975	32.925	33.060	32.030	32.915	32.945	33.070	33.065	32.860	32.810	33.010
4	33.045	32.975	32.995	32.870	32.970	32.885	32.935	33.050	32.985	32.895	32.355	33.100
5	33.035	32.980	33.015	32.230	32.970	32.975	32.955	33.060	33.025	32.965	32.190	33.100
6	33.045	32.990	33.105	32.120	32.945	32.985	32.965	32.950	33.120	33.010	32.435	33.110
7	33.015	33.000	32.985	32.130	32.975	32.920	32.975	32.985	33.105	32.940	32.600	33.070
8	33.000	33.000	32.995	32.125	33.000	32.980	33.015	33.110	33.055	32.985	32.435	33.050
9	33.000	32.980	33.005	32.145	33.035	33.000	32.990	33.045	33.000	33.080	32.635	33.040
10	32.985	32.915	33.095	32.080	33.035	33.000	32.995	32.995	32.950	33.080	32.640	33.060
11	32.980	32.930	33.085	32.070	32.965	32.980	32.985	32.905	32.965	33.135	32.750	33.090
12	32.990	32.980	33.150	32.080	32.950	32.960	32.975	32.905	32.965	32.485	32.850	33.010
13	33.030	33.010	32.900	32.075	32.905	32.945	32.965	32.950	32.895	32.230	32.635	33.080
14	33.045	32.995	32.505	32.055	32.945	32.950	32.955	32.920	32.885	32.160	32.895	33.090
15	33.020	32.985	32.325	32.070	33.050	32.955	33.015	32.920	32.975	32.145	32.790	33.080
16	32.990	33.005	32.685	32.285	33.050	32.975	33.035	32.765	32.960	32.195	32.455	33.005
17	32.975	32.985	32.845	32.430	33.000	32.955	32.985	32.790	33.005	32.570	32.070	32.950
18	32.960	32.980	32.860	32.135	32.750	32.960	33.005	32.940	33.005	32.275	31.975	32.940
19	32.960	32.985	32.925	32.165	32.990	32.970	32.995	32.955	33.010	32.325	32.255	33.000
20	32.970	32.980	32.915	32.075	33.150	32.995	32.990	32.980	32.990	31.860	32.955	32.950
21	32.990	32.980	32.950	31.975	33.010	33.045	33.000	33.005	32.955	31.815	32.970	32.900
22	32.990	33.075	32.965	32.250	33.005	33.030	33.065	32.920	33.020	31.825	32.980	32.935
23	32.990	33.145	32.980	32.665	32.930	32.980	33.035	32.875	32.910	32.420	33.090	32.965
24	32.985	33.165	33.010	32.200	32.960	33.000	33.065	32.940	33.045	32.195	33.055	33.150
25	32.985	33.010	32.995	31.970	32.945	33.010	33.015	32.935	32.935	32.625	33.000	33.055
26	32.980	33.015	33.000	31.955	32.970	32.975	33.020	32.945	32.940	32.485	32.810	33.085
27	32.990	32.995	33.150	31.940	32.985	32.935	33.015	32.965	32.960	32.015	33.030	32.945
28	32.990	33.010	33.090	31.930	32.970	32.960	32.990	33.050	32.995	32.125	33.050	32.930
29	32.995	33.040	33.100	31.925	32.965	32.980	32.975	33.100	32.970	32.265	33.020	32.950
30	33.000		33.130	31.920	33.015	33.055	32.965	33.235	32.965	32.020	33.045	32.945
31	32.985		33.020		33.015		32.960	33.190		32.290		33.000
Avg.	33.000	33.005	32.955	32.230	32.880	32.975	32.995	32.980	33.000	32.490	32.680	33.025

09-5318.50 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 0.8 kilometer downstream from the northerly international boundary and 1.0 kilometer upstream from Morelos Diversion Dam. Prior to July 14, 1971, the wasteway was located 0.6 kilometer 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 35.86 meters 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 2000 obtained by the United States Section; monthly discharge, January 1934 through 1950 by the Bureau of Reclamation.

EXTREMES: Prior to March 1950, maximum monthly discharge 1,127 TCM in January 1940; minimum monthly discharge, zero for various months. Since March 1950, maximum instantaneous discharge, 2.25 CMS on June 19, 1965, at a maximum gage height of 34.785 meters (old datum); minimum instantaneous discharge, zero during parts of most months.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.01	0	0.04	0.04	0	0	0	0	0	0.05	0.01	0.06
2	0	0	.01	.04	0	.02	0	0	0	0	0	.01
3	0	0	0	0	.03	.02	0	.09	0	.09	0	.09
4	0	0	0	0	.05	.01	0	.08	0	.05	.01	.03
5	.10	0	.04	0	.08	.09	0	.08	0	.02	.01	0
6	.06	0	.06	0	.14	.07	0	.03	.10	.08	.01	0
7	.20	0	0	0	.03	0	0	0	.01	.15	.05	0
8	.04	.10	0	0	0	0	0	0	.02	.45	.09	.05
9	.01	.01	0	.08	0	0	0	0	.05	.24	.10	.03
10	0	.04	0	0	0	0	0	.02	0	.05	.09	0
11	0	.04	0	.02	0	0	0	.09	.03	.09	.41	.02
12	.01	.01	.04	0	0	0	0	0	.01	.05	.08	.30
13	.02	0	.01	0	.01	0	0	0	0	.04	.30	.09
14	0	.04	0	.11	0	0	0	0	.07	.05	.23	.06
15	0	.05	.01	.25	0	0	0	.02	.06	0	.24	.01
16	.01	.05	.02	.09	0	0	.06	.01	.05	.02	.05	.01
17	.06	.01	0	.06	0	0	0	0	.03	.02	.23	.01
18	0	.01	0	0	.12	0	.03	0	0	.01	.10	.01
19	.05	0	.03	0	.03	.01	.06	0	.08	.01	.04	.01
20	.40	0	0	0	.01	0	.41	0	.41	.04	.01	.01
21	.05	0	0	.01	0	0	0	0	.04	.15	.08	.01
22	.06	0	0	.15	0	0	0	0	.04	.08	.19	.14
23	.05	.01	0	.01	0	0	.04	0	.06	.02	.21	.07
24	0	.09	0	0	0	0	0	0	.09	.01	.01	0
25	0	.04	0	0	.01	0	0	0	0	.01	.01	0
26	0	.02	.04	.01	.01	0	.01	0	0	.02	.01	.06
27	0	.02	0	.05	.01	0	0	0	0	.05	.01	.03
28	0	.08	.01	0	.01	0	0	.07	0	.01	.01	.02
29	0	.04	0	0	.02	0	.01	.16	.01	.02	.03	.01
30	0	0	.01	0	.06	0	.04	.03	.01	.01	.05	.01
31	0	0	.01	0	0	0	0	.01	0	.01	.01	.01
Sum	1.13	0.66	0.33	0.92	0.62	0.22	0.25	0.69	1.21	1.86	2.67	1.16

Current Year 2000

Period 1935-2000

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	0.455	0	119	0.74	1	0	0.04	97.6	184	1,127	0
Feb.	.420	0	24	.65	1	0	.02	57.0	164	493	7.4
Mar.	.460	0	5	.74	1	0	.01	28.5	171	638	0
April	.455	0	15	.74	1	0	.03	79.5	166	524	20.6
May	.490	0	18	.83	1	0	.02	53.6	167	543	39.1
June	.305	0	5	.40	1	0	.01	19.0	149	734	19.0
July	.410	0	23	.63	1	0	.01	21.6	141	636	0
Aug.	.470	0	29	.77	1	0	.02	59.6	117	761	0
Sept.	.545	0	20	.97	1	0	.04	105	128	570	0
Oct.	.645	0	21	1.25	2	0	.06	161	174	604	0
Nov.	.740	.010	17	1.53	1	0	.09	231	184	570	11.1
Dec.	.500	0	12	.85	1	0	.04	100	202	730	16.9
Yearly	0.740	0		1.53		0	0.03	1,013	1,947	5,551	787

1 And other days

09-5220.21 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, 1.8 kilometers downstream from the northerly international boundary, and about 12.1 kilometers 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 0.05 meter 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 2000.

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, 35.91 meters on February 18, 1998; minimum mean daily elevation above mean sea level, 30.94 meters on February 17, 1957.

MEAN DAILY GAGE HEIGHT IN METERS 2000

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	32.990	32.920	32.880	30.820	32.060	32.910	33.010	32.870	33.100	32.900	32.250	32.960
2	33.000	32.900	32.830	32.860	32.060	32.920	32.920	32.920	33.050	32.870	32.210	32.970
3	31.390	32.880	32.820	32.920	32.160	32.840	32.860	32.960	32.980	32.760	32.700	32.890
4	31.410	32.870	32.880	32.730	32.930	32.810	32.840	32.940	32.910	32.770	32.310	32.980
5	31.420	32.870	32.910	31.950	32.880	32.890	32.870	32.950	32.920	32.830	32.160	32.980
6	31.440	32.880	32.990	31.800	32.860	32.900	32.880	32.850	33.010	32.910	32.330	32.990
7	31.450	32.890	32.870	31.820	32.870	32.840	32.890	32.890	33.000	32.860	32.460	32.940
8	31.450	32.900	32.880	31.820	32.910	32.890	32.920	33.000	32.960	32.900	32.250	32.920
9	31.450	32.880	32.890	31.840	32.940	32.910	32.890	32.950	32.900	32.990	32.520	32.920
10	31.470	32.810	33.000	31.810	32.950	32.920	32.900	32.900	32.850	32.990	32.550	32.960
11	31.500	32.820	32.990	31.800	32.890	32.890	32.900	32.820	32.870	33.040	32.620	33.010
12	31.490	32.870	33.030	31.820	32.870	32.880	32.880	32.830	32.860	32.410	32.740	32.880
13	31.490	32.900	32.810	31.810	32.830	32.860	32.880	32.870	32.830	32.150	32.530	32.960
14	31.490	32.890	32.330	31.800	32.850	32.860	32.870	32.840	32.820	32.140	32.780	32.970
15	31.490	32.880	32.150	31.820	32.960	32.870	32.920	32.840	32.870	32.090	32.690	32.960
16	31.470	32.890	32.660	32.020	32.960	32.890	32.940	32.710	32.860	32.150	32.370	32.870
17	31.460	32.880	32.790	32.190	32.910	32.880	32.900	32.920	32.910	32.500	32.010	32.820
18	31.460	32.870	32.770	31.960	32.680	32.890	32.910	32.860	32.910	32.210	32.950	32.810
19	31.460	32.870	32.810	32.000	32.900	32.900	32.910	32.680	32.910	32.360	32.210	32.870
20	31.460	32.870	32.780	31.960	33.050	32.910	32.900	32.910	31.340	31.910	32.840	32.830
21	31.460	32.870	32.820	31.860	32.930	32.950	32.910	32.920	32.870	31.920	32.850	32.790
22	31.460	32.960	32.840	32.070	32.910	32.950	32.960	32.840	32.900	31.940	32.850	32.820
23	31.460	33.010	32.850	32.410	32.840	32.900	32.940	32.790	32.800	32.460	32.960	32.860
24	31.460	33.010	32.880	32.230	32.880	32.930	32.960	32.850	32.930	32.350	32.940	33.050
25	31.460	32.880	32.870	32.070	32.870	32.930	32.950	32.840	32.840	32.660	32.870	32.960
26	31.460	32.910	32.870	32.050	32.900	32.910	32.940	32.850	32.810	32.560	32.680	32.980
27	31.450	32.880	33.000	32.040	32.910	32.880	32.930	32.880	32.860	32.140	32.900	32.840
28	31.450	32.900	32.950	32.040	32.900	32.880	32.900	32.950	32.900	32.130	32.930	32.820
29	31.440	32.930	32.950	32.030	32.890	32.890	32.880	33.000	32.870	32.250	32.890	32.840
30	31.440		32.980	32.030	32.930	32.960	32.880	33.070	32.850	32.060	32.920	32.840
31	32.900		32.880		32.940		32.870	33.080		33.200		32.900
Avg.	31.605	32.895	32.835	32.015	32.820	32.895	32.905	32.890	32.850	32.495	32.610	32.910

09-5220.30 INTAKE CANAL AT MORELOS DIVERSION STRUCTURE - DISCHARGES

DESCRIPTION: Water-stage recorder and staff gage on left bank of Intake Canal, 61 meters downstream from the intake at Morelos Dam, 410 meters upstream from the point where it joins the old Alamo Canal, 3.5 kilometers upstream from Matamoros Check, and about 1.6 kilometers south of the northerly international boundary. The zero of the gage is 0.05 meter below mean sea level, U. S. C. & G. S. datum.

RECORDS: The records are deduced from the flows arriving in the limitrophe 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 2000. 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 Matamoros 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. Under conditions set forth in the 1944 Water Treaty, water for use in Mexico may 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. No diversions of this nature have been made during the years 1951 through 2000, and consequently the records reported below show the total water diverted from the Colorado River to the Alamo Canal during those years. Mexico occasionally pumps water from the Colorado River at other points below Morelos Dam when water is available in the channel.

EXTREMES: Maximum mean daily discharge, 187 CMS, July 12 and 14, 1983; maximum mean daily gage height, 32.96 meters October 30, 1993 and other days. Minimum daily discharge, no flow on various occasions.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	78.9	77.2	91.3	91.5	75.7	70.5	69.9	53.7	51.1	44.5	53.8	65.5
2	82.2	75.9	88.7	93.2	75.7	69.6	69.5	53.7	47.6	44.5	55.2	67.1
3	87.1	72.7	87.8	103	82.8	57.5	65.8	53.7	48.5	36.5	56.0	66.0
4	76.0	83.7	92.5	89.4	83.1	53.8	63.7	53.7	50.7	37.1	52.0	66.4
5	74.0	84.0	96.2	87.7	68.6	65.9	64.9	53.7	52.5	42.8	53.1	66.9
6	75.5	85.9	101	87.6	67.8	67.2	64.6	53.7	50.9	43.7	53.8	67.9
7	70.4	87.4	93.6	87.6	72.0	59.1	67.8	53.7	50.5	44.8	53.0	68.0
8	67.9	87.6	95.4	87.6	76.5	65.2	65.0	53.7	50.6	45.2	53.0	68.0
9	68.3	85.2	98.4	87.8	80.7	69.5	64.9	53.7	50.7	43.2	53.0	67.6
10	66.7	80.2	111	87.0	82.0	68.5	63.5	53.7	50.0	44.9	53.0	66.7
11	70.2	81.1	109	86.9	73.5	66.0	63.9	53.4	50.0	47.3	53.0	69.5
12	73.1	84.4	117	88.0	71.2	64.4	61.5	52.7	49.1	46.9	53.0	69.5
13	80.3	89.2	94.6	87.7	66.4	62.2	64.1	53.7	47.6	54.2	53.0	70.0
14	82.7	86.5	87.5	86.2	70.4	65.8	63.3	52.4	45.7	58.2	57.9	72.0
15	78.8	84.5	87.5	87.8	82.6	65.4	65.1	48.0	48.5	63.8	62.4	70.1
16	73.1	87.5	87.5	94.2	83.0	69.8	65.8	40.2	48.6	64.0	64.5	68.2
17	71.4	84.7	87.5	93.5	76.6	68.6	64.0	37.3	48.2	60.3	46.2	66.8
18	69.2	83.4	87.5	93.0	60.5	70.7	64.5	44.9	48.5	57.2	43.2	66.6
19	68.5	83.4	87.5	95.4	73.1	72.7	65.4	47.3	48.6	52.6	53.6	69.7
20	70.8	83.3	87.5	88.1	90.6	74.0	65.8	50.0	48.6	52.1	65.5	68.9
21	73.6	83.1	87.5	79.6	71.5	82.6	65.7	53.7	48.6	53.9	63.2	61.8
22	73.3	99.5	88.3	91.0	70.0	83.0	65.0	42.2	48.7	53.8	62.7	62.5
23	73.0	112	90.6	103	62.9	74.2	65.0	37.5	47.2	54.0	62.7	64.4
24	72.9	117	94.6	93.3	66.4	76.6	65.1	44.4	49.4	58.7	63.8	72.1
25	73.6	91.3	92.1	79.3	65.5	78.1	65.8	43.4	50.1	53.9	65.9	68.9
26	72.3	90.6	92.8	78.5	67.9	74.3	65.7	45.2	42.9	51.2	64.5	70.1
27	73.8	86.6	115	77.3	69.6	68.0	65.8	47.5	40.7	51.9	63.9	63.3
28	73.7	90.0	107	76.1	67.8	69.8	65.7	53.7	40.7	52.6	65.5	62.4
29	74.1	94.3	109	75.7	67.1	70.5	65.7	53.7	43.1	53.0	64.7	62.7
30	75.1		114	75.5	73.5	84.3	65.0	53.7	44.5	50.5	64.7	62.6
31	72.9		96.4		73.5		63.7	53.7		56.5		64.9
Sum	2,293.4	2,532.2	2,976.3	2,632.5	2,268.5	2,087.8	2,021.2	1,545.6	1,442.4	1,575.8	1,729.8	2,077.1

Current Year 2000							Period 1950-2000				
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.			3	87.1	10	66.7	74.0	198,150	117,397	275,305	1,192
Feb.			24	117	3	72.7	87.3	218,782	125,662	292,464	11,387
Mar.			12	117	115	87.5	96.0	257,152	237,308	435,370	120,761
April			1	103	30	75.5	87.8	227,448	254,633	404,698	189,700
May			20	90.6	18	60.5	73.2	195,998	148,559	286,174	81,665
June			30	84.3	4	53.8	69.6	180,386	196,883	332,588	117,400
July			1	69.9	12	61.5	65.2	174,632	260,796	439,171	145,135
Aug.			1	53.7	17	37.3	49.9	133,540	250,116	420,673	113,219
Sept.			5	52.5	127	40.7	48.1	124,623	156,394	336,960	66,156
Oct.			16	64.0	3	36.5	50.8	136,149	93,901	280,817	12,894
Nov.			25	65.9	18	43.2	57.7	149,455	86,704	258,388	9,271
Dec.			24	72.1	21	61.8	67.0	179,461	117,252	247,899	10,886
Yearly				117		36.5	68.8	2,175,776	2,045,605	3,451,533	1,569,404

φ Mean daily ! And other days

09-5220.31 INTAKE CANAL AT MORELOS DIVERSION STRUCTURE - STAGES

(See Preceding Page for Description)

MEAN DAILY GAGE HEIGHT IN METERS 2000

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	31.340	31.490	31.620	31.630	31.550	31.400	31.490	31.420	31.310	30.600	31.400	31.450
2	31.400	31.530	31.630	31.580	31.550	31.380	31.490	31.420	31.290	30.570	31.360	31.470
3	32.020	31.520	31.600	31.600	31.520	31.350	31.470	31.430	31.310	30.510	31.320	31.460
4	32.960	31.520	31.620	31.620	31.450	31.340	31.440	31.420	31.360	30.500	31.290	31.470
5	32.950	31.520	31.630	31.600	31.410	31.340	31.430	31.390	31.330	31.540	31.340	31.500
6	32.910	31.520	31.650	31.550	31.430	31.350	31.430	31.390	31.330	30.610	31.330	31.480
7	32.930	31.520	31.670	31.570	31.430	31.360	31.440	31.390	31.330	30.560	31.360	31.470
8	32.910	31.520	31.660	31.570	31.450	31.400	31.440	31.420	31.330	30.610	31.340	31.470
9	32.920	31.540	31.640	31.590	31.460	31.430	31.430	31.430	31.340	30.690	31.310	31.510
10	32.900	31.560	31.660	31.550	31.470	31.450	31.420	31.430	31.330	30.680	31.350	31.520
11	32.900	31.570	31.660	31.540	31.460	31.440	31.410	31.400	31.310	30.740	31.370	31.530
12	32.910	31.580	31.670	31.560	31.440	31.440	31.410	31.350	31.300	31.240	31.370	31.510
13	32.940	31.590	31.610	31.550	31.440	31.430	31.410	31.350	31.300	30.850	31.340	31.520
14	32.960	31.590	31.600	31.540	31.440	31.430	31.420	31.290	31.290	31.850	31.440	31.520
15	32.940	31.590	31.530	31.560	31.450	31.430	31.440	31.260	31.320	31.800	31.420	31.500
16	32.910	31.590	31.560	31.750	31.470	31.440	31.450	31.230	31.330	31.750	31.420	31.480
17	32.900	31.590	31.560	31.830	31.470	31.450	31.450	30.950	31.330	31.200	31.380	31.460
18	32.880	31.590	31.550	31.670	31.340	31.470	31.460	31.220	31.330	31.170	31.370	31.460
19	32.870	31.590	31.530	31.700	31.390	31.470	31.460	31.240	31.340	30.740	31.440	31.460
20	32.890	31.590	31.530	31.630	31.410	31.460	31.430	31.260	31.340	30.910	31.430	31.460
21	32.900	31.590	31.530	31.520	31.410	31.440	31.410	31.270	31.330	30.720	31.420	31.460
22	32.900	31.600	31.530	31.730	31.400	31.470	31.400	31.260	31.350	30.940	31.440	31.450
23	32.900	31.660	31.540	31.750	31.370	31.480	31.400	31.240	31.330	31.460	31.460	31.450
24	31.900	31.640	31.540	31.700	31.400	31.470	31.410	31.240	31.340	31.350	31.470	31.470
25	32.910	31.620	31.540	31.550	31.400	31.480	31.410	31.240	31.310	31.660	31.490	31.450
26	32.900	31.620	31.540	31.530	31.410	31.470	31.410	31.230	31.190	31.560	31.410	31.460
27	32.900	31.610	31.570	31.520	31.420	31.470	31.390	31.180	31.280	31.150	31.470	31.450
28	32.910	31.620	31.570	31.520	31.410	31.470	31.390	31.170	31.310	30.970	31.490	31.450
29	32.910	31.620	31.610	31.510	31.400	31.460	31.420	31.190	31.300	31.230	31.480	31.450
30	32.920		31.660	31.510	31.420	31.460	31.470	31.230	31.310	30.740	31.460	31.450
31	31.440		31.650		31.420		31.460	31.280		31.020		31.450
Avg.	32.705	31.575	31.595	31.600	31.435	31.430	31.430	31.295	31.315	31.030	31.400	31.475

09-5220.41 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, 1.8 kilometers downstream from the northerly international boundary, and about 12.1 kilometers 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 0.05 meter 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 2000.

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, 35.87 meters on February 15, 1998; minimum mean gage height, 29.06 meters from October 3, 1996 to January 13, 1997.

MEAN DAILY GAGE HEIGHT IN METERS 2000

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	30.500	30.500	30.500	30.500	30.500	30.580	30.710	30.570	30.800	30.600	31.250	30.500
2	30.500	30.500	30.500	30.500	30.500	30.600	30.620	30.610	30.750	30.570	31.200	30.500
3	30.500	30.500	30.500	30.500	30.500	30.530	30.560	30.660	30.680	30.510	31.700	30.500
4	30.500	30.500	30.500	30.500	30.500	30.520	30.540	30.640	30.610	30.500	31.310	30.500
5	30.500	30.500	30.500	30.500	30.500	30.600	30.570	30.650	30.680	30.540	31.160	30.500
6	30.500	30.500	30.500	30.500	30.500	30.610	30.580	30.550	30.770	30.610	30.700	30.500
7	30.500	30.500	30.500	30.500	30.500	30.550	30.590	30.590	30.700	30.560	30.630	30.500
8	30.500	30.500	30.500	30.500	30.500	30.600	30.620	30.700	30.660	30.610	31.040	30.500
9	30.500	30.500	30.500	30.500	30.500	30.620	30.590	30.650	30.600	30.690	31.520	30.500
10	30.500	30.500	30.500	30.500	30.500	30.630	30.600	30.610	30.550	30.680	31.320	30.500
11	30.500	30.500	30.500	30.500	30.500	30.600	30.600	30.540	30.570	30.740	31.620	30.500
12	30.500	30.500	30.500	30.500	30.500	30.590	30.580	30.530	30.560	31.240	31.770	30.500
13	30.500	30.500	30.500	30.500	30.500	30.570	30.580	30.570	30.520	30.850	31.280	30.500
14	30.500	30.500	30.500	30.500	30.500	30.570	30.570	30.530	30.540	31.850	31.520	30.500
15	30.500	30.500	30.500	30.500	30.500	30.580	30.610	30.550	30.560	31.800	31.680	30.500
16	30.500	30.500	30.500	30.500	30.500	30.600	30.640	30.500	30.560	31.750	31.220	30.500
17	30.500	30.500	30.500	30.500	30.500	30.590	30.600	30.500	30.610	31.200	30.500	30.500
18	30.500	30.500	30.500	30.500	30.500	30.600	30.600	30.550	30.610	31.170	30.500	30.500
19	30.500	30.500	30.500	30.500	30.500	30.610	30.610	30.590	30.610	30.740	30.500	30.500
20	30.500	30.500	30.500	30.500	30.500	30.620	30.600	30.610	30.590	30.910	30.500	30.500
21	30.500	30.500	30.500	30.500	30.500	30.660	30.610	30.620	30.570	30.720	30.500	30.500
22	30.500	30.500	30.500	30.500	30.500	30.650	30.660	30.540	30.600	30.940	30.500	30.500
23	30.500	30.500	30.500	30.500	30.550	30.600	30.640	30.500	30.540	31.460	30.500	30.500
24	30.500	30.500	30.500	30.500	30.580	30.620	30.660	30.500	30.650	31.350	30.500	30.500
25	30.500	30.500	30.500	30.500	30.560	30.630	30.630	30.500	30.560	31.660	30.500	30.500
26	30.500	30.500	30.500	30.500	30.590	30.610	30.640	30.500	30.520	31.560	30.500	30.500
27	30.500	30.500	30.500	30.500	30.600	30.580	30.630	30.500	30.570	31.150	30.500	30.500
28	30.500	30.500	30.500	30.500	30.600	30.580	30.600	30.590	30.600	30.970	30.500	30.500
29	30.500	30.500	30.500	30.500	30.600	30.590	30.580	30.700	30.560	31.230	30.500	30.500
30	30.500	30.500	30.500	30.500	30.640	30.660	30.580	30.810	30.530	30.740	30.500	30.500
31	30.500	30.500	30.500	30.500	30.610	30.610	30.570	30.780	30.810	31.020	30.500	30.500
Avg.	30.500	30.500	30.500	30.500	30.525	30.600	30.605	30.590	30.610	30.995	30.930	30.500

09-5319.00 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, 1.8 kilometers 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 16, 1965 through 2000.

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 19.3 kilometers, and placed in operation on November 16, 1965. Drainage flows may be discharged on an emergency basis 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, 3.1 kilometers 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 No. 241 of the Commission became effective. The Minute called for discharge of all Wellton-Mohawk drainage waters to be made below Morelos Dam. On August 30, 1973, Minute No. 242 of the Commission became effective. The Minute called for construction of a concrete-lined bypass drain from Morelos Dam to the Santa Clara Slough in Mexico. On June 23, 1977, the first flow was recorded in the bypass drain. Drainage flows through Main Outlet Extension No. 3 will be only on an emergency basis.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	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 2000									Period 1966-2000			
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum	
Jan.	0	0	1	0	1	0	0	0	6,926	23,088	0	
Feb.	0	0	1	0	1	0	0	0	5,325	20,959	0	
Mar.	0	0	1	0	1	0	0	0	3,757	22,827	0	
April	0	0	1	0	1	0	0	0	3,365	22,944	0	
May	0	0	1	0	1	0	0	0	5,073	23,548	0	
June	0	0	1	0	1	0	0	0	3,992	23,135	0	
July	0	0	1	0	1	0	0	0	3,666	23,370	0	
Aug.	0	0	1	0	1	0	0	0	3,728	23,668	0	
Sept.	0	0	1	0	1	0	0	0	5,239	22,787	0	
Oct.	0	0	1	0	1	0	0	0	7,373	23,683	0	
Nov.	0	0	1	0	1	0	0	0	6,990	22,792	0	
Dec.	0	0	1	0	1	0	0	0	6,428	23,585	0	
Yearly	0	0		0		0	0	0	61,862	264,928	0	

! And other days

09-5325.00 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, 6.9 kilometers downstream from the northerly international boundary and 5.1 kilometers 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 limitrophe section of the Colorado River. Since June 1986, zero of the gage is 34.05 meters above mean sea level, U. S. C. & G. S. datum; prior to that date, zero of the gage was 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, January 1951 through 2000, obtained by the United States Section; monthly discharge, January 1924 through 1950 by Bureau of Reclamation.

EXTREMES: Prior to January 1951, maximum monthly discharge, 12,014 TCM in August 1940; minimum monthly discharge, zero in April 1941. Since January 1, 1951, maximum instantaneous discharge, 22.7 CMS on December 3, 1961, at a maximum gage height of 35.845 meters; minimum instantaneous discharge, zero during parts of most years.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.22	0.16	0.01	0.01	0.01	0.10	0.01	0.33	0.58	0.53	0.04	0.24
2	.21	.06	.01	.01	.01	.02	.01	.33	.75	.53	.23	.30
3	.01	.02	.01	.01	.01	.02	.29	.33	.63	.16	.01	.21
4	.13	.30	.05	.01	.01	.02	.38	.33	.54	.36	.09	.01
5	.24	.02	.58	.01	.01	.04	.43	.32	.35	.01	.62	0
6	.26	.50	.16	.01	.01	.01	.11	.10	.08	.08	.09	0
7	.01	.51	.02	.01	.16	.55	.19	.02	.29	.82	.80	.03
8	.27	.23	.02	.01	.01	.02	.37	.01	.18	.27	.11	.04
9	.01	.64	.09	.01	.01	.22	.54	.01	.27	.70	.37	.80
10	.01	.02	.20	.01	.01	.07	.23	.02	.10	.49	.35	1.37
11	.01	.12	.39	.17	.01	.22	.01	.01	.61	.38	.49	.75
12	.16	.02	.02	.01	.26	.10	.01	.06	1.37	1.46	.87	.87
13	.08	.41	.20	.30	.08	.02	.08	.05	.10	.45	1.21	.81
14	.02	.19	.56	.08	.16	.02	.29	.42	.06	.51	.56	.60
15	.08	.11	.21	.05	.01	.09	.23	.42	.63	.09	.91	.03
16	.72	.02	.40	.01	.01	.04	.43	.25	.08	.56	.84	.09
17	.54	.03	.07	.01	.01	.91	.52	.15	.06	.02	.72	.89
18	.02	.21	.02	0	.01	1.14	.19	.02	.06	.38	.52	.60
19	.25	.43	.02	0	.01	.02	.45	.06	.04	.70	.81	.03
20	.24	.15	.02	0	.15	.01	.13	.02	.03	.76	.81	.08
21	.02	.31	.01	0	.29	.02	.02	.07	.21	.89	1.08	.53
22	.07	.30	.01	.06	.44	.01	.52	.07	.02	1.06	1.04	.37
23	.67	.03	.01	.36	.16	.01	.16	.06	.10	.50	.67	.61
24	.28	.04	.02	.70	.14	.40	.21	.41	1.10	.17	.47	.48
25	.26	.06	.54	.28	.50	.66	.02	.02	.43	.27	.29	.01
26	.39	.37	.07	.12	.33	.02	.15	.08	.02	.55	.32	.01
27	.37	.54	.41	.01	.02	.02	.14	.02	.02	.04	.85	.09
28	.77	.50	.02	.01	.18	.45	.07	.13	.30	.53	.11	.11
29	.11	.02	.01	.01	.23	.54	.53	.31	.01	.59	.54	.12
30	.39		.17	.01	.02	.01	.35	.19	.01	.96	.28	.55
31	.21		.01		.01		.35	.12		.21		1.31
Sum	7.03	6.32	4.34	2.29	3.28	5.78	7.42	4.69	7.72	14.94	16.69	11.94

Current Year 2000

Period 1935-2000

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	High		Low		Total	Average	Maximum	Minimum
				Day	Day						
Jan.	0.550	0.015	1	2.24	1	0.01	0.23	607	2,568	11,804	0
Feb.	.420	.020	4	1.97	29	.01	.22	546	2,102	10,398	17.9
Mar.	.650	.010	27	2.82	1	.01	.14	375	1,981	7,685	51.8
April	.765	0	24	3.67	17	0	.08	198	1,820	7,771	0
May	.770	.005	7	3.71	14	0	.11	283	2,151	11,496	10.2
June	.395	.015	17	1.95	1	.01	.19	499	2,044	9,177	13.0
July	.385	.015	17	1.92	1	.01	.24	641	2,071	10,263	11.2
Aug.	.350	.015	29	1.83	17	.01	.15	405	1,795	12,014	18.1
Sept.	.530	.015	1	2.20	123	.01	.26	667	1,316	7,574	7.4
Oct.	.760	.005	12	3.64	20	0	.48	1,291	1,816	7,006	14.7
Nov.	.660	.010	7	2.91	1	.01	.56	1,442	2,196	10,139	23.2
Dec.	.630	0	3	2.70	14	0	.39	1,032	2,823	11,632	51.8
Yearly	0.770	0		3.71		0	0.25	7,986	24,683	102,255	707

! And other days

09-5221.00 COLORADO RIVER AT ELEVEN MILE GAGE - STAGES

DESCRIPTION: Water-stage recorder on the left (Arizona) bank of the river, 6.9 kilometers downstream from northerly international boundary, 5.1 kilometers downstream from Morelos Dam, about 15 meters downstream from the mouth of Eleven Mile Wasteway of the Yuma Project, and 17.7 kilometers downstream from Yuma, Arizona, along the river levee. The zero of the gage is at mean sea level, U. S. C. & G. S. datum. On April 1, 1988, the gage was relocated 399 meters downstream of the old gage on the left bank. Zero of the new gage is at mean sea level, U. S. C. & G. S. datum. Elevation of the new gage is 0.12 meter lower than the old gage. On August 1, 1993, the gage was relocated 81.0 meters upstream of the original 1947 gage. The datum is equal to the 1947 gage.

RECORDS: Mean daily gage heights based on continuous water-stage records. Records available: Continuous record of gage heights, November 1947 through 2000; 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, 33.840 meters on February 18, 1998; minimum mean daily gage height, 27.630 meters on April 7, 1999.

MEAN DAILY GAGE HEIGHT IN METERS 2000

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	28.725	28.340	28.150	28.060	27.845	28.200	28.725	27.940	29.205	28.130	28.105	28.575
2	28.700	28.285	28.025	28.085	27.845	28.230	28.220	28.170	29.005	28.265	28.135	28.765
3	28.885	28.135	28.000	28.370	27.845	27.890	27.980	28.445	28.490	27.800	28.830	28.220
4	28.590	28.145	28.085	27.995	28.340	27.815	27.860	28.350	28.185	27.795	29.175	28.755
5	28.530	28.125	28.185	27.950	28.110	28.035	27.895	28.435	28.210	27.915	28.740	28.755
6	28.585	28.185	28.605	27.935	27.930	28.145	27.925	27.920	28.345	28.280	28.270	28.760
7	28.430	28.230	28.145	27.930	28.045	27.970	27.985	28.065	28.385	28.065	27.950	28.705
8	28.370	28.235	28.155	27.920	28.165	28.020	28.155	28.670	28.465	28.170	28.440	28.445
9	28.370	28.210	28.200	27.915	28.295	28.075	28.075	28.455	28.240	28.740	28.505	28.525
10	28.315	28.035	28.555	27.910	28.415	28.185	28.075	28.190	28.000	28.635	28.580	28.480
11	28.240	28.040	28.645	27.905	28.050	28.020	28.010	27.920	28.085	28.980	28.380	28.820
12	28.285	28.105	28.700	27.885	27.970	27.995	27.945	27.820	28.055	28.815	28.575	28.320
13	28.480	28.235	28.465	27.900	27.840	27.875	27.905	27.950	27.880	28.980	28.750	28.635
14	28.535	28.195	28.020	27.880	27.885	27.870	27.875	27.915	27.860	29.050	28.605	28.740
15	28.470	28.100	27.970	27.880	28.325	27.860	28.115	27.935	28.130	28.320	28.925	28.665
16	28.320	28.190	27.990	27.875	28.440	28.000	28.275	27.790	28.080	28.900	28.570	28.330
17	28.255	28.120	27.980	28.125	28.215	27.975	28.055	27.775	28.305	28.790	27.855	28.045
18	28.190	28.090	27.975	27.885	27.850	28.045	28.125	27.940	28.355	28.760	27.815	27.985
19	28.165	28.090	27.980	27.875	27.960	28.075	28.105	28.010	28.330	28.415	27.830	28.235
20	28.195	28.080	27.970	27.875	28.615	28.095	28.070	28.190	28.205	27.900	28.180	28.055
21	28.280	28.070	27.980	27.875	28.325	28.345	28.085	28.260	28.180	27.870	28.205	27.830
22	28.275	28.455	28.010	28.105	28.270	28.320	28.425	27.905	28.350	28.050	28.215	27.900
23	28.285	28.785	28.055	29.095	27.985	28.110	28.310	27.775	27.830	29.200	28.625	28.060
24	28.265	29.225	28.190	28.135	28.030	28.185	28.450	27.905	28.380	30.040	28.655	29.040
25	28.295	28.560	28.145	27.895	27.970	28.270	28.255	27.920	28.180	30.680	28.280	28.550
26	28.255	28.255	28.080	27.875	28.060	28.125	28.300	27.950	27.955	30.810	27.895	28.680
27	28.295	28.135	28.795	27.855	28.135	27.920	28.275	28.100	28.030	29.455	28.395	28.070
28	28.320	28.205	28.530	27.855	28.085	27.965	28.160	28.430	28.260	28.870	28.580	27.875
29	28.295	28.335	28.510	27.850	28.005	27.990	28.045	28.665	28.075	29.220	28.330	28.000
30	28.335		28.675	27.845	28.280	28.335	27.990	29.385	28.075	28.675	28.455	27.980
31	28.265		28.190		28.310		27.935	29.185		28.100		28.290
Avg.	28.380	28.250	28.225	27.985	28.110	28.065	28.115	28.175	28.240	28.700	28.395	28.390

09-5330.00 TWENTY-ONE MILE WASTEWAY (VALLEY DIVISION, YUMA PROJECT)

DESCRIPTION: Water-stage recorder and control weir on wasteway from West Main Canal to Colorado River. Located on east side of levee at site used prior to May 1, 1971. The site used May 1, 1971 to September 20, 1977 was located 61 meters downstream from present site on west side of levee. This wasteway is located in Arizona, 29.8 kilometers downstream from the northerly international boundary, 28.0 kilometers downstream from Morelos Diversion Dam, and 3.5 kilometers upstream from the Valley Division of the Yuma Project in the United States into the limitrophe 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 2000, 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. The West Main Canal Wasteway was completed in February of 1971, and the waste water from the West Main Canal is normally discharged across the southerly land boundary.

EXTREMES: Prior to January 1951, maximum monthly discharge 3,528 TCM in January 1946; minimum monthly discharge, 150 TCM in September 1950. Since January 1, 1951, maximum instantaneous discharge, 2.89 CMS on January 24, 1954, at a maximum gage height of 29.095 meters (old datum); minimum instantaneous discharge, zero during a part of most months.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	0	0	0.25	0.40	0.40
2	0	0	0	0	0	0	0	0	0	.19	.19	.19
3	0	0	0	0	0	0	0	0	0	0	.16	.14
4	0	0	0	0	0	0	0	0	0	0	.25	.08
5	0	0	0	0	0	0	0	0	0	0	.22	.01
6	0	0	0	0	0	0	0	0	0	.06	.38	.01
7	0	0	0	0	0	0	0	0	0	.25	.30	.03
8	0	0	0	0	0	0	0	0	0	.28	.19	.26
9	0	0	0	0	0	.02	0	0	0	.11	.19	.35
10	0	0	0	0	0	.03	0	0	0	0	.08	.31
11	0	0	0	0	.21	.04	0	.02	0	.17	.25	.31
12	0	0	0	0	.13	.03	0	0	0	.33	.05	.33
13	0	0	0	0	.03	.01	0	0	0	.10	.09	.27
14	0	0	0	0	.01	.03	0	0	0	.09	0	.12
15	0	0	0	0	0	.01	0	0	0	.22	0	.33
16	0	0	0	0	0	.01	0	0	0	.25	0	.30
17	0	0	0	0	.04	.01	0	0	0	.04	.01	.03
18	0	0	0	0	.10	.01	0	0	0	.23	.23	.12
19	0	.15	0	.02	.17	.04	0	0	0	.23	.01	.09
20	0	0	.32	0	.01	.01	0	0	0	.23	.18	.01
21	0	0	.26	0	0	0	0	0	0	.47	.14	.25
22	0	0	.05	0	0	0	0	0	0	.17	.08	.15
23	0	0	.06	0	0	0	0	0	.06	.49	.18	.26
24	0	0	.02	0	0	0	0	.10	.55	.47	.38	.19
25	0	0	0	0	0	0	0	0	.53	.27	.10	.22
26	0	0	0	0	0	0	0	0	.15	.12	.51	.07
27	0	0	0	0	0	0	0	0	0	0	.05	.07
28	0	0	0	0	0	0	0	0	0	.06	.12	.29
29	0	0	0	0	0	0	0	0	0	.34	.29	.08
30	0	0	0	0	0	0	0	0	.08	.24	.16	.04
31	0	0	0	0	0	0	0	0	0	0	0	.04
Sum	0	0.15	0.71	0.02	0.70	0.25	0	0.12	1.37	5.66	5.19	5.35
Current Year 2000										Period 1939-2000		
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum	
Jan.	0	0	! 1	0	! 1	0	0	0	630	3,528	0	
Feb.	.485	0	19	.95	! 1	0	.01	13.0	533	3,096	0	
Mar.	.600	0	21	1.36	! 1	0	.02	61.3	485	2,048	0	
April	.325	0	19	.50	! 1	0	0	1.7	520	2,393	0	
May	.585	0	19	1.29	! 1	0	.02	60.5	632	3,047	0	
June	.275	0	19	.58	! 1	0	.01	21.6	553	2,899	0	
July	0	0	! 1	0	! 1	0	0	0	479	2,405	0	
Aug.	.590	0	24	1.31	! 1	0	0	10.4	501	3,121	0	
Sept.	.495	0	24	1.00	! 1	0	.05	118	453	2,689	0	
Oct.	.600	0	24	1.35	! 1	0	.18	489	585	2,590	0	
Nov.	.685	0	26	1.67	! 13	0	.17	448	713	2,936	0	
Dec.	.520	.005	1	1.07	! 27	0	.17	462	732	3,306	0	
Yearly	0.685	0		1.67		0	0.05	1,686	6,816	30,060	0	

! And other days

09-5345.00 EAST MAIN CANAL WASTEWAY (VALLEY DIVISION, YUMA PROJECT)

DESCRIPTION: Water-stage recorder and control weir located about 91 meters north of the international boundary near San Luis, Arizona and 2.4 kilometers east of the Colorado River. From September 28, 1977 to April 6, 1978, recorder was moved west 31 meters to a temporary bypass channel. On April 7, 1978, recorder was moved back to original site. On August 17, 1992, flow ceased through the wasteway due to construction upstream of the gage. The gage was relocated 20 meters west of the original site providing continuous record since December 21, 1992.

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 2000. 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 land boundary at San Luis.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.08	0.29	0.35	0.32	0.25	0.31	0.36	0.34	0	0.01	0.14	0
2	.12	.20	.46	.27	.32	.43	.06	.36	0	.09	.23	0
3	.07	.08	.17	.24	.46	.55	.15	.06	.18	.28	.11	.09
4	.10	.24	.46	.04	.28	.35	.22	.16	.07	.03	.03	.05
5	.07	.14	.21	.04	.08	.24	.37	.63	.01	.08	.04	0
6	.20	.29	.23	.02	.01	.13	.33	.04	.01	.05	.07	.01
7	.21	.45	.34	.36	.23	.65	.35	0	.12	.39	.05	.18
8	.04	.05	.41	.16	.26	.33	.33	0	.05	.10	.14	.14
9	.12	.19	.41	.12	.09	.21	.14	0	.03	.04	.17	.13
10	.21	.11	.05	.52	0	.35	.31	0	0	.17	.01	.22
11	.10	.05	.15	.20	0	.24	.06	.08	0	0	.05	.29
12	.35	0	.52	.25	0	.03	.10	0	.02	.23	.29	.08
13	.17	.40	.34	.24	0	.10	.07	.25	.14	.17	.18	.08
14	.02	.29	.21	.08	.03	.07	.21	.40	.28	.11	0	.03
15	.02	.44	.17	.12	0	.12	.24	.43	.07	.27	0	.43
16	.39	.46	.09	.04	.38	.11	.50	.14	.02	.20	0	.30
17	.73	.15	.65	.08	.57	.08	.65	.20	.07	.04	.05	.35
18	.41	.12	.35	.24	.69	.10	.53	.03	.36	.11	0	.13
19	.25	.17	.05	.40	.66	.08	.23	.23	.14	.41	0	.20
20	.21	.46	.09	.27	.13	0	.24	.01	.12	.27	.01	.14
21	.41	.42	.21	.32	.07	.45	.22	.09	.24	.18	.05	.54
22	.41	.27	.38	.05	.18	.05	.11	.21	.34	.11	.02	.29
23	.32	.95	.33	.19	.05	.30	.48	.19	.04	0	0	.47
24	.31	.12	.20	.01	.13	.56	.39	.05	.24	0	.12	.35
25	.32	.18	.28	.20	.50	.40	.65	.04	.22	0	0	.47
26	.30	.12	.11	.29	.50	.38	.48	.13	.19	0	.04	.14
27	.37	.36	.08	.17	.36	.18	.22	.19	.26	0	.08	.07
28	.38	.39	.28	.29	.03	.60	.51	.31	.03	0	.02	.36
29	.21	.23	.52	.45	.09	.59	.38	.21	0	.01	.06	.17
30	.19		.44	.16	.39	.24	.48	.01	0	.40	0	.10
31	.36		.48		.34		.33	0		.11		0
Sum	7.45	7.20	9.02	6.14	7.08	8.23	9.70	4.79	3.25	3.86	1.96	5.81
Current Year 2000									Period 1935-2000			
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum	
Jan.	0.340	0	17	0.87	114	0	0.24	644	1,119	4,144	111	
Feb.	.295	0	23	.73	118	0	.25	622	933	3,910	164	
Mar.	.325	0	29	.83	116	0	.29	779	1,065	3,602	175	
April	.300	0	11	.73	114	0	.20	530	1,032	3,910	165	
May	.325	0	18	.83	111	0	.23	612	1,162	3,750	281	
June	.325	0	21	.83	112	0	.27	711	962	4,515	157	
July	.325	0	25	.82	119	0	.31	838	1,037	4,428	210	
Aug.	.305	0	4	.74	113	0	.15	414	1,071	4,885	196	
Sept.	.300	0	24	.74	111	0	.11	281	1,004	3,910	0	
Oct.	.305	0	19	.75	114	0	.12	334	1,060	4,064	0	
Nov.	.300	0	12	.74	111	0	.07	169	1,149	4,404	0	
Dec.	.295	0	15	.72	111	0	.19	502	1,129	3,799	51.0	
Yearly	0.340	0		0.87		0	0.20	6,436	12,723	47,255	3,733	

! And other days

09-5340.00 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 61 meters north of the international boundary near San Luis, Arizona, 2.1 kilometers east of the Colorado River.

RECORDS: Main Drain discharges are lifted 3.05 to 3.66 meters 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 2000.

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, West Main Canal Wasteway, and 242 Lateral 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 land boundary at San Luis.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.44	3.98	3.36	4.14	4.61	3.87	4.04	3.27	4.70	4.37	5.96	6.03
2	4.07	2.93	3.18	5.22	4.52	3.69	3.96	3.34	4.05	5.55	5.88	5.55
3	3.48	3.63	3.49	5.24	4.23	3.94	3.90	3.52	3.96	6.00	6.04	6.02
4	4.21	3.42	3.69	4.92	4.41	3.66	3.73	3.50	3.97	5.70	6.00	4.99
5	4.12	3.74	4.11	4.35	4.58	3.81	3.72	3.65	3.40	5.25	6.07	4.89
6	4.79	3.61	4.20	4.09	4.71	4.08	4.01	4.54	3.48	5.21	6.03	4.52
7	4.21	4.21	3.24	4.20	5.05	4.24	4.13	3.76	3.67	5.22	6.02	4.72
8	4.20	3.63	3.34	4.05	4.69	3.80	4.14	3.65	3.99	3.80	6.07	4.88
9	4.33	3.31	3.21	5.14	4.94	4.63	3.90	3.32	4.36	3.90	6.05	5.58
10	4.01	3.57	3.17	4.19	5.07	4.02	4.45	2.96	4.09	4.20	6.02	5.42
11	4.27	3.55	3.96	4.18	4.77	4.16	3.43	3.68	3.72	4.99	6.03	4.41
12	4.59	3.51	4.11	4.10	5.45	4.13	3.73	3.56	3.24	4.18	6.01	3.90
13	4.82	3.51	3.63	4.62	5.51	4.17	3.92	3.29	3.04	5.76	6.68	3.99
14	4.52	3.73	3.38	4.62	5.83	4.24	3.86	3.04	2.81	6.53	5.63	3.95
15	4.55	3.57	3.37	4.90	4.97	4.03	4.18	3.52	4.30	5.55	5.14	4.91
16	4.27	3.71	3.83	5.32	4.20	4.57	4.05	3.54	3.90	5.58	5.25	4.61
17	4.14	3.50	3.53	5.05	4.51	4.64	3.68	3.22	3.58	5.95	5.93	4.85
18	3.69	4.15	3.40	4.38	4.31	4.31	4.33	3.18	4.07	5.97	5.07	4.68
19	3.74	4.01	3.39	4.51	4.78	3.80	4.26	3.39	4.68	6.04	5.03	4.61
20	3.62	3.69	3.87	4.33	4.88	3.88	3.79	3.52	4.49	5.72	5.31	4.74
21	4.45	4.25	3.67	4.26	4.85	3.72	3.99	3.18	3.69	5.92	5.84	4.31
22	4.16	4.24	3.45	4.39	4.32	3.57	3.86	2.87	4.22	5.71	5.76	4.56
23	3.73	4.01	3.46	5.12	3.85	3.71	4.02	3.22	4.24	6.82	5.40	4.66
24	3.90	3.55	4.09	5.31	2.61	3.72	3.85	3.78	4.19	6.90	5.44	5.11
25	4.57	3.33	3.85	4.41	4.09	3.79	3.88	3.89	3.19	6.84	4.82	4.93
26	3.99	3.71	4.21	4.38	4.46	3.94	3.73	2.71	4.38	6.74	5.43	4.68
27	3.64	3.86	3.50	4.42	4.05	3.76	3.19	3.22	4.48	5.80	5.61	4.13
28	3.96	3.58	3.53	4.65	4.48	4.09	4.05	3.31	4.50	5.63	5.49	4.96
29	3.86	3.26	3.80	4.83	4.24	4.07	4.27	3.63	4.43	6.03	5.32	5.63
30	4.21	4.28	4.28	4.69	3.91	4.15	3.28	3.77	3.80	5.98	5.56	5.02
31	3.98		3.89		3.61		3.33	3.52		5.97		4.48
Sum	128.52	106.75	113.19	138.01	140.49	120.19	120.76	106.55	118.62	173.81	170.89	149.72

Current Year 2000										Period 1971-2000			
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters					
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum		
Jan.			2	8.35	1	0	4.15	11,104	9,390	13,819	2,146		
Feb.			12	5.97	9	1.99	3.68	9,223	9,020	14,787	2,023		
Mar.			5	5.91	10	0	3.65	9,780	10,309	15,332	2,393		
April			4	7.99	26	.19	4.60	11,924	10,265	14,666	2,368		
May			14	7.71	16	.63	4.53	12,138	10,583	16,208	2,405		
June			30	7.79	13	1.63	4.01	10,384	9,701	14,851	2,825		
July			5	7.62	15	0	3.90	10,434	9,594	14,715	3,121		
Aug.			6	6.71	12	0	3.44	9,206	9,556	14,752	3,158		
Sept.			1	6.42	15	0	3.95	10,249	9,691	14,269	2,812		
Oct.			26	8.13	6	0	5.61	15,017	11,294	15,277	3,626		
Nov.			13	8.25	25	2.29	5.70	14,765	10,844	14,814	3,454		
Dec.			1	8.20	11	2.55	4.83	12,936	10,179	14,160	3,022		
Yearly				8.35		0	4.34	137,160	120,426	171,922	33,353		

! And other days

09-5343.00 WEST MAIN CANAL WASTEWAY (VALLEY DIVISION, YUMA PROJECT)

DESCRIPTION: Water-stage recorder located about 0.5 kilometer upstream from outlet to Yuma Main Drain, which is 53 meters upstream from East Main Canal Wasteway outlet and 0.6 kilometer west of San Luis, Arizona. Prior to August 1, 1975, the recorder was located about 46 meters 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: February 23, 1971 through 2000.

REMARKS: Wasteway discharges from West Main Canal Wasteway comprise regulatory waste from the West Main Canal and this water is considered as part of the volumes arriving at the land boundary at San Luis.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.74	0.41	0.36	0.44	0.26	0.41	0.11	0.13	0.25	0.66	0.17	0.09
2	.42	.09	.74	.26	.29	.42	.16	.22	.17	.66	.08	.10
3	.24	.10	.39	.19	.09	.39	.45	.64	.44	.46	.04	.05
4	.23	.73	.19	.08	.12	.04	.48	.15	.81	.77	.06	.21
5	.12	.31	.55	.43	.12	.52	.11	.33	.74	.34	.15	.01
6	.75	.46	.27	.15	.14	.13	.34	.25	.50	.47	.41	.01
7	.12	.44	.25	.13	.34	.13	.24	.21	.63	.52	.24	.02
8	.03	.26	.27	.33	.87	.20	.94	.14	.32	.45	.29	.01
9	.37	.21	.29	.60	.66	1.04	.84	.21	.35	.35	.39	.31
10	.34	.12	.23	.63	.33	.67	.48	.35	.25	.49	.07	.18
11	.43	.29	.68	.71	.32	.87	.31	.60	.18	.32	.68	.30
12	.36	.04	.51	.23	.47	.88	.32	.85	.03	.16	.88	.20
13	.46	.59	.21	.35	.57	.27	.21	.52	.02	.17	.62	.22
14	.43	.33	.13	.34	.62	.57	.64	1.03	.40	.20	.43	.12
15	.40	.20	.28	.15	.92	.46	.71	.41	.28	.42	.61	.07
16	.81	.15	.47	.06	.53	.66	.44	.33	.23	.29	.36	.04
17	.23	.51	.63	.09	.10	.37	.59	.59	.38	.14	.59	.01
18	.11	.78	.16	.03	.01	.57	.19	.19	.51	.10	.07	.14
19	.56	.46	.12	.18	.44	.48	.43	.69	.46	.06	.01	.08
20	.70	.28	.32	.47	1.03	.27	.35	.64	.49	.05	.06	.01
21	.06	.63	0	.16	.69	.19	.17	.88	.80	.16	.09	.05
22	.14	.79	.09	.58	.28	.08	.19	.86	.57	.43	.04	.05
23	.73	.22	.19	.86	.25	.28	.50	1.01	.68	.38	.02	.02
24	.94	.31	.24	.27	.15	.19	.05	.99	.51	.23	.05	.12
25	.74	.09	.24	.26	.15	.33	.09	.47	.31	.18	.05	.61
26	.34	.12	.20	.31	.10	.63	.18	.71	.45	.12	.08	.45
27	.35	.44	.48	.05	.21	.37	.25	.53	.49	.04	.04	.01
28	.62	.34	.41	.04	.63	.29	.16	.53	.46	.13	.02	.08
29	.86	.36	.26	.24	.63	.42	.50	.70	.52	.26	.01	.29
30	.92		.62	.19	.61	.22	.42	.83	.57	.18	.01	.05
31	.68		.32		.30		.08	.76		.01		.14
Sum	14.23	10.06	10.10	8.81	12.23	12.35	10.93	16.75	12.80	9.18	6.62	4.05

Current Year 2000

Period 1971-2000

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High		Low	Average	Total	Average	Maximum	Minimum
				Day	Day						
Jan.	0.880	0.010	24	1.58	1.5	0	0.46	1,229	601	1,376	48.7
Feb.	.855	.040	6	1.47	1.3	.01	.35	869	544	869	196
Mar.	.780	.025	5	1.19	1.21	0	.33	873	585	1,158	250
April	.800	.030	1	1.27	1.4	0	.29	761	562	1,280	202
May	.790	.035	28	1.24	1.3	0	.39	1,057	506	1,445	183
June	.840	.030	12	1.42	1.6	0	.41	1,067	462	1,067	55.8
July	.800	.060	14	1.27	1.1	.01	.35	944	466	944	77.3
Aug.	.845	.040	24	1.44	1.1	.01	.54	1,447	545	1,447	121
Sept.	.825	.005	23	1.37	1.10	0	.43	1,106	544	1,128	234
Oct.	.825	.045	16	1.36	1.19	.01	.30	793	537	1,135	164
Nov.	.800	.040	12	1.27	1.1	.01	.22	572	450	845	32.3
Dec.	.795	.045	11	1.26	1.1	.01	.13	350	539	1,204	43.5
Yearly	0.880	0.005		1.58	1.5	0	0.35	11,068	6,341	11,068	3,179

! And other days

09-5345.50 242 WELL FIELD NEAR SAN LUIS, ARIZONA

DESCRIPTION: Water-stage recorder and 3.7 meter Parshall flume located 31 meters upstream from confluence of East Main Canal Wasteway, 34 meters north of the southerly land boundary, and 2.3 kilometers east of the Colorado River.
 RECORDS: Based on current meter measurements and a continuous record of gage heights. The station is operated by the United States Section of the Commission. Records available: October 18, 1978 through 2000.
 REMARKS: Records show the pumping of ground water from the 242 well field east of San Luis, Arizona. This water is considered as part of the volumes arriving at the land boundary at San Luis.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0.21	0.20	0.22	0.22	0.18	0.38	0	0.23	0.43	0	0
2	0	.20	.20	.22	.23	.17	.38	0	.23	.23	0	0
3	0	.20	.21	.22	.22	.18	.40	0	.24	.19	0	0
4	0	.20	.21	.22	.23	.18	.42	0	.25	.01	0	0
5	0	.20	.21	.22	.09	.19	.43	0	.25	0	0	0
6	0	.20	.21	.22	0	.22	.43	0	.25	0	0	0
7	0	.20	.21	.22	0	.23	.45	.06	.26	0	0	0
8	0	.20	.21	.22	0	.19	.47	.22	.26	0	0	0
9	0	.19	.21	.21	0	.18	.44	.24	.25	0	0	0
10	0	.19	.21	.22	0	.18	.47	.27	.27	0	0	0
11	0	.20	.21	.22	0	.18	.42	.45	.25	0	0	0
12	.09	.18	.21	.22	0	.18	.44	.46	.25	0	0	0
13	.21	.18	.21	.22	0	.18	.42	.46	.24	0	0	0
14	.21	.18	.21	.22	0	.18	.43	.46	.24	0	0	0
15	.21	.18	.22	.22	0	.18	.43	.46	.24	0	0	0
16	.21	.19	.21	.20	0	.18	.44	.46	.24	0	0	0
17	.21	.19	.21	.20	0	.18	.43	.46	.24	0	0	0
18	.21	.20	.21	.21	0	.18	.42	.46	.24	0	0	0
19	.21	.23	.22	.22	0	.18	.43	.47	.24	0	0	0
20	.21	.23	.22	.22	0	.20	.43	.47	.24	0	0	0
21	.21	.23	.20	.21	0	.37	.42	.47	.23	0	0	0
22	.21	.22	.21	.21	0	.38	.40	.46	.23	0	0	0
23	.21	.23	.22	.21	.08	.38	.40	.41	.23	0	0	0
24	.21	.23	.22	.21	.18	.38	.31	.22	.23	0	0	0
25	.21	.23	.23	.22	.18	.38	.20	.23	.22	0	0	0
26	.21	.23	.23	.22	.18	.39	.14	.23	.32	0	0	0
27	.21	.22	.23	.22	.18	.38	.01	.23	.45	0	0	0
28	.21	.22	.21	.22	.18	.38	0	.16	.45	0	0	0
29	.21	.20	.21	.22	.18	.37	0	0	.44	0	0	0
30	.21	.21	.23	.23	.17	.38	0	.04	.44	0	0	0
31	.21	.21	.21	.22	.17	.17	0	.22	0	0	0	0
Sum	4.08	5.96	6.59	6.50	2.49	7.51	10.44	8.07	8.15	0.86	0	0
Current Year. 2000										Period 1935-2000		
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum	
Jan.	0.110	0	12	0.31	1	0	0.13	353	791	3,406	0	
Feb.	.105	.075	11	.27	112	.16	.21	515	1,198	3,677	0	
Mar.	.115	.080	19	.32	21	.18	.21	569	1,216	4,717	0	
April	.110	.075	110	.32	114	.19	.22	562	1,354	4,265	0	
May	.110	0	4	.33	6	0	.08	215	1,262	4,269	0	
June	.140	.060	28	.43	1	.13	.25	649	1,241	4,272	0	
July	.170	0	23	.56	127	0	.34	902	1,438	5,868	0	
Aug.	.190	0	14	.72	1	0	.26	697	1,456	4,988	0	
Sept.	.145	.080	27	.49	121	.20	.27	704	1,240	3,397	0	
Oct.	.140	0	1	.46	4	0	.03	74.3	831	3,344	0	
Nov.	0	0	1	0	1	0	0	0	353	2,101	0	
Dec.	0	0	1	0	1	0	0	0	759	3,654	0	
Yearly	0.190	0		0.72		0	0.17	5,240	13,139	38,461	201	

! And other days

09-5348.00 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, 242 Lateral, 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 mean daily discharges are combined and rounded and the monthly volumes are obtained by adding the volumes of the four stations.

RECORDS: Records obtained and computed by the United States Section of the Commission. Records available: February 23, 1971 through 2000; 242 Lateral from November 1978 through 2000.

REMARKS: Descriptions and flows of the individual stations, East Main Canal Wasteway, West Main Canal Wasteway, the Yuma Main Drain, and 242 Lateral are published separately on preceding pages of this bulletin.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.26	4.89	4.27	5.12	5.34	4.77	4.89	3.74	5.18	5.47	6.27	6.12
2	4.61	3.42	4.58	5.97	5.36	4.71	4.56	3.92	4.45	6.53	6.19	5.65
3	3.79	4.01	4.26	5.89	5.00	5.06	4.90	4.22	4.82	6.93	6.19	6.16
4	4.54	4.59	4.55	5.26	5.04	4.23	4.85	3.81	5.10	6.51	6.09	5.25
5	4.31	4.39	5.08	5.04	4.87	4.76	4.63	4.61	4.40	5.67	6.26	4.90
6	5.74	4.56	4.91	4.48	4.86	4.56	5.11	4.83	4.24	5.73	6.51	4.54
7	4.54	5.30	4.04	4.91	5.62	5.25	5.17	4.03	4.68	6.13	6.31	4.92
8	4.27	4.14	4.23	4.76	5.82	4.52	5.88	4.01	4.62	4.35	6.50	5.03
9	4.82	3.90	4.12	6.07	5.69	6.06	5.32	3.77	4.99	4.27	6.61	6.02
10	4.56	3.99	3.66	5.56	5.40	5.22	5.71	3.58	4.61	4.86	6.10	5.82
11	4.80	4.07	5.00	5.31	5.09	5.45	4.22	4.81	4.15	5.31	6.76	5.00
12	5.39	3.73	5.35	4.80	5.92	5.22	4.59	4.87	3.54	4.57	7.18	4.18
13	5.66	4.68	4.39	5.43	6.08	4.72	4.62	4.52	3.44	6.10	7.48	4.29
14	5.18	4.53	3.93	5.26	6.48	5.06	5.14	4.93	3.73	6.84	6.06	4.10
15	5.18	4.39	4.04	5.38	5.89	4.79	5.56	4.82	4.89	6.24	5.75	5.41
16	5.68	4.51	4.60	5.62	5.11	5.52	5.43	4.47	4.39	6.07	5.61	4.95
17	5.31	4.35	5.02	5.42	5.18	5.27	5.35	4.47	4.27	6.13	5.57	5.21
18	4.42	5.25	4.12	4.86	5.01	5.16	5.47	3.86	5.18	6.18	5.14	4.95
19	4.76	4.87	3.78	5.31	5.88	4.54	5.35	4.78	5.52	6.51	5.04	4.89
20	4.74	4.66	4.50	5.29	6.04	4.35	4.81	4.64	5.34	6.04	5.38	4.89
21	5.13	5.53	4.08	4.95	5.61	4.73	4.80	4.62	4.96	6.26	5.98	4.90
22	4.92	5.52	4.13	5.23	4.78	4.08	4.56	4.40	5.36	6.25	5.82	4.90
23	4.99	5.01	4.20	6.38	4.23	4.67	5.40	4.83	5.19	7.20	5.42	5.15
24	5.36	4.21	4.75	5.80	3.07	4.85	4.60	5.04	5.17	7.13	5.61	5.58
25	5.84	3.83	4.60	5.09	4.92	4.90	4.82	4.63	3.94	7.02	4.87	6.01
26	4.84	4.18	4.75	5.20	5.24	5.34	4.53	3.78	5.34	6.86	5.55	5.27
27	4.57	4.88	4.29	4.86	4.80	4.69	3.67	4.17	5.68	5.84	5.73	4.21
28	5.17	4.53	4.43	5.20	5.32	5.36	4.72	4.31	5.44	5.76	5.53	5.40
29	5.14	4.05	4.79	5.74	5.14	5.45	5.15	4.54	5.39	6.30	5.39	6.09
30	5.53		5.55	5.27	5.08	4.99	4.28	4.65	4.81	6.56	5.57	5.17
31	5.23		4.90	4.42	4.42		3.74	4.50		6.09		4.62
Sum	154.28	129.97	138.90	159.46	162.29	148.28	151.83	136.16	142.82	187.71	179.47	159.58

Current Year 2000

Period 1935-2000

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.			25	5.84	3	3.79	4.98	13,330	11,901	14,963	2,619
Feb.			21	5.53	2	3.42	4.48	11,229	11,695	15,998	2,495
Mar.			30	5.55	10	3.66	4.48	12,001	13,175	16,904	2,864
April			23	6.38	6	4.48	5.32	13,777	13,213	16,013	2,611
May			14	6.48	24	3.07	5.24	14,022	13,513	17,145	3,050
June			9	6.06	22	4.08	4.94	12,811	12,366	15,505	3,115
July			8	5.88	27	3.67	4.90	13,118	12,535	15,320	3,610
Aug.			24	5.04	10	3.58	4.39	11,764	12,628	15,612	3,687
Sept.			27	5.68	13	3.44	4.76	12,340	12,479	15,357	3,210
Oct.			23	7.20	9	4.27	6.06	16,218	13,722	17,143	4,248
Nov.			13	7.48	25	4.87	5.98	15,506	12,796	15,680	4,202
Dec.			3	6.16	14	4.10	5.15	13,788	12,606	14,863	3,562
Yearly				7.48		3.07	5.06	159,904	152,629	183,801	39,274

φ Mean daily

! And other days

09-5222.00 COLORADO RIVER AT SOUTHERLY INTERNATIONAL BOUNDARY - DISCHARGES

DESCRIPTION: Water-stage recorder was located in Mexico on the right bank of the river about 305 meters upstream from the southerly international boundary, 3.2 kilometers west of San Luis, Arizona, and 35 kilometers downstream from Morelos Dam. The zero of the gage was at mean sea level, U. S. C. & G. S. datum. This gage was destroyed on January 19, 1983. Between January 19, 1983 and December 10, 1985, temporary gages were installed on the United States side and levels were established to ensure continuous record. On December 10, 1985, a permanent water-stage recorder was relocated on the left bank of the river about 24 meters upstream from the southerly international boundary. On January 30, 1998 a new gage was installed on the left bank of the river about 305 meters downstream from the southerly international boundary.

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 2000; continuous record of gage heights, January 1947 through 1993. During 1993, from January 1 to February 4 and May 1, 1993 to January 30, 1998, the gage was inoperable. Records of gage height and discharge were estimated from instantaneous observations and discharge measurements. 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 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, 937 CMS on August 19, 1983; maximum gage height, 25.860 meters on November 29, 1957. Minimum discharge, no flow on several occasions since September 1, 1956.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	12.2	6.69	7.60	2.88	0.80	7.02	11.6	2.27	15.2	14.4	10.6	13.5
2	13.3	8.69	5.11	2.67	0.97	7.16	9.93	3.77	20.6	18.2	10.7	18.3
3	17.8	7.52	4.13	5.87	.78	5.92	5.59	7.20	12.7	15.7	13.5	10.8
4	14.6	6.49	3.80	5.76	3.06	4.55	2.80	9.19	10.9	14.7	23.2	15.3
5	12.6	5.80	4.79	2.71	7.27	4.17	2.34	9.53	8.21	14.6	17.4	16.7
6	12.9	6.20	8.28	2.06	4.62	5.47	1.94	8.09	11.8	16.4	15.8	15.5
7	11.7	7.07	7.98	1.69	4.51	4.59	2.63	4.33	13.4	17.4	8.37	19.9
8	10.4	7.38	4.76	1.49	6.00	4.10	3.30	10.2	11.7	16.5	12.5	12.2
9	9.45	7.92	4.07	1.22	8.15	4.16	5.22	14.0	10.2	19.8	11.2	14.8
10	9.15	5.00	7.03	1.05	11.4	6.04	3.86	9.87	8.18	20.5	15.7	10.1
11	7.42	3.98	12.4	1.02	10.5	4.92	4.12	8.81	7.82	25.1	12.4	19.8
12	6.76	4.15	8.35	1.17	9.33	4.14	3.15	3.73	7.87	24.6	10.4	12.1
13	8.07	4.32	15.3	1.53	9.07	2.72	2.58	3.24	7.90	27.5	21.0	12.8
14	9.63	5.71	4.34	1.73	9.07	2.60	2.09	2.64	6.64	32.2	13.0	16.8
15	10.7	4.41	2.98	2.03	10.2	1.57	2.40	2.32	7.24	24.5	16.7	15.4
16	11.6	5.05	2.63	2.27	12.5	2.32	6.49	3.66	8.12	27.9	16.9	13.2
17	9.05	5.39	2.40	3.26	9.79	3.03	5.19	2.43	8.16	29.1	8.72	7.52
18	5.86	4.27	2.27	2.61	8.73	3.35	4.12	2.71	9.98	36.1	4.88	5.61
19	4.36	3.71	2.14	1.13	6.91	4.44	4.60	3.42	9.84	25.6	4.06	7.04
20	3.92	3.07	2.20	.98	10.5	4.29	4.77	6.46	9.72	23.1	7.11	7.30
21	4.75	2.51	2.12	.98	12.2	6.00	3.54	5.90	9.58	19.4	7.62	3.63
22	5.24	3.55	2.27	1.03	9.08	7.86	6.15	6.54	11.0	20.2	8.39	2.63
23	5.24	11.4	2.63	15.3	7.88	7.44	8.67	3.82	10.3	25.8	9.06	3.33
24	5.14	16.0	3.97	12.2	7.28	4.66	7.72	3.31	10.2	39.3	18.0	12.2
25	5.42	15.7	5.10	4.85	6.51	6.54	8.32	4.20	14.3	74.7	11.2	17.2
26	5.26	7.94	3.84	3.54	6.30	5.98	6.80	3.82	11.5	111	8.44	15.0
27	5.15	6.64	8.66	1.33	6.78	4.02	7.22	5.38	11.5	64.6	10.0	12.3
28	5.73	6.05	11.1	.39	6.91	2.79	7.10	6.12	14.4	21.3	14.4	4.67
29	5.79	7.10	11.4	.41	5.94	3.03	4.49	9.60	14.1	20.4	11.9	4.02
30	5.86	9.95	.58	.58	6.28	3.54	4.03	15.1	14.7	21.2	12.3	4.20
31	6.05	5.58			7.94		3.07	19.1		11.8		4.81
Sum	261.10	189.71	179.18	85.74	227.26	138.42	155.83	200.76	327.36	873.6	365.45	348.66
Current Year 2000									Period 1935-2000			
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum	
Jan.	22.950	22.305	3	21.6	20	3.61	8.42	22,559	406,664	2,062,379	0	
Feb.	23.055	22.195	24	23.7	21	1.97	6.54	16,391	333,918	1,708,370	0	
Mar.	23.040	22.220	13	23.9	19	2.02	5.78	15,481	279,814	1,458,432	0	
April	23.045	22.080	23	23.3	28	.36	2.86	7,408	182,573	947,722	0	
May	22.640	21.975	16	15.1	4	.71	7.33	19,635	244,441	1,430,837	0	
June	22.495	22.025	22	8.59	15	1.57	4.61	11,959	208,469	1,455,506	0	
July	22.730	22.200	1	14.2	6	1.84	5.03	13,464	179,539	1,821,962	0	
Aug.	22.990	21.925	31	23.3	11	1.66	6.48	17,346	193,997	2,103,318	0	
Sept.	23.085	22.005	2	25.1	114	6.42	10.9	28,284	224,466	1,956,768	0	
Oct.	23.995	22.010	26	121	31	10.8	28.2	75,479	263,024	2,144,909	0	
Nov.	23.175	22.270	13	28.7	119	3.88	12.2	31,575	303,250	1,761,409	0	
Dec.	23.085	22.240	11	24.7	22	2.43	11.2	30,124	373,656	2,268,370	0	
Yearly	23.995	21.925		121		0.36	9.16	289,705	3,193,808	5,656,495	0	

! And other days

09-5222.01 COLORADO RIVER AT SOUTHERLY INTERNATIONAL BOUNDARY - STAGES

(See Preceding Page for Description)

MEAN DAILY GAGE HEIGHT IN METERS 2000

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	22.555	22.415	22.420	22.245	22.125	22.175	22.630	22.230	22.700	22.050	22.470	22.625
2	22.605	22.500	22.305	22.230	22.125	22.200	22.565	22.290	22.940	22.295	22.480	22.860
3	22.795	22.450	22.265	22.380	22.120	22.140	22.385	22.435	22.545	22.100	22.630	22.495
4	22.660	22.405	22.255	22.375	22.225	22.070	22.260	22.515	22.420	22.020	23.025	22.725
5	22.575	22.375	22.310	22.235	22.415	22.065	22.235	22.520	22.230	22.015	22.830	22.800
6	22.595	22.395	22.475	22.205	22.260	22.165	22.215	22.445	22.470	22.155	22.755	22.745
7	22.545	22.430	22.470	22.190	22.225	22.125	22.250	22.255	22.580	22.235	22.395	22.925
8	22.500	22.445	22.330	22.180	22.270	22.115	22.280	22.525	22.460	22.165	22.600	22.600
9	22.470	22.470	22.300	22.170	22.360	22.135	22.365	22.695	22.350	22.410	22.550	22.720
10	22.465	22.340	22.440	22.165	22.520	22.255	22.305	22.495	22.195	22.465	22.795	22.510
11	22.400	22.295	22.665	22.165	22.435	22.210	22.315	22.430	22.165	22.735	22.610	22.920
12	22.380	22.300	22.505	22.175	22.330	22.185	22.265	22.145	22.160	22.705	22.525	22.615
13	22.450	22.310	22.765	22.190	22.275	22.115	22.235	22.095	22.125	22.825	22.950	22.650
14	22.530	22.375	22.340	22.200	22.230	22.125	22.210	22.035	22.055	22.965	22.650	22.815
15	22.585	22.315	22.275	22.220	22.270	22.085	22.225	21.995	22.095	22.695	22.810	22.760
16	22.630	22.345	22.255	22.230	22.425	22.140	22.415	22.075	22.155	22.820	22.815	22.680
17	22.530	22.360	22.245	22.280	22.200	22.195	22.360	21.985	22.150	22.865	22.475	22.450
18	22.400	22.310	22.235	22.250	22.125	22.225	22.310	22.000	22.285	23.050	22.310	22.375
19	22.340	22.280	22.230	22.180	21.985	22.295	22.335	22.040	22.265	22.750	22.280	22.440
20	22.320	22.250	22.230	22.165	22.290	22.300	22.340	22.220	22.240	22.605	22.420	22.455
21	22.355	22.220	22.225	22.165	22.445	22.380	22.285	22.185	22.185	22.395	22.445	22.300
22	22.375	22.270	22.230	22.165	22.210	22.460	22.400	22.215	22.250	22.455	22.470	22.250
23	22.375	22.610	22.245	22.755	22.130	22.445	22.510	22.035	22.140	22.655	22.490	22.285
24	22.365	22.785	22.310	22.645	22.095	22.325	22.470	21.990	22.080	23.325	22.860	22.640
25	22.375	22.775	22.360	22.340	22.055	22.410	22.495	22.045	22.355	23.630	22.565	22.835
26	22.365	22.450	22.300	22.275	22.050	22.390	22.435	22.010	22.085	23.920	22.420	22.755
27	22.360	22.390	22.500	22.150	22.100	22.300	22.450	22.105	22.030	23.530	22.485	22.650
28	22.385	22.355	22.610	22.085	22.120	22.245	22.445	22.145	22.205	22.990	22.690	22.345
29	22.385	22.400	22.620	22.085	22.065	22.260	22.335	22.365	22.130	22.935	22.560	22.315
30	22.385		22.560	22.105	22.100	22.285	22.315	22.700	22.125	22.975	22.570	22.325
31	22.390		22.370	22.230	22.230		22.270	22.910		22.530		22.350
Avg.	22.465	22.400	22.375	22.240	22.220	22.225	22.350	22.260	22.270	22.685	22.595	22.590

09-5333.00 WELLTON-MOHAWK BYPASS DRAIN AT SOUTHERLY INTERNATIONAL BOUNDARY

DESCRIPTION: Water-stage recorder and Parshall flume located 24 meters upstream from the southerly land boundary, 168 meters east of the Colorado River, and 2.9 kilometers west of San Luis, Arizona. The zero of the gage has not been determined.

RECORDS: Based on current meter measurements and a continuous record of gage heights. Station is operated by United States Section of the Commission. Records available: June 23, 1977 through 2000.

REMARKS: Pursuant to Minute No. 242 of the Commission, a bypass drain of the Wellton-Mohawk extension channel was constructed from Morelos Dam to the Santa Clara Slough in Mexico along the left bank of the Colorado River.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.70	3.80	3.33	3.93	3.83	3.69	5.04	4.65	4.70	4.66	4.22	4.91
2	3.57	3.52	3.41	3.95	3.88	3.71	5.05	4.59	4.55	4.72	4.21	4.92
3	3.43	3.48	3.75	4.04	3.94	3.94	4.95	4.53	4.41	4.54	4.24	4.82
4	3.50	3.47	3.63	3.94	4.13	3.92	4.87	4.49	4.66	4.41	4.11	4.57
5	3.57	3.51	3.55	3.98	4.25	3.93	5.03	4.56	4.60	4.66	4.16	4.51
6	3.71	3.48	3.52	3.96	4.18	3.91	5.19	4.58	4.64	4.64	4.33	4.90
7	3.29	3.48	3.63	4.01	4.27	3.80	5.51	4.46	4.57	4.86	4.28	5.01
8	3.36	3.41	3.57	3.94	4.29	3.54	5.23	4.49	4.61	4.72	4.29	4.99
9	4.26	3.11	3.64	4.00	4.26	3.65	5.17	4.38	4.59	4.64	4.22	4.87
10	4.14	3.25	3.51	3.76	4.23	3.70	5.21	4.35	4.62	4.20	4.13	4.87
11	4.00	3.43	3.51	3.92	4.17	3.87	5.38	4.39	4.54	3.98	4.23	4.82
12	3.79	3.48	3.51	3.71	4.12	3.99	5.26	4.31	4.92	3.98	4.13	4.48
13	3.80	3.37	3.68	3.78	4.01	3.67	5.17	4.38	4.76	4.01	4.22	4.61
14	4.06	3.47	3.70	3.98	3.88	3.76	4.87	4.35	4.47	4.02	4.29	4.98
15	3.94	3.37	3.83	4.05	3.87	3.84	4.81	4.23	4.54	4.08	4.36	4.91
16	4.09	3.38	3.75	3.84	3.86	3.85	4.75	4.22	4.56	3.96	4.70	4.85
17	4.14	3.30	3.82	4.01	3.76	3.85	4.72	4.44	4.54	4.04	4.49	4.50
18	4.18	3.51	3.80	4.05	3.75	3.87	4.82	4.35	4.30	4.09	4.75	4.52
19	4.10	3.72	3.70	3.80	3.18	3.83	4.88	4.42	4.71	4.09	4.69	4.63
20	4.08	3.48	3.83	3.97	3.65	3.86	4.85	4.37	4.67	4.08	4.77	4.74
21	3.98	3.45	3.57	3.95	3.81	3.93	4.71	4.42	4.87	4.02	4.71	4.99
22	4.05	3.41	3.57	3.88	3.69	4.02	4.76	4.31	4.66	4.40	4.95	5.01
23	3.92	3.27	3.57	3.84	3.68	4.11	5.08	4.50	4.69	4.47	4.78	4.90
24	3.84	3.25	3.57	3.94	3.75	4.12	4.89	4.50	4.86	3.73	4.70	4.96
25	3.89	3.31	3.57	3.96	3.74	4.21	4.87	4.64	4.91	4.00	4.58	4.80
26	3.91	3.23	3.57	3.82	3.72	4.30	4.90	4.65	4.91	4.04	4.71	4.61
27	3.62	3.22	3.57	3.87	3.73	4.46	4.75	4.49	4.76	4.16	4.73	4.58
28	3.52	3.22	3.57	3.79	3.74	4.67	4.66	4.46	4.39	4.19	4.95	4.71
29	3.71	3.31	3.88	3.89	3.74	4.73	4.74	4.29	4.34	4.24	4.87	4.97
30	3.96		3.84	3.80	3.71	4.90	4.61	4.73	4.55	4.40	5.08	4.74
31	3.88		3.95		3.71		4.54	4.52		4.24		4.82
Sum	118.93	98.69	112.90	117.36	120.53	119.63	153.27	138.05	138.90	132.27	134.88	148.50

Current Year 2000

Period 1977-2000

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.490	0.335	9	4.59	27	2.38	3.84	10,276	14,000	21,638	7,412
Feb.	.485	.390	19	4.44	9	2.57	3.40	8,527	13,521	18,374	8,506
Mar.	.465	.385	29	4.42	12	3.13	3.64	9,755	14,811	21,496	9,755
April	.495	.380	15	4.82	19	3.13	3.91	10,140	13,474	20,613	3,445
May	.470	.230	9	4.35	19	1.35	3.89	10,414	13,622	20,732	5,215
June	.510	.350	30	5.01	13	2.71	3.99	10,336	12,513	19,842	2,227
July	.560	.465	7	5.83	21	4.33	4.94	13,243	13,017	22,235	3,718
Aug.	.525	.425	30	5.38	22	3.82	4.45	11,928	12,880	22,444	3,656
Sept.	.555	.430	24	5.69	29	3.78	4.63	12,001	12,600	23,538	51.4
Oct.	.540	.390	23	5.28	24	3.07	4.27	11,428	12,958	23,600	23.9
Nov.	.545	.445	22	5.40	6	3.76	4.50	11,654	11,588	20,944	59.2
Dec.	.530	.465	8	5.14	4	4.18	4.79	12,830	12,806	22,518	138
Yearly	0.560	0.230		5.83		1.35	4.19	132,532	157,250	222,488	75,784

! And other days

09-5350.00 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, 1.0 kilometer downstream from the wasteway gates on the Central Feeder Canal on the right bank of the Colorado River, 27 kilometers downstream from Morelos Dam, and 250 meters south of the junction of the Mexicali-San Luis and Algodones-Pescaderos highways.

RECORDS: Data obtained and computed by the Colorado River Irrigation District 14 of the National Water Commission 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 2000.

REMARKS: The Colorado River Irrigation District 14 transports water for irrigation of land on the left bank of the Colorado River by the Central Feeder Canal 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 THOUSAND CUBIC METERS

MONTH	CURRENT YEAR 2000	PERIOD 1964 - 2000		
		AVERAGE	MAXIMUM	MINIMUM
January	1,210	11,222	85,761	0
February	869	6,107	50,898	0
March	542	8,457	72,049	0
April	3,042	13,529	85,372	0
May	4,117	13,289	99,576	0
June	149	11,082	61,705	0
July	159	11,274	56,912	0
August	147	16,753	132,183	0
September	1,586	15,117	83,943	0
October	26,273	14,000	136,198	0
November	18,406	13,126	122,170	0
December	6,529	11,439	86,607	0
Yearly	63,029	150,344	628,347	0

09-5365.00 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 18|251 (old Kilometer 38|000). The wasteway is located in the Colonia Bojorquez 1.3 kilometers upstream from the Sonora-Baja California railroad bridge, 5.9 kilometers downstream from the Miguel C. Rodriguez gaging station, and 45 kilometers downstream from the southerly international boundary.

RECORDS: The records are computed by the National Water Commission and are based upon gate openings. Records available: January 1964 through 2000.

REMARKS: The wasteway structure on the left bank of the Colorado River has two manually operated radial gates 3.0 meters wide. It discharges into a dirt canal 200 meters long with a total capacity of 13.0 CMS which discharges to the river.

MONTHLY DISCHARGE IN THOUSAND CUBIC METERS

MONTH	CURRENT YEAR 2000	PERIOD 1964 - 2000		
		AVERAGE	MAXIMUM	MINIMUM
January	899	1,737	10,541	0
February	1,650	1,409	12,035	0
March	575	746	5,932	0
April	298	398	5,555	0
May	3,322	1,421	14,246	0
June	1,607	804	8,585	0
July	717	643	9,114	0
August	1,019	1,083	17,765	0
September	2,265	2,226	16,855	0
October	8,115	4,659	28,669	0
November	1,670	2,796	25,263	0
December	3,129	2,264	13,380	0
Yearly	25,266	19,191	103,228	0

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 million cubic meters. 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 MILLION CUBIC METERS

Month	LAKE MEAD (Capacity 32,266)		LAKE MOHAVE (Capacity 2,232)		HAVASU LAKE (Capacity 764)		TOTAL IN UNITED STATES RESERVOIRS (Capacity 35,263)	
	2000	Average 1935-2000	2000	Average 1951-2000	2000	Average 1939-2000	2000	Estimated Average
Jan.	30,893.7	23,401.3	2,068.5	2,052.9	680.5	682.9	33,642.7	26,137.1
Feb.	30,804.9	23,265.7	2,051.3	2,065.6	659.7	685.6	33,515.9	26,016.9
Mar.	30,341.1	22,999.3	2,066.1	2,069.8	673.6	700.5	33,080.8	25,769.6
April	29,866.3	23,006.9	2,096.9	2,058.7	719.9	736.9	32,683.1	25,801.9
May	29,661.5	23,686.4	2,151.2	2,127.4	735.9	744.6	32,548.6	26,558.4
June	29,004.0	24,733.4	2,093.2	2,025.5	734.9	739.4	31,832.1	27,498.3
July	28,261.5	24,873.2	2,057.4	1,894.1	711.0	726.1	31,029.9	27,493.4
Aug.	27,673.1	24,682.5	2,104.4	1,847.5	738.1	711.5	30,515.5	27,241.5
Sept.	27,684.2	24,484.9	1,873.7	1,802.6	702.1	703.2	30,260.0	26,990.7
Oct.	27,673.1	24,278.1	1,667.7	1,791.5	733.2	699.1	30,074.0	26,768.7
Nov.	27,636.1	24,129.9	1,813.2	1,865.3	671.0	688.1	30,120.3	26,683.3
Dec.	27,578.1	23,964.9	1,974.8	1,975.9	678.8	688.2	30,231.7	26,629.0
Avg.	28,923.1	23,958.8	2,001.5	1,964.7	703.2	708.8	31,627.9	26,632.4
Max.	30,893.7	! 34,266.1	2,151.2	! 2,230.1	738.1	! 849.5	33,642.7	! 35,934.1
Min.	27,578.1	* 13,231.5	1,667.7	!! 1,462.9	659.7	!! 94.9	30,074.0	!! 16,112.5

! Maximum end of month storage for period of record

!! Minimum end of month storage for period of record

* Minimum end of month storage since 1940

SUSPENDED SILT - 2000

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.

COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY

2000	Time	Stream-flow, Momentary	Gravimetric Percent		Time	Stream-flow, Momentary	Gravimetric Percent		Time	Stream-flow, Momentary	Gravimetric Percent
Date	Std.	CMS		Date	Std.	CMS		Date	Std.	CMS	
Jan. 6	0755	73.8	0.0041	June 7	0700	49.3	0.0103	Nov. 8	0930	51.5	0.0013
13	0825	79.2	0.0026	14	0700	62.4	0.0039	16	0900	80.6	0.0018
20	0845	69.9	0.0026	21	0820	82.2	0.0046	22	0725	71.6	0.0023
27	0845	73.3	0.0021	28	0700	69.3	0.0029	30	0850	80.9	0.0038
Feb. 3	0830	81.3	0.0011	July 5	1115	66.1	0.0026	Dec. 7	0850	87.2	0.0024
10	0905	82.8	0.0011	12	0715	66.5	0.0034	14	0845	87.0	0.0033
17	0800	84.4	0.0103	19	0600	67.9	0.0019	21	0910	61.8	0.0033
24	1000	132	0.0017	26	0720	75.3	0.0037	28	0900	62.2	0.0071
Mar. 2	0810	85.1	0.0031	Aug. 2	0850	76.6	0.0026				
9	0830	89.9	0.0076	10	0825	72.7	0.0032				
16	0805	87.5	0.0046	17	0805	35.3	0.0041				
23	0820	84.9	0.0031	24	0825	46.2	0.0043				
29	0750	99.5	0.0030	30	0830	85.4	0.0031				
Apr. 5	0720	90.2	0.0060	Sept. 6	0610	74.2	0.0025				
12	0835	89.4	0.0064	14	0755	31.7	0.0013				
19	0715	89.5	0.0085	20	0800	57.6	0.0167				
26	0720	82.2	0.0043	28	0745	61.7	0.0024				
May 3	0720	74.1	0.0043	Oct. 5	0855	43.8	0.0029				
10	0655	87.0	0.0022	11	0855	79.9	0.0050				
17	1110	79.1	0.0018	19	0900	52.1	0.0020				
24	0710	63.3	0.0015	25	0820	146	0.0019				
31	0950	74.9	0.0192	Nov. 2	0855	51.8	0.0028				

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

INTAKE CANAL AT MORELOS DIVERSION STRUCTURE

2000	Monthly Weight Megagrams		Number of Samples	Gravimetric Percentages			* Silt Volume - Thousand Cubic Meters			
	Water	Silt		Average	Maximum Sample	Minimum Sample	Total 2000	Period 1952 - 2000		
								Average	Maximum	Minimum
Jan.	198,150,000	56,437	4	0.0285	0.1226	0.0006	41.4	11.6	62.6	0.30
Feb.	218,782,000	13,668	4	0.0062	0.0358	0.0005	10.0	13.2	127.8	1.10
Mar.	257,152,000	8,090	5	0.0031	0.0093	0.0019	5.94	52.2	605.2	1.10
April	227,448,000	33,759	4	0.0148	0.0474	0.0031	24.8	56.5	856.8	2.80
May	195,998,000	6,623	5	0.0034	0.0068	0.0010	4.86	20.2	318.2	1.30
June	180,386,000	5,258	4	0.0029	0.0104	0.0010	3.86	31.4	256.6	2.50
July	174,632,000	20,283	4	0.0116	0.0268	0.0010	14.9	39.0	189.8	2.80
Aug.	133,540,000	3,207	5	0.0024	0.0050	0.0010	2.36	35.8	166.9	2.36
Sept.	124,623,000	2,479	4	0.0020	0.0040	0.0010	1.82	16.4	72.9	1.78
Oct.	136,149,000	5,592	4	0.0041	0.0077	0.0010	4.11	9.02	124.0	0.40
Nov.	149,455,000	5,520	5	0.0037	0.0095	0.0005	4.05	9.07	165.2	0.30
Dec.	179,461,000	4,200	4	0.0023	0.0047	0.0010	3.08	9.06	54.4	0.84
Year	2,175,776,000	165,116	52	0.0071	0.1226	0.0005	121.2	303.5	2,706.5	40.2

* Volume calculated at 1.362 megagrams per cubic meter

COLORADO RIVER AT SOUTHERLY INTERNATIONAL BOUNDARY

2000	Time	Stream-flow, Momentary	Gravimetric Percent		Time	Stream-flow, Momentary	Gravimetric Percent		Time	Stream-flow, Momentary	Gravimetric Percent
Date	Std.	CMS		Date	Std.	CMS		Date	Std.	CMS	
Sept. 15	0840	2.33	0.0051								
Oct. 26	1210	116	0.0056								

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

CHEMICAL ANALYSES OF WATER SAMPLES
2000

The tables below are based on chemical analyses of samples from the Colorado River taken at the Northerly International Boundary by the United States Section of the Commission and analyzed under a contract with the U. S. Bureau of Reclamation.

Colorado River at Northerly International Boundary

2000	Time	Streamflow	Specific		Hardness,	Hardness,	Calcium	Magnesium
Date	Standard	Momentary	Conductance	pH	Total	Noncarbonate	ion (Ca),	ion (Mg),
		CMS	Microsiemens/ cm	Units	(as CaCO ₃)	(CaCO ₃)	Dissolved	Dissolved
					mg/L	mg/L	mg/L	mg/L
Jan. 3	0830	88.9	1,360	8.2	365.43	365.43	93.2	32.3
18	1000	72.0	1,370	8.2	370.89	370.89	94.4	32.9
Feb. 7	0800	83.6	1,350	8.2	346.55	346.55	88.6	30.5
22	0830	102	1,310	8.2	349.89	349.89	90.1	30.4
Mar. 6	0830	98.3	1,230	8.2	334.11	334.11	85.1	29.6
20	0800	85.1	1,210	8.3	335.11	335.11	85.5	29.6
April 3	0900	110	1,250	8.2	341.91	341.91	87.4	30.1
17	0810	89.7	1,080	8.3	300.72	300.72	76.5	26.7
May 1	0845	77.1	1,210	8.3	337.96	337.96	85.0	30.6
15	0730	76.9	1,280	8.2	343.23	343.23	87.6	30.3
June 5	0800	67.2	1,320	8.3	346.37	346.37	88.2	30.7
19	0900	73.0	1,220	8.3	330.45	330.45	83.8	29.5
July 3	0700	74.2	1,240	8.3	338.73	338.73	85.8	30.3
17	0745	68.3	1,250	8.3	341.26	341.26	85.5	31.1
Aug. 7	0745	63.1	1,280	8.3	355.78	355.96	88.1	33.1
21	0900	53.7	1,320	8.3	345.97	345.97	86.4	31.7
Sept. 5	0730	49.9	1,350	8.3	357.82	357.82	89.5	32.7
18	0640	60.2	1,240	8.3	333.78	333.48	83.0	30.8
Oct. 3	0720	43.0	1,340	8.3	355.83	355.83	91.0	31.3
16	0800	103	1,180	8.2	330.04	330.04	83.8	29.4
Nov. 6	0800	53.3	1,350	8.3	365.07	365.07	92.4	32.7
20	0800	65.6	1,330	8.3	357.25	357.25	89.6	32.5
Dec. 4	1030	86.0	1,320	8.3	370.69	370.69	93.5	33.4
18	0815	70.1	1,290	8.3	355.40	355.40	90.5	31.5

2000	Sodium	Potassium	Sulfate	Chloride	Carbonate	Bicarbonate	Nitrate	Total
Date	ion (Na), Dissolved	ion (K) Dissolved	ion (SO ₄) Dissolved	ion (Cl), Dissolved	(as CO ₃)	(as HCO ₃)	(as NO ₃)	Solids Dissolved (Calculated)
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Jan. 3	146	4.4	304	143	N.D.	212	2.0	841
18	152	4.5	312	147	N.D.	209	1.9	860
Feb. 7	139	4.1	292	145	N.D.	206	2.0	857
22	145	4.4	289	143	N.D.	201	2.2	815
Mar. 6	129	4.4	275	127	N.D.	195	1.9	759
20	130	4.3	273	127	N.D.	190	2.0	756
April 3	129	4.4	284	132	N.D.	196	1.9	777
17	104	3.9	251	95	N.D.	177	1.9	655
May 1	128	4.5	286	123	N.D.	192	1.9	764
15	132	4.2	290	134	N.D.	201	2.0	790
June 5	139	4.2	298	139	N.D.	204	2.1	814
19	123	4.2	275	110	N.D.	193	2.1	743
July 3	127	4.3	280	122	N.D.	196	1.6	759
17	133	4.5	289	130	N.D.	201	1.7	785
Aug. 7	139	4.8	300	134	0.2	204	1.3	816
21	145	4.4	293	136	N.D.	203	1.8	812
Sept. 5	149	4.5	300	144	N.D.	209	1.8	838
18	134	4.5	273	128	0.4	194	1.6	763
Oct. 3	142	4.4	306	115	N.D.	205	1.6	806
16	117	4.1	279	110	N.D.	193	1.3	732
Nov. 6	149	4.8	295	144	N.D.	210	1.6	835
20	144	4.5	298	142	N.D.	209	1.6	827
Dec. 4	146	4.6	304	137	N.D.	209	1.4	836
15	137	4.3	293	134	0.1	203	1.4	804

N.D. - Not Detected

SPECIFIC CONDUCTANCE OF WATER SAMPLES

The following table shows specific conductance of individual water samples taken at the Colorado River station and in Mexican canals. Samples were taken at the Northerly International Boundary and at the Southerly International Boundary by the United States Section of the Commission. Determinations for the Northerly International Boundary were made by the Bureau of Reclamation and the United States Section of the Commission (jointly); and for the Southerly International Boundary, by the United States Section of the Commission. Samples for the Intake Canal at Morelos Dam were taken by the Mexican Section of the Commission, and determinations were made by the Ministry of Agriculture and Hydraulic Resources of Mexico.

COLORADO RIVER AT NORTHERLY INTERNATIONAL BOUNDARY

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2000

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,400	1,350	1,220	1,200	1,210	1,220	1,230	1,200	1,230	1,300	1,380	1,300
2	1,390	1,290	1,210	1,220	1,200	1,240	1,230	1,200	1,260	1,320	1,370	1,310
3	1,360	1,290	1,200	1,250	1,200	1,270	1,240	1,170	1,290	1,340	1,280	1,310
4	1,320	1,340	1,210	1,210	1,210	1,290	1,240	1,170	1,320	1,350	1,300	1,320
5	1,310	1,340	1,220	1,210	1,210	1,320	1,240	1,200	1,350	1,330	1,330	1,250
6	1,280	1,340	1,230	1,200	1,220	1,260	1,220	1,240	1,240	1,250	1,350	1,260
7	1,320	1,350	1,180	1,190	1,230	1,280	1,190	1,280	1,210	1,250	1,380	1,220
8	1,340	1,270	1,220	1,180	1,240	1,250	1,210	1,170	1,240	1,250	1,360	1,280
9	1,370	1,280	1,260	1,180	1,210	1,240	1,220	1,150	1,270	1,250	1,320	1,300
10	1,390	1,270	1,190	1,170	1,160	1,260	1,240	1,220	1,300	1,250	1,310	1,320
11	1,400	1,280	1,230	1,200	1,220	1,270	1,230	1,240	1,330	1,150	1,300	1,340
12	1,330	1,290	1,280	1,200	1,240	1,290	1,240	1,270	1,310	1,180	1,300	1,290
13	1,320	1,310	1,320	1,190	1,250	1,250	1,230	1,300	1,330	1,150	1,290	1,230
14	1,310	1,320	1,230	1,200	1,270	1,260	1,240	1,330	1,310	1,160	1,280	1,250
15	1,320	1,280	1,220	1,160	1,280	1,250	1,240	1,350	1,290	1,170	1,270	1,240
16	1,340	1,260	1,210	1,120	1,150	1,230	1,250	1,330	1,270	1,180	1,260	1,250
17	1,360	1,270	1,190	1,080	1,210	1,230	1,250	1,370	1,260	1,170	1,330	1,260
18	1,370	1,280	1,200	1,140	1,250	1,220	1,230	1,340	1,240	1,190	1,330	1,290
19	1,340	1,280	1,200	1,200	1,260	1,220	1,230	1,330	1,290	1,230	1,330	1,340
20	1,340	1,290	1,210	1,160	1,270	1,240	1,200	1,330	1,240	1,310	1,330	1,260
21	1,340	1,290	1,210	1,200	1,280	1,170	1,210	1,320	1,280	1,280	1,290	1,320
22	1,360	1,310	1,200	1,180	1,290	1,170	1,210	1,360	1,220	1,240	1,290	1,320
23	1,380	1,180	1,150	1,150	1,250	1,190	1,220	1,380	1,270	1,210	1,300	1,310
24	1,400	1,120	1,160	1,130	1,250	1,210	1,230	1,370	1,310	1,160	1,290	1,310
25	1,340	1,200	1,140	1,190	1,260	1,220	1,210	1,340	1,360	1,130	1,300	1,310
26	1,320	1,250	1,130	1,230	1,250	1,240	1,200	1,330	1,360	1,120	1,300	1,310
27	1,340	1,300	1,110	1,210	1,250	1,210	1,200	1,310	1,350	1,220	1,310	1,390
28	1,310	1,350	1,140	1,220	1,240	1,230	1,210	1,300	1,230	1,250	1,250	1,310
29	1,320	1,230	1,160	1,210	1,230	1,230	1,220	1,260	1,280	1,290	1,270	1,300
30	1,340		1,110	1,210	1,230	1,220	1,220	1,140	1,300	1,320	1,290	1,330
31	1,350		1,170		1,200		1,230	1,180		1,370		1,360

SPECIFIC CONDUCTANCE OF WATER SAMPLES

INTAKE CANAL AT MORELOS DIVERSION STRUCTURE

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2000

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,300	1,400	1,200	1,260	1,600	1,320	1,170	1,350	1,300	1,420	1,330	1,320
2	1,350	1,400	1,200	1,300	1,600	1,350	1,240	1,320	1,280	1,450	1,360	1,370
3	1,350	1,400	1,200	1,310	1,600	1,350	1,280	1,190	1,320	1,410	1,250	1,320
4	1,320	1,400	1,200	1,300	1,410	1,420	1,260	1,160	1,380	1,460	1,240	1,380
5	1,300	1,410	1,210	1,300	1,290	1,400	1,280	1,170	1,440	1,410	1,290	1,330
6	1,250	1,410	1,210	1,280	1,280	1,450	1,240	1,200	1,300	1,390	1,330	1,320
7	1,300	1,390	1,210	1,250	1,280	1,380	1,230	1,280	1,270	1,380	1,400	1,390
8	1,300	1,380	1,210	1,250	1,300	1,300	1,240	1,300	1,300	1,400	1,300	1,320
9	1,350	1,390	1,280	1,250	1,310	1,320	1,250	1,130	1,300	1,320	1,310	1,300
10	1,400	1,380	1,260	1,250	1,300	1,310	1,270	1,300	1,370	1,320	1,260	1,310
11	1,350	1,300	1,250	1,250	1,300	1,280	1,260	1,260	1,340	1,300	1,250	1,350
12	1,350	1,310	1,250	1,200	1,300	1,280	1,250	1,320	1,340	1,280	1,250	1,350
13	1,300	1,320	1,300	1,200	1,320	1,280	1,230	1,300	1,340	1,250	1,300	1,250
14	1,300	1,320	1,300	1,200	1,320	1,280	1,230	1,310	1,410	1,240	1,200	1,220
15	1,300	1,320	1,300	1,200	1,380	1,280	1,230	1,360	1,410	1,230	1,250	1,220
16	1,350	1,320	1,300	1,200	1,200	1,270	1,210	1,310	1,420	1,230	1,250	1,230
17	1,350	1,310	1,300	1,200	1,300	1,280	1,270	1,340	1,390	1,230	1,300	1,290
18	1,350	1,300	1,300	1,200	1,320	1,280	1,240	1,320	1,400	1,220	1,340	1,330
19	1,350	1,300	1,300	1,200	1,320	1,450	1,230	1,340	1,380	1,200	1,370	1,300
20	1,350	1,300	1,310	1,210	1,350	1,300	1,210	1,360	1,400	1,210	1,340	1,250
21	1,350	1,300	1,300	1,210	1,320	1,250	1,250	1,350	1,450	1,250	1,320	1,340
22	1,350	1,250	1,280	1,220	1,350	1,250	1,210	1,330	1,390	1,250	1,270	1,360
23	1,350	1,290	1,250	1,200	1,320	1,250	1,210	1,330	1,380	1,210	1,270	1,340
24	1,410	1,150	1,200	1,210	1,320	1,250	1,200	1,350	1,400	1,210	1,300	1,290
25	1,350	1,260	1,160	1,220	1,320	1,250	1,240	1,330	1,360	1,200	1,360	1,340
26	1,350	1,250	1,190	1,250	1,350	1,250	1,260	1,350	1,380	1,200	1,400	#
27	1,380	1,300	1,190	1,380	1,350	1,250	1,340	1,280	1,390	1,220	1,320	1,400
28	1,360	1,310	1,190	1,450	1,350	1,250	1,330	1,360	1,410	1,200	1,320	1,300
29	1,310	1,250	1,190	1,480	1,350	1,250	1,350	1,280	1,420	1,280	1,320	1,240
30	1,350		1,190	1,500	1,350	1,250	1,360	1,160	1,400	1,300	1,320	1,270
31	1,400		1,210		1,350		1,370	1,230		1,280		1,250

- Missing data

COLORADO RIVER AT SOUTHERLY INTERNATIONAL BOUNDARY

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2000

January	March	May	July	September	November
3 3,950	1 4,200	1 4,170	3 4,300	5 4,120	1 4,370
19 3,980	7 4,190	16 4,170	19 4,280	12 4,000	14 4,070
	14 4,100			19 3,720	21 4,150
	21 4,130				28 3,780
February	April	June	August	October	December
1 4,200	3 4,360	1 4,140	1 4,330	2 4,100	1 3,940
8 4,350	18 4,210	6 4,050	15 4,400	17 4,350	12 4,220
15 4,230		20 4,220	29 4,210		19 4,150

RAINFALL ON THE COLORADO RIVER WATERSHED
IN MILLIMETERS

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 following page in this bulletin.

IN THE UNITED STATES

Month	Brawley, California		El Centro, California		Blythe, California		Yuma Citrus Station, Arizona		Bullhead City, Arizona	
	2000	Average 1931-2000	2000	Average 1931-2000	2000	Average 1931-2000	2000	Average 1931-2000	2000	Average 1978-2000
Jan.	0	10	0	11	0	12	0	10	0	28
Feb.	0	9	2	9	#	12	3	9	25	29
Mar.	2	7	2	6	12	10	11	7	16	27
April	0	2	0	2	0	3	0	7	1	5
May	0	1	2	0	0	1	0	1	0	3
June	0	0	0	0	T	1	T	1	T	0
July	0	1	0	2	0	5	0	6	0	9
Aug.	0	9	T	8	4	18	35	14	57	20
Sept.	0	8	0	8	0	10	#	11	0	11
Oct.	0	6	14	7	2	7	#	9	7	10
Nov.	0	4	0	4	0	6	0	5	T	12
Dec.	0	11	0	11	0	13	0	11	T	15
Yearly	2	68	20	68		98		91	106	169

IN MEXICO

Month	Los Algodones, Baja California		Mexicali, Baja California		Bataques, Baja California		El Centinela, Baja California		Delta, Baja California	
	2000	Average 1948-2000	2000	Average 1926-2000	2000	Average 1948-2000	2000	Average 1975-2000	2000	Average 1948-2000
Jan.	0	9	0	9	#	10	0	5	0	7
Feb.	0	5	0	8	#	6	7	7	T	6
Mar.	10	4	1	6	#	5	3	3	3	5
April	0	2	T	2	0	3	0	2	0	1
May	0	T	0	T	0	T	0	0	0	T
June	5	T	T	T	0	T	2	T	0	0
July	0	3	T	4	0	2	0	1	0	2
Aug.	4	8	T	9	0	6	10	4	T	6
Sept.	0	4	0	10	0	5	0	7	0	7
Oct.	20	6	8	8	18	6	3	5	10	7
Nov.	T	4	0	4	0	3	0	1	0	3
Dec.	0	9	T	17	0	8	0	7	0	9
Yearly	39	54	9	81		50	25	42	13	52

Month	San Felipe, Baja California		Riito, Sonora						
	2000	Average 1948-2000	2000	Average 1949-2000					
Jan.	0	6	0	6					
Feb.	0	5	0	5					
Mar.	6	3	15	4					
April	0	1	0	1					
May	0	1	0	T					
June	0	1	0	T					
July	7	3	0	2					
Aug.	T	9	0	6					
Sept.	T	17	0	9					
Oct.	76	6	50	8					
Nov.	0	5	0	4					
Dec.	0	9	0	10					
Yearly	89	71	65	59					

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 2000.

IN THE UNITED STATES

NAME OF STATION	LATITUDE	LONGITUDE	@ ELEV. (Meters)	RECORD BEGAN	OBSERVER
* Blythe, California	33° 37'	114° 36'	81.69	1909	State Division of Forestry
Brawley, California	32° 57'	115° 33'	30.48	1908	Agricultural Research Service
Bullhead City, Arizona	35° 07'	114° 36'	176.78	1980	Bullhead City Fire Department
El Centro, California	32° 46'	115° 34'	9.14	1930	El Centro Water Department
Yuma Citrus Station, Arizona	32° 37'	114° 39'	58.22	1923	University of Arizona Experimental Farm

IN MEXICO

NAME OF STATION	LATITUDE	LONGITUDE	@ ELEV. (Meters)	RECORD BEGAN	OBSERVER
Bataques, Baja California	32° 34'	115° 00'	**20.12	1948	# S. A. R. H.
Delta, Baja California	32° 21'	115° 11'	**11.89	1948	S. A. R. H.
El Centinela, Baja California	32° 35'	115° 45'	49.99	1978	S. A. R. H.
Los Algodones, Baja California	32° 42'	114° 44'	35.05	1948	S. A. R. H.
Mexicali, Baja California	32° 40'	115° 28'	3.96	1926	S. A. R. H.
Riito, Sonora	32° 13'	115° 01'	13.11	1959	S. A. R. H.
San Felipe, Baja California	31° 01'	114° 51'	21.95	1969	S. A. R. H.

* Not shown on rainfall map

@ Elevation above mean sea level except Brawley and El Centro, which are elevations below mean sea level

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

Ministry of Agriculture and Hydraulic Resources

EVAPORATION IN THE COLORADO RIVER BASIN
IN MILLIMETERS

Tabulated below are records of evaporation observed at one station in Arizona, at five stations in Baja, California, and at one station in Sonora. The station in the United States is operated by the University of Arizona Experimental Farm. The stations in Mexico are operated by the Ministry of Agriculture and Hydraulic Resources. The type of pan used at all these stations was the National Weather Service standard pan of 1.22 meters diameter. For specific location of these stations, refer to data opposite the same station name shown in "Location of Rainfall Stations," in this bulletin.

IN THE UNITED STATES

Month	Yuma Citrus Station, Arizona	
	2000	Average 1931-2000
Jan.	101	99
Feb.	#	120
Mar.	154	184
April	218	252
May	202	321
June	341	358
July	#	384
Aug.	#	336
Sept.	#	265
Oct.	#	189
Nov.	#	125
Dec.	#	94
Yearly		2,727

IN MEXICO

Month	Los Algodones, Baja California		Mexicali, Baja California		Bataques, Baja California		Riito, Sonora		San Felipe, Baja California	
	2000	Average 1948-2000	2000	Average 1926-2000	2000	Average 1948-2000	2000	Average 1949-2000	2000	Average 1948-2000
Jan.	88	105	55	64	#	83	#	76	119	119
Feb.	95	127	68	130	#	101	#	98	113	139
Mar.	151	180	110	146	#	150	#	146	134	168
April	201	249	185	197	#	205	#	187	194	198
May	299	310	237	266	#	269	#	256	299	242
June	291	335	254	291	311	305	#	286	309	258
July	293	344	268	297	265	289	#	315	315	274
Aug.	265	307	217	256	310	253	#	266	276	261
Sept.	213	255	169	203	266	208	#	215	263	229
Oct.	128	201	108	145	176	148	#	153	224	199
Nov.	91	132	59	85	127	110	#	95	204	148
Dec.	97	107	57	60	110	79	#	77	173	120
Yearly	2,212	2,656	1,787	2,082		2,226		2,246	2,623	2,410

Month	Delta, Baja California							
	2000	Average 1948-2000						
Jan.	91	85						
Feb.	89	108						
Mar.	148	153						
April	244	210						
May	300	255						
June	286	280						
July	288	290						
Aug.	307	264						
Sept.	246	222						
Oct.	116	157						
Nov.	104	105						
Dec.	75	151						
Yearly	2,294	2,058						

Missing record

TEMPERATURE IN THE COLORADO RIVER BASIN
IN DEGREES CELSIUS

The maximum, minimum, and monthly mean temperature observations for United States stations are from daily readings of thermometers generally exposed in a shelter located approximately one meter 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," in this bulletin.

IN THE UNITED STATES

Month	Blythe, California				Yuma Citrus Station, Arizona				Brawley, California			
	2000				2000				2000			
	Mean	Max.	Min.	Average 1931-00	Mean	Max.	Min.	Average 1931-00	Mean	Max.	Min.	Average 1931-00
Jan.	#	27.2	-1.7	11.6	#	28.3	-0.6	11.9	14.4	30.0	-1.1	12.4
Feb.	#	#	#	14.2	#	26.7	4.4	14.1	15.7	27.2	2.2	14.7
Mar.	18.6	33.3	3.3	17.4	#	30.6	1.1	16.9	17.2	32.8	3.3	17.4
April	23.4	40.0	8.3	21.3	#	37.2	8.3	20.5	22.7	38.9	6.7	21.1
May	28.3	45.0	11.7	25.5	#	42.8	10.0	24.4	26.7	45.6	11.1	25.1
June	32.4	46.1	17.2	29.9	#	42.8	15.6	28.8	30.4	43.9	13.9	29.4
July	33.7	46.7	19.4	33.6	#	40.6	16.7	32.7	31.8	46.1	16.1	33.0
Aug.	34.1	47.2	21.7	32.9	#	44.4	21.1	32.5	33.2	46.1	18.3	33.0
Sept.	29.8	46.7	15.0	29.5	#	#	#	29.5	29.5	45.6	12.2	30.1
Oct.	22.9	40.0	8.9	22.9	#	#	#	23.1	22.2	38.9	7.2	23.9
Nov.	13.4	23.9	-0.6	15.7	#	26.1	1.1	16.3	14.0	26.7	-1.1	16.9
Dec.	#	26.1	-0.6	11.7	#	27.2	-1.1	12.4	14.2	27.8	0.6	12.8
Yearly				22.2				21.9	22.7	46.1	-1.1	22.5

Month	El Centro, California				Bullhead City, Arizona							
	2000				2000							
	Mean	Max.	Min.	Average 1931-00	Mean	Max.	Min.	Average 1978-00				
Jan.	15.2	29.4	1.1	12.5	14.0	27.2	-0.6	12.4				
Feb.	16.3	27.8	5.0	14.8	16.2	27.8	4.4	14.9				
Mar.	18.1	32.8	5.0	17.5	18.3	31.7	5.0	18.0				
April	23.6	38.3	8.9	21.1	25.1	41.7	10.0	22.3				
May	27.8	43.3	12.8	25.2	30.3	46.7	13.9	27.3				
June	31.4	43.3	15.6	29.6	33.9	48.9	18.9	32.3				
July	33.2	46.1	18.9	33.2	35.4	49.4	21.1	35.2				
Aug.	33.6	46.1	21.7	32.9	35.4	48.3	21.1	34.8				
Sept.	30.3	44.4	15.6	29.9	30.8	46.1	18.3	30.7				
Oct.	23.2	39.4	9.4	23.8	23.9	41.7	8.9	23.9				
Nov.	15.1	26.1	2.8	16.9	13.8	23.3	1.7	16.6				
Dec.	14.5	28.3	2.8	12.8	13.6	23.9	2.2	12.0				
Yearly	23.5	46.1	1.1	22.5	24.2	49.4	-0.6	23.4				

IN MEXICO

Month	Los Algodones, Baja California				Mexicali, Baja California				Bataques, Baja California			
	2000		1948-2000		2000		1926-2000		2000		1948-2000	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
Jan.	29	1	31	-5	28	2	34	-7	#	#	45	-9
Feb.	29	6	35	-2	27	7	34	-5	#	#	37	-6
Mar.	34	4	38	0	33	5	38	-1	#	#	45	-4
April	42	11	43	3	40	9	41	1	40	10	48	-9
May	46	12	47	6	47	14	47	6	49	18	51	1
June	46	18	52	11	47	18	49	9	48	21	57	6
July	49	19	50	13	48	20	48	13	48	27	56	7
Aug.	48	22	49	16	47	23	49	12	46	28	54	8
Sept.	48	16	50	10	45	19	50	8	48	20	57	4
Oct.	42	11	44	0	39	12	44	0	40	15	48	0
Nov.	28	3	38	-3	25	4	40	-2	26	13	46	0
Dec.	28	3	32	-5	25	4	32	-5	26	6	36	-5
Yearly	49	1	52	-5	48	2	50	-7			57	-9

Missing Data

IRRIGATED AREAS ALONG COLORADO RIVER BELOW IMPERIAL DAM

2000

The total drainage area within the Colorado River basin is about 637,000 square kilometers, of which 478,100 square kilometers lie above Imperial Dam and about 159,000 square kilometers, are below the dam. Of the area below Imperial Dam, 153,800 square kilometers are in the United States and about 5,180 square kilometers are in Mexico. The area below Imperial Dam includes the Gila River watershed with a total area of about 150,700 square kilometers, of which about 2,850 square kilometers 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 U. S. Bureau of Reclamation; and 3) those within the Imperial Valley, California, the data for which are furnished by the U. S. Bureau of Reclamation. 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 Agriculture and 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 Hectares
IN THE UNITED STATES:	
Imperial Dam	
Yuma Valley Division	18,225
Reservation Division	5,222
Yuma Mesa	7,794
Yuma Aux. Project Unit "B" (Yuma Mesa)	858
South Gila Valley	3,902
North Gila Valley	2,544
Wellton-Mohawk	23,685
Coachella Valley	25,616
Imperial Valley	182,440
Warren Act	35
Non-Project lands adjacent to Colorado River	5,191
Total in United States	275,512
IN MEXICO:	
San Luis Valley, R. C., Sonora	16,103
Mexicali Valley	114,872
Total in Mexico	130,975
Total in United States and Mexico	406,487

10-2545.80 ALAMO RIVER AT INTERNATIONAL BOUNDARY

DESCRIPTION: Staff gage located on the right bank of the river, about 11.3 kilometers east of Calexico, California, immediately downstream from the international land boundary between the United States and Mexico and approximately three meters upstream from a 1.22-meter Cipolletti weir in the throat of a twin-tube concrete culvert which carries the river flow under the All-American Canal. On November 18, 1992 continuous gage height recording equipment was installed at the site.

RECORDS: From June 1942 through November 18, 1992 flows 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. A continuous gage height record and mean daily discharge records are available November 19, 1992 through 2000. Records obtained and furnished by Imperial Irrigation District.

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. On September 28, 1995 the National Water Commission of Mexico completed the construction of a weir immediately upstream of the international boundary. The result is that all the Alamo River flow, or a portion thereof, is being diverted into the New River via the interconnected agricultural drainage system in Mexico. After September 28, 1995 the recorded flow at the gage is affected by this diversion.

EXTREMES: Maximum mean daily discharge, 7.31 CMS (estimated), April 13, 1946; minimum discharge, no flow July 22-23, 29-30, 1949 and numerous days after September 28, 1995. 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 CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.08	0.08	0.07	0.08	0.07	0.07	0.08	0.06	0.07	0.06	0.08	0.12
2	.07	.08	.07	.08	.09	.07	.07	.08	.07	.06	.07	.14
3	.07	.08	.08	.08	.13	.08	.07	.09	.07	.06	.08	.13
4	.07	.08	.08	.08	.08	.08	.07	.08	.06	.07	.09	.14
5	.07	.07	.08	.07	.07	.08	.07	.08	.06	.08	.09	.10
6	.08	.07	.09	.07	.07	.08	.10	.08	.06	.07	.08	.09
7	.08	.07	.09	.08	.08	.08	.11	.08	.06	.07	.08	.09
8	.08	.07	.08	.08	.08	.07	.08	.07	.06	.07	.09	.12
9	.08	.08	.09	.08	.08	.07	.07	.07	.06	.09	.09	.10
10	.10	.08	.08	.07	.08	.07	.07	.08	.06	.11	.09	.10
11	.10	.08	.08	.08	.08	.07	.08	.08	.08	.10	.09	.10
12	.08	.08	.08	.08	.08	.08	.08	.08	.07	.10	.08	.09
13	.08	.08	.07	.08	.08	.08	.09	.07	.07	.08	.09	.09
14	.08	.09	.07	.07	.08	.08	.09	.06	.06	.07	.10	.09
15	.08	.10	.08	.07	.09	.09	.08	.06	.06	.07	.09	.09
16	.09	.08	.07	.07	.10	.09	.08	.06	.06	.07	.09	.09
17	.08	.08	.07	.07	.08	.09	.08	.06	.06	.07	.09	.10
18	.08	.10	.07	.08	.08	.09	.08	.06	.06	.07	.09	.10
19	.08	.09	.07	.07	.08	.08	.08	.06	.06	.07	.09	.10
20	.08	.09	.08	.08	.08	.07	.08	.07	.06	.07	.10	.10
21	.08	.09	.08	.08	.08	.07	.07	.07	.06	.08	.10	.10
22	.08	.09	.08	.07	.08	.07	.07	.06	.06	.08	.10	.10
23	.12	.08	.08	.07	.08	.08	.07	.07	.06	.10	.10	.09
24	.10	.08	.08	.07	.08	.07	.07	.07	.05	.09	.10	.09
25	.08	.08	.08	.07	.07	.07	.07	.07	.06	.08	.10	.09
26	.08	.10	.08	.07	.08	.08	.08	.08	.06	.08	.09	.09
27	.08	.07	.08	.08	.09	.10	.07	.10	.06	.08	.09	.09
28	.08	.07	.08	.08	.08	.08	.09	.07	.10	.06	.08	.10
29	.08	.07	.08	.08	.07	.09	.06	.09	.06	.09	.10	.09
30	.08	.08	.08	.08	.08	.08	.07	.08	.06	.08	.12	.10
31	.08		.08		.07		.07		.08		.08	.10
Sum	2.55	2.36	2.43	2.27	2.52	2.38	2.38	2.30	1.86	2.43	2.75	3.11
Current Year 2000										Period 1943-2000		
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters				
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum	
Jan.	0.175	0.130	23	0.12	1	2	0.07	0.08	220	330	3,441	0
Feb.	.160	.120	15	.10	1	5	.07	.08	204	303	3,481	0
Mar.	.150	.120	1	.09	1	1	.07	.08	210	345	3,890	0
April	.140	.120	1	.08	1	5	.07	.08	196	360	2,741	0
May	.275	.130	3	.13	1	1	.07	.08	218	297	2,219	0
June	.165	.125	27	.10	1	1	.07	.08	206	281	2,080	0
July	.170	.120	7	.11	29		.06	.08	206	266	2,112	72.8
Aug.	.160	.115	127	.10	1	1	.06	.07	199	304	2,062	81.0
Sept.	.130	.105	11	.08	24		.05	.06	161	282	1,734	103
Oct.	.175	.115	10	.11	1	1	.06	.08	210	297	2,276	0
Nov.	.180	.130	30	.12	2		.07	.09	238	311	2,566	6.0
Dec.	.200	.145	1	.14	1	6	.09	.10	269	300	2,080	0
Yearly	0.275	0.105		0.14			0.05	0.08	2,537	3,676	27,317	1,318

φ Mean daily ! And other days

10-2549.70 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, 427 meters 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 current meter measurements by the Imperial Irrigation District. Records computed and furnished by the District. Records available: June 1942 through 2000.

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 43,172 TCM during any successive five-year period under the provisions of Minute No. 197 of the Commission. Gage heights shown are meters below mean sea level.

EXTREMES: Maximum mean daily discharge, 29.2 CMS on December 9, 1982; minimum mean daily discharge, 0.06 CMS 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 CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.17	7.45	7.67	6.54	6.74	5.49	5.47	5.98	5.66	4.81	5.27	5.89
2	6.60	7.45	7.19	6.32	7.33	5.72	5.41	5.98	5.75	4.81	5.41	5.83
3	7.22	7.11	6.74	6.43	7.82	5.58	5.38	5.98	5.44	4.76	5.58	6.09
4	7.62	7.02	6.77	6.77	7.16	5.35	5.44	5.75	5.47	4.93	5.35	6.40
5	7.53	6.85	6.88	6.63	7.05	5.47	5.49	5.41	5.35	5.07	5.18	6.83
6	7.11	7.00	7.36	6.46	6.88	6.29	5.55	5.38	5.07	5.10	5.24	6.63
7	6.83	7.25	8.13	6.43	6.51	6.68	5.38	5.44	4.90	5.15	5.15	6.94
8	6.60	7.25	8.04	6.29	6.43	6.34	5.27	5.92	4.79	5.18	5.10	6.54
9	6.57	7.28	8.13	6.29	6.66	6.09	5.35	5.89	4.70	5.52	5.21	6.32
10	6.54	7.19	8.18	6.29	7.00	5.95	5.58	5.92	4.70	5.38	5.32	6.06
11	6.63	7.05	8.01	6.43	6.71	5.83	5.72	6.15	5.15	5.64	5.38	5.86
12	6.68	6.94	7.79	6.43	6.83	6.06	6.03	5.58	4.90	5.41	5.24	6.40
13	6.88	6.54	8.01	6.26	7.48	5.98	5.78	5.30	4.84	5.13	5.21	6.23
14	7.02	6.97	7.82	6.06	6.85	6.49	5.49	5.64	5.04	5.18	5.38	6.09
15	7.36	7.42	7.33	5.92	6.17	6.29	5.38	5.81	5.18	5.32	5.55	6.26
16	7.48	7.14	7.08	6.20	5.78	5.92	5.32	5.47	5.01	5.44	5.72	6.46
17	7.67	7.11	7.14	6.37	5.61	5.47	5.18	5.41	4.84	5.61	5.49	6.20
18	8.69	6.85	7.31	6.49	5.44	5.49	5.10	5.41	4.93	5.58	5.35	6.63
19	9.32	6.57	7.28	6.74	5.72	5.66	5.07	5.27	5.18	5.49	5.24	6.32
20	8.81	6.40	7.14	6.40	6.15	6.03	5.13	5.13	5.35	5.27	5.32	5.98
21	8.04	6.74	7.00	6.54	5.72	6.20	5.04	5.24	5.30	5.10	5.49	6.20
22	7.84	6.97	7.22	6.60	5.75	6.00	4.96	5.21	5.15	5.21	5.07	6.20
23	8.24	7.42	7.08	6.80	4.93	5.86	5.01	5.15	4.96	6.26	3.12	6.09
24	8.92	7.02	7.00	7.31	5.75	5.75	5.18	5.27	4.90	6.12	7.36	5.83
25	9.60	6.57	6.88	7.70	4.96	5.52	5.13	5.21	4.79	6.12	8.89	5.64
26	9.20	6.74	6.26	7.56	5.75	5.89	5.07	5.30	4.59	6.12	5.75	5.66
27	8.78	6.88	6.23	7.76	6.23	6.32	5.30	5.32	4.62	6.12	5.95	6.26
28	8.30	7.14	7.08	7.67	4.81	6.26	5.44	5.10	4.79	6.12	6.32	6.37
29	7.45	7.73	7.67	7.16	5.72	6.03	5.35	5.30	4.87	5.95	6.57	6.00
30	7.16		7.31	6.63	5.92	5.49	5.47	5.72	4.90	5.47	6.17	6.06
31	7.16		6.85		5.72		5.83	5.89		5.38		5.86
Sum		204.05		199.48		177.50		171.53		168.75		192.13
	236.02		226.58		193.58		166.30		151.12		167.38	

Current Year 2000

Period 1943-2000

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters				
	High	Low	Day	φ High		Average	Total	Average	Maximum	Minimum	
				Day	φ Low						
Jan.	12.035	12.435	25	9.60	1	6.17	7.61	20,392	13,236	27,387	2,160
Feb.	12.245	12.410	20	7.73	20	6.40	7.04	17,630	11,859	26,416	1,552
Mar.	12.195	12.430	10	8.18	27	6.23	7.31	19,577	13,560	31,213	1,243
April	12.240	12.470	27	7.76	15	5.92	6.65	17,235	13,667	34,066	1,715
May	12.240	12.570	3	7.82	28	4.81	6.24	16,725	12,548	29,740	776
June	12.370	12.545	7	6.68	4	5.35	5.92	15,336	10,513	25,024	1,341
July	12.455	12.595	12	6.03	22	4.96	5.36	14,368	10,958	28,368	1,008
Aug.	12.440	12.580	11	6.15	28	5.10	5.53	14,820	12,503	34,066	1,405
Sept.	12.490	12.645	2	5.75	26	4.59	5.04	13,057	11,704	29,251	2,214
Oct.	12.430	12.625	23	6.26	3	4.76	5.44	14,580	11,579	28,072	2,567
Nov.	12.125	12.910	25	8.89	23	3.12	5.58	14,462	10,965	25,310	3,063
Dec.	12.340	12.505	7	6.94	25	5.64	6.20	16,600	12,956	28,104	2,175
Yearly	12.035	12.910		9.60		3.12	6.16	194,782	146,048	330,444	30,310

φ Mean daily

! And other days

10-2549.60 WASTES FROM MEXICALI POTABLE WATER PLANT TO NEW RIVER IN MEXICO

DESCRIPTION: A 3.5-meter Parshall flume, installed by the State Commission of Public Services of Mexicali, is located 2.0 kilometers upstream of the pumping plant on the supply canal. Excess water discharges into an open channel, thence into a 91 centimeter diameter pipe that empties into Rivera Drain (Drain 134), which is 2.0 kilometers below the plant and 2.0 kilometers south of the international boundary. From this point the waste is carried by a closed concrete box conduit into New River.

RECORDS: During 2000 the mean daily flows were computed from the total inflow to the potable water plant as measured at the Parshall flume, less the water pumped to the city and the water used in the maintenance of the plant. The records are obtained and furnished by the State Commission of Public Services of Mexicali. Records available: January 1968 through December 2000.

REMARKS: The plant began operation on September 28, 1963 by the State Commission of Public Services of Mexicali. Before 1968 the flow was small and infrequent. The potable water plant obtains water from the West Main Canal, which is a part of Mexico's system of canals in the Colorado Irrigation System. Excess water discharges into a closed conduit that empties into New River 1.4 kilometers upstream of the international boundary.

EXTREMES: Maximum instantaneous discharge, 2.32 CMS on March 26, 1969; minimum instantaneous discharge, zero during several days in the years 1977 through 2000.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.04		0.03	0.03	0.03	0.06	0.03	0.05	0.05	0.02	0.04	0.02
2	.03	0.04	.04	.03	.04	.04	.04	.04	.03	.05	.06	.03
3	.03	.04	.03	.03	.03	.05	.03	.05	.03	.03	.03	.02
4	.03	.04	.03	.03	.06	.05	.05	.05	.04	.05	.02	.02
5	.03	.03	.04	.03	.04	.04	.04	.04	.05	.03	.03	.04
6	.03	.03	.04	.03	.04	.05	.04	.02	.05	.04	.02	.03
7	.03	.04	.05	.03	.04	.05	.04	.05	.04	.03	.04	.02
8	.03	.03	.03	.03	.05	.07	.04	.05	.05	.03	.04	.03
9	.03	.03	.04	.04	.05	.05	.03	.05	.04	.02	.03	.03
10	.03	.03	.04	.03	.07	.06	.05	.05	.03	.03	.03	.03
11	.04	.04	.03	.02	.05	.05	.03	.05	.05	.05	.03	.03
12	.03	.04	.04	.04	.05	.05	.05	.04	.04	.02	.03	.05
13	.03	.04	.04	.03	.03	.06	.03	.04	.04	.02	.02	.04
14	.03	.04	.04	.03	.05	.06	.02	.05	.05	.03	.04	.04
15	.04	.05	.03	.02	.04	.07	.04	.05	.04	.02	.04	.04
16	.02	.05	.03	.03	.04	.06	.04	.05	.03	.05	.03	.04
17	.04	.04	.03	.04	.04	.05	.04	.05	.03	.04	.03	.04
18	.04	.04	.03	.05	.06	.05	.04	.06	.04	.05	.02	.03
19	.03	.04	.03	.01	.05	.05	.02	.05	.05	.03	.02	.03
20	.04	.04	.03	.02	.02	.05	.02	.03	.05	.03	.02	.03
21	.04	.04	.03	.04	.03	.05	.03	.05	.04	.03	.03	.04
22	.04	.03	.03	.03	.04	.06	.04	.05	.04	.03	.03	.04
23	.03	.03	.03	.03	.05	.03	.04	.06	.03	.02	.02	.04
24	.04	.05	.03	.01	.06	.03	.05	.05	.02	.04	.03	.03
25	.05	.03	.03	.02	.04	.03	.04	.05	.04	0	.05	.02
26	.04	.03	.04	.04	.06	.06	.04	.05	.05	.03	.02	.03
27	.04	.03	.05	.04	.04	.05	.04	.03	.04	.02	.03	.04
28	.04	.04	.03	.04	.06	.05	.04	.04	.04	.02	.03	.03
29	.04	.03	.02	.04	.04	.07	.04	.05	.04	.02	.02	.03
30	.04		.03	.04	.04	.08	.03	.05	.04	.03	.03	.04
31	.03		.03		.04		.03	.05		.03		.03
Sum	1.08	1.08	1.05	0.93	1.38	1.58	1.14	1.45	1.21	0.94	0.89	1.01

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day		Day			Total	Average	Maximum	Minimum
			φ High	φ Low	φ High	φ Low					
Jan.			25	0.05	16	0.02	93.3	149	641	0	
Feb.			! 15	.05	! 5	.03	93.3	99.1	384	0	
Mar.			! 7	.05	29	.02	90.7	182	1,074	0	
April			8	.05	! 19	.01	80.4	175	532	0	
May			10	.07	! 20	.02	119	190	537	53.6	
June			30	.08	23	.03	137	176	504	25.9	
July			! 3	.05	! 14	.02	98.5	212	651	0	
Aug.			123	.06	6	.02	125	230	735	39.7	
Sept.			! 1	.05	24	.02	105	217	677	44.1	
Oct.			! 1	.05	25	0	81.2	202	625	46.7	
Nov.			2	.06	! 6	.02	76.9	178	622	32.8	
Dec.			12	.05	! 1	.02	87.3	165	737	8.6	
Yearly					0.08	0	1,188	2,175	6,610	550	

φ Mean daily ! And other days

10-2549.65 WASTE WATERS FROM MEXICAN SYSTEM OF CANALS
ENTERING THE UNITED STATES

DESCRIPTION: During 2000 the flow to the New River in Mexico included waste from the City of Mexicali Potable Water Plant, which discharges into Rivera Drain and then to New River, and drainage water coming from the Colorado River District system of canals that enter the New River below Laguna Xochimilco, and starting January 1988, the north irrigation district watershed is included.

RECORDS: Records of the Potable Water Plant are based on flows measured on a Parshall flume less pumping to the city. Records obtained and furnished by the State Commission of Public Services of Mexicali. Records available: Wisteria Wasteway, January 1951 through 1975; Sifon Wasteway, January 1952 to April 30, 1964; Pueblo Nuevo Wasteway, January 1956 through 1965; and the Potable Water Plant, January 1968 through December 2000.

REMARKS: To obtain data for Sifon and Pueblo Nuevo Wasteways, see bulletins 1 to 6 (1960-1965); and for Wisteria Wasteway, bulletins 1 to 16 (1960-1975). For data on wastes from Potable Water Plant, see previous page of this bulletin.

MONTHLY DISCHARGE IN THOUSAND CUBIC METERS

MONTH	CURRENT YEAR 2000	PERIOD 1956 - 2000		
		AVERAGE	MAXIMUM	MINIMUM
January	529	1,006	10,803	7.8
February	93.3	818	8,981	7.8
March	167	703	5,506	26.8
April	105	607	3,940	19.9
May	294	430	3,174	11.2
June	137	435	6,994	0
July	1,846	662	12,644	0
August	2,197	666	5,103	0
September	105	511	3,966	25.9
October	222	641	4,285	10.4
November	149	642	4,668	0
December	339	763	10,720	0
Yearly	6,183	7,886	34,953	492

10-2540.05 SALTON SEA - ELEVATIONS OF WATER SURFACE

DESCRIPTION: Water-stage recorder and staff gage located on the western shore of the Salton Sea, 24.9 kilometers northwest of Westmorland, Imperial County, California. The Salton Sea is the sink of a closed basin which has a drainage area of 21,652 square kilometers. Zero of the gage is 76.20 meters below mean sea level, U. S. C. & G. S. datum.

RECORDS: Records of water surface elevations available from November 1904 through 2000. 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 35.4 kilometers 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 Westmorland, California." The elevation of the old station is at a datum of 0.30 meter 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 84.64 meters below mean sea level, U. S. C. & G. S. datum.

EXTREMES: Maximum elevation during 2000 was 69.280 meters below mean sea level. Minimum elevation during 2000 was 69.645 meters below mean sea level. Extremes for period of record: maximum elevation 59.71 below mean sea level February 10 to March 29, 1907; minimum elevation since 1906, 76.69 meters below mean sea level in November 1924.

MEAN DAILY WATER SURFACE ELEVATION IN METERS BELOW MEAN SEA LEVEL- 2000

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	69.525	69.435	69.370	69.310	69.280	69.280	69.340	69.405	69.465	69.555	69.615	69.615
2	69.525	69.435	69.370	69.310	69.280	69.280	69.340	69.405	69.495	69.555	69.615	69.615
3	69.525	69.435	69.370	69.310	69.280	69.280	69.340	69.405	69.495	69.555	69.615	69.615
4	69.525	69.435	69.370	69.310	69.280	69.280	69.340	69.405	69.495	69.555	69.615	69.615
5	69.525	69.435	69.370	69.310	69.280	69.280	69.370	69.405	69.495	69.555	69.615	69.615
6	69.525	69.435	69.370	69.310	69.280	69.280	69.370	69.405	69.495	69.555	69.615	69.615
7	69.525	69.435	69.370	69.310	69.280	69.310	69.370	69.405	69.495	69.555	69.615	69.615
8	69.525	69.435	69.370	69.310	69.280	69.310	69.370	69.405	69.495	69.555	69.615	69.615
9	69.525	69.435	69.370	69.310	69.280	69.310	69.370	69.435	69.525	69.555	69.615	69.585
10	69.495	69.435	69.340	69.310	69.280	69.310	69.370	69.435	69.525	69.555	69.615	69.585
11	69.495	69.435	69.340	69.310	69.280	69.310	69.370	69.435	69.525	69.585	69.615	69.585
12	69.495	69.435	69.340	69.310	69.280	69.310	69.370	69.435	69.525	69.585	69.615	69.585
13	69.495	69.435	69.340	69.310	69.280	69.310	69.370	69.435	69.525	69.585	69.615	69.585
14	69.495	69.435	69.340	69.310	69.280	69.310	69.370	69.435	69.525	69.585	69.615	69.585
15	69.495	69.405	69.340	69.310	69.280	69.310	69.370	69.435	69.525	69.585	69.615	69.585
16	69.495	69.405	69.340	69.310	69.280	69.310	69.370	69.435	69.525	69.585	69.615	69.585
17	69.495	69.405	69.310	69.310	69.280	69.310	69.405	69.435	69.525	69.585	69.615	69.585
18	69.495	69.405	69.310	69.310	69.310	69.310	69.405	69.435	69.525	69.615	69.615	69.585
19	69.495	69.405	69.310	69.310	69.310	69.310	69.405	69.435	69.525	69.615	69.645	69.585
20	69.495	69.405	69.310	69.310	69.310	69.310	69.405	69.435	69.525	69.585	69.645	69.585
21	69.495	69.405	69.310	69.310	69.310	69.310	69.405	69.435	69.525	69.585	69.645	69.585
22	69.465	69.405	69.310	69.310	69.310	69.310	69.405	69.435	69.525	69.615	69.645	69.585
23	69.465	69.370	69.310	69.310	69.310	69.310	69.405	69.465	69.555	69.585	69.645	69.585
24	69.465	69.370	69.310	69.310	69.280	69.310	69.405	69.465	69.555	69.585	69.645	69.585
25	69.465	69.370	69.310	69.310	69.280	69.310	69.405	69.465	69.555	69.585	69.645	69.585
26	69.465	69.370	69.310	69.310	69.280	69.310	69.405	69.465	69.555	69.615	69.645	69.585
27	69.465	69.370	69.310	69.310	69.280	69.310	69.405	69.465	69.555	69.615	69.645	69.585
28	69.465	69.370	69.310	69.310	69.280	69.310	69.405	69.465	69.555	69.615	69.645	69.585
29	69.465	69.370	69.310	69.310	69.280	69.310	69.405	69.465	69.555	69.615	69.615	69.585
30	69.465	69.310	69.310	69.280	69.280	69.310	69.405	69.465	69.555	69.615	69.615	69.555
31	69.435	69.310	69.310	69.280	69.280	69.310	69.405	69.465	69.555	69.615	69.615	69.555
Avg.	69.495	69.410	69.335	69.310	69.285	69.305	69.385	69.435	69.525	69.585	69.625	69.590

Month	Current Year 2000		Period 1935-2000		
	@ Extreme Elevation Meters		Elevation Meters		
	High	Low	# Average	# Maximum	! Minimum
Jan.	69.435	69.525	71.400	69.280	75.990
Feb.	69.370	69.435	71.305	69.190	75.830
Mar.	69.310	69.370	71.225	69.130	75.770
April	69.280	69.310	71.170	69.100	75.800
May	69.280	69.310	71.165	69.100	75.740
June	69.280	69.310	71.210	69.160	75.830
July	69.340	69.405	71.260	69.220	75.930
Aug.	69.405	69.465	71.320	69.250	76.020
Sept.	69.465	69.555	71.380	69.280	76.020
Oct.	69.555	69.615	71.410	69.310	76.140
Nov.	69.615	69.645	71.420	69.340	76.200
Dec.	69.555	69.615	71.390	69.340	76.080
Yearly	69.280	69.645	71.305	69.100	76.200

Area and Capacity Table		
Elevation	Area	Capacity
Meters Below M.S.L.	Hectares	Million Cubic Meters
84.640	0	0
83.520	8,337	31.7
82.300	25,455	232.8
81.080	38,284	629.8
79.250	49,615	1,443.2
78.030	54,512	2,077.2
76.810	60,218	2,775.3
74.370	72,723	4,393.7
73.150	79,683	5,322.5
71.630	89,760	6,611.5
70.100	95,426	8,022.6
67.060	106,029	11,092.7
64.010	116,753	14,481.1
60.960	127,680	18,206.2

@ Mean daily

! Reading near first day of month

Mean monthly

CHEMICAL ANALYSIS OF WATER SAMPLES

The tables below are based on samples collected and analyzed by the California Regional Water Quality Control Board - Colorado River Basin, Region-7. New River Samples prior to 1985 were collected and analyzed by the U.S. Geological Survey. Samples from the New River are taken from the right bank at the road bridge, 137 meters north of the international boundary.

NEW RIVER AT INTERNATIONAL BOUNDARY

2000 Date	Time Std.	*Streamflow Momentary	Water Temperature	PH	Oxygen Dissolved (DO)	Specific Conductance	Turbidity
		CMS	Deg C	Units	mg/L	Microsiemens/cm	NTU
Feb. 23	0700	7.02	17.4	7.5	1.0	7,690	10.2
Mar. 22	0700	6.82	16.3	7.9	1.5	5,260	9.5
Apr. 19	0700	N.R.	20.1	7.8	1.1	5,160	11.0
May 10	0700	N.R.	17.8	7.7	0.7	5,310	12.0
June 21	0700	N.R.	30.0	7.8	0.5	4,280	18.0
July 18	0700	N.R.	N.R.	N.R.	N.R.	N.R.	18.5
Aug. 29	0700	N.R.	29.5	7.8	0.1	3,860	30.4
Sept. 26	0700	N.R.	25.0	7.7	0.2	3,430	21.5
Oct. 24	0700	N.R.	21.4	7.6	1.0	4,000	39.0
Nov. 28	0700	N.R.	14.9	7.8	2.5	2,620	26.0
Dec. 20	0700	N.R.	12.2	7.7	3.6	3,670	9.4

* Flow provided by the California Regional Water Quality Control Board
N.R. - Not Reported

NEW RIVER AT INTERNATIONAL BOUNDARY

SAMPLE TYPE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	
DATE	Feb. 23, 2000	Mar. 22, 2000	Apr. 19, 2000	May 10, 2000	
PARAMETER	CONCENTRATION	CONCENTRATION	CONCENTRATION	CONCENTRATION	DETECTION LIMIT
Arsenic	N.D.	N.D.	N.D.	N.D.	2.0 ug/L
Boron	N.A.	N.A.	N.A.	N.A.	0.1 mg/L
Cadmium	N.D.	N.D.	N.D.	N.D.	1.0 ug/L
Chromium	N.D.	N.D.	N.D.	N.D.	10.0 ug/L
Copper	12.0 ug/L	N.D.	N.D.	N.D.	10.0 ug/L
Lead	N.D.	N.D.	N.D.	N.D.	10.0 ug/L
Phenol	0.01 mg/L	N.D.	N.D.	N.D.	0.002 mg/L
MBAS	0.53 mg/L	0.12 mg/L	0.28 mg/L	0.84 mg/L	0.025 mg/L
Zinc	120 ug/L	N.D.	71.0 ug/L	N.D.	50.0 ug/L
Total Cyanide	0.01 mg/L	N.D.	N.D.	N.D.	0.01 mg/L
Total Phosphate(P04-P)	1.28 mg/L	0.89 mg/L	1.99 mg/L	1.88 mg/L	0.01 mg/L
Nitrate (NO3-N)	0.50 mg/L	0.50 mg/L	3.10 mg/L	N.D.	0.20 mg/L
Nitrite (NO2-N)	0.1 mg/L	N.D.	0.10 mg/L	N.D.	0.03 mg/L
Ammonia (NH3-NH4-N)	6.9 mg/L	6.2 mg/L	6.51 mg/L	5.44 mg/L	0.05 mg/L
Total Dissolved Solids	2,720 mg/L	18.0 mg/L	2,930 mg/L	2,860 mg/L	---
Total Suspended Solids	34.0 mg/L	3,130 mg/L	44.0 mg/L	41.0 mg/L	---
Volatile Suspended Solids	N.A.	N.A.	N.A.	N.A.	---

SAMPLE TYPE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	
DATE	June 21, 2000	July 18, 2000	Aug. 29, 2000	Sep. 26, 2000	
PARAMETER	CONCENTRATION	CONCENTRATION	CONCENTRATION	CONCENTRATION	DETECTION LIMIT
Arsenic	N.D.	6.0 ug/L	5.0 ug/L	6.0 ug/L	2.0 ug/L
Boron	N.A.	N.A.	N.A.	N.A.	0.1 mg/L
Cadmium	N.D.	N.D.	N.D.	N.D.	1.0 ug/L
Chromium	N.D.	N.D.	N.D.	N.D.	10.0 ug/L
Copper	N.D.	N.D.	N.D.	N.D.	10.0 ug/L
Lead	N.D.	N.D.	N.D.	N.D.	10.0 ug/L
Phenol	0.01 mg/L	0.007 mg/L	N.D.	0.005 mg/L	0.002 mg/L
MBAS	0.50 mg/L	0.26 mg/L	1.89 mg/L	1.85 mg/L	0.025 mg/L
Zinc	221 ug/L	65.0 ug/L	126	54.0 ug/L	50.0 ug/L
Total Cyanide	0.01 mg/L	0.02 mg/L	N.D.	N.D.	0.01 mg/L
Total Phosphate(P04-P)	1.70 mg/L	2.07 mg/L	1.84 mg/L	0.13 mg/L	0.01 mg/L
Nitrate (NO3-N)	N.D.	0.30 mg/L	N.D.	0.13 mg/L	0.20 mg/L
Nitrite (NO2-N)	N.D.	N.D.	N.D.	N.D.	0.03 mg/L
Ammonia (NH3-NH4-N)	4.55 mg/L	4.82 mg/L	5.00 mg/L	3.52 mg/L	0.05 mg/L
Total Dissolved Solids	2,530 mg/L	2,650 mg/L	2,430 mg/L	2,390 mg/L	---
Total Suspended Solids	64.0 mg/L	58.0 mg/L	35.0 mg/L	59.0 mg/L	---
Volatile Suspended Solids	N.A.	N.A.	N.A.	N.A.	---

N.A. - Not Analyzed
N.D. - Not Detected

CHEMICAL ANALYSIS OF WATER SAMPLES

The tables below are based on samples collected and analyzed by the California Regional Water Quality Control Board - Colorado River Basin, Region-7. New River Samples prior to 1985 were collected and analyzed by the U.S. Geological Survey. Samples from the New River are taken from the right bank at the road bridge, 137 meters north of the international boundary.

NEW RIVER AT INTERNATIONAL BOUNDARY

SAMPLE TYPE	COMPOSITE	COMPOSITE	COMPOSITE	COMPOSITE	
DATE	Oct. 24, 2000	Nov. 28, 2000	Dec. 20, 2000		
PARAMETER	CONCENTRATION	CONCENTRATION	CONCENTRATION	CONCENTRATION	DETECTION LIMIT
Arsenic	3.0 ug/L	3.00 ug/L	3.0 ug/L		2.0 ug/L
Boron	N.A.	N.A.	N.A.		0.1 mg/L
Cadmium	N.D.	N.D.	N.D.		1.0 ug/L
Chromium	N.D.	N.D.	N.D.		10.0 ug/L
Copper	N.D.	N.D.	N.D.		10.0 ug/L
Lead	N.D.	N.D.	N.D.		10.0 ug/L
Phenol	N.D.	N.D.	0.007 mg/L		0.002 mg/L
MBAS	2.01 mg/L	2.00 mg/L	2.07 mg/L		0.025 mg/L
Zinc	N.D.	93.0 ug/L	66.0 ug/L		50.0 ug/L
Total Cyanide	N.D.	N.D.	N.D.		0.01 mg/L
Total Phosphate(P04-P)	1.84 mg/L	2.35 mg/L	1.42 mg/L		0.01 mg/L
Nitrate (NO3-N)	N.D.	0.43 mg/L	0.34 mg/L		0.20 mg/L
Nitrite (NO2-N)	N.D.	N.D.	N.D.		0.03 mg/L
Ammonia (NH3-NH4-N)	7.39 mg/L	7.10 mg/L	7.47 mg/L		0.05 mg/L
Total Dissolved Solids	2,090 mg/L	2,290 mg/L	2,400 mg/L		10.0 mg/L
Total Suspended Solids	46.0 mg/L	35.5 mg/L	74.0 mg/L		10.0 mg/L
Volatile Suspended Solids	N.A.	N.A.	N.A.		

N.D.- None Detected

N.A.- Not Analyzed

CHEMICAL ANALYSES OF WATER SAMPLES

The tables below are based on samples collected and analyzed by the United States Section of the Commission.

Samples from the Alamo River are taken north of the international boundary upstream of the box culvert under the All-American Canal. Flow at this point includes drainage flows across the international boundary and flows from drain interceptors along the toe of the south bank of the All-American Canal. Samples from the New River are taken from the right bank at the road bridge, 137 meters north of the international boundary. Records of the sampling extend from April 1951 through 2000.

ALAMO RIVER

2000	Time	Water Temperature	pH	Oxygen Dissolved (DO)	Conductance	Coliform Fecal	Flow
Date	Std.	Deg C	Units	mg/L	Microsiemens/cm	Colonies/100 mL	CMS
Jan. 26	0855	15.2	7.7	8.9	4,330	133	0.10
Feb. 23	0850	16.0	7.9	9.0	4,790	50	0.07
Mar. 22	0915	16.7	7.8	8.5	5,060	572	0.07
Apr. 26	0725	22.5	7.9	6.9	5,100	1,100	0.06
May 24	0755	26.5	7.7	6.4	5,040	90	0.07
June 21	0820	29.4	7.7	4.4	5,090	#	0.07
July 26	0740	29.3	7.5	4.5	3,610	250	0.07
Aug. 23	0710	29.4	7.5	3.8	3,970	60	0.07
Sep. 27	0745	25.0	7.5	2.1	4,640	#	0.07
Oct. 25	0735	20.6	7.9	5.7	4,220	100	0.07
Nov. 29	0730	12.6	8.0	8.8	4,070	405	0.07
Dec. 27	0800	10.3	7.4	8.6	4,460	290	0.07

- Missing data

NEW RIVER

2000	Time	**Streamflow Momentary	Water Temperature	pH	Oxygen Dissolved (DO)	Specific Conductance	Fecal Coliform
Date	Std.	CMS	Deg C	Units	mg/L	Microsiemens/cm	Colonies/100 mL
Jan. 12	0830	6.66	12.3	7.6	1.7	4,080	1,350,000
Jan. 26	1000	6.85	17.1	7.5	1.1	3,700	750,000
Feb. 9	0830	7.33	16.0	7.6	0.9	4,260	1,200,000
Feb. 23	0920	7.67	17.1	7.4	1.0	4,650	950,000
Mar. 8	0825	8.21	14.9	7.5	3.9	4,700	380,000
Mar. 22	0950	7.42	16.1	7.6	2.9	5,010	580,000
Apr. 12	0800	6.74	22.8	7.5	0.8	5,200	1,150,000
Apr. 26	0805	7.87	25.2	7.6	0.6	4,620	2,000,000
May 10	0725	6.74	25.8	7.6	0.6	4,580	1,675,000
May 24	0845	5.89	27.4	7.6	0.5	4,730	1,600,000
June 7	0730	4.47	26.6	7.5	0.8	4,550	2,825,000
June 21	0905	6.54	29.9	7.6	0.3	4,080	2,575,000
July 12	0815	6.32	28.8	7.6	0.2	4,320	1,750,000
July 26	0820	5.04	30.3	7.4	0.1	4,480	2,600,000
Aug. 9	0740	6.03	30.9	7.6	0.1	3,820	2,550,000
Aug. 23	0750	5.07	29.8	7.6	0.1	3,860	3,025,000
Sept. 13	0710	4.87	29.4	7.6	0.1	3,850	2,325,000
Sept. 27	0830	4.62	25.6	7.6	0.3	4,060	2,450,000
Oct. 17	0850	6.03	21.1	7.4	1.2	3,460	1,200,000
Oct. 25	0730	NR	21.6	7.9	1.6	2,780	2,350,000
Nov. 8	0925	5.32	16.0	7.8	1.3	3,880	925,000
Nov. 29	0845	4.36	14.5	7.9	2.6	3,670	1,005,000
Dec. 13	0940	3.68	14.5	7.8	1.4	3,880	1,400,000
Dec. 27	0920	7.33	11.7	7.3	2.3	4,190	760,000

Note: Temperature, pH, D.O., and Specific Conductance - Data collected in field

** Flow reported by Imperial Irrigation District

NR - None Reported

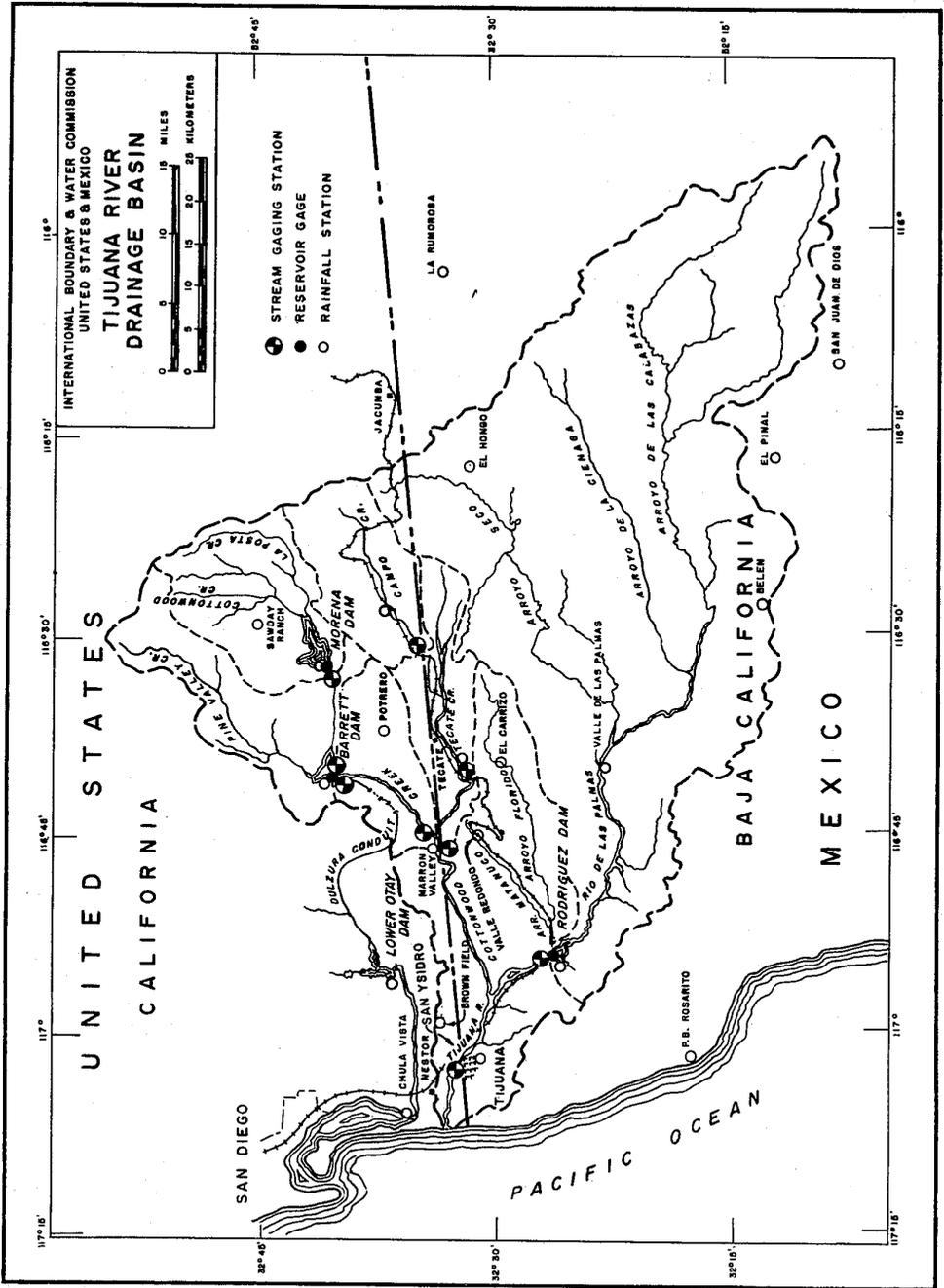
SPECIFIC CONDUCTANCE OF WATER SAMPLES

The following table shows specific conductance 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.

NEW RIVER AT THE INTERNATIONAL BOUNDARY

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 2000

January		March		May		July		September		November	
5	4,600	1	5,100	3	4,600	5	4,500	6	3,900	8	4,500
12	3,900	8	4,700	10	4,100	12	3,800	13	4,200	17	4,500
19	3,900	15	4,500	17	4,300	19	3,500	20	4,800	22	4,500
26	4,000	22	4,100	24	4,600	26	4,000	27	4,800	29	4,300
		29	4,600	31	4,200						
February		April		June		August		October		December	
2	4,500	5	4,100	7	4,800	2	4,800	11	4,200	6	3,200
9	4,700	12	4,000	14	4,900	9	4,400	18	4,200		
16	3,600	19	4,600	21	5,000	16	4,600	25	3,500		
23	5,000	26	4,400	28	3,900	23	4,900				
						30	4,500				



11-0100.00 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 2.9 kilometers upstream from the mouth of Hauser Creek, 13.7 kilometers upstream from Barrett Dam, and about 32.2 kilometers upstream from the international boundary. The zero of the gage is 878.555 meters 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 April 1911 through 2000.

REMARKS: Storage began in Morena Reservoir March 1910. Reservoir capacity and area ratings date from 1910 when Morena Dam was completed. Records for 2000 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 the present crest of ungated spillway is 47.855 meters, gage datum. Reservoir capacity at spillway crest, 1948 survey, is 61,934 TCM. 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: Maximum monthly inflow since 1937, 55,845 TCM, March 1983. Prior to 1937, maximum monthly inflow, 45,886 TCM, January 1916; minimum no flow during parts of many years.

MONTHLY DISCHARGE IN THOUSAND CUBIC METERS

MONTH	CURRENT YEAR 2000	PERIOD 1937 - 2000		
		AVERAGE	MAXIMUM	MINIMUM
January	205	1,221	20,362	0
February	824	2,617	41,407	9.9
March	1,269	3,541	55,845	23.8
April	1,154	2,071	28,530	4.1
May	0	1,028	18,642	0
June	265	581	10,173	0
July	528	355	7,651	0
August	165	274	8,916	0
September	17.8	190	6,331	0
October	56.3	165	4,817	0
November	26.9	274	5,633	0
December	7.7	746	9,472	5.4
Yearly	4,519	13,063	177,579	149

11-0105.00 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 1.3 kilometers 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 2000.

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: Maximum monthly discharge since 1937, 55,615 TCM, March 1983. Prior to 1937, maximum monthly discharge, 26,397 TCM February 1916; minimum, no flow during several months of various years.

MONTHLY DISCHARGE IN THOUSAND CUBIC METERS

MONTH	CURRENT YEAR 2000	PERIOD 1937 - 2000		
		AVERAGE	MAXIMUM	MINIMUM
January	454	305	2,583	0
February	425	1,014	19,644	0
March	454	1,973	55,615	0
April	440	1,494	28,159	0
May	235	829	18,100	0
June	227	631	9,260	0
July	235	392	6,236	0
August	235	377	7,937	0
September	72	416	7,253	0
October	54	263	4,639	0
November	47	294	5,071	0
December	49	522	9,099	0
Yearly	2,927	8,510	168,432	0

11-0110.00 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 13.7 kilometers downstream from Morena Dam, 1.6 kilometers downstream from the mouth of Pine Valley Creek, and about 19.3 kilometers upstream from the international boundary. Zero of gage is 440.775 meters 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 2000. 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 51.475 meters) is 55,205 TCM. Capacity at spillway crest (gage height 49.035 meters) is 46,811 TCM. Dead storage, 887 TCM below lowest outlet (gage height 17.945 meters) 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: Maximum monthly discharge since 1937, 67,540 TCM, February 1980. Prior to 1937, maximum monthly discharge, 67,595 TCM February 1927; minimum, no flow during several months of various years.

MONTHLY DISCHARGE IN THOUSAND CUBIC METERS

MONTH	CURRENT YEAR 2000	PERIOD 1937 - 2000		
		AVERAGE	MAXIMUM	MINIMUM
January	1,692	1,524	29,627	0
February	3,052	3,409	67,539	9.4
March	3,271	5,804	62,041	17.4
April	3,003	2,871	26,680	12.6
May	2,874	1,311	10,509	0
June	2,379	600	4,818	0
July	1,116	350	5,042	0
August	0	202	4,472	0
September	97.8	205	3,858	0
October	25.6	117	796	0
November	0	256	2,519	0
December	1.6	686	6,845	1.6
Yearly	17,512	17,332	141,024	159

11-0114.90 DULZURA CONDUIT BELOW BARRETT DAM, CALIFORNIA

DESCRIPTION: Water-stage recorder 0.8 kilometer downstream from Barrett Dam on right bank of Dulzura Conduit 15.2 meters 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 2000.

REMARKS: Barrett Dam was completed in 1921. Prior to this date the intake of Dulzura Conduit was located 2.4 kilometers 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 12.9 kilometers 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 loss in the reach from the reservoir to the gaging station.

EXTREMES: Since 1937: Maximum mean daily discharge, 4.66 CMS on March 8, 1995; minimum discharge, no flow for long periods on many occasions.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.92	0.94	0.57	1.14	1.12	1.09	1.03	1.02	0.92	0.84	0.89	0.82
2	.92	.95	.56	1.13	1.09	1.09	1.04	.07	.88	.84	.89	.80
3	.91	.95	.71	1.14	1.09	1.09	1.03	0	.89	.82	.89	.80
4	.40	.95	.71	1.14	1.09	1.09	1.03	.53	.92	.82	.91	.09
5	.52	0	.73	1.13	1.09	1.09	1.04	.77	.89	.82	.92	0
6	.99	0	0	1.13	1.09	1.09	1.04	.84	.89	.82	.88	.09
7	.97	0	.04	1.13	1.09	1.07	1.04	.93	.89	.82	.85	.09
8	.85	0	.04	1.14	1.09	1.08	1.04	.94	.89	.82	.87	.09
9	.88	0	.31	1.04	1.09	1.09	1.04	.93	.84	.82	.87	.09
10	.94	0	.62	1.04	1.09	1.09	1.04	.93	.87	.82	.87	.09
11	.94	0	.85	1.04	1.09	1.09	1.04	.93	.87	.82	.84	.09
12	.95	0	.85	1.04	1.09	1.09	1.04	.92	.88	.82	.86	.09
13	.95	0	.85	.92	1.09	1.09	1.04	.92	.85	.82	.84	.09
14	.95	0	1.05	.92	1.09	1.09	1.04	.92	.86	.82	.86	0
15	.95	0	1.05	.94	1.09	1.09	1.04	.92	.88	.85	.84	0
16	.95	0	1.14	.94	1.09	.98	1.04	.92	.86	.82	.86	0
17	.95	0	1.14	.94	1.09	.98	1.04	.92	.85	.80	.85	.12
18	.94	0	1.14	.94	1.09	.98	1.04	.92	.86	.82	.85	.24
19	.95	0	1.13	.94	1.09	.97	1.04	.92	.86	.82	.80	.24
20	.95	0	1.14	.94	1.09	.98	1.04	.92	.85	.79	.81	.80
21	.95	0	1.14	.94	1.09	.98	1.04	.92	.86	.74	.80	.53
22	.94	.27	1.14	.94	1.09	.98	1.04	.92	.85	.77	.86	.53
23	.95	.28	1.14	.94	1.09	.97	1.03	.92	.84	.74	.85	.53
24	.94	.28	1.14	.97	1.09	.98	1.03	.92	.84	.74	.78	.54
25	.94	.35	1.14	.95	1.09	.97	1.04	.92	.85	.89	.82	.69
26	.95	.35	1.14	.97	1.09	.98	1.04	.91	.86	.89	.78	.92
27	.95	.35	1.14	.97	1.09	.98	1.04	.91	.84	.92	.78	.79
28	.95	.35	1.14	.97	1.09	1.03	.99	.91	.86	.87	.78	.78
29	.95	.56	1.14	.97	1.09	1.04	.99	.92	.86	.89	.79	.82
30	.95		1.14	.97	1.09	1.04	.99	.89	.84	.87	.82	.80
31	.95		1.14		1.09		.99	.89		.89		.79
Sum	28.20	6.58	26.97	30.31	33.82	31.16	31.99	26.20	26.00	25.63	25.31	12.35

Current Year 2000

Period 1937-2000

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Volume-Thousand Cubic Meters					
	High	Low	Day	φ High		Day	φ Low	Average	Total	Average	Maximum	Minimum
				Day	φ							
Jan.			6	0.99	4	0.40	0.91	2,436	594	2,899	0	
Feb.			12	.95	5	0	.23	569	578	2,883	0	
Mar.			116	1.14	6	0	.87	2,330	858	7,639	0	
April			1	1.14	113	.92	1.09	2,619	1,063	5,016	0	
May			1	1.12	12	1.09	1.09	2,922	1,206	3,750	0	
June			1	1.09	119	.97	1.04	2,692	1,249	4,611	0	
July			12	1.04	128	.99	1.03	2,764	1,131	4,914	0	
Aug.			1	1.02	3	0	.85	2,264	1,068	4,741	0	
Sept.			1	.92	9	.84	.87	2,246	858	2,862	0	
Oct.			27	.92	121	.74	.83	2,214	738	3,235	0	
Nov.			5	.92	124	.78	.84	2,187	773	3,404	0	
Dec.			26	.92	15	0	.40	1,067	671	2,843	0	
Yearly				1.14		0	0.83	26,310	10,787	40,526	0	

φ Mean daily

! And other days

11-0111.00 COTTONWOOD CREEK BELOW BARRETT DAM, CALIFORNIA

DESCRIPTION: Water-stage recorder and cableway located about 4.0 kilometers downstream from Barrett Dam and 0.8 kilometer 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 305 meters (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. Spillway discharges have occurred in May 1943, March, April 1979, January to May of 1980, April, December 1982, and the entire year of 1983, January to April 1993 and January to March 1995. 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 2000. 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: Maximum monthly discharge since 1937, 111,775 TCM March 1983. Prior to 1937, maximum monthly discharge 47,366 TCM February 1927; minimum, no flow during several months of various years.

MONTHLY DISCHARGE IN THOUSAND CUBIC METERS

MONTH	CURRENT YEAR 2000	PERIOD 1937 - 2000		
		AVERAGE	MAXIMUM	MINIMUM
January	0.6	423	10,114	0
February	0.8	2,195	86,736	0
March	0.8	4,481	111,775	0
April	0.8	2,255	45,417	0
May	0.8	1,010	28,287	0
June	0.7	465	13,503	0
July	0.6	239	5,311	0
August	0.4	154	4,206	0
September	0.3	56.7	1,554	0
October	0.2	47.9	1,530	0
November	0.2	148	5,100	0
December	0.2	193	6,058	0
Yearly	6.4	11,668	254,099	0

11-0120.00 COTTONWOOD CREEK ABOVE TECATE CREEK NEAR DULZURA, CALIFORNIA

DESCRIPTION: Water-stage recorder and cableway located 2.6 kilometers upstream from the international land boundary between the United States and Mexico, 1.3 kilometers upstream from the confluence with Tecate Creek, and 8.2 kilometers 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 213 meters downstream from the gage. Zero of the gage is 173.555 meters 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 2000.

REMARKS: Flow is largely controlled by Barrett and Morena Reservoirs, 16.1 kilometers and 29.0 kilometers, respectively, upstream from this station.

EXTREMES: Maximum discharge 331 CMS February 21, 1980 (gage height 3.400 meters). Minimum discharge, no flow during part of each year.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0.02	0.01	0	0	0	0	0	0	0	0
2	0	0	.02	.01	0	0	0	0	0	0	0	0
3	0	0	.02	.01	0	0	0	0	0	0	0	0
4	0	0	.03	0	0	0	0	0	0	0	0	0
5	0	0	.07	0	0	0	0	0	0	0	0	0
6	0	0	.15	0	0	0	0	0	0	0	0	0
7	0	0	.09	0	0	0	0	0	0	0	0	0
8	0	0	.07	0	0	0	0	0	0	0	0	0
9	0	0	.06	0	0	0	0	0	0	0	0	0
10	0	0	.05	0	0	0	0	0	0	0	0	0
11	0	0	.05	0	0	0	0	0	0	0	0	0
12	0	0	.04	0	0	0	0	0	0	0	0	0
13	0	0	.04	0	0	0	0	0	0	0	0	0
14	0	0	.04	0	0	0	0	0	0	0	0	0
15	0	0	.03	0	0	0	0	0	0	0	0	0
16	0	0	.03	0	0	0	0	0	0	0	0	0
17	0	0	.03	0	0	0	0	0	0	0	0	0
18	0	0	.03	0	0	0	0	0	0	0	0	0
19	0	0	.02	0	0	0	0	0	0	0	0	0
20	0	0	.02	0	0	0	0	0	0	0	0	0
21	0	.01	.02	0	0	0	0	0	0	0	0	0
22	0	.12	.02	0	0	0	0	0	0	0	0	0
23	0	.08	.02	0	0	0	0	0	0	0	0	0
24	0	.06	.02	0	0	0	0	0	0	0	0	0
25	0	.04	.02	0	0	0	0	0	0	0	0	0
26	0	.03	.02	0	0	0	0	0	0	0	0	0
27	0	.02	.02	0	0	0	0	0	0	0	0	0
28	0	.03	.02	0	0	0	0	0	0	0	0	0
29	0	.02	.02	0	0	0	0	0	0	0	0	0
30	0		.02	0	0	0	0	0	0	0	0	0
31	0		.01	0	0	0	0	0	0	0	0	0
Sum	0	0.41	1.12	0.03	0	0	0	0	0	0	0	0
Current Year 2000									Period 1937-2000			
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum	
Jan.			! 1	0	! 1	0	0	0	1,418	45,897	0	
Feb.			22	.12	! 1	0	.01	35.4	3,595	85,134	0	
Mar.			6	.15	31	.01	.04	96.8	5,307	109,418	0	
April			! 1	.01	! 4	0	0	2.6	2,615	49,635	0	
May			! 1	0	! 1	0	0	0	955	22,439	0	
June			! 1	0	! 1	0	0	0	333	7,301	0	
July			! 1	0	! 1	0	0	0	106	3,599	0	
Aug.			! 1	0	! 1	0	0	0	82.4	1,850	0	
Sept.			! 1	0	! 1	0	0	0	80.4	4,209	0	
Oct.			! 1	0	! 1	0	0	0	91.1	291	0	
Nov.			! 1	0	! 1	0	0	0	54.9	1,378	0	
Dec.			! 1	0	! 1	0	0	0	179	3,169	0	
Yearly				0.15		0	0	135	14,817	220,556	0	

φ Mean daily ! And other days

11-0125.00 CAMPO CREEK NEAR CAMPO, CALIFORNIA

DESCRIPTION: Water-stage recorder and broad-crested weir on left bank, 0.8 kilometer upstream from the international land boundary between the United States and Mexico, just upstream from the bridge on California State Highway 94, 5.6 kilometers southwest of Campo, California. Zero of gage is 664.135 meters 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 from October 1936 through 2000.

REMARKS: Campo Creek originates in the United States and flows southwestward into Mexico where it joins Tecate Creek. The flow at this station was partially regulated by a small conservation reservoir, 1.6 kilometers upstream, from August 1956 to February 20, 1980, when it was destroyed by a flood.

EXTREMES: Maximum discharge, 25.3 CMS, March 24, 1983 (gage height 1.640 meters present datum), from rating curve extended above 3.12 CMS 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 CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.01	0.01	0.06	0.02	0.01	0	0	0	0	0	0	0
2	.01	.01	.05	.02	.01	0	0	0	0	0	0	0
3	.01	.01	.05	.01	.01	0	0	0	0	0	0	0
4	.01	.01	.05	.01	.01	0	0	0	0	0	0	0
5	.01	.01	.11	.01	.01	0	0	0	0	0	0	0
6	.01	.01	.20	.01	.01	0	0	0	0	0	0	0
7	.01	.01	.13	.01	.01	0	0	0	0	0	0	0
8	.01	.01	.14	.01	.01	0	0	0	0	0	0	0
9	.01	.01	.14	.01	.01	0	0	0	0	0	0	0
10	.01	.01	.10	.01	.01	0	0	0	0	0	0	0
11	.01	.01	.08	.01	.01	0	0	0	0	0	0	0
12	.01	.01	.07	.01	.01	0	0	0	0	0	0	0
13	.01	.01	.07	.01	.01	0	0	0	0	0	0	0
14	.01	.01	.07	.01	.01	0	0	0	0	0	0	0
15	.01	.01	.05	.01	.01	0	0	0	0	0	0	0
16	.01	.01	.05	.01	.01	0	0	0	0	0	0	0
17	.01	.01	.05	.01	.01	0	0	0	0	0	0	0
18	.01	.02	.04	.02	.01	0	0	0	0	0	0	0
19	.01	.01	.03	.03	.01	0	0	0	0	0	0	0
20	.01	.02	.02	.02	0	0	0	0	0	0	0	0
21	.01	.13	.03	.01	0	0	0	0	0	0	0	0
22	.01	.59	.03	.01	0	0	0	0	0	0	0	0
23	.01	.18	.03	.01	0	0	0	0	0	0	0	0
24	.01	.16	.03	.01	.01	0	0	0	0	0	0	0
25	.01	.10	.02	.01	.01	0	0	0	0	0	0	0
26	.01	.08	.02	.01	.01	0	0	0	0	0	0	0
27	.01	.07	.03	.01	0	0	0	0	0	0	0	0
28	.01	.07	.03	.01	0	0	0	0	0	0	0	0
29	.01	.06	.04	.01	0	0	0	0	0	0	0	0
30	.01		.04	.01	0	0	0	0	0	0	0	0
31	.01		.03		0	0	0	0	0	0	0	0
Sum	0.31	1.66	1.89	0.36	0.22	0	0	0	0	0	0	0

Current Year 2000

Period 1937-2000

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.			1	0.01	1	0.01	0.01	26.8	430	10,581	0
Feb.			22	.59	1	.01	.06	143	555	5,288	0
Mar.			6	.20	120	.02	.06	163	888	11,587	0
April			19	.03	3	.01	.01	31.1	551	8,886	0
May			1	.01	120	0	.01	19.0	268	3,956	0
June			1	0	1	0	0	0	132	2,234	0
July			1	0	1	0	0	0	71.6	1,525	0
Aug.			1	0	1	0	0	0	65.4	2,008	0
Sept.			1	0	1	0	0	0	48.1	1,214	0
Oct.			1	0	1	0	0	0	60.0	1,084	0
Nov.			1	0	1	0	0	0	119	1,522	0
Dec.			1	0	1	0	0	0	204	1,953	0
Yearly				0.59		0	0.01	383	3,392	38,639	0

φ Mean daily

! And other days

11-0131.00 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 9.0 kilometers upstream from its confluence with Cottonwood Creek, 17.0 kilometers upstream from the point where the Tijuana River crosses the international boundary between the United States and Mexico, and 16.0 kilometers southeast of Tijuana, Baja California.

RECORDS: Computed from monthly reservoir records of storage, releases, spills, leakage, evaporation, and rainfall. Records obtained by the Ministry of Agriculture and 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 2000. 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 155.85 meters above mean sea level; at top of spillway gates 125.00 meters above mean sea level. Reservoir capacity at spillway crest 94 TCM; at top of spillway gates 137 TCM.

EXTREMES: Maximum monthly inflow, 237,657 TCM, January 1993; minimum, no flow during part of most years.

MONTHLY DISCHARGE IN THOUSAND CUBIC METERS

MONTH	CURRENT YEAR 2000	PERIOD 1938 - 2000		
		AVERAGE	MAXIMUM	MINIMUM
January	0	6,148	237,657	0
February	3.9	8,398	194,216	0
March	0.9	12,368	172,556	0
April	0	3,683	95,953	0
May	0	790	14,136	0
June	0	232	5,749	0
July	1.1	118	1,806	0
August	0.6	64.9	950	0
September	1.1	65.8	575	0
October	0.2	82.5	432	0
November	0.5	171	2,393	0
December	0.2	910	19,348	0
Yearly	8.5	33,562	412,673	0

11-0132.00 DIVERSIONS FROM RODRIGUEZ RESERVOIR, BAJA CALIFORNIA

DESCRIPTION: Sparling flow meter located immediately below the dam in the pipeline which carries water from Rodriguez Reservoir to Gate No. 1 (Poblado Presa) and to Gate No. 2 (City Aqueduct). Formerly, water for irrigation was also diverted to the North and South Canals.

RECORDS: Direct recording by Sparling flow meter. Records through May 1961 were obtained by the Ministry of Agriculture and Hydraulic Resources; from June 1961 to March 1966 by the Junta de Agua Potable y Alcantarillado del Distrito Urbano de Tijuana; and from April 1966 through 1991 by the State of Baja California Commission of Public Services for Tijuana. Since 1992, the data have been obtained by the National Water Commission. Records furnished by the Mexican Section of the Commission. Records available: May 1937 through 2000.

REMARKS: Beginning in January 1937, diversions for irrigation began from both sides for the Tijuana Valley and for domestic use at the village by Rodriguez Dam and the City of Tijuana. Since February 1960, no water has been released for irrigation of farmlands.

EXTREMES: Maximum monthly diversion, 36,018 TCM, March 1996; minimum, no flow on several occasions since March 1941.

MONTHLY DISCHARGE IN THOUSAND CUBIC METERS

MONTH	CURRENT YEAR 2000	PERIOD 1938 - 2000		
		AVERAGE	MAXIMUM	MINIMUM
January	0	666	6,183	0
February	0	649	6,028	0
March	0	1,210	36,018	0
April	0	794	6,142	0
May	0	993	6,578	0
June	0	1,110	5,893	0
July	3.5	1,226	5,681	0
August	3.3	1,144	5,931	0
September	2.6	1,020	6,158	0
October	2.0	934	6,054	0
November	0.7	825	5,873	0
December	0	781	6,212	0
Yearly	12.1	11,535	94,980	0

11-0133.00 TIJUANA RIVER AT INTERNATIONAL BOUNDARY

DESCRIPTION: Water-stage recorder on top of north levee about 1.1 kilometers downstream (north) from boundary, 1.8 kilometers upstream from the new Dairy Mart Road bridge, and 2.3 kilometers west of the international gate at San Ysidro, California. Zero of the gage is at mean sea level, U. S. C. & G. S. datum.
 RECORDS: Based on current meter measurements, staff gage readings and record of gage heights. Records obtained and furnished by the United States Section of the Commission. Records available: May 1947 through 2000.
 EXTREMES: Since May 1947: Maximum instantaneous discharge, 937 CMS, February 21, 1980; minimum discharge, no flow during many years since 1951.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.27	0	0.82	0	0	0	0	0	0	0	0.06	0
2	.22	0	.82	0	0	0	0	0	0	0	.02	0
3	.12	0	.82	0	0	0	0	0	0	0	.03	0
4	.17	0	.83	0	0	0	0	0	0	0	.02	0
5	.16	0	2.67	0	0	0	0	0	0	0	.03	0
6	.17	0	1.70	0	0	0	0	0	0	0	0	0
7	.14	0	1.30	0	0	0	0	0	0	.10	.03	0
8	.01	0	1.20	.17	0	0	0	0	0	0	.01	0
9	.03	0	1.11	.80	0	0	0	0	0	.11	0	0
10	.04	.01	.98	.41	0	0	0	0	0	0	.03	0
11	.15	.20	.94	0	0	0	0	0	0	0	.08	0
12	.15	.39	.93	0	0	0	0	0	0	0	.06	.03
13	.44	.49	.91	0	0	0	0	0	0	0	.03	.01
14	.21	.43	.93	.17	0	0	0	0	0	0	.02	0
15	0	.17	.94	.28	0	0	0	0	0	0	0	0
16	0	.19	.94	0	0	0	0	0	0	0	.01	0
17	0	.54	.94	.78	0	0	0	0	0	0	0	0
18	0	.48	.94	1.39	0	0	0	0	0	0	0	0
19	0	.49	.88	.84	0	0	0	0	0	0	0	0
20	0	1.21	.87	.45	0	0	0	0	0	0	0	0
21	0	3.88	.88	.41	0	0	0	0	0	0	0	0
22	0	1.98	.87	.67	0	0	0	0	0	0	0	0
23	0	1.46	.87	.71	0	0	0	0	0	0	0	0
24	0	1.15	.79	.26	0	0	0	0	0	0	0	0
25	0	1.01	.51	0	0	.23	0	0	0	0	.01	0
26	.11	.94	.49	0	0	.28	0	0	0	0	0	0
27	0	.89	.20	0	0	.08	0	0	0	.27	0	0
28	0	.88	0	0	0	0	0	0	0	0	0	0
29	0	.84	0	0	0	0	0	0	0	.04	0	0
30	0	0	0	0	0	0	0	0	0	1.77	0	0
31	0	0	0	0	0	0	0	0	0	1.07	0	0
Sum	2.39	17.63	26.08	7.34	0	0.59	0	0	0	3.36	0.44	0.04

Current Year 2000

Period 1947-2000

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	12.185	11.835	113	0.47	13	0	0.08	206	9,186	297,879	0
Feb.	13.305	11.835	21	13.8	11	0	.61	1,523	14,419	388,951	0
Mar.	12.815	11.835	5	6.10	127	0	.84	2,253	17,179	362,019	0
April	12.435	11.835	17	3.39	11	0	.24	634	4,425	77,635	0
May	11.835	11.835	11	0	11	0	0	0	2,147	52,545	0
June	11.975	11.920	26	.50	11	0	.02	51.0	751	11,960	0
July	11.920	11.920	11	0	11	0	0	0	543	11,400	0
Aug.	11.920	11.920	11	0	11	0	0	0	648	21,083	0
Sept.	11.920	11.920	11	0	11	0	0	0	315	5,142	0
Oct.	12.295	11.920	30	2.61	11	0	.11	290	409	6,859	0
Nov.	12.145	11.920	10	.39	17	0	.01	38.0	607	5,399	0
Dec.	12.095	11.920	12	.13	11	0	0	3.5	1,078	8,270	0
Yearly	13.305	11.835		13.8		0	0.16	4,999	51,707	734,832	0

! 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 thousand cubic meters. 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 Dams, 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.

The storage data for Morena and Barrett reservoirs are obtained and provided by the City of San Diego, California and the U.S. Geological Survey. The data for Rodriguez Dam were provided by the Secretariat of Hydraulic Resources in Mexico up to May 1961, from June 1961 to March 1966 the data were provided by the Potable Water and Sewerage Board for the Urban District of Tijuana, from April 1966 to December 1991, the data were provided by the State Public Service Commission of Tijuana, Baja California, and since 1992, by the Secretariat of Agriculture and Hydraulic Resources.

IN THOUSAND CUBIC METERS

Month	MORENA RESERVOIR, CALIFORNIA (Capacity 61,933)		BARRETT RESERVOIR, CALIFORNIA (Capacity 55,211)		RODRIGUEZ RESERVOIR, BAJA CALIFORNIA (Capacity 138,000)		TOTAL IN TIJUANA RIVER BASIN RESERVOIRS (Capacity 255,147)	
	2000	Average 1937-2000	2000	Average 1937-2000	2000	Average 1937-2000	2000	Average 1937-2000
Jan.	40,088	25,247	21,375	19,098	14,620	41,832	76,083	86,177
Feb.	37,738	26,580	20,779	20,112	14,960	44,328	73,477	91,020
Mar.	35,374	28,023	23,814	22,421	15,020	49,849	74,208	100,293
April	32,512	28,187	25,102	23,116	14,960	50,757	72,574	102,060
May	29,381	28,009	25,374	22,883	14,840	50,667	69,595	101,559
June	25,892	27,342	24,970	22,069	14,600	48,952	65,462	98,363
July	22,660	26,576	24,463	21,126	13,915	46,805	61,038	94,507
Aug.	20,954	25,871	22,345	20,103	13,440	44,683	56,739	90,657
Sept.	20,317	25,161	19,641	19,358	13,098	43,040	53,056	87,559
Oct.	19,796	24,672	17,070	18,671	12,889	41,402	49,755	84,745
Nov.	19,507	24,467	14,635	18,149	12,794	40,597	46,936	83,213
Dec.	19,269	24,542	12,247	18,320	12,813	40,461	44,329	83,323
Avg.	26,957	26,223	20,985	20,452	13,996	45,281	61,938	91,956
Max.	40,088	#! 76,069	25,374	*! 56,641	15,020	! 138,486	76,083	! 263,471
Min.	19,269	!! 12	12,247	!! 131	12,794	!! 0	44,329	!! 1,559

- March 31, 1941 - Prior to removal of spillway gates

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

! - Maximum end of month storage for period of record

!! - Minimum end of month storage for period of record

RAINFALL ON THE TIJUANA RIVER WATERSHED
IN MILLIMETERS

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 following rainfall data.

IN THE UNITED STATES

Month	Morena Dam, California		Barrett Dam, California		Marron Valley, California		Sawday Ranch, California		Campo, California	
	2000	Average 1906-2000	2000	Average 1907-2000	2000	Average 1951-2000	2000	Average 1950-2000	2000	Average 1900-2000
Jan.	36	99	23	90	#	#	24	91	19	79
Feb.	149	99	120	89	#	#	133	84	107	83
Mar.	44	90	40	82	#	#	46	80	37	73
April	21	42	11	37	#	#	12	37	12	34
May	0	15	0	13	#	#	0	9	T	12
June	5	4	1	2	#	#	5	2	5	2
July	0	9	0	3	#	#	0	14	0	12
Aug.	2	14	2	6	#	#	43	21	3	13
Sept.	14	11	5	7	#	#	5	12	8	9
Oct.	27	22	19	18	#	#	19	14	17	16
Nov.	14	40	15	37	#	#	19	42	10	34
Dec.	4	75	2	68	#	#	3	57	1	60
Yearly	316	520	238	452			309	463	219	427

Month	Chula Vista, California		Lower Otay Dam, California					
	2000	Average 1930-2000	2000	Average 1906-2000				
Jan.	5	48	16	56				
Feb.	74	47	86	47				
Mar.	30	44	26	56				
April	0	20	21	26				
May	0	5	1	10				
June	0	2	2	3				
July	0	1	0	1				
Aug.	2	2	6	3				
Sept.	T	5	5	6				
Oct.	0	9	19	10				
Nov.	0	27	10	31				
Dec.	T	38	3	37				
Yearly	111	248	195	286				

T Trace

IN MEXICO

Month	El Pinal, Baja California		El Hongo, Baja California		Ignacio Zaragoza, Baja California		Tecate, Baja California		El Carrizo, Baja California	
	2000	Average 1964-2000	2000	Average 1980-2000	2000	Average 1965-2000	2000	Average 1946-2000	2000	Average 1980-2000
Jan.	#	84	5	65	5	62	7	77	4	43
Feb.	#	90	70	69	104	74	112	58	67	53
Mar.	#	94	19	68	24	67	46	66	22	57
April	#	37	14	19	0	25	13	27	8	19
May	#	9	0	6	0	6	2	8	0	4
June	#	1	8	3	0	2	4	3	3	2
July	#	18	0	13	0	3	0	4	0	3
Aug.	#	23	46	19	0	7	0	5	1	2
Sept.	#	18	7	7	3	10	2	5	0	4
Oct.	#	16	12	11	10	14	25	12	12	14
Nov.	#	46	6	28	19	38	9	35	4	29
Dec.	#	71	3	32	3	47	0	49	2	31
Yearly	#	494	190	340	168	365	220	349	123	271

Missing record

T Trace

RAINFALL ON THE TIJUANA RIVER WATERSHED
IN MILLIMETERS

IN MEXICO

	Valle de Palmas, Baja California		Rodriguez Dam, Baja California			
	2000	Average 1948-2000	2000	Average 1938-2000		
Jan.	1	44	3	44		
Feb.	37	39	87	43		
Mar.	21	40	22	44		
April	8	15	11	19		
May	0	4	0	4		
June	4	1	4	1		
July	0	2	0	1		
Aug.	T	5	2	3		
Sept.	T	5	0	6		
Oct.	15	9	17	9		
Nov.	2	20	4	23		
Dec.	3	27	1	37		
Yearly	91	206	151	232		

T Trace

LOCATION OF RAINFALL STATIONS ON THE TIJUANA RIVER WATERSHED

The precipitation records of the stations listed alphabetically below began on the date shown and extend through 2000.

IN THE UNITED STATES

NAME OF STATION	LATITUDE	LONGITUDE	a ELEV. (Meters)	RECORD BEGAN	OBSERVER
Barrett Dam, California	32° 41'	116° 40'	494.69	1907	City of San Diego
Campo, California	32° 38'	116° 28'	801.62	1877	County of San Diego
Chula Vista, California	32° 36'	117° 06'	2.74	1930	Chula Vista Fire Department
Lower Otay Dam, California	32° 37'	116° 56'	164.59	1906	City of San Diego
Marron Valley, California	32° 34'	116° 46'	167.64	1951	County of San Diego
Morena Dam, California	32° 41'	116° 31'	937.26	1906	City of San Diego
Sawday Ranch, California	32° 45'	116° 29'	975.36	1950	Ben and Kelly Tulloch

IN MEXICO

NAME OF STATION	LATITUDE	LONGITUDE	a ELEV. (Meters)	RECORD BEGAN	OBSERVER
Ignacio Zaragoza, Baja California	32° 12'	116° 29'	555.04	1965	** CNA
El Carrizo, Baja California	32° 29'	116° 42'	494.99	1980	CNA
El Hongo, Baja California	32° 31'	116° 18'	960.12	1981	CNA
El Pinal, Baja California	32° 11'	116° 17'	"1350.00	1964	CNA
Rodriguez Dam, Baja California	32° 27'	116° 54'	120.09	1938	CNA
Tecate, Baja California	32° 33'	116° 41'	480.06	1946	CNA
Valle de Las Palmas, Baja California	32° 22'	116° 37'	280.11	1948	CNA

a Elevation above mean sea level

" Estimated from topographic maps

** Baja California State Office of the National Water Commission

EVAPORATION IN THE TIJUANA RIVER BASIN
IN MILLIMETERS

Tabulated below are records of evaporation observed at 3 stations in California and at 2 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 Agriculture and Hydraulic Resources of Mexico. For specific location of these stations, refer to data opposite same station name shown in "Location of Rainfall Stations on the Tijuana River Watershed" in this bulletin.

Types of pans used:

1. Barrett Reservoir: January 1921 through September 1926, square 0.91-meter by 0.91-meter by 0.46-meter deep floating pan. October 1926 through 2000, square 0.91-meter by 0.91-meter by 0.46-meter deep land pan set 0.38-meter in ground.
2. Morena Reservoir: October 1915 through December 1921, square 0.91-meter by 0.91-meter by 0.46-meter deep floating pan. January 1922 through August 1926 records are the average of evaporation in a square 0.91-meter by 0.91-meter by 0.46-meter deep floating pan and a land pan of the same dimensions. September 1926 through 2000, square 0.91-meter by 0.91-meter by 0.46-meter deep land pan set 0.38-meter in ground.
3. Lower Otay Dam: January 1950 through 2000, square 0.91-meter by 0.91-meter by 0.46-meter deep land pan set 0.38-meter in ground.

IN THE UNITED STATES

Month	Morena Dam, California		Barrett Dam, California		Lower Otay Dam California	
	2000	Average 1916-2000	2000	Average 1921-2000	2000	Average 1950-2000
Jan.	35	55	40	48	54	49
Feb.	37	54	41	53	58	57
Mar.	61	81	64	83	83	85
April	135	118	113	115	120	118
May	161	163	148	162	154	153
June	212	210	177	199	170	175
July	255	241	210	235	176	209
Aug.	209	224	181	221	141	197
Sept.	146	177	139	180	144	162
Oct.	65	125	77	126	83	118
Nov.	32	79	44	78	80	72
Dec.	57	57	50	49	72	54
Yearly	1,405	1,584	1,284	1,549	1,335	1,446

IN MEXICO

Month	Rodriguez Dam, Baja California		El Carrizo, Baja California	
	2000	Average 1939-2000	2000	Average 1980-2000
Jan.	76	100	127	134
Feb.	73	103	112	115
Mar.	98	110	140	140
April	145	140	205	183
May	174	131	250	220
June	193	190	286	270
July	204	214	290	297
Aug.	181	198	277	292
Sept.	144	165	237	240
Oct.	81	137	127	209
Nov.	71	108	138	155
Dec.	79	85	155	136
Yearly	1,519	1,696	2,344	2,373

TEMPERATURE IN THE TIJUANA RIVER BASIN
IN DEGREES CELSIUS

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 meters 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 on Tijuana River Watershed" in this bulletin.

IN THE UNITED STATES

Month	Barrett Dam, California				Campo, California				Chula Vista, California			
	2000			Average 1931- 2000	2000			Average 1951- 2000	2000			Average 1931- 2000
	Mean	Max.	Min.		Mean	Max.	Min.		Mean	Max.	Min.	
Jan.	12.7	26.7	-1.1	9.8	10.7	28.3	-5.0	8.8	14.2	26.7	3.3	12.1
Feb.	10.9	26.7	1.7	10.8	10.1	23.9	-2.8	9.3	14.9	28.3	6.7	12.9
Mar.	13.2	28.9	1.7	12.1	10.4	27.8	-4.4	10.1	14.4	24.4	5.6	13.5
April	17.1	34.4	3.9	14.6	14.2	33.9	-1.1	12.3	16.7	25.0	8.3	15.0
May	20.3	37.2	6.7	17.2	17.2	36.7	1.7	15.1	18.1	27.8	10.6	16.4
June	23.1	36.1	8.9	20.5	20.2	38.3	2.8	18.6	19.7	28.9	13.3	17.8
July	24.4	41.7	7.2	24.4	21.7	40.0	1.1	22.7	20.7	26.7	15.0	19.8
Aug.	26.3	40.6	11.7	24.7	23.4	40.0	5.6	22.9	22.4	31.7	17.2	20.8
Sept.	23.4	40.6	8.9	22.6	20.0	38.9	1.1	20.5	21.5	31.7	14.4	20.1
Oct.	17.4	32.8	5.6	18.1	14.4	33.3	-1.7	16.0	18.3	25.0	10.6	17.8
Nov.	11.6	26.7	-1.1	13.5	8.6	26.1	-6.7	11.4	14.0	27.2	4.4	14.9
Dec.	12.3	26.1	0	10.4	10.2	26.7	-4.4	8.8	14.2	28.3	3.9	12.8
Yearly	17.7	41.7	-1.1	16.6	15.1	40.0	-6.7	14.7	17.4	31.7	3.3	16.2

IN MEXICO

Month	Rodríguez Dam, Baja California				El Hongo, Baja California				Ignacio Zaragoza, Baja California			
	2000		1938-2000		2000		1981-2000		2000		1965-2000	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
Jan.	28	4	32	-3	26	0	26	-9	24	-8	34	-8
Feb.	27	6	34	0	23	1	27	-3	25	-6	32	-8
Mar.	26	5	38	0	25	-1	29	-2	25	-6	36	-7
April	32	9	40	2	34	2	34	-1	29	-4	38	-4
May	32	10	39	3	40	3	40	1	35	-1	40	-1
June	30	12	42	8	47	7	47	2	34	3	43	-2
July	33	16	40	8	39	10	45	8	39	1	45	1
Aug.	35	16	41	10	38	10	41	3	39	3	45	3
Sept.	38	13	43	8	37	9	39	2	38	1	44	1
Oct.	27	10	42	1	31	4	37	0	30	-2	40	-6
Nov.	30	5	37	-1	17	3	30	-2	25	-9	34	-9
Dec.	30	5	34	-3	23	1	27	-8	25	-7	33	-7
Yearly	38	4	43	-3	47	-1	47	-9	39	-9	45	-9

Month	Tecate, Baja California				El Carrizo, Baja California				Valle de Palmas, Baja California			
	2000		1946-2000		2000		1980-2000		2000		1948-2000	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
Jan.	30	-1	38	-9	30	4	32	-1	37	0	37	-11
Feb.	27	0	38	-8	32	5	34	-2	31	1	37	-5
Mar.	31	-1	36	-5	31	4	37	-4	31	0	38	-2
April	34	1	39	-2	35	7	41	3	38	2	41	-2
May	38	5	42	1	38	8	42	5	39	4	44	1
June	39	8	44	0	36	11	42	9	38	6	48	4
July	42	7	46	2	39	10	46	8	45	6	49	6
Aug.	42	9	47	1	41	13	45	5	43	9	48	5
Sept.	41	7	46	2	41	12	42	5	44	3	47	3
Oct.	34	5	41	-3	40	9	40	6	34	3	43	0
Nov.	29	-2	37	-3	30	4	35	4	29	-2	38	-7
Dec.	32	0	36	-5	34	5	34	-3	30	-1	35	-6
Yearly	42	-2	47	-9	41	4	46	-4	45	-2	49	-11

DRAINAGE AREAS ABOVE GAGING STATIONS AND IRRIGATED AREAS
ALONG TIJUANA RIVER AND TRIBUTARIES

2000

The total area within the Tijuana River basin is 4,484 square kilometers, 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 Mr. Art Letter, General Manager, Tia Juana Valley County Water District, or estimated from aerial photographs. Those in Mexico were furnished by the Ministry of Agriculture and Hydraulic Resources of Mexico through the Mexican Section of the Commission. All irrigation in the Tijuana River basin in 2000 was by pumping from ground water.

Designation of Areas	Drainage Basin-Square Kilometers			Irrigated Areas-Hectares		
	United States	Mexico	Total	United States	Mexico	Total
Cottonwood Creek above Morena Dam	295	0	295	0		0
Morena Dam to Barrett Dam	344	0	344	0		0
above Barrett Dam	640	0	640	0		0
below Barrett Dam and above Tecate Creek	168	0	168	0		0
above Tecate Creek	808	0	808	0		0
Campo Creek above International Boundary	220	10	230	0		0
Tecate Creek above International Boundary (not including Campo Creek)	49	166	215	0		0
Cottonwood Creek above International Boundary Station	1,070	176	1,246	0		0
Rio de las Palmas above Rodriguez Dam	18	2,541	2,559	0	(b)	0
Tijuana River above Nestor Gaging Station	1,186	3,279	4,465	49		49
above the Mouth	1,197	3,287	4,484	(a) 244		244

(a) Data from Otay Water District, leased areas from IBWC irrigation and private landowners.

(b) There was no irrigation in 2000 in the Tijuana Irrigation District, Tijuana Valley, Baja California Mexico, from the Rodriguez Reservoir.



09-5375.00 WHITEWATER DRAW NEAR DOUGLAS, ARIZONA

DESCRIPTION: Water-stage recorder located on U. S. Highway 80 bridge between Douglas and Bisbee, Arizona, about 137 meters upstream from the Southern Pacific Railroad bridge, 2.4 kilometers upstream from the international boundary, and 3.2 kilometers west of Douglas, Arizona. Zero of gage is 1,191.505 meters above mean sea level, U. S. C. & G. S. datum of 1929. Location April 26, 1972 to April 10, 1974 was 61 meters upstream from bridge with the datum 1.340 meters higher.

RECORDS: Based on current meter measurements, observations of no flow, and a continuous record of gage heights. Computations by shifting control methods. Records obtained and furnished by the U. S. Section of the Commission. Records fair. 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), July 1930 to December 1933, May 1935 to July 1947, October 1947 through 2000 (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.

EXTREMES: Prior to 1936: Maximum recorded discharge, 97.7 CMS August 10, 1931 (gage height 3.700 meters); maximum estimated discharge, 115 CMS July 27, 1919; minimum discharge, no flow for several days of many years. Since 1936: Maximum discharge, 143 CMS August 7, 1955; maximum gage height, 5.045 meters July 29, 1966; minimum discharge, no flow at times during most years.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0.12	0	0	0	0.31	0
2	0	0	0	0	0	0	.09	0	0	0	.23	0
3	0	0	0	0	0	0	0	0	0	0	.18	0
4	0	0	0	0	0	0	0	0	0	0	.22	0
5	0	0	0	0	0	0	0	0	0	0	.46	0
6	0	0	0	0	0	0	0	0	0	0	.28	0
7	0	0	0	0	0	0	0	0	0	0	2.38	0
8	0	0	0	0	0	0	.31	.32	0	0	.96	0
9	0	0	0	0	0	0	.02	1.02	0	0	.48	0
10	0	0	0	0	0	0	0	.53	0	0	.69	0
11	0	0	0	0	0	0	0	0	0	.25	.66	0
12	0	0	0	0	0	0	0	0	0	4.62	.50	0
13	0	0	0	0	0	0	0	0	0	3.62	.40	0
14	0	0	0	0	0	0	.03	0	0	0	.32	0
15	0	0	0	0	0	0	0	0	0	0	.27	0
16	0	0	0	0	0	0	0	0	0	0	.24	0
17	0	0	0	0	0	0	0	0	0	0	.16	0
18	0	0	0	0	0	0	0	.02	0	0	.07	0
19	0	0	0	0	0	0	0	0	0	0	.03	0
20	0	0	0	0	0	.41	0	.02	0	0	.01	0
21	0	0	0	0	0	.51	0	0	0	0	0	0
22	0	0	0	0	0	.03	0	0	0	.26	0	0
23	0	0	0	0	0	0	.06	0	0	.22	0	0
24	0	0	0	0	0	.03	.01	0	0	10.3	0	0
25	0	0	0	0	0	.14	.01	0	0	10.9	0	0
26	0	0	0	0	0	0	0	0	0	13.3	0	0
27	0	0	0	0	0	0	0	.07	0	8.41	0	0
28	0	0	0	0	0	.04	.09	.22	0	5.07	0	0
29	0	0	0	0	0	2.00	.01	2.46	0	3.40	0	0
30	0	0	0	0	0	2.70	.01	7.73	0	2.15	0	0
31	0	0	0	0	0	.39	0	.07	0	.85	0	0
Sum	0	0	0	0	0	6.25	0.76	12.55	0	63.81	8.85	0

Current Year 2000

Period 1936-2000

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	1.380	1.380	1	0	1	0	0	0	40.6	556	0
Feb.	1.380	1.380	1	0	1	0	0	0	19.0	163	0
Mar.	1.380	1.380	1	0	1	0	0	0	24.1	364	0
April	1.380	1.380	1	0	1	0	0	0	17.6	213	0
May	1.380	1.380	1	0	1	0	0	0	12.5	170	0
June	2.230	1.380	29	5.04	1	0	.21	540	127	1,961	0
July	1.815	1.380	8	1.10	3	0	.02	65.7	1,854	10,004	0
Aug.	2.535	1.380	29	10.7	1	0	.40	1,084	3,019	17,861	0
Sept.	1.480	1.380	10	.03	1	0	0	0	790	3,910	0
Oct.	2.715	1.380	25	15.3	1	0	2.06	5,513	456	7,528	0
Nov.	2.130	1.380	7	3.77	1	0	.30	765	59.4	765	0
Dec.	1.380	1.380	1	0	1	0	0	0	126	2,915	0
Yearly	2.715	1.380		15.3		0	0.25	7,968	6,545	27,533	0

! And other days

SEWAGE INFLUENT, DOUGLAS, ARIZONA
INTERNATIONAL TREATMENT PLANT

DESCRIPTION: Parshall flume in the influent line of the older trickling filter unit and a Parshall flume in the influent line of the newer extended aeration unit. The treatment plant is located about 1.6 kilometers west of the Douglas-Agua Prieta Port of Entry immediately adjacent to the international boundary in Douglas, Cochise County, Arizona.

RECORDS: Continuous monthly records since March 1948; daily records from March 18, 1948 through 1950 and from January 1952 through 2000.

REMARKS: The older 4.9 thousand cubic meters per day trickling filter unit was constructed in 1947 by the International Boundary and Water Commission. Since April 8, 1968 all sewage from Agua Prieta has been retained and treated in Mexico to be used for irrigation along with the effluent from the Douglas International Treatment Plant. On July 1, 1973, ownership and operation of the plant was transferred from the International Boundary and Water Commission to the City of Douglas. In 1980 the plant was enlarged, with the addition of the extended aeration unit bringing the total capacity up to 9.8 thousand cubic meters per day. The effluent from the Douglas Treatment Plant is discharged through a conduit to Mexico.

Month	Total Monthly Flows			Mean Daily Flows—Thousand Cubic Meters Per Day					
	Thousand Cubic Meters			Current Year 2000			Period 1952-2000		
	U.S.	Mexico	Total	Maximum	Minimum	Mean	Maximum	Minimum	Mean
Jan.	165	0	165	10.3	2.5	5.3	10.3	1.6	4.4
Feb.	158	0	158	8.2	3.0	5.3	17.7	2.1	4.4
Mar.	174	0	174	8.4	3.2	5.6	13.9	2.2	4.4
April	174	0	174	10.1	1.8	5.8	12.9	1.4	4.4
May	211	0	211	15.0	2.1	6.8	15.0	1.9	4.5
June	242	0	242	15.0	4.2	8.2	15.0	2.1	4.6
July	241	0	241	12.9	5.1	7.8	14.1	1.8	4.8
Aug.	255	0	255	15.1	1.8	8.2	15.1	1.4	4.8
Sept.	190	0	190	9.5	4.4	6.3	9.5	1.8	4.7
Oct.	231	0	231	13.8	4.4	7.4	13.8	2.2	4.6
Nov.	239	0	239	12.4	4.0	7.9	12.4	1.2	4.5
Dec.	191	0	191	9.2	5.6	6.8	12.6	1.7	4.5
Yearly	2,471	0	2,471	15.1	1.8	6.8	17.7	1.2	4.6

09-4705.00 SAN PEDRO RIVER AT PALOMINAS, ARIZONA

DESCRIPTION: Water-stage recorder located near left bank on downstream side of the bridge pier at Highway 92, 1.1 kilometers east of Palominas, 4.0 kilometers upstream from Green Brush Draw, 7.2 kilometers downstream from international boundary, and 19 kilometers southwest of Bisbee, Arizona. Zero of gage is 1,276.39 meters above mean sea level (State Highway bench mark).

RECORDS: Based on current meter measurements, observations of no flow, and a continuous record of gage heights. Records available: May 1930 to October 1933, May 1935 to July 1941, and July 1950 through 2000. Records obtained and furnished by U. S. Geological Survey prior to October 1, 1981 and from October 1, 1995 through 2000, and by the United States Section of the Commission from October 1, 1981 through September 30, 1995.

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

EXTREMES: Maximum daily discharge, 623 CMS on August 14, 1940 (gage height 4.93 meters present datum), from rating curve extended above 159 CMS on basis of slope-area measurement of peak flow; no flow at time in most years. Greatest flood known occurred on September 28, 1926 (gage height, about 7.28 meters present datum), from flood marks; discharge not determined.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.04	0.07	0.05	0.02	0	0	5.75	0.01	0	0	0.71	0.62
2	.04	.07	.05	.02	0	0	1.33	0	0	0	.54	.59
3	.04	.08	.05	.01	0	0	.27	0	0	.01	.42	.57
4	.04	.10	.05	.01	0	0	.59	0	0	0	2.18	.57
5	.05	.10	.05	.01	0	0	.11	0	0	0	17.9	.57
6	.05	.07	.05	.01	0	0	.05	24.6	0	0	10.5	.57
7	.05	.06	.07	.01	0	0	.02	90.6	0	0	28.9	.57
8	.05	.07	.05	.01	0	0	1.56	11.2	0	0	16.9	.57
9	.05	.07	.05	.01	0	.25	.07	.88	0	0	6.66	.54
10	.05	.05	.05	.01	0	.02	.01	.74	0	.02	3.68	.54
11	.05	.05	.05	.01	0	.01	0	1.61	.02	37.9	2.75	.54
12	.05	.05	.06	.01	0	.01	0	2.44	0	75.9	2.38	.54
13	.04	.05	.06	.01	0	0	0	.03	0	12.4	2.12	.54
14	.04	.05	.05	.01	0	0	0	0	0	4.96	1.84	.51
15	.04	.05	.05	.01	0	0	.34	0	0	2.80	1.70	.51
16	.04	.05	.04	.01	0	0	.19	0	0	1.78	1.59	.51
17	.05	.05	.03	.01	0	11.7	.08	1.05	0	1.25	1.47	.51
18	.05	.05	.03	.01	0	4.62	.04	2.86	0	.91	1.33	.48
19	.06	.05	.03	0	0	.01	.02	.62	0	4.53	1.10	.48
20	.06	.05	.03	0	0	0	.01	.27	0	3.34	.99	.48
21	.06	.05	.03	0	0	.02	0	.27	0	2.04	.93	.45
22	.07	.05	.04	0	0	.01	2.49	6.26	0	45.9	.85	.45
23	.06	.05	.04	0	0	.03	4.19	10.0	0	264	.79	.45
24	.05	.05	.03	0	0	18.3	1.25	.04	0	25.9	.76	.42
25	.05	.04	.03	0	0	.31	.16	0	0	10.8	.74	.42
26	.05	.04	.03	0	0	.01	.02	0	0	5.30	.74	.40
27	.05	.04	.02	0	0	.42	.01	1.22	0	3.48	.68	.40
28	.05	.04	.03	0	0	.79	.02	1.87	0	4.22	.68	.40
29	.05	.04	.02	0	0	.07	.01	63.7	0	4.16	.68	.40
30	.05	.04	.02	0	0	5.44	.01	2.66	0	1.78	.68	.37
31	.07		.02		0		.01	.31		1.05		.37
Sum	1.55	1.64	1.26	0.20	0	42.02	18.61	223.24	0.02	514.43	113.19	15.34

Current Year 2000

Period 1951-2000

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second					Volume-Thousand Cubic Meters			
	High	Low	Day	φ High	Day	φ Low	Average	Total	Average	Maximum	Minimum
Jan.	1.165	1.155	31	0.09	1	0.04	0.05	134	2,339	35,987	3.2
Feb.	1.165	1.145	1	.10	126	.03	.06	142	982	8,343	3.7
Mar.	1.165	1.130	7	.12	31	.02	.04	109	855	9,129	16.4
April	1.145	1.090	1	.02	126	0	.01	17.3	200	1,282	0
May	1.100	.870	1	0	9	0	0	0	65.1	502	0
June	3.160	.710	24	107	1	0	1.40	3,631	213	3,631	0
July	2.045	.985	1	29.2	113	0	.60	1,608	5,419	21,263	0
Aug.	4.600	.985	7	272	123	0	7.20	19,288	8,842	44,860	204
Sept.	.980	.705	11	.14	12	0	0	1.7	2,037	20,160	1.7
Oct.	5.755	.675	23	450	7	0	16.6	44,447	2,871	58,371	0
Nov.	1.925	.865	7	38.5	4	.37	3.77	9,780	844	19,006	0
Dec.	.905	.865	1	.62	128	.37	.49	1,325	1,956	31,428	7.6
Yearly	5.755	0.675		450		0	2.55	80,483	26,623	80,483	5,427

φ Mean daily

! And other days

09-4800.00 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, 4.0 kilometers northeast of Lochiel, Arizona, and 2.7 kilometers 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 1,408 meters.

RECORDS: Based on current meter measurements, observations of no flow, and a continuous record of gage heights. Records obtained and furnished by the U. S. Geological Survey. Records available: January 1949 through 2000.

REMARKS: There are small diversions by ground water pumping for irrigating about 80.9 hectares above this station. EXTREMES: Maximum discharge, 362 CMS on August 15, 1984, (gage height 3.19 meters); minimum discharge, no flow for several days of many years.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0	0.17	0.09	0.57	0.37
2	.04	.03	.03	.02	.02	.01	.01	0	.16	.09	.57	.34
3	.04	.03	.03	.02	.02	.01	0	0	.15	.08	.57	.34
4	.04	.03	.03	.02	.02	.01	0	0	.16	.09	.59	.34
5	.04	.03	.03	.02	.02	.01	0	0	.16	.09	.54	.34
6	.04	.03	.03	.02	.01	0	0	4.13	.17	.10	.57	.37
7	.03	.03	.04	.02	.02	0	0	11.8	.16	.11	.99	.37
8	.03	.02	.03	.02	.02	.01	0	.62	.16	.11	.57	.34
9	.03	.02	.03	.02	.02	.01	0	.13	.16	.12	.54	.34
10	.03	.03	.03	.02	.02	.01	0	.42	.40	.14	.48	.31
11	.03	.03	.03	.02	.01	.01	0	.37	.28	.54	.48	.31
12	.03	.03	.03	.02	.01	.01	0	.21	.17	1.25	.45	.31
13	.03	.03	.03	.02	.01	.01	0	.37	.16	.28	.40	.31
14	.03	.03	.03	.02	.01	0	0	.28	.15	.20	.40	.28
15	.03	.03	.03	.02	.01	0	0	.20	.14	.18	.37	.28
16	.03	.03	.03	.02	.01	0	0	.18	.14	.18	.37	.28
17	.03	.03	.03	.02	.01	0	0	.19	.14	.17	.42	.27
18	.03	.03	.03	.01	.01	0	0	.20	.14	.18	.40	.27
19	.03	.03	.03	.01	.01	.01	0	.19	.13	.48	.40	.27
20	.03	.03	.03	.02	0	.01	0	.19	.12	2.49	.40	.27
21	.03	.03	.02	.02	.01	0	0	.18	.12	2.35	.37	.27
22	.03	.03	.02	.02	.01	0	0	.28	.12	4.47	.37	.26
23	.03	.02	.02	.02	0	.05	.01	.42	.11	12.1	.34	.26
24	.03	.03	.02	.03	0	.85	0	.21	.11	1.16	.34	.26
25	.03	.02	.02	.02	.01	.02	0	.18	.10	.65	.34	.25
26	.03	.02	.02	.02	.01	.01	.15	.17	.11	.57	.37	.24
27	.03	.02	.02	.02	.01	.01	.82	.22	.11	.59	.37	.24
28	.03	.02	.02	.01	.01	0	.03	1.36	.10	.91	.37	.23
29	.03	.02	.02	.01	.01	0	.01	.51	.10	.62	.40	.22
30	.02	.02	.02	.02	.01	0	0	.23	.10	.59	.37	.19
31	.03	.02	.02	.02	.01	0	0	.22		.59	.37	.22
Sum	0.97	0.79	0.82	0.57	0.37	1.07	1.04	23.46	4.50	31.57	13.72	8.95

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters					
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum		
												Day	φ High
Jan.			1	2	0.04	30	0.02	0.03	83.8	348	8,822	1.6	
Feb.			1	1	.03	1	.02	.03	68.3	123	1,233	2.2	
Mar.			7		.04	1	.02	.03	70.8	139	2,594	.9	
April			24		.03	18	.01	.02	49.2	64.6	638	0	
May			1	1	.02	120	0	.01	32.0	32.9	210	0	
June			24		.85	1	6	0	.04	92.4	23.7	208	0
July			27		.82	1	3	0	.03	89.9	613	5,267	2.0
Aug.			7		11.8	1	1	0	.76	2,027	1,166	14,207	.1
Sept.			10		.40	125	.10	.15	389	359	3,249	0	
Oct.			23		12.1	3	.08	1.02	2,728	368	5,837	0	
Nov.			7		.99	23	.34	.46	1,185	95.9	1,185	0	
Dec.			1	1	.37	30	.19	.29	773	145	1,348	0	
Yearly					12.1		0	0.24	7,588	3,478	21,433	155	

φ Mean daily

! And other days

09-4805.00 SANTA CRUZ RIVER NEAR NOGALES, ARIZONA

DESCRIPTION: Water-stage recorder, cable with sit-down cable car located 8.9 kilometers east of Nogales, Arizona, 1.3 kilometers downstream from the international boundary and 9.7 kilometers upstream from the Santa Cruz bridge on State Highway No. 82. Zero of gage is 1,128.54 meters above mean sea level, U. S. C. & G. S. datum (levels by International Boundary and Water Commission).

RECORDS: Based on current meter measurements, observations of no flow, and a continuous record of gage heights. Records obtained and furnished by the U. S. Geological Survey. 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 2000.

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 1999.

EXTREMES: Maximum discharge, 949 CMS on October 9, 1977 (gage height 4.725 meters); minimum discharge, no flow for several days of many years.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 2000 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.13	0.05	0.03	0.03	0	0	1.16	0	0.02	0	5.66	1.50
2	.03	.05	.03	.03	0	0	.02	0	.01	0	4.79	1.42
3	.03	.08	.03	.04	0	0	.01	0	.01	0	3.77	1.36
4	.03	.11	.03	.04	0	0	.01	0	.01	0	6.23	1.25
5	.03	.14	.03	.03	.01	0	.01	0	0	0	11.3	1.22
6	.03	.14	.04	.03	.02	0	0	1.76	0	0	8.18	1.19
7	.03	.06	.04	.03	.01	0	.76	3.34	0	0	14.2	1.19
8	.03	.05	.03	.03	0	0	.03	3.43	0	0	9.80	1.16
9	.03	.05	.03	.03	0	0	.02	.04	0	0	8.78	1.13
10	.05	.05	.03	.03	0	0	.02	.01	0	0	7.45	1.16
11	.05	.05	.03	.02	0	0	.01	2.95	0	26.2	6.77	1.13
12	.03	.05	.03	.02	0	0	.01	5.61	0	66.3	6.34	1.16
13	.03	.05	.03	.03	0	0	.01	.21	0	13.3	5.38	1.16
14	.03	.05	.03	.03	0	0	.01	.02	0	6.26	4.73	1.10
15	.03	.03	.03	.03	0	0	.01	0	0	3.99	4.25	1.10
16	.03	.03	.03	.03	0	0	.01	0	0	2.89	3.82	1.02
17	.03	.03	.03	.03	0	0	.01	0	0	1.98	3.43	.85
18	.03	.03	.03	.03	0	.08	0	0	0	1.59	3.00	.65
19	.03	.03	.03	.03	0	0	0	0	0	1.42	2.63	.76
20	.03	.03	.03	.03	0	0	0	0	0	10.8	2.41	.76
21	.03	.03	.03	.02	0	0	0	0	0	5.64	2.18	.82
22	.03	.03	.03	.03	0	.03	0	.16	0	19.2	2.12	.93
23	.03	.03	.03	.03	0	0	0	.01	0	58.1	1.95	.96
24	.03	.03	.03	.02	0	0	0	0	0	13.2	1.84	1.05
25	.03	.02	.03	.02	0	0	0	0	0	8.72	1.78	1.02
26	.03	.02	.03	.02	0	0	0	0	0	6.97	1.67	.99
27	.02	.02	.03	.02	0	0	0	0	0	5.75	1.67	.93
28	.03	.02	.03	.01	0	0	0	.01	0	18.0	1.67	.88
29	.05	.03	.03	0	0	0	0	1.93	0	11.7	1.64	.93
30	.05	.03	.03	0	0	.27	0	.54	0	8.10	1.53	.65
31	.05	.03	.03	0	0	0	0	.40	0	6.17	1.53	.68
Sum	1.12	1.39	0.95	0.77	0.04	0.38	2.11	20.42	0.05	296.28	140.97	32.11

Current Year 2000

Period 1936-2000

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.			1	0.13	27	0.02	0.04	96.8	2,908	37,352	0
Feb.			5	.14	125	.02	.05	120	2,165	25,344	0
Mar.			6	.04	11	.03	.03	82.1	1,880	24,145	0
April			3	.04	129	0	.03	66.5	567	4,263	0
May			6	.02	11	0	0	3.5	136	1,272	0
June			30	.27	11	0	.01	32.8	93.2	1,787	0
July			1	1.16	6	0	.07	182	2,937	19,255	0
Aug.			12	5.61	11	0	.66	1,764	6,246	56,481	12.1
Sept.			1	.02	5	0	0	4.3	1,752	111,633	0
Oct.			12	66.3	11	0	9.56	25,599	2,428	72,806	0
Nov.			7	14.2	30	1.53	4.70	12,180	784	12,180	0
Dec.			1	1.50	18	.65	1.04	2,774	2,832	41,405	0
Yearly				66.3		0	1.36	42,905	24,728	108,071	1,662

φ Mean daily

! And other days

SEWAGE INFLUENT, NOGALES INTERNATIONAL TREATMENT PLANT

DESCRIPTION: One 61-centimeter Parshall flume with a water-stage recorder is located at the international boundary for measuring raw wastewater from Nogales, Sonora. The plant influent and effluent flows are measured by flow meters and recorded on individual chart recorders and continuous totalizers. The Nogales Wash Pumping Plant flows are contaminated surface waters from Mexico captured in the U.S. and pumped into the international sewer trunk line downstream of the influent recorder. Flows determined by pump hour clocks. The Nogales International Treatment Plant is located adjacent to I-19, approximately 14.5 kilometers north of the international boundary, all within the City of Nogales, Santa Cruz County, Arizona.

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 2000.

REMARKS: Nogales International Treatment Plant treats combined sewage from both Nogales, Arizona and Nogales Sonora by means of aerated stabilization lagoons. In February 1991, a plant expansion was completed which increased the capacity to 65.1 thousand cubic meters per day. Ultraviolet disinfected effluent is discharged directly into the Santa Cruz River. Prior to the expansion, the plant capacity was 31.0 thousand cubic meters per day and chlorinated effluent was discharged directly to the Santa Cruz River. Prior to December 18, 1971 the plant was located along the right bank of Nogales Wash, approximately 3.2 kilometers north of the international boundary.

Month	Total Monthly Flows Thousand Cubic Meters				Daily Flows—Thousand Cubic Meters Per Day					
	U.S.	Mexico	Plant*	Total	Current Year 2000			Period 1952-2000		
					Maximum	Minimum	Mean	Maximum	Minimum	Mean
Jan.	642	1,091	0	1,733	59.3	48.9	55.9	93.0	2.5	24.2
Feb.	604	1,048	0	1,652	62.9	52.9	57.0	80.4	2.5	24.9
Mar.	667	1,156	0	1,823	80.2	53.0	58.8	85.7	2.8	24.7
April	688	946	0	1,634	59.1	46.0	54.5	69.2	2.6	23.3
May	764	891	0	1,655	57.1	46.0	53.4	59.4	2.1	22.0
June	705	855	0	1,560	62.1	45.5	52.0	62.5	2.6	20.6
July	360	1,374	0	1,734	61.9	51.5	55.9	68.1	2.6	21.4
Aug.	441	1,282	0	1,723	61.8	51.1	55.6	75.6	2.8	23.2
Sept.	451	1,243	0	1,694	59.5	53.3	56.5	67.9	3.0	24.5
Oct.	435	1,623	0	2,058	87.2	47.3	66.4	87.2	2.6	24.8
Nov.	621	1,559	0	2,180	84.7	59.4	72.7	84.7	3.0	24.6
Dec.	716	1,301	0	2,017	68.6	56.3	65.0	75.9	1.3	24.5
Yearly	7,094	14,369	0	21,463	87.2	45.5	58.6	93.0	1.3	23.6

* Nogales Wash Pumping Plant

RAINFALL ON THE SANTA CRUZ RIVER WATERSHED
IN MILLIMETERS

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

IN THE UNITED STATES

Month	San Rafael #2, Arizona		Canelo, Arizona		Patagonia, Arizona		Nogales Sanitation Plant 6N, Arizona			
	2000	Average 1973-2000	2000	Average 1930-2000	2000	Average 1930-2000	2000	Average 1953-2000		
Jan.	4	42	2	32	1	33	0	30		
Feb.	26	38	17	28	14	29	10	23		
Mar.	29	33	29	23	38	25	22	23		
April	T	13	1	11	0	10	0	9		
May	0	8	0	4	0	5	0	6		
June	45	15	96	19	91	12	144	13		
July	78	115	65	103	46	108	47	113		
Aug.	166	109	129	107	145	106	162	107		
Sept.	64	58	28	44	6	44	13	40		
Oct.	222	38	233	28	202	29	224	35		
Nov.	45	25	50	21	49	21	35	18		
Dec.	0	40	7	36	T	37	T	37		
Yearly	679	534	657	456	592	459	657	454		

T Trace

LOCATION OF RAINFALL STATIONS ON THE SANTA CRUZ RIVER WATERSHED

The precipitation records of the stations listed alphabetically below begin on the date shown and extend through 2000

IN THE UNITED STATES

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (Meters)	RECORD BEGAN	OBSERVER
Canelo, Arizona	S	31° 33'	110° 32'	1,527	1930	R. E. Ewing
Nogales Sanitation Plant 6N, Arizona	S	31° 25'	110° 57'	1,085	June 1952	I. B. & W. C.
Patagonia, Arizona	S	31° 33'	110° 45'	1,277	1930	George R. Proctor
San Rafael #2, Arizona	S	31° 22'	110° 38'	1,481	Jan. 1973	I. B. & W. C.

S Standard 203 millimeter rain gage

TEMPERATURE IN THE SANTA CRUZ RIVER BASIN
IN DEGREES CELSIUS

Tabulated below are monthly records of temperature at the station located at the Nogales Sanitation Plant in Arizona 14.5 kilometers north of the international boundary. On December 18, 1971, the station was moved to correspond with a new Nogales Sanitation Plant. Prior to this date, the station was located 3.2 kilometers 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. The equipment at the Nogales Sanitation Plant - 9N consists of a standard 203-millimeter rain gage and maximum and minimum thermometer. The collection of data for mean relative humidity, evaporation, and mean wind speed was discontinued in 1984.

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

Month	Nogales Sanitation Plant - 9N		
	2000		
	Mean	Max.	Min.
Jan.	8.7	29.4	-9.4
Feb.	9.9	28.9	-5.6
Mar.	11.6	28.3	-2.8
April	16.6	36.7	-1.7
May	21.8	40.6	3.3
June	25.4	40.0	11.1
July	26.4	40.0	13.9
Aug.	25.6	37.8	12.2
Sept.	24.1	38.3	9.4
Oct.	17.6	36.1	1.7
Nov.	8.6	25.0	-5.6
Dec.	9.7	26.1	-6.7
Yearly	16.4	40.6	-9.4

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

2000

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 and estimated from aerial photographs.

Designation of Areas	Drainage Basin—Square Kilometers			Irrigated Areas—Hectares		
	United States	Mexico	Total	United States	Mexico	Total
Santa Cruz River: Above Lochiel, Arizona Gaging Station	212	0	212	40	0	40
Above El Cajon, Mexico Gaging Station	464	324	788	40	952	992
Above Nogales, Arizona Gaging Station	479	901	1,380	40	1,091	1,131
San Pedro River: Above Palominas, Arizona Gaging Station	238	*1,621	1,859	578	1,400	1,978
Whitewater Draw: Above Douglas, Arizona Gaging Station	2,650	0	2,650	8,634	0	8,634

* An additional 122 square kilometers in Mexico is tributary to the San Pedro River downstream from this station.