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WATER BULLETIN NUMBER 43

Flow of the Rio Grande and Related Data

From Elephant Butte Dam, New Mexico to the Gulf of Mexico

1973

STORAGE IN MAJOR RESERVOIRS
SOURCES OF RIVER FLOW
DIVERSIONS
SUSPENDED SILT
CHEMICAL ANALYSES
SANITARY ASPECTS OF WATER QUALITY
CLIMATOLOGICAL DATA
DRAINAGE BASIN AND IRRIGATED AREAS

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FOREWORD

This bulletin presents the forty-third compilation of the stream discharges and related data concerning the international portion of the Rio Grande, prepared jointly by the United States and Mexican Sections of the International Boundary and Water Commission. The stream flow data and kindred subjects pertain to the Rio Grande and its important tributaries near their confluence with the main stream from Elephant Butte, New Mexico to the Gulf of Mexico. The first publication in the series was Water Bulletin No. 1 for the year 1931. The present volume contains the information for the year 1973.

International stream gaging on the Rio Grande was initiated in 1889, when the station at El Paso, Texas was established. Several stations on the Rio Grande and its tributaries downstream from El Paso were established in 1900 and operated until 1914. Between 1914 and 1923, except for a few months in 1919 and 1920, all stream-gaging work on the international reach of the river was suspended. In 1923, the work was resumed and carried on independently by the two countries until 1931 when the present joint program of stream measurements was adopted.

During 1973 the United States Section of the Commission operated the stream-gaging stations on the Rio Grande at El Paso, American Dam, Island, County Line, Fort Quitman, Above Rio Conchos, Below Rio Conchos, Johnson Ranch, Foster Ranch, Del Rio, San Antonio Crossing, Fort Ringgold, San Benito, and Brownsville. The Mexican Section operated the stream-gaging stations on the Rio Grande at Below Amistad Dam, Below Maverick Dam, Eagle Pass, Palafox, Laredo, Below Anzalduas Dam, and Progreso. The station at Falcon Dam was operated jointly by the two Sections. Each Section operated the gaging stations on tributary streams, floodways, and diversions within its own country.

The total drainage area within the outer rim of the Rio Grande Basin is 335,500 square miles. However, about half of this area yields no runoff to the river, the estimated productive area of the watershed being 176,333 square miles. Reservoirs in the basin have a total storage capacity of approximately 11,075,900 acre-feet, in addition to the International Amistad and Falcon Reservoirs, which have a combined conservation capacity of 6,165,000 acre-feet. In the Rio Grande Basin, a rounded total of 2,258,000 acres is irrigated below Elephant Butte Dam on the Rio Grande and below Girvin on the Pecos River. The flow of the Rio Grande to the Gulf of Mexico below Brownsville prior to construction of Falcon Dam averaged 2,600,000 acre-feet per year for the period 1934-1952. For the period 1954-1973, this flow has averaged 694,600 acre-feet per year.

Acknowledgments

Other agencies which have contributed to some part of the data published herein include: The Agricultural Research Service and the Soil Conservation Service of the U. S. Department of Agriculture; the Bureau of Reclamation and the Geological Survey of the U.S. Department of the Interior; the National Weather Service of the U.S. Department of Commerce; the Texas Board of Health; the Texas Water Development Board; the Sanchez Ditch and Reservoir Company; the Middle Rio Grande Conservancy District; the Red Bluff Water Power Control District; State of Colorado, Division of Water Resources; the New Mexico State Engineer Office; the Rio Grande Compact Commission; the Willacy County Water Control and Improvement District No. 1, the Del Rio City Water Department; the Eagle Pass City Water Department; the Laredo City Water Department; the Del Mar Conservation District; Central Power and Light Company; the El Paso Department of Water and Sewerage; the Maverick County Water Control and Improvement District No. 1; the Ministry of Hydraulic Resources of Mexico; the Ministry of Agriculture and Livestock of Mexico; the Meteorological Service of Mexico; Meteorological Service of the State of Chihuahua, Mexico; Federal Power Commission of Mexico; Potable Water Board of Piedras Negras, Coahuila; the Federal Board of Public Improvement Works of Nuevo Laredo, Tamaulipas; and the Water and Drainage Board of Cd. Acuna, Coahuila.

Additional contributions have been made by individuals and corporations and specific notation is made for such, as well as for those of the above-named agencies, where the data appear. The courtesy and cooperation of those who made these contributions are acknowledged with appreciation.

Period Averages

In Water Bulletins Nos. 1 through 29, normal or average discharge volumes shown for the various gaging stations were based on a period beginning in 1924, or thereafter when records became available.

Beginning with Water Bulletin No. 30, the periods have been revised to include only the years following completion of major projects below which the flow of the Rio Grande or a major tributary was modified, or later when records became available. The revised periods are based on the completion of Caballo Dam in 1938, irrigation projects on the Rio Conchos and its tributaries in 1947, International Falcon Dam in 1953, and Amistad Dam and Luis L. Leon Dam in 1968.

For purposes of comparison with the average flows in the Rio Grande below Caballo Dam, records of average discharge in the Rio Grande below Elephant Butte Dam have also been revised to include the same period.

The period of record used to determine the average diversions from the Rio Grande to the United States below Falcon Dam published herein was restricted to begin in 1957, the first complete year of record after United States' waters in Falcon Reservoir were placed under the jurisdiction of the 93rd District Court of Texas.

FOREWORD

Units of Measure

Data collected by the Mexican Section are computed and published in a Spanish version of the water bulletin in metric units. The Mexican data are converted and reported in this bulletin in English units. Conversion factors conform generally to those in the National Bureau of Standards Miscellaneous Publication 286 "Units of Weight and Measure (United States Customary and Metric) - Definitions and Tables of Equivalents". However, for convenience some of the factors have been shortened and modified to facilitate conversion, reconversion to the original units when necessary, and checking of data. Conversion of the mean daily discharges, the monthly average discharge and the monthly volumes from metric to English units is direct. For this reason the monthly average discharge in cubic feet per second and monthly volumes in acre-feet shown for gaging stations operated by the Mexican Section cannot necessarily be obtained in the usual manner from the total monthly flow in second-foot days. For the same reason, evaporation and rainfall data, when totaled, may not be equivalent to the direct conversion from metric to English units. The following factors have been used for data in this bulletin:

METRIC UNITS		ENGLISH UNITS
	LENGTHS	
1 Centimeter		0.393701 Inches
1 Meter		3.28084 Feet
1 Kilometer		0.621371 Miles
	AREAS	
1 Square Meter		10.76391 Square Feet
1 Hectare		2.471054 Acres
1 Square Kilometer		0.386102 Square Miles
	VOLUMES	
1 Cubic Meter		61023.74 Cubic Inches
1 Cubic Meter		35.31467 Cubic Feet
1 Cubic Meter		1.30795 Cubic Yards
1000 Cubic Meters		0.81071 Acre-Foot
1 Liter		0.264172 U. S. Gallon
	WEIGHTS	
1 Kilogram		2.204623 Pounds
1 Metric Ton		2204.623 Pounds
1 Metric Ton		1.102311 Short Tons (2,000 lbs.)

GENERAL HYDROLOGIC CONDITIONS FOR 1973

Along and Adjacent to the International Portion of the Rio Grande

During the year 1973, temperatures were about normal on the watershed of the Rio Grande below El Paso, Texas. Evaporation averaged 93% of normal. Precipitation was 80% of normal from El Paso to Amistad Dam, 138% of normal from Amistad Dam to Falcon Dam, 188% of normal from Falcon Dam to Rio Grande City, and 151% of normal in the Lower Rio Grande Valley on the United States side.

The yearly volume of flow of the Rio Grande was below normal from El Paso to the confluence of the Rio Conchos with the Rio Grande, near normal from the confluence of the Rio Conchos to Falcon Reservoir, and above normal from Falcon Dam to the Gulf of Mexico. In the reach between El Paso and the confluence of the Rio Conchos the flow averaged 53% of normal, ranging from 81% of normal at El Paso Station to 6.5% of normal at the Above Rio Conchos Station; in the reach between the confluence of the Rio Conchos and Amistad Reservoir, where flows were partly regulated by releases from Luis L. Leon Reservoir (El Granero) on the Rio Conchos, the flow averaged 94% of normal; and in the reach between Amistad Dam and Falcon Reservoir, where Rio Grande flows were partly regulated by releases from Amistad Reservoir, the flow averaged 116% of normal. Flows passing Rio Grande stations below Falcon Dam were partly regulated by releases from Falcon Reservoir. Such releases in 1973 amounted to 1,762,688 acre-feet, or 51% of the average for the twenty years of operation, 1954 through 1973. The volume of flow into the Gulf of Mexico, including approximately 92,000 acre-feet of flood flows discharged through the United States and Mexican floodway systems, was approximately 2,515,000 acre-feet, or 243% of the average, including all flood flows, for this twenty-year period. This volume included 2,423,002 acre-feet discharged via the Rio Grande channel which was 349% of the average for this twenty-year period.

The total annual flow of all measured tributaries below Fort Quitman was 156% of normal. The total flow of these tributaries in the United States was 427,522 acre-feet or 63% of normal. For Mexico, the measured tributary flow excluding Rio Alamo and Rio San Juan was 1,344,101 acre-feet, or 116% of normal. The flow of the Rio Alamo and Rio San Juan was 167% and 384% of their respective normals.

Return flow to the Rio Grande at Maverick Power Plant near Eagle Pass was 511,334 acre-feet, or 93% of the twenty-five year average. Return flow to the Rio Grande through various drains in the Maverick County irrigation district excluding storm inflow amounted to 151,566 acre-feet, or 76% of the fifteen-year average.

The only flood of consequence on the Rio Grande in 1973 occurred in late June and early July in the Lower Rio Grande Valley. The flood was due mainly to spill flows from Marte R. Gomez Reservoir caused by runoff resulting from heavy rains on the Rio San Juan watershed the later part of June. When the reservoir rose above spillway level the uncontrolled spills, augmented by flows from the Rio Alamo and local runoff, produced a peak on the Rio Grande of 46,000 second-feet on June 28 at the Fort Ringgold gaging station and of 39,200 second-feet on June 30 above the Mission Floodway inlet. The use of the two countries' floodway systems was required in order to reduce the flood crest sufficiently to safely convey it in the Rio Grande channel in the river reach below Anzalduas Dam. Flood damage was minimal. Above Falcon Dam, the highest peak recorded on the Rio Grande was 37,800 second-feet at the Palafox gaging station. The peak was due to storm runoff exclusively from the watershed area below Amistad Dam.

For all reservoirs in the Rio Grande basin having capacity greater than 15,000 acre-feet, excepting Amistad and Falcon International Reservoirs, the average amount of water in storage in 1973 was 5,425,800 acre-feet, or 131% of the normal 4,150,900 acre-feet. In the United States, stored water in these reservoirs averaged 105% of normal, while in Mexico the average was 142% of normal. In International Amistad Reservoir there was a net decrease in storage during the year of 4,200 acre-feet. Storage ranged from a high of 3,946,300 acre-feet on April 2 to a low of 3,684,300 acre-feet on June 18 and averaged 3,828,700 acre-feet during the year, or 193% of the average for the period of operation, June 1965 through 1973. In International Falcon Reservoir there was a net increase in storage during the year of 133,300 acre-feet. The storage varied from a low of 2,055,400 acre-feet on June 19 to a high of 2,771,500 acre-feet on December 31 and averaged 2,548,000 acre-feet during the year, or 135% of the average for the twenty years of operation, 1954 through 1973.

Diversions from the Rio Grande in the United States were, on the average, 85% of normal. Diversions into the American Canal were 86% of normal; into Maverick Canal 87% of normal; and in the United States below Falcon Dam 81% of the average for the seventeen years, 1957-1973. In Mexico, diversions averaged 80% of normal. Diversions into the Acequia Madre were 127% of normal, while diversions through the Anzalduas Canal for irrigation in Mexico were 77% of the twenty-year average.

In 1973, the total reported irrigated acreage from the Rio Grande and its tributaries below El Paso, Texas showed a decrease of 1% from the previous year. On the United States side, there was an increase of 12% above and practically no change below Falcon Dam for an overall average increase of 1%. On the Mexican side, there was an increase of 2% above and a decrease of 5% below Falcon Dam for an overall average decrease of 2%.

The 1973 investigation of the quality of Rio Grande water extended from El Paso to Brownsville. The annual tonnage of salts carried by the river above Falcon Dam was 65% of the 1935-73 normal. The volume of suspended silt transported by the Rio Grande in 1973 was 39% of average for sampling stations above Amistad Dam, 4% of average for sampling stations in the reach Amistad Dam to Falcon Reservoir, and 127% of average for sampling stations below Falcon Dam.

RIO GRANDE BELOW ELEPHANT BUTTE DAM, NEW MEXICO

DESCRIPTION: Concrete wall control, bubbler gage, and water-stage recorder located on the left bank 100 feet upstream from the cableway at latitude 33°08'45", longitude 107°12'20", and river mile 1,383.9; 0.7 river mile downstream from Elephant Butte Dam, 1.5 river miles upstream from Cuchillo Negro River, and 135.1 river miles upstream from the American Dam at El Paso, Texas. The zero of the gage is 4,242.09 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 28 discharge measurements during the year and a continuous record of gage heights. Records were furnished by the United States Geological Survey. Records available: 1915 through 1973.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. Beginning December 1940, hydroelectric power generation facilities for 27,000 kva were placed in operation at Elephant Butte Dam.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Second-Feet			
Daily:	Max. 8,220	May 22, 1942	Min. 0		Occasionally
Monthly:	Max. 7,600	May 1942	Min. 1.2		Nov. 1971
Yearly:	Max. 2,510	1942	Min. 253		1964

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.7	23.0	17.0	1,870	1,940	1,880	1,930	‡ 1,340	1,460	15.0	9.3	8.1
2	3.7	7.5	‡ 16.0	1,870	1,930	1,860	1,940	1,330	1,480	15.0	11.0	8.1
3	‡ 3.3	9.9	16.0	1,830	1,930	1,850	1,930	696	1,510	15.0	13.0	8.1
4	3.3	9.9	16.0	‡ 1,830	1,930	1,870	1,970	764	1,520	16.0	13.0	8.1
5	3.3	11.0	11.0	1,830	1,930	1,860	1,990	756	1,550	15.0	14.0	8.1
6	3.7	11.0	9.3	1,870	1,920	‡ 1,830	1,840	752	1,510	15.0	14.0	8.1
7	3.7	‡ 12.0	‡ 15.0	1,860	1,900	1,780	1,830	732	1,490	14.0	14.0	11.0
8	6.0	12.0	15.0	1,860	1,910	1,810	1,830	720	1,490	13.0	14.0	15.0
9	6.5	11.0	1,310	‡ 748	1,910	1,840	1,840	704	1,460	11.0	15.0	14.0
10	7.0	11.0	1,900	652	1,890	1,790	1,830	672	1,450	8.7	15.0	14.0
11	6.0	12.0	1,830	636	1,900	‡ 1,790	1,810	656	1,530	8.7	15.0	14.0
12	6.0	15.0	1,810‡	660	1,910	1,790	1,820	656	1,560	8.1	15.0	13.0
13	5.0	11.0	1,820	684	1,920	1,780	1,830	648	1,570	7.5	16.0	14.0
14	4.1	11.0	1,880	692	1,930	1,780	1,830	648	1,600	7.5	‡ 15.0	14.0
15	7.0	‡ 11.0	1,990	656	1,900	1,780	1,830	648	1,610	8.7	14.0	14.0
16	4.5	11.0	2,040	684	‡ 1,960	1,780	1,830	‡ 660	1,540	8.7	14.0	14.0
17	‡ 4.5	9.9	1,970	684	1,970	1,790	1,830	656	1,580	‡ 8.7	14.0	14.0
18	4.2	8.7	1,960	700	1,960	1,760	1,820	664	855	8.7	14.0	13.0
19	4.6	9.3	1,990	688	1,920	1,790	1,820	668	‡ 768	8.7	14.0	13.0
20	4.2	8.1	1,940‡	680	1,930	1,790	1,820	676	732	8.7	14.0	13.0
21	4.4	14.0	1,940	652	1,920	1,790	1,820	764	740	8.7	14.0	13.0
22	4.2	13.0	1,900	323	1,940	1,810	1,830	664	748	8.1	14.0	13.0
23	4.2	13.0	1,860	520	1,900	1,790	1,820	668	728	8.7	13.0	12.0
24	4.2	13.0	1,850	616	1,820	1,820	1,820	676	716	8.7	13.0	12.0
25	4.3	14.0	1,860	652	1,900	1,810	1,780	684	708	8.7	12.0	12.0
26	‡ 4.2	14.0	1,880	648	1,970	1,790	1,340	696	‡ 700	9.3	11.0	12.0
27	3.3	14.0	1,880	704	1,990	‡ 1,860	1,320	704	692	8.7	7.5	12.0
28	3.0	15.0	1,890	1,840	1,960	1,910	1,450	704	708	8.7	‡ 8.1	11.0
29	3.0		1,910	1,910	1,950	1,930	1,430	‡ 724	676	9.3	8.1	11.0
30	4.5		1,890	‡ 1,920	1,900	1,930	1,420	1,420	23.0	9.9	8.1	11.0
31	26.0		1,910		1,870		1,390	1,440		‡ 9.9		11.0
Sum	159.6	335.3	43,325.3	32,769	59,610	54,640	54,590	24,190	34,704.0	320.4	386.1	368.6

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	∅ Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1938-1973 Acre-Feet Average	Maximum	Minimum
Jan.			31	26.0	†28	3.0	5.1	317	26,251	86,500	200
Feb.			1	23.0	2	7.5	12.0	665	40,855	88,861	188
Mar.			16	2,040	6	9.3	1,400	85,934	70,327	119,000	1,520
Apr.			30	1,920	22	323	1,090	64,996	77,201	162,000	24,000
May			27	1,990	24	1,820	1,920	118,235	78,049	467,000	512
June			†29	1,930	18	1,760	1,820	108,377	88,395	363,000	16,913
July			5	1,990	27	1,320	1,760	108,276	91,689	211,000	41,352
Aug.			31	1,440	†13	648	780	47,980	75,905	134,000	9,530
Sept.			15	1,610	30	23.0	1,160	68,534	34,429	129,000	163
Oct.			4	16.0	†13	7.5	10.3	636	18,859	72,100	166
Nov.			13	16.0	27	7.5	12.9	766	18,627	158,000	74.2
Dec.			8	15.0	† 1	8.1	11.9	731	19,384	87,300	179
Yearly				2,040		3.0	837	605,749	639,971	1,818,800	183,415

‡ Discharge measurement made on this day ∅ Mean daily † And other days

RIO GRANDE BELOW CABALLO DAM, NEW MEXICO

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank at latitude 32°53'05", longitude 107°17'30", and river mile 1,355.6; 0.8 river mile downstream from Caballo Dam, about 3 miles northeast of Arrey, New Mexico, 5 miles south of Caballo, New Mexico, and 106.8 river miles upstream from the American Dam at El Paso, Texas. The zero of the gage is 4,140.90 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 16 discharge measurements during the year and a continuous record of gage heights. Records were furnished by the El Paso office of the United States Bureau of Reclamation. Records available: 1938 through 1973.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. In addition to the outflow from Caballo Dam listed below, 1,020 acre-feet of water were diverted in 1973 into Bonita Lateral, a small irrigation canal just below Caballo Dam. Prior to 1938, discharge records were kept at Percha Dam, a low diversion dam about 1.5 miles downstream from this station. Small accretions to the river take place between the station and Percha Dam.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Second-Feet		
Daily:	Max. 7,650	May 20, 1942	Min. 0.1	Several days 1954, 1955 and 1972
Monthly:	Max. 6,710	May 1942	Min. 0.1	Nov. & Dec. 1955
Yearly:	Max. 2,480	1942	Min. 284	1964

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.6	2.3	2.3	1,590	942	1,430	2,650	900	1,350	10.0	1.7	1.2
2	1.9	2.3	2.3	1,570	938	1,280	2,580	1,200	1,020	9.2	1.7	1.2
3	1.8	2.3	2.3	1,460	940	1,160	2,520	1,410	1,000	8.4	1.7	1.3
4	1.7	2.3	2.3	1,310	1,030	1,160	2,590	1,740	1,250	7.5	1.6	1.3
5	1.6	2.3	2.3	‡ 1,290	1,090	1,220	2,640	1,900	1,420	6.7	1.6	1.3
6	1.6	2.3	2.3	1,410	997	1,350	2,520	1,950	1,420	5.9	1.6	1.3
7	1.5	2.3	2.3	1,390	‡ 993	‡ 1,460	2,500	2,380	1,590	5.0	1.5	1.3
8	1.4	2.3	2.3	1,160	1,080	1,480	2,500	2,790	1,770	4.3	1.5	1.3
9	1.4	2.3	350	1,080	1,220	1,660	2,450	2,510	1,750	3.4	1.5	1.3
10	1.3	2.3	777	1,080	1,220	1,660	2,320	2,610	1,530	2.6	1.4	1.3
11	1.3	2.3	785	‡ 1,070	1,250	1,600	2,250	2,610	1,590	1.8	1.4	1.3
12	1.5	2.3	802	1,080	1,280	1,740	2,200	2,530	1,740	‡ 1.8	1.3	1.3
13	1.8	2.3	1,020	1,110	1,220	‡ 1,850	2,090	2,600	1,750	1.8	1.3	1.3
14	2.0	2.3	1,550	1,170	1,090	1,660	1,960	2,730	1,530	1.8	1.3	1.4
15	‡ 2.3	2.3	1,710	1,170	1,040	1,520	527	2,810	1,330	1.8	‡ 1.2	1.4
16	2.3	2.3	1,780	1,180	974	1,360	440	2,810	1,210	1.8	1.2	1.4
17	2.3	2.3	1,770	1,230	976	1,210	277	2,560	1,260	1.8	1.2	‡ 1.4
18	2.3	2.3	1,770	1,290	890	1,210	14.0	2,470	1,260	1.8	1.2	1.4
19	2.3	2.3	1,790‡	1,270	758	1,650	3.2	2,360	1,240	1.7	1.2	1.4
20	2.3	2.3	1,830	1,220	717	2,180	209	2,090	1,250	1.7	1.2	1.4
21	2.3	2.3	1,920	1,220	779	‡ 2,180	858	1,700	1,090	1.7	1.2	1.4
22	2.3	2.3	1,930	1,160	1,070	2,180	1,190	1,680	884	1.7	1.2	1.4
23	2.3	2.3	1,990	1,120	‡ 1,280	2,100	1,250	1,820	875	1.7	1.2	1.4
24	2.3	2.3	2,050	1,180	1,320	2,000	1,170	1,900	918	‡ 1.7	1.2	1.4
25	2.3	2.3	2,030	‡ 1,210	1,520	1,840	1,070	1,910	1,210	1.7	1.2	1.4
26	2.3	2.3	2,010	1,200	1,640	2,120	‡1,060	2,000	1,280	1.7	1.2	1.4
27	2.3	2.3	2,010	1,190	1,470	2,370	1,130	1,820	1,140	1.7	1.2	1.4
28	2.3	2.3	1,990‡	1,210	1,360	2,380	917	2,030	1,050	1.7	1.2	1.4
29	2.3		1,990	1,130	1,430	2,480	909	2,270	634	1.7	1.2	1.4
30	2.3		1,810	1,040	1,480	2,640	909	1,620	169	1.7	1.2	1.4
31	2.3		1,590		1,480		889	1,460		1.7		1.4
Sum	61.9	64.4	37,272.4	36,790	35,474	52,130	46,592.2	65,170	37,510	99.5	40.3	41.9

Current Year 1973 — Period 1938-1973

Month	Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.			†15	2.3	†10	1.3	2.0	123	484	4,850	19.2
Feb.			† 1	2.3	† 1	2.3	2.3	128	7,616	64,300	11.7
Mar.			24	2,050	† 1	2.3	1,200	73,929	84,067	135,000	24,900
Apr.			1	1,590	30	1,040	1,230	72,972	80,833	212,000	25,470
May			26	1,640	20	717	1,140	70,362	74,316	412,000	75.2
June			30	2,640	† 3	1,160	1,740	103,398	103,867	354,000	25,289
July			1	2,650	18	3.2	1,500	92,414	111,908	234,000	28,200
Aug.			†15	2,810	1	900	2,100	129,263	106,837	179,000	20,500
Sept.			8	1,770	30	169	1,250	74,400	48,755	181,000	6,757
Oct.			1	10.0	†19	1.7	3.2	197	4,660	35,400	15.5
Nov.			† 1	1.7	†15	1.2	1.3	79.9	2,493	14,400	7.0
Dec.			†14	1.4	† 1	1.2	1.4	83.1	2,585	19,100	6.0
Yearly				2,810		1.2	853	617,349.0	628,421	1,795,670	206,034.6

‡ Discharge measurement made on this day ∅ Mean daily † And other days

RIO GRANDE AT EL PASO, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located on the downstream side of the first pier from the left abutment of the Courchesne Bridge at latitude 31°48'10", longitude 106°32'25", and river mile 1,250.5; 5.6 river miles upstream from the Santa Fe Street-Juarez Avenue Bridge between El Paso, Texas and Cd. Juarez, Chihuahua and 1.7 miles upstream from the American Dam at El Paso, Texas. The zero of the gage is 3,722.30 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Mean daily discharges in 1973 were computed by adding the flows in the American Canal and the flows at the river station below the American Dam. Because the mean daily discharges are rounded, the monthly sum for this station may not equal the sum of the monthly sums of the other two stations. Extreme discharges are those passing the El Paso station, where measurements are made only during high flows. Records available: 1889 through 1973.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 24,000 second-feet on June 12, 1905. Min. occasionally no flow. Since Elephant Butte Dam was closed in 1915, the largest peak flow to pass this station was 13,500 second-feet on September 3, 1925.

	Average Flow in Second-Feet			
Daily:	Max. 23,680	June 12, 1905	Min. 0	Occasionally
Monthly:	Max. 14,300	June 1905	Min. 0	Occasionally
Yearly:	Max. 2,780	1905	Min. 70.1	1902

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.0	6.8	6.9	571	640	632	1,020	431	976	456	106	77.3
2	7.7	6.7	7.0	635	532	658	1,260	378	1,040	434	106	75.3
3	8.1	5.6	7.2	599	458	665	1,230	331	1,160	323	106	71.4
4	7.2	7.1	7.0	563	437	659	1,080	380	862	260	105	69.9
5	7.9	7.1	5.7	528	452	589	985	604	699	214	105	70.5
6	7.7	7.9	6.2	442	506	535	1,060	737	627	175	104	66.9
7	6.5	7.4	7.0	466	608	520	1,160	910	617	186	97.8	67.6
8	6.3	5.5	7.2	443	542	522	1,040	925	564	208	100	68.8
9	7.0	5.5	5.9	480	477	508	1,130	1,150	650	205	107	72.3
10	6.5	5.5	5.1	470	467	521	1,180	1,190	810	170	101	64.3
11	6.7	5.5	6.4	363	540	696	1,130	944	929	153	102	75.7
12	7.3	6.2	7.4	397	535	769	1,000	1,090	827	145	103	82.7
13	6.8	5.5	222	314	623	693	984	1,080	583	135	101	61.1
14	6.8	5.5	368	327	689	765	983	1,200	709	134	94.3	59.1
15	6.8	5.5	487	390	776	851	1,380	1,270	697	143	90.3	77.8
16	7.0	5.5	598	502	642	762	1,510	1,280	784	150	88.6	77.5
17	8.7	5.5	550	518	588	883	935	1,300	695	132	87.6	79.2
18	10.1	5.5	580	498	485	883	903	1,310	585	119	90.3	81.6
19	10.2	6.0	623	500	419	702	729	1,120	551	115	89.1	79.5
20	7.0	5.5	651	584	397	672	404	1,150	539	108	85.0	75.3
21	7.0	5.5	609	576	332	732	312	1,140	481	103	84.6	74.0
22	10.6	5.5	810	586	331	931	291	939	572	101	83.1	76.4
23	9.5	5.5	842	633	281	923	361	717	653	99.2	83.2	77.8
24	11.5	6.4	867	623	275	927	714	664	567	99.1	81.2	75.1
25	6.8	6.9	840	553	367	985	747	728	431	97.4	81.6	74.0
26	6.8	6.9	795	511	373	909	641	849	385	96.2	82.2	70.9
27	6.8	7.6	852	508	492	778	508	966	315	93.6	78.7	84.6
28	6.8	7.6	729	510	661	877	459	1,030	307	96.0	74.6	79.3
29	6.8		645	560	672	880	667	827	290	94.5	82.8	75.6
30	6.8		708	677	584	907	584	1,340	333	93.6	77.8	74.5
31	6.8		718		575		473	1,560		107		75.1
Sum	234.5	173.2	12,573.0	15,327	15,756	22,334	26,860	29,540	19,238	5,045.6	2,778.8	2,291.1

Month	Current Year 1973								Period 1938-1973		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.	2.10	1.87	23	29.8	1	6.0	7.6	465	6,116	15,100	220
Feb.	2.14	1.75	†24	16.8	† 8	5.5	6.2	344	7,326	52,200	136
Mar.	4.71	1.92	22	1,000	† 6	4.5	406	24,938	33,999	62,500	1,790
Apr.	4.40	3.36	30	704	13	310	511	30,401	42,339	139,000	6,820
May	4.63	3.38	28	832	24	257	508	31,252	45,289	357,000	522
June	5.09	4.03	25	1,000	9	491	744	44,299	52,936	304,000	6,020
July	6.02	3.22	16	1,700	22	234	866	53,276	59,230	198,000	9,652
Aug.	6.73	3.34	30	3,400	3	267	953	58,592	57,027	158,000	4,870
Sept.	5.18	3.28	1	1,600	30	281	641	38,158	39,398	171,000	2,430
Oct.	3.93		1	492	†27	∅ 93.6	163	10,008	13,988	57,900	151
Nov.			9	∅ 107	28	∅ 74.6	92.6	5,512	8,290	21,300	229
Dec.	2.60	2.11	11	141	14	41.0	73.9	4,544	8,007	25,600	206
Yearly	6.73	1.75		3,400		4.5	417	301,789	373,945	1,559,200	57,481

∅ Mean daily † And other days

DIVERSIONS FROM THE RIO GRANDE AMERICAN CANAL AT EL PASO, TEXAS

DESCRIPTION: Concrete control consisting of two triangular-shaped wingwalls extending toward the center of the canal about one-fourth of the canal width and downstream at a 30° angle with the canal side walls, bubbler gage, water-stage recorders (graphic and digital), and binary decimal transmitter located on the right bank of the concrete-lined canal at El Paso, Texas, latitude 31°46'40", longitude 106°31'25", and about 2,400 feet downstream from the headgates of the American Dam which are located at river mile 1,248.8. The zero of the gage is 3,712.09 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 22 discharge measurements during the year, a stable rating curve at medium and high flows, and a continuous record of gage heights. Records available: June 2, 1938 through 1973.

REMARKS: This canal diverts water from the Rio Grande at the American Dam at El Paso, Texas, 2.1 river miles upstream from the International Dam at Juarez, Chihuahua. Water from this canal discharges into the Franklin Canal from which water is frequently returned to the Rio Grande at spillways 2.2, 2.7, and 3.6 river miles downstream from the American Dam. The transmitter relays gage height data upon interrogation by telephone via commercial circuits.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,840 second-feet on March 27, 1944. Min. frequently no flow.

Average Flow in Second-Feet

Daily:	Max. 1,510	Aug. 13, 1945	Min. 0	Frequently
Monthly:	Max. 1,210	Aug. 1943	Min. 0	Frequently since 1952
Yearly:	Max. 748	1943	Min. 65.6	1956

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.0	5.0	5.4	363	423	540	806	267	768	452	104	77.3
2	‡ 5.7	5.0	‡ 5.5	418	319	526	973	‡ 214	847	431	104	75.3
3	6.1	4.0	5.7	378	‡ 243	532	955	144	962	320	104	71.4
4	5.2	5.5	5.5	347	222	524	868	167	660	257	103	69.9
5	5.9	5.5	4.2	313	233	452	783	374	495	211	103	70.5
6	5.8	6.4	4.7	‡ 232	285	395	835	498	412	172	102	‡ 66.9
7	4.6	5.9	5.5	259	383	377	936	669	398	183	95.8	67.6
8	4.4	4.0	5.7	241	323	385	839	719	349	206	‡ 98.3	68.8
9	5.1	4.0	4.4	274	280	372	917	959	442	203	105	72.3
10	4.6	4.0	3.6	265	266	385	968	1,010	606	168	99.4	64.3
11	4.8	4.0	4.9	161	336	564	925	759	728	151	99.9	75.7
12	5.4	4.7	5.9	186	335	644	‡ 798	907	625	143	101	82.7
13	4.8	‡ 4.0	221	111	425	573	776	893	‡ 371	133	99.2	61.1
14	4.8	4.0	367	117	495	‡ 638	769	1,010	490	132	92.3	59.1
15	4.8	4.0	482	175	575	678	1,040	1,080	478	141	88.3	77.8
16	‡ 5.0	4.0	587	279	447	552	1,150	1,090	562	148	86.8	77.5
17	5.0	4.0	542	‡ 295	‡ 386	658	725	1,120	478	130	85.6	79.2
18	5.0	4.0	576	278	334	652	701	1,130	385	117	88.3	‡ 81.6
19	5.0	4.5	620	272	416	466	410	952	405	113	87.1	79.5
20	5.0	4.0	‡646	355	394	438	5.8	979	523	106	83.0	75.3
21	5.0	4.0	608	360	330	506	5.8	973	470	101	82.6	74.0
22	5.0	‡ 4.0	809	374	329	718	153	752	562	99.0	81.1	76.4
23	5.0	4.0	841	428	279	712	279	‡ 526	643	97.2	81.2	77.8
24	5.0	4.9	868	425	‡ 273	714	636	470	558	97.1	79.2	75.1
25	5.0	5.4	839	359	365	766	616	528	423	‡ 95.4	79.6	74.0
26	5.0	5.4	794	324	372	696	442	619	378	94.2	80.2	70.9
27	5.0	6.1	‡320	321	491	566	306	770	308	91.6	77.7	84.6
28	5.0	6.1	546	309	593	668	259	831	300	94.0	74.6	79.3
29	‡ 5.0		471	352	599	676	445	617	284	92.5	82.8	75.6
30	5.0		525	460	533	696	402	823	327	91.6	77.8	74.5
31	5.0		496		520		300	836		105		75.1
Sum	156.0	130.4	11,719.0	9,031	11,809	17,069	20,023.6	22,686	15,237	4,975.6	2,726.8	2,291.1

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	High	Extreme Second-Feet Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1939-1973 Acre-Feet Average	Maximum	Minimum
Jan.	2.57	2.00	5	11.6	† 1	4.0	5.0	309	1,500	8,110	0
Feb.	2.57	1.99	†24	15.3	† 3	4.0	4.7	259	4,569	19,500	0
Mar.	9.13	2.00	22	1,030	† 6	3.0	378	23,244	30,226	50,100	1,700
Apr.	6.74	4.01	30	492	13	85.6	301	17,913	31,545	70,900	4,560
May	7.42	4.78	28	634	4	193	381	23,423	27,035	69,000	392
June	8.24	5.81	25	833	9	341	569	33,856	35,982	65,700	5,990
July	9.90	2.40	16	1,320	†20	5.8	646	39,716	43,514	70,700	8,673
Aug.	9.43	1.90	18	1,170	26	0	732	44,997	42,656	74,600	4,840
Sept.	9.45	5.23	1	1,170	8	251	508	30,222	28,037	63,100	2,230
Oct.	6.73	3.78	† 1	488	30	87.3	161	9,869	11,600	39,000	0
Nov.	4.00	3.67	9	107	28	71.6	90.9	5,409	6,905	21,000	0
Dec.	4.36	3.10	11	141	14	41.0	73.9	4,544	6,825	25,500	0
Yearly	9.90	1.90		1,320		0	323	233,761	270,394	541,610	47,397.4

‡ Discharge measurement made on this day † And other days

RIO GRANDE BELOW AMERICAN DAM AT EL PASO, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the retaining wall of the Smelter Pump on the left bank of the river at latitude 31°46'35", longitude 106°31'20", and river mile 1,248.2; 1.5 river miles upstream from the International Dam, 3.3 river miles upstream from the Santa Fe Street-Juarez Avenue Bridge between El Paso, Texas, and Cd. Juarez, Chihuahua, and 0.6 river mile downstream from the American Dam. The zero of the gage is 3,712.30 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 76 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: June 1938 through 1973.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The operation of the American Dam began June 2, 1938. At this dam, part of the flow passing the El Paso Gaging Station is diverted into the American Canal and the remainder, including excess flood flows, passes this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 11,300 second-feet on September 14, 1958 with a gage height of 14.50 feet. Min. occasionally no flow.

	Average Flow in Second-Feet			
Daily:	Max. 6,040	May 20, 1942	Min. 0	Occasionally
Monthly:	Max. 4,880	May 1942	Min. 0	June 1972 and Dec. 1973
Yearly:	Max. 1,510	1942	Min. 13.8	1956

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	‡ 2.0	1.8	1.5	208	‡ 217	‡ 92.9	215	164	208	4.0	2.0	0
2	2.0	1.7	1.5	‡ 217	213	132	291	‡ 164	190	‡ 3.3	2.0	0
3	2.0	1.6	1.5	221	215	133	‡ 278	‡ 187	200	3.2	2.0	0
4	2.0	1.6	1.5	216	215	135	216	213	‡ 202	3.0	2.0	‡ 0
5	2.0	1.6	1.5	‡ 215	219	‡ 137	202	230	204	2.9	2.0	0
6	1.9	‡ 1.5	‡ 1.5	210	221	140	‡ 222	239	‡ 215	2.7	‡ 2.0	0
7	1.9	1.5	1.5	207	225	‡ 143	229	‡ 241	‡ 219	2.6	2.0	0
8	1.9	1.5	1.5	202	‡ 219	137	205	206	215	2.4	2.0	0
9	‡ 1.9	1.5	1.5	206	‡ 197	136	211	188	208	2.3	2.0	0
10	1.9	1.5	1.5	‡ 205	201	136	210	‡ 181	204	2.1	2.0	0
11	1.9	1.5	1.5	202	‡ 204	132	209	185	201	‡ 2.0	2.0	‡ 0
12	1.9	1.5	1.5	211	200	125	207	186	‡ 202	2.0	2.0	0
13	2.0	‡ 1.5	1.5	‡ 203	193	120	‡ 208	182	‡ 212	2.0	‡ 2.0	0
14	2.0	1.5	1.5	210	‡ 194	127	214	‡ 188	‡ 219	2.0	2.0	0
15	2.0	1.5	5.2	215	201	‡ 173	343	188	219	2.0	2.0	0
16	‡ 2.0	1.5	11.3	‡ 223	195	210	356	189	222	2.0	2.0	0
17	3.7	1.5	8.3	223	202	225	210	‡ 184	‡ 217	‡ 2.0	2.0	0
18	5.1	1.5	4.2	220	‡ 151	231	202	177	‡ 200	2.0	2.0	‡ 0
19	5.2	1.5	3.2	228	3.2	‡ 236	319	170	146	2.0	2.0	0
20	2.0	‡ 1.5	‡ 5.2	‡ 229	2.6	234	398	168	15.8	2.0	‡ 2.0	0
21	2.0	1.5	1.2	216	2.4	‡ 226	306	‡ 170	11.3	2.0	2.0	‡ 0
22	5.6	1.5	1.2	212	‡ 2.1	213	138	‡ 187	10.1	2.0	2.0	0
23	4.5	1.5	.9	205	1.8	211	82.0	191	9.6	2.0	2.0	0
24	6.5	1.5	.9	‡ 198	1.6	213	78.1	194	9.0	‡ 2.0	2.0	0
25	1.8	1.5	.9	194	1.4	219	131	200	8.4	2.0	2.0	0
26	1.8	1.5	.9	187	1.4	‡ 213	‡ 199	230	7.7	2.0	2.0	0
27	1.8	‡ 1.5	32.2	‡ 187	1.4	212	202	196	6.9	2.0	‡ 1.0	0
28	1.8	1.5	183 ‡	201	62.7	209	200	‡ 203	6.2	2.0	0	‡ 0
29	1.8		74	208	‡ 73.9	‡ 204	222	210	5.5	2.0	0	0
30	‡ 1.8	•	183 ‡	217	51.1	211	182	518	4.8	2.0	0	0
31	1.8		222		‡ 54.7		173	725		2.0		0
Sum	78.5	42.8	858.6	6,296	3,947.3	5,265.9	6,858.1	6,854	3,998.3	70.5	53.0	0

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1939-1973 Acre-Feet Average	Maximum	Minimum
Jan.	4.68	3.75	23	24.8	†25	1.8	2.5	156	4,484	12,000	31.1
Feb.	4.03	3.86	1	1.8	† 6	1.5	1.5	84.9	2,480	32,800	31.3
Mar.	5.32	3.82	31	240	†23	.9	27.7	1,703	3,488	22,801	81.9
Apr.	5.37	5.18	20	245	27	179	210	12,488	10,114	74,500	2,230
May	5.25	3.71	7	234	26	.9	127	7,829	17,512	300,000	25.2
June	5.41	4.38	19	263	12	41.8	176	10,445	16,220	250,000	0
July	6.60	4.43	15	626	25	58.2	221	13,603	15,166	155,000	967
Aug.	9.50	5.22	30	2,460	2	155	221	13,595	14,020	114,000	37.5
Sept.	6.24	3.95	1	487	30	ø 4.8	133	7,931	10,764	124,000	53.8
Oct.	3.96	3.77	1	ø 4.0	†11	ø 2.0	2.3	140	2,008	19,000	18.0
Nov.			† 1	ø 2.0	†27	0	1.8	105	1,143	8,700	11.9
Dec.				0		0	0	0	967	7,760	0
Yearly	9.50			2,460		0	94.0	68,079.9	98,366	1,093,553	10,001.1

‡ Discharge measurement made on this day ø Mean daily † And other days

DIVERSIONS FROM THE RIO GRANDE
ACEQUIA MADRE AT JUAREZ, CHIHUAHUA

DESCRIPTION: Bridge for making discharge measurements, gravity well, and water-stage recorder located on the right bank of the canal at Juarez, Chihuahua, latitude 31°45'40", longitude 106°30'30", about 260 feet downstream from the canal intake at the International Dam at Juarez, Chihuahua, which is located at river mile 1,246.7 and 2.1 river miles downstream from the American Dam at El Paso, Texas.

RECORDS: Based on 49 discharge measurements during the year, 43 by the Mexican Section and 6 by the United States Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1938 through 1973. These records, showing the water actually diverted by Mexico, do not necessarily reflect the quantities of water made available to Mexico in the bed of the river by the United States under terms of the Convention of 1906. Such quantities of water are included in the record of "Rio Grande below American Dam at El Paso, Texas." See page 11 in this Water Bulletin.

REMARKS: In 1973 all of the 60,000 acre-feet tabulated below were distributed to land irrigated in the first unit under the canal.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 480 second-feet on July 21, 1944 with a gage height of 6.00 feet. Min. no flow during several months throughout the year.

		Average Flow in Second-Feet			
Daily:	Max. 339	May 10, 1942	Min. 0		Several months each year
Monthly:	Max. 283	May 1938	Min. 0		Several months each year
Yearly:	Max. 116	1942	Min. 9.2		1964

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	204	187	‡ 89.7	199	177	183	0	0	0
2	0	0	0	‡ 192	188	129	‡ 205	‡ 177	188	0	0	0
3	0	0	0	‡ 194	‡ 184	132	197	178	‡ 202	0	0	0
4	0	0	0	‡ 187	180	‡ 129	194	178	200	0	0	0
5	0	0	0	‡ 186	182	126	187	176	197	0	0	0
6	0	0	0	‡ 182	179	126	‡ 199	174	195	0	0	0
7	0	0	0	180	‡ 181	‡ 126	199	176	‡ 195	0	0	0
8	0	0	0	183	180	124	191	177	196	0	0	0
9	0	0	0	‡ 183	172	124	‡ 190	176	198	0	0	0
10	0	0	0	‡ 181	‡ 181	127	191	165	199	0	0	0
11	0	0	0	‡ 178	181	‡ 127	194	177	203	0	0	0
12	0	0	0	192	180	126	198	177	206	0	0	0
13	0	0	0	‡ 187	182	127	‡ 198	180	‡ 203	0	0	0
14	0	0	0	194	‡ 180	‡ 135	201	185	201	0	0	0
15	0	0	0	197	179	177	173	186	198	0	0	0
16	0	0	0	‡ 202	174	215	172	‡ 195	196	0	0	0
17	0	0	0	202	‡ 183	221	173	197	‡ 200	0	0	0
18	0	0	0	‡ 207	164	‡ 205	174	189	201	0	0	0
19	0	0	0	211	0	205	173	182	158	0	0	0
20	0	0	0	211	0	205	172	‡ 205	0	0	0	0
21	0	0	0	201	0	‡ 204	173	205	0	0	0	0
22	0	0	0	200	0	199	172	205	0	0	0	0
23	0	0	0	‡ 204	0	200	172	‡ 208	0	0	0	0
24	0	0	0	200	0	204	173	211	0	0	0	0
25	0	0	0	191	0	‡ 204	174	212	0	0	0	0
26	0	0	0	‡ 183	0	209	177	203	0	0	0	0
27	0	0	30.7	183	0	198	177	‡ 194	0	0	0	0
28	0	0	‡ 194	192	‡ 32.8	‡ 196	176	193	0	0	0	0
29	0		‡ 194	191	42.0	191	176	195	0	0	0	0
30	0		‡ 194	188	‡ 40.3	197	177	197	0	0	0	0
31	0		209		41.7		178	194		0		0
Sum	0	0	821.7	5,786	3,393.8	4,977.7	5,705	5,844	3,719	0	0	0

Month	Current Year 1973								Period 1938-1973		
	Average Rainfall Inches**		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	1938-1973	1973	Day		Day				Average	Maximum	Minimum
Jan.	0.40	1.42		0		0	0	0	0	0	0
Feb.	.36	1.88		0		0	0	0	0	0	0
Mar.	.27	.34	31	209	1	0	26.5	1,630	1,268	6,482	0
Apr.	.17	0.	20	219	11	173	193	11,479	7,562	12,383	2,020
May	.33	.26	10	195	†19	0	109	6,731	9,256	17,380	0
June	.72	.36	17	221	1	45.9	166	9,874	8,148	15,700	0
July	1.65	3.42	† 2	208	†16	0	184	11,322	8,259	15,170	0
Aug.	1.34	.14	25	221	10	157	189	11,591	7,900	12,620	0
Sept.	1.00	0.	11	216	†20	0	124	7,373	4,636	12,380	0
Oct.	.72	.11		0		0	0	0	43.0	0	0
Nov.	.33	.02		0		0	0	0	0	0	0
Dec.	.46	0		0		0	0	0	0	0	0
Yearly	7.75	7.95		221		0	83.0	60,000	47,072	83,930	6,653

‡ Discharge measurement made on this day † And other days

** Average for valley floor in U. S. and Mexico from El Paso to Island Station

RIO GRANDE – ISLAND STATION NEAR CLINT, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank of the rectified channel of the Rio Grande at latitude 31°32'00", longitude 106°14'35", and river mile 1,221.1; 0.6 river mile downstream from the Riverside Canal Wasteway No. 2, about 4 miles south southwest of Clint, Texas, and 27.7 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 3,608.99 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 31 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: August 17, 1938 through 1973.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 7,050 second-feet on September 14, 1958 with a gage height of 15.80 feet. Min. frequently no flow.

	Average Flow in Second-Feet			
Daily:	Max. 6,140	May 19, 1942	Min. 0	Frequently
Monthly:	Max. 4,880	May 1942	Min. 0	Frequently
Yearly:	Max. 1,490	1942	Min. 0.3	1956

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.4	3.6	‡ 4.2	0.4	0.3	1.5	1.7	7.5	52.1	5.0	‡ 4.0	1.6
2	2.4	3.4	4.0	.6	‡ .2	.2	1.1	6.2	27.5	5.0	3.9	1.6
3	‡ 2.4	3.4	3.9	.7	.4	0	7.2	5.2	61.8	‡ 5.0	3.7	1.5
4	2.3	3.4	3.8	‡ .9	.2	0	84.2	4.4	34.4	5.0	3.6	1.5
5	2.3	3.3	3.6	.6	0	0	‡ 51.2	3.8	‡ 23.2	5.0	3.4	‡ 1.5
6	2.5	3.2	3.4	.5	0	‡ 0	19.0	3.3	22.0	5.0	3.3	1.4
7	4.4	‡ 3.3	‡ 3.3	.3	0	0	11.2	2.8	21.2	5.0	3.1	1.3
8	4.0	4.5	3.3	.3	0	0	11.2	‡ 3.5	20.6	5.0	3.0	1.3
9	2.9	5.0	3.3	.3	0	0	50.8	3.8	20.3	5.0	2.9	1.3
10	2.9	4.8	3.3	.3	0	0	187	7.5	20.0	5.0	2.7	1.3
11	2.6	4.8	3.3	.3	0	0	99.8	5.8	20.0	5.0	2.6	1.5
12	2.5	5.0	3.3	.2	0	0	87.5	3.9	20.0	5.0	2.4	2.9
13	2.3	5.2	3.3	.2	0	0	43.6	5.1	19.2	5.0	2.3	2.3
14	2.3	‡ 5.3	‡ 10.4	.2	48.1	0	32.3	4.5	17.6	5.0	‡ 2.1	2.3
15	2.3	5.0	3.3	0	15.5	0	1,240	4.7	17.2	24.2	2.0	1.8
16	2.3	4.4	2.9	0	‡ 6.9	0	‡1,550	6.7	17.6	5.0	2.0	1.4
17	2.3	3.7	2.5	0	8.5	0	908	8.0	17.2	‡ 5.0	2.0	1.3
18	‡ 2.3	3.6	2.1	‡ 0	4.0	0	989	8.8	17.2	4.9	1.9	1.6
19	2.2	3.4	1.7	0	.8	0	682	5.2	16.9	4.9	1.9	‡ 2.9
20	2.1	3.3	1.3	.2	.2	‡ 0	494	4.4	16.5	4.8	1.9	3.4
21	2.3	‡ 3.3	‡ .9	.2	.3	0	222	4.2	16.1	4.7	1.8	3.2
22	3.6	4.8	.2	1.1	4.0	0	137	3.8	16.1	4.7	1.8	2.9
23	3.6	8.8	3.3	1.4	1.9	0	67.1	‡ 3.7	16.1	4.6	1.8	2.9
24	‡ 3.7	6.5	.5	1.5	1.7	0	47.7	3.7	19.2	4.5	1.8	2.8
25	3.8	6.3	.5	.2	2.8	0	‡ 194	3.7	15.3	4.5	1.8	2.7
26	3.8	6.0	.8	.1	2.4	0	40.5	3.4	11.9	4.4	1.7	2.7
27	3.6	4.8	.6	.1	1.8	0	3.2	2.8	8.4	4.3	1.7	2.6
28	3.3	3.9	.4	2.6	1.7	0	3.0	3.2	5.0	4.3	1.7	2.7
29	3.6		‡ .2	.1	1.8	0	113	‡ 3.5	5.0	4.2	1.6	2.7
30	3.8		.1	0	1.7	.1	79.7	3.7	5.0	4.1	1.6	2.7
31	‡ 3.9		.3		1.8		27.7	573		4.1		2.5
Sum	90.7	126.0	78.0	13.3	107.0	1.8	7,485.7	713.8	600.6	167.2	72.0	66.1

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1939-1973 Acre-Feet Average	Maximum	Minimum
Jan.	8.40	7.88	7	10.1	21	1.4	2.9	180	4,403	11,900	0
Feb.	8.35	7.95	23	9.6	† 6	3.2	4.5	250	2,877	37,000	0
Mar.	9.61	7.64	14	65.6	†29	.1	2.5	155	2,131	21,000	0
Apr.	8.56		28	14.6	†15	0	.4	26.4	3,423	70,500	0
May	10.30		14	130	† 5	0	3.5	212	9,796	299,800	0
June	8.01		1	1.9	† 2	0	.1	3.6	8,541	241,000	0
July	16.30		15	1,850	2	∅ 1.1	241	14,848	8,474	118,500	0
Aug.	14.62		31	950	† 7	∅ 2.8	23.0	1,416	7,652	99,400	0
Sept.	11.50		1	150	†28	∅ 5.0	20.0	1,191	8,054	119,200	0
Oct.	9.87		15	31.2	†30	∅ 4.1	5.4	332	3,741	42,800	0
Nov.	9.37	9.23	1	4.0	†29	1.6	2.4	143	1,110	7,270	0
Dec.	9.24	8.35	20	3.4 ∅	† 7	∅ 1.3	2.1	131	2,070	12,900	0
Yearly	16.30			1,850		0	26.1	18,888	62,272	1,079,340	238.1

‡ Discharge measurement made on this day ∅ Mean daily † And other days

RIO GRANDE – COUNTY LINE STATION NEAR ACALA, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank of the rectified channel of the Rio Grande at latitude 31°22'50", longitude 105°59'10", and river mile 1,200.9; 0.8 river mile downstream from the *El Paso-Hudspeth County Line*, 5.5 miles northwest of Acala, Texas, about 8 miles southeast of Tornillo, Texas, and 47.9 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 3,547.59 feet above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on 30 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1938 through 1973.
REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.
EXTREME FLOWS FROM RECORDS: Momentary: Max. 6,340 second-feet on May 19, 1942 with a gage height of 8.66 feet. Min. frequently no flow.

	Average Flow in Second-Feet				
Daily:	Max. 6,180	May 18, 1942	Min. 0		Frequently
Monthly:	Max. 4,920	May 1942	Min. 0		Frequently
Yearly:	Max. 1,720	1942	Min. 0		1956 & 1964

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	‡ 0	0	0	0	0	53.8	163	1.4	‡ 0	0
2	0	0	0	0	‡ 0	0	0	49.5	30.8	1.4	0	0
3	‡ 0	0	0	0	0	0	0	34.7	82.5	‡ 1.5	0	0
4	.1	0	0	‡ 0	0	0	0	24.3	107	1.0	2.3	0
5	1.7	0	0	0	0	0	‡ 0	13.9	‡ 20.4	1.4	2.3	‡ 0
6	0	0	0	0	0	‡ 0	0	19.6	4.9	4.5	2.2	0
7	0	‡ 0	‡ 0	0	0	0	0	16.5	3.1	5.2	2.2	0
8	0	0	0	0	0	0	0	‡ 15.0	2.2	5.8	2.2	0
9	0	0	0	0	0	.6	0	10.0	1.6	5.5	2.2	0
10	0	0	0	.4	0	1.9	0	5.0	1.5	2.8	2.1	0
11	0	0	0	.6	0	3.2	0	0	1.4	1.7	2.1	0
12	0	0	0	.3	0	.3	0	0	1.4	1.7	2.1	0
13	0	0	0	1.0	0	0	0	0	1.4	.9	2.0	0
14	0	‡ 0	‡ 0	1.2	1.4	0	.1	0	1.4	.9	‡ 2.0	0
15	0	0	0	1.4	6.2	0	388	0	1.4	.9	1.9	0
16	0	0	0	1.7	‡ 2.8	0	‡ 962	0	1.4	.9	1.8	0
17	0	0	0	1.7	12.7	0	742	0	16.1	‡ 2.0	1.7	0
18	‡ 0	0	0	‡ 2.0	3.8	0	770	0	7.9	1.0	1.6	0
19	0	0	0	2.7	1.9	0	604	0	3.3	.5	1.5	0
20	0	0	0	2.8	0	‡ 0	478	19.6	1.6	0	1.4	0
21	0	‡ 0	‡ 0	1.7	0	0	278	0	1.5	0	1.3	0
22	0	0	0	5.2	0	0	203	0	1.4	0	1.2	0
23	0	1.1	0	4.3	0	0	147	‡ 0	1.4	0	1.1	0
24	0	1.7	0	1.1	0	0	110	0	10.0	0	1.0	0
25	0	0	0	.9	0	0	‡ 181	0	33.5	0	.9	0
26	0	0	0	.7	0	.6	161	0	11.2	0	.8	1.5
27	0	0	0	.4	0	0	108	0	2.8	0	.7	.3
28	0	0	0	.2	0	0	73.0	0	1.6	0	.6	0
29	0		‡ 0	0	0	0	166	‡ 0	1.5	0	0	0
30	0		0	0	0	0	148	0	1.4	0	0	0
31	‡ 0		0		0		126	324		0		0
Sum	1.8	2.8	0	31.2	28.8	6.6	5,547.1	590.9	520.6	41.0	41.2	1.8

Current Year 1973									Period 1938-1973		
Month	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.	1.36		5	6.1	† 1	0	0.1	3.6	5,720	20,000	0
Feb.	1.33		24	4.7	† 1	0	.1	5.6	4,797	47,900	0
Mar.				0		0	0	0	4,200	33,900	0
Apr.	1.45		22	13.3	† 1	0	1.0	61.9	6,380	84,200	0
May	1.55		17	24.8	† 1	0	.9	57.1	12,159	303,000	0
June	1.29		11	3.5	† 1	0	.2	13.1	10,917	239,000	0
July	0.02		16	1,060	† 1	0	182	11,201	11,366	140,000	0
Aug.	5.72		31	682	†11	0	19.1	1,172	10,501	123,000	0
Sept.	4.67		1	424	†11	Ø 1.4	17.4	1,033	12,719	140,000	0
Oct.	1.53	1.48	3	5.9	†20	0	1.3	81.3	7,907	61,400	0
Nov.	1.59		4	6.7	† 1	0	1.4	81.7	5,136	20,400	0
Dec.	1.40		26	4.3	† 1	0	.1	3.6	5,757	29,700	0
Yearly	0.02			1,060		0	18.9	13,713.9	97,559	1,247,500	0

‡ Discharge measurement made on this day Ø Mean daily † And other days

RIO GRANDE AT FORT QUITMAN, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank of the rectified channel of the Rio Grande at latitude 31°05'05", longitude 105°36'25", and river mile 1,167.1; 1.5 river miles downstream from Old Fort Quitman, 9 miles southeast of Esperanza, Texas, 17.5 miles southeast of McNary, Texas, and 81.7 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 3,450.57 feet above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on 30 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 1973.
REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.
EXTREME FLOWS FROM RECORDS**: Momentary: Max. 10,600 second-feet October 5, 1946 with a gage height of 10.00 feet. Min. frequently no flow.

Average Flow in Second-Feet**

Daily:	Max. 5,890	May 19, 1942	Min. 0	Frequently	
Monthly:	Max. 5,030	May 1942	Min. 0	Several months since 1951	
Yearly:	Max. 1,750	1942	Min. 2.3	1965	

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.3	10.2	‡ 12.6	5.0	4.8	0	0	310	321	13.5	‡ 45.5	24.0
2	8.4	10.9	11.6	4.1	‡ 4.2	.8	0	263	101	12.8	39.9	23.4
3	‡ 5.4	10.6	10.6	3.2	4.4	.9	0	144	50.9	10.4	33.5	22.9
4	8.9	9.7	9.7	‡ 2.8	2.9	1.1	0	136	91.0	8.9	44.8	21.4
5	9.7	9.9	8.8	2.8	3.3	1.2	‡ 0	63.1	‡ 94.1	14.0	50.8	‡ 20.0
6	10.5	10.1	7.9	2.9	5.6	‡ 1.3	0	21.3	42.1	23.9	54.0	18.8
7	11.3	‡ 9.9	‡ 7.7	2.5	3.8	1.3	0	9.9	33.7	25.2	49.9	19.6
8	15.2	10.6	7.5	2.3	2.9	1.3	0	‡ 8.2	52.2	26.8	47.2	19.7
9	19.1	10.2	7.4	3.2	2.0	1.2	0	6.9	39.7	29.4	41.7	16.6
10	18.2	10.5	7.4	2.5	1.9	1.2	0	7.3	39.6	32.6	30.0	23.0
11	22.0	10.9	6.8	2.5	1.8	1.1	0	8.3	29.2	35.7	29.4	28.2
12	26.3	11.2	7.8	3.5	1.7	1.0	0	8.9	32.6	40.1	39.1	27.4
13	24.3	11.5	7.5	3.1	1.7	.9	0	8.8	27.4	41.1	47.0	25.0
14	30.0	‡ 11.8	‡ 7.3	3.7	8.1	.8	0	10.5	27.4	40.0	‡ 45.8	29.3
15	32.1	11.9	7.7	4.6	1.8	.8	‡ 597	7.9	25.8	39.9	41.8	31.6
16	29.6	12.0	7.3	5.2	‡ 1.4	.9	704	7.1	23.9	38.8	40.7	29.5
17	25.3	12.1	6.6	2.3	1.4	.9	1,830	8.5	21.9	‡ 39.8	39.5	30.7
18	‡ 20.6	11.7	6.8	‡ 3.1	1.2	.8	1,330	8.4	20.6	39.5	38.6	30.8
19	17.0	11.4	6.8	2.1	1.0	.9	1,440	8.3	22.4	41.4	36.1	‡ 29.8
20	14.8	11.9	8.3	2.1	1.5	‡ .9	1,240	8.2	22.3	44.8	33.9	32.4
21	13.9	‡ 12.4	‡ 7.6	2.1	1.2	.7	782	8.5	20.4	43.0	30.8	31.9
22	14.3	13.0	6.1	2.9	.7	0	356	6.5	19.2	42.7	29.9	30.6
23	14.1	12.4	8.3	2.3	.5	0	247	‡ 6.6	18.3	48.2	29.0	29.4
24	‡ 11.9	12.0	6.9	2.3	.2	0	186	4.3	17.7	47.9	29.0	31.8
25	9.9	16.6	6.6	4.4	0	.2	‡ 129	5.7	16.8	43.2	27.2	33.2
26	8.5	14.0	7.7	4.5	0	0	276	4.8	15.7	36.0	26.4	36.0
27	8.5	13.4	8.2	4.8	0	.1	276	4.6	15.2	37.9	24.7	36.6
28	8.2	13.2	7.0	4.4	0	0	258	2.8	16.1	40.9	23.8	30.8
29	8.6		‡ 6.7	4.8	0	0	235	‡ 4.4	16.0	42.0	22.9	25.8
30	8.6		6.2	4.7	0	0	400	7.4	15.1	39.2	23.8	34.5
31	‡ 9.5		6.1		0		338	11.4		42.9		49.4
Sum	476.0	326.0	241.5	100.7	60.0	20.3	10,924	1,121.6	1,289.3	1,062.5	1,096.7	874.1

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1938-1973 Acre-Feet Average	Maximum	Minimum
Jan.	4.95	4.58	15	33.3	28	8.2	15.4	944	6,228	20,900	0
Feb.	4.75	4.55	25	21.0	4	9.7	11.6	647	5,376	50,100	0
Mar.	4.66	4.43	1	13.1	22	4.3	7.8	479	4,208	38,900	0
Apr.	4.57	4.15	1	8.3	†19	2.1	3.4	200	5,294	77,000	0
May	4.76		14	24.6	†24	0	1.9	119	12,496	309,000	0
June	4.28		6	2.0	† 1	0	.7	40.3	11,406	240,000	0
July	10.13		17	3,810	† 1	0	352	21,667	12,720	140,000	3.8
Aug.	6.04	4.31	2	366	25	2.5	36.2	2,225	12,037	127,000	16.7
Sept.	6.43	4.81	1	632	30	15.1	43.0	2,557	15,572	147,000	0
Oct.	5.26	4.55	23	51.1	9	7.8	34.3	2,107	11,595	66,500	0
Nov.	5.33	5.00	6	61.0	29	22.9	36.6	2,175	7,131	24,500	0
Dec.	5.27	4.93	31	58.0	9	18.0	28.2	1,734	7,304	31,000	0
Yearly	10.13			3,810		0	48.2	34,894.3	111,367	1,270,400	1,662.3

** Period 1924-1973 ‡ Discharge measurement made on this day † And other days

RIO GRANDE ABOVE RIO CONCHOS NEAR PRESIDIO, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank at latitude 29°37'15", longitude 104°28'50", and river mile 962.5; 6.5 miles northwest of the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua, 7.8 river miles upstream from the Rio Conchos, and 266.3 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 2,576.66 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 78 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 1973.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 14,000 second-feet on June 14, 1905. Highest flow recorded since 1924 was 5,160 second-feet, with a gage height of 10.57 feet, on May 26, 1942. Min. frequently no flow.

Average Flow in Second-Feet**

Daily:	Max. 13,700	June 13 & 14, 1905	Min. 0		Frequently
Monthly:	Max. 10,150	June 1905	Min. 0		Frequently
Yearly:	Max. 1,970	1907	Min. 1.3		1964

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	14.1	13.1	‡ 22.8	0	‡ 0	‡ 0	0	‡ 142	0	‡ 0	‡ 0	0
2	12.8	‡ 15.3	21.1	‡ 0	0	0	‡ 0	178	11.1	0	0	0
3	12.6	13.2	17.7	0	0	0	0	121	25.8	0	0	‡ 0
4	‡ 13.7	11.2	18.9	0	‡ 0	‡ 0	0	72.8	‡ 26.2	0	0	0
5	10.1	10.3	‡ 16.1	0	0	0	0	83.0	15.5	0	‡ 0	0
6	9.9	‡ 9.7	14.6	0	0	0	0	‡ 90.5	7.6	0	0	0
7	11.3	8.2	9.3	0	0	0	0	94.7	17.2	0	0	0
8	‡ 13.1	10.5	7.8	0	‡ 0	‡ 0	0	97.4	38.5	0	0	0
9	16.5	11.6	‡ 10.9	‡ 0	0	0	‡ 0	‡ 94.8	34.5	‡ 0	0	0
10	17.4	16.2	7.9	0	0	0	0	95.0	‡ 21.6	0	0	‡ 0
11	17.7	19.5	8.9	0	‡ 0	‡ 0	0	100	17.0	0	0	0
12	‡ 14.2	‡ 20.1	‡ 7.7	.2	0	0	‡ 0	82.0	11.5	0	‡ 0	0
13	19.1	17.5	5.7	1.2	0	0	0	67.1	6.2	0	0	0
14	17.3	17.7	2.3	1.0	0	0	0	43.4	‡ 2.2	0	0	0
15	‡ 17.0	‡ 17.2	‡ .3	.2	0	0	0	‡ 35.1	2.4	‡ 0	‡ 0	0
16	17.3	16.9	.2	‡ 0	0	0	‡ 18.6	16.0	1.8	0	0	0
17	19.0	16.5	0	0	0	0	9.1	5.4	‡ 1.6	0	0	‡ 0
18	20.6	13.3	0	0	‡ 0	‡ 0	0	1.0	1.2	0	0	0
19	21.4	13.6	‡ 0	0	0	0	2.5	0	.7	0	0	0
20	22.4	‡ 16.4	0	0	0	0	‡ 5.7	‡ 0	‡ 0	0	‡ 0	0
21	23.3	18.7	0	0	‡ 0	‡ 0	.5	0	0	0	0	0
22	‡ 23.6	19.9	0	0	0	0	2.2	0	7.6	0	0	0
23	23.0	‡ 21.5	0	‡ 0	0	0	‡ 9.8	‡ 0	3.8	‡ 0	0	0
24	21.6	27.7	0	0	0	0	19.0	0	‡ 0	0	0	0
25	19.5	37.0	0	0	‡ 0	‡ 0	23.1	0	0	0	0	0
26	21.5	‡ 41.1	‡ 0	‡ 0	0	0	30.4	0	0	0	0	‡ 0
27	21.5	33.0	0	0	0	0	47.8	‡ 0	0	0	0	0
28	16.1	21.5	0	0	0	0	77.6	0	0	0	0	0
29	17.9		0	‡ 0	0	0	41.5	0	0	‡ 0	0	.4
30	‡ 13.6		‡ 0	0	0	0	‡ 47.6	0	0	0	‡ 0	3.3
31	12.3		0		0		99.7	‡ 0		0		3.1
Sum	531.4	508.4	172.2	2.6	0	0	435.1	1,419.2	254.0	0	0	6.8

Current Year 1973									Period 1936-1973		
Month	Extreme Gage Feet		Extreme Second-Feet			Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.	11.20	10.92	20	31.1	30	8.3	17.1	1,054	5,620	24,400	0
Feb.	11.25	10.87	26	41.1	†6	7.1	18.2	1,003	4,650	40,300	0
Mar.	11.18		2	27.9	†16	0	5.6	342	3,435	39,100	0
Apr.	10.62		†12	1.6	† 1	0	.1	5.2	2,549	41,600	0
May				0		0	0	0	9,068	240,000	0
June				0		0	0	0	9,689	215,000	0
July	12.70		31	315	† 1	0	14.0	863	12,733	156,000	0
Aug.	12.19		2	194	†18	0	45.8	2,815	12,431	133,000	0
Sept.	11.29		9	41.8	† 1	0	8.5	504	16,771	151,000	0
Oct.				0		0	0	0	13,659	105,000	0
Nov.				0		0	0	0	5,460	34,500	0
Dec.	10.39		31	4.7	† 1	0	.2	13.5	5,737	30,900	0
Yearly	12.70			315		0	9.1	6,604.7	101,802	1,176,700	951.8

** Period June 1900-March 1914; September 1919-March 1920; and 1924-1973

‡ Discharge measurement made on this day † And other days

RIO CONCHOS NEAR OJINAGA, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the right bank at latitude 29°34'00", longitude 104°27'10", 1.5 river miles from the confluence with the Rio Grande, 1.9 miles west of Ojinaga, Chihuahua, and 3.7 miles west of Presidio, Texas. This stream enters the Rio Grande at river mile 954.7, 13.8 river miles upstream from the "Rio Grande below Rio Conchos" Gaging Station, and 294.1 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 2,568.04 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 163 discharge measurements during the year, 159 by the Mexican Section and 4 by the United States Section of the Commission, a continuous record of gage heights, and a rating curve which, above 15,000 second-feet, was defined previously by related gage heights and records of discharge at the "Rio Grande below Rio Conchos" Gaging Station. Computations by shifting control methods. Records available: 1896 through 1973. Records of stage and measured discharge at this station began April 4, 1954. Prior to this date, flow records were determined from records of the Rio Grande at stations located upstream and downstream from the Rio Conchos confluence.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. La Boquilla Reservoir, La Colina Reservoir, La Rosetilla Reservoir, and Luis L. Leon Reservoir are located 250, 242, 186, and 112 river miles, respectively, upstream from this station. Francisco I. Madero Reservoir is located on the Rio San Pedro, a tributary which enters the Rio Conchos 174 river miles upstream from this station. Power generation facilities: La Boquilla 14,647 kw., La Colina 3,620 kw., La Rosetilla 5,150 kw., Francisco I. Madero and Luis L. Leon, none.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 162,000 second-feet on September 11, 1904.

Average Flow in Second-Feet**

Daily:	Max. 148,900	Sept. 11, 1904	Min. 0	Several days	1953 & 1955
Monthly:	Max. 24,540	Sept. 1904	Min. 4.7	April	1955
Yearly:	Max. 3,710	1906	Min. 155		1953

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	364	348	265	109	119	‡ 194	809	‡ 4,770	5,010	‡ 345	406	374
2	371	‡ 343	‡259	‡ 116	‡ 124	192	‡ 946	‡ 3,350	5,010	371	‡ 410	‡371
3	‡ 378	344	256	116	123	191	1,050	‡ 2,600	‡ 5,050	‡ 378	410	378
4	374	353	252	‡ 114	‡ 124	‡ 191	‡ 1,280	2,150	5,300	‡ 381	410	367
5	‡ 367	‡ 344	‡266	113	126	191	1,660	1,940	‡ 5,400	‡ 396	‡ 403	‡374
6	364	346	259	‡ 110	137	‡ 188	‡ 1,370	‡ 1,830	5,400	431	410	374
7	367	‡ 345	‡254	109	‡ 151	180	1,240	1,870	‡ 5,650	‡ 434	‡ 501	‡374
8	‡ 367	339	253	111	152	‡ 170	1,200	‡ 2,260	5,540	‡ 424	‡ 484	364
9	364	‡ 310	‡242	‡ 113	‡ 151	162	‡ 1,180	2,660	5,470	413	‡ 410	371
10	‡ 364	304	232	116	151	155	1,180	‡ 2,900	‡ 5,400	‡ 403	399	374
11	364	280	231	‡ 118	‡ 155	‡ 151	‡ 1,360	3,230	5,370	399	399	‡378
12	‡ 364	‡ 262	‡226	119	155	144	‡ 2,680	3,130	‡ 5,300	‡ 533	399	‡381
13	364	260	108	‡ 119	155	‡ 309	‡ 3,040	‡ 3,740	5,230	487	‡ 396	309
14	357	‡ 256	‡ 38.5	119	‡ 3,420	448	2,260	3,810	‡ 5,260	424	‡ 399	‡218
15	‡ 364	250	45.6	115	‡ 1,370	‡ 357	2,170	‡ 3,810	4,910	‡ 410	388	325
16	364	‡ 244	‡ 59.7	‡ 113	‡ 533	285	‡ 3,220	3,810	4,590	406	‡ 388	304
17	‡ 357	250	73.1	111	142	397	‡ 2,520	‡ 3,850	‡ 3,370	‡ 385	392	‡199
18	348	246	91.1	‡ 104	‡ 170	‡ 720	‡ 2,240	4,240	2,570	343	396	35.7
19	‡ 347	‡ 250	‡106	102	198	1,230	1,910	4,980	‡ 1,900	‡ 385	‡ 406	‡ 23.0
20	353	249	108	105	222	‡ 1,370	‡ 1,910	‡ 5,230	1,610	406	388	36.7
21	351	‡ 261	‡108	109	‡ 245	1,260	1,710	5,330	‡ 890	420	‡ 388	‡ 56.9
22	‡ 357	281	108	113	248	‡ 1,230	1,570	‡ 5,260	855	‡ 413	396	72.7
23	347	‡ 273	‡112	‡ 118	‡ 246	1,240	‡ 1,490	5,260	844	406	‡ 396	106
24	‡ 341	275	112	126	231	1,250	1,440	‡ 5,190	‡ 819	‡ 399	396	‡263
25	337	269	108	‡ 135	220	‡ 1,250	‡ 1,410	5,160	675	403	396	456
26	‡ 332	‡ 267	‡110	136	205	1,240	1,440	5,050	‡ 554	‡ 410	‡ 388	‡406
27	327	263	124	‡ 132	193	‡ 1,210	‡ 1,840	‡ 4,910	463	381	392	403
28	331	‡ 261	‡134	129	‡ 185	1,190	‡ 3,600	4,910	‡ 396	406	‡ 385	‡396
29	‡ 335		134	122	185	‡ 1,190	‡ 3,400	‡ 5,230	338	‡ 399	388	392
30	329		‡131	‡ 119	‡ 187	1,000	‡ 2,540	5,230	312	403	‡ 381	399
31	336		118		187		2,440	‡ 5,160		‡ 388		‡399
Sum	10,985	8,073	4,924.0	3,491	10,208	19,285	58,105	122,850	99,486	12,582	12,100	9,280.0

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1958-1973 Acre-Feet Average	Maximum	Minimum
Jan.	7.58	7.25	4	381	25	318	353	21,787	53,607	131,293	19,879
Feb.	7.41	6.76	4	367	16	238	289	16,021	37,156	124,386	3,336
Mar.	6.89	5.51	† 1	271	14	33.5	159	9,767	39,437	130,298	4,171
Apr.	6.10	5.91	‡26	136	‡19	102	116	6,922	27,326	76,357	6,922
May	13.52	5.94	14	5,860	1	106	329	20,243	22,637	45,957	10,932
June	9.02	6.04	19	1,560	12	137	643	38,274	34,435	57,479	6,008
July	14.99	7.58	29	7,200	1	727	1,880	115,253	68,839	115,253	23,833
Aug.	15.12	10.04	1	7,630	6	1,810	3,960	243,660	105,314	243,660	31,728
Sept.	14.37	6.50	7	5,790	30	307	3,320	197,367	189,396	468,680	46,959
Oct.	7.45	6.50	12	685	† 1	314	406	24,954	90,337	189,837	24,954
Nov.	7.28	6.82	7	650	‡13	371	403	23,998	49,947	125,311	7,484
Dec.	6.96	5.51	24	533	19	21.2	299	18,408	34,455	51,114	18,408
Yearly	15.12	5.51		7,630		21.2	1,020	736,654	752,886	1,082,065	463,767

** Period June 1900 - March 1914; September 1914 - March 1920; and 1924-1973

‡ Discharge measurement made on this day † And other days

ALAMITO CREEK NEAR PRESIDIO, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located on the left bank 300 feet upstream from the highway bridge on Farm-to-Market Road 170 at latitude 29°31'15", longitude 104°17'40", about 2,000 feet from the confluence with the Rio Grande, and about 6 miles southeast of Presidio, Texas. This stream enters the Rio Grande near the lower end of the Presidio Valley at river mile 941.3, 9.7 river miles downstream from the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua, and 307.5 river miles downstream from the American Dam at El Paso, Texas. Measurements of high flows are made from the highway bridge. The zero of the gage is 2,541.61 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 83 *discharge measurements* during the year at low and medium flows, a high flow rating curve determined by slope-area calculations, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1932 through 1973.

REMARKS: A small irrigation reservoir (San Esteban) 10.5 miles south of Marfa, Texas and irrigation diversions below the reservoir modify the flow of this spring-fed creek. Backwater from the Rio Grande begins to affect the station record when the flow at the station on the Rio Grande below Rio Conchos reaches about 35,000 second-feet.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 56,400 second-feet, determined by slope-area calculations, on September 2, 1962, with a gage height of 13.54 feet. Min. Ø0.1 second-foot on July 25, 1953 and several days in August 1958.

		Average Flow in Second-Feet			
Daily:	Max. 6,200	Sept. 2, 1962	Min. 0.1	July 25, 1953 & several days in August 1958	
Monthly:	Max. 418	Sept. 1958	Min. 0.6	Oct. - Dec. 1953 & May 1968	
Yearly:	Max. 55.9	1941	Min. 4.3	1951	

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.2	1.4	‡ 1.5	1.3	1.2	‡ 0.8	0.6	‡1,230	1,560	‡ 1.0	‡ 1.2	1.3
2	2.1	‡ 1.3	1.5	‡ 1.2	‡ 1.2	.7	‡ .5	39.8	1.8	1.0	1.1	1.3
3	2.1	1.4	1.5	1.2	1.1	.7	.5	1.7	1.6	1.0	1.0	‡ 1.4
4	‡ 2.1	1.5	1.5	1.2	‡ 1.0	‡ .6	.4	.9	‡ 1.6	‡ 1.0	.9	1.4
5	2.1	1.6	‡ 1.5	1.2	1.0	.6	.4	.9	1.6	1.0	‡ .8	1.4
6	2.0	‡ 1.7	1.5	1.3	1.0	.5	.4	‡ .9	1.5	1.0	.8	1.4
7	2.0	1.7	1.4	1.3	‡ 1.0	.4	.4	.9	1.5	.9	.9	1.3
8	‡ 2.0	1.7	1.4	1.3	1.1	.4	.3	.9	1.5	.9	‡ .9	1.3
9	2.0	1.6	‡ 1.4	‡ 1.3	1.1	‡ .5	‡ .3	‡ 34.8	1.4	‡ .9	.9	1.3
10	2.0	1.6	1.4	1.3	1.2	.5	.3	2.7	‡ 1.4	.9	1.0	‡ 1.3
11	1.9	1.6	1.5	1.3	1.2	‡ .6	1.1	267	1.5	.9	1.0	1.3
12	‡ 1.9	‡ 1.6	‡ 1.5	1.3	1.3	.6	‡ 1.0	3.7	1.6	1.0	‡ 1.0	1.4
13	1.9	1.6	1.4	1.4	1.3	.7	.9	1.3	1.7	1.0	1.0	1.4
14	1.9	1.5	1.4	1.4	‡ 1.4	.7	1.8	1.0	‡ 1.8	1.0	1.0	1.4
15	‡ 1.9	‡ 1.5	‡ 1.3	1.4	1.3	.7	2,140	‡ .7	1,710	‡ 1.0	‡ 1.0	1.4
16	1.8	1.5	1.3	‡ 1.4	1.1	.7	‡ 855	.6	22.3	1.0	1.0	1.5
17	1.8	1.5	1.3	1.4	‡ 1.0	.8	277	.6	‡ 1.5	1.0	1.0	‡ 1.5
18	1.7	1.5	1.3	1.3	1.0	‡ .8	1,970	.6	1.5	‡ 1.0	1.0	1.5
19	1.7	1.5	‡ 1.3	1.3	1.0	.8	41.7	.6	1.5	1.0	1.0	1.5
20	1.6	‡ 1.5	1.3	1.3	.9	.7	‡ 3.3	‡ 71.0	1.5	1.0	‡ 1.0	1.5
21	1.6	1.5	1.4	1.3	‡ .9	‡ .7	2.3	2.5	1.5	.9	1.0	1.5
22	‡ 1.5	1.5	1.4	1.2	.9	.7	1.9	1.4	21.4	.9	1.1	1.5
23	1.5	‡ 1.5	1.4	‡ 1.2	.9	.7	‡ 1.6	‡ 1.1	9.8	‡ .9	1.1	1.5
24	1.5	1.5	1.4	1.1	‡ .9	.7	1.6	1.0	‡ 1.2	1.0	1.1	1.5
25	1.5	1.4	1.5	1.0	.9	‡ .7	1.5	1.0	1.2	1.0	1.2	1.5
26	1.6	‡ 1.4	‡ 1.5	1.0	.9	.7	1.5	1.0	1.1	1.0	‡ 1.2	‡ 1.5
27	1.6	1.4	1.5	‡ .9	.8	.7	1.4	‡ .9	1.1	1.1	1.2	1.5
28	1.6	‡ 1.4	1.4	1.0	.8	.7	1.4	.9	1.1	1.2	1.2	1.5
29	1.6		1.4	1.1	‡ .8	‡ .7	1.3	96.5	1.1	‡ 1.2	1.2	1.5
30	‡ 1.6		‡ 1.4	‡ 1.2	.8	.6	‡ 252	732	1.0	1.2	‡ 1.2	1.4
31	1.5		1.3		.8		273	‡ 125		1.2		1.4
Sum	55.8	42.4	43.8	37.1	31.8	19.7	5,835.4	2,623.9	3,359.3	31.1	31.0	44.1

Current Year 1973 — Period 1932-1973

Month	Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	6.87	6.76	1	Ø 2.2	‡22	Ø 1.5	1.8	111	145	273	46.4
Feb.	6.81	6.75	† 6	Ø 1.7	2	Ø 1.3	1.5	84.1	204	3,120	41.5
Mar.	6.88	6.80	† 1	Ø 1.5	‡15	Ø 1.3	1.4	86.9	148	270	46.4
Apr.	6.87	6.79	‡13	Ø 1.4	27	Ø .9	1.2	73.6	203	1,070	56.1
May	6.85	6.75	14	Ø 1.4	‡27	Ø .8	1.0	63.1	1,034	8,520	34.7
June	6.81	6.71	† 1	Ø .8	† 7	Ø .4	.7	39.1	2,050	12,653	39.1
July	8.66	6.08	15	8,800	† 9	Ø .3	188	11,574	3,487	18,500	46.8
Aug.	8.05	6.80	31	5,780	‡15	Ø .6	84.6	5,204	3,413	16,330	56.9
Sept.	8.15	6.97	15	6,230	30	Ø 1.0	112	6,663	3,832	24,900	128
Oct.	7.04	7.00	‡28	Ø 1.2	† 7	Ø .9	1.0	61.7	1,974	19,200	36.9
Nov.	7.14	7.03	† 1	Ø 1.2	† 5	Ø .8	1.0	61.5	218	2,554	35.7
Dec.	7.25	7.12	‡16	Ø 1.5	† 1	Ø 1.3	1.4	87.5	151	408	39.3
Yearly	8.66	6.08		8,800		Ø 0.3	33.3	24,109.5	16,859	40,444	3,109.2

‡ Discharge measurement made on this day Ø Mean daily † And other days

RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS

DESCRIPTION: Cableway, bubbler gage, concrete control weir, water-stage recorders (graphic and digital), and binary decimal transmitter located on the left bank at latitude 29°31'05", longitude 104°17'35", and river mile 940.9; 0.4 river mile downstream from Alamito Creek, 10.1 river miles downstream from the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua and 307.9 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 2,536.00 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 76 discharge measurements during the year and a continuous record of gage heights. Computations for high flows by shifting control methods. Low and medium flow computations based on a stable control weir rating curve defined by meter measurements. Records available: 1955 through 1973. Records are also available from 1896 through June 13, 1932 for a station located about 12.1 river miles downstream from the Rio Conchos and 1.3 miles upstream from Alamito Creek; and from June 14, 1932 through 1954 for a station about 2.0 river miles downstream from the Rio Conchos and 11.4 river miles upstream from Alamito Creek.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The elevation of the zero of the gage prior to placing the weir, May 1, 1968, was 2,527.99 feet above mean sea level, U. S. C. & G. S. datum. The transmitter, operated in cooperation with the National Weather Service, relays gage height data upon interrogation by telephone via commercial circuits.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 54,300 second-feet on October 1, 1958 with a gage height of 20.37 feet. Min. 0.2 second-foot several days in July 1955, and on June 30, 1958.

		Average Flow in Second-Feet			
Daily:	Max. 52,200	Oct. 1, 1958	Min. 0.2	Several days July 1955; and June 30, 1958
Monthly:	Max. 17,100	Oct. 1958	Min. 3.5	May 1955
Yearly:	Max. 2,590	1958	Min. 283	1956

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	407	362	‡283	128	140	211	778	‡ 6,030	5,840	‡ 368	387	393
2	410	‡ 354	283	‡ 138	122	212	‡ 845	4,520	5,610	395	391	394
3	423	353	278	110	121	221	883	3,260	5,720	405	405	381
4	‡ 425	374	256	107	‡ 124	‡ 221	1,060	2,450	‡ 6,110	‡ 400	405	360
5	411	374	‡262	118	132	218	1,740	2,070	5,970	409	‡ 403	356
6	392	‡ 358	260	116	123	205	1,410	1,930	5,910	429	402	359
7	387	348	238	111	‡ 138	197	1,270	1,860	6,100	448	416	‡ 358
8	‡ 393	351	228	126	155	‡ 187	1,190	2,110	6,100	451	‡ 535	367
9	390	357	‡221	‡ 131	146	174	‡ 1,190	‡ 2,630	5,970	‡ 437	429	372
10	399	338	210	115	138	186	1,210	2,870	‡ 5,900	427	402	‡ 380
11	416	321	201	124	142	‡ 185	1,150	3,120	5,680	424	402	377
12	‡ 413	‡ 303	‡205	116	162	160	‡ 2,660	3,530	5,450	424	‡ 407	375
13	414	287	192	112	174	172	2,900	3,870	5,260	434	394	371
14	418	293	185	114	2,290	227	2,630	3,860	‡ 5,190	427	396	216
15	‡ 413	‡ 287	‡ 50.8	113	2,070	326	2,980	4,130	5,220	‡ 416	‡ 398	341
16	406	276	49.9	‡ 122	709	280	‡ 3,950	4,070	4,810	409	401	411
17	405	274	74.6	110	‡ 251	284	2,840	‡ 4,240	‡ 3,660	400	413	‡ 328
18	391	283	94.4	117	140	‡ 523	3,190	4,830	2,520	‡ 344	426	164
19	384	285	‡110	111	195	870	2,210	5,960	2,050	352	418	115
20	384	‡ 274	109	128	232	1,340	‡ 2,080	‡ 6,170	‡ 1,390	378	‡ 396	‡ 115
21	392	302	120	132	237	‡ 1,140	1,900	6,020	843	399	381	131
22	‡ 387	307	115	132	251	1,140	1,690	5,940	892	401	382	136
23	391	325	112	‡ 130	258	1,150	‡ 1,600	‡ 5,840	919	‡ 394	389	136
24	394	311	106	131	‡ 247	1,210	1,500	5,740	‡ 886	391	389	176
25	373	305	105	125	229	‡ 1,250	1,360	5,650	731	386	392	438
26	354	‡ 293	‡115	119	222	1,230	1,490	5,530	597	390	‡ 388	‡ 428
27	361	290	124	‡ 130	218	1,200	1,760	‡ 5,370	511	383	374	415
28	359	286	125	121	210	1,160	3,750	5,420	452	395	376	411
29	368		123	127	‡ 205	1,110	4,080	5,670	394	412	389	399
30	‡ 354		‡106	‡ 138	204	1,080	‡ 2,570	5,790	364	‡ 393	‡ 392	406
31	365		111		210		3,010	‡ 5,830		389		419
Sum	12,175	8,871	4,975.7	3,652	10,195	18,069	62,876	136,310	107,049	12,515	12,083	10,028

‡ Discharge measurement made on this day † And other days

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1968-1973 Acre-Feet Average	Maximum	Minimum
Jan.	2.26	2.15	† 3	426	26	350	393	24,149	51,255	116,947	20,968
Feb.	2.21	1.98	† 4	382	†17	268	317	17,595	34,702	110,937	4,745
Mar.	2.03	1.34	1	292	†15	40.7	161	9,869	35,541	116,352	4,583
Apr.	1.70	1.50	27	154	17	87.6	122	7,244	25,702	72,083	7,244
May	4.78	1.54	†14	5,320	† 2	105	329	20,221	22,735	44,882	12,147
June	3.36	1.60	†19	1,520	13	129	602	35,839	32,952	57,408	5,927
July	5.05	2.75	29	6,280	1	755	2,030	124,713	74,119	124,713	24,764
Aug.	5.18	3.52	1	7,110	7	1,830	4,400	270,367	110,304	270,367	30,365
Sept.	5.20	2.13	1	6,810	30	348	3,570	212,329	202,933	469,832	46,085
Oct.	2.35	2.06	7	475	†27	311	404	24,823	97,507	170,230	24,823
Nov.	2.52	2.15	3	592	28	358	403	23,966	49,509	113,407	8,741
Dec.	2.31	1.56	25	452	19	104	323	19,890	34,338	52,176	19,890
Yearly	5.20	1.34		7,110		40.7	1,090	791,005	772,147	1,070,504	495,643

TERLINGUA CREEK NEAR TERLINGUA, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank at latitude 29°12' 00", longitude 103°36' 15", 2.6 creek miles from the confluence with the Rio Grande, and about 8.5 miles south of Terlingua, Brewster County, Texas. This creek enters the Rio Grande at river mile 876.6, the lower end of Santa Helena Canyon, and 372.2 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 2,200.64 feet above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on 92 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1932 through 1973.
REMARKS: Irrigation diversions modify the flow of this spring-fed creek at this station.
EXTREME FLOWS FROM RECORDS: Momentary: Max. 34,900 second-feet on May 24, 1935 with a gage height of 17.59 feet on a gage 0.3 mile downstream. Min. 0.1 several days in June and July 1950.

Average Flow in Second-Feet

Daily:	Max. 17,200	June 1, 1937	Min. 0.1	Several days in June & July 1950
Monthly:	Max. 921	June 1937	Min. 0.8	October 1934
Yearly:	Max. 146	1937	Min. 5.5	1943

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.1	‡ 3.0	‡ 3.1	2.8	‡ 3.0	‡ 2.5	2.3	354	65.2	‡ 3.1	‡ 3.0	2.4
2	3.1	3.0	3.1	2.9	3.0	2.4	‡ 2.2	‡ 25.7	200	3.1	3.0	2.5
3	‡ 3.1	3.1	3.0	‡ 2.9	3.0	2.2	2.2	6.1	13.6	3.0	2.9	‡ 2.5
4	3.1	3.2	3.0	2.9	3.0	2.1	2.2	2.4	‡ 6.6	3.0	2.8	2.5
5	3.1	‡ 3.2	‡ 3.0	3.0	3.0	‡ 2.0	2.2	4.0	6.1	‡ 3.0	‡ 2.8	2.5
6	3.2	3.2	3.0	3.0	3.0	2.0	2.2	3.9	5.6	2.9	2.8	2.5
7	3.2	3.2	3.0	3.0	‡ 3.0	2.1	2.2	‡ 3.9	5.1	2.8	2.8	2.5
8	‡ 3.2	3.2	3.1	3.0	3.0	2.2	2.2	3.9	4.6	2.7	2.8	2.5
9	3.2	3.2	‡ 3.1	3.1	2.9	2.2	2.2	3.9	4.1	‡ 2.6	‡ 2.8	2.5
10	3.2	3.2	3.2	‡ 3.1	2.8	2.2	‡ 2.2	‡ 65.5	‡ 3.6	2.6	2.8	‡ 2.5
11	3.1	3.2	3.3	3.1	2.8	‡ 2.3	287	20.3	3.4	2.6	2.8	2.5
12	3.1	3.2	‡ 3.4	3.1	2.8	2.3	251	12.4	224	2.6	‡ 2.8	2.5
13	3.1	‡ 3.2	3.2	3.1	2.7	2.3	341	6.4	102	2.7	2.6	2.5
14	3.0	3.2	3.1	3.2	2.6	2.3	76.7	‡ 11.9	‡ 7.2	2.7	2.5	2.5
15	3.0	‡ 3.3	‡ 2.9	3.2	‡ 2.6	26.5	169	3.4	513	‡ 2.7	‡ 2.3	2.5
16	‡ 3.0	3.3	3.0	3.2	2.4	11.2	‡ 665	3.1	82.3	2.8	2.4	2.5
17	3.0	3.2	3.1	‡ 3.2	‡ 2.3	44.4	‡ 128	3.1	‡ 23.5	2.8	2.4	‡ 2.5
18	3.0	3.2	3.2	3.2	2.4	‡ 8.2	49.6	‡ 3.1	4.1	‡ 2.9	2.4	2.5
19	3.0	3.1	‡ 3.3	3.2	2.6	5.5	1,560	37.1	3.4	2.9	‡ 2.5	2.5
20	3.1	‡ 3.1	3.2	3.2	2.8	2.9	‡ 516	34.3	‡ 3.2	2.8	2.5	2.5
21	3.1	4.1	3.2	3.1	‡ 2.9	2.3	83.1	‡ 3.6	3.3	2.8	2.5	2.5
22	‡ 3.1	4.9	3.1	3.1	2.8	‡ 2.3	22.9	3.5	257	2.7	2.5	2.4
23	3.1	16.5	3.0	3.1	2.7	2.3	3.6	3.3	915	‡ 2.6	2.4	2.4
24	3.1	9.5	3.0	‡ 3.1	2.6	105	‡ 2.5	‡ 3.2	40.7	2.7	2.4	2.4
25	3.1	3.2	2.9	3.1	2.5	‡ 48.1	2.5	3.2	‡ 11.8	2.8	2.4	2.4
26	3.1	‡ 2.8	2.9	3.1	2.4	7.2	2.5	3.2	9.9	2.8	‡ 2.4	2.4
27	3.1	2.9	‡ 2.8	3.1	2.3	2.4	2.5	‡ 3.2	8.2	2.9	2.4	‡ 2.4
28	3.1	3.0	2.8	3.0	2.2	2.4	2.5	4.4	6.3	3.0	2.4	2.5
29	‡ 3.1		2.8	3.0	2.1	‡ 2.4	83.7	2.8	4.9	‡ 3.1	‡ 2.4	2.5
30	3.1		‡ 2.8	3.0	‡ 2.0	2.3	‡ 512	22.7	3.6	3.1	2.4	2.6
31	3.1		2.8		2.2		‡1,270	97.6		3.0		2.6
Sum	96.0	110.4	94.4	92.1	82.4	306.5	6,053.2	759.1	2,541.3	87.8	77.9	77.0

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1932-1973 Acre-Feet Average	Maximum	Minimum
Jan.	2.51	2.47	† 6	3.2 ∅	†14	∅ 3.0	3.1	190	193	875	82.7
Feb.	2.77	2.47	23	32.8	26	∅ 2.8	3.9	219	248	4,400	73.4
Mar.	2.48	2.47	12	3.4 ∅	†27	∅ 2.8	3.0	187	233	2,410	72.4
Apr.	2.48	2.45	†14	3.2 ∅	1	∅ 2.8	3.1	183	987	15,500	55.1
May	2.45	2.44	† 1	3.0 ∅	30	∅ 2.0	2.7	163	3,674	26,000	81.3
June	3.41	2.40	24	412	† 5	∅ 2.0	10.2	608	6,690	54,800	59.5
July	7.08	2.42	31	9,770	† 2	∅ 2.2	195	12,006	8,569	28,700	518
Aug.	4.13	2.44	1	1,470	4	∅ 2.4	24.5	1,506	5,582	33,617	123
Sept.	5.19		22	4,080	20	∅ 3.2	84.7	5,041	7,412	42,200	123
Oct.			† 1	3.1 ∅	† 9	∅ 2.6	2.8	174	3,392	27,900	50.8
Nov.			† 1	3.0 ∅	15	∅ 2.3	2.5	155	359	2,980	64.9
Dec.			†30	2.6 ∅	† 1	∅ 2.4	2.5	153	280	3,080	90.0
Yearly	7.08			9,770		∅ 2.0	28.4	20,585	37,919	105,807	3,958

‡ Discharge measurement made on this day ∅ Mean daily † And other days

RIO GRANDE AT JOHNSON RANCH NEAR CASTOLON, TEXAS

DESCRIPTION: Cableway, gravity well, and digital water-stage recorder located on the left bank at latitude 29°02'05", longitude 103°23'30", and river mile 855.3; two miles west-northwest of old Johnson Ranch headquarters, 5.5 river miles downstream from Smoky Creek, 13.0 river miles upstream from Chisos Crossing and the Chihuahua-Coahuila state line, 14.0 river miles downstream from Castolon, Brewster County, Texas and Santa Helena Ranch, Chihuahua, and 393.5 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 2,045.30 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 76 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: April 1936 through 1973.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 61,900 second-feet on September 27, 1958 with a gage height of 24.70 feet. A flow estimated at 97,000 second-feet with a stage of 24.6 feet occurred at this station site on October 3, 1932. Min. no flow several days in 1953, 1955, 1957 and 1958.

Average Flow in Second-Feet

Daily:	Max. 56,900	Sept. 10, 1942	Min. 0	Several days 1953 1955, 1957 & 1958
Monthly:	Max. 23,600	Sept. 1942	Min. 0	May 1953
Yearly:	Max. 4,780	1942	Min. 167	1953

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	410	‡ 372	‡382	84.4	‡ 100	169	1,120	5,080	5,490	‡ 493	‡ 428	405
2	413	370	311	81.3	98.2	181	‡ 742	‡ 5,520	5,390	470	422	417
3	‡ 423	364	309	‡ 91.8	98.8	166	651	3,550	5,170	463	417	‡ 419
4	437	364	305	107	93.4	154	620	2,610	‡ 5,200	471	431	411
5	445	‡ 377	‡291	107	89.3	‡ 184	952	2,110	5,400	‡ 458	‡ 440	399
6	430	389	277	92.3	90.2	179	‡ 1,450	1,960	5,410	468	444	389
7	414	372	279	91.8	‡ 92.5	160	1,210	‡ 1,910	5,370	502	435	387
8	‡ 411	377	269	97.9	93.1	156	1,080	1,980	5,650	509	425	379
9	418	377	‡257	107	104	146	1,060	2,270	5,560	‡ 510	‡ 491	380
10	420	382	237	‡ 114	127	143	‡ 1,650	‡ 2,690	‡ 5,400	489	478	‡ 384
11	414	371	233	123	124	‡ 136	1,510	2,730	5,350	478	424	398
12	425	358	‡221	112	119	147	2,190	3,070	5,290	476	‡ 410	391
13	419	‡ 339	212	101	119	165	2,720	3,150	5,200	471	413	388
14	413	305	193	94.2	119	563	3,010	‡ 3,650	‡ 4,900	570	400	249
15	415	‡ 232	‡171	92.7	1,810‡	242	3,190	3,670	5,280	‡ 522	‡ 380	296
16	‡ 407	289	145	90.9	1,560	228	3,660	3,590	4,940	486	382	205
17	407	300	116	‡ 103	‡ 778	255	‡ 3,940	3,650	‡ 4,650	470	392	‡ 357
18	401	301	94.7	107	443	‡ 219	4,840	‡ 3,650	3,190	‡ 449	408	344
19	395	309	‡ 84.6	100	238	244	4,290	4,290	2,490	426	‡ 418	286
20	376	‡ 313	80.9	88.1	153	487	‡ 2,590	5,020	‡ 2,160	396	428	187
21	377	332	88.8	91	‡ 201	1,170	2,000	‡ 5,200	1,750	397	425	‡ 169
22	‡ 401	338	88.6	88.3	224	‡ 1,020	1,700	5,130	2,540	409	420	181
23	399	355	78.4	109	220	972	1,550	5,050	1,960	‡ 429	411	195
24	397	361	76.3	‡ 130	218	1,020	‡ 1,440	‡ 5,010	1,660	417	413	196
25	379	350	84.1	118	218	‡ 1,240	1,420	5,010	‡ 1,090	415	420	202
26	374	‡ 344	94.5	102	206	1,110	1,410	5,010	882	403	‡ 426	322
27	363	334	‡ 96.6	84.4	195	1,080	1,510	‡ 4,970	744	403	435	‡ 404
28	356	325	95.6	87.1	190	1,080	1,870	4,990	658	407	411	401
29	‡ 361		91.9	87.6	199	1,070	3,330	5,090	592	‡ 404	‡ 397	397
30	371		‡ 95.3	96.6	‡ 191	1,070	‡ 3,960	5,150	542	434	399	401
31	375		97.6		179		‡ 3,820	5,490		423		401
Sum	12,446	9,650	5,395.9	2,980.4	8,725.5	15,166	67,035	122,280	109,903	14,123	12,628	10,340

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	High	Extreme Second-Feet Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1968-1973 Acre-Feet Average	Maximum	Minimum
Jan.	2.15	1.93	5	450	28	337	401	24,686	51,835	113,276	23,830
Feb.	2.07	1.77	8	395	15	276	345	19,140	36,748	111,869	7,743
Mar.	1.86	1.00	1	386	24	70.3	174	10,703	35,491	115,717	6,067
Apr.	1.26	1.02	24	135	2	73.4	99.3	5,912	25,204	73,919	5,912
May	5.20	1.07	15	3,670	3	85.8	281	17,307	25,276	58,190	14,454
June	3.76	1.27	14	1,720	11	129	506	30,081	36,076	66,246	5,839
July	9.57	2.61	31	9,600	-	576	2,160	132,962	82,500	138,962	29,430
Aug.	10.26	3.87	1	10,500	8	1,830	3,940	242,539	115,356	242,539	30,869
Sept.	7.91	2.13	12	6,890	30	513	3,660	217,999	213,516	472,093	45,166
Oct.	2.40	1.92	14	618	21	383	456	28,013	113,836	188,936	25,013
Nov.	2.26	1.91	9	541	†15	368	421	25,047	51,958	121,232	13,267
Dec.	2.01	1.26	3	425	21	169	334	20,509	36,069	54,064	20,509
Yearly	10.26	1.00		10,500		70.3	1,070	774,893	824,117	1,125,040	615,314

‡ Discharge measurement made on this day † And other days

RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TEXAS
(ABOVE MAIN STEM HEAD OF AMISTAD RESERVOIR)

DESCRIPTION: Cableway, bubbler gage, concrete control weir, and water-stage recorders (graphic and digital) located on the left bank at latitude 29°46'50", longitude 101°45'20", and river mile 651.0; 500 feet downstream from the Terrell-Val Verde County Line, 16.9 river miles upstream from Langtry, Texas, and 597.8 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 1,157.17 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 31 discharge measurements during the year, 28 by the United States Section and 3 by the Mexican Section of the Commission, and a continuous record of gage heights. Computations for high flows by shifting control methods. Low and medium flow computations based on a stable control weir rating curve defined by meter measurements. Records available: September 1961 through 1973.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The concrete control weir was placed in operation on February 21, 1967.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 103,000 second-feet, determined by slope-area computations, on June 11, 1965, with a gage height of 34.58 feet. Min. 188 second-feet on August 19, 1965.

Average Flow in Second-Feet

Daily:	Max. 30,100	June 11, 1965	Min. 217	July 1, 1968
Monthly:	Max. 10,700	Sept. 1966	Min. 322	March 1968
Yearly:	Max. 2,100	1966	Min. 981	1963

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	699	647	622	338	340	395	1,120	3,340	5,370	‡ 1,080	671	668
2	‡ 698	652	613	‡ 340	325	399	1,110	5,410	5,070	1,010	685	652
3	705	652	604	332	310	393	1,120	4,560	4,450	959	698	‡ 648
4	709	652	593	335	303	383	1,100	3,880	4,270	1,200	686	640
5	705	‡ 657	‡ 581	333	307	383	934	3,210	4,130	3,190	‡ 686	640
6	710	655	575	328	324	382	928	2,640	4,220	840	675	640
7	722	652	579	332	321	383	955	2,330	5,050	833	675	646
8	‡ 734	683	574	‡ 331	319	375	1,170	2,160	4,380	821	675	652
9	734	705	554	‡ 340	308	387	1,460	2,050	4,370	808	698	646
10	734	707	581	‡ 346	307	371	1,300	2,550	4,420	770	686	646
11	726	686	554	344	300	‡ 360	1,260	2,290	4,390	795	698	644
12	710	‡ 676	‡ 537	344	309	359	2,230	2,620	4,390	783	722	640
13	710	669	527	357	311	378	1,780	2,630	4,500	783	761	‡ 640
14	710	669	508	363	‡ 329	653	3,260	2,860	4,700	795	721	648
15	‡ 710	645	486	363	362	410	3,050	2,940	4,340	795	697	652
16	710	617	483	‡ 361	362	722	6,150	3,170	4,420	786	684	648
17	701	613	478	392	456	994	3,460	3,160	4,460	832	682	‡ 646
18	698	591	473	357	1,510	‡ 747	3,560	3,200	4,240	821	675	648
19	‡ 693	585	‡ 455	340	1,090	493	4,490	3,180	3,830	780	‡ 667	589
20	691	‡ 592	436	342	899	1,580	4,570	‡ 3,260	3,000	767	669	572
21	683	607	411	341	757	518	4,680	3,930	2,630	758	661	621
22	‡ 670	624	386	331	642	684	2,710	4,120	2,840	750	670	622
23	663	626	375	329	531	705	‡ 2,250	4,120	5,700	708	681	576
24	663	628	365	330	467	1,050	1,990	4,110	2,860	693	686	516
25	663	622	354	318	447	1,070	1,810	4,150	2,400	698	675	485
26	663	‡ 624	352	‡ 313	445	1,070	1,700	4,170	2,130	704	661	467
27	677	629	349	306	432	1,090	1,660	4,180	1,720	699	652	457
28	655	619	349	316	419	1,160	1,650	4,160	1,460	688	652	452
29	‡ 652		342	340	‡ 398	1,130	1,590	4,240	1,290	‡ 671	652	452
30	652		338	342	403	1,120	‡ 2,390	4,290	1,170	677	668	522
31	647		335		394		3,390	4,400		674		636
Sum	21,497	17,984	14,769	10,184	14,427	20,144	70,827	107,310	112,200	27,168	20,469	18,611

Current Year 1973 — **Period 1968-1973**

Month	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.	2.14	2.06	† 7	734	31	640	693	42,639	64,532	122,084	40,674
Feb.	2.12	2.01	† 8	710	†18	585	642	35,671	50,839	115,301	22,435
Mar.	2.06	1.73	1	640	30	319	476	29,294	50,353	126,270	19,789
Apr.	1.97	1.70	17	543	18	295	339	20,200	43,026	102,938	20,200
May	2.74	1.69	18	1,690	†11	287	465	28,616	43,098	67,847	28,615
June	4.59	1.75	20	5,930	12	335	671	39,955	60,597	95,484	22,463
July	6.09	2.27	16	9,200	† 5	898	2,280	140,483	101,679	140,961	70,486
Aug.	4.81	2.86	2	6,550	† 9	1,960	3,460	212,846	132,667	212,846	45,474
Sept.	5.25	2.42	1	7,660	30	1,110	3,740	222,545	221,572	432,502	76,940
Oct.	6.72	2.07	5	10,300	29	652	876	53,887	143,587	214,377	53,887
Nov.	2.17	2.07	†12	770	† 1	652	682	40,600	67,979	129,741	37,160
Dec.	2.09	1.88	1	675	†27	452	600	36,914	51,287	71,001	36,914
Yearly	6.72	1.69		10,300		287	1,250	903,650	1,031,216	1,290,242	903,650

‡ Discharge measurement made on this day † And other days

PECOS RIVER NEAR LANGTRY, TEXAS

DESCRIPTION: Cableway, concrete control weir, bubbler gage, and water-stage recorders (graphic and digital) located on the right bank at latitude 29°48'10", longitude 101°26'45", about 7.5 miles east of Langtry, Texas, 9.5 river miles upstream from the Pecos High Bridge, and 15.0 river miles from the confluence with the Rio Grande. This stream enters the Rio Grande at river mile 610.0, 24.1 river miles downstream from Langtry, Texas, and 638.8 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 1,133.08 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 28 discharge measurements during the year, 26 by the United States Section and 2 by the Mexican Section of the Commission, and a continuous record of gage heights. Computations for high flows by shifting control methods. Low and medium flow computations based on stable control weir rating curves defined by meter measurements. Records available: July 1967 through 1973. Records are also available for Pecos River near Comstock, 9.5 river miles downstream, from March 17 through December 3, 1898 and May 1900 through October 7, 1954; for Pecos River near Shumla, 3.5 river miles upstream, from October 8, 1954 through June 1967; and for Pecos River at Mouth near Comstock, from March 1961 through July 2, 1968.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The flood of June 1954, which had a discharge of 948,000 second-feet at the gaging station near the railroad bridge 9.5 river miles downstream, exceeded a gage height of 100 feet at this station. This station was placed in operation June 30, 1967.

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	178	181	181	159	148	106	106	200	103	129	148	141
2 ‡	182	180	185	‡ 159	158	107	104	192	103	127	147	142
3	189	180	179	155	145	107	104	190	106	123	148	‡ 142
4	187	178	178	154	138	109	102	175	‡ 111	169	148	137
5	187	‡ 179	‡ 176	154	137	111	101	166	108	1,420	‡ 148	137
6	185	179	175	151	140	114	102	155	126	379	148	138
7	185	180	172	154	‡ 140	109	99.3	149	149	323	148	141
8	186	196	‡ 172	151	136	107	98.1	148	153	246	154	142
9	182	201	172	‡ 150	131	104	‡ 99.1	141	158	‡ 218	156	142
10	181	193	172	150	129	120	99.1	135	163	205	150	142
11	182	189	172	148	129	‡ 138	101	130	171	191	146	142
12	183	‡ 185	‡ 170	154	130	131	101	126	167	188	146	142
13	182	188	171	157	136	130	102	‡ 123	156	204	145	142
14	181	185	172	158	137	125	109	122	151	185	148	143
15 ‡	182	182	175	157	152	120	170	120	148	178	148	144
16	183	182	176	‡ 158	151	117	532	120	145	171	147	141
17	183	178	178	242	146	129	258	112	141	166	145	‡ 142
18	185	178	180	267	143	129	230	109	138	163	146	141
19	183	178	‡ 180	185	136	112	193	109	137	159	148	139
20	184	‡ 178	174	174	133	510	172	109	136	157	146	137
21	185	183	176	180	‡ 126	‡ 162	160	109	132	154	142	137
22 ‡	182	198	174	181	118	137	149	109	130	151	144	138
23	182	203	174	175	118	131	‡ 143	106	132	‡ 150	145	141
24	182	196	173	168	120	128	137	102	133	143	145	141
25	183	189	166	164	120	120	153	102	130	134	139	140
26	183	187	166	155	117	117	185	99.3	151	128	‡ 139	139
27	185	186	166	151	113	117	185	‡ 99.1	136	121	141	141
28	181	181	173	147	106	117	183	99.1	135	135	137	143
29	180		170	143	107	112	170	93.8	129	157	138	147
30	183		164	143	107	109	169	100	130	150	139	148
31	182		161		104		202	102		149		145
Sum	5,693	5,193	5,373	4,944	4,051	3,985	4,818.6	3,957.3	4,108	6,673	4,369	4,377

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period July 1967-1973 Acre-Feet Average	Maximum	Minimum
Jan.	1.99	1.92	8	198	†15	175	183	11,262	9,940	13,666	7,559
Feb.	2.02	1.91	8	208	5	172	185	10,300	8,927	11,804	7,012
Mar.	1.95	1.87	†23	185	†30	160	173	10,657	9,358	12,422	6,929
Apr.	2.64	1.81	17	591	†29	142	165	9,806	13,004	26,406	8,156
May	1.90	1.66	2	169	31	102	131	8,035	13,814	28,767	7,207
June	3.35	1.60	20	1,610	19	86.9	133	7,904	8,726	11,375	5,726
July	2.37	1.63	16	852	8	94.2	155	9,558	13,584	27,334	4,732
Aug.	2.04	1.63	1	214	29	94.2	128	7,849	31,083	162,055	4,178
Sept.	2.22	1.66	26	278	1	102	137	8,148	16,331	53,371	7,674
Oct.	4.04	1.71	5	3,310	27	115	215	13,236	12,239	26,915	7,123
Nov.	1.56	1.79	† 8	157	†27	136	146	8,666	9,797	16,167	6,589
Dec.	1.83	1.78	†29	148	4	134	141	8,682	9,842	14,325	7,662
Yearly	4.04	1.60		3,310		86.9	158	114,103	157,195	351,354	94,683

‡ Discharge measurement made on this day † And other days

DOLAN SPRINGS NEAR LOMA ALTA, TEXAS

DESCRIPTION: Concrete wall control, bubbler gage, and water-stage recorder located on the left bank of Snake Creek near its mouth, latitude 29°53'40", longitude 100°59'00", and about 12 miles west of Loma Alta, Val Verde County, Texas. Snake Creek enters Dolan Creek from the left side, 0.9 creek mile from the confluence with Devils River. Dolan Creek enters Devils River from the left side, 16.8 river miles upstream from Pafford Crossing, and 42.3 river miles from the confluence with the Rio Grande. The elevation of the zero of the gage has not been determined.

RECORDS: Based on 12 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1966 through 1973.

REMARKS: The flow of these springs is very uniform during periods of dry weather and is not modified by diversions or storage. All storm flow passing this station is deducted and is not included in the tabulation below. This station was established for purposes of correlating the flow of these springs with precipitation data and the flow of other springs in the area. The previous 90° v-notch weir was destroyed by a flood in 1971.

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	10.1	8.0	6.7	5.4	4.5	4.3	4.7	3.6	3.1	‡ 3.2	3.9	3.7
2	‡ 10.0	8.0	6.6	‡ 5.4	4.4	4.2	4.6	3.5	3.1	3.2	4.0	3.7
3	10.0	8.0	6.6	5.4	‡ 4.3	4.1	4.9	3.6	3.0	3.2	4.0	3.7
4	9.8	7.9	6.4	5.2	4.3	‡ 4.1	4.5	3.5	3.0	3.3	4.0	3.7
5	9.8	‡ 7.9	‡ 6.4	5.2	4.4	4.2	4.5	3.5	3.0	3.3	4.0	3.7
6	9.8	7.9	6.4	5.2	4.3	4.3	‡ 4.6	‡ 3.4	‡ 3.0	3.3	4.1	3.7
7	9.5	7.8	6.4	5.2	4.5	4.2	4.8	3.4	3.0	3.3	4.1	3.7
8	9.5	7.8	6.3	5.1	4.5	4.3	4.7	3.4	3.0	3.4	4.1	3.7
9	9.5	7.6	6.3	5.1	4.5	4.3	4.4	3.4	3.0	3.4	4.1	3.8
10	9.4	7.6	6.3	5.1	4.6	4.3	4.6	3.3	3.0	3.4	4.2	3.7
11	9.4	7.5	6.2	5.0	4.5	4.3	4.5	3.3	3.0	3.4	4.2	3.7
12	9.4	7.5	6.2	5.0	4.5	4.4	4.4	3.3	3.0	3.5	‡ 4.2	3.7
13	9.3	7.6	6.2	5.0	4.6	4.4	4.3	3.3	3.1	3.5	4.2	3.7
14	9.3	7.4	6.2	5.0	4.6	4.4	4.3	3.3	3.1	3.5	4.2	3.7
15	9.2	7.4	6.1	4.9	4.6	4.3	4.1	3.3	3.1	3.5	4.1	3.7
16	9.0	7.3	6.1	4.9	4.4	4.4	4.0	3.3	3.1	3.6	4.1	3.7
17	9.0	7.3	6.1	4.9	4.2	4.5	4.0	3.3	3.1	3.6	4.1	3.8
18	9.0	7.2	5.9	4.9	4.4	4.5	4.0	3.2	3.1	3.6	4.1	3.8
19	9.0	7.2	6.0	4.9	4.4	4.3	4.1	3.2	3.1	3.6	4.1	3.7
20	8.8	7.2	5.8	4.9	4.5	4.3	4.2	3.2	3.1	3.7	4.1	3.6
21	8.8	7.0	5.8	4.8	4.5	4.3	4.2	3.2	3.1	3.7	4.0	3.5
22	8.8	7.0	5.8	4.8	4.4	4.4	4.1	3.2	3.1	3.7	4.0	3.5
23	8.7	6.9	5.8	4.8	4.5	4.4	4.1	3.2	3.1	3.7	4.0	3.4
24	8.6	6.9	5.7	4.8	4.5	4.4	4.0	3.2	3.1	3.7	4.0	3.5
25	8.6	6.7	5.6	4.8	4.4	4.5	4.0	3.2	3.2	3.8	4.0	3.5
26	8.5	6.7	5.6	4.6	4.5	4.4	3.9	3.1	3.2	3.8	4.0	3.5
27	8.5	6.8	5.6	4.6	4.5	4.4	3.9	3.1	3.2	3.8	3.9	3.5
28	8.5	6.7	5.7	4.5	4.4	4.4	3.8	3.1	3.2	3.8	3.9	3.6
29	8.3		5.5	4.5	4.4	4.5	3.8	3.1	3.2	3.9	‡ 3.9	3.6
30	8.3		5.5	4.5	4.4	4.5	3.8	3.1	3.2	3.9	3.9	3.6
31	8.3		5.4		4.4		3.8	3.1		3.9		3.6
Sum	282.7	200.8	187.2	148.2	137.9	130.3	131.4	101.9	92.8	110.2	121.5	113.0

Month	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low				Average	Maximum	Minimum
	High	Low	Day		Day						
Jan.	1.92	1.82	1	10.1	†29	∅ 8.3	9.1	561	343	887	77.2
Feb.			† 1	∅ 8.0	†25	∅ 6.7	7.4	410	252	665	66.8
Mar.			1	∅ 6.7	31	∅ 5.4	6.0	371	214	548	70.4
Apr.	1.62	1.49	† 1	5.4	†28	4.5	4.9	294	171	406	65.5
May	1.54	1.47	†10	4.6	17	4.2	4.4	274	212	415	66.2
June	1.48	1.34	†17	4.5	† 3	4.1	4.3	258	205	372	87.9
July	1.40	1.27	3	4.9	31	3.8	4.2	261	193	369	80.9
Aug.			† 1	∅ 3.8	†26	∅ 3.1	3.3	202	317	936	93.3
Sept.			†25	∅ 3.2	† 3	∅ 3.0	3.1	184	356	1,042	85.5
Oct.			†29	∅ 3.9	† 1	∅ 3.2	3.6	219	420	1,134	87.9
Nov.			†10	∅ 4.2	† 1	∅ 3.9	4.0	241	432	1,040	84.5
Dec.	1.34	1.25	† 3	∅ 3.8	23	∅ 3.4	3.6	224	413	1,014	93.9
Yearly				10.1		∅ 3.0	4.8	3,499	3,533	7,361	1,257.2

‡ Discharge measurement made on this day ∅ Mean daily † And other days

DEVILS RIVER AT PAFFORD CROSSING NEAR COMSTOCK, TEXAS
(ABOVE HEAD OF DEVILS BRANCH, AMISTAD RESERVOIR)

DESCRIPTION: Concrete control wall with rectangular notch opening of 900 second-foot capacity, cableway, bubbler gage, water-stage recorders (graphic & digital), and binary decimal transmitter located on the left bank at latitude 29°40'35", longitude 101°00'00", about 11.5 miles east of Comstock, Val Verde County, Texas, and 25.5 river miles from the confluence with the Rio Grande. The confluence is located at river mile 568.1, 0.6 river mile upstream from Amistad Dam, and 680.7 river miles downstream from American Dam at El Paso, Texas. The zero of the gage is 1,131.88 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 29 discharge measurements during the year, 26 by the United States Section and 3 by the Mexican Section of the Commission, a stable rating curve based on meter measurements, and a continuous record of gage heights. Records available: 1960 through 1973. Records are also available from May 1900 through March 1914 for a station 23.8 river miles downstream; from December 1923 through September 1932 for a station 22.8 river miles downstream; from September 2, 1932 through August 1957 for a station 21.0 river miles downstream; from August 7, 1954 through January 1958 for a station 5.4 river miles upstream; and from August 1954 through May 31, 1968 for a station at the mouth 24.7 river miles downstream. A graph of Devils River flow from 1871 through 1939 may be found in Water Bulletin No. 9.

REMARKS: At this station the flow of this spring-fed stream is very uniform during periods of dry weather and is not modified by diversions or storage. The transmitter relays gage height data upon interrogation from the Amistad Dam hydrographic office of the United States Section of the Commission and is also programmed to relay similar data to this same office at predetermined time intervals. Transmission is via radio. In December 1968, the control wall was raised one-half foot and a cable was installed 550 feet upstream.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 173,000 second-feet on August 12, 1972 with a gage height of 16.18 feet. Min. 48.6 second-feet on August 20, 1969.

Average Flow in Second-Feet

Daily:	Max. 77,800	Aug. 15, 1971	Min. 53.7	Aug. 20, 1969
Monthly:	Max. 6,650	Aug. 1971	Min. 64.3	August 1964
Yearly:	Max. 836	1971	Min. 99.9	1968

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	308	272	274	242	221	199	191	223	169	169	214	192
2	314	274	266	241	330	199	‡ 191	227	169	168	212	192
3	326	272	264	233	‡ 384	201	188	198	169	166	211	194
4	315	274	265	232	258	203	188	194	169	175	208	193
5	310	278	261	233	253	206	184	188	185	272	206	193
6	309	280	263	241	257	203	184	186	201	259	204	192
7	311	280	258	241	246	198	183	183	219	243	204	192
8	‡ 304	303	261	226	237	197	196	180	202	230	204	191
9	305	312	258	225	227	204	191	181	184	214	204	188
10	309	296	267	226	228	221	190	178	‡ 179	208	204	‡ 188
11	300	283	261	230	228	205	189	177	177	223	200	188
12	299	‡ 283	‡ 253	235	231	205	186	177	177	212	‡ 200	188
13	304	276	256	238	232	206	181	174	177	358	200	188
14	304	271	254	238	‡ 221	198	193	169	175	399	200	188
15	‡ 304	270	253	244	221	196	207	169	174	‡ 317	200	188
16	303	267	249	‡ 241	221	199	‡ 217	169	184	293	199	188
17	304	279	248	239	221	199	221	166	177	282	196	187
18	299	275	248	240	218	‡ 196	195	166	174	272	197	177
19	292	273	‡ 252	233	216	199	187	166	172	262	200	173
20	280	‡ 280	248	230	218	252	184	‡ 170	173	251	206	173
21	261	‡ 294	244	231	‡ 210	228	182	176	172	241	199	173
22	‡ 280	304	249	229	209	217	178	173	171	236	196	177
23	287	294	257	231	215	207	177	170	177	‡ 232	196	180
24	288	285	271	228	216	203	177	169	‡ 177	226	197	184
25	300	280	248	223	216	202	177	169	177	225	194	184
26	292	‡ 285	‡ 244	214	214	196	177	172	176	225	‡ 192	183
27	273	275	240	214	202	195	175	‡ 172	182	225	192	179
28	262	270	254	213	193	191	175	169	176	229	188	180
29	‡ 277		255	214	193	188	176	169	172	222	192	180
30	276		252	‡ 218	197	189	177	‡ 169	169	218	192	183
31	271		242		196		219	169		217		183
Sum	9,167	7,885	7,915	6,923	7,134	6,107	5,836	5,518	5,355	7,474	6,007	5,739

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1960-1973 Acre-Feet Average	Maximum	Minimum
Jan.	1.84	1.65	† 2	330	31	238	296	18,182	11,612	20,737	4,647
Feb.	1.87	1.69	8	345	1	256	282	15,640	9,624	16,497	3,999
Mar.	1.86	1.64	23	340	31	234	255	15,699	9,288	15,780	4,186
Apr.	1.73	1.57	15	275	28	204	231	13,732	10,505	38,777	4,520
May	2.43	1.53	2	620	†28	188	230	14,150	10,673	32,716	4,517
June	1.74	1.47	†19	279	19	166	204	12,113	16,658	54,328	4,259
July	1.76	1.49	31	239	†26	173	188	11,576	11,044	25,513	4,034
Aug.	1.92	1.45	2	373	12	158	178	10,945	57,489	408,908	3,955
Sept.	1.72	1.48	6	270	1	169	178	10,621	30,809	273,004	5,000
Oct.	2.37	1.47	13	590	† 2	166	241	14,824	17,996	50,845	5,004
Nov.	1.60	1.53	1	216	†27	188	200	11,915	12,747	25,004	4,532
Dec.	1.56	1.49	3	200	†29	173	185	11,383	11,942	23,236	4,697
Yearly	2.43	1.45		620		156	222	160,780	210,387	605,057	72,494

‡ Discharge measurement made on this day † And other days

RIO GRANDE BELOW AMISTAD DAM, NEAR DEL RIO, TEXAS

DESCRIPTION: Cableway, gravity well, concrete control weir, and water-stage recorders (graphic and digital), and binary decimal transmitter located on the left bank at latitude 29°25'30", longitude 101°02'20", and river mile 565.3, 2.2 river miles downstream from Amistad Dam, 10.6 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 683.5 river miles downstream from American Dam at El Paso, Texas. The zero of the gage is 898.94 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based on 39 discharge measurements during the year, 24 by the Mexican Section and 15 by the United States Section of the Commission, and a continuous record of gage heights. Computations for high flows by shifting control methods. Low and medium flow computations based on a stable control weir rating curve defined by meter measurements. Records available: September 1954 through 1973. Records are also available from May 1900 through April 1915 for a station 1.9 miles upstream; from December 1919 through March 1920 for a station 1.7 miles downstream near McKee's Switch; from July 2, 1941 through August 1954, and October 1960 through 1967 for a station at the international highway bridge; and from December 1923 through July 2, 1941, and 1968 through 1973 for a station approximately 10.4 miles downstream.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. On May 31, 1968, Amistad Dam started impounding water. After this day, flow at this station is controlled largely by releases from Amistad Reservoir, 2.3 river miles upstream. The transmitter relays gage height data upon interrogation by telephone via private line to the Amistad office.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,158,000 second-feet on June 28, 1954, determined by slope-area computation, with a gage height of 55.72 feet at the old station site 500 feet downstream. This is the greatest rate of discharge recorded at any point on the Rio Grande. Max. since Amistad Dam, 13,100 second-feet on Sept. 24, 1971. Min. 48.0 second-feet on Dec. 21, 1968 with a gage height of 1.20 feet.

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	79.1	64.3	66.0	315	‡ 9,460	1,080	802	1,140	4,030	1,080	79.5	74.9
2	80.9	66.0	64.3	316	‡ 9,080	1,360	809	1,180	4,030	1,080	79.5	74.9
3	79.1	66.0	64.3	281	9,040	1,350	805	1,500	4,060	1,080	80.5	116
4	‡ 79.1	66.0	62.5	284	8,970	1,350	805	1,490	4,100	1,080	80.5	197
5	80.9	569	64.3	692	8,970	1,340	795	1,480	5,300	1,150	80.2	196
6	79.1	1,620	66.0	1,080	8,860	1,340	798	1,490	6,290	1,080	80.2	186
7	79.1	1,630	67.8	1,060	‡ 8,860	1,350	805	1,490	6,570	1,080	80.2	181
8	80.9	2,050	67.8	1,050	8,830	1,230	819	2,340	7,310	1,080	78.8	181
9	80.9	2,540	67.8	1,160	‡ 8,830	1,170	809	3,230	‡ 5,580	1,080	76.6	181
10	80.9	2,530	78.8	1,310	‡ 7,910	1,180	798	3,230	7,170	1,080	76.6	181
11	77.0	2,520	65.0	1,300	‡ 5,620	1,180	795	3,230	7,170	1,080	76.6	181
12	79.1	2,480	66.0	‡ 1,280	4,590	1,170	‡ 798	‡ 3,230	7,880	1,080	‡ 76.6	181
13	79.1	2,390	67.1	1,300	4,590	1,170	802	2,750	‡ 8,020	1,080	76.6	178
14	79.1	1,830	64.3	1,300	3,570	1,170	805	1,510	7,170	1,080	76.6	186
15	79.1	1,080‡	‡ 62.2	1,300	2,070	1,170	876	1,670	7,170	1,080	78.8	186
16	79.8	1,080	105	1,280	823	1,170	816	2,520	7,170	1,080	‡ 74.9	186
17	80.9	1,080	157	1,280	547	1,170	1,200	3,150	7,170	1,080‡	74.9	194
18	‡ 80.9	1,080	159	1,270	544	1,170	1,520	3,180	5,970	1,080	69.6	183
19	81.9	1,080	157	1,260	540	1,180	1,520	3,210	4,170	3,960	69.6	173
20	81.9	660	157	1,260	540	1,200	1,530	‡ 3,200	3,510	6,070	76.6	189
21	77.7	72.4	158	1,260	544	1,200	1,520	3,210	2,040	6,070	74.9	‡194
22	79.1	72.4	165	1,260	547	1,180	1,530	3,200	1,080	6,070	74.9	194
23	106	‡ 67.8	161	1,270	547	1,180	1,540	‡ 3,670	1,080	6,040	74.9	194
24	178	67.8	160	1,270	632	1,180	1,540	4,060	1,070	6,000	73.1	186
25	160	67.8	157	1,260	740	975	1,540	3,370	1,070	5,970	73.1	186
26	92.9	67.8	159	1,260	733	816	1,530	3,150	1,070	4,130	73.1	194
27	81.2	66.0	164	† 1,260	727	802	1,540	4,100	1,070	2,860	76.6	191
28	74.2	64.3	163	1,270	735	795	1,530	4,100	1,070	2,860	74.9	191
29	77.7		159	1,300	745	‡ 795	1,540	4,100	1,070	1,460	74.9	181
30	77.7		218	3,210	735	798	1,540	4,060	1,070	92.9	74.9	181
31	77.7		274		749		1,540	4,060		72.7		189
Sum	2,681.0	27,027.6	3,667.2	34,998	119,692	34,221	35,597	87,300	131,530	71,165.6	2,288.7	5,486.8

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1968-1973 Acre-Feet Average	Maximum	Minimum
Jan.	0.43	0.20	25	197	20	60.0	86.5	5,318	56,271	91,162	5,318
Feb.	1.80	.23	† 9	2,540	† 1	64.3	968	53,641	137,818	467,202	12,467
Mar.	.52	.20	31	281	16	48.4	118	7,271	50,330	92,735	7,271
Apr.	3.61	.52	30	9,750	3	281	1,170	69,432	59,870	93,899	27,570
May	3.64	.79	1	9,920	†19	530	3,850	237,405	120,722	237,405	24,137
June	1.31	.95	2	1,360	29	777	1,140	67,888	111,129	260,436	16,418
July	1.38	.95	†23	1,550	5	780	1,150	70,584	73,704	140,070	23,182
Aug.	2.30	.98	29	4,130	1	816	2,810	173,166	69,811	173,166	15,589
Sept.	3.28	.39	13	8,230	9	176	4,380	260,814	93,136	260,814	17,606
Oct.	2.79	.23	†19	6,070	31	72.7	2,300	141,193	77,719	149,039	3,734
Nov.	.26	.23	† 3	80.5	†18	69.6	76.3	4,539	38,303	99,274	4,539
Dec.	.43	.26	4	204	† 1	74.9	177	10,873	36,859	98,025	4,859
Yearly	3.64	0.20		9,920		48.4	1,520	1,102,114	925,672	1,198,511	416,788

‡ Discharge measurement made on this day † And other days

CARMINA SPRINGS AT AMISTAD DAM NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 70.6 second-foot capacity and staff gage located on a creek that runs almost parallel to Amistad Dam, about 130 feet from the confluence with the Rio Grande, at latitude 29°26'50", longitude 101°03'35", and about 11.0 miles northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from the Mexican side at river mile 567.3, 0.2 river mile downstream from Amistad Dam, 12.6 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 681.5 river miles downstream from American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: 1969 through 1973.

REMARKS: At least six separate springs have emerged on the watershed of this small creek since operation of Amistad Dam began in May 1968. Prior to this time, flow in this creek was exclusively from storm runoff. All storm water from surface runoff passing this station is deducted and is not included in the tabulation below. On September 24, 1971, a flood destroyed part of the weir.

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	54.7	54.7	54.0	54.0	53.7	51.2	51.2	51.2	51.2	55.1	55.1	55.8
2	54.7	54.7	53.0	54.0	53.3	51.2	51.2	51.2	51.2	55.1	55.4	55.8
3	54.7	54.7	52.3	54.0	53.3	51.2	‡ 51.2	51.2	51.2	55.4	55.4	54.0
4	54.7	54.7	51.2	54.0	53.0	51.2	51.2	51.2	51.2	55.4	55.8	54.7
5	54.7	54.7	‡ 50.1	54.0	53.0	51.2	51.2	51.2	51.2	55.4	55.8	54.7
6	54.7	‡ 54.7	50.1	54.0	52.6	51.2	51.2	51.2	51.2	55.8	55.8	54.7
7	54.7	54.7	50.1	54.0	52.6	51.2	51.2	51.2	51.2	55.8	55.4	54.7
8	‡ 55.1	54.7	50.5	54.0	52.3	51.2	51.2	51.2	51.2	55.8	55.4	54.7
9	55.1	54.7	50.5	‡ 54.0	51.9	51.2	51.2	‡ 51.2	51.2	56.2	55.4	54.7
10	55.1	54.7	50.5	54.0	‡ 51.9	51.2	51.2	51.2	51.2	56.2	55.4	54.7
11	55.1	54.7	50.5	54.0	51.6	‡ 51.2	51.2	51.2	51.2	56.5	55.1	54.7
12	55.1	54.7	50.5	54.0	51.6	51.2	51.2	51.2	51.2	56.5	55.1	54.7
13	55.1	54.7	50.9	54.0	51.2	51.2	51.2	51.2	51.2	56.5	55.1	54.7
14	55.1	54.7	50.9	54.0	51.2	51.2	51.2	51.2	51.2	56.9	55.1	54.7
15	55.1	54.7	50.9	53.7	50.9	51.2	51.2	51.2	51.2	56.9	55.1	54.7
16	55.1	54.7	50.9	53.7	50.9	51.2	51.2	51.2	51.2	56.9	55.1	54.7
17	55.1	55.1	51.2	53.7	50.9	51.2	51.2	51.2	51.2	56.5	55.1	54.7
18	55.1	55.1	51.2	53.7	50.9	51.2	51.2	51.2	51.2	56.5	55.1	54.7
19	55.4	55.1	51.2	53.7	50.9	51.2	51.2	51.2	51.2	56.2	56.5	54.7
20	55.4	55.1	51.2	53.7	50.9	51.2	51.2	51.2	51.2	56.2	55.8	54.7
21	55.4	55.1	51.2	53.7	50.9	51.2	51.2	51.2	51.2	55.8	56.5	54.7
22	55.4	55.1	51.2	53.7	50.9	51.2	51.2	51.2	51.2	55.8	56.5	54.7
23	55.4	55.1	51.6	53.7	50.9	51.2	51.2	51.2	51.2	55.8	56.5	54.7
24	55.4	55.1	51.6	53.7	50.9	51.2	51.2	51.2	51.2	55.4	56.5	54.7
25	55.4	55.1	51.6	53.7	50.9	51.2	51.2	51.2	51.2	55.4	56.5	54.7
26	55.4	55.1	51.6	53.7	50.9	51.2	51.2	51.2	51.2	55.1	55.8	54.7
27	55.4	55.1	51.9	53.7	50.9	51.2	51.2	51.2	51.2	55.1	54.7	54.7
28	55.4	55.1	51.9	53.7	50.9	51.2	51.2	51.2	51.2	55.1	54.7	54.7
29	55.4		51.9	53.7	50.9	51.2	51.2	51.2	51.2	54.7	55.4	54.7
30	55.4		51.9	53.7	50.9	51.2	51.2	51.2	51.2	54.7	55.8	54.7
31	55.4		51.9		50.9		51.2	51.2		55.1		54.7
Sum	1,709.2	1,536.4	1,590.0	1,615.2	1,598.5	1,536.0	1,587.2	1,587.2	1,536.0	1,729.3	1,666.2	1,697.2

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet (mean daily) High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1959-1973 Acre-Feet Average	Maximum	Minimum
Jan.			†19	55.4	† 1	54.7	55.1	3,391	1,533	3,391	354
Feb.			†17	55.1	† 1	54.7	54.7	3,048	1,483	3,048	373
Mar.			1	54.0	† 5	50.1	51.2	3,154	1,541	3,154	525
Apr.			† 1	54.0	†15	53.7	53.7	3,204	1,493	3,204	629
May			1	53.7	†15	50.9	51.6	3,169	1,507	3,169	709
June			† 1	51.2	† 1	51.2	51.2	3,047	1,444	3,047	598
July			† 1	51.2	† 1	51.2	51.2	3,149	1,464	3,149	533
Aug.			† 1	51.2	† 1	51.2	51.2	3,149	1,674	3,149	540
Sept.			† 1	51.2	† 1	51.2	51.2	3,047	1,811	3,047	593
Oct.			†13	56.9	†29	54.7	55.8	3,431	2,011	3,431	830
Nov.			†19	56.5	†27	54.7	55.4	3,305	2,012	3,305	964
Dec.			† 1	55.8	3	54.0	54.7	3,369	2,116	3,369	1,077
Yearly				56.9		50.1	53.0	38,463	20,139	38,463	9,080

‡ Discharge measurement made on this day ∅ Mean daily † And other days

LOURDES, HILDA, ERNESTINA, AND ROSITA SPRINGS NEAR CD. ACUNA, COAHUILA

LOURDES SPRING

DESCRIPTION: Rectangular sharp-crested weir of 28.8 second-foot capacity and staff gage located at latitude 29°26'35", longitude 101°03'30", at the base of the high bank of the Rio Grande, and about 11.1 miles northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from the Mexican side at river mile 566.9, 12.2 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 681.9 river miles downstream from American Dam at El Paso, Texas. The zero of the gage is 926.28 feet above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: 1969 through 1973.
REMARKS: This spring emerged since operation of Amistad Dam began in May 1968. All storm water from surface runoff passing this station is deducted. The daily flow throughout the year was 1.8 second-feet, and the volume for the year amounted to 1,281.1 acre-feet.

HILDA SPRING

DESCRIPTION: Rectangular sharp-crested weir of 53.0 second-foot capacity and staff gage located at latitude 29°26'20", longitude 101°03'35", about 328 feet from the confluence with the Rio Grande, and about 11.0 miles northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from the Mexican side at river mile 566.7, 11.8 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 682.1 river miles downstream from American Dam at El Paso, Texas. The zero of the gage is 908.14 feet above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: 1969 through 1973.
REMARKS: This spring emerged since operation of Amistad Dam began in May 1968. All storm water from surface runoff passing this station is deducted. The daily flow throughout the year was 3.5 second-feet, and the volume for the year amounted to 2,555 acre-feet.

ERNESTINA SPRING

DESCRIPTION: A 90° V-notch weir of 1.4 second-foot capacity and staff gage located at the spring on the right bank of Arroyo del Buey about 100 feet from the right bank of the Rio Grande at latitude 29°24'20", longitude 101°02'15", and about 8.5 miles northwest of Cd. Acuna, Coahuila. This spring enters the Rio Grande at river mile 564.0, 9.3 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, 3.5 river miles downstream from Amistad Dam, and 684.8 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.
RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: November 7, 1961 through 1973.
REMARKS: The flow of this spring is small and very uniform except during periods of very heavy rainfall, at which time the capacity of the weir may be exceeded. The daily flow throughout the year was 0.106 second-foot, or 48 gallons per minute. The volume for the year amounted to 78.0 acre-feet. Waters from this spring have a high sulphur content.

ROSITA SPRING

DESCRIPTION: Cipolletti weir of 3.5 second-foot capacity and staff gage located at the spring about 65 feet from the right bank of the Rio Grande at latitude 29°21'55", longitude 101°00'25", and about 5.5 miles northwest of Cd. Acuna, Coahuila. This spring, located in Mexico, enters the Rio Grande at river mile 560.4, 5.7 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, 7.1 river miles downstream from Amistad Dam, and 688.4 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.
RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: November 17, 1961 through 1973.
REMARKS: The flow of this spring is very uniform during periods of dry weather and is not modified by diversions or storage. The daily flow throughout the year ranged from 0.106 to 0.177 second-foot, or 48 to 79 gallons per minute, and the monthly average ranged from 0.141 to 0.177 second-foot, or 63 to 79 gallons per minute. The total volume for the year amounted to 114 acre-feet.

SPRING M-15 AND SPRING M-5 NEAR CD. ACUNA, COAHUILA

SPRING M-15

DESCRIPTION: Rectangular sharp-crested weir of 8.1 second-foot capacity and staff gage located at latitude 29°25'10", longitude 101°02'45", about 1300 feet from the confluence with the Rio Grande, and about 9.4 miles northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from the Mexican side at river mile 565.0, 10.3 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 683.8 river miles downstream from American Dam at El Paso, Texas. The zero of the gage is 925.13 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: 1969 through 1973.

REMARKS: This spring emerged since operation of Amistad Dam began in May 1968. All storm water from surface runoff passing this station is deducted and is not included in the tabulation below.

Month	Current Year 1973								Period 1969-1973		
	Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.			† 1	2.1	† 1	2.1	2.1	131	60.8	131	21.1
Feb.			†23	2.5	† 1	2.1	2.1	122	55.1	122	19.5
Mar.			† 1	2.1	†20	1.8	2.1	122	57.6	122	21.9
Apr.			† 1	1.8	† 1	1.8	1.8	105	55.9	105	21.1
May			† 1	1.8	† 1	1.8	1.8	109	64.9	109	21.9
June			† 1	1.8	†19	1.4	1.8	96.5	48.6	96.5	21.1
July			†14	1.8	† 1	1.4	1.8	99.7	50.3	99.7	21.1
Aug.			† 1	2.1	†21	1.8	2.1	122	58.4	122	0
Sept.			† 1	1.8	† 1	1.8	1.8	105	56.7	105	0
Oct.			†20	2.1	† 1	1.8	1.8	117	60.8	117	0
Nov.			† 1	2.1	†28	1.8	2.1	124	68.1	124	21.1
Dec.			† 1	1.8	† 1	1.8	1.8	109	73.8	131	21.9
Yearly				2.5		1.4	1.8	1,362.2	711.0	1,362.2	257.2

SPRING M-5

DESCRIPTION: Rectangular sharp-crested weir of 17.7 second-foot capacity and staff gage located at latitude 29°25'05", longitude 101°02'35", at the base of the high bank of the Rio Grande, and about 9.2 miles northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from the Mexican side at river mile 564.8, 10.1 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 684.0 river miles downstream from American Dam at El Paso, Texas. The zero of the gage is 932.38 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: 1969 through 1973.

REMARKS: This spring emerged since operation of Amistad Dam began in May 1968. All storm water from surface runoff passing this station is deducted and is not included in the tabulation below.

Month	Current Year 1973								Period 1969-1973		
	Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.			† 1	2.5	† 1	2.5	2.5	152	130	152	86.7
Feb.			† 1	2.5	† 1	2.5	2.5	137	114	142	78.6
Mar.			† 1	2.5	† 1	2.5	2.5	152	119	152	64.9
Apr.			†23	2.8	† 1	2.5	2.5	152	115	152	63.2
May			† 1	2.8	† 1	2.8	2.8	173	122	173	64.9
June			† 1	2.5	† 1	2.5	2.5	147	107	147	63.2
July			† 1	2.5	† 1	2.5	2.5	152	103	155	43.8
Aug.			† 1	2.5	† 1	2.5	2.5	152	115	162	43.8
Sept.			† 1	2.5	† 1	2.5	2.5	147	113	158	42.2
Oct.			† 1	2.5	† 1	2.5	2.5	152	119	161	43.8
Nov.			† 1	2.5	† 1	2.5	2.5	147	118	147	63.2
Dec.			† 1	2.5	† 1	2.5	2.5	152	122	152	64.9
Yearly				2.8		2.5	2.5	1,815	1,397	1,827	723.2

∅ Mean daily † And other days

ARROYO JABONCILLOS NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 70.6 second-foot capacity and staff gage located at latitude 29°24'25", longitude 101°02'25", about 660 feet from the confluence with the Rio Grande, and about 8.6 miles northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from the Mexican side at river mile 564.5, 9.8 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 684.3 river miles downstream from American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: 1969 through 1973.

REMARKS: At least 9 separate springs have emerged along this creek since operation of Amistad Dam began in May 1968. Prior to this time, flow in this creek was exclusively from storm runoff. All storm water from surface runoff passing this station is deducted and is not included in the tabulation below.

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	71.7	73.1	74.5	73.5	72.4	66.4	66.4	67.1	66.0	‡ 68.2	71.0	71.3
2	72.0	73.5	74.5	‡ 73.5	72.4	66.4	‡ 66.4	67.5	65.7	68.2	71.3	72.0
3	72.0	73.5	74.5	73.5	72.4	66.4	67.1	67.8	‡ 65.7	68.2	71.7	‡ 69.6
4	72.0	73.5	74.5	73.5	72.4	‡ 66.4	66.4	68.2	65.7	68.5	71.7	70.3
5	72.0	73.5	‡ 74.5	73.5	72.4	66.4	66.4	68.5	66.0	68.5	72.0	70.3
6	72.0	‡ 73.5	74.5	73.5	72.0	66.4	66.4	‡ 68.9	66.0	68.5	72.0	70.3
7	72.0	73.5	74.5	73.1	72.0	66.4	66.4	68.9	66.0	68.5	72.0	70.3
8	‡ 72.0	73.8	74.5	73.1	72.0	66.4	66.4	68.5	66.4	68.5	72.0	71.3
9	72.0	74.2	74.5	73.1	72.0	66.4	66.4	68.5	66.4	68.9	72.0	71.3
10	72.4	74.5	74.2	73.1	‡ 72.0	66.4	68.9	68.5	66.4	68.9	72.0	71.3
11	72.4	74.9	74.2	73.1	72.0	66.4	68.9	68.2	66.7	68.9	72.0	71.3
12	72.7	75.2	74.2	73.1	71.7	66.4	68.2	68.2	66.7	68.9	‡ 72.7	71.3
13	72.7	75.2	74.2	73.1	71.7	66.4	67.1	68.2	66.7	69.2	72.7	71.3
14	73.1	75.2	74.2	73.1	71.3	66.4	68.9	67.8	66.7	69.2	72.7	71.3
15	73.1	75.2	74.2	73.1	71.3	66.4	68.9	67.8	67.1	69.2	72.7	71.3
16	73.1	75.2	73.8	73.1	71.0	66.4	68.9	67.8	67.1	69.2	72.7	71.3
17	73.1	74.9	73.8	72.7	71.0	66.4	68.2	67.5	67.1	69.2	72.7	71.3
18	73.1	74.9	73.8	72.7	70.6	66.4	67.1	67.5	67.5	69.6	72.7	71.3
19	73.1	74.9	73.8	72.7	70.6	66.4	68.9	67.5	67.5	69.6	72.7	68.5
20	73.1	74.9	73.8	72.7	70.3	66.4	68.9	67.1	67.5	69.6	70.3	68.5
21	73.1	74.9	73.8	72.7	70.3	66.4	68.9	67.1	67.8	69.6	71.7	69.9
22	73.1	74.9	73.8	72.7	69.9	66.4	68.2	67.1	67.8	69.6	71.7	70.3
23	73.1	74.9	73.8	72.7	69.9	66.4	67.1	66.7	67.8	69.9	71.7	70.3
24	73.1	74.9	73.8	72.7	69.6	66.4	67.1	66.7	68.2	69.9	71.7	71.3
25	73.1	74.9	73.8	72.7	69.6	66.4	67.1	66.7	68.2	69.9	71.7	71.3
26	73.1	74.9	73.8	72.4	69.2	66.4	67.1	66.7	68.2	69.9	71.7	71.3
27	73.1	74.9	73.8	72.4	69.2	66.4	67.1	66.4	68.5	70.3	70.3	71.3
28	73.1	74.5	73.5	72.4	68.9	66.4	67.1	66.4	68.5	70.3	69.6	71.3
29	73.1		73.5	72.4	68.9	66.4	67.1	66.4	68.9	70.3	71.3	71.3
30	73.1		73.5	72.4	68.5	66.4	67.1	66.0	68.9	70.6	71.3	70.3
31	73.1		73.5		68.5		67.1	66.0		70.6		70.3
Sum	2,253.7	2,085.9	2,295.3	2,188.3	2,196.0	1,992.0	2,092.2	2,092.2	2,013.7	2,148.4	2,154.3	2,194.3

Month	Current Year 1973 — Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Period 1969-1973 — Acre-Feet		
			High		Low				Average	Maximum	Minimum
	High	Low	Day		Day						
Jan.			†14	73.1	1	71.7	72.7	4,471	2,095	4,471	349
Feb.			†12	75.2	1	73.1	74.5	4,136	1,921	4,136	381
Mar.			† 1	74.5	†28	73.5	74.2	4,552	2,071	4,552	526
Apr.			† 1	73.5	†26	72.4	73.1	4,340	1,995	4,340	636
May			† 1	72.4	†30	68.5	71.0	4,356	1,934	4,356	721
June			† 1	66.4	† 1	66.4	66.4	3,951	1,862	3,951	678
July			†10	68.9	† 1	66.4	67.5	4,148	1,947	4,148	769
Aug.			† 6	68.9	†30	66.0	67.5	4,149	2,172	4,149	782
Sept.			†29	68.9	† 2	65.7	67.1	3,994	2,367	3,994	782
Oct.			†30	70.6	† 1	68.2	69.2	4,261	2,717	4,279	1,09[illegible]
Nov.			†12	72.7	28	69.6	71.7	4,274	2,740	4,274	1,252
Dec.			2	72.0	†19	68.5	70.6	4,354	2,377	4,401	1,398
Yearly				75.2		65.7	70.3	50,936	26,758	50,986	9,850

‡ Discharge measurement made on this day ∅ Mean daily † And other days

ARROYO DEL BUEY AND ARROYO DE LA TREINTA Y UNA NEAR CD. ACUNA, COAHUILA

ARROYO DEL BUEY

DESCRIPTION: Cipolletti weir of 35.3 second-foot capacity, located at latitude 29°24'20", longitude 101°02'25", 0.2 creek mile from the confluence with the Rio Grande, and about 8.5 miles northwest of Cd. Acuna, Coahuila. This stream enters the Rio Grande from the Mexican side at river mile 564.0, 3.5 river miles downstream from Amistad Dam, 9.3 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 684.8 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: November 1961 through 1973.

REMARKS: The flow of this stream is not modified by diversions or storage. Prior to 1969 discharges were based on a continuous record of gage heights and the weir discharge table. Storm flow is deducted and not included in the tabulation below. This station was established for investigational purposes in connection with Amistad Dam to determine what effect storage in Amistad Reservoir will have on the flow of this stream. At approximately 0.3 creek mile upstream from the weir four springs have emerged since Amistad Reservoir storage began. Backwater from the Rio Grande will affect the flow of this stream when the flow in the river is approximately 20,000 second-feet.

Month	Current Year 1973								Period #Nov. 1961-1973		
	Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	High	Low	Day		Day				** Average	Maximum	Minimum
Jan.			† 1	7.4	† 1	7.4	7.4	456	203	528	6.8
Feb.			† 1	7.4	† 1	7.4	7.4	412	182	477	5.4
Mar.			† 1	7.4	† 1	7.4	7.4	456	195	520	9.3
Apr.			† 1	7.4	† 1	7.4	7.4	441	245	540	6.3
May			† 1	7.4	†23	7.1	7.4	450	256	544	10.9
June			†18	7.4	† 1	7.1	7.1	429	221	492	6.3
July			† 1	7.4	†22	7.1	7.4	449	195	503	6.5
Aug.			† 1	7.1	† 1	7.1	7.1	435	226	517	6.7
Sept.			† 1	7.1	† 1	7.1	7.1	420	248	493	6.6
Oct.			†20	7.8	† 1	7.4	7.4	465	267	513	6.5
Nov.			† 1	7.8	†28	7.4	7.8	460	223	483	6.3
Dec.			† 1	7.4	† 1	7.4	7.4	456	228	536	6.5
Yearly				7.8		7.1	7.4	5,329	2,689	6,031	216.8

ARROYO DE LA TREINTA Y UNA

DESCRIPTION: Cipolletti weir of 35.3 second-foot capacity, located at latitude 29°22'40", longitude 101°01'10", 0.6 creek mile from the confluence with the Rio Grande, and about 6.5 miles northwest of Cd. Acuna, Coahuila. This stream enters the Rio Grande from the Mexican side at river mile 561.2, 6.3 river miles downstream from Amistad Dam, 6.5 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 687.6 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: May 1961 through 1973.

REMARKS: The flow of this stream is very uniform during periods of dry weather and is not modified by diversions or storage. Prior to 1969 discharges were based on a continuous record of gage heights and the weir discharge table. Storm flow is deducted and not included in tabulation below. This station was established for investigational purposes in connection with Amistad Dam to determine what effect storage in Amistad Reservoir will have on the flow of this stream. It is estimated that backwater from the Rio Grande will affect the flow at this station only during times of extremely high releases.

Month	Current Year 1973								Period #May 1961-1973		
	Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	High	Low	Day		Day				** Average	Maximum	Minimum
Jan.			† 1	4.2	† 1	4.2	4.2	260	109	260	15.2
Feb.			† 1	4.2	† 1	4.2	4.2	235	101	255	13.9
Mar.			31	4.9	† 1	4.2	4.8	275	109	275	14.2
Apr.			† 1	4.9	†17	4.6	4.9	285	139	285	10.5
May			1	4.6	† 2	4.2	4.2	261	119	261	5.9
June			† 1	4.2	†19	3.9	4.2	244	104	244	4.2
July			† 1	3.9	† 1	3.9	3.9	239	98.9	239	0
Aug.			†21	4.2	† 1	3.9	3.9	246	106	276	0
Sept.			† 1	4.2	† 1	4.2	4.2	252	137	257	13.1
Oct.			†28	4.6	† 1	3.9	4.2	257	145	272	12.1
Nov.			† 1	4.6	† 1	4.6	4.6	273	126	273	14.2
Dec.			† 1	4.6	† 1	4.6	4.6	282	126	282	15.2
Yearly				4.9		3.9	4.2	3,109	1,419.9	3,109	250.4

** See explanation in REMARKS above ∅ Mean daily † And other days
\# Some months missing

MARIS SPRING NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 106 second-foot capacity and staff gage located at the spring about 100 feet from the right bank of the Rio Grande at latitude 29°24'00", longitude 101°01'55", and about 6 miles northwest of Cd. Acuna, Coahuila. This spring enters the Rio Grande at river mile 563.5, 9.8 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, 4.0 river miles downstream from Amistad Dam, and 685.3 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on periodic staff gage readings and the weir discharge table. Mean daily discharges determined by prorating between readings. Records available: November 14, 1961 through 1973.

REMARKS: The flow of this spring is very uniform during periods of dry weather and is not modified by diversions or storage. This station was established for investigational purposes in connection with Amistad Dam to determine what effect storage in Amistad Reservoir will have on the flow of this spring. All storm water from surface runoff passing this station is deducted and is not included in the tabulation below. Prior to May 1969 the weir had an 11.1 second-foot capacity.

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	15.2	15.2	15.2	14.8	14.5	14.5	14.1	14.8	13.8	‡ 13.8	21.5	17.3
2	15.2	15.2	15.2	14.8	14.5	14.5	‡ 14.1	14.8	13.8	13.8	21.5	17.3
3	15.2	15.2	15.2	14.8	14.5	14.5	14.1	14.8	‡ 13.8	13.8	21.2	‡ 17.3
4	15.2	15.2	15.2	14.8	14.5	‡ 14.5	14.1	14.8	13.8	13.8	21.2	17.3
5	15.2	15.2	‡15.2	14.8	14.5	14.5	14.1	14.8	13.8	24.7	‡ 21.2	17.3
6	15.2	‡ 15.2	15.2	14.8	14.5	14.5	14.1	‡ 14.8	13.8	24.4	21.2	16.8
7	15.2	15.2	15.2	14.8	14.5	14.5	14.1	14.8	13.8	24.4	20.8	16.8
8	‡ 15.2	15.2	15.2	14.8	14.5	14.5	14.1	14.8	13.8	24.0	20.8	16.8
9	15.2	15.2	15.2	‡ 14.8	14.5	14.5	14.1	14.8	13.8	23.7	20.8	16.8
10	15.2	15.2	15.2	14.8	‡ 14.5	14.5	14.1	14.8	13.8	23.7	20.5	16.8
11	15.2	15.2	15.2	14.8	14.5	14.5	14.5	14.5	13.8	23.3	20.5	16.8
12	15.2	15.2	15.2	14.8	14.5	14.5	14.5	14.5	13.8	23.3	20.5	16.8
13	15.2	15.2	15.2	14.8	14.5	14.5	14.5	14.5	13.8	23.0	20.1	16.8
14	15.2	15.2	15.2	14.8	14.5	14.5	14.5	14.5	13.8	23.0	20.1	16.8
15	15.2	15.2	15.2	14.8	14.5	14.5	14.5	14.5	13.8	22.6	19.8	16.2
16	15.2	15.2	15.2	14.8	14.5	14.5	14.5	14.5	13.8	22.6	19.8	16.2
17	15.2	15.2	14.8	14.8	14.5	14.5	14.5	14.5	13.8	22.6	19.4	16.2
18	15.2	15.2	14.8	14.8	14.5	14.5	14.5	14.5	13.8	22.6	19.4	16.2
19	15.2	15.2	14.8	14.8	14.5	14.1	14.5	14.5	13.8	22.6	19.1	16.2
20	15.2	15.2	14.8	14.8	14.5	14.1	14.5	14.5	13.8	22.2	19.1	16.2
21	15.2	15.2	14.8	14.5	14.5	14.1	14.5	14.1	13.8	22.2	19.1	16.2
22	15.2	15.2	14.8	14.8	14.5	14.1	14.5	14.1	13.8	22.2	18.7	16.2
23	15.2	15.2	14.8	14.8	14.5	14.1	14.5	14.1	13.8	22.2	18.7	16.2
24	15.2	15.2	14.8	14.8	14.5	14.1	14.5	14.1	13.8	22.2	18.4	16.2
25	15.2	15.2	14.8	14.5	14.5	14.1	14.5	14.1	13.8	21.9	18.4	16.2
26	15.2	15.2	14.8	14.5	14.5	14.1	14.5	14.1	13.8	21.9	18.0	16.2
27	15.2	15.2	14.8	14.5	14.5	14.1	14.5	14.1	13.8	21.9	18.0	16.2
28	15.2	15.2	14.8	14.5	14.5	14.1	14.5	14.1	13.8	21.5	17.7	15.5
29	15.2		14.8	14.5	14.5	14.1	14.8	14.1	13.8	21.5	17.7	15.5
30	15.2		14.8	14.5	14.5	14.1	14.8	13.8	13.8	21.5	17.3	15.5
31	15.2		14.8		14.5		14.8	13.8		21.5		15.5
Sum	471.2	425.8	465.2	442.2	449.5	430.2	446.4	447.5	414.0	665.4	590.5	503.5

Month	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Period #Dec. 1961-1973 Acre-Feet		
			High		Low						
	High	Low	Day		Day				**Average	Maximum	Minimum
Jan.			† 1	15.2	† 1	15.2	15.2	934	356	934	4.4
Feb.			† 1	15.2	† 1	15.2	15.2	843	311	843	4.1
Mar.			† 1	15.2	†17	14.8	14.8	923	330	923	4.9
Apr.			† 1	14.8	†25	14.5	14.8	878	334	878	4.2
May			† 1	14.5	† 1	14.5	14.5	890	436	976	8.7
June			† 1	14.5	†29	14.1	14.5	853	383	917	5.6
July			†29	14.8	† 1	14.1	14.5	885	366	977	7.9
Aug.			† 1	14.8	†30	13.8	14.5	883	390	1,004	8.2
Sept.			† 1	13.8	† 1	13.8	13.8	820	545	1,111	9.4
Oct.			5	24.7	† 1	13.8	21.5	1,326	599	1,420	9.8
Nov.			† 1	21.5	31	17.3	19.8	1,171	512	1,338	4.2
Dec.			† 1	17.3	†25	15.5	16.2	1,010	438	1,107	4.4
Yearly				24.7		13.8	15.9	11,421	4,972	11,421	140.2

‡ Discharge measurement made on this day # Some months missing ∅ Mean daily
** See explanation in REMARKS above † And other days

EIGHT MILE CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Concrete wall with 90° V-notch weir of 6.9 second-foot capacity, bubbler gage, and water-stage recorder located on the left bank at latitude 29°24'05", longitude 101°00'55", 0.8 creek mile from the confluence with the Rio Grande, and about 8 miles northwest of Del Rio, Texas. This stream enters the Rio Grande from the United States side at river mile 562.9, 4.6 river miles downstream from Amistad Dam, 8.2 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 685.9 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on a continuous record of gage heights and the weir discharge table. Records available: March 1961 through 1973.

REMARKS: The source of flow of this stream is from surface runoff during rainy periods and the subsequent flow from underground seepage as a result of such rains. **Flows of 0.05 second-foot or less are shown as zero in the discharge tabulations; however, the monthly volumes in the annual and period summary are based on the sum of mean daily discharges computed to the nearest hundredth of a second-foot when the mean daily flow is less than 0.1 second-foot. All storm water from surface runoff passing this station is deducted and is not included in the tabulation below. This station was established for investigational purposes in connection with Amistad Dam to determine what effect storage in Amistad Reservoir may have on the flow of this stream.

EXTREME FLOWS FROM RECORDS:

			Average Flow in Second-Feet			
Daily:	Max.	5.4	Oct. 6, 1973	Min.	0	Occasionally
Monthly:	Max.	4.0	Dec. 1973	Min.	0	Occasionally
Yearly:	Max.	3.7	1973	Min.	0	Several years

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.6	3.6	4.1	3.7	4.0	3.2	3.5	3.9	3.3	3.7	3.7	4.3
2	3.5	3.6	4.0	3.8	4.0	3.2	3.4	3.8	3.3	3.7	3.7	4.4
3	3.6	3.6	4.1	3.6	4.0	3.2	3.3	3.6	3.3	3.8	3.6	4.3
4	3.6	3.6	3.9	3.5	4.0	3.2	3.3	3.6	3.3	3.9	3.8	4.2
5	3.6	3.7	4.0	3.5	4.0	3.2	3.4	3.6	3.1	4.6	3.6	4.1
6	3.5	3.7	4.0	3.6	3.9	3.1	3.4	3.4	3.2	5.4	3.6	4.0
7	3.6	3.8	3.9	3.8	3.8	3.0	3.3	3.3	3.8	4.7	3.7	4.1
8	3.4	3.6	4.0	3.3	3.8	3.0	3.4	3.3	3.6	4.3	3.7	4.2
9	3.3	3.6	4.0	3.5	3.8	3.2	3.5	3.3	3.4	4.2	3.6	4.0
10	3.4	3.6	4.1	3.5	3.7	3.3	3.4	3.2	3.3	4.0	3.6	4.0
11	3.3	3.6	4.0	3.6	3.6	4.1	3.3	2.9	3.5	4.1	3.6	4.0
12	3.4	3.6	3.9	3.9	3.6	4.9	3.3	2.8	3.4	4.3	3.8	4.1
13	3.5	3.6	4.0	3.8	3.6	4.3	3.3	2.8	3.4	4.0	3.9	4.0
14	3.6	3.6	3.9	4.0	3.6	3.9	3.4	2.8	3.3	3.9	4.0	4.0
15	3.6	3.6	3.8	4.0	3.5	3.8	4.0	2.8	3.3	4.0	3.8	3.7
16	3.6	3.6	3.7	3.8	3.5	3.8	5.4	2.9	3.3	4.0	3.7	3.7
17	3.6	3.8	3.8	3.9	3.3	3.6	4.9	2.8	3.4	3.8	3.9	3.8
18	3.6	3.7	3.8	4.0	3.2	3.6	4.4	2.8	3.3	3.8	4.0	3.9
19	3.4	3.8	3.9	4.0	3.3	3.6	4.1	2.8	3.4	3.8	4.0	3.5
20	3.6	3.7	3.8	3.9	3.3	3.9	4.0	2.9	3.3	3.8	4.0	3.6
21	3.4	4.1	3.7	3.9	3.3	3.8	4.0	2.9	3.3	3.7	3.9	3.7
22	3.4	4.4	3.8	3.9	3.2	3.7	3.9	2.8	3.3	3.6	4.0	3.8
23	3.3	4.1	4.0	3.9	3.3	3.6	3.8	2.9	3.4	3.6	4.1	3.9
24	3.3	4.0	4.0	3.9	3.4	3.9	3.7	2.9	3.5	3.7	4.1	3.9
25	3.7	3.8	4.0	3.9	3.3	3.6	3.7	3.0	3.4	3.6	4.1	3.9
26	3.6	4.0	3.8	3.9	3.3	3.6	3.6	3.0	3.5	3.7	4.1	3.9
27	3.6	3.8	3.8	3.9	3.2	3.7	3.6	3.0	3.3	3.7	4.0	4.0
28	3.3	4.0	3.9	3.9	3.0	3.6	3.6	3.1	3.4	3.6	4.0	4.0
29	3.5		3.8	4.0	3.1	3.6	3.6	3.3	3.5	3.6	4.0	4.1
30	3.6		3.8	4.0	3.1	3.6	3.6	3.3	3.5	3.6	4.2	4.3
31	3.6		3.7		3.1		4.0	3.3		3.7		4.0
Sum	108.6	105.2	121.0	113.9	108.8	107.8	115.1	96.8	101.3	121.9	115.8	123.4

Month	Current Year 1973 Extreme Gage Feet High	Low	Ø Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period #Mar. 1961-1973 Acre-Feet ** Average	Maximum	Minimum
Jan.	1.21	1.09	25	3.7	† 9	3.3	3.5	215	25.0	215	0
Feb.	1.29	1.10	22	4.4	† 1	3.6	3.8	209	23.6	209	0
Mar.	2.04	1.13	† 1	4.1	†16	3.7	3.9	240	25.8	240	0
Apr.	2.11	1.10	†14	4.0	8	3.3	3.8	226	31.6	226	0
May	1.28	.91	† 1	4.0	28	3.0	3.5	216	29.2	216	0
June	3.44	1.03	12	4.9	† 7	3.0	3.6	214	28.3	214	0
July	2.44	1.04	16	5.4	† 3	3.3	3.7	228	26.7	228	0
Aug.	1.22	1.00	1	3.9	†12	2.8	3.1	192	37.5	192	0
Sept.	1.73	1.02	7	3.8	5	3.1	3.4	201	32.7	201	0
Oct.	1.57	1.11	6	5.4	†22	3.9	3.9	242	44.9	242	0
Nov.	1.27	1.14	30	4.2	† 3	3.5	3.9	230	38.4	230	0
Dec.	1.27	1.13	2	4.4	19	3.9	4.0	245	42.1	245	0
Yearly	3.44	0.91		5.4		2.8	3.7	2,658	385.8	2,658	3.4

Some months missing ** See explanation in REMARKS above Ø Mean daily † And other days

MCKEE SPRING NEAR DEL RIO, TEXAS

DESCRIPTION: Cipolletti weir of 21.5 second-foot capacity, gravity well, and water-stage recorder located on the source pool of this spring which is located on the left flood plain of the Rio Grande at latitude 29°23' 35", longitude 101°01'15", about 150 feet from the edge of the low-flow channel and about 8 miles northwest of Del Rio, Texas. Water from this spring enters the Rio Grande at river mile 562.7, 4.8 river miles downstream from Amistad Dam, and 686.1 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 894.59 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on a continuous record of gage heights and the weir discharge table. Records available: November 1961 through 1973.

REMARKS: The flow of this spring is uniform during periods of dry weather and is not modified by diversions or storage. It is estimated that backwater from the Rio Grande will reach the emergence of this spring when the river flow is approximately 14,000 second-feet. This station was established for investigational purposes in connection with Amistad Dam to determine what effect storage in Amistad Reservoir may have on the flow of this spring.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Second-Feet			
Daily:	Max. 9.1	Aug. 15, 1972	Min. 0	Occasionally
Monthly:	Max. 8.1	Sept. 1972	Min. 0	Occasionally
Yearly:	Max. 6.9	1972 & 1973	Min. 0	1963

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.9	7.0	7.4	7.4	7.5	6.8	6.9	6.9	6.5	6.6	6.6	6.3
2	6.9	7.0	7.4	7.4	7.7	6.8	6.9	6.8	6.6	6.6	6.6	6.3
3	6.9	7.0	7.4	7.4	7.7	6.8	6.8	6.9	6.6	6.6	6.6	6.3
4	6.9	7.0	7.4	7.4	7.7	6.8	6.8	6.9	6.6	6.6	6.6	6.3
5	6.9	7.2	7.4	7.4	7.7	6.6	6.8	6.9	6.6	7.4	6.5	6.3
6	6.9	7.2	7.4	7.4	7.7	6.6	6.8	6.9	6.8	6.9	6.5	6.3
7	6.9	7.4	7.4	7.4	7.7	6.6	6.8	6.9	6.8	6.9	6.5	6.3
8	6.9	7.4	7.4	7.5	7.7	6.6	6.8	6.9	6.8	6.8	6.5	6.3
9	6.9	7.4	7.4	7.5	7.7	6.6	6.8	6.9	6.8	6.6	6.5	6.3
10	6.9	7.4	7.4	7.5	7.7	6.8	6.8	6.9	6.8	6.6	6.5	6.3
11	6.9	7.4	7.4	7.5	7.7	7.2	6.9	6.9	6.8	6.6	6.3	6.3
12	6.9	7.4	7.4	7.5	7.5	7.0	7.0	6.9	6.8	6.6	6.3	6.3
13	6.9	7.4	7.4	7.4	7.5	6.8	7.2	6.8	6.8	6.6	6.3	6.3
14	6.9	7.4	7.4	7.5	7.4	6.6	7.2	6.6	6.8	6.6	6.3	6.3
15	6.9	7.4	7.4	7.4	7.2	6.6	7.4	6.5	6.8	6.6	6.3	6.3
16	6.9	7.4	7.4	7.4	7.2	6.6	7.5	6.6	6.8	6.6	6.3	6.3
17	6.9	7.4	7.4	7.4	7.2	6.8	7.5	6.6	6.8	6.6	6.3	6.3
18	6.9	7.4	7.4	7.4	7.2	6.9	7.5	6.6	6.8	6.6	6.3	6.3
19	6.9	7.4	7.4	7.4	7.2	6.8	7.5	6.6	6.8	6.8	6.3	6.3
20	6.9	7.4	7.4	7.4	7.0	6.9	7.5	6.6	6.8	6.9	6.3	6.3
21	7.0	7.4	7.4	7.4	7.0	6.9	7.5	6.6	6.6	6.9	6.3	6.3
22	7.0	7.4	7.4	7.4	7.0	6.9	7.4	6.6	6.6	6.9	6.3	6.3
23	7.0	7.4	7.4	7.4	7.0	6.9	7.2	6.8	6.5	6.9	6.3	6.3
24	7.0	7.4	7.5	7.4	7.0	6.9	7.0	6.8	6.5	6.9	6.3	6.3
25	7.0	7.4	7.4	7.4	7.0	6.9	6.9	6.8	6.5	6.9	6.3	6.3
26	6.9	7.4	7.4	7.4	7.0	6.9	6.9	6.5	6.5	6.8	6.3	6.3
27	6.9	7.4	7.4	7.4	6.9	6.9	6.9	6.6	6.5	6.8	6.3	6.3
28	7.0	7.4	7.4	7.4	6.9	6.9	6.9	6.5	6.5	6.8	6.3	6.3
29	7.0		7.4	7.4	6.8	6.8	6.9	6.5	6.6	6.6	6.3	6.3
30	7.0		7.4	7.4	6.8	6.8	6.9	6.5	6.8	6.6	6.3	6.3
31	7.0		7.4		6.9		6.9	6.5		6.6		6.3
Sum	214.8	205.2	229.5	222.6	226.2	204.0	218.8	208.3	200.5	208.8	191.4	195.3

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	∅ Extreme Second-Feet High Day	∅ Extreme Second-Feet High	∅ Extreme Second-Feet Low Day	∅ Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period Nov. 1961-1973 Acre-Feet Average	Maximum	Minimum
Jan.	0.71	0.70	†21	7.0	† 1	6.9	6.9	426	177	426	0
Feb.	.73	.71	† 7	7.4	† 1	7.1	7.3	407	162	407	0
Mar.	.74	.73	24	7.5	† 1	7.4	7.4	455	179	455	0
Apr.	.74	.73	† 8	7.5	† 1	7.4	7.4	442	191	442	0
May	.75	.69	† 2	7.7	†29	6.8	7.3	449	216	449	.7
June	.72	.68	11	7.2	† 5	6.6	6.8	405	179	408	0
July	.74	.69	†16	7.5	† 3	6.8	7.1	434	175	434	0
Aug.	.70	.67	† 1	6.9	†15	6.5	6.7	413	181	445	0
Sept.	.69	.67	† 6	6.8	† 1	6.5	6.7	398	191	479	0
Oct.	.73	.68	5	7.4	† 1	6.6	6.7	414	205	464	0
Nov.	.68	.66	† 1	6.6	†11	6.3	6.4	380	195	421	0
Dec.	.66	.66	† 1	6.3	† 1	6.3	6.3	387	199	426	0
Yearly	0.75	0.66		7.7		6.3	6.9	5,010	2,250	5,010	0.7

∅ Mean daily † And other days

CANTU SPRING ON CIENEGAS CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located at the spring source in the channel of a small tributary to Cienegas Creek at latitude 29°23'15", longitude 100°56'00", about 2.5 miles northwest of Del Rio, Texas, and 3.5 creek miles from the confluence with the Rio Grande. The spring is isolated from surface runoff by the concrete enclosure but creek backwater may influence the recorded gage heights. Cienegas Creek enters the Rio Grande at river mile 556.6, 1.9 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 692.2 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on 52 discharge measurements during the year and a continuous record of gage heights. Records available: March 1961 through 1973.

REMARKS: The flow of this spring is very uniform and is not modified by diversions or storage. A weir was installed on May 24, 1961 and removed November 21, 1962. Flows of 0.05 second-foot or less are shown as zero in the discharge tabulations; however, the monthly volumes in the annual and period summary are based on the sum of mean daily discharges computed to the nearest hundredth of a second-foot when the mean daily flow is less than 0.1 second-foot. This station was established for investigational purposes in connection with Amistad Dam to determine what effect storage in Amistad Reservoir may have on the flow of this spring.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Second-Feet			
Daily:	Max. 9.6	Sept. 7-10, 1972	Min. 0		Occasionally
Monthly:	Max. 8.7	Sept. 1972	Min. 0		Occasionally
Yearly:	Max. 7.7	1972	Min. 0		1963

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.5	7.8	8.5	7.6	8.6	7.4	8.0	‡ 7.9	7.0	6.2	‡ 6.4	6.5
2	8.5	8.0	8.5	7.5	8.6	7.4	8.1	7.9	7.0	6.3	6.5	6.6
3	8.4	8.1	8.6	7.4	8.7	7.4	8.2	7.9	6.9	6.4	6.6	6.6
4 ‡	8.4	8.2	8.7	‡ 7.3	‡ 8.7	7.3	8.3	7.9	6.9	‡ 6.5	6.7	6.7
5	8.4	8.3	8.8	7.4	8.5	7.3	‡ 8.4	8.0	6.8	6.6	6.9	‡ 6.7
6	8.4	8.5	8.8	7.6	8.4	7.3	8.4	8.0	‡ 6.8	6.6	7.0	6.6
7	8.4	‡ 8.6	‡ 8.9	7.7	8.2	‡ 7.3	8.3	8.0	6.7	6.6	‡ 7.1	6.5
8	8.4	8.5	8.8	7.8	8.1	7.6	8.3	8.0	6.6	6.7	7.0	6.4
9	8.4	8.4	8.8	7.9	‡ 7.9	7.8	8.3	‡ 8.0	6.5	6.8	6.9	6.2
10 ‡	8.4	8.3	8.7	8.1	7.8	8.1	8.2	7.9	6.4	‡ 6.8	6.8	6.1
11	8.4	8.2	8.6	‡ 8.2	7.7	8.4	‡ 8.2	7.8	6.3	6.7	6.6	6.0
12	8.4	8.1	8.5	8.2	7.6	8.6	8.2	7.7	‡ 6.2	6.6	6.5	‡ 5.9
13	8.4	8.0	8.5	8.2	7.6	‡ 8.9	8.3	7.6	6.1	6.5	6.4	6.0
14	8.5	‡ 7.9	‡ 8.4	8.2	7.5	8.8	8.3	7.5	6.1	6.5	‡ 6.3	6.0
15	8.5	7.9	8.4	8.1	7.4	8.8	8.4	‡ 7.4	6.0	6.4	6.4	6.1
16	8.5	8.0	8.4	8.1	‡ 7.3	8.7	8.4	7.4	6.0	6.3	6.4	6.2
17 ‡	8.5	8.0	8.4	8.1	7.3	8.6	8.5	7.3	5.9	‡ 6.2	6.5	6.3
18	8.4	8.0	8.5	‡ 8.1	7.4	8.6	‡ 8.5	7.3	5.9	6.3	6.5	6.3
19	8.4	8.1	8.5	8.1	7.4	8.5	8.4	7.2	‡ 5.8	6.4	6.6	‡ 6.4
20	8.3	8.1	8.5	8.2	7.4	8.5	8.4	7.2	5.8	6.5	6.6	6.4
21	8.3	8.2	‡ 8.5	8.2	7.4	‡ 8.4	8.3	7.1	5.8	6.7	‡ 6.7	6.4
22	8.2	‡ 8.2	8.4	8.3	7.5	8.2	8.2	‡ 7.1	5.8	6.8	6.7	6.4
23	8.2	8.2	8.4	8.3	‡ 7.5	8.0	8.1	7.1	5.8	6.9	6.6	6.4
24 ‡	8.1	8.3	8.3	8.4	7.5	7.9	8.1	7.1	5.8	‡ 7.0	6.6	6.5
25	8.0	8.3	8.2	‡ 8.4	7.5	7.7	‡ 8.0	7.1	5.8	6.9	6.6	6.5
26	8.0	8.3	8.1	8.4	7.5	‡ 7.5	8.0	7.1	‡ 5.8	6.8	6.6	6.5
27	7.9	8.4	8.1	8.5	7.4	7.6	8.0	7.1	5.9	6.8	6.5	6.5
28	7.9	‡ 8.4	‡ 8.0	8.5	7.4	7.7	8.0	7.1	6.0	6.7	‡ 6.5	‡ 6.5
29	7.8		7.9	8.5	7.4	7.8	7.9	‡ 7.1	6.1	6.6	6.5	6.8
30	7.8		7.8	8.6	‡ 7.4	7.9	7.9	7.1	6.2	6.6	6.6	7.0
31 ‡	7.7		7.7		7.4		7.9	7.0		6.5		7.3
Sum	256.4	229.3	261.2	241.9	240.0	240.0	254.5	231.9	186.7	204.2	198.6	199.4

Current Year 1973 — Period Mar. 1961-1973

Month	Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.	2.65	2.49	† 1	8.5	31	7.7	8.3	509	186	509	0
Feb.	2.58	2.50	7	8.6	1	7.8	8.2	455	164	455	0
Mar.	2.80	2.58	7	8.9	31	7.7	8.4	518	174	518	0
Apr.	3.73	2.60	30	8.6	4	7.3	8.1	480	172	480	0
May	2.75	2.66	† 3	8.7	†16	7.3	7.7	476	167	476	0
June	3.60	2.67	13	8.9	† 4	7.3	8.0	476	157	476	0
July	3.62	2.63	†17	8.5	†29	7.9	8.2	505	154	505	0
Aug.	3.14	2.70	† 5	8.0	31	7.0	7.5	460	169	494	0
Sept.	3.05	2.68	† 1	7.0	†19	5.8	6.2	370	176	520	0
Oct.	3.03	2.67	24	7.0	† 1	6.2	6.6	405	195	477	0
Nov.	2.76	2.72	7	7.1	14	6.3	6.6	394	189	489	0
Dec.	2.77	2.72	30	7.3	12	5.9	6.4	396	202	510	0
Yearly	3.73	2.49		8.9		5.8	7.5	5,444	2,105	5,619	0

‡ Discharge measurement made on this day ∅ Mean daily † And other days

CIENEGAS CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Gravity wells and water-stage recorders located, one each, on the left bank of the Cienegas Creek at latitude 29°21'00", longitude 100°56'40", 0.3 creek mile from the confluence with the Rio Grande; and, for the Briggs Farm Ditch, on the right bank of a concrete flume at latitude 29°21'40", longitude 100°56'30", 2,900 feet from the ditch intake which branches off the right bank of Cienegas Creek immediately upstream from a small diversion dam across the creek, and about 2.5 miles west of Del Rio, Texas. The point of diversion is 1.8 creek miles from the confluence with the Rio Grande. Cienegas Creek enters the Rio Grande at river mile 556.6, 1.9 river miles upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 692.2 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gages has not been determined.

RECORDS: Based on 53 and 52 discharge measurements at Cienegas Creek and Briggs Farm Ditch, respectively, during the year and a continuous record of gage heights. Mean daily discharge computations determined by combining the two records for the total yield of the springs. Records available: March 1965 through 1973. Discharge measurement data available since November 1962. Records are also available from September 1931 through June 1935 for a station 0.1 creek mile downstream.

REMARKS: Low flow of this stream is from springs, one of which is Cantu Spring whose discharge is shown on page 35. The flow of this stream is modified by irrigation diversions through the Briggs Farm ditch and, occasionally, by other smaller diversions upstream. During 1973 there were no appreciable diversions from the creek, other than through the Briggs Farm ditch whose net amount of diversion is included in the tabulation below. All storm flow passing this station is deducted and is not included in the tabulation. These stations were established for investigational purposes in connection with Amistad Dam to determine what effect storage in Amistad Reservoir may have on the flow of these springs.

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	17.5	15.4	19.6	16.8	18.0	13.7	17.2	16.8	13.3	14.8	17.9	17.2
2	13.4	15.5	19.5	17.0	17.4	14.0	17.1	18.8	13.3	14.5	18.2	17.0
3	14.5	15.5	18.5	17.3	18.2	14.6	17.1	17.7	12.8	14.5	18.4	17.0
4	17.2	17.2	18.3	17.0	17.8	16.0	16.5	16.5	12.6	14.7	17.7	17.3
5	17.1	17.3	18.3	17.0	17.6	16.0	16.6	16.6	12.6	27.4	17.9	17.3
6	17.3	18.4	18.2	17.1	17.5	16.1	15.9	16.8	13.8	24.9	18.0	16.9
7	18.4	17.1	18.0	17.8	17.0	15.9	16.5	15.8	16.3	22.4	17.4	17.7
8	17.0	18.4	17.0	17.5	16.0	15.4	19.1	15.8	16.2	19.7	17.4	17.4
9	17.7	19.2	15.2	17.2	14.6	14.9	21.4	16.0	16.2	18.7	16.8	17.1
10	17.5	19.1	15.2	17.9	14.8	16.3	19.4	15.7	15.5	18.7	16.7	16.6
11	17.8	17.8	15.0	17.9	16.0	22.2	18.9	15.9	15.2	18.9	16.8	17.3
12	17.9	17.9	16.9	18.1	16.3	27.9	19.8	15.8	15.2	19.0	16.6	16.9
13	18.2	18.0	17.8	18.1	16.8	23.0	18.0	15.5	15.5	19.1	16.8	17.0
14	17.3	17.9	17.6	18.7	16.0	21.1	17.1	15.5	14.9	19.0	16.7	17.1
15	17.6	18.0	17.9	19.4	17.2	21.1	17.6	15.4	14.8	19.1	16.8	17.2
16	17.9	18.1	17.5	19.3	17.0	20.2	19.1	15.6	14.8	18.9	16.8	16.3
17	18.3	19.5	18.8	18.4	16.6	19.9	20.3	16.3	15.0	18.3	16.8	16.4
18	18.6	18.7	18.2	18.3	15.6	19.0	19.4	16.4	15.0	19.3	16.8	16.2
19	18.7	15.8	18.7	17.2	15.1	17.8	18.1	15.5	14.9	19.3	16.8	16.2
20	18.4	16.0	18.0	16.2	14.1	17.9	17.5	15.6	14.9	19.2	16.6	16.0
21	17.9	19.2	17.3	15.6	13.6	17.8	16.9	15.2	14.3	18.5	16.6	16.8
22	18.0	20.9	16.2	14.6	13.6	17.9	16.1	15.1	14.3	19.1	17.3	16.6
23	17.9	20.1	18.1	15.6	13.7	17.2	16.2	13.9	15.0	18.1	18.1	17.2
24	18.0	18.9	20.8	20.8	14.7	18.3	16.3	13.6	14.4	16.9	18.5	17.1
25	19.4	19.4	19.5	21.1	14.8	18.2	15.9	13.5	14.2	16.6	17.6	16.3
26	19.5	19.7	19.2	20.9	14.9	18.4	15.7	13.4	14.4	16.5	17.7	16.3
27	18.2	19.9	19.1	18.4	16.0	18.1	15.0	13.3	15.5	16.5	17.0	16.2
28	17.0	19.5	18.5	17.8	14.6	18.0	15.2	13.5	14.2	16.6	17.0	16.0
29	16.9		17.9	17.8	13.4	16.7	15.3	13.9	14.3	16.6	17.1	16.0
30	18.2		18.1	17.4	13.1	15.9	15.1	13.5	14.2	17.7	17.2	16.0
31	16.7		17.4		12.8		15.8	13.5		18.8		15.6
Sum	546.0	508.4	556.3	534.2	484.8	539.5	536.1	476.4	437.6	572.3	518.0	518.2

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	∅ Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period Mar. 1965-1973 Acre-Feet Average	Maximum	Minimum
Jan.			26	19.5	2	13.4	17.6	1,083	553	1,083	134
Feb.			22	20.9	1	15.4	18.2	1,008	499	1,008	98.0
Mar.			24	20.8	11	15.0	17.9	1,103	518	1,103	102
Apr.			25	21.1	22	14.6	17.8	1,060	490	1,060	100
May			3	18.2	31	12.8	15.6	962	485	1,019	109
June			12	27.9	1	13.7	18.0	1,070	426	1,070	86.3
July			9	21.4	30	15.1	17.3	1,063	431	1,063	85.5
Aug.			2	18.8	27	13.3	15.4	945	496	1,241	48.4
Sept.			7	16.3	† 4	12.6	14.6	868	494	1,043	84.1
Oct.			5	27.4	† 2	14.5	18.5	1,135	622	1,135	150
Nov.			24	18.5	†12	16.6	17.3	1,027	570	1,027	152
Dec.			7	17.7	31	15.6	16.7	1,028	594	1,028	133
Yearly				27.9		12.6	17.1	12,352	6,178	12,352	1,530.9

∅ Mean daily † And other days

RIO GRANDE AT DEL RIO, TEXAS

DESCRIPTION: Cableway, gravity well, concrete control weir, water-stage recorders (graphic and digital), and binary decimal transmitter located on the right bank 1,200 feet upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila at latitude 29°19'35", longitude 100°55'50", and river mile 554.9; 12.6 river miles downstream from Amistad Dam, and 693.9 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 869.20 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 33 discharge measurements during the year, 26 by the United States Section and 7 by the Mexican Section of the Commission, and a continuous record of gage heights. Computations for high flow by shifting control methods. Low and medium flow computations based on a stable control weir rating curve defined by meter measurements. Records available: December 1923 through July 2, 1941 and January 1968 through 1973. Records are available from May 1900 through April 1915 for a station 12.2 miles upstream; from December 1919 through March 1920 for a station 8.7 miles upstream near McKee's Switch; from July 2, 1941 through 1954 and October 1960 through 1967 for a station 1,200 feet downstream at the international highway bridge; and from September 1954 through 1973 for a station, Rio Grande below Amistad Dam, 10.4 miles upstream.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. Except for tributary inflows and small intervening diversions below Amistad Dam, flow at this station, after May 31, 1968 is controlled largely by releases from Amistad Reservoir. The concrete control weir was placed in operation on February 8 and the cable on June 7, 1968. The transmitter, operated in cooperation with the National Weather Service, relays gage height data upon interrogation by telephone via commercial circuits.

EXTREME FLOWS FROM RECORDS: The greatest recorded flow of 1,140,000 second-feet occurred on June 28, 1954, with a gage height of 38.25 feet at a station 1,200 feet downstream. This peak flow was deduced by subtracting 18,000 second-feet from the peak discharge which occurred below Amistad Dam Site, 10.5 miles upstream. This subtraction was for estimated flattening of the flood wave in traveling between these points. The lowest recorded flow was 142 second-feet which occurred August 14, 1971, with a gage height of 1.27 feet.

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	228	‡ 219	‡ 231	439	9,360	1,160	992	1,590	4,250	1,290	300	252
2	233	219	230	442	‡ 9,470	1,520	981	1,360	4,240	1,280	289	252
3	235	220	232	432	9,340	1,530	972	1,720	4,240	1,290	289	263
4	‡ 232	228	229	‡ 446	8,800	1,530	970	1,720	4,250	‡ 1,360	237	369
5	232	482	236	773	8,510	1,540	970	1,720	5,230	2,270	280	374
6	232	1,790	236	1,280	8,440	1,540	971	1,720	6,680	1,420	277	‡ 377
7	232	‡ 1,800	237	1,290	‡ 8,400	1,520	972	1,720	‡ 6,840	1,360	277	377
8	232	2,110	‡ 242	1,270	8,400	‡ 1,480	1,030	2,300	7,730	1,340	‡ 277	377
9	232	2,650	237	1,340	8,660	1,390	1,010	3,470	8,060	1,340	277	374
10	232	2,650	275	1,500	8,010	1,380	992	3,480	7,510	1,330	273	370
11	227	2,630	239	‡ 1,500	‡ 6,130	1,670	992	3,490	7,510	1,350	270	377
12	224	2,560	229	1,500	4,790	1,400	979	3,490	8,090	1,360	271	380
13	228	2,480	238	1,480	4,770	1,380	‡ 936	‡ 3,220	8,470	1,350	271	377
14	232	2,150	225	1,490	3,950	1,380	999	1,910	7,510	1,360	271	380
15	232	‡ 1,310	‡ 222	1,500	2,490	1,360	1,300	1,900	7,540	1,350	269	377
16	230	1,290	228	1,490	1,160	1,360	1,080	‡ 2,590	7,550	1,350	262	377
17	232	1,310	317	1,490	762	1,350	1,290	3,380	7,540	‡ 1,340	270	384
18	‡ 232	1,300	322	1,480	747	1,360	1,710	3,390	6,400	1,340	268	381
19	228	1,280	317	‡ 1,480	743	1,360	1,710	3,380	‡ 4,470	3,580	265	361
20	226	1,040	320	1,470	729	1,430	1,710	3,390	3,630	6,320	247	373
21	212	275	‡ 311	1,470	725	1,370	1,730	3,390	2,610	6,370	251	386
22	224	‡ 257	317	1,480	723	1,380	1,730	3,370	1,320	6,340	254	378
23	233	237	324	‡ 1,550	734	1,380	1,740	3,710	1,300	6,340	257	378
24	‡ 335	232	351	1,510	‡ 778	1,390	1,750	4,150	1,290	6,350	256	371
25	337	228	322	1,480	930	1,260	1,770	3,580	1,290	6,340	251	370
26	248	234	320	1,470	923	1,020	1,770	3,350	1,310	4,810	255	376
27	227	226	316	1,490	914	1,010	1,780	4,240	1,290	3,120	250	364
28	206	229	323	1,480	914	992	1,780	4,240	1,290	3,100	244	364
29	224		313	1,480	917	‡ 990	1,800	4,240	1,290	2,180	252	360
30	228		‡ 344	2,450	910	992	1,810	4,250	1,290	357	251	363
31	224		438		916		1,840	4,250		339		360
Sum	7,309	31,636	8,721	39,952	123,545	40,424	42,116	93,710	140,020	80,626	8,011	11,222

Month	Current Year 1973 — Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Period# 1968-1973 — Acre-Feet		
	High	Low	Day	High	Day	Low			Average	Maximum	Minimum
Jan.	1.48	1.33	25	364	28	193	236	14,497	59,234	90,952	14,497
Feb.	2.51	1.35	† 8	2,650	3	210	1,130	62,749	136,142	448,205	18,633
Mar.	1.54	1.35	†24	447	†12	210	281	17,293	54,327	96,390	17,293
Apr.	3.85	1.52	30	9,750	1	418	1,330	79,244	64,995	93,320	33,846
May	3.93	1.70	1	10,300	21	670	3,990	245,048	122,910	245,048	30,928
June	2.56	1.82	11	2,830	1	920	1,350	80,180	113,362	250,318	23,143
July	2.31	1.83	15	2,070	† 2	939	1,360	83,536	77,327	138,413	31,474
Aug.	2.92	1.70	27	4,340	26	700	3,020	185,871	77,465	185,871	28,826
Sept.	3.69	1.79	13	8,660	9	862	4,670	277,726	102,720	277,726	38,850
Oct.	3.32	1.43	†20	6,390	31	301	2,600	159,919	88,567	159,919	11,578
Nov.	1.43	1.37	† 1	301	20	232	267	15,890	44,352	99,830	13,644
Dec.	1.50	1.35	†14	391	3	210	362	22,258	42,819	97,072	13,918
Yearly	3.93	1.33		10,300		193	1,720	1,244,216	984,290	1,256,395	508,583

‡ Discharge measurement made on this day † And other days

Values for January 1968 are Rio Grande near Del Rio discharges less Arroyo Las Vacas flow

ARROYO LAS VACAS AT CD. ACUNA, COAHUILA

DESCRIPTION: Concrete wall with a 90° V-notch weir of 353 second-foot capacity, gravity well, and water-stage recorder located on the left bank at Cd. Acuna, Coahuila, latitude 29°19'45", longitude 100°57'20", and 1.8 creek miles from the confluence with the Rio Grande. This stream enters the Rio Grande at river mile 554.7, on the upstream side of the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, 12.8 river miles downstream from Amistad Dam, and 694.1 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 885.82 feet above mean sea level, U.S.C. & G. S. datum.

RECORDS: Based on 1 discharge measurement during the year, a stable rating curve up to 353 second-feet, which is the capacity of the weir, and a continuous record of gage heights. Computations by shifting control methods for flows exceeding the capacity of the weir. During 1973, the capacity of the weir was exceeded on October 4 and 5. Records available: Occasional estimates from June 1935 to March 19, 1938 and a continuous record from March 20, 1938 through 1973.

REMARKS: Low flow of this stream is from springs and is modified by irrigation diversions upstream. On June 17, 1961, a flood destroyed the station leaving the control wall under several feet of silt. The station was reconstructed in September and a V-notch weir with a capacity of 353 second-feet, constructed at this station, started operating December 14, 1961. On June 28, 1954, backwater from the Rio Grande reached an elevation of 902.49 feet at this station. Records prior to 1965 were published under the title "Arroyo Las Vacas near Cd. Acuna, Coahuila."

EXTREME FLOWS FROM RECORDS: *Momentary:* Max. 63,570 second-feet with a gage height of 25.26 feet on June 17, 1961. Min. no flow several occasions in 1956, 1957, 1960, 1961, and September 1, 1967.

Average Flow in Second-Feet**

Daily:	Max. 23,940	June 17, 1961	Min. 0	Several days Dec. 1956, Jan. 1957, & Sept. 1, 1967
Monthly:	Max. 1,050	June 1961	Min. 0.4	Several months 1952, 1953, & 1954
Yearly:	Max. 96.7	1961	Min. 2.8	1952

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.0	6.0	10.9	5.7	4.2	2.8	1.4	10.9	1.4	1.4	14.5	7.8
2	6.7	6.0	11.3	5.7	3.9	2.8	1.4	1.4	1.4	1.4	14.5	8.1
3	6.7	6.0	10.6	5.3	3.5	2.8	1.4	1.8	1.4	1.4	14.1	7.8
4	6.7	6.0	9.5	5.3	3.5	2.8	1.4	1.8	1.4	509	13.1	7.8
5	6.7	5.7	9.5	5.3	3.2	2.8	1.8	1.8	1.1	‡378	12.0	7.1
6	6.7	5.7	9.5	5.3	3.9	2.1	1.4	2.1	9.2	259	11.7	7.1
7	6.7	5.7	9.5	5.3	3.5	2.1	1.4	2.1	3.5	67.8	13.1	7.1
8	6.7	6.0	8.1	5.3	3.5	2.1	26.1	2.1	2.8	43.4	13.1	7.1
9	7.1	6.0	7.1	4.6	3.5	3.9	4.6	2.1	2.1	33.9	12.0	8.5
10	7.1	6.0	7.8	4.2	3.5	3.5	2.8	2.1	1.8	27.5	11.7	8.5
11	7.1	6.7	7.1	4.2	4.2	2.5	2.8	2.1	1.8	29.3	11.7	8.5
12	7.1	6.0	6.7	6.4	4.2	2.1	2.5	2.1	1.4	24.0	11.7	7.8
13	7.1	6.0	6.7	7.4	3.9	2.1	2.1	1.4	1.8	19.4	10.6	7.1
14	7.1	6.0	6.0	7.1	3.9	2.1	2.1	2.1	1.4	17.7	10.2	7.8
15	7.1	6.0	6.0	6.4	3.9	1.4	2.1	1.8	1.4	17.0	9.9	7.1
16	7.1	7.8	6.0	5.3	3.5	1.8	2.1	1.8	1.4	16.2	9.2	7.1
17	7.1	8.5	6.0	4.2	3.5	2.1	2.1	1.8	1.4	14.1	9 2	7.1
18	6.4	8.5	6.0	4.2	3.5	1.8	2.1	1.4	1.4	11.3	9.5	7.1
19	6.0	8.5	5.7	4.2	3.2	2.1	2.1	1.4	1.4	11.3	9.5	7.1
20	6.0	7.1	5.7	4.2	2.8	2.1	2.1	1.4	1.4	10.9	8.1	7.1
21	5.7	10.2	5.7	4.2	2.8	1.8	2.1	1.4	1.4	7.8	6.4	8.5
22	6.4	11.3	5.7	4.2	2.8	1.8	2.1	1.4	1.4	8.5	6.0	8.5
23	6.0	10.2	7.8	4.2	3.5	2.1	2.1	1.4	1.4	8.5	6.0	8.5
24	6.0	8.8	9.2	4.2	3.5	2.5	2.1	1.4	1.4	8.5	6.0	8.5
25	6.0	8.8	6.0	4.2	3.2	2.1	2.1	1.4	1.4	7.8	6.0	8.5
26	6.0	8.5	6.0	4.2	3.2	2.1	2.1	1.4	3.9	7.1	7.1	8.5
27	6.0	10.2	6.0	4.2	2.8	2.1	2.1	1.4	2.1	7.1	6.7	10.2
28	6.0	11.3	6.0	4.2	2.8	1.8	2.1	1.4	1.4	6.0	6.7	10.2
29	6.0		6.0	4.2	2.5	1.4	2.1	1.4	1.4	6.0	6.7	8.1
30	6.0		5.7	4.2	2.5	1.4	2.1	1.4	1.4	143	7.1	7.4
31	6.0		5.7		2.5		2.1	1.4		58.3		7.8
Sum	201.3	209.5	225.5	147.6	104.9	66.9	88.9	60.9	58.1	1,762.6	294.1	245.4

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	High	Extreme Second-Feet Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1938-1973 Acre-Feet Average	Maximum	Minimum
Jan.	0.49	0.43	† 9	7.1	21	5.3	6.4	399	350	910	31.5
Feb.	.59	.43	‡22	11.3	† 5	5.7	7.4	415	505	5,950	33.3
Mar.	.89	.43	23	32.1	‡19	5.7	7.4	447	566	2,600	59.2
Apr.	.52	.39	13	7.8	‡10	4.2	4.9	293	1,488	16,610	75.4
May	.39	.33	† 1	4.2	‡29	2.5	3.5	208	1,403	9,080	90.0
June	.69	.26	9	18.0	‡15	1.4	2.1	133	2,767	62,520	43.8
July	1.97	.26	8	290	† 1	1.4	2.8	178	893	8,230	26.8
Aug.	1.71	.26	1	164	† 2	1.4	2.1	121	1,143	13,661	42.2
Sept.	1.05	.23	6	47.7	5	1.1	2.1	116	2,999	49,566	37.3
Oct.	7.97	.26	5	8,760	† 1	1.4	56.9	3,495	1,729	20,444	22.6
Nov.	.66	.46	† 1	15.2	‡21	5.7	9.9	583	362	1,670	21.0
Dec.	.56	.49	‡27	10.2	† 4	7.1	7.8	486	327	780	22.0
Yearly	7.97	0.23		8,760		1.1	9.5	6,874	14,532	70,026.3	2,066.7

** Period 1938-1973 ‡ Discharge measurement made on this day † And other days

SAN FELIPE SPRINGS AT DEL RIO, TEXAS

DESCRIPTION: Two large and at least two smaller springs rise near the northeast city limits of Del Rio, Texas in or near the channel of San Felipe Creek at latitude 29°22'20" and longitude 100°53'00". The total yield of these springs consists of waters measured in the Val Verde Canal at Del Rio, Texas and in San Felipe Creek at Moore Park, Del Rio, Texas, and diversions by the city of Del Rio. Diversions by the San Felipe Irrigation Company through the Val Verde Canal are measured at a gaging station consisting of a paved measuring section and gravity well and water-stage recorder located on the left side of the canal under the U. S. Highway 277 Bridge across San Felipe Creek at latitude 29°21'55" and longitude 100°53'10". The bridge is located about 0.6 creek mile downstream from the source of the springs and 2.9 creek miles from the confluence of the creek with the Rio Grande. The gaging station on San Felipe Creek at Moore Park consists of gravity well and water-stage recorder located on the left bank about 300 feet downstream from the U. S. Highway 277 Bridge at latitude 29°21'50" and longitude 100°53'10". This stream enters the Rio Grande at river mile 553.1, 1.6 river miles downstream from the international highway bridge between Del Rio, Texas, and Cd. Acuna, Coahuila, and 695.7 river miles downstream from the American Dam at El Paso, Texas. The zeros of the gages for the two stations are, respectively, 942.58 feet and 930.77 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Records for the Val Verde Canal and San Felipe Creek at Moore Park are based on 52 and 53 discharge measurements, respectively, by wading during the year, and continuous records of gage heights. Computations by shifting control methods. Records for the Del Rio Pumping Plant are furnished by the City of Del Rio Water Department. Records available: Total yield of the springs, Feb. 1961 through 1973.

REMARKS: The flows tabulated below represent only the total yield of the springs. All storm runoff has been eliminated from the tabulations.

Average Flow in Second-Feet

Daily:	Max. 155	June 11, 1973	Min. 29.2	July 29, 1964
Monthly:	Max. 145	Dec. 1972	Min. 34.4	August 1964
Yearly:	Max. 139	1973	Min. 50.5	1963

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	146	144	137	141	143	136	146	137	132	133	139	135
2	147	144	137	141	143	137	141	139	130	134	139	136
3	146	145	137	138	142	138	142	137	133	133	140	139
4	146	145	138	138	140	139	139	137	134	136	142	142
5	145	148	140	138	142	138	136	137	121	147	142	143
6	146	145	141	138	144	135	139	136	136	141	142	145
7	145	139	141	140	144	134	136	139	139	137	142	144
8	144	144	143	136	140	135	135	138	132	136	140	145
9	145	145	142	138	141	133	142	138	134	134	140	144
10	145	143	143	135	144	131	145	136	132	136	136	147
11	144	140	142	134	147	155	144	137	132	135	138	143
12	145	141	141	138	144	140	143	133	132	139	141	144
13	143	135	140	135	144	134	138	132	133	138	139	146
14	145	136	140	136	140	134	141	133	130	138	139	146
15	145	137	138	137	142	139	143	132	132	137	139	143
16	147	138	137	136	142	139	138	134	136	135	138	145
17	145	139	138	136	141	139	147	131	135	133	137	144
18	144	140	138	136	141	141	146	133	134	133	136	144
19	144	137	138	136	140	142	143	135	132	134	139	145
20	142	138	134	136	138	140	144	131	134	135	140	146
21	141	140	136	137	139	144	146	130	134	135	140	146
22	144	138	136	137	137	142	146	129	136	135	138	145
23	141	137	136	140	138	143	142	128	138	138	140	144
24	142	136	138	149	137	144	140	129	135	138	142	144
25	143	136	134	148	136	145	141	133	135	138	142	143
26	143	137	136	152	137	148	141	132	133	140	141	144
27	142	136	139	151	135	148	137	130	134	139	139	142
28	142	135	139	152	135	147	140	129	134	139	142	142
29	144		138	151	139	145	138	133	134	139	138	142
30	143		138	145	135	143	135	132	135	139	133	141
31	143		141		136		137	128		140		142
Sum	4,467	3,918	4,296	4,205	4,346	4,208	4,371	4,138	4,001	4,244	4,183	4,441

Month	Current Year 1973 Extreme Gage Feet High	Low	∅ Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period Feb. 1961-1973 Acre-Feet Average	Maximum	Minimum
Jan.			† 2	147	†21	141	144	8,860	5,591	8,860	2,274
Feb.			5	148	†13	135	140	7,771	5,037	7,771	2,119
Mar.			† 8	143	†20	134	139	8,521	5,459	8,521	2,365
Apr.			†26	152	11	134	140	8,340	5,211	8,340	2,291
May			11	147	†27	135	140	8,620	5,499	8,620	2,342
June			11	155	10	131	140	8,346	5,343	8,346	2,481
July			17	147	† 8	135	141	8,670	5,462	8,670	2,214
Aug.			† 2	139	†23	128	133	8,208	5,389	8,337	2,114
Sept.			7	139	5	121	133	7,936	5,343	8,329	2,555
Oct.			5	147	† 1	133	137	8,418	5,848	8,874	2,503
Nov.			† 4	142	30	133	139	8,297	5,651	8,521	2,384
Dec.			10	147	1	135	143	8,809	5,936	8,926	2,390
Yearly				155		121	139	100,796	65,769	100,795	36,580

∅ Mean daily † And other days

SAN FELIPE CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Cableway, bubbler gage, and water-stage recorders (graphic and digital) located on the right bank at latitude 29°19'55", longitude 100°53'20", immediately upstream from the Silos Farm road bridge, 1.1 creek miles from the confluence with the Rio Grande, and about 2 miles south-southeast of Del Rio, Texas. This stream enters the Rio Grande at river mile 553.1, 1.6 river miles downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 695.7 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 877.43 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 49 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: September 1931 through 1973.

REMARKS: Municipal diversions at Del Rio and irrigation diversions greatly modify the flow of this spring-fed creek at this station. Backwater from the Rio Grande reaches this station when the Rio Grande near Del Rio reaches a stage of 15 feet or a flow of about 60,000 second-feet. On June 28, 1954 combined creek flow and backwater from the Rio Grande reached a stage of 24.51 feet, the highest of record, at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 45,000 second-feet on June 14, 1935 with a gage height of 23.20 feet. Min. 0.4 second-foot on July 20, 1953.

Average Flow in Second-Feet

Daily:	Max. 16,200	June 14, 1935	Min. 1.5	July 21, 1953
Monthly:	Max. 805	June 1935	Min. 4.6	July 1953
Yearly:	Max. 136	1935	Min. 25.1	1953

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	141	140	138	102	‡ 107	101	127	118	110	117	120	115
2	143	139	136	102	105	98.8	115	116	109	‡ 115	120	116
3	‡ 144	137	137	104	105	98.4	‡ 112	114	109	119	123	115
4	143	136	136	105	105	97.1	115	114	109	127	122	‡ 117
5	143	135	132	104	104	‡ 101	116	114	‡ 107	202	125	120
6	143	‡ 134	‡ 119	109	107	106	115	110	129	139	‡ 126	120
7	143	136	116	110	110	103	117	‡ 109	124	139	128	118
8	143	138	121	110	‡ 113	98.6	184	108	122	138	131	119
9	‡ 143	138	122	107	111	107	136	109	122	137	133	118
10	143	137	127	‡ 107	109	326	‡ 135	108	124	‡ 137	136	119
11	143	137	124	109	111	1,970	134	110	‡ 124	139	140	‡ 119
12	144	138	123	107	120	‡ 213	135	111	121	138	139	120
13	145	‡ 138	‡ 124	109	122	173	124	112	120	136	‡ 143	120
14	144	138	120	113	121	150	119	‡ 111	118	134	140	120
15	143	139	117	112	‡ 117	143	118	111	118	134	134	120
16	‡ 146	139	118	108	112	141	125	107	117	‡ 129	127	118
17	148	142	119	‡ 110	111	138	‡ 131	106	115	127	125	118
18	149	140	122	113	111	133	132	107	‡ 116	127	124	‡ 120
19	148	140	121	116	109	‡ 133	128	109	116	126	121	123
20	148	143	‡ 123	118	108	143	126	108	113	125	‡ 119	123
21	149	148	117	122	108	126	124	‡ 107	114	123	120	123
22	146	147	117	128	‡ 109	131	124	110	117	121	123	124
23	‡ 146	143	115	157	106	136	118	108	116	123	125	125
24	145	141	116	‡ 135	103	138	‡ 112	108	113	‡ 125	128	126
25	147	140	112	127	102	136	110	110	‡ 111	124	128	125
26	145	138	107	119	100	‡ 137	111	110	114	126	129	126
27	145	‡ 139	‡ 108	117	98.9	137	113	110	114	128	‡ 128	‡ 125
28	146	139	109	116	98.1	133	115	‡ 110	118	129	127	123
29	144		109	117	96.6	128	111	113	123	128	126	123
30	‡ 146		109	113	‡ 98.0	125	110	111	124	‡ 138	120	124
31	144		105		99.9		117	111		128		125
Sum	4,490	3,899	3,721	3,488	3,337.5	5,900.9	3,809	3,420	3,507	4,078	3,830	3,747

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1932-1973 Acre-Feet Average	Maximum	Minimum
Jan.	1.60	1.44	†20	153	12	135	145	8,906	4,422	8,906	934
Feb.	1.56	1.43	†21	158	4	128	139	7,734	3,547	8,630	487
Mar.	1.64	1.23	24	153	31	97.5	120	7,380	3,301	7,380	689
Apr.	3.69	1.21	23	446	2	95.2	114	6,799	3,843	10,407	566
May	1.48	1.11	12	134	29	85.8	108	6,620	4,660	17,600	739
June	13.89	1.16	11	11,400	6	86.2	197	11,704	5,077	47,900	301
July	4.87	1.34	6	711	29	102	123	7,555	3,520	8,300	285
Aug.	1.71	1.27	1	145	21	97.2	110	6,783	3,415	7,584	350
Sept.	1.98	1.31	6	185	† 3	102	117	6,956	5,013	28,678	872
Oct.	3.04	1.32	5	340	1	106	132	8,089	4,772	14,229	1,000
Nov.	1.55	1.32	†12	146	30	111	126	7,597	3,904	7,597	526
Dec.	1.49	1.30	†26	133	3	107	121	7,432	4,000	8,329	496
Yearly	13.89	1.11		11,400		85.8	129	93,555	49,474	98,137	18,201

‡ Discharge measurement made on this day † And other days

DIVERSIONS FROM THE RIO GRANDE
MAVERICK CANAL AT MILE 13 NEAR QUEMADO, TEXAS

DESCRIPTION: Light-weight cableway for making current meter measurements from the bank, bubbler gage, and water-stage recorders (graphic and digital), located on the left bank of a gunnite-lined section of the canal at latitude 29°03'00", longitude 100°39'40", 0.5 canal mile downstream from the Tequesquite Creek Siphon, 3.5 canal miles upstream from the Las Moras Creek Siphon, about 7.5 miles north-northwest of Quemado, Maverick County, Texas, and 12.8 canal miles from the canal intake. The canal intake is at river mile 537.4, 17.3 river miles downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 711.4 river miles downstream from the American Dam at El Paso, Texas. The elevation of the zero of the gage has not been determined.

RECORDS: Based on 33 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Gage heights at this station are affected by gate operation at Las Moras Siphon. Records available: June 21, 1949 through 1973.

REMARKS: Water from the Rio Grande is diverted into the Maverick Canal by Maverick County Water Control and Improvement District No. 1 for power generation and irrigation use. At canal mile 31.8 a portion of the diverted water returns to the river through the Maverick Power Plant, and the remainder enters the Maverick Canal Extension. In 1973, 9,946 acres of land were irrigated between canal mile 31.8 and the power plant, and 26,585 acres were irrigated from the extension, making a total of 36,531 acres. A total of 663,200 acre-feet of water returned to the Rio Grande at the power plant and through the irrigation system (see pages 46, 48, and 51).

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,750 second-feet on August 30, 1973. Min. no flow several days in June, July, and November 1954.

Average Flow in Second-Feet

Daily:	Max. 1,730	August 29, 1973	Min. 0	June 28 through July 11 & Nov. 2, 1954		
Monthly:	Max. 1,580	August 1973	Min. 319	July 1954		
Yearly:	Max. 1,420	1961	Min. 632	1972		

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	403	396	428	592	‡ 1,520	1,090	1,130	1,560	1,510	‡ 1,360	546	335
2	411	385	411	585	1,570	1,350	‡ 1,120	1,340	1,530	1,330	469	340
3	423	386	395	‡ 568	1,600	1,500	1,110	1,460	1,550	1,330	456	336
4	‡ 415	390	386	558	1,610	1,510	1,120	1,560	1,550	1,340	452	356
5	416	370	382	552	1,610	‡ 1,520	1,100	1,580	1,520	1,440	439	431
6	422	‡ 898	‡ 419	1,020	1,610	1,520	1,090	1,550	‡ 1,580	1,420	430	441
7	420	1,410	403	1,320	1,600	1,520	1,090	1,560	1,500	1,430	426	459
8	421	1,490	402	1,340	1,590	1,530	1,150	1,560	1,600	1,450	428	453
9	‡ 412	1,490	406	1,330	1,580	1,470	1,370	‡ 1,550	1,590	1,460	428	451
10	413	1,490	425	‡ 1,430	1,580	1,480	1,240	1,570	1,560	1,440	426	482
11	415	1,490	445	1,530	1,590	1,490	1,160	1,580	1,640	1,450	425	‡ 483
12	415	1,490	411	1,540	1,580	1,480	1,130	1,570	1,600	1,460	426	495
13	414	‡ 1,490	‡ 410	1,530	1,600	1,510	1,120	1,540	1,620	1,470	‡ 426	489
14	417	1,490	410	1,550	1,590	1,450	1,100	1,530	1,620	1,440	428	455
15	411	1,410	396	1,560	‡ 1,590	1,450	1,150	1,550	1,630	‡ 1,450	426	396
16	‡ 411	1,420	379	1,560	1,530	1,440	1,390	1,550	1,590	1,440	406	391
17	416	1,450	399	1,570	1,160	1,460	1,230	1,550	1,600	1,420	395	400
18	423	1,460	471	1,560	999	1,440	1,410	1,560	‡ 1,560	1,410	402	‡ 424
19	413	1,450	514	1,560	997	‡ 1,420	1,480	1,580	1,530	1,400	397	426
20	404	1,450	‡ 491	1,550	997	1,470	1,510	1,560	1,530	1,500	385	423
21	393	1,010	490	1,550	975	1,450	1,520	1,550	1,530	1,530	369	427
22	394	‡ 530	492	1,550	954	1,410	1,570	1,560	1,470	1,530	329	442
23	‡ 398	509	510	1,540	963	1,460	1,520	‡ 1,570	1,460	1,550	327	443
24	423	470	493	1,540	959	1,500	1,560	1,630	1,400	1,500	353	444
25	529	461	453	1,540	1,070	1,510	‡ 1,560	1,650	1,300	1,510	353	437
26	472	454	‡ 475	1,530	1,150	1,310	1,550	1,660	1,270	1,500	344	430
27	410	‡ 445	‡ 424	1,530	1,150	1,180	1,550	1,650	1,380	1,490	‡ 344	437
28	400	432	590	1,530	1,130	1,160	1,550	1,690	1,360	1,490	334	‡ 433
29	399		558	1,530	1,130	1,140	1,570	1,730	1,360	1,490	335	442
30	‡ 399		535	1,520	1,120	1,130	1,550	1,710	1,360	‡ 1,020	332	441
31	399		552		1,100		1,560	1,700		705		438
Sum	12,911	27,616	13,955	40,165	41,204	42,350	41,260	48,960	45,300	43,755	12,036	13,280

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1950-1973 Acre-Feet Average	Maximum	Minimum
Jan.	5.33	4.37	25	553	21	386	416	25,608	71,317	89,500	25,608
Feb.	8.92	4.00	†13	1,500	† 5	330	986	54,776	66,456	86,817	27,287
Mar.	6.48	4.10	28	629	5	370	450	27,679	66,992	90,700	27,679
Apr.	9.08	5.02	16	1,590	5	494	1,340	79,666	65,275	81,000	40,721
May	9.17	6.50	† 3	1,620	22	939	1,330	81,727	70,668	84,973	39,400
June	8.99	6.75	13	1,560	1	939	1,410	84,000	72,825	90,547	31,210
July	9.23	7.17	22	1,590	6	1,070	1,330	81,838	72,388	93,900	19,600
Aug.	9.70	7.75	30	1,750	2	1,200	1,580	97,111	75,212	97,111	36,708
Sept.	9.46		11	1,660	26	∅1,270	1,510	89,851	73,568	89,851	32,963
Oct.	9.21	5.47	23	1,560	30	627	1,410	86,787	74,867	91,578	22,235
Nov.	5.65	3.75	1	670	23	318	401	23,873	69,090	89,991	22,487
Dec.	5.03	3.94	13	497	15	323	428	26,340	69,844	89,158	23,516
Yearly	9.70	3.75		1,750		318	1,050	759,256	848,502	1,027,400	458,631

‡ Discharge measurement made on this day ∅ Mean daily † And other days

PINTO CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Cableway, solid ledge rock and concrete control, bubbler gage, and digital water-stage recorder located on the right bank at latitude 29°08'45", longitude 100°43'05", 1.6 creek miles from the confluence with the Rio Grande, and about 19 miles southeast of Del Rio, Texas. This stream enters the Rio Grande at river mile 530.1, 6.1 river miles downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam, and 718.7 river miles downstream from the American Dam at El Paso, Texas. *The zero of the gage is 813.68 feet above mean sea level, U. S. C. & G. S. datum.*

RECORDS: Based on 46 discharge measurements during the year and a continuous record of gage heights. Records available: September 1955 through 1973 at this station, and November 22, 1928 through August 1955 at a site 3.9 miles upstream.

REMARKS: Small irrigation diversions modify the flow of this spring-fed creek at this station. When the flow in the Rio Grande at the confluence of this creek exceeds about 80,000 second-feet, backwater may reach this station. Backwater from the Rio Grande flood of June 1954 reached a gage height of 28.8 feet, or an elevation of 842.50 feet above mean sea level, at this station. On June 29, 1966 the graphical water-stage recorder was replaced by a digital recorder.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 186,000 second-feet on June 24, 1948 with a gage height of 32.0 feet. Min. frequently no flow.

	Average Flow in Second-Feet				
Daily:	Max. 28,200	June 24, 1948	Min. 0		Frequently
Monthly:	Max. 953	June 1948	Min. 0		Frequently
Yearly:	Max. 105	1932	Min. 1.8		1945

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	19.1	‡ 15.1	‡ 12.1	3.5	2.1	41.4	4.9	12.0	9.8	13.9	‡ 29.0	27.6
2	19.3	14.9	11.6	3.6	2.2	16.5	5.2	‡ 12.3	11.0	13.4	28.5	27.3
3	19.4	14.9	11.4	3.4	2.2	6.4	5.5	11.2	12.0	12.6	29.4	27.1
4	‡ 19.8	14.9	11.1	‡ 3.2	‡ 2.0	4.0	6.3	11.1	13.0	‡ 10.9	30.0	26.6
5	19.8	14.7	11.1	3.1	1.9	3.2	6.5	11.4	12.7	31.4	30.1	26.8
6	19.8	14.7	10.3	2.9	1.7	2.9	5.8	11.2	17.4	30.0	‡ 29.5	26.4
7	20.1	14.7	10.0	3.1	1.6	‡ 2.5	‡ 3.5	11.1	‡ 30.9	21.2	30.1	26.2
8	20.1	14.8	‡ 10.4	3.2	1.5	2.0	145	10.8	25.5	18.9	31.4	26.2
9	20.1	14.8	10.7	2.9	1.3	1.7	169	10.7	19.8	17.7	31.3	26.2
10	20.1	14.6	12.3	2.7	1.2	1.6	48.7	‡ 11.1	17.2	17.3	30.9	26.3
11	20.1	13.8	11.1	2.2	‡ 1.1	392	24.2	10.9	16.9	‡ 15.9	30.8	‡ 26.3
12	20.1	13.2	10.9	‡ 2.0	1.1	101	19.2	10.8	16.6	17.2	30.9	26.3
13	20.1	12.6	11.3	2.6	1.1	26.3	‡ 16.3	11.5	‡ 15.2	920	‡ 31.2	26.4
14	20.1	11.5	10.7	6.4	1.0	‡ 15.4	14.8	10.3	14.7	169	31.2	26.6
15	20.1	‡ 11.1	‡ 10.3	11.4	1.0	6.7	23.8	10.2	14.9	93.2	30.9	25.9
16	20.1	11.4	9.1	9.4	1.1	3.4	19.0	‡ 10.1	14.7	57.9	‡ 30.2	25.1
17	20.1	13.0	9.5	7.6	‡ 1.1	3.1	23.2	10.2	14.6	43.7	30.1	24.0
18	‡ 20.1	14.3	9.5	6.5	1.3	2.9	20.2	9.4	14.7	‡ 39.9	30.0	23.5
19	19.8	14.1	3.0	‡ 6.5	1.7	3.1	‡ 17.7	8.6	‡ 14.5	37.4	29.5	23.3
20	19.4	14.0	2.4	6.3	1.8	10.6	16.3	8.9	14.6	35.5	28.3	22.7
21	18.8	16.8	2.4	5.7	1.8	‡ 4.6	15.3	8.8	14.2	34.2	27.8	22.7
22	18.5	‡ 18.2	‡ 2.6	5.4	2.0	3.9	14.5	8.6	17.0	33.2	27.5	22.6
23	18.1	16.3	2.8	6.0	2.0	3.2	14.2	‡ 8.4	16.5	32.2	28.1	22.6
24	17.8	14.5	3.9	8.0	‡ 2.1	3.1	13.9	8.3	15.1	31.9	27.8	24.5
25	17.4	13.5	4.0	7.0	2.2	3.7	13.7	8.6	14.8	‡ 31.2	27.0	25.0
26	16.8	13.1	3.5	‡ 3.1	2.2	7.2	13.6	9.2	14.8	30.7	26.8	25.5
27	16.5	12.5	3.1	2.3	2.1	6.4	‡ 13.2	5.8	‡ 16.1	30.7	‡ 26.6	25.6
28	16.2	12.2	3.1	2.5	1.7	‡ 5.9	12.4	7.8	15.3	29.7	26.1	25.4
29	15.9		‡ 3.2	2.4	1.3	5.2	11.3	8.6	14.8	28.5	25.9	25.4
30	15.5		3.7	2.2	1.2	4.8	11.1	‡ 8.0	14.1	34.2	27.4	24.9
31	15.0		3.7		‡ 1.2		12.1	9.3		46.0		24.6
Sum	584.1	394.2	235.3	137.1	49.8	694.7	740.4	305.2	473.4	1,979.5	875.3	785.6

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1929-1973 Acre-Feet Average	Maximum	Minimum
Jan.	1.31	1.15	† 6	20.1	31	14.9	18.8	1,159	504	2,270	0
Feb.	1.37	1.09	22	20.1	13	10.7	14.1	782	566	5,760	0
Mar.	1.21	.69	10	14.1	23	1.8	7.6	467	500	2,500	0
Apr.	1.09	.72	15	11.7	12	1.8	4.6	272	1,417	27,100	0
May	.76	.68	2	2.6	†10	1.0	1.6	98.8	2,250	29,400	0
June	5.52	.43	11	2,030	19	.4	23.2	1,378	4,068	56,700	0
July	4.32	.68	8	1,020	8	1.6	23.9	1,469	1,589	30,000	0
Aug.	1.22	.94	12	13.9	27	5.5	9.8	605	1,898	48,700	0
Sept.	1.66	.94	7	33.3	1	9.0	15.8	939	2,555	48,965	0
Oct.	7.58	1.10	13	4,960	4	9.5	63.9	3,926	1,096	8,940	0
Nov.	1.66	1.50	8	32.0	22	25.1	29.2	1,736	474	2,590	0
Dec.	1.60	1.45	† 1	27.7	†22	22.6	25.3	1,558	554	2,470	0
Yearly	7.58	0.43		4,960		0.4	19.9	14,389.8	17,471	76,259.3	1,325.3

‡ Discharge measurement made on this day † And other days

RIO SAN DIEGO AT JIMENEZ, COAHUILA

DESCRIPTION: Cableway, masonry and concrete Cipolletti weir of 777 second-foot capacity, gravity well, and water-stage recorder located on the left bank of Rio San Diego, and gravity well and water-stage recorder on Acequia de Dolores, an irrigation canal that runs along the left bank of the river under the cable, located at latitude 29°04'20", longitude 100°43'50", about 3.5 miles west of Jimenez, Coahuila, and 4.1 river miles from the confluence with the Rio Grande. Part of the canal flow measured here returns to the river downstream. This stream enters the Rio Grande at river mile 525.2, 11.0 river miles downstream from Maverick Dam, 29.4 river miles downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 723.6 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 831.72 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: For the river, based on the weir discharge table and a continuous record of gage heights; and for the canal, on a continuous record of gage heights. The flows tabulated below include the flow of the canal, and prior to 1964, they do not. In 1973, the capacity of the weir was exceeded on October 5 through October 15. Records available: 1922 through 1973. The records from 1922 through September 1932 are considered doubtful.

REMARKS: Reservoirs and irrigation diversions upstream from these stations modify the flow of this spring-fed stream. On December 24, 1955, the zero of the gage was raised 2.62 feet; in November 1961 an additional 0.20 foot, and the capacity of weir was increased from 706 to 777 second-feet.

EXTREME FLOWS FROM RECORDS**: Momentary: Max. 81,930 second-feet on June 17, 1961 with a gage height of 20.70 feet. Min. no flow occurred on several occasions during April, May, and June 1939, May and August 1952, and July and August 1953.

Average Flow in Second-Feet**

Daily:	Max.	33,730	June 17, 1961	Min.	0	Occasionally
Monthly:	Max.	2,380	Oct. 1932	Min.	8.0	July 1956
Yearly:	Max.	527	1935	Min.	24.0	1956

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	116	98.9	109	99.6	79.1	53.7	96.9	101	62.1	87.2	367	278
2	116	96.4	109	89.7	79.1	59.7	86.9	102	62.1	80.5	367	278
3	116	95.0	109	85.8	79.1	65.0	93.6	102	62.5	80.5	357	259
4	116	95.0	109	85.8	78.0	70.6	93.6	102	68.2	69.9	357	259
5	116	96.4	109	86.2	78.0	65.0	122	102	62.1	10,600	346	259
6	116	98.9	111	86.2	78.0	70.3	80.2	102	56.5	3,640	336	259
7	116	98.9	109	86.2	78.0	66.4	75.2	102	74.1	1,610	336	259
8	116	98.9	109	86.2	77.3	59.3	75.2	102	93.2	1,270	336	250
9	109	102	102	92.9	61.1	64.6	88.3	102	93.2	1,140	335	250
10	109	102	102	92.9	71.3	64.6	88.3	102	87.6	1,020	334	250
11	109	102	102	92.5	71.7	64.6	88.3	102	89.7	936	334	250
12	109	102	102	92.5	77.7	64.6	88.3	115	92.2	883	335	240
13	109	102	109	92.5	77.7	65.0	79.5	108	91.8	855	336	222
14	106	102	112	92.5	77.7	62.9	75.2	108	91.8	784	327	204
15	106	109	112	94.6	77.7	59.7	83.3	95.0	91 8	756	327	187
16	106	109	112	95.3	70.6	54.4	88.3	94.6	91.8	710	327	187
17	106	109	112	96.1	66.0	54.4	94.6	94.6	91.8	685	327	170
18	102	109	112	96.8	66.0	54.4	92.5	87.9	91.8	646	327	170
19	95.0	109	112	90.8	66.0	68.5	111	87.9	78.8	583	327	170
20	95.0	116	106	84.8	66.0	332	147	87.9	78.8	544	316	170
21	95.0	116	106	84.8	60.7	117	148	87.6	78.8	512	316	170
22	95.0	123	106	78.8	55.4	104	148	75.6	78.8	487	316	178
23	95.0	123	104	78.8	54.4	102	148	75.6	78.8	477	306	178
24	102	116	113	78.8	65.0	102	148	75.6	76.6	466	298	170
25	102	116	108	91.1	65.0	102	141	75.6	75.2	441	298	170
26	102	116	106	91.1	65.0	97.8	132	75.2	78.0	420	298	170
27	102	116	106	85.1	65.0	94.3	132	75.2	90.4	410	293	170
28	102	105	98.9	85.1	65.0	86.9	118	74.9	94.3	399	279	170
29	93.9		98.9	79.1	65.0	86.9	126	74.5	94.3	388	279	170
30	98.9		96.4	79.1	62.5	86.9	121	74.2	94.3	378	279	162
31	98.9		96.4		53.3		101	74.2		378		162
Sum	2,982.4		2,651.7		2,499.5		2,838.1			31,736.1		6,441
	3,280.7		3,308.6		2,152.4		3,301.2		2,451.4		9,721	

Month	Current Year 1973						Period 1933-1973		
	Extreme Gage Feet		Extreme Second-Feet				Acre-Feet		
			High		Low				
	High	Low	Day		Day		Average Second-Feet	Total Acre-Feet	Average	Maximum	Minimum
Jan.	0.39	0.36	† 1	116	†19	95.0	106	6,504	7,097	36,430	1,860
Feb.	.39	.33	†22	123	† 3	95.0	106	5,912	5,666	25,760	1,060
Mar.	.39	.33	7	117	30	92.2	107	6,556	4,993	27,040	1,340
Apr.	.36	.33	1	99.6	†22	78.8	88.3	5,259	5,966	40,270	1,110
May	.30	.20	† 1	79.1	31	53.3	69.6	4,270	11,147	120,200	861
June	1.28	.20	20	727	1	53.3	83.3	4,957	10,628	108,300	543
July	.46	.30	†21	148	† 7	75.2	107	6,551	8,071	37,890	490
Aug.	.59	.30	12	236	†30	74.2	91.5	5,625	8,265	53,789	738
Sept.	.43		11	138	6	Ø 56.5	81.6	4,863	15,953	94,667	1,183
Oct.	9.12	.30	5	19,600	4	69.9	1,020	63,021	16,968	71,830	1,698
Nov.	.85	.72	† 1	367	†28	279	324	19,275	10,868	64,060	803
Dec.	.72	.49	† 1	278	†30	162	208	12,782	7,488	45,320	1,130
Yearly	9.12	0.20		19,600		53.3	201	145,575	113,110	381,720	17,430

** Period October 1932-1973 Ø Mean daily † And other days

RIO GRANDE BELOW MAVERICK DAM NEAR QUEMADO, TEXAS

DESCRIPTION: Cableway, bubbler gage, control weir of 1,270 second-foot capacity, gravity well, and water-stage recorder located on the right bank at latitude 29°03'00", longitude 100°40'00", and river mile 523.4; 1.5 miles south-southeast of Jimenez, Coahuila, 1.9 river miles downstream from Rio San Diego, about 7.5 miles north-northwest of Quemado, Maverick County, Texas, 12.8 river miles downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam, 31.3 river miles downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila, and 725.5 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 769.00 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 7 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods prior to completion of the weir and for flows exceeding the capacity of the weir thereafter. Computations for flows within the capacity of the weir were based on a stable control weir rating curve defined by meter measurements. Records available: 1965 through 1973. Records, excluding some high flow periods, are also available from 1956 through May 1965 for a station 8.1 river miles upstream.

REMARKS: This station was placed in operation January 1, 1965 and replaces the station "Rio Grande below Maverick Dam near Del Rio, Texas" which stopped operating June 1, 1965. Irrigation diversions 14.0 river miles upstream largely control the flow at this station. A bubbler gage replaced the gravity well on May 1, 1966. The weir was placed in operation June 1, 1967 at which time a bubbler gage and gravity well were installed and the zero of the gage was set 3.28 feet higher.

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	116	117	133	79.5	7,170	70.9	101	434	3,200	117	466	296
2	137	117	130	80.5	8,440	97.5	96.1	253	3,200	109	448	296
3	142	117	129	81.2	8,440	97.5	77.0	184	3,200	109	424	298
4	142	117	130	86.5	8,370	85.8	92.2	343	3,190	1,180	420	307
5	142	120	125	94.6	8,400	73.5	93.9	338	3,400	18,650	410	307
6	142	155	133	106	8,400	89.3	93.9	331	5,830	5,510	396	284
7	142	625	123	101	8,300	91.1	86.5	326	6,000	2,100	381	284
8	142	629	117	101	8,230	95.7	417	318	6,820	1,410	381	284
9	137	1,430	117	101	8,160	102	1,050	1,930	6,040	1,190	381	272
10	139	1,550	125	109	7,730	84.8	239	2,230	6,110	1,090	381	272
11	139	1,570	122	151	5,760	2,020	151	2,230	6,780	1,020	381	272
12	133	1,560	117	151	3,640	519	123	2,280	7,130	961	381	272
13	127	1,480	107	151	3,600	202	102	2,350	8,120	2,500	396	272
14	125	1,410	101	158	3,300	145	93.9	1,090	7,130	1,680	396	250
15	127	551	97.5	216	1,750	110	241	530	6,820	982	388	229
16	120	182	86.5	242	459	86.5	194	565	6,820	922	374	208
17	125	160	86.5	208	98.9	86.5	158	2,060	6,780	802	381	208
18	125	160	86.5	‡ 179	74.9	79.5	299	2,150	6,390	742	381	208
19	125	160	93.9	169	61.4	74.2	558	2,160	‡ 4,200	883	378	208
20	125	151	86.5	162	60.0	590	558	2,160	2,680	5,900	367	198
21	117	169	86.5	151	60.0	255	523	2,160	2,510	6,040	367	198
22	113	169	86.5	151	58.6	169	498	2,150	379	6,000	364	198
23	113	160	‡ 86.5	158	60.0	151	512	2,190	146	6,000	343	198
24	113	151	93.6	280	66.0	151	463	3,040	117	6,000	342	198
25	‡ 131	142	92.9	211	66.0	169	459	3,080	258	5,970	331	198
26	130	142	110	165	60.0	159	445	2,100	292	5,540	331	198
27	125	133	108	151	60.0	‡ 126	438	2,340	128	2,670	323	198
28	117	‡ 133	121	142	56.9	114	427	‡ 3,100	122	2,440	307	198
29	113		94.6	144	53.7	101	406	3,150	120	2,400	307	198
30	113		86.5	151	48.0	101	406	3,190	117	798	307	188
31	117		83.0		42.4		399	3,180		491		188
Sum	3,954	13,560	3,295.5	4,431.3	101,075.8	6,296.8	9,800.5	53,942	114,029	92,206	11,233	7,383

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1968-1973 Acre-Feet Average	Maximum	Minimum
Jan.	0.46	0.39	† 3	142	21	110	127	7,847	19,474	54,215	5,236
Feb.	1.87	.39	11	1,630	† 1	117	484	26,869	96,639	401,339	5,788
Mar.	.43	.33	† 1	133	31	79.5	106	6,536	17,686	68,727	5,874
Apr.	.95	.33	24	501	1	79.5	148	8,788	16,118	32,447	5,030
May	4.53	.23	1	9,290	31	42.4	3,260	200,481	69,128	200,481	6,574
June	3.02	.23	11	4,730	1	42.4	210	12,489	57,613	164,298	1,671
July	2.85	.30	9	4,240	3	75.9	316	19,443	25,791	80,943	2,322
Aug.	2.53	.59	†30	3,250	3	133	1,740	107,056	64,877	164,760	11,855
Sept.	4.17	.36	13	8,190	25	101	3,810	226,175	73,843	226,175	13,678
Oct.	12.93	.39	5	34,100	† 2	109	2,970	182,907	88,821	182,907	13,399
Nov.	.92	.69	1	473	†28	307	374	22,283	19,922	32,340	13,343
Dec.	.69	.52	† 4	307	†30	188	238	14,646	14,538	25,360	7,486
Yearly	12.93	0.23		34,100		42.4	1,150	835,520	564,450	1,095,264	207,998

‡ Discharge measurement made on this day † And other days

RIO SAN RODRIGO NEAR MOUTH AT EL MORAL, COAHUILA

DESCRIPTION: Cableway, gravity well, concrete control weir of 4,600 second-foot capacity, and water-stage recorder located on the left bank at El Moral, Coahuila, latitude 26°53'45", longitude 100°38'05", 0.5 river mile from the confluence with the Rio Grande, and about 15.5 miles northwest of Piedras Negras, Coahuila. The stream enters the Rio Grande at river mile 512.0, 19.5 river miles downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam, 20.7 river miles upstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila, and 736.8 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 751.61 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 9 discharge measurements made at low and medium flows during the year and a continuous record of gage heights. Records available: 1962 through 1973.

REMARKS: This station, located 10.6 river miles downstream from the permanent station which was in operation from 1922 through May 1966, was originally installed on a provisional basis; however, it became the permanent station on June 1, 1966 when operation of the upstream station was discontinued. The rating curve for this station is affected by backwater from the Rio Grande when its flow is approximately 10,000 second-feet. The flow of this spring-fed stream is modified by diversions above this station. On November 25, 1969, a concrete control weir was finished and placed in operation. Prior to this date, the zero of the gage was 746.82 feet above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS**: Momentary: Max. 72,000 second-feet on June 17, 1961 determined by slope-area computations. Min. frequently no flow.

Average Flow in Second-Feet

Daily:	Max.	6,180	Sept. 15, 1967	Min.	0	Frequently
Monthly:	Max.	1,450	Aug. 1971	Min.	0	Frequently
Yearly:	Max.	305	1971	Min.	5.3	1963

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	85.5	63.9	59.3	42.4	35.0	14.1	7.8	26.5	13.8	27.5	207	134
2	91.5	63.9	59.3	41.3	153	14.1	7.8	30.1	13.8	27.2	207	138
3	90.8	63.9	59.3	40.6	40.6	13.1	7.8	32.1	13.4	27.5	207	138
4	86.2	61.8	59.3	39.6	35.0	14.1	7.8	29.0	12.7	172	202	134
5	84.4	61.8	59.3	38.8	35.0	14.1	9.2	26.1	12.4	8,300	197	134
6	83.3	61.8	59.3	39.9	36.4	13.1	9.2	24.0	17.0	7,080	197	134
7	82.6	61.8	59.3	43.1	36.4	11.7	9.2	23.7	17.7	2,210	197	132
8	82.6	61.8	59.3	44.1	35.0	10.6	13.4	22.6	15.5	1,200	191	127
9	83.0	61.8	59.3	43.1	‡ 33.2	10.6	27.5	21.9	14.5	840	187	126
10	85.5	61.8	59.0	41.7	33.2	10.6	27.5	20.8	13.8	653	187	124
11	86.5	61.8	57.2	‡ 39.9	31.8	10.6	26.1	20.5	‡ 13.4	540	187	120
12	84.8	61.8	57.2	41.3	41.7	9.9	25.4	19.4	13.8	470	185	113
13	82.6	61.8	57.2	41.3	33.5	9.5	25.4	19.1	17.3	519	181	109
14	81.6	61.8	55.8	42.7	30.4	9.2	24.4	18.7	20.8	399	173	107
15	78.8	61.8	55.1	162	29.7	9.2	166	19.1	23.3	367	171	105
16	75.9	61.8	53.7	93.2	27.5	9.2	85.8	18.4	25.1	‡ 333	166	105
17	‡ 74.2	61.8	52.3	69.2	26.1	9.2	61.1	17.7	25.1	306	163	101
18	74.2	61.8	50.9	54.7	25.1	9.2	49.8	17.3	25.1	286	163	99.9
19	70.6	61.8	50.9	49.4	24.4	9.2	43.4	16.6	25.1	274	163	99.9
20	68.9	63.2	50.9	45.6	21.5	‡ 8.8	40.5	16.2	25.1	262	159	97.1
21	67.3	70.6	48.7	42.4	19.3	9.2	38.5	15.5	24.4	251	157	95.0
22	66.4	‡ 83.3	49.4	40.3	18.0	9.2	36.4	‡ 15.2	24.0	245	159	93.6
23	66.4	82.3	50.1	39.6	18.0	9.2	35.3	14.5	25.1	239	159	91.5
24	66.4	75.6	50.1	38.8	18.0	10.6	33.9	14.5	26.1	234	155	90.4
25	73.5	71.3	47.7	37.8	17.0	11.3	32.8	14.1	26.5	228	154	87.2
26	73.1	68.9	46.3	37.1	15.9	10.6	31.8	14.1	26.1	223	150	85.5
27	68.9	66.0	44.5	36.4	14.5	9.2	31.1	15.2	26.3	217	147	85.5
28	66.4	60.0	‡ 43.1	35.3	14.1	8.1	29.7	15.2	26.1	217	141	85.5
29	63.9		43.1	35.0	13.8	7.8	27.9	14.8	27.5	212	138	85.5
30	63.9		43.1	35.0	13.8	7.8	27.2	14.5	27.5	212	134	85.5
31	63.9		43.1		14.1		26.8	14.5		212		85.5
Sum	2,374.1	1,821.7	1,643.1	1,431.6	941.5	313.1	1,026.6	601.9	618.3	26,783.2	5,184	3,348.6

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1962-1973 Acre-Feet Average	Acre-Feet Maximum	Acre-Feet Minimum
Jan.	1.25	1.08	2	92.9	†29	83.9	76.6	4,709	2,405	9,975	0
Feb.	1.21	1.05	23	85.5	28	59.3	65.0	3,613	1,624	6,669	0
Mar.	1.05	.92	† 1	59.3	†28	43.1	53.0	3,259	1,356	3,880	0
Apr.	2.23	.85	15	413	†29	35.0	47.7	2,839	3,127	21,692	122
May	2.85	.52	2	777	29	13.1	30.4	1,867	2,273	8,431	17.0
June	.56	.43	† 1	14.1	†29	7.8	10.6	621	1,355	4,705	0
July	2.69	.43	15	632	† 1	7.8	33.2	2,037	4,425	28,394	0
Aug.	.82	.56	3	33.2	†25	14.1	19.1	1,193	11,527	59,017	0
Sept.	.75	.52	†29	27.5	5	11.7	20.5	1,227	13,221	44,000	0
Oct.	9.65	.75	5	18,500	2	27.2	862	53,033	13,767	53,033	0
Nov.	1.71	1.44	† 1	207	30	134	173	10,279	5,071	19,270	0
Dec.	1.48	1.21	† 2	138	†26	85.5	108	6,643	3,739	15,053	0
Yearly	9.65	0.43		18,500		7.8	126	91,375	63,940	220,979	3,850.7

** Period 1961-1973 ‡ Discharge measurement made on this day † And other days

RETURN FLOW TO THE RIO GRANDE AT MAVERICK POWER PLANT NEAR EAGLE PASS, TEXAS

DESCRIPTION: A part of the water diverted from the river into the Maverick Canal is returned to the Rio Grande through the hydroelectric power plant located on the left bank of the Rio Grande at latitude 28°49'50", longitude 100°33'10", about 9 miles north-northwest of Eagle Pass, Texas, and about 32.2 canal miles downstream from the point of diversion. The return enters the Rio Grande at river mile 501.5 and 747.3 river miles downstream from the American Dam at El Paso, Texas.

RECORDS: Based on records furnished by the Maverick County Water Control and Improvement District No. 1, showing hourly discharge in cubic feet per second based on hourly manometer readings, through each turbine at the Central Power and Light Company hydroelectric power plant. The mean daily discharges computed from the manometer readings have been multiplied by a factor to make them agree with periodic current meter measurements of flows made under stable flow conditions by hydrographers of the Commission. There were 48 discharge measurements made during the year. Records available: 1949 through 1973.

REMARKS: This power plant began operating April 16, 1932 with hydroelectric power generating facilities for 12,000 kw. Because the September 1932 flood washed out the upper end of the Maverick Canal, this plant did not operate from September 2, 1932 until March 17, 1937. Since then it has operated continuously except for 44 days in 1953 when shortage of water prevented operation and from June 30 through July 19, during flood of 1954, and while the canal was being repaired. The plant's operation is now governed by the amount of water released from Amistad Reservoir which began operations on May 31, 1968.

Average Flow in Second-Feet

Daily:	Max. 1,460	Aug. 29, 1969 & Oct. 23, 1973	Min. 0		Occasionally
Monthly:	Max. 1,300	Oct. 1973	Min. 14.1		June 1953
Yearly:	Max. 1,020	1950 & 1961	Min. 232		1972

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	120	119	324	29.5	1,030	399	916	1,060	1,110	1,190	437	57.0
2	‡ 92.9	109	305	‡ 29.5	1,100	556	922	984	1,150	‡ 1,200	317	57.1
3	178	98.0	310	29.5	‡ 1,170	915	910	881	1,160	1,130	287	‡ 57.1
4	159	128	315	29.5	1,170	‡ 905	950	1,060	‡ 1,160	1,150	291	55.6
5	180	‡ 332	‡180	105	1,160	869	884	1,120	1,150	1,320	‡270	54.2
6	187	441	163	415	1,150	847	795	‡ 1,050	1,250	1,340	263	52.7
7	168	1,080	172	866	1,160	861	758	1,010	1,350	1,350	256	70.4
8	‡ 197	1,210	169	882	‡ 1,140	878	778	993	1,340	1,340	240	64.3
9	191	1,270	133	‡ 877	1,150	876	‡ 992	982	1,350	‡ 1,360	249	85.7
10	205	1,300	83.6	909	1,150	929	938	985	‡ 1,280	1,310	250	‡ 74.2
11	228	1,300	163	970	1,150	875	845	987	1,310	1,280	259	96.2
12	243	1,310‡	‡119	983	1,080	‡ 847	777	1,080	1,290	1,290	‡243	85.0
13	235	1,310	53.9	973	1,110	875	730	1,010	1,290	1,330	216	70.9
14	218	1,290	45.1	974	‡ 1,100	852	676	‡ 997	1,270	1,350	215	55.3
15	‡ 228	1,240	34.7	1,060	1,100	868	927	1,010	1,240	1,350	205	54.3
16	226	1,230	45.7	1,070	1,100	878	1,240	1,020	1,240	‡ 1,340	160	55.8
17	229	1,260	154	1,080	785	971	1,190	1,070	‡ 1,220	1,340	127	‡ 57.3
18	233	1,280	23.3	1,080	274	‡ 903	1,240	1,130	1,190	1,330	167	58.0
19	199	1,270	‡ 23.3	1,170	186	866	1,360	1,170	1,230	1,320	‡141	59.7
20	167	1,270‡	23.5	1,220	157	994	1,320	‡ 1,090	1,230	1,380	134	59.3
21	122	1,070	23.8	1,210	177	1,060	1,300	1,040	1,230	1,430	133	59.9
22	‡ 36.3	523	24.0	1,190	‡ 109	1,040	1,330	1,010	1,210	1,440	129	60.6
23	36.3	400	24.3	1,200‡	103	1,050	‡ 1,310	996	1,310	1,460	96.7	75.4
24	36.3	354	24.5	1,200	160	1,280	1,290	1,050	‡ 1,320	1,400	56.9	70.7
25	247	248	24.8	1,160	206	‡ 1,400	1,220	1,130	1,230	1,370	56.9	64.3
26	346	‡ 278	‡ 25.0	1,110	283	1,340	1,180	1,170	1,110	1,370	‡ 56.9	‡ 63.2
27	256	303	25.6	1,070	373	1,140	1,160	‡ 1,090	1,200	1,340	56.9	63.3
28	242	299	26.3	1,050	324	1,100	1,110	1,110	1,200	1,360	56.9	63.5
29	‡ 218		26.9	1,110	‡ 278	1,070	1,130	1,300	1,200	‡ 1,370	56.9	63.6
30	196		27.6	1,040	310	973	‡ 1,100	1,310	1,200	1,060	56.9	63.8
31	71.1		28.2		281		1,070	1,220		569		63.9
Sum	5,690.9	22,322.0	3,121.1	26,092.0	22,026	28,417	32,348	33,115	37,020	40,169	5,484.0	1,992.3

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	∅ Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1949-1973 Acre-Feet Average	Maximum	Minimum
Jan.			26	346	†22	36.3	184	11,288	49,605	72,800	4,952
Feb.			†12	1,310	3	98.0	797	44,275	46,144	68,500	9,373
Mar.			1	324	†18	23.3	101	6,191	40,087	65,400	5,713
Apr.			20	1,220	† 1	29.5	870	51,753	36,904	58,600	4,301
May			† 3	1,170	23	103	711	43,688	45,112	69,188	2,280
June			25	1,400	1	399	947	56,364	41,717	68,900	841
July			19	1,360	14	676	1,040	64,161	39,626	64,151	2,880
Aug.			30	1,310	3	881	1,070	65,683	46,522	69,000	18,457
Sept.			† 7	1,350	† 1	1,110	1,230	73,428	51,803	75,591	13,741
Oct.			23	1,460	31	569	1,300	79,674	53,364	79,674	11,147
Nov.			1	437	†24	56.9	183	10,877	47,097	67,400	3,203
Dec.			11	96.2	6	52.7	64.3	3,952	48,964	73,130	2,608
Yearly				1,460		23.3	706	511,334	546,945	740,000	168,354

‡ Discharge measurement made on this day ∅ Mean daily † And other days

DIVERSIONS FROM THE RIO GRANDE
MAVERICK CANAL EXTENSION BELOW THE POWER PLANT
NEAR EAGLE PASS, TEXAS

DESCRIPTION: Gage well and digital water-stage recorder located on the downstream side of a wooden pile bridge at latitude 28°49'50", longitude 100°32'40", about 1 mile downstream from the heading of this canal extension, about 9 miles north-northwest of Eagle Pass, Texas, and about 32.8 canal miles downstream from the point of diversion from the Rio Grande, which is located at river mile 537.4. The elevation of the zero of the gage has not been determined.

RECORDS: Based on 33 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1939 through 1973.

REMARKS: The main Maverick Canal divides into two branches at a point about 9 miles north-northwest of Eagle Pass, Texas, and about 31.8 canal miles downstream from the point at which water from the Rio Grande is diverted. One branch leads to the Maverick Power Plant and back to the Rio Grande while the other branch forms this Maverick Canal Extension, which is used to transmit irrigation water. Irrigation from this canal extension began in June 1938. In 1973, 26,585 acres of land north and south of Eagle Pass were irrigated. A total of 123,169 acre-feet of water from this canal extension returned to the river through the irrigation system which extends approximately 67 canal miles downstream.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 580 second-feet on July 25, 1964. Min. occasionally no flow.

		Average Flow in Second-Feet		
Daily:	Max. 559	July 14, 1964	Min. 0	Occasionally
Monthly:	Max. 525	July 1964	Min. 18.7	March 1939
Yearly:	Max. 345	1964	Min. 62.1	1939

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	263	181	100	‡ 369	372	420	112	305	282	120	106	170
2	‡ 264	193	101	‡ 352	374	389	‡ 111	306	251	‡ 120	105	208
3	228	208	102	343	‡ 377	392	88.4	307	237	120	104	206
4	199	209	102	318	377	‡ 390	75.4	310	‡ 238	120	105	171
5	202	‡ 207	‡ 97.6	331	378	435	112	317	232	70.7	104	213
6	‡ 197	155	133	306	379	446	159	‡ 340	184	42.7	104	265
7	198	171	155	307	379	430	187	339	88.8	42.4	103	262
8	197	165	148	306	380	413	232	337	131	43.0	102	302
9	173	164	159	335	357	412	232	335	132	43.4	102	305
10	160	152	190	356	346	413	232	344	150	67.7	101	‡ 305
11	162	142	196	372	347	394	215	367	179	103	100	306
12	156	‡ 140	‡193	369	380	384	216	370	179	103	‡ 99.7	306
13	150	139	195	372	403	385	216	350	179	94.4	99.4	303
14	155	139	216	371	‡ 399	384	250	340	202	48.3	99.5	300
15	‡ 157	139	206	375	399	384	143	339	213	48.2	99.3	291
16	158	140	228	377	398	383	26.8	338	213	‡ 48.1	125	275
17	159	140	179	378	385	384	26.7	306	‡ 213	48.4	155	257
18	156	140	291	380	461	‡ 383	26.7	276	212	48.6	159	240
19	180	140	‡266	339	523	381	26.3	276	196	49.0	157	274
20	202	‡ 139	267	309	542	344	78.0	‡ 275	181	49.3	152	292
21	215	137	276	322	508	275	103	274	188	49.4	151	287
22	‡ 265	112	268	323	500	274	104	274	188	49.3	152	295
23	259	98.8	267	‡ 322	505	272	‡ 104	274	92.4	49.9	140	302
24	246	97.2	292	319	453	243	138	276	38.8	49.8	133	299
25	213	107	290	319	431	‡ 31.9	203	276	38.7	89.5	192	300
26	169	‡ 128	‡253	334	455	30.7	214	276	80.9	110	‡213	‡ 297
27	163	109	247	366	452	32.2	215	276	120	109	170	289
28	167	100	253	365	455	34.5	236	277	120	109	174	275
29	‡ 158		321	372	453	36.7	254	226	120	‡ 110	175	274
30	157		302	371	426	84.1	254	192	120	108	172	286
31	168		298		436		273	246		106		282
Sum	5,896	4,092.0	6,591.6	10,378	13,040	9,260.1	4,863.3	9,344	4,999.5	2,370.6	3,953.9	8,437

Month	Average Rainfall Inches** 1939-1973	Average Rainfall Inches** 1973	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1939-1973 Acre-Feet Average	Maximum	Minimum
			Current Year 1973								
Jan.	0.80	1.47	22	276	13	147	190	11,695	12,623	19,800	2,140
Feb.	.99	2.88	5	216	27	87.7	146	8,116	11,745	18,200	2,120
Mar.	.67	.19	29	342	17	19.0	213	13,074	15,069	23,310	1,150
Apr.	1.56	.74	9	395	4	230	346	20,584	15,711	25,900	3,430
May	2.99	.19	19	567	† 9	344	421	25,864	13,796	28,191	2,840
June	2.00	3.40	1	461	26	30.0	309	18,367	16,563	30,173	3,750
July	1.40	4.13	31	305	†19	26.3	157	9,646	17,887	32,276	4,510
Aug.	2.27	1.82	12	374	30	191	301	18,534	15,890	29,312	3,480
Sept.	3.06	5.96	† 1	290	24	38.4	167	9,918	12,364	22,640	4,600
Oct.	2.23	7.73	13	139	† 6	42.1	76.5	4,702	12,817	21,800	4,702
Nov.	.67	.11	25	202	15	98.5	132	7,842	13,058	20,117	4,170
Dec.	.03		5	314	4	164	272	16,735	13,103	20,200	4,233
Yearly	19.37	28.42		567		19.0	228	165,075	170,626	250,801	44,950

‡ Discharge measurement made on this day † And other days

** On the United States side from Maverick Power Plant to Cuervo Creek

RETURN FLOW TO THE RIO GRANDE FROM MAVERICK CANAL
MAVERICK DAM TO EAGLE PASS, TEXAS

DESCRIPTION: Part of the water diverted from the Rio Grande into the Maverick Canal is returned to the river through various drains and spillways of the irrigation system located between Maverick Diversion Dam and Eagle Pass, Texas. These return flows are measured at gaging stations consisting of sharp-crested Cipolletti weirs or control structures equipped with continuous water-stage recorders located at Lateral 2 Spill, Canon Grande, Quemado Creek, Lateral 15 Spill, Hardt Spill, Houchin Spill, Lateral 12 Spill, Lateral 8-B Spill, Elm Creek, and Seco Creek; and a Parshall flume at the Lateral 2 Sand Trap Spill into Las Moras Creek immediately below the canal siphon.

RECORDS: Based on the weir discharge table and a continuous record of gage heights. All storm flow occurring at these stations is deducted from the records and is not shown below. Records available: April 1959 through 1973.

REMARKS: In addition to the flows listed below, water from the Maverick Canal is returned to the Rio Grande in this reach at the Maverick Power Plant (see page 46).

EXTREME FLOWS FROM RECORDS:

		Average Flow in Second-Feet		
Daily:	Max. 788	Jan. 16, 1965	Min. 18.3	March 9, 1969
Monthly:	Max. 218	Jan. 1965	Min. 32.8	Jan. 1973
Yearly:	Max. 145	1965	Min. 51.4	1973

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	46.7	39.4	32.9	75.7	79.9	74.7	33.3	59.4	48.7	37.9	39.8	60.3
2	41.3	43.9	36.5	78.4	65.9	74.3	29.3	56.3	59.9	41.5	43.9	47.8
3	44.1	45.1	31.8	61.2	45.4	68.0	24.8	52.9	66.2	46.2	44.5	54.8
4	34.5	43.6	27.4	61.7	44.2	66.0	29.6	63.7	60.4	46.5	40.4	56.0
5	33.7	51.9	28.9	67.7	45.9	76.6	27.2	65.6	52.6	46.0	44.5	61.1
6	33.7	51.1	30.5	78.9	67.5	72.5	29.3	56.2	48.3	48.4	47.9	48.1
7	33.7	49.5	28.1	78.6	70.3	64.1	41.8	59.4	47.1	52.5	41.2	44.5
8	27.1	51.6	31.7	55.7	59.2	66.3	58.3	60.4	51.3	53.0	45.3	44.9
9	22.1	47.3	39.8	50.5	55.0	71.9	66.7	74.9	43.3	51.1	39.7	41.5
10	24.0	45.0	39.1	52.6	50.9	64.5	55.6	85.6	38.8	48.3	39.1	42.8
11	22.3	50.9	36.3	57.0	55.1	79.7	52.2	77.5	37.4	45.9	39.6	42.6
12	21.4	51.5	35.9	68.0	76.3	88.4	51.9	66.4	40.5	43.5	42.4	48.3
13	21.8	46.3	45.7	69.0	71.5	85.3	50.3	61.0	38.3	50.2	42.1	50.9
14	22.8	41.9	47.5	77.1	61.4	86.7	51.3	60.0	37.9	52.0	46.3	47.7
15	25.0	34.5	57.1	89.6	58.8	80.3	53.0	61.8	40.6	53.0	52.3	46.6
16	23.9	31.9	49.3	73.1	56.9	78.3	57.9	61.9	44.8	50.7	54.6	37.5
17	25.6	32.6	44.2	64.8	59.3	77.9	52.2	51.1	48.4	48.3	53.5	43.3
18	36.7	32.4	45.6	51.5	59.5	70.7	45.0	56.3	58.0	46.5	43.0	51.4
19	36.1	35.9	54.4	51.5	66.5	70.8	33.7	60.2	58.1	40.8	54.9	55.9
20	34.7	32.5	54.5	52.4	73.2	65.7	28.9	60.9	53.0	39.5	55.5	46.4
21	29.4	33.5	60.4	50.4	68.8	54.4	30.5	70.8	54.8	38.4	55.3	45.5
22	31.9	38.3	71.8	52.1	78.2	48.3	39.1	86.1	56.4	38.9	48.9	51.8
23	39.1	35.9	75.9	51.0	80.7	52.0	36.8	87.6	48.5	39.7	47.2	55.5
24	46.4	34.4	63.4	54.6	68.9	50.6	48.8	83.1	43.9	40.6	51.1	64.8
25	51.4	34.0	75.8	54.2	67.0	48.7	44.2	76.3	38.2	44.0	44.4	59.1
26	44.3	33.1	76.4	53.9	82.3	41.7	48.9	74.8	46.9	42.5	43.8	58.5
27	36.8	31.1	65.6	52.2	70.3	31.7	55.9	73.5	53.8	47.0	45.9	56.4
28	29.7	31.0	70.7	66.5	58.2	26.7	63.2	73.4	39.7	46.4	44.3	59.4
29	28.8		67.1	57.2	54.5	24.0	61.6	70.9	37.1	44.3	45.1	60.5
30	31.9		63.2	65.9	64.6	30.0	61.1	57.1	37.0	49.7	48.4	62.8
31	34.4		55.7		65.0		55.9	59.1		44.0		70.3
Sum	1,130.1		1,873.0		1,890.8		2,064.2		1,417.4		1,617.0	
	1,015.3	1,543.2		1,991.2		1,417.4		1,429.9		1,384.9		

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	∅ Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period Apr. 1959-1973 Acre-Feet Average	Maximum	Minimum
Jan.			25	51.4	12	21.4	32.8	2,014	6,558	13,430	2,014
Feb.			5	51.9	28	31.0	40.4	2,242	5,549	7,652	2,242
Mar.			28	76.4	4	27.4	49.8	3,061	6,378	8,952	3,061
Apr.			15	89.6	21	50.4	62.4	3,715	6,449	7,795	3,715
May			26	82.3	4	44.2	64.2	3,949	6,272	8,777	3,697
June			12	88.4	29	24.0	63.0	3,750	6,778	9,219	2,912
July			9	66.7	3	24.8	45.7	2,811	7,094	9,858	2,811
Aug.			23	87.6	17	51.1	66.6	4,094	6,882	9,866	2,931
Sept.			3	66.2	30	37.0	47.7	2,836	5,899	9,477	2,835
Oct.			† 8	53.0	1	37.9	45.7	2,811	5,922	8,583	2,811
Nov.			20	55.5	10	39.1	46.2	2,747	6,074	8,696	2,717
Dec.			31	70.3	16	37.5	52.2	3,207	5,970	8,821	2,438
Yearly				89.6		21.4	51.4	37,237	75,825	104,997	37,237

∅ Mean daily † And other days

RIO GRANDE AT EAGLE PASS, TEXAS

DESCRIPTION: Cableway, gravity well, water-stage recorder, and resistance-type transmitter located on the left bank at latitude 29°42'50", longitude 100°30'25", and river mile 491.8; 0.5 river mile upstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila, 73.4 river miles downstream from Amistad Dam, and 757.0 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 682.91 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 70 discharge measurements during the year, 47 by the Mexican Section and 23 by the United States Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: May 1900 through Mar. 1914; Aug. 1914 through Apr. 1916; Sept. 1916; Sept. and Oct. 1917; Oct. 1918; Sept. and Oct. 1919; Aug. and Sept. 1920; June 1922; Sept., Nov., and Dec. 1923; and 1924 through 1973.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The transmitter is coupled, via leased telephone circuits, to a receiver located in the office of the Eagle Pass and Piedras Negras Bridge Company from where the Wheatstone bridge circuit can be balanced to indicate the existing gage height. This system is operated in cooperation with the National Weather Service.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 964,100 second-feet, determined by slope-area calculations, on June 29, 1954 with a gage height of 53.51 feet. Well-authenticated information indicates the occurrence of a flood in June 1865 with an estimated discharge of 1,236,000 second-feet and a gage height of 56.00 feet on the present gage and also that these were the only floods since 1745 with flows greater than 825,000 second-feet. Min. 24.4 second-feet on June 22,1953 with a gage height of 0.07 foot.

Average Flow in Second-Feet**

Daily:	Max. 572,100	June 28, 1954	Min. 30.7	June 22, 1953
Monthly:	Max. 48,000	Sept. 1932	Min. 248	April 1953
Yearly:	Max. 9,180	1932	Min. 870	1956

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	396	388	569	242	3,130	569	1,030	1,480	4,200	1,320	1,240	519
2	388	353	551	262	‡ 9,010	629	1,010	1,440	4,270	‡ 1,270	1,010	519
3	‡ 456	352	554	‡ 251	8,790	985	1,020	1,100	4,310	1,250	985	537
4	487	374	554	‡ 244	8,860	992	‡ 1,120	1,260	4,310	‡ 1,290	943	‡ 533
5	480	459	494	238	8,860	982	1,020	1,480	4,270	9,640	957	544
6	491	‡ 629	‡ 399	501	8,930	‡ 939	922	1,410	5,760	26,200	‡ 876	551
7	480	1,380	413	946	‡ 8,900	936	883	1,360	7,240	7,100	879	554
8	484	1,900	410	1,030	‡ 8,790	932	883	1,330	7,490	4,480	855	558
9	‡ 473	2,150	396	1,010	8,760	989	1,760	1,660	7,950	3,780	865	558
10	484	2,690	357	‡ 1,040	8,790	1,040	‡ 1,540	‡ 3,040	6,250	3,370	848	544
11	491	2,750	413	1,130	7,520	1,240	1,100	3,080	7,700	2,990	848	‡ 544
12	505	2,770	385	1,180	5,010	2,430	961	3,200	‡ 7,770	3,100	848	554
13	505	‡2,770	‡ 320	1,200	4,340	‡ 1,210	901	3,190	‡ 8,690	4,730	‡ 816	‡ 544
14	480	2,690	299	1,200	4,200	1,040	837	‡ 2,680	8,480	5,970	‡ 816	498
15	480	2,420	274	1,610	‡ 3,210	999	1,870	1,740	7,660	3,430	819	452
16	‡ 477	1,670	263	1,480	2,320	961	1,950	1,630	7,660	‡ 3,130	784	452
17	470	1,570	348	‡ 1,440	1,150	1,010	‡ 1,580	2,230	7,630	2,860	738	452
18	473	1,560	235	1,380	554	964	1,490	3,100	‡ 7,560	‡ 2,730	752	‡ 466
19	466	1,540	236	1,370	385	‡ 929	1,840	3,210	6,000	2,620	‡ 742	477
20	420	‡1,520	‡ 228	1,390	353	1,270	1,940	3,150	4,450	5,160	735	441
21	403	1,440	238	1,360	346	1,550	1,900	‡ 3,080	3,920	7,130	‡ 717	448
22	272	876	234	1,360	284	1,240	1,900	3,070	2,970	7,170	713	466
23	‡ 267	727	258	1,360	242	1,190	1,910	3,060	1,790	7,100	689	466
24	278	660	260	‡ 1,360	322	1,390	1,880	3,500	1,650	7,100	614	466
25	466	576	264	1,460	367	1,600	1,760	3,880	‡ 1,460	‡ 7,100	618	452
26	590	540	265	1,320	434	1,530	‡ 1,680	3,640	1,350	7,100	590	‡ 459
27	509	‡ 565	‡ 277	‡ 1,190	505	‡ 1,270	1,660	3,070	1,530	4,930	‡ 586	434
28	459	544	272	1,150	459	1,180	1,610	‡ 4,030	1,370	4,100	576	434
29	438		275	1,210	‡ 413	1,150	1,610	‡ 4,170	1,330	‡ 4,030	572	438
30	‡ 424		254	1,190	410	1,080	‡ 1,570	4,130	1,330	3,130	558	438
31	371		243		410		1,530	4,030		1,360		438
Sum	13,883	37,863	10,538	32,154	116,054	34,226	44,667	82,430	148,350	156,720	23,589	15,236

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1968-1973 Acre-Feet Average	Maximum	Minimum
Jan.	2.10	1.35	26	614	†23	258	448	27,494	66,801	93,804	27,494
Feb.	4.00	1.48	13	2,800	1	307	1,350	75,121	140,871	448,150	35,604
Mar.	2.20	1.21	17	667	31	211	340	20,899	52,549	114,018	20,899
Apr.	3.41	1.21	15	1,950	3	211	1,070	63,786	59,594	89,308	24,030
May	6.92	1.25	2	9,430	24	223	3,740	230,246	115,084	230,246	36,193
June	4.59	1.77	12	3,740	1	438	1,140	67,930	106,376	246,770	19,254
July	3.41	2.30	24	1,950	14	745	1,440	88,565	76,559	119,791	26,100
Aug.	5.12	2.66	29	4,700	3	1,050	2,660	163,450	129,231	261,760	56,856
Sept.	6.73	2.69	13	8,900	26	1,080	4,940	294,212	133,137	294,212	80,699
Oct.	14.60	2.82	6	33,000	2	1,210	5,050	310,805	161,961	310,805	80,699
Nov.	2.95	2.00	1	1,360	† 2	558	788	46,790	65,341	94,575	46,790
Dec.	2.00	1.74	† 8	558	†27	420	491	30,225	58,023	105,033	26,197
Yearly	14.60	1.21		33,000		211	1,960	1,419,523	1,165,577	1,707,305	705,670

** Period 1924-1973 ‡ Discharge measurement made on this day † And other days

RIO ESCONDIDO AT VILLA DE FUENTE, COAHUILA

DESCRIPTION: Cableway, gravity well, concrete control weir of 1,750 second-foot capacity, and water-stage recorder located on the downstream side of the left abutment of the highway bridge over Rio Escondido on the outskirts of Villa de Fuente, Coahuila, 1.2 river miles downstream from the cableway, at latitude 28°40'10", longitude 100°32'50", about 3 miles southwest of Piedras Negras, Coahuila, 3.7 river miles from the confluence with the Rio Grande, and 6.8 river miles downstream from the confluence of Rio San Antonio with Rio Escondido. Rio Escondido enters the Rio Grande at river mile 488.2, 3.1 river miles downstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila, and 760.6 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 718.37 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 11 discharge measurements during the year and a continuous record of gage heights. Records available: 1922 through 1973. Records from 1922 through September 1932 are considered doubtful.

REMARKS: Diversions and drainage returns modify the flow of this spring-fed stream at this station. Backwater from the Rio Grande reached an elevation of 729.92 feet during the flood of June 1954. Prior to November 1954, the gage well was located at the present cableway site. The weir was destroyed by a flood on September 24, 1964. On November 25, 1969, the concrete control weir was finished and placed in operation.

EXTREME FLOWS FROM RECORDS**: Momentary: Max. 24,000 second-feet on June 29, 1936 with a gage height of 19.13 feet. Min. frequently no flow.

		Average Flow in Second-Feet**			
Daily:	Max. 13,100	Sept. 24, 1964	Min.	0	Several days 1956-1958 & 1965
Monthly:	Max. 827	Sept. 1964	Min.	0.3	September 1965
Yearly:	Max. 144	1971	Min.	2.4	1956

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	108	96.1	95.0	73.1	29.0	101	23.7	26.5	20.5	39.2	141	90.4
2	109	96.1	92.9	72.0	33.5	94.6	21.5	43.4	21.2	36.7	141	87.6
3	111	96.1	92.9	69.6	33.5	37.8	22.2	18.0	22.2	36.7	137	87.6
4	111	92.9	92.9	69.6	32.1	27.5	21.2	13.8	20.5	52.3	137	79.5
5	108	92.9	92.9	69.6	32.1	26.1	21.9	11.7	15.2	463	131	79.5
6	108	92.9	90.4	74.5	32.8	26.5	20.5	11.3	39.2	826	127	79.5
7	108	92.9	90.4	74.5	33.9	55.1	18.7	10.9	48.0	299	127	79.5
8	105	96.6	90.4	74.5	32.1	50.5	23.0	9.9	43.8	199	124	77.0
9 ‡	105	98.9	91.5	49.1	30.7	50.1	30.0	10.6	43.4	167	124	77.0
10	105	98.9	86.2	38.1	32.1	26.5	28.3	10.9	38.1	157	119	77.0
11	110	98.9	87.6	39.9	33.5	21.5	27.5	9.2	38.1	152	114	‡ 74.9
12	107	98.9	87.6	41.7	37.1 ‡	19.8	27.5	8.5	38.1	152	111	72.0
13	105	98.9	‡ 87.6	41.7	73.8	14.1	20.8	17.0	39.9	678	‡114	72.0
14	105	98.9	84.8	45.6	40.3	12.0	13.8	55.4	39.9	226	118	77.0
15	104	98.9	81.9	47.7	36.7	11.3	141	124	39.9	208	118	77.0
16	101	98.9	84.8	45.6	43.8	11.3	61.4	34.3	41.7	201	111	79.5
17	99.9	108	75.9	40.3	49.4	11.7	32.1	20.1	41.7	192	111	79.5
18	98.9	106	73.5	‡ 37.1	47.7	13.1	29.0	23.0	‡ 40.3	185	111	84.8
19	97.8	100	67.1	36.0	28.6	13.4	29.0	18.7	38.1	179	111	84.8
20	96.1	‡101	67.1	35.0	24.4	59.3	29.0	18.7	34.3	176	105	84.8
21	96.1	112	63.9	35.0	21.2	36.4	29.0	‡ 17.0	9.2	173	102	84.8
22	92.9	114	55.4	37.1	‡ 15.9	26.1	29.0	15.9	11.7	168	102	84.8
23	92.9	111	56.2	38.1	14.8	25.1	29.0	14.8	92.2	167	102	84.8
24	92.9	108	55.1	37.4	16.2	27.9	29.0	13.8	149	160	98.9	84.8
25	107	105	55.8	35.0	18.0	32.1	26.1	13.1	44.8	159	98.9	84.8
26	102	105	53.3	32.1	17.7	29.7	23.7	13.1	30.7	156	98.9	84.8
27	98.9	99.9	53.3	29.0	14.8	26.5	21.2	13.8	37.8	149	‡ 95.3	84.8
28	96.1	96.1	71.0	29.0	14.8	24.4	21.2	18.0	47.7	148	92.9	84.8
29	96.1		77.0	29.0	17.3	23.7	21.2	21.5	41.7	148	92.9	84.8
30	96.1		77.0	29.0	16.6	23.7	21.2	20.5	40.3	148	89.7	81.9
31	96.1		74.5		23.7		21.2	18.7		143		81.9
Sum	3,169.8	2,813.9	2,405.9	1,405.9	928.1	958.8	913.9	676.1	1,209.2	6,343.9	3,405.5	2,527.9

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	High	Extreme Second-Feet Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1933-1973 Acre-Feet Average	Maximum	Minimum
Jan.	1.51	1.41	† 3	111	†22	92.9	102	6,285	2,161	15,990	43.8
Feb.	1.54	1.41	22	114	† 4	92.9	101	5,583	1,569	9,990	38.9
Mar.	1.64	1.15	28	138	†26	53.3	77.7	4,772	1,330	6,910	92.4
Apr.	1.28	.92	† 6	74.5	†27	29.0	47.0	2,788	1,869	21,950	81.1
May	1.84	.72	13	184	†23	14.8	30.0	1,841	3,591	25,470	154
June	2.26	.62	1	304	10	9.9	32.1	1,902	2,280	19,730	60.3
July	2.72	.69	15	477	14	13.1	29.7	1,813	1,598	9,740	57.6
Aug.	2.76	.59	15	501	12	8.5	21.9	1,342	2,825	20,830	34.9
Sept.	2.49	.56	24	388	6	7.1	40.3	2,397	4,372	49,182	17.8
Oct.	4.36	.93	6	1,370	† 2	36.7	205	12,585	3,420	28,327	43.8
Nov.	1.80	1.38	† 1	141	30	87.6	114	6,760	2,201	25,730	43.8
Dec.	1.38	1.28	1	90.4	†12	72.0	81.6	5,013	1,899	13,406	67.3
Yearly	4.36	0.56		1,370		7.1	73.5	53,081	29,115	104,294	1,755.3

** Period 1932-1973 ‡ Discharge measurement made on this day † And other days

RETURN FLOW TO THE RIO GRANDE FROM MAVERICK CANAL EAGLE PASS TO SAN ANTONIO CROSSING

DESCRIPTION: Part of the water diverted from the Rio Grande into the Maverick Canal is returned to the river through various drains and spillways of the irrigation system located between Eagle Pass, Texas and the San Antonio Crossing Gaging Station. These return flows are measured at gaging stations consisting of sharp-crested Cipolletti weirs or control structures equipped with continuous water-stage recorders located at Lateral 40 Spill, Lateral 40 D Spill, Canon Diablo, Lateral 50 Lowline No. 1, Lateral 50 Spill, Lateral 50 Lowline No. 2, Rosita Creek, Lateral 60 K Spill, Sauz Creek, Lateral 70 Spill No. 1, Lateral 70 Spill No. 2, Indio Creek, Gravel Spill, Lateral 71 Spill, and Cuervo Creek.

RECORDS: Based on the weir discharge table, stable station control rating tables, and a continuous record of gage heights. All storm flow occurring at these stations is deducted from the records and is not shown below. Records available: April 1959 through 1973.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Second-Feet		
Daily:	Max. 350	July 5, 1968	Min. 15.7	March 10, 1969
Monthly:	Max. 248	July 1967	Min. 54.6	December 1969
Yearly:	Max. 206	1963	Min. 132	1970

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	211	174	166	220	258	230	35.4	124	75.6	112	91.6	94.0
2	229	167	152	221	227	254	39.9	139	98.2	112	85.8	107
3	217	160	155	226	216	264	64.4	143	119	97.8	88.3	114
4	209	184	148	227	222	241	75.0	158	103	96.0	97.2	113
5	209	196	154	207	225	231	65.4	155	105	102	90.7	113
6	188	189	151	229	266	222	57.2	151	116	106	95.4	110
7	183	179	133	252	258	234	68.9	157	138	96.8	93.9	111
8	165	174	135	255	250	263	89.5	145	137	88.3	80.8	148
9	132	161	179	252	244	288	115	148	82.9	72.1	77.2	161
10	124	159	224	258	237	313	143	143	92.5	52.8	83.4	177
11	120	160	181	257	217	316	149	143	95.0	42.9	90.8	196
12	101	196	176	256	207	280	132	155	95.8	50.4	88.9	206
13	110	198	210	262	221	234	110	179	110	86.4	76.8	206
14	136	179	189	282	232	201	111	191	108	104	74.4	231
15	112	181	184	278	217	236	126	202	108	114	69.8	188
16	122	166	175	295	210	247	120	190	121	109	66.8	172
17	126	163	164	299	199	247	80.6	190	140	90.9	70.3	188
18	129	164	162	264	183	245	49.5	213	124	74.5	85.4	180
19	138	178	183	287	189	220	38.1	184	126	64.5	109	155
20	122	194	217	286	232	272	32.1	134	124	54.6	89.9	119
21	122	211	225	235	266	282	34.6	149	122	63.4	94.6	131
22	137	228	215	239	264	258	34.8	142	109	63.7	94.0	118
23	166	225	228	253	242	250	56.9	133	109	54.5	112	149
24	203	194	214	246	259	274	71.6	124	107	54.3	107	166
25	226	152	222	217	265	254	62.2	135	79.9	61.7	95.6	187
26	210	154	227	186	266	201	77.5	135	67.6	50.6	94.0	191
27	200	158	226	183	253	129	90.6	153	64.5	63.3	117	155
28	172	165	196	204	243	74.6	114	176	47.3	82.4	128	157
29	144		181	245	234	42.0	123	143	76.5	103	115	175
30	145		188	263	223	35.6	136	114	102	95.0	93.2	178
31	161		205		198		130	96.9		93.3		171
Sum	4,949	5,009	5,765	7,384	7,223	6,838.2	2,633.2	4,744.9	3,103.9	2,512.2	2,762.8	4,367.0

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	∅ Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period Apr. 1959-1973 Acre-Feet Average	Maximum	Minimum
Jan.			2	229	12	101	160	9,816	9,940	12,435	5,242
Feb.			22	228	25	152	179	9,935	9,525	13,117	5,561
Mar.			23	228	7	133	186	11,435	10,830	13,498	6,118
Apr.			17	299	27	183	246	14,646	11,260	14,646	9,380
May			† 6	266	18	183	233	14,327	10,623	14,327	6,205
June			11	316	30	35.6	228	13,563	11,602	14,430	7,798
July			11	149	20	32.1	84.9	5,223	11,695	15,219	5,223
Aug.			18	213	31	96.9	153	9,411	11,047	14,299	8,378
Sept.			17	140	28	47.3	103	6,156	9,262	13,974	4,541
Oct.			15	114	11	42.9	81.0	4,983	9,202	12,248	4,983
Nov.			28	128	16	66.8	92.1	5,480	9,571	11,843	5,067
Dec.			14	231	1	94.0	157	9,654	9,756	12,797	3,354
Yearly				316		32.1	158	114,629	124,316	149,031	95,204

∅ Mean daily † And other days

RIO GRANDE AT SAN ANTONIO CROSSING NEAR EL INDIO, TEXAS

DESCRIPTION: Cableway, bubbler gage, concrete control weir, and water-stage recorders (graphic and digital) located on the left bank at latitude 28°20'40", longitude 100°18'35", and river mile 455.8; 0.5 river mile downstream from Cuervo Creek, which marks the lower end of the Maverick County Water Control and Improvement District No. 1, 1.9 river miles upstream from Tovar Creek, 5 miles northeast of Villa Guerrero, Coahuila, about 11.5 miles south of El Indio, Texas, 35.5 river miles downstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila, and 793.0 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 580.00 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 37 discharge measurements during the year, 35 by the United States Section and 2 by the Mexican Section of the Commission, and a continuous record of gage heights. Computations for high flows by shifting control methods. Low and medium flow computations based on a stable control weir rating curve defined by meter measurements. Records available: Mar., Apr., May, Oct., Nov., and Dec. 1952 with some days missing; Jan. through Aug. 20, 1953; Sept. 23, 1953 through June 14, 1954; and May 27, 1955 through 1973 with several days missing prior to Sept. 1955.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 912,000 second-feet in June 1954, determined by slope-area computation, with an elevation of 624.31 feet. Min. 54.4 second-feet on June 24, 1953 with an elevation of 581.96 feet at a station 1,700 feet upstream from the present site.

Average Flow in Second-Feet**

Daily:	Max. 185,000	Sept. 25, 1964	Min. 299	July 20 & Aug. 2-4, 1956
Monthly:	Max. 31,700	Sept. 1964	Min. 445	July 1956
Yearly:	Max. 6,130	1958	Min. 1,040	1956

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	723	644	828	546	1,420	717	1,180	1,620	4,020	1,530	1,690	886
2	746	621	824	544	‡ 7,400	360	1,170	1,600	4,330	1,480	1,500	890
3 ‡	765	600	804	550	8,480	1,010	‡ 1,180	1,570	4,490	‡ 1,460	1,380	892
4	797	611	804	‡ 533	8,540	1,220	1,240	1,540	4,430	1,580	1,350	873
5	826	666	798	509	8,490	1,170	1,230	1,520	‡ 4,250	9,480	1,330	873
6	816	748	726	561	8,640	‡ 1,170	1,140	1,490	4,570	‡24,800	1,280	873
7	813	‡ 1,000	‡ 623	866	8,670	1,150	1,060	1,470	6,980	11,500	1,260	860
8	793	1,920	652	1,240	8,570	1,190	1,020	‡ 1,460	6,680	5,720	1,250	873
9	792	2,190	649	1,310	8,600	1,220	1,150	1,490	7,460	4,470	1,200	884
10	793	2,860	674	1,290	8,620	1,320	2,160	2,620	6,230	3,840	1,190	890
11	799	3,060	635	‡ 1,290	8,050	1,350	1,530	3,080	7,310	3,450	1,170	903
12	785	3,120	657	1,370	6,260	2,400	1,310	3,170	‡ 7,570	3,250	1,180	‡ 924
13	785	3,150	670	1,400	4,310	1,790	1,170	3,360	8,060	4,580	1,170	911
14	785	‡ 3,070	‡ 617	1,430	4,680	1,340	1,090	3,320	8,520	7,400	‡1,160	883
15	771	2,960	575	1,530	4,260	1,280	3,650	2,660	7,670	5,090	1,170	831
16	760	2,290	522	1,830	‡ 2,940	1,240	3,850	1,380	7,610	3,930	1,140	766
17 ‡	760	1,960	519	1,740	2,010	1,200	2,120	1,830	7,620	‡ 3,240	1,100	753
18	760	1,880	574	1,650	1,160	1,230	1,630	3,050	7,550	2,950	1,060	733
19	760	1,820	506	1,620	750	1,150	1,640	3,310	‡ 6,800	2,790	1,100	731
20	745	1,850	501	1,620	620	‡ 1,320	1,910	3,360	5,430	3,590	1,070	698
21	693	‡ 1,960	‡ 503	1,560	632	1,790	1,880	3,290	4,220	7,070	1,050	733
22	700	1,670	513	1,520	632	1,700	1,880	‡ 3,220	5,420	6,970	1,040	763
23	616	1,240	506	1,550	560	1,550	1,880	3,160	8,970	‡ 6,970	1,040	758
24 ‡	616	1,050	527	1,540	520	1,570	‡ 1,880	3,230	2,610	6,970	994	758
25	757	934	528	1,550	600	1,820	1,830	3,920	2,070	6,970	924	754
26	907	821	526	1,540	620	1,740	1,810	3,990	1,830	‡ 6,880	897	758
27	913	801	531	1,420	670	1,570	1,780	3,270	1,720	5,960	892	757
28	800	‡ 820	‡ 524	1,360	747	1,340	1,750	3,610	1,700	3,980	‡ 904	726
29	758		519	1,380	704	1,290	1,720	4,540	1,600	4,010	906	735
30	737		523	1,460	647	1,250	1,700	4,390	1,580	4,010	887	722
31 ‡	715		519		‡ 603		1,670	4,320		‡ 2,220		726
Sum	23,786	46,316	18,877	38,309	119,910	40,947	52,210	86,340	159,300	168,140	34,284	25,117

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1968-1973 Acre-Feet Average	Maximum	Minimum
Jan.	6.11	5.83	†26	955	†23	606	767	47,179	78,461	108,121	47,179
Feb.	7.24	5.83	13	3,180	† 1	587	1,650	91,867	148,857	444,879	52,151
Mar.	6.03	5.73	† 1	837	29	486	609	37,442	66,554	126,920	37,442
Apr.	6.74	5.73	16	2,000	† 4	506	1,280	75,985	72,003	105,586	37,386
May	8.36	5.74	† 2	8,840	24	510	3,870	237,838	128,555	237,838	50,723
June	7.44	5.82	12	3,740	1	579	1,360	81,217	130,710	353,792	29,808
July	8.30	6.11	15	8,240	8	977	1,680	103,557	88,811	134,150	37,228
Aug.	7.82	6.43	29	5,090	8	1,420	2,790	171,253	146,669	294,704	66,822
Sept.	9.71	6.53	23	19,600	30	1,560	5,310	315,967	144,906	315,967	83,327
Oct.	11.34	6.44	6	31,300	4	1,400	5,420	333,501	181,519	333,501	92,140
Nov.	6.62	6.04	1	1,740	†26	867	1,140	68,001	79,844	97,251	58,569
Dec.	6.09	5.87	12	939	19	662	810	49,819	72,025	104,173	49,819
Yearly	11.34	5.73		31,300		486	2,230	1,613,626	1,338,914	2,016,338	896,415

** Period 1956-1973 ‡ Discharge measurement made on this day † And other days

RIO GRANDE AT PALAFOX NEAR LAREDO, TEXAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the right bank on the outskirts of Palafox, Webb County, Texas and Villa Hidalgo, Coahuila at latitude 27°47'55", longitude 99°52'40", and river mile 403.0; 1.9 river miles downstream from Arroyo Agua Verde in Mexico, 13.1 river miles upstream from Santo Tomas Creek in United States, 44.7 river miles upstream from the international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas, and 845.8 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 436.02 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 26 discharge measurements during the year, 23 by the Mexican Section and 3 by the United States Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. High flows prior to early 1962 were computed from a rating curve developed after the cableway was installed. Records available: August 1959 through 1973.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The recorder was installed on August 5, 1959 and the cableway in early 1962.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 214,000 second-feet on September 25, 1964 with a gage height of 42.06 feet. Min. 314 second-feet on June 30, and July 1, 1972 with a gage height of -0.66 foot.

Average Flow in Second-Feet**

Daily:	Max. 163,000	Sept. 26, 1964	Min. 314		July 1, 1972
Monthly:	Max. 30,400	Sept. 1964	Min. 434		June 1969
Yearly:	Max. 4,420	1964	Min. 1,270		1972

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	812	‡ 696	840	487	1,560	625	1,320	1,820	4,060	‡ 1,690	2,150	950
2	855	667	‡ 869	‡ 494	2,750	675	‡ 1,210	1,830	3,990	1,650	1,810	886
3	872	629	855	494	7,910	915	1,190	1,780	3,950	1,640	1,620	955
4	886	614	840	509	7,950	‡ 1,080	1,230	1,540	‡ 3,950	1,580	1,510	‡ 855
5	918	614	823	516	7,950	1,320	1,300	1,410	3,950	8,830	1,530	844
6	932	622	823	501	8,020	1,260	1,300	1,660	3,990	29,600	1,450	812
7	918	622	830	540	8,230	1,210	1,160	1,720	5,790	31,000	1,380	312
8	918	614	639	855	‡ 8,400	1,180	1,100	‡ 1,610	6,740	7,660	‡1,360	812
9	918	636	675	1,280	8,300	1,210	1,180	1,540	6,780	4,770	1,340	812
10	918	703	675	1,350	8,300	1,290	1,460	1,590	6,960	‡ 3,880	1,320	876
11	886	939	692	1,350	8,230	1,390	2,060	2,790	5,970	3,410	1,310	‡ 918
12	872	‡2,750	660	1,400	7,030	1,400	1,590	2,890	‡ 7,130	3,210	1,320	939
13	872	3,200	‡ 675	1,510	5,010	2,460	1,350	3,040	7,420	3,110	1,320	918
14	855	3,160	706	1,560	4,590	1,770	1,190	3,140	8,020	5,760	1,280	939
15	848	3,090	639	1,610	‡ 4,450	1,390	1,140	3,160	7,700	6,220	1,240	939
16	812	2,960	572	1,770	3,570	1,350	4,590	2,420	7,200	4,030	1,210	918
17	798	2,420	512	1,920	2,770	1,300	2,920	1,880	7,240	3,780	1,170	855
18	‡ 784	2,150	480	‡ 1,860	1,930	1,260	2,020	2,200	7,100	2,810	1,130	855
19	756	2,080	516	1,770	1,210	1,300	1,740	3,020	6,990	2,580	1,150	855
20	756	2,080	‡ 523	1,720	840	1,370	1,850	3,020	5,610	2,480	1,110	770
21	724	2,150	480	1,760	660	1,610	2,060	2,970	4,270	4,590	1,110	727
22	696	2,310	509	1,690	653	1,960	1,990	2,950	3,710	7,270	1,110	727
23	‡ 696	1,800	501	1,680	646	1,880	‡ 1,990	2,990	12,400	7,380	1,110	727
24	‡ 604	1,260	509	1,670	600	2,010	2,030	2,970	4,700	7,310	1,070	738
25	657	978	509	1,680	565	2,080	2,030	3,260	2,470	7,380	992	770
26	756	798	509	1,720	530	2,080	1,950	3,810	1,980	7,240	932	791
27	911	685	512	1,610	597	1,950	1,900	3,600	7,310	7,060	982	770
28	946	696	540	1,460	675	1,690	1,880	3,020	1,960	5,050	982	770
29	844		547	1,430	749	1,440	1,850	3,990	1,760	4,200	932	770
30	756		494	1,460	735	1,370	1,830	4,270	1,740	4,030	982	770
31	682		494		660		1,850	4,100		3,440		770
Sum	25,458	41,923	19,448	39,656	116,070	43,825	54,260	81,990	162,840	194,640	38,012	25,750

Month	Current Year 1973 Extreme Gage Feet High	Low	Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1968-1973 Acre-Feet Average	Maximum	Minimum
Jan.	0.92	0.07	27	961	24	576	819	50,496	78,872	107,275	50,496
Feb.	3.28	.16	†13	3,200	† 4	614	1,500	83,193	149,672	455,925	57,122
Mar.	.69	- .26	2	883	21	466	629	38,574	70,310	138,207	38,574
Apr.	2.46	- .23	16	2,080	1	480	1,320	78,640	71,906	105,285	36,522
May	6.17	- .20	8	8,400	26	494	3,740	230,225	133,421	230,225	60,344
June	3.44	.03	13	3,210	1	586	1,460	86,968	199,575	750,690	25,768
July	5.58	1.05	16	7,100	8	1,050	1,750	107,625	97,658	156,748	30,729
Aug.	4.30	1.51	29	4,630	5	1,320	2,650	162,603	163,716	360,755	70,515
Sept.	10.86	2.00	23	21,900	30	1,690	5,440	323,014	157,283	323,014	93,312
Oct.	16.31	1.80	7	37,800	4	1,540	6,290	385,915	221,224	385,915	100,013
Nov.	3.02	.89	1	2,660	†26	932	1,270	75,411	84,322	104,269	56,954
Dec.	.89	.46	1	932	21	706	830	51,077	75,538	111,036	51,077
Yearly	16.31	-0.26		37,800		466	2,310	1,673,741	1,503,497	2,724,451	920,935

** Period August 1959-1973 ‡ Discharge measurement made on this day † And other days

RIO GRANDE AT LAREDO, TEXAS

DESCRIPTION: Cableway, bubbler gage, and water-stage recorder located on the right bank at Laredo, Texas at latitude 27°29'45", longitude 99°29'30", and river mile 357.2; immediately downstream from the Laredo, Texas sewage plant, 1.1 river mile downstream from the international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas, and 891.6 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 345.28 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 69 discharge measurements during the year, 67 by the Mexican Section and 2 by the United States Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: May 1900 through 1913; May, June, and Oct. 1914; Sept. 1916; Sept. and Oct. 1917; Oct. 1918; Sept. and Oct. 1919; Aug. and Sept. 1920; June, Nov., and Dec. 1922; and 1923 through 1973. Gage height records are available for Jan., Feb., and Mar. 1914.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. This station was established in Jan. 1955 to replace the station 1.7 miles upstream which was destroyed by the June-July 1954 flood. Prior to July 11, 1968 the recorder was located 0.2 river mile upstream, where the cableway is still located, and the zero of the gage was 347.90 feet above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 716,900 second-feet on June 30, 1954, determined by slope-area calculations with a gage height of 61.35 feet. Much well-authenticated information establishes the occurrence of a greater flood in June 1865 with a gage height of 62.5 feet on the same gage and discharge of approximately 950,000 second-feet and also that these were the only floods since 1745 with flows greater than 600,000 second-feet. Min. no flow several days in June and July 1953 and on July 24, 1956.

Average Flow in Second-Feet**

Daily:	Max. 576,000	June 30, 1954	Min. 0	Several days June, July 1953	
Monthly:	Max. 49,500	Sept. 1932	Min. 5.5	June 1953	
Yearly:	Max. 9,670	1932	Min. 1,080	1956	

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	742	756	897	392	1,490	562	1,280	1,760	4,130	1,590	2,740	978
2	809	756	897	‡ 392	1,520	519	‡ 1,220	‡ 2,500	3,990	1,560	1,900	936
3	‡ 826	742	897	371	‡ 6,140	579	1,210	1,620	‡ 3,880	‡ 1,580	1,730	‡ 858
4	826	671	897	371	8,050	‡ 738	1,180	1,540	3,960	1,530	1,510	858
5	826	653	‡ 376	371	8,160	798	1,160	1,260	3,990	1,600	‡1,480	858
6	876	‡ 636	858	392	8,230	1,100	1,190	1,350	3,990	‡20,400	1,480	837
7	929	618	819	416	‡ 8,300	1,070	1,180	‡ 1,580	4,450	‡29,700	1,420	‡ 816
8	‡ 876	756	727	505	8,330	1,020	1,070	1,610	6,820	‡15,200	1,390	816
9	862	1,560	629	‡ 932	8,230	1,060	‡ 1,090	1,540	6,570	‡ 5,930	1,360	816
10	862	2,360	664	‡ 1,330	8,260	3,270	1,090	1,490	7,060	4,520	1,300	‡ 858
11	862	2,780	692	1,370	‡ 8,300	‡ 1,300	1,660	1,930	‡ 6,220	3,780	1,280	897
12	844	‡3,210	‡ 710	1,420	7,770	1,310	‡ 1,740	2,920	6,750	3,450	‡1,250	897
13	844	3,210	678	1,460	6,320	1,700	1,400	‡ 3,150	7,310	3,320	1,250	897
14	844	3,250	629	1,530	‡ 4,870	2,210	1,220	3,320	7,770	4,410	1,260	936
15	‡ 826	3,210	629	1,610	4,730	1,550	1,110	3,260	8,050	‡ 6,890	1,190	957
16	809	3,090	600	‡ 1,610	4,450	1,360	‡ 2,540	2,900	7,420	4,980	1,140	936
17	773	2,930	533	1,880	‡ 3,290	1,330	‡ 4,170	2,000	‡ 7,490	‡ 3,880	1,140	‡ 897
18	756	2,360	501	1,860	2,500	‡ 1,240	‡ 2,340	1,810	7,380	3,230	1,140	816
19	773	2,160	‡ 438	1,800	1,560	1,210	1,790	2,570	7,170	2,900	‡1,100	798
20	756	2,210	438	1,710	1,010	1,360	1,610	‡ 3,150	6,570	2,680	1,100	798
21	773	2,200	452	1,650	‡ 738	1,750	1,890	3,130	5,160	2,770	1,100	777
22	‡ 756	2,250	420	1,670	622	1,700	1,980	3,090	3,960	‡ 6,890	1,100	738
23	689	‡2,220	452	‡ 1,670	590	2,230	‡ 1,940	3,020	5,650	7,350	1,100	738
24	689	1,750	438	1,670	600	3,030	1,940	2,980	‡ 9,890	7,350	1,100	‡ 738
25	689	1,360	420	1,680	530	‡ 2,500	1,910	3,000	‡ 3,110	7,350	1,020	777
26	689	‡1,070	‡ 420	1,670	491	2,630	1,880	3,640	2,120	7,310	‡ 999	777
27	756	996	420	1,650	509	2,200	1,810	‡ 3,850	6,670	7,130	978	777
28	946	876	420	1,560	‡ 519	1,850	1,780	3,240	4,270	6,290	978	777
29	‡ 964		438	1,480	530	1,570	1,760	3,290	2,000	‡ 4,380	978	777
30	862		420	‡ 1,480	579	1,410	1,740	‡ 4,310	1,780	4,130	978	798
31	791		392		590		‡ 1,640	4,200		3,960		‡ 738
Sum	25,125	50,640	18,701	37,902	117,808	46,156	51,520	81,010	165,580	188,040	38,491	25,872

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	High	Extreme Second-Feet Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1968-1973 Acre-Feet Average	Maximum	Minimum
Jan.	2.23	1.97	29	984	†23	689	809	49,830	79,894	109,488	49,830
Feb.	4.27	1.90	14	3,250	† 6	618	1,810	100,452	150,844	450,602	58,978
Mar.	2.13	1.61	† 1	897	31	357	604	37,096	70,102	145,127	37,096
Apr.	3.22	1.57	17	2,020	5	349	1,260	75,166	72,820	118,874	35,107
May	7.71	1.51	† 8	8,400	26	470	3,810	233,678	136,857	233,678	89,917
June	7.35	1.57	10	7,800	2	509	1,540	91,592	193,235	695,494	29,685
July	6.40	2.30	16	6,430	8	1,050	1,660	102,203	106,946	223,886	32,270
Aug.	5.31	2.46	30	4,590	5	1,190	2,610	160,677	170,072	426,780	65,681
Sept.	11.52	2.95	24	16,300	30	1,640	5,510	328,372	167,735	328,372	94,988
Oct.	17.59	2.79	7	32,800	5	1,470	6,070	372,907	259,460	526,524	105,334
Nov.	4.53	2.00	1	3,640	†27	978	1,290	76,413	85,296	109,789	58,095
Dec.	2.00	1.80	1	978	†22	738	833	51,316	79,069	115,063	51,316
Yearly	17.59	1.51		32,800		349	2,320	1,679,702	1,572,330	3,074,060	980,740

** Period 1924-1973 ‡ Discharge measurement made on this day † And other days

RIO SALADO AT LAS TORTILLAS, TAMAULIPAS

DESCRIPTION: Cableway, control weir with notch opening of 2,500 second-foot capacity, gravity well, and water-stage recorder located on the right bank at latitude 26°50'10", longitude 99°33'50", 2.0 river miles downstream from the confluence of Rio Sabinas with Rio Salado, 6 miles southeast of the town of Las Tortillas, Tamaulipas, and 24.8 river miles from the confluence with the Rio Grande. This stream enters the Rio Grande at river mile 298.4, 24.6 river miles upstream from Falcon Dam, and 950.4 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 325.72 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 13 discharge measurements during the year, a stable rating curve up to 2,500 second-feet, and a continuous record of gage heights. Computations by shifting control methods for flows greater than 2,500 second-feet. Records available: September 9, 1953 through 1973. Records are also available for a station at old Cd. Guerrero, 18.6 miles downstream, from 1900 through 1913 and 1923 through September 8, 1953.

REMARKS: Reservoirs and irrigation diversions modify the flow at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 65,000 second-feet on September 16, 1971 with a gage height of 40.39 feet. Min. frequently no flow. The maximum discharge was measured at the highway bridge 13.0 river miles downstream from the station. Extreme flow data for the Rio Salado at Cd. Guerrero prior to September 8, 1953 may be found in previous bulletins.

		Average Flow in Second-Feet**			
Daily:	Max. 62,900	Sept. 16, 1971	Min. 0		Frequently
Monthly:	Max. 13,600	Sept. 1971	Min. 0		Frequently
Yearly:	Max. 3,310	1971	Min. 56.8		1956

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	135	135	179	93.2	74.9	93.2	883	139	179	632	565	343
2	135	135	179	97.8	84.0	84.0	724	427	171	‡ 565	540	343
3	135	135	171	‡ 102	84.0	84.0	646	593	171	540	526	343
4	‡ 139	135	164	102	74.9	93.2	593	1,130	164	537	512	343
5	148	135	156	102	65.7	‡ 102	565	699	‡ 148	579	501	‡ 343
6	148	135	164	112	65.7	130	‡ 512	470	139	1,370	491	332
7	148	130	‡164	130	65.7	130	491	343	135	2,520	491	321
8	156	‡ 135	171	130	‡ 74.9	121	540	239	130	1,690	480	311
9	164	148	164	121	93.2	112	470	209	130	989	470	321
10	164	148	148	102	93.2	‡ 112	448	209	135	777	470	321
11	164	164	148	102	93.2	121	427	224	144	699	459	321
12	164	148	148	93.2	102	121	406	217	139	632	448	321
13	164	144	144	102	112	227	385	209	139	657	‡ 427	311
14	164	130	139	102	112	424	343	201	274	699	427	311
15	164	121	144	112	93.2	148	321	‡ 201	565	1,010	427	300
16	156	112	121	121	93.2	144	300	201	565	1,120	427	285
17	156	112	112	102	84.0	130	300	201	565	1,080	427	285
18	164	139	102	93.2	93.2	121	285	217	650	1,040	427	285
19	148	139	102	93.2	84.0	121	270	194	3,640	953	427	278
20	148	164	102	84.0	84.0	459	270	201	2,540	883	406	270
21	148	194	102	93.2	93.2	448	239	194	1,590	812	406	270
22	139	209	107	93.2	84.0	321	224	201	1,420	763	‡ 385	262
23	139	232	112	93.2	65.7	367	209	186	1,300	724	385	262
24	139	224	121	102	65.7	3,920	194	164	1,210	699	385	270
25	194	224	112	93.2	65.7	7,420	179	164	1,090	657	364	270
26	194	209	102	93.2	65.7	13,800	164	176	1,010	646	364	278
27	164	194	97.8	84.0	74.9	12,100	148	209	918	618	364	278
28	156	179	93.2	74.9	93.2	3,480	139	201	850	572	364	285
29	148		88.6	65.7	93.2	1,870	130	209	752	593	343	278
30	139		84.0	74.9	93.2	1,260	130	186	699	579	343	278
31	130		93.2		93.2		130	186		565		278
Sum	4,754	4,409	4,034.8	2,964.1	2,614.7	48,063.4	11,065	8,600	21,562	26,200	13,051	9,297

Month	Current Year 1973						Average Second-Feet	Total Acre-Feet	Period 1954-1973		
	Extreme Gage Feet		Extreme Second-Feet						Acre-Feet		
			High		Low						
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.	1.15	0.92	25	224	31	130	153	9,421	7,770	57,070	0
Feb.	1.18	.82	23	239	17	102	157	8,736	6,631	66,880	0
Mar.	1.05	.75	† 1	179	30	54.0	130	8,000	3,953	29,690	0
Apr.	.92	.59	† 7	130	29	65.7	93.9	5,884	5,719	21,994	0
May	.55	.56	†13	112	6	56.5	84.4	5,186	20,035	100,919	0
June	16.37	.75	26	18,700	† 2	84.0	1,600	95,296	24,503	172,970	0
July	2.20	.59	1	1,020	31	121	357	21,949	28,283	441,541	0
Aug.	2.49	.92	4	1,380	1	130	278	17,057	15,152	92,579	0
Sept.	4.27	.39	19	4,560	9	121	717	42,756	112,144	807,616	2,860
Oct.	3.38	1.61	7	2,780	4	491	844	51,939	71,247	550,739	110
Nov.	1.71	1.38	† 1	565	†29	343	434	25,886	33,455	338,000	0
Dec.	1.41	1.21	4	364	22	255	300	18,431	17,635	176,100	0
Yearly	16.37	0.56		18,700		56.5	427	310,543	346,502	2,400,553.5	41,238.2

** Period September 1953-1973 ‡ Discharge measurement made on this day † And other days

RIO GRANDE BELOW FALCON DAM, TEXAS

DESCRIPTION: The discharges reported below represent water measured as it leaves Falcon Reservoir through turbine penstocks, bypass valves, spillway gates, and leakage. Falcon Dam, astride the Rio Grande, is located at latitude 26°33'25", longitude 99°10'05", and river mile 273.8; about 7 miles southwest of Falcon, Texas, 84.5 river miles downstream from the international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas, and 975.0 river miles downstream from the American Dam at El Paso, Texas. A gravity well and water-stage recorder located 2.5 river miles downstream and a cableway located one mile farther downstream are used to measure the flow of this station at times when spillway gates are in operation.

RECORDS: Based on daily Simplex meter records of releases through the six turbines, established rating curves for the four hollow-jet bypass valves, estimates of gate leakage, and measurements of flow at the cable during spillgate operations. During 1973 there was 1 discharge measurement made by the Mexican Section of the Commission. Records available: 1958 through 1973. Records are also available from December 17, 1952 through 1957 for a station at Chapeno, 2.5 miles downstream, where discharges included arroyo inflow below Falcon Dam, which inflow is eliminated from the records reported below.

REMARKS: Computation of flow was made jointly by the United States and Mexican Sections of the Commission from a consolidation of the basic data gathered by each Section incident to the international operation of Falcon Reservoir.

EXTREME FLOWS FROM RECORDS**: Momentary: Max. 82,600 second-feet on September 13, 1971. Min. 1.5 second-feet on March 24 and 25, 1957 (at Chapeno gaging station).

Average Flow in Second-Feet**

Daily:	Max. 76,400	Sept. 18, 1971	Min. 1.5		March 24 & 25, 1957
Monthly:	Max. 32,500	Oct. 1958	Min. 23.5		Nov. 1973
Yearly:	Max. 6,930	1958	Min. 1,580		1970

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,320	1,020	18.0	316	9,120	11,900	18.0	289	4,000	7,060	18.0	18.0
2	657	1,010	18.0	814	7,890	12,700	18.0	90.0	4,010	8,020	62.0	18.0
3	709	1,020	18.0	1,020	7,400	11,100	18.0	18.0	4,060	9,020	18.0	18.0
4	714	1,010	18.0	1,000	7,500	9,950	18.0	18.0	4,060	10,000	18.0	18.0
5	551	1,020	18.0	3,320	7,130	8,730	18.0	18.0	6,120	11,000	81.0	18.0
6	365	1,020	18.0	5,070	8,010	8,450	18.0	18.0	6,090	11,300	18.0	18.0
7	370	1,020	18.0	5,090	8,550	7,990	18.0	18.0	4,930	10,900	18.0	18.0
8	371	1,020	1,000	4,980	‡ 9,230	7,970	18.0	3,250	3,940	3,500	18.0	813
9	194	758	1,020	5,070	10,300	5,300	18.0	5,260	3,930	9,060	18.0	394
10	18.0	537	999	5,070	10,700	5,230	18.0	5,080	3,940	10,500	18.0	18.0
11	18.0	520	996	5,220	10,800	3,300	18.0	5,490	3,900	11,100	18.0	18.0
12	18.0	784	1,010	5,030	5,930	2,690	18.0	5,330	4,970	11,100	18.0	18.0
13	18.0	1,520	1,020	4,920	794	1,520	18.0	6,000	4,970	9,530	18.0	18.0
14	18.0	813	1,340	4,990	3,720	708	18.0	4,540	4,930	8,100	18.0	18.0
15	18.0	414	1,020	4,990	5,660	1,600	18.0	2,480	2,160	7,010	18.0	18.0
16	18.0	405	528	4,990	5,360	3,000	18.0	2,000	4,320	4,930	77.0	18.0
17	18.0	237	525	4,970	5,300	3,030	18.0	2,010	5,520	3,320	18.0	599
18	18.0	18.0	520	4,960	4,130	3,830	18.0	1,250	6,500	1,280	18.0	508
19	18.0	18.0	502	4,930	3,630	4,530	18.0	1,250	2,550	18.0	18.0	18.0
20	18.0	18.0	530	5,000	3,780	3,220	18.0	2,500	18.0	18.0	18.0	18.0
21	18.0	18.0	516	5,020	4,480	193	18.0	3,020	18.0	18.0	18.0	18.0
22	195	18.0	502	5,070	6,240	18.0	566	2,990	18.0	18.0	18.0	18.0
23	347	18.0	505	5,170	7,060	18.0	1,710	4,040	18.0	18.0	18.0	18.0
24	329	18.0	510	5,040	6,780	18.0	773	4,030	2,000	18.0	18.0	18.0
25	327	18.0	796	5,060	7,090	18.0	1,520	3,610	5,910	18.0	18.0	18.0
26	323	18.0	813	6,030	7,700	18.0	1,520	1,960	6,060	18.0	18.0	18.0
27	324	18.0	797	6,900	8,560	18.0	1,020	2,000	3,090	18.0	18.0	18.0
28	327	18.0	804	7,940	8,400	18.0	821	2,510	1,250	18.0	18.0	18.0
29	758		817	8,730	9,210	18.0	823	3,530	4,960	18.0	18.0	541
30	1,010		767	9,040	10,000	18.0	892	4,030	5,950	18.0	18.0	511
31	1,000		815		10,400		537	4,050		18.0		519
Sum	14,306.0		146,300		117,153.0		83,229.0		146,964.0		4,417.0	
	10,397.0		19,880.0		220,934		10,360.0		114,192.0		706.0	

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	∅ Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period #1954-1973 Acre-Feet Average	Maximum	Minimum
Jan.			1	1,320	†10	18.0	335	20,622	205,438	414,129	16,245
Feb.			13	1,520	†18	18.0	511	28,376	157,424	367,334	16,600
Mar.			14	1,340	† 1	18.0	635	39,035	125,533	347,000	2,390
Apr.			30	9,040	2	814	4,880	290,192	239,673	401,541	19,530
May			11	10,300	13	794	7,130	438,315	295,155	526,000	21,674
June			2	12,700	†22	18.0	3,910	232,370	253,141	551,000	22,337
July			23	1,710	† 1	18.0	334	20,549	101,523	229,826	12,836
Aug.			13	6,000	† 3	18.0	2,680	164,852	123,780	206,000	25,900
Sept.			19	6,500	†20	18.0	3,810	226,497	183,089	1,030,371	1,428
Oct.			8	11,300	†19	18.0	4,740	291,499	253,658	1,997,000	27,100
Nov.			5	81.0	† 1	18.0	23.5	1,400	119,856	1,128,000	1,400
Dec.			8	813	† 1	18.0	142	8,761	110,806	465,000	3,761
Yearly				12,700		18.0	2,430	1,762,083	2,109,376	5,010,300	1,143,500

** Period 1954-1973 ‡ Discharge measurement made on this day ∅ Mean daily
# Values prior to 1958 are Chapeno discharges less arroyo inflow † And other days

RIO ALAMO AT CD. MIER, TAMAULIPAS

DESCRIPTION: Cableway, reinforced concrete weir of 177 second-foot capacity, gravity well, and water-stage recorder located on the right bank at a point called "El Paso del Cantaro", latitude 26°27'10", longitude 99°09'20", about 0.5 mile north of Cd. Mier, Tamaulipas, and 5.0 river miles from the confluence with the Rio Grande. This stream enters the Rio Grande at river mile 261.4, 12.4 river miles downstream from Falcon Dam, and 987.4 river miles downstream from the American Dam at El Paso, Texas. The weir is located about 300 feet downstream from the recorder. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 3 discharge measurements made at high flows during the year, the weir discharge table at low flows, and a continuous record of gage heights. High flow computations by shifting control methods. Records available: July 1923 through 1973.

REMARKS: Small reservoirs and irrigation diversions modify the flow of this spring-fed stream at this station. On June 11, 1952, the zero of the gage was raised 1.31 feet to make it coincide with the weir crest elevation. Prior to January 1, 1969, the zero of the gage was 188.35 feet above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 144,800 second-feet on September 11, 1948 with a gage height of 33.56 feet. Min. periods of no flow have occurred at times during all years of record except 1934, 1935, 1968 and 1972.

		Average Flow in Second-Feet**			
Daily:	Max. 87,230	Sept. 11, 1948	Min. 0		Frequently
Monthly:	Max. 7,310	Sept. 1967	Min. 0		Frequently
Yearly:	Max. 837	1967	Min. 16.4		1929

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	65.3	69.2	73.5	40.6	4.2	0	593	102	84.8	424	530	304
2	65.3	67.1	71.3	37.1	22.2	0	470	217	75.9	353	509	313
3	63.2	63.2	71.3	27.9	445	0	576	200	75.9	322	498	322
4	63.2	61.1	69.2	18.7	177	0	1,010	220	73.5	296	487	322
5	65.3	59.0	67.1	15.9	35.3	0	579	326	69.2	547	473	304
6	65.3	56.9	67.1	18.7	13.1	0	381	255	63.2	1,150	463	‡ 287
7	63.2	47.3	67.1	21.5	6.0	0	287	144	59.0	3,110	473	313
8	61.1	40.6	65.0	18.7	4.2	18.7	282	115	59.0	‡2,090	473	339
9	59.0	33.9	65.0	15.9	4.2	27.1	795	109	63.2	1,390	473	322
10	61.1	33.9	63.2	15.9	4.2	7.4	360	104	81.2	1,160	463	313
11	65.3	37.1	63.2	14.5	4.2	2.5	240	99.6	54.7	938	463	304
12	71.3	42.4	63.2	15.9	8.1	10.9	182	94.3	45.6	872	452	295
13	69.2	42.4	63.2	15.9	6.0	82 .3	163	94.3	93.9	826	452	287
14	71.3	37.1	63.2	15.9	4.2	89.7	148	94.3	1,270	1,300	441	279
15	73.5	35.3	63.2	16.2	4.2	152	142	192	‡5,970	2,070	431	261
16	75.9	33.9	59.0	18.7	6.0	36.7	142	344	1,780	1,900	417	244
17	75.9	37.1	56.9	31.1	6.0	11.3	137	766	575	1,610	406	219
18	73.5	43.8	47.3	18.7	7.1	4.2	131	1,130	1,110	1,270	406	219
19	73.5	56.9	45.6	18.7	6.0	2.5	131	350	4,490	1,060	396	201
20	75.9	65.0	43.8	17.3	6.0	94.0	131	146	2,630	907	396	193
21	73.5	87.2	45.6	13.1	4.2	214	131	118	1,180	812	385	181
22	71.3	99.6	47.3	10.6	1.8	229	126	107	897	745	374	184
23	69.2	94.3	47.3	8.1	1.1	597	120	102	720	656	374	210
24	67.1	84.8	45.6	6.0	1.1	1,420	115	96.8	586	625	374	219
25	67.1	73.5	43.8	8.1	.7	1,670	109	94.3	519	593	360	201
26	67.1	73.5	43.8	9.2	.7	1,840	109	84.8	459	565	350	193
27	67.1	73.5	42.4	8.1	0	11,100	107	87.2	2,300	543	339	193
28	67.1	73.5	40.6	6.0	0	3,880	102	94.3	1,760	578	331	193
29	67.1		38.8	4.2	0	1,660	96.8	129	872	815	304	201
30	67.1		37.1	4.2	0	922	94.3	104	622	632	304	201
31	67.1		35.3		0		94.3	91.8		565		193
Sum	1,623.1		491.4			24,071.3		6,211.7		30,874		7,810
	2,108.1	1,716.0		782.8		8,084.4			28,639.1		12,597	

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	High	Extreme Second-Feet Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1924-1973 Acre-Feet Average	Maximum	Minimum
Jan.	189.11	188.98	†16	75.9	9	59.0	68.2	4,182	3,206	34,920	0
Feb.	189.24	188.78	22	99.6	† 9	33.9	57.9	3,219	2,423	25,550	0
Mar.	189.11	188.78	1	73.5	31	35.3	55.4	3,403	2,418	19,830	0
Apr.	188.85	188.45	† 1	40.6	†29	4.2	16.2	975	6,078	36,210	0
May	190.55	188.35	3	805	†27	0	25.4	1,553	12,586	137,000	0
June	199.34	188.29	27	15,400	† 1	0	802	47,731	13,497	83,240	0
July	191.14	189.21	4	1,410	†30	94.3	261	16,037	6,530	37,590	0
Aug.	191.83	189.14	16	2,300	26	84.8	200	12,321	16,347	205,700	0
Sept.	195.51	188.88	15	8,260	†11	43.8	953	56,804	41,554	434,387	135
Oct.	192.65	189.86	7	3,600	† 3	287	996	61,282	19,936	193,700	0
Nov.	190.22	189.90	1	530	†29	304	420	24,935	4,259	25,109	0
Dec.	189.96	189.63	8	339	21	181	252	15,494	3,455	15,982	0
Yearly	199.34	188.29		15,400		0	343	247,936	132,789	805,678.4	11,898.7

** Period 1924-1973 ‡ Discharge measurement made on this day † And other days

CONTRIBUTIONS FROM RIO SAN JUAN
FALCON DAM TO FORT RINGGOLD

DESCRIPTION: The Lower Rio San Juan Irrigation District in Mexico lies along the Rio Grande between Cd. Miguel Aleman and Rio Bravo, Tamaulipas and is irrigated with water impounded by Marte R. Gomez Dam situated on the Rio San Juan 12.4 river miles upstream from the confluence with the Rio Grande. The Rio San Juan enters the Rio Grande at river mile 237.8 and 1,011.0 river miles downstream from the American Dam at El Paso, Texas. Drain water from this irrigation district enters the Rio Grande between Falcon Dam and the Fort Ringgold Gaging Station through the Rio San Juan Channel, Rancherias Drain, and Los Fresnos Drain; and between this station and Anzalduas Dam through Puertecitos, Los Indios, Huizache, and Morillo Drains. Only the portion of water reaching the Rio Grande via channels located upstream from the Fort Ringgold Gaging Station is shown below. The portion of drain water from this irrigation district reaching the Rio Grande via channels located downstream from the Fort Ringgold Gaging Station is shown on page 62 in this bulletin.

RECORDS: Water entering the Rio Grande through the Rio San Juan Channel, included in the tabulation below and composed of spills and leakage from Marte R. Gomez Dam, and storm inflow and drainage below the dam, was measured at the Rio San Juan Gaging Station at Camargo, Tamaulipas 3.1 river miles upstream from the confluence with the Rio Grande. (See next page for station description and separate tabulation of discharge for this station.) The discharge through Rancherias Drain was determined by prorating between 41 current meter measurements made during the year. There was no drainage flow through Los Fresnos Drain in 1973. All storm water measured at these two drains was deducted and is not included in the tabulation below. Records available: 1953 through 1973.

REMARKS: In 1973 there were 160,991 irrigable acres in the Lower Rio San Juan Irrigation District.

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	62.9	48.0	31.1	32.8	27.5	36.4	17,300	1,480	2,980	6,220	2,590	1,380
2	68.2	44.8	30.7	30.7	30.7	43.1	14,200	1,350	2,820	5,260	2,480	1,350
3	73.1	41.3	30.0	29.7	33.9	50.1	12,000	1,450	2,640	4,630	2,340	1,320
4	78.4	37.8	29.7	44.1	37.4	56.5	11,100	1,510	2,580	4,170	2,270	1,290
5	83.7	34.3	29.0	47.3	33.5	63.6	11,000	3,080	2,450	3,780	2,230	1,260
6	83.7	31.1	28.6	50.5	30.0	70.6	10,300	4,940	2,270	3,520	2,230	1,260
7	83.7	27.5	27.9	54.0	26.1	70.3	9,250	5,330	1,970	4,170	2,220	1,260
8	83.7	47.7	27.9	57.2	22.6	70.3	8,190	5,010	1,850	4,130	2,210	1,260
9	83.0	67.5	27.9	60.4	18.7	70.3	7,420	4,410	1,730	3,290	2,210	1,260
10	83.0	87.6	27.9	63.9	19.4	69.9	7,100	3,990	1,670	3,040	2,200	1,260
11	83.0	107	27.5	67.1	19.4	69.6	6,390	3,640	1,670	2,800	2,190	1,260
12	83.0	127	27.5	64.3	20.1	69.2	5,650	3,400	1,580	2,690	2,180	1,260
13	83.0	147	27.5	61.8	20.8	1,090	5,080	3,050	1,540	2,710	2,170	1,260
14	83.0	167	27.5	59.0	21.5	2,520	4,590	2,860	5,510	3,040	2,110	1,260
15	82.3	156	27.5	55.8	21.5	209	4,200	2,760	6,040	5,510	2,040	1,260
16	82.3	145	200	53.3	22.2	38.8	3,850	3,090	6,750	6,600	1,980	1,270
17	82.3	134	266	50.5	22.2	38.8	3,530	5,190	6,040	6,320	1,970	1,260
18	77.3	123	244	47.0	22.2	38.5	3,370	7,030	5,900	5,690	1,970	1,260
19	72.4	111	239	43.1	22.2	38.1	3,110	7,200	8,790	5,050	1,960	1,270
20	67.5	100	239	39.6	21.9	38.1	2,920	6,920	13,500	4,660	1,890	1,270
21	62.5	89.0	239	35.7	21.9	49.8	2,660	6,180	14,200	4,380	1,830	1,270
22	57.6	80.9	233	32.1	21.9	62.2	2,460	5,260	12,200	4,130	1,810	1,250
23	52.6	72.7	233	28.6	21.9	140	2,280	4,560	10,100	3,780	1,790	1,220
24	47.7	64.6	243	24.7	22.2	2,800	2,110	4,030	8,690	3,500	1,770	1,200
25	48.4	56.2	229	21.2	21.9	7,840	1,980	3,520	7,380	3,410	1,760	1,180
26	48.7	48.0	219	21.9	22.2	27,100	1,900	3,220	6,500	3,330	1,740	1,150
27	49.4	39.9	197	22.2	22.2	37,100	1,810	3,360	10,200	3,130	1,660	1,130
28	49.8	31.8	69.2	23.0	22.6	36,400	1,710	3,220	10,100	2,970	1,580	1,110
29	50.5		47.0	23.7	22.2	29,800	1,630	3,110	8,690	2,780	1,490	1,090
30	50.9		42.4	24.0	22.6	23,100	1,580	3,120	7,450	2,780	1,410	1,060
31	51.6		31.8		29.3		1,520	3,110		2,780		1,040
Sum	2,267.7		1,269.2		169,143.2		120,380		124,250		38,230	
	2,149.2		3,399.6		744.7		172,190		175,790		60,280	

Month	Current Year 1973 — Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Period 1954-1973 — Acre-Feet		
			High		Low						
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.			† 5	83.7	24	47.7	69.2	4,262	9,168	77,184	126
Feb.			14	167	7	27.5	81.2	4,501	4,500	40,778	246
Mar.			17	266	†11	27.5	109	6,741	3,896	24,706	250
Apr.			11	67.1	25	21.2	42.4	2,517	3,864	36,208	196
May			4	37.4	9	18.7	24.0	1,479	4,735	29,121	555
June			27	37,100	1	36.4	5,650	335,396	26,315	335,396	476
July			1	17,300	31	1,520	5,540	341,927	33,786	341,927	312
Aug.			19	7,200	2	1,350	3,880	238,812	29,843	274,079	202
Sept.			21	14,200	13	1,540	5,860	348,812	137,639	1,878,782	298
Oct.			16	6,600	12	2,690	3,990	246,427	114,754	901,800	229
Nov.			1	2,590	30	1,410	2,010	119,560	33,726	230,400	154
Dec.			1	1,380	31	1,040	1,230	75,838	16,417	98,974	200
Yearly				37,100		18.7	2,380	1,726,272	418,043	2,896,004	11,025

ø Mean daily † And other days

RIO SAN JUAN AT CAMARGO, TAMAULIPAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank opposite Camargo, Tamaulipas at latitude 26°18'50", longitude 98°50'20", 3.1 river miles from the confluence with the Rio Grande, and 9.3 river miles downstream from Marte R. Gomez Dam. This stream enters the Rio Grande at river mile 237.8, 3.9 river miles upstream from the Rio Grande gaging station at Fort Ringgold, 36.0 river miles downstream from Falcon Dam, and 1,011.0 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 104 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Discharge prorated between measurements during times of extremely low flow. Records available: January 1954 through 1973.

REMARKS: Except for storm inflow, diversion, and drainage returns below Marte R. Gomez Dam, the flow at this station is controlled by spills from Marte R. Gomez Reservoir and leakage through the dam. Backwater from the Rio Grande frequently reaches this station. Flow passing this station, combined with drain water entering the Rio Grande through Rancherias and Los Fresnos drains, is also published under heading "Contributions from Rio San Juan - Falcon Dam to Fort Ringgold" (see previous page). Prior to July 1, 1968 the zero of the gage was 130.45 feet above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 115,000 second-feet on September 25, 1967 with a gage height of 42.03 feet. Min. 0.7 second-foot several days in April 1960.

Average Flow in Second-Feet

Daily:	Max. 115,000	Sept. 25, 1967	Min. 0.7	April 23, 24 & 25, 1960
Monthly:	Max. 31,600	Sept. 1967	Min. 2.1	November 1964
Yearly:	Max. 3,990	1967	Min. 14.6	1963

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	59.0	38.1	26.8	27.9	15.2	23.0	17,300	‡ 1,480	2,980	‡ 6,220	2,580	1,370
2	64.3	35.7	26.5	25.8	15.9	29.3	‡ 14,200	1,340	2,810	‡ 5,260	2,470	1,350
3	69.2	33.2	26.1	24.7	16.2	36.0	‡ 12,000	1,440	‡ 2,630	‡ 4,630	2,330	1,310
4	74.5	30.7	25.5	‡ 38.8	‡ 17.0	42.4	‡ 11,100	1,500	2,570	‡ 4,170	2,260	1,290
5	‡ 79.8	28.3	25.4	42.0	15.9	49.1	‡ 11,000	3,070	‡ 2,450	‡ 3,740	2,220	‡1,250
6	79.8	25.8	25.1	45.2	15.2	‡ 55.4	‡ 10,300	‡ 4,940	2,270	3,510	‡2,220	1,250
7	79.8	‡ 23.3	‡ 24.7	48.7	14.1	55.4	9,250	‡ 5,330	1,960	4,170	2,220	1,250
8	79.8	43.4	24.4	51.9	13.4	55.4	8,190	5,010	1,840	‡ 4,130	2,210	1,250
9	79.5	63.6	24.0	55.1	‡ 12.4	55.4	‡ 7,420	4,410	1,730	‡ 3,280	2,200	1,260
10	79.5	83.7	23.7	58.6	13.1	55.4	‡ 7,100	‡ 3,990	‡ 1,660	‡ 3,040	2,190	1,260
11	79.5	104	23.0	‡ 61.8	13.4	55.4	‡ 6,360	3,600	1,660	‡ 2,790	2,180	1,260
12	79.5	124	22.6	59.0	14.1	55.1	‡ 5,650	3,390	‡ 1,580	2,680	2,170	1,260
13	79.5	144	22.2	56.5	14.8	1,080	5,090	‡ 3,050	1,530	2,700	‡2,160	‡1,260
14	79.5	‡164	‡ 21.9	53.7	15.5	‡2,510	4,590	2,850	5,510	3,030	2,100	1,260
15	79.1	152	21.9	50.9	15.9	196	4,170	2,750	‡ 6,040	‡ 5,510	2,030	1,260
16	79.1	140	194	48.4	‡ 16.6	25.4	‡ 3,850	‡ 3,080	‡ 6,710	‡ 6,600	‡1,980	1,260
17	‡ 79.1	128	261	‡ 45.6	16.2	25.4	3,530	5,190	‡ 6,040	‡ 6,320	1,970	1,260
18	74.2	116	238	41.3	15.5	25.4	‡ 3,360	7,030	‡ 5,900	‡ 5,690	1,960	1,260
19	69.2	104	233	37.1	15.2	25.4	3,100	7,200	‡ 8,790	‡ 5,010	‡1,950	1,260
20	64.3	92.2	‡233	32.8	14.5	‡ 25.4	2,910	‡ 6,920	‡ 13,500	4,660	1,890	1,260
21	59.0	‡ 80.2	233	28.6	14.1	37.1	2,660	6,140	‡ 14,200	4,380	‡1,830	‡1,260
22	54.0	72.7	228	24.4	13.4	49.8	2,450	5,260	‡ 12,200	‡ 4,130	1,810	1,240
23	49.1	65.0	228	20.1	‡ 13.1	128	‡ 2,270	‡ 4,560	10,100	3,740	1,790	1,220
24	‡ 44.1	57.6	238	15.9	12.7	2,790	2,110	3,990	‡ 8,690	‡ 3,490	1,770	1,190
25	43.8	49.8	224	‡ 11.7	12.0	‡7,840	‡ 1,970	3,510	‡ 7,380	3,410	1,750	1,170
26	43.1	42.4	214	12.4	11.7	27,100 ‡	1,890	3,220	‡ 6,500	‡ 3,320	‡1,730	1,150
27	42.7	34.6	192	12.7	11.3	37,100 ‡	‡ 1,810	‡ 3,350	‡ 10,200	3,130	1,650	‡ 1,130
28	42.0	‡ 27.2	‡ 64.6	13.4	10.9	36,400 ‡	1,710	3,210	‡ 10,100	2,960	1,570	1,110
29	41.7		42.4	14.1	10.2	29,800 ‡	1,620	3,110	‡ 8,690	‡ 2,770	1,490	1,080
30	41.0		37.4	14.5	‡ 9.9	23,100 ‡	1,570	‡ 3,110	‡ 7,450	2,770	‡1,410	1,060
31	‡ 40.6		26.8		16.2		1,510	3,100		‡ 2,770		1,040
Sum	2,103.5		1,073.6			168,825.2		120,130		124,010		38,090
	2,009.3		3,251.3		435.6		172,040		175,670		60,090	

Month	Current Year 1973								Period 1954-1973		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low				Average	Maximum	Minimum
	High	Low	Day		Day						
Jan.			† 5	79.8	31	40.6	65.0	3,985	9,043	76,938	88.4
Feb.			14	164	7	23.3	75.2	4,174	4,308	40,536	203
Mar.			17	261	†14	21.9	105	6,449	3,126	24,513	212
Apr.			11	61.8	25	11.7	35.7	2,130	3,647	35,876	177
May			4	17.0	30	9.9	14.1	864	4,295	28,709	245
June	154.63		†27	39,200	1	23.0	5,620	334,608	25,915	334,608	274
July	147.57	139.40	1	19,600	31	1,490	5,540	341,429	33,574	341,429	182
Aug.	143.11	139.07	18	8,090	† 2	1,170	3,880	238,364	29,689	273,904	161
Sept.	143.80	139.34	†20	15,300	†12	1,490	5,860	348,539	137,485	1,878,406	226
Oct.			16	6,600	12	2,680	3,990	246,020	114,582	901,500	193
Nov.			1	2,580	30	1,410	2,000	119,204	33,567	230,100	126
Dec.			1	1,370	31	1,040	1,230	75,565	16,284	98,547	163
Yearly				39,200		9.9	2,380	1,721,331	415,515	2,891,093	10,534

‡ Discharge measurement made on this day † And other days

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE - FALCON DAM TO FORT RINGGOLD

Beginning June 1971, the Texas Water Rights Commission assumed control of the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam, the disposition of such waters being made by its Rio Grande Watermaster. Previous to that, since June 1956, such waters had been under the jurisdiction of the 93rd District Court of Texas administered by its Special Water Master.

During 1973, 5,605 irrigable acres and several towns and rural homes were allotted Rio Grande water in the river reach between Falcon Dam and the Fort Ringgold gaging station. Such irrigable area was 0.7% of the total irrigable acres below Falcon Dam allotted Rio Grande water.

The total diversion during 1973 in this river reach was 5,349 acre-feet, or 0.7% of the total water diverted from the Rio Grande below Falcon Dam. All records of diversions in this river reach, which were determined by means of flow meters, were furnished by the Rio Grande Watermaster. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

Average Flow in Second-Feet

Daily:	Max. 77.0	May 1, 1962	Min. 0	Occasionally	
Monthly:	Max. 43.8	June 1960	Min. 2.2	March 1957	
Yearly:	Max. 20.3	1960	Min. 6.9	1968	

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.8	4.8	1.9	12.3	10.4	9.4	0.7	2.3	8.1	2.1	11.0	7.2
2	1.4	6.1	1.9	16.3	7.6	14.4	.7	1.9	2.8	3.6	15.0	3.4
3	3.1	7.7	3.1	18.1	15.8	8.6	2.0	3.2	7.3	6.1	9.3	4.4
4	2.1	2.9	1.9	12.4	13.6	10.8	2.0	1.7	7.3	6.8	3.5	14.7
5	1.4	10.8	1.9	12.7	5.2	17.2	2.5	2.4	6.4	4.7	5.8	11.8
6	2.5	8.2	2.0	13.9	2.6	15.6	2.0	2.0	17.2	6.1	9.7	7.7
7	1.5	7.5	3.1	14.8	6.1	17.9	2.4	2.4	17.3	2.8	3.0	5.9
8	1.5	4.9	3.9	11.4	7.7	18.1	3.4	7.8	13.3	2.7	6.5	4.4
9	1.5	4.9	3.6	11.9	10.4	19.6	3.4	7.8	12.1	4.9	4.6	3.4
10	1.5	5.3	6.0	8.5	5.2	11.5	3.4	2.0	3.8	9.9	5.6	5.0
11	1.5	1.5	4.2	11.7	7.0	15.1	3.0	4.0	3.8	6.7	2.6	6.9
12	2.8	8.1	9.1	9.7	7.3	16.3	3.4	2.3	9.5	6.7	4.8	4.6
13	3.1	14.4	17.3	10.6	9.5	5.9	8.6	4.9	9.0	3.2	9.7	5.4
14	5.6	12.2	15.2	13.5	5.6	4.2	5.9	7.8	4.0	1.7	10.5	4.3
15	5.6	14.7	15.3	13.3	3.1	3.7	2.3	4.6	3.8	1.7	7.7	5.7
16	2.2	7.9	9.0	15.9	3.1	3.8	7.0	6.2	3.5	4.6	7.7	6.4
17	8.5	5.3	6.3	13.9	3.5	5.6	6.1	6.3	4.3	2.6	6.2	7.6
18	5.6	2.7	4.5	16.7	3.9	9.1	18.7	6.3	2.0	2.6	6.2	13.3
19	5.6	2.4	9.5	12.2	4.6	7.6	16.0	4.7	2.0	6.6	12.6	23.1
20	2.2	1.4	7.1	11.6	3.1	7.4	21.4	4.3	2.0	4.7	12.5	21.5
21	.6	1.4	8.3	11.1	5.0	5.8	14.4	4.1	2.3	3.6	10.9	22.4
22	.6	1.4	12.7	9.4	8.9	7.8	11.4	4.1	3.5	3.6	11.4	23.5
23	4.2	1.4	20.1	9.8	15.1	2.5	9.2	6.5	2.1	5.2	12.4	22.4
24	6.2	2.7	23.2	8.2	12.4	1.2	9.1	8.9	5.4	4.5	8.5	12.4
25	2.5	2.7	15.6	8.1	4.4	1.2	6.8	5.2	5.4	10.8	4.3	12.4
26	4.6	1.9	20.2	11.0	6.9	1.2	7.4	2.3	8.5	31.0	6.5	12.8
27	9.1	3.2	10.5	12.9	3.5	1.2	10.7	2.3	3.1	15.2	8.9	4.7
28	8.2	1.9	17.4	9.0	6.1	4.3	5.3	1.9	2.1	5.1	12.4	10.3
29	1.6		19.7	7.3	12.1	4.3	3.5	6.2	3.6	8.1	14.1	9.7
30	1.7		23.7	6.0	8.0	4.3	7.5	6.9	2.1	3.8	12.8	6.7
31	4.9		19.2		11.2		3.7	6.7		9.7		9.1
Sum	107.2	150.3	317.4	354.2	228.9	255.6	203.9	140.0	177.6	191.4	256.7	313.1

Month	Average Rainfall Inches**		Current Year 1973 ∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Period 1957-1973 Acre-Feet		
			High		Low						
	1957-1973	1973	Day		Day				Average	Maximum	Minimum
Jan.	1.10	1.68	27	9.1	†21	0.6	3.5	213	598	1,291	159
Feb.	1.30	4.04	15	14.7	†20	1.4	5.4	298	672	1,480	223
Mar.	.56	.02	30	23.7	† 1	1.9	10.2	630	941	1,845	158
Apr.	1.49	.65	3	18.1	30	6.0	11.8	703	992	1,890	357
May	2.45	2.12	3	15.8	6	2.6	7.4	454	1,053	2,624	211
June	2.86	7.18	9	19.6	†24	1.2	8.5	507	1,123	2,610	209
July	1.02	1.09	20	21.4	† 1	.7	6.6	404	742	1,620	278
Aug.	2.34	4.25	24	8.9	4	1.7	4.5	278	647	935	278
Sept.	5.51	10.08	7	17.3	†18	2.0	5.9	352	531	1,230	178
Oct.	2.26	3.26	26	31.0	†14	1.7	6.2	380	669	1,220	131
Nov.	1.20	.20	2	15.0	11	2.6	8.6	509	526	1,170	216
Dec.	.71	.39	22	23.5	† 2	3.4	10.1	621	603	1,580	145
Yearly	22.80	34.96		31.0		0.6	7.4	5,349	9,097	14,754	4,989

∅ Mean daily ** United States side-average of several stations in this reach
† And other days

RIO GRANDE AT FORT RINGGOLD, RIO GRANDE CITY, TEXAS

DESCRIPTION: Cableway, bubbler gage, gravity well, water-stage recorders (graphic and digital), and impulse-type transmitter located on the left bank at Fort Ringgold, latitude 26°22'05", longitude 98°48'20", and river mile 233.9, about 1 mile downstream from Rio Grande City, Texas, 3.9 river miles downstream from Rio San Juan, and 1,014.9 river miles downstream from American Dam at El Paso, Texas. The zero of the gage is 100.00 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 32 discharge measurements during the year, 30 by the United States Section and 2 by the Mexican Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: January 1955 through 1973. Records composed of the addition of discharges of the Rio Grande at Roma, Texas, and the Rio San Juan at Santa Rosalia, Tamaulipas are available for May, June, and October 1914; September 1916; September and October 1917; October 1918; September and October 1919; August and September 1920; June 1922; September 1923; and 1924 through 1931. Records are also available for the station "Rio Grande near Rio Grande City," 3.0 miles downstream, for 1932 through 1954.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. Except for tributary inflows and intervening diversions below Falcon Dam, flow at this station is controlled largely by releases from Falcon Reservoir, 39.9 river miles upstream. The transmitter relays gage height data to the Anzalduas Dam office of the United States Section of the Commission and to the Anzalduas Dam control room via leased telephone circuits. The data is recorded automatically at both locations.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 220,000 second-feet on September 22 and 23, 1967 with a gage height of 61.40 feet. Min. no flow occurred several days in June and July 1953.

Average Flow in Second-Feet**

Daily:	Max. 207,000	Sept. 23, 1967	Min. 14.6	April 13, 1957
Monthly:	Max. 49,600	Oct. 1958	Min. 235	March 1957
Yearly:	Max. 9,140	1958	Min. 1,750	1970

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,940	1,160	177	853	8,670	10,500	20,300	2,460	6,750	12,700	3,130	1,590
2	1,720	1,190	172	862	8,710	12,600	‡ 15,900	2,000	6,670	‡14,900	‡3,000	1,530
3	927	1,160	167	831	8,250	12,100	‡ 13,100	1,980	6,330	13,600	2,920	1,590
4	880	1,180	167	1,040	7,400	11,000	12,200	2,040	6,420	‡14,000	2,830	1,570
5	893	1,160	169	1,080	7,480	9,760	12,000	3,100	6,870	14,700	2,750	1,550
6	754	‡ 1,160	157	3,970	7,680	8,450	‡ 11,100	4,920	7,800	15,900	2,650	1,500
7	574	1,190	154	5,130	7,960	7,970	9,670	5,400	7,430	17,700	2,610	1,500
8	521	1,100	154	5,320	8,500	7,800	8,330	5,160	5,850	16,000	2,650	1,520
9	510	1,220	814	4,930	9,100	6,490	7,620	7,650	5,590	11,000	2,740	2,210
10	429	1,060	1,170	5,170	10,000	5,860	7,550	8,430	5,630	14,100	2,780	2,030
11	359	795	1,160	5,180	10,300	4,820	6,680	8,060	5,610	15,100	2,750	1,650
12	286	739	1,180	5,150	10,600	3,480	6,010	8,830	5,650	15,700	2,670	1,480
13	226	941	1,210	5,090	3,460	3,590	5,480	8,050	5,250	15,400	2,610	1,490
14	214	1,810	1,180	5,120	930	5,110	5,080	8,180	10,600	13,800	2,560	‡1,510
15	203	1,060	‡1,490	5,350	4,420	1,140	4,690	6,300	13,900	15,500	2,520	1,500
16	205	570	1,250	4,930	5,770	1,830	4,440	‡ 5,550	13,400	16,200	2,480	1,490
17	206	539	923	5,120	5,610	3,660	4,090	6,970	11,600	13,400	2,450	1,430
18	198	483	876	5,150	5,350	3,050	3,900	9,300	12,500	10,300	2,410	2,000
19	198	328	826	‡ 5,350	4,150	3,980	3,700	8,520	‡ 18,800	7,410	2,370	2,320
20	198	214	796	5,140	4,220	4,500	3,520	7,800	‡ 17,800	5,740	2,300	2,100
21	184	229	788	5,240	3,980	3,560	3,310	8,190	‡ 16,800	5,170	‡2,190	1,670
22	213	249	816	5,240	5,140	832	3,110	7,870	‡ 13,900	4,800	2,100	1,470
23	196	235	1,110	5,020	6,910	556	3,210	7,300	11,200	4,520	2,040	1,450
24	349	207	1,110	5,210	7,430	3,530	4,170	7,570	‡ 9,090	‡ 4,240	2,060	1,450
25	419	189	1,120	5,190	6,480	7,820	3,300	7,160	‡ 10,100	4,020	2,010	1,430
26	439	186	1,070	5,750	7,350	‡ 24,900	3,840	6,560	‡ 12,800	3,850	1,980	1,420
27	418	204	1,110	‡ 6,500	8,460	‡ 38,800	3,830	5,380	18,500	3,660	1,910	1,380
28	392	191	932	7,360	8,420	‡ 44,500	3,280	5,490	‡ 16,600	3,490	1,850	1,380
29	551		869	8,210	8,320	‡ 35,300	2,980	5,620	12,800	3,470	1,770	1,370
30	926		861	8,540	9,250	‡ 27,000	2,910	6,520	14,700	3,460	‡1,670	1,780
31	1,220		800		9,940		2,730	6,810		3,380		1,980
Sum	16,748	20,749	24,778	143,026	220,240	314,488	202,530	195,170	317,740	317,210	72,800	50,390

Current Year 1973									Period # 1954-1973		
Month	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low				Average	Maximum	Minimum
	High	Low	Day		Day						
Jan.	27.99	25.23	1	3,560	23	165	540	33,219	212,667	416,906	33,043
Feb.	27.84	25.25	14	3,350	26	172	741	41,155	168,588	376,607	25,500
Mar.	27.60	25.18	15	2,560	† 6	147	799	49,146	129,440	378,000	14,400
Apr.	31.10	25.68	30	8,790	3	388	4,770	283,688	246,289	447,815	75,100
May	32.58	25.87	12	11,300	14	520	7,100	436,840	313,898	521,000	36,702
June	48.00	25.82	28	46,000	23	482	10,500	623,778	295,200	623,778	98,620
July	41.56	27.17	1	23,500	31	2,210	6,530	401,712	144,565	401,712	22,300
Aug.	32.09	26.83	10	10,500	3	1,620	5,300	387,114	162,373	522,593	25,000
Sept.	38.16	27.97	27	25,200	10	3,530	10,600	630,228	385,584	2,712,754	42,423
Oct.	36.33	28.15	8	20,400	31	3,310	10,200	629,177	394,207	3,047,000	30,000
Nov.	28.15	27.00	1	3,290	30	1,630	2,430	144,397	163,065	1,442,000	29,274
Dec.	27.70	26.66	19	3,090	†29	1,360	1,630	99,947	127,135	540,000	36,100
Yearly	48.00	25.18		46,000		147	5,190	3,760,401	2,746,511	6,619,700	1,269,259

** Period 1955-1973 ‡ Discharge measurement made on this day † And other days
# 1954 values are Rio Grande City less arroyo inflow

CONTRIBUTIONS FROM RIO SAN JUAN FORT RINGGOLD TO ANZALDUAS DAM

DESCRIPTION: The Lower Rio San Juan Irrigation District in Mexico lies along the Rio Grande between Cd. Miguel Aleman and Rio Bravo, Tamaulipas and is irrigated with water impounded by Marte R. Gomez Dam situated on the Rio San Juan 12.4 river miles upstream from the confluence with the Rio Grande. The Rio San Juan enters the Rio Grande at river mile 237.8 and 1,011.0 river miles downstream from the American Dam at El Paso, Texas. Drain water from this irrigation district enters the Rio Grande between Falcon Dam and the Fort Ringgold Gaging Station through the Rio San Juan Channel, Rancherias Drain, and Los Fresnos Drain; and between this station and Anzalduas Dam through Puertecitos, Los Indios, Huizache, and Morillo Drains. Only the portion of drain water from this irrigation district reaching the Rio Grande via drains located downstream from the Fort Ringgold Gaging Station is shown below. The portion of water reaching the Rio Grande via channels located upstream from the Fort Ringgold Gaging Station is shown on page 58 in this bulletin.

RECORDS: Drain water reaching the Rio Grande through Puertecitos, Los Indios, Huizache, and Morillo Drains was determined by prorating between frequent current meter measurements. In 1973, 38, 36, 37, and 6 meter measurements were made at Puertecitos, Los Indios, Huizache, and Morillo Drains, respectively. All storm water measured at these drains was deducted and is not included in the tabulation below. In 1973, 48 per cent of the drain water from this irrigation district reaching the Rio Grande between Fort Ringgold Gaging Station and Anzalduas Dam was contributed by Morillo Drain. Records available: 1953 through 1973.

REMARKS: In 1973 there were 160,991 irrigable acres in the Lower Rio San Juan Irrigation District. Since July 9, 1969 some water has been diverted from Morillo Drain directly to the gulf via the Morillo Drain Diversion Canal to reduce the salinity of Rio Grande waters. In 1973, 25,518 acre-feet were diverted.

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	7.1	6.4	11.7	10.6	86.9	72.4	152	35.0	247	107	122	20.5
2	7.1	6.0	9.5	10.9	90.4	78.0	152	35.0	248	105	119	19.8
3	7.1	6.4	9.5	11.7	102	131	152	35.0	247	103	114	19.1
4	7.1	6.4	9.5	11.7	99.2	169	152	96.1	248	106	125	18.4
5	7.1	6.7	9.2	11.7	97.1	118	151	119	248	108	106	17.3
6	6.7	6.4	9.2	11.7	101	115	151	83.3	248	110	102	17.3
7	6.7	6.7	9.2	12.0	118	110	150	34.6	249	113	98.5	17.7
8	7.8	7.1	9.2	12.0	84.8	73.1	150	296	250	115	83.3	17.7
9	8.5	7.4	9.2	12.0	77.7	77.3	150	347	251	118	27.5	17.7
10	8.1	7.4	9.2	12.4	84.4	64.3	149	348	252	120	27.5	18.0
11	7.8	7.8	9.2	12.4	82.3	51.2	149	349	250	122	27.5	18.0
12	16.2	8.1	9.2	13.4	78.8	50.5	149	351	248	125	26.8	18.0
13	14.8	8.1	9.2	14.5	75.2	64.6	85.8	310	246	127	26.8	18.4
14	14.5	8.5	9.2	15.9	71.3	127	38.8	269	244	130	26.5	18.4
15	15.9	8.8	9.2	17.0	103	161	38.8	228	243	132	26.5	18.7
16	10.2	8.8	9.2	18.0	83.3	147	38.5	230	241	135	26.5	18.7
17	4.9	8.8	9.2	19.1	70.6	70.6	38.1	230	184	137	26.5	18.7
18	4.6	8.8	9.2	20.8	63.9	69.9	37.8	230	129	139	26.8	19.1
19	4.6	9.2	9.2	25.4	54.7	71.0	37.8	230	127	142	26.8	19.1
20	4.2	9.2	9.2	39.9	54.4	59.3	37.4	231	125	143	26.8	19.4
21	4.2	9.2	9.2	40.6	44.8	101	37.1	230	124	145	26.8	19.8
22	4.2	12.0	9.2	45.9	41.3	97.1	37.1	230	122	148	27.2	19.8
23	3.9	13.8	9.2	54.7	40.3	154	37.1	230	120	150	27.2	19.8
24	3.9	14.1	9.5	62.9	41.7	154	36.7	233	119	151	26.2	20.1
25	3.9	13.8	9.5	57.6	54.4	154	36.4	235	117	153	25.4	20.1
26	4.6	13.8	9.5	62.2	59.0	154	36.0	238	115	156	25.1	20.1
27	6.7	13.8	9.9	57.6	66.7	153	35.7	239	114	150	24.0	20.5
28	8.1	13.4	9.9	66.0	70.3	153	35.7	242	112	144	23.0	20.5
29	8.1		9.9	75.5	67.5	153	35.7	244	110	138	22.2	20.8
30	8.8		9.9	86.2	69.2	153	35.3	247	108	132	21.5	20.8
31	7.4		10.6		70.3		35.0	247		126		20.8
Sum	234.8	256.9	293.7	922.4	2,304.5	3,306.3	2,557.8	6,702.0	5,686	4,030	1,440.9	593.1

Month	Current Year 1973 Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Period 1954-1973 Acre-Feet		
			High		Low						
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.			12	16.2	†23	3.9	7.4	466	1,978	4,745	466
Feb.			24	14.1	2	6.0	9.2	509	3,135	7,059	509
Mar.			1	11.7	† 5	9.2	9.5	582	2,569	5,291	582
Apr.			30	86.2	1	10.6	30.7	1,829	3,026	6,111	899
May			7	118	23	40.3	74.5	4,572	6,908	30,179	1,557
June			4	169	12	50.5	110	6,559	9,379	35,952	2,027
July			† 1	152	31	35.0	82.6	5,075	5,424	48,782	1,037
Aug.			12	351	7	34.6	216	13,292	2,606	13,292	661
Sept.			10	252	30	108	189	11,273	2,411	11,273	665
Oct.			26	156	3	103	130	7,993	2,845	9,831	623
Nov.			4	125	30	21.5	48.0	2,860	2,315	10,461	520
Dec.			†29	20.8	† 5	17.3	19.1	1,176	3,413	34,043	512
Yearly				351		3.9	77.7	56,186	46,009	179,482	13,462

∅ Mean daily † And other days

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE – FORT RINGGOLD TO ANZALDUAS DAM

Beginning June 1971, the Texas Water Rights Commission assumed control of the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam, the disposition of such waters being made by its Rio Grande Watermaster. Previous to that, since June 1956, such waters had been under the jurisdiction of the 93rd District Court of Texas administered by its Special Water Master.

During 1973, 178,700 irrigable acres and several towns and rural homes were allotted Rio Grande water in the river reach between the gaging station at Fort Ringgold and Anzalduas Dam. Such irrigable area was 23.9% of the total irrigable acres below Falcon Dam allotted Rio Grande water.

The total diversion during 1973 in this river reach was 169,178 acre-feet, or 23.4% of the total water diverted from the Rio Grande below Falcon Dam. About 86% of the water diverted in this river reach was determined by the International Boundary and Water Commission through records of discharge obtained by means of flow meters, and by deflection meters developed by the Commission. The records for the rest of these diversions were furnished by the Rio Grande Watermaster and were determined from records of discharge obtained by means of flow meters. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Second-Feet		
Daily:	Max. 1,220	June 21, 1960	Min. 0	Occasionally
Monthly:	Max. 1,010	June 1960	Min. 10.3	March 1957
Yearly:	Max. 417	1961	Min. 188	1966

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	124	185	33.0	118	641	748	0	667	104	91.4	211	200
2	109	166	34.9	422	677	470	36.9	670	48.0	102	286	120
3	3.2	112	18.5	411	608	222	21.0	412	85.6	118	115	428
4	61.3	47.6	0	458	562	669	0	244	250	122	78.3	436
5	61.0	135	37.8	516	371	774	82.3	142	278	191	252	452
6	18.7	203	49.1	382	242	764	77.2	223	274	91.5	285	384
7	0	282	6.9	191	617	739	34.9	435	187	23.2	287	352
8	2.1	322	39.7	93.5	687	652	0	351	111	160	402	184
9	33.8	62.0	38.6	582	742	339	75.5	378	111	217	230	101
10	0	47.6	17.7	658	740	246	52.4	369	223	255	106	292
11	30.4	10.5	0	588	740	494	135	268	244	245	66.8	290
12	0	94.5	44.8	581	444	502	176	119	427	107	223	276
13	20.6	169	46.5	468	128	502	197	400	428	59.2	256	262
14	0	304	214	209	301	457	169	356	129	9.4	298	238
15	30.5	380	143	126	516	404	48.6	284	10.1	26.2	316	120
16	34.9	299	206	505	533	222	186	205	6.2	6.9	256	100
17	0	81.7	174	457	541	90.6	193	199	16.4	39.0	186	266
18	86.8	10.0	56.9	480	453	425	233	61.1	50.5	5.2	118	306
19	155	69.1	236	530	322	480	291	6.2	51.0	116	379	313
20	30.2	22.5	256	485	205	487	310	210	10.2	43.8	354	293
21	9.3	0	246	208	552	365	246	263	70.6	20.7	360	244
22	65.5	34.6	228	116	609	204	170	222	29.4	91.6	234	83.9
23	88.5	34.9	216	535	633	46.5	447	278	11.5	78.5	222	9.1
24	106	0	146	576	618	7.0	476	285	81.0	197	125	12.4
25	35.0	0	110	590	502	0	473	139	77.6	177	67.1	11.6
26	57.0	34.7	188	634	323	0	489	124	114	144	300	353
27	41.3	0	271	522	248	0	422	323	24.8	94.8	356	427
28	21.2	76.2	280	335	636	13.2	320	285	6.0	99.2	412	442
29	47.5		334	237	652	21.0	225	222	42.5	118	408	315
30	52.5		298	614	683	0	545	233	6.5	102	362	129
31	64.1		186		781		626	153		103		250
Sum	1,389.4	3,182.9	4,156.4	12,627.5	16,307	10,343.3	6,762.8	8,526.3	3,507.9	3,244.6	7,556.2	7,689.1

Month	Average Rainfall Inches**		Current Year 1973 ∅ Extreme Second-Feet High			Low		Average Second-Feet	Total Acre-Feet	Period 1957-1973 Acre-Feet		
	1957-1973	1973	Day		Day					Average	Maximum	Minimum
Jan.	1.37	3.50	19	155	† 7	0		44.8	2,756	11,237	28,747	2,020
Feb.	1.24	3.44	15	380	†21	0		114	6,313	11,489	38,599	1,640
Mar.	.64	.05	29	334	† 4	0		134	8,244	16,535	41,200	637
Apr.	1.33	.46	10	658	8	93.5		421	25,046	23,838	36,074	5,760
May	2.31	1.16	31	781	13	128		526	32,344	22,662	48,400	3,177
June	2.93	7.07	5	774	†25	0		345	20,516	25,134	59,900	5,011
July	.94	.13	31	626	† 1	0		219	13,414	20,493	45,400	6,753
Aug.	1.73	3.73	2	670	19	6.2		275	16,912	20,068	30,000	11,440
Sept.	4.09	7.34	13	428	28	6.0		117	6,958	14,830	35,000	4,136
Oct.	2.54	3.68	10	255	13	5.2		105	6,436	14,951	30,400	2,830
Nov.	1.05	.03	23	412	11	66.5		252	14,933	13,280	21,932	2,930
Dec.	.92	.59	5	452	23	9.1		248	15,251	11,175	13,782	2,506
Yearly	21.09	31.23		781		0		234	169,178	205,747	302,130	136,460

∅ Mean daily
† And other days
** United States side - average of several stations in the reach

RIO GRANDE ABOVE MISSION INLET SOUTH OF ABRAM, TEXAS

DESCRIPTION: Cableway, bubbler gage, water-stage recorder, and impulse-type transmitter, located on the left bank at latitude 26°11'00", longitude 98°24'30", and river mile 182.4; 1.5 miles southeast of Abram, Texas, about 6 miles southwest of Mission, Texas, 10.8 river miles upstream from Anzalduas Dam, and 1,066.4 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 10 discharge measurements during the flood period and a gage height record based on the recorder chart and/or frequent staff gage readings. Computations for the flood period by shifting control methods. Records available: June 1960 through 1973, complete gage height record and flood flows.

REMARKS: This station is operated as a flood stage recording and transmitting station only. It is located within the Anzalduas Dam backwater, therefore, discharges are computed only during extreme high floods when the station has an open-channel rating. The transmitter relays gage height data to the Anzalduas Dam office of the United States Section of the Commission via leased telephone circuits. The data is recorded automatically.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 216,000 second-feet on September 26, 1967 with a gage height of 124.70 feet.

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1							35,000					
2							28,400					
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25						13,000						
26						17,800						
27						24,800						
28						29,200						
29						37,100						
30						38,900						
31												
Sum												

Month	Current Year 1973						Period		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	High Day	High	Low Day	Low			Average	Maximum	Minimum
Jan.											
Feb.											
Mar.											
Apr.											
May											
June	116.02		30	39,200							
July	115.90		1	38,000							
Aug.											
Sept.											
Oct.											
Nov.											
Dec.											
Yearly	116.02			39,200							

DIVERSIONS FROM THE RIO GRANDE
ANZALDUAS CANAL NEAR REYNOSA, TAMAULIPAS

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank at latitude 26°03'05", longitude 98°20'10", 0.5 canal mile from the canal intake, and about 5 miles northwest of Reynosa, Tamaulipas. The canal intake is immediately upstream from Anzalduas Dam at river mile 171.6, 102.2 river miles downstream from Falcon Dam, and 1,077.2 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 86.32 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 47 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1952 through 1973.

REMARKS: Diversions by this canal are for irrigation and domestic use in Mexico and for conveying water for storage in Culebron, Villa Cardenas, and Palito Blanco Reservoirs about 23 canal miles downstream from this station. During 1973, 446,337 acres were irrigated with water delivered through this canal. More than one crop per year was grown on parts of this land. Flow at this canal station is affected by backwater from the operation of canal gates 4.5 miles, 11.3 miles, and 22.5 miles below this station. During 1973, there was no water returned to the Rio Grande through Poniente Drain.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 10,950 second-feet on June 2, 1957 with a gage height of 16.01 feet. Min. no flow occurs frequently.

Average Flow in Second-Feet

Daily:	Max. 9,350	May 29, 1957	Min. 0		Frequently
Monthly:	Max. 5,090	April 1972	Min. 0		Several months
Yearly:	Max. 1,980	1959	Min. 150		1952

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.4	1.4	1.4	1.4	5,900	5,300	4,800	618	466	816	268	1.4
2	316	1.4	1.4	1.4	‡ 5,690	5,620	‡4,410	629	470	953	526	1.4
3	551 ‡	1.4	1.4	1.4	‡ 5,300	5,930	590	678	470	1,040	530	1.4
4	650	1.4	1.4	1.4	‡ 5,330	‡5,970	1.4	703	540	1,180	533	1.4
5	710	1.4	1.4	1.4	5,330	5,930	1.4	770	‡ 558	1,590‡	667	1.4
6	731	1.4	1.4	1.4	5,330	4,910	1.4	‡ 477	406	1,800	‡777	‡ 1.4
7	720	1.4	1.4	1.4	5,330	4,100	1.4	180	212	1,800	636	1.4
8	‡706	1.4	1.4	1.4	‡ 5,230	‡3,740	1.4	184	212	1,800‡	265	1.4
9	696	1.4	1.4	159	5,370	3,280	1.4	247	212	2,220	1.4	795
10	699	1.4	1.4	530	5,760	2,880	1.4	653	212	2,540‡	1.4	265
11	431	1.4	1.4	706	‡ 6,180	‡2,610	1.4	953	191	2,790	1.4	1.4
12	1.4	249	1.4	‡ 671	6,360	1,880	1.4	830	184	2,510	1.4	1.4
13	1.4	636 ‡	1.4	706	4,770	1,170	1.4	833	187	953	1.4	1.4
14	1.4	738	1.4	699	‡ 1,940	‡1,090	1.4	‡ 826	258	1.4	1.4	1.4
15	1.4	431	138	713	‡ 1,640	1,620	1.4	953	173	1.4	1.4	1.4
16	1.4	1.4	360 ‡	713	2,150	1,600	207	975	1.4	1.4	1.4	1.4
17	1.4	1.4	222	699	‡ 2,420	1,590	431	‡ 706	1.4	1.4	1.4	1.4
18	1.4	1.4	1.4	‡ 717	2,420	‡1,590	526	618	1.4	1.4	1.4	487
19	1.4	1.4	1.4	720	2,480	1,590	‡ 501	572	1.4	1.4	1.4	1,060
20	1.4	1.4	1.4	939	2,470	1,170	720	636	1.4	1.4	1.4	42.4
21	1.4	1.4	1.4	1,050	‡ 2,700	886	953	‡ 576	1.4	1.4	1.4	1.4
22	1.4	1.4	1.4	1,260	‡ 2,960	‡ 720	1,040	579	1.4	1.4	1.4	1.4
23	1.4	1.4	1.4	1,640	3,060	274	‡1,140	576	1.4	1.4	367	1.4
24	1.4	1.4	1.4	2,010‡	‡ 3,810	1.4	1,240	572	265	1.4	893	1.4
25	1.4	1.4	1.4	2,310	‡ 4,660	1.4	1,200	576	‡ 505	1.4	266	1.4
26	1.4	1.4	1.4	2,600	5,120	1.4	1,020	484	653	1.4	1.4	1.4
27	1.4	1.4	1.4	3,070‡	5,400	1,090	‡ 742	484	682	1.4	1.4	1.4
28	1.4	1.4	142	3,810	‡ 5,580	‡3,960	530	480	689	1.4	1.4	1.4
29	1.4		360 ‡	4,450	5,650	4,270	530	‡ 477	692	1.4	1.4	1.4
30	1.4		223	5,330‡	5,400	5,300	‡ 625	466	675	1.4	1.4	1.4
31	1.4		1.4		‡ 5,330		618	466		1.4		1.4
Sum	2,087.6		35,513.2		80,074.2			18,777		22,017.2		2,685.8
	6,239.4		1,480.0		137,070		21,839.8		8,923.2		5,754.6	

Month	Average Rainfall Inches**		Current Year 1973 ∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Period 1954-1973 Acre-Feet		
			High		Low						
	1954-1973	1973	Day		Day				Average	Maximum	Minimum
Jan.	1.28	3.78	6	731	† 1	1.4	201	12,376	100,218	259,799	1,520
Feb.	1.53	4.80	14	738	† 1	1.4	74.5	4,141	94,255	251,519	1,086
Mar.	.66	.16	†16	360	† 1	1.4	47.7	2,936	38,901	147,900	1,128
Apr.	1.68	.47	30	5,330	† 1	1.4	1,180	70,481	126,223	303,212	23,381
May	2.44	2.60	12	5,360	15	1,640	4,410	271,881	188,615	285,477	29,169
June	3.06	7.32	4	5,970	†24	1.4	2,670	158,819	122,270	270,700	15,256
July	1.36	1.02	1	4,800	† 4	1.4	706	43,367	43,359	162,400	5,730
Aug.	2.20	4.37	16	975	7	180	607	37,243	70,753	186,909	6,709
Sept.	5.08	4.72	29	692	†26	1.4	297	17,695	70,803	165,800	8,708
Oct.	2.75	4.09	11	2,790	†14	1.4	710	43,696	52,130	209,590	0
Nov.	1.37	.83	24	893	† 9	1.4	192	11,416	14,237	83,690	0
Dec.	1.02	.35	19	1,060	† 1	1.4	86.5	5,327	30,677	166,700	651
Yearly	24.43	34.51		5,360		1.4	939	679,378	952,441	1,434,920	551,946

‡ Discharge measurement made on this day ∅ Mean daily ** Average of several stations
† And other days

RIO GRANDE BELOW ANZALDUAS DAM, TEXAS

DESCRIPTION: Cableway, gravity well, water-stage recorder, and selsyn-type transmitter, located on the right bank at latitude 26°08'00", longitude 98°20'05", and river mile 171.1; 0.5 river mile downstream from Anzalduas Dam, about 4.5 miles northwest of Reynosa, Tamaulipas, 12.2 river miles upstream from the international highway bridge between Hidalgo, Texas and Reynosa, Tamaulipas, and 1,077.7 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 81 discharge measurements during the year, 79 by the Mexican Section and 2 by the United States Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1952 through 1973.

REMARKS: Except during local storms, flow at this station is controlled largely by releases from Falcon Reservoir and by diversions into Anzalduas Canal. Excessive upstream flood flows are partly diverted into the Mission Inlet of the United States floodway system before reaching this station. Prior to January 1, 1968 the zero of the gage was 82.61 feet above mean sea level, U. S. C. & G. S. datum. The transmitter relays gage height data to the Anzalduas Dam control room.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 131,000 second-feet on September 24, 1967 with a gage height of 30.51 feet. Min. periods of no flow have occurred on several occasions in 1953, 1954, 1956, and 1957.

Average Flow in Second-Feet

Daily:	Max. 121,000	Sept. 25, 1967	Min. 0		Occasionally
Monthly:	Max. 37,830	Oct. 1958	Min. 5.5		March 1957
Yearly:	Max. 6,410	1958	Min. 158		1957

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,270	381	252	509	2,640	‡ 3,780	‡ 23,000	1,300	7,450	‡13,400	2,770	1,740
2	946	1,020	296	759	‡ 2,860	4,130	‡ 19,100	992	7,420	12,400	‡2,760	1,820
3	689	1,110	313	848	3,190	5,720	19,000	901	7,270	‡13,900	2,830	‡1,630
4	466	1,080	271	‡ 901	2,780	5,720	‡ 17,400	1,730	6,890	‡13,100	2,840	1,490
5	452	1,080	‡ 313	953	2,180	‡ 4,630	‡ 15,600	1,500	‡ 6,710	12,500	‡2,500	1,380
6	‡ 392	611	197	1,810	2,380	4,380	‡ 14,400	2,850	7,490	13,000	2,140	1,360
7	396	964	250	3,400	2,510	4,380	‡ 13,000	4,660	8,620	14,300	1,980	1,400
8	351	879	243	4,800	‡ 2,650	4,060	11,500	‡ 5,160	8,260	‡15,900	‡2,140	692
9	250	848	‡ 918	4,700	2,870	3,600	‡ 10,200	5,830	6,710	11,700	2,750	685
10	250	445	1,580	‡ 3,920	‡ 3,020	3,320	9,320	8,260	6,460	‡10,100	3,030	1,140
11	250	968	1,290	3,600	3,250	2,850	‡ 9,000	8,790	6,500	12,000	2,960	‡1,830
12	248	809	‡1,540	3,960	3,990	‡ 2,420	8,050	8,690	6,320	13,700	2,830	1,410
13	245	‡ 618	901	3,740	5,540	2,090	‡ 6,850	‡ 8,970	‡ 6,110	15,300	‡2,730	1,880
14	239	530	1,380	3,990	2,270	3,920	5,860	8,470	7,840	15,900	2,600	2,030
15	245	417	1,490	4,270	1,430	4,170	5,370	8,440	12,800	‡15,100	2,470	2,130
16	‡ 250	438	280	3,960	2,250	1,600	‡ 4,800	‡ 6,780	15,500	15,800	2,460	1,510
17	248	424	306	‡ 3,570	2,100	1,710	4,340	‡ 5,690	‡ 14,800	‡16,200	2,560	‡ 512
18	250	434	445	3,640	2,410	‡ 1,790	3,850	8,020	‡ 13,500	13,700	2,530	685
19	392	441	‡ 427	3,710	2,450	1,790	3,470	9,920	14,700	11,500	2,370	685
20	597	‡ 441	459	3,810	1,500	1,910	‡ 3,010	‡ 9,780	‡ 17,200	8,970	2,280	1,420
21	586	441	600	3,880	‡ 1,310	1,680	2,410	8,930	‡ 18,400	6,670	‡2,130	1,630
22	‡ 593	431	685	3,850	1,470	1,910	1,920	‡ 9,080	‡ 16,800	5,790	2,140	1,610
23	604	424	‡ 710	3,270	1,580	1,390	1,190	8,580	14,300	5,300	1,920	1,580
24	600	427	685	2,620	1,880	2,190	‡ 1,140	8,160	‡ 12,000	‡ 5,160	1,560	1,580
25	‡ 664	434	685	‡ 2,390	2,170	8,690	1,160	8,260	10,300	4,840	1,990	1,570
26	526	420	646	2,080	1,790	15,900	1,220	7,840	11,600	4,730	‡2,020	‡1,250
27	569	438	‡ 611	2,280	2,010	‡ 18,600	2,440	6,710	14,100	4,560	1,870	1,090
28	544	‡ 172	675	2,650	2,410	‡ 19,000	2,670	5,580	‡ 17,900	4,240	1,790	1,050
29	1,190		‡1,390	3,130	‡ 2,620	‡ 24,200	2,310	‡ 5,690	16,000	4,060	‡1,670	989
30	‡ 1,460		498	2,850	2,880	‡ 24,500	1,660	6,000	13,700	‡ 3,990	1,650	1,320
31	622		312		3,340		‡ 1,430	7,060		3,810		1,600
Sum	16,384	17,125	20,648	89,850	77,730	186,030	226,670	198,623	333,650	321,620	70,270	42,698

‡ Discharge measurement made on this day † And other days

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1954-1973 Acre-Feet Average	Maximum	Minimum
Jan.	83.53	79.53	29	1,960	25	70.6	530	32,489	92,241	220,916	1,090
Feb.	82.61	79.59	4	1,330	28	144	611	33,976	69,709	241,900	830
Mar.	83.96	79.66	12	2,380	5	84.8	667	40,953	72,981	235,500	339
Apr.	87.73	80.31	8	5,440	1	305	2,990	178,181	92,219	178,181	3,160
May	88.52	80.64	13	6,180	15	434	2,510	154,184	113,317	202,400	35,360
June	102.69	81.56	27	29,000	23	876	6,220	368,852	160,872	368,852	7,850
July	102.40	81.82	1	24,200	23	795	7,310	449,747	96,747	449,747	2,000
Aug.	92.39	81.30	†19	10,200	3	452	6,390	393,970	74,790	393,970	943
Sept.	98.62	87.53	28	18,900	13	5,400	11,100	661,719	255,588	1,862,856	3,920
Oct.	97.47	84.84	14	16,800	31	3,250	10,400	638,113	315,163	2,326,000	1,730
Nov.	84.84	81.59	1	3,250	7	1,240	2,340	139,355	146,452	1,438,000	1,430
Dec.	83.40	80.41	†13	2,210	17	321	1,380	84,671	89,855	540,100	1,500
Yearly	102.69	79.53		29,000		70.6	4,380	3,176,210	1,579,934	4,640,968	114,749

RIO GRANDE FLOODWAY DISCHARGES
LOWER RIO GRANDE VALLEY

On the United States Side

Part of the excess water from floods entering the Lower Rio Grande Valley is diverted from the river through the United States floodway system, with the inlet located south of Mission, Texas approximately 6 miles upstream from Anzalduas Dam. Flood waters were diverted into this floodway system in 1973.

Floodwater entering the system is measured first at the Mission Floodway Station on State Highway No. 336 bridge south of McAllen and again 18.5 miles downstream at the Main Floodway Station on Farm Road No. 88 bridge south of Weslaco. At a point 3 miles southwest of Mercedes the floodway divides, one channel going northeastward through the Arroyo Colorado Floodway to the Gulf of Mexico, and the other going to the gulf via the North Floodway, traveling first northward and then eastward to the gulf. At the point of division, a divisor dike which runs longitudinally in the Main Floodway, divides and controls the flows into the Arroyo Colorado Floodway and the North Floodway. The flow of the Arroyo Colorado is measured at El Fuste Siphon south of Mercedes and farther downstream at the bridge on U. S. Highway No. 83 south of Harlingen. The North Floodway flow is measured at the bridge on old U. S. Highway No. 83 west of Mercedes and farther downstream at the bridge on U. S. Highway No. 77 near Sebastian.

In 1973, diversion of river flow at the Mission Floodway inlet began when the river at Anzalduas Dam reached a stage of approximately 110.4 feet above mean sea level.

A total of 20,731 acre-feet of flood flow was diverted through the floodway system in 1973.

MISSION FLOODWAY SOUTH OF MCALLEN, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located in the pilot channel of the floodway on the downstream side of State Highway No. 336 bridge at latitude 26° 10' 10", longitude 98° 14' 10", about 2 miles south of McAllen, Texas, and 8.5 channel miles from the point of diversion. The point of diversion is at river mile 177.8, 6.2 river miles upstream from Anzalduas Dam, and 1,071.0 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is 0.20 foot above mean sea level, U. S. C. & G. S. datum (I.B. & W.C. Survey, 1967).

RECORDS: Based on 9 discharge measurements and a continuous record of gage heights during the flood period. Computations by shifting control methods. Flood measurements are made from the highway bridge.

REMARKS: Besides floodwaters from the Rio Grande, the floodway carries local storm, drainage, and seepage flows. Prior to 1958, the station was named "North Floodway South of McAllen, Texas" and from 1958 through 1970, "Mission Branch Floodway South of McAllen, Texas."

Mean Daily Discharge in Second-Feet 1973 - Period Summary

June 28 †Q	280	July 1	2,580	July 4	522	Period	Maximum Gage-Feet	Date	Maximum Second-Feet	Total Acre-Feet
29 †	1,370	2 †	1,930	5	150	June 28 - July 5	93.16	June 30	2,720	20,939
30 †	2,590	3	1,160							
				Total	10,582					

MAIN FLOODWAY SOUTH OF WESLACO, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located in the low flow channel on the downstream side of the bridge on Farm Road No. 88 at latitude 26° 06' 40", longitude 97° 59' 30", about 3 miles south of Weslaco, Texas, 26.8 channel miles from the point of diversion from the Rio Grande, and 2.5 channel miles upstream from the point where this floodway branches into the Arroyo Colorado and North Floodway. The zero of the gage is at mean sea level, U. S. C. & G. S. datum (I.B. & W.C. Survey, 1967).

RECORDS: Based on 3 discharge measurements and a continuous record of gage heights during the flood period. Computations by shifting control methods. Flood measurements are made from the highway bridge.

REMARKS: Besides floodwaters from the Rio Grande, the floodway carries local storm, drainage, and seepage flows.

Mean Daily Discharge in Second-Feet 1973 - Period Summary

June 30 †	1,610	July 3	2,270	July 6	369	Period	Maximum Gage-Feet	Date	Maximum Second-Feet	Total Acre-Feet
July 1 †	2,800	4	1,530	7	199	June 30 - July 7	62.12	July 2	2,960	24,726
2	2,830	5	858							
				Total	12,466					

† Discharge measurement made on this day Q Includes local storm flow

RIO GRANDE FLOODWAY DISCHARGES
LOWER RIO GRANDE VALLEY

On the United States Side

ARROYO COLORADO FLOODWAY SOUTH OF MERCEDES, TEXAS

DESCRIPTION: Cableway, bubbler gage, and water-stage recorder located on the left bank immediately upstream from the Hidalgo and Cameron Counties Water Control and Improvement District No. 9 El Fuste Siphon at latitude 26° 07' 45", longitude 97° 54' 45", near the south city limit of Mercedes, Texas and about 2 channel miles from the point where the Main Floodway divides into the North Floodway and Arroyo Colorado. The zero of the gage is 51.88 feet above mean sea level, U. S. C. & G. S. datum (I.B.&W.C. Survey, 1967).

RECORDS: Based on 3 discharge measurements and a continuous record of gage heights during the flood period. Computations by shifting control methods.

REMARKS: Besides a portion of Rio Grande Floodwaters from the Main Floodway, Arroyo Colorado carries local storm, drainage, and seepage flows.

Mean Daily Discharge in Second-Feet 1973 - Period Summary

June 30 999 July 1 † 1,540 2 † 1,620	July 3 † 1,650 4 1,500 5 1,180	July 6 684 7 372 Total 9,545	Period	Maximum Gage-Feet	Date	Maximum Second-Feet	Total Acre-Feet
			June 30 - July 7	2.73	July 2	1,860	18,932

ARROYO COLORADO FLOODWAY SOUTH OF HARLINGEN, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located in the low flow channel on the downstream side of the south service road bridge for U. S. Highway No. 83, at latitude 26° 10' 20", longitude 97° 41' 55", on the south city limit of Harlingen, Texas, and about 18 channel miles from the point where the Main Floodway divides into the North Floodway and Arroyo Colorado. The zero of the gage is at mean sea level, U. S. C. & G. S. datum (I.B.&W.C. Survey, 1967).

RECORDS: Based on 2 discharge measurements and a continuous record of gage heights during the flood period. Computations by shifting control methods. Flood measurements are made from the highway bridge.

REMARKS: Besides a portion of Rio Grande floodwaters from the Main Floodway, the Arroyo Colorado carries local storm, drainage, and seepage flows.

Mean Daily Discharge in Second-Feet 1973 - Period Summary

June 30 776 July 1 1,230 2 †1,730	July 3 † 1,880 4 1,760 5 1,550	July 6 1,140 7 685 Total 10,751	Period	Maximum Gage-Feet	Date	Maximum Second-Feet	Total Acre-Feet
			June 30 - July 7	11.25	July 3	1,930	21,324

NORTH FLOODWAY WEST OF MERCEDES, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located in the pilot channel of the floodway on the upstream side of the old U. S. Highway No. 83 bridge at latitude 26° 08' 30", longitude 97° 55' 50", on the west city limit of Mercedes, Texas, and about 2 channel miles from the point where the Main Floodway divides into the North Floodway and Arroyo Colorado. The zero of the gage is 0.16 foot above mean sea level, U. S. C. & G. S. datum (I.B.&W.C. Survey, 1967).

RECORDS: Based on an established rating curve and a continuous record of gage heights during the flood period. Flood measurements are made from the highway bridge.

REMARKS: Besides a portion of Rio Grande floodwaters from the Main Floodway, the North Floodway carries local storm, drainage, and seepage flows.

Mean Daily Discharge in Second-Feet 1973 - Period Summary

June 30 0 July 1 307 2 1,020	July 3 385 4 330 5 43.0	July 6 0 7 0 Total 2,585	Period	Maximum Gage-Feet	Date	Maximum Second-Feet	Total Acre-Feet
			June 30 - July 7	58.35	July 2	1,120	5,127

† Discharge measurement made on this day

RIO GRANDE FLOODWAY DISCHARGES
LOWER RIO GRANDE VALLEY

On the United States Side

NORTH FLOODWAY NEAR SEBASTIAN, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located in the pilot channel of the floodway on the downstream side of the U. S. Highway No. 77 bridge at latitude 26° 15' 50", longitude 97° 46' 35", about 2 miles south-southwest of Sebastian, Texas, and about 23 channel miles from the point where the Main Floodway divides into the North Floodway and Arroyo Colorado. The zero of the gage is 0.37 foot above mean sea level, U. S. C. & G. S. datum (I.B.&W.C. Survey, 1967).

RECORDS: Based on 1 discharge measurement and a continuous record of gage heights during the flood period. Computations by shifting control methods. Flood measurements are made from the highway bridge.

REMARKS: Besides a portion of Rio Grande floodwaters from the Main Floodway, the North Floodway carries local storm, drainage, and seepage flows.

Mean Daily Discharge in Second-Feet 1973 - Period Summary

July 2	295	July 5	† 758	July 8	239
3	559	6	469	9	201
4	815	7	299		
				Total	3,635

Period	Maximum Gage-Feet	Date	Maximum Second-Feet	Total Acre-Feet
July 2 - July 9	33.27	July 4	893	7,210

† Discharge measurement made on this day

RIO GRANDE FLOODWAY DISCHARGES
LOWER RIO GRANDE VALLEY

On the Mexican Side

Part of the excess water from floods entering the Lower Rio Grande Valley is diverted from the river through the Mexican floodway system, with inlets located approximately 38 miles (Retamal Heading), 51 miles (San Rafael), and 107 miles (Floodway No. 2), respectively, downstream from Anzalduas Dam. Floodwaters were diverted through Retamal Canal and Anzalduas Canal in 1973. San Rafael and Floodway No. 2 were not used.

Floodwater diverted through Retamal Heading flows through Retamal Canal into Culebron and Villa Cardenas Lakes; and floodwater diverted at San Rafael flows, via San Rafael Drain, into these same lakes from where it flows in a southeastwardly direction via Floodway No. 1 into the Gulf of Mexico. Floodwater entering Floodway No. 2 flows south and east into the Gulf of Mexico.

A total of 23,014 acre-feet of flood flow was diverted through Retamal Canal in 1973. In addition, 48,450 acre-feet of flood flow was diverted through Anzalduas Canal during the June-July 1973 flood. There were no diversions for irrigation purposes through Retamal Canal in 1973.

RETAMAL CANAL NEAR RIO BRAVO, TAMAULIPAS

DESCRIPTION: Cableway located at latitude 26° 03' 15", longitude 90° 02' 00", 0.9 mile downstream from the canal headgate, and about 5 miles northwest of Rio Bravo, Tamaulipas. The canal intake is at river mile 133.5, 25.4 river miles downstream from the international highway bridge between Hidalgo, Texas and Reynosa, Tamaulipas, and 1,115.3 river miles downstream from the American Dam at El Paso, Texas. The headgate is about 1,000 feet from the Rio Grande. The elevation of the gate sill is at 59.06 feet above mean sea level, U. S. C. & G. S. datum.

RECORDS: The mean daily discharges in the following tabulation were furnished by the Ministry of Hydraulic Resources.

REMARKS: Retamal Canal, with a gate capacity of 7,000 second-feet, was originally constructed to transport water for irrigation purposes from the Rio Grande into Culebron Lake.

Mean Daily Discharge in Second-Feet 1973 - Period Summary

June 27	338	June 30	2,480	July 3	731	Period	Date	∅ Maximum Second-Feet	Total Acre-Feet
28	1,720	July 1	2,520						
29	1,780	2	2,040	Total	11,609	June 27 - July 3	July 1	2,520	23,014

∅ Mean daily

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE - ANZALDUAS DAM TO PROGRESO

Beginning June 1971, the Texas Water Rights Commission assumed control of the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam, the disposition of such waters being made by its Rio Grande Watermaster. Previous to that, since June 1956, such waters had been under the jurisdiction of the 93rd District Court of Texas administered by its Special Water Master.

During 1973, 140,669 irrigable acres and several towns and rural homes were allotted Rio Grande water in the river reach between Anzalduas Dam and the Progreso International Bridge. Such irrigable area was 18.9% of the total irrigable acres below Falcon Dam allotted Rio Grande water.

The total diversion during 1973 in this river reach was 156,494 acre-feet, or 21.6% of the total water diverted from the Rio Grande below Falcon Dam. About 94% of the water diverted in this river reach was determined by the International Boundary and Water Commission through records of discharge obtained by means of flow meters, and by deflection meters developed by the Commission. The records for the rest of these diversions were furnished by the Rio Grande Watermaster and were determined from records of discharge obtained by means of flow meters. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

	Average Flow in Second-Feet				
Daily:	Max. 1,120	June 16 & 17, 1965	Min. 0		Occasionally
Monthly:	Max. 749	June 1969	Min. 13.3		May 1972
Yearly:	Max. 333	1961	Min. 167		1970

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.1	4.6	81.8	127	502	837	0	478	126	109	360	116
2	137	1.6	91.6	282	567	863	0	506	15.5	295	356	87.5
3	116	1.6	5.6	312	583	721	134	432	75.7	267	282	276
4	142	32.4	0	340	595	916	0	311	253	153	183	377
5	18.1	207	0	375	426	962	17.9	203	366	324	250	372
6	7.4	237	0	308	233	964	31.8	242	331	256	90.6	279
7	4.7	208	12.9	110	599	960	14.4	256	182	102	72.6	213
8	4.7	205	103	57.2	727	619	0	275	290	290	207	143
9	4.7	101	85.3	178	723	435	77.6	233	97.0	351	199	86.0
10	95.0	48.6	9.8	254	738	361	222	120	305	256	47.6	221
11	75.0	36.8	0	225	778	330	65.8	79.2	461	183	7.3	322
12	0	78.2	25.2	236	562	280	69.9	22.7	437	313	69.0	196
13	0	61.8	3.6	251	129	433	180	89.1	381	154	179	314
14	0	93.9	3.5	187	267	438	169	129	225	128	160	301
15	0	187	49.1	51.0	311	412	31.8	118	91.2	99.5	112	147
16	0	188	163	182	292	275	208	124	7.8	158	224	101
17	12.8	142	112	249	300	118	375	91.8	14.7	137	178	206
18	21.9	37.8	5.6	253	326	368	520	96.0	21.6	29.2	61.3	303
19	25.6	113	191	250	253	488	541	83.8	18.6	21.6	216	353
20	12.7	56.5	232	284	5.4	473	559	264	8.3	13.7	249	340
21	0	41.8	244	194	399	263	454	312	0	3.8	213	293
22	74.0	0	218	71.4	355	104	276	298	0	24.1	85.0	130
23	135	0	200	313	391	23.7	545	303	0	47.3	222	42.0
24	2.9	0	128	428	419	3.5	621	348	35.6	161	210	32.0
25	11.5	0	57.4	456	468	3.5	591	224	200	208	69.6	18.0
26	105	0	146	504	360	0	624	110	228	112	228	234
27	8.6	0	172	510	146	216	565	284	155	157	275	415
28	0	0	179	385	523	401	469	341	119	66.8	217	482
29	0		219	212	623	186	353	190	107	177	238	425
30	0		240	429	669	0	476	110	46.9	278	228	166
31	6.4		260		708		491	208		277		305
Sum	2,033.6		8,013.6		12,453.7		6,886.6		5,152.0		7,300.5	
	1,022.1		3,238.4		13,978.4		8,682.2		4,598.9		5,489.0	

Month	Current Year 1973								Period 1957-1973		
	Average Rainfall Inches**		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	1957-1973	1973	Day		Day				Average	Maximum	Minimum
Jan.	1.49	4.17	4	142	†12	0	33.0	2,027	11,104	34,959	723
Feb.	1.42	4.19	6	237	†22	0	74.4	4,133	9,114	28,535	1,140
Mar.	.74	.07	31	260	† 4	0	104	6,423	13,358	36,100	1,050
Apr.	1.38	.67	27	510	15	51.0	267	15,895	17,919	26,074	3,630
May	2.74	1.54	11	778	20	5.4	451	27,726	19,014	35,500	817
June	3.13	7.38	6	964	†26	0	415	24,702	27,113	44,541	5,336
July	1.03	.71	26	624	† 1	0	280	17,221	22,009	41,100	8,597
Aug.	1.90	4.26	2	506	12	22.7	222	13,659	14,977	25,300	7,452
Sept.	4.34	6.96	11	461	†21	0	153	9,122	12,544	28,000	3,214
Oct.	2.81	3.86	9	351	21	3.8	166	10,219	13,828	29,215	2,039
Nov.	1.31	.39	1	300	11	7.3	183	10,887	10,565	22,813	1,015
Dec.	1.09	.36	28	482	25	18.0	236	14,480	9,707	17,500	1,978
Yearly	23.38	34.96		964		0	216	156,494	181,252	241,270	121,006

∅ Mean daily ** United States side - average of several stations in the reach
† And other days

RIO GRANDE NEAR PROGRESO, TEXAS

DESCRIPTION: Gravity well, water-stage recorder, and digital transmitter located on the downstream side of the center pier of the Progreso International Bridge at latitude 26°03'45", longitude 97°57'00", and river mile 123.8; 0.8 river mile downstream from the Progreso pumping plant, 2 miles south of Progreso, Texas, 47.3 river miles downstream from Anzalduas Dam, and 1,125.0 river miles downstream from the American Dam at El Paso, Texas. Meter measurements are made from the bridge. An auxiliary gage well and water-stage recorder located about 300 feet upstream from the bridge are used when the low-flow channel shifts to the left bank. The zero of the gage at both recorders is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 69 discharge measurements during the year, 66 by the Mexican Section and 3 by the United States Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: December 1952 through August 24, 1953; and December 1953 through 1973.

REMARKS: Except for diversions, tributary inflows, and drainage returns below Falcon Dam, flow at this station after August 25, 1953 was controlled largely by releases from Falcon Reservoir, 150 miles upstream. Excessive upstream flood flows are partly diverted through the Mission Inlet of the United States floodway system and through Retamal Heading of the Mexican floodway system before reaching this station. The transmitter relays gage height data upon interrogation by telephone via commercial circuits. Prior to January 1, 1969, the zero of the gage was 52.56 feet above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 60,700 second-feet on September 26, 1967 with a gage height of 24.34 feet. Min. no flow several days in June, July, and August 1953.

	Average Flow in Second-Feet				
Daily:	Max. 48,400	Sept. 26, 1967	Min. 0		Frequently 1953
Monthly:	Max. 22,400	Oct. 1971	Min. 5.1		June 1953
Yearly:	Max. 4,560	1971	Min. 666		1957

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,060	‡ 1,070	477	247	2,290	2,460	‡ 19,500	1,090	6,780	‡14,800	‡3,260	1,510
2	1,320	544	292	‡ 244	2,080	2,640	‡ 18,800	855	7,200	13,900	2,260	1,670
3	1,100	971	292	371	2,310	3,180	‡ 17,900	551	7,240	13,400	2,300	1,740
4	‡ 752	1,250	307	456	2,450	‡ 4,650	‡ 19,200	487	‡ 7,060	13,300	2,520	‡1,420
5	671	1,210	371	533	2,080	4,450	‡ 17,900	1,390	6,870	13,100	2,650	1,210
6	629	1,070	‡ 371	540	1,830	3,710	‡ 16,400	1,630	6,430	12,600	2,370	1,110
7	579	867	‡ 317	1,380	‡ 1,670	3,410	14,700	‡ 2,850	7,270	13,100	‡2,230	1,140
8	537	‡ 727	284	3,080	1,790	3,390	13,000	4,310	8,120	13,900	2,190	1,180
9	537	791	274	‡ 4,450	1,360	3,410	‡ 11,500	4,770	7,840	‡13,700	2,120	876
10	448	886	463	4,410	2,070	3,200	10,100	5,790	6,820	10,600	2,650	‡ 720
11	348	846	1,360	3,640	2,180	‡ 2,930	‡ 9,430	7,560	‡ 6,320	10,200	3,020	957
12	299	‡ 805	1,320	3,530	2,520	2,560	8,860	8,120	6,180	11,100	2,980	1,470
13	338	890	‡1,420	3,740	3,990	2,120	‡ 7,910	8,300	5,900	12,600	‡2,670	1,300
14	339	882	1,130	3,600	‡ 4,910	1,720	6,820	‡ 8,200	5,970	14,400	2,480	‡1,530
15	‡ 333	801	1,320	3,990	2,490	3,600	6,070	8,120	6,370	14,900	2,410	1,830
16	332	333	1,460	‡ 4,310	1,450	3,280	5,580	7,700	12,500	‡14,900	2,320	1,990
17	333	364	685	3,780	1,900	1,650	‡ 4,800	6,390	‡ 14,400	15,300	2,310	1,560
18	321	417	310	3,390	1,890	1,560	4,080	6,140	14,400	15,000	2,420	‡ 703
19	302	430	347	3,510	2,150	‡ 1,460	3,480	7,810	‡ 13,700	13,200	‡2,470	519
20	316	466	‡ 307	3,530	2,330	1,410	‡ 3,010	8,970	‡ 14,900	11,100	2,270	512
21	569	491	246	3,600	1,720	1,540	2,530	‡ 5,790	‡ 16,600	8,360	2,190	992
22	635	‡ 569	312	3,850	‡ 1,240	1,790	‡ 2,090	3,370	‡ 17,500	7,060	2,130	1,480
23	‡ 518	579	494	‡ 3,740	1,230	1,910	1,680	3,250	16,200	6,040	2,100	1,580
24	569	572	487	2,920	1,260	1,570	901	7,800	‡ 14,200	‡ 5,470	2,070	‡1,610
25	703	558	547	2,270	1,370	3,310	576	7,630	12,500	5,120	1,920	1,620
26	883	597	‡ 614	1,970	1,570	3,290	486	7,770	‡ 11,100	4,840	1,820	1,530
27	565	‡ 604	558	1,560	1,580	‡ 16,500	664	7,450	11,900	4,770	1,740	1,140
28	632	586	452	1,750	‡ 1,750	12,500	1,820	‡ 6,360	14,600	4,590	‡1,660	809
29	‡ 713		470	2,300	1,780	‡ 16,100	2,040	5,620	16,500	4,380	1,570	685
30	1,060		879	‡ 2,670	1,910	‡ 19,500	‡ 1,950	5,620	15,600	4,240	1,490	703
31	1,540		618		2,210		1,430	6,000		4,030		1,110
Sum	19,431	19,326	18,734	79,381	64,190	140,910	235,231	180,763	320,770	324,500	68,620	38,206

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1954-1973 Acre-Feet Average	Maximum	Minimum
Jan.	57.23	54.43	31	1,500	11	295	625	38,541	91,763	241,300	17,340
Feb.	56.89	54.46	1	1,380	16	304	692	38,345	70,877	171,900	12,620
Mar.	57.41	54.13	16	1,550	10	212	607	37,251	67,260	379,400	4,930
Apr.	61.35	54.04	9	4,660	1	135	2,650	157,497	82,691	157,497	32,060
May	61.94	58.50	14	5,230	22	1,140	2,070	127,279	102,550	153,028	33,164
June	75.52	60.92	30	20,100	20	1,300	4,700	279,383	132,121	279,383	50,984
July	75.52	55.56	1	20,100	26	456	7,590	466,849	93,703	466,849	16,970
Aug.	67.72	55.45	20	9,150	4	353	5,430	333,534	85,894	333,534	10,400
Sept.	74.64	62.69	22	17,700	14	5,650	10,700	636,712	137,667	837,532	21,650
Oct.	73.38	60.73	†17	15,500	31	3,920	10,500	643,306	233,730	1,377,16	14,030
Nov.	60.73	57.02	1	3,920	30	1,420	2,280	136,055	106,030	735,000	18,000
Dec.	58.01	54.92	26	2,010	†19	501	1,230	75,752	83,650	437,200	7,370
Yearly	75.52	54.04		20,100		135	4,130	2,995,395	1,321,571	3,201,271	432,410

‡ Discharge measurement made on this day † And other days

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE - PROGRESO TO SAN BENITO

Beginning June 1971, the Texas Water Rights Commission assumed control of the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam, the disposition of such waters being made by its Rio Grande Watermaster. Previous to that, since June 1956, such waters had been under the jurisdiction of the 93rd District Court of Texas administered by its Special Water Master.

During 1973, 316,124 irrigable acres and several towns and rural homes were allotted Rio Grande water in the river reach between the gaging stations at Progreso and near San Benito. Such irrigable area was 42.4% of the total irrigable acres below Falcon Dam allotted Rio Grande water.

The total diversion during 1973 in this river reach was 302,301 acre-feet, or 41.7% of the total water diverted from the Rio Grande below Falcon Dam. About 99% of the water diverted in this river reach was determined by the International Boundary and Water Commission through records of discharge obtained by means of flow meters, by open channel rating stations, and by deflection meters developed by the Commission. The records for the rest of these diversions were furnished by the Rio Grande Watermaster and were determined from records of discharge obtained by means of flow meters. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Second-Feet		
Daily:	Max. 2,750	June 15, 1965	Min. 0	Occasionally
Monthly:	Max. 2,080	June 1960	Min. 53.5	March 1957
Yearly:	Max. 726	1955	Min. 367	1968

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	379	0	126	94.5	1,440	1,960	100	571	17.6	155	738	201
2	501	0	131	151	1,510	2,070	101	621	17.9	115	799	18.7
3	497	0	30.8	325	1,550	2,080	80.0	506	95.4	114	635	218
4	537	0	0	405	1,560	2,330	84.5	307	18.4	112	395	453
5	557	30.0	42.8	399	1,520	2,580	84.5	93.0	69.5	109	219	436
6	184	256	0	331	1,440	2,210	83.6	87.3	248	108	0	521
7	120	388	5.4	197	1,590	2,340	89.8	73.3	439	108	24.5	608
8	78.5	661	42.9	97.8	1,470	1,990	84.6	80.2	190	463	153	465
9	15.9	669	34.2	344	1,450	1,570	77.3	366	136	588	129	373
10	0	645	4.2	540	1,490	1,480	60.2	275	95.1	196	1.4	342
11	0	485	1.8	586	1,580	1,720	316	175	65.6	112	1.4	374
12	31.1	508	0	511	1,340	1,630	384	170	135	94.5	36.2	527
13	0	537	20.3	518	1,230	1,610	468	127	288	99.2	215	628
14	51.8	470	42.5	442	1,080	1,530	87.3	103	371	140	308	519
15	63.4	303	0	240	797	1,590	28.6	464	124	152	299	289
16	52.3	215	0	158	903	1,550	138	503	185	174	227	60.0
17	36.4	45.9	0	381	929	1,240	121	94.2	274	177	0	276
18	48.0	0	0	492	868	1,200	535	10.0	212	152	12.4	399
19	30.4	0	148	396	821	975	1,000	77.2	202	128	114	419
20	0	79.9	275	474	395	1,050	942	125	208	124	321	385
21	70.4	26.7	316	250	532	790	844	155	181	75.6	344	378
22	143	16.8	304	155	598	334	749	186	170	58.8	223	231
23	172	0	287	466	620	366	840	360	154	155	112	82.1
24	256	41.1	281	622	826	356	815	405	136	116	86.6	97.7
25	103	0	101	866	1,130	306	702	99.3	119	32.8	53.9	37.7
26	36.8	14.5	267	1,120	1,100	20.9	767	78.6	417	51.5	74.3	398
27	0	0	351	1,230	968	64.2	795	89.8	304	33.0	88.9	532
28	24.3	0	320	1,230	1,370	95.2	1,060	3.1	175	2.0	312	562
29	138		432	1,190	1,440	87.4	1,180	51.4	215	336	455	469
30	94.1		387	1,300	1,570	92.6	583	183	216	375	459	292
31	45.5		259		1,530		559	101		696		606
Sum	5,391.9		15,511.3		37,217.3		6,540.9		5,352.4		11,197.2	
	4,265.9		4,209.9		36,647		13,762.4		5,478.5		6,836.6	

Month	Average Rainfall Inches**		Current Year 1973 ∅ Extreme Second-Feet High		Low		Average Second-Feet	Total Acre-Feet	Period 1957-1973 Acre-Feet		
	1957-1973	1973	Day		Day				Average	Maximum	Minimum
Jan.	1.63	4.66	5	557	†10	0	138	8,461	36,591	97,130	4,872
Feb.	1.80	6.14	9	669	† 1	0	193	10,695	20,014	49,859	4,807
Mar.	.85	.10	29	432	† 4	0	136	8,350	21,520	54,200	3,280
Apr.	1.42	.67	30	1,300	1	94.5	517	30,766	41,613	74,653	12,900
May	3.15	1.61	7	1,590	20	395	1,180	72,688	49,407	74,629	9,277
June	3.47	7.45	5	2,580	26	20.9	1,240	73,819	71,211	123,000	14,674
July	1.50	1.13	29	1,180	15	28.6	444	27,297	38,263	77,132	11,307
Aug.	2.66	7.10	2	821	23	3.1	211	12,974	25,083	45,900	12,736
Sept.	5.33	7.40	7	439	1	17.6	183	10,866	23,899	59,400	4,308
Oct.	3.04	4.27	31	696	25	2.0	173	10,616	22,170	58,164	5,146
Nov.	1.64	1.99	2	799	† 6	0	228	13,560	19,747	44,359	4,853
Dec.	1.24	.17	13	628	2	18.7	361	22,209	21,487	37,500	6,663
Yearly	27.67	42.69		2,580		0	418	302,301	391,005	525,771	266,680

∅ Mean daily ** United States side - average of several stations in the reach
† And other days

RIO GRANDE NEAR SAN BENITO, TEXAS

DESCRIPTION: Cableway, concrete control weir, bubbler gage, water-stage recorders (graphic and digital), and impulse-type transmitter, located on the left bank at latitude 26°02'00", longitude 97°43'40", and river mile 95.5; 5.6 river miles downstream from San Benito pumping plant, about 9.5 miles southwest of San Benito, Texas, and 1,152.3 river miles downstream from the American Dam at El Paso, Texas. An auxiliary gage well is located 0.2 river mile upstream from the gage. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 38 discharge measurements during the year and a continuous record of gage heights. Computations for high flows by shifting control methods. Low and medium flow computations based on a stable control weir rating curve defined by meter measurements. Records available: November 26, 1952 through August 25, 1953, and December 1953 through 1973.

REMARKS: Except for diversions, tributary inflows, and drainage returns below Falcon Dam, flow at this station after August 25, 1953 was controlled largely by releases from Falcon Reservoir, 177.3 river miles upstream. Excessive upstream flood flows are partly diverted through the United States and Mexican floodway systems before reaching this station. The transmitter relays gage height data via leased telephone circuits to the Harlingen office of the United States Section of the Commission. The concrete control weir was constructed in December 1965 and the gage was moved to its present location just above the weir on January 4, 1967.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 25,000 second-feet on September 29, 1967 with a gage height of 61.05 feet. Min. no flow occurs frequently.

		Average Flow in Second-Feet**		
Daily:	Max. 24,800	Sept. 29, 1967	Min. 0	Frequently
Monthly:	Max. 14,300	Oct. 1971	Min. 39.5	December 1956
Yearly:	Max. 3,480	1973	Min. 200	1956

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	451	1,160	488	227	911	536	‡ 15,600	719	5,740	‡14,300	3,030	1,170
2	682	710	285	117	651	404	‡ 16,600	579	6,500	13,700	2,140	1,570
3	663	645	218	90.1	589	696	16,800	504	6,800	12,900	1,860	‡1,610
4	‡ 331	1,000	306	‡ 77.8	‡ 381	1,460	16,900	479	6,890	‡12,400	2,190	1,310
5	151	1,050	‡308	75.6	759	1,720	‡ 17,000	874	‡ 6,550	12,200	‡2,350	797
6	302	851	348	123	398	1,290	16,400	‡ 1,470	6,060	11,800	2,550	610
7	440	487	368	496	406	995	15,300	1,980	5,950	11,700	2,260	414
8	428	211	299	1,970	359	1,010	14,400	3,360	6,930	12,100	2,030	635
9	481	126	282	3,180	‡ 349	1,580	13,200	‡ 3,960	7,370	12,300	1,810	532
10	511	118	236	3,360	453	1,650	11,300	4,230	6,590	‡11,000	2,340	410
11	426	199	917	2,860	539	1,440	‡ 9,650	5,540	5,810	9,680	2,790	411
12	326	191	1,270	2,500	829	954	8,560	6,860	5,480	10,100	2,860	778
13	271	294	1,180	2,670	1,840	668	7,520	7,270	5,290	11,300	2,650	732
14	252	314	1,150	2,700	2,800	347	6,320	7,540	5,100	12,700	2,270	627
15	247	211	1,060	2,850	2,330	872	5,280	7,340	5,950	13,600	2,150	1,440
16	243	‡ 189	1,390	3,300	757	1,960	4,730	7,100	9,390	14,000	2,120	1,840
17	244	226	934	3,200	615	813	4,310	6,220	11,700	‡14,300	2,190	1,800
18	‡ 304	416	432	2,580‡	929	429	‡ 3,890	5,210	‡ 12,600	14,300	2,300	837
19	265	443	281	2,490	936	551	3,450	6,150	‡ 12,900	‡13,500	2,310	270
20	307	442	183	2,670	1,500	476	3,000	7,790	13,300	12,000	2,050	221
21	338	411	92.3	2,710	1,310	794	2,530	8,330	‡ 14,000	9,960	1,730	238
22	502	506	45.8	2,950	717	1,150	2,040	7,950	‡ 14,500	7,730	1,680	1,000
23	502	558	35.5	3,050	493	1,620	1,510	‡ 7,730	14,800	6,140	1,900	1,440
24	432	512	91.7	2,390	‡ 420	1,310	712	7,280	‡ 14,400	5,320	1,860	1,530
25	472	523	233	1,650	257	1,660	293	6,970	‡ 13,500	5,020	1,520	1,580
26	674	534	399	1,090	289	4,330	‡ 295	7,160	12,000	‡ 4,790	1,720	1,430
27	668	579	240	511	452	8,830	179	6,930	‡ 11,400	4,590	1,880	838
28	547	538	161	231	438	‡ 12,800	390	6,160	12,600	4,430	1,600	440
29	531		128	722	339	‡ 13,600	1,110	5,590	14,000	4,130	1,230	360
30	571		205	1,160	289	‡ 14,500	1,280	5,240	14,500	3,740	1,000	404
31	1,210		445		450		1,400	5,230		‡ 3,410		618
Sum	13,772	13,456	14,061.3	54,050.5	24,315	30,445	221,949	159,755	288,660	309,140	62,370	27,942

Month	Current Year 1973 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second-Feet High Day	Extreme Second-Feet High	Extreme Second-Feet Low Day	Extreme Second-Feet Low	Average Second-Feet	Total Acre-Feet	Period 1954-1973 Acre-Feet Average	Maximum	Minimum
Jan.	36.39	34.51	31	1,320	5	130	444	27,316	45,375	227,000	2,920
Feb.	36.36	34.44	1	1,310	10	108	481	26,690	45,110	363,000	3,380
Mar.	36.75	34.19	16	1,460	23	28.2	454	27,890	40,422	360,000	2,560
Apr.	42.75	34.36	10	3,480	5	70.3	1,800	107,208	37,674	116,000	11,500
May	41.47	34.74	14	3,140	28	223	794	48,828	45,936	128,576	16,873
June	58.65	34.78	30	14,900	15	250	2,680	159,560	55,300	159,560	16,100
July	59.59	34.58	† 4	17,100	27	183	7,160	440,229	57,959	440,229	4,690
Aug.	51.91	35.15	21	8,420	4	458	5,150	316,869	41,748	316,869	3,100
Sept.	58.44	46.66	23	14,800	14	5,050	9,620	572,549	136,074	599,652	7,710
Oct.	57.85	42.47	1	14,400	31	3,210	9,970	613,170	178,173	880,359	3,340
Nov.	42.47	36.19	1	3,210	30	951	2,080	123,703	82,171	682,000	5,540
Dec.	38.69	34.63	†16	2,030	21	194	901	55,422	60,787	479,000	2,430
Yearly	59.59	34.19		17,100		28.2	3,480	2,518,940	82,979	2,515,340	145,520

** Period 1954-1973 ‡ Discharge measurement made on this day † And other days

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE - SAN BENITO TO BROWNSVILLE

Beginning June 1971, the Texas Water Rights Commission assumed control of the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam, the disposition of such waters being made by its Rio Grande Watermaster. Previous to that, since June 1956, such waters had been under the jurisdiction of the 93rd District Court of Texas administered by its Special Water Master.

During 1973, 100,470 irrigable acres and several towns and rural homes were allotted Rio Grande water in the river reach between the gaging stations near San Benito and Brownsville. Such irrigable area was 13.5% of the total irrigable acres below Falcon Dam allotted Rio Grande water.

The total diversion during 1973 in this river reach was 89,824 acre-feet, or 12.4% of the total water diverted from the Rio Grande below Falcon Dam. About 88% of the water diverted in this river reach was determined by the International Boundary and Water Commission through records of discharge obtained by means of flow meters, by open channel rating stations, and by deflection meters developed by the Commission. The records for the rest of these diversions were furnished by the Rio Grande Watermaster and were determined from records of discharge obtained by means of flow meters. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Second-Feet		
Daily:	Max. 782	June 14, 1963	Min. 0	Occasionally
Monthly:	Max. 542	June 1965	Min. 18.5	February 1966
Yearly:	Max. 223	1965	Min. 102	1968

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	180	32.7	25.3	49.5	349	416	51.4	267	48.4	57.8	139	41.8
2	211	36.9	35.4	79.1	423	450	51.4	330	88.5	47.9	31.8	38.7
3	156	28.2	28.8	75.5	464	475	50.1	189	101	67.7	31.4	131
4	99.8	27.4	29.0	98.8	426	613	51.0	101	94.0	56.6	31.6	162
5	99.8	36.1	31.2	136	378	634	55.2	82.9	85.3	85.4	32.0	171
6	58.1	44.6	40.6	137	400	612	55.2	155	82.2	76.7	33.8	151
7	49.7	44.0	106	137	411	603	55.2	176	34.0	59.7	58.4	144
8	50.5	50.7	28.5	140	406	563	55.2	153	31.9	81.6	33.9	36.6
9	45.4	46.3	29.2	234	369	449	55.2	153	31.9	70.0	32.7	35.8
10	46.3	32.0	29.0	273	366	451	40.5	161	30.0	45.0	32.4	136
11	36.9	32.7	29.3	286	370	415	40.4	55.8	24.7	61.9	31.8	167
12	31.0	31.1	30.4	266	357	358	30.8	52.2	34.0	44.1	134	138
13	32.2	26.4	33.2	225	325	381	32.7	176	49.2	32.2	142	29.9
14	33.2	33.4	35.2	183	351	361	66.0	142	79.5	53.6	33.3	32.1
15	31.0	62.5	38.3	78.8	411	358	80.6	137	110	20.3	37.5	40.2
16	29.6	80.8	37.3	193	347	425	91.0	139	101	9.6	33.0	40.0
17	33.6	43.1	34.7	222	298	368	95.5	136	199	36.3	31.7	166
18	35.6	25.7	32.0	213	270	380	113	27.2	232	13.5	32.2	46.8
19	30.7	35.1	31.9	200	244	325	204	27.2	213	35.0	138	158
20	36.8	45.7	32.9	101	223	339	191	70.9	203	27.0	123	149
21	25.9	27.9	30.4	99.5	337	211	98.3	61.3	96.5	21.1	34.8	131
22	44.9	29.0	52.2	93.5	325	49.3	84.6	59.7	45.0	35.0	36.5	78.7
23	45.7	30.2	36.4	136	343	32.6	176	72.5	22.8	31.4	37.6	79.1
24	42.0	29.3	31.1	248	374	16.8	184	58.9	39.1	20.8	37.7	79.7
25	39.8	27.8	6.3	330	394	30.0	256	53.5	21.5	34.3	34.5	79.2
26	35.7	27.1	18.0	325	379	22.2	367	50.6	42.2	33.8	33.1	188
27	30.7	30.7	17.3	260	364	22.2	319	22.5	29.8	33.1	57.8	177
28	32.3	31.0	17.9	135	404	23.7	82.4	29.1	13.1	32.4	59.8	189
29	29.5		22.4	85.9	414	29.1	79.7	25.0	41.9	32.2	81.6	110
30	39.3		31.8	200	397	30.5	180	35.6	26.2	31.6	42.1	97.9
31	30.8		40.2		401		228	35.9		128		211
Sum	1,028.4		5,240.6		9,443.4		3,235.8		1,415.6		3,435.5	
	1,723.6		1,022.2		11,320		3,520.4		2,250.7		1,649.0	

Month	Current Year 1973								Period 1957-1973		
	Average Rainfall Inches**		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	1957-1973	1973	Day		Day				Average	Maximum	Minimum
Jan.	1.85	3.82	2	211	21	25.9	55.6	3,419	10,691	24,568	1,290
Feb.	2.10	6.13	16	80.8	18	25.7	36.7	2,040	6,296	15,243	1,028
Mar.	.73	.14	7	105	25	6.3	33.0	2,028	5,876	15,200	705
Apr.	1.46	.57	25	330	1	49.5	175	10,395	11,116	21,828	2,180
May	2.94	1.26	3	464	20	223	365	22,453	14,516	27,670	2,561
June	3.45	7.61	5	634	24	16.8	315	18,731	18,422	32,279	6,690
July	1.44	1.06	26	367	12	30.8	114	6,983	11,263	23,145	3,687
Aug.	2.73	6.39	2	330	27	22.5	104	6,418	7,681	10,700	4,061
Sept.	5.82	5.74	18	232	28	13.1	75.0	4,464	5,829	12,600	876
Oct.	3.12	3.92	31	128	16	9.6	45.7	2,808	5,533	11,300	1,591
Nov.	1.51	1.78	13	142	3	31.4	55.0	3,271	4,752	9,021	2,320
Dec.	1.45	.26	31	211	13	29.9	111	6,814	6,182	11,200	2,163
Yearly	28.60	38.68		634		6.3	124	89,824	108,157	161,503	73,788

∅ Mean daily ** United States side - average of several stations in the reach

RIO GRANDE AT RAILROAD BRIDGE, BROWNSVILLE, TEXAS

DESCRIPTION: Gravity well and water-stage recorder located on the downstream side of the left pier of the railroad bridge between Brownsville, Texas and Matamoros, Tamaulipas at latitude 25°53'00", longitude 97°30'25", and river mile 56.3; 3.7 river miles downstream from the Brownsville pumping plant, 8.7 river miles downstream from the inlet to old Floodway No. 2 in Mexico, and 1,192.5 river miles downstream from the American Dam at El Paso, Texas. Meter measurements are made from the bridge. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 15 discharge measurements during the flood period, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1901 through 1913; 1923 through July 16, 1954; and, for flood flows only, through 1973.

REMARKS: This station is operated during flood periods only.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 36,320 second-feet on June 22, 1903; and since 1923, 32,950 second-feet on April 30, 1949 with a gage height of 37.00 feet on the present gage.

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1							14,700		5,860	14,900		
2							15,500		6,570	14,800		
3							15,700		7,060	14,100		
4							15,200		7,420	13,500		
5							14,800		7,310	13,100		
6							15,400		6,780	12,800		
7							15,500		6,460	12,500		
8							15,200		6,780	12,700		
9							14,500		7,590	13,300		
10							12,900		7,770	13,100		
11							11,500		7,030	11,500		
12							9,610		6,500	11,100		
13									6,220	11,500		
14									6,140	12,400		
15									6,140	13,600		
16									7,730	14,100		
17									10,300	14,500		
18									11,900	14,900		
19									12,600	14,700		
20									12,900	13,600		
21									13,500			
22									14,300			
23									15,100			
24									15,500			
25									15,000			
26									13,300			
27						7,700			12,100			
28						10,900			12,000			
29						12,500			13,200			
30						13,800			14,400			
31												
Sum									295,460			

Month	Current Year 1973								Period		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low						
	High	Low	Day		Day				Average	Maximum	Minimum
Jan.											
Feb.											
Mar.											
Apr.											
May											
June											
July	34.71		3	15,700							
Aug.											
Sept.			24	∅ 15,500	1	5,860	9,850	585,929			
Oct.											
Nov.											
Dec.											
Yearly											

∅ Mean daily

RIO GRANDE NEAR BROWNSVILLE, TEXAS

DESCRIPTION: Cableway, bubbler gage, and water-stage recorders (graphic and digital) located on the left bank at latitude 25°52'35", longitude 97°27'15", and river mile 48.8; 1,000 feet downstream from El Jardin pumping plant, 6.8 river miles downstream from the international highway bridge (Gateway) between Brownsville, Texas and Matamoros, Tamaulipas, and 1,200.0 river miles downstream from the American Dam at El Paso, Texas. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 35 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1934 through 1973.

REMARKS: Except for diversions, tributary inflows, and drainage returns below Falcon Dam, flow at this station after August 25, 1953 was controlled largely by releases from Falcon Reservoir, 225 river miles upstream. Excessive upstream flood flows are partly diverted into the United States and Mexican floodway systems before reaching this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 31,700 second-feet on October 8, 1945 with a gage height of 31.48 feet. Min. no flow occurs frequently.

		Average Flow in Second-Feet		
Daily:	Max. 30,800	Sept. 14,1942; Oct. 8, 1945	Min. 0	Frequently
Monthly:	Max. 23,200	Oct. 1941	Min. 0	June, July 1953
Yearly:	Max. 9,010	1941	Min. 42.1	1956

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	88.7	1,070	536	299	801	21.9	13,300	1,010	5,370	‡13,900	3,460	1,150
2	232	1,000	490	268	599	21.3	‡ 13,800	503	5,780	13,900	3,030	1,270
3	456	683	335	168	343	20.7	‡ 14,200	528	6,250	13,500	2,470	‡1,480
4	522	642	264	‡ 87.1	‡ 281	101	14,600	554	6,570	‡13,100	2,330	1,410
5	376	917	‡ 288	52.5	493	679	‡ 14,900	606	6,560	12,700	‡2,490	1,120
6	193	945	301	35.6	414	782	‡ 15,400	‡ 968	6,270	12,400	2,750	890
7	276	772	317	32.9	206	536	15,600	1,290	5,960	12,100	2,870	822
8	411	523	319	318	143	319	15,300	1,920	6,040	12,100	2,510	828
9	446	315	312	1,830	122	486	14,600	‡ 3,180	6,810	12,300	2,250	876
10	496	213	284	2,640	89.8	1,000	13,100	3,520	7,130	‡12,300	2,150	724
11	506	180	284	2,810	112	1,040	‡ 11,200	4,090	6,570	11,100	2,540	521
12	435	207	778	2,440	206	848	9,730	5,270	6,030	10,400	2,850	466
13	357	227	1,070	2,250	561	483	8,660	6,200	5,780	10,800	2,850	756
14	324	270	1,100	2,360	1,600	278	7,590	6,860	5,560	11,900	2,660	826
15	325	282	1,010	2,480	2,250	97.7	6,580	7,010	5,470	12,900	2,390	805
16	312	212	1,030	2,800	1,420	508	5,690	7,050	6,590	13,500	2,260	1,290
17	295	233	1,200	3,050	560	1,060	5,050	‡ 6,900	9,490	‡13,700	2,210	1,570
18	‡280	296	829	2,860	400	404	‡ 4,460	6,170	11,400	‡13,900	2,250	1,430
19	303	374	508	2,390	600	141	3,650	5,790	‡ 12,100	13,800	‡2,230	884
20	276	409	358	2,430	775	170	2,760	6,170	‡ 12,300	13,100	2,220	421
21	314	429	261	2,540	1,140	183	2,200	7,530	‡ 12,900	11,600	1,990	249
22	327	418	185	2,630	815	582	1,950	8,140	‡ 13,600	9,710	1,800	278
23	434	465	138	2,880	423	1,050	1,530	7,980	14,000	7,860	1,770	877
24	452	508	120	2,780	223	1,290	1,070	7,770	‡ 14,300	6,450	1,900	1,240
25	404	493	127	1,950	132	1,040	582	7,560	‡ 14,100	5,670	1,820	1,340
26	421	572	211	1,260	56.7	1,990	‡ 291	7,360	13,100	‡ 5,250	1,590	1,330
27	587	587	332	‡ 896	26.3	4,600	193	7,230	‡ 11,600	4,930	1,740	1,110
28	600	568	284	505	46.3	‡8,450	267	7,030	11,400	4,740	1,780	770
29	500		215	382	85.1	11,100	462	6,320	12,400	4,580	1,520	517
30	479		164	623	33.6	12,500 ‡	881	5,670	13,400	4,240	1,260	357
31	564		157		22.6		1,000	5,340		‡ 3,830		328
Sum	13,810		48,047.1		51,791.6		153,519		322,260		27,935	
	11,991.7	13,807		15,009.4		220,596		274,830		68,000		

Month	Current Year 1973								Period 1954-1973		
	Extreme Gage Feet		Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
			High		Low				Average	Maximum	Minimum
	High	Low	Day		Day						
Jan.	7.69	3.60	31	820	1	58.2	387	23,785	33,720	224,000	283
Feb.	9.01	4.29	† 1	1,150	11	174	493	27,392	39,835	362,000	1,060
Mar.	9.44	3.99	17	1,260	24	118	445	27,336	35,097	361,000	2,050
Apr.	15.21	3.12	17	3,100	7	31.8	1,600	95,300	26,065	127,000	875
May	13.08	2.53	15	2,370	31	22.3	484	29,771	29,996	127,595	4,140
June	29.30	2.48	30	13,000	4	20.2	1,730	102,727	34,261	143,517	2,430
July	31.43	5.18	† 6	15,600	27	182	7,120	437,546	50,185	437,546	1,120
Aug.	24.07	6.14	22	8,180	3	347	4,950	304,501	33,291	304,501	218
Sept.	30.01	19.74	24	14,400	1	5,270	9,160	545,117	118,166	545,117	950
Oct.	29.59	16.53	† 1	14,000	31	3,620	10,400	639,193	161,010	887,207	756
Nov.	16.53	9.80	1	3,620	30	1,170	2,270	134,876	75,446	528,000	1,290
Dec.	11.25	5.46	17	1,600	22	141	901	55,408	57,518	480,000	524
Yearly	31.43	2.48		15,600		20.2	3,350	2,423,002	694,590	2,423,002	30,596

‡ Discharge measurement made on this day † And other days

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE - BROWNSVILLE TO THE GULF

Beginning June 1971, the Texas Water Rights Commission assumed control of the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam, the disposition of such waters being made by its Rio Grande Watermaster. Previous to that, since June 1956, such waters had been under the jurisdiction of the 93rd District Court of Texas administered by its Special Water Master.

During 1973, 4,211 irrigable acres were allotted Rio Grande water in the river reach between the gaging station near Brownsville and the mouth of the Rio Grande. Such irrigable area was 0.6% of the total irrigable acres below Falcon Dam allotted Rio Grande water.

The total diversion during 1973 in this river reach was 1,037 acre-feet, or 0.2% of the total water diverted from the Rio Grande below Falcon Dam. All records of diversions in this river reach, which were determined by means of flow meters, were furnished by the Rio Grande Watermaster. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Second-Feet			
Daily:	Max. 40.4	June 17, 1965	Min.	0	Frequently
Monthly:	Max. 23.4	June 1965	Min.	0	Occasionally
Yearly:	Max. 7.0	1965	Min.	0.9	1972

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	3.9	4.6	0	0	0	0	0	0
2	0	0	0	0	5.8	1.4	0	0	0	0	0	0
3	0	0	0	0	0	3.6	0	0	2.0	0	0	0
4	0	0	0	0	0	3.6	0	0	2.0	0	0	0
5	0	0	0	0	0	4.2	0	0	2.0	0	0	0
6	0	0	0	0	0	3.5	0	0	2.0	0	3.1	0
7	0	0	0	0	10.4	6.2	0	0	1.3	0	3.1	0
8	0	0	0	0	18.4	8.5	0	0	1.3	0	3.1	0
9	0	0	0	0	15.0	8.2	0	0	1.3	0	3.1	0
10	0	0	0	0	17.2	7.7	0	0	1.3	0	3.1	0
11	0	0	0	0	18.5	7.3	0	0	1.3	0	3.1	0
12	0	0	0	0	18.5	14.5	0	0	1.3	0	3.1	0
13	0	0	0	0	13.7	14.4	0	1.1	2.6	0	0	0
14	0	0	0	0	13.7	14.4	0	1.1	1.4	0	0	0
15	0	0	0	3.1	4.3	11.8	0	3.7	1.4	0	0	0
16	0	0	0	3.1	17.1	9.4	0	3.7	1.4	0	0	0
17	0	0	0	3.1	0	9.4	0	2.6	1.4	0	0	0
18	0	0	0	3.1	0	10.5	0	2.6	1.4	0	0	2.8
19	0	0	0	3.1	0	8.9	0	2.6	1.4	.5	0	2.8
20	0	0	0	3.1	0	1.9	0	0	1.4	.5	0	2.8
21	0	0	0	3.1	0	1.9	0	0	0	.5	5.7	2.8
22	0	0	0	1.0	3.0	1.9	0	0	0	.5	0	0
23	0	0	0	1.9	3.0	1.9	0	3.0	0	.5	0	0
24	0	0	0	2.6	3.0	1.9	0	3.0	0	0	0	0
25	0	0	0	5.2	9.0	1.9	0	3.0	0	0	0	0
26	0	0	0	4.0	8.8	0	0	3.0	0	0	0	0
27	0	0	0	4.0	4.9	0	0	3.0	0	0	0	2.9
28	0	0	0	3.1	6.3	0	0	3.0	0	0	0	2.9
29	0		0	0	6.3	0	0	3.0	0	0	1.5	0
30	0		0	0	8.2	0	0	5.0	0	0	1.7	0
31	0		0		8.1		0	2.0		0		0
Sum	0	0	0	43.5	217.1	163.5	0	45.4	28.2	2.5	30.6	17.0

Month	Current Year 1973								Period 1957-1973		
	Average Rainfall Inches**		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	1957-1973	1973	High Day	High	Low Day	Low			Average	Maximum	Minimum
Jan.	1.92	3.51		0		0	0	0	437	1,275	0
Feb.	2.20	5.80		0		0	0	0	208	668	0
Mar.	.71	.11		0		0	0	0	136	634	0
Apr.	1.52	.55	25	5.2	† 1	0	1.4	86.3	207	633	0
May	2.76	1.80	†11	18.5	† 3	0	7.0	431	363	1,356	0
June	3.27	6.98	12	14.5	†26	0	5.4	324	476	1,393	9.7
July	1.28	.66		0		0	0	0	211	778	0
Aug.	2.57	5.00	30	5.0	† 1	0	1.5	90.0	135	317	13.7
Sept.	5.99	6.24	13	2.6	† 1	0	.9	55.9	61.5	190	0
Oct.	3.06	3.24	†19	.5	† 1	0	.1	5.0	56.5	218	0
Nov.	1.51	.61	21	5.7	† 1	0	1.0	60.7	76.8	252	0
Dec.	1.50	.40	†27	2.9	† 1	0	.5	33.7	91.1	335	0
Yearly	28.29	34.90		18.5		0	1.5	1,086.6	2,458.9	5,036.3	665.0

∅ Mean daily ** United States side - average of several stations in the reach
† And other days

DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE BELOW FALCON DAM

Beginning June 1971, the Texas Water Rights Commission assumed control of the United States portion of the water in Falcon Reservoir and in the Rio Grande below Falcon Dam, the disposition of such waters being made by its Rio Grande Watermaster. Previous to that, since June 1956, such waters had been under the jurisdiction of the 93rd District Court of Texas administered by its Special Water Master.

In 1973, 745,779 irrigable acres, several towns, and many rural homes were allotted Rio Grande water between Falcon Dam and the Gulf of Mexico. The total diversion from the river was 724,294 acre-feet. About 92% of the water diverted was determined through records of discharge obtained by means of flow meters, by open channel rating stations, and by deflection meters developed by the Commission. The records for the balance of the diversions were furnished by the Rio Grande Watermaster and were determined from records of discharge obtained by means of flow meters. Drainage from more than 90% of this area does not return to the Rio Grande but some of it is re-used within the area. More than one crop per year is often grown on parts of this land.

Diversion data pertaining to "Diversions from the Rio Grande-United States Side below Rio Grande City" for the period 1922 through 1957, may be found in previous issues of these Water Bulletins. The area irrigated below Rio Grande City is about 99% of the total acreage irrigated in the United States side below Falcon Dam.

A breakdown by river reaches of the total diversion below Falcon Dam shown in the tabulation below may be found in appropriate downstream order in preceding pages of this Water Bulletin. Because the mean daily discharges are rounded, the total acre-feet shown in the summary below may not equal the sum of the acre-feet of the individual reaches.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Second-Feet		
Daily:	Max. 5,380	June 20 & 21, 1960	Min. 7.2	Sept. 29, 1967
Monthly:	Max. 4,350	June 1960	Min. 102	March 1957
Yearly:	Max. 1,590	1965	Min. 880	1970

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	688	227	268	401	2,950	3,980	152	1,990	304	415	1,460	566
2	959	211	295	950	3,190	3,870	190	2,130	173	564	1,490	268
3	775	150	86.8	1,140	3,220	3,510	287	1,540	367	573	1,070	1,060
4	842	110	30.9	1,310	3,160	4,540	138	965	625	450	691	1,440
5	737	419	114	1,440	2,700	4,970	242	528	807	714	759	1,440
6	271	749	91.7	1,170	2,320	4,570	250	709	954	538	422	1,340
7	176	930	134	650	3,230	4,670	197	943	861	296	449	1,320
8	137	1,240	218	400	3,320	3,850	143	867	638	997	806	833
9	101	883	191	1,350	3,310	2,820	289	1,140	389	1,230	598	599
10	143	778	66.7	1,730	3,360	2,560	378	927	658	762	196	996
11	144	566	35.3	1,700	3,490	2,980	560	582	800	609	113	1,160
12	64.9	720	110	1,600	2,730	2,800	664	366	1,040	565	475	1,140
13	55.9	809	121	1,470	1,840	2,950	886	798	1,160	348	802	1,240
14	90.6	914	310	1,030	2,020	2,800	497	739	810	333	810	1,090
15	130	947	246	512	2,040	2,780	192	1,010	340	300	772	602
16	119	791	415	1,060	2,100	2,490	630	981	305	353	748	307
17	91.3	318	327	1,330	2,070	1,830	796	530	510	392	402	922
18	198	76.2	99.0	1,460	1,920	2,390	1,420	203	520	202	230	1,070
19	247	220	616	1,390	1,640	2,280	2,050	202	488	308	860	1,270
20	81.9	206	803	1,360	832	2,360	2,020	674	433	214	1,060	1,190
21	106	97.8	845	766	1,820	1,640	1,660	795	350	125	968	1,080
22	328	81.8	815	446	1,900	701	1,290	770	248	214	590	546
23	445	66.5	760	1,460	2,010	473	2,020	1,020	190	318	606	235
24	413	73.1	609	1,890	2,250	386	2,110	1,110	297	493	468	234
25	192	30.5	290	2,260	2,510	343	2,030	524	424	463	229	159
26	239	78.2	639	2,600	2,180	44.3	2,250	368	810	372	642	1,190
27	89.7	33.9	822	2,540	1,730	304	2,110	725	517	323	787	1,560
28	86.0	109	814	2,100	2,950	537	1,940	663	315	206	1,010	1,690
29	217		1,030	1,730	3,150	328	1,840	498	410	671	1,200	1,330
30	188		980	2,550	3,340	127	1,790	574	293	790	1,110	692
31	152		764		3,440		1,910	507		1,210		1,380
Sum	8,507.3	11,835.0	12,946.4	41,795	78,722	69,883.3	32,931	25,378	16,041	15,354	21,823	29,949

Month	Average Rainfall Inches** 1957-1973	Average Rainfall Inches** 1973	Current Year 1973 ∅ Extreme Second-Feet High Day	High	Low Day	Low	Average Second-Feet	Total Acre-Feet	Period 1957-1973 Acre-Feet Average	Maximum	Minimum
Jan.	1.49	3.54	2	959	13	55.9	274	16,874	70,655	182,403	9,717
Feb.	1.55	4.56	8	1,240	25	30.5	423	23,474	47,792	126,230	11,785
Mar.	.69	.06	29	1,030	4	30.9	418	25,679	58,379	149,000	6,280
Apr.	1.41	.57	26	2,600	8	400	1,390	82,899	95,684	157,807	25,100
May	2.63	1.39	11	3,490	20	832	2,540	156,143	107,047	171,000	16,071
June	3.18	7.36	5	4,970	26	44.3	2,330	138,611	143,592	259,000	31,931
July	1.14	.69	28	2,250	4	138	1,060	65,318	93,002	178,000	31,502
Aug.	2.20	4.86	2	2,130	19	202	819	50,337	68,584	113,000	36,208
Sept.	4.91	7.50	13	1,160	2	173	535	31,817	57,661	136,000	12,709
Oct.	2.78	3.79	9	1,230	21	125	495	30,454	57,222	124,598	12,991
Nov.	1.31	.66	2	1,490	11	113	727	43,285	45,939	97,969	12,674
Dec.	1.09	.42	28	1,690	25	159	966	59,403	49,254	84,500	14,034
Yearly	24.38	35.40		4,970		30.5	1,000	724,294	897,811	1,153,049	636,835

** United States side-average of several stations in the reach ∅ Mean daily

OUTFALLS FROM SEWERS INTO THE RIO GRANDE

In Acre-Feet

EL PASO SEWAGE OUTFALL

This sewage enters the Rio Grande through the outfalls of the El Paso, Ascarate, and Ysleta Sewage Plants, located 7.1, 8.7, and 15.6 river miles, respectively, downstream from the American Dam. The outfall from the El Paso Plant consists of flows measured by a Parshall meter and estimates of amounts which bypass the meter. The effluent from the Socorro Plant, located 17.6 miles below American Dam, is discharged into ponds at the approximate rate of 10 c.f.s. When the ponds overflow, the effluent may enter either the Rio Grande or Riverside Canal. No record has been kept of the amount of this effluent entering the Rio Grande and it is not included in the table below. All of the plants are operated by the El Paso Water Utilities of the Public Service Board of the City of El Paso, Texas and the records are furnished by that agency.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1973	1,581	1,539	1,612	1,649	1,763	1,662	1,988	2,102	1,936	2,027	1,883	1,875	21,667
* Average	1,733	1,597	1,768	1,737	1,851	1,812	1,952	1,976	1,857	1,864	1,735	1,765	21,647

EAGLE PASS SEWAGE OUTFALL

This sewage outfall enters the Rio Grande 753.1 river miles downstream from the American Dam at El Paso, Texas and about 600 feet upstream from the Eagle Pass-Piedras Negras International Railroad Bridge. The records are based on weekly current meter measurements or gage height observations made by personnel of the International Boundary and Water Commission.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1973	49.2	52.2	64.3	52.8	57.1	57.9	101	103	85.9	135	161	119	1,038.4
* Average	57.3	54.5	55.5	48.0	48.8	45.8	50.2	60.2	60.2	68.3	70.8	67.2	686.8

LAREDO SEWAGE OUTFALL

This sewage outfall enters the Rio Grande 891.4 river miles downstream from the American Dam at El Paso, Texas and immediately upstream from the Laredo Gaging Station. The record is based on estimates by the Texas State Health Department.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1973	477	474	579	536	761	555	517	484	507	473	584	605	6,552
* Average	431	432	520	529	573	527	530	494	434	422	496	460	5,848

BROWNSVILLE SEWAGE OUTFALL

This sewage outfall enters the Rio Grande 3.4 river miles downstream from the Gateway Bridge between Brownsville, Texas and Matamoros, Tamaulipas; 3.4 river miles upstream from the Brownsville Gaging Station; and 52.2 river miles from the Gulf of Mexico. Records are furnished by the City of Brownsville.

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1973	650	623	670	617	692	661	679	742	703	633	393	346	7,414
* Average	384	363	402	375	402	426	441	441	429	459	391	379	4,897

* Period averages are for past 10 years

MUNICIPAL AND INDUSTRIAL WATER USES

In Acre-Feet

Tabulated below are monthly and yearly amounts of water pumped from the Rio Grande directly into the municipal distribution systems of cities along the border, except for the city of Del Rio whose total supply is derived from San Felipe Springs. The city of El Paso derives its municipal supply mainly from the Franklin Canal and from wells some of which, near Canutillo, Texas, pump water into the Rio Grande to be conveyed 17 miles downstream to the point of diversion at the El Paso Water Plant. In 1973 this water amounted to 5,763 acre-feet and is included in the tabulation below. Ciudad Acuna, Coahuila, whose municipal diversion for the Rio Grande started in 1971 may, at times, use an alternate source from Arroyo Las Vacas which was its previous source of supply. Such use would be reflected in the tabulations below.

All Rio Grande water used by U. S. municipalities below Falcon Dam is also included in the figures shown under "Diversions from the Rio Grande - United States Side...." (by river reaches and total below Falcon Dam) on pages 60, 63, 71, 73, 75, 78, and 79 herein. Population data for all cities are estimates based on the 1970 official census except for Falcon Village (estimated by the International Boundary and Water Commission), and Del Mar and San Ignacio which are based on utilities connections.

In United States

Month	EL PASO (Pop. 360,000)				DEL RIO ∅ (Pop. 23,400)			
	1973	Period 1964-1973			1973	Period 1964-1973		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	0	0	0	0	343.5	348.6	424.6	279.1
Feb.	0	0	0	0	350.8	348.9	524.9	252.2
Mar.	829	405.7	831	37.9	551.7	519.5	714.9	350.1
Apr.	2,164	1,379.7	2,164	671.4	530.8	553.3	679.0	482.5
May	2,426	1,765.8	3,251	3.0	838.6	595.2	838.6	376.5
June	3,165	2,094.6	3,407	637.0	601.9	711.9	907.6	571.7
July	1,962	1,984.2	2,819	830.8	643.2	883.4	1,093.2	643.2
Aug.	3,107	2,079.6	3,107	881.5	920.0	793.2	967.8	500.8
Sept.	2,571	1,445.5	2,571	343.9	585.4	564.8	697.6	431.0
Oct.	182	431.0	1,016	0	485.3	435.1	650.6	282.1
Nov.	0	145.9	397	0	417.4	366.3	458.2	295.6
Dec.	0	40.2	131	0	406.5	341.8	413.4	259.2
Yearly	16,406	11,772.2	16,406.0	3,805.3	6,675.1	6,462.0	7,271.2	5,734.3

Month	EAGLE PASS (Pop. 15,374)				DEL MAR (Pop. 2,120)			
	1973	Period 1964-1973			1973	Period 1964-1973		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	267.3	175.0	267.3	122.2	23.7	14.0	23.7	2.3
Feb.	189.5	162.5	229.8	120.7	23.7	15.3	29.0	3.3
Mar.	239.5	200.9	262.8	163.3	27.6	16.5	31.1	0
Apr.	200.4	214.0	306.8	161.0	39.4	27.2	45.3	0
May	400.1	238.0	400.1	144.3	50.1	26.5	51.3	0
June	325.6	269.4	325.6	214.8	54.1	29.5	58.4	0
July	357.4	314.2	365.0	265.1	32.2	27.8	43.1	0
Aug.	354.3	289.5	354.3	229.8	43.9	37.6	51.3	15.2
Sept.	244.0	219.9	279.2	164.8	41.4	30.1	51.2	10.8
Oct.	191.4	200.8	265.3	154.7	26.1	20.0	36.2	6.9
Nov.	187.8	183.5	238.4	142.0	27.6	22.0	32.1	6.9
Dec.	205.3	176.0	228.6	128.1	27.9	19.1	31.8	6.7
Yearly	3,162.6	2,643.7	3,178.5	2,138.6	417.7	285.6	417.7	89.3

∅ Includes Laughlin Air Force Base

MUNICIPAL AND INDUSTRIAL WATER USES

In Acre-Feet

In United States

Month	LAREDO (Pop. 67,500)				LAREDO POWER STATION			
	1973	Period 1964-1973			1973	Period 1964-1973		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	866.8	784.5	1,109.1	587.8	72.3	46.6	72.3	26.2
Feb.	831.8	758.3	1,045.4	601.4	58.3	39.6	72.7	13.5
Mar.	1,112.7	1,001.1	1,402.4	786.4	51.5	42.6	79.3	10.7
Apr.	1,166.4	1,150.8	1,552.9	952.0	55.8	55.2	76.4	26.0
May	1,653.9	1,245.8	1,857.8	822.6	106.9	63.1	106.9	37.8
June	1,387.0	1,316.5	1,684.6	1,016.5	69.6	71.2	85.1	51.9
July	1,476.7	1,514.0	1,771.9	1,176.2	88.3	89.3	106.2	63.4
Aug.	1,382.3	1,424.3	1,708.1	1,228.8	98.1	89.0	103.0	73.8
Sept.	1,299.8	1,110.7	1,482.1	742.1	74.0	72.7	87.8	49.8
Oct.	1,156.5	1,028.6	1,326.2	815.5	45.0	51.6	87.8	29.7
Nov.	1,080.7	917.8	1,158.1	716.6	75.4	55.8	75.4	21.8
Dec.	1,100.5	836.2	1,100.5	591.5	53.1	52.8	71.3	32.2
Yearly	14,515.1	13,088.6	15,720.3	10,588.5	848.3	729.5	867.7	524.5

Month	SAN YGNACIO (Pop 1,020)				NEW ZAPATA (Pop. 2,330)			
	1973	Period November 1965-1973			1973	Period 1964-1973		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	2.2	2.0	3.0	0.8	29.2	25.7	43.0	14.6
Feb.	1.9	2.2	3.6	1.1	27.8	26.2	40.2	17.4
Mar.	3.2	3.1	5.2	2.1	39.2	31.9	41.2	25.0
Apr.	3.0	3.7	4.8	2.4	38.9	36.2	46.0	27.0
May	4.5	3.1	5.3	1.5	49.6	34.9	49.6	18.3
June	2.9	3.2	4.8	1.4	48.0	39.4	49.2	27.7
July	3.2	3.3	4.7	.8	47.2	45.5	57.6	34.4
Aug.	3.2	3.7	4.9	1.4	37.6	44.3	67.7	31.5
Sept.	3.0	2.7	4.0	1.5	29.5	30.8	50.4	21.1
Oct.	2.6	2.3	2.9	1.5	30.6	29.9	47.6	20.0
Nov.	2.7	2.3	2.8	1.4	29.2	27.3	44.3	18.9
Dec.	2.9	2.1	2.9	1.1	33.9	27.0	43.1	20.1
Yearly	35.3	33.7	42.8	21.3	440.7	399.1	579.9	276.0

Month	FALCON VILLAGE (Pop. 180)				ROMA * (Pop. 2,750)			
	1973	Period 1964-1973			1973	Period 1964-1973		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	7.7	6.6	9.5	4.7	32.0	28.8	38.6	14.4
Feb.	7.2	6.4	9.4	4.4	29.4	26.5	36.0	14.4
Mar.	8.4	8.6	12.9	6.5	40.9	34.8	45.3	18.2
Apr.	8.9	9.5	13.0	6.5	38.6	36.8	48.7	17.0
May	10.5	9.1	11.6	6.5	45.0	38.8	49.7	19.9
June	9.5	10.1	14.3	7.8	44.3	39.2	50.1	21.1
July	11.1	12.0	14.7	9.2	47.2	42.7	54.9	21.9
Aug.	10.6	11.2	13.2	9.7	42.5	41.3	52.4	25.7
Sept.	9.6	8.5	11.0	5.8	45.0	35.2	49.5	18.6
Oct.	9.5	7.7	9.5	6.4	40.0	33.2	44.5	19.5
Nov.	8.4	7.1	8.4	5.1	41.8	31.3	44.0	15.7
Dec.	9.4	6.6	9.4	3.8	41.0	29.4	43.2	15.4
Yearly	110.8	103.4	123.3	88.1	487.7	418.0	528.0	228.2

Month	RIO GRANDE CITY (Pop. 5,680)				BROWNSVILLE (Pop. 62,000)			
	1973	Period 1964-1973			1973	Period 1964-1973		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	72.7	67.5	88.7	52.8	959.6	747.9	959.6	620.4
Feb.	61.9	61.7	83.5	51.6	850.5	713.4	973.9	572.5
Mar.	73.7	72.3	96.6	59.8	964.4	838.1	1,120.0	641.6
Apr.	74.6	77.0	113.3	61.4	995.2	872.1	1,130.8	663.1
May	93.2	78.4	96.4	61.4	1,236.4	875.6	1,236.4	644.2
June	104.0	89.0	124.0	59.2	1,122.8	914.0	1,122.8	727.3
July	109.8	97.5	131.9	59.2	1,289.8	1,076.8	1,289.8	860.4
Aug.	105.1	101.0	156.2	83.9	1,124.5	1,003.4	1,177.1	790.2
Sept.	93.8	84.8	114.3	62.9	1,008.9	863.2	1,075.6	665.4
Oct.	89.0	78.8	109.3	58.0	1,036.8	859.6	1,099.6	698.7
Nov.	81.6	74.3	96.3	55.9	1,094.2	825.6	1,094.2	633.4
Dec.	80.0	72.4	85.0	54.9	1,036.0	798.8	1,036.0	577.6
Yearly	1,039.4	954.7	1,257.0	768.2	12,719.1	10,388.5	12,719.1	8,907.7

* Includes Los Saenz and Escobares, Texas

MUNICIPAL AND INDUSTRIAL WATER USES

In Acre-Feet

In Mexico

Month	CD. ACUNA, COAHUILA (Pop. 35,000)				PIEDRAS NEGRAS, COAHUILA (Pop. 67,738)			
	1973	Period 1971-1973			1973	Period 1965-1973		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	55.0	18.3	55.0	0	317.5	223.4	317.5	163.8
Feb.	38.0	65.4	102.7	38.0	254.9	193.3	254.9	160.3
Mar.	150.4	123.2	150.4	76.8	297.4	230.0	297.4	134.6
Apr.	166.8	126.5	166.8	67.9	307.7	248.1	307.7	194.2
May	156.6	123.8	156.6	77.6	359.4	274.0	359.4	198.5
June	153.5	120.2	153.5	83.7	341.4	298.2	341.4	241.8
July	205.1	146.4	205.1	80.1	347.9	328.7	375.4	297.2
Aug.	189.7	165.3	222.4	83.7	364.6	314.2	364.6	248.2
Sept.	111.1	110.9	139.7	81.9	308.4	272.7	334.8	222.1
Oct.	68.3	100.2	145.8	68.3	280.0	258.5	324.3	208.5
Nov.	62.7	64.1	73.8	55.7	315.9	241.0	315.9	176.4
Dec.	67.1	42.8	67.1	0	297.5	238.3	342.2	171.1
Yearly	1,424.3	1,207.1	1,424.3	828.8	3,792.6	3,120.4	3,792.6	2,599.5

Month	NUEVO LAREDO, TAMPS. (Pop. 170,213)				NUEVA CD. GUERRERO, TAMPS. (Pop. 4,529)			
	1973	Period 1964-1973			1973	Period 1964-1973		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	1,461.7	1,107.4	1,461.7	780.4	25.1	28.2	36.6	19.8
Feb.	1,423.8	1,046.1	1,423.8	697.0	22.0	25.8	33.2	19.1
Mar.	1,678.8	1,227.3	1,678.8	929.6	27.7	31.7	40.5	25.4
Apr.	1,672.9	1,342.0	1,829.0	1,006.9	27.4	31.5	41.9	19.9
May	1,975.5	1,403.9	1,975.5	956.3	28.7	35.4	48.9	28.0
June	2,012.1	1,471.6	2,012.1	915.0	28.1	31.8	38.7	21.2
July	2,329.5	1,615.7	2,329.5	997.7	26.3	32.0	37.0	26.2
Aug.	2,188.2	1,584.4	2,188.2	957.4	27.4	31.5	37.1	26.8
Sept.	2,041.5	1,406.5	2,041.5	913.2	26.5	30.4	35.8	22.2
Oct.	2,005.9	1,406.4	2,005.9	943.8	26.0	30.9	35.9	24.0
Nov.	2,111.0	1,281.5	2,111.0	857.9	20.9	30.1	42.4	24.6
Dec.	1,908.7	1,248.6	1,908.7	817.8	26.8	28.7	34.7	24.6
Yearly	22,809.6	16,141.4	22,809.6	11,252.2	312.9	368.0	442.9	312.9

Month	CD. MIER, TAMPS. (Pop. 6,727)				CD. MIGUEL ALEMAN, TAMPS. (Pop. 12,700)			
	1973	Period 1964-1973			1973	Period Aug. 1967-1973		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	26.8	29.2	35.8	21.8	27.1	31.9	37.6	25.3
Feb.	10.5	25.5	33.1	10.5	25.9	32.4	40.5	25.9
Mar.	9.9	30.3	39.3	9.9	32.4	39.3	45.3	32.4
Apr.	9.1	31.0	40.3	9.1	32.3	40.5	50.8	31.0
May	9.1	32.2	39.3	9.1	36.6	41.0	46.9	36.5
June	27.2	33.4	37.7	24.8	37.4	43.9	49.1	37.4
July	30.9	34.2	39.4	27.2	40.6	50.3	62.8	40.6
Aug.	13.1	32.3	39.6	13.1	38.8	43.3	60.4	9.7
Sept.	15.2	29.3	36.9	15.2	38.6	40.2	59.2	26.0
Oct.	14.5	30.4	45.6	14.5	38.4	37.2	51.0	19.9
Nov.	13.3	30.5	40.9	13.3	36.3	38.2	46.5	29.3
Dec.	12.6	28.2	33.5	12.6	36.2	35.5	43.7	27.8
Yearly	191.3	366.5	430.8	191.3	420.6	473.7	543.9	420.6

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

In Thousands of Acre-Feet

Data are presented below for all storage reservoirs in the Rio Grande Basin in the United States and Mexico that exceed 15,000 acre-feet in capacity, except San Esteban Reservoir on Alamito Creek which according to the Texas Water Development Board originally had a capacity of 18,800 acre-feet. There are no monthly storage data available for this reservoir. Also presented on pages 88 and 89 are data for International Amistad and Falcon Reservoirs on the Rio Grande. The monthly figures represent the water in storage on the last day of each month, in thousands of acre-feet. The capacities indicated are at spillway level. Storage figures greater than the capacity indicate that the water surface was above spillway level.

The reservoirs and the agencies providing the data are: Rio Grande, Continental, Santa Maria, Terrace, Mountain Home, and Platoro from the State of Colorado, Division of Water Resources; Sanchez from the Sanchez Ditch and Reservoir Company; Abiquiu from the United States Corps of Engineers; Costilla, Bluewater, Alamogordo, McMillan, and Avalon from the United States Geological Survey; Storrie from the State Engineer Office of New Mexico; Heron, El Vado, Elephant Butte, and Caballo from the United States Bureau of Reclamation; Red Bluff from the Red Bluff Water Power Control District; Lake Casa Blanca from the Webb County Office; Willacy from the Willacy County Water Control and Improvement District No. 1; La Boquilla, La Colina, and Rosetilla from the Federal Power Commission of Mexico; Francisco I. Madero, Chihuahua, Luis L. Leon, Centenario, San Miguel, Venustiano Carranza, Laguna de Salinillas, La Boca, Marte R. Gomez, Culebron, Villa Cardenas, and Palito Blanco from the Ministry of Hydraulic Resources of Mexico; Amistad Reservoir (International) and Falcon Reservoir (International) from International Boundary and Water Commission.

In United States

Month	RIO GRANDE (Capacity 51.1)		CONTINENTAL (Capacity 22.7)		SANTA MARIA (Capacity 45.1)		TERRACE (Capacity 17.2)		MOUNTAIN HOME (Capacity 18.6)	
	1973	#Average 1927-1973	1973	#Average 1928-1973	1973	#Average 1928-1973	1973	#Average 1925-1973	1973	#Average 1924-1973
Jan.	15.3	13.8	4.0	4.8	4.0	6.6	4.3	3.4	1.5	3.6
Feb.	17.0	14.9	4.5	5.2	4.5	7.0	5.1	3.7	1.5	3.9
Mar.	18.3	16.3	5.0	5.6	4.8	7.9	6.0	4.1	1.7	4.3
Apr.	19.9	16.7	5.6	6.2	5.3	9.2	6.5	5.1	1.8	4.9
May	21.0	21.9	6.1	7.9	5.8	12.8	6.8	7.0	2.6	6.6
June	39.6	22.6	11.7	8.2	9.3	14.3	9.4	8.2	7.5	6.7
July	50.5	13.2	15.6	5.7	14.4	9.5	16.9	5.6	12.5	5.0
Aug.	35.2	6.9	10.0	3.7	11.1	5.1	12.4	3.5	3.7	3.1
Sept.	21.4	7.1	.5	3.6	6.0	4.8	7.0	3.0	3.5	2.7
Oct.	21.4	8.4	0	3.5	5.9	5.1	7.0	3.1	2.6	2.7
Nov.	21.4	11.1	0	3.9	5.9	5.7	6.9	3.1	2.8	3.0
Dec.	25.0	12.7	1.2	4.4	6.6	6.1	7.6	3.4	3.4	3.3
Avg.	25.5	13.8	5.4	5.2	7.0	7.8	8.0	4.4	3.8	4.2
Max.	50.5	52.1	15.6	26.7	14.4	42.1	16.9	17.7	12.5	16.4
Min.	15.3	0	0	0	4.0	0	4.3	0	1.5	0

Month	SANCHEZ (Capacity 103.2)		PLATORO (Capacity 60.0)		COSTILLA (Capacity 15.7)		HERON (Capacity 401.3)		EL VADO (Capacity 196.5)	
	1973	#Average 1927-1973	1973	Average 1952-1973	1973	#Average 1922-1973	1973	Average 1971-1973	1973	Average 1935-1973
Jan.	5.2	11.0	2.9	5.8	2.0	4.3	55.5	33.0	21.8	29.2
Feb.	5.4	11.2	3.5	5.8	2.4	4.7	56.7	33.7	23.2	26.6
Mar.	6.0	11.8	4.0	6.1	2.9	5.3	58.3	35.9	39.5	26.5
Apr.	7.6	13.2	4.6	7.0	3.8	6.4	69.6	45.5	93.7	64.9
May	14.7	16.9	4.6	9.3	8.0	8.4	118.4	68.0	148.1	111.1
June	26.9	16.2	12.0	15.2	12.8	7.8	171.3	90.8	176.2	100.7
July	25.2	11.8	33.2	13.4	11.1	5.1	197.7	96.1	177.8	81.9
Aug.	18.1	9.4	36.9	12.5	5.0	3.5	198.0	95.9	160.0	60.8
Sept.	17.3	9.7	37.0	12.7	4.7	3.0	198.8	95.3	132.7	49.5
Oct.	16.6	10.2	36.9	12.5	5.4	3.3	198.5	101.3	125.8	45.8
Nov.	16.1	10.5	36.9	7.5	5.8	3.7	195.3	102.2	126.0	35.3
Dec.	16.3	10.8	37.0	7.5	6.1	4.0	156.0	84.1	126.3	31.1
Avg.	14.6	11.9	20.8	9.6	5.8	5.0	139.5	73.5	112.6	55.3
Max.	26.9	62.4	37.0	54.0	12.8	15.1	198.8	198.8	177.8	203.5
Min.	5.2	0	2.9	0	2.0	0	55.5	0.6	21.8	0

Some months missing

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

In Thousands of Acre-Feet

In United States

Month	ABIQUIU (Capacity 1,217.0)		BLUEWATER (Capacity 43.5)		ELEPHANT BUTTE (Capacity 2,137.2)		CABALLO (Capacity 344.0)		STORRIE (Capacity 23.3)	
	1973	Average 1965-1973	1973	#Average 1927-1973	1973	Average 1915-1973	1973	#Average 1938-1973	1973	#Average 1939-1973
Jan.	2.2	1.1	3.4	5.7	343.4	749.1	69.4	99.5	11.5	8.1
Feb.	2.1	1.2	4.2	6.4	384.4	750.9	73.6	125.3	12.1	8.0
Mar.	2.0	2.2	9.9	9.8	366.1	729.9	83.0	108.1	12.3	8.6
Apr.	3.1	4.3	32.6	13.0	386.7	726.2	74.3	101.9	11.5	8.9
May	164.8	37.0	37.4	11.5	551.9	821.8	119.2	102.5	11.1	9.4
June	194.0	32.7	35.0	9.5	675.9	853.5	119.7	84.3	10.0	8.1
July	124.2	24.5	32.6	8.3	699.1	796.7	128.7	63.9	10.2	8.3
Aug.	83.2	24.7	30.4	7.3	705.3	740.9	42.8	37.4	6.7	9.3
Sept.	83.2	25.9	28.1	7.0	663.8	714.1	31.8	28.0	5.9	8.7
Oct.	83.2	25.4	26.9	6.6	671.8	713.7	35.5	43.6	5.1	8.4
Nov.	69.0	15.5	26.5	6.4	706.6	728.8	37.8	58.9	4.1	8.5
Dec.	45.5	6.3	26.6	6.3	794.2	747.7	40.0	74.9	4.1	7.7
Avg.	71.4	16.7	24.5	8.2	579.1	756.1	71.3	77.4	8.7	8.5
Max.	194.0	194.0	37.4	47.1	794.2 ∅	2,302.8 ∅	128.7 ∅	346.6 ∅	12.3	26.3
Min.	2.0	0	3.4	0	303.6 ∅	3.3 ∅	31.8 ∅	0.1 ∅	4.1	0

Month	ALAMOGORDO (Capacity 110.7)		McMILLAN and AVALON (Capacity 38.0)		RED BLUFF (Capacity 310.0)		LAKE CASA BLANCA (Capacity 22.1)		WILLACY (Capacity 25.0)	
	1973	#Average 1937-1973	1973	#Average 1908-1973	1973	#Average 1936-1973	1973	Average 1962-1973	1973	#Average 1939-1973
Jan.	84.9	67.7	33.2	26.6	51.2	95.6	18.1	12.4	16.6	14.9
Feb.	89.5	71.6	33.3	26.7	53.4	97.2	17.9	12.1	16.6	14.1
Mar.	93.9	61.2	26.8	26.1	55.2	94.2	17.5	11.8	17.7	13.3
Apr.	99.7	53.6	25.9	17.5	49.7	80.3	16.8	11.9	14.2	13.4
May	103.1	56.3	32.7	19.9	81.8	84.5	16.5	12.5	14.6	14.4
June	111.1	50.5	34.9	19.3	75.6	86.0	17.7	13.1	18.8	14.6
July	111.1	49.4	26.8	18.2	71.7	76.4	17.2	12.4	19.2	14.4
Aug.	107.5	53.3	11.0	17.3	59.0	72.4	16.4	12.6	17.4	13.1
Sept.	107.1	55.3	3.7	18.3	53.2	73.7	16.3	15.0	17.5	14.7
Oct.	86.4	58.7	10.0	20.3	54.8	83.6	17.4	13.9	17.0	15.0
Nov.	89.5	60.4	11.9	21.8	56.5	86.4	17.6	13.8	17.4	14.9
Dec.	94.3	65.0	13.0	24.9	56.3	90.6	16.9	13.4	16.1	14.5
Avg.	98.2	58.6	21.9	21.4	59.9	85.1	17.2	12.9	17.1	14.3
Max.	111.1	156.3	34.9	85.5	81.8	327.5	18.1	28.2	19.2	22.6
Min.	84.9	0.4	3.7	0	49.7	10.0	16.3	3.5	14.2	0

Month	TOTAL IN U. S. RESERVOIRS (Capacity 5,260.3)	
	1973	Estimated ‡Average
Jan.	750.4	1,196.2
Feb.	812.9	1,230.2
Mar.	830.9	1,189.0
Apr.	932.9	1,210.1
May	1,469.2	1,439.7
June	1,769.4	1,482.3
July	1,795.7	1,319.8
Aug.	1,570.1	1,192.7
Sept.	1,439.5	1,152.1
Oct.	1,423.2	1,185.1
Nov.	1,454.0	1,201.4
Dec.	1,492.5	1,218.7
Avg.	1,312.1	1,249.3
Max.	1,795.7	
Min.	750.4	

\# Some months missing ∅ Daily extremes ‡ Totals of period averages in all reservoirs

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

In Thousands of Acre-Feet

In Mexico

Month	LA BOQUILLA (Capacity 2,417.5)		LA COLINA (Capacity 19.5)		ROSETILLA (Capacity 15.4)		FRANCISCO I. MADERO (Capacity 344.6)		CHIHUAHUA (Capacity 25.9)	
	1973	#Average 1914-1973	1973	Average 1940-1973	1973	Average 1940-1973	1973	#Average 1948-1973	1973	Average 1961-1973
Jan.	1,497.1	1,428.6	17.8	17.9	14.4	12.5	332.3	214.4	10.9	5.7
Feb.	1,544.7	1,396.5	18.6	18.2	14.3	12.8	329.2	212.5	10.6	5.5
Mar.	1,476.3	1,342.3	19.7	18.2	13.7	12.3	292.2	203.1	9.9	5.4
Apr.	1,376.5	1,270.0	19.7	18.7	14.9	11.8	245.4	173.2	9.2	5.1
May	1,282.1	1,209.1	18.7	18.5	14.8	11.7	199.1	148.5	8.6	4.7
June	1,183.5	1,129.1	19.8	18.5	13.8	12.1	148.2	132.9	7.9	4.3
July	1,199.0	1,164.7	18.8	18.6	12.5	11.7	149.9	144.9	8.4	4.6
Aug.	1,698.0	1,336.2	18.7	18.2	15.8	12.7	231.4	175.3	13.0	6.2
Sept.	1,805.6	1,497.6	18.2	17.9	8.3	13.0	230.4	206.3	12.9	6.8
Oct.	1,746.3	1,504.8	19.0	17.8	10.5	12.9	230.2	215.9	12.2	6.9
Nov.	1,710.4	1,468.2	11.8	16.4	8.8	12.2	232.0	216.1	11.3	6.8
Dec.	1,686.4	1,451.6	18.8	18.0	8.8	13.0	233.6	216.5	10.7	6.5
Avg.	1,517.2	1,349.9	18.3	18.1	12.6	12.4	237.8	188.3	10.5	5.3
Max.	1,805.6	2,544.7	19.8	20.5	15.8	19.4	332.3	366.6	13.0	13.5
Min.	1,183.5	16.9	11.8	11.6	8.3	0.4	148.2	1.4	7.9	0.2

Month	LUIS L. LEON (Capacity 689.1)		CENTENARIO and SAN MIGUEL (Capacity 19.9)		VENUSTIANO CARRANZA (Capacity 1,122.8)		LAGUNA DE SALINILLAS (Capacity 15.4)						
	1973	Average 1968-1973	1973	Average 1934-1973	1973	Average 1930-1973	1931	1932	1933	1934	1935	1936	1937
Jan.	371.3	300.8	16.2	13.3	1,090.9	380.7	0.2	1.2	1.0	1.5	1.5	1.4	0.3
Feb.	394.0	300.3	16.6	13.1	1,092.5	361.6	.7	1.5	1.4	1.1	1.2	1.1	.7
Mar.	411.0	289.8	15.4	9.9	1,067.2	341.0	1.1	1.5	.7	1.3	1.5	1.5	.7
Apr.	424.0	264.3	12.2	8.4	1,019.0	329.9	1.1	1.4	.9	1.5	.4	1.5	.7
May	442.6	261.6	8.3	9.0	935.9	315.6	1.4	.7	1.1	1.0	1.2	1.4	.6
June	423.2	286.7	6.3	7.7	898.8	302.4	.9	.9	1.3	.9	1.1	.8	.7
July	420.8	313.8	8.3	7.4	888.9	310.4	1.5	1.0	1.5	.9	1.5	.6	.5
Aug.	411.8	320.8	4.2	8.0	863.5	316.8	1.5	.6	.6	.4	1.4	.6	.5
Sept.	377.8	373.8	5.8	10.1	862.0	367.6	1.1	1.4	1.1	1.0	1.4	.3	.3
Oct.	407.0	395.0	13.3	12.4	918.5	398.6	1.0	.6	1.5	1.4	1.1	1.1	.4
Nov.	425.6	392.6	12.2	12.6	918.5	404.0	1.0	1.2	1.3	1.3	.8	.4	.4
Dec.	437.8	392.2	14.3	13.0	894.5	403.0	.6	1.4	1.5	1.0	1.2	.2	
Avg.	412.2	324.3	11.1	10.4	954.2	352.6	1.0	1.1	1.2	1.1	1.2	.9	
Max.	ø 498.6	ø 615.9	16.6	20.7	ø1,097.3	ø1,167.8	1.5	1.5	1.5	1.5	1.5	1.5	
Min.	ø 353.5	ø 3.8	4.2	0	ø 846.9	* 1.0	0.2	0.6	0.6	0.4	0.4	0.2	

Month	LAGUNA DE SALINILLAS (Capacity 15.4)																
	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954
Jan.	6.7	5.8	5.4	6.1	8.6	9.6	13.2	12.5	12.1	11.6	15.1	10.5	11.6	12.7	15.2	4.7	6.2
Feb.	8.0	6.0	6.2	8.2	10.2	11.7	12.2	13.5	13.9	13.9	9.2	14.6	5.8	7.1	15.0	5.5	9.4
Mar.	5.5	6.4	4.6	10.2	4.2	5.1	10.0	4.9	8.4	5.2	6.4	5.8	10.4	13.2	8.8	4.9	7.2
Apr.	2.3	7.0	4.4	11.8	8.5	4.6	13.1	8.8	13.1	7.4	11.3	11.7	15.2	13.3	13.4	3.7	11.6
May	1.3	8.0	5.5	13.1	6.7	5.8	10.0	11.7	11.9	12.7	10.1	15.8	11.1	8.1	8.1	2.5	9.2
June	1.3	7.2	4.3	10.9	6.0	3.6	4.0	6.6	7.4	13.2	4.4	7.9	6.1	13.7	5.5	1.2	5.8
July	1.6	6.3	5.3	7.8	4.5	3.2	7.1	11.6	7.1	4.9	10.3	6.4	7.1	8.6	9.7	.2	7.9
Aug.	3.8	5.1	4.7	9.2	5.2	7.0	13.0	15.5	10.9	10.6	8.9	11.3	13.0	13.8	7.1	0	12.0
Sept.	6.9	4.0	7.0	10.5	12.4	11.8	15.6	14.3	15.2	15.1	14.4	15.3	15.1	15.4	5.1	0	15.2
Oct.	7.4	3.1	4.2	9.6	12.8	14.8	14.3	13.3	14.7	14.7	15.2	14.3	12.6	13.5	3.2	0	13.7
Nov.	7.8	1.9	3.4	10.2	11.5	14.8	13.1	12.1	13.1	12.8	13.6	12.6	11.1	11.6	2.1	0	12.1
Dec.	6.4	3.7	2.8	9.2	10.4	11.6	12.2	10.9	11.3	12.6	11.6	11.7	9.4	11.8	1.3	0	10.1
Avg.	4.9	5.4	4.8	9.7	8.4	8.6	11.5	11.3	11.6	11.2	10.9	11.5	10.7	11.9	7.9	1.9	10.0
Max.	8.0	8.0	7.0	13.1	12.8	14.8	15.6	15.5	15.2	15.1	15.2	15.8	15.2	15.4	15.2	5.5	15.2
Min.	1.3	1.9	2.8	6.1	4.2	3.2	4.0	4.9	7.1	4.9	4.4	5.8	5.8	7.1	1.3	0	6.2

Some months missing * Minimum since full reservoir in 1932 ø Daily extremes

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

In Thousands of Acre-Feet

In Mexico

Month	LAGUNA DE SALINILLAS (Capacity 15.4)																
	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Jan.	9.0	9.8	6.4	7.7	10.3	7.1	12.2	4.6	6.2	2.8	4.1	5.9	5.2	4.1	4.6	1.9	3.2
Feb.	13.1	9.7	7.1	14.0	8.1	10.1	13.1	10.5	8.7	12.7	11.0	11.0	8.6	11.6	10.6	11.9	13.4
Mar.	8.4	11.4	6.0	12.8	10.3	7.5	8.1	7.9	7.3	11.0	6.7	8.4	7.8	2.9	6.8	9.8	11.6
Apr.	12.6	14.3	5.4	12.3	11.3	6.8	8.8	7.0	13.7	12.3	13.6	8.4	13.1	12.4	5.3	8.0	11.3
May	6.6	7.1	3.9	7.0	13.9	12.5	11.5	12.1	11.6	13.9	12.7	11.8	12.2	12.3	14.3	10.1	13.1
June	1.6	4.6	6.9	10.6	13.6	12.0	11.2	12.1	10.0	12.5	14.1	13.5	10.5	11.3	9.4	13.5	13.1
July	7.5	2.8	8.6	8.6	12.5	10.6	10.4	10.1	9.5	9.7	12.4	11.3	7.9	10.3	7.5	11.4	12.5
Aug.	8.1	1.1	7.3	6.8	9.3	9.0	11.8	8.3	7.7	8.4	10.2	9.3	6.8	8.4	6.4	9.4	11.8
Sept.	7.1	5.3	6.0	7.1	11.3	7.9	7.5	10.6	6.6	7.5	8.7	8.8	6.6	8.3	4.7	7.9	15.0
Oct.	5.8	6.2	4.9	7.8	10.1	6.7	6.6	9.1	5.7	6.6	7.6	8.0	5.7	7.3	3.2	6.8	14.0
Nov.	4.9	4.6	4.0	7.4	8.4	11.0	6.2	7.7	4.1	5.8	7.1	6.6	5.2	6.1	2.8	4.9	15.1
Dec.	5.1	3.8	3.2	8.8	7.5	12.7	5.6	6.8	3.4	4.7	6.6	5.8	4.5	5.6	1.9	4.4	14.6
Avg.	7.5	6.7	5.8	9.2	10.6	9.5	9.4	8.9	7.9	9.0	9.6	9.1	7.8	8.4	6.5	8.3	12.4
Max.	13.1	14.3	8.6	14.0	13.9	12.7	13.1	12.1	13.7	13.9	14.1	13.5	13.1	12.4	14.3	13.5	15.1
Min.	1.6	1.1	3.2	6.8	7.5	6.7	5.6	4.6	3.4	2.8	4.1	5.8	4.5	2.9	1.9	1.9	3.2

Month	LAGUNA DE SALINILLAS (Capacity 15.4)			LA BOCA (Capacity 33.2)		MANTE R. GOMEZ (Capacity 898.3)		CULEBRON and VILLA CARDENAS (Capacity 90.0)		PALITO BLANCO (Capacity 124.0)	
	1972	1973	Average 1931-1973	1973	Average 1963-1973	1973	#Average 1943-1973	1973	#Average 1939-1973	1973	Average 1942-1973
Jan.	13.9	10.9	7.1	32.8	25.2	849.1	588.9	3.4	37.0	12.6	38.0
Feb.	14.1	15.6	9.1	32.8	25.2	858.1	540.2	3.5	34.1	12.6	32.9
Mar.	12.4	12.5	7.0	31.9	24.8	855.1	507.8	3.5	32.2	12.4	33.0
Apr.	11.5	10.5	8.6	29.8	24.0	755.0	475.8	3.3	33.8	11.5	30.3
May	14.0	11.5	8.6	28.0	23.6	663.1	444.8	3.2	35.9	23.0	30.7
June	11.8	14.9	7.5	32.8	23.8	1,041.6	442.9	8.5	37.7	37.8	33.5
July	13.0	12.9	7.1	32.9	24.3	889.4	416.5	9.1	33.2	26.7	31.9
Aug.	11.3	12.6	7.5	31.6	25.4	922.3	481.1	8.8	33.5	12.9	28.8
Sept.	15.3	13.5	8.5	32.4	26.7	956.6	589.7	9.0	43.1	11.8	39.9
Oct.	12.6	13.1	7.8	32.7	27.3	917.8	641.1	9.1	48.8	12.2	45.1
Nov.	14.2	7.9	7.1	32.7	27.5	898.4	639.7	8.8	38.0	11.1	43.7
Dec.	14.5	7.9	6.7	31.7	27.5	879.0	636.7	6.8	41.9	9.5	42.9
Avg.	13.2	12.0	7.7	31.8	25.4	873.8	533.8	6.4	37.4	16.2	35.9
Max.	15.3	15.6	9.1	32.9	33.6	Ø1,111.8	Ø1,465.4	9.1	116.8	37.8	140.1
Min.	11.3	7.9	6.7	28.0	0	Ø 617.6	** 17.8	3.2	0	9.5	0

Month	TOTAL IN MEXICAN RESERVOIRS (Capacity 5,815.6)	
	1973	Estimated ‡Average
Jan.	4,259.7	3,070.1
Feb.	4,343.1	2,962.0
Mar.	4,220.8	2,826.8
Apr.	3,931.0	2,653.9
May	3,638.9	2,522.3
June	3,837.1	2,439.1
July	3,677.6	2,489.1
Aug.	4,244.6	2,770.5
Sept.	4,344.3	3,201.0
Oct.	4,341.9	3,334.4
Nov.	4,289.5	3,284.9
Dec.	4,239.8	3,269.5
Avg.	4,114.0	2,902.0
Max.	4,344.3	
Min.	3,638.9	

\# Some months missing Ø Daily extremes ** Minimum since full reservoir in 1947
‡ Total of period averages in all reservoirs

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

International Amistad Reservoir

Amistad Dam is the second of the major international storage dams constructed on the Rio Grande as authorized by the Water Treaty of 1944 between the United States and Mexico. It is located at mile 567.5, 12.8 river miles upstream from Del Rio, Texas and Cd. Acuna, Coahuila, and 681.3 river miles downstream from the American Dam at El Paso, Texas.

Storage Capacities

(1961 Survey)

Elevation	Description	At Indicated Elevation		Between Indicated Elevations	
		Reservoir Capacity Acre-Feet	Reservoir Area Acres	Storage Volume Acre-Feet	Type of Storage
898.0	Original River Bed at Dam Axis	0	0		
				8,029	Silt and Dead
930.0	Lowest Outlet (United States Penstocks)	8,029	712		
				3,497,410	Silt & Conservation
1,117.0	Top of Conservation Storage *	3,505,439	54,860		
				1,744,222	Ordinary Flood
1,140.4	Top of Spillway Gates	5,249,661	84,358		
				407,116	Super Flood
1,145.1	Maximum Water Surface	5,656,777	88,984		

Storage in Thousands of Acre-Feet at 24:00 Hours 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3,855.5	3,897.9	3,907.7	3,945.6	3,885.4	3,704.5	3,695.1	3,791.5	3,825.1	3,828.6	3,800.4	3,834.1
2	3,855.5	3,899.3	3,909.8	3,946.3	3,870.8	3,702.5	3,695.7	3,801.1	3,829.9	3,827.9	3,801.7	3,834.8
3	3,856.9	3,900.0	3,912.6	3,946.3	3,853.4	3,700.4	3,695.7	3,807.9	3,832.7	3,827.9	3,804.5	3,834.8
4	3,859.0	3,901.4	3,912.6	3,943.5	3,835.5	3,699.1	3,696.4	3,813.4	3,835.5	3,826.2	3,806.5	3,836.8
5	3,861.8	3,902.8	3,915.4	3,940.7	3,820.3	3,698.4	3,695.7	3,817.5	3,834.1	3,877.7	3,807.2	3,836.8
6	3,862.5	3,901.4	3,917.5	3,941.4	3,805.9	3,695.7	3,695.7	3,818.2	3,835.5	3,878.4	3,807.9	3,836.2
7	3,864.5	3,900.0	3,918.2	3,940.0	3,788.7	3,692.4	3,695.7	3,819.6	3,836.2	3,879.1	3,810.0	3,835.5
8	3,864.5	3,900.0	3,921.7	3,937.2	3,771.6	3,690.4	3,698.4	3,817.5	3,834.1	3,879.1	3,812.7	3,836.2
9	3,865.2	3,899.3	3,921.7	3,934.4	3,756.6	3,691.0	3,699.1	3,814.8	3,834.8	3,879.1	3,814.1	3,837.5
10	3,865.9	3,894.5	3,926.6	3,930.1	3,743.7	3,691.0	3,700.4	3,812.0	3,833.4	3,879.1	3,814.1	3,836.8
11	3,866.6	3,892.4	3,926.6	3,928.7	3,734.9	3,689.7	3,701.1	3,808.6	3,831.3	3,879.8	3,814.8	3,838.9
12	3,866.6	3,891.7	3,928.7	3,927.3	3,727.5	3,689.7	3,703.1	3,807.2	3,827.2	3,882.6	3,815.5	3,840.3
13	3,870.1	3,889.6	3,931.5	3,925.9	3,718.7	3,688.3	3,705.2	3,806.5	3,821.7	3,883.3	3,817.5	3,841.7
14	3,872.2	3,888.2	3,933.7	3,925.9	3,713.3	3,687.0	3,710.6	3,808.6	3,818.9	3,882.6	3,819.6	3,843.1
15	3,874.3	3,886.8	3,934.4	3,928.0	3,708.5	3,685.6	3,722.7	3,811.4	3,814.8	3,881.9	3,821.7	3,843.1
16	3,877.0	3,886.1	3,933.7	3,925.2	3,708.5	3,685.6	3,732.2	3,812.0	3,810.0	3,881.9	3,822.4	3,843.1
17	3,879.8	3,886.1	3,933.7	3,924.5	3,708.5	3,685.0	3,739.7	3,812.7	3,806.5	3,881.9	3,825.1	3,844.4
18	3,882.6	3,884.7	3,933.7	3,924.5	3,709.2	3,684.3	3,745.1	3,812.0	3,803.8	3,880.5	3,826.5	3,845.8
19	3,882.6	3,884.7	3,936.5	3,921.7	3,711.9	3,689.0	3,749.8	3,812.0	3,804.5	3,872.9	3,826.5	3,845.8
20	3,883.3	3,887.5	3,936.5	3,921.7	3,712.6	3,695.1	3,758.0	3,812.7	3,805.2	3,863.1	3,826.5	3,843.1
21	3,884.7	3,891.0	3,935.8	3,921.0	3,713.3	3,694.4	3,766.2	3,814.8	3,805.9	3,852.1	3,827.2	3,843.1
22	3,886.1	3,895.2	3,935.8	3,920.3	3,713.9	3,692.4	3,768.2	3,817.5	3,810.0	3,842.4	3,828.6	3,843.1
23	3,887.5	3,897.2	3,937.2	3,920.3	3,713.9	3,691.7	3,768.9	3,817.5	3,821.0	3,832.0	3,829.9	3,843.1
24	3,887.5	3,899.3	3,940.0	3,919.6	3,713.9	3,693.7	3,769.6	3,817.5	3,823.7	3,821.0	3,831.3	3,844.4
25	3,890.3	3,901.4	3,941.4	3,918.9	3,713.9	3,692.4	3,769.6	3,819.6	3,825.8	3,811.4	3,832.7	3,845.1
26	3,890.3	3,902.8	3,941.4	3,916.1	3,713.9	3,692.4	3,769.6	3,821.0	3,827.9	3,803.8	3,833.4	3,845.1
27	3,891.0	3,904.2	3,942.8	3,911.2	3,712.6	3,693.0	3,769.6	3,821.0	3,829.3	3,801.1	3,833.4	3,845.8
28	3,892.4	3,906.3	3,943.5	3,906.3	3,711.9	3,693.7	3,768.9	3,822.4	3,828.6	3,796.9	3,834.1	3,846.5
29	3,893.1		3,944.2	3,904.9	3,709.2	3,693.7	3,768.9	3,821.7	3,828.6	3,794.2	3,832.7	3,847.2
30	3,893.8		3,944.9	3,900.0	3,706.5	3,695.1	3,779.9	3,821.7	3,828.6	3,799.0	3,833.4	3,847.9
31	3,895.2		3,944.9		3,705.8		3,782.6	3,822.4		3,799.7		3,847.9

Month	1973							Period June 1968-1973		
	MOMENTARY MAXIMUM			MOMENTARY MINIMUM			Average Storage	Mean Monthly Storage		
	Elevation	Storage	Day	Elevation	Storage	Day		Average	Maximum	Minimum
Jan.	1,122.79	3,895.2	31	1,122.17	3,852.1	1	3,876.1	2,011.0	3,876.1	722.6
Feb.	1,122.95	3,906.3	28	1,122.64	3,884.7	†18	3,895.4	1,993.6	3,895.4	787.7
Mar.	1,123.50	3,944.9	†30	1,122.95	3,906.3	1	3,930.5	1,975.9	3,930.5	861.7
Apr.	1,123.52	3,946.3	† 2	1,122.86	3,900.0	30	3,926.6	2,006.4	3,926.6	962.8
May	1,122.86	3,900.0	1	1,120.03	3,705.8	31	3,745.6	1,986.7	3,745.6	1,038.6
June	1,120.01	3,704.5	1	1,119.71	3,684.3	13	3,692.6	1,628.3	3,692.6	3.0
July	1,121.16	3,782.6	31	1,119.87	3,695.1	1	3,732.5	1,643.4	3,732.5	83.0
Aug.	1,121.74	3,822.4	†29	1,121.16	3,782.6	1	3,814.0	1,847.3	3,814.0	176.2
Sept.	1,121.94	3,836.2	7	1,121.47	3,803.8	18	3,823.5	2,019.5	3,823.5	355.7
Oct.	1,122.62	3,883.3	13	1,121.33	3,794.2	29	3,850.2	2,192.0	3,850.2	661.0
Nov.	1,121.90	3,833.4	†26	1,121.42	3,800.4	1	3,820.4	2,247.8	3,820.4	702.9
Dec.	1,122.11	3,847.9	†30	1,121.90	3,833.4	1	3,841.5	2,283.6	3,841.5	706.1
Yearly	1,123.52	3,946.3		1,119.71	3,684.3		3,328.7	1,986.8	3,328.7	1,047.6

† And other days * When necessary, the Commission may set temporary conservation levels

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

International Falcon Reservoir

Falcon Dam is the lowermost of the major international storage dams authorized for construction on the Rio Grande by the Water Treaty of 1944 between the United States and Mexico and was the first dam constructed. It is located 84.5 river miles downstream from Laredo, Texas and Nuevo Laredo, Tamaulipas, 975.0 river miles downstream from the American Dam, and 273.8 river miles upstream from the Gulf of Mexico.

Storage Capacities
(1971-1972 Survey)

Elevation	Description	At Indicated Elevation		Between Indicated Elevations	
		Reservoir Capacity Acre-Feet	Reservoir Area Acres	Storage Volume Acre-Feet	Type of Storage
175.0	Original River Bed at Dam Axis	0	0		
				67	Silt and Dead
203.33	Lowest Outlet (Mexican Penstock)	67	89		
				2,667,521	Silt & Conservation
301.2	Top of Conservation Storage *	2,667,588	86,843		
				509,505	Ordinary Flood
306.7	Top of Spillway Gates	3,177,093	98,512		
				801,323	Super Flood
314.2	Maximum Water Surface	3,978,416	115,406		

Storage in Thousands of Acre-Feet at 24:00 Hours 1973 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,639.0	2,655.4	2,754.6	2,733.3	2,475.0	2,230.9	2,334.4	2,385.9	2,380.3	2,576.7	2,705.1	2,761.7
2	2,638.2	2,654.6	2,756.4	**2,731.5**	**2,466.8**	**2,203.8**	**2,338.3**	**2,392.3**	**2,379.5**	**2,563.2**	**2,709.5**	2,761.7
3	2,637.3	2,653.7	2,758.1	2,728.9	2,461.0	2,179.8	2,341.5	2,405.9	2,378.7	2,547.2	2,714.8	2,761.7
4	2,638.2	2,652.0	2,759.9	2,726.2	2,459.4	2,160.5	2,343.0	2,412.3	2,377.9	2,529.6	2,719.2	2,762.6
5	2,639.9	2,651.1	2,761.7	2,719.2	2,458.6	2,143.5	2,344.6	2,416.4	2,370.7	2,513.8	2,723.6	2,763.5
6	2,641.6	2,650.3	2,763.5	2,709.5	2,457.8	2,130.3	2,346.2	2,418.0	2,361.2	2,517.1	2,725.4	2,765.3
7	2,642.5	2,649.4	2,764.4	2,699.9	2,457.8	2,116.4	2,347.8	2,418.0	2,354.9	2,550.5	2,727.1	2,765.3
8	2,643.4	2,648.5	2,764.4	2,691.1	2,453.7	2,102.5	2,350.1	2,413.9	2,358.0	2,590.3	2,731.5	2,766.2
9	2,645.9	2,649.4	2,764.4	2,680.6	2,448.8	2,091.6	2,351.7	2,406.7	2,364.4	2,581.8	2,735.1	2,766.2
10	2,646.8	2,649.4	2,763.5	2,670.2	2,442.3	2,082.8	2,353.3	2,397.9	2,369.1	2,570.8	2,737.7	2,766.2
11	2,647.7	2,650.3	2,761.7	2,660.6	2,435.8	2,077.0	2,355.7	2,389.1	2,373.9	2,560.6	2,738.6	2,766.2
12	2,648.5	2,653.7	2,759.9	2,652.0	2,446.3	2,079.2	2,357.2	2,381.9	2,376.3	2,550.5	2,739.5	2,767.0
13	2,648.5	2,657.2	2,759.0	2,646.8	2,455.3	2,080.7	2,358.8	2,375.5	2,385.9	2,548.0	2,740.4	2,768.8
14	2,649.4	2,661.5	2,758.1	2,639.9	2,456.9	2,079.9	2,361.2	2,372.3	2,421.2	2,543.8	2,743.0	2,769.7
15	2,650.3	2,667.6	2,756.4	2,633.0	2,452.0	2,077.8	2,363.6	2,372.3	2,448.8	2,544.7	2,746.6	2,769.7
16	2,651.1	2,676.3	2,754.6	2,629.6	2,448.0	2,072.7	2,364.4	2,373.1	2,459.4	2,548.0	2,748.4	2,769.7
17	2,652.0	2,685.0	2,752.8	2,622.7	2,443.1	2,068.4	2,368.3	2,380.3	2,465.9	2,551.4	2,750.1	2,767.9
18	2,653.7	2,693.7	2,751.9	2,615.9	2,437.4	2,062.6	2,373.1	2,381.9	2,472.5	2,553.9	2,751.9	2,767.0
19	2,655.4	2,704.2	2,751.0	2,607.3	2,432.5	2,055.4	2,376.3	2,382.7	2,484.8	2,559.0	2,753.7	2,766.2
20	2,657.2	2,715.7	2,751.0	2,600.5	2,425.2	2,058.3	2,378.7	2,384.3	2,503.8	2,564.9	2,753.7	2,766.2
21	2,658.9	2,721.8	2,751.0	2,593.7	2,416.4	2,101.7	2,380.3	2,382.5	2,518.8	2,571.6	2,753.7	2,767.0
22	2,660.6	2,728.9	2,750.1	2,587.7	2,405.1	2,108.3	2,381.9	2,381.9	2,530.4	2,584.3	2,755.5	2,767.0
23	2,661.5	2,733.3	2,749.2	2,580.9	2,392.3	2,119.3	2,381.9	2,377.9	2,537.1	2,595.4	2,756.4	2,767.9
24	2,663.2	2,736.8	2,748.4	2,574.2	2,377.9	2,157.6	2,382.7	2,373.1	2,553.9	2,607.3	2,759.0	2,767.9
25	2,662.4	2,741.3	2,746.6	2,565.7	2,364.4	2,190.3	2,382.7	2,371.5	2,550.5	2,622.7	2,761.7	2,767.9
26	2,661.5	2,747.5	2,743.9	2,557.3	2,350.1	2,257.6	2,381.9	2,373.9	2,543.8	2,638.2	2,761.7	2,767.9
27	2,661.5	2,750.1	2,742.2	2,543.0	2,335.2	2,300.0	2,380.3	2,382.7	2,580.1	2,657.2	2,762.6	2,767.9
28	2,660.6	2,752.8	2,740.4	2,527.1	2,317.9	2,317.9	2,378.7	2,384.3	2,594.5	2,678.9	2,762.6	2,768.8
29	2,658.9		2,738.6	2,508.8	2,293.5	2,325.0	2,377.9	2,384.3	2,592.0	2,685.0	2,762.6	2,769.7
30	2,657.2		2,736.8	2,491.4	2,278.3	2,329.7	2,379.5	2,383.5	2,589.0	2,693.7	2,762.6	2,770.6
31	2,656.3		2,735.1		2,256.1		2,382.7	2,381.9		2,700.7		2,771.5

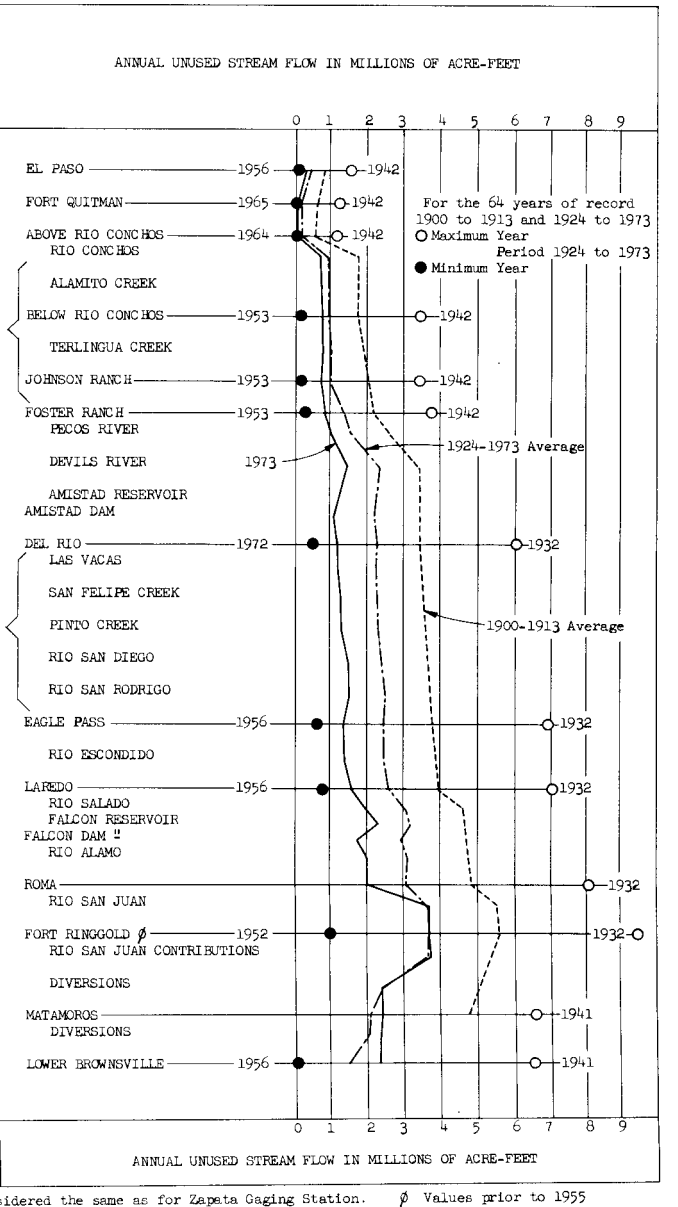
Month	1973							Period 1954-1973		
	MOMENTARY MAXIMUM			MOMENTARY MINIMUM			Average Storage	Mean Monthly Storage		
	Elevation	Storage	Day	Elevation	Storage	Day		Average	Maximum	Minimum
Jan.	301.15	2,663.2	24	300.85	2,637.3	3	2,651.3	2,045.4	3,070.8	218.7
Feb.	302.17	2,752.8	28	300.98	2,648.5	8	2,685.4	1,936.0	2,952.5	156.2
Mar.	302.30	2,764.4	† 7	301.97	2,735.1	31	2,753.2	1,904.8	2,959.5	226.7
Apr.	301.97	2,735.1	1	299.12	2,491.4	30	2,631.0	1,793.3	2,954.6	325.6
May	299.12	2,491.4	1	296.16	2,256.1	31	2,413.1	1,679.1	2,869.9	490.1
June	297.11	2,329.7	30	293.45	2,055.4	19	2,145.4	1,583.7	2,673.3	273.7
July	297.78	2,382.7	†24	297.17	2,334.4	1	2,364.5	1,705.9	2,685.9	209.9
Aug.	298.22	2,413.0	† 6	297.64	2,371.5	25	2,388.3	1,708.6	2,707.3	208.0
Sept.	300.35	2,594.5	28	297.43	2,354.9	7	2,455.9	1,839.9	2,871.1	256.2
Oct.	301.58	2,700.7	31	299.43	2,517.1	6	2,583.9	2,115.7	3,250.2	308.3
Nov.	302.28	2,762.6	†27	301.53	2,705.1	1	2,743.1	2,167.1	3,124.5	390.9
Dec.	302.38	2,771.5	31	302.27	2,761.7	† 1	2,766.9	2,183.8	3,129.7	343.4
Yearly	302.38	2,771.5		293.45	2,055.4		2,548.0	1,888.7	2,764.2	544.3

† And other days * When necessary the Commission may set temporary conservation levels

SOURCES OF RIVER FLOW

The graph and the column of figures on this page represent data on the annual yield of drainage areas tributary to various stream-gaging stations in the Rio Grande watershed. The graphic values are for the entire tributary area, while the column figures are reduced to the yield from one average square mile of the tributary area. There were no reservoirs of consequence on the area from 1900 to 1913; therefore, the figures in the first column correspond to those for that period in the graph. Because about 17,000,000 acre-feet of reservoir capacity have been developed on the watershed since 1913, in which large volumes of unused runoff are stored in some years and released in later years as unused stream flow (thus reducing the unused stream flow in some years and adding thereto in others), it is significant to differentiate between the unused runoff and unused stream flow.

Average Annual Unused Water Acre-Feet per Square Mile			
RUNOFF		STREAM FLOW	
1900-1913	1924-1973	1924-1973	
29.7	14.3	14.7	EL PASO — 1956 — 1942
19.6	4.1	4.4	FORT QUITMAN — 1965 — 1942
16.4	3.4	3.8	ABOVE RIO CONCHOS — 1964 — 1942
42.6	31.7	31.5	RIO CONCHOS
			ALAMITO CREEK
19.8	17.7	17.7	BELOW RIO CONCHOS — 1953 — 1942
			TERLINGUA CREEK
			JOHNSON RANCH — 1953 — 1942
25.9	16.1	16.2	FOSTER RANCH — 1953 — 1942
12.4	8.6	8.6	PECOS RIVER
104.3	104.3	104.3	DEVILS RIVER — 1973
			AMISTAD RESERVOIR
26.9	18.8	18.2	AMISTAD DAM
			DEL RIO — 1972 — 1932
			LAS VACAS
			SAN FELIPE CREEK
110.8	52.5	52.5	PINTO CREEK
			RIO SAN DIEGO
			RIO SAN RODRIGO
29.2	19.9	19.3	EAGLE PASS — 1956 — 1932
32.4	39.4	39.4	RIO ESCONDIDO
29.3	20.7	20.1	LAREDO — 1956 — 1932
23.1	15.9	15.1	RIO SALADO
			FALCON RESERVOIR
			FALCON DAM ‼
			RIO ALAMO
			ROMA — 1932
**48.4	**51.0	**49.6	RIO SAN JUAN
			FORT RINGGOLD Ø — 1952 — 1932
			RIO SAN JUAN CONTRIBUTIONS
			DIVERSIONS
			MATAMOROS — 1941
			DIVERSIONS
			LOWER BROWNSVILLE — 1956 — 1941



‼ Values prior to 1953 considered the same as for Zapata Gaging Station. Ø Values prior to 1955 considered the same as for Rio Grande City Gaging Station. ** Includes contributions of the Rio San Juan entering the Rio Grande above and below Rio Grande City.

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

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 three methods:

A. By lowering an open small-neck bottle in one or more verticals in the stream cross section, being careful to approach but not strike bottom, thus securing an integrated sample throughout the depth. By taking from each sample an amount of water volumetrically proportional to the river flow represented by that sample, a composite, representative of the monthly river flow, is made and its gravimetric percentage of silt determined.

B. 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 stream flow represented by that set of samples.

C. By sampling at 2-hour intervals, the water pumped directly from the river to the Laredo, Texas Water Treatment Plant. From daily composites of these samples, a monthly composite, representative of the river flow, is made as stated in Method A and its gravimetric percentage of silt determined.

For ease of comparison, the assumption is made that one cubic foot of silt weighs 66.7 pounds, or one acre-foot of silt weighs 1,452 tons.

Month	1973							Period of Record		
	Tons		No. of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot			
	Water	Silt		Average	Maximum Sample	Minimum Sample		Average	Maximum	Minimum

Rio Grande at El Paso, Texas

Period: Sept. 1947-1973

Jan.	632,000	21.2	17	0.003360			0.01	0.19	1.4	0
Feb.	468,000	18.5	13	.003960			.01	.24	2.2	.01
Mar.	33,892,000	81,200	16	.2397			55.9	21.1	55.9	.89
Apr.	41,317,000	22,200	27	.05380			15.3	10.8	45.2	2.2
May	42,474,000	17,200	30	.040411			11.8	8.1	63.3	.03
June	60,205,000	27,900	28	.04632			19.2	20.5	152	.86
July	72,406,000	43,500	25	.06008			30.0	33.3	124	1.1
Aug.	79,631,000	55,600	10	.06984			38.3	35.9	112	2.0
Sept.	51,859,000	6,030	10	.01172			4.2	22.1	123	1.1
Oct.	13,602,000	1,160	12	.008520			.80	4.9	51.0	.01
Nov.	7,491,000	381	21	.005080			.26	.29	1.5	.01
Dec.	6,176,000	200	17	.003240			.14	.28	2.1	.01
Yearly	410,153,000	255,460.7	226	0.06228			175.92	157.70	436.87	34.37

Samples and analyses by U. S. Section, Method A

Río Conchos near Ojinaga, Chihuahua

Period: 1956-1973

Jan.	29,610,000	0	14	0	0	0	0	0	0	0
Feb.	21,774,000	0	12	0	0	0	0	.25	4.5	0
Mar.	13,274,000	0	13	0	0	0	0	0	0	0
Apr.	9,407,000	0	12	0	0	0	0	.32	5.8	0
May	27,512,000	138,000	15	.5027	1.1680	0	95.0	37.4	145	0
June	52,017,000	6,450	13	.0124	.0359	0	4.4	179	688	0
July	156,637,000	250,000	18	.1593	1.1529	0	172	295	1,450	0
Aug.	331,151,000	33,400	15	.0101	.0958	0	23.0	531	2,650	8.1
Sept.	268,236,000	0	12	0	0	0	0	1,166	9,330	0
Oct.	33,914,000	0	14	0	0	0	0	786	12,400	0
Nov.	32,615,000	0	13	0	0	0	0	6.2	70.2	0
Dec.	25,018,000	0	13	0	0	0	0	1.1	14.0	0
Yearly	1,001,165,000	427,850	164	0.04274	1.1680	0	294.4	3,002.27	21,903.3	284.7

Samples and analyses by Mexican Section, Method B

Rio Grande below Rio Conchos near Presidio, Texas

Period: 1955-1973

Jan.	32,820,000	798	6	0.002430			0.55	4.2	22.2	0.55
Feb.	23,913,000	392	7	.001640			.27	4.1	22.2	.14
Mar.	13,413,000	440	9	.003280			.30	5.6	70.9	.15
Apr.	9,845,000	310	6	.003147			.21	5.7	95.7	.12
May	27,482,000	312,000	9	1.137	4.484	0.01230	215	41.2	215	.21
June	48,708,000	5,510	9	.01132			3.8	124	465	.29
July	169,494,000	397,000	8	.2340	1.510	.01120	273	292	1,420	2.0
Aug.	367,448,000	283,000	10	.07691	.3573	.02960	195	387	1,360	2.9
Sept.	288,570,000	73,500	6	.02546			50.6	569	3,610	14.9
Oct.	33,736,000	1,110	7	.003293			.76	369	4,770	.76
Nov.	32,571,000	818	8	.002510			.56	9.1	45.2	.26
Dec.	27,032,000	616	6	.002280			.42	3.6	13.7	.42
Yearly	1,075,032,000	1,075,494	91	0.1000			740.47	1,814.5	8,793.44	172.78

Samples and analyses by U. S. Section, Method A

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

Month	1973						Period of Record		
	Tons		No. of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot		
	Water	Silt		Average	Maximum Sample	Minimum Sample	Average	Maximum	Minimum

Rio Grande at Johnson Ranch near Castolon, Texas

Period: Oct. 1951-1973

Jan.	33,550,000	1,030	5	0.003080			0.71	4.2	25.5	0.40
Feb.	26,013,000	728	6	.002800			.50	14.2	253	.21
Mar.	14,546,000	454	8	.003120			.31	2.8	9.4	.14
Apr.	8,035,000	219	4	.002720			.15	47.5	692	.01
May	23,521,000	25,800	7	.1098	0.6986	0.008900	17.8	125	426	0
June	40,882,000	39,600	7	.09684	.2188	.008500	27.3	390	1,570	2.3
July	180,705,000	1,577,000	9	.8728	1.164	.04040	1,090	796	4,030	51.6
Aug.	389,627,000	474,000	7	.1438	.5564	.1025	326	900	3,840	2.8
Sept.	296,276,000	294,000	6	.09916	.3509	.04650	202	937	8,990 *	98.5
Oct.	38,072,000	2,160	7	.005680			1.5	785	13,500 "	1.5
Nov.	34,041,000	967	8	.002840			.67	13.4	151	.28
Dec.	27,873,000	624	5	.002240			.43	6.5	48.3	.41
Yearly	1,053,141,000	2,416,582	79	0.2295			1,667.37	4,021.60	23,869.62	803.27

Samples and analyses by U. S. Section, Method A
" Estimated * Partly estimated

Rio Grande at Foster Ranch near Langtry, Texas

Period: 1969-1973

Jan.	57,949,000	1,110	5	0.001920			0.76	10.5	34.9	0.61
Feb.	48,479,000	1,180	4	.002440			.81	3.6	13.0	.57
Mar.	39,813,000	1,040	4	.002600			.72	6.4	12.2	.72
Apr.	27,453,000	505	5	.001840			.35	3.4	12.7	.22
May	38,891,000	34,400	4	.08844	0.4006	0.005400	23.7	27.0	49.6	.60
June	54,302,000	59,300	4	.1092	.2298	.006400	40.8	290	657	40.8
July	190,926,000	1,008,000	5	.5280	1.411	.05800	694	590	736	355
Aug.	289,273,000	520,000	3	.1796	.5498	.1180	358	561	1,320	21.8
Sept.	302,454,000	855,000	4	.2827	.7705	.08270	589	872	1,520	285
Oct.	73,236,000	73,400	4	.1002	.3018	.007200	50.6	386	1,070	50.6
Nov.	55,178,000	1,100	4	.002000			.76	22.8	91.6	.76
Dec.	50,169,000	903	4	.001800			.62	4.7	16.1	.62
Yearly	1,228,123,000	2,555,938	50	0.2081			1,760.12	2,777.40	3,951.48	1,739.3

Samples and analyses by U. S. Section, Method A

Pecos River near Langtry, Texas

Period: Nov. 1954-1973

Jan.	15,306,000	380	4	0.002480			0.26	0.25	0.62	0.05
Feb.	13,998,000	353	3	.002520			.24	.23	.70	.05
Mar.	14,484,000	458	4	.003160			.32	.28	.79	.05
Apr.	13,327,000	437	5	.003280			.30	10.7	167	.06
May	10,920,000	319	4	.002920			.22	21.8	407	.07
June	10,742,000	241	4	.002240			.17	2.6	41.7	.09
July	12,990,000	369	5	.002840			.25	1.9	22.2	.05
Aug.	10,667,000	316	4	.002960			.22	1.7	23.8	.04
Sept.	11,074,000	323	4	.002920			.22	26.5	359	.09
Oct.	17,989,000	374	5	.002080			.26	7.3	59.8	.07
Nov.	11,778,000	269	4	.002280			.19	.30	1.1	.03
Dec.	11,799,000	288	4	.002440			.20	.20	.55	.05
Yearly	155,074,000	4,127	50	0.002661			2.85	73.76	577.44	1.87

Samples and analyses by U. S. Section, Method A

Rio Grande below Amistad Dam near Del Rio, Texas

Period: July 1968-1973

Jan.	7,228,000	66.5	12	0.0009200			0.05	0.51	1.2	0.05
Feb.	72,902,000	642	9	.0008800			.44	1.2	2.3	.13
Mar.	9,882,000	90.9	13	.0009200			.06	.44	1.1	.06
Apr.	94,363,000	1,170	13	.001240			.81	.77	1.3	.20
May	322,650,000	2,840	8	.0008800			2.0	1.6	3.2	.25
June	92,265,000	960	12	.001040			.66	.99	2.1	.23
July	95,929,000	1,070	10	.001120			.74	3.5	16.4	.28
Aug.	235,345,000	6,500	14	.002760			4.5	1.8	4.5	.20
Sept.	354,464,000	3,400	11	.0009600			2.3	1.2	2.3	.20
Oct.	191,878,000	2,990	12	.001560			2.1	1.2	2.1	.05
Nov.	6,169,000	71.6	11	.001160			.05	.61	1.9	.05
Dec.	14,777,000	35.5	8	.0002400			.02	.68	1.7	.02
Yearly	1,497,852,000	19,836.5	133	0.001324			13.73	14.50	* 26.0	5.01

Samples and analyses by U. S. Section, Method A
* July through December 1968

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

Month	1973							Period of Record		
	Tons		No. of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot			
	Water	Silt		Average	Maximum Sample	Minimum Sample		Average	Maximum	Minimum

Rio Grande at Laredo, Texas

Period: #1953-1973

Jan.	67,722,000	1,540	31	0.002280			1.1	9.1	28.0	1.0
Feb.	136,521,000	4,910	28	.003600			3.4	20.1	109	.88
Mar.	50,416,000	2,580	31	.005120			1.8	11.0	26.8	.78
Apr.	102,156,000	11,000	30	.01080			7.6	165	1,920	.47
May	317,585,000	70,900	31	.02232			48.8	310	3,540	2.3
June	124,480,000	15,700	30	.01264			10.8	932	12,400	.56
July	138,901,000	17,800	31	.01284			12.3	553	3,440	1.3
Aug.	218,371,000	23,500	31	.01076			16.2	471	1,960	4.2
Sept.	446,281,000	81,600	30	.01828			56.2	1,016	5,010	9.0
Oct.	506,807,000	168,000	31	.03316			116	775	7,520	7.6
Nov.	103,851,000	2,280	28	.002200			1.6	90.7	1,190	1.6
Dec.	69,742,000	1,200	31	.001720			.83	11.4	67.6	.83
Yearly	2,282,833,000	401,010	363	0.01757			276.63	4,364.30	19,257.72	143.94

Samples by Laredo Water Plant and analyses by U. S. Section, Method C
Some months missing

∅ Rio Grande below Falcon Dam, Texas, U. S. Tailrace

Period: July 1955-1973

Jan.	28,027,000	258	0	"0.0009200			0.18	1.7	5.4	0.14
Feb.	38,565,000	393	0	" .001020			.27	2.0	9.1	.06
Mar.	53,051,000	594	6	.001120			.41	1.2	4.3	.15
Apr.	394,378,000	5,680	13	.001440			3.9	3.2	12.2	.25
May	595,701,000	6,910	13	.001160			4.8	3.5	8.1	.19
June	315,807,000	4,670	9	.001480			3.2	3.4	18.7	.21
July	27,928,000	346	4	.001240			.24	.90	2.3	.12
Aug.	224,358,000	4,040	12	.001800			2.8	1.2	2.8	.22
Sept.	307,825,000	4,190	11	.001360			2.9	1.9	12.9	0
Oct.	396,168,000	4,750	8	.001200			3.3	3.6	37.5	.18
Nov.	1,903,000	28.2	13	.001480			.02	1.1	5.5	.02
Dec.	11,907,000	224	13	.001880			.15	1.6	14.7	.11
Yearly	2,395,618,000	32,083.2	102	0.001339			22.17	25.30	92.15	7.24

Samples and analyses by U. S. Section, Method A
" Estimated
∅ Discharge based on record of total releases from Falcon Reservoir

Río Alamo at Cd. Mier, Tamaulipas

Period: #1934-1973

Jan.	5,684,000	0	0	"0			0	1.6	21.8	0
Feb.	4,375,000	0	0	"0			0	2.7	48.6	0
Mar.	4,625,000	0	0	"0			0	6.0	91.2	0
Apr.	1,325,000	0	0	"0			0	27.0	229	0
May	2,111,000	3,840	4	.182	0.2703	0	2.6	43.5	281	0
June	64,870,000	538,000	10	.829	1.3454	0	371	68.3	471	0
July	21,795,000	9,150	8	.042	.1755	.0011	6.3	19.4	143	0
Aug.	16,745,000	4,020	10	.024	.0506	.0011	2.8	120	1,610	0
Sept.	77,201,000	109,000	9	.141	.1816	.0011	75.1	216	2,920	0
Oct.	83,287,000	123,000	10	.148	.2587	.0790	84.7	82.0	753	0
Nov.	33,956,000	14,900	9	.044	.0770	.0022	10.3	2.3	40.7	0
Dec.	21,057,000	0	0	"0			0	1.4	33.7	0
Yearly	337,031,000	801,910	60	0.2379	1.3454	0	552.80	590.20	3,156.57	54.09

Samples and analyses by Mexican Section, Method B
Some months missing " Estimated

Rio Grande at Fort Ringgold, Rio Grande City, Texas

Period: May 1959-1973

Jan.	45,147,000	740	6	0.001640			0.51	10.5	32.6	0.43
Feb.	55,933,000	805	4	.001440			.55	5.0	13.7	.35
Mar.	66,793,000	1,200	7	.001800			.83	4.7	26.7	.39
Apr.	385,552,000	10,200	7	.002640			7.0	18.6	51.0	6.0
May	593,696,000	63,400	8	.01068			43.7	49.4	259	4.0
June	847,758,000	312,000	7	.03680			215	54.4	94.4	4.7
July	545,955,000	155,000	6	.02832			107	24.7	90.9	2.1
Aug.	526,115,000	66,300	6	.01260			45.7	60.6	510	1.2
Sept.	856,524,000	263,000	8	.03076			181	155	798	4.8
Oct.	855,096,000	56,400	7	.005600			38.8	70.8	552	2.6
Nov.	196,246,000	6,830	7	.003480			4.7	4.0	11.4	1.3
Dec.	135,835,000	3,800	2	.002800			2.6	3.6	12.1	.92
Yearly	5,110,650,000	939,675	75	0.01839			647.39	461.30	1,691.1	72.12

Samples and analyses by U. S. Section, Method A

SUSPENDED SILT IN THE RIO GRANDE AND TRIBUTARIES

Month	1973							Period of Record		
	Tons		No. of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot			
	Water	Silt		Average	Maximum Sample	Minimum Sample		Average	Maximum	Minimum

‡ Rio Grande near Los Ebanos, Texas

Period: May 1956-1973

Jan.	45,147,000	846	14	0.001873			0.58	19.3	107	0.50
Feb.	55,933,000	984	12	.001760			.68	6.5	16.0	.68
Mar.	66,793,000	1,760	13	.002640			1.2	7.2	40.2	.65
Apr.	385,552,000	19,800	13	.005141			13.6	60.1	635	3.0
May	593,696,000	45,400	13	.007649			31.3	74.7	289	5.3
June	847,758,000	183,000	13	.02153			126	63.6	209	3.2
July	545,955,000	57,200	13	.01048			39.4	15.3	79.9	.74
Aug.	526,115,000	81,200	14	.01544			55.9	89.1	1,150	2.0
Sept.	856,524,000	186,000	12	.02169			128	115	459	3.5
Oct.	855,096,000	121,000	14	.01411			83.3	50.1	314	3.2
Nov.	196,246,000	10,400	13	.005320			7.2	8.7	75.1	.62
Dec.	135,835,000	5,180	13	.003815			3.6	4.5	16.3	1.0
Yearly	5,110,650,000	712,770	157	0.01395			490.76	514.10	1,788.7	80.0

Samples and analyses by U. S. Section, Method A
‡ Discharge based on record of flow at Fort Ringgold

Rio Grande below Anzalduas Dam, Texas

Period: May 1956-1973

Jan.	44,155,000	742	31	0.001680			0.51	8.3	49.0	0.51
Feb.	46,176,000	610	28	.001320			.42	2.8	11.9	.24
Mar.	55,658,000	1,310	31	.002360			.90	3.5	27.3	.25
Apr.	242,160,000	5,230	30	.002160			3.6	36.8	279	2.0
May	209,547,000	16,100	31	.007680			11.1	28.0	79.9	1.4
June	501,296,000	159,000	30	.03180			110	47.0	414	1.2
July	611,238,000	50,100	30	.008200			34.5	27.9	333	.83
Aug.	535,433,000	67,900	31	.01268			46.8	34.9	502	.73
Sept.	899,322,000	325,000	30	.03616			224	150	1,480	.59
Oct.	867,240,000	147,000	31	.01696			101	94.8	676	.34
Nov.	189,393,000	7,500	30	.003960			5.2	19.2	274	.51
Dec.	115,074,000	2,620	31	.002280			1.8	10.2	135	.41
Yearly	4,316,692,000	783,112	364	0.01814			539.83	463.40	2,541.0	28.37

Samples and analyses by U. S. Section, Method A

Rio Grande near San Benito, Texas

Period: April 1955-1973

Jan.	37,124,000	950	4	0.002560			0.65	11.3	121	0.13
Feb.	36,274,000	1,200	6	.003307			.83	8.3	97.8	.15
Mar.	37,904,000	3,050	8	.008040			2.1	4.3	50.6	.11
Apr.	145,703,000	21,600	7	.01484			14.9	5.6	17.9	.11
May	65,545,000	10,600	9	.01622			7.3	24.3	265	2.2
June	216,853,000	25,800	6	.01188			17.8	12.3	39.4	.72
July	598,302,000	49,300	4	.008233			34.0	10.0	91.6	.11
Aug.	430,647,000	30,000	7	.006972			20.7	7.6	48.5	.07
Sept.	778,134,000	181,000	4	.02320			125	55.8	218	.30
Oct.	833,341,000	81,300	5	.009760			56.0	66.1	636	.25
Nov.	168,129,000	12,300	7	.007309			8.5	19.4	247	.17
Dec.	75,322,000	8,800	2	.01168			6.1	12.4	163	.06
Yearly	3,423,278,000	425,900	69	0.01244			293.88	237.40	894.82	9.54

Samples and analyses by U. S. Section, Method A

Rio Grande near Brownsville, Texas

Period: April 1955-1973

Jan.	32,325,000	789	5	0.002440			0.54	5.7	67.4	0.02
Feb.	37,228,000	1,660	7	.004458			1.1	9.8	80.6	.04
Mar.	37,219,000	4,180	7	.01124			2.9	5.2	70.2	.08
Apr.	129,519,000	5,650	6	.004360			3.9	3.4	27.7	.04
May	40,461,000	7,720	9	.01908			5.3	8.3	58.5	.38
June	139,613,000	6,010	6	.004303			4.1	10.3	58.4	.21
July	594,656,000	85,700	3	.01442			59.0	27.1	292	.08
Aug.	413,838,000	73,500	8	.01776			50.6	8.2	50.6	.01
Sept.	740,852,000	163,000	6	.02201			112	47.2	255	0
Oct.	868,708,000	260,000	7	.02992			179	54.5	242	.03
Nov.	183,306,000	16,600	4	.009080			11.4	23.3	283	.12
Dec.	75,303,000	9,150	4	.01215			6.3	11.8	142	.02
Yearly	3,293,028,000	633,959	72	0.01925			436.14	214.80	1,072.26	1.97

Samples and analyses by U. S. Section, Method A

CHEMICAL ANALYSES OF WATER SAMPLES FROM THE RIO GRANDE AND TRIBUTARIES - 1973

The following tables are based on chemical analyses of composites representative of the river flow at Rio Grande and tributary stations. The monthly composites were made by the United States Section of the Commission by taking from each independent water sample an amount of water volumetrically proportional to the river flow represented by that sample. The chemical analyses were made by the U. S. Geological Survey, Water Resources Division, Austin, Texas. All other data were computed by the United States Section of the Commission.

To convert milligram equivalents to parts per million by weight, multiply each ion by its appropriate conversion factor. These factors are: Ca, 20.04; Mg, 12.16; Na, 22.99; (CO_3 plus HCO_3) expressed as CO_3, 30.00; SO_4, 48.03; Cl, 35.45; NO_3, 62.00. To convert tons per acre-foot to parts per million, multiply tons per acre-foot by 735.5. Electrical conductivity, reported in the tables as ECx10^6 at 25°C, is a relative measure of the total salt concentration.

Month	No. of Samples	Dissolved Solids: Tons Per Acre-Foot	Dissolved Solids: Total Tons	ECx10^6 @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3

Rio Grande at El Paso, Texas

Sampling by U. S. Section

Jan.	17	2.79	1,300	3,180	0.59	7.9	76	39	5.14	2.80	24.58	5.21	14.78	13.03	0
Feb.	13	2.88	991	3,260	.60	8.2	75	39	5.59	2.88	24.80	5.61	15.03	13.40	0
Mar.	16	.80	20,000	945	.11	7.4	45	30	3.89	1.07	4.09	3.11	3.39	2.82	.06
Apr.	27	.99	30,100	1,120	.14	7.4	49	25	4.39	1.32	5.57	3.15	5.31	2.79	.01
May	30	1.07	33,400	1,190	.16	7.5	50	24	4.49	1.40	5.87	3.57	5.54	2.93	0
June	28	.95	42,100	1,090	.17	7.5	50	22	4.19	1.32	5.52	3.57	5.29	2.54	.04
July	25	.96	51,100	1,080	.19	7.8	49	23	4.19	1.40	5.31	3.47	5.04	2.51	0
Aug.	10	1.07	62,700	1,090	.17	7.7	50	24	4.19	1.40	5.48	3.61	4.96	2.71	.05
Sept.	10	1.56	59,500	1,720	.26	7.8	55	29	5.89	1.89	9.66	4.75	7.95	5.13	.01
Oct.	12	1.86	18,600	2,040	.27	7.8	57	30	6.59	2.30	12.01	5.11	9.54	6.35	.01
Nov.	21	2.16	11,900	2,320	.36	8.0	61	32	6.79	2.55	14.53	5.38	10.99	7.76	.03
Dec.	17	2.18	9,910	2,370	.38	7.7	62	33	6.69	2.63	15.27	5.47	11.12	8.04	.01
Mean ◐	∅226	1.13	∅ 341,601	1,250	0.19	7.6	52	26	4.60	1.49	6.50	3.75	5.75	3.32	0.02
Period Avg.		1.10	443,000	1,220			52	29	4.39	1.56	6.56	3.52	5.48	3.66	
Tons of Constituents, 1973									37,800	7,440	61,400	46,200	113,000	48,300	
Avg. Tons, Period 1930-1973									48,100	10,400	82,500	57,800	144,000	70,900	

Rio Grande at Fort Quitman, Texas

Sampling by U. S. Section

Jan.	4	9.15	8,640	9,710	0.90	7.9	66	65	22.70	12.34	69.16	4.92	31.65	69.11	0.01
Feb.	3	8.19	5,300	9,070	.82	7.8	66	67	20.46	11.93	63.51	3.87	28.73	64.88	0
Mar.	5	10.1	4,840	10,500	.95	7.7	67	67	23.20	13.33	74.38	4.72	32.90	74.76	.01
Apr.	2	6.24	1,250	6,890	.78	7.6	67	61	15.22	8.97	48.28	4.39	24.15	45.14	.10
May	2	9.47	1,130	9,160	.75	7.7	64	67	22.21	12.34	62.64	4.06	28.11	66.58	.04
June	2	11.1	447	11,500	1.1	7.3	67	66	24.95	15.79	83.52	2.79	40.18	84.07	.03
July	2	2.14	46,400	2,420	.28	8.2	60	53	7.29	2.39	14.36	3.61	7.58	12.98	.11
Aug.	2	6.61	14,700	7,030	.65	7.9	65	62	17.46	8.88	49.59	4.92	23.32	46.83	.02
Sept.	1	.83	2,120	911	.12	8.1	39	21	4.59	1.07	3.57	4.36	3.04	2.00	.07
Oct.	2	5.70	12,000	6,350	.66	7.9	66	59	15.97	6.83	43.94	5.24	22.07	39.49	.03
Nov.	2	4.71	10,200	5,170	.56	8.0	65	56	13.42	5.59	34.89	5.61	17.99	30.18	.23
Dec.	2	4.99	8,650	5,500	.57	7.8	65	57	14.32	6.09	37.58	5.83	18.49	32.72	.19
Mean ◐	29 ∅	3.32	115,677 ∅	3,660	0.39	8.1	63	57	9.99	4.04	23.69	4.14	11.91	21.77	0.10
Period Avg.		2.46	303,000	2,780			61	55	7.88	3.20	17.44	3.65	9.11	15.86	
Tons of Constituents, 1973									9,500	2,330	25,900	5,890	27,100	36,600	
Avg. Tons, Period 1930-1973									26,400	6,500	67,100	18,300	73,200	94,100	

∅ Total ◐ Weighted mean ** Percent of total cations *** Percent of total anions

CHEMICAL ANALYSES OF WATER SAMPLES FROM THE RIO GRANDE AND TRIBUTARIES - 1973

Month	No. of Samples	Dissolved Solids: Tons Per Acre-Foot	Dissolved Solids: Total Tons	ECx10⁶ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Rio Grande above Rio Conchos near Presidio, Texas															
Sampling by U. S. Section															
Jan.	6	5.48	5,730	6,260		7.6	65		# 22.80		42.85	4.00		37.24	
Feb.	7	5.40	5,440	6,000		7.7	65		# 21.60		40.89	3.34		36.67	
Mar.	5	5.96	2,040	6,410	0.80	7.8	65	59	15.47	7.49	43.50	4.20	23.73	39.49	0
Apr. "	0	.91	4.7	1,010			56		# 4.48		5.66	2.88		2.40	
May	No	Flow													
June	No	Flow													
July	4	1.19	1,030	1,340	.23	7.5	54	34	4.89	1.15	7.13	2.95	5.91	4.51	0
Aug.	5	1.40	3,940	1,530		7.7	54		# 7.08		8.31	2.75		5.34	
Sept.	3	.91	459	1,010		7.8	56		# 4.48		5.66	2.88		2.40	
Oct.	No	Flow													
Nov.	No	Flow													
Dec. "	0	4.75	64.1	5,300			65		# 19.01		35.98	2.94		32.27	
Mean ⊕	∅30	2.84	∅ 18,757.8	3,160			62		# 12.32		20.31	3.15		16.91	
Period Avg.		1.89	198,000	2,120			59		# 8.77		12.61	3.10		10.80	
Tons of Constituents, 1973											4,200	849		5,390	
Avg. Tons, Period 1935-1973											41,400	13,300		54,700	
Rio Conchos near Ojinaga, Chihuahua															
Sampling by Mexican Section															
Jan.	14	1.12	24,400	1,220		7.7	53		# 5.60		6.44	2.75		2.26	
Feb.	12	1.16	18,600	1,290		7.5	54		# 6.04		7.00	2.82		2.65	
Mar.	13	1.32	12,900	1,450	0.30	7.7	53	21	5.39	1.48	7.79	3.34	8.54	3.16	0.03
Apr.	12	1.33	9,210	1,470		7.2	60		# 5.52		8.18	2.79		3.39	
May	15	1.28	25,900	1,300		7.7	43		# 7.44		5.61	3.21		2.34	
June	13	1.09	41,700	1,180		7.6	53		# 5.52		6.22	3.11		1.81	
July	18	1.07	123,000	1,090	.25	7.7	44	11	5.19	1.07	4.96	2.72	7.37	1.24	.03
Aug.	14	1.01	246,000	913		7.8	47		# 4.96		4.48	2.75		.96	
Sept.	12	.72	142,000	780		7.9	44		# 4.32		3.39	3.11		.82	
Oct.	14	1.26	31,400	1,350		7.9	52		# 6.76		7.22	3.05		2.60	
Nov.	13	1.22	29,300	1,290		7.8	55		# 5.72		7.09	3.25		2.40	
Dec.	13	1.22	22,500	1,300		7.8	52		# 6.40		6.96	3.67		2.37	
Mean ⊕	∅163	0.99	∅ 726,910	996		7.8	48		# 5.28		4.82	2.93		1.31	
Period Avg.		0.75	561,000	797			42		# 4.75		3.40	2.71		1.16	
Tons of Constituents, 1973											111,000	88,100		46,500	
Avg. Tons, Period 1935-1973											79,000	82,400		41,700	
Rio Grande at Johnson Ranch near Castolon, Texas															
Sampling by U. S. Section															
Jan.	5	1.41	34,300	1,570		7.5	54		# 7.44		8.57	3.25		3.95	
Feb.	6	1.43	27,400	1,600		7.7	55		# 7.20		3.92	2.72		4.18	
Mar.	8	1.67	17,900	1,780	0.35	7.4	55	26	6.19	1.89	9.92	2.79	10.74	4.74	0.02
Apr.	4	1.81	10,700	1,900		7.3	56		# 8.48		10.61	2.82		4.43	
May	7	1.36	23,500	1,420		7.4	46		# 7.80		6.57	3.21		2.60	
June	7	1.20	36,100	1,280		7.6	53		# 6.08		6.79	3.28		2.17	
July	9	1.03	137,000	1,010	.20	7.4	37	8	5.99	.90	4.09	3.25	6.97	.93	.04
Aug.	7	1.02	247,000	992		7.8	48		# 5.44		5.09	3.15		1.10	
Sept.	6	.77	163,000	810		7.7	44		# 4.56		3.57	3.08		.85	
Oct.	7	1.39	38,900	1,420		7.5	52		# 7.04		7.57	2.98		2.65	
Nov.	8	1.37	34,300	1,400		7.6	53		# 6.48		7.44	3.31		2.65	
Dec.	5	1.44	29,500	1,510		7.6	51		# 7.60		8.00	3.64		2.91	
Mean ⊕	∅79	1.04	∅ 805,100	1,080		7.6	47		# 5.83		5.15	3.15		1.47	
Period Avg.		0.94	644,000	937			44		# 5.70		4.49	2.89		1.04	
Tons of Constituents, 1973											125,000	99,600		54,900	
Avg. Tons, Period 1948-1973											96,200	80,800		54,100	

∅ Total ⊕ Weighted Mean ** Percent of total cations *** Percent of total anions " Estimated
Sum of calcium and magnesium

CHEMICAL ANALYSES OF WATER SAMPLES FROM THE RIO GRANDE AND TRIBUTARIES - 1973

Month	No. of Samples	Dissolved Solids: Tons Per Acre-Foot	Dissolved Solids: Total Tons	ECx10⁶ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3

Rio Grande at Foster Ranch near Langtry, Texas

Sampling by U. S. Section

Jan.	5	1.00	45,200	1,170	0.26	7.4	48	21	4.44	1.65	5.66	2.82	6.66	2.57	0.03
Feb.	4	1.04	37,100	1,200	.24	7.9	49	22	4.49	1.73	5.92	2.95	6.64	2.74	.02
Mar.	4	1.10	32,200	1,200	.25	7.5	48	23	4.29	1.81	5.70	2.95	6.35	2.79	.05
Apr.	5	.92	18,600	1,020	.18	7.0	44	20	3.84	1.89	4.44	3.02	5.27	2.03	.02
May	4	1.02	29,200	1,080	.19	7.6	40	16	4.89	1.73	4.44	3.08	6.41	1.81	.03
June	4	1.10	44,000	1,210	.25	7.4	47	19	4.99	1.56	5.74	3.11	7.02	2.43	.04
July	5	.86	121,000	915	.21	7.5	42	11	4.59	.90	3.96	3.67	4.87	1.04	.05
Aug.	3	.86	183,000	949	.25	7.7	45	10	4.49	.99	4.48	2.95	5.89	1.02	.07
Sept.	4	.68	151,000	725	.16	7.6	38	9	4.04	.69	2.91	3.51	3.62	.68	.06
Oct.	4	.97	52,300	1,040	.19	7.6	46	16	4.39	1.32	4.78	3.25	5.89	1.69	.01
Nov.	4	1.03	41,800	1,110	.25	7.7	50	17	3.99	1.65	5.57	2.95	6.58	2.00	.02
Dec.	4	1.02	37,700	1,110	.25	7.7	48	18	4.09	1.65	5.39	3.28	5.95	2.06	.04
Mean ①	∅50	0.88	∅ 793,100	954	0.21	7.6	44	14	4.36	1.13	4.32	3.24	5.34	1.37	0.05
Period Avg.		0.89	918,000	948			42	14	4.70	1.01	4.12	3.21	5.29	1.38	
Tons of Constituents, 1973									107,000	16,900	122,000	119,000	315,000	59,700	
Avg. Tons, Period 1968-1973									132,000	17,200	133,000	135,000	356,000	68,600	

Pecos River near Langtry, Texas

Sampling by U. S. Section

Jan.	4	3.02	34,000	3,320	0.21	7.5	59	63	7.73	5.68	19.58	3.18	9.08	20.88	0.06
Feb.	3	3.07	31,600	3,760	.21	8.1	60	65	8.58	6.50	22.71	3.21	10.37	24.82	.05
Mar.	4	3.82	40,700	4,090	.23	7.6	61	66	8.58	7.07	24.71	2.85	11.12	27.36	.05
Apr.	5	3.43	33,600	3,850	.21	7.0	62	67	7.98	6.66	23.40	2.75	10.16	25.95	.02
May	4	3.22	25,900	3,580	.24	7.4	64	65	7.53	6.09	21.53	2.69	9.66	23.41	.01
June	4	2.38	18,800	2,840	.19	7.5	60	64	6.24	4.94	16.96	2.66	7.33	18.11	.04
July	5	2.30	22,000	2,650	.21	7.4	59	63	5.99	4.69	15.31	2.85	6.79	16.64	.01
Aug.	4	2.92	22,900	3,300	.22	7.7	61	65	7.29	5.84	20.40	2.59	9.08	21.72	.03
Sept.	4	2.71	22,100	3,010	.20	7.6	60	65	6.64	5.10	17.31	2.59	7.91	19.18	.04
Oct.	5	2.22	29,400	2,580	.15	7.2	58	61	6.19	4.28	14.49	2.95	6.79	15.46	.05
Nov.	4	2.50	21,700	2,780	.18	7.5	58	62	6.49	4.77	15.83	2.95	7.29	16.98	.05
Dec.	4	2.62	22,700	2,890	.21	7.4	58	63	6.79	5.10	16.62	3.15	7.33	17.77	.05
Mean ①	∅50	2.85	∅ 325,400	3,220	0.20	7.5	60	64	7.19	5.56	19.06	2.89	8.59	20.68	0.04
Period Avg.		2.03	385,000	2,360			57	61	6.01	3.98	13.34	2.75	6.29	14.41	
Tons of Constituents, 1973									22,400	10,500	68,000	13,500	64,000	114,000	
Avg. Tons, Period 1955-1973									31,100	12,500	79,300	21,300	78,100	132,000	

Rio Grande below Amistad Dam near Del Rio, Texas

Sampling by U. S. Section

Jan.	12	0.73	3,880	849	0.10	7.5	38	26	4.19	0.90	3.18	2.33	3.89	2.20	0.01
Feb.	9	.72	38,600	824	.14	7.7	40	24	3.69	1.07	3.22	2.75	3.41	1.97	.01
Mar.	13	.75	5,450	373	.13	7.7	39	24	4.14	.99	3.31	2.66	3.89	2.09	.02
Apr.	13	.72	50,000	840	.12	7.4	43	26	3.54	1.15	3.52	2.75	3.37	2.17	.01
May	8	.74	176,000	833	.14	7.4	42	27	3.54	1.07	3.39	2.75	3.12	2.14	0
June	12	.72	48,900	846	.13	8.0	43	27	3.49	1.23	3.61	2.66	3.62	2.31	0
July	10	.78	55,100	863	.17	7.5	45	28	3.39	1.23	3.78	2.69	3.60	2.40	0
Aug.	14	.61	140,000	358	.15	7.7	46	28	3.34	1.32	3.92	2.49	3.73	2.43	.01
Sept.	11	.81	211,000	894	.15	7.9	46	28	3.39	1.32	4.00	2.49	3.93	2.51	0
Oct.	12	.77	109,000	891	.16	7.3	47	26	3.39	1.23	4.05	2.72	3.91	2.31	0
Nov.	11	.86	3,900	958	.14	7.7	38	25	4.89	1.07	3.61	3.05	4.16	2.45	.01
Dec.	8	.81	8,810	931	.16	7.4	42	29	4.09	1.15	3.87	2.79	3.81	2.65	.02
Mean ①	133∅	0.77	∅ 850,640	863	0.15	7.6	44	27	3.47	1.21	3.74	2.63	3.62	2.32	0
Period Avg.		0.80	726,000	915			44	26	3.86	1.21	4.00	2.82	3.97	2.41	
Tons of Constituents, 1973									104,000	22,100	129,000	118,000	261,000	123,000	
Avg. Tons, Period 1969-1973									95,000	18,000	113,000	104,000	234,000	105,000	

∅ Total ① Weighted Mean ** Percent of total cations *** Percent of total anions

CHEMICAL ANALYSES OF WATER SAMPLES FROM THE RIO GRANDE AND TRIBUTARIES - 1973

Month	No. of Samples	Dissolved Solids: Tons Per Acre-Foot	Dissolved Solids: Total Tons	ECx10⁶ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3

Rio Grande at Laredo, Texas

Sampling by Laredo Water Plant

Jan.	31	0.78	38,900	882		7.3	40		# 5.00		3.35	2.26		2.43	
Feb.	28	.81	81,400	896		7.5	39		# 5.40		3.48	2.62		2.37	
Mar.	31	1.01	37,500	1,140	0.25	7.4	43	30	4.49	1.97	4.78	2.72	5.29	3.47	0.04
Apr.	30	.86	64,600	974		7.1	45		# 4.88		3.96	2.69		2.71	
May	31	.78	182,000	884		7.4	43		# 4.68		3.52	2.98		2.29	
June	30	.80	73,300	923		7.8	45		# 4.80		3.87	2.62		2.65	
July	31	.74	75,600	843	.17	7.5	42	27	3.49	1.32	3.52	2.62	3.52	2.29	.04
Aug.	31	.97	156,000	887		7.7	43		# 5.04		3.87	2.69		2.48	
Sept.	30	.75	246,000	861		7.5	44		# 4.60		3.65	2.62		2.31	
Oct.	31	.63	235,000	723		7.7	38		# 4.32		2.65	3.05		1.78	
Nov.	28	.80	61,100	874		7.7	42		# 4.96		3.52	2.79		2.37	
Dec.	31	.75	38,500	888	.20	7.2	39	26	3.79	1.56	3.35	2.79	3.50	2.26	.04
Mean ⊕	Ø363	0.77	Ø1,289,900	854		7.5	42		# 4.77		3.44	2.78		2.28	
Period Avg.		0.67	1,388,000	762			41		# 4.49		3.06	2.53		2.07	
Tons of Constituents, 1973											181,000	191,000		185,000	
Avg. Tons, Period 1956-1973											198,000	214,000		207,000	

Río Salado at Las Tortillas, Tamaulipas

Sampling by Mexican Section

Jan.	1	4.18	39,400	4,030		7.5	45		# 25.60		21.05	2.56		13.68	
Feb.	1	4.11	35,900	4,040		8.0	45		# 26.40		21.75	3.41		14.05	
Mar.	1	4.57	36,600	4,260	1.3	7.5	48	34	14.07	10.94	23.49	3.08	28.94	16.64	0.46
Apr.	1	4.73	27,800	4,410		7.3	48		# 26.40		24.01	3.41		15.80	
May	1	5.17	26,800	4,690		7.5	46		# 30.40		25.58	2.52		15.80	
June	1	4.84	461,000	4,330		7.5	47		# 26.60		23.66	2.39		13.82	
July	1	1.60	35,100	1,630	.45	7.7	40	29	6.94	3.37	6.96	3.61	8.41	5.08	.16
Aug.	1	2.24	38,200	2,160		7.7	45		# 12.30		10.27	3.08		6.60	
Sept.	1	4.15	177,000	3,770		8.0	44		# 25.00		19.40	2.88		11.34	
Oct.	1	1.09	56,600	1,190		7.5	39		# 7.20		4.57	3.34		3.05	
Nov.	2	2.14	55,400	2,080		7.8	45		# 11.76		9.48	3.54		6.26	
Dec.	1	2.65	48,800	2,540		7.4	43		# 16.30		12.05	3.15		7.76	
Mean ⊕	Ø13	3.34	Ø1,038,600	3,110		7.6	45		# 19.36		16.00	2.95		9.82	
Period Avg.		0.93	338,000	965			37		# 6.46		3.79	2.46		2.63	
Tons of Constituents, 1973											155,000	37,400		147,000	
Avg. Tons, Period 1955-1973											43,000	36,400		46,000	

‡ Rio Grande below Falcon Dam, Texas - U. S. Tailrace

Sampling by U. S. Section

Jan. ‼	0	0.84	17,300	970			43		3.69	1.66	4.05	2.20	4.38	3.03	
Feb. ‼	0	.85	24,100	980			43		3.72	1.68	4.09	2.22	4.42	3.07	
Mar.	6	.88	34,400	1,010	0.22	7.3	43	32	3.84	1.73	4.22	2.29	4.56	3.16	0.02
Apr.	13	.86	250,000	1,020	.22	6.9	43	32	3.79	1.81	4.26	2.29	4.62	3.19	0
May	13	.95	416,000	1,040	.22	7.5	43	32	3.94	1.81	4.35	2.36	4.71	3.30	0
June	9	.91	211,000	1,060	.24	7.6	44	31	3.89	1.89	4.57	2.43	4.91	3.30	.01
July	4	.92	18,900	1,050	.26	7.6	44	32	3.79	1.97	4.61	2.26	4.87	3.30	0
Aug.	12	.95	157,000	1,040	.25	7.6	45	31	3.69	1.89	4.61	2.20	4.96	3.27	0
Sept.	11	.97	220,000	1,050	.24	7.5	46	32	3.69	1.81	4.70	2.10	5.00	3.39	.02
Oct.	8	.89	259,000	1,030	.24	7.3	47	31	3.49	1.81	4.70	2.16	4.87	3.22	.01
Nov.	13	.87	1,220	1,010	.22	7.6	46	31	3.59	1.81	4.52	2.07	4.73	3.10	0
Dec.	13	.87	7,620	1,010	.24	7.6	46	32	3.54	1.73	4.52	2.16	4.54	3.16	.01
Mean ⊕	102Ø	0.92	Ø1,616,540	1,040			44		3.77	1.82	4.48	2.27	4.80	3.27	
Period Avg.		0.69	1,479,000	802			43	29	3.29	1.20	3.35	2.29	3.34	2.32	
Tons of Constituents, 1973									181,000	53,100	247,000	163,000	553,000	278,000	
Avg. Tons, Period 1958-1973									192,000	42,600	224,000	200,000	467,000	240,000	

⊕ Weighted mean Ø Total ** Percent of total cations *** Percent of total anions ‼ Estimated
‡ Tonnage figures based on total release from Falcon Reservoir # Sum of calcium and magnesium

CHEMICAL ANALYSES OF WATER SAMPLES FROM THE RIO GRANDE AND TRIBUTARIES - 1973

Month	No. of Samples	Dissolved Solids: Tons Per Acre-Foot	Dissolved Solids: Total Tons	EC x 10^6 @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3

Rio Grande at Fort Ringgold, Rio Grande City, Texas

Sampling by U. S. Section

Jan.	6	1.18	39,200	1,420	0.40	7.7	52	42	4.69	1.97	7.18	2.85	5.27	5.81	0.04
Feb.	4	.99	40,700	1,130	.29	7.5	47	35	3.99	1.81	5.22	2.39	4.89	3.89	.01
Mar.	7	1.04	51,100	1,210	.32	7.4	48	37	4.19	1.89	5.61	2.56	4.93	4.40	.03
Apr.	7	.92	261,000	1,060	.24	7.2	44	32	3.89	1.81	4.48	2.33	4.71	3.39	.01
May	8	.94	411,000	1,070	.25	7.6	44	32	3.99	1.89	4.57	2.39	4.89	3.39	0
June	7	.75	468,000	880	.19	7.5	42	30	3.59	1.48	3.61	2.43	3.79	2.68	.03
July	5	.60	241,000	709	.15	7.3	37	27	3.29	1.15	2.57	2.69	2.54	1.95	.02
Aug.	6	.84	325,000	864	.19	7.5	41	29	3.49	1.56	3.52	2.38	3.77	2.57	0
Sept.	8	.72	454,000	823	.18	7.4	38	28	3.69	1.32	3.13	2.62	3.39	2.31	.04
Oct.	7	.73	459,000	858	.17	7.4	41	28	3.59	1.48	3.48	2.69	3.62	2.43	.01
Nov.	7	.71	103,000	815	.17	7.6	39	28	3.49	1.32	3.04	2.69	3.02	2.23	.08
Dec.	2	.80	80,000	931	.23	7.4	41	31	3.79	1.56	3.74	2.56	3.75	2.82	.04
Mean ⊕ Ø	75	0.78	Ø2,933,000	893	0.20	7.4	41	30	3.66	1.51	3.62	2.53	3.77	2.67	0.02
Period Avg.		0.72	1,907,000	835			43	30	3.43	1.20	3.56	2.38	3.41	2.51	
Tons of Constituents, 1973									375,000	93,900	426,000	388,000	926,000	484,000	
Avg. Tons, Period 1959-1973									248,000	52,700	295,000	258,000	591,000	321,000	

Morillo Drain in Mexico, 8.4 River Miles above Anzaldúas Dam

Sampling by Mexican Section

Jan.	3	10.0	1,270	10,700	2.2	7.7	73	66	17.71	13.00	84.39	3.84	34.98	76.17	0.08
Feb.	4	10.3	602	11,200	2.5	7.8	72	68	19.46	13.66	87.00	3.74	34.56	82.37	.08
Mar.	3	11.9	48.8	12,800	5.9	7.8	74	68	19.71	15.63	102.22	3.31	41.43	94.50	.06
Apr.	4	8.76	4,710	9,240	4.7	7.4	73	64	15.07	10.94	71.34	3.44	31.85	63.47	.06
May	4	8.79	15,500	9,120	4.4	7.7	72	63	16.22	10.04	69.16	4.00	31.65	61.22	.07
June	2	7.97	29,200	9,050	5.1	7.6	73	68	15.47	9.37	69.60	3.74	26.65	64.32	.06
July	2	11.3	30,500	11,800	4.9	7.7	75	66	17.96	13.82	96.14	3.57	39.14	83.22	.07
Aug. ‼	0	7.55	35,700	8,450			74		13.47	8.47	63.08	3.38	25.82	55.29	
Sept.	2	7.55	44,700	8,150	4.0	7.9	74	65	13.47	8.47	63.08	3.38	25.82	55.29	.06
Oct.	4	10.0	61,200	10,700	5.4	7.6	74	67	18.46	11.43	85.26	4.10	33.73	77.58	.07
Nov.	4	11.3	15,100	12,400	6.2	7.7	76	68	18.21	14.15	102.66	2.98	39.56	90.84	.11
Dec.	No	Flow													
Mean ⊕ Ø	32	8.87	π Ø238,530.3	9,530			74		15.80	10.33	74.93	3.64	30.29	66.79	
Period Avg.		4.19	193,000	4,570			71	63	8.76	5.10	33.57	2.86	14.98	29.87	
Tons of Constituents, 1973 *									11,600	4,590	63,000	3,990	53,200	86,600	
Avg. Tons, Period 1970-1973									11,000	3,890	48,400	5,370	45,100	66,400	

Rio Grande below Anzalduas Dam, Texas

Sampling by U. S. Section

Jan.	31	1.39	45,200	1,640	0.46	7.4	54	46	4.69	2.55	8.44	2.03	6.66	7.33	0.04
Feb.	28	1.17	39,800	1,440	.39	7.6	50	42	4.64	2.30	7.05	2.39	5.81	5.98	.03
Mar.	31	1.62	66,300	1,870	.58	7.5	56	50	5.19	2.80	10.09	2.20	6.95	9.31	.03
Apr.	30	.97	173,000	1,120	.25	6.9	46	35	3.99	1.89	4.96	2.29	4.96	3.84	0
May	31	1.04	160,000	1,160	.27	7.6	46	35	4.19	1.89	5.18	2.39	5.14	4.09	0
June	30	.88	325,000	1,040	.26	7.5	46	35	3.94	1.56	4.74	2.62	4.12	3.67	0
July	30	.72	324,000	863	.22	7.5	44	35	3.44	1.32	3.70	2.52	3.04	2.96	.02
Aug.	31	.93	366,000	980	.23	7.6	45	35	3.79	1.65	4.39	2.46	4.00	3.44	.01
Sept.	30	.78	516,000	914	.22	7.7	44	34	3.49	1.40	3.92	2.29	3.64	3.05	.04
Oct.	31	.90	574,000	1,060	.26	7.2	47	35	3.79	1.65	4.78	2.49	4.21	3.64	.01
Nov.	30	1.02	142,000	1,430	.30	7.7	47	40	4.29	1.73	5.35	2.35	4.08	4.71	.04
Dec.	31	.99	83,800	1,160	.28	7.5	45	38	4.24	1.89	5.09	2.95	4.10	4.37	.06
Mean ⊕ Ø	304	0.89	Ø2,815,000	1,030	0.25	7.5	46	36	3.80	1.61	4.59	2.47	4.05	3.63	0.02
Period Avg.		0.90	1,499,000	1,070			50	39	3.76	1.45	5.13	2.40	3.95	4.12	
Tons of Constituents, 1973									329,000	84,600	456,000	320,000	840,000	556,000	
Avg. Tons, Period 1959-1973									170,000	39,600	266,000	162,000	428,000	289,000	

⊕ Weighted mean Ø Total ** Percent of total cations *** Percent of total anions ‼ Estimated
* To Rio Grande excluding storm runoff π An additional 254,532 tons pumped to the gulf

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1973

The following tables show electrical conductivity, expressed in mhos per centimeter x 10^6 at 25°C, of individual water samples taken at Rio Grande and tributary stations. The determinations were made by the United States Section of the Commission.

Electrical conductivity is a relative indication of the concentration of dissolved solids in the water samples. Though no exact relationship exists between conductivity and dissolved solids in natural waters, a study of recent data pertaining to stations on the Rio Grande watershed indicates that the relationship may be expressed within 10% by the following equations:

Tons per Acre-Foot = .0003878 (EC x 10^6 at 25°C) when conductivity (EC x 10^6 at 25°C) is below 7,520 micromhos.

Tons per Acre-Foot = .001052 (EC x 10^6 at 25°C) - 1.235 when conductivity (EC x 10^6 at 25°C) ranges between 7,520 and 22,000 micromhos.

Rio Grande at El Paso, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		June		July		September		November	
1	3,180	27	3,200	15	1,200	14	1,080	13	1,070	15	978	13	1,780	15	2,400
2	3,160	March		16	1,130	15	1,070	14	1,060	16	938	14	1,930	16	2,360
5	3,140	2	3,280	17	1,160	16	1,080	15	1,040	17	1,030	17	1,950	19	2,400
8	2,900	5	3,280	18	1,150	17	1,120	16	1,050	18	1,060	18	1,940	20	2,430
9	3,130	6	3,270	19	1,150	18	1,190	17	1,050	19	1,160	20	1,940	21	2,430
10	3,230	7	3,280	20	1,100	19	1,220	20	1,140	20	1,360	October		23	2,320
11	3,030	8	3,320	21	1,110	20	1,230	21	1,160	21	1,520	4	1,780	26	2,290
12	3,110	9	3,380	22	1,100	21	1,290	22	1,030	22	1,730	11	2,100	27	2,310
16	3,190	12	3,360	23	1,070	22	1,300	23	1,030	23	1,700	16	2,120	28	2,360
18	3,260	13	1,230	24	1,080	23	1,400	24	1,030	24	1,410	17	2,100	29	2,350
19	3,180	15	871	25	1,120	24	1,400	25	1,010	25	1,080	18	2,130	30	2,330
22	3,180	16	803	26	1,140	25	1,250	26	1,020	26	1,110	22	2,260	December	
23	3,190	19	795	27	1,140	26	1,290	27	1,080	August		24	2,290	3	2,340
25	3,210	20	891	28	1,120	28	1,090	28	1,070	2	1,380	25	2,230	4	2,340
26	3,190	22	893	29	1,120	29	1,070	29	1,060	7	983	26	2,290	5	2,350
29	3,190	23	892	30	1,080	30	1,120	30	1,030	10	912	27	2,260	6	2,340
30	3,240	26	885	May		31	1,090	July		14	932	30	2,350	7	2,320
February		27	899	1	1,100	June		1	1,030	21	1,300	31	2,380	10	2,310
1	3,270	April		2	1,150	1	1,060	2	1,010	23	1,300	November		11	2,180
2	3,270	4	1,030	3	1,210	2	1,090	4	986	24	1,770	1	2,290	12	2,350
5	3,260	5	1,030	4	1,220	3	1,050	5	1,020	27	1,300	2	2,280	13	2,350
6	3,250	6	1,070	5	1,240	4	1,030	6	1,040	28	1,290	5	2,230	14	2,330
12	3,310	7	1,070	6	1,220	5	1,140	7	1,000	31	793	6	2,270	17	2,340
13	3,310	8	1,100	7	1,140	6	1,140	8	1,000	September		7	2,330	18	2,370
15	3,390	9	1,060	8	1,170	7	1,170	9	1,000	4	1,290	8	2,280	19	2,400
16	3,340	10	1,090	9	1,180	8	1,140	10	994	6	1,340	9	2,290	20	2,430
20	3,360	11	1,150	10	1,200	9	1,110	11	1,000	7	1,300	12	2,280	21	2,430
22	3,050	12	1,150	11	1,160	10	1,140	12	1,020	10	1,940	13	2,270	27	2,430
23	3,190	13	1,210	12	1,160	11	1,060	13	1,010	11	1,940	14	2,360	28	2,500
26	3,220	14	1,170	13	1,140	12	1,060	14	1,020						

Sampling by U. S. Section

Rio Grande at Fort Quitman, Texas

January		February		March		April		June		July		September		November	
3	9,730	7	8,920	7	10,680	4	5,980	6	11,090	25	3,710	5	922	1	5,170
18	9,640	14	8,400	14	10,660	18	7,690	20	12,260	August		October		14	5,150
24	9,550	21	9,500	21	10,660	May		July		8	6,880	3	8,620	December	
31	9,460	March		29	10,720	2	7,060	15	2,020	23	8,672	17	5,840	5	5,720
		1	8,470			16	11,470							19	5,420

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1973

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C

Rio Grande above Rio Conchos near Presidio, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		January		February		February		March		July		August		August	
4	5,940	22	6,690	6	5,770	23	5,930	5	5,890	16	3,000	1	828	15	2,070
8	5,860	30	6,490	12	5,680	26	6,280	9	6,740	20	1,060	6	1,560	September	
12	5,850	February		15	5,770	March		12	7,240	23	1,020	9	1,860	4	914
15	5,890	2	6,060	20	6,160	1	5,830	15	7,490	30	1,280	13	2,200	10	972
														17	1,530

Sampling by U. S. Section

Rio Conchos near Ojinaga, Chihuahua

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		July		August		September		November	
1	1,190	19	1,390	4	1,390	18	1,200	4	1,150	10	1,010	28	1,440	14	1,300
3	1,130	21	1,340	6	1,520	21	1,190	6	1,150	13	1,010	October		16	1,310
5	1,240	23	1,300	9	1,460	23	1,330	9	1,150	15	997	1	1,580	19	1,320
8	1,230	26	1,360	11	1,510	25	1,320	11	1,150	17	1,010	3	1,580	21	1,330
10	1,230	28	1,350	13	1,500	28	1,340	12	1,140	20	1,110	5	1,440	23	1,310
12	1,140	March		16	1,500	30	1,380	13	1,150	22	931	8	1,350	26	1,280
15	1,140	2	1,370	18	1,470	June		13	1,060	24	899	10	1,340	28	1,270
17	1,210	5	1,370	23	1,420	1	1,340	16	1,050	27	841	12	1,380	30	1,260
19	1,250	7	1,370	25	1,470	4	1,340	17	980	29	796	15	1,380	December	
22	1,190	9	1,370	27	1,400	6	1,370	18	965	31	755	17	1,360	3	1,280
24	1,180	12	1,390	30	1,490	8	1,320	20	1,180	September		19	1,270	5	1,300
26	1,260	14	1,390	May		11	1,370	23	1,150	3	756	22	1,250	7	1,230
29	1,260	16	1,580	2	1,500	13	1,400	25	1,160	5	730	25	1,280	10	1,280
31	1,260	19	1,430	4	1,490	15	1,210	27	1,120	7	739	27	1,260	12	1,300
February		21	1,420	7	1,440	18	1,280	28	920	10	760	29	1,290	14	1,370
2	1,260	23	1,430	9	1,450	20	1,160	29	980	12	722	31	1,330	17	1,330
5	1,200	26	1,470	11	1,430	22	1,140	30	1,100	14	728	November		19	1,550
7	1,170	28	1,480	14	1,340	25	1,130	August		17	737	2	1,350	21	1,500
9	1,250	30	1,400	14	1,380	27	1,130	1	937	19	860	5	1,280	24	1,440
12	1,370	April		15	843	29	1,140	2	937	21	1,000	7	1,320	26	1,340
14	1,290	2	1,380	16	1,040	July		3	882	24	1,260	9	1,250	28	1,320
16	1,270					2	1,150	8	1,000	26	1,330	12	1,250	31	1,290

Sampling by Mexican Section

Rio Grande below Rio Conchos near Presidio, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		June		August		September		November	
4	1,500	23	1,720	2	1,690	17	1,050	29	1,140	9	1,090	20	889	8	1,430
8	1,370	26	1,920	13	1,770	21	1,210	July		13	1,030	24	1,240	12	1,290
12	1,470	March		16	1,700	24	1,360	2	1,160	15	994	October		15	1,340
15	1,530	1	1,690	23	1,750	29	1,420	9	1,160	17	998	1	1,420	20	1,380
22	1,580	5	1,610	27	1,710	June		12	1,080	20	917	4	1,530	26	1,370
30	1,590	9	1,790	30	1,750	1	1,460	16	1,020	23	917	9	1,340	30	1,380
February		9	1,510	May		4	1,450	20	1,180	27	840	15	1,410	December	
2	1,490	12	1,580	2	1,800	7	1,460	23	1,140	31	790	18	1,310	3	1,370
6	1,540	15	1,860	4	1,680	8	1,530	26	1,140	September		23	1,330	7	1,360
12	1,620	19	1,910	7	1,790	11	1,550	30	1,060	4	754	29	1,310	10	1,310
15	1,760	26	1,860	14	1,550	18	1,290	August		10	766	November		17	1,360
20	1,650	30	1,780	16	1,060	21	1,140	1	901	14	709	1	1,360	20	1,800
						25	1,120	6	1,160	17	725	5	1,310	26	1,360

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1973

Rio Grande at Johnson Ranch near Castolon, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		June		July		August		October		November	
3	1,510	26	1,700	10	1,840	1	1,520	10	1,170	18	1,040	5	1,460	15	1,400
8	1,480	March		17	1,870	5	1,550	17	969	21	981	9	1,430	19	1,390
16	1,540	1	1,710	24	1,900	11	1,570	20	848	24	947	15	1,410	26	1,420
22	1,590	5	1,770	May		18	1,430	24	1,080	September		18	1,410	29	1,400
29	1,630	9	1,750	1	1,850	22	1,270	30	1,170	4	762	23	1,430	December	
February		12	1,710	7	1,830	25	1,080	31	1,000	10	835	29	1,400	3	1,420
1	1,650	15	1,670	15	1,850	29	1,160	August		14	719	November		10	1,410
5	1,580	19	1,680	15	1,860	July		2	987	17	715	1	1,410	17	1,390
13	1,480	27	1,940	17	982	2	1,160	7	1,150	20	809	5	1,400	21	1,410
15	1,560	30	1,930	27	1,110	5	1,200	10	1,130	25	1,070	9	1,400	27	1,840
20	1,780	April		30	1,500	6	1,190	14	1,070	October		12	1,380		
		3	1,890							1	1,330				

Sampling by U. S. Section

Rio Grande at Foster Ranch near Langtry, Texas

January		February		April		May		July		August		October		November	
2	1,210	20	1,140	2	979	21	1,280	2	1,140	20	1,010	1	918	19	1,090
8	1,090	26	1,200	9	1,020	29	849	9	1,110	27	948	9	1,080	26	1,100
15	1,130	March		16	1,010	June		16	965	September		23	1,130	December	
22	1,180	5	1,200	23	997	4	1,000	23	603	4	804	29	1,110	3	1,090
29	1,210	12	1,240	30	1,010	11	1,040	30	1,090	10	753	November		10	1,120
February		19	1,180	May		18	1,370	August		17	752	5	1,120	17	1,110
5	1,190	26	1,060	7	1,030	25	1,160	6	905	24	478	12	1,120	26	1,070
12	1,230			14	992										

Sampling by U. S. Section

Pecos River near Langtry, Texas

January		March		April		June		July		August		October		November	
8	3,100	5	3,920	16	3,830	4	3,240	16	2,560	27	2,990	9	2,370	19	2,770
15	3,260	12	3,860	23	3,600	11	3,080	23	2,500	September		15	2,550	26	2,830
22	3,440	19	4,060	30	3,810	18	2,950	30	2,720	4	2,910	23	2,820	December	
29	3,560	26	4,440	May		25	2,570	August		10	2,680	29	2,870	3	2,850
February		April		7	3,770	July		6	3,520	17	3,190	November		10	2,850
5	3,690	2	4,200	14	3,670	2	2,850	13	3,650	24	3,200	5	2,790	17	2,870
12	3,700	9	3,970	21	3,570	9	2,870	20	3,150	October		12	2,790	26	3,000
20	3,840			29	3,310					1	3,010				

Sampling by U. S. Section

Devils River at Pafford Crossing near Comstock, Texas

January		February		April		May		July		August		October		November	
2	407	12	371	2	391	21	381	2	375	20	376	1	356	12	380
8	406	26	378	16	387	29	372	9	280	27	378	9	370	19	398
15	404	March		23	369	June		23	357	September		15	354	26	391
22	396	5	393	30	369	4	338	30	346	4	368	23	395	December	
29	408	12	387	May		11	369	August		10	380	29	385	3	318
February		19	393	7	383	18	347	6	365	17	371	November		10	332
5	404	26	389	14	382	25	365	13	313	24	371	5	371	26	403

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1973

Rio Grande below Amistad Dam near Del Rio, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		July		August		September		November	
3	903	20	814	2	835	18	813	2	863	17	865	28	894	12	934
5	836	22	827	4	842	21	824	5	856	20	869	October		14	955
8	803	26	903	6	824	23	838	9	863	22	868	1	901	16	939
12	815	28	840	9	832	29	820	11	860	24	872	3	894	19	954
15	824	March		11	826	June		13	863	27	885	5	839	23	955
17	827	2	815	13	828	1	840	18	857	29	882	9	885	26	957
19	804	5	824	16	825	4	840	20	877	31	883	12	878	28	958
22	825	7	861	18	822	6	846	23	863	September		15	885	30	921
24	843	9	843	20	838	11	873	25	866	4	890	17	884	December	
26	837	12	909	23	843	13	836	30	862	7	884	19	883	3	958
29	825	14	818	25	835	15	839	August		10	879	23	885	5	922
31	892	16	858	27	807	18	857	1	852	12	880	26	883	7	918
February		19	855	30	839	20	847	3	858	14	891	29	880	10	916
2	834	21	841	May		22	850	6	865	17	898	31	919	17	917
5	852	23	857	2	812	25	854	8	886	19	896	November		21	912
7	793	26	849	4	818	27	840	10	867	21	903	2	959	26	937
12	798	28	854	9	829	29	856	13	869	24	897	5	954	28	916
14	780	30	859	15	830			15	873	26	897	7	960		

Sampling by U. S. Section

** Rio Grande below Maverick Dam near Del Rio, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		July		August		October		November	
1	789	15	785	1	832	16	835	1	818	16	848	1	860	16	793
2	785	16	783	2	838	17	840	2	825	17	857	2	864	17	795
3	787	17	759	3	819	18	820	3	822	18	854	3	863	18	796
4	781	18	807	4	834	19	806	4	823	19	857	4	863	19	790
5	787	19	805	5	820	20	792	5	818	20	863	5	662	20	797
6	797	20	813	6	825	21	786	6	816	21	858	6	445	21	788
7	787	21	783	7	820	22	784	7	813	22	856	7	772	22	796
8	784	22	706	8	820	23	811	8	770	23	856	8	840	23	790
9	796	23	774	9	827	24	806	9	602	24	855	9	854	24	794
10	791	24	705	10	824	25	811	10	794	25	866	10	855	25	769
11	793	25	693	11	829	26	815	11	816	26	867	11	855	26	793
12	793	26	799	12	827	27	829	12	820	27	885	12	853	27	785
13	789	27	686	13	830	28	821	13	818	28	870	13	846	28	792
14	784	28	791	14	823	29	804	14	816	29	868	14	857	29	793
15	783	March		15	811	30	795	15	857	30	867	15	856	30	794
16	779	1	790	16	832	31	795	16	843	31	867	16	863	December	
17	780	2	772	17	826	June		17	736	September		17	860	1	766
18	775	3	768	18	824	1	808	18	819	1	896	18	859	2	804
19	772	4	765	19	816	2	818	19	836	2	887	19	859	3	801
20	769	5	776	20	840	3	836	20	830	3	884	20	877	4	880
21	774	6	758	21	827	4	822	21	831	4	882	21	875	5	841
22	777	7	762	22	824	5	823	22	830	5	879	22	882	6	833
23	772	8	777	23	822	6	831	23	843	6	878	23	881	7	829
24	770	9	774	24	826	7	828	24	839	7	872	24	883	8	846
25	778	10	778	25	837	8	825	25	844	8	883	25	884	9	838
26	801	11	771	26	827	9	824	26	840	9	873	26	880	10	822
27	788	12	784	27	822	10	1,280	27	840	10	888	27	884	11	800
28	761	13	749	28	807	11	771	28	839	11	891	28	882	12	825
29	770	14	790	29	812	12	702	29	835	12	889	29	876	13	826
30	766	15	774	30	837	13	815	30	837	13	884	30	870	14	823
31	773	16	771	May		14	813	31	833	14	881	31	750	15	817
February		17	796	1	888	15	817	August		15	892	November		16	817
1	775	18	844	2	821	16	817	1	831	16	908	1	696	17	817
2	727	19	810	3	815	17	827	2	827	17	887	2	792	18	827
3	768	20	817	4	818	18	827	3	837	18	900	3	808	19	819
4	766	21	820	5	841	19	827	4	836	19	899	4	811	20	827
5	767	22	819	6	841	20	807	5	832	20	900	5	817	21	829
6	686	23	817	7	837	21	818	6	833	21	912	6	796	22	816
7	794	24	818	8	828	22	823	7	842	22	891	7	812	23	830
8	795	25	822	9	826	23	823	8	845	23	886	8	812	24	826
9	758	26	820	10	839	24	823	9	911	24	879	9	816	25	826
10	789	27	827	11	836	25	819	10	860	25	874	10	801	26	828
11	796	28	838	12	832	26	825	11	863	26	876	11	793	27	814
12	783	29	830	13	830	27	821	12	861	27	871	12	811	28	822
13	789	30	796	14	823	28	817	13	853	28	873	13	806	29	816
14	771	31	791	15	830	29	805	14	857	29	871	14	799	30	829
						30	810	15	852	30	867	15	798	31	818

Sampling by Maverick County Water Control and Improvement District No. 1
** Samples collected at the Maverick Canal headgate

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1973

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C

Rio Grande at San Antonio Crossing near El Indio, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		March		May		July		September		October		November	
3	722	7	773	14	963	2	850	3	901	5	904	6	598	14	691
10	750	14	818	21	1,050	16	836	24	909	12	886	17	860	28	804
17	744	21	931	28	1,010	31	984	August		19	909	23	889	December	
24	878	28	890	April		June		8	881	October		26	875	12	750
31	800	March		4	1,050	6	920	22	895	3	959	31	921	19	831
		7	898	11	907	20	897								

Sampling by U. S. Section

Rio Grande at Laredo, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		July		August		October		November	
1	809	15	801	1	1,170	16	855	1	913	16	891	1	993	17	835
2	826	16	791	2	1,100	17	859	2	912	17	901	2	988	18	793
3	818	17	838	3	1,170	18	865	3	915	18	918	3	975	19	785
4	826	18	796	4	1,160	19	876	4	888	19	910	4	965	20	838
5	869	19	852	5	1,150	20	870	5	895	20	902	5	969	21	792
6	834	20	848	6	1,160	21	888	6	908	21	861	6	719	22	772
7	906	21	851	7	1,100	22	865	7	903	22	883	7	460	23	770
8	865	22	923	8	1,140	23	925	8	900	23	888	8	347	24	813
9	814	23	906	9	1,130	24	932	9	977	24	893	9	538	25	824
10	820	24	921	10	1,130	25	932	10	910	25	896	10	542	26	808
11	813	25	997	11	1,090	26	953	11	892	26	899	11	633	27	837
12	817	26	1,050	12	1,040	27	966	12	897	27	894	12	681	28	854
13	803	27	1,130	13	1,000	28	998	13	914	28	895	13	723	29	855
14	818	28	1,210	14	934	29	1,020	14	904	29	900	14	741	30	812
15	827	March		15	954	30	1,040	15	877	30	900	15	705	December	
16	806	1	1,220	16	870	31	1,040	16	859	31	908	16	691	1	847
17	797	2	1,270	17	923	June		17	761	September		17	757	2	859
18	799	3	1,230	18	884	1	1,060	18	743	1	877	18	849	3	866
19	915	4	1,160	19	927	2	1,070	19	655	2	905	19	913	4	832
20	951	5	1,060	20	856	3	1,110	20	677	3	910	20	882	5	842
21	873	6	1,060	21	863	4	1,090	21	777	4	912	21	824	6	874
22	852	7	1,080	22	819	5	1,050	22	826	5	930	22	849	7	868
23	873	8	1,070	23	887	6	1,020	23	810	6	862	23	831	8	828
24	871	9	1,070	24	893	7	998	24	791	7	913	24	868	9	786
25	884	10	1,060	25	911	8	992	25	828	8	900	25	881	10	848
26	916	11	999	26	907	9	952	26	836	9	892	26	877	11	873
27	916	12	1,040	27	880	10	862	27	831	10	880	27	876	12	833
28	880	13	1,060	28	865	11	942	28	850	11	886	28	793	13	862
29	837	14	1,050	29	889	12	902	29	871	12	890	29	872	14	863
30	886	15	1,070	30	912	13	943	30	858	13	887	30	896	15	862
31	900	16	1,050	May		14	917	31	867	14	885	31	909	16	829
February		17	1,090	1	852	15	910	August		15	876	November		17	873
1	984	18	1,090	2	851	16	916	1	871	16	885	1	905	18	880
2	974	19	1,120	3	918	17	878	2	830	17	899	2	874	19	847
3	1,010	20	1,120	4	841	18	884	3	823	18	879	3	895	20	880
4	1,030	21	1,140	5	836	19	838	4	858	19	909	5	963	21	900
5	999	22	1,120	6	818	20	726	5	885	20	905	6	961	22	908
6	976	23	1,090	7	829	21	797	6	893	21	912	7	984	23	912
7	964	24	1,120	8	837	22	826	7	891	22	925	8	922	24	905
8	957	25	1,120	9	839	23	739	8	890	23	931	9	915	25	919
9	931	26	1,120	10	847	24	876	9	895	24	779	10	855	26	931
10	860	27	1,110	11	845	25	900	10	892	25	519	11	847	27	928
11	892	28	1,120	12	847	26	927	11	903	26	536	13	868	28	865
12	813	29	1,150	13	847	27	845	12	881	27	762	14	884	29	941
13	821	30	1,130	14	849	28	876	13	888	28	409	15	837	30	949
14	790	31	1,110	15	841	29	944	14	881	29	414	16	869	31	938
						30	929	15	896	30	890				

Sampling by Laredo Water Plant

Río Salado at Las Tortillas, Tamaulipas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		July		August		October		November	
4	4,050	8	4,050	3	4,420	8	4,740	3	1,640	10	2,200	2	1,180	22	2,220
		March				June				September		November		December	
		7	4,260			5	4,410			5	3,820	13	2,040	5	2,560

Sampling by Mexican Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1973

Rio Grande below Falcon Dam, Texas, U. S. Tailrace

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
March		April		May		June		August		September		November		December	
19	987	18	1,000	18	1,020	18	1,060	20	1,050	19	1,030	2	1,010	3	1,010
21	990	20	1,000	21	1,030	20	1,060	22	1,040	24	1,040	5	1,020	5	1,000
23	991	23	1,010	23	1,030	July		24	1,050	26	1,030	7	1,000	7	1,000
26	991	25	1,010	25	1,030	23	1,050	27	1,050	28	1,030	9	1,010	10	1,000
28	994	27	1,020	28	1,030	25	1,050	29	1,050	October		13	1,010	12	1,010
30	997	30	1,010	30	1,030	27	1,050	31	1,040	1	1,030	14	1,010	15	1,000
April		May		June		30	1,050	September		3	1,030	16	1,010	17	1,010
2	996	2	1,020	1	1,050	August		3	1,050	5	1,020	19	1,000	19	1,010
4	994	4	1,010	4	1,050	1	1,060	5	1,040	8	1,030	21	1,010	21	1,010
6	994	7	1,010	6	1,060	8	1,050	7	1,040	10	1,030	23	1,010	24	1,010
9	999	9	1,010	8	1,050	10	1,050	10	1,040	12	1,020	26	998	26	1,010
11	999	11	1,020	11	1,060	13	1,050	12	1,040	15	1,020	28	1,000	28	1,010
13	1,000	14	1,030	13	1,060	15	1,050	14	1,050	17	1,020	30	1,000	31	1,010
16	1,000	16	1,020	15	1,050	17	1,050	17	1,040						

Sampling by U. S. Section

Rancherías Drain in Mexico, 69.3 River Miles above Anzaldúas Dam

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		March		May		June		August		September		November	
5	7,140	14	7,120	20	7,950	4	2,980	13	2,160	8	6,410	12	6,700	21	7,070
17	7,300	21	8,540	28	7,730	9	7,110	20	2,710	16	6,400	October		30	7,140
24	7,220	28	8,750	April		16	7,010	July		23	6,360	31	7,810	December	
31	6,990	March		4	8,170	23	5,160	18	6,930	30	6,530	November		5	7,320
February		7	8,260	11	7,910	30	4,430	25	6,800	September		6	7,430	26	7,220
7	7,070	14	8,100	17	9,510	June		August		5	6,720	13	7,320		
				25	5,910	6	4,960	1	6,600						

Sampling by Mexican Section

* Río San Juan at Camargo, Tamaulipas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		March		April		May		June		September		November	
5	1,170	14	953	14	2,040	11	1,120	9	2,220	20	1,890	5	686	13	719
17	1,130	21	1,450	20	935	17	1,260	16	2,660	July		12	671	23	743
24	1,210	28	1,490	28	1,070	25	1,790	23	2,150	18	680	October		December	
31	1,080	March		April		May		30	2,140	August		22	712	5	788
February		7	1,750	4	1,880	4	2,020	June		1	706	November		13	776
7	1,800							6	2,130	30	683	6	741	21	1,010

Sampling by Mexican Section
* Samples through June 20 collected 3 miles above gaging station

Rio Grande at Fort Ringgold, Rio Grande City, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		March		April		May		June		August		September		November	
8	1,270	2	2,030	16	1,030	29	1,050	30	630	6	714	24	666	2	781
15	1,740	5	2,050	23	1,040	31	1,050	July		10	944	26	863	9	814
19	1,680	12	1,100	26	1,030	June		3	628	13	913	28	687	12	808
22	1,660	15	1,130	30	1,020	4	1,070	3	605	20	751	October		16	819
26	1,370	19	1,120	May		11	1,080	13	664	23	908	2	911	21	788
29	1,340	22	1,130	3	1,040	14	1,040	16	730	September		4	947	26	855
February		26	1,170	7	1,040	18	1,090	23	924	4	950	17	816	30	833
2	1,040	April		11	1,040	22	1,170	27	956	10	952	23	733	December	
5	1,030	2	1,190	14	1,140	28	729	30	969	17	819	24	733	14	924
15	1,050	5	1,210	21	1,050	28	724	August		20	679	26	765	21	921
23	1,690	9	1,050	25	1,070	30	610	3	894	22	664	29	795		

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1973

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C

Puertecitos Drain in Mexico, 46.8 River Miles above Anzaldúas Dam

January		February		March		April		May		July		August		November	
5	4,450	15	4,350	22	4,730	25	4,050	30	4,520	18	5,030	30	1,030	6	4,810
18	4,470	21	4,050	28	4,670	May		June		August		September		16	4,740
24	4,370	March		April		3	3,720	6	4,030	1	4,920	6	1,040	23	4,850
31	4,420	1	4,680	5	4,690	10	4,630	13	4,550	16	1,040	October		December	
February		7	4,690	11	4,380	16	4,800	20	4,770	23	1,040	3	4,940	5	4,870
7	4,450	15	4,710	17	4,460	23	4,960					18	5,130		

Sampling by Mexican Section

Los Indios Drain in Mexico, 46.8 River Miles above Anzaldúas Dam

January		February		March		April		May		July		August		November	
5	3,200	15	3,130	22	3,230	25	3,580	30	3,380	18	3,610	30	3,490	6	3,340
18	3,230	21	3,110	28	3,250	May		June		August		September		16	3,430
24	3,130	March		April		3	3,750	6	3,330	1	3,570	5	3,500	23	3,350
31	3,160	1	3,190	5	3,290	10	2,920	13	3,210	10	3,550	October		December	
February		7	3,230	11	3,240	16	3,480	20	3,590	16	3,430	3	3,470	5	3,380
7	3,220	15	3,130	17	2,910	23	3,330			23	3,390	18	3,580		

Sampling by Mexican Section

Huizache Drain in Mexico, 41.8 River Miles above Anzaldúas Dam

January		February		March		April		May		July		August		November	
5	3,350	15	3,570	22	3,870	25	3,760	30	2,920	18	4,400	30	3,460	6	3,620
18	3,490	21	2,930	28	3,810	May		June		August		September		16	3,620
24	3,400	March		April		3	3,040	6	3,290	1	1,970	6	3,400	23	3,780
31	2,910	1	3,430	5	3,230	10	3,820	13	3,030	16	3,350	October		December	
February		7	3,540	11	3,160	16	3,220	20	3,730	23	3,280	3	4,350	5	2,220
7	3,290	15	4,030	17	3,070	23	3,060					18	4,310		

Sampling by Mexican Section

Rio Grande near Los Ebanos, Texas

January		February		April		May		July		August		October		November	
1	1,090	15	1,170	2	1,400	18	1,110	2	648	17	887	1	825	16	947
3	1,120	19	1,570	4	1,350	21	1,120	4	721	20	724	3	907	19	952
5	1,320	21	1,910	6	1,280	23	1,120	6	707	22	810	5	921	21	988
8	1,400	23	1,890	9	1,050	25	1,110	9	707	24	895	8	861	23	1,000
10	1,570	26	2,410	11	1,070	28	1,090	11	710	27	853	10	861	26	1,010
12	1,720	28	2,580	13	1,050	30	1,070	13	734	29	920	12	909	28	1,020
15	2,030	March		16	1,050	June		16	776	31	926	15	949	30	1,040
18	2,020	3	2,590	18	1,060	1	1,090	18	814	September		17	794	December	
19	2,290	5	2,740	20	1,050	4	1,080	20	836	3	953	19	830	3	1,080
22	2,390	7	2,690	23	1,050	6	1,090	23	1,030	5	940	22	795	5	1,090
24	2,330	9	2,820	25	1,080	8	1,080	25	1,020	7	944	24	836	7	1,080
26	2,000	12	1,310	27	1,080	11	1,130	27	1,010	10	991	26	860	10	1,030
29	1,730	14	1,190	30	1,050	13	1,190	30	1,050	12	1,010	29	885	12	1,150
31	1,290	16	1,190	May		15	1,100	August		14	981	31	922	14	1,130
February		19	1,670	2	1,110	18	1,190	1	991	17	734	November		17	1,090
2	1,190	21	1,300	4	1,060	20	1,150	3	997	19	841	2	902	19	1,040
5	1,150	23	1,310	7	1,070	22	1,170	6	791	21	673	5	932	21	1,040
7	1,180	26	1,290	9	1,060	25	785	8	734	24	830	7	980	23	1,120
9	1,150	28	1,290	11	1,070	27	811	10	890	26	822	9	932	26	1,130
12	1,420	30	1,300	14	1,170	29	642	13	955	28	703	12	915	28	1,150
14	1,280			16	1,120			15	972			14	961	31	1,100

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1973

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C

Rio Grande at Penitas, Texas

January		February		April		May		July		August		October		November	
1	1,200	16	1,310	2	1,340	18	1,080	2	728	17	970	1	914	16	1,050
3	1,300	19	1,390	4	1,360	21	1,130	4	990	20	976	3	882	19	973
5	1,190	21	1,300	6	1,390	23	1,140	6	786	22	758	5	899	21	1,090
8	1,190	23	1,670	9	1,040	25	1,070	9	897	24	867	8	957	23	1,090
10	1,260	26	2,190	11	1,060	28	1,070	11	843	27	916	10	972	26	1,090
12	1,400	28	2,110	13	1,080	30	1,080	13	795	29	929	12	1,050	28	1,070
15	1,740	March		16	1,070	June		16	810	31	994	15	1,380	30	1,080
17	1,670	2	2,370	18	1,090	1	1,070	18	816	September		17	1,490	December	
19	1,740	5	2,720	20	1,090	4	1,070	20	883	3	1,380	19	1,120	3	1,120
22	2,070	7	2,700	23	1,080	6	1,090	23	917	5	983	22	1,320	5	1,120
24	1,900	9	2,900	25	1,070	8	1,080	25	990	7	1,020	24	881	7	1,150
29	2,440	12	2,940	27	1,080	11	1,220	27	910	10	1,020	26	930	10	1,150
31	2,020	14	1,650	30	1,050	13	1,160	30	914	12	996	29	994	12	1,110
February		16	1,460	May		15	1,060	August		14	1,040	31	1,050	14	1,160
2	1,690	19	1,320	2	1,050	18	1,350	1	994	17	1,060	November		17	1,220
5	1,550	21	1,330	4	1,050	20	1,180	3	1,060	19	1,020	2	1,010	19	1,190
7	1,370	23	1,410	7	1,060	22	1,120	6	1,070	21	995	5	1,020	21	1,180
9	1,280	26	1,420	9	1,050	25	1,150	8	765	24	986	7	1,040	24	1,120
12	1,290	28	1,420	11	1,050	27	1,180	10	880	26	977	9	981	26	1,260
14	1,350	30	1,280	14	1,130	29	724	13	955	28	977	12	1,040	28	1,180
				16	1,190			15	969			14	1,050	31	1,190

Sampling by U. S. Section

Rio Grande above Anzalduas Dam, South of Abram, Texas

January		February		April		May		July		August		October		November	
1	1,200	16	1,360	2	1,310	18	1,090	2	638	17	894	1	850	16	1,020
3	1,150	19	1,190	4	1,370	21	1,100	4	649	20	804	3	913	19	1,020
5	1,090	21	1,260	6	1,370	23	1,130	6	730	22	723	5	961	21	1,040
8	1,340	23	1,390	9	1,070	25	1,070	9	698	24	777	8	948	23	1,050
10	1,380	26	1,550	11	1,130	28	1,070	11	753	27	828	10	712	26	1,080
12	1,400	28	1,750	13	1,100	30	1,070	13	741	29	841	12	946	28	1,050
15	1,490	March		16	1,040	June		16	797	31	822	15	953	30	1,110
17	1,630	2	1,950	18	1,050	1	1,060	18	838	September		17	850	December	
19	1,620	5	2,120	20	1,050	4	1,030	20	861	3	890	19	801	3	1,130
22	1,970	7	2,490	23	1,060	6	1,070	23	928	5	879	22	839	5	1,150
24	2,110	9	2,520	25	1,070	8	1,080	25	913	7	1,000	24	843	7	1,180
26	2,300	12	2,690	27	1,080	11	1,170	27	971	10	924	26	898	10	1,130
29	2,190	14	1,450	30	1,040	13	1,120	30	1,010	12	942	29	976	12	1,060
31	1,880	16	1,430	May		15	1,140	August		14	1,020	31	971	14	1,170
February		19	1,320	2	1,040	18	1,320	1	1,040	17	562	November		17	1,220
2	1,640	21	1,320	4	1,040	20	1,210	3	983	19	895	2	965	19	1,180
5	1,250	23	1,400	7	1,040	22	1,120	6	1,060	21	728	5	999	21	1,140
7	1,240	26	1,410	9	1,050	25	1,170	8	799	24	690	7	1,010	24	1,090
9	1,250	28	1,330	11	1,050	27	966	10	715	26	706	9	1,050	26	1,150
12	1,260	30	1,020	14	1,090	29	683	13	894	28	876	12	965	28	1,190
14	1,390			16	1,390			15	957			14	1,000	31	1,200

Sampling by U. S. Section

Morillo Drain in Mexico, 8.4 River Miles above Anzaldúas Dam

January		February		March		April		May		July		October		October	
3	a) 9,520	14	a) 11,680	14	a) 12,620	18	a) 8,390	17	a) 10,160	23	a) 12,020	3	b) 8,340	31	d) 11,700
19	a) 10,820	19	a) 10,710	23	a) 12,640	24	a) 8,190	31	a) 8,920	31	a) 11,640	3	c) 15,600	November	
22	a) 11,320	23	a) 10,710	April		May		June		September		18	b) 7,590	12	a) 12,260
February		March		5	a) 12,280	4	a) 7,880	6	a) 9,630	10	b) 3,420	18	c) 10,700	15	a) 12,300
9	a) 11,430	2	a) 12,490	12	a) 10,190	11	a) 8,680	20	a) 8,520	10	c) 14,110	26	d) 12,400	22	a) 12,470
														30	a) 12,470

Sampling by Mexican Section

a) Morillo Drain Diversion Canal b) Esterito Drain at Argueiles c) Morillo Drain below Brecha Argueiles

d) Morillo Drain at Highway Bridge

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1973

Rio Grande below Anzalduas Dam, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		July		August		October		November	
1	1,280	15	1,270	1	1,330	16	1,450	1	711	16	1,050	1	878	16	1,050
2	1,250	16	1,310	2	1,310	17	1,230	2	749	17	1,040	2	926	17	1,050
3	1,220	17	1,480	3	1,290	18	1,160	3	805	18	1,040	3	1,030	18	1,050
4	1,210	18	1,500	4	1,300	19	1,130	4	827	19	893	4	1,000	19	1,050
5	1,180	19	1,410	5	1,300	20	1,110	5	870	20	894	5	1,040	20	1,060
6	1,130	20	1,410	6	1,350	21	1,150	6	892	21	842	6	1,020	21	1,070
7	1,130	21	1,380	7	1,360	22	1,140	7	885	22	843	7	1,030	22	1,080
8	1,110	22	1,340	8	1,130	23	1,140	8	873	23	890	8	975	23	1,100
9	1,130	23	1,310	9	1,060	24	1,110	9	876	24	921	9	957	24	1,110
10	1,190	24	1,260	10	1,050	25	1,080	10	899	25	949	10	902	25	1,120
11	1,260	25	1,250	11	1,050	26	1,100	11	932	26	970	11	979	26	1,120
12	1,330	26	1,250	12	1,090	27	1,120	12	950	27	1,010	12	1,140	27	1,110
13	1,340	27	1,290	13	1,070	28	1,120	13	902	28	1,050	13	1,050	28	1,130
14	1,340	28	1,340	14	1,060	29	1,110	14	789	29	1,120	14	1,110	29	1,140
15	1,350	March		15	1,060	30	1,110	15	813	30	1,030	15	1,090	30	1,140
16	1,370	1	1,380	16	1,040	31	1,100	16	833	31	951	16	1,050	December	
17	1,380	2	1,450	17	1,050	June		18	867	September		17	962	1	1,170
18	1,390	3	1,500	18	1,040	1	1,120	19	900	1	1,040	18	961	2	1,160
19	1,400	4	1,530	19	1,060	2	1,110	20	916	2	1,010	19	951	3	1,190
20	1,440	5	1,590	20	1,060	3	1,130	21	942	3	1,050	20	1,040	4	1,200
21	1,510	6	1,640	21	1,030	4	1,170	22	950	4	1,040	21	1,070	5	1,190
22	1,570	7	1,690	22	1,080	5	1,180	23	959	5	1,050	22	1,120	6	1,250
23	1,640	8	1,800	23	1,100	6	1,140	24	965	6	1,070	23	1,110	7	1,220
24	1,700	9	1,810	24	1,120	7	1,160	25	966	7	1,040	24	1,140	8	1,240
25	1,800	10	2,240	25	1,130	8	1,120	26	945	8	1,050	25	1,180	9	1,240
26	1,940	11	2,770	26	1,140	9	1,160	27	1,030	9	1,090	26	1,220	10	1,220
27	2,120	12	2,920	27	1,140	10	1,150	28	972	10	1,060	27	1,260	11	1,170
28	2,270	13	2,950	28	1,100	11	1,110	29	952	11	1,130	28	1,290	12	1,150
29	2,460	14	2,220	29	1,100	12	1,120	30	974	12	1,090	29	1,340	13	1,130
30	2,460	15	1,960	30	1,090	13	1,130	31	1,020	13	1,090	30	1,310	14	1,070
31	2,240	16	1,450	May		14	1,240	August		14	1,170	31	1,330	15	1,100
February		17	1,470	1	1,100	15	1,160	1	993	15	976	November		16	1,220
1	2,190	18	1,470	2	1,100	16	1,410	2	1,000	16	878	1	1,340	17	1,230
2	2,040	19	1,480	3	1,100	17	1,440	3	1,030	17	716	2	1,390	18	1,240
3	1,910	20	1,480	4	1,110	18	1,340	4	1,020	18	884	3	1,340	19	1,240
4	1,580	21	1,450	5	1,170	19	1,340	5	1,460	19	949	4	1,340	20	1,230
5	1,380	22	1,360	6	1,140	20	1,230	6	1,400	20	399	5	1,360	21	1,170
6	1,310	23	1,370	7	1,140	21	1,310	7	1,170	21	752	6	1,400	22	1,170
7	1,290	24	1,330	8	1,130	22	1,260	8	835	22	739	7	1,400	23	1,150
8	1,300	25	1,360	9	1,110	23	1,200	9	814	23	741	8	1,260	24	1,090
9	1,290	26	1,550	10	1,100	24	1,750	10	922	24	784	9	1,310	25	1,090
10	1,300	27	1,500	11	1,100	25	1,440	11	972	25	789	10	1,070	26	1,110
11	1,300	28	1,410	12	1,090	26	1,040	12	985	26	777	11	1,040	27	1,120
12	1,280	29	1,410	13	1,230	27	1,030	13	946	27	973	12	1,010	28	1,160
13	1,260	30	1,390	14	1,220	28	886	14	990	28	942	13	997	29	1,190
14	1,240	31	1,360	15	1,440	29	722	15	1,050	29	797	14	1,020	30	1,190
						30	676			30	745	15	1,040	31	1,200

Sampling by U. S. Section

Arroyo Colorado South of Harlingen, Texas

January		February		April		May		June		July		October		November	
8	4,580	21	3,570	2	5,620	14	2,080	18	4,540	23	4,610	3	5,050	12	4,980
15	3,720	26	1,810	9	5,380	21	5,340	July		August		11	4,820	19	5,360
22	5,320	March		16	5,470	29	5,320	2	1,350	20	4,550	24	5,390	26	5,230
29	5,680	5	4,290	23	5,410	June		3	837	27	4,250	29	5,680	December	
February		12	5,640	30	5,150	4	4,760	9	3,360	September		November		6	5,180
6	5,940	19	5,810	May		11	3,710	16	5,350	10	5,690	5	5,150	10	4,840
12	5,550	26	5,710	7	5,110					26	4,370				

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES

1973

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C

North Floodway near Sebastian, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		March		April		May		July		September		November	
8	5,220	12	6,620	19	8,100	23	6,390	29	5,770	23	4,560	10	5,750	7	4,450
15	6,800	21	6,330	26	7,390	30	5,840	June		August		26	4,800	12	6,660
22	7,150	26	7,310	April		May		4	4,970	21	5,390	October		19	6,620
29	7,200	March		2	7,470	7	5,180	13	5,070	27	5,150	4	4,530	26	6,620
February		5	6,770	9	6,820	14	2,250	18	5,830	September		15	1,940	December	
5	7,030	14	7,690	16	6,680	21	6,270	July		6	6,340	24	5,600	7	5,770
								16	6,110			29	6,460		

Sampling by U. S. Section

Rio Grande at Mercedes, Texas, Pumps

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		July		August		October		November	
1	1,410	15	1,380	1	1,510	16	1,210	1	754	16	1,030	1	766	16	1,050
2	1,640	16	1,430	2	1,500	17	1,320	2	660	17	1,160	2	788	17	1,080
3	1,320	17	1,450	3	1,530	18	1,430	3	672	18	1,070	3	908	18	1,090
4	1,270	18	1,410	4	1,560	19	1,150	4	689	19	1,010	4	934	19	1,090
5	1,280	19	1,410	5	1,430	20	1,140	5	724	20	1,010	5	974	20	1,140
6	1,360	20	1,420	6	1,390	21	1,140	6	761	21	897	6	996	21	1,100
7	1,390	21	1,620	7	1,360	22	1,170	7	796	22	848	7	1,050	22	1,100
8	1,390	22	1,710	8	1,380	23	1,140	8	879	23	854	8	1,040	23	1,130
9	1,380	23	1,700	9	1,380	24	1,250	9	891	24	891	9	1,040	24	1,120
10	1,310	24	1,650	10	1,140	25	1,180	10	895	25	921	10	969	25	1,170
11	1,300	25	1,670	11	1,060	26	1,160	11	903	26	997	11	975	26	1,200
12	1,350	26	1,670	12	1,060	27	1,140	12	903	27	1,000	12	927	27	1,180
13	1,630	27	1,600	13	1,070	28	1,140	13	972	28	1,030	13	1,080	28	1,220
14	1,630	28	1,530	14	1,100	29	1,120	14	953	29	1,030	14	1,100	29	1,180
15	1,630	March		15	1,090	30	1,130	15	820	30	1,000	15	1,110	30	1,180
16	1,700	1	1,490	16	1,090	31	1,110	16	821	31	1,020	16	1,110	December	
17	1,730	2	1,570	17	1,090	June		17	841	September		17	1,120	1	1,200
18	1,720	3	1,640	18	1,050	1	1,120	18	951	1	992	18	1,110	2	1,200
19	1,700	4	1,970	19	1,050	2	1,120	19	872	2	1,000	19	1,020	3	1,210
20	1,680	5	1,980	20	1,060	3	1,110	20	890	3	1,020	20	982	4	1,270
21	1,680	6	1,810	21	1,080	4	1,110	21	927	4	1,060	21	980	5	1,240
22	1,490	7	1,830	22	1,080	5	1,150	22	939	5	1,050	22	1,010	6	1,270
23	1,510	8	1,830	23	1,080	6	1,170	23	950	6	1,050	23	998	7	1,280
24	1,550	9	1,820	24	1,080	7	1,180	24	980	7	1,040	24	1,130	8	1,280
25	1,620	10	1,940	25	1,100	8	1,170	25	1,010	8	1,040	25	1,140	9	1,320
26	1,680	11	2,010	26	1,150	9	1,160	26	1,030	9	1,070	26	1,140	10	1,320
27	1,740	12	2,010	27	1,160	10	1,120	27	1,040	10	1,070	27	1,170	11	1,370
28	1,960	13	2,560	28	1,160	11	1,130	28	1,050	11	1,100	28	1,220	12	1,350
29	1,970	14	2,860	29	1,190	12	1,160	29	1,010	12	1,110	29	1,250	13	1,260
30	2,120	15	3,000	30	1,110	13	1,120	30	1,040	13	1,090	30	1,130	14	1,220
31	2,320	16	2,770	May		14	1,140	31	999	14	1,040	31	1,300	15	1,180
February		17	2,090	1	1,110	15	1,540	August		15	1,060	November		16	1,100
1	2,550	18	1,930	2	1,100	16	1,180	1	1,050	16	901	1	1,370	17	1,110
2	2,530	19	1,820	3	1,110	17	1,140	2	1,030	17	902	2	1,330	18	1,240
3	2,370	20	1,810	4	1,100	18	1,140	3	1,090	18	848	3	1,340	19	1,320
4	2,240	21	1,830	5	1,110	19	1,700	4	1,080	19	743	4	1,360	20	1,390
5	2,060	22	1,710	6	1,120	20	1,250	5	1,090	20	922	5	1,360	21	1,460
6	1,930	23	1,710	7	1,180	21	1,420	6	1,060	21	822	6	1,350	22	1,390
7	1,660	24	1,640	8	1,180	22	1,240	7	1,110	22	826	7	1,370	23	1,220
8	1,500	25	1,560	9	1,150	23	1,230	8	1,360	23	739	8	1,410	24	1,320
9	1,470	26	1,560	10	1,180	24	1,250	9	940	24	731	9	1,410	25	1,320
10	1,380	27	1,430	11	1,120	25	1,250	10	801	25	752	10	1,410	26	1,320
11	1,370	28	1,460	12	1,110	26	1,940	11	942	26	807	11	1,360	27	1,130
12	1,390	29	1,660	13	1,030	27	1,350	12	939	27	785	12	1,120	28	1,160
13	1,440	30	1,460	14	1,100	28	961	13	991	28	803	13	1,100	29	1,220
14	1,350	31	1,480	15	1,330	29	985	14	1,010	29	986	14	1,310	30	1,260
						30	925	15	981	30	772	15	1,060	31	1,270
												15	1,040		

Sampling by U. S. Section

ELECTRICAL CONDUCTIVITY OF WATER SAMPLES
1973

Rio Grande near San Benito, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		April		May		June		August		September		November	
16	1,480	22	1,410	3	1,500	8	1,220	8	1,130	2	1,100	13	1,110	5	1,340
18	1,620	March		10	1,180	10	1,180	11	1,180	6	1,130	22	893	8	1,360
23	1,680	6	1,670	11	1,100	17	1,120	15	1,240	9	1,170	27	826	9	1,400
30	1,920	8	1,910	17	1,070	18	1,540	19	1,220	13	1,010	October		12	1,230
February		13	2,100	18	1,100	21	1,200	July		17	1,060	1	825	15	1,050
1	2,370	16	2,900	24	1,120	25	1,170	12	931	21	1,060	10	979	19	1,090
6	2,050	20	2,050	27	1,150	29	1,150	24	1,020	30	1,070	15	1,100	23	1,120
8	1,810	23	1,870	May		June		26	1,080	September		26	1,140	December	
13	1,410	27	1,560	1	1,140	4	1,170	30	1,170	5	957	29	1,250	18	1,140
16	1,400	29	1,500	4	1,130	5	1,110							26	1,220

Sampling by U. S. Section

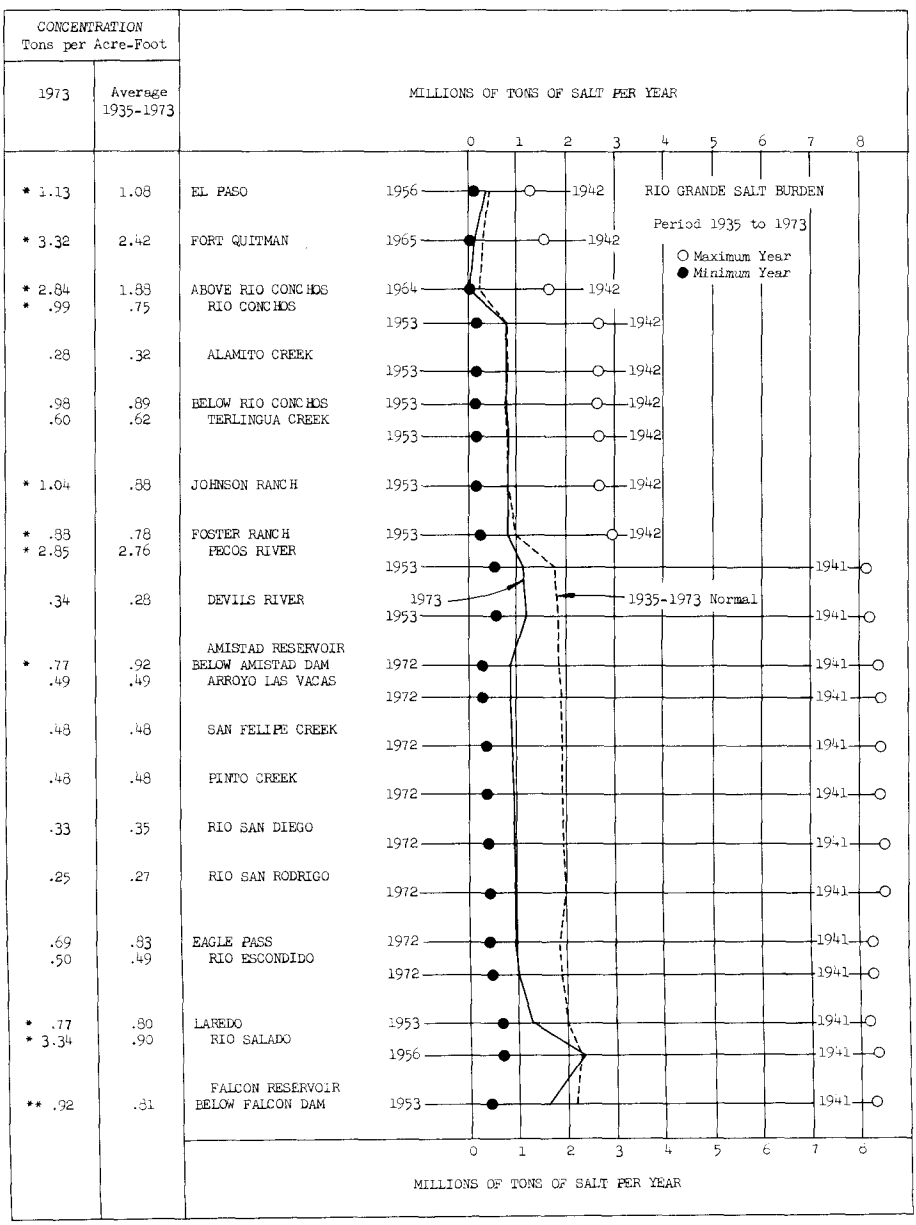
Rio Grande near Brownsville, Texas

Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C	Date	ECx10⁶ @25°C
January		February		March		May		June		August		September		October	
12	1,400	16	1,850	27	2,170	4	1,230	5	1,200	6	1,230	22	989	29	1,210
16	1,480	22	1,490	April		8	1,360	8	1,200	9	1,980	24	768	November	
18	1,460	27	1,700	3	1,800	10	1,450	14	1,220	13	904	25	743	15	1,090
23	1,670	March		11	1,280	14	1,150	15	1,280	17	1,000	26	805	19	1,110
30	1,690	6	1,720	17	1,130	18	1,320	19	1,480	21	1,080	October		23	1,150
February		8	1,710	18	1,120	21	1,400	July		27	906	1	926	26	1,160
1	1,810	13	1,880	24	1,140	25	1,300	12	914	30	1,040	4	887	December	
6	2,420	16	2,590	27	1,160	29	1,510	25	1,050	September		9	1,020	3	1,240
8	2,160	20	2,800	May		June		30	1,260	5	990	15	1,080	6	1,270
13	2,130	23	2,710	1	1,180	4	1,620	August		13	1,090	17	1,120	10	1,300
								2	1,180			26	1,120	18	1,200

Sampling by U. S. Section

RIO GRANDE SALT BURDEN

The term "salt", as used herein, means total dissolved solids. The 1973 concentrations which are marked by an asterisk (*) are based on the chemical analyses shown on preceding pages of this bulletin. Those without asterisks are based on chemical analyses reported in previous water bulletins or have been developed by deduction. Average concentrations shown for the period 1935 to 1973 are the weighted means of the values determined for the 39-year period indicated.



* Based on 1973 chemical analyses of samples collected at stations indicated
** Based on 1973 chemical analyses of samples collected at Falcon Dam - U. S. Tailrace

SANITARY ASPECTS OF WATER QUALITY

The United States and Mexican Sections of the Commission and the Texas State Department of Health cooperate in the joint sanitary water-sampling program along the Rio Grande. All analyses below have been made under the "Rules of Laboratory Procedure," as approved by the participating agencies and which conform with the procedures set out in the manual "Standard Methods for the Examination of Water and Wastewater," Eleventh Edition (1960), prepared jointly by the American Public Health Association, the American Water Works Association and the Water Pollution Control Federation. These analyses were made in the laboratories of the Cameron County Health Unit and the United States Section of the International Boundary and Water Commission.

Rio Grande at Laredo, Texas, Water Plant

Date 1973	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1973	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)	Date 1973	Coliform Organisms per 100 c. c.	Total Bacteria per c. c. (plate count)
Jan. 2	110	35	Mar. 19	360	320	Aug. 13	360	720
8	26	19	26	26	390	Sept. 10	60	485
15	26	6.5	Apr. 2	93	955	Oct. 9	3,600	770
22	26	29.5	9	910	1,910	Nov. 12	210	180
29	60	8.5	16	360	580	Dec. 10	230	320
Feb. 5	60	39	23	52	680			
12	160	130	30	26	625			
20	26	30	May 7	3,600	2,560	Total	12,927	13,527.5
26	26	6	June 11	2,300	2,150	Average	517	541
Mar. 5	110	24	July 9	110	555			

Samples and analyses by U. S. Section

Rio Grande at 8.6 Miles below Laredo, Texas, R. R. Bridge

Feb. 12	110,000	2,500	June 11	2,400,000	230,000	Dec. 10	160,000	75,500
Mar. 19	110,000	65,500	July 16	79,000	82,500			
26	240,000	76,500	Aug. 13	240,000	21,000			
Apr. 9	380,000	315,000	Sept. 10	110,000	21,500			
30	240,000	52,000	Oct. 9	110,000	41,000	Total	4,325,000	1,120,500
May 7	36,000	22,500	Nov. 12	110,000	105,000	Average	332,700	86,200

Samples by Mexican Section and analyses by U. S. Section

Rio Grande below Falcon Dam, Texas, U. S. Tailrace

Jan. 2	0	5	Mar. 5	0	4	Sept. 10	0	775
8	0	2.5	19	0	4	Oct. 9	0	385
15	0	2.5	26	0	20	Nov. 12	2.6	595
22	0	4	Apr. 2	0	4	Dec. 10	2.6	60
29	0	3.5	9	0	25			
Feb. 5	0	4	16	0	17			
12	0	2.5	23	0	5	Total	11.2	2,937.0
20	0	2.5	30	0	15	Average	0.5	134
26	0	1.5	June 11	6	1,000			

Samples and analyses by U. S. Section

Rio Grande at Mercedes, Texas, Pumps

Jan. 8	1,300		May 7	3,300		Sept. 10	110	
Feb. 12	7,900		June 11	1,300		Total	21,700	
Mar. 12	700		July 9	790		Average	2,410	
Apr. 9	4,600		Aug. 13	1,700				

Samples by U. S. Section and analyses by Cameron County Health Unit

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Tabulated below, in approximate downstream order, are monthly records of United States rainfall stations located in Texas with averages for their periods of record. For location, elevation, period of record, type of gage in use, watershed subdivision in which the station is located, and the observer, see alphabetical listing of these stations shown on pages 137 through 140 in this bulletin. These rainfall records have not been published elsewhere. Records of daily rainfall amounts, where available, are on file in the office of the United States Section of the Commission. Daily records for years prior to 1953 may also be found in corresponding water bulletins.

Detailed listings of the months and years for which records are available through 1970 may be found under "Index to Precipitation Records" in Water Bulletins 10, 14, 26, and Supplement 40 A.

	American Dam		Island Station		County Line Station		Fort Hancock Bridge		Guayuco Arroyo	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.08	0.38	1.37	0.32		0.31	1.21	0.36	0.98	0.31
Feb.	1.78	.37	1.44	.30		.22	1.57	.32	1.23	.24
Mar.	.74	.34	.30	.24	0.40	.26	.74	.25	0	.17
Apr.	T	.20	0	.15	0	.19	0	.24	0	.18
May	.25	.21	.08	.29		.35	.36	.50	.38	.39
June	.02	.60	.27	.54	.01	.58	.15	.87	0	.61
July	4.32	1.52	2.88	1.14		1.20	4.60	1.36	3.55	1.51
Aug.	.53	1.34	.14	1.16		1.32	.56	1.72		1.84
Sept.	.02	.98	0	.78		.94	.27	1.08	.20	1.06
Oct.	.04	.62	.11	.70		.90	.67	.99	1.15	1.07
Nov.	T	.25	0	.25		.28	T	.29	0	.21
Dec.	0	.40	0	.37		.34	0	.41	0	.34
Yearly	8.78	7.21	6.59	6.24		6.89	10.13	8.39		7.93

	Fort Quitman		Neely Ranch		Moody Bennett Ranch		La Nutria Station		Bill Shannon Ranch	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.93	0.38	0.92	0.32	0.64	0.35	0.10	0.02	0.75	0.47
Feb.	1.35	.27		.20	1.93	.42	1.50	.38	1.20	.42
Mar.	.24	.23	.20	.19	1.07	.21	.15	.26	.15	.44
Apr.	0	.22	0	.12	0	.12	0	.03	0	.15
May	.52	.41	1.32	.36	.85	.74	.70	.24	.50	.80
June	.04	.85	0	.82	0	.87	0	.93	.50	1.55
July	1.76	1.52	3.43	1.76	2.82	1.73	2.20	1.20	3.75	2.39
Aug.	.71	1.75	.74	1.85	1.33	1.88	1.60	2.64	2.75	2.36
Sept.	0	.96	.57	1.30	.18	1.23	0	.90	0	1.76
Oct.	0	.84	1.02	1.03	.90	.96	.35	1.25	0	1.04
Nov.	0	.28	0	.23	0	.36	0	.37	0	.30
Dec.	0	.37	0	.39	0	.20	0	.07	0	.42
Yearly	5.55	8.08		8.57	9.72	9.07	6.60	8.29	9.60	12.10

	Adobes Ranch		Shafter		Livingston Ranch		Presidio (IB&WC Gage)		Quebec Ranch	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.47	0.33	0.50	0.10	0	0.42	0.15	0.27	0	0.46
Feb.	1.45	.27	1.00	.54	1.40	.37	.70	.23	2.50	.36
Mar.	.03	.20	0	.36	0	.18	T	.16	.80	.32
Apr.	0	.13	0	0	0	.45	T	.17	0	.23
May	1.75	.72	1.80	.63	1.26	.40	1.00	.48	0	.87
June	.10	1.39	5.05	3.51	0	1.82	.15	1.26	.60	1.75
July	2.91	2.09	.25	4.48	3.70	1.96	3.70	1.38	6.20	2.58
Aug.	1.90	1.77	2.00	3.48	0	1.66	.25	1.03	1.80	2.43
Sept.	.75	1.94	.70	2.49	2.25	1.73	.70	1.16	1.40	2.03
Oct.	0	.65	0	1.67	0	.90	.30	.65	.75	.88
Nov.	0	.25	0	.70	0	.35	0	.27	0	.30
Dec.	0	.24	0	0	0	.22	0	.20	0	.28
Yearly	9.36	9.98	11.30	17.96	8.61	10.46	6.95	7.31	14.05	12.49

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

	Bloys Camp		Kerr Mitchell Ranch		Loma Vista Ranch		H. T. Fletcher Ranch		H. M. Greenwood (Cienega Ranch)	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.29	0.69	0.37	0.48	0.91	0.66	0.75	0.77	0.60	0.60
Feb.	2.50	.70	.88	.38	.85	.33	1.20	.35	1.50	.36
Mar.	.90	.57	.16	.22	.20	.19	.25	.39	.20	.32
Apr.	.19	.43	0	.41	.10	.48	.10	.42	.30	.49
May	.94	1.48	.72	1.15	1.05	1.02	.95	1.12	1.00	.82
June	.78	2.61	1.17	1.84	.50	1.88	.40	1.61	1.20	2.17
July	4.23	3.49	4.87	2.00	.50	2.03	3.15	2.86	5.30	2.45
Aug.	4.36	4.02	2.92	2.17	1.40	2.02	3.00	2.89	1.05	2.23
Sept.	1.48	2.66	1.75	1.74	1.70	1.70	1.95	2.06	.40	2.69
Oct.	.20	1.53	.36	1.28	.40	1.09	.80	1.48	0	1.42
Nov.	0	.61	0	.33	0	.24	0	.47	0	.47
Dec.	0	.56	0	.34	0	.38	0	.37	0	.54
Yearly	16.87	19.35	13.20	12.34	7.61	12.02	12.55	14.79	11.55	14.56

	Redford		Lajitas, Texas		02 Ranch		Earl Hammond Ranch		Maverick Ranger Station	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.25	0.31		0.12	0.58	0.49	0.57	0.20	0.13	0.37
Feb.	.90	.25	0	.50	.70	.39	1.32	.51	1.44	.36
Mar.	T	.22	0	.34	0	.32	0	.39	T	.11
Apr.	0	.26	0	.53	0	.37	0	.38		.16
May	1.00	.51	0	.62	1.20	1.04	1.32	.63		.80
June	.20	.89	1.20	1.55	2.23	1.46	.25	1.52		1.60
July	2.50	1.22	.80	.98	5.15	2.01	2.92	2.12	1.64	1.59
Aug.	.30	1.08	.94	1.59	0	2.24	1.30	2.21	1.25	1.70
Sept.	1.05	1.63	1.35	2.38	1.15	1.78	1.95	1.93	1.12	1.63
Oct.	.20	.79	0	.77	0	1.39	.43	1.49	0	1.07
Nov.	0	.32	0	.09	0	.59	0	.32	0	.24
Dec.	0	.16	0	.10	0	.35	0	.34	0	.26
Yearly	6.40	7.64	4.29	9.57	11.01	12.43	10.06	12.04		9.89

	Terlingua Creek Station		Castolon, Texas		Johnson Ranch		Ray Willoughby Ranch		J. F. Woodward Ranch	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.05	0.23	0.06	0.22	T	0.34	0	0.51	0.24	0.48
Feb.	1.40	.25	1.63	.39	1.50	.25	1.20	.52	1.17	.44
Mar.	T	.15	0	.34	T	.20	.15	.24	0	.20
Apr.	0	.33	0	.32	0	.38	0	.40	0	.42
May	.30	.62	0	.84	.20	1.03	1.50	1.53	.95	1.08
June	.30	1.04	.40	1.42	.30	1.05	.50	1.99	.64	1.90
July	2.10	1.03	3.84	1.72	3.30	1.10	4.40	3.03	2.77	2.11
Aug.	2.00	1.04	2.94	1.86	.80	.88	1.60	2.12	2.23	2.88
Sept.	.85	1.22	2.63	1.86	T	1.32	.80	2.30	.66	1.86
Oct.	T	.68	0	.86	T	.68	.40	1.04	0	1.05
Nov.	0	.17	0	.16	0	.20	0	.50	0	.52
Dec.	0	.21	0	.20	0	.28	0	.40	0	.21
Yearly	7.00	6.97	11.50	10.19	6.10	7.72	10.55	14.58	8.66	13.15

	Yarborough Ranch		Kokernot Ranch Headquarters		Buttrill Ranch		A. M. Potter Ranch		Black Gap Game Refuge	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.20	0.19	0.53	0.48	0	0.50	0.75	0.34	0.41	0.45
Feb.	2.20	.58	1.02	.33	.91	.19	1.15	.54	1.63	.54
Mar.	0	.33	T	.17	0	.16	.05	.21	0	.29
Apr.	.10	.26	0	.50	.22	.48	0	.21	0	.36
May	1.47	.87	1.38	.79	.75	1.10	1.11	1.05	.78	1.38
June	.43	1.74	.58	1.36	0	1.46	.15	1.17	.15	1.33
July	5.26	3.08	4.93	1.83	1.70	1.58	2.10	1.23	4.05	1.70
Aug.	0	3.11	1.35	1.48	4.57	1.40	1.93	1.52	2.59	1.32
Sept.	1.38	2.26	2.07	1.38	1.87	1.66	.84	1.57	3.99	1.89
Oct.	0	1.18	.48	1.06	0	.94	.45	.50	0	1.09
Nov.	0	.74	0	.28	0	.26	0	.39	0	.30
Dec.	0	.23	0	.31	0	.20	0	.42	0	.28
Yearly	11.04	14.57	12.34	9.97	10.02	9.93	8.54	9.15	13.60	10.93

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Stillwell Crossing		Persimmon Gap Ranger Station		Sheep Pasture		Mouth of Maravillas Creek		Heath Crossing	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.21	0.35	1.14	0.54	0.41	0.25	0.09	0.16	0.00	0.29
Feb.	1.70	.48	1.78	.54	1.71	.62	1.28	.17	1.48	.64
Mar.	0	.35	T	.39	0	.50	0	.31	0	.31
Apr.	.19	.21	.03	.44	0	.20	0	.41	0	.18
May	.61	.36	.49	.97	.36	1.14	.36	.84	.53	.83
June	0	1.13	1.11	1.22	.30	1.67	.50	1.71	.09	1.53
July	2.79	1.87	3.54	1.48	5.50	1.85	3.00	1.35	3.84	1.32
Aug.	1.22	1.20	1.97	.94	2.05	1.46	.85	1.78	.98	1.36
Sept.	2.85	2.34		1.22	3.22	2.63	1.00	1.02	1.57	2.48
Oct.	0	.94	0	1.10	0	1.58	0	1.09	0	.88
Nov.	0	.26	0	.24	0	.50	0	.38	0	.26
Dec.	0	.29	0	.28	0	.23	0	.10	0	.23
Yearly	9.57	10.28	10.06	9.36	13.55	12.63	7.08	9.32	8.48	10.31

Month	Dove Mountain Ranch		Steve Stumberg Ranch		McGonagill Ranch Headquarters		McGonagill Ranch East Mill		E. W. Hardgrave Ranch	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.41	0.48	0	0.54	0	0.36	0	0.36	0.36	0.52
Feb.	1.29	.42	.84	.43	1.30	.61	1.30	.28	1.24	.70
Mar.	0	.28	.89	.42	0	.39	0	.42	.21	.37
Apr.	0	.40	.18	.63	0	.44	.40	.59	.39	1.26
May	0	1.05	.32	1.38	.60	1.14	.60	1.21	.78	1.36
June		1.22	0	1.80	0	1.97	0	1.89	.34	1.55
July	2.84	1.91	5.77	2.02	.40	2.17	2.70	1.38	2.35	1.17
Aug.	.30	1.24	.60	1.56	.20	1.47	0	1.52	1.31	1.58
Sept.	4.55	1.29	1.22	2.20	.70	2.04	1.40	2.06	1.68	2.50
Oct.	0	1.42	.21	1.56	0	1.02	0	1.10	1.07	1.65
Nov.	0	.28	0	.38	0	.24	0	.19	0	.52
Dec.	0	.35	0	.48	0	.14	0	.20	0	.35
Yearly	9.39	10.34	10.03	13.40	6.80	11.99	6.40	11.20	9.73	13.53

Month	Lewis James Ranch		Dryden		Ross Foster Ranch		W. A. Arledge Ranch		Hoffman Ranch	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.33	0.39	0.62	0.53	0.25	0.43	0.50	0.68	0.49	0.39
Feb.	1.50	.75	1.31	.54	.80	.57	2.03	.54	.96	.45
Mar.	.33	.40	.30	.42	.20	.28	.25	.47	0	.36
Apr.	0	.78	.73	.88	.75	.79	1.23	1.23	.30	.30
May	.35	1.38	0	1.67	.15	1.46	0	1.79	.62	1.13
June	0	.89	.87	1.11	.35	1.19	1.49	1.69	.15	1.82
July	1.66	1.60	3.02	1.07	1.10	.65	1.64	1.18	6.38	2.22
Aug.	0	2.28	.33	1.27	0	1.27	.43	1.31	1.66	2.36
Sept.	2.64	3.36	1.30	1.82	1.63	2.08	1.74	2.00	3.27	2.04
Oct.	1.52	1.50	2.00	1.25	1.08	1.06	2.00	1.53	.17	1.18
Nov.	0	.54	0	.40	0	.23	0	.46	0	.42
Dec.	0	.28	0	.43	0	.22	0	.49	0	.32
Yearly	8.43	14.15	10.48	11.39	6.31	10.23	11.31	13.37	14.00	12.99

Month	Owens Ranch		Todd Field		Terrell Plant (E. P. N. G. Co.)		* Latham Ranch		Prosser Ranch No. 3	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.65	0.31	1.13	0.44	0.67	0.36	0	0.51	0.50	0.39
Feb.		.65	.94	.88	1.55	.75	1.50	1.09	1.85	.96
Mar.		1.05	.53	1.14	.17	.63	.90	.64	1.55	.63
Apr.		1.56	1.07	1.96	.65	1.76	1.60	2.08	.90	1.15
May		1.80	.88	1.57	.68	1.51	1.50	3.33	.70	1.96
June		1.61	1.87	2.51		1.57	2.40	2.29	1.15	1.32
July		.50	4.86	1.22	.53	.76	5.00	2.72	2.80	1.28
Aug.		2.11	0	1.68	0	1.21	0	3.59	.80	2.48
Sept.		2.95	4.08	3.22	3.16	2.45	2.30	3.92	2.20	3.11
Oct.		2.27	2.12	1.49		1.40	2.40	1.77	4.15	1.92
Nov.		1.08	.02	.55		.68	0	.92	.10	.53
Dec.		.53	0	.25		.37	0	.79	0	.16
Yearly		16.42	17.50	16.91		13.45	17.80	23.65	16.80	15.89

T Trace

* Formerly Oberkamf Ranch

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

	Ranchita (Continental)		Pecos River Near Langtry Station		Dead Mans Canyon Near Comstock		Prosser Ranch No. 1		Continental Ranch	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.70	0.32	0.27	0.26	0.36	0.33	0.40	0.32	0.70	0.61
Feb.	1.80	.90	1.55	.88	1.55	.75	1.63	.80	1.80	.99
Mar.	1.15	.77	.45	.48	1.10	.54	1.50	.52	1.20	.69
Apr.	.65	.92	0	.79	1.50	1.12	.90	1.38	.60	1.34
May	.50	1.69	.10	1.23	1.30	1.94	1.50	2.04	.74	2.43
June	.89	2.35	.55	1.83	.60	2.00	1.40	1.64	1.40	2.05
July	.82	1.09	1.37	1.96	4.80	2.49	1.00	2.13	2.15	2.65
Aug.	0	4.44	.09	2.35	0	2.69	.20	2.93	0	3.18
Sept.	2.90	2.38	3.38	2.88	1.35	2.30	2.20	2.64	2.10	2.96
Oct.	3.50	2.38	.85	1.35	5.40	2.29	3.60	1.93	5.90	2.52
Nov.	0	.84	0	.56	0	.55	.05	.57	0	.69
Dec.	0	.27	0	.20	0	.29	0	.25	0	.34
Yearly	12.91	18.35	8.61	14.77	17.96	17.29	14.38	17.15	16.59	20.45

	Martin King Ranch		Brotherton Ranch		Walker Ranch		P. W. Kelly Ranch		Comstock	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.35	0.56	0.42	0.32	0.55	0.28	0.58	0.48	0.71	0.62
Feb.	1.38	.79	2.27	.97	1.60	.88	1.17	.88	1.32	.85
Mar.	.92	.29	2.60	.52	1.39	.65	1.84	.83	1.52	.60
Apr.	1.29	.85	.93	.91	1.50	.82	1.10	1.08	.64	1.30
May	.30	1.53	.36	1.39	1.40	2.01	1.65	2.23	.57	1.90
June	1.28	1.68	1.72	2.10	1.24	2.39	2.67	2.43	1.89	2.26
July	2.17	1.22	2.31	1.19	1.00	1.38	.82	1.57	2.03	1.07
Aug.	1.60	1.57	1.03	2.34	.20	1.64	2.99	2.70	1.06	1.98
Sept.	3.51	2.68	3.02	2.66	2.00	2.32	2.93	2.50	2.18	2.15
Oct.	6.59	2.31	4.68	2.01	4.15	2.20	4.62	2.29	2.98	1.85
Nov.	0	.48	0	.48	.10	.61		.54	.04	.55
Dec.	0	.40	0	.19	T	.21		.28	0	.65
Yearly	19.39	14.36	19.34	15.58	15.13	15.39		17.81	14.94	15.78

	Cow Creek Near Comstock		Goodenough * Spring Raft		Amistad Reservoir Near Comstock		Feely		Lock Store	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.60	0.38	0.47	0.35	0.45	0.23	0.40	0.51	1.53	0.60
Feb.	1.30	.69	1.15	.62	1.60	.62	2.00	.92	2.31	1.04
Mar.	.85	.49	.50	.29	.78	.73	.30	.58	.91	.67
Apr.	1.30	1.09	.65	1.25	.30	.45	.40	1.22	2.29	1.92
May	.40	1.04	.30	1.04	.20	1.12	.60	1.84	.72	1.86
June	2.00	1.81	1.80	1.99	3.00	2.19	3.90	2.54	1.22	1.38
July	.65	.87	1.25	.77	1.50	1.34	1.00	.31	3.06	1.58
Aug.	.15	2.88	.40	1.73	.10	3.53	.06	2.47	.07	2.68
Sept.	1.80	2.35	1.30	2.97	4.40	3.46	1.54	2.52	4.57	3.69
Oct.	3.40	1.60	5.80	2.08	6.20	1.79	3.95	2.19	3.17	1.69
Nov.	0	.45	0	.38	0	.09	0	.33	.13	.63
Dec.	0	.22	0	.33	0	.01	0	.30	0	.21
Yearly	12.45	13.87	13.62	13.80	18.53	15.56	14.15	16.23	19.98	17.95

	W. E. Sawyer Ranch		Whitehead Brothers Ranch		Prosser Ranch No. 2		Bakers Crossing		Allen Dunbar Ranch	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.31	0.50	0.84	0.41	0.60	0.40	0.69	0.85	0.80	0.73
Feb.		1.04	1.80	1.01	1.60	1.02	1.95	1.06	1.15	1.29
Mar.	1.01	.99	1.90	.84	1.90	.79	1.57	.78	2.60	.91
Apr.	1.25	1.99	2.30	1.22	.98	1.17	2.57	1.09	1.15	2.21
May	.95	1.84	.80	2.59	3.20	1.86	1.93	2.33	2.05	2.67
June	1.46	1.28	1.70	1.72	1.10	1.56	2.65	2.10	1.90	3.30
July	2.67	1.89	0	1.22	2.20	2.07	1.09	1.46	3.70	1.81
Aug.	0	3.20	0	2.55	.30	2.97	.89	2.17	0	2.54
Sept.	3.41	2.95	2.30	2.65	2.45	3.11	2.07	3.04	5.80	3.66
Oct.	3.40	2.39	3.30	3.18	3.50	1.96	4.08	1.77	5.30	3.22
Nov.	0	.79	.10	.75	.10	.55	0	.58	0	.70
Dec.		.54	0	.26	0	.23	0	.62	0	.62
Yearly		19.30	15.04	18.40	17.93	17.69	19.49	17.85	24.45	23.66

T Trace * Formerly Goodenough Spring

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Erekson Ranch		Vinegarone		Dolan Springs		H. K. Fawcett Ranch		Hinds "AT" Ranch	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.77	0.96	0.75	0.33	0.72	0.37	1.48	0.76	0.89	0.59
Feb.	2.30	1.31	2.20	1.15	2.65	1.09	1.32	.84	1.46	.99
Mar.	2.55	.85	2.10	.93	1.50	.91	1.65	.85	1.09	.64
Apr.	1.05	2.04	1.00	1.19	1.85	1.62	1.08	1.66	.76	1.22
May	2.35	2.51	1.13	2.28	T	1.81	.60	2.34	1.75	1.91
June	2.39	3.15	2.00	1.75	2.10	1.91	1.90	1.63	2.44	2.33
July	3.09	1.73	1.50	1.55	1.50	1.49	2.20	1.05	2.29	1.35
Aug.	0	2.02	.45	3.69	.45	3.94	1.00	2.66	1.72	2.16
Sept.	5.38	3.26	3.00	2.63	2.30	2.81	2.50	3.46	1.94	2.34
Oct.	5.68	2.70	4.55	3.22	4.10	2.68	6.00	2.58	3.43	2.43
Nov.	0	.87	.15	.81	.10	.67	0	.58	0	.60
Dec.	0	.41	0	.25	0	.26	0	.38	0	.48
Yearly	26.56	21.81	18.83	19.78	17.27	19.56	19.73	18.79	17.77	17.54

Month	H. T. Miers Ranch Headquarters		H. T. Miers Ranch No. 2		A. A. Baker Ranch		Harlow Ranch		Gillis Ranch	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.38	0.63	0.57	0.49	0.77	0.40	1.11	0.35		0.44
Feb.	2.05	1.31	1.72	1.06	1.57	.86	1.54	.68	1.52	.99
Mar.	2.23	.82	2.42	.95	.88	.54	.65	.35	1.17	.81
Apr.	.59	1.56	.11	1.37	.66	1.13	1.00	1.10		1.40
May	1.10	2.47	.97	2.16	.87	1.83	1.30	2.13		2.17
June	1.94	3.18	1.09	2.51	2.39	1.96	1.90	2.53		1.84
July	1.08	1.27	1.50	1.12	2.32	1.28	1.31	1.17		.99
Aug.	.25	2.52	.05	3.41	.53	2.37	.50	2.85		2.35
Sept.	1.50	2.78	2.83	3.14	1.96	2.85	1.80	2.41		2.74
Oct.	4.20	3.14	4.84	2.27	2.76	1.74	4.20	2.61		2.40
Nov.	.05	.77	0	.73	.02	.56	0	.56		.96
Dec.	0	.51	0	.43	0	.31	0	.10		.53
Yearly	15.37	20.96	16.10	19.64	14.71	15.83	15.31	16.84		17.62

Month	Goldwire Ranch		Pafford Crossing		Big Satan Creek Station		Cliff Lowry Ranch		Lowry Ranch No. 2	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.40	0.33	0.35	0.43	0.75	0.36	0.66	0.45	0.45	0.37
Feb.	1.73	1.02	2.17	.96	2.30	1.01	1.92	1.30	1.53	1.07
Mar.	1.82	.79	2.00	.48	3.16	1.15	2.21	.69	1.98	.86
Apr.	.82	.82	.74	1.08	1.78	1.15	.63	1.66	.72	1.62
May	1.27	2.17	1.72	1.75	.26	1.58	1.02	2.35	1.15	2.09
June	1.82	2.83	1.57	2.35	1.48	2.17	3.44	2.39	2.14	2.22
July	1.35	1.99	1.18	1.16	1.60	1.15	1.32	.78	1.56	.84
Aug.	.52	6.30	.40	2.45	.40	5.73	.27	2.94	.08	3.62
Sept.	2.65	2.33	1.85	2.99	1.80	2.34	1.99	3.66	1.24	2.73
Oct.	3.30	2.76	3.05	2.15	4.10	2.91	4.17	2.33	5.09	2.06
Nov.	.05	.76	.05	.50	0	.71	0	.75	0	.79
Dec.	0	.18	0	.38	0	.22	0	.39	0	.37
Yearly	15.73	22.28	15.08	16.68	17.63	20.48	17.63	19.69	15.94	18.64

Month	Tuffy Whitehead Ranch		Stewart Ranch		Rough Canyon Near Del Rio		Devils Lake		Sellers Ranch	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.52	0.34	0.63	0.45	0.40	0.33	0.56	0.65	0.57	0.42
Feb.	1.63	.86	1.58	1.01	1.85	1.24	1.71	.91	2.00	.84
Mar.	1.06	.62	1.75	.54	1.65	.59	1.43	.59	1.60	.51
Apr.	.86	1.14	.18	1.45	.30	.90	.48	1.61	.45	1.37
May	1.68	1.62	.55	1.54	.60	1.64	1.20	1.81	.60	1.36
June	2.28	2.09	3.49	2.57	2.60	2.39	2.09	2.38	2.85	2.55
July	.93	.81	1.74	1.15	1.65	1.14	1.85	.36	1.90	.30
Aug.	.38	1.92	1.97	2.27	.12	4.20	.46	1.96	.65	2.43
Sept.	1.87	3.02	1.40	2.95	.80	2.47	1.37	2.26	1.51	2.30
Oct.	3.87	1.88	3.34	2.24	5.60	2.83	3.95	1.92	3.03	1.93
Nov.	.02	.55	0	.71	0	.86	0	.64	0	.53
Dec.	0	.34	0	.43	0	.25	0	.69	0	.38
Yearly	15.10	15.19	16.63	17.31	15.57	18.84	15.10	16.28	15.16	15.47

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

	Evans Creek Near Comstock		J. G. Brite Ranch		Hutto Ranch No. 1		Hutto Ranch No. 2		Middle Fork San Pedro	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.32	0.23	0.49	0.39	0.58	0.54	0.74	0.53	0.80	0.50
Feb.	2.00	.95	1.67	1.05	1.34	1.14	1.60	1.16	1.90	.94
Mar.	.90	.74	1.79	.71	.93	.61	1.35	.59	1.65	.70
Apr.	.45	.95	.77	1.72	.12	1.97	.41	2.31	.20	1.29
May	.50	.74	1.28	2.08	.47	1.53	.46	1.55	.25	2.16
June	3.40	2.52	3.09	2.08	3.32	2.46	3.24	2.39	3.15	2.81
July	4.90	1.34	2.27	.86	2.25	.92	1.31	.85	1.80	1.13
Aug.	1.50	5.31	1.25	3.04	.26	2.89	.38	2.85	.21	4.14
Sept.	1.70	3.76	1.55	3.39	1.80	3.40	1.84	4.33	1.82	1.44
Oct.	4.43	2.57	3.53	2.24	5.30	2.42	5.79	2.18	5.03	3.86
Nov.	0	.71	0	.67	0	.79	0	.90	0	.84
Dec.	0	.22	0	.37	0	.39	0	.33	0	.29
Yearly	20.10	20.04	17.69	18.60	16.37	19.06	17.12	19.97	16.81	20.10

	North Fork San Pedro		Long Ranch		Buoy No. 11		Amistad Raft		Amistad Dam	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.70	0.46	0.65	0.66	0.52	0.31	0.67	0.39	0.57	0.48
Feb.	1.70	.91	1.44	.76	1.20	.64	1.40	.67	1.40	.94
Mar.	1.70	.75	1.40	1.02	.50	.58	1.50	.60	1.57	.69
Apr.	.15	1.04	.39	1.65	.50	.56	.65	1.36	.52	1.96
May	.40	1.61	.26	1.13	.70	1.50	.30	1.74	1.09	1.94
June	4.10	2.82	4.56	3.04	3.40	2.93	3.55	2.78	4.88	2.08
July	3.55	1.32	2.46	1.68	3.76	1.30	3.53	1.24	4.19	.99
Aug.	.66	4.06	.45	3.95	.44	3.82	.32	5.82	.32	2.87
Sept.	1.31	2.38	1.72	1.61	1.25	2.98	1.50	2.96	1.74	4.27
Oct.	3.80	3.43	5.19	2.47	7.35	2.82	5.20	3.23	5.41	1.83
Nov.	0	.91	0	.38	0	0	0	.63	.04	.60
Dec.	0	.29	0	.14	0	.08	0	.21	0	.41
Yearly	18.07	19.98	18.52	18.49	19.62	17.52	18.62	21.63	21.73	19.06

	Laughlin Air Force Base		Gillis Head-Quarters Ranch		Lewis Ranch		Maverick County Canal Headgate		Sultenfuss Ranch	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.72	0.53	0.90	0.63	0.76	0.61	0.88	0.56	1.10	0.78
Feb.	1.52	1.01	1.15	1.21	1.68	1.12	1.90	1.08	3.40	1.69
Mar.	.77	.45	1.10	.71	1.87	.73	.61	.60	1.55	.87
Apr.	.52	2.00	.24	1.86	.22	2.20	.62	1.65	.80	2.72
May	.52	1.58	.42	2.40	.71	2.00	1.00	2.06	1.40	2.20
June	3.39	2.93	4.19	3.27	3.31	2.66	2.30	2.27	4.60	3.18
July	4.43	1.63	2.09	1.33	1.82	.56	3.50	1.45	3.50	.63
Aug.	.33	2.35	1.24	4.99	.45	2.93	.50	1.72	.90	4.55
Sept.	3.26	3.14	1.84	2.08	1.88	4.25	2.90	3.02	3.90	4.29
Oct.	6.13	2.75	5.61	3.46	9.35	3.27	5.20	2.06	13.05	3.73
Nov.	.01	.81	0	1.05	0	.83	0	.69	0	1.09
Dec.	T	.48	0	.29	0	.49	0	.49	0	.64
Yearly	21.60	19.66	18.78	23.28	22.05	21.65	19.41	17.65	34.20	26.37

	Pinto Creek Station		Las Moras Creek		Wipff Ranch		Lateral No. 2 Spill		Normandy	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.40	0.53	1.51	0.77	1.60	0.76	1.51	0.68	1.70	0.81
Feb.	2.05	.92	2.35	1.19	2.20	.98	1.90	.85	2.38	.86
Mar.	.50	.51	.70	.63	.45	.59	.60	.63	.30	.77
Apr.	.90	1.33	2.09	1.36	3.40	1.52	.60	1.41	3.26	1.66
May		1.70	.65	2.04	0	1.88	.40	2.36	1.20	2.34
June	2.68	2.82	2.03	2.86	2.70	2.36	5.65	2.55	2.47	2.16
July	1.58	1.05	2.00	1.14	2.00	1.32	3.70	1.70	3.82	1.94
Aug.	.10	2.12	.43	2.39	1.00	2.32	1.45	2.59	1.42	2.65
Sept.	2.10	3.35	3.47	3.97	3.30	3.25	3.40	3.45	2.99	3.52
Oct.	2.90	2.08	4.06	2.70	5.60	2.31	5.55	2.34	6.53	2.48
Nov.	T	.79	.05	1.05	T	1.01	T	.89	.12	.98
Dec.	0	.46	0	.56	0	.49	0	.44	0	.71
Yearly		17.66	19.34	20.66	22.25	18.79	24.76	19.89	26.19	20.78

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Lateral No. 12 Headgate		Lateral No. 15 Spill		Maverick Power Plant		Cooper Ranch		Coal Mine	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.34	0.67	1.09	0.68	1.03	0.74	1.60	0.52	1.90	0.82
Feb.	2.00	.70	1.95	.75	2.51	.86	2.35	.82	2.10	.94
Mar.	.35	.54	.50	.51	.33	.79	.50	.52	.18	.57
Apr.	.75	1.44	1.75	1.32	1.44	1.65	1.50	1.39	1.16	1.53
May	.50	2.30	.60	2.30	.20	2.68	.25	2.15	2.14	2.69
June	2.70	2.00	1.90	1.97	3.79	2.32	4.15	2.16	2.60	1.26
July	3.30	1.41	3.90	1.61	4.06	1.45	5.80	1.96	4.67	2.36
Aug.	.75	2.11	1.45	2.10	1.79	2.14	1.20	2.20	1.40	2.06
Sept.	3.70	3.38	3.30	2.69	3.65	2.87	5.50	3.30	4.68	3.75
Oct.	7.00	2.68	6.80	2.66	4.76	2.50	7.10	2.53	7.24	2.62
Nov.	T	.69	.05	.60	.08	.68	T	.72	.03	.62
Dec.	0	.48	0	.49	0	.54	0	.47	0	.39
Yearly	22.39	18.40	23.29	17.68	23.64	19.22	29.95	19.24	28.15	19.41

Month	Elm Creek Station		Chittim Ranch		Eagle Pass		Canon Diablo		Rosita Creek Siphon	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.70	0.54	1.40	0.56	1.27	0.72	1.23	0.62	1.55	0.48
Feb.	2.10	.77	2.65	.93	2.85	1.17	2.20	.96	2.90	.90
Mar.	.25	.48	.10	.56	.25	.83	.13	.77	.10	.53
Apr.	.62	1.46	.45	1.58	.86	1.37	.35	1.84	.30	1.53
May	0	2.82	T	2.87	.41	3.46	0	4.14	.10	2.75
June	3.40	1.84	3.40	1.79	3.50	2.75	2.70	2.43	3.30	2.03
July	4.60	1.89	4.65	1.90	5.61	1.50	4.20	.92	4.00	1.78
Aug.	3.60	2.72	4.10	2.66	3.96	3.78	2.00	3.14	1.00	2.04
Sept.	3.40	3.07	4.05	3.24	3.48	4.11	5.95	4.10	5.10	3.26
Oct.	9.35	2.81	9.00	2.97	9.53	2.70	8.20	2.60	7.45	2.59
Nov.	.15	.52	.10	.56	.12	.59	.10	.68	T	.70
Dec.	0	.48	0	.52	0	.71	0	.52	0	.57
Yearly	29.17	19.40	29.90	20.19	31.84	23.69	27.06	22.72	25.80	19.16

Month	Weyrich Farm		Trees Farm		Rosita Creek Station		Farias Ranch		Indio Ranch	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.20	0.50	1.45	0.53	1.25	0.47	1.50	0.60	1.32	0.61
Feb.	2.70	1.00	3.16	.98	2.60	.83	3.84	1.26	3.30	1.01
Mar.	0	.55	.20	.48	.15	.55	.26	.54	.23	.55
Apr.	0	1.78	.34	1.70	.40	1.52	.55	1.93	.46	2.07
May	0	3.22	.07	2.92	0	2.47	.25	3.14	0	2.67
June	2.95	1.75	2.54	1.66	3.00	2.04	3.80	1.60	4.00	2.52
July	4.60	.95	5.13	1.80	3.40	1.01	4.43	2.17	3.50	2.01
Aug.	.95	1.95	1.70	2.04	.90	2.09	.45	2.38	.86	1.95
Sept.	3.35	3.45	7.40	3.04	7.50	2.93	9.32	4.15	9.36	3.93
Oct.	5.90	1.95	8.72	3.30	8.40	3.02	8.47	3.14	7.41	2.94
Nov.	0	.69	.10	.66	.15	.66	.11	.84	.17	.82
Dec.	0	.53	0	.50	0	.54	0	.71	0	.59
Yearly	21.65	18.32	30.81	19.67	27.75	18.43	30.98	22.48	31.11	21.67

Month	El Indio		Van Dalsem Farm		Wuensche Farm		Keisling Farm		Cuervo Creek Station	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.		0.74	1.55	0.50	1.64	0.65	1.44	0.54	1.40	0.61
Feb.	3.62	1.00	3.50	1.05	3.32	1.10	3.22	1.05	3.00	.83
Mar.	.20	.58	.15	.50	.14	.63	.16	.71	.10	.45
Apr.	1.37	1.63	1.00	1.92	1.14	1.71	.81	1.88	.60	1.58
May	.05	3.30	0	2.71	0	2.64	0	2.52	0	2.19
June	2.24	1.89	3.20	1.24	4.15	2.18	3.84	2.54	4.65	2.05
July	4.78	1.15	3.35	1.55	2.27	1.25	2.12	1.39	3.25	1.25
Aug.	1.93	2.06	1.05	1.83	.34	1.92	.55	2.02	1.30	1.86
Sept.	9.79	3.29	6.90	3.64	5.56	3.24	5.55	3.05	6.65	3.23
Oct.	11.93	2.26	6.85	2.71	7.47	2.36	7.47	2.75	5.90	2.50
Nov.	.09	.67	.15	.70	.19	.72	.23	.65	.15	.70
Dec.	0	.60	0	.58	0	.54	0	.78	0	.50
Yearly		19.17	27.70	18.93	26.22	18.94	25.39	19.83	27.00	17.76

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	Apache Ranch		Laredo Water Plant		Fort McIntosh (Laredo)		Corralitos Ranch		Huisache Ranch	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0	0.73	0.77	0.76	1.57	0.73	0.30	0.62	1.10	0.76
Feb.	4.00	1.10	3.37	.86	3.56	.89	4.60	.90	4.30	1.12
Mar.	0	.36	T	.56	.07	.68	0	.27	0	.37
Apr.	0	1.47	.26	1.08	.70	1.27	T	1.07	0	1.35
May	0	2.29	T	2.36	.13	2.63	1.10	1.73	1.72	2.10
June	5.50	2.08	5.60	2.22	11.55	2.28	10.50	2.58	11.50	2.48
July	0	1.70	1.50	1.12	1.35	1.36	1.61	.91	.75	1.00
Aug.	0	2.15	3.32	1.81	2.58	1.91	3.23	2.07	2.17	1.68
Sept.	3.00	3.70	5.05	3.25	5.77	3.00	8.45	3.67	8.20	4.42
Oct.	2.00	2.50	1.53	1.67	1.61	1.69	2.40	1.72	1.85	2.09
Nov.	0	.88	.40	.84	.54	1.14	0	.37	0	.90
Dec.	0	.71	0	.84	T	.85	0	.45	0	.63
Yearly	14.50	19.67	24.80	17.37	29.83	18.43	32.67	16.86	31.59	18.90

Month	Zapata Water Plant		El Peyote Ranch		Arroyo Tigre Chiquito		Falcon Dam		Roma International Bridge	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.70	0.83	1.83	1.17	1.40	0.81	1.11	0.82	0.87	0.86
Feb.	4.40	1.00	4.42	1.58	3.50	.98	4.14	.97	4.33	1.10
Mar.	0	.45	.03	.39	0	.31	0	.63	0	.69
Apr.	0	1.55	1.04	1.07	.65	1.05	.50	1.19	.52	1.37
May	1.25	2.50	.99	3.36	2.06	2.36	1.79	2.36	2.58	1.81
June	8.50	2.18	12.20	4.82	3.44	2.39	7.36	2.85	5.30	2.23
July	.75	.97	.40	1.22	.38	.82	.56	.84	2.62	.89
Aug.	5.40	1.99	4.65	1.72	4.22	2.36	5.80	2.62	.05	2.12
Sept.	8.25	4.92	13.50	6.99	12.10	5.22	12.17	4.80	7.65	4.63
Oct.	4.50	1.87	5.29	2.04	4.18	2.12	3.13	2.24	2.28	2.07
Nov.	0	1.00	.30	.84	.42	1.11	.29	1.16	0	.80
Dec.	0	.57	0	.52	0	.54	.17	.81	0	.47
Yearly	34.75	19.73	44.45	25.32	37.35	20.07	37.02	21.09	27.10	19.04

Month	Garciasville		Los Ebanos		La Joya		HDWCID #6, Goodwin Pump No. 4B		HDWCID #6, Goodwin Pump No. 3	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	2.08	0.97	1.51	1.13	1.50	1.12	3.78	1.25	4.17	1.32
Feb.	3.75	1.06	3.88	.94	1.30	.93	3.58	1.03	3.50	1.15
Mar.	0	.45	0	.38	0	.40	0	.55	.12	.61
Apr.	.35	1.13	1.35	1.75	.10	1.08	.57	1.09	.35	1.26
May	3.40	2.31	1.60	1.84	.92	2.03	.34	2.04	.89	2.23
June	8.44	2.54	6.76	2.44	6.02	2.82	4.64	2.55	6.53	2.64
July	0	1.08	0	.36	0	.87	0	.91	0	.97
Aug.	2.75	1.76	3.30	2.04	2.05	1.84	3.02	1.42	2.95	1.49
Sept.	3.66	4.02	9.75	3.42	5.94	3.33	6.41	3.46	6.40	3.19
Oct.	4.03	1.99	6.10	2.09	3.43	1.91	2.14	2.71	2.58	2.88
Nov.	0	.98	0	.68	0	.97	0	1.02	0	.94
Dec.	.55	.87	1.20	.68	.80	.88	.01	.81	.97	.93
Yearly	29.01	18.96	35.45	18.85	21.96	18.23	24.97	18.74	28.46	19.81

Month	HDWCID #6, Goodwin Pump No. 5		HDWCID #6, Goodwin Pump No. 3A		HDWCID #6, Goodwin Pump No. 4		Penitas (Edinburg Pumping Plant)		New Mission Pumping Plant	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	4.48	1.35	3.96	1.22	4.17	1.73	4.03	1.38	2.41	0.84
Feb.	5.02	1.16	2.52	1.16	3.43	1.13	3.11	1.11	3.56	.84
Mar.	0	.65	0	.56	0	.50	.15	.47	0	.44
Apr.	.20	1.33	.38	1.33	.30	1.15	.14	.96	.05	.97
May	.37	2.64	.57	2.00	.76	2.24	.69	2.17	.31	2.84
June	6.89	2.48	7.23	2.97	7.54	3.19	9.67	3.32	9.32	3.40
July	0	.78	.03	.36	.36	.99	.00	.94	.25	.92
Aug.	6.54	2.28	2.41	1.51	4.70	1.50	3.99	1.98	1.36	1.30
Sept.	9.11	4.12	6.03	3.21	6.75	4.07	7.35	3.98	4.45	2.94
Oct.	3.50	2.73	3.11	2.35	2.52	3.02	4.01	2.72	4.10	2.34
Nov.	0	1.02	0	.98	0	1.06	0	1.03	0	.91
Dec.	.50	.91	0	.52	.74	1.06	1.00	1.04	.40	.73
Yearly	38.91	21.43	26.29	19.49	31.87	21.64	34.19	20.90	26.41	18.17

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN THE UNITED STATES

In Inches

Month	O. C. Dale Farm		HDWCID #15 (Edinburg Office)		Edinburg Filtration Plant		La Feria Pumping Plant		La Feria Materials Yard	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	5.56	1.64	4.15	1.39	5.10	1.47	5.01	1.64	4.55	1.34
Feb.	4.64	1.29	3.76	1.15	4.62	1.22	7.55	1.85	6.77	1.62
Mar.	.15	.84	.04	.67	.12	.75	0	.83	0	.93
Apr.	.94	1.66	.56	1.39	.75	1.51	.55	1.89	.37	1.36
May	.90	2.21	1.58	2.39	.92	2.37	3.40	3.45	.85	3.43
June	7.38	3.18	4.95	2.58	5.11	2.89	7.40	3.79	8.21	4.10
July	.44	1.02	.30	.93	.23	.76	1.92	2.07	1.18	1.63
Aug.	4.31	1.87	5.18	1.86	6.53	1.76	6.50	3.36	5.80	3.01
Sept.	9.42	4.09	10.81	4.14	8.46	3.74	12.90	7.25	9.63	5.74
Oct.	3.58	3.11	6.97	2.70	3.22	2.47	6.65	4.22	4.46	2.95
Nov.	T	1.27	.09	1.03	.31	1.17	.27	2.01	.15	1.47
Dec.	.90	1.08	.22	.93	.50	1.02	0	1.35	.15	1.71
Yearly	38.22	23.26	38.61	21.16	35.87	21.13	52.05	33.71	42.12	29.29

Month	CCWCID #19 (Adams Gardens)		San Benito Pump		Whipple Farm		* CCWCID #11 Bayview Dist. Office		Los Fresnos Pumping Plant	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	5.17	1.19	5.40	1.37	3.25	1.87	4.06	1.48	3.10	1.58
Feb.	5.98	1.35	5.35	1.02	6.60	2.13	5.61	1.93	6.10	1.81
Mar.	.05	.79	.15	.83	.15	.71	.01	.78	0	.58
Apr.	.78	1.40	.56	1.20	.60	1.79	.60	1.58	.70	1.73
May	.63	2.66	2.15	2.53	.80	3.18	.89	2.81	1.00	2.50
June	6.97	2.99	7.04	2.56	9.75	3.35	8.06	2.98	7.60	4.03
July	.45	1.10	.67	1.59	.90	1.91	.51	1.53	1.50	1.51
Aug.	9.75	2.44	8.41	2.10	3.76	2.77	4.87	2.80	7.75	2.69
Sept.	10.41	4.08	6.88	4.39	4.30	6.04	3.72	5.64	7.40	5.35
Oct.	3.88	2.66	4.77	2.36	4.85	3.15	2.42	2.34	4.60	3.97
Nov.	1.45	1.42	2.57	1.05	2.00	1.54	.84	1.39	0	1.57
Dec.	.19	1.04	.18	1.27	.20	1.50	.23	1.34	.20	1.27
Yearly	45.71	23.12	44.13	22.27	37.16	29.94	31.82	26.20	39.95	28.59

T Trace * Average of 18 gages

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Tabulated below, in approximate downstream order, are monthly records of Mexican rainfall stations with averages for their periods of record. For location, elevation, period of record, type of gage in use, watershed subdivision in which the station is located, and the observer, see alphabetical listing of these stations shown on pages 141 through 145 in this bulletin. These rainfall records have not been published elsewhere. Records of daily rainfall amounts, where available, are on file in the office of the Mexican Section of the Commission.

Detailed listings of the months and years for which records are available through 1970 may be found under "Index to Precipitation Records" in Water Bulletins 10, 14, 22, 26, and Supplement 40A.

Month	Juarez, Chihuahua		Loma Blanca, Chihuahua		Garita Km. 28, Chihuahua		Samalayuca, Chihuahua		San Agustin, Chihuahua	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.57	0.39	1.65	0.68	2.44	0.48	1.65	0.36	1.65	0.39
Feb.	1.85	.45	1.93	.64	2.13	.43	2.05	.51	1.93	.38
Mar.	.39	.38	.20	.08	.51	.30	.37	.40	.43	.30
Apr.	0	.31	0	.07	0	.08	0	.13	0	.12
May	.24	.33	.35	.21	.87	.18	.63	.17	.16	.24
June	.47	.67	.08	.89	.20	.85	0	.88	.55	.71
July	4.92	1.59	3.66	1.67	3.58	1.66	6.02	2.04	3.78	1.76
Aug.	.08	1.49	.03	1.46	.43	1.72	.83	1.85	.28	1.17
Sept.	0	1.25	0	.80	.43	1.44	0	1.70	0	1.02
Oct.	.20	.96	.04	.49	.16	.78	0	.55	.08	.62
Nov.	.03	.52	0	.19	0	.37	0	.35	0	.30
Dec.	0	.54	0	.30	0	.53	.03	.44	0	.51
Yearly	9.80	8.88	7.99	7.48	10.75	8.82	12.13	9.38	8.86	7.52

Month	Guadalupe, Chihuahua		Tinajas, Chihuahua		Praxedis Guerrero, Chihuahua		San Antonio, Chihuahua		Porvenir, Chihuahua	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.61	0.35	1.38	0.29	1.30	0.30	1.26	0.35	1.85	0.34
Feb.	1.50	.39	1.30	.34	.91	.29	1.22	.35	2.05	.44
Mar.	.47	.41	.75	.33	0	.30	.71	.32	.79	.30
Apr.	0	.06	0	.07	0	.05	0	.05	0	.10
May	.47	.23	.20	.24	.59	.25	.28	.32	.35	.42
June	.08	.77	0	.75	0	.70	0	1.37	.20	.94
July	8.50	1.92	6.73	2.06	6.06	2.17	5.71	2.37	6.02	1.81
Aug.	.28	1.65	.55	1.63	.12	1.40	1.22	2.23	.83	2.00
Sept.	.35	1.14	.12	1.33	0	1.00	0	1.49	.35	1.30
Oct.	.39	.86	0	.93	0	.82	.24	.95	.91	.91
Nov.	0	.40	0	.35	0	.36	0	.42	0	.44
Dec.	0	.31	0	.32	0	.28	0	.36	0	.42
Yearly	13.65	8.49	11.03	8.64	8.98	7.92	10.64	10.58	13.35	9.42

Month	Vado de Cedillos, Chihuahua		Los Barriles, Chihuahua		Banderas, Chihuahua		Luis L. Leon, Chihuahua		El Cuarenta, Chihuahua	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.65	0.34	0.16	0.39	0.91	0.14	1.10	0.33	2.05	0.31
Feb.	1.81	.38	.24	.29	1.77	.38	1.73	.33	2.17	.42
Mar.	.63	.25	.04	.28	0	.22	.43	.22	.16	.29
Apr.	0	.12	0	.14	0	.08	0	.13	T	.12
May	.39	.34	.08	.39	.79	.28	.75	.34	.35	.30
June	T	1.25	0	1.26	T	1.13	.08	1.38	0	.75
July	6.50	1.93	3.07	2.34	4.06	1.55	4.68	1.99	4.06	2.00
Aug.	1.50	1.90	.55	2.39	.98	2.42	1.02	2.35	2.60	2.61
Sept.	.20	1.42	.03	1.74	.47	1.38	.39	1.19	T	1.61
Oct.	.98	1.02	.51	1.27	.79	.83	1.26	1.07	.47	1.11
Nov.	0	.38	0	.57	0	.33	0	.44	T	.41
Dec.	0	.44	0	.38	0	.20	0	.36	T	.44
Yearly	13.66	9.77	4.73	11.44	9.77	8.94	11.44	10.13	11.86	10.37

T-race

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

	El Cuervo, Chihuahua		Carichic, Chihuahua		San Juanito, Chihuahua		Siquirichic, Chihuahua		El Vergel, Chihuahua	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.20	0.22	0.67	0.45	1.65	1.51	1.30	1.12	0.55	1.53
Feb.	2.01	.39	2.13	.67	2.56	1.24	3.15	.66	1.73	.89
Mar.	0	.15	.12	.16	.24	.26	.59	.37	.08	.55
Apr.	0	.16	.59	.17	.67	1.33	T	.22	T	.49
May	1.77	.51	.12	.38	.55	.62	.75	.50	1.06	.79
June	.03	1.30	1.10	1.58	1.57	1.93	1.69	1.69	2.05	3.03
July	2.80	2.23	7.32	6.07	5.12	13.83	6.38	5.35	7.20	6.67
Aug.	2.52	2.60	4.13	5.12	4.53	8.25	8.03	5.40	8.35	6.75
Sept.	.35	1.95	1.57	2.94	1.65	3.24	1.77	3.10	2.24	4.70
Oct.	.16	.93	.20	1.23	T	3.29	1.61	1.07	1.10	1.70
Nov.	0	.20	0	.53	.03	1.15	T	.45	0	.58
Dec.	0	.06	.04	.70	.08	1.78	T	1.07	.12	1.52
Yearly	9.89	10.77	17.99	20.00	18.70	38.31	25.27	21.00	24.48	29.20

	Balleza, Chihuahua		El Sitio, Chihuahua		La Boquilla, Chihuahua		San Antonio, Durango		Estacion Rosario, Durango	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.31	0.30	0.20	0.22	0.04	0.30	0	0.32	0	0.23
Feb.	1.61	.38	1.46	.43	1.57	.19	1.42	.19	.94	.44
Mar.	T	.13	.20	.15	T	.16	0	.09	0	.18
Apr.	0	.21	.39	.19	.31	.18	0	.24	0	.19
May	T	.23	.51	.44	.47	.52	.83	.57	1.93	1.03
June	1.10	1.65	.24	1.59	.24	1.42	1.65	1.81	1.06	2.58
July	5.83	4.61	5.75	4.29	7.68	2.95	8.35	4.45	4.96	4.43
Aug.	5.39	4.83	6.22	4.93	8.31	3.01	10.83	4.03	10.08	5.29
Sept.	1.57	3.26	1.54	3.61	.55	2.91	2.43	4.19	3.46	5.42
Oct.	T	.03	0	.80	.43	.91	2.44	1.26	.39	1.35
Nov.	0	.49	0	.43	0	.33	0	.23	0	.37
Dec.	T	.50	1.26	.37	.28	.37	.24	.26	.28	.49
Yearly	15.81	17.43	17.77	17.50	19.88	13.25	28.24	17.64	23.10	22.05

	Ojo Caliente, Chihuahua		Villa Coronado, Chihuahua		Santa Barbara, Chihuahua		Valle Allende, Chihuahua		Escalon, Chihuahua	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.04	0.19	0	0.20	0.20	0.34	0	0.20	0	0.39
Feb.	1.93	.25	1.57	.43	1.06	.59	.59	.26	1.14	.24
Mar.	0	.16	0	.20	0	.21	0	.09	0	.11
Apr.	.24	.17	0	.22	.04	.14	0	.20	0	.27
May	.75	.51	1.22	.59	.24	1.01	1.46	.69	.43	.70
June	.83	1.69	1.10	2.94	1.61	2.44	1.57	1.51	1.02	1.64
July	4.96	3.21	7.40	4.04	.83	3.12	11.77	3.98	4.61	2.37
Aug.	4.65	2.75	6.31	4.28	18.93	5.91	8.77	4.68	3.23	2.72
Sept.	.55	2.80	1.97	3.77	3.90	4.90	1.22	3.97	2.68	2.92
Oct.	.06	1.12	.31	1.37	.75	.95	.47	1.03	.12	1.21
Nov.	0	.17	0	.41	0	.24	0	.20	0	.24
Dec.	.35	.26	.08	.35	.39	.44	.20	.26	.59	.31
Yearly	14.26	13.08	20.46	18.56	28.00	20.29	24.05	17.37	13.82	13.12

	Jimenez, Chihuahua		Parral, Chihuahua		Camargo, Chihuahua		Victoria, Chihuahua		Tacubaya, Chihuahua	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.12	0.24	T	0.20	T	0.38	0.20	0.30	0.24	0.19
Feb.	1.69	.19	1.30	.23	2.05	.37	2.48	.35	2.64	.75
Mar.	0	.06	0	.10	T	.12	0	.15	0	.15
Apr.	0	.12	.12	.21	.16	.19	.06	.25	.24	.19
May	.35	.47	.55	.43	1.02	.65	1.22	.92	1.30	1.20
June	.57	1.13	1.35	1.76	.67	1.68	.83	2.17	1.02	1.51
July	5.20	3.44	6.54	4.29	3.62	3.04	6.06	2.86	7.13	4.00
Aug.	3.70	2.35	7.52	4.33	6.14	2.75	4.92	3.08	5.24	2.35
Sept.	2.46	2.11	.94	4.23	.16	2.50	1.39	2.68	1.34	3.12
Oct.	.35	1.37	.20	1.17	.04	1.01	.59	.82	1.30	.60
Nov.	0	.22	0	.43	0	.35	0	.16		.23
Dec.	.12	.23	.31	.38	.31	.38	.43	.26	0	.50
Yearly	13.80	11.95	19.33	17.86	14.17	13.73	18.70	14.35		14.89

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

	Rosetilla, Chihuahua		Nonoava, Chihuahua		El Maguey, Chihuahua		San Lorenzo, Chihuahua		Villalba, Chihuahua	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.04	0.38	0.24	0.11	0	0.23	0.12	0.18	0.12	0.32
Feb.	1.34	.18	1.69	.53	1.69	.38	1.54	.27	1.10	.17
Mar.	T	.11	.12	.23	0	.12	0	.01	0	.05
Apr.	.28	.28	.24	.18	.39	.14	.71	.08	.16	.17
May	1.10	.35	T	.22	.31	.38	.43	.54	.87	.38
June	.04	1.11	.35	.93	0	1.57	.75	1.56	.04	1.14
July	4.69	2.64	6.14	5.86	3.39	3.66	4.76	3.57	8.62	3.48
Aug.	5.28	2.75	5.24	3.42	4.17	4.09	5.04	4.76	3.78	3.02
Sept.	.63	2.15	1.38	2.62	1.46	3.35	1.89	3.71	1.18	2.61
Oct.	.08	.31	.12	1.07	0	.38	.43	.35	.04	.96
Nov.	0	.20	0	.47	0	.26	T	.52	0	.26
Dec.	0	.34	T	.45	.24	.30	0	.51	.12	.37
Yearly	13.48	11.30	15.52	16.14	11.65	15.36	15.67	16.56	16.23	12.93

	Las Virgenes, Chihuahua		Km. 135, Chihuahua		Km. 99, Chihuahua		Delicias, Chihuahua		Lazaro Cardenas, Chihuahua	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.12	0.25	0.04	0.08	0.04	0.09	0.12	0.33	0.16	0.25
Feb.	1.10	.14	1.65	.29	1.38	.31	1.38	.17	1.81	.31
Mar.	T	.05	.08	.11	0	.09	0	.13	0	.11
Apr.	.04	.21	.08	.32	.08	.21	.16	.27	.08	.29
May	.35	.33	1.38	.61	.31	.46	.83	.33	1.16	.52
June	T	1.11	.20	1.29	T	1.57	.47	1.13	.28	1.46
July	6.77	2.44	3.68	2.25	4.84	2.57	3.39	2.43	4.84	2.91
Aug.	5.43	2.60	3.90	2.81	4.61	2.75	4.02	2.49	4.09	2.48
Sept.	.24	2.13	.12	2.69	.16	2.58	.28	2.13	.32	2.07
Oct.	.20	.80	.20	.92	T	.73	.16	.80	.20	1.00
Nov.	0	.23	0	.21	0	.23	0	.25	0	.20
Dec.	T	.33	0	.21	T	.34	0	.37	T	.20
Yearly	14.25	10.62	11.31	11.79	11.42	11.93	10.81	10.53	12.95	11.80

	Meoqui, Chihuahua		Las Burras, Chihuahua		Cd. Guerrero, Chihuahua		Bachiniva, Chihuahua		La Trasquila, Chihuahua	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.12	0.14	0.20	0.23	1.06	0.58	0.67	0.39	1.02	0.22
Feb.	1.30	.27	1.57	.22	1.38	.43	1.42	.21	1.73	.43
Mar.	T	.10	.04	.13	.28	.21	.24	.35	.31	.15
Apr.	.24	.47	.12	.19	.20	.20	.12	.10	0	.16
May	.71	.52	.55	.39	.35	.30	.47	.21	.31	.38
June	T	1.15	.24	1.02	.59	1.53	.91	1.48	.20	1.54
July	3.82	2.43	4.80	2.82	3.94	4.79	3.27	5.87	2.36	3.53
Aug.	3.90	2.56	4.65	2.55	6.61	5.30	4.65	4.74	1.34	2.88
Sept.	.28	1.91	.16	2.05	.67	2.95	.59	2.31	.39	3.08
Oct.	.24	.93	.20	.73	.08	1.21	0	1.16	.67	.72
Nov.	T	.14	0	.17	T	.50	0	.32	0	.33
Dec.	T	.33	0	.33	.20	.70	0	.40	0	.24
Yearly	10.61	10.95	12.53	10.83	15.36	18.70	12.34	17.54	8.33	13.66

	Cuauhtemoc, Chihuahua		Colonia Anahuac, Chihuahua		Presa Chihuahua, Chihuahua		Chihuahua, Chihuahua		Majalca, Chihuahua	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.43	0.28	0.43	0.28	0.39	0.14	0.24	0.27	1.02	0.30
Feb.	.12	.17	.91	.41	1.61	.32	1.54	.21	1.93	.50
Mar.	0	.12	0	.13	.12	.15	.12	.20	.24	.27
Apr.	.20	.20	.31	.25	.47	.23	.31	.19	.31	.39
May	.47	.37	.67	.47	1.22	.97	.31	.42	1.14	.88
June	.71	1.48	.83	1.33	.87	2.30	.08	1.48	1.42	2.76
July	6.14	4.71	4.84	4.95	7.17	4.75	9.53	3.56	7.72	6.19
Aug.	7.28	4.20	4.57	4.92	6.30	4.63	5.16	3.41	11.54	6.18
Sept.	.12	2.59	1.54	3.12	.31	2.50	.31	2.69	1.34	3.45
Oct.	.35	1.12	0	1.06	.24	.91	.24	.83	.12	.90
Nov.	0	.28	0	.30	0	.24	0	.40	0	.26
Dec.	0	.39	T	.22	.04	.29	.08	.34	.04	.25
Yearly	15.82	15.91	14.10	17.44	18.74	17.33	17.92	14.00	26.82	22.33

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

	Planta Zootecnica, Chihuahua		Villa Aldama, Chihuahua		La Campana, Chihuahua		Presa Luis L. Leon, * Chihuahua		El Anteojo, Chihuahua	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.43	0.23	0.12	0.18	0.28	0.24	0.16	0.08	0.12	0.01
Feb.	1.97	.30	1.89	.26	2.24	.41	.20	.17	.24	.25
Mar.	.12	.16	0	.20	.28	.18	0	.14	T	.04
Apr.	.47	.26	.20	.17	.08	.29	T	.21	.16	.33
May	.63	.48	.39	.46	1.57	.32	1.38	.31	.51	.50
June	T	1.66	T	1.89	.12	1.57	T	1.21	.08	1.78
July	5.10	3.89	2.80	3.12	4.80	3.26	9.17	2.50	3.43	2.60
Aug.	5.35	4.12	2.72	2.98	2.28	3.17	1.22	2.65	.98	2.35
Sept.	.20	2.30	.08	2.63	.04	2.67	.12	2.17	1.46	1.51
Oct.	.28	1.09	.16	.62	.04	.97	T	.60	1.02	.87
Nov.	T	.29	0	.24	T	.29	T	.14	0	.17
Dec.	.08	.31	1.34	.35	0	.30	T	.15	0	.29
Yearly	15.63	15.09	9.70	13.10	11.73	13.67	12.25	10.33	8.00	11.00

	Parrita, Chihuahua		Maijoma, Chihuahua		Coyame, Chihuahua		Gallego, Chihuahua		El Sueco, Chihuahua	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.47	0.10	0.20	0.41	0.35	0.14	1.42	0.28	1.02	0.41
Feb.	1.69	.34	1.02	.40	1.22	.45	1.42	.48	1.54	.53
Mar.	.39	.09	T	.20	.16	.18	.43	.17	.71	.27
Apr.	0	.51	.20	.22	0	.24	.23	.18	.35	.20
May	.55	.34	.94	.70	.83	.62	.20	.28	.35	.22
June	.12	2.08	.91	1.65	.43	1.34	.12	1.05	.24	.85
July	3.19	2.35	3.50	2.80	5.20	2.47	6.54	3.25	5.79	2.99
Aug.	2.60	3.23	4.53	3.21	1.10	1.89	1.22	3.24	1.10	3.51
Sept.	.67	2.79	3.86	2.63	.75	2.36	1.22	2.24	.04	2.51
Oct.	0	.91	.39	1.00	.16	.85	.71	1.37	.39	1.22
Nov.	0	.21	0	.34	0	.29	0	.28	0	.42
Dec.	0	.13	T	.32	0	.15	0	.21	T	.23
Yearly	9.68	13.08	15.55	13.88	10.20	10.98	13.56	13.03	11.53	13.36

	Ojinaga (IB&WC), Chihuahua		Ojinaga (M.S. of Mexico), Chihuahua		Portrero el Llano, Chihuahua		Manuel Benavides, Chihuahua		Sierra Mojada, Coahuila	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.35	0.35	0.31	0.31	0.16	0.10	0.04	0.12	T	0.53
Feb.	.94	.29	1.26	.25	.20	.27	1.46	.31	1.57	.31
Mar.	.04	.15	.16	.20	0	.46	0	.26	0	.29
Apr.	0	.22	0	.24	0	.13	T	.20	0	.26
May	.87	.44	1.97	.58	.63	.28	.43	1.03	1.65	1.04
June	.12	1.33	.20	1.13	0	1.54	.24	1.36	2.44	2.28
July	4.72	1.63	6.42	1.51	3.39	2.36	3.19	2.42	4.72	2.79
Aug.	.39	1.45	.31	1.49	1.02	2.27	1.50	2.43	5.51	2.89
Sept.	.55	1.37	.59	1.50	.08	1.44	1.85	2.66	2.05	3.02
Oct.	.47	1.04	.63	1.01	0	.51	.28	.82	.67	1.31
Nov.	0	.35	0	.37	0	.17	0	.17	0	.50
Dec.	0	.25	0	.37	0	.26	0	.15	1.18	.61
Yearly	8.45	8.87	11.85	8.96	5.48	9.79	8.99	11.93	19.79	15.83

	Mina La Borrada, Coahuila		Santa Rosa, Coahuila		San Fernando, Coahuila		Hacienda San Miguel, Coahuila		Rcho. La Chuparrosa, Chihuahua	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.12	0.25	0.51	0.77	0.28	0.33	0.51	0.30	0.35	0.15
Feb.	.75	.46	5.43	1.07	1.42	.66	1.85	.61	1.04	.52
Mar.	0	.23	1.18	.61	.20	.41	.28	.58	.28	.55
Apr.	0	.32	1.02	.94	1.81	1.14	.16	1.78	.60	.60
May	.98	.81	0	1.27	.24	1.09	.79	2.00	.10	1.18
June	.67	1.76	1.42	1.65	3.23	1.20	2.09	2.28	2.83	2.13
July	1.46	1.19	2.91	1.52	1.22	.90	5.20	1.72	1.12	.99
Aug.	1.18	2.03	.20	1.93	1.97	1.58	.35	1.38	.12	3.51
Sept.	2.76	2.16	2.60	2.39	4.02	3.05	2.36	3.46	1.00	1.97
Oct.	0	1.11	5.31	2.42	5.33	1.93	4.02	2.05	7.98	2.55
Nov.	0	.34	0	.88	0	.42	0	.37	0	.12
Dec.	0	.21	0	.37	0	.32	0	.25	0	.08
Yearly	7.92	10.87	20.58	15.82	20.22	13.18	17.61	17.28	15.42	14.35

T Trace * Formerly Presa El Granero, Chihuahua

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Presa Centenario, Coahuila		Amstd. Res. Near, Tlaloc, Coahuila		Ciudad Acuna, Coahuila		Presa Cabeceras, Coahuila		Presa San Miguel, Coahuila	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.75	0.54	0.80	0.55	0.87	0.58	0.98	0.52	1.38	0.52
Feb.	2.24	1.07	1.75	.71	1.85	.90	2.40	.92	2.36	1.02
Mar.	.75	.54	1.50	.89	1.10	.75	.67	.58	.31	.57
Apr.	.39	1.37	1.15	1.38	.55	1.63	1.34	1.32	1.02	.91
May	.35	1.51	.20	1.32	.20	2.30	1.06	2.38	.55	1.94
June	1.77	2.38	3.85	3.24	2.09	2.47	2.83	2.28	2.91	2.42
July	.98	.90	5.10	1.91	2.48	1.19	1.77	1.20	2.24	1.14
Aug.	.24	3.21	0	4.77	1.54	2.08	1.34	3.84	5.16	3.28
Sept.	1.81	4.83	2.00	4.21	2.60	3.31	4.96	5.75	4.33	4.41
Oct.	7.64	2.67	6.20	2.14	5.63	2.49	12.44	3.27	7.60	2.48
Nov.	0	.85	0	.16	.04	.59	1.22	.88	.08	.73
Dec.	0	.35	0	.05	0	.49	0	.32	0	.47
Yearly	16.92	20.22	22.55	21.33	18.95	18.78	31.01	23.26	27.94	19.89

Month	Palestina, Coahuila		Chupadero, Coahuila		Jimenez, Coahuila		El Remolino, Coahuila		Piedras Negras, Coahuila	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.10	0.91	0.39	0.54	1.69	0.71	0.59	0.42	2.24	0.76
Feb.	2.87	1.04	2.09	.93	2.40	1.01	2.99	.80	3.93	1.09
Mar.	.59	.66	.71	.53	.39	.75	0	.40	.20	.65
Apr.	1.22	1.65		1.72	1.42	1.69	0	1.49	.79	1.92
May	.43	2.37		1.75	.59	2.47	.59	2.20	.28	3.05
June	1.93	2.41		2.43	2.32	2.83	2.60	3.64	4.92	2.35
July	2.13	1.73	.87	1.07	2.68	1.38	.79	1.86	5.04	2.04
Aug.	.08	2.26	.28	2.45	.39	1.96	0	1.86	3.11	2.81
Sept.	3.54	3.31	.79	3.94	2.52	3.33	2.76	4.16	3.19	3.35
Oct.	9.72	2.09		2.09	5.55	2.53	15.04	3.37	9.45	3.11
Nov.	.08	.74	0	.73	.04	.87	0	.59	.08	.71
Dec.	0	.77	0	.37	0	.63	0	.37	T	.62
Yearly	23.69	19.94		18.60	19.99	20.16	25.36	21.16	33.28	22.46

Month	Allende, Coahuila		Villa Guerrero, Coahuila		Rancho San Diego, Coahuila		Rancho Mercedes, Coahuila		Villa Hidalgo, Coahuila	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.14	0.65	1.97	0.56	0.79	0.25	0.63	0.56	0.87	0.79
Feb.	0	1.03	3.19	.89	3.35	.68	3.66	.94	3.82	1.11
Mar.	0	.44	0	.39	0	.37	1.93	.85	0	.62
Apr.	.04	1.13	.83	1.53	.59	1.27	0	2.03	.59	1.54
May	4.02	2.37	.51	2.39	1.97	2.61	.39	2.82	.04	2.36
June	3.46	2.33	4.61	2.56	3.15	2.13	9.45	2.57	6.69	2.25
July	.04	1.64	3.19	1.29	0	1.41	0	.74	.59	.96
Aug.	0	2.87	1.34	2.25	0	1.59	.12	2.34	2.64	2.16
Sept.	0	3.75	5.71	4.22	1.77	3.82	7.68	3.07	6.59	3.70
Oct.	.51	2.16	5.59	3.11	2.56	1.66	8.90	2.49	4.13	1.90
Nov.		.61	0	.61	0	.81	0	.96	0	1.01
Dec.		.55	0	.55	0	.60	0	.58	T	.74
Yearly		19.53	26.94	20.35	14.18	17.20	32.76	19.95	26.26	19.14

Month	Colombia, Nuevo Leon		Rancho Los Vidrios, Tamaulipas		Nv. Laredo (M.S. of Mexico), Tamps.		Nv. Laredo (IBWC), Tamaulipas		El Llano, Tamaulipas	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.47	0.25	0.39	0.77	1.50	0.78	1.61	0.66	0.94	0.73
Feb.	3.54	.94	3.54	1.12	3.90	.94	4.09	1.05	3.74	1.46
Mar.	0	.49	0	.39	.04	.61	T	.38	0	.23
Apr.	1.26	1.31	0	1.35	.47	1.19	.63	1.13	1.06	1.21
May	.59	2.55		2.96	.16	2.40	.20	2.55	.87	2.73
June	6.69	2.03		2.03	12.83	2.31	12.13	2.75	16.26	6.79
July	3.58	1.04	4.53	1.28	1.10	1.27	1.22	.96	.91	.45
Aug.	.39	3.15	.79	2.15	1.85	1.65	2.28	2.26	2.56	3.75
Sept.	6.26	4.98	9.25	3.90	6.22	3.09	5.98	3.64	5.12	5.50
Oct.	4.53	1.79	4.09	2.56	1.85	1.55	1.85	1.74	3.11	2.55
Nov.	0	1.15	0	1.25	.04	.96	.59	.99	.57	.91
Dec.	T	.52	0	.93	0	.86	0	.69	.16	.51
Yearly	27.31	20.20		20.69	29.96	17.61	30.56	18.82	35.40	26.82

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

	Nuevo Laredo Km. 26 SSW, Tamaulipas		Rancho Las Espuelas, Tamaulipas				San Ignacio, Tamaulipas		Rancho San Juan de La Palma, Tamps.	
Month	1973	Average	1971	1972	1973	Average	1973	Average	1973	Average
Jan.	1.26	0.69		0.51	1.50	1.00	1.77	0.68	1.14	0.74
Feb.	5.71	1.43		1.38	3.39	2.38	3.94	1.33	4.37	1.14
Mar.	0	.36		.91	.47	.69	0	.33	0	.53
Apr.	1.57	1.62		2.01	1.34	1.68	.79	1.32	.91	1.85
May	1.14	2.66		6.50	3.62	5.06	.59	2.96	.98	1.88
June	11.42	2.50		3.19	7.64	5.42	12.13	2.74	8.43	2.26
July	1.26	.90		2.40	2.68	2.54	1.10	.77	0	.76
Aug.	1.89	2.34		.20	2.52	1.36	2.44	2.62	3.82	2.02
Sept.	3.15	4.64		5.19	7.40	6.30	5.91	5.32	10.67	4.80
Oct.	3.11	2.01		.51	1.61	1.06	2.56	2.46	2.68	1.74
Nov.	0	1.05	1.26	1.29	.87	1.14	0	1.14	.08	1.06
Dec.	0	.63	.91	0	.31	.41	0	.65	0	.73
Yearly	30.51	20.83		24.09	33.35	29.04	31.23	22.32	33.08	19.51

	El Treinta, Coahuila		Muzquiz, Coahuila		Conchos, Coahuila		Sabinas, Coahuila		*Juarez, Coahuila	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0	0.34	2.13	0.82	0.71	0.29	0.91	0.59	1.26	0.60
Feb.	2.24	.55	2.76	.61	3.11	.70	2.40	.77	3.39	.59
Mar.	0	.53	.04	.37	0	.30	T	.41	0	.36
Apr.	.39	1.10	.24	1.00	.43	1.64	.16	1.18	.31	1.21
May	1.46	2.38	1.10	3.84	0	2.36	.79	2.47	T	1.92
June	4.37	3.22	13.86	3.59	9.92	2.74	5.51	2.06	25.43	1.80
July	2.76	2.21	3.03	2.50	.39	1.90	2.40	1.26	.51	.90
Aug.	0	2.32	1.34	2.52	2.20	1.95	2.20	2.20	1.54	1.41
Sept.	4.53	4.48	4.37	4.91	4.76	3.40	2.44	3.42	3.93	3.29
Oct.	3.35	1.81	4.37	2.25	5.39	2.26	4.09	1.35	1.46	1.62
Nov.	0	.38	.28	1.14	T	.54	0	.61	.12	.58
Dec.	0	.18	0	.92	0	.44	T	.52	0	.34
Yearly	19.10	19.50	33.52	24.97	26.91	18.52	20.90	17.34	38.00	14.62

	Cuatro Cienegas, Coahuila		Ocampo, Coahuila		Ejido San Blas, Coahuila		San Buenaventura, Coahuila		Monclova, Coahuila	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.		0.32	0.39	0.40		0.44	0.43	0.63	0.71	0.48
Feb.	2.56	.39	2.60	.33	6.02	2.01	1.97	.53	2.87	.51
Mar.	T	.12	0	.17	0	0	.39	.33	0	.30
Apr.	T	.29	0	.67	0	.17	.20	.73	.16	.59
May	1.22	.79	.39	1.01	0	1.21	.16	1.51	.39	1.45
June	2.28	.74	2.56	1.45		4.51	3.58	1.68	5.00	1.44
July	2.40	.82	1.89	1.87		1.80	.75	1.54	2.68	1.54
Aug.	T	1.04	1.10	1.70		2.41	2.68	1.72	1.26	1.61
Sept.	.24	1.47	2.36	2.44		3.69	2.09	2.50	1.10	3.02
Oct.	.39	.75	.16	1.01		5.20	3.82	1.37	2.80	1.23
Nov.	0	.38	T	.27		.10	T	.55	.08	.56
Dec.	.16	.42	.16	.37		.14	T	.62	.08	.53
Yearly		7.53	11.61	11.69		21.68	16.07	13.71	17.13	13.26

	Progreso, Coahuila		Presa Carranza, ** Coahuila		Laguna de Salinillas, N. L.		Candela, Coahuila		Lampazos, Nuevo Leon	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.38	0.46	0.91	0.73	0.51	0.65	0.79	0.32	0.87	0.59
Feb.	2.76	.56	3.46	.69	3.19	.69	3.31	1.66	3.15	1.05
Mar.	0	.32	.08	.49	T	.53	0	.28	0	.54
Apr.	.31	1.20	.31	1.20	.35	1.02	0	.37	.35	1.03
May	.43	2.13	.12	2.14	.47	2.27	.28	1.56	.31	2.37
June	6.18	1.69	3.86	1.87	5.87	1.88	5.51	3.23	6.02	3.04
July	2.24	.90	1.50	.98	.47	.75	0	1.42	2.28	1.71
Aug.	3.94	1.95	2.24	2.04	1.50	2.40	1.18	1.31	.83	1.80
Sept.	2.20	3.03	5.23	3.08	5.59	3.44	2.01	3.05	2.63	5.50
Oct.		1.83	1.69	1.69	2.99	1.84	1.14	.56	2.01	1.69
Nov.	.16	.55	.04	.60	0	.70	.47	.42	.03	.68
Dec.	.08	.47	T	.63	.08	.55	.08	.21	.20	.46
Yearly		15.09	19.49	16.14	21.02	16.72	14.77	14.39	18.78	20.51

T Trace * Formerly Villa Juarez, Coahuila ** Formerly Don Martin, Coahuila

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Anahuac, Nuevo Leon		* Rio Salado, Carr. 85, N. L.		Bustamante, Nuevo Leon		Sabinas Hidalgo, Nuevo Leon		Vallecillo, Nuevo Leon	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.94	0.71	1.54	0.50	0.94	0.61	1.46	0.52	1.18	0.51
Feb.	3.11	.67	3.78	1.00	3.35	.93	2.60	.99	2.72	.93
Mar.	.04	.49	0	.32	0	.51	0	.64	0	.42
Apr.	0	1.11	.37	1.26	.31	.98	.16	1.20	.47	.98
May	.08	2.29	0	2.43	.51	1.53	0	2.43	.39	1.85
June	7.40	1.88	9.72	3.19	10.04	3.97	14.84	4.93	12.17	3.56
July	1.50	1.24	1.89	1.41	2.44	1.46	3.15	2.34	1.15	1.25
Aug.	1.50	2.12	1.69	1.67	3.78	3.40	2.87	2.56	1.93	1.83
Sept.	3.94	3.33	6.50	5.40	9.72	6.19	12.76	7.57	4.53	4.84
Oct.	7.01	1.85	3.46	1.64	4.65	2.22	5.75	2.87	3.43	2.34
Nov.	.24	.64	0	.79	.26	.37	.16	1.09	.20	.84
Dec.	.03	.71	0	.60	.31	.59	.31	.03	.24	.58
Yearly	25.84	16.84	29.45	20.21	36.33	23.31	44.06	27.77	28.44	19.93

Month	Las Tortillas, Tamaulipas		Rancho Bonanza, Tamaulipas		Rancho San Rafael Bustamante, Tamps.		Rio Salado Riberena, Tamaulipas		Aniego 166, Tamaulipas	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.57	0.47	2.20		1.89	0.77	1.38	0.57	1.57	0.80
Feb.	4.76	1.41	4.49		5.24	2.18	4.13	1.39	4.72	1.30
Mar.	0	.44	0		0	.21	0	.44	0	.39
Apr.	1.06	1.37	.51		1.38	.97	.79	1.21	.79	1.08
May	.39	2.95	1.10		1.38	2.47	.83	2.63	1.57	3.00
June	12.99	3.29	8.12		12.91	5.07	9.45	3.85	12.20	3.09
July	.79	.98	.20		.94	1.23	.71	.64	1.57	.55
Aug.	3.23	1.56	1.50		4.02	2.61	3.03	2.60	4.33	2.55
Sept.	5.91	5.64	7.01		8.08	7.04	10.16	6.77	9.45	7.70
Oct.	4.72	1.76	2.72		5.28	3.72	3.11	2.30	1.38	1.67
Nov.	0	1.20	0		0	1.48	0	1.15	.39	1.04
Dec.	T	.79	0		T	.50	0	.87	.20	.56
Yearly	35.42	21.86	27.85		42.02	28.25	33.59	23.82	38.17	23.73

Month	La Bandera, Tamaulipas		Nueva Cd. Guerrero, Tamaulipas		Hacienda El Alamo, Nuevo Leon		Parras, Nuevo Leon			
	1973	Average	1973	Average	1973	Average	1967	1972	1973	Average
Jan.	1.38	0.75	1.28	0.96	1.69	0.68	0.08		1.02	0.20
Feb.	4.33	1.06	4.17	1.04	3.82	1.70	0		3.23	.56
Mar.	0	.71	T	.50	0	.35	.20		0	.32
Apr.	.79	1.44	.83	1.31	.24	.63	.63		.59	.61
May	.79	2.99	1.10	2.11	.79	1.83	.39		0	.79
June	8.46	3.71	7.09	2.97	10.83	5.93		6.22	13.54	3.06
July	1.18	.81	1.85	.90	2.56	2.52			.28	.82
Aug.	.79	2.40	0.93	2.19	3.31	3.20		0	3.31	1.70
Sept.	8.27	6.07	11.02	4.63	10.55	6.33	5.91	7.87		4.15
Oct.	1.57	1.73	2.48	2.12	3.31	2.22		.04	2.95	2.66
Nov.	.39	.94	.71	.98	.32	1.11		.12	.04	.87
Dec.	0	.82	.08	.53	.47	.51		.16	.51	.29
Yearly	27.95	23.83	37.12	20.29	37.88	27.01				15.85

Month	San Javier, Nuevo Leon		Cd. Mier, Km. 8 SW, Tamaulipas		Cd. Mier, Tamaulipas		Miguel Aleman, Tamaulipas		Parras, Coahuila	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.57	0.78	1.57	0.78	1.50	1.06	1.34	0.85	0.59	0.51
Feb.	4.69	1.23	4.33	1.34	4.13	1.33	3.62	1.33	1.02	.45
Mar.	0	.71	0	.72	0	.68	0	.24	.12	.40
Apr.	.98	1.77	1.38	1.44	1.42	1.39	.71	1.75	.24	.23
May	1.97	3.30	1.97	3.24	2.13	2.81	2.48	2.34	.91	1.03
June	6.30	4.05	6.10	3.72	6.22	2.72	8.50	2.91	2.05	2.10
July	.79	1.50	.98	1.41	.94	.75	.55	1.04	1.38	2.30
Aug.	4.92	3.25	4.72	3.03	4.84	2.76	2.65	2.37	7.52	3.24
Sept.	16.14	7.08	11.42	6.59	9.21	5.52	5.59	7.51	6.02	2.99
Oct.	1.57	2.32	1.77	2.08	1.91	2.30	2.44	1.48	1.85	1.32
Nov.	.39	1.15	.59	1.12	.20	1.17	.04	.99	0	.45
Dec.	.20	.69	.20	.72	.12	.66	.20	.58	.16	.77
Yearly	39.52	28.39	35.03	26.19	32.52	23.15	28.15	23.39	21.56	15.84

T Trace * Formerly La Gloria, Nuevo Leon

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

	Gral. Cepeda, Coahuila		Reata, Coahuila		San Antonio de las Alazanas, Coahuila		Saltillo, Coahuila		Ramos Arizpe, Coahuila	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.12	0.48	0	0.28	2.52	0.98	0.71	0.58	0.67	0.47
Feb.	1.34	.51	1.38	.26	.63	.89	1.30	.56	.98	.40
Mar.	0	.30	0	.26	0	.47	T	.41	0	.28
Apr.	.08	.40	0	.28	0	.89	.24	.80	.08	.45
May	.67	.85	.12	.81	2.28	1.87	1.89	1.17	1.06	.87
June	2.83	2.24	.87	1.10	3.78	2.84	2.72	2.23	1.77	1.07
July	1.89	3.23	3.58	.88	2.20	3.22	2.09	2.59	.75	1.41
Aug.	6.10	3.13	.59	1.58	3.11	3.13	5.12	2.49	2.32	1.34
Sept.	6.22	2.87	2.36	1.36	6.06	2.90	4.09	2.73	3.35	1.77
Oct.	2.72	1.30	.75	.71	1.57	2.12	2.28	1.28	2.09	.78
Nov.	0	.49	0	.45	.12	1.23	.31	.82	0	.46
Dec.	.20	.53	.16	.28	0	.88	.24	.63	0	.51
Yearly	22.17	16.33	9.81	8.25	22.27	21.42	20.99	16.29	13.07	9.81

	Carbonera, Nuevo Leon		Icamole, Nuevo Leon		Mina, Nuevo Leon		La Popa, Nuevo Leon		Cienega de Flores, Nuevo Leon	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	2.05	0.91		0.27	0.94	0.48	0.63	0.49	2.16	1.25
Feb.	.87	.82		.30	.79	.48	1.34	1.05	3.15	1.01
Mar.	0	.74	0	.15	0	.12	0	.31	0	1.12
Apr.	.04	.87	.12	.29	.31	.51	0	.46	1.22	1.58
May	3.39	2.24	.71	.87	.63	.63	.35	1.14	.98	2.70
June	4.80	2.56	3.19	1.07	5.67	2.02	16.65	2.12	13.43	3.39
July	1.81	2.53	1.50	.53	1.10	.82	0	.94	3.15	1.91
Aug.	5.67	3.37	.83	1.14	2.91	1.53	2.72	1.93	5.43	4.43
Sept.	5.24	3.17	5.00	2.25	5.00	3.46	9.06	3.61	14.25	5.95
Oct.	.91	1.66	2.09	1.01	1.06	1.19	1.10	.87	3.54	2.78
Nov.	0	.87	T	.46	0	.62	0	.57	1.10	1.11
Dec.	.20	.30	T	.39	.16	.44	0	.57	1.30	1.11
Yearly	24.98	20.74		8.73	18.57	12.30	31.85	14.11	49.71	28.34

	Hacienda Mamulique, Nuevo Leon		Topo Chico, Nuevo Leon		Higueras, Nuevo Leon		Sombreretillo, Nuevo Leon		Los Ramones, Nuevo Leon	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.			0.79	0.38	1.50	0.66	3.90	2.20	1.69	0.65
Feb.			1.50	.57	2.05	.59	8.43	3.52	2.17	.77
Mar.			0	.44	0	.66	0	.70	T	.63
Apr.			.47	.96	.31	1.27	.31	1.01	T	1.67
May			.55	1.32	.63	1.98	1.89	5.62	2.95	2.37
June			14.17	2.54	11.50	2.66		12.35	13.39	3.52
July			1.38	1.32	6.77	2.10		5.60	2.13	1.89
Aug.			5.98	2.97	6.69	3.22		5.88	5.08	3.68
Sept.	5.08		4.17	4.44	10.71	4.96	18.90	18.14	10.00	5.46
Oct.	1.41		4.84	2.64	5.79	1.83	15.35	10.38	4.61	3.02
Nov.	.24		.59	.67	.55	.80	1.10	2.15	T	.69
Dec.	.28		.91	.43	.83	.63	1.42	1.70	.94	.48
Yearly			35.35	18.68	47.33	21.36		69.25	42.96	24.83

	Cerro Prieto, Nuevo Leon		Los Herrera (La Tableta), Nuevo Leon		Rinconada, Nuevo Leon		Santa Catarina, Nuevo Leon		Monterrey, Nuevo Leon	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.54	0.40		0.58	0.79	0.30	0.87	0.64	0.79	0.61
Feb.	1.06	.38		.67	.94	.29	.94	.45	1.34	.70
Mar.	0	.55	0.04	.62	0	.23	0	.30	0	.73
Apr.	.24	.76	.35	1.37	0	.44	T	.64	.63	1.14
May	1.89	3.77	1.97	2.67	.39	.53	.31	.86	.59	1.57
June	10.51	4.82	10.59	2.87	4.29	1.18	10.39	2.13	15.39	2.89
July	2.28	2.48	2.28	1.33	0	.34	T	1.11	.91	2.30
Aug.	7.91	3.18	7.13	2.79	1.26	1.28	2.09	2.97	6.77	3.25
Sept.	7.60	5.19	5.39	4.90	3.35	1.74		3.91	2.36	5.91
Oct.	7.64	3.74	1.85	2.57	2.20	.95	1.38	1.76	4.68	3.23
Nov.	0	.12	.16	.65	0	.28	T	.47	.63	1.23
Dec.	.59	.22	.24	.45	T	.30	T	.50	.79	.69
Yearly	41.26	26.11		21.47	13.22	7.86		15.74	34.88	24.25

T Trace

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Apodaca, Nuevo Leon		A. Blanca Canoas, Nuevo Leon		Pajonal, Nuevo Leon		Cadereyta, Nuevo Leon		La Cruz, Nuevo Leon	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.91	0.68	1.85	0.67	0.79	0.60	0.94	0.73	2.05	0.64
Feb.	1.42	1.02	0	.54	.91	.72	2.16	.94	0	.53
Mar.	0	.59	0	.21	0	.27	0	1.14	0	.20
Apr.	.87	.86	0	.58	0	.67	1.10	2.05	0	.51
May	.39	2.05	.71	1.60	.39	1.64	1.97	2.42	.71	1.52
June	10.75	3.43	5.83	2.95	11.02	2.72	16.46	3.80	4.49	2.81
July	1.77	1.35	1.42	2.05	1.57	2.54	4.17	2.48	.63	2.37
Aug.	3.23	3.90	3.94	3.02	3.15	3.79	2.64	3.63	4.92	3.64
Sept.	2.52	5.92	.83	4.49	3.15	5.04	11.54	5.21	2.72	4.55
Oct.	2.28	2.41	1.14	2.20	.39	2.09	8.46	3.39	.75	2.06
Nov.	.43	.82	0	.73	T	.58	1.61	1.17	0	.69
Dec.	1.02	.65		.40	T	.61	1.34	.71		.26
Yearly	25.59	23.68		19.44	21.37	21.27	52.39	27.67		19.78

Month	Tunel San Francisco, Nuevo Leon		Las Comitas, Nuevo Leon		* La Boca, Nuevo Leon		Adjuntas, Nuevo Leon		Villa Allende, Nuevo Leon	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	2.20	0.87	0.24	0.32	1.06	0.91	0.55	0.40	2.13	0.96
Feb.	4.25	1.40	1.10	.41	2.48	1.05	1.18	.79	3.86	1.30
Mar.	.12	1.75	0	.26	.08	1.12	.24	.19	.39	1.28
Apr.	2.01	2.08	.12	.73	1.10	1.67	.83	1.17	1.85	2.58
May	1.57	2.88	.31	.98	1.69	2.66	.94	2.53	4.17	3.57
June	32.80	7.90	14.33	2.65	31.65	5.88	33.15	12.04	29.17	5.47
July	4.02	3.25	.67	1.74	6.89	3.45	6.46	6.12	4.37	3.18
Aug.	12.83	7.43	1.61	3.43	14.80	6.30	3.15	3.68	18.07	5.63
Sept.	6.14	10.37	2.40	4.48	7.99	9.15	4.45	10.01	7.48	8.17
Oct.	3.11	5.92	.59	1.93	2.44	5.16	3.70	5.73	4.17	5.76
Nov.	.39	1.65	0	.46	1.65	1.41	.04	.65	3.35	1.66
Dec.	.71	.96	T	.34	.59	.87	.04	.41	1.30	.94
Yearly	70.15	46.46	21.37	17.73	72.42	39.63	54.73	43.72	80.31	40.50

Month	San Juan, Nuevo Leon		Laguna de Sanchez, Nuevo Leon		Cerritos, Nuevo Leon		Casillas, Nuevo Leon		Cienega Del Toro, Nuevo Leon	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	2.28	0.48	1.18	0.60	1.93	0.54	1.30	0.47	0.43	0.93
Feb.	3.15	.98	1.50	.64	2.36	1.53	.67	.87	.35	.57
Mar.	0	.70	.16	.47	.12	48	.87	.66	0	.63
Apr.	.39	1.88		1.18	.12	.41	1.73	.85	.71	.92
May	4.09	2.29	.75	1.92	2.68	3.73	2.68	2.24	1.65	2.02
June	21.69	3.38	16.14	3.67	29.25	10.63	13.58	3.78	8.86	2.70
July	2.48	1.91	1.50	2.56	6.30	6.76	1.54	2.36	1.69	1.59
Aug.	6.89	3.91	5.98	4.32	11.10	5.35	2.20	3.23	4.96	2.88
Sept.	7.87	5.48	4.57	5.47	5.67	12.90	1.34	3.83	5.35	3.64
Oct.	5.83	3.24	3.07	2.85	1.81	4.80	1.97	2.27	1.97	2.32
Nov.	.87	.92	.04	.57	.08	.39	1.02	.69	0	.54
Dec.	1.26	.49	.16	.56	.08	.28	.51	.66	0	.62
Yearly	56.80	25.66		24.81	61.50	47.80	29.41	21.91	25.97	19.36

Month	Potrero Redondo, Nuevo Leon		Mimbres, Nuevo Leon		Rayones, Nuevo Leon		Rusio, Nuevo Leon		Santa Rosa, Nuevo Leon	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	1.89	0.86	4.21	1.45		0.29	4.02	0.84	1.61	0.40
Feb.	2.68	1.80	2.48	1.43	2.95	.39	.51	.70		.25
Mar.	.39	1.26	0	1.39	0	.30	0	.64	0	.11
Apr.	.51	2.49	1.22	1.27	1.42	.98	.51	1.14	.79	.26
May	3.66	3.47	.94	1.83	5.71	1.46	2.36	2.03	2.17	1.62
June	27.68	9.22	8.27	2.96	8.15	2.10	7.13	2.24	1.85	1.08
July	11.54	5.12	1.97	2.39	6.50	1.01		.91	.87	1.00
Aug.	10.98	6.83	5.47	3.46	6.69	2.78	3.23	1.42	5.31	1.56
Sept.	5.94	13.30	10.55	3.85	4.53	3.03	3.94	1.87	2.09	.98
Oct.	0	5.20	3.74	2.08	4.13	1.51	.59	1.31	.79	.38
Nov.	0	1.55	0	1.13	0	.37		.71	0	.09
Dec.	1.22	.31	0	1.19	0	.29		.87	0	.03
Yearly	66.49	51.91	38.85	24.43		14.51		14.68		7.76

T Trace * Formerly Villa de Santiago, Nuevo Leon

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Potosi, Nuevo Leon		Iturbide, Nuevo Leon		Cadereyta, Nuevo Leon		Linares, Nuevo Leon		Montemorelos, Nuevo Leon	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	3.27	1.10	2.09	0.59	2.05	0.89	2.17	0.90	1.97	0.79
Feb.		.84	.94	.65	2.17	.98	1.57	.87	1.97	1.00
Mar.	0	.43	.12	.59	.38	1.25	.06	1.09	.08	1.17
Apr.	.20	1.23	1.14	1.11	2.60	2.54	3.07	2.33	.47	2.26
May		1.70	1.54	1.96	4.09	3.51	3.86	3.66	3.98	3.20
June	2.09	1.38	9.76	3.57	9.72	5.47	17.76	3.96	18.15	4.17
July		.80	3.11	2.50		2.59	2.87	2.46	3.11	2.03
Aug.		1.70	7.91	4.22	8.58	5.70	10.31	3.82	8.11	4.30
Sept.		1.28	7.32	5.47	4.17	7.72	3.74	6.27	4.06	5.76
Oct.		1.27	3.78	2.60	5.55	3.81	7.40	3.49	7.91	3.99
Nov.		1.55	.04	.57	.47	1.09	.51	1.16	1.26	1.62
Dec.		1.93	.12	.46	.63	.62	.91	1.03	.79	.85
Yearly		15.21	37.87	24.29		36.10	54.25	31.03	51.86	31.14

Month	Gral. Teran Experimt. Station, Nuevo Leon		El Realito, Nuevo Leon		San Rafael, Nuevo Leon		El Cuchillo, Nuevo Leon		Gral. Bravo, Nuevo Leon	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	2.05	0.64	2.13	0.78		1.06	1.10	0.63	1.50	0.77
Feb.	2.17	.92	1.02	.59		1.33	1.57	.56	2.44	.57
Mar.	0	1.38	0	.24	0	.49	T	.50	0	.54
Apr.	0	1.33	.12	.29	.35	.64	.12	1.27	.24	1.46
May	4.80	2.86	2.09	2.98		1.76	2.16	2.22	2.01	2.94
June	15.24	4.58	8.70	5.07	2.64	2.26	8.42	2.64	8.58	2.72
July	.79	2.20	1.30	3.09		2.38		1.64	.83	2.13
Aug.	13.31	4.08	3.74	3.32	5.35	2.56	2.87	2.79	.91	2.72
Sept.	9.37	7.28	9.33	7.70	5.28	2.73	7.76	4.48	6.38	4.49
Oct.	3.62	4.62	3.74	2.22	1.14	1.38	4.09	2.12	2.80	2.12
Nov.	.55	1.12	0	.20	0	.80	.04	.54	0	.86
Dec.		.65	.43	.26	0	.76	.35	.45	.51	.71
Yearly		31.96	32.60	26.74		18.15		19.84	26.20	22.03

Month	Cerralvo, Nuevo Leon		Comales, Tamaulipas		Camargo, Tamaulipas		Valadeces, Tamaulipas		Bajo Rio San Juan, Tamps., No. 2-29	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	0.83	0.65	2.48	0.86	2.05	1.03	2.80	1.32	4.25	1.34
Feb.	1.50	.65	3.15	.80	3.07	1.05	2.99	1.17	3.35	1.11
Mar.	0	.56	0	.59	0	.48	0	.50	0	.40
Apr.	.16	1.88	.39	1.53	.79	1.73	.39	1.51	2.20	1.46
May	.94	2.89	3.07	2.12	1.93	2.18	1.93	3.21	2.20	3.85
June	16.13	3.36	11.57	2.29	10.67	2.60	13.54	4.25	8.74	3.32
July	3.78	1.52	0	1.13	.24	1.23	0	1.49	0	.97
Aug.	3.98	3.50	3.46	2.65	4.49	2.16	6.77	2.59	8.19	3.10
Sept.	11.89	5.33	9.53	4.23	8.82	4.68	8.07	5.28	7.87	5.28
Oct.	4.33	2.72	3.03	2.37	3.27	1.88	5.35	2.53	6.06	2.57
Nov.	.51	.69	0	.72	0	1.16	0	1.01	0	1.06
Dec.	.67	.45	.31	.69	.51	.67	1.02	.81	2.05	.86
Yearly	44.77	24.35	36.99	20.03	35.84	20.85	42.86	25.67	44.91	25.32

Month	* Cd. Dias Ordaz, Tamaulipas		Reynosa Km. 22 SW, Tamaulipas		Bajo Rio San Juan, Tamps., No. 2-38		Bajo Rio San Juan, Tamps., No. 2-33		Arguelles, Tamaulipas	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	3.50	0.93	3.46	1.10	3.11	1.26	3.90	1.38	3.86	1.30
Feb.	3.82	1.00	4.33	.94	3.46	1.02	3.27	1.12	4.80	1.40
Mar.	.08	.48	.20	.55	.16	.47	.08	.40	.12	.54
Apr.	.35	1.66	.59	1.24	.67	1.26	.39	1.38	.59	1.16
May	2.28	2.40	2.32	2.89	5.04	3.96	1.57	3.87	2.64	2.87
June	9.94	2.46	6.10	3.05	8.62	3.89	11.26	3.72	7.05	3.08
July	.39	.95	1.81	1.55	.20	1.23	.08	1.10	2.48	1.13
Aug.	3.78	2.05	2.72	2.13	5.94	3.44	6.02	3.17	1.97	1.41
Sept.	3.93	4.23	4.02	5.02	6.69	4.60	7.72	5.52	3.15	4.68
Oct.	6.85	2.64	5.91	2.32	4.57	1.89	3.07	2.37	3.15	1.78
Nov.	0	1.01	1.57	1.01	0	1.23	0	1.14	.53	.96
Dec.	1.69	.82	.93	1.17	.55	.85	1.10	1.15	.79	1.19
Yearly	41.56	20.63	34.01	22.97	39.01	25.10	38.46	26.32	31.23	21.50

T Trace * Formerly San Miguel de Camargo, Tamaulipas

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

Month	Presa Anzalduas, Tamaulipas		Reynosa, Tamaulipas		Mendez, Tamaulipas		Bajo Rio San Juan, Tamps., No. 3-55		Bajo Rio San Juan, Tamps., No. 3-58	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	2.60	0.73	3.94	1.05	0.98	0.89	5.31	1.84	4.53	1.61
Feb.	1.81	.55	3.50	.91	1.89	.87	5.43	1.58	4.45	1.39
Mar.	.04	.50	0	.71	0	.88	0	.71	0	.73
Apr.	.43	1.29	.31	1.15	.64	1.76	.31	1.73	.47	1.52
May	.98	2.62	.93	2.27	1.97	2.64	.67	2.98	1.46	2.89
June	7.87	2.73	9.13	2.32	13.54	3.02	10.24	3.93	10.20	3.41
July	.71	1.04	.59	1.12	.51	1.10	.28	2.26	2.68	2.21
Aug.	2.01	1.48	1.46	1.53	5.75	3.15	6.93	2.71	6.65	2.64
Sept.	4.84	3.63	6.26	3.34	4.92	4.49	3.07	4.63	3.23	5.05
Oct.	2.83	2.34	4.88	2.16	2.60	2.34	3.50	3.34	3.27	3.16
Nov.	.04	.59	.12	.93	.31	.69	.51	.76	0	1.07
Dec.	.47	.88	.43	.77	2.13	.48	0	.76	0	.82
Yearly	24.63	18.28	31.60	18.26	35.24	22.31	36.25	27.23	38.94	26.50

Month	Bajo Rio San Juan, Tamps., No. 3-60		Bajo Rio San Juan, Tamps., No. 3-47		Bajo Rio San Juan, Tamps., No. 3-63		Rio Bravo, Tamaulipas		Retamal, Tamaulipas	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	3.86	1.45	6.06	1.89	4.13	1.60	5.63	1.18		0.89
Feb.	4.69	1.43	3.66	1.41	3.82	1.67	5.12	1.27		.96
Mar.	0	.67	0	.62	0	.66	0	.66		.70
Apr.	.43	1.80	.43	1.58	.16	1.24	.16	1.53		1.35
May	1.65	2.75	1.50	3.84	2.87	2.47	1.18	2.37		2.45
June	12.05	3.82	10.16	4.28	8.62	3.73	10.00	3.13	8.90	2.86
July	.83	1.49	1.39	2.19	1.54	1.83	.75	1.94	1.14	1.03
Aug.	4.84	2.67	3.74	2.23	3.50	3.10	4.45	2.38	5.75	2.41
Sept.	6.38	5.30	5.51	4.77	.47	5.40	9.06	4.90	2.24	3.36
Oct.	4.29	3.16	5.24	2.88	3.78	2.40	7.28	2.81	4.84	2.51
Nov.	0	1.03	.51	1.15	0	.89	2.13	1.16	.63	1.19
Dec.	0	.78	0	.93	0	.68	0	.80	.24	.84
Yearly	39.02	26.35	38.70	27.77	28.89	25.67	45.76	24.13		20.55

Month	Bajo Rio Bravo, Tamps., No. 3-15		Bajo Rio Bravo, Tamps., No. 4-16		Bajo Rio Bravo, Tamps., No. 3-14		Bajo Rio Bravo, Tamps., No. 3-17		Bajo Rio Bravo, Tamps., No. 2-8	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	4.76	1.62	2.64	1.56	3.66	1.50	4.45	1.73	3.15	1.61
Feb.	5.98	1.77	3.39	1.49	5.47	1.16	4.06	1.61	4.06	1.59
Mar.	.08	.74	.39	.69	.12	.42	0	.60	.20	.84
Apr.	.71	1.52	.39	1.53	.43	1.18	.51	1.15	.75	1.61
May	1.42	3.09	2.09	2.43	.94	3.25	1.38	3.32	2.80	2.70
June	8.31	4.53	6.81	4.33	6.69	3.23	6.26	3.72	9.49	3.60
July	1.02	2.08	1.65	1.52	2.95	1.73	3.58	2.12	1.10	2.11
Aug.	3.58	2.66	4.13	3.22	2.20	1.94	5.12	2.50	6.61	3.63
Sept.	4.53	3.96	1.65	5.28	2.05	4.15	4.17	5.16	2.72	5.79
Oct.	4.09	2.49	4.37	2.65	4.13	2.26	5.20	2.41	8.43	2.91
Nov.	2.01	1.20	1.14	1.59	.35	.83	.83	1.33	.28	1.93
Dec.	.28	.95	.91	.99	.31	.80	.63	1.00	.31	.95
Yearly	36.77	26.59	29.56	27.28	29.30	22.45	36.19	26.65	40.10	29.27

Month	Bajo Rio Bravo, Tamps., No. 2-6		Bajo Rio Bravo, Tamps., No. 2-10		Valle Hermoso, Tamaulipas		Control, Tamaulipas		Bajo Rio Bravo, Tamps., No. 2-5	
	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	3.74	1.95	2.87	1.50	3.66	1.09	3.15	1.30	3.78	2.02
Feb.	5.04	1.74	3.03	2.22	3.86	1.34	4.72	1.14	5.75	1.73
Mar.	.08	.97	0	.96	.24	.55	.20	.61	.16	1.16
Apr.	.83	1.50	.55	1.50	.75	1.65	.47	1.46	.71	1.53
May	2.13	3.23	3.15	2.40	1.30	2.63	4.76	2.91	2.36	2.82
June	3.98	3.41	7.72	3.72	6.93	3.32	6.42	3.19	5.00	3.72
July	1.46	1.62	.94	1.81	1.77	1.65	.75	1.36	1.50	1.35
Aug.	5.79	3.02	4.64	2.97	3.58	1.81	3.82	2.80	6.89	2.98
Sept.	4.57	5.04	1.77	5.40	2.13	5.54	2.68	5.32	2.68	5.49
Oct.	5.00	2.53	5.63	2.16	4.88	2.38	2.32	2.38	3.74	2.41
Nov.	0	1.27	.39	1.35	1.14	1.51	2.17	1.24	1.18	1.34
Dec.	.20	1.12	.47	.76	.31	.87	.35	.89	.39	.96
Yearly	32.82	27.40	31.16	26.75	30.55	24.34	31.81	24.60	34.14	27.51

RAINFALL ON THE RIO GRANDE WATERSHED IN MEXICO

In Inches

	Bajo Rio Bravo, Tamps., No. 2-11		Bajo Rio Bravo, Tamps., No. 1-2		Bajo Rio Bravo, Tamps., No. 2-7		Bajo Rio Bravo, Tamps., No. 1-4		Bajo Rio Bravo, Tamps., No. 1-18	
Month	1973	Average	1973	Average	1973	Average	1973	Average	1973	Average
Jan.	3.78	1.86	2.80	1.73	2.68	1.62	3.46	2.00	2.48	1.73
Feb.	3.82	1.32	6.38	1.72	4.37	1.54	6.06	1.48	4.92	1.67
Mar.	.03	.68	.12	.61	.08	.78	.08	.89	.08	.46
Apr.	.91	1.93	.79	1.14	.59	1.83	.71	1.65	.47	1.19
May	1.30	3.07	3.35	3.53	.79	3.17	2.64	3.04	2.56	2.60
June	9.02	4.84	5.55	4.19	6.18	3.97	4.33	3.77	9.13	3.78
July	1.22	1.95	.91	1.74	.87	1.71	.20	.87	.83	1.56
Aug.	4.76	3.00	3.03	2.92	4.83	3.26	5.55	2.68	4.80	2.64
Sept.	6.85	5.83	3.31	5.97	4.33	5.28	3.98	5.72	9.72	5.47
Oct.	4.76	3.01	3.07	2.39	3.07	2.29	3.27	2.49	5.31	3.20
Nov.	.91	1.32	.93	1.25	1.31	1.30	2.17	1.15	1.26	1.34
Dec.	.23	1.01	.31	.91	.51	1.02	.59	1.06	.28	1.12
Yearly	37.09	29.26	30.60	28.10	30.16	28.27	33.04	26.81	41.84	26.76

	Bajo Rio Bravo, Tamps., No. 1-3		Bajo Rio Bravo, Tamps., No. 1-13		Bajo Rio Bravo, Tamps., No. 1-12		Matamoros, Tamaulipas			
Month	1973	Average	1973	Average	1973	Average	1973	Average		
Jan.	2.48	1.78	2.52	1.64	3.66	2.04	4.41	1.91		
Feb.	5.00	1.49	4.92	1.51	7.76	1.84	7.05	2.15		
Mar.	.08	.54	.12	.65	.08	.63	.20	.59		
Apr.	.47	1.55	.55	1.49	.51	1.37	.35	1.67		
May	1.46	2.89	1.22	2.01	1.73	3.09	3.27	2.63		
June	4.13	3.87	4.84	3.95	5.31	3.46	5.31	3.75		
July	.75	1.31	.75	1.32	.39	1.59	.87	1.50		
Aug.	4.85	2.93	4.69	3.08	4.80	2.15	7.32	3.20		
Sept.	4.09	5.33	4.53	5.83	5.59	5.52	10.39	6.81		
Oct.	2.95	2.58	2.99	2.48	4.45	3.24	3.54	3.59		
Nov.	.71	1.67	.31	1.33	.75	1.22	.12	1.35		
Dec.	.35	.93	.20	.97	.35	1.01	.43	1.47		
Yearly	27.12	26.62	27.64	26.26	35.38	27.16	43.26	30.62		

AVERAGE RAINFALL ON SUBDIVISIONS OF THE RIO GRANDE WATERSHED

With Averages for the 103 Years 1871-1973, Inclusive

In Inches

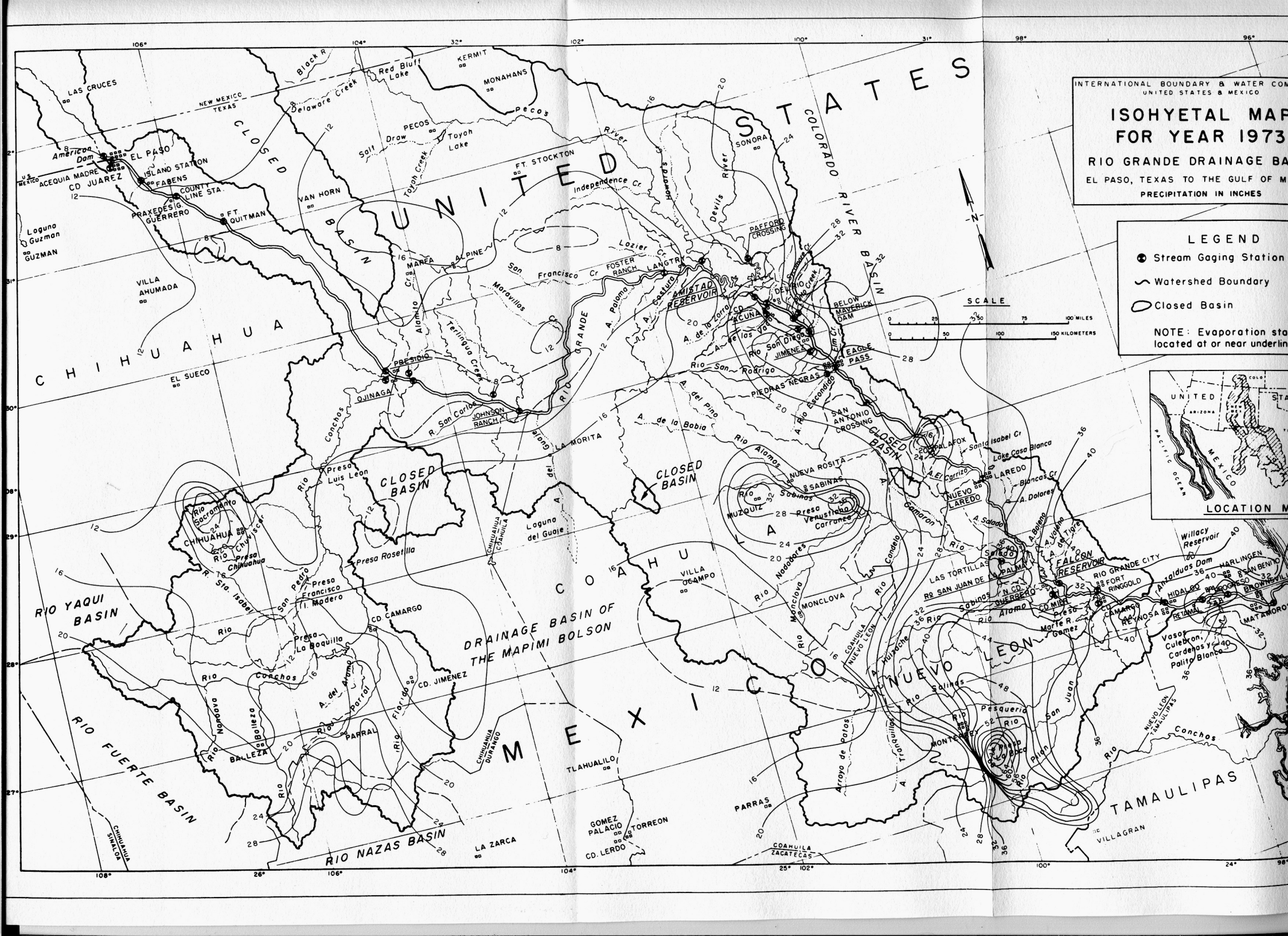
The precipitation records of all stations on or adjacent to the watershed subdivisions listed below have been used, with proper weighting for area, in calculating the average rainfalls shown here. The drainage area for each subdivision is shown in parentheses. The hundreds of individual records are delineated in the various "Indexes to Precipitation Records" shown in Water Bulletins Nos. 10, 14, 22, 26, and Supplement 40A.

Month	El Paso to Fort Quitman (2,677 Square Miles)		Fort Quitman to Above Rio Conchos (3,022 Square Miles)		* Above Rio Conchos to Johnson Ranch (3,815 Square Miles)		Johnson Ranch to Langtry (13,669 Square Miles)	
	1973	Period Average	1973	Period Average	1973	Period Average	1973	Period Average
Jan.	1.43	0.44	0.66	0.39	0.15	0.35	0.23	0.49
Feb.	1.59	.38	1.59	.27	1.02	.29	1.29	.38
Mar.	.47	.34	.41	.26	.01	.20	.12	.41
Apr.	0	.26	T	.34	.04	.39	.17	.80
May	.44	.40	.93	.61	.66	.76	.44	1.51
June	.14	.82	.14	1.21	.37	1.12	.70	1.73
July	5.00	2.33	3.25	3.00	3.15	1.84	2.89	1.89
Aug.	.59	1.92	1.43	2.43	1.70	1.86	1.03	2.11
Sept.	.15	1.36	.32	1.87	1.63	1.51	1.81	2.19
Oct.	.36	.91	.55	1.02	.18	.85	.42	1.22
Nov.	.01	.43	0	.41	0	.33	0	.58
Dec.	0	.58	0	.53	0	.39	0	.54
Total	10.18	10.17	9.28	12.34	8.91	9.89	9.10	13.85

Month	Pecos River below Sheffield (3,390 Square Miles)		# Langtry to Amistad Dam (2,091 Square Miles)		Devils River (4,305 Square Miles)		‡ Amistad Dam to Eagle Pass (1,625 Square Miles)	
	1973	Period Average	1973	Period Average	1973	Period Average	1973	Period Average
Jan.	0.56	0.70	0.46	0.52	1.11	0.68	1.17	0.76
Feb.	1.44	.88	1.91	.65	2.00	.73	2.12	.92
Mar.	.90	.78	.56	.77	1.40	1.07	.87	1.00
Apr.	.93	1.88	.89	1.34	1.07	1.77	1.06	1.68
May	.69	1.79	.51	1.95	1.08	2.56	.65	2.89
June	.90	2.48	2.35	2.23	1.61	2.68	3.49	2.51
July	3.36	1.85	2.95	1.22	2.87	1.73	3.23	1.32
Aug.	.21	1.98	.78	1.66	.27	2.13	1.21	2.01
Sept.	3.57	2.39	2.71	2.35	3.30	2.94	2.96	3.13
Oct.	2.06	1.82	4.82	1.47	3.90	2.20	7.06	2.06
Nov.	.01	.92	0	.74	.03	1.52	.03	1.02
Dec.	0	.74	0	.62	T	.99	T	.86
Total	14.63	18.21	17.94	15.52	18.64	21.00	23.85	20.66

Month	⊕ Eagle Pass to Laredo (3,795 Square Miles)		♂ Laredo to Falcon Dam (3,369 Square Miles)		† Falcon Dam to Rio Grande City (468 Square Miles)		United States Side below Rio Grande City (986 Square Miles)	
	1973	Period Average	1973	Period Average	1973	Period Average	1973	Period Average
Jan.	0.94	0.74	1.34	0.76	1.54	0.91	3.84	1.26
Feb.	3.16	.83	4.34	.82	3.90	.85	4.63	1.11
Mar.	.31	.93	.01	.79	.02	.95	.07	1.05
Apr.	.46	1.58	.70	1.40	.76	1.20	.56	1.35
May	.91	3.10	.94	3.20	1.91	2.44	1.30	2.83
June	5.50	2.48	10.71	1.99	8.53	2.14	7.39	2.56
July	1.66	1.43	1.14	2.05	.61	1.86	.61	1.70
Aug.	.75	2.32	3.36	1.86	4.22	2.17	4.92	2.29
Sept.	5.13	3.09	8.59	3.15	11.03	3.60	7.15	4.39
Oct.	4.85	1.89	3.32	1.61	3.78	1.95	3.87	2.52
Nov.	.04	.97	.20	1.56	.27	.78	.73	1.38
Dec.	T	.98	.01	.82	.16	.67	.42	1.24
Total	23.71	20.34	34.66	20.01	36.73	19.52	35.49	23.68

* Excluding Rio Conchos, Alamito and Terlingua Creeks
# Excluding Pecos and Devils Rivers
‡ Excluding Arroyo Las Vacas, San Felipe Creek, Pinto Creek, Rio San Diego, and Rio San Rodrigo
⊕ Excluding Rio Escondido
♂ Excluding Rio Salado above Old Cd. Guerrero
† Excluding Rio Alamo and Rio San Juan


INTERNATIONAL BOUNDARY & WATER COM
UNITED STATES & MEXICO
ISOHYETAL MAP
FOR YEAR 1973
RIO GRANDE DRAINAGE BA
EL PASO, TEXAS TO THE GULF OF M
PRECIPITATION IN INCHES
LEGEND
Stream Gaging Station
Watershed Boundary
Closed Basin
NOTE: Evaporation sta
located at or near underlin
SCALE
0 25 50 75 100 MILES
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LOCATION M
UNITED STATES
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DRAINAGE BASIN OF THE MAPIMI BOLSON
RIO YAQUI BASIN
RIO FUERTE BASIN
RIO NAZAS BASIN
CLOSED BASIN
COLORADO RIVER BASIN
RIO GRANDE
EL PASO
CD JUAREZ
LAS CRUCES
FT STOCKTON
PECOS
VAN HORN
ALPINE
MARFA
PRESIDIO
OJINAGA
EL SUECO
VILLA AHUMADA
GUZMAN
AMISTAD RESERVOIR
DEL RIO
ACUNA
PAFFORD CROSSING
BELOW MAVERICK DAM
EAGLE PASS
PIEDRAS NEGRAS
SAN ANTONIO CROSSING
LAREDO
NUEVO LAREDO
FALCON RESERVOIR
RIO GRANDE CITY
MONTERREY
MONCLOVA
SALTILLO
CD JIMENEZ
PARRAL
CD CAMARGO
CHIHUAHUA
JUAREZ
TORREON
CD LERDO
GOMEZ PALACIO
PARRAS
TLAHUALILO
VILLA OCAMPO
MUZQUIZ
NUEVA ROSITA
SABINAS
LA MORITA
JOHNSON RANCH
FOSTER RANCH
LANGTRY
SONORA
MONAHANS
KERMIT
RED BLUFF LAKE
TOYAH LAKE
SALT DRAW
DELAWARE CREEK
BLACK R
AMERICO DAM
ISLAND STATION
FABENS
COUNTY LINE STA
PRAXEDES G GUERRERO
FT QUITMAN
LOZIER
INDEPENDENCE CR
SAN FRANCISCO CR
MARAVILLOS CR
ALAMITO
TERLINGUA CREEK
R SAN CARLOS
CONCHOS
PRESA LUIS LEON
PRESA ROSETILLA
PRESA CHIHUAHUA
PRESA FRANCISCO I MADERO
PRESA LA BOQUILLA
LAGUNA DEL GUAJE
LAGUNA DE GUZMAN
RIO SACRAMENTO
RIO CHUVISCAR
RIO STA ISABEL
RIO SAN PEDRO
RIO CONCHOS
RIO NOMBRE DE DIOS
RIO FLORIDO
RIO BALLEZA
RIO PARRAL
RIO ALAMOS
RIO SABINAS
RIO SAN RODRIGO
RIO ESCONDIDO
RIO SAN DIEGO
A DE LOS VAQUEROS
A DE LA BABIA
A DEL PINO
A PALOMA
A CASTURA
A DE LA LORRA
A DEL ORO
A DEL ARROYO
A DEL BRONCO
A DEL CARRIZO
A DE LOS DOLORES
A SALADO
A DEL TIGRE
A VOLCAN
A BALLENA
A HUIZACHE
A TRIQUILES
ARROYO DE PALOS
RIO NADADORES
RIO MONCLOVA
RIO CANDELO
RIO CAMARON
RIO SALINAS
RIO PESQUERIA
RIO SAN JUAN
RIO PRIETO
RIO RAMOS
RIO ATASCOSA
RIO ALAMO
RIO SABINAS
RIO SALADO
RIO LAS TORTILLAS
RIO SAN JUAN DE LA PALMA
RIO MORTE R GOMEZ
RIO CAMARGO
RIO REYNOSA
RIO RETAMAL
RIO HIDALGO
RIO SAN JUAN
RIO BENITO
RIO BROWNSVILLE
RIO MATAMOROS
RIO CONCHOS
RIO SALINAS
RIO PESQUERIA
RIO SAN JUAN
RIO PRIETO
RIO RAMOS
RIO ATASCOSA
RIO ALAMO
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RIO SAN JUAN DE LA PALMA
RIO MORTE R GOMEZ
RIO CAMARGO
RIO REYNOSA
RIO RETAMAL
RIO HIDALGO
RIO SAN JUAN
RIO BENITO
RIO BROWNSVILLE
RIO MATAMOROS
Presa Venustiano Carranza
Presa Marte R. Gomez
Presa Vasos Cuelcron, Cardenas y Palito Blanco
Anzalduas Dam
Willacy Reservoir
Lake Casa Blanca
Santa Isabel Cr
Blancas Cr
Devils River
Howard Draw
Pecos River
Toyah Creek
Toyah Lake
Black R
Delaware Creek
Red Bluff Lake
Las Moras Cr
Pinto Creek
Seminole Cr
Lozier Cr
Foster Ranch
Langtry
Alamito
Terlingua Creek
Maravillos Cr
Independence Cr
San Francisco Cr
Rio Grande
Rio Conchos
Rio Alamos
Rio Sabinas
Rio San Rodrigo
Rio Escondido
Rio San Diego
Rio Salado
Rio Las Tortillas
Rio San Juan de la Palma
Rio Morte R Gomez
Rio Camargo
Rio Reynosa
Rio Retamal
Rio Hidalgo
Rio San Juan
Rio Benito
Rio Brownsville
Rio Matamoros
Rio Salinas
Rio Pesqueria
Rio San Juan
Rio Prieto
Rio Ramos
Rio Atascosa
Rio Alamo
Rio Sabinas
Rio Monclova
Rio Candelo
Rio Camaron
Rio Nadadores
Rio Florido
Rio Balleza
Rio Parral
Rio Nombre de Dios
Rio Conchos
Rio Sta Isabel
Rio San Pedro
Rio Chuvisca
Rio Sacramento
Rio Chihuahua
Rio Alamos
Rio Sabinas
Rio Muzquiz
Rio San Rodrigo
Rio Escondido
Rio San Diego
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Rio San Juan de la Palma
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Rio Alamo
Rio Sabinas
Rio Monclova
Rio Candelo
Rio Camaron
Rio Nadadores
Rio Florido
Rio Balleza
Rio Parral
Rio Nombre de Dios
Rio Conchos
Rio Sta Isabel
Rio San Pedro
Rio Chuvisca
Rio Sacramento
Rio Chihuahua

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

The precipitation records of stations listed below began on the date shown and extend through 1973. For detailed information regarding sources of data, specific periods of record, and other pertinent matters relative to these and additional rainfall stations on the Rio Grande watershed see "Index to Precipitation Records" in Water Bulletins Nos. 10, 14, 22, 26, and Supplement 40A. All United States precipitation stations listed below are in Texas, while those in Mexico are in the indicated state as shown.

In United States

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Adobes Ranch	S	29° 46'	104° 34'	2,550	1950	Fort Quitman - Above Rio Conchos	T. C. Davis
American Dam	S	31° 47'	106° 32'	3,730	1938	El Paso - Fort Quitman	I. B. & W. C.
Amistad Dam	R	29° 28'	101° 02'	1,150	July 1962	Langtry - Below Amistad Dam	I. B. & W. C.
Amistad Raft	C	29° 27'	101° 03'	‡‡	Dec. 1968	Langtry - Amistad Dam	I. B. & W. C.
Amistad Reservoir near Comstock	C	29° 33'	101° 13'	1,130	1970	Langtry - Amistad Dam	I. B. & W. C.
Apache Ranch	C	27° 56'	99° 56'	500	# 1953	Eagle Pass - Laredo	Leroy Tibiletti
Arledge, W. A. Ranch	S	29° 58'	101° 38'	1,950	June 1933	Johnson Ranch - Langtry	W. A. Arledge
Arroyo Tigre Chiquito	C	26° 41'	99° 07'	314	Apr. 1954	Laredo - Falcon Dam	I. B. & W. C.
Baker, A. A. Ranch	R	29° 44'	101° 09'	1,720	July 1962	Devils River	I. B. & W. C.
Bakers Crossing	S	29° 58'	101° 09'	1,520	#Apr. 1955	Devils River	James Baker
Bennett, Moody Ranch	S	30° 37'	104° 55'	3,175	July 1956	Fort Quitman - Above Rio Conchos	Moody Bennett
Big Satan Creek Station	C	29° 40'	100° 58'	1,150	Nov. 1968	Devils River	I. B. & W. C.
Black Gap Game Refuge	S	29° 34'	102° 57'	2,325	# 1952	Johnson Ranch - Langtry	Ben Martin
Bloys Camp	V	30° 33'	104° 07'	5,650	# 1941	Alamito Creek	George Knight
Brite, J. G. Ranch	R	29° 33'	101° 01'	1,150	Sept.1962	Devils River	I. B. & W. C.
Brotherton Ranch	V	29° 42'	101° 19'	1,400	1961	Langtry - Below Amistad Dam	Perry Calk
Buoy No. 11	C	29° 31'	101° 10'	‡‡	Dec. 1969	Langtry - Amistad Dam	I. B. & W. C.
Buttrill Ranch	S	30° 00'	103° 16'	3,500	Mar. 1952	Johnson Ranch - Langtry	Tom B. Leary
Canon Diablo	C	28° 39'	100° 27'	700	1964	Eagle Pass - Laredo	I. B. & W. C.
Castolon	S	29° 08'	103° 31'	2,100	#Mar. 1953	Above Rio Conchos - Johnson Ranch	National Park Service
CCWID #11 (Bayview Dist. Off.) Avg. 18 Gages	S	26° 08'	97° 21'	25	1952	Lower Rio Grande Valley	CCWID #11
CCWCID #19 (Adams Gardens)	S	26° 10'	97° 47'	50	1952	Lower Rio Grande Valley	CCWCID #19
Chittim Ranch	C	28° 44'	100° 28'	810	Mar. 1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Coal Mine	R	28° 48'	100° 28'	770	Mar. 1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Comstock	S	29° 41'	101° 10'	1,530	May 1939	Langtry - Below Amistad Dam	I. B. & W. C.
Continental Ranch	S	29° 51'	101° 18'	1,560	Mar. 1965	Pecos River Below Sheffield	Julio Crowder
Cooper Ranch	C	28° 50'	100° 27'	800	Mar. 1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Corralitos Ranch	C	27° 07'	99° 25'	346	1953	Laredo - Falcon Dam	I. B. & W. C.
County Line Station	R	31° 23'	105° 59'	3,550	1938	El Paso - Fort Quitman	I. B. & W. C.
Cow Creek near Comstock	R	29° 36'	101° 12'	1,210	Apr. 1965	Langtry - Below Amistad Dam	I. B. & W. C.
Cuervo Creek Station	C	28° 21'	100° 19'	620	1954	Eagle Pass - Laredo	I. B. & W. C.
Dale, O. C. Farm	S	26° 15'	98° 16'	130	1952	Lower Rio Grande Valley	O. C. Dale
Dead Mans Canyon near Comstock	C	29° 47'	101° 19'	1,320	Sept.1967	Pecos River below Sheffield	I. B. & W. C.
Devils Lake	R	29° 34'	100° 59'	1,146	May 1939	Devils River	I. B. & W. C.
Dolan Springs	C	29° 54'	100° 59'	1,360	Feb. 1966	Devils River	I. B. & W. C.
Dove Mountain Ranch	S	29° 48'	102° 54'	2,880	#Mar. 1952	Johnson Ranch - Langtry	Sam Cavness
Dryden	S	30° 03'	102° 07'	2,130	# 1931	Johnson Ranch - Langtry	Lewis Cash
Dunbar, Allen Ranch	V	29° 57'	100° 32'	2,200	1955	Devils River	Allen Dunbar
Eagle Pass	S	28° 42'	100° 30'	815	1964	Eagle Pass - Laredo	I. B. & W. C.
Edinburg Filtration Plant	S	26° 18'	98° 10'	100	1952	Lower Rio Grande Valley	City of Edinburg
El Indio	S	28° 31'	100° 19'	725	# 1941	Eagle Pass - Laredo	Glen Stidham
Elm Creek Station	C	28° 46'	100° 30'	720	1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
El Peyote Ranch	C	27° 07'	98° 58'	650	1966	Laredo - Falcon Dam	F. J. Saldana
Erekson Ranch	S	29° 56'	100° 34'	2,330	1955	Devils River	Bob Erekson
Evans Creek near Comstock	C	29° 32'	101° 06'	1,180	July 1969	Devils River	I. B. & W. C.
Falcon Dam	S	26° 33'	99° 08'	323	Apr. 1950	Laredo - Falcon Dam	I. B. & W. C.
Farias Ranch	R	28° 36'	100° 20'	720	Mar. 1959	Eagle Pass - Laredo	I. B. & W. C.

S Standard R Recording C Cumulative V Visual ‡‡ Reservoir Surface
Some months or years missing

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In United States

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Fawcett, H. K. Ranch	S	29° 52'	100° 54'	1,550	# 1941	Devils River	H. K. Fawcett
Feely	C	29° 34'	101° 07'	1,250	Apr. 1965	Langtry - Below Amistad Dam	I. B. & W. C.
Fletcher, H. T. Ranch	S	30° 12'	104° 16'	5,100	# 1939	Alamito Creek	Hayes Mitchell, Jr.
Fort Hancock Bridge	S	31° 16'	105° 51'	3,500	Apr. 1940	El Paso - Fort Quitman	I. B. & W. C.
Fort McIntosh (Laredo)	V	27° 30'	99° 31'	410	# 1850	Eagle Pass - Laredo	I. B. & W. C.
Fort Quitman	R	31° 06'	105° 36'	3,430	# 1937	Fort Quitman - Above Rio Conchos	I. B. & W. C.
Foster, Ross Ranch	C	29° 47'	101° 45'	1,230	May 1961	Johnson Ranch - Langtry	I. B. & W. C.
Garciasville	R	26° 20'	98° 41'	200	Apr. 1957	Lower Rio Grande Valley	I. B. & W. C.
Gillis Headquarters Ranch	S	29° 37'	100° 47'	1,410	1968	Amistad Dam - Eagle Pass	Jake Schiller
Gillis Ranch	S	29° 41'	101° 03'	1,440	1965	Devils River	Walter Gillis
Goldwire Ranch	C	29° 44'	100° 57'	1,685	Nov. 1968	Devils River	Jake Schiller
Goodenough Spring Raft	C	29° 32'	101° 16'	††	Aug. 1958	Langtry - Amistad Dam	I. B. & W. C.
Greenwood, H. M. (Cienega Ranch)	S	29° 48'	104° 13'	4,000	Mar. 1941	Alamito Creek	H. M. Greenwood
Guayuco Arroyo	R	31° 10'	105° 40'	3,600	#May 1940	El Paso - Fort Quitman	I. B. & W. C.
Hammond, Earl Ranch	S	29° 41'	103° 51'	3,700	Apr. 1963	Terlingua Creek	Earl Hammond
Hardgrave, E. W. Ranch	S	30° 18'	102° 09'	2,650	Apr. 1952	Johnson Ranch - Langtry	Jack Hardgrave
Harlow Ranch	C	29° 50'	101° 11'	1,695	Mar. 1959	Devils River	I. B. & W. C.
HCWCID #6 Goodwin Pump No. 3	S	26° 16'	98° 24'	175	# 1953	Lower Rio Grande Valley	HCWCID #6
HCWCID #6 Goodwin Pump No. 3A	S	26° 14'	98° 22'	130	# 1953	Lower Rio Grande Valley	HCWCID #6
HCWCID #6 Goodwin Pump No. 4	S	26° 16'	98° 21'	185	1956	Lower Rio Grande Valley	HCWCID #6
HCWCID #6 Goodwin Pump No. 4B	S	26° 18'	98° 23'	210	# 1953	Lower Rio Grande Valley	HCWCID #6
HCWCID #6 Goodwin Pump No. 5	S	26° 22'	98° 21'	225	# 1953	Lower Rio Grande Valley	HCWCID #6
HCWCID #15 (Edinburg Office)	S	26° 23'	98° 09'	85	1952	Lower Rio Grande Valley	HCWCID #15
Heath Crossing	S	29° 27'	102° 50'	1,775	July 1966	Johnson Ranch - Langtry	Dow Chemical
Hinds "AT" Ranch	S	29° 46'	101° 03'	1,690	Sept.1954	Devils River	Lucious Hinds
Hoffman Ranch	S	30° 38'	103° 51'	4,650	June 1955	Pecos River Above Sheffield	Dr.A.J. Hoffman
Hulsache Ranch	C	26° 57'	99° 21'	383	Aug. 1953	Laredo - Falcon Dam	I. B. & W. C.
Hutto Ranch No. 1	R	29° 30'	100° 50'	1,240	Jan. 1964	Devils River	I. B. & W. C.
Hutto Ranch No. 2	R	29° 29'	100° 54'	1,210	Jan. 1964	Devils River	I. B. & W. C.
Indio Ranch	S	28° 31'	100° 22'	700	1959	Eagle Pass - Laredo	Earnest Scales
Island Station	R	31° 32'	106° 14'	3,630	1939	El Paso - Fort Quitman	I. B. & W. C.
James, Lewis Ranch	S	30° 11'	102° 07'	2,275	1966	Johnson Ranch - Langtry	Lewis James
Johnson Ranch	C	29° 01'	103° 23'	2,050	#July 1933	Johnson Ranch - Langtry	I. B. & W. C.
Keisling Farm	S	28° 23'	100° 17'	740	Dec. 1958	Eagle Pass - Laredo	Robert Smith
Kelly, P. W. Ranch	S	29° 46'	101° 12'	1,750	1955	Langtry - Below Amistad Dam	Bobby Kelly
King, Martin Ranch	R	29° 44'	101° 22'	1,460	Nov. 1954	Langtry - Below Amistad Dam	I. B. & W. C.
Kokernot Ranch - Hqtrs.	S	29° 59'	103° 34'	4,140	# 1952	Johnson Ranch - Langtry	David Kokernot
La Feria Materials Yard	V	26° 10'	97° 50'	50	1960	Lower Rio Grande Valley	CCWCID #3
La Feria Pumping Plant	S	26° 03'	97° 50'	60	1952	Lower Rio Grande Valley	CCWCID #3
Lajitas	S	29° 16'	103° 48'	2,320	June 1967	Above Rio Conchos - Johnson Ranch	Texas Hwy. Dept.
La Joya	R	26° 15'	98° 29'	150	Apr. 1957	Lower Rio Grande Valley	I. B. & W. C.
La Nutria Station	C	30° 14'	104° 43'	2,880	Mar. 1967	Fort Quitman - Above Rio Conchos	I. B. & W. C.
Laredo Water Plant	S	27° 33'	99° 31'	410	# 1930	Eagle Pass - Laredo	Laredo Water Plant
Las Moras Creek	S	29° 00'	100° 38'	800	1958	Below Amistad Dam - Eagle Pass	Lou McGee
Lateral No. 2 Spill	C	28° 56'	100° 38'	780	Mar. 1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Lateral No. 12 Headgate	C	28° 54'	100° 34'	800	1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Lateral No. 15 Spill	C	28° 51'	100° 34'	740	1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Latham Ranch ‡	S	30° 13'	101° 22'	2,120	1965	Pecos River Below Sheffield	John & Bob Latham
Laughlin Air Force Base	S	29° 22'	100° 47'	1,080	Dec. 1958	Below Amistad Dam - Eagle Pass	U. S. A. F.
Lewis, Billie C., Jr. Ranch	S	29° 33'	100° 40'	1,400	1967	Below Amistad Dam - Eagle Pass	Billie C. Lewis, Jr.
Livingston Ranch	S	29° 49'	104° 22'	4,150	# 1951	Above Rio Conchos - Johnson Ranch	J. S. Livingston
Lock Store	S	30° 40'	100° 57'	2,400	Oct. 1962	Devils River	Claud Ward
Loma Vista Ranch	S	30° 13'	103° 47'	5,050	# 1941	Alamito Creek	Hayes Mitchell
Long Ranch	R	29° 28'	100° 57'	1,140	Oct. 1971	Devils River	I. B. & W. C.
Los Ebanos	C	26° 18'	99° 33'	150	Apr. 1957	Lower Rio Grande Valley	I. B. & W. C.
Los Fresnos Pump. Plant	S	26° 57'	97° 34'	30	1952	Lower Rio Grande Valley	CCWCID #6
Lowry, Cliff Ranch	R	29° 39'	100° 52'	1,490	June 1962	Devils River	I. B. & W. C.

S Standard C Cumulative V Visual R Recording # Some months or years missing
‡ Formerly Oberkampf Ranch †† Reservoir Surface

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In United States

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Lowry Ranch No. 2	R	29° 37'	100° 46'	1,160	May 1965	Devils River	I. B. & W. C.
Maverick County Canal Headgate	S	29° 10'	100° 46'	870	Mar. 1948	Below Amistad Dam - Eagle Pass	MCWCID #1
Maverick Power Plant	S	28° 50'	100° 33'	800	June 1952	Below Amistad Dam - Eagle Pass	C. P. & L. Co.
Maverick Ranger Station	S	29° 18'	103° 30'	2,780	1955	Terlingua Creek	Park Ranger
McGonagill Ranch - Headquarters	S	30° 20'	102° 58'	4,150	Apr. 1952	Johnson Ranch - Langtry	W. E. McGonagill
McGonagill Ranch - East Mill	S	30° 21'	102° 55'	4,050	May 1952	Johnson Ranch - Langtry	W. G. McGonagill
Middle Fork San Pedro	C	29° 30'	100° 53'	1,170	June 1969	Devils River	I. B. & W. C.
Miers, H. T. Ranch - Headquarters	C	29° 44'	100° 51'	1,760	1957	Devils River	I. B. & W. C.
Miers, H. T. Ranch No. 2	R	29° 44'	100° 53'	1,600	Apr. 1964	Devils River	I. B. & W. C.
Mitchell, Kerr Ranch	S	30° 13'	104° 00'	4,450	# 1941	Alamito Creek	Mrs. K. Mitchell
Mouth of Maravillas Creek	S	29° 34'	102° 47'	1,650	#Oct. 1949	Johnson Ranch - Langtry	Black Gap Game Refuge
Neely Ranch	S	30° 59'	105° 32'	3,350	Aug. 1941	Fort Quitman - Above Rio Conchos	Mrs. Tom Neely
New Mission Pump. Plant	S	26° 11'	98° 24'		Aug. 1961	Lower Rio Grande Valley	HCWCID #14
Normandy	S	28° 55'	100° 36'	780	Dec. 1958	Below Amistad Dam - Eagle Pass	Fannin G. Lowe
North Fork San Pedro	C	29° 31'	100° 53'	1,144	June 1969	Devils River	I. B. & W. C.
02 Ranch	S	29° 51'	103° 45'	3,780	# 1914	Terlingua Creek	Calvin Woodward
Owens Ranch	S	30° 45'	101° 40'	2,170	July 1963	Pecos River Below Sheffield	Jeff Owens
Pafford Crossing	C	29° 41'	101° 00'	1,180	Feb. 1960	Devils River	I. B. & W. C.
Pecos River near Langtry Station	C	29° 48'	101° 27'	1,260	July 1967	Pecos River Below Sheffield	I. B. & W. C.
Penitas (Edinburg Pumping Plant)	S	26° 14'	98° 27'	100	July 1957	Lower Rio Grande Valley	B. Leadbetter
Persimmon Gap Ranger Station	S	29° 40'	103° 10'	2,900	# 1948	Johson Ranch - Langtry	Park Ranger
Pinto Creek Station	C	29° 09'	100° 43'	870	Dec. 1958	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Potter, A. M. Ranch	S	29° 46'	103° 25'	3,440	1952	Johnson Ranch - Langtry	A. M. Potter
Presidio (IB&WC Gage)	C	29° 34'	104° 23'	2,550	Oct. 1949	Above Rio Conchos - Johnson Ranch	I. B. & W. C.
Prosser Ranch No. 1	C	29° 54'	101° 14'	1,710	Mar. 1965	Pecos River Below Sheffield	I. B. & W. C.
Prosser Ranch No. 2	C	29° 59'	101° 16'	1,850	Mar. 1965	Devils River	I. B. & W. C.
Prosser Ranch No. 3	C	30° 02'	101° 16'	2,020	Mar. 1965	Pecos River Below Sheffield	I. B. & W. C.
Quebec Ranch	V	30° 31'	104° 25'	4,600	1949	Adjacent to Alamito Creek	George Jones
Ranchita (Continental)	S	29° 50'	101° 20'	1,540	1969	Pecos River	Julio Crowder
Redford	C	29° 29'	104° 13'	2,500	July 1954	Above Rio Conchos - Johnson Ranch	I. B. & W. C.
Roma (Internat'l Bridge)	S	26° 24'	99° 01'	230	1941	Falcon Dam - Rio Grande City	Starr County Bridge Co.
Rosita Creek Siphon	C	28° 41'	100° 24'	760	# 1959	Eagle Pass - Laredo	I. B. & W. C.
Rosita Creek Station	C	28° 36'	100° 24'	700	# 1959	Eagle Pass - Laredo	I. B. & W. C.
Rough Canyon nr. Del Rio	C	29° 35'	100° 56'	1,147	June 1969	Devils River	I. B. & W. C.
San Benito Pump	S	26° 03'	97° 45'	50	Oct. 1953	Lower Rio Grande Valley	I. B. & W. C.
Sawyer, W. E. Ranch	S	30° 25'	100° 47'	2,100	June 1966	Devils River	Geo. Powell
Sellers Ranch	C	29° 34'	101° 02'	1,190	#Feb. 1960	Devils River	I. B. & W. C.
Shafter	V	29° 49'	104° 19'	3,800	July 1968	Above Rio Conchos - Johnson Ranch	Rosa Munoz
Shannon, Bill Ranch	C	29° 57'	104° 40'	2,680	# 1956	Fort Quitman - Above Rio Conchos	Bill Shannon
Sheep Pasture	S	29° 33'	102° 55'	2,210	May 1965	Johnson Ranch - Langtry	Black Gap Game Refuge
Stewart Ranch	R	29° 35'	100° 52'	1,330	Feb. 1960	Devils River	I. B. & W. C.
Stillwell Crossing	S	29° 24'	102° 50'	1,750	# 1960	Johnson Ranch - Langtry	Ulice Adams
Stumberg, Steve Ranch	C	30° 11'	102° 53'	4,300	1943	Johnson Ranch - Langtry	Mrs.SteveStumberg
Sultenfuss Ranch	S	29° 21'	100° 37'	1,110	1965	Pinto Creek	Udo Sultenfuss
Terlingua Creek Station	C	29° 12'	103° 36'	2,215	Mar. 1952	Above Rio Conchos - Johnson Ranch	I. B. & W. C.
Terrell Plant (El Paso Nat. Gas Co.)	R	30° 22'	101° 50'	2,510	July 1962	Pecos River Below Sheffield	Bob Norred
Todd Field	S	30° 51'	101° 27'	2,650	Sept.1964	Pecos River Below Sheffield	R. B. Stephens
Trees Farm	R	28° 38'	100° 25'	720	Mar. 1959	Eagle Pass - Laredo	I. B. & W. C.
Van Dalsem Farm	C	28° 27'	100° 19'	700	1959	Eagle Pass - Laredo	I. B. & W. C.
Vinegarone	C	29° 57'	100° 46'	1,780	May 1966	Devils River	I. B. & W. C.
Walker Ranch	C	29° 49'	101° 14'	1,530	July 1969	Devils River	I. B. & W. C.
Weyrich Farm	C	28° 40'	100° 24'	760	Sept.1962	Eagle Pass - Laredo	I. B. & W. C.
Whipple Farm	S	26° 04'	97° 29'	25	1952	Lower Rio Grande Valley	Harry Whipple
Whitehead Bros. Ranch	S	30° 02'	100° 52'	1,900	May 1966	Devils River	I. B. & W. C.
Whitehead, Tuffy Ranch	R	29° 38'	101° 07'	1,420	July 1962	Devils River	I. B. & W. C.
Willoughby, Ray Ranch	V	30° 12'	103° 33'	5,225	# 1952	Johnson Ranch - Langtry	Bill Ramsey

S Standard C Cumulative V Visual R Recording # Some months or years missing

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In United States

NAME OF STATION	TYPE GAGE	LATI-TUDE	LONGI-TUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Wipff Ranch	C	29° 00'	100° 35'	840	Mar. 1959	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Woodward, J. F. Ranch	S	30° 08'	103° 36'	4,750	1954	Johnson Ranch - Langtry	J. F. Woodward
Wuensche Farm	S	28° 24'	100° 19'	670	# 1952	Eagle Pass - Laredo	I. B. & W. C.
Yarborough Ranch	S	30° 06'	103° 36'	4,550	1966	Johnson Ranch - Langtry	VenancioVictorino
Zapata Water Plant	S	26° 54'	99° 16'	380	May 1953	Laredo - Falcon Dam	Zapata Water Plant

S Standard C Cumulative # Some months or years missing

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In Mexico

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
A. Blanca Canoas, Nuevo Leon	S	25° 32'	100° 30'	†	# 1958	Rio San Juan	Hydr. Resources
Adjuntas, Nuevo Leon	S	25° 18'	100° 08'	†	# 1958	Rio San Juan	Monterrey Wtrwrks
Allende, Coahuila	S	28° 21'	100° 51'	1,170	# 1947	Eagle Pass - Laredo	Hydr. Resources
Amistad Reservoir near Tlaloc, Coahuila	C	29° 26'	101° 07'	1,200	1970	Langtry - Amistad Dam	I. B. & W. C.
Anahuac, Nuevo Leon	S	27° 15'	100° 08'	656	#June 1933	Rio Salado	Hydr. Resources
Aniego 166, Tamaulipas	C	26° 46'	99° 15'	308	Jan. 1964	Laredo - Falcon Dam	I. B. & W. C.
Apodaca, Nuevo Leon	S	25° 46'	100° 11'	1,330	Feb. 1964	Rio San Juan	Hydr. Resources
Arguelles, Tamaulipas	C	26° 11'	98° 28'	†	1962	Lower Rio Grande Valley	I. B. & W. C.
Bachiniva, Chihuahua	S	28° 46'	107° 15'	6,250	# 1952	Adjacent to Rio Conchos	Meteor. Service of Mexico
Bajo Rio Bravo, Tamaulipas							
No. 1-2	S	25° 56'	97° 46'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 1-3	S	25° 50'	97° 42'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 1-4	S	25° 51'	97° 45'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 1-12	S	25° 56'	97° 38'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 1-13	S	25° 44'	97° 40'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 1-18	S	25° 49'	97° 42'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 2-5	S	25° 48'	97° 49'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 2-6	S	25° 44'	97° 53'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 2-7	S	25° 39'	97° 42'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 2-8	S	25° 40'	97° 55'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 2-10	S	25° 36'	97° 52'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 2-11	S	25° 35'	97° 46'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 3-14	S	25° 56'	97° 59'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 3-15	S	25° 46'	98° 01'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 3-17	S	25° 49'	97° 58'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 4-16	S	25° 35'	98° 00'	†	1964	Lower Rio Grande Valley	Hydr. Resources
Bajo Rio San Juan, Tamaulipas							
No. 2-29	S	26° 10'	98° 38'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 2-33	S	26° 10'	98° 28'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 2-38	S	26° 06'	98° 34'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 3-47	S	25° 58'	98° 07'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 3-55	S	25° 52'	98° 12'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 3-58	S	25° 50'	98° 11'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 3-60	S	25° 46'	98° 10'	†	1964	Lower Rio Grande Valley	Hydr. Resources
No. 3-63	S	25° 41'	98° 06'	†	1964	Lower Rio Grande Valley	Hydr. Resources
Balleza, Chihuahua	S	26° 57'	106° 21'	5,870	# 1903	Rio Conchos	Meteor. Service of Mexico
Banderas, Chihuahua	S	31° 00'	105° 39'	†	1963	Fort Quitman - Above Rio Conchos	Hydr. Resources
Bustamente, Nuevo Leon	S	26° 32'	100° 31'	1,450	# 1958	Rio Salado	Hydr. Resources
Cabezones, Nuevo Leon	S	24° 59'	99° 45'	†	1962	Adjacent to Rio San Juan	Hydr. Resources
Cadereyta, Nuevo Leon	S	25° 35'	100° 00'	1,180	#Sept.1904	Rio San Juan	Hydr. Resources
Camargo, Chihuahua	S	27° 42'	105° 10'	5,420	Oct. 1956	Rio Conchos	Hydr. Resources
Camargo, Tamaulipas	S	26° 19'	98° 50'	223	# 1953	Falcon Dam - Rio Grande City	Hydr. Resources
Carbonera, Nuevo Leon	S	24° 49'	100° 47'	†	# 1958	Rio San Juan	Hydr. Resources
Carichic, Chihuahua	S	27° 55'	107° 04'		May 1961	Rio Conchos	Meteor. Service of Chihuahua
Casillas, Nuevo Leon	S	25° 12'	100° 12'	4,060	# 1958	Rio San Juan	Hydr. Resources
Cd. Acuna, Coahuila	S	29° 20'	100° 57'	900	1951	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Cd. Diaz Ordaz	S	26° 14'	98° 36'	130	# 1953	Lower Rio Grande Valley	Hydr. Resources
Cd. Guerrero, Chihuahua	S	28° 33'	107° 29'	6,560	#May 1903	Adjacent to Rio Conchos	Meteor. Service of Mexico
Cd. Mier, Tamaulipas	S	26° 26'	99° 09'	260	Oct. 1955	Falcon Dam - Rio Grande City	I. B. & W. C.
Cd. Mier Km. 8, SW, Tamaulipas	C	26° 23'	99° 14'	†	1962	Rio Alamo	I. B. & W. C.
Cerralvo, Nuevo Leon	R	26° 05'	99° 37'	1,130	#Nov. 1938	Rio San Juan	Hydr. Resources
Cerritos, Nuevo Leon	S	25° 31'	100° 12'	†	# 1958	Rio San Juan	Monterrey Wtrwrks
Cerro Prieto, Nuevo Leon	S	25° 57'	99° 26'	†	#Sept.1958	Rio San Juan	Hydr. Resources
Chihuahua, Chihuahua	S	28° 38'	106° 04'	4,690	# 1900	Rio Conchos	Meteor. Service of Mexico
Chipadero, Coahuila	S	29° 05'	100° 51'	930	1961	Rio San Diego	F. Jakubesch
Cienega de Flores, Nuevo Leon	R	25° 57'	100° 57'	1,770	Apr. 1938	Rio San Juan	Hydr. Resources
Cienega del Toro, Nuevo Leon	S	25° 05'	100° 20'	7,010	# 1958	Rio San Juan	Hydr. Resources
Colombia, Nuevo Leon	C	27° 42'	99° 46'	†	Jan. 1964	Eagle Pass - Laredo	I. B. & W. C.
Colonia Anahuac, Chihuahua	S	28° 29'	106° 44'	6,550	1951	Rio Conchos	Celulosa de Chihuahua, S.A.
Comales, Tamaulipas	R	26° 11'	98° 55'	260	#Mar. 1938	Rio San Juan	Hydr. Resources
Conchos, Coahuila	S	28° 01'	101° 20'	†	#Oct. 1950	Rio Salado	Hydr. Resources
Control, Tamaulipas	S	25° 58'	97° 49'	59	#June 1942	Lower Rio Grande Valley	Hydr. Resources

S Standard C Cumulative R Recording † Not available # Some months or years missing

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In Mexico

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Coyame, Chihuahua	S	29° 28'	105° 06'	†	Nov. 1961	Rio Conchos	Meteor. Service of Chihuahua
Cuatro Cienegas, Coah.	S	26° 59'	102° 04'	2,430	# 1923	Rio Salado	Hydr. Resources
Cuauhtemoc, Chihuahua	S	28° 24'	106° 52'	7,250	#June 1923	Adjacent to Rio Conchos	Meteor. Service of Mexico
Delicias, Chihuahua	S	28° 11'	105° 28'	3,710	#Aug. 1933	Rio Conchos	Hydr. Resources
Don Martin, Coahuila	S	27° 31'	100° 37'	790	#June 1927	Rio Salado	Hydr. Resources
Ejido San Blas, Coahuila	S	27° 25'	101° 43'	†	1970	Rio Salado	Hydr. Resources
El Anteojo, Chihuahua	S	28° 29'	104° 48'	4,130	1963	Adjacent to Rio Conchos	Meteor. Service of Mexico
El Cuarenta, Chihuahua	S	30° 33'	105° 50'	†	1965	Adjacent to Ft. Quitman Above Rio Conchos	Meteor. Service of Mexico
El Cuchillo, Nuevo Leon	S	25° 43'	99° 16'	590	June 1938	Rio San Juan	Hydr. Resources
El Cuervo, Chihuahua	S	30° 15'	105° 08'	3,840	# 1961	Adjacent to Ft. Quitman Above Rio Conchos	Hydr. Resources
El Llano, Tamaulipas	S	27° 24'	99° 31'	†	Nov. 1968	Laredo - Falcon Dam	I. B. & W. C.
El Maguey, Chihuahua	S	27° 37'	106° 09'	4,380	July 1955	Rio Conchos	Meteor. Service of Chihuahua
El Realito, Nuevo Leon	S	25° 18'	99° 21'	†	# 1970	Rio San Juan	Hydr. Resources
El Remolino, Coahuila	S	28° 45'	102° 05'	1,310	June 1958	Rio San Rodrigo	I. B. & W. C.
El Sitio, Chihuahua	S	27° 31'	106° 16'	†	July 1955	Rio Conchos	Meteor. Service of Chihuahua
El Sueco, Chihuahua	S	29° 54'	106° 24'	5,090	1958	Adjacent to Rio Conchos	Meteor. Service of Chihuahua
El Treinta, Coahuila	S	28° 20'	101° 24'	†	1961	Rio Salado	I. B. & W. C.
El Vergel, Chihuahua	S	26° 22'	106° 30'	7,350	# 1957	Rio Conchos	Meteor. Service of Mexico
Escalon, Chihuahua	S	26° 45'	104° 21'	4,144	# 1957	Adjacent to Rio Conchos	Meteor. Service of Mexico
Escuela Ganaderia, Chihuahua	S	28° 42'	106° 04'	4,680	1961	Rio Conchos	Meteor. Service of Chihuahua
Estacion Rosario, Durango	S	26° 30'	105° 38'	†	July 1962	Rio Conchos	Hydr. Resources
Gallego, Chihuahua	S	29° 50'	106° 23'	5,100	1958	Adjacent to Rio Conchos	Meteor. Service of Chihuahua
Garita Km. 28, Chihuahua	S	31° 33'	106° 28'	3,990	May 1958	El Paso - Ft. Quitman	I. B. & W. C.
Gral. Bravo, Nuevo Leon	S	25° 48'	99° 11'	590	#Sept.1906	Rio San Juan	Hydr. Resources
Gral. Cepeda, Coahuila	S	25° 23'	101° 29'	4,920	#Aug. 1926	Rio San Juan	Hydr. Resources
Gral. Teran (Experiment Station), Nv. Leon	S	25° 16'	99° 38'	1,090	# 1958	Rio San Juan	Agriculture and Livestock Dept.
Guadalupe, Chihuahua	S	31° 23'	106° 06'	3,950	1958	El Paso - Ft. Quitman	I. B. & W. C.
Hacienda El Alamo, Nuevo Leon	S	26° 29'	99° 47'	†	1968	Rio Alamo	I. B. & W. C.
Hacienda Mamulique, Nuevo Leon	S	26° 07'	100° 14'	†	1973	Rio San Juan	Hydr. Resources
Hacienda San Miguel, Coahuila	S	29° 13'	101° 30'	†	1961	Langtry - Below Amistad Dam	I. B. & W. C.
Higueras, Nuevo Leon	S	25° 59'	100° 01'	1,640	#Sept.1908	Rio San Juan	Meteor. Service of Mexico
Icamole, Nuevo Leon	S	25° 55'	100° 43'	4,900	# 1958	Rio San Juan	Hydr. Resources
Iturbide, Nuevo Leon	S	24° 44'	99° 54'	†	1941	Adjacent to Rio San Juan	Hydr. Resources
Jimenez, Chihuahua	S	27° 08'	104° 55'	4,490	# 1951	Rio Conchos	Hydr. Resources
Jimenez, Coahuila	S	29° 04'	100° 40'	810	# 1951	Below Amistad Dam - Eagle Pass	I. B. & W. C.
Juarez, Chihuahua	S	31° 44'	106° 29'	3,740	# 1903	El Paso - Ft. Quitman	Hydr. Resources
Km. 99, Chihuahua	S	28° 08'	105° 35'	†	# 1962	Rio Conchos	Hydr. Resources
Km. 135, Chihuahua	S	28° 13'	105° 37'	†	# 1952	Rio Conchos	Hydr. Resources
La Bandera, Tamaulipas	C	26° 42'	99° 22'	†	1962	Laredo - Falcon Dam	I. B. & W. C.
La Boquilla, Chihuahua	S	27° 32'	105° 25'	4,330	# 1910	Rio Conchos	Electric industry of Mexico
La Campana, Chihuahua	S	29° 20'	106° 20'	4,820	# 1958	Rio Conchos	Meteor. Service of Mexico
La Cruz, Nuevo Leon	S	25° 28'	100° 26'	†	1958	Rio San Juan	Hydr. Resources
La Gloria, Nuevo Leon	S	26° 53'	99° 49'	390	#May 1958	Rio Salado	I. B. & W. C.
La Popa, Nuevo Leon	S	26° 10'	100° 50'	3,230	# 1958	Rio San Juan	Hydr. Resources
La Trasquila, Chihuahua	S	29° 06'	107° 06'	†	# 1962	Adjacent to Rio Conchos	Hydr. Resources
Laguna de Salinillas, Nuevo Leon	S	27° 28'	100° 23'	750	# 1940	Rio Salado	Hydr. Resources
Laguna de Sanchez, N. L.	R	25° 22'	100° 17'	6,500	Apr. 1941	Rio San Juan	Hydr. Resources
Lampazos, Nuevo Leon	S	27° 02'	100° 30'	1,120	# 1958	Rio Salado	Meteor. Service of Mexico
Las Burras, Chihuahua	S	28° 31'	105° 26'	3,590	July 1949	Rio Conchos	Hydr. Resources
Las Comitas, Nuevo Leon	S	25° 26'	100° 09'	1,670	# 1940	Rio San Juan	Hydr. Resources
Las Tortillas, Tamaulipas	C	26° 50'	99° 34'	360	May 1961	Laredo - Falcon Dam	I. B. & W. C.

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LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In Mexico

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Las Virgenes, Chihuahua	S	28° 10'	105° 35'	4,070	# 1943	Rio Conchos	Hydr. Resources
Lazaro Cardenas, Chihuahua	S	28° 23'	105° 37'	3,940	# 1951	Rio Conchos	Meteor Service of Mexico
Linares, Nuevo Leon	R	24° 52'	99° 34'	1,180	# 1900	Adjacent to Rio San Juan	Hydr. Resources
Loma Blanca, Chihuahua	S	31° 35'	106° 18'	3,850	1970	El Paso - Ft. Quitman	Hydr. Resources
Los Barriles, Chihuahua	S	30° 55'	105° 45'	4,360	July 1958	El Paso - Ft. Quitman	I. B. & W. C.
Los Herrera(La Tableta), Nuevo Leon	R	25° 54'	99° 24'	820	#Sept.1939	Rio San Juan	Hydr. Resources
Los Ramones, Nuevo Leon	R	25° 42'	99° 38'	200	#Sept.1939	Rio San Juan	Hydr. Resources
Luis L. Leon, Chihuahua	S	31° 05'	105° 35'	3,400	Apr. 1955	El Paso - Ft. Quitman	I. B. & W. C.
Maijoma, Chihuahua	S	28° 55'	104° 21'	4,270	Aug. 1955	Rio Conchos	Meteor. Service of Chihuahua
Majalca, Chihuahua	S	28° 53'	106° 21'	6,360	June 1963	Rio Conchos	Meteor. Service of Mexico
Manuel Benavides, Chihuahua	S	29° 06'	103° 54'	†	Oct. 1961	Above Rio Conchos - Johnson Ranch	Meteor. Service of Mexico
Matamoros, Tamaulipas	S	25° 52'	97° 30'	33	# 1958	Lower Rio Grande Valley	Hydr. Resources
Mendez, Tamaulipas	S	25° 07'	98° 35'	430	#Sept.1939	Adjacent to Lower Rio Grande Valley	Hydr. Resources
Mesquí, Chihuahua	S	28° 16'	105° 29'	3,790	1961	Rio Conchos	Meteor. Service of Mexico
Miguel Aleman, Tamaulipas	S	26° 24'	99° 02'	190	1964	Falcon Dam - Rio Grande City	Hydr. Resources
Mina, Nuevo Leon	S	26° 00'	100° 32'	†	# 1958	Rio San Juan	Hydr. Resources
Mina La Borrada, Coahuila	S	29° 21'	102° 30'	†	Aug. 1961	Johnson Ranch - Langtry	I. B. & W. C.
Monclova, Coahuila	S	26° 54'	101° 25'	1,920	# 1897	Rio Salado	Hydr. Resources
Montemorelos, Nuevo Leon	S	25° 12'	99° 50'	1,420	#Aug. 1904	Rio San Juan	Hydr. Resources
Monterrey, Nuevo Leon	S	25° 40'	100° 18'	1,740	# 1896	Rio San Juan	Hydr. Resources
Muzquiz, Coahuila	S	27° 53'	101° 31'	1,650	# 1923	Rio Salado	Meteor. Service of Mexico
Nonava, Chihuahua	S	27° 29'	106° 44'	†	# 1963	Rio Conchos	Meteor. Service of Chihuahua
Nueva Co. Guerrero, Tamaulipas	S	26° 34'	99° 14'	350	#May 1954	Laredo - Falcon Dam	I. B. & W. C.
Nuevo Laredo, Tamaulipas	V	27° 30'	99° 30'	430	1950	Laredo - Falcon Dam	I. B. & W. C.
Nuevo Laredo, Tamaulipas	S	27° 30'	99° 30'	430	# 1909	Laredo - Falcon Dam	Meteor. Service of Mexico
Nuevo Laredo Km. 26, SSW, Tamaulipas	C	27° 17'	99° 37'	†	Apr. 1961	Laredo - Falcon Dam	I. B. & W. C.
Ocampo, Coahuila	S	27° 19'	102° 24'	3,770	# 1960	Adjacent to Rio Salado	Hydr. Resources
Ojinaga, Chihuahua	S	29° 34'	104° 24'	2,590	#Apr. 1954	Rio Conchos	I. B. & W. C.
Ojinaga, Chihuahua	S	29° 34'	104° 25'	2,620	#Nov. 1906	Rio Conchos	Meteor. Service of Mexico
Ojo Caliente, Chihuahua	S	27° 41'	105° 12'	4,010	1942	Rio Conchos	Hydr. Resources
Pajonal, Nuevo Leon	S	25° 29'	100° 23'	†	1958	Rio San Juan	Hydr. Resources
Palestina, Coahuila	S	28° 05'	100° 59'	1,530	# 1931	Rio San Diego	Hydr. Resources
Paras, Nuevo Leon	S	25° 30'	99° 31'	541	1958	Rio Alamo	Hydr. Resources
Parral, Chihuahua	S	26° 56'	105° 39'	5,450	# 1903	Rio Conchos	Meteor. Service of Mexico
Parras, Coahuila	S	25° 27'	102° 10'	5,510	1958	Adjacent to Rio San Juan	Hydr. Resources
Parrita, Chihuahua	S	29° 25'	105° 29'	†	# 1958	Adjacent to Rio Conchos	Hydr. Resources
Piedras Negras, Coahuila	S	28° 43'	100° 31'	820	# 1951	Below Amistad Dam - Eagle Pass	Meteor. Service of Mexico
Planta Zootecnica, Chihuahua	S	28° 41'	105° 04'	4,770	# 1957	Rio Conchos	Meteor. Service of Mexico
Porvenir, Chihuahua	S	31° 14'	105° 52'	3,530	1958	El Paso - Ft. Quitman	I. B. & W. C.
Potosí, Nuevo Leon	S	24° 51'	100° 19'	6,260	# 1958	Adjacent to Rio San Juan	Hydr. Resources
Potrero del Llano, Chihuahua	S	29° 13'	104° 28'	3,540	June 1964	Above Rio Conchos - Johnson Ranch	I. B. & W. C.
Potrero Redondo, Nuevo Leon	S	25° 16'	100° 10'	†	# 1958	Rio San Juan	Hydr. Resources
Praxedis G. Guerrero, Chihuahua	S	31° 22'	106° 00'	3,540	1958	El Paso - Ft. Quitman	I. B. & W. C.
Presa Anzalduas, Tamaulipas	V	26° 08'	98° 20'	105	Apr. 1960	Lower Rio Grande Valley	I. B. & W. C.
Presa Cabeceras, Coahuila	S	29° 02'	101° 05'	†	1964	Below Amistad Dam - Eagle Pass	Hydr. Resources
Presa Centenario, Coahuila	S	29° 13'	100° 57'	†	1964	Arroyo Las Vacas	Hydr. Resources
Presa Chihuahua, Chihuahua	S	28° 34'	106° 10'	5,230	Oct. 1961	Rio Conchos	Hydr. Resources
Presa Luis L. Leon Chihuahua	S	28° 57'	105° 17'	†	Oct. 1964	Rio Conchos	Hydr. Resources
Presa San Miguel, Coahuila	S	29° 02'	100° 57'	1,000	1954	Rio San Diego	Hydr. Resources
Progreso, Coahuila	S	27° 25'	101° 00'	1,210	#Feb. 1943	Rio Salado	Hydr. Resources
Ramos Arizpe, Coahuila	S	25° 32'	100° 57'	4,590	#Apr. 1907	Rio San Juan	Meteor. Service of Mexico

Some months or years missing S Standard C Cumulative R Recording V Virtual
† Not available

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In Mexico

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Rancho Bonanza, Tamaulipas	S	26° 50'	99° 26'	†	1973	Laredo - Falcon Dam	Delfino Garcia P.
Rancho La Chuparrosa, Coahuila	R	29° 30'	101° 15'	1,150	1970	Langtry - Amistad Dam	I. B. & W. C.
Rancho Las Espuelas, Tamaulipas	S	27° 07'	99° 27'	†	1971	Laredo - Falcon Dam	Delfino Garcia P.
Rancho Los Vidrios, Tamaulipas	C	27° 35'	99° 37'	450	Sept.1956	Eagle Pass - Laredo	I. B. & W. C.
Rancho Mercedes, Coahuila	S	28° 02'	100° 01'	540	May 1959	Eagle Pass - Laredo	I. B. & W. C.
Rancho San Diego, Coahuila	S	27° 59'	100° 35'	†	May 1959	Eagle Pass - Laredo	I. B. & W. C.
Rancho San Juan de la Palma, Tamaulipas	S	26° 54'	99° 20'	350	Apr. 1955	Laredo - Falcon Dam	I. B. & W. C.
Rancho San Rafael Bustamante, Tamps.	C	26° 54'	99° 30'	†	Nov. 1967	Rio Salado	I. B. & W. C.
Rayones, Nuevo Leon	S	25° 01'	100° 05'	1,970	#Oct. 1926	Rio San Juan	Hydr. Resources
Reata, Coahuila	S	26° 07'	101° 04'	3,070	#July 1944	Rio San Juan	Hydr. Resources
Retamal, Tamaulipas	S	26° 02'	98° 03'	82	Oct. 1949	Lower Rio Grande Valley	I. B. & W. C.
Reynosa, Tamaulipas	R	26° 06'	98° 17'	130	# 1941	Lower Rio Grande Valley	Hydr. Resources
Reynosa Km. 22, SW, Tamaulipas	C	26° 00'	98° 30'	†	# 1962	Lower Rio Grande Valley	I. B. & W. C.
Rinconada, Nuevo Leon	S	25° 41'	100° 42'	4,790	#Apr. 1944	Rio San Juan	Hydr. Resources
Rio Bravo, Tamaulipas	S	25° 59'	98° 06'	85	#Sept.1950	Lower Rio Grande Valley	Hydr. Resources
Rio Salado Riberena, Tamaulipas	S	26° 48'	99° 24'	330	July 1964	Laredo - Falcon Dam	I. B. & W. C.
Rosetilla, Chihuahua	S	28° 15'	105° 18'	3,780	1940	Rio Conchos	Electric Industry of Mexico
Rusio, Nuevo Leon	S	24° 42'	100° 26'	6,570	#June 1956	Adjacent to Rio San Juan	Hydr. Resources
Sabinas, Coahuila	S	27° 51'	101° 07'	1,120	#May 1922	Rio Salado	Hydr. Resources
Sabinas Hidalgo, Nuevo Leon	S	26° 30'	100° 10'	1,030	May 1958	Rio Salado	I. B. & W. C.
Saltillo, Coahuila	S	25° 26'	101° 00'	5,280	# 1886	Rio San Juan	Hydr. Resources
Samalayuca, Chihuahua	S	31° 21'	106° 28'	4,180	1958	El Paso - Ft. Quitman	Meteor. Service of Mexico
San Agustin, Chihuahua	S	31° 31'	106° 15'	3,650	1958	El Paso - Ft. Quitman	I. B. & W. C.
San Antonio de las Alazanas, Coahuila	S	25° 16'	100° 35'	†	1958	Rio San Juan	Hydr. Resources
San Antonio, Chihuahua	S	31° 01'	106° 00'	4,490	July 1958	El Paso - Ft. Quitman	I. B. & W. C.
San Antonio, Durango	S	26° 25'	105° 21'	5,430	# 1943	Rio Conchos	Hydr. Resources
San Buenaventura, Coahuila	S	27° 05'	101° 33'	2,300	#Dec. 1926	Rio Salado	Meteor. Service of Mexico
San Fernando, Coahuila	S	29° 25'	101° 43'	†	Aug. 1961	Langtry - Below Amistad Dam	I. B. & W. C.
San Ignacio, Tamaulipas	C	27° 04'	99° 28'	†	1964	Laredo - Falcon Dam	I. B. & W. C.
San Javier, Nuevo Leon	C	26° 16'	99° 25'	†	1962	Rio Alamo	I. B. & W. C.
San Juan, Nuevo Leon	S	25° 33'	99° 50'	880	#Nov. 1943	Rio San Juan	Hydr. Resources
San Juanito, Chihuahua	S	27° 59'	107° 27'	†	# 1959	Adjacent to Rio Conchos	Meteor Service of Mexico
San Lorenzo, Chihuahua	S	28° 10'	106° 29'	3,770	# 1961	Rio Conchos	Hydr. Resources
Santa Barbara, Chihuahua	S	26° 48'	105° 49'	6,460	1964	Rio Conchos	Hydr. Resources
Santa Catarina, Nuevo Leon	R	25° 40'	100° 29'	2,230	Oct. 1937	Rio San Juan	Hydr. Resources
Santa Rosa, Coahuila	V	29° 38'	101° 28'	†	# 1958	Langtry - Below Amistad Dam	Ind. Co-operator
Santa Rosa, Nuevo Leon	S	24° 10'	100° 18'	†	1970	Adjacent to Rio San Juan	Hydr. Resources
Sierra Mojada, Coahuila	S	27° 17'	103° 42'	4,120	# 1897	Adjacent to Johnson Ranch - Langtry	Hydr. Resources
Siquirichic, Chihuahua	S	27° 09'	107° 12'	7,610	#July 1956	Adjacent to Rio Conchos	Meteor. Service of Mexico
Sombreretillo, Nuevo Leon	S	26° 18'	99° 58'	†	1970	Rio San Juan	Hydr. Resources
Tacubaya, Chihuahua	S	28° 08'	104° 23'	5,150	#July 1963	Adjacent to Rio Conchos	Meteor. Service of Mexico
Tinajas, Chihuahua	S	31° 08'	106° 05'	4,320	1958	El Paso - Ft. Quitman	I. B. & W. C.
Topo Chico, Nuevo Leon	R	25° 44'	100° 20'	1,640	#Aug. 1939	Rio San Juan	Hydr. Resources
Tunel San Francisco, Nuevo Leon	S	25° 25'	100° 10'	†	# 1958	Rio San Juan	Hydr. Resources
Vado de Cedillos, Chihuahua	S	31° 13'	105° 48'	3,500	Apr. 1958	El Paso - Ft. Quitman	I. B. & W. C.
Valadeces, Tamaulipas	S	26° 14'	98° 40'	†	1964	Lower Rio Grande Valley	Hydr. Resources
Vallecillo, Nuevo Leon	S	26° 40'	99° 59'	900	#June 1958	Rio Salado	Hydr. Resources
Valle Allende, Chihuahua	S	25° 56'	105° 23'	†	Mar. 1952	Rio Conchos	Meteor. Service of Chihuahua
Valle Hermoso, Tamaulipas	S	25° 41'	97° 48'	52	#June 1949	Lower Rio Grande Valley	Hydr. Resources
Victoria, Chihuahua	S	27° 58'	104° 33'	4,810	June 1963	Adjacent to Rio Conchos	Meteor. Service of Mexico
Villa Aldama, Chihuahua	S	28° 50'	105° 55'	4,140	1961	Rio Conchos	Meteor. Service of Mexico

\# Some months or years missing S Standard C Cumulative R Recording V Visual
† Not available

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

In Mexico

NAME OF STATION	TYPE GAGE	LATITUDE	LONGITUDE	ELEV. (FT.)	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Villa Allende, Nuevo Leon	S	25° 17'	100° 01'	2,210	#Nov. 1938	Rio San Juan	Hydr. Resources
Villa Coronado, Chihuahua	S	26° 44'	105° 08'	4,790	Aug. 1964	Rio Conchos	Hydr. Resources
Villa de Santiago, Nuevo Leon	S	25° 25'	100° 09'	1,460	# 1923	Rio San Juan	Hydr. Resources
Villa Guerrero, Coahuila	S	28° 19'	100° 23'	690	#June 1958	Eagle Pass - Laredo	I. B. & W. C.
Villa Hidalgo, Coahuila	S	27° 47'	99° 52'	660	1951	Eagle Pass - Laredo	I. B. & W. C.
Villalba, Chihuahua	S	28° 10'	105° 46'	3,940	Oct. 1940	Rio Conchos	Hydr. Resources

Some months or years missing S Standard

EVAPORATION IN THE RIO GRANDE BASIN IN THE UNITED STATES

In Inches

Tabulated below are records of evaporation observed at eight stations in Texas operated by the United States Section of the Commission from Presidio to Brownsville. At all stations, the exposure to wind was uniform and relatively unimpeded. The sites were kept cleared of all high brush and trees within 150 feet, and all brush, tall weeds, and other obstructions within 100 feet of the fenced enclosures. Within the enclosures, all vegetation has been eradicated or kept trimmed to within 3 inches of the ground surface. For specific location of these stations refer to data opposite same station name shown in "Location of Rainfall Stations on the Rio Grande Watershed," pages 137 through 140 in this bulletin.

Records were obtained by means of:

1. National Weather Service standard pan. A circular pan, 4 feet in diameter and 10 inches deep, made of 22-gage galvanized iron, is set on a wooden platform with the rim of the pan 16 inches above the ground. The water level is maintained between 2 and 3 inches below the rim of the pan and is measured with a micrometer gage. This type of pan was in operation at Amistad Dam and Falcon Dam.

2. A circular pan, 2 feet in diameter and 36 inches deep, made of 22-gage galvanized iron, is set in the ground with the rim of the pan 3 inches above the ground surface and the top covered with a circular screen of No. 4 (1/4" mesh) galvanized hardware cloth. The water level is maintained between 2.5 and 3.5 inches below the rim of the pan. This type of pan was in operation at Falcon Dam. This same type of pan, equipped with an automatic feed tank that maintains the water at a level 3 inches below the rim of the pan, was in operation at Martin King Ranch and Eagle Pass.

3. An evaporometer, developed by the United States Section of the Commission and calibrated against a 2-foot pan described above, was in operation at Presidio, Johnson Ranch, and at a site 7 miles east of Brownsville. On October 1, 1971, the Wardlaw Ranch station was relocated to the Long Ranch, about 1.5 miles west, where an evaporometer was installed to replace the pan at the former location.

Month	Presidio		Johnson Ranch		Martin King Ranch		Long Ranch	
	1973	Average 1950-1973	1973	Average 1950-1973	1973	#Average 1956-1973	1973	Average October 1971-1973
Jan.	4.50	3.76	3.18	3.43	3.34	3.07	2.36	2.22
Feb.	3.01	5.11	2.42	4.92	1.93	3.52	1.27	2.04
Mar.	7.89	8.26	8.78	8.27	5.85	6.25	5.64	5.91
Apr.	9.60	10.11	10.51	10.61	7.13	7.39	5.40	6.32
May	10.49	11.99	11.11	12.04	9.17	8.50	8.15	6.46
June	10.78	12.83	10.53	12.39	6.99	10.04	5.18	6.53
July	8.89	12.22	9.46	12.54	9.20	11.27	6.78	7.68
Aug.	9.23	11.36	9.01	11.40	9.77	10.66	7.38	6.91
Sept.	7.95	9.70	6.94	9.24	6.86	7.61	5.60	5.62
Oct.	6.90	7.56	7.20	7.21	3.52	5.31	2.78	2.83
Nov.	3.70	4.86	4.72	4.67	3.31	3.88	2.55	2.51
Dec.	5.00	3.63	3.75	3.44	4.13	3.10	2.25	1.87
Total	87.94	101.39	87.61	100.16	71.20	80.60	55.37	56.90

Month	Amistad Dam		Eagle Pass		Falcon Dam				Brownsville	
					2-Foot Pan		4-Foot Pan			
	1973	Average March 1963-1973	1973	#Average 1964-1973	1973	#Average 1950-1973	1973	#Average 1956-1973	1973	#Average 1958-1973
Jan.	3.91	3.99	2.68	3.21	3.26	3.48	4.01	4.09	1.43	2.43
Feb.	3.08	4.59	1.92	3.49	2.95	4.38	3.66	5.26	3.29	3.35
Mar.	9.39	8.76	6.38	5.60	5.82	6.68	7.63	8.50	3.72	4.36
Apr.	9.22	10.19	6.27	6.74	6.12	7.92	7.80	10.60	5.45	5.38
May	12.54	11.20	8.07	6.80	6.16	9.41	11.16	12.22	5.13	5.40
June	9.71	13.03	8.45	9.54	9.98	10.92	11.89	13.54	4.79	5.91
July	11.16	15.66	8.95	11.10	10.82	12.90	12.85	15.86	5.89	6.60
Aug.	12.40	13.89	8.42	9.77	8.51	11.44	10.60	14.38	3.80	6.25
Sept.	9.21	9.50	6.80	7.10	7.19	8.15	9.16	10.18	3.27	4.70
Oct.	6.44	7.15	7.85	5.88	5.55	6.52	6.30	7.54	2.43	4.02
Nov.	4.55	4.87	4.26	3.68	4.53	4.82	4.85	5.43	3.72	3.38
Dec.	5.20	3.78	4.16	3.37	4.79	3.79	5.08	4.07	2.26	2.67
Total	97.11	105.71	74.21	76.23	77.68	90.41	94.99	111.67	45.18	54.45

Some months missing

EVAPORATION IN THE RIO GRANDE BASIN IN MEXICO

In Inches

Tabulated below are records of evaporation observed at eight stations operated and maintained by the Mexican Section of the Commission. Seven stations are along the Rio Grande from Cd. Acuna, Coahuila to Cd. Mier, Tamaulipas and one is located on the Rio Conchos near Ojinaga, Chihuahua. At all stations, except Ojinaga, the sites were kept cleared of all high brush and trees within 150 feet, and of all brush and tall weeds within 100 feet of the fenced enclosures. There are several large trees at the Ojinaga station. The corrugated iron gage well, 42 inches in diameter, and one A-frame of the cableway of the Rio Conchos stream gaging station are in the north end of the enclosure. Inside the enclosures, all vegetation had been eradicated or was kept trimmed to within 3 inches of the ground surface. Except for a water barrel and a thermometer shelter in the northeast and northwest corners of the enclosures, the exposure to wind was uniform and relatively unimpeded. For specific location of these stations refer to data opposite same station name shown in "Location of Rainfall Stations on the Rio Grande Watershed," pages 141 through 145 in this bulletin.

The type of pan used at all these stations was a standard National Weather Service-type pan, 4 feet in diameter and 10 inches deep, made of 22-gage galvanized iron, set on a wooden platform with the rim of the pan 16 inches above the ground. The water level was maintained between 2 and 3 inches below the rim of the pan and was measured with a micrometer gage.

Data for other evaporation stations in the Rio Grande basin in Mexico, which were operated by various Mexican agencies, are available in Water Bulletin No. 43 published by the Mexican Section of the Commission.

	Ojinaga, Chihuahua		Cd. Acuna, Coahuila		Jimenez, Coahuila		Hidalgo, Coahuila	
Month	1973	#Avg. April 1954-1973	1973	#Avg. 1951-1973	1973	#Avg. 1951-1973	1973	#Avg. 1951-1973
Jan.	3.86	3.76	3.62	3.50	4.84	3.56	2.91	4.05
Feb.	3.62	5.11	2.64	4.65	3.23	4.40	4.25	5.22
Mar.	9.06	8.68	8.82	8.00	9.06	7.01	9.13	8.13
Apr.	11.57	11.23	7.91	8.96	7.80	7.77	6.46	10.16
May	13.19	13.48	10.79	10.13	11.73	8.96		12.28
June	15.16	13.83	9.29	11.70	9.41	10.70	9.49	13.80
July	12.01	13.37	10.08	13.49	9.88	12.20	7.28	15.31
Aug.	11.85	11.47	11.54	12.16	11.89	10.96		14.23
Sept.	9.37	9.28	7.52	8.81	8.19	7.79	11.30	10.19
Oct.	8.19	7.36	5.47	6.16		5.26	5.31	7.45
Nov.	5.31	4.55	3.78	4.00	4.21	3.54	3.39	4.84
Dec.	4.53	3.40	4.25	3.21	5.43	3.02	3.50	3.81
Total	107.72	105.52	85.71	94.77		85.17		109.47

	Nuevo Laredo, Tamaulipas		Rancho San Juan de la Palma, Tamaulipas		Nueva Cd. Guerrero, Tamaulipas		Cd. Mier, Tamaulipas	
Month	1973	Avg. Aug. 1954-1973	1973	#Avg. April 1955-1973	1973	#Avg. June 1954-1973	1973	#Avg. Oct. 1955-1973
Jan.	3.78	4.10	3.23	3.81	3.11	3.58	4.25	3.78
Feb.	3.35	4.80	3.03	4.82	2.72	4.34	3.54	4.76
Mar.	8.58	8.15	7.05	7.63	6.69	7.29	9.21	7.87
Apr.	8.35	10.14	6.97	9.64	7.05	9.14	9.80	9.74
May	11.57	10.93	9.80	11.50	9.49	10.65	10.83	11.17
June	10.94	12.41	10.63	12.11	9.41	11.56	9.57	12.31
July	11.89	14.00	9.76	13.70	10.39	13.56	11.34	14.68
Aug.	10.16	12.66	8.58	13.13	7.60	12.37	7.20	13.25
Sept.	9.09	9.91	5.87	9.88	6.77	9.06	8.11	9.93
Oct.	6.26	7.25	3.94	7.07	4.61	6.68	5.55	7.52
Nov.	4.96	5.00	2.80	4.84	3.74	4.74	4.61	5.00
Dec.	5.08	4.02	3.78	3.87	3.94	3.54	4.25	3.83
Total	94.01	103.37	75.44	102.00	75.52	96.51	88.26	103.84

Some months missing

TEMPERATURE, HUMIDITY AND WIND

The maximum and minimum temperatures shown for the stations in Mexico are from daily maximum and minimum thermometer observations. The mean monthly temperatures are averages of these daily maximum and minimum temperatures.

The mean monthly temperatures and relative humidities shown for stations in the United States were integrated from continuous records of hygrothermographs, housed in louvered shelters, with the sensing elements of the instruments 16 inches above the ground and 9 feet southwest of either a 2 or 4-foot diameter evaporation pan. The maximum and minimum temperatures shown below are the extreme temperatures for the month as recorded on the charts except for Falcon Dam and Amistad Dam where the readings are based on daily maximum and minimum thermometer observations.

Monthly mean wind velocities are based on the total miles of wind movement indicated by a standard 3-cup anemometer installed and operated according to specifications for a Class A National Weather Service evaporation station.

Temperature - Degrees Fahrenheit

In United States

Month	Amistad Dam, Texas				Eagle Pass, Texas				Falcon Dam, Texas			
	Mean 1973	Average March 1963-1973	1973 Max.	1973 Min.	Mean 1973	#Average 1964-1973	1973 Max.	1973 Min.	Mean 1973	Average July 1950-1973	1973 Max.	1973 Min.
Jan.	45.5	50.4	76	20	46.3	51.6	80	28	51.6	56.4	87	25
Feb.	48.6	52.5	77	24	50.4	54.2	76	24	52.2	60.0	85	27
Mar.	63.4	61.9	86	42	68.2	63.3	88	46	68.1	67.0	94	45
Apr.	65.3	71.7	99	35	68.8	73.3	96	36	68.9	75.4	100	41
May	75.5	76.2	105	52	79.4	77.3	108	56	76.5	80.0	106	55
June	75.6	81.7	108	60	79.9	82.6	102	64	78.8	84.1	98	64
July	79.3	84.9	98	68	82.8	86.0	100	68	81.7	86.2	102	70
Aug.	80.1	83.4	102	67	82.3	84.3	102	68	78.5	85.9	102	68
Sept.	76.9	78.4	99	60	79.5	78.7	98	60	78.3	81.4	101	65
Oct.	68.6	69.4	92	52	70.9	69.4	92	50	71.6	73.7	95	54
Nov.	62.2	60.1	84	34	63.9	60.8	86	30	67.4	64.2	92	35
Dec.	51.0	51.7	87	23	53.7	54.3	86	20	56.1	58.0	89	19
Yearly	66.0	68.5	108	20	68.8	69.7	108	20	69.1	72.7	106	19

In Mexico

Month	Cd. Juarez, Chihuahua				Ojinaga, Chihuahua				Cd. Acuna, Coahuila			
	Mean 1973	#Average July 1960-1973	1973 Max.	1973 Min.	Mean 1973	#Average April 1954-1973	1973 Max.	1973 Min.	Mean 1973	#Average April 1951-1973	1973 Max.	1973 Min.
Jan.	42.8	45.1	70	21	46.4	49.1	75	21	44.6	49.3	79	18
Feb.	46.4	49.5	77	23	51.8	53.9	81	27	48.2	54.3	79	21
Mar.	53.6	56.5	79	34	62.6	61.1	86	36	68.0	63.0	100	41
Apr.	60.8	64.1	90	30	68.0	70.9	97	36	71.6	72.3	104	30
May	71.6	73.2	99	46	78.8	79.7	104	54	80.6	78.4	113	50
June	80.6	80.8	109	57	86.0	84.7	111	61	82.4	84.7	106	59
July	82.4	83.3	104	64	86.0	85.7	106	68	86.0	87.4	108	68
Aug.	80.6	80.2	100	59	82.4	84.0	102	59	87.8	87.1	108	66
Sept.		75.0			82.4	79.8	102	55	82.4	81.7	109	55
Oct.	66.2	64.8	95	39	73.4	70.3	100	37	73.4	71.6	100	45
Nov.	55.4	52.6	86	25	62.6	58.2	93	23	66.2	59.2	99	28
Dec.	46.4	46.7	79	18	50.0	50.5	82	16	53.6	51.5	93	21
Yearly		64.3			69.2	69.0	111	16	70.4	70.0	113	18

Month	Chupadero, Coahuila				Jimenez, Coahuila				El Remolino, Coahuila			
	Mean 1973	#Average 1961-1973	1973 Max.	1973 Min.	Mean 1973	#Average March 1951-1973	1973 Max.	1973 Min.	Mean 1973	Average June 1958-1973	1973 Max.	1973 Min.
Jan.	42.8	48.9	75	16	51.8	52.2	52	52	60.8	56.2	91	34
Feb.	46.4	53.6	73	21	53.6	56.3	54	57	59.0	59.8	93	23
Mar.	62.6	62.7	84	37	64.4	62.9	64	63	66.2	66.0	97	34
Apr.		72.8			68.0	71.4	68	72	73.4	74.8	104	48
May		77.0			75.2	77.2	75	77	80.6	79.2	111	50
June		82.8			78.8	83.4	79	84	86.0	84.3	109	63
July	84.2	86.1	102	64	82.4	85.6	82	86	86.0	86.4	109	64
Aug.	82.4	84.5	102	63	82.4	85.3	82	86	84.2	85.7	109	61
Sept.	77.0	80.0	99	55	80.6	80.2	81	81	80.6	81.9	103	54
Oct.	69.8	70.5	90	45		71.8		72	75.2	73.9	106	50
Nov.	62.6	60.0	86	27	64.4	61.0	64	61	69.8	66.5	99	41
Dec.	51.3	52.0	88	18	53.6	54.1	54	54	64.4	59.5	100	25
Yearly		64.9				70.1		52	73.8	72.8	111	23

Some months missing

TEMPERATURE, HUMIDITY AND WIND

Temperature - Degrees Fahrenheit

In Mexico

Month	Piedras Negras, Coahuila				Guerrero, Coahuila				Rancho Mercedes, Coahuila			
	Mean 1973	#Average April 1951-1973	1973 Max.	1973 Min.	Mean 1973	#Average 1958-1973	1973 Max.	1973 Min.	Mean 1973	#Average June 1959-1973	1973 Max.	1973 Min.
Jan.	48.2	51.0	81	21	50.0	50.5	84	23	50.0	55.8	75	32
Feb.	51.8	55.4	79	25	55.4	54.0	81	27	53.6	58.3	77	25
Mar.	68.0	62.4	90	43	69.8	64.0	95	41	60.8	63.9	79	43
Apr.	69.8	71.7	99	41	75.2	72.9	106	36	75.2	72.5	100	45
May	78.8	77.4	105	54	80.6	78.5	111	50	80.6	76.7	99	63
June	80.6	83.8	102	64	86.0	83.0	106	66	82.4	82.8	99	63
July	84.2	86.5	100	68	86.0	85.4	104	73	84.2	85.1	100	66
Aug.	80.6	85.5	104	68	86.0	83.3	104	68	84.2	85.3	100	68
Sept.	71.6	79.7	100	59	82.4	80.7	104	63	78.8	81.4	97	61
Oct.	66.2	70.2	93	48	75.2	70.2	95	50	71.6	73.9	90	54
Nov.	66.2	59.1	86	30	68.0	61.3	90	32	66.2	65.1	84	32
Dec.	55.4	52.6	88	19	55.4	52.9	90	21	60.8	59.0	81	19
Yearly	68.4	69.6	108	19	72.5	69.7	111	21	70.7	71.6	100	19

Month	Nuevo Laredo, Tamps., C.I.L.A.				Nuevo Laredo, Tamps., M.S. of M.				Rancho San Juan de la Palma, Tamps.			
	Mean 1973	Average August 1964-1973	1973 Max.	1973 Min.	Mean 1973	Average 1945-1973	1973 Max.	1973 Min.	Mean 1973	#Average April 1955-1973	1973 Max.	1973 Min.
Jan.	51.8	56.0	93	21	50.0	55.8	82	23	53.6	55.8	81	32
Feb.	55.4	58.2	86	25	57.2	60.1	81	25	53.6	59.4	82	27
Mar.	73.4	68.0	95	46	71.6	67.4	90	50	68.0	66.1	86	48
Apr.	73.4	77.0	108	39	71.6	75.4	97	39	69.8	75.2	99	39
May	80.6	80.4	111	59	82.4	80.6	104	57	77.0	80.1	104	54
June	82.4	84.4	102	61	82.4	84.5	100	64	80.6	85.0	102	64
July	86.0	87.2	102	70	86.0	87.7	100	73	82.4	87.8	102	70
Aug.	84.2	86.4	100	70	82.4	87.3	102	72	80.6	87.1	97	68
Sept.	82.4	82.9	104	64	73.4	81.5	100	66	80.6	82.7	97	68
Oct.	77.0	74.5	97	50	75.2	73.5	91	54	73.4	75.5	90	54
Nov.	71.6	66.2	93	36	66.2	64.3	86	36	68.0	66.2	86	41
Dec.	62.6	59.7	82	23	50.0	56.8	82	21	59.0	58.9	86	23
Yearly	73.4	73.4	111	21	70.7	72.9	104	21	70.6	73.3	104	23

Month	El Treinta, Coahuila				Sabinas Hidalgo, Nuevo Leon				Nueva Cd. Guerrero, Tamaulipas			
	Mean 1973	Average 1961-1973	1973 Max.	1973 Min.	Mean 1973	Average October 1961-1973	1973 Max.	1973 Min.	Mean 1973	Average 1958-1973	1973 Max.	1973 Min.
Jan.	44.6	50.0	86	21	53.6	56.9	100	23	51.8	54.8	88	25
Feb.	50.0	54.8	77	19	53.6	59.9	88	23	55.4	58.5	86	28
Mar.	64.4	63.7	95	39	69.8	66.5	100	48	71.6	66.2	93	45
Apr.	69.8	74.4	104	34	71.6	76.2	108	36	71.6	76.1	100	43
May	78.8	77.7	111	46	78.8	79.7	109	52	78.8	80.4	104	57
June	77.0	81.2	97	59	82.4	84.0	106	63	82.4	84.5	102	66
July	80.6	83.5	104	61	80.6	85.2	99	64	84.2	86.4	102	68
Aug.	80.6	82.9	100	61	78.8	84.8	100	68	82.4	86.1	97	70
Sept.	78.8	78.4	99	59	82.4	81.0	104	64	82.4	82.2	100	68
Oct.	69.8	69.9	95	46	73.4	74.4	97	52	78.8	74.7	95	55
Nov.	60.8	60.1	90	28	69.8	65.5	97	41	71.6	65.4	95	36
Dec.	50.0	52.8	91	18	60.8	59.6	100	30	59.0	58.0	93	21
Yearly	67.1	69.1	111	18	71.3	72.8	109	23	72.5	72.8	104	21

Month	Cd. Mier, Tamaulipas				Retamal, Tamaulipas							
	Mean 1973	#Average October 1955-1973	1973 Max.	1973 Min.	Mean 1973	#Average 1951-1973	1973 Max.	1973 Min.				
Jan.	51.8	55.1	88	27		60.6						
Feb.	55.4	58.8	88	28		63.1						
Mar.	75.2	66.8	93	54		69.2						
Apr.	73.4	75.7	99	41		76.9						
May	80.6	80.0	103	57		80.2						
June	82.4	84.4	100	68	80.6	83.9	100	66				
July	84.2	86.2	102	68	84.2	85.7	100	72				
Aug.	82.4	86.0	95	68	82.4	86.2	99	70				
Sept.	82.4	82.1	100	68	84.2	83.3	102	68				
Oct.	75.2	74.3	99	54	77.0	77.0	95	52				
Nov.	69.8	64.8	91	34	75.2	68.4	97	41				
Dec.	57.2	58.4	93	19	64.4	62.3	86	32				
Yearly	72.5	72.7	108	19		74.7						

Some months missing

TEMPERATURE, HUMIDITY AND WIND

Mean Wind Speed - Miles Per Hour
In United States

Month	Martin King Ranch, Texas		Amistad Dam, Texas		Eagle Pass, Texas		Falcon Dam, Texas	
	1973	Average 1957-1973	1973	#Average March 1963-1973	1973	#Average December 1963-1973	1973	#Average July 1950-1973
Jan.	3.8	3.9	3.6	3.3	2.3	2.4	4.4	3.9
Feb.	3.7	4.8	3.2	4.0	2.3	3.0	4.5	4.5
Mar.	5.8	6.4	4.7	4.9	3.4	3.7	4.2	5.0
Apr.	5.8	6.4	4.6	4.8	3.6	3.6	4.5	5.6
May	4.8	6.8	4.0	4.9	2.7	3.5	4.3	5.7
June	5.4	7.2	3.9	5.2	2.6	3.6	5.5	6.0
July	6.1	6.9	3.5	4.9	2.3	3.5	4.8	6.3
Aug.	5.3	6.0	3.7	4.2	2.2	3.1	3.5	5.2
Sept.	4.8	5.2	3.9	3.8	2.2	2.7	3.1	4.2
Oct.	4.0	4.7	3.5	3.5	1.6	2.2	3.3	3.6
Nov.	3.6	4.0	3.2	3.2	1.3	2.0	2.6	3.9
Dec.	3.4	3.6	3.4	3.2	1.7	2.1	3.1	3.6
Yearly	4.7	5.5	3.8	4.2	2.4	3.0	4.0	4.8

Mean Relative Humidity-Percent
In United States

Month	Amistad Dam, Texas		Eagle Pass, Texas		Falcon Dam, Texas	
	1973	Average March 1963-1973	1973	#Average 1964-1973	1973	Average July 1950-1973
Jan.	66.3	60.6	67.5	62.6	65.2	66.6
Feb.	74.4	60.9	77.1	61.9	68.1	64.7
Mar.	54.9	53.5	66.8	56.8	60.6	61.9
Apr.	61.7	58.5	70.2	60.3	61.9	62.1
May	49.0	62.9	62.5	66.2	56.5	64.9
June	70.4	63.0	74.9	64.8	66.3	64.5
July	71.4	58.2	74.3	60.3	62.1	60.4
Aug.	61.3	60.5	71.3	63.6	65.9	61.8
Sept.	70.9	67.2	77.7	71.5	68.5	66.4
Oct.	77.3	67.2	82.0	70.8	69.6	67.4
Nov.	70.9	63.4	74.7	68.3	68.3	67.1
Dec.	51.6	62.2	59.6	65.8	55.3	65.2
Yearly	65.0	61.5	71.6	64.4	64.0	64.4

In Mexico

Month	Nueva Cd. Guerrero, Tamaulipas	
	1973	Average August 1961-1973
Jan.	83	79
Feb.	81	78
Mar.	74	73
Apr.	68	74
May	67	79
June	80	78
July	77	75
Aug.	84	75
Sept.	85	82
Oct.	83	80
Nov.	78	79
Dec.	76	80
Yearly	78	78

Some months missing

DRAINAGE BASIN AND IRRIGATED AREAS
Along the Rio Grande and Tributaries – 1973

The total area within the outer rim of the Rio Grande basin is about 335,500 square miles but it contains large areas, especially along its southwestern boundary, that contribute no surface run-off to the Rio Grande. Such noncontributing areas constitute about 47 percent of the total area, leaving 176,333 square miles of productive watershed which is the only one included in the list below.

The irrigated areas shown below are listed in accordance with the location of their diversion points and are all within the Rio Grande basin, except in the Lower Rio Grande Valley where large portions of irrigated lands in both countries lie outside the basin boundary line.

Only areas irrigated in 1973 are shown except that, in the United States below Falcon Dam, the figures shown represent acreages which were subject to irrigation in 1973 but for which data on the portion actually irrigated is not known. On the Mexican side part of the data may have been gathered previous to 1973.

DESIGNATION OF AREAS AND GAGING STATIONS	Drainage Basin Square Miles			Irrigated Areas - Acres		
	United States	Mexico	Total	United States	Mexico	Total
Above Elephant Butte Dam	25,923	0	25,923			
Elephant Butte Dam to Caballo Dam	1,295	0	1,295	0	0	0
Above Caballo Dam	27,218	0	27,218	0	0	0
Caballo Dam to El Paso Station	2,049	0	2,049	92,699	0	92,699
Above El Paso Gaging Station	29,267	0	29,267	92,699	0	92,699
El Paso Station to American Dam	4	0	4	13,349	0	13,349
Above American Dam	29,271	0	29,271	106,048	0	106,048
American Dam to Island Station	187	285	472	32,683	16,791	49,474
Above Island Gaging Station	29,458	285	29,743	138,731	16,791	155,522
Island Station to County Line Station	485	259	744	0	0	0
American Dam to County Line Station - Total	672	544	1,216	32,683	16,791	49,474
Above County Line Gaging Station	29,943	544	30,487	138,731	16,791	155,522
County Line Station to Fort Quitman Station	663	794	1,457	10,171	0	10,171
Above Fort Quitman Gaging Station	30,606	1,338	31,944	148,902	16,791	165,693
Fort Quitman Station to Above Presidio Station	1,621	1,401	3,022	1,159	254	1,413
Above Presidio Station above Rio Conchos	32,227	2,739	34,966	150,061	17,045	167,106
Rio Conchos above Boquilla Dam	0	8,131	8,131	0	a) 5,832	5,832
Rio Conchos above Luis L. Leon Dam	0	22,992	22,992	0		
Rio Conchos - Total	0	26,404	26,404	0	378,526	378,526
Alamito Creek above Gaging Station	1,504	0	1,504	40	0	40
Presidio Station above Rio Conchos to Presidio Station below Rio Conchos - excluding above tributaries	367	98	465	4,101	250	4,351
Presidio Station above Rio Conchos to Presidio Station below Rio Conchos - Total	1,871	26,502	28,373	4,141	378,776	382,917
Above Presidio Station below Rio Conchos	34,098	29,241	63,339	154,202	395,821	550,023
Terlingua Creek above Gaging Station	1,070	0	1,070	b) 1,140	0	1,140
Presidio Station below Rio Conchos to Johnson Ranch Station - excluding Terlingua Creek	1,093	2,258	3,351	1,046	1,406	2,452
Presidio Station below Rio Conchos to Johnson Ranch Station - Total	2,163	2,258	4,421	2,186	1,406	3,592
Above Johnson Ranch Gaging Station	36,261	31,499	67,760	156,388	397,227	553,615
Johnson Ranch Station to Foster Ranch Station	6,412	6,570	12,982	c) 2,845	0	2,845
Above Foster Ranch Gaging Station	42,673	38,069	80,742	159,233	397,227	556,460
Foster Ranch Station to Langtry Station	182	505	687	0	0	0
Above Langtry Gaging Station (Discontinued)	42,855	38,574	81,429	159,233	397,227	556,460
Pecos River above Girvin	29,562	0	29,562		0	
Pecos River, Girvin to Station near Langtry	5,617	0	5,617	0	0	0
Pecos River above Station at Mouth (Discontinued)	35,308	0	35,308	0	0	0
Devils River above Pafford Crossing Station	3,961	0	3,961	0	0	0
Devils River above Station near Mouth (Discontinued)	4,305	0	4,305	0	0	0
Langtry Station to Amistad Dam - excluding above tributaries	217	1,875	2,092	0	0	0
Langtry Station to Amistad Dam - Total	39,830	1,875	41,705	0	0	0

a) Includes area above Madero Reservoir b) Includes 1,000 acres irrigated by spreader dams
c) Includes 2,560 acres irrigated by spreader dams

DRAINAGE BASIN AND IRRIGATED AREAS
Along the Rio Grande and Tributaries – 1973

DESIGNATION OF AREAS AND GAGING STATIONS	Drainage Basin Square Miles			Irrigated Areas - Acres		
	United States	Mexico	Total	United States	Mexico	Total
Above Amistad Dam	82,685	40,449	123,134	159,233	397,227	556,460
Amistad Dam to Below Amistad Dam Gaging Station	5	4	9	0	0	0
Above the Below Amistad Dam Gaging Station	82,690	40,453	123,143	159,233	397,227	556,460
Below Amistad Dam Station to Del Rio Station	60	100	160	597	0	597
Above Del Rio Gaging Station	82,750	40,553	123,303	159,830	397,227	557,057
Arroyo Las Vacas above Gaging Station	0	350	350	0	840	840
San Felipe Creek above Gaging Station	46	0	46	2,300	0	2,300
Pinto Creek above Gaging Station	249	0	249	400	0	400
Rio San Diego above Gaging Station	0	853	853	0	10,959	10,959
Rio San Diego - Total	0	859	859	0	12,511	12,511
Del Rio Station to Below Maverick Dam Station near Quemado - excluding above tributaries	669	110	779	39,199	1,977	41,176
Del Rio Station to Below Maverick Dam Station near Quemado - Total	964	1,319	2,283	41,899	15,328	57,227
Above the Below Maverick Dam Gaging Station near Quemado	83,714	41,872	125,586	201,729	412,555	614,284
Rio San Rodrigo near Mouth above Gaging Station	0	1,049	1,049	0	6,424	6,424
Rio San Rodrigo - Total	0	1,049	1,049	0	6,424	6,424
Below Maverick Dam Station near Quemado to Maverick Power Plant - excluding Rio San Rodrigo	287	114	401	1,530	0	1,530
Below Maverick Dam Station near Quemado to Maverick Power Plant - Total	287	1,163	1,450	1,530	6,424	7,954
Above Maverick Power Plant	84,001	43,035	127,036	203,259	418,979	622,238
Maverick Power Plant to Eagle Pass Station	244	32	276	225	104	329
Above Eagle Pass Gaging Station	84,245	43,067	127,312	203,484	419,083	622,567
Rio Escondido above Gaging Station	0	1,459	1,459	0	10,692	10,692
Rio Escondido - Total	0	1,471	1,471	0	10,692	10,692
Eagle Pass Station to San Antonio Crossing Station - excluding Rio Escondido	237	206	443	250	79	329
Eagle Pass Station to San Antonio Crossing Station - Total	237	1,677	1,914	250	10,771	11,021
Above San Antonio Crossing Gaging Station	84,482	44,744	129,226	203,734	429,854	633,588
San Antonio Crossing Station to Palafox Station	629	1,683	2,312	990	959	1,949
Above Palafox Gaging Station	85,111	46,427	131,538	204,724	430,813	635,537
Palafox Station to Laredo Station	607	433	1,040	3,290	2,313	5,603
Above Laredo Gaging Station	85,718	46,860	132,578	208,014	433,126	641,140
Rio Salado above Venustiano Carranza Dam	0	15,831	15,831	0	61,282	61,282
Rio Salado above Las Tortillas Gaging Station	0	23,155	23,155	0	121,948	121,948
Rio Salado above River Road Crossing	0	23,323	23,323	0	121,948	121,948
Laredo Station to Falcon Dam - excluding Rio Salado	2,042	1,327	3,369	d) 6,471	1,515	7,986
Laredo Station to Falcon Dam - Total	2,042	24,650	26,692	6,471	123,463	129,934
Amistad Dam to Falcon Dam - excluding above tributaries	4,780	4,009	8,789	52,552	6,947	59,499
Above Falcon Dam	87,760	71,510	159,270	214,485	556,589	771,074
Rio Alamo above Gaging Station	0	1,675	1,675	0	7,660	7,660
Rio San Juan above Marte Gomez Dam	0	12,745	12,745	0	102,548	102,548
Rio San Juan - Marte Gomez Dam to Camargo Gaging Station	0	195	195	0	160,991	160,991
Rio San Juan - Total	0	12,949	12,949	0	263,539	263,539
Falcon Dam to Ft. Ringgold Station - excluding above tributaries	222	246	468	5,605	2,283	7,888
Falcon Dam to Ft. Ringgold Station - Total	222	14,870	15,092	5,605	273,482	279,087
Above Fort Ringgold Gaging Station	87,982	86,380	174,362	220,090	830,071	1,050,161
Fort Ringgold Station to Anzalduas Dam	952	798	1,750	178,700	458,796	637,496
Above Anzalduas Dam	88,934	87,178	176,112	398,790	1,288,867	1,687,657
Anzalduas Dam to Progreso Station	13	163	176	140,669	5,837	146,506
Above Progreso Gaging Station	88,947	87,341	176,288	539,459	1,294,704	1,834,163
Progreso Station to San Benito Station	7	9	16	316,124	956	317,080
Above San Benito Gaging Station	88,954	87,350	176,304	855,583	1,295,660	2,151,243
San Benito Station to Brownsville Station	14	15	29	100,470	1,806	102,276
Falcon Dam to Brownsville Station - excluding Rio Alamo and Rio San Juan	1,208	1,231	2,439	741,568	469,678	1,211,246
Above Brownsville Gaging Station	88,968	87,365	176,333	956,053	1,297,466	2,253,519

d) Includes 110 acres irrigated from small reservoirs

DRAINAGE BASIN AND IRRIGATED AREAS
Along the Rio Grande and Tributaries – 1973

DESIGNATION OF AREAS AND GAGING STATIONS	Drainage Basin Square Miles			Irrigated Areas - Acres		
	United States	Mexico	Total	United States	Mexico	Total
Brownsville Station to Gulf of Mexico				4,211	27	4,238
Falcon Dam to Gulf of Mexico - excluding Rio Alamo and Rio San Juan				745,779	469,705	1,215,484
Amistad Dam to Gulf of Mexico - excluding above tributaries				798,331	476,652	1,274,983
Above Gulf of Mexico				960,264	1,297,493	2,257,757

SUPPLEMENTARY DATA–INTERNATIONAL FALCON RESERVOIR

Deduced Inflows

Considering that a knowledge of the mean daily inflows reaching the International Falcon Reservoir would serve a useful purpose, such data have been deduced for 1973 showing the flows as close as they can be approximated. These data are based on the daily operation of the International Falcon Reservoir, taking into account: a) record of gage-heights at the dam; b) releases as measured at both hydroelectric plants and outlet works; c) elevation-area-capacity tables based on 1971-1972 surveys; and d) rate of evaporation measured at the Dam and at Nueva Cd. Guerrero applied to an area one foot higher than the average area of two consecutive days.

Flow contributions from different sources, irrigation diversion between Laredo and Falcon, river channel losses, reservoir evaporation, accuracy of gage-height records, displacement due to wind action on the reservoir, and bank storage and return incident to changes in reservoir level, all tend to cause variations in the deduced determinations and the inflows shown below should not necessarily be in agreement with the combined flow of the Rio Grande at Laredo and the Rio Salado at Las Tortillas.

In spite of the deficiencies noted above and others that may occur, the data shown below represent a reasonable approximation of the flows entering the International Falcon Reservoir.

Mean Daily Discharge in Second-Feet 1973 — Annual and Period Summary

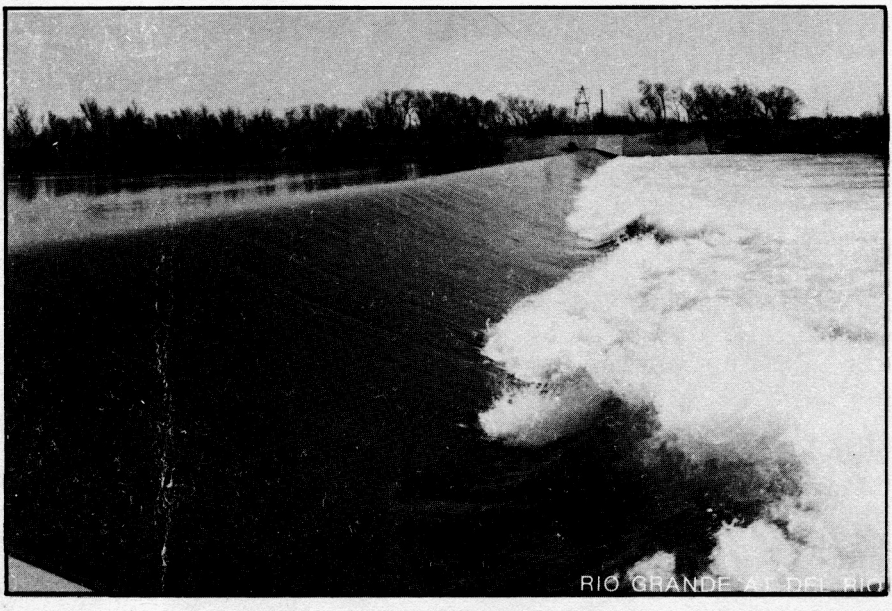
Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,820	1,180	1,300	855	1,270	480	3,280	2,710	3,880	3,070	2,660	119
2	282	1,010	1,360	816	5,790	494	2,700	3,570	4,340	1,790	2,710	544
3	583	1,110	1,240	678	3,990	250	2,130	7,270	4,240	1,620	3,130	713
4	1,120	699	1,270	466	7,490	1,330	1,530	3,640	4,560	1,880	2,560	915
5	1,650	1,100	1,410	420	7,240	1,300	1,660	2,860	3,640	3,510	2,590	908
6	1,300	1,100	1,650	297	8,120	2,430	1,650	1,830	2,060	13,600	1,030	943
7	890	922	1,090	1,170	9,640	1,950	1,760	999	2,460	28,300	1,030	154
8	837	657	1,480	1,430	8,230	1,610	1,960	2,180	6,290	24,300	2,480	1,480
9	1,520	1,460	1,500	480	8,370	1,070	1,670	2,490	7,880	5,580	2,050	590
10	597	925	1,360	399	7,980	1,500	1,840	1,640	6,820	5,900	1,510	248
11	629	1,360	855	590	8,190	1,390	2,020	1,880	6,850	6,290	636	350
12	653	2,790	530	1,250	11,900	4,870	1,680	3,190	6,990	6,180	731	844
13	346	3,710	1,140	2,590	6,430	2,990	1,790	3,370	10,600	8,480	904	1,500
14	738	3,510	1,590	2,310	5,330	777	1,970	3,640	23,300	6,070	1,790	784
15	664	3,780	1,090	2,150	3,410	1,400	2,010	3,010	16,600	7,520	2,000	533
16	770	5,090	441	3,880	4,100	1,400	1,440	3,090	10,100	6,850	1,880	396
17	833	4,730	498	2,280	3,290	1,890	3,070	6,110	9,530	5,540	901	180
18	1,160	4,660	922	1,890	2,330	2,030	3,300	2,680	10,000	3,070	1,250	424
19	1,330	5,330	256	1,490	2,290	2,080	2,590	2,290	9,570	2,990	1,650	424
20	1,540	5,930	939	2,420	2,380	5,010	2,210	4,170	10,300	3,350	622	381
21	1,710	3,250	1,180	2,330	802	22,500	1,800	3,390	8,230	3,920	413	911
22	1,660	3,600	699	2,810	696	3,600	2,490	2,920	6,430	6,750	484	420
23	1,250	2,730	1,180	2,100	1,280	5,900	2,830	2,840	4,060	6,110	1,900	1,010
24	1,430	2,000	1,100	2,200	262	19,700	1,930	2,550	11,000	6,530	2,010	445
25	182	2,320	763	1,470	1,310	16,800	2,510	3,740	4,770	8,050	1,800	448
26	322	3,370	294	3,010	1,450	34,300	2,140	4,030	3,410	8,090	410	314
27	971	1,760	452	316	2,190	22,100	1,210	7,030	21,900	10,200	1,030	431
28	600	1,540	614	547	833	9,850	1,150	3,810	9,010	11,300	480	893
29	311		710	154	335	4,410	1,580	4,060	4,240	3,320	434	1,480
30	427		498	1,030	840	3,120	2,570	4,270	3,440	4,940	424	1,510
31	939		833		309		3,350	4,100		3,990		1,320
Sum	29,084	71,623	30,294	43,828	128,077	178,531	65,820	105,359	236,500	219,090	43,499	21,612

Month	Current Year 1973								Period 1968-1973		
	Extreme Gage Feet		∅ Extreme Second-Feet				Average Second-Feet	Total Acre-Feet	Acre-Feet		
	High	Low	High		Low				Average	Maximum	Minimum
			Day		Day						
Jan.			1	1,820	25	182	939	57,671	87,102	124,065	50,635
Feb.			20	5,930	8	657	2,560	142,059	170,137	453,053	65,950
Mar.			6	1,650	19	256	973	60,125	84,953	149,942	53,064
Apr.			16	3,880	29	154	1,460	86,955	93,371	138,122	49,911
May			12	11,900	24	282	4,130	254,054	168,520	254,054	101,854
June			28	34,300	3	250	5,930	354,036	274,586	770,709	46,609
July			31	3,350	28	1,150	2,120	130,529	225,307	634,367	33,481
Aug.			3	7,270	7	999	3,400	208,931	208,009	581,600	64,413
Sept.			14	23,300	6	2,060	7,880	469,234	452,469	1,442,682	137,403
Oct.			7	28,300	3	1,620	7,060	434,596	419,474	1,365,884	122,189
Nov.			3	3,130	26	410	1,450	86,263	116,683	316,191	45,260
Dec.			30	1,510	1	119	696	42,870	94,016	388,564	42,870
Yearly				34,300		119	3,210	2,327,328	2,395,177	6,234,950	1,280,067

∅ Mean daily

Flow of the Rio Grande and Related Data

1973



UNITED STATES OF AMERICA
DEPARTMENT OF STATE

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

WATER BULLETIN NUMBER 43