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WATER BULLETIN NUMBER 66

Flow of the Rio Grande and Related Data

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

1996

STORAGE IN MAJOR RESERVOIRS
SOURCES OF RIVER FLOW
DIVERSIONS
QUALITY OF WATER
CLIMATOLOGICAL DATA
DRAINAGE BASIN AND IRRIGATED AREAS

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FOREWORD

This bulletin presents the sixty-sixth 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 streamflow 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 information for the year 1996.

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 1996 the United States Section of the Commission operated the stream-gaging stations on the Rio Grande at El Paso, Below American Dam, Fort Quitman, Candelaria, Above Rio Conchos, Below Rio Conchos, Johnson Ranch, Foster Ranch, Del Rio, El Indio, Laredo, Rio Grande City, San Benito, and Brownsville. The Mexican Section operated the stream-gaging stations on the Rio Grande at Below Amistad Dam, Jimenez, Piedras Negras, and Below Anzalduas Dam. The station at Below 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.

In 1976 the names of several gaging stations were changed, pursuant to agreement between the two Sections of the Commission. Where it was decided that some confusion might result from this change, a note giving the former name was added to the descriptive heading of the gaging station.

The total drainage area within the outer rim of the Rio Grande Basin is 868,945 square kilometers. However, about half of this area yields no runoff to the river, the estimated productive area of the watershed being 456,701 square kilometers. Major reservoirs in the basin have a total storage capacity of approximately 15,228,700 thousand cubic meters, in addition to the International Amistad and Falcon Reservoirs, which have a combined conservation capacity of 7,160,512 thousand cubic meters. In the Rio Grande basin, a total area of hectares is irrigated below Elephant Butte Dam on the Rio Grande and above 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 3,207,048 thousand cubic meters per year for the period 1934-1952. For the period 1954-1996, this flow has averaged 900,410 thousand cubic meters annually.

The mean sea level datum, referred to as the U. S. C. & G. S. in the description of the stream-gaging stations, is the National Geodetic Vertical Datum of 1929.

Acknowledgments

Other agencies which have contributed to some part of the data published herein include: the Natural Resource Conservation Service of the U. S. Department of Agriculture; the Bureau of Reclamation, the National Park Service, 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 Natural Resource Conservation Commission; the Middle Rio Grande Conservancy District; the Red Bluff Water Power Control District; State of Colorado, Division of Water Resources; the Rio Grande Compact Commission; the Delta Lake Irrigation District; 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 City of El Paso; the Maverick County Control and Improvement District No. 1; the Ministry of Agriculture and Hydraulic Resources of Mexico; the National Water Commission of Mexico; the Meteorological Service of Mexico; the Meteorological Service of the State of Chihuahua, Mexico; Federal Power Commission of Mexico; Potable Water Board of Piedras Negras, Coahuila; 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 International 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

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

METRIC TO ENGLISH CONVERSION CONSTANTS

METRIC UNITS					ENGLISH UNITS
			LENGTH		
1	Millimeter	x	0.03937	=	Inch
1	Meter	x	3.28084	=	Feet
1	Kilometer	x	0.62137	=	Mile
			AREA		
1	Square Meter	x	10.76391	=	Square Feet
1	Hectare	x	2.47105	=	Acre
1	Square Kilometer	x	0.38610	=	Square Mile
			VOLUME		
1	Cubic Meter	x	35.31467	=	Cubic Feet
1,000	Cubic Meters	x	0.81071	=	Acre-Feet
			WEIGHT		
1	Kilogram	x	2.20462	=	Pounds
1	Megagram	x	1.10231	=	Tons (2,000 lbs.)
			TEMPERATURE		
	Degrees Celsius	x	1.8 + 32	=	Degrees Fahrenheit

GENERAL HYDROLOGIC CONDITIONS FOR 1996

Along and Adjacent to the International Portion of the Rio Grande

During the year 1996, temperatures were 0.7 degree Celsius above average on the watershed of the Rio Grande below El Paso, Texas. Evaporation was 124% of average. Precipitation was 67% of average from El Paso to Amistad Dam, 70% of average from Amistad Dam to Falcon Dam, 64% of average from Falcon Dam to Rio Grande City, and 68% of average in the lower Rio Grande Valley on the United States side.

The yearly volume of flow of the Rio Grande was above average from El Paso to the confluence of the Rio Conchos with the Rio Grande, and below average from the Rio Conchos confluence to the Gulf of Mexico. In the reach between El Paso and the confluence of the Rio Conchos, the flow was 112% of average, ranging from 110% of average at Rio Grande at El Paso to 117% at Fort Quitman; in the reach between the Confluence of the Rio Conchos and Amistad Reservoir, where most of the flows normally originate from releases from Luis Leon Reservoir (El Granero) on the Rio Conchos, the flow was 47% of average; and in the reach between Amistad Dam and Falcon Reservoir, where flows mostly originate from releases from Amistad Reservoir, the flow was 52% of average. Most of the flows passing the Rio Grande Stations below Falcon Dam originated from releases from Falcon Reservoir, which in 1996 amounted to 1,718,443 thousand cubic meters, or 58% of the average for the forty-three years of operation, 1954-1996. The estimated volume of flow passing to the Gulf of Mexico was 68,252 thousand cubic meters, which is 9% of the average for this forty-three year period.

The total annual flow of all measured tributaries below Fort Quitman was 32% of average. The total flow of these tributaries in the United States was 545,068 thousand cubic meters, or 73% of average. For Mexico, the measured tributary flow, excluding Rio Alamo and Rio San Juan, was 359,157 thousand cubic meters, or 21% of average. The flows of the Rio Alamo and Rio San Juan were 19% and 0.6% of their respective averages.

Return flow to the Rio Grande at Maverick Power Plant near Eagle Pass was 975,085 thousand cubic meters, or 110% of the twenty-nine year average. Return flow to the Rio Grande through various drains in the Maverick County Irrigation District, excluding storm inflow, amounted to 44,036 thousand cubic meters, or 37% of the twenty-nine year average.

No significant flooding occurred on the Rio Grande in 1996. The highest peak flows recorded on the Rio Grande were, above Falcon Dam, 786 cubic meters per second at Foster ranch near Langtry, TX; and below Falcon Dam, 259 cubic meters per second at Rio Grande City.

For all reservoirs in the Rio Grande basin having a capacity greater than 18,500 thousand cubic meters, excepting Amistad and Falcon International Reservoirs, the average amount of water in storage in 1996 was 5,985,900 thousand cubic meters, or 93% of the average 6,431,500 thousand cubic meters. In the United States, stored water in these reservoirs was 155% of average, while in Mexico it was 58% of average.

In International Amistad Reservoir, there was an increase in storage during the year of 48,100 thousand cubic meters. Storage ranged from a high of 1,570,400 thousand cubic meters on December 15 to a low of 1,156,900 thousand cubic meters on August 21 and averaged 1,408,200 thousand cubic meters during the year, or 40% of the average for the period 1969 through 1996. In International Falcon Reservoir, there was a decrease in storage during the year of 245,100 thousand cubic meters. The storage ranged from a high of 1,013,800 thousand cubic meters on January 17 to a low of 298,200 thousand cubic meters on August 19 and averaged 647,500 thousand cubic meters during the year, or 28% of the average for the period 1954 through 1996.

Diversions from the Rio Grande in the United States were 105% of average. Diversions into the American Canal were 116% of average, into the Maverick Canal 98% of average, and in the United States below Falcon Dam, 109% of the average for the thirty-nine years, 1958-1996. In Mexico, diversions were 33% of average. Diversions into the Acequia Madre were 119% of average, while diversions through the Anzalduas Canal in Mexico were 28% of the forty-three year average.

In 1996, the total reported irrigated area from the Rio Grande and its tributaries below Caballo Dam showed a 37% decrease from the previous year. On the United States side, there was an increase of about 5% above Falcon Dam and a decrease of about 0.4% below Falcon Dam, for an overall average increase of 0.9%. On the Mexican side, there was an increase of about 0.5% reported above Falcon Dam and a decrease of about 72% below Falcon Dam, for an overall decrease of 65%.

08-3610.00 RIO GRANDE BELOW ELEPHANT BUTTE DAM, NEW MEXICO

DESCRIPTION: Concrete wall control, bubbler gage, water-stage recorder, and data collection platform located on the left bank 30 meters upstream from the cableway at latitude 33°08'55", longitude 107°12'20", and river kilometer 2,236; 1.6 river kilometers downstream from Elephant Butte Dam, 2.4 river kilometers upstream from Cuchillo Negro River, and 217 river kilometers upstream from the American Dam at El Paso, Texas. The zero of the gage is 1,292.68 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 21 current-meter measurements during the year and a continuous record of gage heights. Records were furnished by the United States Geological Survey. Records available: 1915 through 1996.

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. The data collection platform is operated by U. S. Geological Survey and relays gage height data by radio via satellite.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Cubic Meters per Second					
Daily:	Max. 233	May 22, 1942		Min. 0		Occasionally	
Monthly:	Max. 215	May 1942		Min. 0.03		Nov. 1971	
Yearly:	Max. 71.1	1942		Min. 7.16		1964	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.76	* 34.6	* 36.2	30.6	28.6	51.0	* 52.1	41.6	17.1	* 0.96	* 0.34	0.34
2	11.8	34.6	36.2	* 31.2	29.2	51.0	43.6	* 36.0	17.6	1.30	.34	.34
3	17.7	33.7	36.0	30.9	28.9	51.0	52.4	33.1	* 17.2	.79	.37	.34
4	18.5	33.7	35.1	30.6	28.9	51.0	53.0	33.4	18.1	.76	.34	* .34
5	19.2	34.3	37.1	30.3	28.6	51.0	53.0	33.7	17.7	.76	.34	.34
6	19.9	* 34.3	41.3	30.0	28.9	50.7	53.5	33.7	18.4	.76	.34	.34
7	20.6	34.0	42.5	29.7	28.6	50.4	54.4	33.4	18.5	.74	.34	.34
8	* 27.0	34.0	42.8	29.7	28.3	48.1	54.9	34.6	18.3	.74	.34	.34
9	32.3	33.7	42.5	29.2	28.2	50.4	55.5	34.8	19.1	.74	.34	.34
10	35.1	34.3	42.5	28.9	28.0	50.4	54.4	34.8	19.1	.74	.37	.34
11	35.1	34.3	42.2	29.5	28.0	50.1	55.2	35.1	19.1	.74	.34	.34
12	35.7	28.6	42.2	30.0	28.0	50.1	55.5	35.4	19.2	.71	.34	.31
13	37.1	25.4	41.9	29.7	27.8	49.8	55.8	35.4	19.2	.74	.34	.34
14	37.1	25.4	* 41.3	28.2	27.7	* 53.8	56.1	37.9	19.3	.71	.34	.34
15	37.7	25.6	43.6	* 27.6	* 27.7	50.4	* 56.1	36.0	19.0	.74	.34	.31
16	* 37.4	25.9	42.2	27.1	27.9	50.4	56.1	* 24.3	7.79	.74	.34	.34
17	38.8	25.8	41.3	27.5	28.0	51.5	55.5	17.7	* .99	.74	.34	.31
18	38.8	25.9	41.6	27.3	28.3	52.4	47.6	17.7	.68	.74	.34	.31
19	39.6	26.0	41.3	27.8	28.6	51.0	43.0	17.8	.65	.71	.34	.34
20	39.4	26.3	41.6	28.1	42.2	50.7	43.0	17.9	.85	.74	.34	.34
21	37.9	26.4	41.6	28.3	50.4	51.8	42.8	17.8	.93	.74	.34	.31
22	36.0	26.8	34.3	28.3	50.4	50.4	42.8	17.7	.99	.54	.34	.31
23	34.8	32.6	31.2	28.3	50.4	50.1	42.5	17.6	1.05	.31	.34	.31
24	33.4	35.7	33.1	28.2	50.4	51.0	41.6	18.0	1.02	.31	.34	.31
25	33.4	36.0	32.0	28.2	50.4	51.8	41.6	18.1	1.08	.31	.34	.34
26	33.4	36.8	30.3	28.6	50.7	51.5	41.9	17.7	1.13	.31	.34	.34
27	33.4	37.1	30.3	28.9	50.7	51.8	41.9	17.4	1.13	.34	.34	.34
28	33.4	36.5	30.6	28.6	51.0	52.4	41.6	17.5	.96	.37	.34	.34
29	33.4	36.8	29.2	28.3	50.7	51.3	41.6	17.5	.93	.34	.34	.34
30	33.7		30.9	* 28.9	* 51.0	52.4	41.6	17.3	.96	.37	.34	.34
31	34.0		30.6		51.0		41.6	17.1		.37		.37
Sum	957.36	915.1	1,165.5	868.5	1,137.5	1,529.7	1,512.2	818.0	298.04	19.91	10.26	10.33

Month	Current Year 1996							Period 1938–1996			
	Extreme Gage Meters		Extreme–Cubic Meters per Second				Average	Volume–Thousand Cubic Meters			
	High	Low	Day	ϕ High	Day	ϕ Low		Total	Average	Maximum	Minimum
Jan.			19	39.6	1	1.76	30.9	82,716	31,208	147,406	247
Feb.			27	37.1	!13	25.4	31.6	79,065	51,779	207,297	232
Mar.			15	43.6	29	29.2	37.6	100,699	90,097	174,074	1,261
April			2	31.2	16	27.1	29.0	75,038	105,557	199,454	13,824
May			!28	51.0	!14	27.7	36.7	98,280	117,082	576,485	632
June			14	53.8	8	48.1	51.0	132,166	128,339	447,576	20,862
July			!14	56.1	!24	41.6	48.8	130,654	122,445	305,796	51,006
Aug.			1	41.6	31	17.1	26.4	70,675	92,398	178,200	11,761
Sept.			14	19.3	19	.65	9.93	25,751	43,164	159,174	201
Oct.			2	1.30	!23	.31	.64	1,720	19,575	154,731	183
Nov.			! 3	.37	! 1	.34	.34	886	17,398	195,408	91.5
Dec.			31	.37	!12	.31	.33	893	24,053	160,055	112
Yearly				56.1		0.31	25.3	798,543	843,095	2,243,367	226,236

* Discharge measurement made on this day ϕ Mean daily ! And other days

08-3625.00 RIO GRANDE BELOW CABALLO DAM, NEW MEXICO

DESCRIPTION: Cableway, gravity well, water-stage recorder, and data collection platform located on the left bank at latitude 32°53'05", longitude 107°17'30", and river kilometer 2,190; 1.3 river kilometers downstream from Caballo Dam, about 5.0 kilometers northeast of Arrey, New Mexico, 8.0 kilometers south of Caballo, New Mexico, and 172 river kilometers upstream from the American Dam at El Paso, Texas. The zero of the gage is 1,262.15 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 44 current-meter 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 1996.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. In addition to the outflow from Caballo Dam listed below, 1337 TCM of water were diverted in 1996 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 2.4 kilometers downstream from this station. Small accretions to the river take place between the station and Percha Dam. The data collection platform is operated by U. S. Bureau of Reclamation and relays gage heights and flow data by radio via satellite.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Cubic Meters per Second					
Daily:	Max.	217	May 20, 1942	Min.	0	1954, 1955 and 1972
Monthly:	Max.	190	May 1942	Min.	0	Nov. 1955
Yearly:	Max.	70.2	1942	Min.	8.04	1964

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.06	18.7	34.1	51.5	* 43.8	54.8	33.3	67.1	35.9	0.25	0.11	0.06
2	.06	17.2	36.4	50.2	43.7	54.6	37.1	64.0	35.7	* .25	.11	.06
3	.06	15.8	36.5	* 48.7	45.0	54.6	* 42.1	60.6	39.8	.23	.11	.06
4	.06	15.8	36.4	48.7	46.9	55.8	42.1	56.7	* 42.4	.23	.11	* .06
5	.03	* 15.8	42.8	35.5	46.9	* 59.9	44.6	51.7	39.9	.23	.11	.06
6	.03	15.8	* 48.7	21.5	46.7	59.6	47.0	50.4	36.9	.23	.11	.06
7	.03	* 15.8	48.6	21.9	48.1	58.2	46.9	* 48.9	33.3	.23	.11	.06
8	.03	15.3	50.1	21.9	* 49.0	56.7	46.8	48.7	33.1	.20	.11	.06
9	.03	8.69	51.6	30.7	46.6	56.6	54.2	47.0	32.7	* .20	.11	.06
10	.03	3.77	51.7	* 38.8	43.3	56.4	* 63.1	45.1	36.6	.20	.11	.06
11	.03	3.12	52.7	38.7	39.1	56.2	60.8	45.0	40.7	.20	.11	.06
12	4.79	3.23	58.7	38.9	39.1	* 56.2	59.5	44.8	35.6	.20	.11	.06
13	9.15	11.6	* 63.9	39.0	39.0	56.5	63.1	49.3	27.1	.17	.11	.06
14	9.15	* 18.2	63.4	38.6	46.1	56.0	61.0	* 53.6	24.0	.17	.08	.06
15	9.15	18.0	61.4	38.9	53.7	55.5	46.7	52.8	24.0	.17	.08	.06
16	* 9.18	19.4	59.8	49.4	53.4	55.6	39.1	54.5	24.1	.17	.08	.06
17	9.20	21.3	59.8	* 57.2	54.6	55.6	* 42.6	56.3	20.5	.17	.08	.06
18	9.12	21.4	61.3	51.5	56.1	59.0	47.2	56.1	* 17.7	.17	.08	.06
19	9.18	21.6	62.8	48.3	55.8	* 62.1	45.9	55.7	17.6	.17	.08	.06
20	9.15	23.4	* 64.3	44.9	55.7	62.2	44.5	56.0	23.9	.17	.08	.06
21	9.18	* 25.2	64.3	44.9	54.3	62.8	44.5	* 56.5	30.3	.14	.08	.06
22	9.23	30.3	59.7	44.8	* 52.0	63.6	44.4	56.2	30.1	.14	.08	.03
23	9.20	33.2	56.0	43.2	49.1	63.7	48.9	49.6	31.6	* .14	.08	.03
24	* 9.20	33.1	55.6	* 41.5	48.2	63.4	* 52.6	43.4	40.9	.14	.08	.03
25	9.23	33.3	55.7	41.4	47.5	62.6	52.1	43.3	* 52.5	.14	.08	.03
26	11.6	33.3	55.3	40.0	47.2	* 61.6	52.9	43.2	57.6	.14	.08	.03
27	14.2	33.0	* 55.5	38.8	47.1	48.9	53.7	45.1	* 56.0	.14	.08	.03
28	* 14.2	* 32.5	55.7	38.6	49.0	40.6	53.6	* 47.3	47.4	.14	.08	.03
29	14.3	32.2	55.9	38.7	* 51.8	38.4	53.5	45.3	53.3	.14	.08	.03
30	17.4		* 53.3	41.3	51.9	35.4	59.7	39.8	19.7	* .11	.06	.03
31	* 20.0		51.4		53.1		* 67.5	36.2		.11		.03
Sum	216.26	590.01	1,663.4	1,228.0	1,503.8	1,683.1	1,551.0	1,570.2	1,040.9	5.49	2.77	1.56

Month	Current Year 1996							Period 1938-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	ϕ High	Day	ϕ Low		Total	Average	Maximum	Minimum
Jan.			31	20.0	! 5	0.03	6.98	18,685	5,425	146,403	23.7
Feb.			!25	33.3	11	3.12	20.3	50,977	17,199	138,207	14.4
Mar.			!20	64.3	1	34.1	53.7	143,718	112,168	200,839	30,675
April			17	57.2	6	21.5	40.9	106,099	100,968	261,905	31,417
May			18	56.1	13	39.0	48.5	129,928	101,388	508,691	92.8
June			23	63.7	30	35.4	56.1	145,420	136,040	436,371	31,193
July			31	67.5	1	33.3	50.0	134,006	144,257	309,079	34,748
Aug.			1	67.1	31	36.2	50.7	135,665	127,711	220,412	25,320
Sept.			26	57.6	19	17.6	34.7	89,934	65,312	223,812	8,335
Oct.			! 1	.25	!30	.11	.18	474	11,181	151,369	19.1
Nov.			! 1	.11	30	.06	.09	239	3,789	101,642	8.8
Dec.			! 1	.06	!22	.03	.05	135	5,180	180,557	7.5
Yearly				67.5		0.03	30.2	955,280	830,618	2,215,231	254,198

* Discharge measurement made on this day ϕ Mean daily ! And other days

08-3640.00 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 kilometer 2,021; 8.9 river kilometers upstream from the Paso del Norte Bridge between El Paso, Texas and Cd. Juarez, Chihuahua and 2.7 kilometers upstream from the American Dam at El Paso, Texas. The zero of the gage is 1,134.56 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 23 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 1996.

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

EXTREME FLOWS FROM RECORDS: Momentary: Max. 680 CMS 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 382 CMS on September 3, 1925.

Average Flow in Cubic Meters per Second

Daily:	Max.	671	June 12, 1905	Min.	0	Occasionally
Monthly:	Max.	405	June 1905	Min.	0	Occasionally
Yearly:	Max.	78.7	1905	Min.	1.99	1902

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.97	13.8	* 12.3	26.8	22.3	22.0	36.0	* 31.5	21.1	48.3	5.58	3.63
2	4.21	15.2	12.1	* 25.1	20.6	24.7	* 27.5	37.2	25.8	37.0	5.00	3.71
3	4.09	14.9	15.9	25.8	21.8	27.5	23.3	35.5	23.0	* 18.3	4.91	* 3.52
4	4.08	14.4	20.7	24.1	22.3	27.3	20.6	35.9	22.1	15.2	4.78	3.37
5	* 4.14	13.8	20.2	22.0	21.8	28.6	24.4	35.0	20.4	13.9	* 4.78	3.30
6	4.10	13.2	19.7	28.8	24.4	29.2	23.7	29.7	20.0	13.0	4.76	3.14
7	4.02	12.9	21.0	28.5	25.0	29.0	25.0	26.7	* 20.1	12.7	4.64	3.09
8	3.84	12.2	24.5	20.0	23.9	29.9	30.7	27.2	20.5	11.4	4.58	3.04
9	3.63	11.7	24.3	16.7	22.0	30.5	28.6	24.7	18.2	10.2	4.83	3.07
10	3.65	10.8	27.3	16.0	22.4	* 31.6	27.2	25.2	17.0	9.81	4.79	3.01
11	3.42	9.71	28.9	13.6	20.0	29.9	29.2	29.2	18.7	8.93	4.74	2.80
12	3.07	8.47	29.5	19.9	20.5	28.3	30.7	27.7	24.2	8.52	4.68	2.67
13	3.56	6.22	29.6	18.8	18.4	28.2	26.1	24.9	41.9	8.09	4.70	2.82
14	4.69	* 5.49	31.4	18.5	16.8	27.0	28.4	24.1	40.7	8.01	4.63	2.70
15	5.40	4.35	29.8	20.8	14.2	27.0	34.6	22.0	33.9	8.09	4.61	2.60
16	8.76	6.77	28.9	* 19.3	14.0	29.3	* 45.2	21.1	28.8	7.62	4.51	2.54
17	9.38	6.09	27.3	19.8	18.0	32.9	40.2	20.4	23.3	7.25	4.10	2.72
18	8.94	5.23	26.9	22.3	18.1	31.6	23.5	21.6	22.0	6.74	4.21	2.37
19	8.85	5.37	* 28.1	27.4	19.6	29.3	25.0	27.6	19.2	6.60	4.11	2.24
20	8.94	5.86	30.4	22.2	23.1	27.2	28.9	25.4	15.8	7.28	4.16	2.51
21	9.21	6.26	30.0	23.1	* 22.3	26.8	28.8	27.5	13.2	6.31	* 4.23	2.58
22	9.57	6.37	29.6	22.3	23.0	26.1	32.2	* 26.1	11.6	* 6.03	4.21	2.60
23	9.96	6.56	30.7	21.4	21.3	27.0	28.7	29.3	14.4	6.01	4.11	2.43
24	* 10.0	5.75	29.8	22.3	18.4	28.2	25.7	30.3	12.8	6.05	3.98	2.32
25	9.91	12.8	28.0	21.7	16.0	28.1	24.1	28.9	11.8	5.91	3.84	2.28
26	10.2	15.0	28.7	18.7	17.5	27.2	23.6	23.2	14.8	5.74	3.94	2.26
27	11.2	* 14.7	27.7	19.3	21.9	* 34.2	24.7	21.7	17.2	5.64	3.99	2.14
28	12.2	14.0	28.1	22.0	22.8	37.1	29.8	22.4	18.5	6.13	3.85	2.11
29	11.4	12.2	25.8	22.0	20.8	41.1	31.8	21.8	22.9	* 6.22	3.97	2.05
30	9.75		26.0	* 21.6	21.3	32.4	29.9	23.6	22.1	6.18	3.76	2.02
31	12.2		26.0		21.3		29.3	23.1		5.93		2.15
Sum	220.34	290.10	799.2	650.8	635.8	879.2	887.4	830.5	636.0	333.09	132.98	83.79

Current Year 1996 | Period 1938-1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High Day	High	Low Day	Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	1.220	0.910	29	12.8	12	3.03	7.11	19,037	11,174	150,048	271
Feb.	1.310	.930	26	17.9	15	3.19	10.0	25,065	13,059	122,304	167
Mar.	1.645	1.155	14	32.4	1	11.1	25.8	69,051	48,470	140,433	2,204
April	1.660	1.195	7	33.5	11	12.1	21.7	56,229	52,656	171,563	8,414
May	1.520	1.230	7	26.7	15	12.9	20.5	54,933	57,453	439,894	644
June	1.880	1.410	29	53.9	1	21.4	29.3	75,963	69,137	375,353	7,421
July	1.920	1.335	17	67.5	4	18.8	28.6	76,671	78,341	244,070	11,904
Aug.	1.745	1.340	4	39.2	17	19.0	26.8	71,755	71,674	194,405	6,007
Sept.	1.935	1.105	13	83.2	23	10.3	21.2	54,950	49,014	211,481	2,995
Oct.	1.855	.965	1	67.8	26	5.47	10.7	28,779	22,667	163,710	186
Nov.	.970	.875	1	5.86	30	3.56	4.43	11,489	12,734	124,457	282
Dec.	.890	.790	2	3.92	19	1.47	2.70	7,239	12,882	197,341	254
Yearly	1.935	0.790		83.2		1.47	17.4	551,161	499,261	1,923,317	70,867

* Discharge measurement made on this day

08-3645.00 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 recorder, and binary decimal transmitter located on the right bank of the concrete-lined canal at El Paso, Texas, latitude 31°46' 40", longitude 106°31'35", and about 0.7 kilometer downstream from the headgates of the American Dam which are located at river kilometer 2,018. The zero of the gage is 1,131.45 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 14 current-meter 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 1996.

REMARKS: This canal diverts water from the Rio Grande at the American Dam at El Paso, Texas, 3.4 river kilometers upstream from the International Dam at Cd. Juarez, Chihuahua. Water from this canal discharges into the Franklin Canal from which water is frequently returned to the Rio Grande at spillways 3.5, 4.3,and 5.8 river kilometers downstream from the American Dam. The transmitter relays gage height data upon interrogation by telephone via commercial circuits.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 52.1 CMS on March 27, 1944. Min. frequently no flow.

Average Flow in Cubic Meters per Second

Daily:	Max.	42.8	Aug. 13, 1945	Min.	0	Frequently
Monthly:	Max.	34.3	Aug. 1943	Min.	0	Frequently since 1952
Yearly:	Max.	21.2	1943	Min.	0.24	1990

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.07	12.3	11.7	20.1	15.4	16.4	27.0	24.1	16.4	24.7	* 0.03	0.02
2	.07	14.3	11.5	18.5	* 15.6	16.3	* 19.9	28.2	19.3	22.7	.03	.02
3	2.58	15.6	14.4	18.6	17.2	19.0	15.9	26.9	21.2	* 15.5	.03	* .02
4	3.56	14.0	19.3	* 17.2	17.8	19.6	13.5	28.4	17.1	12.1	.03	.02
5	3.35	* 13.6	* 18.7	15.1	18.1	20.1	16.5	27.1	15.2	11.0	.03	.02
6	3.23	13.4	18.1	20.5	19.2	* 19.9	15.8	24.7	* 14.9	11.1	.03	.02
7	3.24	13.2	18.8	21.4	19.6	19.3	17.4	20.6	16.8	11.0	.03	.02
8	3.26	12.3	21.5	14.5	19.2	19.8	21.7	* 20.3	18.5	10.5	.03	.02
9	3.29	11.9	22.3	11.4	17.8	20.5	21.2	18.5	17.0	9.38	.03	.02
10	3.28	11.1	24.9	10.5	17.9	21.2	20.2	18.3	16.0	8.85	.03	.02
11	2.53	10.6	26.9	8.13	15.7	20.9	22.5	20.5	17.1	8.13	.02	.02
12	1.67	7.83	27.3	13.5	16.1	19.6	23.3	22.2	21.2	7.85	.02	.02
13	.07	5.71	27.3	13.7	14.5	18.5	18.8	19.8	25.3	7.64	.02	.02
14	.07	5.33	28.4	13.6	13.2	17.4	21.8	18.9	24.8	7.67	.02	.02
15	.07	4.45	25.8	15.6	11.0	17.7	27.0	16.9	15.9	2.97	.02	.02
16	.07	5.78	24.8	14.1	10.9	19.9	29.9	15.8	20.0	.03	.02	.02
17	.13	5.86	24.0	14.4	14.7	23.4	26.6	15.0	22.1	.03	.02	.02
18	5.30	5.34	23.7	16.2	15.3	23.2	17.6	15.8	21.2	* .03	.02	.02
19	8.42	5.41	23.2	21.0	16.6	21.5	18.0	20.9	19.1	.03	* .02	.02
20	9.61	5.92	24.2	16.6	19.7	20.0	22.0	19.7	16.0	.03	.02	.02
21	9.63	6.15	24.2	17.1	19.3	19.6	22.4	21.3	15.0	.03	.02	.02
22	9.71	6.43	23.6	16.4	19.6	19.1	24.4	20.1	13.6	.03	.02	.02
23	9.96	6.56	24.0	15.5	18.4	20.2	21.9	22.2	14.1	.03	.02	.02
24	9.86	5.75	23.5	16.2	16.3	21.5	19.3	22.8	11.4	.03	.02	.02
25	10.0	11.3	21.4	15.6	14.4	22.1	17.6	21.4	10.5	.03	* .02	.02
26	10.2	13.5	21.4	13.1	13.6	21.5	17.1	16.8	12.9	.03	.02	.02
27	9.95	12.9	20.8	13.5	16.8	26.6	17.7	15.1	15.4	.03	.02	.02
28	10.2	11.9	20.8	15.5	19.1	28.9	21.5	15.7	16.0	.03	.02	.02
29	12.8	11.1	19.1	15.3	18.1	27.8	23.2	15.1	20.1	.03	.02	.02
30	11.4		19.6	14.8	17.4	24.0	21.9	16.5	19.1	.03	.02	.02
31	12.0		19.6		18.0		22.0	17.6		.03		.02
Sum	169.58	279.52	674.8	467.63	516.5	625.5	645.6	627.2	523.2	171.57	0.70	0.62

Current Year 1996 | Period 1939-1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second Day	High	Day	Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	2.450		18	19.8	1	0.07	5.47	14,652	5,481	51,241	0
Feb.	2.265	1.330	3	16.0	16	3.31	9.64	24,151	9,210	62,253	0
Mar.	2.905	1.945	14	29.1	1	10.6	21.8	58,303	40,293	69,130	0
April	2.725	1.675	7	25.2	11	7.08	15.6	40,403	36,825	87,408	0
May	2.545	1.925	23	20.5	16	9.92	16.7	44,626	35,290	85,163	0
June	3.045	2.225	29	31.6	1	14.4	20.9	54,043	45,947	80,984	0
July	3.095	2.075	16	32.3	4	12.2	20.8	55,780	53,679	87,171	0
Aug.	3.021	2.240	2	29.8	17	13.9	20.2	54,190	52,070	92,064	0
Sept.	3.030	1.810	13	29.7	13	7.53	17.4	45,204	36,367	77,877	0
Oct.	2.895		1	27.2	15	.03	5.53	14,824	17,846	59,131	0
Nov.			! 1	.03	!11	.02	.02	60.5	8,788	37,208	0
Dec.			! 1	.02	! 1	.02	.02	53.6	8,265	55,112	0
Yearly				32.3		0.02	12.8	406,290	350,061	668,068	7,603

* Discharge measurement made on this day ! And other days

08-3650.00 RIO GRANDE BELOW AMERICAN DAM AT EL PASO, TEXAS AND CD. JUAREZ, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the left bank of the river at latitude 31°46'35", longitude 106°31'20", and river kilometer 2,017; 2.4 river kilometers upstream from the International Dam, 5.0 river kilometers upstream from the Paso del Norte Bridge between El Paso, Texas and Cd. Juarez, Chihuahua, and 1.0 river kilometer downstream from the American Dam. The zero of the gage is 1,131.51 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 65 current-meter measurements during the year, and a continuous record of gage heights. Computations by shifting control methods. Records available: June 1938 through 1996.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The operation of the American Dam began June 2, 1938. Part of the flow above the dam is diverted into the American Canal, and the remainder, including excess flood flows, passes below the dam.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 320 CMS on September 14, 1958 with a gage height of 4.42 meters. Min. occasionally no flow.

		Average Flow in Cubic Meters per Second				
Daily:	Max.	171	May 20, 1942	Min.	0	Occasionally
Monthly:	Max.	138	May 1942	Min.	0	Occasionally
Yearly:	Max.	42.8	1942	Min.	0.39	1956

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.42	* 0.32	0.60	* 5.17	5.51	5.37	* 6.68	5.44	3.67	8.55	5.78	4.07
2	4.49	.32	.59	5.28	3.86	6.50	6.26	* 5.54	3.52	4.97	5.37	* 4.06
3	2.23	.32	.58	5.40	* 3.21	* 6.38	* 6.46	5.99	3.23	* 1.09	5.26	4.03
4	.44	.30	* .54	5.43	3.26	6.02	6.35	6.09	3.48	1.00	* 5.26	3.92
5	.39	.29	.56	5.55	3.21	6.02	6.37	* 5.66	* 3.56	.97	5.20	3.87
6	.35	.31	.57	5.55	* 3.27	6.20	6.23	5.02	3.63	.99	5.11	3.77
7	.34	.32	.64	5.35	3.34	* 6.25	6.30	* 5.11	2.06	1.00	4.98	3.80
8	* .36	.31	.68	* 5.26	3.26	6.46	* 6.45	5.46	.50	1.01	4.82	3.76
9	.38	.30	.69	5.25	3.18	6.56	6.24	* 5.45	.51	1.03	4.88	3.79
10	.37	.31	.76	5.31	* 3.29	* 6.51	6.26	5.37	* .42	1.07	4.81	3.76
11	.58	.34	.81	5.36	3.46	6.42	6.28	5.32	.49	1.08	4.72	3.68
12	1.61	.30	.86	* 5.41	3.42	6.35	* 6.38	* 5.21	.60	1.10	4.64	3.67
13	3.43	.28	.89	5.29	3.40	6.44	6.41	5.18	32.9	1.12	4.64	3.81
14	3.42	.26	.92	5.24	3.50	6.38	6.51	5.30	14.3	1.11	4.57	3.75
15	3.88	.26	* 2.73	* 5.23	3.53	6.39	* 6.57	* 5.39	16.0	5.18	4.53	3.75
16	8.18	.28	3.24	5.36	3.61	6.56	10.9	5.37	5.15	8.45	4.44	3.47
17	8.46	.27	3.15	5.37	* 3.50	* 6.58	10.7	5.34	.50	7.84	4.22	3.53
18	3.75	.24	* 3.19	5.62	3.24	6.26	6.75	5.41	.87	* 7.28	4.24	3.23
19	.76	.25	* 4.57	* 5.26	3.19	6.23	* 6.81	* 5.56	1.06	7.01	* 4.23	3.27
20	.69	.25	5.43	5.22	* 3.18	6.17	6.42	5.50	* 1.06	6.89	4.18	3.44
21	.64	.26	5.42	4.94	3.22	* 6.33	6.30	5.57	1.01	6.71	4.16	3.39
22	.60	* .25	* 5.41	* 5.14	3.23	6.54	* 6.64	5.49	.98	6.44	4.13	3.24
23	* .53	.24	5.44	5.17	3.27	6.49	6.52	* 5.58	.98	6.41	4.17	3.16
24	.50	.24	5.34	* 5.34	* 3.25	* 6.51	* 6.62	5.56	.99	6.43	4.07	3.12
25	.47	.25	* 5.30	5.36	3.12	6.49	6.72	5.42	.93	6.28	3.91	3.12
26	.43	.24	5.61	* 5.28	3.17	6.57	* 6.52	* 5.31	.88	6.16	4.07	3.09
27	.45	1.37	5.64	5.28	3.11	6.74	6.38	5.49	.87	6.02	4.10	2.99
28	.41	.82	5.68	5.24	* 3.09	* 6.52	6.51	5.65	.86	* 6.18	4.08	2.95
29	.39	.69	* 5.52	* 5.28	3.14	9.60	* 6.51	5.62	.86	6.18	4.21	2.99
30	.35		5.26	5.43	3.13	7.36	6.43	* 5.67	.82	6.05	4.10	2.98
31	.33		5.17		* 3.14		* 5.86	4.14		6.02		3.12
Sum	53.63	10.19	91.79	159.37	104.29	195.20	208.34	168.21	106.69	137.62	136.88	108.58

Month	Current Year 1996							Period 1939–1996			
	Extreme Gage Meters		Extreme–Cubic Meters per Second					Volume–Thousand Cubic Meters			
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	3.000	1.460	16	14.4	31	0.30	1.73	4,634	5,688	98,781	0
Feb.	1.920	1.445	27	8.35	18	.20	.35	880	3,669	60,041	0
Mar.	1.865	1.495	23	7.37	4	.50	2.96	7,931	7,854	79,572	99.8
April	1.860	1.765	20	7.26	21	4.85	5.31	13,770	15,245	91,915	2,752
May	1.865	1.670	1	7.03	2	2.75	3.36	9,011	21,478	369,945	31.1
June	2.255	1.690	29	21.1	1	3.15	6.51	16,865	22,501	308,855	0
July	2.210	1.770	16	19.6	31	5.38	6.72	18,001	24,812	191,605	1,193
Aug.	1.920	1.675	2	8.95	31	3.18	5.43	14,533	19,313	140,115	46.3
Sept.	2.905	1.415	13	62.8	18	.21	3.56	9,218	12,093	152,960	66.4
Oct.	2.115	1.500	1	15.6	1	.79	4.44	11,890	4,569	104,679	22.2
Nov.	1.795	1.745	10	6.00	25	3.78	4.56	11,826	3,852	87,256	0
Dec.	1.765	1.700	3	4.29	27	2.84	3.50	9,381	4,529	142,194	0
Yearly	3.000	1.415		62.8		0.20	4.05	127,940	145,603	1,349,111	12,337

* Discharge measurement made on this day

08-3655.00 DIVERSIONS FROM THE RIO GRANDE
ACEQUIA MADRE AT CD. JUAREZ, CHIHUAHUA

DESCRIPTION: Bridge for making discharge measurements, gravity well, and water-stage recorder located on the right bank of the canal at Cd. Juarez, Chihuahua, latitude 31°45'40", longitude 106°30'30", about 80 meters downstream from the canal intake at the International Dam at Cd. Juarez, Chihuahua, which is located at river kilometer 2,015 and 3.4 river kilometers downstream from the American Dam at El Paso, Texas.

RECORDS: Flow records provided by Mexican Section. Records available: 1938 through 1996. These records, showing the water 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 the 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" on the preceding page of this bulletin.

REMARKS: Based on 74 current-meter measurements and a continuous record of stage.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 13.6 CMS on July 21, 1944 with a gage height of 1.83 meters. Min. no flow during several months throughout the year.

Average Flow in Cubic Meters per Second

Daily:	Max.	9.61	May 10, 1942	Min.	0	Several months each year
Monthly:	Max.	7.42	May 1942	Min.	0	Several months each year
Yearly:	Max.	3.28	1942	Min.	0.26	1964

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	* 4.40	4.95	4.98	* 5.69	4.93	3.37	0	0	0
2	0	0	0	4.59	3.54	6.47	5.66	* 5.08	* 2.24	0	0	0
3	0	0	0	* 4.79	* 2.51	* 6.29	* 5.90	5.70	* 2.59	0	0	0
4	0	0	0	4.89	2.67	5.85	5.65	5.79	* 3.25	0	0	0
5	0	0	0	5.15	2.69	* 5.77	* 5.75	* 5.36	3.43	0	0	0
6	0	0	0	5.10	* 2.77	5.91	5.70	4.82	* 3.72	0	0	0
7	0	0	0	5.00	2.87	* 5.95	5.70	* 4.91	2.33	0	0	0
8	0	0	0	* 4.81	* 2.83	6.10	* 5.97	5.15	0	0	0	0
9	0	0	0	4.68	2.84	6.18	6.00	* 4.90	0	0	0	0
10	0	0	0	* 4.74	* 3.06	* 6.15	* 6.02	4.94	0	0	0	0
11	0	0	0	4.80	3.26	6.07	6.09	5.00	0	0	0	0
12	0	0	0	* 4.92	3.28	* 5.94	* 6.13	* 5.13	0	0	0	0
13	0	0	0	4.68	* 3.21	6.01	6.25	5.02	0	0	0	0
14	0	0	0	4.67	3.33	* 5.93	5.58	* 5.16	0	0	0	0
15	0	0	* 1.84	* 4.75	* 3.21	5.97	5.26	5.08	0	0	0	0
16	0	0	2.89	4.79	3.24	6.04	5.71	* 5.12	0	0	0	0
17	0	0	2.95	* 4.99	* 3.22	* 6.18	5.82	5.12	0	0	0	0
18	0	0	* 2.98	5.04	2.91	5.90	5.67	5.29	0	0	0	0
19	0	0	* 4.00	* 5.06	2.96	* 5.94	5.35	* 4.29	0	0	0	0
20	0	0	* 4.96	4.76	* 3.03	5.94	5.87	4.90	0	0	0	0
21	0	0	4.90	4.85	3.02	* 5.98	5.95	* 5.20	0	0	0	0
22	0	0	* 4.87	* 4.88	* 2.97	6.28	* 6.17	5.14	0	0	0	0
23	0	0	5.00	5.18	3.04	6.29	5.92	* 5.19	0	0	0	0
24	0	0	5.02	* 5.09	* 3.00	* 6.37	* 5.62	5.16	0	0	0	0
25	0	0	* 4.94	4.96	2.87	6.37	6.13	5.28	0	0	0	0
26	0	0	* 5.20	* 4.53	2.98	* 6.44	* 6.14	* 5.01	0	0	0	0
27	0	0	* 5.26	4.62	* 2.98	6.81	5.93	5.20	0	0	0	0
28	0	0	5.35	4.90	2.93	* 6.58	6.08	* 5.34	0	0	0	0
29	0	0	* 5.10	* 5.02	* 3.03	5.60	* 6.18	5.22	0	0	0	0
30	0		4.81	5.29	2.85	4.93	6.15	* 5.26	0	0	0	0
31	0		4.83		* 2.83		* 5.79	4.12		0		0
Sum	0	0	74.90	145.93	94.88	181.22	181.83	157.81	20.93	0	0	0

Current Year 1996 | Period 1938-1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme Cubic Meters per Second High Day	High	Low Day	Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0	0	! 1	0	! 1	0	0	0	42.4	2,504	0
Feb.	0	0	! 1	0	! 1	0	0	0	157	9,264	0
Mar.	1.390	0	28	5.44	! 1	0	2.42	6,471	2,289	9,807	0
April	1.470	1.170	30	5.42	26	3.98	4.86	12,608	10,410	15,274	0
May	1.520	.900	1	5.12	2	2.35	3.06	8,198	10,730	19,869	0
June	1.880	.990	27	7.20	30	3.14	6.04	15,657	10,961	19,360	0
July	1.920	.850	22	6.92	15	2.16	5.87	15,710	11,307	18,714	0
Aug.	1.910	.180	7	6.50	19	.30	5.09	13,635	10,956	15,565	0
Sept.	1.780	0	4	5.90	! 7	0	.70	1,808	5,356	15,269	0
Oct.	0	0	! 1	0	! 1	0	0	0	61.8	1,743	0
Nov.	0	0	! 1	0	! 1	0	0	0	0	0	0
Dec.	0	0	! 1	0	! 1	0	0	0	0	0	0
Yearly	1.920	0		7.20		0	2.34	74,087	62,270	103,511	8,207

* Discharge measurement made on this day ! And other days

08-3705.00 RIO GRANDE AT FORT QUITMAN, TEXAS
NEAR COLONIA LUIS LEON, CHIHUAHUA

DESCRIPTION: Cableway, bubbler gage, and water-stage recorder located on the left bank of the rectified channel of the Rio Grande at latitude 31°05'10", longitude 105°36'30", and river kilometer 1,888; 2.4 river kilometers downstream from Old Fort Quitman, 14.5 kilometers southeast of Esperanza, Texas, and 28.2 kilometers southeast of McNary, Texas. The zero of the gage is 1,052.35 meters above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on 30 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 1996.
REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station.
EXTREME FLOWS FROM RECORDS:** Momentary: Max. 300 CMS October 5, 1946 with a gage height of 3.05 meters. Min. frequently no flow.

Average Flow in Cubic Meters per Second**

Daily:	Max.	167	May 19, 1942	Min.	0	Frequently
Monthly:	Max.	142	May 1942	Min.	0	Several months since 1951
Yearly:	Max.	49.8	1942	Min.	0.07	1965

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	13.6	6.98	5.55	2.93	* 5.56	1.15	18.9	2.70	2.75	23.1	8.34	7.12
2	11.7	8.44	4.83	2.74	5.33	1.08	12.3	1.90	2.95	* 26.5	8.91	6.79
3	8.44	8.87	4.80	* 3.05	4.50	1.30	* 9.63	2.76	2.41	23.3	8.94	6.34
4	7.86	12.5	5.02	3.54	4.39	1.06	7.03	3.33	3.96	14.9	7.16	* 6.37
5	7.66	18.7	4.80	3.96	4.92	.97	6.93	2.56	3.01	13.4	4.54	6.49
6	8.89	16.7	* 4.15	5.94	5.02	.91	5.68	* 2.24	2.46	16.7	* 4.94	6.72
7	8.66	* 11.3	3.81	7.23	4.09	.97	5.19	2.96	3.23	18.6	5.92	7.05
8	8.33	11.1	3.70	13.8	3.92	.89	4.36	2.84	2.87	18.9	5.71	6.71
9	* 7.55	10.9	3.58	10.5	4.14	.89	3.67	3.01	3.48	18.8	5.91	6.46
10	7.68	10.7	3.86	6.24	5.53	.94	4.14	2.81	4.44	16.4	5.94	5.84
11	7.35	11.1	4.43	4.58	6.44	.84	5.34	2.83	* 3.73	9.41	5.37	5.73
12	7.28	11.3	4.44	4.09	6.30	* 1.05	5.70	2.51	4.41	10.2	5.72	5.76
13	7.46	8.89	4.83	4.19	7.26	2.05	5.65	2.58	4.44	14.3	6.95	6.40
14	7.66	6.87	4.48	3.84	5.46	4.84	8.34	2.00	17.7	11.8	8.13	6.38
15	7.74	5.86	4.22	4.31	* 4.05	2.50	10.4	1.97	19.3	10.5	8.22	6.11
16	7.49	7.84	3.79	4.80	3.20	1.68	10.6	1.92	16.0	* 8.73	7.75	6.10
17	8.07	6.55	3.94	* 4.62	2.71	1.61	* 9.62	1.71	12.1	8.41	7.08	6.35
18	11.0	5.29	3.98	5.06	2.76	1.41	12.8	1.69	9.36	8.36	7.12	6.46
19	* 10.8	6.23	4.10	6.09	2.49	* 1.32	12.4	1.72	10.0	8.83	6.64	6.67
20	12.9	4.81	* 3.73	6.04	2.79	1.19	12.7	1.83	11.6	10.3	* 7.28	6.70
21	17.7	* 4.55	3.63	7.45	2.45	1.17	8.26	* 1.76	10.3	9.81	7.33	6.33
22	17.8	3.75	3.32	7.02	* 2.12	1.18	8.93	1.62	11.0	7.46	7.41	6.35
23	18.1	3.50	3.04	* 6.85	2.20	1.17	* 8.23	1.98	13.8	7.31	7.31	6.04
24	17.4	3.40	3.13	6.55	2.46	1.17	7.54	2.03	7.37	8.08	7.16	5.66
25	17.5	3.76	3.39	5.45	2.44	1.16	5.29	3.12	4.65	8.08	6.86	5.74
26	15.4	3.74	3.49	5.12	2.25	1.07	3.77	4.90	* 4.62	11.3	5.97	5.85
27	13.4	5.14	3.12	5.33	1.68	7.15	3.52	4.35	4.97	12.4	5.92	7.55
28	10.2	4.70	2.29	5.39	1.63	16.9	3.06	* 6.03	5.63	10.2	7.73	7.25
29	10.0	5.51	2.62	5.61	* 1.28	10.5	2.72	9.92	7.46	8.93	7.15	7.64
30	8.63		3.75	6.43	1.33	12.9	2.65	5.95	13.9	* 8.88	7.04	7.68
31	* 9.50		2.68		1.27		2.38	2.86		9.48		7.27
Sum	333.75	228.98	120.50	168.75	111.97	83.02	227.73	92.39	223.90	393.37	206.45	201.91

Month	Current Year 1996							Period 1938-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	1.950	1.530	23	18.7	11	5.46	10.8	28,836	10,968	96,674	0
Feb.	2.020	1.385	6	21.1	24	3.11	7.90	19,784	8,550	68,720	0
Mar.	1.570	1.275	1	6.52	28	1.92	3.89	10,411	7,982	72,889	0
April	1.975	1.345	8	17.1	2	2.59	5.63	14,580	10,291	94,942	0
May	1.635	1.190	13	7.89	29	1.01	3.61	9,674	16,007	381,665	0
June	2.915	1.150	28	70.3	11	.61	2.77	7,173	14,084	295,595	0
July	2.375	1.350	14	35.7	31	2.10	7.35	19,676	20,062	173,266	4.7
Aug.	1.830	1.325	29	12.1	17	1.37	2.98	7,982	18,612	158,563	20.6
Sept.	2.125	1.380	15	20.5	3	2.11	7.46	19,345	21,675	181,266	0
Oct.	2.035	1.560	2	30.4	22	6.54	12.7	33,987	20,237	114,377	0
Nov.	1.740	1.300	2	11.0	6	2.48	6.88	17,837	13,668	106,523	0
Dec.	1.690	1.505	27	9.03	25	5.12	6.51	17,445	14,249	152,593	0
Yearly	2.915	1.150		70.3		0.61	6.54	206,730	176,385	1,569,390	2,050

* Discharge measurement made on this day ϕ Mean daily

08-3712.00 RIO GRANDE NEAR CANDELARIA, TEXAS AND SAN ANTONIO DEL BRAVO, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and digital recorder located on the left bank of the Rio Grande at San Antonio Diversion Dam, latitude 30°10'30", longitude 104°41'10" and river kilometer 1,672, 0.5 river kilometer upstream from Capote Creek and about 4.0 kilometers north of Candelaria, Presidio County, Texas and San Antonio, Chihuahua. The zero of the gage is 871.11 meters above mean sea level, U.S.C.& G. S. datum.

RECORDS: Based on 25 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: November 19, 1975 through 1996.

REMARKS: Reservoirs, diversions, and drainage returns modify the flow at this station. Prior to June 1979 the zero of the gage was 871.07 meters above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 561 CMS on September 30, 1978 with a gage height of 3.31 meters. Min. frequently no flow.

Average Flow in Cubic Meters per Second**

Daily:	Max.	222	Dec. 23, 1986	Min.	0	Frequently
Monthly:	Max.	72.2	Dec. 1986	Min.	0	Frequently
Yearly:	Max.	37.7	1987	Min.	0.59	1977

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.07	8.25	4.94	2.82	3.56	0.46	12.0	3.54	4.31	6.44	7.96	7.09
2	8.04	8.39	4.86	2.95	3.54	.38	* 13.0	3.22	5.25	5.48	7.80	* 7.21
3	8.08	8.50	4.78	* 3.09	3.66	.33	12.8	3.11	5.05	5.54	8.05	7.04
4	8.08	8.48	4.68	3.10	* 3.64	.25	11.5	3.00	5.72	5.47	8.05	7.00
5	7.97	* 8.26	4.49	3.12	3.56	.22	10.7	* 3.70	5.23	6.50	* 8.17	7.00
6	7.91	8.19	4.41	3.14	3.47	* .19	10.1	4.54	4.25	6.61	8.39	6.74
7	7.94	8.15	* 4.34	3.15	3.35	.17	9.02	5.49	4.88	7.31	7.98	6.60
8	7.80	8.21	4.27	3.17	3.17	.15	7.56	5.30	4.71	7.87	7.25	6.45
9	7.81	8.37	4.20	3.30	3.19	.12	6.82	3.99	* 3.57	8.38	7.03	6.46
10	7.97	8.53	4.13	3.85	3.04	.09	6.44	4.20	4.02	* 8.50	7.41	6.59
11	7.90	8.28	4.07	4.00	2.74	.05	6.06	4.55	4.49	7.84	7.25	6.28
12	7.68	8.04	4.00	4.13	2.57	.05	5.71	3.54	21.8	7.75	7.07	5.98
13	7.62	7.70	3.93	4.05	2.49	.11	5.44	2.95	13.2	7.69	7.16	5.91
14	7.56	7.53	3.86	3.72	2.51	.38	5.20	* 2.48	15.5	7.33	7.01	6.10
15	7.35	7.41	3.80	* 3.69	2.43	1.60	5.00	2.32	13.2	* 7.42	6.53	5.98
16	7.31	7.27	3.78	3.67	2.35	.89	5.30	2.24	16.0	7.41	6.23	* 5.97
17	* 7.28	6.73	3.79	3.65	2.27	1.08	6.47	2.26	15.7	7.91	5.90	5.99
18	7.21	6.06	3.73	3.64	2.19	* 2.23	* 5.27	2.27	14.1	7.87	6.43	5.98
19	7.20	5.99	3.64	3.62	2.00	1.72	5.84	2.26	* 13.7	7.75	6.45	5.95
20	7.17	5.88	* 3.57	3.60	1.72	1.10	6.15	3.42	12.0	7.74	6.62	5.96
21	7.49	* 5.53	3.54	3.58	1.52	.68	6.46	3.11	11.8	7.83	* 6.60	5.96
22	7.84	5.51	3.57	3.56	1.43	.49	5.41	2.49	11.4	7.66	6.39	5.99
23	8.02	5.51	3.51	3.57	* 1.36	.46	7.10	2.41	10.7	7.46	6.81	5.90
24	8.16	5.42	3.44	3.67	1.24	.28	6.43	2.52	8.76	8.00	6.89	5.85
25	8.25	5.34	3.38	3.66	1.15	.20	5.16	3.17	7.81	7.95	6.87	5.94
26	8.44	5.26	3.27	3.64	.99	.14	5.17	* 4.99	11.9	7.71	6.90	5.99
27	8.44	5.18	3.12	3.63	.88	.14	4.99	5.40	10.9	7.79	6.93	5.83
28	8.33	5.10	3.06	3.61	.77	3.60	4.63	5.63	9.67	7.92	6.82	5.65
29	7.88	5.02	3.00	3.59	.73	7.30	4.14	5.97	8.53	7.30	6.95	5.84
30	7.77		2.94	3.57	.69	10.3	3.79	7.48	7.45	7.32	6.85	5.85
31	7.96		2.88		.60		3.58	5.39		8.14		5.87
Sum	242.53	202.09	118.98	105.54	68.81	35.16	213.24	116.94	285.60	229.89	212.75	192.95

Month	Current Year 1996							Period 1975-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second					Volume-Thousand Cubic Meters			
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	1.865	1.770	26	8.77	!19	6.99	7.82	20,955	20,760	183,420	0
Feb.	1.890	1.755	10	8.85	29	4.97	6.97	17,461	15,166	122,892	0
Mar.	1.765	1.660	1	5.11	31	2.86	3.84	10,280	13,211	101,919	0
April	1.750	1.655	12	4.29	2	2.77	3.52	9,119	13,967	91,771	10.5
May	1.695	1.525	3	3.66	31	.52	2.22	5,945	17,268	169,009	0
June	1.995	1.370	30	11.1	27	.03	1.17	3,038	19,549	186,724	178
July	2.045	1.635	3	13.9	31	3.47	6.88	18,424	26,639	148,433	97.6
Aug.	2.120	1.520	25	12.2	19	2.11	3.77	10,104	26,486	88,466	755
Sept.	2.620	1.660	14	50.0	9	2.72	9.52	24,676	34,073	166,806	447
Oct.	2.020	1.815	9	8.97	4	5.09	7.42	19,862	32,150	125,676	537
Nov.	1.920	1.765	5	8.60	17	5.49	7.09	18,382	22,270	132,602	0
Dec.	1.870	1.810	2	7.38	28	5.55	6.22	16,671	22,040	187,408	0
Yearly	2.620	1.370		50.0		0.03	5.53	174,917	263,579	1,191,590	18,685

* Discharge measurement made on this day ! And other days ** Period November 1975-1996

08-3715.00 RIO GRANDE ABOVE RIO CONCHOS NEAR PRESIDIO, TEXAS AND OJINAGA, CHIHUAHUA

DESCRIPTION: Cableway, bubbler gage, and water-stage recorder (graphic and digital) located on the left bank at latitude 29°36'15", longitude 104°27'05", and river kilometer 1,551; 8.0 river kilometers upstream from the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua and 3.8 river kilometers upstream from the confluence with the Rio Conchos. The zero of the gage is 784.29 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 24 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1889 through 1996.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. Prior to 1978 the zero of the gage was 785.37 meters above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 396 CMS on June 14, 1905. Highest flow recorded since 1924 was 146 CMS, with a gage height of 3.22 meters, on May 26, 1942. Min. frequently no flow.

Average Flow in Cubic Meters per Second**

Daily:	Max.	388	June 13 & 14, 1905	Min.	0	Frequently
Monthly:	Max.	287	June 1905	Min.	0	Frequently
Yearly:	Max.	55.8	1907	Min.	0.04	1964

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.05	7.21	4.03	2.68	2.57	0.47	7.70	2.04	9.35	6.39	6.79	5.68
2	7.91	7.29	4.01	2.55	2.47	.47	* 10.4	1.74	9.38	* 5.36	7.17	* 5.77
3	7.79	7.71	4.22	2.38	2.48	.50	14.8	1.44	12.8	5.06	7.22	6.27
4	7.84	7.98	4.21	* 2.72	* 2.36	.30	20.2	1.17	5.50	5.52	6.83	6.56
5	7.84	8.18	4.51	2.66	2.61	.27	20.4	* 1.16	5.10	6.57	* 6.83	6.72
6	7.78	8.11	4.70	2.46	2.47	.24	11.4	5.07	6.51	7.75	7.22	6.64
7	7.67	* 7.87	* 4.41	2.52	2.37	.22	8.93	3.21	5.79	8.41	7.29	6.52
8	7.71	8.03	4.29	2.55	2.09	.20	8.22	6.19	4.60	9.04	7.37	6.36
9	7.60	8.19	4.33	2.64	1.97	.17	7.16	5.52	* 5.59	9.91	7.27	6.46
10	7.34	8.69	4.24	2.90	1.89	.13	4.88	5.71	5.00	11.0	6.65	6.36
11	7.55	9.34	4.01	3.63	1.96	.18	3.48	5.38	4.78	11.6	6.19	6.54
12	7.71	9.81	3.83	4.07	1.81	* .14	3.25	7.46	16.2	12.2	5.67	6.58
13	7.56	9.83	3.69	4.48	1.44	.12	2.80	5.02	13.3	10.7	5.13	6.54
14	7.34	9.53	3.58	5.00	1.28	.12	3.31	4.04	28.6	9.46	4.99	6.51
15	7.26	9.23	3.66	4.61	1.36	.21	3.90	2.65	27.8	* 8.65	5.35	6.21
16	* 7.10	9.06	3.91	* 3.74	1.80	.10	2.93	2.08	20.8	8.00	5.36	* 5.65
17	6.84	8.99	3.85	3.29	1.84	1.48	3.48	1.64	* 21.0	7.53	5.48	5.41
18	6.46	8.90	* 4.00	3.10	1.97	* .78	* 3.60	1.37	20.1	7.65	5.77	5.41
19	6.47	7.86	3.84	2.89	1.79	.42	4.48	* 1.21	18.4	7.61	5.98	5.49
20	6.51	6.83	3.65	2.82	1.44	.32	4.27	1.09	14.3	7.38	6.36	5.50
21	6.39	* 6.75	3.46	2.96	1.26	.42	4.90	.97	12.3	7.01	* 6.13	5.47
22	6.45	6.33	3.41	2.81	* 1.05	.62	5.65	1.96	12.4	6.50	6.03	5.56
23	6.96	5.85	3.45	2.71	.91	.45	7.29	1.39	12.5	6.50	6.26	5.60
24	7.27	5.72	3.36	2.50	.86	3.83	11.0	.89	13.0	6.38	6.06	5.94
25	7.78	5.22	3.16	2.69	.82	1.45	9.61	1.62	13.9	6.74	6.08	5.64
26	8.24	4.92	2.95	3.36	.77	* 3.13	8.42	20.1	14.5	7.06	6.21	5.55
27	8.44	4.54	2.91	3.48	.71	.62	6.49	8.94	14.3	6.74	6.20	5.66
28	8.66	4.32	2.67	3.51	.57	1.01	5.32	5.15	15.3	6.33	5.94	5.81
29	8.57	4.10	2.70	3.13	.58	2.50	4.42	16.6	12.9	6.09	6.14	5.52
30	8.29		2.65	2.72	.52	6.17	3.42	8.16	8.44	6.16	6.08	5.52
31	7.46		2.72		.57		2.58	8.16		6.40		5.47
Sum	232.84	216.39	114.41	93.56	48.59	27.04	218.69	139.13	384.44	237.70	188.05	184.92

Month	Current Year 1996							Period 1938–1996			
	Extreme Gage Meters		Extreme–Cubic Meters per Second				Average	Volume–Thousand Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	0.795	0.670	!28	8.80	20	5.88	7.51	20,117	11,830	183,346	0
Feb.	.830	.550	12	9.91	!28	4.10	7.46	18,696	9,113	119,491	0
Mar.	.590	.440	6	4.75	30	2.54	3.69	9,885	7,168	91,778	0
April	.610	.410	!14	5.10	2	2.15	3.12	8,084	6,588	87,920	0
May	.460	.185	8	2.80	!28	.43	1.57	4,198	12,127	295,521	0
June	.805	.040	26	9.17	!11	.03	.90	2,336	13,450	267,019	0
July	1.310	.410	5	22.9	!13	2.21	7.05	18,895	17,974	191,983	0
Aug.	1.455	.235	29	27.4	25	.68	4.49	12,021	18,689	164,116	0
Sept.	1.880	.530	14	44.7	11	3.80	12.8	33,216	22,125	185,694	0
Oct.	.960	.590	12	12.9	3	4.98	7.67	20,537	21,903	129,311	0
Nov.	.720	.575	7	7.55	!13	4.81	6.27	16,248	11,938	125,343	0
Dec.	.695	.600	5	6.99	17	5.24	5.97	15,977	12,259	167,944	0
Yearly	1.880	0.040		44.7		0.03	5.70	180,210	165,164	1,450,617	1,174

* Discharge measurement made on this day ! And other days

** Period June 1900–March 1914; September 1919–March 1920; and 1924–1996

08-3730.00 RIO CONCHOS NEAR OJINAGA, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, and water-stage recorder located on the right bank at latitude 29°34'55", longitude 104°25'52", 1.0 river kilometer from the confluence with the Rio Grande, 4.0 kilometers northwest of Ojinaga, Chihuahua, and 6.0 kilometers northwest of Presidio, Texas. This stream enters the Rio Grande at river kilometer 1,547, 18.7 river kilometers upstream from the "Rio Grande below Rio Conchos" Gaging Station. The zero of the gage is 780.40 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 193 discharge measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1896 through 1996. Prior to April 4, 1954, 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 405, 393, 302, and 183 river kilometers, respectively, upstream from this station. Francisco I. Madero Reservoir is located on the Rio San Pedro, a tributary which enters the Rio Conchos 283 river kilometers 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. The station was relocated on January 20, 1978 incident to the Rio Grande channel rectification in the Presidio-Ojinaga area.

EXTREME FLOWS FROM RECORDS: Momentary: Max. (period 1968-1996) 2,020 CMS, on September 30, 1978. The greatest recorded flow occurred September 11, 1904 with a peak flow estimated at 4,590 CMS. Min. 0.09 CMS on June 11, 1996.

Average Flow in Cubic Meters per Second**

Daily:	Max.	1,490	Oct. 1, 1978	Min.	0.09	June 11, 1996
Monthly:	Max.	496	Sept. 1991	Min.	0.39	May 1996
Yearly:	Max.	83.6	1991	Min.	2.38	1995

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.76	0.73	* 0.82	* 0.39	0.38	0.47	* 1.89	* 2.76	3.17	* 11.2	* 3.47	2.77
2	.77	* .81	.82	* .34	* .36	.43	* .39	* 2.69	* 6.37	* 12.1	3.19	* 2.17
3	* .80	.76	.76	* .40	* .36	* .30	* .58	2.96	* 9.02	12.8	2.84	* 1.74
4	.82	.83	* .77	.40	.38	* .38	.77	3.23	* 17.7	* 23.9	* 3.03	* 1.77
5	* .85	.81	* .80	.40	.39	* .41	* .96	* 3.07	12.7	60.7	* 2.81	1.74
6	.81	* .74	* .64	.39	* .36	.41	1.15	* .61	* 10.7	72.7	* 2.21	* 1.78
7	.80	* .76	.56	.35	* .36	* .36	1.35	* 5.22	2.67	* 75.5	2.39	1.87
8	* .78	.83	* .49	* .40	* .38	.34	* 1.20	* 1.35	.56	90.4	* 1.97	1.99
9	* .83	* .79	.50	* .42	.41	.20	* 1.10	* 1.72	* .50	102 *	1.91	* 2.07
10	* .84	.77	.40	* .48	* .39	* .24	* 2.81	1.11	* .36	124 *	2.44	* 2.31
11	.85	.76	* .41	.39	.43	* .09	3.44	2.22	* .52	130	* 2.84	* 2.10
12	* .84	* .70	* .43	* .41	.40	* .11	* 2.71	* 2.24	* 32.1	140 *	* 3.01	1.94
13	.77	* .78	* .50	.50	* .43	.33	1.67	* 2.26	* 67.9	151	* 3.03	* 1.33
14	.78	* .78	.50	.50	* .45	* .54	4.48	* 1.50	112 *	154 *	3.05	1.34
15	* .79	.82	* .49	* .55	* .40	.74	* 5.68	2.07	8.16	* 73.2	* 2.65	1.61
16	* .78	* .77	.41	* .49	.36	4.01	* 19.7	2.05	5.82	* 18.9	2.57	* 2.14
17	* .83	.76	.38	* .48	* .38	* 2.00	* 4.48	2.09	* 3.47	14.4	2.54	* 2.35
18	.82	.80	* .40	.53	.38	* 1.64	4.84	2.34	* 2.23	* 13.0	* 2.35	* 2.24
19	* .77	* .81	* .42	* .49	.38	* 1.47	* 1.74	2.54	.83	11.3	* 2.08	1.92
20	* .77	* .73	* .48	.47	* .40	1.61	1.99	2.10	* .94	9.88	* 1.76	1.89
21	.77	* .82	.42	.42	* .41	* 1.61	1.24	1.86	1.76	* 9.05	2.14	2.47
22	.79	.78	* .41	* .42	* .38	1.75	* .46	.51	1.85	* 7.86	* 2.18	1.89
23	* .79	* .83	.40	* .40	.40	2.31	* .39	1.14	* 3.11	* 6.76	1.95	1.71
24	* .79	.83	.42	* .48	* .38	* 2.68	* .32	1.21	* 3.20	5.78	2.39	1.34
25	.79	.76	* .49	.55	.40	* 3.04	.25	.53	* 3.02	* 4.22	* 2.08	1.61
26	* .77	* .78	* .45	* .56	.40	* 1.62	* .18	.23	2.30	3.90	* 1.76	1.64
27	.76	* .82	* .46	.52	* .40	4.81	.13	168	* 3.11	4.52	* 1.70	1.25
28	.75	* .82	.42	.49	* .37	* 16.0	.90	26.6	3.02	* 6.43	1.91	1.07
29	* .73	.84	* .38	* .40	* .43	8.59	* 1.21	115	5.63	* 5.67	* 1.80	1.34
30	* .73		.41	* .38	.40	3.09	* 1.84	201	* 8.57	* 5.00	2.88	1.31
31	* .75		.41		* .37		* 2.26	20.2		4.56		1.34
Sum	24.48	22.82	15.65	13.40	12.12	61.58	72.11	582.41	333.29	1,364.73	72.93	56.04

Month	Current Year 1996: Extreme Gage Meters High	Low	Extreme-Cubic Meters per Second: Day	φ High	Day	φ Low	Average	Period 1968-1996: Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.			! 5	0.85	!29	0.73	0.79	2,115	44,198	263,658	2,115
Feb.			29	.84	12	.70	.79	1,972	41,788	210,479	1,972
Mar.			! 1	.82	!17	.38	.50	1,352	53,448	248,201	1,352
April			26	.56	2	.34	.45	1,158	48,185	110,860	1,158
May			14	.45	! 2	.36	.39	1,047	59,773	211,231	1,047
June			28	16.0	11	.09	2.05	5,321	72,623	361,843	5,321
July			16	19.7	27	.13	2.33	6,230	84,286	297,613	6,230
Aug.			30	201	26	.23	18.8	50,320	143,118	708,584	7,205
Sept.			14	112	10	.36	11.1	28,796	201,754	1,285,546	20,162
Oct.			14	154	26	3.90	44.0	117,913	129,272	809,127	2,951
Nov.			1	3.47	27	1.70	2.43	6,301	47,410	169,500	1,963
Dec.			1	2.77	28	1.07	1.81	4,842	31,260	81,372	2,094
Yearly				201		0.09	7.19	227,367	957,115	2,636,721	75,095

* Discharge measurement made on this day φ Mean daily ! And other days

** Period 1968-1996

08-3740.00 ALAMITO CREEK NEAR PRESIDIO, TEXAS

DESCRIPTION: Gravity well and digital water-stage recorder located on the downstream side of the highway bridge on Farm-to-Market Road 170 at latitude 29°31'25", longitude 104°17'15", about 400 meters upstream from its confluence with the Rio Grande, and about 9.7 kilometers southeast of Presidio, Presidio County, Texas. This stream enters the Rio Grande near the lower end of the Presidio Valley at river kilometer 1,529, 13.8 river kilometers downstream from the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua. Measurements of high flows are made from the highway bridge. The zero of the gage is 771.785 meters above mean sea level U.S.C.&G.S. datum.

RECORDS: Based on 32 current-meter 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 1996.

REMARKS: A small irrigation reservoir (San Esteban) 16.9 kilometers south of Marfa, Presidio County, Texas and irrigation diversions below the reservoir modify the flow of this spring-fed creek. Back water from the Rio Grande begins to effect the station record when the flow at the station on the Rio Grande below Rio Conchos reaches about 991 CMS.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,600 CMS, determined by slope-area calculations, on September 2, 1962, with a gage height of 4.13 meters. Min. no flow occasionally.

Average Flow in Cubic Meters per Second

Daily:	Max.	351	Sept. 21, 1974	Min.	0	Occasionally
Monthly:	Max.	28.3	Sept. 1974	Min.	0.01	July 1980
Yearly:	Max.	2.75	1974	Min.	0.02	1994

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.04	0.02	0.02	0.01	0.01	0.01	0.01	0.03	0.13	0.03	0.04	0.04
2	.04	.02	.02	* .01	.01	.01	.01	.03	.14	.03	.04	.03
3	.04	.02	.02	.01	.01	.01	* .01	.04	.18	* .03	.04	.03
4	.03	.02	.02	.01	.01	.01	.01	.04	.33	.03	.04	* .03
5	.03	.02	.02	.01	.01	.01	.01	.04	* .16	.03	.04	.03
6	.03	.02	.02	.01	* .01	.01	.02	* .99	1.16	.03	* .04	.03
7	.03	* .02	.02	.01	.01	.01	.02	.46	7.64	.03	.04	.03
8	.03	.02	.02	.01	.01	.01	.02	.27	18.8	.03	.04	.03
9	.03	.02	.02	.01	.01	.01	.04	.13	27.8	.04	.04	.03
10	.03	.02	.02	.01	.01	.01	.07	.07	41.0	.04	.04	.03
11	* .03	.02	* .02	.01	.01	* .01	.11	.50	80.1	.04	.04	.03
12	.03	.02	.02	.01	.01	.01	3.11	.04	103 *	.04	.04	.03
13	.03	.02	.02	.01	.01	.01	3.21	* .01	42.7	.04	.04	.03
14	.02	.02	.02	.01	.01	.01	2.31	.01	21.2	.04	.04	.03
15	.02	.02	.02	.01	.01	.01	* 1.02	.01	8.13	.04	.04	.03
16	.02	.02	.02	* .01	.01	.01	.12	.01	1.03	* .04	.04	.03
17	.02	.02	.02	.01	.01	.01	* .02	.01	* .63	.04	.04	.03
18	.02	.02	* .02	.01	.01	.01	.02	.02	.26	.04	.04	.03
19	.02	.02	.02	.01	.01	* .01	.02	.02	* .09	.04	.04	.03
20	.02	* .02	.02	.01	.01	.01	.02	.02	.06	.04	.04	.03
21	.02	.02	.02	.01	.01	.01	.02	.02	.05	.04	.04	.03
22	.02	.02	.02	.01	.01	.01	.02	.02	.05	.04	.04	.03
23	.02	.02	.02	.01	.01	.01	.02	.03	* .04	.04	.04	.03
24	.02	.02	.01	.01	.01	.01	.02	.05	.04	.04	.04	.03
25	.02	.02	.01	.01	.01	.01	.02	.60	* .04	.04	.04	.03
26	.02	.02	.01	.01	.01	.01	.02	1.25	.04	.04	.04	.03
27	.02	.02	.01	.01	.01	.01	.02	* .40	.04	.04	.04	.03
28	.02	.02	.01	.01	.01	.01	.02	* .89	.04	.04	.04	.03
29	.02	.02	.01	.01	.01	.01	.02	5.11	.04	.04	.04	.03
30	.02		.01	.01	.01	.01	.03	.94	* .04	.04	.04	.03
31	.02		.01		.01		.03	.07		.04		.03
Sum	0.78	0.58	0.54	0.30	0.31	0.30	10.42	12.13	354.96	1.16	1.20	0.94

Month	Current Year 1996								Period 1932–1996		
	Extreme Gage Meters		Extreme–Cubic Meters per Second					Volume–Thousand Cubic Meters			
	High	Low	High Day	High	Low Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.640	0.585	! 1	0.04	!13	0.02	0.03	67.4	155	370	53.6
Feb.	.585	.575	! 1	.02	! 1	.02	.02	50.1	204	3,853	48.4
Mar.	.585	.570	! 1	.02	!23	.01	.02	46.7	171	1,256	46.7
April	.585	.560	! 1	.01	! 1	.01	.01	25.9	294	4,550	25.9
May	.570	.550	! 1	.01	! 1	.01	.01	26.8	930	10,530	26.8
June	.700	.500	! 5	.02	! 1	.01	.01	25.9	2,073	15,607	25.9
July	1.450	.370	12	18.3	! 1	.01	.34	900	3,324	22,813	11.7
Aug.	1.690	.305	29	19.2	!12	.01	.39	1,048	3,534	20,167	26.8
Sept.	2.020	.555	12	190	30	.03	11.8	30,669	5,450	73,244	46.3
Oct.	1.130	1.110	! 8	.04	! 1	.03	.04	100	2,033	23,731	40.6
Nov.	1.180	1.125	!15	.05	! 1	.04	.04	104	214	3,150	44.0
Dec.	1.170	1.140	! 1	.04	! 2	.03	.03	81.2	164	503	48.5
Yearly	2.020	0.305		190		0.01	1.05	33,145	18,546	86,682	758

* Discharge measurement made on this day ! And other days

08-3742.00 RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS AND OJINAGA, CHIHUAHUA

DESCRIPTION: Cableway, bubbler gage, water-stage recorders (graphic and digital) and data collection platform located on the left bank at latitude 29°31'10", longitude 104°17'10", and river kilometer 1,529; 0.6 river kilometer downstream from Alamito Creek and 14.4 river kilometers downstream from the international highway bridge between Presidio, Texas and Ojinaga, Chihuahua. The zero of the gage is 771.75 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 26 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1955 through 1996. Records are also available from 1896 through June 13, 1932 for a station located about 19.5 river kilometers downstream from the Rio Conchos and 2.1 kilometers upstream from Alamito Creek; and from June 14, 1932 through 1954 for a station about 3.2 river kilometers downstream from the Rio Conchos and 18.3 river kilometers upstream from Alamito Creek.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The data collection platform, operated in cooperation with the National Weather Service, relays gage height data upon interrogation by telephone via commercial circuits. Prior to December 1, 1979 the zero of the gage was 772.97 meters above mean sea level, U. S. C. & G. S. datum. A concrete control weir at this station was removed in December 1991.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,730 CMS on September 30, 1978, with a gage height of 4.70 meters. The greatest recorded flow occurred September 11, 1904, with a peak flow estimated at 4,590 CMS at a station 19.0 kilometers upstream. Min. 0.01 CMS several days in July 1955 and June 30, 1958.

Average Flow in Cubic Meters per Second**

Daily:	Max.	1,510	Oct. 1, 1978	Min.	0.26	June 12, 1996
Monthly:	Max.	544	Sept. 1991	Min.	1.84	May 1996
Yearly:	Max.	98.1	1991	Min.	13.2	1996

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.13	8.18	5.43	3.08	2.11	0.95	9.60	4.83	13.0	17.6	10.3	8.49
2	8.12	8.19	5.18	* 2.94	2.05	.91	10.8	4.46	16.6	17.5	10.4	7.97
3	8.12	8.35	5.12	2.82	2.24	.84	* 12.6	4.44	23.0	17.9	10.1	8.04
4	8.23	8.61	5.03	2.78	2.41	.69	12.2	4.44	* 25.5	29.4	9.90	* 8.36
5	8.37	8.67	4.77	2.83	2.54	.69	11.5	4.27	19.4	67.3	9.68	8.49
6	8.09	* 8.66	4.70	3.02	* 2.55	.66	10.9	6.67	19.5	80.5	* 9.47	8.45
7	8.09	8.50	4.64	3.06	2.40	.59	10.3	* 8.89	16.4	* 83.9	9.72	8.42
8	8.09	8.07	4.59	3.21	2.21	.55	9.44	7.81	14.5	99.5	9.38	8.38
9	8.07	7.98	4.46	3.20	2.01	.38	8.30	7.37	12.7	112	9.22	8.56
10	8.06	8.04	4.24	3.08	2.00	.38	7.76	6.89	* 11.8	135	9.13	8.70
11	* 8.06	8.25	* 4.19	3.21	2.07	* .28	7.03	8.10	34.4	142	9.07	8.67
12	8.06	8.32	4.14	3.55	2.13	.26	9.07	7.20	149 *	152	8.72	8.55
13	8.11	8.38	4.10	3.57	1.91	.46	7.68	7.29	46.7	162	8.20	7.90
14	8.12	8.45	4.06	3.73	1.78	.67	10.1	5.55	174	163	8.08	7.88
15	8.14	8.29	4.08	3.84	1.76	.96	10.6	4.73	45.0	81.9	8.04	7.85
16	8.15	7.91	4.08	3.55	1.70	4.12	22.7	4.14	21.0	26.9	7.97	7.82
17	8.18	7.81	4.04	* 3.43	1.86	3.49	7.98	3.74	20.0	* 22.0	8.06	7.79
18	7.95	7.71	3.91	3.29	1.91	2.43	8.46	3.73	19.8	20.7	8.16	7.68
19	7.91	7.55	3.95	3.15	1.93	* 1.90	6.24	3.77	16.7	18.9	8.10	7.44
20	7.92	* 6.86	3.91	2.95	* 1.89	1.94	6.28	3.21	15.4	17.3	8.16	7.42
21	7.95	6.34	* 3.69	3.01	1.81	2.04	6.16	* 2.85	14.3	16.1	8.31	7.97
22	7.77	6.25	3.41	2.94	1.70	2.38	* 6.13	2.49	14.5	14.4	8.25	7.48
23	7.99	6.19	3.47	2.73	1.59	2.77	6.42	2.56	* 16.0	13.3	8.25	7.34
24	8.02	6.13	3.44	2.64	1.55	3.49	6.82	2.15	16.6	* 12.2	8.49	7.31
25	8.03	6.20	3.38	2.57	1.51	4.50	7.96	2.75	17.3	11.0	8.20	7.28
26	8.22	6.00	3.34	2.63	1.47	4.76	7.15	18.6	17.1	11.0	8.01	7.22
27	8.40	5.68	3.30	2.66	1.43	5.44	6.64	178 *	17.8	11.3	7.94	6.94
28	8.61	5.62	3.25	2.68	1.39	17.0	6.24	32.6	18.7	12.8	7.89	6.91
29	8.88	5.56	3.31	2.54	1.29	11.1	5.65	137 *	19.2	11.8	7.98	6.89
30	8.78		3.16	2.29	1.06	9.27	5.29	211	18.0	11.2	9.00	6.86
31	8.40		3.13		.90		4.87	28.4		11.0		6.84
Sum	253.02	216.75	125.50	90.98	57.16	85.90	268.87	729.93	883.9	1,603.4	262.18	241.90

Current Year 1996 | Period 1968-1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High Day	High	Low Day	Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	1.005	0.965	28	9.28	!21	7.67	8.16	21,861	59,816	277,577	19,820
Feb.	1.005	.940	! 5	8.68	29	5.53	7.47	18,727	52,631	223,569	5,853
Mar.	.940	.890	1	5.53	31	3.12	4.05	10,843	63,468	275,997	5,653
April	.925	.850	15	3.99	30	2.13	3.03	7,861	57,999	199,909	7,861
May	.880	.805	5	2.63	31	.85	1.84	4,939	70,526	243,287	4,939
June	1.335	.755	28	27.8	11	.18	2.86	7,422	88,423	383,789	7,311
July	1.590	.860	16	53.9	31	4.64	8.67	23,230	107,049	325,218	23,118
Aug.	2.745	.835	30	393	25	1.91	23.5	63,066	175,030	866,134	26,566
Sept.	3.070	.995	14	504	12	9.04	29.5	76,369	341,513	1,410,221	27,740
Oct.	1.890	1.035	!13	170	31	10.3	51.7	138,534	166,421	871,689	20,688
Nov.	1.055	.995	! 1	10.5	29	7.82	8.74	22,652	64,273	197,536	10,782
Dec.	1.030	.990	1	8.80	31	6.82	7.80	20,900	48,946	229,318	13,618
Yearly	3.070	0.755		504		0.18	13.2	416,404	1,296,095	3,092,559	416,404

* Discharge measurement made on this day ! And other days ** Period 1968-1996

08-3745.00 TERLINGUA CREEK NEAR TERLINGUA, TEXAS

DESCRIPTION: Cableway, bubbler gage, water-stage recorder (digital) located on the left bank at latitude 29°12'10", longitude 103°37'10", 4.3 creek kilometers upstream from its confluence with the Rio Grande, and about 13.6 kilometers south of Terlingua, Brewster County, Texas. This creek enters the Rio Grande at river kilometer 1,425, the lower end of Santa Helena Canyon. The zero of the gage is 670.83 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 23 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1932 through 1996.

REMARKS: Irrigation diversions upstream of the station modify the flow of this spring-fed creek. A cableway was reinstalled on July 27, 1995, at the original cableway site, located 137 meters downstream from the new gage.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 988 CMS on May 24, 1935 with a gage height of 5.36 meters on a gage 0.5 kilometer downstream. Min. no flow on several occasions in 1986.

Average Flow in Cubic Meters per Second

Daily:	Max.	487	June 1, 1937	Min.	0	August 14 and 15, 1986
Monthly:	Max.	32.6	Sept. 1974	Min.	0.01	Several months 1995-96
Yearly:	Max.	4.28	1990	Min.	0.10	1994

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.01	* 0.01	0.01	* 0.01	0.01	0.08	* 0.05	* 0.07	0.43	* 0.04	0.04	0.05
2	.01	.01	.01	.01	* .01	14.2	.05	.08	.17	.04	.04	.05
3	.01	.01	.01	.01	.01	.11	.05	.10	* .32	.04	.04	* .05
4	.01	.01	.01	.01	.01	0	.06	.24	.20	.04	* .04	.05
5	.01	.01	.01	.01	.01	0	.06	2.41	.23	.04	.04	.05
6	.01	.01	* .01	.01	.02	0	.06	1.66	2.26	.04	.04	.05
7	.01	.01	.01	.01	3.91	0	.07	1.45	3.23	.04	.04	.04
8	* .01	.01	.01	.01	1.53	0	.07	1.63	4.74	.04	.04	.04
9	.01	.01	.01	.01	.05	0	.07	2.50	2.54	.04	.04	.04
10	.01	.01	.01	.01	.03	0	.13	2.52	.76	.04	.05	.04
11	.01	.01	.01	.01	.02	0	2.07	49.1	22.3	.04	.05	.04
12	.01	.01	.01	.01	.02	5.02	1.36	* 33.0	7.14	.04	.05	.04
13	.01	.01	.01	.01	.03	.79	.31	4.30	13.8	.04	.05	.04
14	.01	.01	.01	.01	.03	34.0	2.10	.74	3.69	.04	.05	.03
15	.01	.01	.01	.01	.03	1.42	* 32.0	* .06	29.7	.04	.05	.03
16	.01	.01	.01	.01	.04	.97	3.77	.05	7.01	.04	.05	.03
17	.01	.01	.01	.01	.04	3.35	1.44	.05	2.32	.04	.05	* .03
18	.01	.01	.01	* .01	.04	4.14	.45	.05	* 1.01	.04	.05	.03
19	.01	.01	* .01	.01	.04	1.99	.27	.42	.31	.04	.05	.03
20	.01	.01	.01	.01	.04	* .62	.19	.46	.11	.04	* .05	.03
21	.01	.01	.01	.01	.05	.19	.14	.08	.10	.04	.05	.03
22	.01	* .01	.01	.01	.05	.12	.12	.07	.09	* .04	.05	.03
23	.01	.01	.01	.01	.05	.11	.11	.07	.08	.04	.05	.03
24	.01	.01	.01	.01	.05	.81	.11	.07	.08	.04	.05	.03
25	.01	.01	.01	.01	.05	.15	.10	.09	.93	.04	.05	.03
26	.01	.01	.01	.01	.06	49.5	.10	.61	.07	.04	.05	.03
27	.01	.01	.01	.01	.06	28.4	.09	6.11	.06	.04	.05	.04
28	.01	.01	.01	.01	.06	.07	.09	1.83	.05	.04	.05	.04
29	.01	.01	.01	.01	.06	.16	.08	3.60	.05	.04	.06	.04
30	.01		.01	.01	.25	.05	.08	7.47	.04	.04	.05	.04
31	.01		.01		.49		.07	1.85		.04		.04
Sum	0.31	0.29	0.31	0.30	7.15	146.25	45.72	122.74	103.82	1.24	1.42	1.17

Month	Current Year 1996							Period 1932-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second					Volume-Thousand Cubic Meters			
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.760	0.750	! 1	0.01	! 1	0.01	0.01	26.8	228	1,079	26.8
Feb.	.760	.745	! 1	.01	! 1	.01	.01	25.1	277	5,431	25.1
Mar.	.760	.745	! 1	.01	! 1	.01	.01	26.8	287	2,978	26.8
April	.770	.760	! 1	.01	! 1	.01	.01	25.9	1,606	23,016	25.9
May	2.140	.740	7	45.7	! 1	.01	.23	618	4,154	32,095	100
June	2.780	.365	2	314	! 3	0	4.88	12,636	7,937	67,640	73.4
July	1.830	.440	15	111	! 1	.05	1.47	3,950	9,400	35,429	141
Aug.	1.990	.530	11	198	15	.04	3.96	10,605	8,860	79,182	80.4
Sept.	2.215	.570	15	190	30	.04	3.46	8,970	10,868	84,339	152
Oct.	.610	.600	! 1	.04	! 1	.04	.04	107	4,279	34,414	62.7
Nov.	.690	.600	29	.07	! 1	.04	.05	123	553	7,015	80.1
Dec.	.610	.610	! 1	.05	!14	.03	.04	101	355	3,800	92.4
Yearly	2.780	0.365		314		0	1.18	37,215	48,804	135,031	3,032

* Discharge measurement made on this day ! And other days

08-3750.00 RIO GRANDE AT JOHNSON RANCH NEAR CASTOLON, TEXAS AND SANTA ELENA, CHIHUAHUA

DESCRIPTION: Cableway, gravity well, digital water-stage recorder, and G.O.E.S. Data Collection Platform located on the left bank at latitude 29°02'05", longitude 103°23'25", and river kilometer 1,388; 2.2 river kilometers upstream from the old Johnson Ranch headquarters, 9.7 river kilometers downstream from Smoky Creek, and 14.8 river kilometers upstream from Chizos Crossing and the Chihuahua-Coahuila state line. The zero of the gage is 623.41 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 22 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: April 1936 through 1996.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The Data Collection Platform transmits gage heights by radio via NWS G.O.E.S. satellite to NWS computer bank.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 2,040 CMS, on September 30, 1978 with a gage height of 8.66 meters. A flow estimated at 2,750 CMS with a stage of 7.50 meters occurred at this station site on October 3, 1932. Min. no flow several days in 1953, 1955, 1957, and 1958.

Average Flow in Cubic Meters per Second**

Daily:	Max.	1,850	Oct. 1, 1978	Min.	0.09	June 11, 1996
Monthly:	Max.	470	Sept. 1991	Min.	1.21	May 1996
Yearly:	Max.	97.0	1991	Min.	12.4	1995

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	9.21	* 8.99	5.05	* 2.47	1.54	1.04	* 10.2	* 3.55	79.0	* 15.6	11.2	8.11
2	9.27	8.66	4.72	2.32	* 1.93	.36	9.94	3.25	36.4	15.0	10.5	8.40
3	9.31	8.56	4.55	2.48	1.91	5.03	9.94	3.01	* 28.8	14.9	10.1	* 8.10
4	9.31	8.49	4.41	2.59	1.40	.86	10.6	3.19	33.2	14.6	* 9.76	7.91
5	9.30	8.55	4.28	2.43	1.16	.38	11.9	4.34	30.7	18.1	9.71	7.96
6	9.22	8.62	* 4.12	2.24	1.67	.26	13.3	4.66	25.7	55.1	9.56	8.04
7	9.11	8.60	3.85	1.99	1.23	.20	13.5	3.66	27.6	67.8	9.37	7.99
8	* 9.07	8.53	3.82	1.80	6.37	.16	12.8	4.93	24.2	76.2	9.38	7.89
9	9.07	8.37	3.91	2.09	3.24	.16	12.7	6.71	20.6	93.1	9.43	7.84
10	9.07	8.17	4.04	2.53	1.63	* .11	13.1	6.46	24.1	111	9.16	7.80
11	8.95	8.09	4.03	2.39	1.21	.09	13.0	22.1	136	138	9.06	7.67
12	8.95	8.07	3.98	2.29	1.04	2.18	15.4	16.4	194	146	8.93	7.49
13	8.95	8.12	3.91	2.02	.93	3.34	13.6	9.11	346	161	8.71	7.50
14	8.92	8.13	3.74	2.22	.88	7.34	33.6	8.19	155	170	8.44	7.52
15	8.95	8.10	3.63	2.69	1.05	4.48	60.0	* 8.18	352	166	8.25	7.38
16	8.95	8.07	3.45	3.13	.97	2.52	* 25.8	7.61	153	78.8	8.05	7.32
17	8.94	7.91	3.28	3.38	.86	3.91	41.6	7.24	47.7	27.7	7.97	* 7.28
18	8.87	7.81	3.39	* 3.57	.81	4.41	17.2	7.13	* 34.2	20.0	7.88	7.23
19	8.82	7.74	* 3.36	3.17	.74	5.92	14.1	7.76	30.3	16.9	7.84	7.13
20	8.72	7.67	3.44	2.73	.72	* 4.04	13.1	16.6	24.3	16.6	* 7.82	7.07
21	8.71	7.51	3.43	2.34	.63	3.34	11.6	9.17	21.7	16.2	7.88	7.11
22	8.65	* 7.03	3.33	2.07	.63	3.12	10.8	8.66	17.9	* 15.9	7.97	7.19
23	8.60	6.68	3.14	1.83	.62	3.09	9.81	8.83	18.1	15.5	7.93	7.57
24	8.51	6.46	3.23	1.91	.62	4.14	9.75	10.9	28.3	14.9	7.84	7.23
25	8.54	6.17	3.08	2.01	.60	5.99	8.92	9.59	18.9	14.4	7.84	7.15
26	8.65	5.93	2.86	1.95	.53	12.8	8.58	11.3	16.5	13.9	7.87	7.14
27	8.75	5.88	2.70	1.89	.52	42.1	8.13	87.3	16.3	13.3	7.85	7.12
28	8.88	5.55	2.85	1.55	.52	8.68	7.12	249	16.1	13.0	7.91	7.10
29	9.00	5.26	2.85	1.32	.51	8.27	6.11	165	16.0	12.6	8.02	6.98
30	9.09		2.68	1.23	.51	12.0	5.08	404	16.0	12.4	8.07	7.01
31	9.14		2.58		.40		4.25	299		11.7		6.95
Sum	277.48	221.72	111.69	68.63	37.38	150.32	455.53	1,416.83	1,988.6	1,576.2	260.30	232.18

Current Year 1996 | Period 1968-1996

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second					Volume-Thousand Cubic Meters			
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	1.290	1.215	! 2	9.32	25	8.48	8.95	23,974	61,039	306,158	18,506
Feb.	1.275	1.155	1	9.03	29	5.18	7.65	19,157	52,216	239,000	9,551
Mar.	1.160	1.030	1	5.18	31	2.40	3.60	9,650	60,294	261,098	7,484
April	1.100	.940	18	3.64	30	1.11	2.29	5,930	55,211	183,591	5,930
May	1.645	.810	8	9.28	31	.14	1.21	3,230	72,142	228,534	3,230
June	2.825	.770	27	103	10	.04	5.01	12,988	93,118	442,109	7,202
July	3.000	1.070	14	301	31	3.82	14.7	39,358	117,087	355,631	15,373
Aug.	4.230	.975	30	463	3	2.95	45.7	122,414	179,651	818,986	28,797
Sept.	4.010	1.335	15	453	30	15.9	66.3	171,815	125,653	1,217,635	29,316
Oct.	2.580	1.290	!13	174	31	11.4	50.8	136,184	187,294	927,275	21,926
Nov.	1.340	1.230	1	11.4	23	7.72	8.68	22,490	66,755	183,566	16,365
Dec.	1.305	1.230	2	8.55	31	6.94	7.49	20,060	50,461	220,460	14,934
Yearly	4.230	0.770		463		0.04	18.6	587,250	1,120,921	3,058,852	390,612

* Discharge measurement made on this day ! And other days ** Period 1968-1996

08-3772.00 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TEXAS AND RANCHO SANTA ROSA, COAHUILA

DESCRIPTION: Cableway, bubbler gage, concrete control weir, and water-stage recorder (graphic and digital) located on the left bank at latitude 29°46'50", longitude 101°45'30", and river kilometer 1,058; 152 meters downstream from the Terrell-Val Verde County line, 8.8 kilometers downstream from Lozier Canyon, and about 19.8 kilometers west of Langtry, Val Verde County, Texas. The zero of the gage is 352.71 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 32 current-meter measurements during the year, 25 by the United States Section and 7 by the Mexican Section of the Commission, and a continuous record of gage heights. Computations for medium and high flows by shifting control methods. Low flow computations based on a stable control weir rating curve defined by current-meter measurements. Records available: September 1961 through 1996.

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. A computerized radio telemetry system relays gage height data to the Amistad Dam office.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 4,190 CMS on November 5, 1978 with a gage height of 11.63 meters. Min. 5.32 CMS on August 19, 1965.

Average Flow in Cubic Meters per Second**

Daily:	Max.	2,310	Sept. 20, 1974	Min.	6.15	July 1, 1968
Monthly:	Max.	443	Sept. 1991	Min.	8.73	April 1996
Yearly:	Max.	110	1991	Min.	21.6	1995

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	16.6	16.0	12.5	9.68	7.61	24.4	* 23.8	13.3	304	23.3	21.3	15.3
2	16.2	16.6	12.5	* 9.63	7.69	16.2	17.7	* 12.3	231	24.3	21.6	* 15.6
3	16.5	16.9	12.5	9.91	7.81	* 15.2	24.8	11.3	* 96.4	24.6	20.0	15.3
4	16.7	16.9	* 12.3	9.82	7.79	12.2	19.3	13.5	46.0	* 23.3	* 19.8	15.8
5	16.8	16.9	12.2	9.66	7.64	11.3	16.0	13.4	34.5	21.9	19.3	16.7
6	16.7	17.1	12.1	9.46	* 7.47	13.8	14.5	13.1	* 52.0	21.4	18.4	16.4
7	16.9	* 16.8	12.0	9.64	7.49	* 13.0	13.6	35.4	30.2	* 20.3	18.2	15.3
8	16.9	15.5	* 12.0	9.73	10.8	10.6	13.8	17.9	28.6	49.2	18.0	14.9
9	17.1	15.7	11.9	9.70	12.1	10.2	19.4	13.4	21.0	79.0	17.9	15.6
10	17.0	15.9	11.8	9.50	* 8.46	11.6	21.0	12.1	21.6	86.2	17.0	15.9
11	17.0	15.7	11.7	9.39	9.16	8.65	22.2	10.9	18.9	99.1	* 17.5	15.7
12	* 16.7	14.9	11.7	* 9.34	12.9	8.11	16.5	11.4	20.9	112	18.2	15.6
13	16.3	14.5	11.6	8.90	10.1	8.01	16.7	26.2	223	127	17.9	15.6
14	16.4	14.6	11.5	8.66	8.90	7.67	28.2	* 68.3	311	133	17.2	15.5
15	16.2	14.6	* 11.4	* 8.62	8.19	7.99	* 24.3	33.0	419	144	* 16.9	14.8
16	15.8	14.7	11.3	8.28	7.62	8.86	81.3	21.8	144 *	151	17.6	* 14.5
17	15.8	14.9	11.2	8.15	7.34	* 15.4	78.7	16.1	247	149	20.1	14.5
18	15.8	15.3	11.1	8.14	7.22	18.3	52.3	14.5	111	102	15.3	14.5
19	15.7	15.7	11.1	8.00	7.02	15.0	43.5	12.8	49.3	60.2	15.1	14.4
20	15.7	* 15.5	11.0	7.90	* 6.90	12.8	37.1	11.2	34.1	46.7	14.9	14.4
21	15.9	15.2	10.9	8.23	6.84	10.3	24.6	10.2	27.1	* 38.7	14.8	14.4
22	16.0	15.1	10.8	8.66	7.09	12.7	18.5	11.4	24.6	33.1	15.0	14.4
23	15.8	15.1	10.8	8.32	7.12	13.3	17.1	25.1	22.4	30.6	15.3	14.4
24	15.4	15.0	11.0	8.03	6.93	11.2	15.4	25.2	43.3	29.0	34.3	14.0
25	* 15.1	14.8	10.7	7.83	6.79	10.1	13.8	31.5	130	27.6	16.7	14.3
26	15.0	13.8	10.5	7.81	6.98	14.7	13.1	12.2	47.7	26.6	15.9	15.2
27	15.1	13.6	10.5	7.87	6.95	11.8	12.2	10.8	33.0	24.9	15.1	15.3
28	15.1	13.2	10.3	7.85	6.83	13.2	14.9	22.6	23.2	32.4	15.1	14.5
29	15.4	12.5	10.3	7.60	6.83	92.2	13.7	84.0	20.8	23.2	15.9	14.5
30	15.6		10.2	7.48	7.32	39.8	14.5	293 *	20.2	21.9	15.8	14.5
31	15.6		10.1		73.5		14.2	242		21.9		14.5
Sum	498.8	443.0	351.5	261.79	313.39	478.59	756.7	1,149.9	2,835.8	1,807.4	536.1	466.3

Month	Current Year 1996: Extreme Gage Meters High	Low	Extreme—Cubic Meters per Second Day	High	Day	Low	Average	Period 1968–1996: Volume—Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0.600	0.565	9	17.4	27	14.3	16.1	43,096	80,000	259,502	38,661
Feb.	.605	.545	7	18.1	29	12.3	15.3	38,275	71,995	289,215	27,673
Mar.	.555	.520	2	12.9	31	10.0	11.3	30,370	81,145	277,246	24,409
April	.525	.480	! 8	10.2	!29	7.27	8.73	22,619	77,545	192,692	22,619
May	1.245	.455	31	210	24	6.39	10.1	27,077	99,368	289,647	27,077
June	1.130	.470	29	178	!13	7.55	16.0	41,350	122,538	477,792	27,708
July	1.220	.530	16	207	!27	11.8	24.4	65,379	139,256	435,732	29,447
Aug.	2.155	.515	30	374	22	8.98	37.1	99,351	204,314	929,405	43,546
Sept.	3.885	.685	14	786	12	14.2	94.5	245,013	264,220	1,147,133	53,559
Oct.	1.195	.620	16	152	8	19.4	58.3	156,159	238,663	1,112,382	39,637
Nov.	.960	.570	24	76.8	!20	14.1	17.9	46,319	101,689	441,434	37,497
Dec.	.615	.570	5	17.9	24	13.4	15.0	40,288	72,041	217,549	39,502
Yearly	3.885	0.455		786		6.39	27.0	855,296	1,552,774	3,465,652	680,220

* Discharge measurement made on this day ! And other days ** Period 1968–1996

08-4474.10 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 12.1 kilometers east of Langtry, Texas, 15.3 river kilometers upstream from the Pecos High Railroad Bridge; 24.1 river kilometers upstream from its confluence with the Rio Grande. This stream enters the Rio Grande at river kilometer 991, 38.0 river kilometers downstream from Langtry, Val Verde County, Texas. The zero of the gage is 345.36 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 24 current-meter measurements during the year, 17 by the United States Section and 7 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 current-meter measurements. Records available: July 1967 through 1996. Records are also available for Pecos River near Comstock, 15.3 river kilometers downstream, from March 17 through December 3, 1898 and May 1900 through October 7, 1954; for Pecos River near Shumla, 5.6 river kilometers 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. A computerized radio telemetry system relays gage height data to the Amistad Dam office.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 16,300 CMS on September 20, 1974, with a gage height of 22.95 meters. The greatest flood of record, which exceeded a gage height of 30.5 meters at this station, occurred on June 28, 1954. The peak discharge was 26,800 CMS at the gaging station located near the railroad bridge 15.3 river kilometers downstream. Min. 1.65 CMS on July 27, 1974 with a gage height of 0.45 meters.

Average Flow in Cubic Meters per Second

Daily:	Max.	4,330	Sept. 20 , 1974	Min.	1.37	May 30, 1996
Monthly:	Max.	382	Sept. 1974	Min.	1.87	July 1996
Yearly:	Max.	42.5	1974	Min.	3.29	1994

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.46	3.12	3.48	* 3.26	2.31	81.5	* 2.40	1.53	16.5	22.1	5.84	10.4
2	3.17	2.85	3.48	3.40	2.31	11.6	2.35	1.57	13.1	13.3	5.66	* 6.95
3	3.27	2.95	3.46	3.30	2.31	* 6.20	2.31	1.62	* 12.8	7.75	5.37	6.24
4	3.20	2.94	* 3.35	3.61	2.39	5.30	2.50	1.68	8.92	* 7.30	5.32	6.15
5	3.16	3.16	3.38	3.57	2.31	5.22	2.41	1.67	7.24	7.55	5.51	6.01
6	3.08	3.17	3.40	3.36	* 2.35	4.29	2.36	* 2.05	* 6.37	7.85	5.54	5.93
7	3.13	3.22	3.27	3.17	2.27	* 3.81	2.14	2.29	6.10	* 8.47	5.42	5.83
8	3.11	3.18	* 3.29	3.04	2.44	3.82	1.95	3.39	5.88	8.15	5.51	5.77
9	3.01	3.09	3.32	2.86	2.63	3.50	1.94	13.7	5.63	7.83	5.32	5.68
10	2.96	3.02	3.45	2.61	* 2.44	3.32	1.89	3.94	5.61	7.51	5.30	5.73
11	3.34	3.18	3.52	2.50	2.28	3.12	1.99	2.90	5.03	7.22	* 5.44	5.95
12	3.15	3.05	3.35	* 2.47	2.43	3.15	2.25	2.53	4.69	6.99	5.52	5.94
13	3.14	3.07	3.31	2.59	2.46	3.10	1.85	2.30	4.67	6.89	5.45	5.90
14	3.38	2.94	3.25	3.13	2.21	2.98	1.73	2.18	10.0	6.88	5.45	5.81
15	3.52	2.89	3.20	* 3.02	3.26	2.87	1.64	2.00	213	6.88	5.42	5.71
16	3.63	2.82	3.19	2.93	3.22	2.81	1.62	1.96	39.9	6.88	5.52	* 5.38
17	3.62	2.69	3.16	2.82	2.85	2.74	1.58	2.08	30.2	6.79	5.56	5.20
18	3.58	2.77	* 3.45	2.85	2.50	2.63	1.57	2.04	27.8	6.51	* 5.91	5.10
19	3.42	2.87	3.72	2.87	2.22	2.45	1.58	* 2.09	24.0	6.31	6.10	5.15
20	3.44	2.94	3.67	2.78	* 2.19	2.32	1.60	2.07	27.6	6.55	6.00	5.12
21	3.53	2.99	3.56	2.56	2.08	2.30	1.55	2.13	28.5	* 6.45	5.89	5.04
22	3.45	* 3.00	3.55	2.56	1.90	2.07	1.55	2.17	26.1	5.80	5.78	5.08
23	3.37	2.90	3.62	2.62	1.82	2.20	1.59	9.36	26.1	5.68	5.71	5.12
24	3.34	2.90	3.56	2.46	1.77	2.28	1.61	54.6	27.6	5.61	5.72	5.07
25	3.16	2.90	3.58	2.36	2.01	2.37	1.51	12.6	31.5	5.73	5.62	4.98
26	3.37	2.90	3.62	2.36	1.93	2.49	2.57	7.27	39.8	5.66	5.64	5.03
27	3.36	2.90	3.52	2.36	2.15	2.53	1.83	7.16	49.5	5.56	5.42	5.14
28	3.31	2.92	3.70	31.8	2.00	2.55	1.54	8.90	54.1	6.15	5.43	5.20
29	3.18	2.92	3.53	12.4	1.68	2.68	1.49	19.7	47.1	7.21	8.06	5.24
30	3.16		3.30	3.06	1.37	2.71	1.47	30.8	34.0	6.79	13.1	5.24
31	3.13		3.16		455		1.48	19.2		6.13		5.31
Sum	102.13	86.25	106.40	124.68	523.09	180.91	57.85	229.48	839.34	232.48	177.53	176.40

Current Year 1996 | Period 1967-1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second Day	High	Day	Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0.580	0.530	17	4.08	12	2.59	3.29	8,824	15,265	36,067	8,824
Feb.	.570	.515	! 7	3.71	!17	2.31	2.97	7,452	13,678	31,348	7,452
Mar.	.560	.500	!29	4.27	!16	2.50	3.43	9,193	13,822	27,290	8,331
April	1.395	.450	28	137	15	1.56	4.16	10,772	15,910	64,098	8,633
May	7.590	.435	31	2,310	31	1.19	16.9	45,195	20,224	56,812	7,808
June	1.675	.480	1	187	23	1.89	6.03	15,631	15,721	46,702	5,767
July	.560	.445	26	3.95	30	1.31	1.87	4,998	19,660	94,844	4,998
Aug.	1.415	.445	24	140	1	1.37	7.40	19,827	21,522	199,892	5,153
Sept.	3.165	.590	15	520	13	4.43	28.0	72,519	54,576	992,293	6,313
Oct.	.890	.605	1	27.6	24	5.40	7.50	20,086	26,600	140,507	7,806
Nov.	.750	.590	30	14.1	9	5.08	5.92	15,339	18,015	73,681	8,127
Dec.	.730	.585	1	12.3	19	4.90	5.69	15,241	16,040	46,697	8,602
Yearly	7.590	0.435		2,310		1.19	7.75	245,077	251,033	1,341,805	103,647

* Discharge measurement made on this day ! And other days

08-4474.20 DEAD MANS CANYON NEAR COMSTOCK, TEXAS

To determine storm runoff previously included with flows measured on the Pecos River at a gaging station which was relocated upstream due to completion of Amistad Dam, a gaging station was established at Dead Mans Canyon in 1968.

DESCRIPTION: Cableway, control weir, bubbler gage, and digital recorder located on the left bank of the canyon at latitude 29°47'05", longitude 101°19'25", 3.7 kilometers upstream from its confluence with the Pecos River, which is 15.3 kilometers upstream from the Pecos River confluence with the Rio Grande. The zero of the gage is 359.05 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on current-meter measurements, a continuous record of gage heights, and the weir discharge rating. Records available: March 1968 through 1996.

REMARKS: This stream is normally dry, its flow being confined to periods of storm runoff from its 228 square kilometers of watershed area. Only the days of flow are shown below.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,070 CMS on September 17, 1974, with a gage height of 3.90 meters. Maximum volumes: Monthly, 35,973 TCM in September 1974; yearly, 37,654 TCM in 1974.

Average Flow in Cubic Meters per Second

Daily:	Max.	166	Sept. 18, 1974	Min.	
Monthly:	Max.	13.9	Sept. 1974	Min.	see REMARKS
Yearly:	Max.	1.20	1974	Min.	

Mean Daily Discharge in CMS 1996

Month and Day			
	No flow during 1996		

Annual Summary

Month	Maximum Gage and Discharge			Thousand Cubic Meters
	Day	Meters	CMS	
Yearly				

08-4494.00 DEVILS RIVER AT PAFFORD CROSSING NEAR COMSTOCK, TEXAS

DESCRIPTION: Concrete control wall with rectangular notch opening of 25.5 CMS capacity, cableway, bubbler gage, water-stage recorders (graphic & digital), located on the left bank at latitude 29°40'35", longitude 101°00'00", about 18.5 kilometers east of Comstock, Val Verde County, Texas, and 41.0 river kilometers upstream from its confluence with the Rio Grande. The confluence is located at river kilometer 925, 1.1 river kilometer upstream from Amistad Dam. The zero of the gage is 345.00 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 28 current-meter measurements during the year, 22 by the United States Section and 6 by the Mexican Section of the Commission, a stable rating curve based on current-meter measurements, and a continuous record of gage heights. Records available: 1960 through 1996. Records are also available from May 1900 through March 1914 for a station 38.3 river kilometers downstream; from December 1923 through September 1932 for a station 36.7 river kilometers downstream; from September 2, 1932 through August 1957 for a station 33.8 river kilometers downstream; from August 7, 1954 through January 1958 for a station 8.7 river kilometers upstream; and from August 1954 through May 31, 1968 for a station at the mouth 39.8 river kilometers downstream.

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. A computerized radio telemetry system relays gage height data to the Amistad Dam office.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 7,080 CMS on September 18, 1974 with a gage height of 6.04 meters. Min. 1.38 CMS on August 20, 1969.

Average Flow in Cubic Meters per Second

Daily:	Max.	3,480	Sept. 18, 1974	Min.	1.52	August 20, 1969
Monthly:	Max.	240	Sept. 1974	Min.	1.82	August 1964
Yearly:	Max.	27.7	1974	Min.	2.83	1968

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.55	6.01	5.09	* 4.71	4.37	4.40	* 3.79	3.83	4.87	5.81	5.42	5.47
2	6.50	6.20	5.15	4.74	4.47	4.42	3.66	3.80	4.80	5.75	5.38	* 5.51
3	6.50	6.33	5.19	4.98	4.58	* 4.41	3.71	3.79	* 4.77	5.76	5.38	5.51
4	6.49	6.30	* 5.14	5.32	4.58	4.25	3.73	3.76	4.65	5.72	* 5.41	5.50
5	6.46	* 6.00	5.25	5.65	4.62	4.13	3.76	* 3.76	4.73	5.82	5.35	5.47
6	6.46	5.79	4.98	5.66	* 4.55	4.01	3.79	3.76	4.84	5.82	5.47	5.51
7	6.42	5.97	4.28	5.60	4.39	4.04	3.84	3.79	4.94	* 5.83	* 5.38	5.46
8	* 6.41	5.97	4.79	5.45	4.26	4.07	* 3.86	3.80	5.02	5.80	5.39	5.23
9	6.36	5.97	5.02	5.32	4.23	4.09	3.89	3.80	5.07	5.57	5.39	5.32
10	6.31	5.97	5.01	5.17	4.23	4.11	3.93	3.81	5.12	5.51	5.39	5.47
11	6.26	5.56	4.92	5.05	4.23	4.13	3.96	3.83	5.08	5.52	5.44	5.47
12	6.28	5.66	4.94	4.92	4.23	4.15	3.99	3.83	5.04	5.55	5.49	5.36
13	6.28	5.75	4.98	4.74	4.21	4.09	4.02	3.83	* 5.11	5.55	5.43	5.42
14	6.30	5.77	5.01	4.58	4.19	4.14	4.07	3.85	5.11	5.57	5.43	5.47
15	6.49	5.93	* 4.80	* 4.50	4.19	4.10	* 4.09	3.86	5.77	5.59	* 5.43	5.32
16	6.21	5.80	4.83	4.55	4.19	* 4.08	4.09	3.86	16.8	5.59	5.47	* 5.39
17	6.37	5.67	4.84	4.62	4.19	4.13	4.06	3.87	16.4	5.62	5.40	5.21
18	5.90	5.65	4.70	4.67	4.16	4.13	4.06	3.89	9.54	5.32	5.44	5.27
19	6.02	5.85	4.75	* 4.64	4.16	4.10	4.02	* 3.93	8.09	5.35	5.48	5.51
20	6.39	5.83	4.55	4.34	* 4.16	4.09	3.99	3.91	7.41	5.67	5.45	5.51
21	6.20	* 5.80	4.67	4.24	4.19	4.08	3.99	4.00	7.12	* 5.62	5.37	5.51
22	6.32	5.73	4.70	4.59	4.20	4.05	3.99	4.06	6.66	5.23	5.31	5.51
23	6.44	5.76	4.59	4.37	4.23	4.03	3.96	4.78	6.54	5.23	5.49	5.61
24	6.12	5.58	4.84	4.09	4.25	4.03	3.96	4.86	6.37	5.43	6.62	5.50
25	* 5.99	5.81	4.54	4.23	4.26	4.03	3.96	4.97	6.29	5.57	5.73	5.54
26	5.97	6.02	4.50	4.14	4.29	4.05	3.89	5.58	6.58	5.56	5.61	5.55
27	5.91	5.93	4.62	4.35	* 4.30	4.09	3.89	5.33	6.11	5.52	5.40	5.55
28	5.90	5.55	4.85	4.26	4.33	4.06	3.89	5.17	5.95	6.02	5.66	5.56
29	5.88	5.69	4.79	4.55	4.34	4.03	3.86	4.97	5.88	5.90	6.00	5.59
30	5.92		4.73	4.49	4.37	3.98	3.86	4.90	5.79	5.45	5.60	5.59
31	5.90		4.66		4.38		3.86	4.87		5.44		5.63
Sum	193.51	169.85	149.71	142.52	133.33	123.50	121.42	130.05	196.45	173.69	165.21	169.52

Current Year 1996 | Period 1960-1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second Day	High	Day	Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0.555	0.535	20	6.69	28	5.80	6.24	16,719	20,201	35,576	5,732
Feb.	.555	.520	27	6.55	11	5.15	5.86	14,675	17,776	40,893	4,933
Mar.	.545	.500	2	5.63	! 6	3.93	4.83	12,935	17,776	41,204	5,163
April	.555	.510	5	5.76	20	4.06	4.75	12,314	18,053	47,831	5,575
May	.525	.510	! 5	4.62	18	4.16	4.30	11,520	19,990	49,101	5,572
June	.520	.505	3	4.47	! 6	3.96	4.12	10,670	22,231	67,011	5,253
July	.515	.495	15	4.30	1	3.64	3.92	10,491	27,706	230,071	4,976
Aug.	.570	.490	23	6.69	20	3.64	4.20	11,236	43,605	504,380	4,878
Sept.	.825	.500	16	25.6	5	4.26	6.55	16,973	53,520	621,065	6,167
Oct.	.560	.525	28	6.37	24	5.19	5.60	15,007	37,098	272,093	6,172
Nov.	.585	.535	24	7.45	27	5.19	5.51	14,274	21,335	40,721	5,590
Dec.	.555	.530	31	6.01	12	5.07	5.47	14,647	20,744	38,316	5,794
Yearly	0.825	0.490		25.6		3.64	5.11	161,461	320,035	872,184	89,420

* Discharge measurement made on this day ! And other days

08-4494.40 BIG SATAN CREEK NEAR COMSTOCK, TEXAS

To determine storm runoff previously included with flows measured on the Devils River at a gaging station which was relocated upstream due to completion of Amistad Dam, a gaging station was established at Big Satan Creek in 1968.

DESCRIPTION: Cableway, control weir, bubbler gage, and digital recorder located on the right bank of the creek at latitude 29°39'50", longitude 100°57'50", 1.8 kilometers upstream from its confluence with the Devils River, which is 34.1 kilometers upstream from the Devils River confluence with the Rio Grande. The zero of the gage is 345.64 meters above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on current-meter measurements, a continuous record of gage heights, and the weir discharge rating. Records available: May 1968 through 1996.
REMARKS: This creek is normally dry, its flow being confined to periods of storm runoff from its 109 square kilometers of watershed area. Only the days of flow are shown below.
EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,590 CMS on August 15, 1971, with a gage height of 3.75 meters. Maximum volumes: Monthly, 15,053 TCM in August 1971; yearly, 15,449 TCM in 1971.

Average Flow in Cubic Meters per Second

Daily:	Max.	127	Aug. 15, 1971	Min.	
Monthly:	Max.	5.61	Aug. 1971	Min.	see REMARKS
Yearly:	Max.	0.49	1971	Min.	

Mean Daily Discharge in CMS 1996

Month and Day			
	No flow during 1996		

Annual Summary

Month	Maximum Gage and Discharge			Thousand Cubic Meters
	Day	Meters	CMS	
Yearly				

08-4494.80 ROUGH CANYON NEAR DEL RIO, TEXAS

To determine storm runoff previously included with flows measured on the Devils River at a gaging station which was relocated upstream due to completion of Amistad Dam, a gaging station was established at Rough Canyon in 1968.

DESCRIPTION: Cableway, control weir, bubbler gage, and digital recorder located on the right bank at latitude 29°34'40", longitude 100°56'00", 6.3 kilometers upstream from its confluence with the Devils River, which is 17.9 kilometers upstream from the Devils River confluence with the Rio Grande. The zero of the gage is 314.12 meters above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on current-meter measurements, a continuous record of gage heights, and the weir discharge rating. Records available: January 1968 through 1996.
REMARKS: This stream is normally dry, its flow being confined to periods of storm runoff from its 62.2 square kilometers of watershed area. Only the days of flow are shown below.
EXTREME FLOWS FROM RECORDS: Momentary: Max. 199 CMS on August 12, 1972, with a gage height of 2.07 meters. Maximum volumes: Monthly, 10,152 TCM in August 1971; yearly, 10,154 TCM in 1971.

Average Flow in Cubic Meters per Second

Daily:	60.6	Aug. 16, 1971	Min.	
Monthly:	3.79	Aug. 1971	Min.	see REMARKS
Yearly:	0.32	1971	Min.	

Mean Daily Discharge in CMS 1996

Month and Day				
Sept. 14	3.21			
15	7.79			
16	0.09			

Annual Summary

Month	Maximum Gage and Discharge			Thousand Cubic Meters
	Day	Meters	CMS	
Sept.	14	0.995	46.9	958
Yearly		0.995	46.9	958

08-4494.85 NORTH FORK SAN PEDRO CREEK NEAR DEL RIO, TEXAS

To determine storm runoff previously included with flows measured on the Devils River at a gaging station which was relocated upstream due to completion of Amistad Dam, a gaging station was established at the north fork of San Pedro Creek in 1968.

DESCRIPTION: Cableway, control weir, bubbler gage, and digital recorder located on the right bank of the creek at latitude 29°31'20", longitude 100°53'00", 4.8 kilometers upstream from its confluence with the Middle Fork Branch, which is 10.1 kilometers upstream from its confluence with Devils River which itself is 7.2 river kilometers above Devils River confluence with the Rio Grande. The zero of the gage is 343.49 meters above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on current-meter measurements, a continuous record of gage heights, and the weir discharge rating. Records available: January 1968 through 1996.
REMARKS: This creek is normally dry, its flow being confined to periods of storm runoff from its 44 square kilometers of watershed area. Only the days of flow are shown below.
EXTREME FLOWS FROM RECORDS: Momentary: Max. 144 CMS on August 12, 1972, with a gage height of 2.57 meters. Maximum volumes: Monthly, 4,198 TCM in October 1969; yearly, 5,010 TCM in 1969.

Average Flow in Cubic Meters per Second

Daily:	Max.	35.1	Oct. 4, 1969	Min.	
Monthly:	Max.	1.57	Oct. 1969	Min.	see REMARKS
Yearly:	Max.	0.16	1969	Min.	

Mean Daily Discharge in CMS 1996

Month and Day							
Sept. 14	1.19						
15	6.18						

Annual Summary

Month	Maximum Gage and Discharge			Thousand Cubic Meters
	Day	Meters	CMS	
Sept.	15	1.150	37.7	637
Yearly		1.150	37.7	637

08-4494.90 MIDDLE FORK SAN PEDRO CREEK NEAR DEL RIO, TEXAS

To determine storm runoff previously included with flows measured on the Devils River at a gaging station which was relocated upstream due to completion of Amistad Dam, a gaging station was established at the middle fork of San Pedro Creek in 1968.

DESCRIPTION: Cableway, control weir, bubbler gage, and digital recorder located on the right bank of the creek at latitude 29°29'30", longitude 100°52'50", 5.1 kilometers upstream from its confluence with the North Fork Branch, which is 10.1 kilometers above the confluence with Devils River, which itself is 7.2 river kilometers above the Devils River confluence with the Rio Grande. The zero of the gage is 346.56 meters above mean sea level, U. S. C. & G. S. datum.
RECORDS: Based on current-meter measurements, a continuous record of gage heights, and the weir discharge rating. Records available: December 1967 through 1996.
REMARKS: This creek is normally dry, its flow being confined to periods of storm runoff from its 31 square kilometers of watershed area. Only the days of flow are shown below.
EXTREME FLOWS FROM RECORDS: Momentary: Max. 289 CMS on July 17, 1972, with a gage height of 1.78 meters. Maximum volumes: Monthly, 4,596 TCM in July 1975; yearly, 7,118 TCM in 1990.

Average Flow in Cubic Meters per Second

Daily:	Max.	39.4	July 17, 1975	Min.	
Monthly:	Max.	1.72	July 1975	Min.	see REMARKS
Yearly:	Max.	0.23	1990	Min.	

Mean Daily Discharge in CMS 1996

Month and Day							
Sept. 10	4.68	Sept. 22	2.35				
11	3.02	23	1.99				
12	2.44	24	1.39				
13	2.19	25	0.84				
14	2.02	26	0.40				
15	5.39	27	0.08				
16	1.90						
17	1.85						
18	1.85						
19	2.01						
20	1.82						
21	1.69						

Annual Summary

Month	Maximum Gage and Discharge			Thousand Cubic Meters
	Day	Meters	CMS	
Sept.	10	0.890	46.4	3,275
Yearly		0.890	46.4	3,275

08-4495.90 EVANS CREEK NEAR COMSTOCK, TEXAS

To determine storm runoff previously included with flows measured on the Devils River at a gaging station which was relocated upstream due to completion of Amistad Dam, a gaging station was established at Evans Creek in 1968.

DESCRIPTION: Cableway, control weir, bubbler gage, and digital recorder located on the left bank of the creek at latitude 29°32'15", longitude 101°06'10", 17.7 kilometers upstream from its confluence with the Devils River, which is 5.1 kilometers upstream from the Devils River confluence with the Rio Grande. The zero of the gage is 354.34 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on current-meter measurements, a continuous record of gage heights, and the weir discharge rating. Records available: December 1967 through 1996.

REMARKS: This creek is normally dry, its flow being confined to periods of storm runoff from its 192 square kilometers of watershed area. Only the days of flow are shown below.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 493 CMS on June 2, 1971, with a gage height of 1.83 meters. Maximum volumes: Monthly, 11,448 TCM in August 1971; yearly, 17,767 TCM in 1971.

Average Flow in Cubic Meters per Second

Daily:	112	Aug. 15, 1971	Min.	
Monthly:	4.28	Aug. 1971	Min.	see REMARKS
Yearly:	0.56	1971	Min.	

Mean Daily Discharge in CMS 1996

Month and Day			
	No flow during 1996		

Annual Summary

Month	Maximum Gage and Discharge			Thousand Cubic Meters
	Day	Meters	CMS	
Yearly				

08-4508.05 CARMINA SPRINGS NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 2.00 CMS capacity and staff gage located on a creek about 40 meters upstream from its confluence with the Rio Grande, at latitude 29°26'50", longitude 101°03'35", and about 17.7 kilometers northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from Mexico at river kilometer 923, 0.4 river kilometer downstream from Amistad Dam and 20.3 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. 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 1996.

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 CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.80	0.80	* 0.80	0.80	0.80	0.71	0.60	0.58	0.60	0.75	0.80	0.82
2	.80	.80	.80	.80	.80	.71	.60	.58	.60	.75	.80	.82
3	.80	.80	.80	.82	.80	.71	.60	.58	.60	.75	.80	.82
4	.82	.80	.80	.80	.80	.71	.60	.58	.66	.75	.80	.81
5	.82	.80	.80	.80	.80	.71	.60	.58	.71	.75	.80	.80
6	.82	.80	* .80	.80	.80	.71	.59	.58	.72	.75	.80	.80
7	.82	.80	.80	.80	.80	.71	.59	.58	.71	.78	.80	.80
8	.82	.80	.80	.80	* .80	.71	.58	.60	.71	.78	.80	.80
9	.82	.80	.80	.80	.80	.71	.58	.60	.71	* .80	.80	.80
10	.81	.80	.80	* .80	.80	.71	* .58	.59	.72	.80	.78	.80
11	.80	.80	.80	.80	.80	.71	.58	.58	.72	.80	.78	* .80
12	.80	.80	.80	.80	.80	* .69	.58	.58	.71	.80	.78	.80
13	.80	.80	* .80	.80	.78	.69	.58	.58	.70	.80	* .80	.80
14	.80	.80	.80	.80	.78	.66	.58	* .58	.69	.80	.80	.80
15	.80	.80	.80	.80	* .78	.66	.58	.58	.70	.80	.80	.80
16	.80	.80	.80	.80	.77	.66	.60	.58	.71	.80	.80	.80
17	* .80	.80	.80	* .80	.73	.66	.60	.58	.73	.80	.80	.80
18	.80	.80	.80	.80	.71	.66	.60	.58	* .73	.80	.80	* .80
19	.80	.80	.82	.80	.71	* .66	.60	.58	.73	.80	.80	.80
20	.80	.80	* .82	.80	.71	.66	.60	.58	.73	.80	.80	.80
21	.80	* .80	.82	.80	.71	.66	.59	* .58	.73	.80	.80	.80
22	.80	.80	.82	.80	.71	.64	.58	.58	.75	.80	.80	.80
23	.80	.80	.82	.80	.71	.64	.58	.58	.75	* .80	.80	.80
24	* .80	.80	.82	* .80	.71	.64	.58	.58	.75	.80	.80	.80
25	.80	.80	.82	.80	.71	.62	.58	.60	* .75	.80	.80	.80
26	.80	.80	.82	.80	.71	* .62	.58	.60	.75	.80	.80	.80
27	.80	.80	* .82	.80	.71	.62	.58	.60	.75	.80	.80	.80
28	.80	.80	.82	.80	.71	.62	.58	.60	.75	.80	.82	.80
29	.80	.80	.80	.80	.71	.62	.58	.60	.75	.80	.82	.80
30	.80		.80	.80	.71	.62	.58	.60	.75	.80	.82	.80
31	.80		.80		.71		.58	.60		.80		.80
Sum	24.93	23.20	25.00	24.02	23.38	20.11	18.21	18.17	21.37	24.46	24.00	24.87

Month	Current Year 1996: Extreme Gage Meters High	Low	Extreme-Cubic Meters per Second: Day	ϕ High	Day	ϕ Low	Average	Period 1969-1996: Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0.255	0.250	! 4	0.82	! 1	0.80	0.80	2,154	3,592	5,155	449
Feb.	.250	.250	! 1	.80	! 1	.80	.80	2,004	3,253	4,603	460
Mar.	.255	.250	!19	.82	! 1	.80	.81	2,160	3,538	5,406	648
April	.255	.250	3	.82	! 1	.80	.80	2,075	3,341	4,512	776
May	.250	.230	! 1	.80	!17	.71	.75	2,020	3,302	4,604	874
June	.230	.210	! 1	.71	!25	.62	.67	1,738	3,147	4,411	738
July	.205	.200	! 1	.60	! 6	.58	.59	1,573	3,272	4,553	658
Aug.	.205	.200	! 8	.60	! 1	.58	.59	1,570	2,930	4,460	666
Sept.	.240	.205	!22	.75	! 1	.60	.71	1,846	4,025	4,199	731
Oct.	.250	.240	! 9	.80	! 1	.75	.79	2,113	3,613	4,750	1,024
Nov.	.255	.245	!28	.78	!10	.78	.80	2,074	3,526	4,546	1,189
Dec.	.255	.250	! 1	.82	! 4	.80	.80	2,149	3,671	5,019	1,329
Yearly	0.255	0.200		0.82		0.58	0.74	23,476	41,210	54,194	9,542

* Discharge measurement made on this day ϕ Mean daily ! And other days

LOURDES AND HILDA SPRINGS NEAR CD. ACUNA, COAHUILA

08-4508.20 LOURDES SPRING

DESCRIPTION: Rectangular sharp-crested weir of 0.82 CMS 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 17.9 kilometers northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from Mexico at river kilometer 922, 19.6 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The zero of the gage is 282.33 meters 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 1996.
REMARKS: This spring emerged since operation of Amistad Dam began in May 1968. All storm water from surface runoff passing this station is deducted.

Current Year 1996									Period 1969-1996		
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	ϕ High	Day	ϕ Low		Total	Average	Maximum	Minimum
Jan.	0.090	0.090	1!	0.05	1!	0.05	0.05	134	149	199	107
Feb.	0.100	0.090	1!	0.05	1!	0.05	0.05	125	136	228	96.8
Mar.	0.100	0.100	1!	0.05	1!	0.05	0.05	134	150	258	107
April	0.100	0.100	1!	0.05	1!	0.05	0.05	130	146	171	104
May	0.100	0.090	1!	0.05	1!	0.05	0.05	134	148	176	91.6
June	0.090	0.090	1!	0.05	1!	0.05	0.05	130	144	181	114
July	0.090	0.090	1!	0.05	1!	0.05	0.05	134	148	187	107
Aug.	0.090	0.090	1!	0.05	1!	0.05	0.05	134	150	187	117
Sept.	0.090	0.090	1!	0.05	1!	0.05	0.05	130	145	181	104
Oct.	0.090	0.090	1!	0.05	1!	0.05	0.05	134	149	187	107
Nov.	0.090	0.090	1!	0.05	1!	0.05	0.05	130	144	181	101
Dec.	0.090	0.090	1!	0.05	1!	0.05	0.05	134	147	187	80.4
Yearly	0.100	0.090		0.05		0.05	0.05	1,583	1,756	2,085	1,421

ϕ Mean daily ! And other days

08-4508.30 HILDA SPRING

DESCRIPTION: Rectangular sharp-crested weir of 1.50 CMS capacity and staff gage located on a creek about 100 meters upstream from its confluence with the Rio Grande, at latitude 29°26'20 ", longitude 101°03'35", and about 17.7 kilometers northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from Mexico at river kilometer 922, 19.0 kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The zero of the gage is 276.80 meters 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 1996.
REMARKS: This spring emerged since operation of Amistad Dam began in May 1968. All storm water from surface runoff passing this station is deducted.

Current Year 1996									Period 1969-1996		
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousands of Cubic Meters			
	High	Low	Day	ϕ High	Day	ϕ Low		Total	Average	Maximum	Minimum
Jan.	0.030	0.030	1!	0.02	1!	0.02	0.02	53.6	196	321	53.6
Feb.	0.030	0.030	1!	0.02	1!	0.02	0.02	50.1	175	290	48.0
Mar.	0.040	0.040	1!	0.02	1!	0.02	0.02	53.6	185	297	53.6
April	0.040	0.040	1!	0.02	1!	0.02	0.02	51.8	174	278	51.8
May	0.040	0.030	1!	0.02	20!	0.01	0.02	43.2	175	268	43.2
June	0.030	0.030	1!	0.01	1!	0.01	0.01	25.9	166	259	25.9
July	0.030	0.030	1!	0.01	1!	0.01	0.01	26.8	167	285	26.8
Aug.	0.030	0.030	1!	0.01	1!	0.01	0.01	26.8	164	295	26.8
Sept.	0.030	0.030	18!	0.02	1!	0.01	0.01	37.2	164	289	37.2
Oct.	0.040	0.030	1!	0.02	1!	0.02	0.02	53.6	181	299	53.6
Nov.	0.030	0.030	1!	0.02	1!	0.02	0.02	51.8	180	311	51.8
Dec.	0.040	0.030	1!	0.02	1!	0.02	0.02	53.6	190	321	53.6
Yearly	0.040	0.030		0.02		0.01	0.02	528	2,117	3,345	528

ϕ Mean daily ! And other days

08-4509.00 RIO GRANDE BELOW AMISTAD DAM NEAR CD. ACUNA, COAHUILA AND DEL RIO, TEXAS

DESCRIPTION: Cableway, gravity well, concrete control weir, and water-stage recorders (graphic and digital), located on the left bank at latitude 29°25'30", longitude 101°02'25", and river kilometer 920, 3.4 river kilometers downstream from Amistad Dam and 17.4 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The zero of the gage is 274.00 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 22 current-meter measurements during the year, 17 by the Mexican Section and 5 by the U.S. Section, 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 current-meter measurements. Records available: September 1954 through 1996. Records are also available from May 1900 through April 1915 for a station 3.1 kilometers upstream; from December 1919 through March 1920 for a station 2.7 kilometers downsteam 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 1996 for a station approximately 17.1 kilometers 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, 3.4 river kilometers upstream. A computerized radio telemetry system relays gage height data to the Amistad Dam office.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 32,790 CMS on June 28, 1954, determined by slope-area computation, with a gage height of 16.98 meters at the old station site 152 meters downstream. This is the greatest rate of discharge recorded at any point on the Rio Grande. Max. since Amistad Dam, 1,760 CMS on Sept. 21, 1974. Min. 0.63 CMS on February 14, 1969, with a gage height of 0.33 meters.

Average Flow in Cubic Meters per Second**

Daily:	Max.	1,730	Sept. 22, 1974	Min.	1.32	August 13, 1971
Monthly:	Max.	609	Sept. 1974	Min.	1.72	October 1971
Yearly:	Max.	139	1974	Min.	16.3	1972

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	38.3	35.9	29.7	30.0	81.6	71.5	34.6	33.7	33.5	33.8	32.1	38.1
2	39.4	42.5	30.2	31.3	82.2	71.2	35.3	33.6	33.6	33.8	32.4	34.6
3	38.6	41.7	29.9	30.8	81.6	69.8	32.4	33.9	34.6	32.3	34.4	34.5
4	39.0	40.3	29.5	32.4	77.3	70.5	36.5	34.1	33.5	31.6	31.4	31.1
5	38.8	28.2	30.9	32.0	79.6	76.1	33.8	34.2	32.4	30.9	31.7	33.5
6	38.5	26.8	* 31.4	31.6	79.7	75.2	34.1	34.3	33.5	31.7	32.8	34.0
7	38.8	28.8	29.6	33.0	80.3	75.1	33.6	35.1	32.4	29.5	* 31.6	33.5
8	35.7	29.9	31.1	31.4	* 77.9	73.4	34.4	33.8	32.6	32.5	33.2	34.9
9	39.4	29.4	30.0	32.4	75.4	76.7	33.4	34.7	* 32.3	* 32.4	34.7	33.7
10	38.9	29.0	33.0	* 30.2	76.6	76.0	* 34.5	33.8	33.8	30.0	34.6	32.6
11	39.0	29.0	29.3	30.8	76.3	76.5	34.8	33.7	33.8	31.2	33.3	* 33.6
12	38.7	29.2	30.7	31.5	75.2	* 78.1	35.7	34.0	33.6	30.8	33.5	33.1
13	36.2	30.0	30.5	31.6	75.2	78.2	34.3	35.1	33.8	32.1	* 38.5	33.6
14	35.1	31.5	30.7	31.0	73.4	77.9	34.1	* 35.1	34.5	26.7	35.6	34.7
15	34.8	30.5	30.6	31.3	74.8	76.4	33.6	34.8	36.4	31.7	35.2	33.7
16	34.2	30.2	31.0	32.1	76.8	76.2	33.7	34.5	34.5	* 34.1	33.3	33.2
17	* 34.7	28.7	30.1	32.4	* 74.5	76.6	33.6	34.1	31.9	33.2	33.3	33.0
18	35.0	28.9	30.0	* 31.2	76.1	76.6	* 33.9	32.9	32.3	33.4	33.8	* 57.1
19	33.5	30.0	30.9	32.4	76.8	76.5	33.5	33.5	33.1	33.4	33.5	58.9
20	33.5	29.8	30.2	31.3	75.5	76.5	34.1	33.6	33.0	32.8	30.8	59.8
21	34.7	28.1	30.0	73.8	75.2	76.6	32.2	34.0	34.2	32.6	31.7	34.6
22	34.1	28.9	31.1	80.0	76.6	77.1	32.3	34.4	33.4	32.0	33.7	32.2
23	33.4	28.9	28.9	78.7	75.4	75.6	32.6	35.0	32.4	33.2	31.6	33.3
24	33.3	28.6	29.9	* 80.1	77.9	76.7	33.6	34.9	32.9	32.4	31.6	32.7
25	32.7	30.1	31.2	79.6	75.6	75.9	33.0	34.8	* 33.1	31.1	35.1	32.6
26	34.0	28.0	30.3	83.7	75.6	* 77.7	32.4	32.3	33.3	31.7	34.3	33.9
27	36.7	30.0	31.6	83.8	76.7	76.6	32.8	34.2	32.3	30.3	38.0	34.4
28	33.4	31.1	30.3	86.2	76.3	77.4	33.5	34.2	32.7	33.2	33.3	34.3
29	33.1	29.4	30.6	83.4	74.7	80.6	33.6	34.1	33.5	32.3	34.6	33.6
30	33.7		34.0	82.4	75.8	38.4	33.5	33.3	32.5	33.3	34.5	33.0
31	* 33.3		26.9		68.9		34.6	33.3		31.1		30.6
Sum	1,112.5	893.4	944.1	1,442.4	2,375.5	2,237.6	1,048.0	1,057.0	999.4	991.1	1,008.1	1,116.4

Month	Current Year 1996: Extreme Gage Meters High	Low	Extreme—Cubic Meters per Second High Day	High	Low Day	Low	Average	Period 1968–1996: Volume—Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0.495	0.130	9	56.2	30	4.06	35.9	96,120	117,266	258,803	6,560
Feb.	.610	.140	1	84.0	! 1	4.77	30.8	77,190	156,708	576,288	15,378
Mar.	.540	.105	30	66.3	31	2.47	30.5	81,570	189,578	530,496	8,969
April	.695	.155	27	108	27	5.90	48.1	124,623	199,044	511,229	34,007
May	.680	.155	!22	104	!15	5.90	76.6	205,243	279,012	665,712	29,773
June	.685	.150	!10	106	30	5.50	74.6	193,329	211,923	495,331	20,251
July	.620	.140	4	87.0	! 9	4.77	33.8	90,547	175,492	452,036	28,595
Aug.	.645	.135	8	93.9	!11	4.42	34.1	91,325	189,409	816,834	19,229
Sept.	.635	.120	12	91.2	24	3.40	33.3	86,348	238,174	1,578,960	21,717
Oct.	.655	.105	19	96.8	10	2.47	32.0	85,631	216,169	1,002,326	4,606
Nov.	.655	.075	19	96.8	25	1.25	33.6	87,100	124,009	619,574	5,599
Dec.	.665	.095	18	99.6	10	1.96	36.0	96,457	107,390	266,786	5,994
Yearly	0.695	0.075		108		1.25	41.6	1,315,483	2,204,174	4,398,694	514,104

* Discharge measurement made on this day ! And other days ** Period 1968–1996

08-4509.04 SPRING M-15 NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Rectangular sharp-crested weir of 0.23 CMS capacity and staff gage located at latitude 29°25'20", longitude 101°02'40", about 0.4 kilometer upstream from its confluence with the Rio Grande and about 15.1 kilometers northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from Mexico at river kilometer 919, 16.5 river kilometers upstream from the international highway bridge between Del Rio, Texas, and Cd. Acuna, Coahuila. The zero of the gage is 281.98 meters 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 1996.

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.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
2	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
3	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
4	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
5	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
6	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
7	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
8	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
9	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
10	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
11	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
12	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
13	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
14	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
15	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
16	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
17	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
18	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
19	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
20	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
21	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
22	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
23	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
24	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
25	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
26	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
27	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
28	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
29	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
30	.01		.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
31	.01		.01		.01		.01	.01		.01		.01
Sum	0.31	0.29	0.31	0.30	0.31	0.30	0.31	0.31	0.30	0.31	0.30	0.31

Month	Current Year 1996							Period 1969-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second					Volume-Thousand Cubic Meters			
	High	Low	Day	ϕ High	Day	ϕ Low	Average	Total	Average	Maximum	Minimum
Jan.	0.040	0.040	! 1	0.01	! 1	0.01	0.01	26.8	85.5	162	26.0
Feb.	.040	.040	! 1	.01	! 1	.01	.01	25.1	77.8	152	24.0
Mar.	.040	.040	! 1	.01	! 1	.01	.01	26.8	76.2	150	26.8
April	.040	.040	! 1	.01	! 1	.01	.01	25.9	72.0	130	25.9
May	.040	.040	! 1	.01	! 1	.01	.01	26.8	75.8	139	26.8
June	.040	.030	! 1	.01	! 1	.01	.01	25.9	66.0	149	25.9
July	.030	.030	! 1	.01	! 1	.01	.01	26.8	66.5	131	26.0
Aug.	.040	.030	! 1	.01	! 1	.01	.01	26.8	67.3	150	0
Sept.	.030	.030	! 1	.01	! 1	.01	.01	25.9	72.3	204	0
Oct.	.040	.030	! 1	.01	! 1	.01	.01	26.8	85.3	402	0
Nov.	.040	.040	! 1	.01	! 1	.01	.01	25.9	80.3	249	25.9
Dec.	.040	.040	! 1	.01	! 1	.01	.01	26.8	79.4	162	26.8
Yearly	0.040	0.030		0.01		0.01	0.01	316	904	1,680	316

ϕ Mean daily ! And other days

08-4509.05 ARROYO DE LOS JABONCILLOS NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 2.00 CMS capacity and staff gage located at latitude 29°24'25", longitude 101°02'20", about 200 meters upstream from its confluence with the Rio Grande, and about 13.8 kilometers northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from Mexico at river kilometer 918, 15.3 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. 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 discharge determined by prorating between readings. Records available: 1969 through 1996.

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 CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.54	0.55	* 0.56	0.54	0.46	0.42	0.33	0.31	0.30	0.45	0.51	0.52
2	.54	.56	.55	.54	.46	.42	.33	.31	.30	.45	.51	.52
3	.55	.56	.55	.54	.46	.41	.33	.31	.30	.45	.52	.52
4	.55	.56	.54	.54	.46	.41	.33	.31	.30	.45	.52	.52
5	.55	.56	.54	.54	.46	.41	.33	.31	.31	.45	.52	.52
6	.54	.56	.54	.54	.46	.41	.33	.31	.32	.46	.52	.52
7	.54	.57	.54	.54	.46	.40	.32	.31	.33	.46	.52	.52
8	.53	.57	.54	.54	.46	.40	.32	.31	.34	.46	.52	.52
9	.53	.56	.54	.54	.46	.39	.32	.31	.35	.46	.52	.52
10	.52	.56	.54	.54	.46	.39	.32	.31	.36	.46	.52	.52
11	.53	.56	.55	.53	.46	.38	.32	.31	.37	.46	.52	.52
12	.54	.56	.55	.53	.46	.38	.32	.31	.37	.46	.52	.52
13	.54	.55	* .55	.52	.46	.38	.32	.31	.38	.46	.52	.51
14	.55	.55	.55	.52	.45	.37	.31	.31	.38	.46	.52	.51
15	.55	.55	.54	.52	* .45	.37	.31	.31	.39	.46	.52	.50
16	.56	.55	.54	.51	.45	.37	.31	.31	.39	.46	.52	.50
17	.57	.54	.53	.51	.45	.37	.31	.31	.40	.46	.52	.49
18	.56	.54	.53	.50	.44	.36	.31	.30	.40	.46	.51	.49
19	.56	.54	.53	.50	.44	* .36	.31	.30	.41	.46	.51	.50
20	.56	.54	.52	.50	.44	.36	.31	.30	.41	.46	.51	.50
21	.56	* .54	.52	.49	.44	.35	.31	.30	.42	.46	.51	.51
22	.56	.54	.53	.49	.44	.35	.31	.30	.42	.46	.51	.52
23	.55	.54	.53	.48	.44	.35	.31	.30	.43	* .46	.51	.53
24	.55	.55	.53	.48	.43	.35	.31	.30	.43	.47	.51	.54
25	.55	.55	.53	.47	.43	.34	.31	.30	.44	.47	.51	.54
26	.55	.56	.53	.47	.43	.34	.31	.30	.44	.48	.51	.55
27	.55	.56	* .54	.46	.43	.34	.31	.30	.44	.49	.51	.55
28	.55	.57	.54	.46	.42	.34	.31	.30	.44	.50	.51	.55
29	.55	.56	.54	.45	.42	.34	.31	.30	.45	.50	.51	.55
30	.55		.54	.45	.42	.33	.31	.30	.45	.51	.51	.55
31	.55		.54		.42		.31	.30		.51		.55
Sum	16.98	16.06	16.70	15.24	13.82	11.19	9.80	9.47	11.47	14.46	15.45	16.18

Month	Current Year 1996							Period 1969–1996			
	Extreme Gage Meters		Extreme–Cubic Meters per Second				Average	Volume–Thousand Cubic Meters			
	High	Low	Day	ϕ High	Day	ϕ Low		Total	Average	Maximum	Minimum
Jan.	0.285	0.270	17	0.57	10	0.52	0.55	1,467	4,045	5,822	431
Feb.	.285	.275	!17	.57	!17	.54	.55	1,388	3,671	5,189	470
Mar.	.280	.270	11	.55	20	.52	.54	1,443	3,969	5,642	649
April	.275	.245	! 1	.54	30	.45	.51	1,317	3,723	5,359	785
May	.250	.235	! 1	.46	!28	.42	.45	1,194	3,731	5,600	889
June	.232	.200	! 1	.42	30	.33	.37	967	3,474	5,021	836
July	.200	.190	! 1	.33	!14	.31	.32	847	3,482	5,387	847
Aug.	.190	.185	! 1	.31	!18	.30	.31	818	3,441	5,330	818
Sept.	.245	.185	!29	.45	! 1	.30	.38	991	3,545	5,448	965
Oct.	.265	.245	!30	.51	! 1	.45	.47	1,249	3,901	6,428	1,249
Nov.	.270	.265	! 3	.52	! 1	.51	.52	1,335	3,908	5,979	1,335
Dec.	.280	.260	!26	.55	!17	.49	.52	1,398	4,053	5,808	1,398
Yearly	0.285	0.185		0.57		0.30	0.46	14,414	44,943	67,013	11,596

* Discharge measurement made on this day ϕ Mean daily ! And other days

08-4509.06 SPRING M-5 NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Rectangular sharp-crested weir of 0.50 CMS capacity and staff gage located at latitude 29º25'20", longitude 101º02'35", at the base of the high bank of the Rio Grande, and about 14.8 kilometers northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from Mexico at river kilometer 919, 16.2 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The zero of the gage is 284.19 meters 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 1996.

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.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.04	0.03	0.04	0.03	0.04	0.03	0.03	0.03	0.03	0.03	0.04	0.04
2	.04	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04
3	.04	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04
4	.04	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04
5	.03	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04
6	.03	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04
7	.03	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04
8	.03	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04
9	.03	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04
10	.03	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04
11	.03	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04
12	.03	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04
13	.03	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04
14	.03	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04
15	.03	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04
16	.03	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04
17	.03	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04
18	.03	.03	.03	.04	.04	.03	.03	.03	.03	.03	.04	.04
19	.03	.04	.03	.04	.04	.03	.03	.03	.03	.03	.04	.04
20	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04	.04
21	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04	.04
22	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04	.04
23	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04	.04
24	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04	.04
25	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04	.04
26	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04	.04
27	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04	.04
28	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04	.04
29	.03	.04	.03	.04	.03	.03	.03	.03	.03	.04	.04	.04
30	.03		.03	.04	.03	.03	.03	.03	.03	.04	.04	.04
31	.03		.03		.03		.03	.03		.04		.04
Sum	0.97	0.98	1.10	1.03	1.12	0.90	0.93	0.93	0.90	1.05	1.20	1.24

Month	Current Year 1996							Period 1969-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
				ϕ High		ϕ Low					
	High	Low	Day		Day			Total	Average	Maximum	Minimum
Jan.	0.070	0.070	! 1	0.04	! 5	0.03	0.03	83.8	182	241	83.8
Feb.	.070	.070	!19	.04	! 1	.03	.03	84.7	165	213	84.7
Mar.	.070	.070	! 1	.04	!18	.03	.04	95.0	178	227	80.1
April	.070	.070	!18	.04	! 1	.03	.03	89.0	172	220	78.0
May	.070	.070	! 1	.04	!20	.03	.04	96.8	178	229	80.1
June	.070	.070	! 1	.03	! 1	.03	.03	77.8	169	223	77.8
July	.070	.060	! 1	.03	! 1	.03	.03	80.4	171	213	54.0
Aug.	.070	.060	! 1	.03	! 1	.03	.03	80.4	174	241	54.0
Sept.	.070	.070	! 1	.03	! 1	.03	.03	77.8	171	233	52.1
Oct.	.070	.070	!20	.04	! 1	.03	.03	90.7	179	241	54.0
Nov.	.080	.070	! 1	.04	! 1	.04	.04	104	174	233	78.0
Dec.	.080	.080	! 1	.04	! 1	.04	.04	107	180	241	80.1
Yearly	0.080	0.060		0.04		0.03	0.03	1,067	2,093	2,650	892

ϕ Mean daily ! And other days

08-4509.10 ARROYO DEL BUEY NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 1.00 CMS capacity, located at latitude 29°24'20", longitude 101°02'25", 0.3 kilometer up-upstream from its confluence with the Rio Grande, and about 13.7 kilometers northwest of Cd. Acuna, Coahuila. This creek enters the Rio Grande from Mexico at river kilometer 918, 5.6 river kilometers downstream from Amistad Dam and 15.1 kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. 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 1996.

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 0.5 creek kilometer 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 566 CMS.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.17	0.16	0.17	0.14	0.15	0.15	0.15	0.15	0.17	0.17	0.18	0.17
2	.17	.16	.17	.14	.15	.15	.15	.15	.17	.17	.18	.17
3	.17	.16	.17	.14	.15	.15	.15	.15	.17	.17	.18	.17
4	.17	.16	.17	.14	.15	.15	.15	.15	.17	.17	.18	.17
5	.16	.16	.17	.14	.15	.15	.15	.15	.17	.17	.18	.17
6	.16	.16	.17	.14	.15	.15	.15	.15	.17	.17	.18	.17
7	.16	.16	.16	.14	.15	.15	.15	.15	.17	.17	.18	.17
8	.16	.16	.16	.14	.15	.15	.15	.15	.17	.17	.18	.17
9	.16	.16	.16	.14	.15	.15	.15	.15	.17	.17	.18	.17
10	.16	.16	.16	.14	.15	.15	.15	.15	.17	.17	.18	.17
11	.16	.16	.16	.14	.15	.15	.15	.15	.17	.17	.18	.17
12	.16	.16	.16	.14	.15	.15	.15	.15	.17	.17	.18	.17
13	.16	.16	.16	.14	.15	.15	.15	.15	.17	.17	.18	.17
14	.16	.16	.16	.14	.15	.15	.15	.16	.17	.17	.18	.17
15	.16	.16	.16	.14	.15	.15	.15	.16	.17	.17	.18	.17
16	.16	.16	.16	.14	.15	.15	.15	.16	.17	.17	.18	.17
17	.16	.16	.16	.14	.15	.15	.15	.16	.17	.17	.18	.17
18	.16	.16	.15	.15	.15	.15	.15	.16	.17	.17	.18	.17
19	.16	.17	.15	.15	.15	.15	.15	.16	.17	.17	.18	.17
20	.16	.17	.15	.15	.15	.15	.15	.16	.17	.18	.18	.17
21	.16	.17	.15	.15	.15	.15	.15	.16	.17	.18	.17	.17
22	.16	.17	.15	.15	.15	.15	.15	.16	.17	.18	.17	.17
23	.16	.17	.15	.15	.15	.15	.15	.16	.17	.18	.17	.17
24	.16	.17	.15	.15	.15	.15	.15	.16	.17	.18	.17	.17
25	.16	.17	.15	.15	.15	.15	.15	.16	.17	.18	.17	.17
26	.16	.17	.15	.15	.15	.15	.15	.16	.17	.18	.17	.17
27	.16	.17	.15	.15	.15	.15	.15	.16	.17	.18	.17	.17
28	.16	.17	.15	.15	.15	.15	.15	.17	.17	.18	.17	.17
29	.16	.17	.14	.15	.15	.15	.15	.17	.17	.18	.17	.17
30	.16		.14	.15	.15	.15	.15	.17	.17	.18	.17	.17
31	.16		.14		.15		.15	.17		.18		.17
Sum	5.00	4.75	4.85	4.33	4.65	4.50	4.65	4.87	5.10	5.39	5.30	5.27

Month	Current Year 1996								Period 1961-1996		
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.	0.200	0.200	! 1	0.17	! 5	0.16	0.16	432	434	651	8.4
Feb.	.200	.200	!19	.17	! 1	.16	.16	410	398	624	6.7
Mar.	.200	.180	! 1	.17	!29	.14	.16	419	433	725	11.5
April	.180	.180	!18	.15	! 1	.14	.14	374	451	937	7.8
May	.190	.180	! 1	.15	! 1	.15	.15	402	483	1,092	13.4
June	.190	.190	! 1	.15	! 1	.15	.15	389	452	664	7.8
July	.190	.190	! 1	.15	! 1	.15	.15	402	416	657	8.0
Aug.	.200	.190	!28	.17	! 1	.15	.16	421	436	653	8.3
Sept.	.210	.200	! 1	.17	! 1	.17	.17	441	450	648	8.1
Oct.	.210	.210	!20	.18	! 1	.17	.17	466	474	671	8.0
Nov.	.210	.200	! 2	.18	! 1	.17	.18	458	434	638	7.8
Dec.	.200	.200	! 1	.17	! 1	.17	.17	455	440	664	8.0
Yearly	0.210	0.180		0.18		0.14	0.16	5,069	5,301	7,674	268

φ Mean daily ! And other days

08-4511.20 MARIS SPRING NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 3.00 CMS capacity and staff gage located at the spring about 30 meters from the right bank of the Rio Grande at latitude 29°24'00", longitude 101°01'40", and about 12.9 kilometers northwest of Cd. Acuna, Coahuila. This spring enters the Rio Grande from Mexico at river kilometer 917, 14.3 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila and 6.4 river kilometers downstream from Amistad Dam. 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 February 1984 and September 1985 through 1996.

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 may 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 a 0.32 CMS capacity. Beginning March 1, 1984, discharge computations were temporarily discontinued due to leakage under the weir. Discharge computations were resumed on August 14, 1985.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.24	0.24	0.24	0.24	0.25	0.24	0.24	0.24	0.24	0.26	0.25	0.25
2	.24	.24	.24	.24	.25	.24	.24	.24	.24	.26	.25	.25
3	.24	.24	.24	.24	.25	.24	.24	.24	.24	.26	.25	.25
4	.24	.24	.24	.24	.25	.24	.24	.24	.24	.26	.25	.25
5	.24	.24	.24	.24	.24	.24	.24	.24	.24	.26	.25	.25
6	.24	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25
7	.24	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25
8	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.25
9	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.25
10	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.25
11	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.25
12	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.25
13	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.25
14	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.25
15	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.26
16	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.26
17	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.26
18	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.26
19	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.26
20	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.26
21	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.26
22	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.26
23	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.25
24	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.25
25	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.25
26	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.25
27	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.25
28	.24	.24	.24	.24	.24	.24	.24	.24	.25	.25	.25	.25
29	.24	.24	.24	.25	.24	.24	.24	.24	.26	.25	.25	.25
30	.24		.24	.25	.24	.24	.24	.24	.26	.25	.25	.24
31	.24		.24		.24		.24	.24		.25		.24
Sum	7.44	6.96	7.44	7.22	7.48	7.20	7.44	7.44	7.45	7.80	7.50	7.81

Month	Current Year 1996: Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second Day	ϕ High	Day	ϕ Low	Average	Period 1961-1996: Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0.065	0.060	!10	0.24	!17	0.24	0.24	643	697	1,152	5.0
Feb.	.065	.060	! 1	.24	!14	.24	.24	601	623	1,052	5.0
Mar.	.060	.060	! 1	.24	! 1	.24	.24	643	663	1,139	6.0
April	.070	.060	!29	.25	! 1	.24	.24	624	688	1,128	5.0
May	.070	.060	! 1	.25	! 8	.24	.24	646	748	1,624	11.0
June	.060	.055	! 1	.24	!19	.24	.24	622	721	1,138	7.0
July	.050	.045	!10	.24	! 1	.24	.24	643	747	1,693	10.0
Aug.	.060	.060	!14	.24	! 1	.24	.24	643	767	1,524	8.0
Sept.	.095	.060	!29	.26	! 1	.24	.25	644	775	1,434	7.0
Oct.	.090	.070	! 1	.26	!30	.25	.25	674	836	1,752	6.0
Nov.	.075	.070	! 1	.25	!21	.25	.25	648	799	1,650	5.0
Dec.	.085	.065	!15	.26	!30	.24	.25	675	745	1,464	5.0
Yearly	0.095	0.045		0.26		0.24	0.24	7,706	8,809	16,058	180

ϕ Mean daily ! And other days

08-4511.30 EIGHT MILE CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Concrete wall with 90° V-notch weir of 0.20 CMS capacity at latitude 29°24'00", longitude 101°00'55", 1.3 creek kilometers upstream from its confluence with the Rio Grande, and about 12.9 kilometers northwest of Del Rio, Val Verde County, Texas. This stream enters the Rio Grande from the United States at river kilometer 916, 7.4 river kilometers downstream from Amistad Dam and 13.4 kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The elevation of the zero of the gage is 278.58 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 12 current-meter measurements during the year. Mean daily discharges determined by prorating between measurements. Records available: March 1961 through 1996.

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. 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. Bubbler gage and water-stage recorder were removed April 1, 1985.

EXTREME FLOWS FROM RECORDS:

Average Flow in Cubic Meters per Second

Daily:	Max.	0.45	July 23 & 24, 1976	Min.	0	Occasionally
Monthly:	Max.	0.18	July 1976	Min.	0	Occasionally
Yearly:	Max.	0.11	1974 & 1975	Min.	0	Several years

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	* 0	0	0	0	0	0	* 0	0	* 0	0	0
3	0	0	0	* 0	* 0	0	* 0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	* 0	0	0	* 0	0	* 0	* 0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	* 0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	* 0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0		0	0	0	0	0	0	0	0	0	0
31	0		0		0		0	0		0		0
Sum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Month	Current Year 1996: Extreme Gage Meters High	Low	Extreme—Cubic Meters per Second: Day	ϕ High	Day	ϕ Low	Average	Total	Period 1961-1996: Volume—Thousand Cubic Meters Average	Maximum	Minimum
Jan.			! 1	0	! 1	0	0	0	155	363	0
Feb.			! 1	0	! 1	0	0	0	145	396	0
Mar.			! 1	0	! 1	0	0	0	150	386	0
April			! 1	0	! 1	0	0	0	138	313	0
May			! 1	0	! 1	0	0	0	139	412	0
June			! 1	0	! 1	0	0	0	119	264	0
July			! 1	0	! 1	0	0	0	119	481	0
Aug.			! 1	0	! 1	0	0	0	117	369	0
Sept.			! 1	0	! 1	0	0	0	116	296	0
Oct.			! 1	0	! 1	0	0	0	131	412	0
Nov.			! 1	0	! 1	0	0	0	132	396	0
Dec.			! 1	0	! 1	0	0	0	139	349	0
Yearly				0		0	0	0	1,600	3,567	0

* Discharge measurement made on this day ϕ Mean daily ! And other days

08-4511.40 MCKEE SPRING NEAR DEL RIO, TEXAS

DESCRIPTION: This spring is located on the left floodplain of the Rio Grande at latitude 29°23'35", longitude 101°01'15", about 46 meters from the edge of the low-flow channel and about 12.9 kilometers northwest of Del Rio, Texas. Water from this spring enters the Rio Grande from the United States at river kilometer 916, 7.7 river kilometers downstream from Amistad Dam.

RECORDS: Based on 12 current-meter measurements during the year. Mean daily discharges determined by prorating between measurements. Records available: November 1961 through 1996.

REMARKS: The flow of this spring is uniform during periods of dry weather and is modified by periodic residential pumping. It is estimated that backwater from the Rio Grande will reach the emergence of this spring when the river flow is approximately 396 CMS. 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 Cubic Meters per Second				
Daily:	Max.	0.31	Feb. 16, 1983	Min.	0	Occasionally
Monthly:	Max.	0.26	Feb. 1983	Min.	0	Occasionally
Yearly	Max.	0.22	1979	Min.	0	1963

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.09	0.10	0.08	0.08	* 0.07	0.08	0.05	0.07	0.06	0.07	0.06	0.09
2	.10	* .10	.07	.08	.07	.08	.04	* .07	.06	* .07	.06	.09
3	.10	.10	.07	* .08	.07	.08	* .04	.07	.06	.07	.06	.09
4	.10	.10	.07	.08	.07	.08	.04	.07	.06	.07	.06	.09
5	.10	.10	.07	.08	.07	* .08	.04	.07	* .06	.07	* .06	* .09
6	.10	.10	.07	.08	.07	.08	.04	.07	.06	.07	.06	.09
7	.10	.10	* .07	.08	.07	.08	.04	.07	.06	.07	.06	.09
8	.10	.09	.07	.08	.07	.08	.04	.07	.06	.07	.06	.09
9	.10	.09	.07	.08	.07	.08	.05	.07	.06	.07	.06	.09
10	* .10	.09	.07	.08	.07	.07	.05	.07	.06	.07	.07	.09
11	.10	.09	.07	.08	.07	.07	.05	.07	.06	.07	.07	.09
12	.10	.09	.07	.08	.07	.07	.05	.07	.06	.07	.07	.08
13	.10	.09	.07	.08	.07	.07	.05	.07	.06	.07	.07	.08
14	.10	.09	.07	.08	.07	.07	.05	.07	.06	.07	.07	.08
15	.10	.09	.07	.08	.07	.07	.05	.07	.06	.07	.07	.08
16	.10	.09	.07	.08	.07	.07	.05	.07	.06	.07	.07	.08
17	.10	.09	.07	.08	.07	.06	.05	.07	.06	.07	.07	.08
18	.10	.09	.07	.08	.07	.06	.05	.07	.06	.07	.07	.08
19	.10	.09	.07	.07	.07	.06	.06	.07	.06	.07	.07	.08
20	.10	.08	.07	.07	.08	.06	.06	.07	.07	.06	.08	.08
21	.10	.08	.07	.07	.08	.06	.06	.06	.07	.06	.08	.08
22	.10	.08	.08	.07	.08	.06	.06	.06	.07	.06	.08	.08
23	.10	.08	.08	.07	.08	.06	.06	.06	.07	.06	.08	.08
24	.10	.08	.08	.07	.08	.05	.06	.06	.07	.06	.08	.07
25	.10	.08	.08	.07	.08	.05	.06	.06	.07	.06	.08	.07
26	.10	.08	.08	.07	.08	.05	.06	.06	.07	.06	.08	.07
27	.10	.08	.08	.07	.08	.05	.06	.06	.07	.06	.08	.07
28	.10	.08	.08	.07	.08	.05	.06	.06	.07	.06	.08	.07
29	.10	.08	.08	.07	.08	.05	.07	.06	.07	.06	.08	.07
30	.10		.08	.07	.08	.05	.07	.06	.07	.06	.09	.07
31	.10		.08		.08		.07	.06		.06		.07
Sum	3.09	2.58	2.28	2.28	2.29	1.98	1.64	2.06	1.91	2.05	2.13	2.51

Month	Current Year 1996: Extreme Gage Meters High	Extreme Gage Meters Low	Extreme—Cubic Meters per Second: Day	ϕ High	Day	ϕ Low	Average	Period 1961–1996: Volume—Thousand Cubic Meters: Total	Average	Maximum	Minimum
Jan.			! 2	0.10	! 1	0.09	0.10	267	334	649	0
Feb.			! 1	.10	!20	.08	.09	223	315	628	0
Mar.			!22	.08	! 2	.07	.07	197	338	650	0
April			! 1	.08	!19	.07	.08	197	331	604	0
May			!20	.08	! 1	.07	.07	198	358	633	0
June			! 1	.08	!24	.05	.07	171	329	580	0
July			!29	.07	! 2	.04	.05	142	339	692	0
Aug.			! 1	.07	!21	.06	.07	178	342	622	0
Sept.			!20	.07	! 1	.06	.06	165	329	591	0
Oct.			! 1	.07	!20	.06	.07	177	342	640	0
Nov.			30	.09	! 1	.06	.07	184	321	636	0
Dec.			! 1	.09	!24	.07	.08	217	327	596	0
Yearly				0.10		0.04	0.07	2,316	4,005	6,978	0

* Discharge measurement made on this day ϕ Mean daily ! And other days

08-4511.50 ARROYO DE LA TREINTA Y UNA NEAR CD. ACUNA, COAHUILA

DESCRIPTION: Cipolletti weir of 1.00 CMS capacity, located at latitude 29°22'35", longitude 101°01'15", 966 creek meters upstream from its confluence with the Rio Grande, and about 10.5 kilometers northwest of Cd. Acuna, Coahuila. This stream enters the Rio Grande from Mexico at river kilometer 913, 10.1 river kilometers downstream from Amistad Dam and 10.6 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. 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 1996.

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 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. It is estimated that backwater from the Rio Grande will affect the flow at this station only during times of extremely high release.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.06	0.06	0.06	0.06	0.05	0.06	0.05	0.05	0.06	0.06	0.06	0.06
2	.06	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06
3	.06	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06
4	.06	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06
5	.06	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06
6	.06	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06
7	.06	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06
8	.06	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06
9	.06	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06
10	.06	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06
11	.06	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06
12	.06	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06
13	.06	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06
14	.06	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06
15	.06	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06
16	.06	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06
17	.06	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06
18	.06	.06	.06	.05	.05	.06	.05	.05	.06	.06	.06	.06
19	.06	.06	.06	.05	.06	.06	.05	.05	.06	.06	.06	.06
20	.06	.06	.06	.05	.06	.05	.05	.05	.06	.06	.06	.06
21	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06	.06
22	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06	.06
23	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06	.06
24	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06	.06
25	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06	.06
26	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06	.06
27	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06	.06
28	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06	.06
29	.06	.06	.06	.05	.06	.05	.05	.06	.06	.06	.06	.06
30	.06		.06	.05	.06	.05	.05	.06	.06	.06	.06	.06
31	.06		.06		.06		.05	.06		.06		.06
Sum	1.86	1.74	1.86	1.67	1.68	1.69	1.55	1.66	1.80	1.86	1.80	1.86

Current Year 1996 | Period 1961-1996

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	ϕ High	Day	ϕ Low		Total	Average	Maximum	Minimum
Jan.	0.100	0.100	! 1	0.06	! 1	0.06	0.06	161	205	348	18.7
Feb.	.100	.100	! 1	.06	! 1	.06	.06	150	188	317	17.1
Mar.	.100	.100	! 1	.06	! 1	.06	.06	161	205	403	17.5
April	.100	.100	! 1	.06	!18	.05	.06	144	216	373	13.0
May	.100	.100	!19	.06	! 1	.05	.05	145	211	323	7.3
June	.100	.090	! 1	.06	!20	.05	.06	146	200	313	5.2
July	.090	.090	! 1	.05	! 1	.05	.05	134	193	312	0
Aug.	.100	.090	!21	.06	! 1	.05	.05	143	198	398	0
Sept.	.100	.100	! 1	.06	! 1	.06	.06	156	208	337	16.2
Oct.	.100	.100	! 1	.06	! 1	.06	.06	161	222	348	14.9
Nov.	.100	.100	! 1	.06	! 1	.06	.06	156	207	382	17.5
Dec.	.100	.100	! 1	.06	! 1	.06	.06	161	210	382	18.7
Yearly	0.100	0.090		0.06		0.05	0.06	1,818	2,463	4,026	308

ϕ Mean daily ! And other days

08-4513.00 CANTU SPRING NEAR DEL RIO, TEXAS

DESCRIPTION: Concrete enclosure 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 4.0 kilometers northwest of Del Rio, Texas and 5.6 creek kilometers upstream from the confluence of Cienegas Creek with the Rio Grande. Cienegas Creek enters the Rio Grande at river kilometer 906, 3.0 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila.

RECORDS: Based on 12 current-meter measurements during the year. Mean daily discharges determined by prorating between measurements. Records available: March 1961 through 1996.

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. 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 Cubic Meters per Second			
Daily:	Max.	0.37	March 2, 1989	Min.	0	Occasionally
Monthly:	Max.	0.34	March 1989	Min.	0	Occasionally
Yearly:	Max.	0.24	1989	Min.	0	1963

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.09	0.06	0.09	0.09	* 0.08	0.06	0.04	0.06	0.08	0.06	0.08	0.09
2	.09	* .06	.09	.09	.08	.06	.04	* .06	.08	* .06	.08	.09
3	.09	.06	.10	* .09	.08	.06	* .04	.06	.08	.06	.08	.09
4	.09	.06	.10	.09	.08	.06	.04	.06	.08	.06	.08	.09
5	.09	.06	.10	.09	.08	* .06	.04	.06	* .08	.06	* .08	* .09
6	.09	.06	.10	.09	.08	.06	.04	.06	.08	.06	.08	.09
7	.09	.07	* .10	.09	.08	.06	.04	.06	.08	.06	.08	.09
8	.09	.07	.10	.09	.08	.06	.04	.06	.08	.06	.08	.09
9	.09	.07	.10	.09	.08	.06	.04	.06	.08	.06	.08	.09
10	* .09	.07	.10	.09	.08	.06	.04	.06	.08	.06	.08	.09
11	.09	.07	.10	.09	.07	.06	.04	.06	.08	.06	.08	.09
12	.09	.07	.10	.09	.07	.06	.05	.07	.08	.07	.08	.09
13	.09	.07	.10	.09	.07	.06	.05	.07	.07	.07	.08	.09
14	.08	.07	.10	.09	.07	.05	.05	.07	.07	.07	.08	.10
15	.08	.08	.10	.09	.07	.05	.05	.07	.07	.07	.08	.10
16	.08	.08	.10	.09	.07	.05	.05	.07	.07	.07	.08	.10
17	.08	.08	.10	.09	.07	.05	.05	.07	.07	.07	.08	.10
18	.08	.08	.10	.09	.07	.05	.05	.07	.07	.07	.08	.10
19	.08	.08	.10	.08	.07	.05	.05	.07	.07	.07	.08	.10
20	.08	.08	.10	.08	.07	.05	.05	.07	.07	.07	.08	.10
21	.08	.08	.10	.08	.07	.05	.05	.07	.07	.07	.09	.10
22	.07	.08	.10	.08	.07	.05	.05	.07	.07	.07	.09	.10
23	.07	.08	.10	.08	.07	.05	.05	.07	.07	.07	.09	.10
24	.07	.09	.10	.08	.07	.05	.05	.07	.07	.07	.09	.10
25	.07	.09	.09	.08	.07	.05	.05	.07	.07	.07	.09	.10
26	.07	.09	.09	.08	.07	.05	.05	.07	.07	.07	.09	.10
27	.07	.09	.09	.08	.07	.05	.06	.07	.06	.07	.09	.10
28	.07	.09	.09	.08	.07	.04	.06	.07	.06	.07	.09	.10
29	.07	.09	.09	.08	.06	.04	.06	.08	.06	.08	.09	.10
30	.06		.09	.08	.06	.04	.06	.08	.06	.08	.09	.10
31	.06		.09		.06		.06	.08		.08		.10
Sum	2.49	2.18	3.01	2.58	2.24	1.60	1.49	2.09	2.18	2.09	2.50	2.97

Month	Current Year 1996: Extreme Gage Meters High	Low	Extreme-Cubic Meters per Second Day	ϕ High	Day	ϕ Low	Average	Period 1961-1996: Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.			! 1	0.09	!30	0.06	0.08	215	425	697	0
Feb.			!24	.09	! 1	.06	.08	188	381	749	0
Mar.			! 3	.10	! 1	.09	.10	260	417	907	0
April			! 1	.09	!19	.08	.09	223	392	780	0
May			! 1	.08	!29	.06	.07	194	400	750	0
June			! 1	.06	!28	.04	.05	138	374	675	0
July			!27	.06	! 1	.04	.05	129	381	671	0
Aug.			!29	.08	! 1	.06	.07	181	384	668	0
Sept.			! 1	.08	!27	.06	.07	188	388	661	0
Oct.			!29	.08	! 1	.06	.07	181	428	777	0
Nov.			!21	.09	! 1	.08	.08	216	405	768	0
Dec.			!14	.10	! 1	.09	.10	257	414	734	0
Yearly				0.10		0.04	0.07	2,370	4,789	8,063	0

* Discharge measurement made on this day ϕ Mean daily ! And other days

08-4515.00 CIENEGAS CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Measurement sections, one each, located on Cienegas Creek at latitude 29°21'10", longitude 100°56'35", 0.8 creek kilometer upstream from its confluence with the Rio Grande; and for the Briggs Farm ditch, latitude 29°21'40", longitude 100°56'30", 884 meters downstream from the ditch intake which branches off the right bank of Cienegas Creek immediately upstream of a small diversion dam across the creek, and about 4.0 kilometers west of Del Rio, Val Verde County Texas. The point of diversion is 2.9 creek kilometers upstream from the confluence of Cienegas Creek with the Rio Grande. Cienegas Creek enters the Rio Grande at river kilometer 906, 3.0 river kilometers upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila.

RECORDS: Based on 12 current-meter measurements at Cienegas Creek and 12 current-meter measurements at Briggs Farm ditch, respectively, during the year. Mean daily discharge computations determined by combining the two records for the total yield of the springs. Records available: March 1965 through 1996. Discharge measurement data available since November 1962. Records are also available from September 1931 through June 1935 for a station 0.5 creek kilometer downstream. The station was moved 0.3 creek kilometer upstream in June 1983.

REMARKS: Low flow of this stream is from springs, one of which is Cantu Spring, whose discharge is shown on the previous page. The flow of this stream is modified by irrigation diversions through the Briggs Farm ditch. 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.

EXTREME FLOWS FROM RECORDS:

			Average Flow in Cubic Meters per Second			
Daily:	Max.	1.21	August 12, 1972	Min.	0.01	April 21, 1966
Monthly:	Max.	0.70	July 1976	Min.	0.02	August 1967
Yearly:	Max.	0.51	1977	Min.	0.03	1968

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.28	0.22	0.15	0.19	* 0.18	0.22	0.15	0.15	0.28	0.24	0.23	0.24
2	.29	* .22	.15	.19	.18	.22	.15	* .15	.28	* .24	.23	.24
3	.29	.22	.15	* .20	.18	.22	* .14	.15	.29	.24	.23	.24
4	.29	.21	.15	.20	.18	.23	.14	.15	.29	.24	.23	.24
5	.30	.21	.15	.20	.19	* .23	.14	.16	* .30	.24	* .23	* .24
6	.30	.21	.14	.20	.19	.23	.14	.16	.30	.24	.23	.24
7	.30	.20	* .14	.20	.18	.22	.14	.17	.30	.24	.23	.24
8	.30	.21	.14	.20	.18	.22	.14	.17	.30	.24	.23	.25
9	.31	.21	.14	.20	.19	.22	.14	.18	.29	.24	.23	.25
10	* .31	.20	.14	.20	.19	.22	.14	.18	.29	.24	.23	.25
11	.31	.20	.15	.19	.19	.21	.14	.18	.29	.24	.23	.25
12	.30	.20	.15	.19	.19	.21	.14	.19	.29	.24	.23	.25
13	.30	.19	.15	.19	.20	.21	.14	.20	.28	.24	.23	.25
14	.29	.19	.15	.19	.20	.20	.14	.20	.28	.24	.23	.27
15	.29	.19	.16	.19	.20	.20	.14	.21	.28	.24	.23	.27
16	.29	.18	.16	.19	.20	.20	.14	.21	.28	.24	.23	.27
17	.28	.18	.16	.19	.20	.19	.14	.21	.28	.24	.23	.27
18	.28	.18	.16	.19	.21	.19	.14	.22	.27	.24	.23	.27
19	.27	.18	.16	.19	.20	.19	.14	.22	.27	.23	.23	.27
20	.27	.18	.17	.19	.20	.19	.14	.22	.27	.23	.23	.28
21	.27	.18	.17	.19	.20	.18	.15	.23	.27	.23	.24	.28
22	.26	.18	.17	.19	.21	.18	.15	.23	.26	.23	.24	.28
23	.26	.17	.17	.19	.21	.18	.15	.24	.26	.23	.24	.28
24	.26	.17	.18	.19	.21	.17	.15	.24	.26	.23	.24	.28
25	.25	.17	.18	.18	.21	.17	.15	.24	.26	.23	.24	.28
26	.25	.16	.18	.18	.21	.17	.15	.25	.26	.23	.24	.29
27	.24	.16	.18	.18	.22	.16	.15	.25	.25	.23	.24	.29
28	.24	.16	.18	.18	.22	.16	.15	.26	.25	.23	.24	.29
29	.24	.15	.19	.18	.22	.16	.15	.27	.25	.23	.24	.29
30	.23		.19	.18	.22	.15	.15	.27	.25	.23	.24	.29
31	.23		.19		.22		.15	.28		.23		.30
Sum	8.58	5.48	5.00	5.72	6.18	5.90	4.47	6.44	8.28	7.31	7.00	8.23

Month	Current Year 1996: Extreme Gage Meters High	Low	Extreme Cubic Meters per Second: Day	ϕ High	Day	ϕ Low	Average	Period 1965–1996: Volume Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.			! 9	0.31	11	0.23	0.28	741	984	1,532	163
Feb.			! 1	.22	29	.15	.19	473	908	1,512	121
Mar.			!29	.19	! 6	.14	.16	432	945	1,563	85.6
April			! 3	.20	!25	.18	.19	494	873	1,388	59.2
May			!27	.22	11	.18	.20	534	877	1,430	81.7
June			! 4	.23	30	.15	.20	510	821	1,322	18.1
July			! 1	.15	! 3	.14	.14	386	797	1,884	9.3
Aug.			31	.28	! 1	.15	.21	556	802	1,531	8.0
Sept.			! 5	.30	!27	.25	.28	715	801	1,287	16.2
Oct.			! 1	.24	!19	.23	.24	632	920	1,400	19.1
Nov.			!21	.24	! 1	.23	.23	605	895	1,378	31.1
Dec.			31	.30	! 1	.24	.27	711	945	1,441	78.6
Yearly				0.31		0.14	0.21	6,789	10,568	15,992	856

* Discharge measurement made on this day ϕ Mean daily ! And other days

08-4518.00 RIO GRANDE AT DEL RIO, TEXAS AND CD. ACUNA, COAHUILA

DESCRIPTION: Cableway, bubbler gage, concrete control weir, water-stage recorders (graphic and digital) and data collection platform located on the left bank at latitude 29°20'07", longitude 100°55'41", and river kilometer 903, 360 meters upstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila and 20.4 river kilometers downstream from Amistad Dam. The zero of the gage is 264.93 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 19 current-meter measurements during the year, 12 by the United States Section and 7 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 current-meter measurements. Records available: December 1923 through July 2, 1941 and January 1968 through 1996. Records are available from May 1900 through April 1915 for a station 19.6 kilometers upstream; from December 1919 through March 1920 for a station 14.0 kilometers upstream near McKee's Switch; from July 2, 1941 through 1954 and October 1960 through 1967 for a station 366 meters downstream at the international highway bridge; and from September 1954 through 1996 for a station, Rio Grande below Amistad Dam, 17.0 kilometers 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 data collection platform, 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 32,300 CMS occurred on June 28, 1954, with a gage height of 11.66 meters at a station 360 meters downstream. The lowest recorded flow was 3.51 CMS which occurred March 5 and 6, 1969, with a gage height of 0.38 meters.

Average Flow in Cubic Meters per Second**

Daily:	Max.	1,810	Sept. 22, 1974	Min.	4.64	Aug. 13, 1971
Monthly:	Max.	632	Sept. 1974	Min.	5.32	October 1971
Yearly:	Max.	146	1974	Min.	19.9	1972

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	37.1	20.3	32.0	27.8	75.3	68.0	29.7	* 32.6	33.7	34.8	* 37.4	41.1
2	39.1	43.3	31.7	30.9	76.2	67.7	30.3	32.3	33.4	32.9	38.8	37.9
3	39.4	50.1	30.3	28.2	75.3	67.1	28.9	32.3	34.0	32.9	40.8	37.1
4	39.4	48.1	29.2	28.6	72.5	68.3	30.3	32.6	32.9	* 33.1	36.5	35.4
5	38.5	37.4	29.5	31.4	74.2	72.5	* 29.5	33.1	33.1	32.9	36.5	35.1
6	38.2	32.3	30.9	30.6	75.0	71.9	30.0	33.4	* 32.3	32.6	35.1	* 35.1
7	38.8	31.7	32.0	31.7	76.7	* 70.0	29.7	33.7	31.4	33.1	35.4	33.7
8	* 36.2	32.0	33.1	30.0	74.2	68.8	29.7	33.4	31.2	33.4	39.6	37.7
9	34.8	31.7	31.7	29.2	72.2	71.9	29.2	34.8	30.3	35.1	37.7	34.3
10	32.0	31.4	31.2	28.6	71.9	70.2	30.9	34.3	31.2	32.6	37.7	31.4
11	29.5	32.0	29.5	27.9	71.6	70.2	31.2	34.0	30.9	33.1	36.2	32.0
12	30.0	33.7	27.6	28.2	70.8	71.4	31.4	* 34.6	32.0	32.6	34.8	30.9
13	27.8	32.6	27.0	29.7	71.4	71.4	30.3	35.4	* 32.3	34.6	37.9	31.2
14	25.1	34.6	26.7	28.6	70.0	70.2	30.3	35.1	34.3	29.7	36.0	31.2
15	24.7	34.6	* 26.8	29.7	69.4	68.8	29.7	35.1	45.0	33.1	39.1	32.6
16	24.0	37.9	27.5	30.9	* 71.1	69.7	29.5	* 35.1	33.4	34.3	32.3	31.2
17	23.3	36.0	26.9	30.6	68.3	69.4	29.7	34.6	32.0	34.8	32.6	32.0
18	24.0	35.1	26.5	* 28.0	69.4	69.7	29.7	33.7	33.1	36.5	32.0	56.1
19	24.8	33.7	29.2	* 28.0	69.7	69.7	30.0	33.1	* 32.6	37.1	33.4	59.8
20	23.4	32.9	30.0	28.1	68.5	69.1	31.2	34.0	33.1	34.6	33.1	59.5
21	23.2	32.0	30.6	61.7	68.3	69.1	30.6	34.8	33.4	34.8	34.0	34.3
22	21.4	31.2	30.0	70.5	70.2	70.2	30.3	35.1	33.1	37.4	33.7	32.0
23	20.4	* 28.9	27.7	71.1	68.3	68.5	30.0	37.1	32.6	38.2	31.2	32.9
24	21.0	29.2	28.1	73.1	71.1	69.7	30.6	39.6	33.1	36.0	35.4	33.7
25	20.7	29.2	30.9	71.4	68.8	70.0	31.4	36.5	33.4	35.4	34.3	35.7
26	21.0	27.4	32.9	75.6	68.3	71.6	31.4	34.8	32.6	34.3	37.9	34.6
27	23.8	29.5	36.2	76.7	* 70.2	70.2	30.3	36.5	33.1	32.9	37.9	36.0
28	20.5	32.6	29.2	78.7	70.5	69.1	31.4	35.7	34.3	39.1	37.9	36.0
29	19.9	33.4	29.7	79.9	68.8	71.6	31.7	34.8	34.6	37.4	38.2	34.8
30	18.6		29.7	80.7	72.2	36.5	31.7	36.0	33.7	39.1	36.2	35.7
31	21.0		32.0		65.7		32.3	34.6		35.1		32.6
Sum	861.6	974.8	926.3	1,326.1	2,206.1	2,062.5	942.9	1,072.7	996.1	1,073.5	1,079.6	1,133.6

Month	Current Year 1996							Period 1968–1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	0.680	0.405	9	51.3	30	5.35	27.8	74,442	122,896	272,866	17,882
Feb.	.805	.425	3	87.2	1	7.05	33.6	84,223	160,757	552,852	22,983
Mar.	.785	.455	27	81.0	31	10.3	29.9	80,032	193,743	489,370	21,337
April	.845	.480	!29	99.1	1	13.2	44.2	114,575	205,101	566,611	41,748
May	.855	.525	7	96.9	21	16.4	71.2	190,607	284,151	669,284	38,149
June	.845	.490	! 5	96.9	30	12.8	68.8	178,200	215,871	512,957	28,546
July	.730	.475	31	60.6	9	11.4	30.4	81,467	179,557	452,566	38,823
Aug.	.755	.470	24	71.4	19	12.5	34.6	92,681	195,186	827,137	35,556
Sept.	.820	.460	15	90.3	24	10.3	33.2	86,063	246,713	1,637,441	47,921
Oct.	.780	.455	19	80.1	10	10.3	34.6	92,750	223,894	1,005,540	14,281
Nov.	.815	.415	19	92.6	19	6.49	36.0	93,277	131,715	650,690	16,830
Dec.	.830	.425	18	95.7	10	7.67	36.6	97,943	113,118	282,187	17,168
Yearly	0.855	0.405		99.1		5.35	40.0	1,266,260	2,272,702	4,617,893	627,328

* Discharge measurement made on this day ! And other days

\# Values for January 1968 are Rio Grande near Del Rio less Arroyo de las Vacas flow

08-4520.00 ARROYO DE LAS VACAS AT CD. ACUNA, COAHUILA

DESCRIPTION: Cableway, concrete wall with a V-shape concrete control weir of 10 CMS 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 2.9 creek kilometers upstream from its confluence with the Rio Grande. This stream enters the Rio Grande at river kilometer 903 on the upstream side of the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila and 20.7 river kilometers downstream from Amistad Dam. The zero of the gage is 270.00 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 32 current-meter measurements during the year by the Mexican Section, a stable rating curve up to 10 CMS, 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. Records available: Occasional estimates from June 1935 to March 19, 1938 and a continuous record from March 20, 1938 through 1996.

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-shape concrete control weir with a capacity of 10 CMS, constructed at this station, started operating December 14, 1961. On June 28, 1954, backwater from the Rio Grande reached an elevation of 275.08 meters 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. 1,800 CMS with a gage height of 7.70 meters on June 17, 1961. Min. no flow on several occasions.

		Average Flow in Cubic Meters per Second**			
Daily:	Max. 678	June 17, 1961	Min. 0	Occasionally
Monthly:	Max. 29.8	June 1961	Min. 0.01	Occasionally
Yearly:	Max. 2.74	1961	Min. 0.08	1952

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.05	0.05	0.07	0.08	0.05	0.05	0.02	0.01	0.04	0.06	0.07	0.08
2	.04	.05	.07	.08	.04	.04	.02	.01	.04	.06	.06	.09
3	.04	.05	.07	.09	.03	.03	.02	.01	.03	.06	.06	.08
4	.04	.05	.07	.10	.04	.02	.01	.01	.03	.10	.06	.08
5	.04	.06	.06	.16	.04	.02	.01	.01	.04	.05	.07	.07
6	.04	.05	.06	.11	.04	.02	.01	.01	.03	.05	.06	.06
7	.04	.05	* .07	.10	.04	.02	.01	.01	.03	.08	.06	.07
8	.04	.06	.07	.11	.04	.02	.01	* .01	.03	.07	.05	.08
9	.04	.05	.07	.10	* .04	.02	.01	.01	.03	.04	.04	.09
10	.04	.06	.07	.08	.04	.02	.01	.01	.03	.05	.04	.10
11	* .04	.06	.07	* .08	.04	.02	.02	.01	.04	.11	.11	.09
12	.04	.05	.07	.08	.04	.02	* .02	.01	* .03	.03	.03	* .09
13	.04	.06	.07	.08	.04	.02	.02	.01	.04	.04	.07	.08
14	.05	.06	.07	.08	.04	.02	.02	.01	1.86	.04	.07	.09
15	.06	.06	.07	.08	.04	.02	.02	* .01	65.1	.04	.06	.20
16	.05	.06	.07	.07	.04	.02	.01	.01	.52	.04	.03	.11
17	.05	.07	.07	.08	.04	.02	.01	.01	.18	.04	.03	.10
18	.04	.08	.07	.07	.04	.02	.01	.01	.09	.04	.08	.10
19	.04	* .07	.06	.07	.04	.02	.01	.01	* .08	.04	.03	.11
20	.04	.06	.06	.06	.04	.02	.01	.01	.07	.04	.03	.14
21	.04	.05	.06	.06	.04	.02	.01	.01	.06	.04	.09	.12
22	.05	* .05	.07	.06	.04	.02	.01	.08	.06	.04	.06	.12
23	.05	.06	.07	.05	.03	.02	.01	.25	.06	.06	.05	.10
24	.05	.07	.07	.05	.03	.02	.01	18.9	.06	.04	.06	.08
25	.05	.08	.07	.06	.03	.02	.01	.75	.08	.04	.05	.08
26	.05	.07	.07	.05	.03	.02	.01	.14	.12	.04	.05	.10
27	.06	.07	.08	.05	.03	* .02	.01	.02	.07	.04	.06	.11
28	.07	.13	.07	.05	.02	.02	.01	.02	.06	1.77	* .07	.14
29	.06	.07	.07	.04	.02	.02	.01	.02	.07	.20	.10	.16
30	.05		.07	.04	1.43	.02	.01	9.26	.07	.09	.08	.12
31	.05		.08		.06		.01	.15		* .06		.10
Sum	1.44	1.81	2.14	2.27	2.56	0.66	0.39	29.80	69.05	3.50	1.78	3.14

Month	Current Year 1996							Period 1938-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	0.100	0.080	!17	0.07	! 3	0.04	0.05	124	509	1,420	38.9
Feb.	.215	.085	28	.56	! 6	.04	.06	156	611	7,339	40.6
Mar.	.105	.085	!22	.08	! 5	.04	.07	185	712	3,214	72.6
April	.140	.070	5	.21	27	.03	.08	196	1,578	20,483	93.3
May	.650	.060	30	12.1	! 2	.02	.08	221	1,619	11,194	111
June	.080	.050	1	.05	!20	.01	.02	57.0	2,681	77,118	53.6
July	.055	.040	! 1	.02	!22	.01	.01	33.7	1,616	20,240	32.8
Aug.	1.260	.030	24	65.5	!21	.01	.96	2,575	1,507	24,532	51.8
Sept.	3.020	.035	15	338	1	.01	2.30	5,966	3,132	61,139	45.8
Oct.	.590	.050	28	9.50	12	.01	.11	302	1,840	25,218	27.6
Nov.	.225	.035	21	.69	!13	.01	.06	154	504	3,521	25.9
Dec.	.225	.070	15	.69	2	.03	.10	271	463	1,372	26.8
Yearly	3.020	0.030		338		0.01	0.32	10,241	16,772	86,384	2,554

* Discharge measurement made on this day ! And other days ** Period 1938-1996

08-4528.00 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, gravity well and graphic water-stage recorder located on the left side of the canal under the US Highway 277 Bridge across San Felipe Creek at latitude 29°21'55" and longitude 100°53'10". The bridge is located about 1.0 creek kilometer downstream from the source of the springs and 6.3 creek kilometers upstream 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 graphic water-stage recorder located on the left bank about 91 meters downstream from the US Highway 277 Bridge at latitude 29°21'50" and longitude 100°53'10". This stream enters the Rio Grande at river kilometer 902, 0.8 river kilometer downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The zeros of the gages for the two stations are, respectively, 287.30 meters and 283.70 meters 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 23 current-meter measurements at each station respectively, during the year, and continuous records of gage heights. Computations are 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, February 1961 through 1996.

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 Cubic Meters per Second

Daily:	Max.	4.84	July 23, 1976	Min.	0.83	July 29, 1964
Monthly:	Max.	4.33	December 1976	Min.	0.97	August 1964
Yearly:	Max.	4.22	1977	Min.	1.43	1963

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.55	2.25	2.30	1.80	2.32	1.76	1.69	1.66	2.01	* 2.72	2.77	2.97
2	2.58	* 2.02	2.28	* 2.11	2.30	1.74	* 1.74	1.66	1.80	2.58	2.77	2.94
3	2.60	1.82	2.15	2.19	2.49	1.99	1.82	1.66	1.74	2.68	2.77	* 2.86
4	2.62	1.81	2.24	2.21	2.36	* 1.90	1.68	1.66	* 1.91	2.72	2.79	2.84
5	2.64	1.91	* 2.09	2.65	2.39	2.24	1.73	1.70	2.02	2.68	* 2.87	2.85
6	2.69	1.89	1.87	2.56	2.30	2.44	1.69	* 1.70	1.67	2.51	2.89	2.83
7	2.69	1.64	2.39	2.53	* 2.15	2.44	1.72	1.74	1.77	2.66	2.93	2.75
8	2.67	1.73	2.36	2.53	2.06	2.61	1.73	1.68	1.64	2.60	2.99	2.91
9	* 2.74	1.88	2.28	2.45	1.93	2.61	1.74	1.72	1.80	2.77	3.04	2.80
10	2.63	1.94	2.20	2.51	2.00	2.42	1.74	1.80	1.65	2.87	3.13	2.82
11	2.62	2.04	2.40	2.54	2.11	2.16	1.70	1.82	1.69	2.91	3.24	2.77
12	2.61	2.11	2.14	2.16	2.11	2.15	1.75	1.79	1.78	2.95	3.33	2.78
13	2.62	1.99	2.09	2.28	1.96	2.10	1.74	1.78	2.03	2.95	3.35	2.76
14	2.58	1.71	2.09	2.22	2.06	2.19	1.71	1.74	2.12	2.87	3.35	2.79
15	2.59	1.91	2.05	2.25	2.09	2.05	1.76	1.71	2.26	* 2.77	3.45	2.86
16	2.57	2.12	2.10	* 2.42	2.36	2.29	* 1.80	1.75	2.36	2.71	3.48	2.87
17	2.50	2.04	2.17	2.26	2.30	2.20	1.78	1.75	* 2.39	2.73	3.53	* 2.87
18	2.51	2.14	2.35	2.18	2.26	* 1.95	1.74	1.70	2.39	2.75	3.62	2.86
19	2.51	2.08	* 2.09	2.11	2.22	1.82	1.68	1.79	2.43	2.70	* 3.66	2.90
20	2.50	* 2.37	2.28	2.19	2.38	1.80	1.66	* 1.78	2.43	2.71	3.66	2.87
21	2.46	2.12	2.00	2.31	* 2.19	1.76	1.65	1.77	2.38	2.57	3.60	2.91
22	2.47	2.05	1.75	2.44	1.77	1.75	1.67	1.81	2.45	2.65	3.63	2.86
23	2.39	2.09	1.93	2.09	1.70	1.78	1.68	1.89	2.45	2.66	3.45	2.82
24	2.38	1.94	1.88	2.15	1.63	1.72	1.67	2.12	2.48	2.69	3.29	2.86
25	2.34	1.99	1.94	1.95	1.71	1.66	1.64	2.34	2.50	2.70	3.34	2.89
26	2.38	1.95	2.00	1.83	1.80	1.75	1.69	2.26	2.54	2.77	3.24	2.90
27	2.33	2.12	1.97	1.88	1.58	1.71	1.66	2.34	2.55	2.70	3.13	2.93
28	2.32	2.23	1.92	1.90	1.66	1.57	1.63	2.35	2.60	2.78	3.16	2.93
29	2.32	2.18	1.79	2.11	1.58	1.69	1.67	2.28	2.59	2.76	3.12	2.96
30	2.32		1.75	2.12	1.71	1.75	1.67	2.28	2.65	2.79	3.04	2.98
31	2.25		1.95		1.68		1.69	1.66		2.74		2.96
Sum	77.98	58.07	64.80	66.93	63.16	60.00	52.92	57.69	65.08	84.65	96.62	88.90

Month	Current Year 1996							Period 1961-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	φ High	Day	φ Low		Total	Average	Maximum	Minimum
Jan.			9	2.74	31	2.25	2.52	6,737	8,629	11,558	2,805
Feb.			20	2.37	7	1.64	2.00	5,017	7,638	10,129	2,614
Mar.			11	2.40	22	1.75	2.09	5,599	8,356	11,137	2,917
April			5	2.65	1	1.80	2.23	5,783	8,067	10,610	2,826
May			3	2.49	!27	1.58	2.04	5,457	8,428	11,471	3,506
June			8	2.61	28	1.57	2.00	5,184	8,163	11,162	3,060
July			3	1.82	28	1.63	1.71	4,572	8,346	11,523	2,731
Aug.			28	2.35	1	1.66	1.86	4,984	8,316	11,751	2,608
Sept.			30	2.65	8	1.64	2.17	5,623	8,151	11,038	3,152
Oct.			!12	2.95	6	2.51	2.73	7,314	8,625	11,408	3,094
Nov.			!19	3.66	! 1	2.77	3.22	8,348	8,324	11,058	2,941
Dec.			30	2.98	7	2.75	2.87	7,681	8,655	11,633	2,948
Yearly				3.66		1.57	2.29	72,299	99,698	133,083	45,119

* Discharge measurement made on this day φ Mean daily ! And other days

08-4530.00 SAN FELIPE CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: Bubbler gage, and water-stage recorders (graphic and digital) located on the left bank at latitude 29°19'50", longitude 100°53'20", immediately upstream from the Silos Farm road bridge, 1.8 creek kilometers upstream from its confluence with the Rio Grande, and about 3.2 kilometers south-southeast of Del Rio, Val Verde County, Texas. This stream enters the Rio Grande at river kilometer 902, 0.8 river kilometer downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The zero of the gage is 267.44 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 30 current-meter measurements during the year, 24 by the United States Section and 6 by the Mexican Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: September 1931 through 1996.

REMARKS: The flow of this spring-fed creek is greatly modified by municipal and irrigation diversions upstream from the station. Backwater from the Rio Grande reaches this station when the Rio Grande at Del Rio reaches a stage of 4.6 meters, or a flow of about 1,700 CMS. On June 28, 1954 combined creek flow and backwater from the Rio Grande reached a stage of 7.47 meters, the highest of record, at this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,270 CMS on June 14, 1935, with a gage height of 7.07 meters. Min. 0.01 CMS on July 20, 1953.

Average Flow in Cubic Meters per Second

Daily:	Max.	459	June 14, 1935	Min.	0.04	July 21, 1953
Monthly:	Max.	22.8	June 1935	Min.	0.13	July 1953
Yearly:	Max.	3.85	1935	Min.	0.71	1953

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.64	2.05	1.50	1.30	1.34	0.71	0.35	0.24	1.15	* 1.93	2.25	2.38
2	1.92	* 2.08	1.43	* 1.40	1.30	.67	* .30	.25	1.14	1.73	2.27	2.35
3	1.90	2.10	1.45	1.45	1.22	.67	.31	.27	1.23	1.59	2.30	* 2.37
4	1.88	2.09	1.71	1.42	1.12	* .67	.34	.32	* 1.41	1.65	2.30	2.45
5	1.95	2.11	* 1.46	1.85	1.11	.71	.34	.27	1.20	1.68	* 2.30	2.41
6	1.93	2.07	1.09	1.73	1.09	.70	.36	* .35	1.01	1.59	2.35	2.40
7	1.90	1.89	1.22	1.72	* .94	.66	.37	.25	1.02	1.56	2.44	2.43
8	1.88	1.91	1.22	1.55	.80	.64	.34	.26	1.07	1.56	2.41	2.46
9	* 1.87	2.01	1.23	1.54	.73	.59	.32	.28	1.07	1.61	2.40	2.47
10	1.93	2.04	1.19	1.43	.68	.56	.39	.31	1.00	1.77	2.38	2.31
11	1.90	2.11	1.23	1.51	.68	.52	.37	.31	1.07	1.81	2.22	2.01
12	1.90	2.06	1.13	1.24	.67	.49	.41	.32	1.11	1.74	2.09	1.85
13	1.90	1.89	1.17	1.10	.62	.48	.38	.32	1.33	1.76	1.91	1.76
14	1.90	1.77	* 1.15	1.09	.64	.46	.39	.32	2.76	1.77	* 1.74	1.78
15	1.87	1.76	1.12	1.18	.71	.46	.37	.40	9.28	* 1.74	1.67	2.07
16	1.93	1.89	1.17	* .95	* .81	.47	* .31	.46	2.30	1.78	1.66	1.88
17	1.91	1.86	1.17	.71	.77	.44	.30	.46	* 2.09	1.76	1.69	* 1.95
18	1.95	1.85	1.22	.48	.81	* .37	.29	.46	2.19	1.90	1.67	2.15
19	1.97	1.51	* 1.41	.57	.78	.37	.30	.44	2.20	1.98	* 1.76	2.21
20	1.93	* 1.44	1.75	.57	.67	.35	.30	* .42	2.18	1.98	1.86	2.36
21	1.90	1.29	1.36	.61	.62	.35	.29	.42	2.17	1.82	1.80	2.37
22	1.96	1.29	1.12	.79	.56	.38	.28	.43	2.23	1.79	1.63	2.37
23	1.94	1.29	1.17	.72	.55	.40	.23	.52	2.17	1.84	1.69	2.37
24	1.93	1.25	1.16	.69	.54	* .37	.21	.85	2.30	1.77	1.89	2.30
25	1.94	1.35	1.19	.49	.60	.34	.22	.67	2.45	1.88	1.78	2.36
26	1.95	1.25	1.35	.40	.60	.35	.25	.69	2.39	2.01	1.80	2.37
27	1.99	1.30	1.31	.48	.58	.38	.27	.71	2.32	2.11	1.88	2.38
28	1.97	1.55	1.17	.56	.66	.39	.29	.74	2.37	3.55	1.98	2.41
29	1.96	1.48	1.24	* .96	.67	.40	.27	.90	2.33	2.07	2.14	2.46
30	1.98		1.52	1.20	.98	.40	.24	12.1	2.07	2.13	2.23	2.51
31	2.03		1.38		* .74		.26	1.08		2.21		2.44
Sum	59.51	50.54	39.99	31.69	24.59	14.75	9.65	25.82	60.61	58.07	60.49	70.39

Current Year 1996 | Period 1932-1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High Day	High	Low Day	Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0.280	0.160	! 2	2.21	1	1.16	1.92	5,142	6,715	10,985	1,152
Feb.	.355	.135	28	2.84	26	.88	1.74	4,367	5,617	10,642	601
Mar.	.280	.115	20	2.23	24	.78	1.29	3,455	5,413	10,304	850
April	.270	.010	5	2.11	!26	.18	1.06	2,738	5,658	12,836	698
May	1.535	.850	30	4.24	!22	.51	.79	2,125	6,465	21,697	912
June	1.240	.865	6	.84	!21	.32	.49	1,274	6,576	59,059	370
July	1.180	.660	11	.45	24	.16	.31	834	5,614	27,232	352
Aug.	3.520	.680	30	46.9	7	.18	.83	2,231	5,111	9,355	432
Sept.	3.450	1.195	15	51.6	8	.82	2.02	5,237	6,579	35,373	1,076
Oct.	2.005	1.215	28	11.3	7	1.42	1.87	5,017	6,736	17,551	1,233
Nov.	1.390	1.230	24	3.06	!21	1.45	2.02	5,226	5,902	10,567	649
Dec.	1.460	1.240	15	4.05	14	1.61	2.27	6,082	6,134	10,660	612
Yearly	3.520	0.010		51.6		0.16	1.38	43,728	72,520	121,046	22,441

* Discharge measurement made on this day ! And other days

08-4539.00 DIVERSIONS FROM THE RIO GRANDE MAVERICK CANAL AT MILE 13 NEAR QUEMADO, TEXAS

DESCRIPTION: Foot bridge for making current-meter measurements, and water-stage recorder (graphic), located on the left bank of a gunnite-lined section of the canal at latitude 29°03'00", longitude 100°39'40", 0.8 canal kilometer downstream from the Tequesquite Creek Siphon, 5.6 canal kilometers upstream from the Las Moras Creek Siphon, about 12.1 kilometers north-northwest of Quemado, Maverick County, Texas and 20.6 kilometers downstream from the canal intake. The canal intake is at river kilometer 875, 28.0 river kilometers downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The elevation of the zero of the gage has not been determined.

RECORDS: Based on 45 current-meter measurements during the year and a continuous record of gage heights. 38 measurements were made by the U.S. Section, 1 measurement was made by the Mexican Section of the Commission, and 6 measurements were made by the Maverick County Irrigation District. 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 1996.

REMARKS: At canal kilometer 51.2 a portion of the diverted water returns to the river through the Maverick Power Plant, and the remainder enters the Maverick Canal Extension. In 1996, 5,205 hectares of land were irrigated between this station and the power plant, and 10,387 hectares were irrigated from the extension, making a total of 15,592 hectares. A total of 1,019,117 TCM returned to the Rio Grande at the power plant and through irrigation system returns published in the following pages of this bulletin.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 52.4 CMS on February 15, 1989. Min. no flow several days in June, July, and November 1954; and October 1978.

Average Flow in Cubic Meters per Second**

Daily:	Max.	50.4	Aug. 19, 1990	Min.	0	Oct. 2 & 3,	1978
Monthly:	Max.	47.5	April 1990	Min.	8.35	Feb.	1977
Yearly:	Max.	42.2	1980	Min.	17.9		1972

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	39.1	37.1	35.2	32.5	43.7	41.1	34.3	32.7	34.5	* 33.3	35.5	37.0
2	39.0	37.3	34.9	* 32.9	43.8	42.7	* 31.6	32.6	34.4	32.1	36.0	37.9
3	38.4	38.6	34.6	34.3	43.9	42.7	31.6	32.7	34.2	33.5	35.7	36.7
4	38.3	38.3	34.3	34.0	43.8	* 42.3	31.5	32.6	* 34.6	33.0	36.2	* 34.4
5	38.5	38.7	* 34.3	35.0	43.9	42.4	32.0	32.7	34.3	33.6	35.5	34.2
6	37.7	* 35.7	35.4	33.6	44.2	43.0	31.8	32.7	33.5	33.2	35.5	25.8
7	37.5	34.9	35.2	35.3	* 44.5	43.1	29.4	* 33.0	33.8	33.2	* 35.8	25.6
8	38.7	34.5	34.0	35.9	44.4	42.8	31.7	33.3	33.7	32.9	35.4	25.6
9	37.9	34.8	34.5	35.4	44.1	42.8	32.1	32.8	33.6	34.3	35.7	25.1
10	37.0	35.0	33.8	34.7	44.1	42.7	31.8	33.3	33.1	34.6	36.4	24.9
11	* 37.6	35.0	* 34.4	34.0	41.0	42.7	31.4	33.2	33.1	32.8	36.0	24.0
12	35.5	34.4	33.9	33.8	40.5	43.2	31.2	32.8	33.1	33.4	36.3	24.8
13	35.2	34.0	32.8	33.5	39.9	43.2	32.7	33.0	32.2	33.2	35.7	25.3
14	36.2	34.0	33.0	33.7	39.5	42.9	32.7	31.8	33.6	33.5	36.2	25.4
15	36.4	35.4	* 32.8	33.4	39.4	43.0	33.1	33.5	36.6	32.1	* 38.0	25.4
16	36.2	34.8	33.4	34.5	39.6	43.1	32.6	33.5	39.8	32.9	37.2	25.3
17	36.0	34.4	33.2	34.4	* 40.1	42.7	32.6	33.3	35.8	33.6	35.0	25.1
18	36.4	33.7	33.4	34.7	43.5	42.5	32.6	33.4	* 34.4	* 34.2	34.3	25.1
19	36.1	34.3	33.2	* 33.8	43.7	* 42.5	32.7	33.1	34.6	34.0	33.2	27.3
20	36.3	35.0	33.5	34.7	43.5	41.8	32.8	32.6	34.4	33.5	32.7	* 31.2
21	36.5	34.7	32.8	34.4	43.3	42.0	33.0	32.7	34.4	33.7	34.8	31.6
22	36.1	* 34.5	33.8	41.2	43.4	42.4	* 32.6	32.7	34.6	33.8	* 35.5	30.4
23	* 35.8	34.8	34.4	43.2	43.6	42.9	32.2	* 34.3	34.5	33.7	35.7	30.0
24	36.2	34.5	33.4	43.1	43.5	42.7	32.1	35.2	33.9	33.9	35.6	30.2
25	36.2	34.7	33.9	42.9	43.7	41.8	32.3	39.0	34.0	34.0	35.2	30.0
26	36.6	34.6	34.8	43.2	43.7	41.9	32.7	36.1	34.2	33.1	34.7	30.0
27	37.0	33.7	35.8	43.0	43.7	41.1	32.7	35.0	34.2	33.4	35.6	30.2
28	37.7	35.4	33.7	43.3	43.5	41.6	32.4	34.9	34.0	37.9	35.8	30.3
29	37.3	36.0	33.3	43.6	43.3	41.9	32.8	34.6	33.4	38.7	35.9	30.2
30	36.9		34.7	43.4	42.3	41.4	32.4	38.4	33.7	* 41.1	36.2	30.0
31	37.1		36.5		41.9		32.3	39.5		38.9		29.7
Sum	1,147.4	1,022.8	1,056.9	1,105.4	1,327.0	1,272.9	999.7	1,051.0	1,028.2	1,059.1	1,067.3	898.7

Month	Current Year 1996: Extreme Gage Meters High	Low	Extreme-Cubic Meters per Second Day	High	Day	Low	Average	Period 1968-1996: Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	2.945	2.685	1	39.7	12	33.4	37.0	99,135	88,659	120,225	25,730
Feb.	2.990	2.655	4	39.5	!18	33.0	35.3	88,370	87,141	113,996	20,233
Mar.	2.865	2.480	!27	38.9	28	30.4	34.1	91,316	97,744	122,230	34,141
April	3.040	2.410	29	45.0	1	29.1	36.8	95,507	98,683	123,587	50,229
May	3.005	2.680	8	45.8	30	37.9	42.8	114,653	103,440	126,490	49,910
June	3.050	2.665	12	44.7	30	35.0	42.4	109,979	99,831	116,310	38,497
July	2.740	2.155	21	38.0	8	24.6	32.2	86,374	100,005	120,518	44,129
Aug.	2.860	2.180	31	41.9	1	25.9	33.9	90,806	100,597	119,784	45,279
Sept.	2.865	2.240	16	41.6	12	27.8	34.3	88,836	96,722	117,876	40,659
Oct.	2.885	2.230	!29	42.7	27	26.3	34.2	91,506	96,328	121,971	27,426
Nov.	2.850	2.105	16	41.7	19	23.7	35.6	92,215	87,983	115,209	27,737
Dec.	2.830	2.050	21	41.1	11	22.9	29.0	77,648	87,593	120,494	29,007
Yearly	3.050	2.050		45.8		22.9	35.6	1,126,345	1,144,726	1,337,047	565,712

* Discharge measurement made on this day ! And other days ** Period 1968-1996

08-4550.00 PINTO CREEK NEAR DEL RIO, TEXAS

DESCRIPTION: 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", 2.6 creek kilometers upstream from its confluence with the Rio Grande, and about 30.6 kilometers southeast of Del Rio, Val Verde County, Texas. This stream enters the Rio Grande at river kilometer 864, 9.1 river kilometers downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam. The zero of the gage is 248.01 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 16 current-meter measurements during the year, 12 by the United States Section and 4 by the Mexican Section of the Commission, and a continuous record of gage heights. Records available: September 1955 through 1996 at this station, and November 22, 1928 through August 1955 at a site 6.3 kilometers upstream.

REMARKS: Flow of this spring-fed creek is modified by small irrigation diversions upstream from the station. When flow in the Rio Grande exceeds about 2,270 CMS at the mouth of this creek, backwater may reach the station. At this station during the Rio Grande flood of June 1954, backwater reached a gage height of 8.78 meters, or an elevation of 256.79 meters above mean sea level.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 5,270 CMS on June 24, 1948 with a gage height of 9.75 meters. Min. frequently no flow.

Average Flow in Cubic Meters per Second

Daily:	Max.	799	June 24, 1948	Min.	0	Frequently
Monthly:	Max.	27.0	June 1948	Min.	0	Frequently
Yearly:	Max.	2.97	1932	Min.	0.04	1980

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.08	0.06	0.06	0.07	0.04	1.03	0	0	0.05	* 0.02	0.27	0.34
2	.08	* .06	.06	* .07	.03	.38	0	0	.02	.02	.27	.34
3	.08	.06	* .06	.07	.03	.23	0	0	.02	.02	.27	.31
4	.08	.06	.06	.07	.03	* .12	0	0	* .02	.02	.27	* .31
5	.08	.06	.06	.07	.03	.09	0	0	.02	.02	.27	.31
6	.08	.06	.06	.08	.02	.09	0	0	.01	.03	* .27	.31
7	.08	.06	.07	.09	* .02	.09	0	0	.01	.02	.24	.34
8	.08	.07	.06	.09	.02	.09	0	0	.02	.03	.21	.34
9	.08	.08	.05	.09	.02	.09	0	0	.01	.03	.19	.31
10	.09	.08	.05	.07	.02	.08	0	0	.02	.03	.17	.31
11	* .09	.06	.06	.07	.02	.08	0	0	.01	.02	.17	.33
12	* .08	.06	.07	.07	.02	.08	0	0	.01	.02	.17	.34
13	.08	.06	.07	.05	.01	.07	0	0	.01	.02	.18	.34
14	.09	.06	* .07	.05	.01	.06	0	0	.17	.02	* .18	.34
15	.10	.06	.07	.05	.01	.06	0	0	22.1	.01	.18	.40
16	.10	.06	.06	.05	.01	.05	0	0	1.19	.01	.12	.38
17	.09	.06	.06	.06	.01	.04	0	0	.32	.01	.06	.37
18	.09	.06	.05	.06	.01	.04	0	0	.12	.01	.08	.38
19	.08	.05	.05	.06	.01	.03	0	0	.07	.01	.08	.38
20	.07	.05	.05	.05	.01	.02	0	0	.04	.02	.06	.39
21	.07	.06	.05	.05	.01	.02	0	0	.04	.02	.06	.40
22	.06	.06	.05	.05	.01	.02	0	0	.03	.01	.05	.41
23	.07	.06	.06	.04	.01	.01	0	0	.02	.01	.06	.42
24	.08	.05	.06	.04	.01	.01	0	0	.02	.01	.16	.43
25	.08	.05	.06	.04	.01	.01	0	0	.04	.01	.15	.44
26	.07	.05	.06	.04	.01	.01	0	0	.03	.01	.24	.45
27	.07	.05	.06	.04	.01	.01	0	0	.02	.01	.29	.46
28	.07	.06	.06	.04	.01	0	0	0	.02	123	.30	.46
29	.07	.07	.07	* .04	.01	0	0	0	.02	14.5	.33	.47
30	.07		.08	.04	5.31	0	0	1.29	.02	2.19	.37	.48
31	.06		.08		3.87		0	.20		.27		.49
Sum	2.45	1.74	1.89	1.76	9.65	2.91	0.00	1.49	24.50	140.43	5.72	11.78

Month	Current Year 1996							Period 1929-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	High Day	High	Low Day	Low		Total	Average	Maximum	Minimum
Jan.	0.255	0.245	!14	0.10	!22	0.06	0.08	212	680	2,784	0
Feb.	.275	.250	! 8	.08	19	.04	.06	150	714	7,106	0
Mar.	.275	.230	31	.09	18	.05	.06	163	645	3,085	0
April	.250	.215	! 6	.09	29	.03	.06	152	1,453	33,464	0
May	1.510	.140	30	38.5	!12	0	.31	834	2,119	36,248	0
June	.550	.140	1	1.87	!27	0	.10	251	4,463	69,981	0
July	.140	.140	! 1	0	! 1	0	0	0	1,657	37,030	0
Aug.	.910	.140	30	7.44	! 1	0	.05	129	1,677	60,070	0
Sept.	1.840	.170	15	68.9	!13	0	.82	2,117	2,352	60,397	0
Oct.	2.900	.180	28	264	!14	0	4.53	12,133	1,358	12,133	0
Nov.	.405	.215	30	.82	!21	.05	.19	494	593	3,196	0
Dec.	.340	.295	31	.50	! 3	.31	.38	1,018	695	3,041	0
Yearly	2.900	0.140		264		0	0.56	17,653	18,406	94,053	1,178

* Discharge measurement made on this day ! And other days

08-4555.00 RIO SAN DIEGO NEAR JIMENEZ, COAHUILA

DESCRIPTION: Cableway, masonry and concrete Cipolletti weir of 22 CMS 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°47'35", about 6.0 kilometers west of Jimenez, Coahuila, and 7.0 river kilometers upstream from its 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 kilometer 856, 16.8 river kilometers downstream from Maverick County Water Control and Improvement District No. 1 diversion dam and 46.4 river kilometers downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The zero of the gage is 253.51 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 59 current meter measurements, the weir discharge table and a continuous record of gage heights. Records available: October 1932 through 1996.

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 0.80 meters; in November 1961 an additional 0.06 meters, and the capacity of the weir was increased from 20 CMS to 22 CMS.

EXTREME FLOWS FROM RECORDS:** Momentary: Max. 2,320 CMS on June 17, 1961 with a gage height of 6.31 meters. Min. no flow occurred on several occasions.

Average Flow in Cubic Meters per Second**

Daily:	Max.	1,040	July 18, 1975	Min.	0	Occasionally
Monthly:	Max.	67.5	Oct. 1932	Min.	0.07	July 1996
Yearly:	Max.	17.6	1976	Min.	0.68	1956

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.83	1.05	0.37	0.23	0.18	0.11	0.06	0.06	5.06	4.22	2.68	1.75
2	.85	1.05	.41	* .26	.19	.11	* .06	.06	5.03	4.00	2.68	1.82
3	* .88	1.05	.44	.28	.19	.10	.06	.06	* 5.03	* 3.85	2.57	* 1.38
4	.85	1.05	.47	.29	.20	* .11	.06	.06	4.94	3.85	2.46	1.34
5	.81	1.06	* .50	.31	.20	.11	.06	.06	4.80	4.10	* 2.19	1.31
6	.78	* 1.06	.47	.33	.21	.12	.05	* .06	4.80	4.25	2.03	1.27
7	.75	.93	.44	.35	* .21	.12	.05	.06	4.57	4.00	1.90	1.24
8	.71	.80	.41	.36	.20	.13	.05	.07	4.57	* 3.51	1.82	1.20
9	* .68	.67	.37	* .38	.19	.13	* .05	.07	4.40	3.36	1.82	1.17
10	.74	.54	.34	.37	.18	.14	.05	.08	* 4.10	3.13	1.64	* 1.13
11	.80	.41	.31	.35	.16	* .14	.06	.08	4.13	3.04	1.57	1.12
12	.86	* .28	* .28	.34	.15	.14	.06	.09	4.46	2.76	* 1.45	1.12
13	.92	* .28	.27	.32	.14	.14	.07	* .09	4.98	2.68	1.45	1.11
14	.98	.28	.27	.31	* .13	.14	.07	.09	7.92	2.68	1.38	1.10
15	1.04	.28	.26	.29	.13	.14	.08	.09	35.3	* 2.68	1.28	1.09
16	* 1.10	.28	.26	* .28	.13	.14	.08	.09	12.0	2.60	1.28	1.09
17	1.09	.28	.25	.27	.13	.14	.08	.08	* 9.80	2.46	1.30	* 1.08
18	1.08	.28	.25	.26	.12	* .14	.08	.08	8.70	2.38	1.64	1.04
19	1.07	.28	* .24	.25	.12	.13	.08	.08	7.89	2.11	* 1.68	1.01
20	1.05	* .28	.23	.24	.12	.12	.08	* .08	7.40	2.27	1.23	.97
21	1.04	.28	.23	.23	* .12	.11	.08	.08	6.97	2.68	.99	.93
22	1.03	.28	.22	.22	.12	.09	.08	.08	6.57	* 2.68	.80	.89
23	* 1.02	.28	.22	* .21	.12	.08	.08	.08	6.16	2.68	.80	.86
24	1.02	.28	.21	.21	.12	.07	.08	.08	* 5.90	3.13	.97	* .82
25	1.03	.28	.21	.20	.12	* .06	.07	.79	6.35	3.13	.86	.85
26	1.03	.28	* .20	.20	.12	.06	.07	1.59	5.52	2.68	* .80	.88
27	1.03	.28	.21	.19	.12	.06	.07	6.94	5.16	1.92	.80	.91
28	1.03	.31	.21	.19	* .12	* .06	.07	7.53	5.00	9.99	.80	.93
29	1.04	.34	.22	.18	.11	.06	.06	7.06	4.57	* 5.17	.95	.96
30	* 1.04		.22	* .18	.11	.06	* .06	18.2	4.48	2.79	1.24	.99
31	1.04		.23		.11		.06	6.17		2.68		* 1.02
Sum	29.22	14.80	9.22	8.08	4.57	3.26	2.07	50.09	206.56	103.46	45.06	34.38

Current Year 1996 | Period 1932-1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second Day	High	Day	Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0.055	0.040	16	1.10	9	0.68	0.94	2,525	10,427	44,937	2,300
Feb.	.049	.033	! 5	1.06	!20	.28	.51	1,279	8,265	31,769	1,279
Mar.	.045	.030	5	.50	26	.20	.30	797	7,294	33,352	797
April	.040	.015	9	.38	!29	.18	.27	698	8,277	49,678	698
May	.020	.015	! 6	.21	!29	.11	.15	395	14,117	148,269	395
June	.020	.015	!10	.14	!25	.06	.11	282	14,204	133,550	282
July	.015	.010	!15	.08	! 6	.05	.07	179	16,939	167,938	179
Aug.	.730	.010	30	52.7	! 1	.06	1.62	4,328	14,081	112,553	392
Sept.	1.000	.130	15	90.0	! 9	4.10	6.89	17,847	20,931	116,770	843
Oct.	.395	.080	28	20.0	27	1.82	3.34	8,939	25,407	180,878	1,011
Nov.	.100	.050	! 1	2.68	!21	.80	1.50	3,893	17,352	84,231	990
Dec.	.080	.045	! 1	1.82	23	.82	1.11	2,970	12,582	55,901	1,389
Yearly	1.000	0.010		90.0		0.05	1.40	44,132	169,876	557,477	21,508

* Discharge measurement made on this day ! And other days ** Period 1932-1996

08-4557.00 RIO GRANDE NEAR JIMENEZ, COAHUILA AND QUEMADO, TEXAS

DESCRIPTION: Cableway, control weir of 36 CMS capacity, gravity well, and water-stage recorder located on the right bank at latitude 29°03'00", longitude 100°39'50", and river kilometer 853; 2.4 kilometers south-southeast of Jimenez, Coahuila, 3.0 river kilometers downstream from Rio San Diego, about 12.1 kilometers north-northwest of Quemado, Maverick County, Texas, 19.8 river kilometers downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam, and 49.4 river kilometers downstream from the international highway bridge between Del Rio, Texas and Cd. Acuna, Coahuila. The zero of the gage is 234.39 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 14 current-meter measurements during the year, 12 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 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 current-meter measurements. Records available 1968 through 1996. Records, excluding some high flow periods, are also available from 1956 through May 1965 for a station 14.0 river kilometers upstream. Records prior to 1976 were published under title "Rio Grande below Maverick Dam near Quemado, Texas."

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 21.5 river kilometers upstream largely control the flow at this station. The weir was placed in operation June 1, 1967, at which time the zero of the gage was set 1.00 meter higher.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 2,260 CMS on July 18, 1975 with a gage height of 7.68 meters. Min. 0.05 CMS on September 21, 1995, with a gage height of 0.055 meters.

Average Flow in Cubic Meters per Second

Daily:	Max.	1,900	July 18, 1975	Min.	0.08	April 25 and 26, 1983
Monthly:	Max.	602	Sept. 1974	Min.	0.80	June 1969
Yearly:	Max.	124	1974	Min.	8.11	1968

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.59	6.01	1.48	2.53	40.0	36.4	5.70	2.03	12.2	8.48	8.80	6.12
2	8.73	11.2	1.22	1.03	39.4	35.4	3.86	2.04	10.1	9.87	8.24	8.23
3	9.03	15.7	1.00	.94	40.9	34.3	3.60	2.00	8.79	7.44	8.08	6.14
4	7.86	16.1	.94	.94	38.9	34.0	2.87	1.97	8.86	7.68	* 9.92	8.42
5	8.65	14.8	.94	1.22	37.8	36.6	3.72	2.88	8.19	8.86	8.03	6.96
6	8.20	4.49	.94	3.92	39.1	39.2	2.46	4.04	8.16	8.16	8.19	17.1
7	9.42	2.48	.77	1.69	42.4	36.8	6.05	3.34	8.32	7.85	7.76	17.9
8	* 6.85	1.71	.77	1.31	41.2	37.0	* 2.52	4.06	7.84	8.42	7.06	17.6
9	6.54	1.71	.77	1.12	38.9	36.2	2.76	4.28	* 8.12	6.40	8.97	* 17.2
10	10.5	1.71	.77	1.03	39.5	* 39.0	2.08	4.06	7.73	6.26	6.90	15.0
11	9.06	1.48	* .86	.94	41.2	37.2	3.26	3.70	7.99	6.08	7.65	14.9
12	10.2	* 1.34	.94	.94	41.8	37.6	4.11	* 4.38	8.08	6.52	6.25	15.0
13	10.5	1.42	.94	.86	42.1	39.0	2.66	4.85	10.9	6.47	6.33	13.6
14	6.77	1.50	.94	.73	40.2	38.6	2.12	6.88	11.8	7.02	10.2	13.8
15	5.81	1.46	.94	* .62	41.4	38.6	2.10	4.01	141	4.60	7.08	16.2
16	5.43	1.31	.94	.62	42.8	38.7	1.70	4.62	27.9	5.94	8.98	15.6
17	5.40	1.31	.94	.62	42.2	39.0	1.58	3.80	16.8	8.02	6.62	14.2
18	6.44	1.31	.86	.77	37.5	39.2	1.44	3.91	13.9	7.88	7.06	14.5
19	5.56	1.31	.82	* .77	38.1	38.2	1.46	3.28	13.8	7.69	6.00	36.5
20	4.97	1.31	.84	.77	38.3	39.5	1.62	3.58	12.6	8.35	8.77	* 33.2
21	4.80	1.31	.86	.77	37.3	38.8	2.10	3.32	12.1	7.93	5.47	33.6
22	* 5.17	1.31	.94	36.9	37.4	39.6	1.80	3.46	12.0	7.88	6.26	12.6
23	5.55	1.31	.94	37.6	39.0	39.1	1.58	5.84	10.9	7.96	5.08	12.0
24	4.47	1.31	.94	37.0	37.7	38.4	1.32	8.64	10.8	7.78	4.88	11.1
25	4.03	1.31	.94	37.4	38.8	40.4	1.90	15.6	14.2	7.57	3.98	10.5
26	4.14	* .96	.94	39.9	37.4	40.2	2.27	8.09	10.8	7.24	5.53	10.9
27	4.62	.77	.94	41.2	37.4	41.8	1.82	11.4	10.1	6.53	5.62	11.4
28	7.95	.93	3.65	43.1	37.9	40.4	1.46	13.4	9.25	393	6.22	12.0
29	5.13	1.47	1.54	42.1	36.4	40.7	1.67	13.2	9.51	92.3	6.38	11.6
30	5.15		1.22	39.8	45.8	41.4	1.89	66.0	9.26	13.6	6.18	10.7
31	5.07		.94		48.4		1.70	21.6		9.58		10.8
Sum	210.59	100.34	32.47	379.14	1,237.2	1,151.3	77.18	244.26	462.00	709.36	212.49	455.37

Month	Current Year 1996							Period 1968-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second					Volume-Thousand Cubic Meters			
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.280	0.075	13	16.4	26	2.61	6.79	18,195	63,175	216,588	6,458
Feb.	.445	.035	4	32.4	!26	.77	3.46	8,669	100,744	495,046	7,139
Mar.	.060	.035	1	1.71	! 7	.77	1.05	2,805	120,678	486,605	2,805
April	.705	.030	22	71.6	!14	.62	12.6	32,758	135,982	502,502	6,204
May	.795	.170	31	94.5	29	7.89	39.9	106,894	210,848	608,342	8,109
June	.680	.150	30	66.0	!28	6.56	38.4	99,472	147,297	489,197	2,061
July	.335	.030	7	21.4	16	.62	2.49	6,668	125,032	384,578	2,864
Aug.	1.170	.030	30	198	! 1	.62	7.88	21,104	134,950	876,848	6,347
Sept.	1.660	.135	15	319	! 5	5.64	15.4	39,917	190,574	1,559,261	16,872
Oct.	2.950	.100	28	670	16	3.62	22.9	61,289	184,638	1,025,395	13,827
Nov.	.350	.090	14	22.8	!23	3.10	7.08	18,359	82,297	615,686	10,933
Dec.	.705	.075	19	71.6	!25	2.37	14.7	39,344	58,686	223,396	9,234
Yearly	2.950	0.030		670		0.62	14.4	455,474	1,554,901	3,909,913	256,561

* Discharge measurement made on this day ! And other days

08-4571.00 RIO SAN RODRIGO AT EL MORAL, COAHUILA

DESCRIPTION: Bubbler gage and water-stage recorder located on the left bank at El Moral, Coahuila, latitude 28°53'20", longitude 100°37'55", 1.6 river kilometers from the confluence with the Rio Grande, and about 25 kilometers northwest of Piedras Negras, Coahuila. This stream enters the Rio Grande at river kilometer 834, 39.3 river kilometers downstream from the Maverick County Water Control and Improvement District No. 1 diversion dam and 35.2 river kilometers upstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila. The zero of the gage is 228.89 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 1 current-meter measurement during the year, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1962 through 1996.

REMARKS: Prior to 1976 this station was published under the heading "Rio San Rodrigo near Mouth at El Moral, Coahuila." The flow of this spring-fed stream is modified by diversions above this station. La Fragua Dam, located about 19 river kilometers upstream from this station, began operation in 1991. The concrete control weir, placed in operation on November 25, 1969, was destroyed by the flood of July 12, 1976, and the station was relocated on October 15, 1976.

EXTREME FLOWS FROM RECORDS:** Momentary: Max. 3,970 CMS on July 18, 1975, with a gage height of 5.62 meters. Min. frequently no flow.

Average Flow in Cubic Meters per Second

Daily:	Max.	1,260	July 18, 1975	Min.	0	Frequently
Monthly:	Max.	209	July 1976	Min.	0	Frequently
Yearly:	Max.	23.7	1976	Min.	0.07	1996

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	0	0.27	0	0	0
2	0	0	0	0	0	0	0	0	.01	0	0	0
3	0	0	0	0	0	.28	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	6.62	0	0	0
16	0	0	0	0	0	0	0	0	.28	0	0	0
17	0	0	0	0	0	0	0	0	.01	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	2.06	0	0
29	0	0	0	0	0	0	0	0	0	* 1.90	0	0
30	0		0	0	0	0	0	12.3	0	.98	0	0
31	0		0		0		0	1.20		.58		0
Sum	0	0	0	0	0	0.28	0	13.50	7.19	5.52	0	0

Month	Current Year 1996								Period 1962-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second					Volume-Thousand Cubic Meters				
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0	0	! 1	0	! 1	0	0	0	4,861	20,066	0
Feb.	0	0	! 1	0	! 1	0	0	0	3,310	12,251	0
Mar.	0	0	! 1	0	! 1	0	0	0	2,559	9,653	0
April	0	0	! 1	0	! 1	0	0	0	5,340	46,663	0
May	0	0	! 1	0	! 1	0	0	0	4,932	36,113	0
June	.495	0	3	2.04	! 1	0	.01	24.2	7,810	127,224	0
July	0	0	! 1	0	! 1	0	0	0	33,529	560,796	0
Aug.	1.170	0	30	34.0	! 1	0	.44	1,166	12,234	109,801	0
Sept.	1.155	0	15	32.6	! 1	0	.24	621	19,605	65,176	0
Oct.	.620	0	28	4.47	! 1	0	.18	477	16,494	80,464	0
Nov.	0	0	! 1	0	! 1	0	0	0	10,799	103,632	0
Dec.	0	0	! 1	0	! 1	0	0	0	6,739	25,993	0
Yearly	1.170	0		34.0		0	0.07	2,288	128,212	748,140	2,288

* Discharge measurement made on this day ! And other days ** Period 1961-1996

08-4575.00 RETURN FLOW TO THE RIO GRANDE FROM THE MAVERICK CANAL 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 14.5 kilometers north-northwest of Eagle Pass, Maverick County, Texas, and about 51.8 canal kilometers downstream from the point of diversion. The return enters the Rio Grande at river kilometer 816.

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 34 current-meter measurements made during the year. 25 measurements were made by the U.S. Section of the Commission and 9 measurements were made by the Maverick County Irrigation District. Records available: 1949 through 1996.

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 Cubic Meters per Second**

Daily:	Max.	48.1	April 28, 1990	Min.	0	Occasionally	
Monthly:	Max.	44.4	April 1990	Min.	1.20	Dec.	1971
Yearly:	Max.	36.7	1990	Min.	6.57		1972

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	36.3	33.3	31.5	28.5	38.8	37.6	30.7	* 22.5	30.5	29.1	33.9	32.5
2	35.8	33.9	31.3	25.6	* 38.4	39.2	* 25.8	23.2	29.8	28.9	33.5	34.2
3	35.7	35.5	30.8	28.7	38.3	40.5	25.8	24.2	29.6	* 29.2	33.7	33.3
4	35.1	36.0	30.1	* 27.9	38.6	40.4	25.2	25.7	29.3	29.3	33.5	31.8
5	34.7	35.6	29.4	30.5	38.1	39.5	25.9	26.5	30.0	30.1	32.9	* 31.3
6	34.1	* 35.0	29.2	30.3	38.6	38.6	25.4	25.4	* 29.4	30.6	32.3	25.9
7	33.6	33.0	28.2	30.7	39.1	37.0	24.0	25.7	29.3	30.3	* 32.6	23.6
8	34.9	33.0	* 28.0	32.9	39.7	37.2	23.6	* 24.9	29.3	30.0	32.7	24.1
9	* 33.7	32.7	28.8	32.9	39.3	37.7	23.4	24.7	28.9	30.7	33.3	23.7
10	32.1	33.0	29.0	32.5	39.0	* 37.7	25.3	26.5	29.3	31.1	33.9	23.5
11	31.1	32.7	28.7	31.6	37.0	36.8	25.3	26.7	29.1	29.6	33.2	22.9
12	31.2	32.0	29.2	31.2	35.3	37.0	25.5	25.7	28.7	30.1	32.8	* 23.2
13	32.1	30.8	28.9	30.0	* 35.8	37.9	27.1	25.8	28.8	30.0	31.9	23.3
14	32.7	30.9	28.8	29.2	34.8	38.7	27.5	24.4	29.2	29.8	32.2	23.7
15	32.7	32.2	28.9	29.2	34.4	37.6	27.6	25.2	30.6	28.6	33.2	23.6
16	32.7	31.9	28.4	29.4	34.3	36.8	26.2	24.8	35.2	28.5	35.7	* 23.2
17	32.8	32.0	28.4	29.3	34.5	36.2	* 25.8	25.1	31.4	* 29.3	33.4	23.0
18	31.7	31.8	28.0	* 30.0	37.5	35.2	26.0	25.8	30.0	29.5	33.4	* 22.9
19	32.1	32.0	26.5	30.3	38.5	* 34.9	25.5	24.8	29.6	29.8	31.1	* 23.9
20	31.9	* 32.4	26.5	29.7	37.7	34.0	25.6	21.8	* 29.1	29.7	* 29.4	* 27.6
21	32.9	31.7	26.4	29.0	35.7	33.8	26.7	22.8	29.3	29.6	30.3	28.6
22	32.9	31.8	26.8	32.1	36.2	34.7	25.3	* 24.7	29.5	29.3	31.0	27.7
23	* 32.4	32.1	27.4	33.4	36.8	36.6	24.1	26.8	29.5	28.5	31.9	27.4
24	32.1	31.6	* 27.6	34.9	36.8	36.5	23.9	28.2	29.3	28.4	33.5	* 27.4
25	32.0	30.3	26.3	34.9	37.1	34.8	24.8	32.7	30.4	28.7	33.1	27.4
26	32.7	30.1	27.1	34.9	37.8	33.2	25.5	31.1	30.8	28.8	31.6	27.3
27	33.1	28.1	27.7	35.5	38.8	32.8	26.3	29.4	30.8	* 29.2	33.1	* 27.2
28	34.1	29.1	28.0	36.4	38.6	32.3	25.7	29.6	30.4	31.3	32.8	27.6
29	33.9	32.1	25.3	37.1	36.8	32.9	25.3	29.2	30.0	33.1	33.3	* 27.9
30	33.3		27.4	37.4	35.8	35.5	24.4	31.2	29.4	35.5	33.1	27.4
31	33.3		28.9		35.9		23.9	35.4		35.2		27.0
Sum	1,029.7	936.6	877.5	946.0	1,154.0	1,093.6	793.1	820.5	896.5	931.8	982.3	824.1

Current Year 1996 | Period 1968–1996

Month	Extreme Gage Meters		Extreme–Cubic Meters per Second				Average	Volume–Thousand Cubic Meters			
	High	Low	Day	ϕ High	Day	ϕ Low		Total	Average	Maximum	Minimum
Jan.			1	36.3	11	31.1	33.2	88,966	72,640	116,090	6,108
Feb.			4	36.0	27	28.1	32.3	80,922	72,282	108,078	6,008
Mar.			1	31.5	29	25.3	28.3	75,816	73,691	109,909	7,047
April			30	37.4	2	25.6	31.5	81,734	72,572	115,145	5,305
May			8	39.7	16	34.3	37.2	99,706	80,543	113,668	17,131
June			3	40.5	28	32.3	36.5	94,487	72,263	102,070	8,162
July			1	30.7	9	23.4	25.6	68,524	70,031	96,639	6,830
Aug.			31	35.4	20	21.8	26.5	70,891	71,172	97,044	22,766
Sept.			16	35.2	12	28.7	29.9	77,458	77,129	111,197	16,949
Oct.			30	35.5	24	28.4	30.1	80,508	78,584	109,382	13,750
Nov.			16	35.7	20	29.4	32.7	84,871	71,494	106,644	3,951
Dec.			2	34.2	!11	22.9	26.6	71,202	71,509	112,566	3,217
Yearly				40.5		21.8	30.8	975,085	883,910	1,158,234	207,661

ϕ Mean daily ! And other days ** Period 1968–1996

08-4577.00 RETURN FLOW TO THE RIO GRANDE FROM THE MAVERICK IRRIGATION DISTRICT ABOVE 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, Maverick County 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 Hughes Ranch, Lateral 1, Lateral 2 Spill, Canon Grande, Quemado Creek, Lateral 15 Spill, Houchin Spill, and Elm Creek; and a Parshall flume at the Lateral 2 Sand Trap Spill into Las Moras Creek immediately below the canal siphon. Gate leakage at Las Moras Creek which is measured periodically and mean daily discharges are determined by prorating between current-meter measurements.

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 1996. Records computed by the U.S. Section of the Commission prior to 1996, for which mean daily flows are available. Monthly volumes for 1996 were provided by the Maverick County Irrigation District through the Texas Natural Resource Conservation Commission. Records prior to 1976 were published under the title "Return Flow to the Rio Grande from Maverick Canal-Maverick Dam to Eagle Pass, Texas".

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 shown on a prior page of this bulletin.

EXTREME FLOWS FROM RECORDS:

Average Flow in Cubic Meters per Second**

Daily:	Max.	26.3	Sept. 29, 1975	Min.	0.07	Aug. 4 & 8, 1985
Monthly:	Max.	4.36	June 1968	Min.	0.14	Sept. 1985
Yearly:	Max.	3.57	1968	Min.	0.41	1985

Month	Current Year 1996							Period 1968-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.							1.07	2,857	3,548	9,424	1,252
Feb.							.82	2,043	3,351	7,556	1,158
Mar.							.91	2,450	4,445	7,940	1,383
April							1.16	3,000	4,552	9,615	1,016
May							1.35	3,614	4,382	10,087	1,048
June							1.46	3,772	4,423	11,334	640
July							1.28	3,435	4,563	10,060	405
Aug.							1.42	3,790	4,561	11,423	486
Sept.							1.27	3,292	3,957	9,472	356
Oct.							1.23	3,297	4,013	8,097	1,337
Nov.							1.01	2,614	3,842	10,726	1,019
Dec.							.78	2,081	3,430	7,122	1,277
Yearly							1.15	36,245	49,067	112,857	12,834

08-4586.00 RETURN FLOW TO THE RIO GRANDE FROM THE MAVERICK IRRIGATION DISTRICT BELOW 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 Eagle Pass, Texas and the El Indio 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 Canon Diablo, Lateral 50 Spill, Rosita Creek, Lateral 60-K Spill, Sauz Creek, Indio Creek, 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 1996. Records computed by the U.S. Section of the Commission prior to 1996, for which mean daily flows are available. Monthly volumes for 1996 were provided by the Maverick County Irrigation District through the Texas Natural Resource Conservation Commission. Records prior to 1976 were published under the "Return Flow to the Rio Grande from Maverick Canal, Eagle Pass to San Antonio Crossing".

EXTREME FLOWS FROM RECORDS:

Average Flow in Cubic Meters per Second**

Daily:	Max.	9.91	July 5, 1968	Min.	0.04	April 22, 1986
Monthly:	Max.	7.00	July 1968	Min.	0.12	April 1986
Yearly:	Max.	5.10	1971	Min.	0.25	1996

Month	Current Year 1996							Period 1968-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.							0.32	857	5,807	15,700	410
Feb.							.30	754	4,831	13,204	442
Mar.							.47	1,253	6,340	14,401	392
April							.41	1,061	6,880	18,066	317
May							.27	712	6,422	17,672	698
June							.36	946	6,660	17,742	655
July							.26	708	6,505	18,723	708
Aug.							.29	788	6,108	14,290	756
Sept.							.05	139	5,147	11,301	139
Oct.							.08	220	4,812	10,138	220
Nov.							.05	136	4,943	13,309	136
Dec.							.08	217	5,172	15,785	217
Yearly							0.25	7,791	69,627	161,048	7,791

08-4580.00 RIO GRANDE AT PIEDRAS NEGRAS, COAHUILA AND EAGLE PASS, TEXAS

DESCRIPTION: Cableway, gravity well, water-stage recorder, and data collection platform located on the left bank at latitude 28°42'50", longitude 100°30'25", and river kilometer 800, 1.0 river kilometer upstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila and 124 river kilometers downstream from Amistad Dam. The zero of the gage is 208.15 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 25 discharge measurements during the year, 19 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: May 1900 through March 1914; August 1914 through April 1916; September 1916; September and October 1917; October 1918; September and October 1919; August and September 1920; June 1922; September, November, and December 1923; and 1924 through 1996. Records prior to 1976 were published under the title "Rio Grande at Eagle Pass, Texas."

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The data collection platform is coupled to leased telephone circuits. This system is operated in cooperation with the National Weather Service.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 27,300 CMS, determined by slope-area calculations, on June 29, 1954, with a gage height of 16.31 meters. Well-authenticated information indicates the occurrence of a flood in June 1865 with an estimated discharge of 35,000 CMS and a gage height of 17.07 meters on the present gage, and also that these were the only floods since 1745 with flows greater than 23,400 CMS. Min. 0.69 CMS on June 22, 1953, with a gage height of 0.02 meters.

Average Flow in Cubic Meters per Second**

Daily:	Max.	2,870	July 19, 1975	Min.	4.90	April 25, 1984
Monthly:	Max.	622	Sept. 1974	Min.	9.16	June 1969
Yearly:	Max.	147	1974	Min.	27.5	1972

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	46.4	38.2	31.6	26.7	74.5	70.4	* 54.6	* 27.8	55.5	42.6	47.8	44.8
2	45.7	38.1	31.8	22.8	* 73.7	70.4	33.8	26.0	45.5	41.2	44.5	* 45.7
3	45.6	44.6	31.0	26.2	75.1	73.9	30.9	26.9	44.3	42.5	43.7	48.0
4	44.6	48.5	* 30.0	* 25.2	75.2	71.4	30.0	28.0	43.9	40.9	42.6	43.9
5	* 43.5	45.4	28.6	28.6	71.8	71.6	29.5	* 29.5	44.3	43.7	43.0	* 45.0
6	44.2	42.8	27.4	28.9	* 76.3	74.8	29.9	28.6	43.4	43.2	40.6	39.8
7	44.3	33.5	27.0	31.5	75.1	73.7	27.8	29.3	43.1	* 42.8	* 40.6	44.4
8	44.9	32.9	26.5	* 31.7	76.1	74.0	29.3	28.0	43.2	42.1	39.7	45.1
9	41.3	31.7	26.9	30.5	73.2	74.4	26.2	28.4	45.5	43.4	39.6	45.4
10	40.1	31.9	27.1	29.8	71.8	78.4	26.6	30.6	43.5	42.2	41.8	45.3
11	41.4	31.7	26.2	28.8	72.0	77.4	29.6	30.6	41.6	40.3	39.5	43.8
12	40.6	31.0	27.2	27.8	71.5	76.7	30.1	29.5	42.2	40.2	39.3	44.2
13	42.7	29.7	26.5	27.2	70.1	79.8	30.9	30.1	43.8	40.7	37.2	44.2
14	42.7	29.3	25.4	26.3	68.3	81.0	30.3	29.0	45.7	40.7	37.8	43.7
15	* 40.1	30.0	26.2	26.4	67.4	80.0	29.8	31.4	130	39.8	42.1	44.7
16	38.4	30.3	25.8	26.6	67.8	77.6	28.6	29.5	101	37.2	43.6	* 46.2
17	38.1	30.3	26.0	26.7	69.6	* 78.0	* 27.3	29.3	61.6	39.3	41.6	44.8
18	37.8	30.0	* 25.4	27.4	67.3	76.8	27.4	30.0	51.9	41.6	* 38.4	43.2
19	38.2	29.4	23.9	27.4	70.1	75.6	27.1	* 29.6	48.1	42.2	36.8	64.4
20	37.8	29.7	23.3	26.9	* 68.9	74.6	26.8	27.0	47.2	42.0	34.4	71.0
21	38.0	29.3	23.4	26.1	66.2	73.8	28.0	26.2	46.2	* 42.8	36.9	72.3
22	37.5	29.3	23.4	* 42.6	66.2	74.0	27.7	28.5	46.0	41.4	36.6	52.2
23	37.2	29.6	24.5	65.2	68.5	76.4	25.8	35.6	* 46.0	40.4	37.8	46.7
24	37.2	29.2	25.2	66.3	67.6	76.0	25.3	40.2	45.1	40.6	39.1	44.4
25	36.6	28.8	23.8	68.0	70.0	76.0	26.0	45.7	64.6	41.5	38.6	45.1
26	37.3	29.7	* 24.7	68.1	68.9	73.8	27.1	49.3	50.3	41.2	36.6	44.7
27	37.4	27.6	26.2	71.5	69.4	74.2	28.5	38.9	46.4	41.7	39.1	44.8
28	38.8	27.9	26.8	73.1	70.8	73.1	28.5	42.0	74.8	207	40.7	45.8
29	40.8	30.6	23.8	76.2	69.0	71.8	27.0	43.6	44.2	366	45.2	46.6
30	38.3		25.2	74.9	66.9	77.1	26.2	185	43.6	106	44.8	45.8
31	38.0		25.8		83.9		25.5	107		63.4		45.0
Sum	1,255.5	951.0	816.6	1,185.4	2,203.2	2,256.7	902.1	1,221.1	1,542.5	1,860.6	1,210.0	1,471.0

Current Year 1996 | Period 1968-1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High Day	High	Low Day	Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0.920	0.830	7	48.0	25	35.7	40.5	108,475	150,781	352,875	32,306
Feb.	.960	.750	4	54.3	27	25.8	32.8	82,166	179,920	552,787	43,917
Mar.	.800	.715	1	32.0	19	21.6	26.3	70,554	202,465	563,328	25,779
April	1.185	.720	29	91.4	2	22.2	39.5	102,419	214,102	570,326	29,641
May	1.270	.905	31	107	16	45.8	71.1	190,356	297,867	726,365	44,643
June	1.255	.935	14	104	29	50.2	75.2	194,979	240,447	594,778	23,750
July	1.190	.710	1	92.3	31	21.1	29.1	77,941	238,592	961,969	32,194
Aug.	2.520	.710	30	364	1	21.1	39.4	105,503	221,081	916,834	70,131
Sept.	2.100	.855	15	262	11	38.9	51.4	133,272	290,866	1,611,965	99,541
Oct.	3.145	.815	29	534	16	33.7	60.0	160,756	285,035	1,099,958	72,334
Nov.	.955	.800	1	53.4	20	32.0	40.3	104,544	172,792	704,160	56,497
Dec.	1.230	.825	21	99.4	! 6	35.0	47.5	127,094	149,398	356,400	32,314
Yearly	3.145	0.710		534		21.1	46.1	1,458,059	2,643,346	4,629,385	870,435

* Discharge measurement made on this day ! And other days ** Period 1968-1996

08-4581.50 RIO ESCONDIDO AT VILLA DE FUENTE, COAHUILA

DESCRIPTION: Cableway, gravity well, concrete control weir of 50 CMS capacity and water-stage recorder located on the right bank of the Rio Escondido on the outskirts of Villa de Fuente, Coahuila, at latitude 28°40'05", longitude 100°31'00", about 5.0 kilometers southwest of Piedras Negras, Coahuila, 8.0 river kilometers from the confluence with the Rio Grande, and 10.9 river kilometers downstream from the confluence of Rio San Antonio with Rio Escondido. Rio Escondido enters the Rio Grande at river kilometer 794, 5.0 river kilometers downstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila. The zero of the gage is 218.96 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 18 discharge measurements and a continuous record of gage heights. Records available: October 1932 through 1996.

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 222.48 meters 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. 680 CMS on June 29, 1936 with a stage of 224.61 meters above mean sea level. Min. frequently no flow.

Average Flow in Cubic Meters per Second

Daily:	Max.	371	Sept. 24, 1964	Min.	0	Occasionally
Monthly:	Max.	23.4	Sept. 1964	Min.	0.01	Sept. 1965
Yearly:	Max.	7.29	1987	Min.	0.07	1956

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.30	0.35	0.34	0.22	0.22	0.35	* 0.12	0.07	0.20	0.18	* 0.18	0.18
2	.29	.35	.33	.21	.22	.22	.13	.06	.14	.18	.18	* .18
3	.30	.34	.35	.21	.22	.50	.12	.06	.14	.18	.18	.18
4	.31	.34	.54	.23	.22	.70	.12	.06	.12	.18	.17	.18
5	* .34	.33	* .57	8.31	.22	.28	.11	* .06	.42	.20	.17	.18
6	.35	.32	.57	.82	* .34	.22	.11	.06	.19	.22	.17	.18
7	.35	.32	.52	.35	.26	.20	.12	.06	.19	* .19	.17	.18
8	.35	.32	.54	.28	3.22	.20	.10	.06	.19	.18	.17	.17
9	.35	.32	.54	.29	.58	.19	.09	.06	.42	.18	.17	.17
10	.36	.32	.57	.27	.30	.18	.10	.06	.23	.18	.16	.17
11	.34	.32	.57	.25	.26	.18	.10	.04	.19	.18	.16	.17
12	.35	.30	.54	.25	.24	.18	.66	.04	.19	.18	.16	.17
13	.34	.31	.54	.25	.24	.18	.14	.02	.57	.18	.16	.17
14	.34	.32	.54	.24	.21	.18	.12	0	.20	.18	.16	.17
15	* .34	.32	.51	.24	.21	.18	.10	0	.18	.18	.15	.17
16	.34	.32	.51	.24	.20	.18	.10	0	.18	.18	.15	* .17
17	.38	.31	.53	.24	.21	* .16	.08	0	* .16	.18	.15	.19
18	.34	.31	* .52	.24	.21	.17	.08	0	.16	.18	* .15	.18
19	.33	.31	.51	.24	.22	.16	.08	0	.16	.18	.16	.20
20	.34	.32	.50	.24	* .20	.16	.08	0	.17	.18	.16	.33
21	.35	.32	.45	.24	.20	.16	.08	0	.17	* .18	.16	.35
22	.35	.32	.21	* .24	.20	.16	.08	0	.16	.17	.16	.31
23	.35	.32	.20	.23	.18	.16	.08	.04	* .17	.17	.16	.22
24	.36	.32	.20	.24	.18	.15	.08	.63	.36	.18	.17	.19
25	.35	.31	.20	.23	.18	.15	.08	1.02	3.30	.18	.17	.19
26	.35	.31	.21	.23	.18	.15	.08	.46	.28	.18	.17	.19
27	.35	.31	.22	.24	.18	.14	.07	.30	.21	.17	.17	.18
28	.35	.32	.22	.24	.18	.14	.07	.30	.20	.45	.17	.18
29	.35	.34	.22	.22	.18	.14	.07	.30	.20	.28	.18	.18
30	.35		.22	.22	.18	.13	.07	2.48	.20	.19	.18	.18
31	.34		.22		1.27		.07	.65		.18		.18
Sum	10.59	9.32	12.71	15.95	11.11	6.25	3.49	6.89	9.65	6.00	4.97	6.04

Current Year 1996 | Period 1932-1996

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second					Volume-Thousand Cubic Meters			
	High	Low	Day	High	Day	Low	Average	Total	Average	Maximum	Minimum
Jan.	0.210	0.170	16	0.41	! 1	0.29	0.34	915	4,156	23,350	53.6
Feb.	.195	.170	! 1	.35	12	.29	.32	805	3,226	17,803	48.4
Mar.	.240	.120	! 5	.57	!24	.19	.41	1,098	2,723	14,070	114
April	1.065	.130	5	26.2	1	.21	.53	1,378	2,947	27,069	100
May	.735	.100	8	10.2	31	.16	.36	960	4,619	31,418	190
June	.300	.080	4	.98	!29	.13	.21	540	3,569	31,888	74.3
July	.450	.040	12	2.81	!26	.07	.11	302	3,255	32,694	64.8
Aug.	.760	0	30	11.2	!13	0	.22	595	4,400	37,135	24.2
Sept.	.815	.075	25	13.4	4	.12	.32	834	6,185	60,665	21.6
Oct.	.315	.105	28	1.12	!21	.17	.19	518	6,378	49,084	53.6
Nov.	.110	.095	! 1	.18	!14	.15	.17	429	4,956	31,743	53.6
Dec.	.200	.105	21	.36	! 7	.17	.19	522	4,371	27,140	82.9
Yearly	1.065	0		26.2		0	0.28	8,896	50,785	229,999	2,163

* Discharge measurement made on this day ! And other days ** Period 1932-1996

08-4587.00 RIO GRANDE NEAR EL INDIO, TEXAS AND VILLA GUERRERO, COAHUILA

DESCRIPTION: Cableway, bubbler gage, concrete control weir, and water-stage recorders (graphic and digital) located on the left bank at latitude 28°20'45", longitude 100°18'35", and river kilometer 741, 0.9 river kilometer downstream from Cuervo Creek, which marks the lower end of the Maverick County Water Control and Improvement District No. 1, 3.1 river kilometers upstream from Tovar Creek, 8.0 kilometers northeast of Villa Guerrero, Coahuila, about 18.5 kilometers south of El Indio, Maverick County, Texas, and 57.8 river kilometers downstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila. The zero of the gage is 176.78 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 18 current-meter 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 current-meter measurements. Records available: March, April, May, October, November, and December 1952 with some days missing; January through August 20, 1953; September 23, 1953 through June 14, 1954; and May 27, 1955 through 1996 with several days missing prior to September 1955. Records prior to 1976 were published under the title "Rio Grande at San Antonio Crossing near El Indio, Texas."

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

EXTREME FLOWS FROM RECORDS: Momentary: Max. 25,800 CMS in June 1954, was determined by slope-area computation, with an elevation of 190.29 meters. Min. 1.54 CMS occurred on June 24, 1953 with an elevation of 177.38 meters at a station 518 meters upstream from the present site.

Average Flow in Cubic Meters per Second**

Daily:	Max.	2,730	July 19, 1975	Min.	9.26	June 29 & 30, 1972
Monthly:	Max.	617	Sept. 1974	Min.	14.2	June 1969
Yearly:	Max.	150	1974	Min.	35.0	1972

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	43.8	42.7	36.8	29.7	73.4	77.7	67.0	23.3	69.1	39.0	50.5	39.7
2	44.6	44.6	36.9	28.4	* 73.7	68.6	34.5	22.4	46.3	38.1	43.4	40.0
3	45.4	46.5	35.5	* 27.0	74.1	74.2	* 27.3	23.4	42.5	38.2	42.5	41.6
4	45.0	54.7	34.7	28.9	75.6	71.1	25.7	23.7	41.3	38.5	40.7	* 40.2
5	43.2	55.4	32.6	116	73.2	* 69.5	25.0	25.3	* 42.1	41.3	40.2	36.7
6	42.5	* 52.7	* 30.9	54.0	81.4	70.9	25.1	* 25.4	41.9	42.6	* 39.0	36.3
7	42.5	46.1	31.4	37.4	77.3	71.9	25.5	23.9	40.3	40.4	38.3	34.2
8	43.7	40.4	30.9	36.8	91.3	68.0	23.7	24.9	39.9	* 39.4	38.9	36.2
9	41.1	38.8	30.6	35.4	78.9	68.6	27.8	24.4	46.2	38.7	38.2	35.4
10	38.1	37.8	31.0	33.5	72.9	67.3	27.5	24.9	64.3	39.4	38.9	36.9
11	37.3	38.0	30.5	32.5	73.1	69.4	26.9	27.2	39.8	37.9	39.1	35.3
12	* 39.1	38.3	29.5	31.4	71.5	67.1	28.6	27.4	38.0	36.2	37.3	33.9
13	41.3	37.6	29.4	30.5	71.8	67.1	27.8	25.9	39.8	35.9	36.8	35.4
14	43.2	35.6	28.4	29.3	70.2	69.0	28.5	26.5	40.4	35.6	35.0	34.1
15	42.9	34.7	27.9	29.2	* 67.6	69.3	27.8	25.9	51.5	35.1	36.6	36.2
16	40.2	36.1	28.2	29.1	67.6	67.4	26.9	26.9	143	33.6	38.1	37.9
17	39.1	36.6	27.8	* 29.2	69.0	66.7	25.9	25.4	67.0	31.3	41.8	38.5
18	39.2	36.7	27.5	28.8	69.7	66.4	25.7	25.3	49.5	33.3	38.6	* 37.1
19	40.3	35.9	27.6	29.1	68.5	64.8	26.0	25.5	45.5	34.7	36.1	36.9
20	40.4	34.2	26.3	28.8	70.0	63.2	26.0	25.8	43.6	33.7	34.7	60.5
21	39.7	32.1	25.8	28.1	68.4	62.7	27.4	* 22.5	41.6	33.6	35.1	60.3
22	38.9	30.4	25.4	27.0	65.1	64.0	29.5	22.7	40.8	34.9	34.3	60.7
23	38.7	31.5	26.1	58.7	65.2	65.3	29.1	26.6	40.2	* 34.4	35.1	38.3
24	39.5	32.0	27.5	67.7	67.8	67.2	27.8	31.9	* 44.5	33.4	39.9	36.4
25	39.2	31.7	28.2	68.0	67.4	67.2	26.7	39.7	89.1	33.4	39.4	37.7
26	39.4	32.0	28.4	67.7	68.6	65.7	27.2	47.5	53.9	33.5	38.9	37.4
27	40.1	32.0	30.7	69.5	68.5	64.4	25.8	39.6	43.1	32.8	37.0	36.8
28	40.5	32.0	30.8	71.9	68.5	63.9	26.5	35.7	42.5	65.7	40.4	37.3
29	42.2	34.4	29.2	78.1	68.5	62.3	26.1	38.0	41.5	372	41.5	37.7
30	42.7		27.8	77.5	65.5	65.2	24.7	114	40.1	130	40.1	37.5
31	41.5		28.8		75.0		23.8	144		68.1		35.8
Sum	1,275.3	1,111.5	923.1	1,339.2	2,219.3	2,026.1	873.8	1,065.6	1,509.3	1,614.7	1,166.4	1,218.9

Month	Current Year 1996							Period 1968-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	High	Day	Low		Total	Average	Maximum	Minimum
Jan.	1.975	1.915	! 3	46.6	!10	36.7	41.1	110,186	161,462	344,184	58,194
Feb.	2.030	1.860	5	58.7	!21	29.9	38.3	96,034	189,895	548,741	63,322
Mar.	1.915	1.820	2	38.4	20	23.8	29.8	79,756	210,713	567,475	46,184
April	2.530	1.840	5	216	2	26.0	44.6	115,707	226,052	584,928	46,115
May	2.285	1.975	8	111	28	46.4	71.6	191,748	317,169	740,332	62,566
June	2.225	1.980	1	99.1	29	46.3	67.5	175,055	261,435	681,150	36,768
July	2.170	1.820	1	84.8	! 5	22.2	28.2	75,496	254,177	972,830	45,920
Aug.	2.625	1.800	30	290	2	20.7	34.4	92,068	236,786	1,016,428	82,422
Sept.	2.535	1.905	16	223	24	36.8	50.3	130,404	306,812	1,598,663	102,781
Oct.	2.825	1.880	29	454	!17	30.6	52.1	139,510	299,051	1,064,503	81,268
Nov.	2.035	1.875	1	56.7	!20	30.6	38.9	100,777	187,947	681,981	58,933
Dec.	2.135	1.865	20	79.4	15	30.2	39.3	105,313	158,186	341,125	61,451
Yearly	2.825	1.800		454		20.7	44.7	1,412,054	2,809,685	4,731,321	1,105,710

* Discharge measurement made on this day ! And other days ** Period 1968-1996

08-4590.00 RIO GRANDE AT LAREDO, TEXAS AND NUEVO LAREDO, TAMAULIPAS

DESCRIPTION: Bubbler gage and water-stage recorder (graphic and digital) and data collection platform located at the Lincoln Juarez International Bridge on the left bank at latitude 27°30'05", longitude 99°30'13" and river kilometer 580. The zero of the gage is 107.12 meters above mean sea level U. S. C. & G. S. datum.

RECORDS: Based on 25 current-meter measurements during the year made from the bridge and a continuous record of gage heights. Computations by shifting control methods. Records available: May 1900 through 1913; (gage height records only) January through March 1914; May, June, and October 1914; September 1916; September and October 1917; October 1918; September and October 1919; August and September 1920; June, November, and December 1922; 1923 through March 2, 1989 at a station 1.3 kilometers downstream of present site; March 3, 1989 through May 1990 at a station 0.5 kilometer upstream of present site; and June 1990 through 1996 at the present site.

REMARKS: Reservoirs, diversions, and drainage returns modify the river flow at this station. The data collection platform, 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. 20,300 CMS on June 30, 1954 was determined by slope-area calculations, with a gage height of 18.44 meters at a site 0.5 kilometer upstream. Well authenticated information established the occurrence of a greater flood in 1865 with a gage height of 19.05 meters on a gage 1.3 kilometers downstream with a discharge of approximately 27,000 CMS. These were only floods since 1745 with flows greater than 17,000 CMS. Min. No flow several days in June and July 1953, and July 24, 1956.

Average Flow in Cubic Meters per Second**

Daily:	Max.	3,270	June 30, 1971	Min.	7.00	July 2, 1972
Monthly:	Max.	579	Sept. 1974	Min.	14.1	June 1969
Yearly:	Max.	152	1974	Min.	38.2	1972

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	42.9	42.0	32.7	25.6	* 74.0	168	65.4	18.4	237	* 40.4	62.9	37.7
2	43.0	41.6	32.6	* 26.6	56.7	161	* 71.6	16.5	114	38.4	45.9	* 36.2
3	42.9	41.6	37.6	29.0	66.2	217	47.2	15.7	* 56.6	70.8	41.8	35.7
4	42.7	41.8	39.2	24.1	70.2	136	39.7	14.4	45.1	80.8	* 41.7	38.1
5	43.0	43.3	* 39.1	25.0	73.1	102	32.1	14.6	48.1	50.1	41.4	41.0
6	43.4	* 47.0	37.5	98.5	73.2	* 79.6	30.4	* 14.9	48.7	53.4	40.9	39.1
7	42.7	46.5	35.8	59.8	78.1	66.6	29.7	18.3	43.1	44.8	40.6	38.2
8	42.4	45.6	33.5	41.5	86.4	70.7	29.1	20.2	42.5	41.8	37.3	35.5
9	* 42.5	41.9	32.6	40.2	94.1	65.5	34.2	24.3	51.8	40.6	35.5	35.7
10	43.4	41.3	32.3	39.7	91.8	65.3	74.5	24.4	46.0	39.5	34.7	37.8
11	42.6	41.2	31.2	37.7	81.1	64.4	47.1	21.3	68.2	38.9	33.3	37.5
12	42.2	40.9	33.6	35.6	80.2	70.6	44.6	22.2	44.0	37.8	36.8	39.6
13	42.4	40.9	32.5	33.7	78.2	69.5	47.5	27.8	220	35.8	35.1	37.8
14	42.7	40.9	31.2	31.8	79.6	69.2	38.6	29.9	180	34.7	33.5	36.6
15	43.1	40.4	32.0	30.3	* 76.2	74.0	31.9	33.1	146	* 33.7	31.3	38.1
16	43.9	39.7	30.5	* 27.1	72.8	75.8	* 30.4	34.7	74.6	32.9	30.0	* 37.1
17	43.3	39.9	28.8	25.0	70.6	74.2	27.4	25.3	167 *	33.1	36.0	37.4
18	42.6	40.5	28.5	24.7	70.6	* 73.1	25.5	27.2	80.2	30.1	* 39.4	39.0
19	42.3	40.7	* 26.8	25.3	72.7	73.1	22.3	25.8	51.1	27.8	39.5	38.6
20	42.1	40.8	26.2	24.7	69.4	70.4	21.5	* 25.4	44.9	32.2	35.8	37.4
21	42.1	* 40.5	24.8	26.2	73.5	68.3	20.8	27.0	42.7	33.9	33.8	46.4
22	42.2	40.1	23.2	24.8	70.8	66.8	19.9	27.1	42.2	34.5	29.7	54.6
23	* 41.9	39.1	23.5	24.2	65.1	66.1	20.1	91.9	41.7	34.4	31.2	56.8
24	41.9	38.9	22.9	33.7	65.4	67.1	21.6	119	41.6	34.5	30.4	44.5
25	41.5	38.1	24.7	58.2	68.6	70.4	21.0	70.6	182	34.4	32.7	41.3
26	41.4	37.7	27.0	56.8	68.7	70.6	33.0	64.4	186	34.3	34.1	40.0
27	41.2	37.4	24.9	57.1	72.3	68.9	37.0	55.1	56.2	35.3	33.1	40.1
28	41.2	37.0	24.3	58.7	72.6	66.0	21.4	48.2	66.4	34.7	34.7	40.3
29	41.3	35.8	27.6	67.2	95.9	66.3	20.2	42.1	51.3	68.7	35.8	40.4
30	41.8		29.9	70.7	154	63.4	21.5	204	41.3	374 *	37.5	40.7
31	42.3		26.8		113		20.5	282		141		41.3
Sum	1,314.9	1,183.1	933.8	1,183.5	2,435.1	2,519.9	1,047.7	1,485.8	2,570.3	1,697.3	1,106.4	1,240.5

Month	Current Year 1996							Period 1968-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
				High		Low		Total	Average	Maximum	Minimum
	High	Low	Day		Day						
Jan.	0.870	0.780	16	44.5	27	41.1	42.4	113,607	166,967	352,918	61,395
Feb.	.890	.690	! 6	48.6	29	33.8	40.8	102,220	198,097	555,809	48,383
Mar.	.720	.640	! 3	39.4	22	22.6	30.1	80,680	217,488	609,638	45,757
April	1.410	.630	6	148	24	21.2	39.5	102,254	234,024	640,138	43,304
May	1.700	.890	30	212	!18	52.5	78.6	210,393	342,880	817,599	110,911
June	2.250	.865	3	321	23	51.6	84.0	217,719	299,163	857,878	36,616
July	1.170	.560	10	112	23	18.2	33.8	90,521	263,526	1,034,298	39,804
Aug.	2.780	.535	30	438	5	13.1	47.9	128,373	247,840	979,770	81,016
Sept.	2.825	.725	13	445	30	40.8	85.7	222,074	319,862	1,500,845	100,872
Oct.	2.990	.675	30	445	!18	26.3	54.8	146,647	337,706	1,180,391	69,266
Nov.	1.200	.710	1	93.4	22	27.0	36.9	95,593	192,318	723,165	55,719
Dec.	1.080	.735	23	68.8	9	29.4	40.0	107,179	162,699	379,380	63,297
Yearly	2.990	0.535		445		13.1	51.1	1,617,260	2,982,570	4,799,562	1,209,723

* Discharge measurement made on this day ! And other days ** Period 1968-1996

08-4597.00 RIO SALADO NEAR LAS TORTILLAS, TAMAULIPAS

DESCRIPTION: Cableway, control weir with notch opening of 72 CMS capacity, gravity well, and water-stage recorder located on the right bank at latitude 26°50'10", longitude 99°33'50", 3 river kilometers downstream from the confluence of Rio Sabinas with Rio Salado, 10 kilometers southeast of the town of Las Tortillas, Tamaulipas, and 39.9 river kilometers from the confluence with the Rio Grande. This stream enters the Rio Grande at river kilometer 482, 39.8 river kilometers upstream from Falcon Dam. The zero of the gage is 99.28 meters above mean sea level, U . S. C. & G. S. datum.

RECORDS: Based on 6 discharge measurements during the year by the Mexican Section, a stable rating curve up to 72 CMS, and a continuous record of gage heights. Computations by shifting control methods for flows greater than 72 CMS. Records available: September 9, 1953, through 1996. Records are also available for a station at old Cd. Guerrero, 30 kilometers downstream, from 1900 through 1913 and 1923 through September 8, 1953.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 1,840 CMS on September 16, 1971, with a gage height of 12.31 meters. Min. frequently no flow. The maximum discharge was measured at the highway bridge 20.9 river kilometers 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 Cubic Meters per Second**

Daily:	Max.	1,780	Sept. 16, 1971	Min.	0	Frequently
Monthly:	Max.	384	Sept. 1971	Min.	0	Frequently
Yearly:	Max.	93.9	1971	Min.	1.08	1994

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.01	0	0	0	0	4.68	0	0	2.25	* 1.70	0.33	0
2	.01	0	0	0	0	7.25	0	0	2.91	1.06	.34	0
3	.02	0	0	0	0	3.77	0	0	5.35	.88	.31	0
4	.06	0	0	0	0	11.2	0	0	4.59	26.7	.27	.10
5	.06	0	0	0	0	14.1	0	0	2.46	42.8	.25	.28
6	.04	0	0	0	0	5.53	.25	0	1.87	30.7	.23	.25
7	.03	0	0	0	0	1.53	.42	0	1.72	25.6	.19	.22
8	.02	0	0	0	4.60	.64	.64	0	1.51	* 19.3	.19	.22
9	.06	0	0	0	10.5	.17	.72	.22	1.20	* 18.1	.17	.21
10	.07	0	0	0	.95	.07	20.5	0	.87	* 11.7	.16	.22
11	.10	0	0	0	1.79	.03	30.9	0	.67	* 7.13	.15	.26
12	.11	0	0	0	1.66	.01	10.8	0	.59	4.26	.14	.23
13	.08	0	0	0	.72	.01	5.11	0	1.53	2.62	.14	.21
14	.07	0	0	0	.37	.01	1.75	0	1.53	1.96	.12	.16
15	.06	0	0	0	.11	.01	1.24	0	6.14	* 1.91	.09	.16
16	.06	0	0	0	.06	.01	1.66	0	2.67	1.91	.09	.16
17	.04	0	0	0	.04	.01	.59	0	6.51	1.85	.08	.14
18	.03	0	0	0	.02	.01	0	0	12.6	1.79	.09	.16
19	.04	0	0	0	.01	.01	0	0	9.03	1.72	.08	.13
20	.04	0	0	0	0	.01	0	0	2.19	1.52	.08	.12
21	.03	0	0	0	0	.01	0	.68	25.5	1.25	.06	.08
22	.03	0	0	0	0	.01	0	.45	8.99	1.31	.05	.06
23	.02	0	0	0	0	.01	0	3.83	8.79	1.11	.05	.04
24	.02	0	0	0	0	.01	0	23.1	3.31	.89	.07	.10
25	.01	0	0	0	0	.01	0	42.9	4.39	.73	.03	.05
26	.01	0	0	0	0	.01	0	61.5	6.86	.56	0	.01
27	.01	0	0	0	0	.01	0	55.2	7.95	.58	0	0
28	.01	0	0	0	0	.01	0	20.7	3.51	.51	.05	0
29	0	0	0	0	0	.01	0	8.37	1.90	.46	.06	0
30	0		0	0	32.4	.01	0	3.77	2.12	.42	.05	0
31	0		0		3.20		0	2.15		.37		0
Sum	1.15	0	0	0	56.43	49.16	74.58	222.87	141.51	213.40	3.92	3.57

Current Year 1996 | Period 1953–1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme–Cubic Meters per Second Day	ϕ High	Day	ϕ Low	Average	Volume–Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.			12	0.11	! 1	0	0.04	99.4	10,387	73,777	0
Feb.			! 1	0	! 1	0	0	0	8,670	82,495	0
Mar.			! 1	0	! 1	0	0	0	5,281	36,628	0
April			! 1	0	! 1	0	0	0	13,008	250,373	0
May			30	32.4	! 1	0	1.82	4,876	30,056	447,500	0
June			5	14.1	!12	.01	1.64	4,247	33,581	304,451	0
July			11	30.9	! 1	0	2.41	6,444	31,189	544,635	0
Aug.			26	61.5	! 1	0	7.19	19,256	23,503	259,070	0
Sept.			21	25.5	12	.59	4.72	12,226	93,287	996,183	2,651
Oct.			5	42.8	31	.37	6.88	18,438	57,435	679,329	136
Nov.			2	.34	!26	0	.13	339	28,854	416,863	0
Dec.			5	.28	! 1	0	.12	308	17,553	217,244	0
Yearly				61.5		0	2.09	66,233	352,804	2,961,050	34,122

* Discharge measurement made on this day ϕ Mean daily ! And other days

** Period September 1953–1996

08-4613.00 RIO GRANDE BELOW FALCON DAM NEAR FALCON, TEXAS AND NUEVA CD. GUERRERO, TAMAULIPAS

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°33'35", longitude 99°10'00", and river kilometer 442; about 11.3 kilometers southwest of Falcon, Starr County, Texas and 139 river kilometers downstream from the old international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas. A gravity well and graphic water-stage recorder located 4.1 river kilometers downstream and a cableway located 1.6 kilometers 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 cableway during spillway gate operations. During 1996 there were 13 current-meter measurements made at the cableway by the United States Section during spillway operations. Records available: 1958 through 1996. Records are also available from December 17, 1952 through 1957 for a station at Chapeno, 4.1 kilometers downstream, where discharges included arroyo inflow below Falcon Dam. This 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. 2,340 CMS on September 18, 1971. Min. 0.04 CMS on March 24 and 25, 1957 (at Chapeno gaging station).

Average Flow in Cubic Meters per Second**

Daily:	Max.	2,160	Sept. 18, 1971	Min.	0.04	March 24 & 25,	1957
Monthly:	Max.	920	Oct. 1958	Min.	0.67	Nov.	1973
Yearly:	Max.	196	1958	Min.	44.7		1970

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	14.0	53.1	54.0	48.7	137	116	23.3	68.5	9.00	14.0	42.3	19.0
2	10.3	53.0	63.6	54.0	123	115	22.9	63.8	9.00	14.0	55.1	19.0
3	8.80	45.1	59.1	54.3	113	105	24.7	62.5	9.00	11.5	55.2	21.4
4	20.0	38.8	53.9	73.9	103	97.3	28.2	67.1	11.5	6.50	60.1	21.4
5	16.5	34.1	42.1	73.7	103	97.0	29.9	68.4	14.0	5.50	65.3	16.7
6	9.00	36.4	38.8	73.9	91.5	88.9	38.0	67.7	14.0	3.50	60.6	14.0
7	9.00	41.4	44.0	108	85.5	78.1	44.2	66.3	9.00	3.50	55.3	14.0
8	11.3	34.2	43.7	113	88.1	93.2	43.1	62.6	9.00	3.50	33.7	14.0
9	19.0	* 29.1	43.8	107	90.2	90.9	43.5	39.6	9.00	3.50	34.0	16.7
10	24.0	36.0	46.4	100	91.0	87.6	43.1	25.0	10.5	7.00	39.2	19.0
11	9.00	43.8	59.2	105	97.5	85.9	43.0	46.0	12.0	13.4	46.1	18.8
12	14.0	44.0	64.2	156	106	81.4	60.9	45.9	12.0	19.3	41.3	21.3
13	14.0	44.2	59.2	184	85.1	74.9	66.8	52.6	12.0	21.1	33.8	23.8
14	16.5	* 44.0	54.1	190	73.0	75.8	67.6	45.8	15.0	24.4	31.6	28.7
15	19.0	39.1	60.4	190	71.2	82.5	68.4	27.9	16.0	35.9	28.8	31.2
16	27.1	* 38.9	74.1	191	88.5	82.7	73.1	30.8	13.0	33.3	28.6	29.2
17	38.1	43.7	73.8	190	88.6	79.8	67.8	41.1	14.5	24.2	29.0	29.1
18	43.6	44.1	78.9	220 *	93.7	78.0	63.4	45.5	19.2	21.6	29.0	26.8
19	43.6	53.8	78.5	238 *	98.6	75.1	65.9	45.6	11.1	16.4	23.9	19.0
20	44.9	61.4	79.0	238	96.3	63.0	67.9	26.3	11.1	14.0	19.2	16.3
21	44.0	65.9	84.3	244	93.6	53.2	62.9	23.6	15.5	14.0	19.1	19.0
22	44.6	64.0	84.4	250	100	58.3	66.0	5.90	8.00	18.6	19.1	19.0
23	29.6	63.8	75.9	257	110	57.4	70.6	.50	27.9	24.2	19.1	19.4
24	49.3	63.7	68.5	238 *	104	48.4	66.2	.50	46.1	24.1	19.1	19.1
25	54.4	63.9	69.2	211 *	109	43.0	58.1	.50	* 37.1	28.2	19.2	18.8
26	46.6	64.4	69.3	212 *	123	33.3	59.8	.50	23.6	37.8	16.6	18.8
27	42.7	44.1	69.5	209 *	122	28.6	63.2	.50	23.8	35.7	14.0	21.5
28	44.0	* 44.2	64.2	210 *	118	25.9	63.0	5.50	21.2	32.5	14.0	31.1
29	39.5	43.8	56.8	195	113	23.3	63.2	7.00	23.9	32.9	14.0	33.5
30	38.0		54.7	148	113	22.9	63.0	7.00	18.9	48.0	16.5	33.7
31	43.0		49.6		112 *		68.1	8.00		47.8		32.3
Sum	887.40	1,376.0	1,917.2	4,882.5	3,141.4	2,142.4	1,689.8	1,058.50	485.90	639.90	982.8	685.6

Month	Current Year 1996							Period 1954-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	ϕ High	Day	ϕ Low		Total	Average	Maximum	Minimum
Jan.			25	54.4	3	8.80	28.6	76,671	263,663	664,934	12,802
Feb.			21	65.9	9	29.1	47.4	118,886	181,260	453,153	13,796
Mar.			22	84.4	6	38.8	61.8	165,646	169,274	487,987	27,900
April			23	257	1	48.7	163	421,848	410,499	861,235	97,418
May			1	137	15	71.2	101	271,417	473,206	882,527	26,611
June			1	116	30	22.9	71.4	185,103	318,959	830,101	24,322
July			16	73.1	2	22.9	54.5	145,999	199,034	482,117	15,837
Aug.			1	68.5	!23	.50	34.1	91,454	265,432	1,823,919	74,233
Sept.			24	46.1	22	8.00	16.2	41,982	193,334	1,333,232	1,761
Oct.			30	48.0	! 6	3.50	20.6	55,287	259,977	2,463,696	2,383
Nov.			5	65.3	!27	14.0	32.8	84,914	133,863	1,391,291	1,727
Dec.			30	33.7	! 6	14.0	22.1	59,236	119,182	573,923	10,807
Yearly				257		0.50	54.3	1,718,443	2,987,683	6,188,898	1,410,843

* Discharge measurement made on this day ϕ Mean daily ! And other days

** Period 1954-1996

08-4620.00 RIO ALAMO AT CD. MIER, TAMAULIPAS

DESCRIPTION: Cableway, reinforced concrete weir of 5 CMS capacity, gravity well, and water-stage recorder located on the right bank at a point called "El Paso del Cantaro," latitude 26°27'00", longitude 99°09'05", about 1.0 kilometer north of Cd. Mier, Tamaulipas, and 8.0 river kilometers from the confluence with the Rio Grande. This stream enters the Rio Grande at river kilometer 422, 20.0 river kilometers downstream from Falcon Dam. The weir is located about 91 meters downstream from the recorder. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on the weir discharge table at low flows and a continous record of gage heights. High flow computations by shifting control methods. Records available: July 1923 through 1996.

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 0.40 meters to make it coincide with the weir crest elevation. Prior to January 1, 1969, the zero of the gage was 57.41 meters above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 4,100 CMS on September 11, 1948, with a stage of 67.64 meters above mean sea level. Min. periods of no flow have occurred at times during all years of record except 1934, 1935, 1968, 1972, 1974, 1976, 1977, 1979, and 1981.

Average Flow in Cubic Meters per Second

Daily:	Max.	2,470	Sept. 11, 1948	Min.	0	Frequently
Monthly:	Max.	207	Sept. 1967	Min.	0	Frequently
Yearly:	Max.	23.7	1967	Min.	0.35	1993

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	0	2.35	0.02	0	0
2	0	0	0	0	0	0	0	0	16.2	4.95	0	0
3	0	0	0	0	0	0	0	0	5.02	2.31	0	0
4	0	0	0	0	0	0	0	0	.84	3.20	0	0
5	0	0	0	0	0	0	0	0	.19	1.93	0	0
6	0	0	0	0	0	0	0	0	.06	1.16	0	0
7	0	0	0	0	0	0	0	0	.02	.70	0	0
8	0	0	0	0	2.48	0	0	9.56	0	.44	0	0
9	0	0	0	0	.57	0	0	3.19	0	.29	0	0
10	0	0	0	0	.21	0	0	.20	0	.18	0	0
11	0	0	0	0	.10	0	0	.03	0	.12	0	0
12	0	0	0	0	.05	0	0	0	0	.08	0	0
13	0	0	0	0	.02	0	0	0	.98	.05	0	0
14	0	0	0	0	0	0	0	0	1.67	.03	0	0
15	0	0	0	0	0	0	0	0	.43	.02	0	0
16	0	0	0	0	0	0	0	0	.17	0	0	0
17	0	0	0	0	0	0	0	0	.06	0	0	0
18	0	0	0	0	0	0	0	0	.02	0	0	0
19	0	0	0	0	0	0	0	.11	34.3	0	0	0
20	0	0	0	0	0	0	0	4.11	27.3	0	0	0
21	0	0	0	0	0	0	0	1.00	9.43	0	0	0
22	0	0	0	0	0	0	0	17.0	1.33	0	0	0
23	0	0	0	0	0	0	0	23.3	.29	0	0	0
24	0	0	0	0	0	0	0	49.1	.15	0	0	0
25	0	0	0	0	0	0	0	37.5	.08	0	0	0
26	0	0	0	0	0	0	0	12.0	.03	0	0	0
27	0	0	0	0	0	0	0	2.59	0	0	0	0
28	0	0	0	0	0	0	0	1.14	0	0	0	0
29	0	0	0	0	0	0	0	.60	0	0	0	0
30	0		0	0	0	0	0	.32	0	0	0	0
31	0		0		0		0	.25		0		0
Sum	0	0	0	0	3.43	0	0	162.00	100.92	15.48	0	0

Month	Current Year 1996: Extreme Gage Meters High	Extreme Gage Meters Low	Extreme Cubic Meters per Second High	Day	Low	Day	Average	Period 1924–1996: Volume—Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0	0	0	! 1	0	! 1	0	0	2,142	43,079	0
Feb.	0	0	0	! 1	0	! 1	0	0	2,712	65,959	0
Mar.	0	0	0	! 1	0	! 1	0	0	2,006	24,456	0
April	0	0	0	! 1	0	! 1	0	0	5,787	44,665	0
May	57.920	0	8	10.2	! 1	0	.11	296	10,028	168,990	0
June	0	0	! 1	0	! 1	0	0	0	11,469	102,675	0
July	0	0	! 1	0	! 1	0	0	0	6,962	76,780	0
Aug.	58.630	57.290	24	74.4	! 1	0	5.23	13,997	18,663	253,778	0
Sept.	58.800	57.410	20	98.2	! 1	0	3.36	8,719	41,489	535,810	167
Oct.	57.870	57.400	4	8.14	! 1	0	.50	1,337	18,050	238,962	0
Nov.	0	0	! 1	0	! 1	0	0	0	3,769	31,041	0
Dec.	0	0	! 1	0	! 1	0	0	0	2,661	19,714	0
Yearly	58.800	0		98.2		0	0.77	24,349	125,738	747,096	11,053

! And other days ** Period 1924–1996

08-4642.00 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°18'40", longitude 98°50'15", 5.0 river kilometers from the confluence with the Rio Grande, and 15.0 river kilometers downstream from Marte R. Gomez Dam. This stream enters the Rio Grande at river kilometer 384; 6.0 river kilometers upstream from the Rio Grande gaging station at Rio Grande City, 58.1 river kilometers downstream from Falcon Dam. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 9 discharge measurements during the year by the Mexican Section and a continuous record of gage heights. Computations by shifting control methods. Discharge prorated between measurements during times of extremely low flow. Records available: 1954 through 1996.

REMARKS: Except for storm inflow, diversions, 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. Prior to July 1, 1968 the zero of the gage was 39.76 meters above mean sea level, U. S. C. & G. S. datum.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 3,270 CMS on September 25,1967 with a stage of 52.57 meters above mean sea level. Min. no flow occurs frequently.

Average Flow in Cubic Meters per Second

Daily:	Max.	3,250	Sept. 25, 1967	Min.	0	Frequently
Monthly:	Max.	894	Sept. 1967	Min.	0	Frequently
Yearly:	Max.	113	1967	Min.	0.02	1992

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	3.80	0	0	0	0
8	0	0	0	0	0	0	0	4.39	0	0	0	0
9	.01	0	0	0	0	0	0	11.5	0	0	0	0
10	.01	0	0	0	0	0	0	0	0	0	0	0
11	.01	0	0	0	0	0	0	0	0	0	0	0
12	.01	0	0	0	0	0	0	0	0	0	0	0
13	.01	0	0	0	0	0	0	0	0	0	0	0
14	.01	0	0	0	0	0	0	0	0	0	0	0
15	.02	0	0	0	0	0	0	0	0	0	0	0
16	.02	0	0	0	0	0	0	0	0	0	0	0
17	* .02	0	0	0	0	0	0	0	0	0	0	0
18	.02	0	0	0	0	0	0	0	0	0	0	0
19	.02	0	0	0	0	0	0	0	0	0	0	0
20	.02	0	0	0	0	0	0	0	.87	0	0	0
21	.02	0	0	0	0	0	0	0	0	0	0	0
22	.01	0	0	0	0	0	0	0	0	0	0	0
23	.01	0	0	0	0	0	0	1.78	0	0	0	0
24	.01	0	0	0	0	0	0	.84	0	0	0	0
25	.01	0	0	0	0	0	0	0	0	0	0	0
26	.01	0	0	0	0	0	0	0	0	0	0	0
27	.01	0	0	0	0	0	0	0	0	0	0	0
28	.01	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0	0
30	0		0	0	0	0	0	0	0	0	0	0
31	0		0		0		0	0		0		0
Sum	0.27	0	0	0	0	0	0	22.31	0.87	0	0	0

Current Year 1996 | Period 1954-1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second Day	ϕ High	Day	ϕ Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.			!15	0.02	! 1	0	0.01	23.3	9,646	118,256	11.2
Feb.			! 1	0	! 1	0	0	0	5,699	79,341	0
Mar.			! 1	0	! 1	0	0	0	2,919	30,236	0
April			! 1	0	! 1	0	0	0	2,601	44,253	0
May			! 1	0	! 1	0	0	0	3,561	35,412	0
June			! 1	0	! 1	0	0	0	16,563	412,734	0
July			! 1	0	! 1	0	0	0	26,770	421,148	0
Aug.			9	11.5	! 1	0	.72	1,928	19,805	337,857	48.4
Sept.			20	.87	! 1	0	.03	75.2	120,779	2,316,989	0
Oct.			! 1	0	! 1	0	0	0	102,881	1,111,977	0
Nov.			! 1	0	! 1	0	0	0	28,499	283,859	0
Dec.			! 1	0	! 1	0	0	0	17,014	190,901	0
Yearly				11.5		0	0.06	2,027	356,737	3,566,125	648

* Discharge measurement made on this day ϕ Mean daily ! And other days

08-4645.00 CONTRIBUTIONS TO THE RIO GRANDE FROM THE LOWER RIO SAN JUAN IRRIGATION DISTRICT FALCON DAM TO RIO GRANDE CITY

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 20.0 river kilometers upstream from the confluence with the Rio Grande. The Rio San Juan enters the Rio Grande at river kilometer 384. Drain water from this irrigation district enters the Rio Grande between Falcon Dam and the Rio Grande City Gaging Station through the Rio San Juan channel, Rancherias Drain, and Los Fresnos Drain; and between the Rio Grande City Station and Anzalduas Dam through Puertecitos, Los Indios, Huizache, and Morillo Drains. Only the portion of water reaching the Rio Grande via drains located upstream from the Rio Grande City Gaging Station is shown below. Drain water reaching the Rio Grande through the Rio San Juan channel is included in the Rio San Juan tabulation.

RECORDS: Based on 20 discharge measurements during the year by the Mexican Section. Water entering the Rio Grande through the Rio San Juan Channel, composed of spills and leakage from Marte R. Gomez Dam, storm inflow and drainage below the dam, is measured at the Rio San Juan Gaging Station at Camargo, Tamaulipas, 5.0 river kilometers upstream from the confluence with the Rio Grande. All storm water measured at these two drains was deducted and is not included in the tabulation below. Records available: 1953 through 1996. Records prior to 1976 include Rio San Juan flow.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.01	0.01	0.22	0.12	0.26	0.10	0.03	0	0.01	0	0	0
2	.01	* .01	.23	.12	.25	.09	* .03	0	.01	0	0	0
3	.01	.02	.23	* .12	.24	.08	.03	0	.01	0	0	0
4	.01	.04	.23	.14	.23	.07	.03	0	* .01	0	0	0
5	* .01	.05	.24	.16	.22	.07	.03	0	.01	0	0	0
6	.01	.06	* .24	.18	.21	* .06	.03	0	.01	0	0	0
7	.01	.08	.22	.20	.20	.06	.02	0	.01	0	0	0
8	.01	.09	.21	.22	* .19	.05	.02	.01	.01	.01	0	0
9	.01	.10	.19	.24	.19	.05	.02	.01	.01	.01	0	0
10	.01	.12	.17	.25	.19	.05	.02	.01	.01	.01	0	0
11	.01	.13	.16	.27	.18	.05	.02	.01	.01	.01	0	0
12	.01	.14	* .14	.29	.18	.04	.02	.01	0	.01	0	0
13	.01	.16	.14	.31	.18	.04	* .02	* .01	0	.01	0	0
14	.01	* .17	.14	.33	.18	.04	.02	.01	0	.01	0	0
15	.01	.17	.14	.35	.18	.04	.01	.01	0	.01	0	0
16	.01	.18	.14	.37	.17	.03	.01	.01	0	* .01	0	0
17	* .01	.18	.14	* .39	.17	.03	.01	.01	0	.01	0	0
18	.01	.18	.13	.38	.17	.03	.01	.01	0	.01	0	0
19	.01	.19	.13	.37	.17	.03	.01	.01	0	.01	0	0
20	.01	.19	.13	.36	.17	.02	.01	.01	0	.01	0	0
21	.01	.19	.13	.35	.16	* .02	.01	.01	0	.01	0	0
22	.01	.20	.13	.34	.16	.02	.01	.01	0	.01	0	0
23	.01	.20	.13	.33	* .16	.02	.01	.01	0	.01	0	0
24	.01	.20	.13	.32	.15	.02	.01	.01	0	.01	0	0
25	.01	.21	.13	.31	.15	.02	.01	.01	0	.01	0	0
26	.01	.21	.13	.30	.14	.02	0	.01	0	.01	0	0
27	.01	.21	.13	.29	.13	.03	0	.01	0	0	0	0
28	.01	.22	.13	.29	.12	.03	0	.01	0	0	0	0
29	.01	.22	.12	.28	.12	.03	0	.01	0	0	0	0
30	.01		.12	.27	.11	.03	0	.01	0	0	0	0
31	.01		.12		.10		0	.01		0		0
Sum	0.31	4.13	4.97	8.25	5.43	1.27	0.45	0.24	0.11	0.19	0	0.00

Month	Current Year 1996							Period 1954-1996			
	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	ϕ High	Day	ϕ Low		Total	Average	Maximum	Minimum
Jan.			! 1	0.01	! 1	0.01	0.01	26.8	347	1,470	0
Feb.			!28	.22	! 1	.01	.14	357	439	1,157	0
Mar.			! 5	.24	!29	.12	.16	429	334	952	32.0
April			17	.39	! 1	.12	.28	713	432	1,338	24.2
May			1	.26	31	.10	.18	469	808	1,807	14.7
June			1	.10	!20	.02	.04	110	685	1,551	6.0
July			! 1	.03	!26	0	.01	38.9	417	3,573	12.1
Aug.			! 8	.01	! 1	0	.01	20.7	353	3,902	20.7
Sept.			! 1	.01	!12	0	0	9.5	276	860	9.5
Oct.			! 8	.01	! 1	0	.01	16.4	234	983	16.4
Nov.			! 1	0	! 1	0	0	0	198	794	0
Dec.			! 1	0	! 1	0	0	0	185	610	0
Yearly				0.39		0	0.07	2,190	4,708	13,656	606

* Discharge measurement made on this day ϕ Mean daily ! And other days

08-4646.00 DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, FALCON DAM TO RIO GRANDE CITY

Beginning June 1971, the Texas Water Rights Commission, now the Texas Natural Resource Conservation 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 Watermaster.

During 1996, 1,711 irrigable hectares and several towns and rural homes were allotted Rio Grande water in the river reach between Falcon Dam and the Rio Grande City gaging station. Such irrigable area was 0.7% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 1996 in this river reach was 16,600 TCM, or 1.2% of the total water diverted from the Rio Grande below Falcon Dam. Records of diversions in this river reach were determined by means of flow meters. More than one crop per year is often grown on parts of this land.

Records prior to 1976 were published under the title "Diversions from the Rio Grande, United States Side-Falcon Dam to Fort Ringgold."

EXTREME FLOWS FROM RECORDS:

			Average Flow in Cubic Meters per Second			
Daily:	Max.	4.25	June 1, 1996	Min.	0	Occasionally
Monthly:	Max.	1.58	April 1984	Min.	0.06	March 1957
Yearly:	Max.	0.65	1989	Min.	0.20	1968

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.42	1.77	2.89	0.72	0.70	4.25	0.53	0.78	0.21	0.75	2.62	0.31
2	.34	1.05	.60	.83	.76	1.28	.52	.51	.21	.74	1.18	.32
3	.41	.72	.34	.77	.84	1.65	.52	.57	.24	.52	.51	.30
4	.41	.50	.76	.76	.65	.79	.43	.38	.22	.52	.55	.30
5	.47	.30	.72	.72	.37	1.06	.48	.37	.22	.31	.53	.30
6	.37	.53	.72	.47	.61	1.09	.42	.45	.39	.22	.43	.26
7	.25	.68	.65	.32	.75	.85	.32	.45	.39	.22	.57	.26
8	.35	.70	.82	.87	.67	.86	.55	.37	.23	.24	.47	.26
9	.43	1.56	.60	.94	.77	.57	.55	.37	.23	.47	.42	.34
10	.51	1.48	.45	.92	.77	.78	.55	.37	.23	.56	.24	.33
11	.55	.59	.72	1.07	.61	.57	.55	.16	.24	.63	.29	.34
12	.82	.48	.83	1.04	.45	.58	.51	.22	.28	.53	.28	.41
13	.53	.67	.85	.76	.80	.65	.43	.22	.42	.50	.27	.41
14	.51	.82	.94	.60	.85	.65	.31	.18	.43	.46	.31	.33
15	.65	.72	.97	.75	1.11	.57	.42	.25	.23	.68	.36	.26
16	.57	.69	.74	.81	1.10	.37	.42	.23	.24	.63	.43	.41
17	.67	.51	.48	.84	1.19	.47	.54	.16	.24	.66	.27	.41
18	.52	.40	.51	.97	1.04	.47	.50	.25	.34	.70	.27	.41
19	.65	.81	.72	1.08	.72	.48	.45	.38	.33	.82	.25	.46
20	.46	.97	.74	.91	1.16	.54	.46	.40	.41	.55	.31	.58
21	.38	.95	.59	.62	1.01	.59	.33	.47	.43	.57	.51	.41
22	.55	.87	.76	.87	1.01	.58	.50	.35	.28	.68	.51	.41
23	.59	1.05	.63	.84	1.06	.40	.58	.25	.27	.66	.44	.27
24	.68	.85	.42	.88	1.22	.52	.58	.25	.37	.63	.27	.29
25	.66	0	.71	.94	1.12	.51	.53	.24	.40	.65	.25	.25
26	.64	0	.64	.95	0	.49	.45	.24	.43	.46	.27	.31
27	.53	0	.69	.68	0	.51	.42	.24	.51	0	.29	.31
28	0	0	.80	0	0	.51	0	.24	.41	0	.26	.26
29	0	0	.82	0	0	.43	0	.24	0	0	.26	0
30	0		.59	0	0	0	0	.24	0	0	.26	0
31	0		0		0		0	.24		0		0
Sum	13.92	19.67	22.70	21.93	21.34	23.07	12.85	10.07	8.83	14.36	13.88	9.51

Month	Current Year 1996: Average Rainfall** Millimeters 1996	1960–1996	Extreme–Cubic Meters per Second: Day	ϕ High	Day	ϕ Low	Average	Period 1960–1996: Volume–Thousand Cubic Meters: Total	Average	Maximum	Minimum
Jan.	2	26	12	0.82	!28	0	0.45	1,203	924	1,828	196
Feb.	3	27	1	1.77	!25	0	.68	1,699	1,148	2,198	275
Mar.	0	13	1	2.89	31	0	.73	1,961	1,547	2,558	549
April	22	36	19	1.08	!28	0	.73	1,895	1,684	4,088	440
May	29	66	24	1.22	!26	0	.69	1,844	1,294	3,237	260
June	2	66	1	4.25	30	0	.77	1,993	1,165	3,217	258
July	43	38	!23	.58	!28	0	.41	1,110	977	1,897	343
Aug.	118	58	1	.78	11	.16	.32	870	917	1,798	343
Sept.	68	108	27	.51	!29	0	.29	763	752	1,745	220
Oct.	35	46	19	.82	!27	0	.46	1,241	1,083	2,109	448
Nov.	16	27	1	2.62	10	.24	.46	1,199	779	1,793	260
Dec.	9	24	20	.58	!29	0	.31	822	736	1,490	179
Yearly	347	535		4.25		0	0.52	16,600	13,006	20,497	6,154

ϕ Mean daily ! And other days ** United States side – average of several stations in the reach

08-4647.00 RIO GRANDE AT RIO GRANDE CITY, TEXAS NEAR CAMARGO, TAMAULIPAS

DESCRIPTION: Cableway, bubbler gage, water-stage recorders (graphic and digital), and digital transmitter located on the left bank at Fort Ringgold, latitude 26°22'00", longitude 98°48'10", and river kilometer 378; about 1.6 kilometer downstream from Rio Grande City, Texas, and 6.0 river kilometers downstream from Rio San Juan. The zero of the gage is 30.48 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 26 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: January 1955 through 1996. Records prior to 1976 were published under the title "Rio Grande at Fort Ringgold, Rio Grande City, Texas." Records composed of the addition of discharges of the Rio Grande at Roma, Texas and the Rio San Juan at Santa Rosalía, 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" 4.8 kilometers 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, 64.1 river kilometers upstream. The transmitter relays gage height data via radio to the Mercedes Office of the Commission, and to the Anzalduas Dam control room, where it is recorded automatically.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 6,230 CMS on September 22 and 23, 1967, with a gage height of 18.71 meters. Min. no flow occurred several days in June and July 1953.

Average Flow in Cubic Meters per Second**

Daily:	Max.	5,860	Sept. 23, 1967	Min.	0.36	March 5, 1985
Monthly:	Max.	1,400	Oct. 1958	Min.	6.66	March 1957
Yearly:	Max.	259	1958	Min.	49.6	1970

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3.49	48.1	* 46.9	56.3	151	106	31.0	64.4	15.9	* 26.6	* 49.3	16.7
2	7.22	* 53.5	54.6	57.7	131 *	114	30.3	* 65.1	20.9	18.5	46.4	21.5
3	9.63	53.9	60.2	* 59.6	118	106 *	* 30.9	62.2	32.4	15.5	51.1	* 24.7
4	5.47	47.8	60.0	61.6	102	96.5	32.7	61.8	* 24.1	15.6	54.4	25.7
5	16.7	38.6	54.0	72.2	102	92.4	36.4	65.0	17.6	17.1	58.0	29.5
6	18.1	36.4	42.4	73.2	95.3	93.3	38.4	63.4	18.6	14.1	61.9	26.3
7	7.41	37.1	37.4	82.2	78.8	75.4	49.1	61.7	21.1	10.2	58.9	19.7
8	5.51	43.9	43.2	120	85.7	80.4	50.6	62.3	20.6	8.77	55.4	17.9
9	5.08	35.2	43.2	123	84.7	89.0	47.7	90.3	15.8	6.50	43.4	17.0
10	* 10.8	29.6	45.3	112	84.9	85.9	56.1	51.9	12.8	4.87	37.1	17.2
11	20.8	37.7	48.9	106	84.4	84.0	51.4	23.3	11.2	3.90	40.3	21.1
12	9.31	48.4	60.8	122	96.6	79.5	51.4	43.6	11.5	3.35	49.9	23.0
13	7.07	47.1	62.0	152	96.6	76.2	61.8	46.4	14.8	10.4	* 47.4	23.7
14	7.88	48.4	59.6	172	79.4	64.9	63.3	51.7	17.3	20.9	34.8	27.5
15	8.41	* 47.3	54.2	168	60.3	75.4	63.9	48.6	18.5	22.2	31.8	29.0
16	13.3	42.7	62.1	179	* 78.2	77.9	65.2	28.5	20.3	32.0	29.4	35.5
17	21.7	43.0	66.3	186 *	84.6	78.0	68.2	29.0	21.0	* 36.4	28.8	* 31.2
18	35.8	49.3	69.3	212	83.8	72.5	* 64.2	43.1	17.8	26.2	30.1	30.5
19	43.4	49.8	72.2	252	91.8	68.3	61.0	50.5	* 19.8	23.9	30.8	30.0
20	44.2	57.6	75.6	240	95.6	* 68.0	65.1	* 53.3	57.5	19.2	29.9	25.2
21	44.3	63.9	76.8	240	89.2	59.2	64.8	40.9	45.0	15.0	23.2	19.6
22	45.3	64.0	* 82.9	252	88.3	52.8	62.4	34.8	30.4	11.2	20.7	20.3
23	44.6	64.8	84.6	244	99.8	60.1	63.8	49.4	17.6	12.8	21.7	23.9
24	30.5	64.4	75.6	235	106	54.4	65.2	56.7	17.1	20.9	20.1	22.7
25	* 50.5	65.4	67.2	229 *	95.6	51.7	62.0	59.1	52.7	24.5	21.6	22.8
26	54.3	65.0	68.4	226	116	47.8	58.1	42.8	48.1	27.0	21.8	22.5
27	46.7	59.7	69.7	214 *	118	40.8	60.1	20.1	26.2	38.8	22.2	22.5
28	45.5	47.1	69.9	223	118	35.5	62.2	10.0	29.5	38.8	19.6	21.1
29	45.7	45.6	64.3	221	111	33.3	62.4	6.22	25.9	33.1	17.7	34.1
30	43.6		60.8	183	110	31.0	62.9	4.35	26.6	33.8	16.6	38.7
31	40.1		60.3		107		63.1	7.30		46.9		39.1
Sum	792.38	1,435.3	1,898.7	4,873.8	3,043.6	2,150.2	1,705.7	1,397.77	728.6	638.99	1,074.3	780.2

Current Year 1996 | Period 1954-1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High Day	High	Low Day	Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	8.210	7.000	!26	55.0	!10	0	25.6	68,462	274,442	628,819	20,625
Feb.	8.380	7.960	21	69.3	10	28.5	49.5	124,010	207,243	464,530	31,488
Mar.	8.490	7.960	23	89.1	7	29.5	61.2	164,048	174,415	470,016	17,787
April	9.280	8.100	19	259	! 1	50.3	162	421,096	386,119	878,161	92,665
May	8.875	8.190	1	155	15	54.5	98.2	262,967	474,934	850,281	45,271
June	8.665	7.890	2	122	30	29.6	71.7	185,777	355,188	811,943	97,028
July	8.370	7.880	17	75.3	2	29.3	55.0	147,372	225,040	707,768	27,479
Aug.	8.660	7.545	9	117	30	4.00	45.1	120,767	283,307	1,853,522	30,778
Sept.	8.350	7.660	20	70.7	!10	10.6	24.3	62,951	353,706	3,346,077	52,327
Oct.	8.140	7.570	31	50.5	12	3.13	20.6	55,209	369,445	3,758,177	37,009
Nov.	8.310	7.720	6	63.9	30	15.7	35.8	92,820	168,494	1,778,975	36,109
Dec.	8.015	7.730	31	40.2	9	16.3	25.2	67,409	144,905	665,515	39,434
Yearly	9.280	7.000		259		0	56.1	1,772,888	3,417,238	8,165,042	1,565,582

* Discharge measurement made on this day ! And other days ** Period 1955-1996

08-4683.00 CONTRIBUTIONS TO THE RIO GRANDE FROM THE LOWER RIO SAN JUAN IRRIGATION DISTRICT RIO GRANDE CITY 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 20.0 river kilometers upstream from the confluence with the Rio Grande. The Rio San Juan enters the Rio Grande at river kilometer 384. Drain water from this irrigation district enters the Rio Grande between Falcon Dam and the Rio Grande City Gaging Station through the Rio San Juan channel, Rancherias Drain, and Los Fresnos Drain; and between the Rio Grande City 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 Rio Grande City Gaging Station is shown below.

RECORDS: Drain water reaching the Rio Grande through Morillo Drain was determined by hourly staff gage readings and the weir discharge table, and through Puertecitos and Los Indios Drains by prorating between frequent current meter measurements. All storm water measured at these drains was deducted and is not included in the tabulation below. Records available: 1953 through 1996.

REMARKS: 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 1996, 34,947 TCM were diverted.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.13	0.07	0.36	0.28	1.01	0.45	0.11	0.04	0.02	0.04	0.02	0.02
2	.13	* .07	.36	.28	.38	.40	* .11	* .04	.02	* .04	.02	.02
3	.13	.09	.36	* .28	.39	.35	.11	.04	.02	.04	.02	* .02
4	.14	.11	.36	.28	.40	.30	.10	.04	* .02	.04	.02	.02
5	* .14	.13	.36	.27	.41	.26	.10	.03	.02	.04	* .02	.02
6	.13	.17	* .36	.26	.43	* .21	.09	.03	.02	.03	.02	.02
7	.13	.19	.35	.26	.44	.20	.09	.03	.02	.03	.02	.02
8	.12	.21	.33	.26	* .45	.19	.09	.03	.02	.03	.02	.02
9	.11	.23	.32	.25	.48	.19	.08	.03	.02	.03	.02	.02
10	.11	.25	.31	.24	.51	.18	.08	.03	.02	.03	.02	.02
11	.09	.27	.29	.24	.53	.17	.08	.02	.02	.03	.02	.02
12	.08	.31	* .28	.24	.56	.16	.08	.02	.01	.02	.02	.02
13	.08	.33	.28	.23	.59	.15	.07	* .02	.01	.02	.02	.02
14	.07	* .35	.28	.22	.62	.15	.07	.02	.01	.02	.02	.02
15	.06	.35	.28	.22	.65	.14	.07	.02	.01	.02	.02	.02
16	.06	.35	.28	.22	.67	.13	.06	.02	.01	* .02	.02	.02
17	* .05	.35	.28	* .21	.70	.12	.06	.02	.01	.02	.02	.02
18	.05	.35	.28	.22	.73	.11	.05	.02	* .01	.02	.02	* .02
19	.05	.35	.28	.23	.76	.11	* .05	.02	.01	.02	.02	.02
20	.05	.36	.28	.25	.79	.10	.05	.02	.01	.02	.02	.02
21	.05	.36	.28	.26	.81	* .09	.05	.02	.02	.02	.02	.02
22	.05	.36	.28	.27	.84	.09	.05	.02	.02	.02	.02	.02
23	.05	.36	.28	.28	* .87	.10	.05	.02	.02	.02	.02	.02
24	.05	.36	.28	.29	.82	.10	.05	.02	.02	.02	.02	.02
25	.06	.35	.28	.31	.78	.10	.05	.02	.02	.02	.02	.02
26	.07	.35	.28	.32	.73	.10	.04	.02	.03	.02	.02	.02
27	.07	.35	.28	.33	.68	.10	.04	.02	.03	.02	.02	.02
28	.07	.35	.28	.33	.63	.10	.04	.02	.03	.02	.02	.02
29	.07	.35	.28	1.28	.59	.10	.04	.02	.03	.02	.02	.02
30	.07		.28	2.29	.54	.10	.04	.02	.04	.02	.02	.02
31	.07		.28		.49		.04	.02		.02		.02
Sum	2.59	8.08	9.36	10.90	19.28	5.05	2.09	0.76	0.57	0.78	0.60	0.62

Current Year 1996 | Period 1954-1996

Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	ϕ High	Day	ϕ Low		Total	Average	Maximum	Minimum
Jan.			! 4	0.14	!17	0.05	0.08	224	3,084	9,405	224
Feb.			!20	.36	! 1	.07	.28	698	3,550	8,707	572
Mar.			! 1	.36	!12	.28	.30	809	2,408	6,526	643
April			30	2.29	17	.21	.36	942	4,297	12,815	468
May			1	1.01	2	.38	.62	1,666	9,770	37,225	856
June			1	.45	!21	.09	.17	436	9,398	106,021	436
July			! 1	.11	!26	.04	.07	181	4,911	60,172	181
Aug.			! 1	.04	!11	.02	.02	65.7	2,587	16,395	65.7
Sept.			30	.04	!12	.01	.02	49.2	2,573	13,905	49.2
Oct.			! 1	.04	!12	.02	.03	67.4	3,006	12,127	67.4
Nov.			! 1	.02	! 1	.02	.02	51.8	2,088	12,904	51.8
Dec.			! 1	.02	! 1	.02	.02	53.6	2,606	41,991	53.6
Yearly				2.29		0.01	0.17	5,244	50,278	221,389	5,244

* Discharge measurement made on this day ϕ Mean daily ! And other days

08-4684.00 DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, RIO GRANDE CITY TO ANZALDUAS DAM

Beginning June 1971, the Texas Water Rights Commission, now the Texas Natural Resource Conservation 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 Watermaster.

During 1996, 68,492 irrigable hectares and several towns and rural homes were allotted Rio Grande water in the river between the gaging station at Rio Grande City and Anzalduas Dam. Such irrigable area was 24.9% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 1996 in this river reach was 298,412 TCM, or 22.1% of the total water diverted from the Rio Grande below Falcon Dam. Records of diversions in this river reach were determined by means of flowmeters and by a deflection meter developed by the International Boundary and Water Commission. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

Average Flow in Cubic Meters per Second

Daily:	Max.	34.6	June 21, 1960	Min.	0	Occasionally	
Monthly:	Max.	28.6	June 1960	Min.	0.29	March	1957
Yearly:	Max.	13.5	1989	Min.	5.32		1966

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.63	17.3	20.4	14.9	15.3	18.4	7.28	14.7	0.15	8.13	11.9	3.77
2	3.34	12.5	10.9	14.4	16.5	11.9	8.17	11.8	1.56	7.30	7.29	4.22
3	1.99	10.1	11.2	15.3	15.8	17.0	8.80	9.03	.16	6.90	6.90	4.43
4	4.09	6.51	16.1	12.4	14.5	17.1	5.95	9.64	1.67	4.51	6.57	5.00
5	3.62	8.20	13.4	9.75	14.6	18.5	2.70	12.5	1.54	2.03	11.5	6.01
6	2.91	8.08	14.8	7.31	17.2	16.5	2.46	13.4	2.94	2.02	8.28	4.27
7	2.47	7.70	13.5	6.83	16.8	14.5	1.73	13.9	.08	3.70	11.8	2.86
8	3.62	9.65	14.6	11.4	17.6	12.7	14.2	13.5	.39	4.05	9.49	8.02
9	4.70	11.5	11.3	11.6	19.1	12.9	14.7	11.7	2.28	3.63	4.61	8.23
10	5.60	8.10	10.7	14.1	17.3	15.4	11.7	7.76	1.62	4.96	6.13	7.99
11	6.59	8.82	13.6	13.6	12.7	15.3	11.7	10.2	1.73	4.01	10.2	8.11
12	7.67	11.2	14.6	13.1	14.0	14.4	9.20	10.9	2.48	3.18	12.1	8.69
13	4.39	12.2	14.5	7.76	10.8	12.3	5.16	12.0	2.47	5.01	11.6	8.10
14	2.99	12.5	16.4	7.75	8.27	10.7	5.09	12.4	1.35	9.80	10.1	6.21
15	8.20	13.7	15.7	11.8	7.51	9.76	11.3	12.2	1.19	9.25	8.47	6.44
16	8.40	12.3	11.2	15.3	10.7	9.23	12.1	10.7	1.78	9.81	6.79	11.0
17	7.71	7.14	10.7	15.6	10.8	12.4	14.3	7.69	1.98	8.90	8.49	10.8
18	10.2	8.01	13.0	14.1	8.56	11.9	14.0	9.03	3.44	7.61	9.73	11.0
19	8.98	12.1	15.4	14.4	8.95	11.3	10.9	11.3	4.68	5.10	11.1	11.1
20	7.45	14.0	16.9	13.9	10.3	10.6	7.41	10.5	4.53	5.06	8.90	8.32
21	5.81	14.9	17.8	13.9	12.6	10.6	7.19	8.69	3.38	5.27	16.6	4.77
22	10.4	15.2	14.7	17.2	11.7	8.08	15.5	4.19	5.48	8.97	6.16	3.99
23	9.78	15.2	12.7	17.3	12.7	5.83	14.4	5.28	5.77	8.91	4.23	6.65
24	10.4	12.6	11.6	17.9	12.6	8.71	13.9	3.13	6.20	9.94	5.63	5.02
25	11.5	12.1	14.1	18.1	8.87	10.7	12.8	1.24	7.51	9.10	7.39	3.65
26	11.3	15.6	15.7	13.5	7.85	11.8	11.8	1.73	8.79	6.35	9.84	9.89
27	9.03	15.4	15.1	11.7	12.1	8.33	7.86	.78	6.22	3.38	8.69	10.6
28	6.68	12.5	14.6	11.4	11.7	5.84	12.8	1.74	3.41	5.31	3.73	6.99
29	9.62	12.3	13.1	13.5	14.3	3.74	16.2	1.10	1.88	8.38	4.79	3.62
30	12.3		10.9	16.0	16.9	3.71	15.2	2.48	2.86	7.43	3.98	4.93
31	12.6		9.07		15.2		14.6	.77		7.40		3.78
Sum	214.97	337.41	428.27	395.80	403.81	350.13	321.10	255.98	89.52	195.40	252.99	208.46

Month	Current Year 1996: Average Rainfall** Millimeters 1996	1960–1996	Extreme–Cubic Meters per Second: Day	ϕ High	Day	ϕ Low	Average	Period 1960–1996: Volume–Thousand Cubic Meters: Total	Average	Maximum	Minimum
Jan.	3	30	31	12.6	1	0.63	6.93	18,573	15,919	35,458	2,479
Feb.	1	27	1	17.3	4	6.51	11.6	29,152	18,178	47,610	4,040
Mar.	0	16	1	20.4	31	9.07	13.8	37,003	28,772	51,495	8,288
April	10	33	25	18.1	7	6.83	13.2	34,197	33,170	53,085	9,608
May	20	68	9	19.1	15	7.51	13.0	34,889	28,057	55,732	3,919
June	5	69	5	18.5	30	3.71	11.7	30,251	27,798	73,847	6,181
July	3	36	29	16.2	7	1.73	10.4	27,743	27,831	57,262	8,330
Aug.	79	53	1	14.7	31	.77	8.26	22,117	28,381	44,751	8,469
Sept.	38	93	26	8.79	7	.08	2.98	7,735	18,738	42,873	5,102
Oct.	27	54	24	9.94	6	2.02	6.30	16,883	22,780	46,570	4,358
Nov.	10	23	21	16.6	28	3.73	8.43	21,858	19,587	45,171	3,614
Dec.	3	26	19	11.1	7	2.86	6.72	18,011	15,638	30,837	3,091
Yearly	199	528		20.4		0.08	9.44	298,412	284,849	424,806	168,318

ϕ Mean daily ! And other days ** United States side – average of several stations in the reach

08-4686.00 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°07'50", longitude 98°20'10", 0.8 canal kilometer from the canal intake, and about 8.0 kilometers northwest of Reynosa, Tamaulipas. The canal intake is immediately upstream from Anzalduas Dam at river kilometer 274, 165 river kilometers downstream from Falcon Dam. The zero of the gage is 26.31 meters above mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 163 discharge measurements during the year, 152 by the Mexican Section and 11 by the United States Section of the Commission, and a continuous record of gage heights. Computations by shifting control methods. Records available: 1952 through 1996.

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 37.0 canal kilometers downstream from this station. For area irrigated during 1995 see the tabulation under the heading of "Drainage Basin and Irrigated Areas" in this Bulletin. Flow at this canal station is affected by backwater from the operation of canal gates 19 kilometers and 37 kilometers below this station.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 310 CMS on June 2, 1957, with a gage height of 4.88 meters. Min. no flow occurs frequently.

Average Flow in Cubic Meters per Second

Daily:	Max.	279	May 17, 1994	Min.	0	Frequently
Monthly:	Max.	215	April 1993	Min.	0	Several months
Yearly:	Max.	60.3	1989	Min.	4.26	1952

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	* 6.40	* 9.10	* 6.40	75.1	3.30	* 14.4	* 7.00	0	0	* 4.00	0
2	0	* 8.80	0	0	* 52.0	3.30	* 6.10	* 8.00	0	0	4.00	* 10.8
3	0	8.80	0	0	* 52.6	* 3.50	* 4.50	8.00	0	0	7.60	* 5.90
4	0	8.80	0	0	34.9	* 3.50	* 4.50	8.00	0	0	* 15.8	0
5	0	8.80	0	* 10.3	* 26.8	* 3.60	* 4.60	* 7.40	11.0	0	* 20.1	0
6	0	* 4.40	0	* 23.9	* 21.7	* 3.60	4.60	* 7.50	* 10.4	0	* 20.8	0
7	0	0	0	* 33.1	* 29.9	* 3.60	4.60	* 7.40	5.00	0	* 20.4	0
8	0	0	0	* 39.9	* 23.0	3.60	* 5.40	* 8.60	1.70	0	* 22.1	0
9	* 6.80	0	0	* 58.8	* 16.0	3.60	5.40	* 11.2	0	* 6.50	24.9	0
10	* 13.1	0	10.2	* 63.2	* 14.6	* 3.60	* 5.20	25.4	0	* 10.2	21.1	0
11	* 9.80	0	* 7.30	* 52.4	15.1	* 8.10	* 5.00	16.9	0	* 10.8	0	0
12	0	0	* 4.30	* 46.6	* 15.5	* 8.00	* 5.00	* 7.70	0	0	0	0
13	0	0	0	* 68.7	* 14.2	* 8.00	6.20	* 7.40	0	0	0	0
14	0	0	0	78.2	* 25.6	* 8.20	6.20	3.70	0	0	0	0
15	0	0	0	* 81.2	0	3.50	* 5.70	0	0	0	0	10.0
16	0	0	0	* 89.9	0	3.50	* 5.70	0	0	0	0	* 10.9
17	0	10.3	0	* 84.2	0	* 3.50	* 4.10	0	0	0	0	4.90
18	0	9.50	0	* 75.4	0	* 9.10	* 3.70	0	0	0	0	0
19	0	0	0	* 98.2	0	* 8.90	* 4.80	2.00	0	0	* 10.0	0
20	0	0	0	133 *	0	* 9.20	4.80	* 3.80	* 10.0	0	* 10.7	0
21	0	0	0	132	0	* 8.90	6.10	* 4.00	17.1	0	0	0
22	0	0	0	125 *	0	8.90	* 7.30	* 3.90	17.1	0	0	0
23	0	0	0	130 *	0	8.90	* 7.20	* 22.5	0	0	0	0
24	0	0	8.20	134 *	0	* 9.50	* 8.50	46.0	0	0	0	0
25	0	0	* 14.0	125 *	0	* 4.00	* 7.20	49.5	0	0	0	0
26	0	0	14.0	100 *	2.50	* 4.00	* 7.60	* 49.0	0	0	* 8.50	0
27	0	* 5.40	0	84.0	* 5.00	* 4.00	7.60	* 35.7	0	0	* 7.50	* 13.9
28	1.40	* 8.70	0	* 84.0	* 5.60	4.00	7.60	* 5.80	* 11.3	* 4.20	0	0
29	* 3.40	* 9.20	0	* 84.0	* 5.80	10.0	* 6.80	0	7.50	* 3.50	0	0
30	* 3.60		8.60	* 81.5	* 5.80	15.6	* 7.60	0	0	* 4.20	0	0
31	* 3.50		12.9		* 3.30		8.80	0		* 3.30		0
Sum	41.60	89.10	88.60	2,122.90	445.00	183.00	192.80	356.40	91.10	42.70	197.50	56.40

Current Year 1996 | Period 1952-1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second Day	ϕ High	Day	ϕ Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.			10	13.1	! 1	0	1.34	3,594	137,255	439,093	0
Feb.			17	10.3	! 7	0	3.07	7,698	107,063	310,245	0
Mar.			!25	14.0	! 2	0	2.86	7,655	45,992	182,376	1,182
April			24	134	! 2	0	70.8	183,419	191,909	557,401	2,950
May			1	75.1	!15	0	14.4	38,448	267,878	531,533	467
June			30	15.6	! 1	3.30	6.10	15,811	121,082	333,959	0
July			1	14.4	18	3.70	6.22	16,658	53,454	200,370	392
Aug.			25	49.5	!15	0	11.5	30,793	99,032	333,642	698
Sept.			!21	17.1	! 1	0	3.04	7,871	63,904	204,486	131
Oct.			11	10.8	! 1	0	1.38	3,689	61,698	258,526	0
Nov.			9	24.9	!11	0	6.58	17,064	17,780	103,226	0
Dec.			27	13.9	! 1	0	1.82	4,873	29,378	205,654	0
Yearly				134		0	10.7	337,573	1,196,425	1,903,119	134,796

* Discharge measurement made on this day ϕ Mean daily ! And other days

08-4692.00 RIO GRANDE BELOW ANZALDUAS DAM NEAR REYNOSA, TAMAULIPAS AND MISSION, TEXAS

DESCRIPTION: Cableway, gravity well, water-stage recorder, and selsyn-type transmitter, located on the right bank at latitude 26°07'50", longitude 98°19'55", and river kilometer 273; 0.8 river kilometer downstream from Anzalduas Dam, about 7.0 kilometers northwest of Reynosa, Tamaulipas, and 16.6 river kilometers upstream from the international highway bridge between Hidalgo, Texas and Reynosa, Tamaulipas. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 135 discharge measurements during the year, 107 by the Mexican Section and 28 by the United States Section of the Commission, and a continuous record of gage heights. Records available: 1952 through 1996.

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 United States floodway system inlet at Anzalduas Dam before reaching this station. Prior to January 1, 1968 the zero of the gage was 25.18 meters 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. 3,700 CMS on September 24, 1967, with a stage of 34.48 meters above mean sea level. Min. periods of no flow have occurred on several occasions in 1953, 1954, 1956, and 1957.

Average Flow in Cubic Meters per Second

Daily:	Max.	3,440	Sept. 25, 1967	Min.	0	Occasionally
Monthly:	Max.	1,070	Oct. 1958	Min.	0.16	March 1957
Yearly:	Max.	182	1958	Min.	4.49	1957

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	6.47	32.2	36.5	38.1	87.2	84.1	* 16.9	48.6	5.10	* 15.6	20.2	11.4
2	12.0	31.7	34.3	35.7	* 78.1	91.7	* 17.1	* 48.4	5.21	13.8	16.7	16.0
3	11.0	26.0	34.2	35.0	70.2	* 92.1	* 13.1	41.6	* 6.59	* 13.2	22.8	* 16.0
4	5.01	30.8	33.9	36.3	73.1	* 93.3	12.1	47.3	7.00	* 7.00	27.2	14.5
5	7.64	35.4	43.2	38.3	* 65.2	83.3	* 17.0	* 53.5	14.3	6.08	* 33.2	7.74
6	9.02	* 34.3	40.0	32.6	* 56.3	* 78.3	11.5	* 52.4	* 7.22	5.99	30.5	6.08
7	7.26	* 33.4	31.7	33.5	* 57.2	* 67.5	19.6	* 48.7	7.45	3.79	* 25.9	6.57
8	8.33	29.2	* 28.1	35.0	57.6	61.8	* 23.5	* 46.2	8.83	1.84	15.6	9.35
9	* 9.25	29.0	23.7	37.5	* 60.0	63.6	22.6	* 43.2	* 6.54	1.97	13.4	13.3
10	7.35	28.6	30.2	35.9	* 62.2	* 71.1	* 24.8	39.6	* 4.73	* 2.06	24.0	* 11.7
11	7.01	28.5	33.2	36.2	63.3	* 70.9	* 29.2	35.6	5.59	3.11	29.7	16.1
12	5.18	29.1	33.7	40.2	* 65.9	* 68.8	* 38.1	* 32.7	* 11.4	5.80	* 31.8	15.9
13	3.78	* 28.4	34.3	47.1	* 68.7	* 63.6	37.4	* 36.2	* 6.94	10.8	32.6	* 12.1
14	3.97	30.0	34.8	58.6	69.0	* 66.0	51.4	36.4	7.64	* 10.8	* 27.1	14.0
15	13.4	27.6	* 34.5	66.1	* 70.5	55.8	* 55.3	36.3	9.42	7.44	22.4	17.6
16	15.9	27.7	42.8	70.8	69.9	62.2	* 55.5	* 20.8	7.42	11.4	22.8	21.1
17	11.2	27.5	49.4	77.2	* 71.8	* 67.9	49.5	18.3	7.27	* 15.2	23.8	* 20.5
18	* 22.0	34.9	53.2	* 81.2	79.8	* 66.8	* 46.7	19.9	* 6.36	* 12.0	21.2	18.1
19	32.7	* 37.9	* 52.8	82.3	82.4	* 65.0	* 48.4	* 29.9	* 10.4	10.3	* 19.4	11.4
20	30.5	33.4	* 54.3	78.1	* 84.5	58.3	43.0	30.2	* 8.90	12.0	* 16.6	11.1
21	33.1	40.8	59.0	78.5	* 82.9	* 50.6	44.6	* 31.2	5.50	13.1	9.84	11.0
22	32.8	* 48.0	* 60.6	84.7	* 85.0	41.2	* 51.3	27.5	15.0	* 18.5	* 6.30	19.6
23	33.8	* 52.6	56.1	84.6	* 87.0	38.9	50.4	15.6	* 12.5	17.4	10.7	16.9
24	* 40.0	52.9	60.6	* 82.5	* 94.5	* 44.1	* 51.4	4.90	* 6.87	* 15.8	19.1	13.2
25	* 40.1	49.6	54.8	85.2	93.3	40.8	51.2	4.58	20.6	* 11.1	14.7	13.3
26	27.4	48.2	* 52.3	* 96.6	93.9	* 34.1	* 45.8	4.38	* 18.9	8.30	10.9	14.8
27	28.4	44.5	49.9	104	* 96.1	* 24.6	39.0	4.37	12.2	15.5	5.58	15.0
28	28.3	38.0	45.9	106 *	95.1	19.8	43.0	4.83	12.4	* 20.8	5.58	18.3
29	* 28.2	* 35.5	* 44.0	104	* 94.8	14.2	* 43.6	* 4.90	13.2	* 21.6	7.54	26.1
30	* 29.3		43.2	* 99.6	96.6	12.5	* 43.6	* 5.08	12.4	32.2	9.48	28.7
31	29.4		36.0		* 97.2		45.8	5.33		* 31.5		20.6
Sum	579.77	1,025.7	1,321.2	1,921.4	2,409.3	1,752.9	1,142.4	878.47	283.88	375.98	576.62	468.04

Current Year 1996 | Period 1952-1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second Day	High	Day	Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	24.530	23.340	24	44.6	14	3.10	18.7	50,092	111,247	401,561	1,340
Feb.	24.700	24.130	23	54.0	! 3	25.7	35.4	88,620	88,671	341,107	1,024
Mar.	25.100	24.120	24	77.0	9	25.3	42.6	114,152	98,802	348,805	418
April	25.720	24.340	28	110	6	35.0	64.0	166,009	144,390	507,514	3,898
May	25.560	24.830	31	98.7	6	55.3	77.7	208,164	188,009	591,520	43,410
June	25.520	23.760	4	96.0	30	10.9	58.4	151,451	220,903	838,797	1,828
July	24.860	23.670	16	56.8	4	8.67	36.9	98,703	159,768	687,079	2,461
Aug.	24.840	23.430	5	55.8	27	3.68	28.3	75,900	156,962	1,489,882	1,163
Sept.	24.180	23.400	26	25.3	!20	3.00	9.46	24,527	249,898	2,297,808	4,831
Oct.	24.460	23.320	31	36.1	! 8	1.80	12.1	32,485	281,258	2,868,998	2,138
Nov.	24.420	23.450	! 5	34.4	!27	5.23	19.2	49,820	136,602	1,773,274	1,770
Dec.	24.370	23.440	29	30.1	! 6	5.04	15.1	40,439	101,576	666,198	1,855
Yearly	25.720	23.320		110		1.80	34.8	1,100,362	1,938,086	5,724,004	141,538

* Discharge measurement made on this day ! And other days

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 at Anzalduas Dam near Mission, Texas.

Floodwater entering the system is measured first at the Banker Floodway Station at Anzalduas Dam near Mission and again 40.6 kilometers downstream at the Main Floodway Station on Farm Road No. 88 bridge south of Weslaco. At a point 4.8 kilometers 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 diversion, 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 1996, no flood flow was diverted through this floodway system.

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 the inlet located 59.7 kilometers downstream from Anzalduas Dam.

Floodwater entering the system through the Retamal Inlet flows into Culebron and Villa Cardenas Reservoirs through the Retamal Floodway, while floodwater entering the canal at Anzalduas Dam reaches these lakes via the Culebron and Retamal Canals. From that point it flows in a southeastwardly direction via Floodway No. 1 into the Gulf of Mexico.

The Retamal Floodway replaces the previously used floodway system, which consisted of Retamal Canal, San Rafael Floodway, and Floodway No. 2.

In 1996, no flood flow was diverted through Retamal Floodway or Anzalduas Canal.

08-4732.00 DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, ANZALDUAS DAM TO PROGRESO

Beginning June 1971, the Texas Water Rights Commission, now the Texas Natural Resource Conservation 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 Watermaster.

During 1996, 47,479 hectares 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 17.3% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 1996 in this river reach was 272,523 TCM, or 20.2% of the total water diverted from the Rio Grande below Falcon Dam. Records of diversions in this river reach were determined by means of flowmeters and by deflection meters which were developed by the International Boundary and Water Commission. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Cubic Meters per Second						
Daily:	Max.	33.4	June 1, 1990	Min.	0	Occasionally		
Monthly:	Max.	23.1	June 1990	Min.	0.38	May	1972	
Yearly:	Max.	12.6	1989	Min.	4.73		1970	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	11.8	12.4	11.2	15.7	26.7	5.48	16.8	0	10.3	5.60	3.06
2	3.88	11.7	4.05	11.1	14.3	16.4	10.3	14.4	.97	11.1	3.58	9.32
3	3.88	5.93	4.02	10.7	15.7	17.2	1.88	4.15	1.38	8.85	3.10	9.63
4	.04	5.00	7.14	10.3	14.6	19.3	.48	6.44	1.40	2.27	4.60	9.20
5	2.11	12.5	11.0	10.4	14.2	16.9	7.39	13.3	8.04	1.38	12.6	5.75
6	2.17	10.5	12.8	3.60	15.9	14.1	1.90	11.0	1.07	1.01	13.2	4.72
7	2.87	9.11	11.8	2.39	15.9	16.1	8.48	9.47	.19	.60	17.3	4.71
8	5.07	11.2	13.2	7.15	15.6	6.67	11.6	14.6	0	.73	5.44	4.60
9	6.06	4.04	5.08	8.37	15.0	6.29	14.9	4.01	.46	.72	4.66	6.46
10	5.74	3.65	8.50	9.83	17.4	15.7	12.5	3.45	.64	.72	4.69	6.84
11	6.79	2.84	15.4	10.2	11.8	16.9	13.2	6.87	.76	.78	7.61	12.7
12	1.20	10.4	15.4	13.2	11.1	15.7	18.3	3.94	14.6	.40	10.9	14.5
13	.62	12.6	14.7	12.5	14.5	16.0	6.47	7.69	1.47	.20	10.5	7.96
14	.61	12.0	14.9	14.6	15.7	20.5	12.7	6.93	.35	2.10	11.6	7.55
15	1.36	14.3	16.8	17.5	13.0	6.20	15.0	10.0	.10	2.30	3.99	7.11
16	5.82	15.6	5.07	18.6	12.8	10.6	16.9	2.63	2.25	3.90	3.25	13.1
17	5.85	11.9	8.02	19.1	13.4	18.1	11.9	2.79	3.05	10.9	2.17	11.0
18	5.38	11.4	12.7	18.2	14.6	18.7	11.8	2.35	1.45	1.80	2.05	8.70
19	7.07	13.6	10.8	18.9	17.4	18.5	10.3	10.0	11.4	2.00	2.32	4.76
20	2.15	13.5	11.4	11.1	18.5	15.7	5.64	11.7	2.12	1.80	2.36	3.42
21	6.72	14.5	11.0	13.2	20.4	17.4	5.29	14.0	.75	2.84	1.84	4.29
22	9.28	15.0	12.0	18.9	19.8	6.73	12.3	5.92	0	7.39	1.74	8.26
23	11.8	17.0	4.01	20.7	22.1	5.88	11.5	4.62	1.20	7.58	2.02	11.0
24	11.5	10.5	8.70	19.3	27.4	13.2	9.77	7.50	1.56	7.46	5.36	5.69
25	11.4	13.8	10.2	18.5	13.0	10.1	9.30	3.30	9.00	3.24	7.13	1.64
26	12.7	9.84	10.9	16.9	21.2	7.24	11.2	.52	14.2	3.43	6.51	1.08
27	4.24	11.9	9.49	14.9	21.9	7.30	5.82	.74	3.37	1.39	.81	1.69
28	3.40	8.82	11.3	19.9	21.9	1.10	8.54	.74	2.90	2.47	.27	1.78
29	6.42	8.56	4.35	16.1	19.3	.49	9.14	.74	3.43	2.99	.13	2.60
30	7.47		3.63	16.5	19.9	0	6.50	.77	4.56	7.84	.13	10.7
31	7.26		2.33		10.1		8.54	.22		4.48		1.59
Sum	160.86	313.49	303.09	413.84	514.1	381.70	295.02	201.59	92.67	114.97	157.46	205.41

Month	Current Year 1996							Period 1960-1996			
	Average Rainfall** Millimeters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	1996	1960-1996	Day	ϕ High	Day	ϕ Low		Total	Average	Maximum	Minimum
Jan.	0	34	26	12.7	1	0	5.19	13,898	16,594	43,121	892
Feb.	2	31	23	17.0	11	2.84	10.8	27,086	14,395	35,196	2,522
Mar.	3	17	15	16.8	31	2.33	9.78	26,187	23,185	44,562	7,923
April	11	36	23	20.7	7	2.39	13.8	35,756	27,463	48,447	8,691
May	12	77	24	27.4	31	10.1	16.6	44,418	27,522	53,225	1,008
June	30	69	1	26.7	30	0	12.7	32,979	33,015	59,901	5,184
July	0	40	12	18.3	4	.48	9.52	25,490	29,376	49,928	8,137
Aug.	104	62	1	16.8	31	.22	6.50	17,417	22,412	33,973	9,192
Sept.	56	105	12	14.6	! 1	0	3.09	8,007	14,894	34,885	3,964
Oct.	45	58	2	11.1	13	.20	3.71	9,933	18,590	38,509	2,540
Nov.	13	28	7	17.3	!29	.13	5.25	13,605	15,378	41,712	1,252
Dec.	6	31	12	14.5	26	1.08	6.63	17,747	12,754	24,623	2,284
Yearly	282	588		27.4		0	8.62	272,523	255,578	398,520	149,260

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

08-4736.00 DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, PROGRESO TO SAN BENITO

Beginning June 1971, the Texas Water Rights Commission, now the Texas Natural Resource Conservation 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 Watermaster.

During 1996, 126,513 hectares and several towns and rural homes were allotted Rio Grande water in the river reach between Progreso and the gaging station at San Benito. Such irrigable area was 46.0% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 1996 in this river reach was 618,594 TCM, or 45.9% of the total water diverted from the Rio Grande below Falcon Dam. Records of diversions in this river reach were determined by means of flowmeters, by open channel rating stations, and by deflection meters which were developed by the International Boundary and Water Commission. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

Average Flow in Cubic Meters per Second

Daily:	Max.	82.4	June 5, 1990	Min.	0	Occasionally	
Monthly:	Max.	63.0	May 1995	Min.	1.52	March	1957
Yearly:	Max.	27.6	1989	Min.	10.4		1968

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	11.2	18.8	15.7	63.1	67.5	4.32	23.7	0	6.29	6.28	5.52
2	4.38	16.9	17.9	14.8	66.8	61.8	3.77	24.2	0	4.57	7.18	8.38
3	9.82	16.5	24.5	15.7	61.2	62.3	4.13	24.1	.82	3.66	7.42	6.79
4	6.70	12.5	22.9	16.2	53.2	60.0	4.69	24.3	1.41	2.99	13.4	6.60
5	7.74	12.6	18.6	19.8	52.4	61.6	3.79	25.2	1.42	2.37	17.0	6.98
6	2.31	17.9	28.2	18.5	46.1	53.0	6.71	27.5	3.09	2.26	14.8	4.88
7	5.87	20.4	23.6	24.4	46.3	53.3	7.82	26.8	.59	2.70	14.1	2.06
8	7.78	20.4	21.3	21.9	46.2	47.3	7.93	29.6	0	4.28	8.08	.86
9	2.61	20.3	15.4	21.7	41.9	33.3	9.97	28.3	1.61	1.55	3.99	3.98
10	2.46	16.8	15.1	23.2	44.7	32.9	11.2	25.8	3.53	0	3.91	9.49
11	1.52	16.6	14.8	22.4	42.7	26.9	11.3	25.0	2.40	.11	14.5	3.02
12	1.40	15.5	14.1	20.2	48.9	36.0	11.6	24.0	1.51	0	14.7	2.07
13	.06	10.8	14.9	19.7	56.6	41.4	15.4	23.3	.63	0	15.7	3.41
14	0	10.9	15.1	18.7	56.9	35.6	26.3	21.4	5.72	4.74	10.6	4.30
15	1.28	11.5	15.4	27.4	54.7	46.3	27.8	21.1	1.57	7.53	10.3	4.21
16	11.0	11.3	11.8	35.8	75.3	46.9	28.2	15.4	5.03	5.36	9.16	9.62
17	11.6	9.23	18.7	37.6	75.1	43.1	29.7	10.3	4.60	5.07	8.61	9.65
18	5.62	9.06	27.2	39.7	75.8	45.3	30.5	7.76	3.00	4.65	5.33	7.49
19	16.5	14.8	30.8	40.8	61.1	31.6	25.5	8.98	2.13	2.34	15.5	6.57
20	17.2	15.8	26.1	57.1	57.1	31.7	21.1	12.0	.94	2.25	9.49	3.69
21	20.5	11.6	26.3	53.6	48.6	33.4	21.7	11.7	.01	5.72	6.69	4.32
22	18.0	18.6	34.8	50.0	53.1	62.1	27.0	11.6	.01	6.71	5.78	3.34
23	18.8	26.2	38.4	57.2	52.4	22.6	26.5	7.92	14.6	4.73	.07	5.82
24	17.9	27.9	40.3	59.8	52.4	29.4	27.6	5.60	12.8	4.04	.90	7.94
25	17.4	26.4	40.8	53.3	52.2	22.1	27.9	3.41	12.0	4.30	6.16	5.27
26	9.51	16.6	32.4	55.0	54.2	23.2	35.4	1.65	13.6	3.58	7.92	4.19
27	4.33	16.5	31.3	59.3	53.2	19.7	20.6	2.65	2.47	4.58	4.43	4.14
28	6.65	18.0	29.7	60.9	55.1	18.9	23.4	2.72	2.37	12.6	2.06	1.54
29	8.88	16.0	27.6	60.1	61.5	9.16	24.3	2.65	2.29	15.7	2.16	0
30	10.8		22.6	52.2	59.7	8.29	23.9	2.11	4.75	12.9	.08	4.89
31	11.0		20.9		59.6		22.7	2.02		12.6		15.6
Sum	259.62	468.79	740.3	1,072.7	1,728.1	1,166.65	572.73	482.77	104.90	150.18	246.30	166.62

Current Year 1996 | Period 1960–1996

Month	Average Rainfall** Millimeters 1996	Average Rainfall** Millimeters 1960–1996	Extreme–Cubic Meters per Second Day	ϕ High	Day	ϕ Low	Average	Volume–Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0	40	21	20.5	! 1	0	8.37	22,431	48,824	119,807	6,010
Feb.	2	39	24	27.9	18	9.06	16.2	40,503	28,290	75,228	5,929
Mar.	18	22	25	40.8	16	11.8	23.9	63,962	36,147	84,858	9,551
April	13	44	28	60.9	2	14.8	35.8	92,681	63,227	125,384	15,299
May	9	78	18	75.8	9	41.9	55.7	149,308	71,867	168,687	8,409
June	77	77	1	67.5	30	8.29	38.9	100,799	83,875	162,181	13,724
July	3	50	26	35.4	2	3.77	18.5	49,484	59,549	114,350	13,947
Aug.	148	75	8	29.6	26	1.65	15.6	41,711	44,613	88,370	15,710
Sept.	129	129	23	14.6	! 1	0	3.50	9,063	29,279	68,815	5,314
Oct.	125	69	29	15.7	!10	0	4.84	12,976	31,600	71,743	6,347
Nov.	32	37	5	17.0	23	.07	8.21	21,280	25,648	66,002	5,986
Dec.	17	37	31	15.6	29	0	5.37	14,396	24,709	55,789	8,217
Yearly	573	697		75.8		0	19.6	618,594	547,628	868,544	328,940

ϕ Mean daily ! And other days ** United States side – average of several stations in the reach

08-4737.00 RIO GRANDE NEAR SAN BENITO, TEXAS AND RAMIREZ, TAMAULIPAS

DESCRIPTION: Cableway, concrete control weir, bubbler gage, water-stage recorders (graphic and digital), and digital transmitter, located on the left bank at latitude 26°01'50", longitude 97°43'40", and river kilometer 156, 6.3 river kilometers downstream from San Benito pumping plant and about 15.3 kilometers southwest of San Benito, Texas. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 24 current-meter 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 current-meter measurements. Records available: November 26, 1952 through August 25, 1953, and December 1953 through 1996.

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, 286 river kilometers 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 radio to the Mercedes office of the Commission, and to the Anzalduas Dam Control Room, where it is recorded automatically. 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. 708 CMS on September 29, 1967 with a gage height of 18.61 meters. Min. no flow occurs occasionally.

Average Flow in Cubic Meters per Second**

Daily:	Max.	702	Sept. 29, 1967	Min.	0	Occasionally	
Monthly:	Max.	405	Oct. 1971	Min.	1.12	Dec.	1956
Yearly:	Max.	107	1976	Min.	5.66		1956

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0.40	8.21	5.55	* 15.2	* 20.0	10.2	* 11.0	* 7.27	7.67	* 2.87	1.92	1.36
2	.08	7.62	5.76	17.2	15.0	8.13	11.0	7.39	7.62	3.03	2.53	1.19
3	.04	7.48	5.14	8.96	7.92	* 11.7	11.0	7.53	7.29	3.20	2.33	* 2.00
4	1.31	7.43	* 5.58	7.93	11.4	11.8	11.0	7.67	* 6.54	3.75	* 2.65	4.17
5	2.51	* 8.26	12.8	7.70	15.2	11.9	10.4	8.51	6.34	4.59	2.66	3.13
6	2.42	8.67	9.42	5.44	10.9	9.85	9.84	8.43	6.24	4.80	3.03	4.31
7	2.07	3.44	1.54	5.70	8.49	9.62	5.97	8.58	5.90	4.96	3.43	5.06
8	1.90	2.32	.12	7.06	8.45	5.37	5.37	8.70	5.57	4.81	3.51	6.07
9	3.76	1.50	.32	6.43	6.81	13.8	4.77	8.34	5.26	4.78	4.40	4.94
10	2.41	2.29	.03	5.17	6.85	12.8	2.27	9.03	4.94	4.74	6.95	2.08
11	3.85	7.14	.73	2.72	8.85	14.0	1.57	9.19	4.84	4.54	6.18	1.82
12	4.16	8.66	2.39	2.46	13.6	11.8	1.92	7.87	4.70	4.33	3.59	* 3.06
13	6.30	5.95	1.37	5.07	13.3	10.4	2.11	6.69	4.53	4.12	3.42	4.21
14	7.56	5.59	1.73	6.53	8.83	6.00	1.98	6.82	4.47	3.07	3.54	2.18
15	6.67	* 5.13	* 2.38	* 10.4	9.15	11.1	* 4.09	* 6.93	4.09	* 1.57	3.53	1.64
16	4.93	2.43	4.55	7.80	8.81	10.7	4.47	6.89	* 2.71	1.30	3.54	1.09
17	* 1.18	2.18	8.84	7.47	* 8.30	13.9	4.13	8.06	1.76	1.37	3.54	.67
18	.24	3.18	7.23	11.4	9.99	* 9.70	3.96	8.12	1.90	1.50	* 3.72	1.06
19	.42	3.39	2.43	10.4	13.3	7.27	5.21	8.06	2.04	1.56	3.86	3.88
20	.62	4.75	6.64	8.73	13.4	5.53	9.94	7.99	2.53	1.63	3.86	5.32
21	.91	6.44	10.8	6.94	11.9	3.71	10.1	7.93	3.49	1.70	3.86	6.76
22	.23	5.91	10.4	12.2	7.67	4.51	9.79	8.22	3.69	1.70	3.92	5.16
23	.41	.83	8.53	14.2	8.27	8.91	9.45	11.4	3.34	.93	4.99	3.43
24	.14	.03	7.39	12.4	8.87	10.9	9.79	13.1	1.63	1.63	4.57	2.00
25	.15	.24	8.66	12.1	11.8	8.71	7.83	12.3	1.64	1.72	.08	5.13
26	5.05	.08	8.50	15.1	14.0	10.5	7.86	8.43	1.77	1.78	.04	6.17
27	16.2	3.28	5.65	23.0	15.0	10.6	7.47	7.48	1.92	1.84	.87	4.30
28	13.0	7.59	7.17	22.8	14.2	* 9.91	7.20	7.03	3.26	1.91	.40	6.92
29	15.2	3.15	6.00	27.5	8.82	11.0	7.12	6.97	3.33	1.95	2.61	11.2
30	9.40		11.1	24.3	7.67	10.5	7.15	6.80	3.28	1.80	3.63	12.3
31	7.60		13.1		9.42		7.20	6.70		1.86		5.88
Sum	121.12	133.17	181.85	330.31	336.17	294.82	212.96	254.43	124.29	85.34	97.16	128.49

Current Year 1996 | Period 1954-1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second Day	High	Day	Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	10.820	10.250	27	17.4	! 3	0	3.91	10,465	53,976	393,481	3,601
Feb.	10.740	10.345	6	12.1	!26	0	4.59	11,506	54,540	447,576	4,168
Mar.	10.780	9.960	31	14.6	!18	0	5.87	15,712	47,283	444,640	3,164
April	11.010	10.460	29	29.6	11	1.43	11.0	28,539	57,995	430,013	9,689
May	10.920	10.635	1	22.8	9	5.95	10.8	29,045	87,804	472,420	20,813
June	10.845	10.540	9	18.3	21	3.19	9.83	25,472	97,647	647,984	19,815
July	10.730	10.485	1	11.1	12	1.29	6.87	18,400	81,395	552,457	5,790
Aug.	10.775	10.600	24	14.8	31	5.99	8.21	21,983	84,043	1,020,220	3,827
Sept.	10.640	10.465	1	7.71	24	1.52	4.14	10,739	143,663	787,894	9,513
Oct.	10.570	10.095	7	5.02	!22	0	2.75	7,373	177,014	1,086,522	4,737
Nov.	10.615	9.730	! 9	6.95	! 8	0	3.24	8,395	85,698	816,665	6,699
Dec.	10.790	9.850	30	15.1	! 1	0	4.14	11,102	70,538	591,018	2,992
Yearly	11.010	9.730		29.6		0	6.28	198,731	1,041,596	3,383,956	179,397

* Discharge measurement made on this day ! And other days ** Period 1954-1996

08-4749.00 DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, SAN BENITO TO BROWNSVILLE

Beginning June 1971, the Texas Water Rights Commission, now the Texas Natural Resource Conservation 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 Watermaster.

During 1996, 28,912 hectares and several towns and rural homes were allotted Rio Grande water in the river reach between gaging stations near San Benito and Brownsville. Such irrigable area was 10.5% of the total irrigable area below Falcon Dam allotted Rio Grande water.

The total diversion during 1996 in this river reach was 138,198 TCM, or 10.3% of the total water diverted from the Rio Grande below Falcon Dam. Records of diversion in this river reach were determined by means of flowmeters, and by deflection meters which were developed by the International Boundary and Water Commission. More than one crop per year is often grown on parts of this land.

EXTREME FLOWS FROM RECORDS:

Average Flow in Cubic Meters per Second

Daily:	Max.	22.1	June 14, 1963	Min.	0	Occasionally	
Monthly:	Max.	15.3	June 1965	Min.	0.52	Feb.	1966
Yearly:	Max.	6.32	1965	Min.	2.78		1981

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1.00	4.77	5.83	7.24	12.6	15.8	7.10	7.07	4.75	1.38	1.37	0.91
2	.99	3.64	2.90	8.43	8.93	8.60	9.88	6.92	5.89	1.34	1.00	1.78
3	1.31	2.51	2.67	9.07	8.23	8.84	11.1	4.77	5.60	.17	1.03	1.49
4	1.26	2.54	5.36	8.60	7.35	6.90	9.12	4.63	4.57	0	1.09	1.20
5	1.04	2.85	6.42	7.66	7.62	5.98	7.08	5.17	6.44	0	1.05	1.20
6	1.04	3.15	9.35	7.24	8.55	10.5	4.30	5.18	6.19	.37	1.05	1.12
7	1.00	4.51	5.89	6.54	8.73	11.1	3.37	7.71	5.99	1.26	1.07	1.02
8	1.04	3.26	4.78	6.42	7.48	6.11	3.15	6.88	5.54	1.80	1.12	.98
9	1.52	2.00	1.00	6.09	6.85	7.36	2.56	6.99	5.60	1.70	1.08	.98
10	1.36	1.60	.73	6.04	5.93	9.49	2.47	7.14	6.18	1.21	1.09	1.37
11	1.30	1.16	1.37	7.16	6.06	11.5	2.25	6.81	3.75	1.15	1.65	1.11
12	1.29	1.72	1.94	6.73	5.27	7.44	2.70	6.93	2.40	1.23	2.08	1.13
13	1.07	1.47	1.69	3.29	6.32	11.0	2.91	5.70	1.25	1.17	2.10	.99
14	1.00	4.81	1.91	2.54	10.4	11.5	3.74	5.02	1.26	1.74	2.06	1.06
15	1.23	4.67	1.90	3.31	11.0	11.1	3.46	3.86	1.38	1.47	2.06	1.09
16	1.78	4.74	1.84	3.08	8.56	8.49	3.88	3.97	1.83	1.25	2.03	1.10
17	1.87	2.85	2.86	7.57	7.16	9.54	5.28	3.55	1.77	1.54	1.51	1.08
18	1.57	1.79	5.41	9.12	7.39	11.6	6.53	3.59	1.43	1.34	1.48	1.17
19	1.45	1.69	7.16	8.09	7.53	11.0	6.19	4.11	.96	1.08	1.05	1.08
20	1.44	1.77	6.95	8.37	7.99	6.87	6.42	3.48	1.44	1.39	1.04	1.09
21	1.45	6.01	7.08	11.6	9.64	5.27	8.72	1.76	1.23	1.00	.99	1.08
22	1.49	7.01	6.41	11.9	9.16	5.43	10.7	1.73	1.42	1.40	1.06	1.85
23	1.38	5.53	7.11	7.79	9.09	4.69	7.89	3.75	1.39	1.46	1.08	2.73
24	1.20	3.05	5.26	8.54	9.30	5.66	6.63	9.52	1.58	1.13	.99	4.04
25	1.34	1.01	5.46	11.1	8.71	8.32	4.92	8.36	1.45	1.13	2.84	2.35
26	1.71	.99	5.70	11.3	7.55	7.61	4.41	7.02	1.24	1.14	2.58	5.02
27	3.02	2.20	8.23	10.1	7.65	8.55	4.88	4.80	1.19	1.05	1.16	4.74
28	4.23	2.91	4.36	9.36	10.2	7.64	2.55	4.93	1.30	1.04	.98	4.79
29	4.34	1.82	4.44	8.60	9.43	7.06	5.78	4.29	1.36	1.02	.91	10.1
30	4.65		3.05	10.7	8.52	5.82	5.21	3.62	1.39	1.02	.93	8.74
31	3.30		2.86		6.91		4.60	2.95		1.08		8.71
Sum	53.67	88.03	137.92	233.58	256.11	256.77	169.78	162.21	87.77	35.06	41.53	77.10

Month	Current Year 1996: Average Rainfall** Millimeters 1996	1960–1996	Extreme–Cubic Meters per Second: Day	ϕ High	Day	ϕ Low	Average	Period 1960–1996: Volume–Thousand Cubic Meters: Total	Average	Maximum	Minimum
Jan.	7	43	30	4.65	2	0.99	1.73	4,637	12,878	30,303	1,871
Feb.	3	36	22	7.01	26	.99	3.04	7,606	8,866	25,442	1,268
Mar.	15	20	6	9.35	10	.73	4.45	11,916	9,148	18,745	1,777
April	12	48	22	11.9	14	2.54	7.79	20,181	14,591	34,233	3,613
May	19	78	1	12.6	12	5.27	8.26	22,128	19,407	59,789	1,956
June	49	75	1	15.8	23	4.69	8.56	22,185	20,626	39,816	4,612
July	20	46	3	11.1	11	2.25	5.48	14,669	15,821	29,633	4,548
Aug.	178	80	24	9.52	22	1.73	5.23	14,015	11,615	21,680	4,021
Sept.	123	141	5	6.44	19	.96	2.93	7,583	7,579	14,796	1,081
Oct.	198	74	8	1.80	! 4	0	1.13	3,029	7,227	14,503	1,962
Nov.	13	40	25	2.84	29	.91	1.38	3,588	5,751	11,127	2,215
Dec.	23	40	29	10.1	1	.91	2.49	6,661	6,194	11,785	2,484
Yearly	660	721		15.8		0	4.37	138,198	139,703	199,208	87,788

ϕ Mean daily ! And other days ** United States side – average of several stations in the reach

08-4750.00 RIO GRANDE NEAR BROWNSVILLE, TEXAS AND MATAMOROS, TAMAULIPAS

DESCRIPTION: Cableway, bubbler gage, water-stage recorders (graphic and digital), and digital transmitter located on the left bank at latitude 25°52'35", longitude 97°27'20", and river kilometer 78.3, 0.3 river kilometer downstream from El Jardin pumping plant, and 11.2 river kilometers downstream from the international highway bridge (Gateway) between Brownsville, Texas and Matamoros, Tamaulipas. The zero of the gage is at mean sea level, U. S. C. & G. S. datum.

RECORDS: Based on 23 current-meter measurements during the year and a continuous record of gage heights. Computations by shifting control methods. Records available: 1934 through 1996.

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, 364 river kilometers upstream. Excessive upstream flood flows are partly diverted into the United States and Mexican floodway systems before reaching this station. The transmitter relays gage height data via radio to the Mercedes office of the Commission, and to the Anzalduas Dam Control Room, where it is recorded automatically.

EXTREME FLOWS FROM RECORDS: Momentary: Max. 898 CMS on October 8, 1945 with a gage height of 9.60 meters. Min. no flow occurs frequently.

Average Flow in Cubic Meters per Second**

Daily:	Max.	459	Oct. 19 & 20, 1971	Min.	0	Frequently	
Monthly:	Max.	408	Oct. 1971	Min.	0.10	Aug. 1957	
Yearly:	Max.	103	1976	Min.	1.19	1956	

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.47	* 4.25	* 1.07	* 4.26	* 9.39	1.50	* 5.18	* 1.91	2.39	* 2.88	0.45	3.79
2	3.51	2.15	1.51	3.71	8.74	2.37	4.43	1.48	2.30	1.52	.43	* 2.93
3	2.43	1.93	2.75	4.69	6.81	* 1.99	3.35	2.50	* 2.84	1.24	.80	1.74
4	1.49	1.95	3.35	2.45	2.57	2.76	2.30	2.32	4.74	18.6	1.17	1.61
5	1.01	2.66	1.44	.84	2.56	4.55	1.51	1.71	4.90	25.6	1.70	1.61
6	1.11	3.64	1.15	.62	6.00	4.01	2.75	2.48	4.80	17.9	* 1.57	1.64
7	1.24	4.71	1.54	.98	2.65	1.31	6.23	2.25	3.48	* 9.89	1.32	1.46
8	1.16	2.30	.77	1.58	1.62	1.88	4.71	2.39	2.23	6.37	1.77	2.04
9	1.08	1.58	.27	1.26	1.75	1.32	3.69	2.36	2.07	3.82	1.72	2.68
10	1.01	1.42	.56	.74	1.41	1.77	3.89	1.19	1.78	2.26	2.41	2.72
11	1.28	1.09	.77	.03	.95	2.03	2.76	1.12	1.09	4.89	3.52	2.05
12	1.30	2.23	.56	.06	1.97	2.20	.98	1.92	1.79	4.19	3.21	* 1.23
13	1.75	5.68	.63	.01	4.46	1.14	.45	2.92	5.42	3.19	* 2.07	.79
14	1.92	4.24	* .88	0	4.16	1.01	.23	1.45	5.82	2.75	1.48	.98
15	2.49	3.13	.73	.02	1.63	.10	.15	* 1.21	4.62	* 2.66	1.65	1.28
16	2.30	* 1.93	.44	2.34	1.27	.72	* .11	2.10	* 4.12	1.80	2.38	1.03
17	* 1.35	1.71	.20	2.23	* 1.80	2.72	.15	2.21	2.65	1.08	3.17	.69
18	.79	2.04	2.98	.83	1.85	* 2.61	.15	4.29	1.59	.58	3.24	.56
19	.52	1.85	2.56	.79	1.82	1.41	.13	4.64	1.43	.81	3.17	.40
20	.12	1.48	.83	1.63	3.76	1.47	.05	4.01	2.53	.70	2.87	.31
21	.06	.96	.02	.26	3.58	.37	.03	4.52	5.24	.97	2.89	.70
22	.01	1.00	.05	0	4.17	.38	.18	5.30	5.25	1.22	3.08	1.91
23	.06	1.04	.59	.21	1.83	1.15	.04	6.56	5.19	.81	3.29	1.99
24	.12	.58	.32	.17	.66	4.73	0	6.17	3.81	.36	4.82	.89
25	.04	.22	.10	.94	.87	4.88	0	7.26	1.86	.73	5.51	.52
26	.10	0	1.20	.39	2.54	.34	.50	5.23	.92	2.18	2.89	.48
27	.79	0	1.32	.29	4.42	2.07	3.08	1.99	.54	3.51	1.64	.54
28	1.82	0	.52	6.79	5.63	3.91	1.79	1.35	1.54	3.33	1.95	.19
29	5.50	.12	.84	8.43	4.81	2.69	1.31	1.36	1.66	2.35	3.07	.17
30	6.11		1.63	10.5	2.04	3.89	2.01	1.39	2.07	1.30	4.40	.47
31	4.22		4.08		1.18		2.53	1.64		.68		.55
Sum	51.16	55.89	35.66	57.05	98.90	63.28	54.67	89.23	90.67	130.17	73.64	39.95

Current Year 1996 | Period 1954-1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme-Cubic Meters per Second High Day	High	Low Day	Low	Average	Volume-Thousand Cubic Meters Total	Average	Maximum	Minimum
Jan.	0.950	0.345	30	6.59	!20	0	1.65	4,420	43,129	407,379	349
Feb.	.965	.200	13	7.14	!25	0	1.93	4,829	47,854	446,279	1,303
Mar.	.820	.270	31	5.14	!17	0	1.15	3,081	40,573	445,080	2,532
April	1.350	.170	30	12.1	!11	0	1.90	4,929	41,853	397,086	1,079
May	1.215	.375	1	9.81	24	.59	3.19	8,545	67,956	438,873	5,104
June	.930	.290	24	6.66	!15	0	2.11	5,467	76,754	600,151	2,996
July	.880	.220	7	6.40	!22	0	1.76	4,723	69,175	539,704	1,383
Aug.	1.000	.430	25	7.94	11	.88	2.88	7,709	71,502	1,001,626	269
Sept.	1.065	.425	13	8.18	27	.38	3.02	7,834	128,891	784,150	1,171
Oct.	2.600	.510	5	29.6	19	.19	4.20	11,247	164,900	1,094,351	933
Nov.	1.150	.480	25	5.83	1	.26	2.45	6,362	80,398	650,763	1,587
Dec.	.925	.310	1	4.07	!28	.08	1.29	3,452	67,425	591,508	646
Yearly	2.600	0.170		29.6		0	2.30	72,598	900,410	3,263,087	37,722

* Discharge measurement made on this day ! And other days ** Period 1954-1996

08-4753.00 DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, BROWNSVILLE TO THE GULF OF MEXICO

Beginning June 1971, the Texas Water Rights Commission, now the Texas Natural Resource Conservation 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 1996, 1,653 hectares 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 area below Falcon Dam allotted Rio Grande water.

The total diversion during 1996 in this river reach was 4,346 TCM, or 0.3% of the total water diverted from the Rio Grande below Falcon Dam. Records of diversions in this river reach were determined 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 Cubic Meters per Second			
Daily:	Max.	2.78	June 1, 1996	Min.	0	Frequently
Monthly:	Max.	0.66	June 1965	Min.	0	Occasionally
Yearly:	Max.	0.20	1965	Min.	0.02	1976

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0.67	0.57	1.29	2.78	0.51	0.32	0	0	0	0
2	0	.09	0	.63	.66	.55	.25	.14	0	0	0	0
3	0	.09	0	.63	.57	.71	.24	.14	0	0	0	0
4	0	.09	0	.63	.54	.35	.13	.14	0	0	0	0
5	0	.09	.09	.47	.43	.33	0	.06	0	0	0	.09
6	0	0	.20	.28	.50	.36	0	.06	0	0	0	.09
7	0	0	.18	.09	.35	.46	0	.06	0	0	0	.09
8	0	.12	.18	.20	.31	.22	0	0	0	0	0	.09
9	0	.12	.18	.20	.23	.16	0	0	0	0	0	.09
10	0	.12	0	.22	.23	.31	0	0	0	0	0	.16
11	0	0	0	.11	.11	.31	0	0	0	0	0	.31
12	0	.08	.11	.16	.13	.35	0	0	0	0	0	.22
13	0	.08	.11	.16	.19	.18	0	0	0	0	0	.21
14	0	.08	.23	.10	.39	.21	0	0	0	0	0	.12
15	0	0	.41	.36	.39	.19	0	0	0	0	0	0
16	0	0	.41	.51	.40	.08	0	0	0	0	0	.11
17	0	0	.11	.62	.40	.13	0	0	0	0	0	.13
18	0	0	.08	.60	.20	.47	0	0	0	0	0	.16
19	0	0	.59	.59	.20	.20	0	0	0	0	0	.20
20	0	.12	.83	.48	.58	.26	0	0	0	0	0	.19
21	0	.12	.88	.35	.72	.37	0	0	0	0	0	.01
22	0	.12	.73	.53	.70	.30	.08	0	0	0	0	.01
23	0	.12	.77	.42	.67	.26	.08	0	0	0	0	.01
24	0	.12	.68	.65	.65	.40	.08	0	0	0	0	.01
25	0	0	.79	.82	.67	.12	.08	0	0	0	0	.01
26	0	0	.38	.63	0	.26	.08	0	0	0	0	.01
27	0	0	.10	.54	0	.54	.08	0	0	0	0	.01
28	0	0	.10	0	0	.40	0	0	0	0	0	.01
29	0	0	.21	0	0	.33	0	0	0	0	0	0
30	0		.21	0	0	0	0	0	0	0	0	0
31	0		0		0		0	0		0		0
Sum	0	1.56	9.23	11.55	11.51	11.59	1.61	0.92	0	0	0	2.34

Month	Average Rainfall** Millimeters 1996	Average Rainfall** Millimeters 1960–1996	Extreme–Cubic Meters per Second ϕ High Day	ϕ High	ϕ Low Day	ϕ Low	Average	Volume–Thousand Cubic Meters Current Year 1996 Total	Period 1960–1996 Average	Period 1960–1996 Maximum	Period 1960–1996 Minimum
Jan.	2	46	! 1	0	! 1	0	0	0	406	1,573	0
Feb.	4	34	! 8	.12	! 1	0	.05	135	266	1,113	0
Mar.	3	17	21	.88	! 2	0	.30	797	174	797	0
April	18	49	25	.82	!28	0	.39	998	355	1,187	22.4
May	2	70	1	1.29	!26	0	.37	994	475	1,673	0
June	15	70	1	2.78	30	0	.39	1,001	606	1,718	0
July	8	46	1	.51	! 5	0	.05	139	247	960	0
Aug.	127	77	1	.32	! 8	0	.03	79.5	112	391	0
Sept.	228	145	! 1	0	! 1	0	0	0	47.0	199	0
Oct.	262	81	! 1	0	! 1	0	0	0	60.1	224	0
Nov.	14	44	! 1	0	! 1	0	0	0	73.6	311	0
Dec.	15	39	11	.31	! 1	0	.08	202	118	613	0
Yearly	698	718		2.78		0	0.14	4,346	2,940	6,212	670

ϕ Mean daily ! And other days ** United States side – average of several stations in the reach

08-4754.00 DIVERSIONS FROM THE RIO GRANDE
UNITED STATES SIDE, FALCON DAM TO THE GULF OF MEXICO

Beginning June 1971 the Texas Water Rights Commission, now the Texas Water 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 Watermaster.

In 1996, 274,760 hectares, 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 1,348,997 TCM. Records of diversion from the Rio Grande were determined by means of flowmeters, by open channel rating stations and by deflection meters developed by the International Boundary and Water Commission. Drainage from more than 90% of this area does not return to the Rio Grande, but some of it is reused 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 area irrigated on 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 volumes shown in the summary below may not equal the sum of the volumes of the individual reaches.

EXTREME FLOWS FROM RECORDS:

		Average Flow in Cubic Meters per Second				
Daily:	Max. 159	June 1, 1960	Min. 0.08	Aug. 10, 1980
Monthly:	Max. 123	June 1960	Min. 2.89	Mar. 1957
Yearly:	Max. 59.8	1989	Min. 24.9	1970

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2.05	46.8	61.0	50.3	109	135	25.2	63.4	5.11	26.9	27.8	13.6
2	12.9	45.9	36.4	50.2	108	101	32.9	58.0	8.63	25.1	20.2	24.0
3	17.4	35.9	42.7	52.2	102	108	26.7	42.8	8.20	20.1	19.0	22.6
4	12.5	27.1	52.3	48.9	90.8	104	20.8	45.5	9.27	10.3	26.2	22.3
5	15.0	36.5	50.2	48.8	89.6	104	21.4	56.6	17.7	6.09	42.7	20.3
6	8.80	40.2	66.1	37.4	88.9	95.6	15.8	57.6	13.7	5.88	37.8	15.3
7	12.5	42.4	55.6	40.6	88.8	96.3	21.7	58.4	7.24	8.48	44.8	11.0
8	17.9	45.3	54.9	47.9	87.9	73.9	37.4	65.0	6.16	11.1	24.6	14.8
9	15.3	39.5	33.6	48.9	83.9	60.6	42.7	51.4	10.2	8.07	14.8	20.1
10	15.7	31.8	35.5	54.3	86.3	74.6	38.4	44.5	12.2	7.45	16.1	26.2
11	16.8	30.0	45.9	54.5	74.0	71.5	39.0	49.0	8.88	6.68	34.3	25.6
12	12.4	39.4	47.0	54.4	79.9	74.5	42.3	46.0	21.3	5.34	40.1	27.0
13	6.67	37.8	46.8	44.2	89.2	81.5	30.4	48.9	6.24	6.88	40.2	21.1
14	5.11	41.1	49.5	44.3	92.5	79.2	48.1	45.9	9.11	18.8	34.7	19.6
15	12.7	44.9	51.2	61.1	87.7	74.1	58.0	47.4	4.47	21.2	25.2	19.1
16	27.6	44.6	31.1	74.1	109	75.7	61.5	32.9	11.1	21.0	21.7	35.3
17	27.7	31.6	40.9	81.3	108	83.7	61.7	24.5	11.6	27.1	21.1	33.1
18	23.3	30.7	58.9	82.7	108	88.4	63.3	23.0	9.66	16.1	18.9	28.9
19	34.7	43.0	65.5	83.9	95.9	73.1	53.3	34.8	19.5	11.3	30.2	24.2
20	28.7	46.2	62.9	91.9	95.6	65.7	41.0	38.1	9.44	11.1	22.1	17.3
21	34.9	48.1	63.7	93.3	93.0	67.6	43.2	36.6	5.80	15.4	26.6	14.9
22	39.7	56.8	69.4	99.4	95.5	83.2	66.1	23.8	7.19	25.2	15.3	17.9
23	42.4	65.1	63.6	104	98.0	39.7	61.0	21.8	23.3	23.3	7.84	26.5
24	41.7	55.0	67.0	107	104	57.9	58.6	26.0	22.5	23.2	13.2	23.0
25	42.3	53.3	72.1	103	84.6	51.9	55.5	16.6	30.4	18.4	23.8	13.2
26	35.9	43.0	65.7	98.3	90.8	50.6	63.3	11.2	38.3	15.0	27.1	20.5
27	21.2	46.0	64.9	97.2	94.9	44.9	39.7	9.21	13.8	10.4	15.4	21.5
28	21.0	42.2	60.9	102	98.9	34.4	47.3	10.4	10.4	21.4	7.30	15.4
29	29.3	38.7	50.5	98.3	105	21.2	55.4	9.02	8.96	28.1	8.25	16.3
30	35.2		41.0	95.4	105	17.8	50.8	9.22	13.6	29.2	5.38	29.3
31	34.2		35.2		91.8		50.4	6.20		25.6		29.7
Sum	703.53	1,228.9	1,642.0	2,149.8	2,936.5	2,189.6	1,372.9	1,113.75	383.96	510.17	712.67	669.6

Current Year 1996 | Period 1958-1996

Month	Average Rainfall** Millimeters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	1996	1958-1996	Day	ϕ High	Day	ϕ Low		Total	Average	Maximum	Minimum
Jan.	2	38	23	42.4	1	2.05	22.7	60,785	92,118	224,987	11,984
Feb.	3	34	23	65.1	4	27.1	42.4	106,177	68,726	155,700	14,537
Mar.	7	17	25	72.1	16	31.1	53.0	141,869	95,689	193,098	19,538
April	14	38	24	107	6	37.4	71.7	185,743	139,397	258,994	48,937
May	15	69	! 1	109	11	74.0	94.7	253,714	151,021	306,530	19,823
June	30	70	1	135	30	17.8	73.0	189,181	169,344	319,179	32,671
July	13	41	22	66.1	6	15.8	44.3	118,619	134,961	242,015	38,857
Aug.	126	62	8	65.0	31	6.20	35.9	96,228	108,418	182,408	44,662
Sept.	107	109	26	38.3	15	4.47	12.8	33,174	73,687	168,349	15,676
Oct.	115	68	30	29.2	12	5.34	16.5	44,079	80,460	162,305	16,023
Nov.	16	31	7	44.8	30	5.38	23.8	61,575	66,042	163,201	15,633
Dec.	12	31	16	35.3	7	11.0	21.6	57,853	61,286	113,823	17,311
Yearly	460	608		135		2.05	42.7	1,348,997	1,241,149	1,879,991	785,513

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

OUTFALLS FROM SEWERS INTO THE RIO GRANDE

In Thousand Cubic Meters

EL PASO SEWAGE OUTFALL

Treated sewage effluent enters the Rio Grande through the outfall of the Haskell Street Wastewater Treatment Plant located 11.4 river kilometers downstream from the American Dam. The outfall from this plant consists of flows measured by a Sparling propeller meter and estimates of amounts which bypass the meter. The records are furnished by the City of El Paso, Texas.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1996	2,435	2,242	2,387	2,236	2,407	2,501	2,745	2,710	2,623	2,611	2,380	2,377	29,654
Average	2,418	2,296	2,460	2,369	2,462	2,381	2,672	2,798	2,589	2,517	2,451	2,435	29,848

Period average 1987–1996

EAGLE PASS SEWAGE OUTFALL

Treated sewage effluent enters the Rio Grande at river kilometer 798 and about 183 meters upstream from the Eagle Pass–Piedras Negras International Railroad Bridge. The records are based on weekly current-meter measurements and estimates by personnel of the International Boundary and Water Commission.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1996	272	232	289	290	317	304	308	313	315	312	309	297	3,558
Average	225	208	230	222	234	228	209	217	228	237	228	231	2,697

Period average 1987–1996

LAREDO SEWAGE OUTFALL

Treated sewage effluent enters the Rio Grande from two sewage treatment plants, Zacate Creek Sewage Treatment Plant and Southside Sewage Treatment Plant. These sewage outfalls enter the Rio Grande at river kilometers 579 and 573, 1.4 and 7.9 river kilometers respectively downstream from the old international highway bridge Laredo, Texas and Nuevo Laredo, Tamaulipas. The records are furnished by the Laredo Water Treatment Plant in Laredo, Texas.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1996	1,404	1,307	1,421	1,470	1,616	1,579	1,634	1,637	1,611	1,546	1,432	1,444	18,101
Average	1,244	1,168	1,294	1,293	1,403	1,389	1,446	1,448	1,301	1,382	1,219	1,240	12,827

Period average 1987–1996

BROWNSVILLE SEWAGE OUTFALL

Treated sewage effluent enters the Rio Grande at river kilometer 75.3, 14.3 river kilometers downstream from the Gateway Bridge between Brownsville, Texas and Matamoros, Tamaulipas and 3.1 river kilometers downstream from the Brownsville Gaging station. Records are furnished by the City of Brownsville.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly
1996	674	645	673	654	724	671	639	658	670	799	630	612	8,049
Average	689	639	686	677	710	690	684	700	692	734	664	667	8,232

Period average 1987–1996

MUNICIPAL AND INDUSTRIAL WATER USES

In Thousand Cubic Meters

Tabulated below are monthly and yearly amounts of water pumped from the Rio Grande directly into municipal distribution systems of cities along the border, except for the city of Del Rio, whose main supply is derived from San Felipe Springs; and the city of El Paso, whose supply is derived mainly from deep wells. The amount shown below for the city of El Paso is Rio Grande water pumped from the Franklin Canal at the El Paso Water Plant for municipal use. Ciudad Acuna, Coahuila, whose municipal diversion from 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 prior pages of this bulletin. Population data was provided by the Chamber of Commerce for each city in the United States, except El Paso, which was provided by the City Planning Office; Falcon Village, estimated by the International Boundary and Water Commission; Del Rio, by the Middle Rio Grande Development Counsel; Laughlin Air Force Base, by the U.S. Air Force; Laredo, by the Laredo Development Foundation; and Rio Bravo and San Ygnacio, which are based on utilities connections.

In the United States

Month	EL PASO (Pop. 540,203)				DEL RIO (Pop. 32,045)			
	1996	Period 1987 - 1996			1996	Period 1987 - 1996		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	0	123	741	0	996	849	1,032	667
Feb.	627	696	1,907	0	1,110	816	1,110	665
Mar.	4,827	3,691	6,678	315	1,398	1,099	1,494	697
April	7,771	5,329	8,583	1,812	1,550	1,226	1,715	791
May	8,213	6,371	10,169	4,083	1,834	1,316	1,834	854
June	8,072	6,330	9,701	4,619	2,030	1,420	2,030	754
July	8,185	6,442	9,651	5,057	2,277	1,647	2,277	1,406
Aug.	9,026	6,451	9,819	4,762	1,666	1,698	2,170	1,399
Sept.	8,070	5,804	8,231	4,507	1,047	1,320	1,486	1,047
Oct.	607	2,507	7,930	0	1,240	1,194	1,373	929
Nov.	0	8.4	83.6	0	973	920	1,062	757
Dec.	0	0	0	0	906	836	934	643
Yearly	55,398	43,752	70,268	27,604	17,027	14,341	17,027	12,285

Month	EAGLE PASS (Pop. 27,000)				LAREDO (Pop. 140,000)			
	1996	Period 1987 - 1996			1996	Period 1987 - 1996		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	449	369	460	236	3,162	2,201	3,162	1,332
Feb.	455	344	455	241	3,234	2,248	3,234	1,608
Mar.	521	420	527	310	3,650	2,712	3,650	2,020
April	565	464	668	331	3,921	2,944	3,921	2,147
May	668	490	668	306	4,410	3,280	4,410	2,128
June	731	556	731	302	3,929	3,409	3,929	2,201
July	855	595	855	402	3,874	3,706	5,107	2,890
Aug.	794	634	845	419	3,224	3,559	4,406	2,758
Sept.	533	498	633	391	2,907	2,901	3,394	2,393
Oct.	539	478	588	368	3,114	3,000	3,561	2,268
Nov.	496	400	496	311	3,009	2,621	3,044	2,180
Dec.	438	393	462	302	2,675	2,460	2,797	1,964
Yearly	7,044	5,641	7,044	4,029	41,109	35,041	41,109	26,694

Month	LAREDO POWER STATION				RIO BRAVO (Pop. 5,000)			
	1996	Period 1987 - 1996			1996	Period 1987 - 1996		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	44.2	76.2	123	37.0	86.6	42.3	86.6	14.9
Feb.	115	92.7	115	65.3	70.8	44.3	71.4	10.6
Mar.	110	123	175	93.6	94.1	51.4	94.1	1.0
April	109	132	162	87.3	105	61.7	105	24.7
May	152	158	212	124	127	67.7	127	21.2
June	179	200	260	158	117	74.7	123	21.2
July	247	205	252	163	132	80.2	132	19.9
Aug.	146	207	260	146	98.0	78.9	116	31.6
Sept.	135	180	239	135	84.9	59.0	84.9	28.7
Oct.	166	142	189	114	81.9	62.3	90.8	10.1
Nov.	94.9	88.1	145	43.0	78.1	54.2	79.6	19.1
Dec.	78.9	86.2	138	45.1	73.5	42.7	73.5	23.6
Yearly	1,576	1,690	1,892	1,518	1,149	719	1,149	300

MUNICIPAL AND INDUSTRIAL WATER USES

In Thousand Cubic Meters

In the United States

Month	SAN YGNACIO (Pop. 788)				ZAPATA (Pop. 9,500)			
	1996	Period 1987 - 1996			1996	Period 1987 - 1996		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	13.8	11.8	13.8	8.3	136	128	199	93.4
Feb.	14.7	12.7	16.7	9.1	142	132	169	95.3
Mar.	18.2	14.7	18.2	10.5	194	152	194	111
April	19.1	16.3	22.8	11.2	174	174	249	113
May	24.5	19.6	32.3	12.6	169	166	225	125
June	21.8	19.9	27.4	12.5	220	181	231	115
July	23.0	20.1	24.7	14.9	205	202	305	146
Aug.	19.3	19.6	22.7	16.6	209	197	256	132
Sept.	15.2	15.8	19.5	10.4	149	160	207	105
Oct.	15.7	16.6	20.2	13.8	148	170	231	116
Nov.	16.1	14.0	16.8	10.2	196	139	196	50
Dec.	15.5	13.7	16.0	9.4	137	148	227	109
Yearly	217	195	224	159	2,079	1,949	2,505	1,655

Month	FALCON VILLAGE (Pop. 80)				ROMA (Pop. 8,059)			
	1996	Period 1987 - 1996			1996	Period 1987 - 1996		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	6.8	7.8	9.6	6.1	217	160	217	112
Feb.	7.0	7.4	8.9	3.8	209	162	229	107
Mar.	8.0	8.5	11.6	5.3	246	190	246	128
April	7.9	9.2	11.2	6.9	270	206	278	139
May	8.1	10.0	13.9	8.0	300	230	331	141
June	9.3	10.6	16.4	7.6	309	232	309	139
July	9.7	12.1	17.4	9.7	299	247	325	138
Aug.	7.4	11.2	15.0	7.4	250	240	292	160
Sept.	7.8	9.7	14.3	7.8	213	204	247	123
Oct.	6.3	9.5	12.6	6.3	220	185	251	64.4
Nov.	5.5	8.0	11.5	5.5	223	178	251	132
Dec.	5.0	7.7	9.3	5.0	198	168	207	130
Yearly	88.8	112	150	88.8	2,954	2,402	2,954	1,581

Month	RIO GRANDE CITY (Pop. 40,000)				BROWNSVILLE (Pop. 115,000)			
	1996	Period 1987 - 1996			1996	Period 1987 - 1996		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	268	195	268	132	1,959	1,829	1,965	1,618
Feb.	211	172	257	125	1,872	1,687	2,084	1,437
Mar.	292	220	292	177	2,258	1,984	2,279	1,684
April	440	229	440	134	2,405	2,021	2,405	1,763
May	350	232	378	121	2,516	2,061	2,580	987
June	336	241	336	176	2,515	2,214	2,515	1,918
July	356	279	360	173	3,008	2,418	3,008	1,513
Aug.	272	257	333	195	2,371	2,503	3,470	2,127
Sept.	286	234	286	150	1,929	2,077	2,437	1,828
Oct.	249	234	271	162	1,976	2,065	2,287	1,744
Nov.	208	209	263	153	1,997	1,893	2,025	1,661
Dec.	183	200	237	165	2,128	1,899	2,128	1,691
Yearly	3,451	2,702	3,459	2,041	26,934	24,641	26,934	22,842

MUNICIPAL AND INDUSTRIAL WATER USES

In Thousand Cubic Meters

In Mexico

Month	CD. ACUNA, COAHUILA (Pop. 81,577)				PIEDRAS NEGRAS, COAHUILA (Pop. 116,097)			
	1996	Period 1987 - 1996			1996	Period 1987 - 1996		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	310	304	310	290	855	824	1,084	740
Feb.	292	281	295	276	801	769	919	685
Mar.	317	308	317	300	840	819	1,059	591
April	306	300	308	295	738	814	1,142	564
May	322	308	322	298	911	912	1,260	664
June	316	300	316	291	1,029	956	1,194	774
July	329	309	329	295	1,148	1,035	1,231	845
Aug.	331	308	331	296	1,045	1,001	1,135	848
Sept.	319	301	319	296	906	934	1,174	820
Oct.	328	308	328	294	929	941	1,116	835
Nov.	315	299	315	293	840	842	963	744
Dec.	323	307	323	290	818	830	974	702
Yearly	3,808	3,634	3,808	3,585	10,862	10,676	12,413	9,024

Month	NUEVO LAREDO, TAMAULIPAS (Pop. 274,913)				NUEVA CD. GUERRERO, TAMAULIPAS (Pop. 4,007)			
	1996	Period 1987 - 1996			1996	Period 1987 - 1996		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	4,787	2,633	4,787	1,645	62.5	55.1	73.1	36.6
Feb.	4,678	2,446	4,678	1,776	57.4	49.4	66.3	31.9
Mar.	4,925	2,427	4,925	1,571	52.2	54.8	73.5	39.0
April	4,311	2,876	4,311	2,160	40.3	55.1	72.3	37.1
May	5,358	2,758	5,358	1,813	54.5	63.5	72.6	54.0
June	5,011	2,824	5,011	2,006	54.8	62.4	71.5	48.8
July	4,963	3,138	4,963	2,251	55.3	64.0	74.4	43.9
Aug.	4,945	3,088	4,945	2,224	60.5	64.4	74.9	52.3
Sept.	4,843	3,135	4,843	2,368	52.0	61.2	72.2	45.7
Oct.	4,513	2,950	4,513	2,127	63.2	65.4	74.4	52.8
Nov.	4,236	2,894	4,706	1,642	62.8	60.5	72.4	50.7
Dec.	4,192	3,056	4,558	2,232	60.1	56.7	74.1	39.0
Yearly	56,763	34,222	56,763	25,422	676	713	825	602

Month	CD. MIER, TAMAULIPAS (Pop. 6,270)				CD. MIGUEL ALEMAN, TAMAULIPAS (Pop. 22,363)			
	1996	Period 1987 - 1996			1996	Period 1987 - 1996		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	79.4	49.7	79.4	32.7	230	192	236	141
Feb.	58.3	43.5	58.3	31.4	238	175	238	103
Mar.	57.8	50.7	75.6	36.3	250	203	250	145
April	53.0	52.0	70.7	42.2	259	207	259	155
May	53.6	54.8	81.7	37.4	268	216	268	161
June	77.8	60.7	78.6	42.1	254	212	255	160
July	80.4	65.8	80.4	36.7	268	219	268	164
Aug.	53.6	63.0	79.5	49.2	254	220	257	169
Sept.	67.4	62.5	77.6	50.0	253	207	253	139
Oct.	53.6	57.9	79.6	35.3	252	213	252	158
Nov.	51.8	55.0	73.5	41.2	242	217	338	157
Dec.	53.6	54.7	71.9	43.1	243	199	243	153
Yearly	740	670	853	543	3,010	2,479	3,029	1,862

MUNICIPAL AND INDUSTRIAL WATER USES

In Thousand Cubic Meters

In Mexico

Month	CD. DIAZ ORDAZ, TAMAULIPAS (Pop. 15,685)				REYNOSA, TAMAULIPAS (Pop.336,732)			
	1996	Period 1996			1996	Period 1996		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	136				3,594			
Feb.	131				3,326			
Mar.	146				3,784			
April	125				3,853			
May	134				4,424			
June	148				4,640			
July	161				4,769			
Aug.	149				4,501			
Sept.	131				4,069			
Oct.	132				4,190			
Nov.	128				3,767			
Dec.	131				3,629			
Yearly	1,651				48,547			

Month	MATAMOROS, TAMAULIPAS (Pop. 363,236)							
	1996	Period 1996						
		Average	Maximum	Minimum				
Jan.								
Feb.								
Mar.								
April								
May								
June	1,940							
July	2,853							
Aug.	3,194							
Sept.	3,046							
Oct.	2,980							
Nov.	2,573							
Dec.	2,589							
Yearly								

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN
In Million Cubic Meters

Data are presented below for all storage reservoirs in the Rio Grande basin in the United States and Mexico that exceed 18.5 million cubic meters in capacity. The monthly figures represent the water in storage on the last day of each month, in millions of cubic meters. 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 Sanchez from the State of Colorado, Division of Water Resources; Platoro, Heron, El Vado, Elephant Butte, Caballo, Sumner, and Brantley from the United States Bureau of Reclamation; Costilla from the New Mexico Interstate Stream Commission; Abiquiu, Cochiti, and Santa Rosa from the United States Corps of Engineers; Bluewater from the United States Geological Survey; Storrie from the State Engineer Office of New Mexico; Red Bluff from the Red Bluff Water Power Control District; Delta Lake from the Delta Lake Irrigation District; 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, Rodrigo Gomez (La Boca), Marte R. Gomez and El Cuchillo from the National Water Commission; Amistad Reservoir (International) and Falcon Reservoir (International) from the International Boundary and Water Commission.

In the United States

Month	RIO GRANDE (Capacity 63.0)		CONTINENTAL (Capacity 28.0)		SANTA MARIA (Capacity 55.6)		TERRACE (Capacity 21.2)		MOUNTAIN HOME (Capacity 22.9)	
	1996	Average 1927–1996	1996	Average 1928–1996	1996	Average 1928–1996	1996	Average 1925–1996	1996	Average 1924–1996
Jan.	50.7	17.8	10.9	6.0	18.5	9.7	8.7	5.5	8.2	4.6
Feb.	51.9	19.2	11.7	6.6	18.6	10.2	9.6	6.0	8.4	4.9
Mar.	53.1	21.0	12.4	7.1	18.7	10.7	10.7	6.7	8.6	5.4
April	53.0	22.5	12.4	8.0	18.6	11.7	10.2	7.2	8.7	6.0
May	44.3	25.5	8.8	9.6	18.4	14.7	9.7	8.3	8.0	8.0
June	17.0	28.7	1.3	9.9	12.7	17.4	7.6	9.9	6.7	8.6
July	16.9	19.5	1.3	7.4	10.4	14.3	5.1	7.9	3.8	6.3
Aug.	17.0	12.3	1.3	4.9	10.5	9.8	2.6	5.3	2.2	4.0
Sept.	17.0	10.9	1.3	4.4	10.4	8.1	1.9	4.3	1.8	3.5
Oct.	17.3	11.4	1.4	4.5	8.9	8.2	2.2	4.3	1.8	3.5
Nov.	21.8	13.7	2.5	4.7	9.3	8.8	3.5	4.6	2.0	3.9
Dec.	25.2	16.5	3.4	5.8	9.6	9.4	4.6	5.0	2.1	4.2
Avg.	32.1	18.2	5.7	6.6	13.7	11.1	6.4	6.2	5.2	5.2
Max.	53.1	67.6	12.4	32.9	18.7	51.9	10.7	21.8	8.7	20.2
Min.	16.9	0	1.3	0	8.9	0	1.9	0	1.8	0

Month	SANCHEZ (Capacity 127.3)		PLATORO (Capacity 73.5)		COSTILLA (Capacity 19.4)		HERON (Capacity 495.0)		EL VADO (Capacity 229.8)	
	1996	Average 1927–1996	1996	Average 1952–1996	1996	Average 1922–1996	1996	Average 1971–1996	1996	Average 1935–1996
Jan.	66.7	19.1	55.8	19.6	13.6	5.8	461.1	334.3	119.3	72.4
Feb.	64.5	19.0	56.2	19.3	14.2	6.3	461.1	330.5	108.8	70.1
Mar.	66.0	19.8	56.4	19.6	15.0	6.9	447.5	319.1	115.6	75.5
April	78.6	21.2	56.9	19.6	16.4	8.2	415.8	314.9	183.1	113.4
May	56.2	24.2	65.5	22.4	12.6	10.5	451.5	354.1	172.3	153.7
June	50.8	26.1	57.6	30.6	8.5	9.9	448.8	385.3	132.2	146.0
July	42.2	21.8	48.1	28.2	5.7	6.7	428.1	387.5	120.9	125.8
Aug.	37.5	17.9	34.3	25.1	1.9	4.4	422.7	385.7	75.7	102.8
Sept.	36.6	17.5	30.1	24.8	1.3	3.8	413.4	381.2	55.7	89.4
Oct.	36.6	18.3	26.1	24.2	1.8	4.3	396.3	380.0	52.6	84.0
Nov.	37.0	18.8	26.6	20.6	2.5	4.8	388.2	377.1	53.6	74.8
Dec.	37.3	19.2	27.0	20.6	3.1	5.3	377.3	352.9	54.7	73.5
Avg.	50.8	20.2	45.1	22.9	8.1	6.4	426.0	358.5	103.7	98.4
Max.	78.6	78.6	65.5	68.2	16.4	20.2	461.1	495.0	183.1	251.0
Min.	36.6	0	26.1	0	1.3	0	377.3	0.7	52.6	0

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN
In Million Cubic Meters

In the United States

	ABIQUIU (Capacity 1,481.4)		COCHITI (Capacity 619.6)		JEMEZ CANYON (Capacity 123.9)		BLUEWATER (Capacity 47.5)		ELEPHANT BUTTE (Capacity 2,547.1)	
Month	1996	Average 1965–1996	1996	Average 1973–1996	1996	Average 1965–1996	1996	Average 1927–1996	1996	Average 1915–1996
Jan.	258.1	105.9	71.7	72.8	27.5	11.3	12.1	10.7	2,508.0	1,143.7
Feb.	248.8	103.9	72.0	68.0	27.2	11.5	12.2	11.5	2,518.8	1,150.0
Mar.	229.3	101.7	71.0	68.1	26.9	12.2	12.0	16.3	2,472.5	1,112.9
April	223.8	114.2	70.8	76.8	27.4	16.6	11.1	20.3	2,400.6	1,105.3
May	214.3	164.0	71.0	105.9	26.0	17.6	7.4	18.2	2,292.1	1,202.6
June	204.4	155.3	71.4	110.7	24.8	14.4	4.4	15.4	2,175.7	1,232.0
July	196.1	140.8	70.8	83.7	24.5	13.1	4.5	13.4	2,080.4	1,166.8
Aug.	193.1	137.0	69.9	74.9	23.4	12.5	4.6	12.1	2,026.2	1,103.0
Sept.	179.5	130.9	69.8	74.2	22.3	12.0	4.2	11.4	2,030.4	1,075.8
Oct.	178.0	125.4	69.7	77.6	22.6	11.5	4.0	10.9	2,041.5	1,077.3
Nov.	186.6	116.0	70.0	77.6	24.5	11.5	3.9	10.7	2,080.9	1,102.6
Dec.	194.5	113.6	70.3	76.8	26.2	11.7	3.9	10.6	2,119.2	1,133.8
Avg.	208.9	125.7	70.7	80.6	25.3	13.0	7.0	13.5	2,228.9	1,133.8
Max.	258.1	493.8	72.0	471.2	27.5	88.8	12.2	58.1	2,518.8	2,840.5
Min.	178.0	0	69.7	4.4	22.3	0	3.9	0	2,026.2	4.1

	CABALLO (Capacity 408.9)		STORRIE (Capacity 28.7)		SANTA ROSA (Capacity 542.6)		LAKE SUMNER (Capacity 116.8)		BRANTLEY (Capacity 69.4)	
Month	1996	Average 1938–1996	1996	Average 1939–1996	1996	Average 1980–1996	1996	Average 1937–1996	1996	Average 1988–1996
Jan.	254.5	124.1		10.5	72.1	73.2	52.3	70.7	40.6	28.1
Feb.	273.1	154.3		10.5	73.1	72.0	51.7	75.1	40.0	30.3
Mar.	225.2	128.7	10.1	11.3	73.4	72.8	48.5	64.5	35.7	33.8
April	192.1	129.9	8.5	11.8	73.0	73.8	44.3	56.3	19.8	27.8
May	159.2	139.6	7.1	12.5	47.3	74.6	18.1	56.1	26.2	31.5
June	153.1	127.0	5.4	11.2	4.8	75.1	31.0	50.5	44.8	34.6
July	148.5	103.9	6.6	10.9	39.1	71.7	44.8	48.7	26.5	26.0
Aug.	86.8	72.6	9.7	11.6	54.9	73.9	11.7	51.7	32.2	25.1
Sept.	34.8	56.6	10.6	11.2	46.0	72.4	23.9	53.6	37.4	27.8
Oct.	42.5	67.5	9.9	10.8	45.7	73.6	25.0	55.5	28.5	22.9
Nov.	47.3	81.7	10.9	10.9	46.7	74.9	30.1	59.6	23.0	23.8
Dec.	51.6	101.2	11.6	10.3	46.8	75.8	34.8	65.2	25.3	24.2
Avg.	139.1	107.3		11.1	51.9	73.6	34.7	59.0	31.7	28.0
Max.	273.1	427.5		32.3	73.4	143.5	52.3	192.8	44.8	57.2
Min.	34.8	0		0	4.8	0	11.7	0.5	19.8	1.1

	RED BLUFF (Capacity 357.3)		DELTA LAKE (Capacity 30.8)						TOTAL IN U.S. RESERVOIRS (Capacity 7,509.7)	
Month	1996	Average 1936–1996	1996	Average 1939–1996					1996	Estimated Average
Jan.	93.0	122.6	21.0	19.4					4,223.4	2,287.6
Feb.	95.0	125.0	18.9	18.7					4,234.8	2,322.9
Mar.	94.6	121.8	22.1	18.0					4,125.3	2,253.7
April	93.8	108.2	16.5	18.0					4,035.4	2,291.7
May	81.7	108.4	17.2	18.5					3,814.9	2,580.8
June	78.0	109.6	23.2	18.7					3,564.2	2,626.9
July	72.4	99.8	19.0	18.6					3,415.7	2,422.9
Aug.	73.2	95.0	18.7	17.7					3,210.1	2,259.4
Sept.	79.5	99.2	18.2	19.1					3,126.1	2,192.3
Oct.	80.2	108.4	16.7	18.8					3,109.3	2,203.0
Nov.	87.8	112.3	20.7	18.9					3,179.4	2,232.4
Dec.	90.9	117.9	17.9	18.6					3,237.3	2,271.9
Avg.	85.0	110.7	19.2	18.6					3,606.3	2,328.8
Max.	95.0	404.0	23.2	27.9					4,234.8	
Min.	72.4	12.3	16.5	0					3,109.3	

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN
In Million Cubic Meters

In Mexico

Month	SAN GABRIEL (Capacity 255.4)		PICO DEL AGUILA (Capacity 50.0)		LA BOQUILLA (Capacity 2,903.4)		LA COLINA (Capacity 24.1)		FRANCISCO I. MADERO (Capacity 348.0)	
	1996	Average 1990-1996	1996	Average 1993-1996	1996	Average 1914-1996	1996	Average 1940-1996	1996	Average 1948-1996
Jan.	40.0	127.8	14.9	21.8	525.8	1,818.1	24.3	22.8	229.3	259.3
Feb.	39.3	123.9	15.0	19.5	523.1	1,768.2	23.8	23.2	229.3	254.0
Mar.	38.6	118.1	13.5	16.0	501.3	1,692.5	24.3	23.4	221.6	236.4
April	38.0	109.2	11.0	9.9	463.1	1,593.2	24.3	23.8	196.7	198.1
May	31.7	95.5	6.3	7.4	420.4	1,497.2	24.2	23.5	171.7	164.4
June	31.8	83.1	7.0	7.5	392.0	1,413.0	24.1	23.6	165.6	142.6
July	32.4	86.9	6.4	6.4	480.0	1,456.4	24.2	23.6	179.7	164.0
Aug.	137.3	113.4	13.9	9.0	1,279.7	1,687.4	24.3	23.3	369.8	209.7
Sept.	211.3	144.6	21.5	13.0	2,008.6	1,903.8	24.3	23.1	348.7	253.1
Oct.	218.2	157.8	20.5	21.0	2,008.6	1,912.0	24.2	22.8	344.1	260.6
Nov.	218.0	157.3	20.2	21.3	1,999.6	1,876.7	24.2	21.2	345.7	261.6
Dec.	217.0	156.5	20.1	21.5	1,999.6	1,864.4	24.2	22.9	346.4	261.0
Avg.	104.5	122.8	14.2	14.5	1,050.1	1,706.9	24.2	23.1	262.4	222.1
Max.	218.2	475.5	21.5	42.6	2,008.6	3,402.1	24.3	27.8	369.8	452.2
Min.	31.7	19.8	6.3	6.3	392.0	20.8	23.8	14.3	165.6	1.7

Month	CHIHUAHUA (Capacity 25.8)		LUIS L. LEON (Capacity 356.0)		CENTENARIO and SAN MIGUEL (Capacity 46.3)		LA FRAGUA (Capacity 45.0)		VENUSTIANO CARRANZA (Capacity 1,385.0)	
	1996	Average 1961-1996	1996	Average 1968-1996	1996	Average 1934-1996	1996	Average 1991-1996	1996	Average 1930-1996
Jan.	6.9	9.6	222.1	471.2	15.6	18.4	15.6	34.1	73.7	613.0
Feb.	6.8	9.2	224.8	468.3	13.4	18.3	14.9	33.6	71.8	588.8
Mar.	6.7	8.7	208.7	446.0	8.9	15.2	13.7	28.4	61.4	549.0
April	6.5	8.2	198.4	417.2	5.7	13.4	12.7	27.7	58.3	537.0
May	6.2	7.5	181.7	389.5	2.8	13.8	11.3	27.1	56.0	512.4
June	7.6	7.0	170.7	368.9	1.8	12.1	10.0	25.0	55.4	488.4
July	7.4	7.4	324.0	384.1	1.7	11.4	9.6	26.6	64.9	499.6
Aug.	11.1	9.2	342.7	380.7	4.6	12.0	9.8	26.2	62.3	507.4
Sept.	14.6	11.5	528.5	448.2	16.7	14.2	11.2	31.0	103.7	569.1
Oct.	14.1	11.8	433.9	468.2	21.8	16.5	16.3	32.3	181.3	611.6
Nov.	13.6	10.8	436.8	475.6	25.3	17.1	23.1	33.0	185.7	622.0
Dec.	13.3	10.3	442.0	487.9	28.6	17.6	25.1	32.7	187.2	618.5
Avg.	9.6	9.3	309.5	433.8	12.2	15.0	14.4	29.8	96.8	559.7
Max.	14.6	32.7	528.5	928.9	28.6	43.0	25.1	46.0	187.2	1,435.0
Min.	6.2	0.2	170.7	4.7	1.7	0	9.6	9.6	55.4	1.2

Month	LAGUNA DE SALINILLAS (Capacity 19.0)		RODRIGO GOMEZ (Capacity 41.0)		EL CUCHILLO (Capacity 1,123.1)		MARTE R. GOMEZ (Capacity 1,096.9)		TOTAL IN MEXICAN RESERVOIRS (Capacity 7,719.0)	
	1996	Average 1931-1996	1996	Average 1963-1996	1996	Average 1994-1996	1996	Average 1943-1996	1996	Estimated ! Average
Jan.	11.9	9.8	29.8	32.2	297.5	242.7	321.9	720.9	1,829.3	4,401.8
Feb.	10.6	11.4	29.1	31.5	286.2	238.5	263.8	676.8	1,751.9	4,265.4
Mar.	14.5	9.9	28.3	30.2	272.8	229.7	215.7	648.2	1,630.0	4,051.6
April	13.1	11.3	27.7	29.2	254.8	217.3	134.9	592.2	1,445.2	3,787.5
May	11.2	11.2	25.1	28.5	234.8	208.4	48.4	535.4	1,231.8	3,521.7
June	16.1	10.5	21.0	28.0	214.9	207.5	45.8	540.6	1,163.8	3,358.0
July	13.9	10.0	17.7	28.1	198.3	193.1	43.4	535.7	1,403.6	3,433.3
Aug.	12.2	9.9	19.3	28.1	276.9	293.2	79.4	575.7	2,643.3	3,885.3
Sept.	10.9	10.5	22.5	31.8	327.9	358.0	112.9	718.0	3,763.3	4,530.0
Oct.	15.6	9.9	35.6	33.8	439.8	393.4	131.2	761.2	3,905.2	4,712.9
Nov.	13.9	9.5	37.4	33.7	303.7	342.5	247.8	766.9	3,895.0	4,649.1
Dec.	12.6	9.3	33.2	33.0	299.6	336.8	244.1	763.9	3,893.0	4,636.2
Avg.	13.0	10.3	27.2	30.7	283.9	271.8	157.4	653.0	2,379.6	4,102.7
Max.	16.1	39.0	37.4	45.4	439.8	512.1	321.9	1,308.0	3,905.2	
Min.	10.6	0	17.7	0	198.3	172.2	43.4	22.0	1,163.8	

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 river kilometer 924, 20.8 river kilometers upstream from Del Rio, Texas and Cd. Acuna, Coahuila.

Maximum storage for period of record: 5,994.6 million cubic meters on September 22, 1974 with an elevation of 346.150 meters above mean sea level, U. S. C. & G. S. datum.

Storage Capacities
(1992 Survey)

Elevation Meters	Description	At Indicated Elevation		Between Indicated Elevations	
		Reservoir Capacity-Thousand Cubic Meters	Reservoir Area Hectares	Storage Volume-Thousand Cubic Meters	Type of Storage
273.710	Original River Bed at Dam Axis	0	0		
				0	
283.465	Lowest Outlet (United States Penstocks)	0	0		
				3,887,094	Silt & Conservation
340.462	Top of Conservation Storage *	3,887,094	26,077		
				2,138,052	Ordinary Flood
347.595	Top of Spillway Gates	6,025,146	34,124		
				499,553	Surcharge
349.025	Maximum Water Surface	6,524,699	35,770		

STORAGE IN MILLION CUBIC METERS AT 24:00 HOURS 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,512.3	1,493.0	1,491.7	1,474.6	1,408.1	1,295.4	1,178.6	1,169.5	1,259.2	1,484.1	1,567.1	1,566.4
2	1,510.4	1,491.1	1,491.1	1,474.0	1,402.2	1,294.3	1,178.1	1,168.5	1,277.2	1,485.3	1,565.7	1,566.4
3	1,509.1	1,489.8	1,491.1	1,473.4	1,398.1	1,290.5	1,177.6	1,166.5	1,284.9	1,486.6	1,564.4	1,565.7
4	1,508.4	1,487.3	1,491.1	1,473.4	1,393.3	1,286.6	1,177.6	1,163.9	1,289.9	1,487.9	1,565.7	1,565.7
5	1,507.8	1,487.3	1,491.1	1,474.6	1,389.8	1,281.6	1,176.6	1,163.4	1,294.3	1,489.2	1,565.0	1,565.7
6	1,507.1	1,487.9	1,490.5	1,473.4	1,385.1	1,277.8	1,176.1	1,162.4	1,297.7	1,490.5	1,566.4	1,565.7
7	1,505.8	1,487.9	1,489.8	1,472.1	1,379.8	1,274.5	1,175.1	1,161.9	1,301.0	1,491.1	1,566.4	1,565.7
8	1,503.9	1,488.5	1,488.5	1,472.1	1,374.6	1,270.1	1,174.6	1,163.9	1,303.8	1,493.0	1,566.4	1,563.7
9	1,503.9	1,489.2	1,487.3	1,471.5	1,369.9	1,265.7	1,172.5	1,165.0	1,306.0	1,494.9	1,565.7	1,564.4
10	1,503.9	1,489.2	1,486.6	1,470.2	1,367.0	1,261.4	1,172.5	1,164.4	1,308.3	1,499.4	1,565.7	1,565.0
11	1,503.3	1,489.8	1,485.3	1,469.6	1,362.4	1,257.1	1,172.5	1,164.4	1,308.8	1,503.9	1,565.7	1,565.7
12	1,502.6	1,489.2	1,485.3	1,469.6	1,358.3	1,252.2	1,172.5	1,163.4	1,310.0	1,509.7	1,565.7	1,566.4
13	1,502.0	1,489.2	1,484.7	1,469.0	1,354.3	1,247.4	1,172.0	1,161.4	1,316.7	1,516.2	1,565.7	1,567.1
14	1,502.6	1,489.8	1,486.0	1,468.4	1,349.1	1,242.5	1,172.0	1,162.4	1,340.0	1,524.0	1,564.4	1,567.7
15	1,502.0	1,489.8	1,486.0	1,465.2	1,345.1	1,238.3	1,172.5	1,164.4	1,384.5	1,531.9	1,564.4	1,570.4
16	1,502.0	1,489.2	1,485.3	1,463.3	1,340.0	1,233.4	1,173.0	1,163.4	1,406.9	1,540.4	1,565.7	1,569.1
17	1,501.3	1,489.2	1,484.7	1,462.1	1,335.4	1,228.1	1,175.1	1,161.4	1,422.5	1,549.1	1,565.7	1,568.4
18	1,500.7	1,489.8	1,483.4	1,460.9	1,329.7	1,224.4	1,177.1	1,160.4	1,436.4	1,554.4	1,565.7	1,565.7
19	1,498.7	1,489.8	1,482.8	1,460.2	1,324.6	1,220.2	1,178.6	1,158.4	1,444.3	1,557.0	1,567.1	1,561.7
20	1,498.7	1,490.5	1,482.8	1,459.0	1,320.6	1,216.0	1,179.7	1,157.9	1,448.6	1,559.7	1,566.4	1,559.7
21	1,498.7	1,490.5	1,481.5	1,453.5	1,315.6	1,211.3	1,180.2	1,156.9	1,452.3	1,561.0	1,566.4	1,560.4
22	1,498.7	1,490.5	1,480.3	1,448.6	1,310.0	1,207.1	1,179.7	1,157.4	1,454.7	1,561.0	1,565.0	1,559.7
23	1,499.4	1,490.5	1,479.6	1,444.3	1,304.9	1,202.4	1,179.7	1,163.4	1,457.8	1,560.4	1,565.0	1,559.0
24	1,498.1	1,491.1	1,480.3	1,439.4	1,299.3	1,197.7	1,179.2	1,186.3	1,460.2	1,561.0	1,569.7	1,559.0
25	1,496.8	1,492.4	1,479.6	1,435.2	1,294.3	1,193.5	1,179.2	1,194.1	1,469.6	1,561.7	1,567.1	1,558.4
26	1,496.8	1,491.1	1,478.4	1,430.3	1,291.6	1,188.9	1,177.1	1,196.1	1,475.2	1,563.0	1,565.7	1,558.4
27	1,495.6	1,491.7	1,477.1	1,426.1	1,286.6	1,183.7	1,176.1	1,196.1	1,480.3	1,564.4	1,565.7	1,559.0
28	1,494.9	1,491.7	1,477.1	1,423.1	1,282.7	1,179.7	1,175.1	1,197.2	1,480.9	1,566.4	1,566.4	1,559.0
29	1,494.3	1,491.7	1,477.1	1,417.1	1,278.3	1,175.6	1,173.5	1,198.7	1,482.8	1,567.1	1,567.1	1,559.7
30	1,494.9		1,476.5	1,412.3	1,273.9	1,178.6	1,172.5	1,221.3	1,482.8	1,566.4	1,567.7	1,559.7
31	1,493.6		1,475.9		1,284.4		1,171.0	1,243.1		1,566.4		1,560.4

Month	1996							Period 1969-1996		
	MOMENTARY MAXIMUM			MOMENTARY MINIMUM			Average Storage	Mean Monthly Storage		
	Elevation	Storage	Day	Elevation	Storage	Day		Average	Maximum	Minimum
Jan.	328.055	1,512.3	1	327.910	1,493.6	31	1,501.6	3,650.2	4,971.4	891.3
Feb.	327.905	1,493.0	1	327.860	1,487.3	4	1,489.9	3,631.8	4,952.1	971.6
Mar.	327.895	1,491.7	1	327.770	1,475.9	31	1,484.2	3,582.5	4,954.1	1,062.9
April	327.760	1,474.6	1	327.250	1,412.3	30	1,456.9	3,515.8	4,910.5	1,187.6
May	327.215	1,408.1	1	326.040	1,273.9	30	1,339.0	3,407.9	4,723.6	1,281.1
June	326.235	1,295.5	1	325.110	1,175.6	29	1,235.9	3,335.1	4,696.8	1,127.9
July	325.155	1,180.2	21	325.065	1,171.0	31	1,175.7	3,310.2	4,745.6	1,171.3
Aug.	325.755	1,243.1	31	324.925	1,156.9	21	1,173.5	3,390.2	4,861.4	1,173.5
Sept.	327.825	1,482.8	30	325.905	1,259.2	1	1,381.3	3,478.6	5,078.5	1,275.4
Oct.	328.470	1,567.1	29	327.835	1,484.1	1	1,530.6	3,645.9	5,515.1	1,489.2
Nov.	328.490	1,569.7	24	328.450	1,564.4	3	1,566.0	3,664.8	5,231.7	1,536.0
Dec.	328.495	1,570.4	15	328.405	1,558.4	25	1,563.5	3,669.6	4,970.7	1,523.4
Yearly	328.495	1,570.4		324.925	1,156.9		1,408.2	3,523.6	4,873.4	1,290.5

* 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 139 river kilometers downstream from the old international highway bridge between Laredo, Texas and Nuevo Laredo, Tamaulipas and 442 river kilometers upstream from the Gulf of Mexico.

Maximum storage for period of record: 4,305.6 million cubic meters on October 19, 1958 with an elevation of 93.910 meters above mean sea level, U. S. C. & G. S. datum.

Storage Capacities
(1992 Survey)

Elevation Meters	Description	At Indicated Elevation: Reservoir Capacity Thousands of Cubic Meters	At Indicated Elevation: Reservoir Area Hectares	Between Indicated Elevations: Storage Volume Thousands of Cubic Meters	Between Indicated Elevations: Type of Storage
53.340	Original River Bed at Dam Axis	0	0		
				67	Dead
61.965	Lowest Outlet (Mexican Penstock)	67	10		
				3,273,351	Silt & Conservation
91.805	Top of Conservation Storage *	3,273,418	35,281		
				623,589	Ordinary Flood
93.480	Top of Spillway Gates	3,897,007	39,678		
				993,201	Surcharge
95.770	Maximum Water Surface	4,890,208	46,322		

STORAGE IN MILLION CUBIC METERS AT 24:00 HOURS 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	991.2	997.4	947.8	827.9	483.9	404.6	404.2	348.6	418.7	622.3	717.6	713.2
2	992.7	995.0	942.5	823.7	479.1	411.0	405.9	343.4	435.3	625.8	716.3	715.0
3	992.7	993.5	939.6	821.0	474.8	414.8	409.3	339.0	443.4	630.9	714.4	716.9
4	993.5	992.0	937.3	817.6	471.0	420.4	410.6	333.9	447.4	640.8	711.9	718.2
5	996.6	991.2	935.8	813.5	468.2	423.5	409.3	329.2	449.7	651.3	709.4	719.4
6	998.9	991.2	934.4	808.1	464.9	423.9	407.6	324.6	452.5	659.0	705.7	721.9
7	999.7	992.0	932.9	802.7	464.5	423.0	404.6	320.0	455.2	666.2	705.7	723.2
8	1,000.5	992.7	929.2	798.7	464.0	420.4	402.5	317.9	457.0	672.1	704.5	725.1
9	1,002.8	994.3	926.2	792.6	461.7	417.4	402.1	317.2	458.9	676.4	703.2	726.4
10	1,004.4	995.0	924.0	784.6	461.7	413.5	403.4	315.8	461.7	679.4	701.4	728.3
11	1,005.9	993.5	920.3	778.7	459.8	411.0	422.2	314.1	463.5	681.2	700.1	729.5
12	1,007.5	992.0	915.9	768.2	455.2	408.4	429.6	311.3	466.8	683.0	700.1	730.8
13	1,009.1	990.4	913.0	756.4	452.5	406.8	432.7	309.0	469.1	684.2	700.1	730.8
14	1,011.4	988.9	910.8	745.5	451.1	404.2	431.8	307.9	482.4	684.2	699.5	730.2
15	1,012.2	988.1	907.1	730.8	449.3	401.7	428.7	307.3	496.0	684.2	698.9	729.5
16	1,013.0	986.5	902.8	715.0	445.2	398.8	424.3	305.9	504.8	683.6	699.5	729.5
17	1,013.8	984.2	897.7	698.9	442.0	396.7	418.7	303.2	512.3	684.2	700.8	727.6
18	1,012.2	983.4	894.1	681.8	438.5	394.7	414.8	300.6	525.9	684.8	700.8	727.6
19	1,010.6	980.4	886.2	664.4	434.4	392.2	409.3	298.2	548.7	685.4	701.4	727.6
20	1,009.9	977.3	880.4	646.0	430.5	391.4	405.1	298.2	564.7	685.4	703.2	730.2
21	1,008.3	973.5	874.0	626.3	427.0	391.0	400.0	298.6	572.2	686.7	705.7	730.8
22	1,007.5	969.7	867.6	609.3	422.6	390.1	395.1	302.6	577.1	686.7	705.7	733.3
23	1,007.5	967.4	862.7	588.6	417.0	390.1	390.1	307.9	578.2	686.7	704.5	737.1
24	1,005.9	963.6	859.1	567.9	411.0	389.7	385.3	319.7	577.7	686.7	703.9	740.3
25	1,005.2	959.8	858.4	553.0	405.5	391.4	380.8	337.5	579.8	687.3	705.7	742.3
26	1,002.8	956.1	851.4	538.8	400.5	392.6	376.4	351.2	596.9	686.1	706.3	742.9
27	1,001.3	955.3	844.5	524.9	394.7	395.1	372.5	366.2	609.8	684.8	710.1	744.2
28	1,000.5	954.5	840.3	511.3	388.9	396.3	368.5	374.0	614.4	684.2	711.9	744.8
29	999.7	950.8	838.2	496.0	383.6	399.2	363.9	378.8	617.2	684.8	711.9	744.8
30	998.9		835.4	485.3	392.6	401.7	358.9	384.4	620.0	689.1	713.2	745.5
31	998.2		832.0		400.0		353.5	398.0		707.0		746.1

Month	1996: MOMENTARY MAXIMUM Elevation	Storage	Day	MOMENTARY MINIMUM Elevation	Storage	Day	Average Storage	Period 1954-1996: Mean Monthly Storage Average	Maximum	Minimum
Jan.	82.660	1,013.8	17	82.515	991.2	1	1,003.7	2,552.3	3,787.8	269.8
Feb.	82.555	997.4	1	82.250	950.8	29	981.0	2,442.7	3,712.2	192.7
Mar.	82.230	947.8	1	81.425	832.0	31	894.9	2,438.8	3,689.1	279.6
April	81.395	827.9	1	78.460	485.3	30	692.6	2,331.5	3,644.4	401.6
May	78.445	483.9	1	77.310	383.6	29	438.6	2,146.8	3,540.0	438.6
June	77.790	423.9	6	77.385	389.7	24	403.9	2,058.5	3,440.3	337.6
July	77.890	432.7	13	76.925	353.5	31	400.7	2,126.8	3,321.4	258.9
Aug.	77.485	398.0	31	76.145	298.2	19	327.9	2,097.7	3,418.5	256.6
Sept.	79.740	620.0	30	77.730	418.7	1	515.3	2,200.0	3,541.4	316.0
Oct.	80.470	707.0	31	79.760	622.3	1	675.3	2,454.6	4,009.2	380.3
Nov.	80.555	717.6	1	80.405	698.9	15	705.8	2,543.4	3,854.0	482.2
Dec.	80.780	746.1	31	80.520	713.2	1	730.7	2,584.3	3,860.4	423.6
Yearly	82.660	1,013.8		76.145	298.2		647.5	2,331.5	3,410.6	647.5

* When necessary, the Commission may set temporary conservation levels

QUALITY OF WATER - 1996

08-3640.00 RIO GRANDE AT EL PASO, TEXAS

LOCATION: At gaging station on Courchesne Bridge at river kilometer 2,021, 2.7 river kilometers upstream from American Dam, and 8.9 kilometers upstream from Paso del Norte Bridge between El Paso, Texas and Cd. Juarez, Chihuahua.

RECORDS: Chemical analyses, February 1930 through current year (prior to July 1986 sampling at American Dam); biochemical analyses, September 1943 through 1972 and February 1976 through current year (prior to 1976 samples taken from Franklin Canal at El Paso,Texas); specific conductance, 1930 through 1932 and 1937 through current year (prior to July 1986 samples taken at American Dam); suspended silt, 1947 through 1976 (samples taken at American Dam).

REMARKS: Sampling by International Boundary and Water Commission; chemical analyses by U. S. Geological Survey, biochemical analyses by Haskell R. Street Wastewater Treatment Plant laboratory in El Paso; specific conductance determinations by International Boundary and Water Commission. Additional water quality parameters, including heavy metals, nutrients, pesticides, and biological indices, determined and published by U. S. Geological Survey.

1996 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Hardness, Total (as CaCO3) mg/L	Hardness, Noncarbonate (as CaCO3) mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L
Jan. 18	0820	10.2	1,460	7.8	6.0	270	110	72	22
Feb. 15	0805	5.41	1,720	8.1	11.0	350	120	96	26
Mar. 21	0820	29.2	862	8.1	13.9	150	59	37	15
April 18	0755	22.9	1,120	7.5	15.5	250	78	74	17
May 16	0750	14.6	1,370	7.6	20.5	290	96	80	21
June 20	0800	29.2	1,050	7.7	24.4	220	60	62	16
July 18	0815	23.6	1,140	7.6	26.1	220	59	63	16
Aug. 22	0805	24.8	1,000	7.7	24.0	220	64	62	15
Sept. 26	0810	12.3	1,430	7.6	19.5	320	100	90	22
Oct. 10	0810	8.72	1,610	7.9	19.5	310	110	88	23
Oct. 17	0810	8.27	1,940	8.0	17.0	390	150	110	27
Oct. 31	0830	6.20	2,180	8.1	13.0	450	210	130	30
Nov. 20	0805	3.48	3,000	8.2	11.5	520	260	150	35
Nov. 21	0805	3.48	3,000	8.0	11.5	490	240	140	35
Dec. 12	0815	2.46	2,850	8.0	10.0	480	230	140	32
Dec. 16	0950	2.32	2,600	8.1	2.5	480	230	140	31

1996 Date	Sodium ion (Na), Dissolved mg/L	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved mg/L	Alkalinity Total (as CaCO3) mg/L	Sulfate ion (SO4) Dissolved mg/L	Chloride ion (Cl), Dissolved mg/L	Silica (SiO2) Dissolved mg/L	Solids Dissolved (Calculated) mg/L
Jan. 18	190	5	8.5	160	280	190	13	873
Feb. 15	230	5	9.8	220	340	220	17	1,070
Mar. 21	110	4	6.9	95	180	92	14	512
April 18	130	4	7.7	180	210	110	14	670
May 16	160	4	8.6	190	270	150	16	820
June 20	130	4	7.2	160	210	100	17	639
July 18	130	4	7.5	160	210	120	21	666
Aug. 22	120	4	7.3	150	200	98	18	613
Sept. 26	190	5	8.5	210	290	140	22	891
Oct. 10	200	5	10.0	210	340	160	25	971
Oct. 17	260	6	11.0	230	400	210	24	1,180
Oct. 31	300	6	11.0	240	440	290	26	1,370
Nov. 20	470	9	15.0	260	580	610	26	2,040
Nov. 21	470	9	11.0	260	580	470	27	1,890
Dec. 12	430	9	13.0	250	530	410	24	1,730
Dec. 16	410	8	11.0	250	500	370	26	1,640

QUALITY OF WATER - 1996

08-3640.00 RIO GRANDE AT EL PASO, TEXAS

1996 Date	Water Temperature Deg C	Oxygen Dissolved (DO) mg/L	pH Units	Coliform, Fecal Colonies /100 mL	Oxygen Demand Bio-Chemical (BOD) 5 Day mg/L
Jan. 4	6.7	10.3	8.1	70	5
11	6.7	10.3	8.1	70	5
18	5.6	10.8	8.2	470	8
25	2.2	10.6	8.2	70	2
Feb. 1	10.0	9.6	8.1	90	7
8	10.0	9.6	8.0	130	4
15	11.1	9.4	8.2	40	4
22	12.2	9.4	8.0	210	8
29	6.1	10.8	8.2	190	6
Mar. 7	7.2	10.8	8.1	180	4
14	11.7	9.4	8.1	130	5
21	13.9	9.0	8.2	60	3
28	12.2	8.8	8.2	70	5
April 4	15.6	8.8	7.8	110	7
11	12.8	10.0	8.0	150	3
18	15.6	8.7	8.1	130	6
25	18.3	8.2	7.9	100	7
May 2	18.3	8.2	8.1	100	6
9	21.1	8.0	7.8	200	5
16	20.6	8.0	7.9	460	7
23	21.1	7.7	7.9	170	7
30	20.6	7.9	8.0	60	5
June 6	24.4	7.3	7.9	170	6
13	23.3	7.4	7.9	190	5
20	24.4	7.3	8.1	120	4
27	23.9	7.4	7.6	#	11

1996 Date	Water Temperature Deg C	Oxygen Dissolved (DO) mg/L	pH Units	Coliform, Fecal Colonies /100 mL	Oxygen Demand Bio-Chemical (BOD) 5 Day mg/L
July 4	#	#	#	#	#
11	25.6	7.2	7.9	330	5
18	26.1	7.0	7.7	4,100	7
25	24.4	7.3	8.2	720	3
Aug. 1	25.6	7.2	7.9	700	4
8	23.9	7.4	8.0	9,800	3
15	24.4	7.3	7.8	1,300	3
22	23.9	7.3	7.8	420	4
29	22.8	7.4	7.9	520	2
Sept. 5	22.2	#	7.9	21,600	4
12	21.7	7.7	7.8	7,100	6
19	20.0	8.0	7.9	1,900	8
26	20.0	8.0	7.8	2,000	5
Oct. 3	17.8	#	8.4	700	5
10	19.4	8.1	7.9	400	5
17	17.2	8.4	7.8	500	3
24	12.2	9.2	7.9	400	2
31	12.8	9.1	8.2	100	3
Nov. 7	10.0	9.8	8.0	200	2
14	11.1	9.4	8.2	200	3
21	11.7	9.4	8.2	130	2
26	7.78	10.3	8.0	130	3
Dec. 5	6.11	10.5	8.0	70	2
12	10.0	9.6	8.0	50	3
19	0.56	10.0	8.2	140	6
26	#	#	#	#	#

Missing Data

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1				949	1,110		970			1,120	2,240	
2							1,060	975		1,120		2,970
3				1,020	1,210	1,170	1,040					
4						1,170			1,260	1,620	2,400	2,920
5				980				906	1,260			
6					1,130	1,110			1,320		2,470	2,720
7						1.100		961		1,640		
8				1,010	1,180		1,110				2,450	
9								1,110	1,330	1,670		2,720
10					1,170	1,010	1,120					
11				1,090		1,080			992	1,690		2,910
12				1,090			1,050	1,040				
13					1,240	1,080			989		2,630	2,920
14								1,020				
15				1,000	1,340		1,000	1,070		1,800	2,600	
16									1,170	1,880		
17				1,030	1,250	999	977					
18									1,180	1,950	2,680	
19				964		1,010	1,100	957				
20					1,130				1,380		2,750	
21						1,030		972		2,080		
22			1,000	1,050	1,220		1,080				3,000	
23								1,050	1,490	2,070		
24				1,030	1,260	993	1,130					
25			962						1,490	2,180	2,420	
26				1,160		1,000	1,180	1,110			3,050	
27			1,020						1,340		3,070	
28						923		1,170				
29			1,010	1,080	1,270		1,050					
30								1,170		2,240		
31					1,290		1,060					

QUALITY OF WATER - 1996

RIO GRANDE AT RIVERSIDE CANAL HEADING NEAR EL PASO, TEXAS AND CD. JUAREZ, CHIHUAHUA

LOCATION: At river kilometer 1,991, 15.3 kilometers downstream from the Haskell R. Street Wastewater Treatment Plant and 26.8 river kilometers downstream from the American Dam at El Paso, Texas.
RECORDS: Biochemical analyses, February 1976 through current year. Samples also collected quarterly and analyses made by the Texas Natural Resource Conservation Commission at a location 1.6 km. upstream at Ysleta-Zaragoza Bridge, through 1972 and May 1975 through current year.
REMARKS: Sampling by International Boundary and Water Commission. Analyses by the Haskell R. Street Wastewater Treatment Plant laboratory in El Paso.

1996 Date	Water Temperature Deg C	Oxygen Dissolved (DO) mg/L	pH Units	Coliform, Fecal Colonies /100 mL	Oxygen Demand Bio-Chemical (BOD) 5 Day mg/L
Jan. 4	#	#	#	#	#
11	8.9	10.0	7.6	0	13
18	6.7	10.8	7.9	0	17
25	5.6	10.8	7.8	10	10
Feb. 1	11.1	9.4	7.8	20	9
8	11.1	9.4	7.8	10	9
15	12.8	9.2	7.9	40	8
22	14.4	9.0	7.8	30	13
29	8.9	10.0	8.0	0	6
Mar. 7	15.6	10.0	8.0	0	9
14	12.8	9.2	8.0	40	8
21	14.4	9.0	8.1	30	6
28	14.4	9.0	8.2	0	7
April 4	16.1	8.6	7.7	60	10
11	18.9	8.0	7.5	70	6
18	16.1	8.0	7.7	20	11
25	19.4	7.7	7.7	120	4
May 2	18.9	8.2	7.7	50	14
9	22.2	7.0	7.7	70	7
16	21.1	8.0	7.6	50	6
23	21.1	7.7	7.8	130	10
30	22.2	7.6	7.8	80	30
June 6	25.6	7.2	7.6	150	8
13	23.3	7.4	7.5	210	7
20	25.6	7.0	7.7	220	9
27	25.6	7.2	7.5	#	17

1996 Date	Water Temperature Deg C	Oxygen Dissolved (DO) mg/L	pH Units	Coliform, Fecal Colonies /100 mL	Oxygen Demand Bio-Chemical (BOD) 5 Day mg/L
July 4	#	#	#	#	#
11	26.7	7.0	7.6	1,680	10
18	27.2	7.0	7.6	5,500	4
25	26.1	7.2	7.8	280	10
Aug. 1	26.7	6.9	7.6	14,000	5
8	25.6	7.2	7.7	8,000	7
15	25.6	7.0	7.5	800	5
22	25.6	7.2	7.7	280	5
29	24.4	7.3	7.7	920	5
Sept. 5	23.9	#	7.6	7,200	6
12	23.3	7.4	7.7	1,400	2
19	22.2	7.6	7.8	500	8
26	21.7	7.4	7.5	800	5
Oct. 3	18.9	#	8.0	200	10
10	21.7	7.6	7.7	200	7
17	19.4	8.1	7.7	100	13
24	15.0	8.8	7.7	0	7
31	17.2	8.2	7.9	0	7
Nov. 7	13.3	9.0	7.7	0	5
14	14.4	9.0	7.8	100	9
21	14.4	9.0	7.8	80	12
26	8.9	9.4	7.7	330	9
Dec. 5	9.4	10.0	7.6	20	11
12	12.8	9.2	7.5	90	10
19	3.3	9.2	7.6	0	6
26	#	#	#	#	#

- Missing Data

08-3715.00 RIO GRANDE ABOVE RIO CONCHOS NEAR PRESIDIO, TEXAS AND OJINAGA, CHIHUAHUA

LOCATION: Gaging station at river kilometer 1,555; 10.5 river kilometers upstream from the Rio Conchos.
RECORDS: Chemical analyses, February 1933 through 1981; specific conductance, 1931 and 1935 through current year.
REMARKS: Sampling by the International Boundary and Water Commission; chemical analyses by the U.S. Geological Survey; determinations for specific conductance by International Boundary and Water Commission. Results of biochemical analyses by the International Boundary and Water Commission and the Texas Natural Resource Conservation Commission, November 1977 through current year, available upon request.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

January		March		May		July		September		November	
16	3,250	7	4,510	4	3,650	2	856	9	1,900	5	3,260
		18	4,480	22	4,170	18	1,970	17	1,520	21	3,550
February		**April**		**June**		**August**		**October**		**December**	
7	2,740	3	4,830	12	5,430	5	3,250	2	3,020	2	3,540
21	2,840	16	3,490	18	3,160	19	2,440	15	2,690		
				26	961						

QUALITY OF WATER - 1996

08-3730.00 RIO CONCHOS NEAR OJINAGA, CHIHUAHUA

LOCATION: At gaging station, 2.5 river kilometers from the confluence with the Rio Grande, which is located at river kilometer 1,547.
RECORDS: Chemical analyses, February 1935 through 1981; suspended silt, 1956 through 1979, specific conductance, 1935 through 1995.
REMARKS: Sampling and determinations for specific conductance by the International Boundary and Water Commission; chemical analyses by the U. S. Geological Survey.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1												
2												
3												
4												
5												
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No samples were collected for 1996.

08-3742.00 RIO GRANDE BELOW RIO CONCHOS NEAR PRESIDIO, TEXAS AND OJINAGA, CHIHUAHUA

LOCATION: Gaging station at river kilometer 1,259; 0.6 river kilometer downstream from Alamito Creek and 18.7 river kilometers downstream from the Rio Conchos.
RECORDS: Specific conductance, 1956 through current year.
REMARKS: Sampling and determinations for specific conductance by the International Boundary and Water Commission. Results of biochemical analyses by the International Boundary and Water Commission and the Texas Natural Resource Conservation Commission, November 1977 through current year, available upon request.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

January		March		May		July		September		November	
11	3,340	11	3,780	6	3,610	3	1,030	4	920	6	3,020
		21	4,270	20	3,890	22	3,390	10	1,910		
								23	1,860		
February		**April**		**June**		**August**		**October**		**December**	
6	2,760	2	4,190	11	4,090	7	1,420	7	1,080	4	3,310
20	2,890	17	3,470	19	2,630	21	2,660	17	1,560		
								24	2,430		

QUALITY OF WATER - 1996

08-3772.00 RIO GRANDE AT FOSTER RANCH NEAR LANGTRY, TEXAS AND RANCHO SANTA ROSA, COAHUILA

LOCATION: Gaging station at river kilometer 1,058, about 20.8 kilometers west of Langtry, Texas.
RECORDS: Chemical analyses, March 1969 through 1970 and October 1974 through current year; biochemical, October 1974 through 1995; suspended silt, 1969 through current year; specific conductance, 1969 through 1981, 1983, 1985 through current year.
REMARKS: Sampling and analyses by U. S. Geological Survey; sampling and determinations for suspended silt and specific conductance by the International Boundary and Water Commission. Additional water quality parameters, including heavy metals, nutrients, pesticides, and biological indices, determined and published by the U. S. Geological Survey.

1996 Date	Time Std.	* Stream flow, Momentary CMS	Specific Conductance Microsiemens	pH Units	Water Temperature Deg C	Hardness, Total (as CaCO3) mg/L	Hardness, Noncarbonate (as CaCO3) mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L	Sodium ion (Na), Dissolved mg/L	Sodium Adsorption Ratio (SAR)	Potassium ion (K) Dissolved mg/L
Feb. 21	1130	15.0	1,880	8.2	18.0	360	190	94	30	250	6	8.1
Mar. 20	1200	11.0	1,510	8.2	17.5	360	150	95	29	190	4	7.1
April 01	1140	7.76	1,510	8.1	21.0	360	180	94	29	180	4	6.2
April 16	1237	6.68	1,320	8.0	19.5	320	170	83	26	160	4	4.4
May 1	1135	7.65	1,330	8.0	21.0	320	170	82	27	160	4	6.0
May 29	1145	4.98	782	8.1	28.5	210	74	51	20	78	2	4.9
June 27	1045	7.76	677	8.0	27.5	210	57	61	14	51	2	4.5
July 30	1345	13.0	972	8.0	28.0	280	150	83	17	91	2	5.7
Aug. 15	1120	38.2	1,480	7.7	27.0	300	200	100	12	170	4	7.3
Aug. 20	1238	11.6	593	8.0	26.5	170	34	55	7.20	58	2	3.8
Aug. 30	1340	283	723	7.5	26.5	200	110	67	6.90	73	2	4.7
Sept. 11	1135	33.7	1,060	7.9	27.0	320	200	110	10	84	2	6.0
Dec. 18	1125	13.2	1,760	8.1	9.5	400	240	110	29	220	5	6.7

1996 Date	Alkalinity Total (as CaCO3) mg/L	Sulfate ion (SO4) Dissolved mg/L	Chloride ion (Cl), Dissolved mg/L	Silica (SiO2), Dissolved mg/L	Oxygen, Dissolved (DO) mg/L	Coliform, Fecal Cols./100 mL	Turbidity NTU	Solids Dissolved (Calculated) mg/L	Solids Dissolved (Residue ┤ 180 Deg C) mg/L	Suspended Sediment mg/L
Feb. 21	168	380	300	7.7	11.0		38.0	1,170	1,190	112
Mar. 20	209	320	210	16.0	9.4		36.0	999	1,000	101
April 1	180	320	210	18.0	9.4		34.0	972	992	88
April 16	145	280	160	20.0	11.8		0.20	826	834	106
May 1	146	290	160	21.0	8.6		20.0	839	882	95
May 29	137	160	62	20.0	7.6		7.0	482	513	26
June 27	154	130	38	17.0	7.4		180	416	438	253
July 30	130	250	63	18.0	7.8		200	612	626	408
Aug. 15	99	350	190	12.0	6.2		5,300	908	940	8,850
Aug. 20	134	120	27	17.0	7.1		860	376	398	1,860
Aug. 30	88	200	42	10.0	4.1		7,500	465	484	17,000
Sept. 11	116	300	78	15.0	7.2		920	680	706	1,660
Dec. 18	158	380	240	15.0	9.2		12.0	1,100	1,130	#

Missing data
* Flow provided by the US Geological Survey

SUSPENDED SILT - 1996

1996 Date	Time Std.	Streamflow, Momentary CMS	Gravimetric Percent	1996 Date	Time Std.	Streamflow, Momentary CMS	Gravimetric Percent	1996 Date	Time Std.	Streamflow, Momentary CMS	Gravimetric Percent
Jan. 12	1120	16.7	0.0058	May 20	0940	7.05	0.0057	Sept. 3	1125	90.3	0.6832
25	1100	15.0	0.0055	June 3	1005	15.4	0.0208	16	1110	129	0.7710
Feb. 5	1130	16.9	0.0083	17	1005	12.4	0.0031	Oct. 7	1020	20.2	0.0175
Mar. 4	1130	12.3	0.0105	July 1	1005	24.4	2.2387	21	1115	39.4	0.0575
15	1210	11.4	0.0138	15	1015	24.9	0.1546	Nov. 4	1045	19.4	0.0111
Apr. 2	1035	9.32	0.4326	Aug. 2	1015	12.1	0.0113	15	1140	16.9	0.0075
15	0945	8.58	0.0080	14	1055	80.4	0.1686	Dec. 2	1125	15.8	0.0054
May 6	1020	7.50	0.0045	30	1055	268	1.0040	16	1050	14.5	0.0018

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

January	March	May	July	September	November
12 1,860	4 1,570	6 1,280	1 854	3 823	4 1,520
25 1,820	15 1,470	20 1,860	15 973	16 657	15 1,680
February	**April**	**June**	**August**	**October**	**December**
5 1,930	2 1,600	3 525	2 909	7 1,460	2 1,800
	15 1,310	17 797	14 1,450	21 874	16 1,820
			30 928		

QUALITY OF WATER - 1996

08-4474.10 PECOS RIVER NEAR LANGTRY, TEXAS

LOCATION: At gaging station, 24.1 river kilometers from the confluence with the Rio Grande, which is located at river kilometer 991.4.
RECORDS: Chemical analyses, 1967 through current year; biochemical analyses, October 1974 through 1995; suspended silt, November 1954 through 1976; specific conductance daily, 1969 through September 1985 and biweekly through current year.
REMARKS: Sampling and analyses by U.S. Geological Survey; sampling and determinations for specific conductance by the International Boundary and Water Commission. Additional water quality parameters, including heavy metals, nutrients, pesticides, and biological indices, determined and published by the U. S. Geological Survey.

1996 Date	Time Std.	Stream flow, Momentary CMS	Specific Conductance Microsiemens /cm	pH Units	Water Temperature Deg C	Hardness, Total (as CaCO3) mg/L	Hardness, Noncarbonate (as CaCO3) mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L	Sodium ion (Na), Dissolved mg/L	Sodium Adsorption Ratio (SAR)	Potassium ion (K) Dissolved mg/L
Feb. 22	1122	3.85	4,820	8.1	18.5	910	760	200	98	690	10	10.0
Mar. 21	1000	3.48	4,750	8.1	18.0	920	780	200	100	700	10	11.0
April 02	1030	3.40	4,760	8.1	19.0	890	750	190	100	700	10	9.6
April 17	0732	3.03	5,200	8.0	19.5	960	850	200	110	810	11	5.9
May 2	1200	2.66	4,230	7.9	22.5	780	680	170	86	640	10	10.0
May 30	1140	2.27	3,940	7.8	29.0	740	630	160	81	560	9	9.0
June 28	1125	2.52	2,800	8.1	28.5	540	410	120	57	360	7	7.1
July 17	1020	2.12	3,000	8.1	28.0	590	470	130	63	400	7	7.6
Aug. 14	1035	2.66	2,460	8.1	30.5	430	320	92	48	310	7	6.8
Aug. 25	1455	7.99	996	7.8	25.0	230	130	65	16	99	3	3.5
Sept. 12	1025	5.95	2,980	8.0	27.5	610	460	140	62	410	7	8.4
Sept. 15	1830	165	1,850	7.5	25.0	360	270	91	33	230	5	6.3
Dec. 17	0950	5.41	3,630	7.9	11.0	710	560	160	75	490	8	8.4

1996 Date	Alkalinity Total (as CaCO3) mg/L	Sulfate ion (SO4) Dissolved mg/L	Chloride ion (Cl), Dissolved mg/L	Silica (SiO2), Dissolved mg/L	Oxygen, Dissolved (DO) mg/L	Coliform, Fecal Cols./ 100 mL	Oxygen Demand, Biochemical (BOD) 5 Day mg/L	Turbidity NTU	Solids Dissolved (Calculated) mg/L	Solids Dissolved (Residue @ 180 Deg C) mg/L	Suspended Sediment mg/L
Feb. 22	152	660	1,100	8.8	9.6			0.2	2,860	3,020	4
Mar. 21	134	690	1,200	7.2	9.5			0.2	2,990	3,150	3
April 2	136	680	1,200	7.4	9.0			0.2	2,970	3,100	2
April 17	106	740	1,300	7.0	10.3			0.2	3,240	3,320	5
May 2	106	590	1,100	9.1	7.1			0.2	2,670	2,800	4
May 30	108	540	940	14.0	6.3			0.4	2,370	2,680	5
June 28	126	380	610	13.0	7.9			1.5	1,630	1,750	#
July 17	118	380	650	14.0	6.9			0.2	1,720	1,810	16
Aug. 14	111	310	520	8.4	7.3			0.2	1,360	1,480	6
Aug. 25	103	110	170	9.6	7.2			7.5	545	589	24
Sept. 12	150	420	670	14.0	7.2			0.2	1,820	1,830	#
Sept. 15	94	240	380	9.6	9.2			100	1,050	1,130	#
Dec. 17	166	500	810	14.0	10.9			0.3	2,160	2,270	#

Missing Data

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

January		March		May		July		September		November	
2	4,290	4	4,860	6	4,730	1	2,880	3	2,280	4	2,930
25	4,780	18	4,930	20	4,550	15	3,020	16	1,120	18	3,250
February		April		June		August		October		December	
5	4,750	1	4,960	3	1,800	5	2,990	7	2,500	2	3,410
22	4,960	15	5,120	17	2,740	16	2,880	21	2,920		

08-4494.00 DEVILS RIVER AT PAFFORD CROSSING NEAR COMSTOCK, TEXAS

LOCATION: At gaging station 41.0 river kilometers from the confluence with the Rio Grande, which is located at river kilometer 925.
RECORDS: Daily specific conductance, 1968 through September 1985; weekly or biweekly specific conductance through current year.
REMARKS: Sampling and determinations for specific conductance by the U. S. Geological Survey through September 1985. Sampling prior to 1978 and since October 1985 by the International Boundary and Water Commission. Chemical and biochemical analyses, 1978 through current year, available from U. S. Geological Survey.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

January		March		May		July		September		November	
2	372	19	293	6	376	1	407	3	363	4	384
25	431			20	362	15	363	16	422	15	363
February		April		June		August		October		December	
5	317	1	403	3	382	5	358	7	412	2	429
		15	375	17	378	19	379	21	346	16	431

QUALITY OF WATER - 1996

08-4509.00 RIO GRANDE BELOW AMISTAD DAM NEAR CD. ACUNA, COAHUILA AND DEL RIO, TEXAS

LOCATION: Gaging station at river kilometer 920.3, 3.4 river kilometers downstream from Amistad Dam.
RECORDS: Chemical analyses, July 1968 through current year; suspended silt, 1969 through 1976; specific conductance 1968 through current year.
REMARKS: Sampling for chemical analyses by the International Boundary and Water Commission, analyses by the U. S. Geological Survey. Sampling and determinations for specific conductance by the International Boundary and Water Commission.

1996 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Hardness, Total (as CaCO3) mg/L	Hardness, Noncarbonate (as CaCO3) mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L
Jan. 17	0745	44.5	1,300	7.8	11.0	280	160	73	23
Feb. 14	0745	44.2	1,330	8.0	9.0	290	170	75	25
Mar. 20	0905	30.0	1,320	7.3	#	280	180	70	25
April 17	0743	30.6	1,330	7.5	13.0	290	170	76	25
May 13	0645	71.4	1,380	7.7	16.0	300	170	76	26
May 28	1445	99.7	1,310	7.9	17.5	290	160	77	24
June 19	0630	47.9	1,370	7.8	#	300	170	77	26
June 26	1320	131	1,360	7.8	19.5	310	180	79	26
July 16	1330	47.0	1,370	7.8	22.0	320	190	81	27
July 17	0638	12.4	1,360	7.7	#	290	160	74	25
Aug. 13	1345	49.0	1,360	7.7	24.0	280	150	71	25
Aug. 21	0700	12.0	1,350	7.5	24.0	290	170	74	26
Sept. 10	1325	44.5	1,320	7.8	25.0	280	170	73	24
Sept. 18	0845	6.12	1,300	7.7	25.5	290	170	73	26
Oct. 16	1205	43.3	1,210	7.8	32.0	270	170	72	23
Nov. 20	0820	45.0	1,190	8.0	19.5	280	170	74	23
Dec. 18	0920	73.9	1,160	8.0	14.0	280	170	77	22

1996 Date	Sodium ion (Na), Dissolved mg/L	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved mg/L	Alkalinity Total (as CaCO3) mg/L	Sulfate ion (SO4) Dissolved mg/L	Chloride ion (Cl), Dissolved mg/L	Silica (SiO2) Dissolved mg/L	Solids Dissolved (Calculated) mg/L
Jan. 17	150	4	5.8	120	260	170	15	767
Feb. 14	160	4	5.3	120	260	190	16	805
Mar. 20	150	4	5.9	98	260	180	14	765
April 17	150	4	5.5	120	250	190	15	783
May 13	160	4	5.4	120	260	190	15	807
May 28	150	4	5.5	#	240	170	15	763
June 19	160	4	5.4	130	260	190	15	811
June 26	170	4	5.7	#	260	200	15	836
July 16	150	4	5.3	#	250	200	16	808
July 17	150	4	5.6	120	250	190	15	784
Aug. 13	150	4	5.4	#	250	190	15	787
Aug. 21	160	4	5.2	120	250	190	16	795
Sept. 10	140	4	5.2	#	250	180	16	760
Sept. 18	150	4	5.3	120	240	170	16	750
Oct. 16	140	4	5.2	100	230	160	15	708
Nov. 20	140	4	5.2	110	230	150	15	703
Dec. 18	130	3	5.2	110	220	150	15	687

- Missing data

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1			1,510	1,370	1,320		1,360				1,240	
2	1,240	1,260						1,420		1,240		1,230
3	1,270			1,360	1,380	1,380	1,380		1,340			
4			1,420						1,350	1,260	1,230	1,230
5	1,240	1,270		1,320		1,380	1,380	1,400				
6			1,440		1,320				1,350		1,230	1,230
7		1,270						1,400		1,270		1,230
8	1,280		1,420	1,270	1,350		1,380					
9		1,280						1,390	1,350	1,270		
10	1,270			1,330	1,360		1,380					
11			1,420						1,340	1,260		1,230
12	1,280	1,310		1,340		1,390	1,370	1,390			1,230	
13			1,420		1,350				1,340		1,240	1,240
14		1,310						1,390				
15			1,420	1,320	1,340		1,380			1,250	1,230	
16	1,270	1,370						1,390	1,310	1,250		1,210
17	1,280			1,330	1,370	1,390	1,380					
18			1,400						1,310	1,260	1,240	1,210
19	1,270			1,330		1,420	1,380	1,390	1,330			
20		1,440	1,370		1,380				1,310		1,240	1,210
21		1,400				1,410		1,390		1,240		
22	1,270		1,360	1,300	1,340		1,370				1,240	
23		1,440							1,330	1,250		1,220
24	1,260			1,330	1,370	1,400	1,380					
25			1,390						1,290	1,240	1,210	
26	1,320	1,500		1,330		1,390	1,380	1,370				
27			1,400						1,260		1,230	1,200
28		1,480			1,330	1,380		1,380		1,230		
29	1,340		1,390	1,350	1,320		1,390				1,230	
30								1,370	1,260	1,240		1,210
31	1,350				1,380		1,380					

QUALITY OF WATER - 1996

08-4557.00 RIO GRANDE NEAR JIMENEZ, COAHUILA AND QUEMADO, TEXAS

LOCATION: Near gaging station at Maverick Canal Headgates. The canal intake is at river kilometer 875, 21.5 river kilometers above the gaging station.
RECORDS: Specific conductance, 1954 through current year.
REMARKS: Sampling and determinations by the International Boundary and Water Commission.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1		1,660		1,400	1,360	1,330	1,380	1,260	1,230	1,190	1,170	1,230
2		1,530		1,380	1,350	1,360	1,400	1,230	1,240	1,190	1,180	1,220
3		1,560		1,360	1,390	1,400	1,300	1,230	1,230	1,190	1,180	1,220
4		1,700		1,350	1,360	1,410	1,400	1,230	1,220	1,190	1,180	1,220
5		1,380		1,340	1,340	1,380	1,400	1,190	1,230	1,190	1,180	1,230
6		1,570		1,360	1,360	1,400	1,400	1,230	1,240	1,190	1,180	1,250
7		1,400		1,340	1,350	1,380	1,400	1,240	1,230	1,190	1,180	1,230
8		1,380		1,340	1,350	1,360	1,410	1,230	1,230	1,190	1,180	1,220
9		1,380		1,350	1,350	1,400	1,400	1,230	1,220	1,200	1,180	1,210
10		1,380		1,370	1,350	1,410	1,410	1,220	1,230	1,190	1,180	1,230
11		1,390		1,350	1,350	1,370	1,400	1,230	1,230	1,190	1,180	1,250
12		1,380		1,360	1,350	1,380	1,420	1,220	1,230	1,190	1,180	1,230
13		1,380		1,370	1,360	1,370	1,380	1,230	1,240	1,190	1,190	1,220
14		1,660		1,370	1,360	1,370	1,380	1,230	1,230	1,190	1,190	1,220
15		1,410		1,360	1,350	1,350	1,390	1,210	1,220	1,190	1,180	1,210
16		1,600		1,340	1,340	1,370	1,440	1,220	1,230	1,190	1,180	1,210
17		1,590		1,370	1,360	1,360	1,400	1,240	1,230	1,190	1,200	1,210
18		1,360		1,340	1,340	1,380	1,390	1,230	1,220	1,190	1,180	1,220
19		1,400		1,350	1,350	1,380	1,410	1,240	1,230	1,200	1,180	1,220
20		1,400		1,350	1,350	1,380	1,410	1,240	1,230	1,190	1,180	1,210
21		1,410		1,380	1,370	1,370	1,360	1,240	1,230	1,190	1,180	1,220
22		1,390		1,400	1,350	1,370	1,390	1,220	1,230	1,190	1,180	1,210
23		1,390		1,380	1,350	1,390	1,390	1,220	1,230	1,190	1,170	1,220
24		1,370		1,370	1,350	1,370	1,390	1,220	1,230	1,200	1,180	1,220
25		1,390		1,360	1,350	1,380	1,400	1,230	1,230	1,190	1,180	1,210
26		1,400		1,380	1,370	1,370	1,410	1,230	1,230	1,190	1,170	1,230
27		1,410		1,340	1,340	1,360	1,420	1,220	1,230	1,190	1,180	1,220
28		1,670		1,370	1,350	1,370	1,400	1,240	1,230	1,210	1,180	1,220
29		1,400		1,400	1,340	1,370	1,380	1,230	1,230	1,200	1,170	1,210
30				1,350	1,320	1,390	1,370	1,230	1,220	1,170	1,180	1,210
31					1,340		1,380	1,220		1,180		1,210

08-4587.00 RIO GRANDE NEAR EL INDIO, TEXAS AND VILLA GUERRERO, COAHUILA

LOCATION: Gaging station at river kilometer 741, 57.8 river kilometers downstream from the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila.
RECORDS: Specific conductance 1954 through current year.
REMARKS: Sampling and determinations by the International Boundary and Water Commission.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

January		March		May		July		September		November	
12	1,230	6	1,390	2	1,370	3	1,400	5	1,210	6	1,170
				15	1,360			24	1,160		
February		April		June		August		October		December	
6	1,270	3	1,370	5	1,340	6	1,460	3	1,180	4	1,160
21	1,340	17	1,360			21	1,430	23	1,210	18	1,200

QUALITY OF WATER - 1996

08-4590.00 RIO GRANDE AT LAREDO WATER PLANT, LAREDO, TEXAS AND NUEVO LAREDO, TAMAULIPAS

SUSPENDED SILT - 1996

Month	Monthly Weight Megagrams		Number of Samples	Gravimetric Percentages			Silt Volume Thousand Cubic Meters**
	Water	Silt		Composite	Maximum Sample*	Minimum Sample*	Total
Jan.	113,607,000	4,090	31	0.0036	0.0032	0.0042	3.8
Feb.	102,220,000	3,987	29	0.0039	0.0047	0.0077	3.7
Mar.	80,680,000	4,034	31	0.0050	0.0039	0.0091	3.8
April	102,254,000	12,679	30	0.0124	0.0263	0.0077	11.9
May	210,393,000	47,128	31	0.0224	0.0793	0.0283	44.1
June	217,719,000	52,688	30	0.0242	0.0971	0.0091	49.3
July	90,521,000	10,772	31	0.0119	0.0764	0.0084	10.1
Aug.	128,373,000	#	#	#	#	#	#
Sept.	222,074,000	#	#	#	#	#	#
Oct.	146,647,000	52,206	31	0.0356	0.2211	0.0072	48.9
Nov.	95,593,000	5,353	30	0.0056	0.0406	0.0044	5.0
Dec.	107,179,000	3,108	31	0.0029	0.0039	0.0053	2.9
Year	1,617,260,000	196,045	305				

* Represents the gravimetric percentages at the maximum flow and minimum flow of the month
** Volume calculated at 1.068 megagrams per cubic meter
# - Missing data

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,230	1,260	1,410	1,490	1,360	1,010	1,390	1,650	784	801	419	1,220
2	1,260	1,600	1,360	1,360	1,370	1,020	2,440	1,810	560	988	404	1,240
3	1,260	1,310	1,380	1,410	1,370	830	1,420	1,440	504	1,020	432	1,200
4	1,450	1,300	1,450	1,420	1,470	723	1,370	1,540	536	858	512	1,140
5	1,340	1,340	1,400	1,430	1,380	975	1,390	1,440	617	758	655	1,100
6	1,350	1,310	1,400	1,480	1,770	1,140	1,690	1,470	703	798	784	1,130
7	1,400	1,290	1,370	1,370	1,370	1,280	1,450	1,620	720	892	984	1,170
8	1,290	1,280	1,400	1,160	1,310	1,350	1,810	1,390	915	1,020	1,130	1,130
9	1,300	1,300	1,440	796	1,360	1,370	1,390	1,810	1,070	1,060	1,150	1,180
10	1,280	962	1,390	676	1,300	1,390	1,120	1,810	1,170	1,110	1,220	1,170
11	1,270	1,240	1,480	988	1,360	1,380	1,140	1,460	961	1,110	1,190	1,170
12	1,280	1,250	1,450	1,200	1,290	1,390	1,200	1,710	1,200	1,130	1,200	1,150
13	1,230	1,270	1,460	1,250	1,380	1,410	1,190	1,450	1,070	1,180	1,140	1,170
14	1,330	1,780	1,430	1,330	1,350	1,540	1,790	1,440	470	1,140	1,090	1,170
15	1,270	1,310	1,390	1,370	1,360	1,390	1,350	1,440	642	1,170	1,170	1,310
16	1,280	1,320	1,420	1,370	1,460	1,380	873	1,440	654	1,190	1,200	1,180
17	1,300	1,310	1,710	1,390	1,420	1,390	1,210	1,370	890	1,170	1,240	1,190
18	1,290	1,380	1,460	1,400	1,390	1,380	1,390	1,750	1,080	1,210	1,220	1,160
19	1,300	1,350	1,460	1,460	1,420	1,380	1,410	1,390	817	1,220	1,220	1,190
20	1,320	1,290	1,390	1,400	1,390	1,390	1,400	1,380	618	1,210	1,180	1,200
21	1,290	1,420	1,710	1,350	1,370	1,370	1,430	1,380	887	1,230	1,240	1,170
22	1,280	1,410	1,430	1,400	1,420	983	1,460	1,430	788	1,210	1,220	1,070
23	1,300	1,390	1,400	1,380	1,430	1,420	1,460	1,390	756	1,260	1,230	1,180
24	1,300	1,300	1,520	1,380	1,520	1,410	1,450	798	895	1,200	1,240	1,190
25	1,310	1,340	1,440	1,430	1,400	1,440	1,460	498	946	1,200	1,220	1,150
26	1,290	1,470	1,400	1,430	1,410	1,420	1,400	674	571	1,200	1,230	1,180
27	1,310	1,360	1,390	1,370	1,390	1,410	1,240	904	604	1,220	1,220	1,210
28	1,420	1,400	1,670	1,370	1,400	1,440	1,460	1,130	706	1,210	1,220	1,210
29	1,320	1,520	1,400	1,430	1,320	1,410	1,460	1,190	950	1,210	1,200	1,210
30	1,330		1,350	1,370	1,080	1,410	1,480	1,140	802	1,000	828	1,180
31	1,350		1,350		1,010		1,330	487		487	487	1,200

QUALITY OF WATER - 1996

08-4590.00 RIO GRANDE AT LAREDO, TEXAS AND NUEVO LAREDO TAMAULIPAS

LOCATION: Samples for biochemical analyses, specific conductance, and suspended silt collected at the Laredo Water Plant, river kilometer 586.
RECORDS: Chemical analyses, 1955 through 1976; chemical and biochemical analyses, 1973 through September 1986; biochemical analyses, September 1968 through current year; suspended silt, 1953 through current year; specific conductance, 1948-1949 and 1955 through current year.
REMARKS: Field parameter samples for biochemical analyses, suspended silt and specific conductance collected and analyzed by the International Boundary and Water Commission and the Texas Natural Resource Conservation Commission. Additional water quality parameters, including heavy metals, nutrients, pesticides, and biological indices, available from U. S. Geological Survey through September 1986.

1996 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Hardness, Total (as CaCO3) mg/L	Hardness, Noncarbonate (as CaCO3) mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L
Jan. 17	1020	47.6	1,250	7.6	12.0	280	170	71	24
Feb. 21	1055	40.5	1,340	7.8	28.0	310	180	80	26
Mar. 19	1015	30.3	1,370	7.4	18.4	300	190	78	26
April 16	0915	27.0	1,370	7.6	17.0	310	180	83	26
May 14	1105	87.5	1,360	7.5	26.5	290	160	76	25
June 26	0836	51.0	1,390	7.7	29.0	290	180	73	27
July 16	0955	28.3	993	7.7	33.5	220	120	59	18
Aug. 21	1040	30.9	1,410	7.6	27.0	300	210	76	27
Sept. 18	0920	85.0	1,180	7.8	29.0	280	160	74	23
Oct. 16	0810	36.0	1,180	7.9	25.0	270	160	73	22
Nov. 20	1014	41.9	1,180	7.9	22.5	280	160	77	22
Dec. 11	1037	41.1	1,160	8.1	17.0	280	170	79	21

1996 Date	Sodium ion (Na), Dissolved mg/L	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved mg/L	Alkalinity Total (as CaCO3) mg/L	Sulfate ion (SO4) Dissolved mg/L	Chloride ion (Cl), Dissolved mg/L	Silica (SiO2) Dissolved mg/L	Solids Dissolved (Calculated) mg/L
Jan. 17	140	4	5.2	100	260	160	5.3	729
Feb. 21	150	4	5.6	130	270	180	8.9	798
Mar. 19	150	4	5.3	120	270	180	7.7	787
April 16	150	4	5.7	130	270	190	13.0	817
May 14	150	4	5.4	130	260	180	16.0	790
June 26	160	4	5.5	120	270	200	13.0	820
July 16	110	3	5.6	100	180	130	12.0	576
Aug. 21	160	4	5.9	92	270	200	16.0	811
Sept. 18	130	3	6.5	120	210	150	15.0	682
Oct. 16	130	3	5.1	110	230	150	12.0	690
Nov. 20	120	3	4.7	120	220	150	13.0	678
Dec. 11	120	3	4.4	120	210	140	12.0	658

1996 Date	Time Std.	Stream-flow, Momen-tary CMS	Specific Conduct-ance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Oxygen, Dis-solved (DO) mg/L	Coli-form, Fecal Cols./ 100 mL	Oxygen, Demand, Bio-Chemical (BOD) 5 Day mg/L	Alka-linity Total (as CaCO3) mg/L	Sulfate ion (SO4), Dis-solved mg/L	Chloride ion (Cl), Dis-solved mg/L	Solids Dis-solved (Residue @ 180 Deg C) mg/L	Sus-pended Solids mg/L
Jan. 24	0940	42.9	1,280	8.1	14.0	9.8	#	#	#	#	#	#	#
Feb. 13	1135	41.2	1,203	8.1	15.2	8.9	40	2.0	125	257	169	750	20
Mar. 12	1105	36.0	450	7.9	15.0	9.3	100	1.0	135	290	203	886	37
April 24	1040	25.2	1,290	8.1	24.6	7.7	50	#	#	#	#	#	#
May 14	1100	87.5	900	8.3	26.8	7.4	65	1.0	130	263	188	810	113
June 11	1105	54.9	1,486	8.3	27.5	7.5	80	1.5	119	264	195	835	78
July 15	0940	29.4	1,400	8.3	30.9	8.0	<7	#	#	#	#	#	#
Aug. 21	0940	32.0	1,472	8.1	27.2	7.0	1700	<1.0	115	249	204	1,027	79
Sept. 25	0930	55.0	998	8.4	27.4	6.9	60	1.0	112	186	111	589	238
Nov. 20	1014	41.8	1,230	8.1	22.4	7.9	300	5.0	122	256	170	720	32
Dec. 11	1037	40.6	1,245	8.2	17.2	8.8	20	3.0	110	225	156	760	40

< Actual value is known to be less than the value shown
Missing Data

QUALITY OF WATER - 1996

08-4613.00 RIO GRANDE BELOW FALCON DAM NEAR FALCON, TEXAS AND NUEVA CD. GUERRERO, TAMAULIPAS

LOCATION: Chemical and specific conductance samples from Falcon Reservoir at Falcon Dam, river kilometer 442.3, and biochemical sampling at the Chapeno gaging station 4.1 river kilometers below Falcon Dam; latitude 26°31'45", longitude 99°09'30".

RECORDS: Chemical analyses, July 1955 through current year; biochemical analyses, July 1975 through current year; suspended silt, July 1955 through 1976; specific conductance 1955 through current year.

REMARKS: Sampling for chemical analyses by the International Boundary and Water Commission at Falcon Village Water Plant, analyses by the U. S. Geological Survey; sampling and determinations for specific conductance by the International Boundary and Water Commission at Falcon Dam Power Plant tailrace; biochemical analyses, collected and analyzed by the International Boundary and Water Commission and the Texas Natural Resource Conservation Commission.

1996 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Hardness, Total (as CaCO3) mg/L	Hardness, Noncarbonate (as CaCO3) mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L
Jan. 15	1300	18.5	1,100	7.8	13.5	240	140	66	19
Mar. 19	1400	78.4	1,170	7.3	15.5	270	150	71	22
Mar. 21	1010	127	1,190	8.2	17.5	270	150	70	22
May 15	1100	53.5	1,300	7.5	24.5	280	160	71	24
June 13	1150	101	1,290	8.1	27.0	260	170	68	22
July 1	1345	40.2	1,420	7.9	28.5	250	160	61	23
July 18	1305	67.4	1,300	7.4	39.5	270	170	66	25
July 31	0925	174	1,370	7.9	28.0	260	160	66	23
Aug. 21	1345	33.7	1,270	7.4	28.5	260	170	68	23
Sept. 19	0815	18.0	1,150	7.7	28.0	230	140	58	21
Sept. 26	1150	25.7	1,110	7.7	28.5	230	140	59	20
Oct. 22	0755	13.5	1,010	7.6	23.0	230	120	61	18
Nov. 19	0806	28.6	1,010	7.8	22.0	240	140	66	19
Dec. 3	1400	47.3	1,020	8.4	18.5	240	130	66	18
Dec. 17	0806	28.6	1,020	7.7	3.5	240	130	68	18

1996 Date	Sodium ion (Na), Dissolved mg/L	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved mg/L	Alkalinity Total (as CaCO3) mg/L	Sulfate ion (SO4) Dissolved mg/L	Chloride ion (Cl), Dissolved mg/L	Silica (SiO2) Dissolved mg/L	Solids Dissolved (Calculated) mg/L
Jan. 15	120	3	6.1	100	230	140	10.0	655
Mar. 19	130	3	6.3	120	240	140	9.8	689
Mar. 21	130	3	5.9	120	240	150	9.5	699
May 15	150	4	6.0	120	260	170	10.0	761
June 13	140	4	6.4	93	260	170	9.2	735
July 1	140	4	6.4	87	250	170	9.6	714
July 18	150	4	6.1	97	260	180	11.0	757
July 31	140	4	6.8	97	250	180	10.0	737
Aug. 21	140	4	6.6	98	250	180	10.0	737
Sept. 19	130	4	6.1	90	220	150	9.9	650
Sept. 26	130	4	6.1	92	220	150	10.0	654
Oct. 22	110	3	6.1	100	190	130	10.0	588
Nov. 19	120	3	5.7	110	190	120	11.0	597
Dec. 03	110	3	6.0	110	190	130	10.0	600
Dec. 17	110	3	5.9	110	190	120	11.0	590

1996 Date	Time Std.	Stream-flow, Momen-tary CMS	Specific Conduct-ance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Oxygen, Dis-solved (DO) mg/L	Coli-form, Fecal Cols./ 100 mL	Oxygen, Demand, Bio-Chemical (BOD) 5 Day mg/L	Alka-linity Total (as CaCO3) mg/L	Sulfate ion (SO4), Dis-solved mg/L	Chloride ion (Cl), Dis-solved mg/L	Solids Dis-solved (Residue @ 180 Deg C) mg/L	Sus-pended Solids mg/L
Jan. 24	1412	56.1	1,090	8.3	16.3	10.5	18	N/A	106	221	133	216	13
Apr. 10	1500	208	1,090	8.4	19.5	9.6	14	N/A	112	263	170	820	8
Jul. 15	1305	60.0	1,400	8.3	30.1	8.1	14	N/A	100	256	175	960	85
Oct. 23	1205	63.7	1,020	8.2	22.2	10.2	<17	N/A	94	169	129	822	4

- Missing Data
N/A Not Analyzed
< - Actual value is known to be less than the value shown

QUALITY OF WATER - 1996

08-4613.00 RIO GRANDE BELOW FALCON DAM NEAR FALCON, TEXAS AND NUEVA CD. GUERRERO, TAMAULIPAS

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,110		1,160	1,160	1,260						1,020	
2		1,130							1,300	1,090		1,030
3	1,100			1,180	1,280							
4			1,160						1,290	1,090	1,020	1,050
5	1,090	1,130										
6			1,150		1,270				1,300		1,040	1,030
7		1,130								1,070		
8	1,090		1,160	1,200	1,290						1,030	
9		1,160						1,300	1,270	1,070		1,030
10	1,080			1,190	1,460							
11			1,160						1,210	1,060	1,050	1,050
12	1,070	1,140		1,230				1,310				
13			1,170		1,320				1,200		988	
14		1,150						1,310		1,050		
15	1,100		1,180	1,220	1,300						1,030	
16		1,150						1,290	1,210	1,050		1,060
17	1,080			1,230	1,300							
18			1,180						1,150	1,040	1,030	1,050
19	1,090	1,150		1,230				1,290				
20			1,150		1,320				1,160		1,040	1,050
21		1,150						1,310		1,030		
22	1,090		1,180	1,270	1,330						1,040	
23		1,140						1,330	1,150	1,000		1,060
24	1,090			1,260	1,330							
25			1,180						1,140	1,030	1,040	1,040
26	1,110	1,160		1,250				1,290				
27			1,180		1,350				1,090		1,030	1,060
28		1,160						1,320		1,030		
29	1,100		1,160	1,260	1,340					1,040		
30								1,300	1,010	1,050		1,050
31	1,110				1,360							

08-4642.00 RIO SAN JUAN AT CAMARGO, TAMAULIPAS

LOCATION: At gaging station, 5.1 river kilometers from the confluence with the Rio Grande, which is located at river kilometer 384.
RECORDS: Specific conductance, 1960 through 1995.
REMARKS: Sampling and determinations by the International Boundary and Water Commission.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

January	March	May	July	September	November
February	April	June	August	October	December

No samples were collected for 1996

08-4645.00 RANCHERIAS DRAIN NEAR CAMARGO, TAMAULIPAS

LOCATION: At a point about 600 meters from the confluence with the Rio Grande, which is located at river kilometer 389. This drain carries waste water from the Lower Rio San Juan Irrigation District in Mexico.
RECORDS: Specific conductance, 1948 and 1960 through current year.
REMARKS: Sampling and determinations by the International Boundary and Water Commission.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

January		March		May		July		September		November	
5	5,470	6	5,770	8	5,900	2	5,290	4	5,120	5	6,000
17	5,410	12	5,750	23	5,660	19	5,500	18	5,610		
February		**April**		**June**		**August**		**October**		**December**	
2	2,670	3	5,660	6	5,400	2	5,590	2	5,680		
14	5,440	17	4,620	22	5,290	13	3,820	16	5,770		

QUALITY OF WATER - 1996

08-4647.00 RIO GRANDE AT RIO GRANDE CITY, TEXAS NEAR CAMARGO, TAMAULIPAS

LOCATION: Gaging station at river kilometer 378, 6.0 river kilometers downstream from Rio San Juan.
RECORDS: Chemical analyses, 1959 through current year; specific conductance, 1958 through current year; suspended silt, 1959 through 1977.
REMARKS: Sampling by the International Boundary and Water Commission; chemical analyses by the U.S. Geological Survey; specific conductance determinations by the International Boundary and Water Commission.

1996 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Hardness, Total (as CaCO3) mg/L	Hardness, Noncarbonate (as CaCO3) mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L
Jan. 19	0940	50.4	1,160	8.2	5.0	260	150	70	21
Feb. 23	1200	64.0	1,190	8.0	31.0	260	150	71	21
Mar. 22	1055	86.1	1,250	7.2	19.0	290	170	77	23
April 16	0945	189	1,300	7.3	18.0	290	170	75	24
May 16	1015	85.0	1,350	7.3	24.0	290	170	76	25
June 20	1005	68.0	1,280	7.5	30.0	270	160	70	23
July 18	1015	62.9	1,310	7.5	36.0	260	170	64	24
Aug. 22	0945	38.5	1,260	7.4	22.5	250	160	67	21
Sept. 19	0945	16.0	1,310	7.9	30.0	250	160	62	24
Oct. 22	0905	11.5	1,150	7.7	24.0	220	130	58	19
Nov. 19	0920	28.6	1,090	7.8	23.5	240	130	64	19
Dec. 17	0900	30.0	1,080	7.7	4.5	260	150	71	19

1996 Date	Sodium ion (Na), Dissolved mg/L	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved mg/L	Alkalinity Total (as CaCO3) mg/L	Sulfate ion (SO4) Dissolved mg/L	Chloride ion (Cl), Dissolved mg/L	Silica (SiO2) Dissolved mg/L	Solids Dissolved (Calculated) mg/L
Jan. 19	130	3	6.1	120	230	150	3.0	680
Feb. 23	140	4	6.3	120	240	150	10.0	708
Mar. 22	140	4	6.5	120	250	160	7.9	734
April 16	150	4	6.4	120	270	160	11.0	770
May 16	160	4	6.9	120	270	180	11.0	802
June 20	150	4	7.0	100	260	170	10.0	754
July 18	150	4	6.3	89	260	180	12.0	750
Aug. 22	140	4	7.3	93	240	180	10.0	722
Sept. 19	170	4	6.5	90	250	190	9.8	767
Oct. 22	130	4	6.2	92	210	150	9.5	639
Nov. 19	120	3	5.9	110	200	140	9.6	624
Dec. 17	120	3	6.3	110	190	130	8.5	610

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,660		1,260	1,290	1,360		1,400				1,070	
2		1,230						1,360	920	1,290		1,150
3	1,630			1,310	1,390	1,400	1,390					
4			1,250						1,360	1,630	1,080	1,190
5	1,550	1,240		1,320		1,420	1,400	1,350				
6			1,280		1,360				1,150		1,070	1,160
7		1,300				1,400		1,370				
8	1,380		1,280	1,310	1,370		1,440				1,100	
9		1,380						1,370	820	1,350		1,200
10	1,410			1,270	1,420	1,380	1,350					
11			1,290						1,450	1,490	1,120	1,160
12	1,370	1,300		1,290		1,390	1,320	1,330				
13			1,300		1,390				971		1,080	1,150
14		1,310				1,370		1,340		1,190		
15	1,370		1,280	1,280	1,410		1,340				1,160	
16		1,320						1,340	979	1,120		1,130
17	1,300			1,280	1,370	1,350	1,350					
18			1,320						1,380	1,600	1,170	1,170
19	1,260	1,300		1,310		1,350	1,370	1,350				
20			1,270		1,400				838			1,130
21		1,290				1,310		1,050		1,160		
22	1,240		1,270	1,300	1,390		1,350				1,160	
23		1,290						1,320	829	1,200		1,160
24	1,230			1,310	1,380	1,350	1,350					
25			1.260						1,010	1,090	1,170	1,160
26	1,230			1,310		1,330	1,360	1,050				
27		1,250			1,400				1,120		1,180	1,170
28		1,260	1,270			1,330		748				
29	1,230		1,320	1,310	1,400		1,350				1,160	
30								1,090	1,190			1,160
31	1,230				1,400							

QUALITY OF WATER - 1996

PUERTECITOS DRAIN AND LOS INDIOS DRAIN NEAR CD. DIAZ ORDAZ, TAMAULIPAS

LOCATION: For Puertecitos Drain, at a point about 2,600 meters from the confluence with the Rio Grande, which is located at river kilometer 353; and, for Los Indios Drain, at a point about 650 meters from its confluence with Puertecitos Drain. These two drains join at a point about 1,300 meters from the confluence with the Rio Grande. These drains carry waste water from the lower Rio San Juan Irrigation District in Mexico.
RECORDS: Specific conductance, 1960 through current year.
REMARKS: Sampling and determinations by the International Boundary and Water Commission.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

1996 Date	Puerte-citos Drain	Los Indios Drain	1996 Date	Puerte-citos Drain	Los Indios Drain	1996 Date	Puerte-citos Drain	Los Indios Drain	1996 Date	Puerte-citos Drain	Los Indios Drain
Jan. 5	2,840	2,330	Apr. 3	2,960	2,440	Jul. 2	2,740	2,480	Oct. 2	2,800	
17	2,770	2,240	17	2,850	2,470	19	2,820	2,600	16	2,720	
Feb. 2	2,870	2,360	May 8	3,020	2,550	Aug. 2	2,870	2,760	Nov. 5	2,770	
14	3,110	2,310	23	2,920	2,500	13	2,780	2,770			
Mar. 6	3,130	2,360	Jun. 6	2,950	2,490	Sept. 4	2,810	2,770			
12	3,190	2,320	22	2,840	2,520	18	2,840				

08-4663.00 RIO GRANDE AT LOS EBANOS, TEXAS NEAR CD. DIAZ ORDAZ, TAMAULIPAS

LOCATION: Gaging station at river kilometer 329, 54.7 river kilometers upstream from Anzalduas Dam.
RECORDS: Chemical analyses, June 1977 through current year; specific conductance, 1956 through current year.
REMARKS: Sampling by the International Boundary and Water Commission; chemical analyses by the U. S. Geological Survey; specific conductance determinations by the International Boundary and Water Commission.

1996 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Hardness, Total (as CaCO3) mg/L	Hardness, Noncarbonate (as CaCO3) mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L
Jan. 17	1300	5.32	1,540	7.9	21.0	330	210	88	27
Mar. 15	1030	39.4	1,230	7.1	#	280	170	76	23
May 17	0910	71.9	1,350	7.3	27.5	280	170	71	25
July 19	1200	51.0	1,360	7.7	#	270	180	67	25
Sept. 17	1035	4.16	1,670	7.8	31.0	330	230	80	31
Oct. 16	1035	11.6	1,240	7.9	27.0	240	150	60	21
Nov. 20	1115	34.0	1,140	7.9	24.0	250	140	69	20
Dec. 17	1305	9.12	1,100	8.0	16.0	260	150	72	20

1996 Date	Sodium ion (Na), Dissolved mg/L	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved mg/L	Alkalinity Total (as CaCO3) mg/L	Sulfate ion (SO4) Dissolved mg/L	Chloride ion (Cl), Dissolved mg/L	Silica (SiO2) Dissolved mg/L	Solids Dissolved (Calculated) mg/L
Jan. 17	190	5	6.3	120	300	230	7.3	922
Mar. 15	140	4	6.4	120	250	150	9.3	724
May 17	160	4	6.4	110	280	180	11.0	801
July 19	160	4	6.2	95	270	190	13.0	789
Sept. 17	210	5	7.2	97	320	260	11.0	978
Oct. 16	150	4	5.9	85	230	180	10.0	708
Nov. 20	120	3	5.9	120	210	150	10.0	654
Dec. 17	120	3	5.7	120	200	140	7.0	634

- Missing Data

QUALITY OF WATER - 1996

08-4663.00 RIO GRANDE AT LOS EBANOS, TEXAS NEAR CD. DIAZ ORDAZ. TAMAULIPAS

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,650	1,160	1,240	1,200	1,380	1,370		1,300	1,320	1,010	1,070	1,220
2	1,660	1,180	1,280	1,210	1,390	1,360		1,330	1,310	1,360	1,080	1,230
3	1,660	1,290	1,270	1,210	1,370	1,360		1,330	1,290	1,420	1,080	1,220
4	1,660	1,210	1,280	1,290	1,370	1,370		1,320	1,290	1,390	1,090	1,220
5	1,690	1,240	1,260	1,250	1,390	1,370		1,330	1,300	1,010	1,090	1,230
6	1,670	1,210	1,280	1,250	1,410	1,340		1,320	1,320	1,030	1,110	1,220
7	1,430	1,210	1,260	1,240	1,360	1,390		1,330	1,290	1,010	1,080	1,220
8	1,420	1,230	1,300	1,260	1,390	1,350		1,170	1,300	1,370	1,110	1,210
9	1,420	1,190	1,310	1,260	1,400	1,360		1,130	1,660	1,390	1,180	1,210
10	1,400	1,200	1,300	1,250	1,310	1,340		1,170	1,650	1,380	1,300	1,220
11	1,420	1,190	1,310	1,260	1,320	1,300		1,130	1,760	2,020	1,290	1,200
12	1,410	1,270	1,310	1,220	1,310	1,310		1,140	1,770	2,060	1,280	1,210
13	1,410	1,190	1,300	1,260	1,330	1,310		1,330	1,770	2,040	1,280	1,210
14	1,410	1,250	1,360	1,240	1,390	1,300		1,340	1,770	2,040	1,280	1,200
15	1,410	1,300	1,290	1,250	1,400	1,310		1,330	1,760	2,040	1,290	1,170
16	1,190	1,300	1,280	1,260	1,400	1,320		1,330	1,530	2,040	1,250	1,180
17	1,190	1,280	1,260	1,260	1,360	1,350		1,330	1,540	2,060	1,270	1,170
18	1,200	1,350	1,270	1,260	1,380	1,340		1,320	1,540	2,020	1,280	1,180
19	1,190	1,220	1,270	1,250	1,360	1,350		1,320	1,550	2,060	1,270	1,180
20	1,210	1,350	1,280	1,280	1,360	1,340		1,330	1,520	2,020	1,270	1,180
21	1,200	1,350	1,290	1,230	1,370	1,350		1,350	1,020		1,280	1,180
22	1,190	1,350	1,230	1,240	1,350	1,350		1,340	1,020	1,470	1,270	1,210
23	1,200	1,350	1,230	1,250	1,360	1,330		1,340	1,020	1,540	1,270	1,200
24	1,180	1,330	1,220	1,240	1,350	1,330		1,330	1,020	1,630	1,250	1,180
25	1,210	1,310	1,230	1,280	1,330	1,340		1,340	1,030	1,140	1,250	1,180
26	1,200	1,210	1,240	1,250	1,360	1,340		1,350	1,020	1,130	1,240	1,180
27	1,190	1,180	1,220	1,230	1,370	1,340		1,340	1,020	1,130	1,240	1,180
28	1,170	1,200	1,260	1,240	1,360	1,460		1,340	1,020	1,150	1,250	1,190
29	1,160	1,200	1,230	1,270	1,340	1,450		1,340	1,040	1,140	1,240	1,180
30	1,150		1,220	1,240	1,360	1,450		1,340	1,030	1,150	1,240	1,180
31	1,170		1,220		1,360			1,350		1,140		1,210

08-4675.00 RIO GRANDE AT PENITAS, TEXAS AND REYNOSA DIAZ, TAMAULIPAS

LOCATION: At the H.C.W.C. & I. District No. 1 (Edinburg) pumping plant, river kilometer 300, 26.2 river kilometers upstream from Anzalduas Dam.
RECORDS: Specific conductance, 1963 through current year.
REMARKS: Sampling and determinations by the International Boundary and Water Commission.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,360		1,230	1,280	1,340						1,100	
2									607	1,300		1,290
3	1,960			1,280	1,300	1,390						
4									886	1,300	1,060	1,340
5	2,090	1,200		1,270		1,400						
6			1,230		1,380				1,270		1,080	
7		1,240				1,390				1,310		
8	2,090		1,280	1,260	1,310			1,330			1,060	
9		1,340						1,440	1,150	1,390		
10	2,000				1,340	1,390						
11			1,320	1,250					1,140	1,400	1,060	
12	1,660	1,320		1,250		1,400		1,170				
13			1,330		1,360				1,350		1,100	
14		1,350				1,380		1,490		1,430		
15	1,820		1,260	1,270	1,340						1,100	
16		1,300						1,340	1,430	2,140		
17	1,570			1,260	1,440	1,340						
18			1,280						1,710	1,430	1,100	
19	1,600	1,350		1,260		1,300		1,360				
20			1,240		1,400				1,840		1,100	
21		1,300				1,310		1,340		1,260		
22	1,200		1,230	1,250	1,370						1,150	
23		1,270						1,330	1,320	1,370		1,160
24	1,200			1,280	1,370	1,330						
25			1,250						1,110	1,210	1,150	1,190
26	1,200	1,220		1,280		1,310		1,340				
27			1,250		1,400				798		1,260	1,300
28		1,200				1,360		1,640		1,360		
29	1,190		1,290	1,290	1,370						1,250	
30								748	1,210	1,180		1,220
31	1,280				1,370							

QUALITY OF WATER - 1996

08-4678.00 MORILLO DRAIN NEAR ANZALDUAS DAM

LOCATION: At the Morillo Drain Project pumping plant located about 0.6 river kilometer from the confluence with the Rio Grande or at the gaging station on the bypass canal 0.6 kilometer from the pumping plant. Morillo Drain enters the Rio Grande at river kilometer 288, 14.2 river kilometers upstream from Anzalduas Dam. This drain carries waste water from the lower Rio San Juan Irrigation District in Mexico and surface runoff during periods of heavy precipitation.
RECORDS: Chemical analyses, 1962 through current year; specific conductance, 1956 through current year.
REMARKS: Sampling by the International Boundary and Water Commission and chemical analyses by the U. S. Geological Survey. Determinations for specific conductance by International Boundary and Water Commission.

1996 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Hardness, Total (as CaCO3) mg/L	Hardness, Noncarbonate (as CaCO3) mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L
Jan. 8	0820	0.99	6,430	7.9	9.0	850	680	190	91
Feb. 21	0830	0.99	6,740	7.9	21.0	890	720	200	94
April 17	0845	0.99	6,680	7.6	20.0	980	790	230	99
May 22	0730	0.99	5,540	7.8	25.0	830	680	200	80
June 28	0830	0.99	5,400	7.8	28.0	790	620	180	82
Aug. 23	0810	0.96	2,630	7.6	26.5	420	310	100	41
Sept. 17	0945	0.00	7,220	7.9	28.0	980	810	210	110
Oct. 16	0920	0.00	6,730	7.7	24.0	910	730	200	100
Nov. 20	0955	0.99	6,840	7.9	23.5	890	730	200	95
Dec. 17	1110	0.00	6,930	7.9	11.0	940	740	220	96

1996 Date	Sodium ion (Na), Dissolved mg/L	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved mg/L	Alkalinity Total (as CaCO3) mg/L	Sulfate ion (SO4) Dissolved mg/L	Chloride ion (Cl), Dissolved mg/L	Silica (SiO2) Dissolved mg/L	Solids Dissolved (Calculated) mg/L
Jan. 8	1,100	16	7.2	170	1,400	1,300	24	4,210
Feb. 21	1,100	16	7.9	170	1,500	1,400	28	4,430
April 17	1,200	17	7.6	190	1,600	1,200	33	4,490
May 22	930	14	7.7	140	1,300	990	32	3,630
June 28	910	14	6.8	170	1,300	1,000	27	3,610
Aug. 23	370	8	6.7	100	540	470	14	1,610
Sept. 17	1,300	18	6.9	160	1,600	1,400	22	4,750
Oct. 16	1,200	17	7.3	180	1,500	1,300	19	4,440
Nov. 20	1,200	17	1.4	160	1,500	1,600	23	4,720
Dec. 17	1,300	18	6.5	210	1,500	1,400	27	4,680

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1		3,530	7,310	5,700			7,260	7,480		4,740	7,350	
2	7,530			5,810	4,810		7,460	8,260	5,100	5,310		7,150
3	7,720			5,830	5,280	6,970	7,420	6,150	5,710	6,010		
4	7,470		7,440			6,990	7,550		6,440		7,630	7,090
5	7,510		8,990			7,100	7,410	8,030	6,650		6,650	7,170
6		5,500	7,260		6,240	7,180		7,780	6,570		7,360	7,130
7		5,460	7,400		6,330	7,200		8,070		5,320	7,760	
8	7,660	5,000	7,540	6,020	5,570		7,780	7,860		4,620	7,690	
9	7,510	6,390		6,040	5,450		7,570	3,170	6,430	5,560		1,930
10	7,580			6,130	5,380	7,150	7,770		6,110	5,930		7,040
11	7,630		7,750	5,810		7,360	7,830		6,660	6,160	7,150	7,070
12	7,740	6,670	7,730	6,400			7,740	7,510	7,020		7,590	6,920
13		6,970	7,930		5,090	6,860		7,780	7,330		7,170	7,210
14		6,680	7,770		5,210			7,780		6,580	7,520	
15	7,850	6,410	7,990	6,400	5,170		7,750	7,740		6,780	7,230	
16	7,680	6,500		6,710	5,540		7,670	7,900		7,020		7,080
17	7,920			6,890	5,500	7,290	7,610		7,410	6,890		7,100
18	7,620		8,090	6,720		7,270	7,670		7,330	6,870	7,380	7,040
19	7,650	6,810	8,180	6,800		7,510	7,610	7,550	7,200		7,430	7,190
20		6,940	8,090		5,550	7,570		7,690	7,340			7,080
21		6,980				7,520		7,860		2,850	7,460	
22	7,550	7,120	6,260	6,180	5,740		7,520	7,560		6,660	6,990	
23	7,770	7,180		5,930	5,740		8,630	7,380	7,430	7,220		
24	7,760			5,990	5,590	7,320	7,780		7,420	7,360		7,190
25	7,740		6,260	5,560		7,450	7,610		7,380	7,270	7,360	
26	7,740	6,930	5,870	5,660		7,370	7,720	4,280	7,620		7,480	7,200
27		6,310	6,010		5,790	7,200		4,680	7,460		7,270	
28		6,890	5,960		5,930	7,390				7,570	6,630	
29	6,410	6,900	6,150	4,830	6,240		6,500	6,010		7,540	7,610	
30	4,280			4,490	6,530		7,540	6,500	3,480	7,520		7,000
31	7,120				6,770		7,720			7,470		7,180

QUALITY OF WATER – 1996

08-4692.00 RIO GRANDE BELOW ANZALDUAS DAM NEAR REYNOSA, TAMAULIPAS AND MISSION, TEXAS

LOCATION: At Anzalduas Dam, 0.8 river kilometer above the gaging station, located at river kilometer 273.
RECORDS: Chemical analyses, March 1959 through current year; specific conductance 1948 and 1956 through current year; suspended silt, May 1956 through 1977.
REMARKS: Sampling by the International Boundary and Water Commission; chemical analyses by the U.S. Geological Survey; determinations for specific conductance by the International Boundary and Water Commission.

1996 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Hardness, Total (as CaCO3) mg/L	Hardness, Noncarbonate (as CaCO3) mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L
Mar. 20	0910	58.6	1,250	7.1	#	280	170	76	23
May 22	0830	84.1	1,370	7.7	25.0	290	180	73	25
Aug. 23	0840	21.4	1,410	7.6	28.0	290	190	73	26
Sept. 17	0915	6.20	1,210	8.0	30.0	250	130	72	18
Oct. 16	0945	6.10	1,290	7.8	27.0	270	180	69	24
Nov. 20	1030	14.5	1,040	8.1	24.0	240	140	65	19
Dec. 17	1145	20.5	1,310	7.9	19.0	300	180	81	23

1996 Date	Sodium ion (Na), Dissolved mg/L	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved mg/L	Alkalinity Total (as CaCO3) mg/L	Sulfate ion (SO4) Dissolved mg/L	Chloride ion (Cl), Dissolved mg/L	Silica (SiO2) Dissolved mg/L	Solids Dissolved (Calculated) mg/L
Mar. 20	140	4	6.3	120	250	160	10.0	737
May 22	160	4	6.5	100	280	180	12.0	800
Aug. 23	160	4	6.9	95	280	210	12.0	826
Sept. 17	150	4	6.3	120	200	170	13.0	702
Oct. 16	150	4	6.3	90	250	180	12.0	746
Nov. 20	120	3	6.0	100	190	130	10.0	604
Dec. 17	150	4	6.1	120	240	180	7.7	759

Missing Data

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C – 1996

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,160	1,190	1,210	1,250	1,310	1,380	1,350	1,350	1,460	890	1,180	1,180
2	1,190	1,200	1,210	1,270	1,320	1,380	1,380	1,360	1,630	1,030	1,160	1,180
3	1,200	1,240	1,260	1,270	1,390	1,360	1,380	1,350	1,640	1,050	1,140	1,220
4	1,240	1,270	1,350	1,340	1,340	1,370	1,400	1,350	1,290	1,090	1,130	1,260
5	1,280	1,230	1,350	1,300	1,340	1,370	1,430	1,340	1,050	1,170	1,130	1,280
6	1,350	1,270	1,290	1,330	1,380	1,390	1,480	1,330	902	1,210	1,070	1,270
7	1,460	1,250	1,250	1,330	1,400	1,370	1,490	1,320	834	1,210	1,070	1,260
8	1,600	1,230	1,230	1,300	1,300	1,400	1,540	1,350	781	1,220	1,080	1,250
9	1,790	1,220	1,230	1,280	1,350	1,380	1,550	1,320	815	1,230	1,090	1,260
10	2,140	1,230	1,240	1,290	1,380	1,390	1,530	1,340	855	1,240	1,070	1,270
11	2,230	1,300	1,270	1,240	1,370	1,420	1,490	1,360	963	1,290	1,060	1,300
12	2,200	1,320	1,390	1,260	1,380	1,370	1,450	1,350	1,110	1,290	1,060	1,370
13	2,170	1,330	1,340	1,230	1,380	1,340	1,380	1,340	1,360	1,280	1,070	1,400
14	2,250	1,350	1,380	1,250	1,380	1,360	1,410	1,330	1,460	1,300	1,080	1,380
15	2,260	1,320	1,360	1,300	1,330	1,340	1,350	1,270	1,520	1,300	1,080	1,370
16	2,150	1,360	1,330	1,270	1,380	1,350	1,180	1,340	1,400	1,310	1,120	1,240
17	1,840	1,390	1,240	1,260	1,410	1,330	1,370	1,620	1,260	1,350	1,110	1,340
18	1,880	1,340	1,270	1,250	1,410	1,360	1,320	1,400	1,250	1,400	1,110	1,380
19	1,710	1,310	1,290	1,260	1,530	1,320	1,380	1,340	1,360	1,430	1,090	1,360
20	1,720	1,270	1,260	1,250	1,430	1,310	1,360	1,390	1,600	1,470	1,070	1,300
21	1,610	1,290	1,260	1,250	1,400	1,300	1,350	1,370	1,670	1,660	1,090	1,260
22	1,610	1,350	1,260	1,260	1,400	1,310	1,370	1,370	1,720	1,900	1,100	1,240
23	1,390	1,350	1,250	1,260	1,360	1,350	1,370	1,450	1,780	1,500	1,090	1,200
24	1,250	1,280	1,250	1,270	1,380	1,300	1,360	1,340	1,710	1,280	1,110	1,170
25	1,230	1,280	1,240	1,270	1,390	1,300	1,370	1,370	1,670		1,120	1,160
26	1,200	1,220	1,240	1,280	1,370	1,310	1,380	1,360	1,580	1,200	1,120	1,160
27	1,260	1,230	1,240	1,260	1,370	1,340	1,380	1,360	1,360	1,180		1,160
28	1,270	1,210	1,250	1,220	1,380	1,400	1,370	1,340	1,240	1,140	1,160	1,160
29	1,260	1,200	1,300	1,310	1,400	1,310	1,360	1,310	943	1,190	1,160	1,170
30	1,250		1,260	1,330	1,380	1,310	1,380	1,310	719	1,280	1,160	1,210
31	1,200		1,250		1,380		1,370	1,340		1,380		1,270

QUALITY OF WATER - 1996

08-4733.90 RIO GRANDE AT MERCEDES IRRIGATION DISTRICT PUMPS NEAR MERCEDES, TEXAS AND RIO RICO, TAMAULIPAS

LOCATION: At river kilometer 190, 84.6 river kilometers downstream from Anzalduas Dam.
RECORDS: Specific conductance, 1945 through current year.
REMARKS: Sampling and determinations by the International Boundary and Water Commission.

SPECIFIC CONDUCTANCE OF WATER SAMPLES IN MICROSIEMENS/CM @ 25 DEG C - 1996

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,560	1,370	1,290	1,300	1,300	1,370		1,390	1,560	1,630	1,220	1,230
2	1,580	1,350	1,290	1,310	1,370	1,380		1,390	1,590	1,400	1,290	1,400
3	1,740	1,300	1,260	1,300	1,400	1,410		1,380	1,600	1,300	1,350	1,460
4	1,810	1,260	1,290	1,320	1,340	1,380		1,390	1,550	1,160	1,420	1,400
5	1,660	1,290	1,290	1,320	1,450	1,420		1,370	1,510	908	1,310	1,340
6	1,540	1,320	1,310	1,310	1,340	1,400		1,370	1,490	959	1,210	1,310
7	1,500	1,310	1,380	1,330	1,370	1,420		1,360	1,610	1,090	1,190	1,320
8	1,630	1,350	1,370	1,350	1,390	1,450		1,350	1,710	1,170	1,180	1,320
9	1,570	1,290	1,360	1,370	1,360	1,480		1,350	1,430	1,190	1,180	1,410
10	1,530	1,290	1,350	1,330	1,370	1,420		1,350	1,220	1,210	1,170	1,430
11	1,550	1,290	1,350	1,330	1,360	1,430		1,370	1,160	1,260	1,150	1,470
12	1,560	1,300	1,300	1,280	1,400	1,420		1,360	1,100	1,310	1,220	1,560
13	1,620	1,310	1,310	1,330	1,390	1,420		1,400	1,030	1,350	1,140	1,470
14	1,760	1,350	1,370	1,280	1,420	1,400		1,360	1,060	1,410	1,100	1,390
15	1,850	1,430	1,460	1,290	1,450	1,370		1,360	1,130	1,540	1,100	1,380
16	1,920	1,450	1,410	1,280	1,410	1,370		1,330	1,160	1,700	1,100	1,410
17	2,280	1,490	1,450	1,280	1,390	1,360		1,210	1,290	1,670	1,150	1,460
18	2,400	1,420	1,350	1,280	1,370	1,370		1,260	1,440	1,630	1,130	1,520
19	2,330	1,450	1,280	1,290	1,420	1,360		1,330	1,500	1,450	1,170	1,440
20	2,250	1,470	1,310	1,320	1,510	1,330		1,630	1,590	1,460	1,160	1,370
21	1,790	1,350	1,330	1,290	1,400	1,330		1,480	1,580	1,480	1,160	1,310
22	1,860	1,350	1,290	1,270	1,410	1,360		1,410	1,550	1,510	1,180	1,380
23	1,640	1,370	1,310	1,270	1,400	1,340		1,400	1,530	1,540	1,190	1,450
24	1,780	1,390	1,270	1,280	1,380	1,240		1,330	1,580	1,540	1,190	1,470
25	1,600	1,370	1,280	1,290	1,420	1,350		1,350	1,750	1,540	1,190	1,450
26	1,380	1,320	1,270	1,280	1,400	1,370		1,390	1,870	1,600	1,250	1,400
27	1,280	1,340	1,260	1,290	1,410	1,340		1,440	1,920	1,710	1,380	1,360
28	1,300	1,270	1,280	1,290	1,440	1,340		1,490	1,870	1,860	1,310	1,350
29	1,310	1,290	1,260	1,300	1,420	1,440		1,540	1,790	1,970	1,260	1,280
30	1,330		1,290	1,300	1,380	1,430		1,580	1,740	1,490	1,240	1,240
31	1,330		1,310		1,390			1,590		1,250		1,230

QUALITY OF WATER - 1996

08-4750.00 RIO GRANDE NEAR BROWNSVILLE, TEXAS AND MATAMOROS, TAMAULIPAS

LOCATION: Gaging station at river kilometer 78.3, 0.3 river kilometer downstream from El Jardin pumping plant and 11.2 river kilometers downstream from the international highway bridge between Brownsville, Texas and Matamoros, Tamaulipas.

RECORDS: Chemical and biochemical analyses, October 1967 through January 1968 and October 1974 through current year; biochemical, December 1976 through current year; specific conductance, 1955 through September 1983; suspended silt, 1955 through 1977.

REMARKS: Sampling and analyses by the U. S. Geological Survey. Additional water quality parameters, including heavy metals, nutrients, pesticides, and biological indices, determined and published by the U. S. Geological Survey. Sampling and determinations for specific conductance prior to 1978 by the International Boundary and Water Commission.

1996 Date	Time Standard	Streamflow Momentary CMS	Specific Conductance Micro-siemens /cm	pH Units	Water Temper-ature Deg C	Hardness, Total (as CaCO3) mg/L	Hardness, Noncarbonate (as CaCO3) mg/L	Calcium ion (Ca), Dissolved mg/L	Magnesium ion (Mg), Dissolved mg/L
Mar. 19	1020	3.17	1,420	8.2	22.0	320	180	86	26
April 17	0920	3.54	1,520	8.3	25.0	350	200	96	27
May 2	1045	8.55	1,450	8.1	24.0	280	190	77	22
May 28	1040	4.30	1,740	8.2	29.0	310	200	79	28
June 11	1010	2.49	1,520	8.2	29.0	330	190	83	29
June 25	1045	0.99	1,650	8.1	28.5	320	200	81	28
July 23	1250	0.12	1,930	8.1	30.0	360	210	89	33
Aug. 20	1010	3.54	1,530	8.1	30.0	310	180	77	27
Sept. 24	0920	4.30	1,360	8.0	30.5	310	150	84	24
Nov. 13	1040	2.14	1,810	8.2	22.0	440	260	120	34

1996 Date	Sodium ion (Na), Dissolved mg/L	Sodium Adsorption Ratio(SAR)	Potassium ion (K) Dissolved mg/L	Alkalinity Total (as CaCO3) mg/L	Sulfate ion (SO4) Dissolved mg/L	Chloride ion (Cl), Dissolved mg/L	Silica (SiO2) Dissolved mg/L	Solids Dissolved (Calculated) mg/L
Mar. 19	160	4	6.3	140	290	180	9.8	845
Apr. 17	170	4	6.5	150	300	200	13.0	906
May 2	150	4	6.3	99	270	170	11.0	770
May 28	190	5	7.1	115	320	220	9.6	926
June 11	180	4	6.7	134	300	210	11.0	904
June 25	170	4	7.3	124	290	210	12.0	876
July 23	210	5	7.5	148	330	240	19.0	1,020
Aug. 20	160	4	7.3	129	280	200	13.0	844
Sept. 24	150	4	6.5	165	230	190	16.0	802
Nov. 13	200	4	6.5	178	330	280	15.0	1,100

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

Tabulated below, in approximate downstream order, are monthly records of United States rainfall stations with averages for their periods of record. With the exception of Las Cruces, New Mexico, all stations are located in Texas. 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 following rainfall data 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 40A.

	Las Cruces, New Mexico		American Dam		Fort Hancock Bridge		Guayuco Arroyo		Bill Shannon Ranch	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	17	10	11	10	11	1	8	0	11
Feb.	1	11	0	9	4	8	4	6	0	9
Mar.	0	5	0	8	0	7	0	6	0	7
April	0	5	13	5	11	7	17	5	0	6
May	0	12	0	8	0	11	0	12	0	18
June	26	17	13	15	60	22	43	15	43	41
July	28	29	29	36	46	34	21	35	19	51
Aug.	29	65	50	40	52	42	35	42	75	64
Sept.	83	35	44	30	30	35	22	31	64	61
Oct.	7	23	T	19	4	25	6	21	3	31
Nov.	0	15	4	8	14	10	7	7	10	10
Dec.	0	24	4	14	0	12	0	10	0	11
Yearly	174	258	167	203	231	224	156	198	214	320

	Adobes Ranch		H. T. Fletcher Ranch		Kerr Mitchell Ranch		Shafter		Presidio (IB&WC Gage)	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	9	5	17	8	13	0	8	2	9
Feb.	0	6	1	10	0	9	0	11	T	7
Mar.	0	4	0	8	0	5	0	8	0	4
April	0	5	0	13	0	15	0	18	T	7
May	T	15	1	28	10	31	7	29	T	15
June	20	35	7	45	61	48	59	56	7	32
July	11	50	34	77	11	55	0	69	64	42
Aug.	118	48	42	81	159	60	73	62	77	36
Sept.	67	55	123	64	139	55	143	73	50	39
Oct.	0	17	4	35	15	33	10	32	3	19
Nov.	9	6	16	11	23	9	14	9	12	8
Dec.	0	8	0	13	0	12	0	11	1	10
Yearly	225	258	233	402	426	345	306	386	216	228

	Redford		La Mota Ranch		Study Butte		Terlingua Creek Station		Johnson Ranch	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	8	0	13	0	11	0	8	0	9
Feb.	0	5	0	6	0	8	0	5	0	5
Mar.	0	4	0	6	0	4	0	3	0	3
April	0	7	0	16	0	11	0	8	0	10
May	T	15	0	23	6	31	30	18	T	24
June	4	25	36	38	15	27	11	27	10	28
July	19	40	22	52	8	38	16	33	65	30
Aug.	87	35	61	53	67	41	85	32	51	25
Sept.	41	46	57	55	46	37	41	33	55	36
Oct.	0	19	3	26	1	23	3	18	0	18
Nov.	18	8	15	10	12	7	10	5	5	6
Dec.	0	8	0	11	0	7	0	7	0	8
Yearly	169	220	194	309	155	245	196	197	186	202

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

	A.M. Potter Ranch		Owens Ranch		Lewis James Ranch		Rio Grande near Dryden		Ross Foster Ranch	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	8	0	16	0	13	0	14	0	9
Feb.	0	11	1	19	0	17	3	12	2	13
Mar.	0	5	0	22	0	8	0	4	0	6
April	1	7	32	48	0	26	1	17	0	19
May	56	24	38	60	7	45	2	26	11	30
June	36	27	9	49	6	30	14	29	8	33
July	4	36	21	36	6	33	T	23	3	15
Aug.	67	38	102	51	180	48	110	41	81	31
Sept.	65	47	83	66	71	76	143	57	48	36
Oct.	16	18	6	51	33	36	19	24	T	25
Nov.	0	10	30	27	44	17	20	12	24	16
Dec.	19	11	0	18	0	14	1	11	3	12
Yearly	264	242	322	463	347	363	313	270	180	245

	Pecos River near Langtry Station		Prosser Ranch No. 3		Devils River at Cauthorn Ranch		Prosser Ranch No. 1		Dead Man's Canyon near Comstock	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	9	0	13	0	13	0	12	0	11
Feb.	10	18	3	21	2	19	0	18	6	17
Mar.	0	10	0	15	1	18	0	13	0	12
April	33	25	20	31	5	27	3	28	0	28
May	13	37	43	60	42	56	27	60	8	52
June	20	44	6	44	29	43	25	42	0	49
July	4	46	15	48	7	25	0	53	1	56
Aug.	38	32	99	48	70	29	57	40	89	40
Sept.	78	55	11	72	76	53	6	63	14	53
Oct.	8	38	13	44	16	51	0	39	0	43
Nov.	24	17	41	22	36	21	18	21	0	17
Dec.	T	14	3	16	5	17	0	12	T	14
Yearly	228	345	254	434	289	372	136	401	118	392

	Prosser Ranch No. 2		Walker Ranch		Harlow Ranch		Ed Crane Ranch		H. K. Fawcett Ranch	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	11	0	12	0	11	0	21	0	17
Feb.	0	22	3	18	0	17	6	26	6	20
Mar.	0	14	0	14	0	10	1	16	T	19
April	0	28	4	26	10	27	41	39	33	39
May	32	59	25	64	5	53	22	68	17	62
June	0	44	14	53	29	52	6	48	8	34
July	0	48	15	46	0	38	9	49	5	45
Aug.	64	51	81	28	65	36	115	32	65	52
Sept.	0	66	2	63	70	58	35	69	83	76
Oct.	0	38	0	35	0	42	19	48	25	53
Nov.	29	19	15	19	33	17	50	25	37	22
Dec.	0	13	0	14	0	14	5	21	8	17
Yearly	125	413	159	392	212	375	309	462	287	456

	Vinegaroon		Brotherton Ranch		A. A. Baker Ranch		Zuberbueler Ranch		Comstock	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	16	0	16	0	13	0	17	0	14
Feb.	6	22	3	23	3	18	9	26	0	20
Mar.	11	18	1	15	0	14	0	15	0	16
April	35	35	5	24	27	30	22	27	11	32
May	6	77	10	50	19	52	6	63	10	50
June	15	53	0	42	5	43	1	47	0	50
July	18	63	16	39	0	45	4	57	8	39
Aug.	106	68	113	41	152	43	163	32	138	42
Sept.		67	7	63	39	71	24	68	22	59
Oct.		59	4	39	18	40	5	34	13	41
Nov.		25	23	16	33	19	30	22	47	17
Dec.		21	1	13	1	14	2	20	2	16
Yearly		524	183	381	297	402	266	428	251	396

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

	Martin King Ranch		Goldwire Ranch		H. T. Miers Ranch Headquarters		H. T. Miers Ranch No. 2		Gillis Ranch Headquarters	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	14	T	14	3	14	0	13	0	18
Feb.	2	18	9	18	17	25	15	22	6	27
Mar.	0	10	0	19	0	20	0	22	0	24
April	2	23	12	40	20	42	20	36	19	46
May	21	46	4	61	8	63	3	66	0	74
June	0	41	0	49	3	60	3	52	7	62
July	5	38	6	56	14	44	19	45	8	65
Aug.	94	39	93	54	116	48	79	49	97	55
Sept.	12	63	31	55	66	60	88	71	69	62
Oct.	5	47	20	47	24	60	22	48	39	59
Nov.	19	15	41	27	51	24	40	23	68	32
Dec.	0	13	10	18	18	19	13	21	9	23
Yearly	160	367	226	458	340	479	302	468	322	547

	Pafford Crossing		Tuffy Whitehead Ranch		Hutto Ranch No. 2		Lowry Ranch No. 2		Amistad Reservoir near Comstock	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	3	14	0	10	0	15	0	13	0	11
Feb.	10	19	8	19	4	24	12	20	2	16
Mar.	0	16	0	18	0	18	1	20	0	10
April	0	34	5	34	17	45	16	36	8	31
May	3	49	5	47	0	54	3	58	8	42
June	0	49	0	43	0	57	3	53	0	36
July	0	52	2	43	13	52	22	50	5	29
Aug.	144	49	97	36	104	48	104	53	103	35
Sept.	46	67	38	68	63	81	81	64	43	50
Oct.	10	48	12	38	15	46	17	45	2	38
Nov.	46	23	48	20	36	24	47	24	30	17
Dec.	15	17	7	13	5	17	19	18	19	11
Yearly	277	437	222	389	257	481	325	454	220	326

	Evans Creek near Comstock		Sellers Ranch		J. G. Brite Ranch		Devils Lake		Big Satan Creek Station	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	T	10	2	10	0	12	0	16	3	15
Feb.	10	18	18	18	15	21	18	21	17	22
Mar.	0	13	0	13	3	16	1	17	0	22
April	0	25	5	29	0	34	18	38	8	38
May	3	43	3	46	3	55	0	55	3	54
June	0	39	0	57	2	52	2	58	0	47
July	0	46	0	36	0	40	2	38	0	57
Aug.	96	44	79	39	69	42	67	41	122	60
Sept.	10	58	47	57	49	72	88	61	46	57
Oct.	0	43	15	46	18	46	18	47	27	51
Nov.	33	20	43	20	40	20	51	21	56	26
Dec.	0	15	16	15	24	16	27	20	8	20
Yearly	152	374	228	386	223	426	292	433	290	469

	Rough Canyon near Del Rio		Stewart Ranch		Gillis Ranch		Buoy No. 11		North Fork San Pedro	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	12	0	13	0	14	0	12	T	13
Feb.	13	22	3	22	7	23	15	18	3	20
Mar.	4	20	3	19	46	24	0	14	0	20
April	13	29	18	37	15	37	4	35	18	37
May	25	66	2	52	5	62	11	54	13	61
June	0	54	12	53	1	49	0	45	0	55
July	8	49	45	51	1	56	1	37	38	63
Aug.	61	47	96	39	121	38	130	38	88	44
Sept.	132	70	79	67	85	75	52	53	109	67
Oct.	20	57	12	48	16	40	17	40	23	48
Nov.	70	27	62	23	52	26	42	19	48	25
Dec.	34	22	7	17	10	21	14	13	14	21
Yearly	380	475	339	441	359	465	286	378	354	474

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

Month	Amistad Dam		Long Ranch		Middle Fork San Pedro		Cliff Lowry Ranch No. 1		Hutto Ranch No. 1	
	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	15	0	16	0	12	0	14	0	13
Feb.	15	22	6	24	2	21	18	24	0	22
Mar.	4	19	0	21	0	20	1	21	0	18
April	20	40	15	38	0	33	16	40	10	42
May	14	60	10	62	0	59	3	68	0	59
June	1	53	0	56	0	53	7	55	0	57
July	2	46	4	52	20	53	37	50	56	55
Aug.	108	47	77	37	86	42	71	48	136	43
Sept.	88	90	80	61	43	63	86	79	100	75
Oct.	22	44	20	42	14	53	24	51	24	49
Nov.	31	24	31	22	31	21	47	26	36	22
Dec.	8	19	8	19	5	19	19	18	4	16
Yearly	313	479	251	450	201	449	329	494	366	471

Month	Lewis Ranch		Laughlin Air Force Base		Wardlaw Standart Ranch		Maverick County Canal Headgate		Pinto Creek Station	
	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	16	0	16	0	22	0	14	5	13
Feb.	4	28	44	27	14	32	0	25	15	18
Mar.	1	23	1	17	0	28	0	15	3	15
April	19	49	27	51	13	46	0	41	18	42
May	15	64	15	59	8	70	0	60	13	61
June	0	68	0	68	0	71	0	54	0	54
July	50	46	6	63	0	41	0	44	3	41
Aug.	146	52	134	44	140	31	83	37	145	43
Sept.	78	72	50	66	52	62	45	64	109	69
Oct.	111	64	59	60	167	51	127	54	127	52
Nov.	59	30	61	26	41	34	0	24	14	26
Dec.	13	21	45	18	8	23	13	19	25	16
Yearly	496	533	442	515	443	511	268	451	477	450

Month	Las Moras Creek		Eagle Pass		Trees Farm		El Indio		Van Dalsem Farm	
	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	20	0	22	0	17	0	21	0	18
Feb.	0	25	8	26	0	23	T	25	0	24
Mar.	0	17	1	19	10	13	115	18	0	14
April	3	37	18	46	43	46	5	46	33	52
May	16	56	20	86	49	72	48	81	36	73
June	0	69	11	76	22	57	18	58	0	55
July	0	39	8	51	6	38	36	35	0	37
Aug.	86	42	75	54	44	39	41	46	41	38
Sept.	43	84	89	81	71	65	172	76	81	74
Oct.	74	55	42	54	2	60	38	55	97	57
Nov.	23	25	24	25	32	21	30	20	15	20
Dec.	3	20	4	22	2	19	6	19	3	20
Yearly	248	489	300	562	281	470	509	500	306	482

Month	Keisling Farm		Apache Ranch		Corralitos Ranch		Huisache Ranch		Zapata	
	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	20		21	6	23	3	24	5	25
Feb.	0	25		23	15	24	18	26	4	25
Mar.	0	17		12	1	16	0	16	0	14
April	23	49		50	19	30	18	33	14	37
May	34	69		65	76	59	76	60	76	68
June	0	65		51	41	55	38	61	13	60
July	17	36		51	114	39	48	38	8	40
Aug.	61	37		45	146	53	135	43	142	51
Sept.	76	67		75	43	76	113	92	38	99
Oct.	4	53		63	33	52	20	53	50	46
Nov.	4	20	31	24	13	25	13	23	19	25
Dec.	3	23	8	24	3	20	1	23	19	25
Yearly	222	481		504	510	472	483	492	388	515

RAINFALL ON THE RIO GRANDE WATERSHED

IN THE UNITED STATES

IN MILLIMETERS

	Falcon Dam		Roma (Int'l. Bridge)		Garciasville		Los Ebanos		La Joya	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	2	24	3	23	3	24	23	26	0	26
Feb.	4	25	5	26	5	27	2	22	0	24
Mar.	0	15	0	14	0	12	1	13	0	11
April	11	33	26	34	13	30	0	32	0	22
May	46	65	38	51	5	69	31	55	40	53
June	3	63	0	58	16	69	19	60	4	63
July	56	34	50	34	0	32	0	30	0	26
Aug.	180	60	70	48	59	44	0	42	0	32
Sept.	54	100	82	102	67	83	65	75	0	74
Oct.	39	49	19	48	52	41	34	41	4	42
Nov.	17	28	19	22	14	24	21	21	0	19
Dec.	17	21	3	15	8	21	0	20	9	23
Yearly	429	517	315	475	242	476	196	437	57	415

	Penitas (Edinburg Pumping Plant)		HCWCID #6 Goodwin Pump No. 3		HCWCID #6 Goodwin Pump No. 4B		United Irrigation District		Edinburg City Water Plant	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	32	0	33	0	32	0	32	0	38
Feb.	0	25	0	28	0	25	0	28	4	30
Mar.	0	16	0	17	0	15	0	23	2	20
April	0	30	25	36	13	29	0	32	11	37
May	0	62	32	62	51	57	0	84	22	62
June	0	73	0	69	0	69	0	68	19	63
July	0	35	0	38	0	31	0	36	0	39
Aug.	77	56	166	48	158	43	70	51	160	57
Sept.	3	88	76	81	25	87	64	74	45	91
Oct.	24	62	26	67	25	64	0	56	48	54
Nov.	11	22	6	24	0	22	13	19	14	24
Dec.	0	27	0	29	0	29	0	26	11	33
Yearly	115	528	331	532	272	503	147	529	336	548

	Anzalduas Dam		Mercedes (IBWC) LRGFCP Office		Mercedes Pump		La Feria Materials Yard		La Feria Pumping Plant	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	30	0	16	0	44	0	45	0	45
Feb.	0	34	0	2	1	15	0	50	0	44
Mar.	6	15	4	25	5	36	20	25	16	24
April	22	39	8	29	4	33	0	48	0	54
May	17	68	1	78	15	90	0	73	0	78
June	0	60	105	82	60	74	185	92	38	83
July	0	37	22	14	14	50	0	58	0	54
Aug.	81	53	113	79	107	66	159	72	162	83
Sept.	37	92	64	73	79	72	125	126	181	150
Oct.	34	52	48	50	113	48	81	76	173	97
Nov.	10	21	11	33	44	23	34	37	36	49
Dec.	5	22	18	37	9	55	13	45	30	44
Yearly	212	523	394	518	451	606	617	747	636	805

	San Benito Pump		CCWCID #11 Bayview Dist. Off.							
Month	1996	Average	1996	Average						
Jan.	0	37	0	45						
Feb.	10	28	0	39						
Mar.	43	22	0	19						
April	13	35	0	46						
May	25	72	0	63						
June	0	66	40	60						
July	0	41	0	42						
Aug.	213	65	162	68						
Sept.	124	109	330	141						
Oct.	158	68	287	70						
Nov.	27	32	0	44						
Dec.	15	35	0	38						
Yearly	628	610	819	675						

RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

IN MILLIMETERS

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 following rainfall data. These rainfall records have not been published elsewhere. Records of daily rainfall amounts, where available, are on file in the offices 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, 26, and Supplement 40A.

Month	Cd. Juarez, Chihuahua		La Junta, Chihuahua		Hidalgo del Parral, Chihuahua		Jimenez, Chihuahua		La Boquilla, Chihuahua	
	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	3	11	2	26	3	5	6	8	6	8
Feb.	5	11	5	13	1	5	1	5	0	5
Mar.	0	9	0	7	0	2	0	3	0	3
April	18	8	9	5	0	5	0	4	0	6
May	0	9	0	5	0	11	1	13	0	13
June	27	16	26	34	126	44	25	36	32	35
July	70	40	194	131	117	109	28	80	59	71
Aug.	50	43	125	121	173	111	118	66	118	74
Sept.	16	35	50	61	107	115	30	58	27	73
Oct.	0	26	0	31	9	27	34	26	9	21
Nov.	8	12	0	10	4	11	2	6	14	8
Dec.	0	15	0	22	0	10	0	6	0	8
Yearly	197	235	411	466	540	455	245	311	265	325

Month	Ojo Caliente, Chihuahua		Camargo, Chihuahua		Las Virgenes, Chihuahua		Delicias, Chihuahua		Km. 135, Chihuahua	
	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	13	7	10	10	0	7	9	9	0	6
Feb.	0	5	0	6	0	3	0	4	0	5
Mar.	0	4	0	4	0	2	0	3	0	3
April	0	4	0	5	0	6	0	8	0	7
May	0	12	0	13	0	8	0	9	0	11
June	49	42	87	38	89	30	124	32	52	27
July	69	81	43	73	54	65	34	62	36	58
Aug.	106	72	72	68	83	66	95	64	100	70
Sept.		68	41	65	57	60	41	59	77	75
Oct.		27	8	24	8	21	6	21	0	23
Nov.		6	16	10	20	6	18	7	0	7
Dec.		7	0	11	0	9	0	9		8
Yearly		335	277	327	311	283	327	287		300

Month	Colonia Anahuac, Chihuahua		Las Burras, Chihuahua		Presa Chihuahua, Chihuahua		Chihuahua, Chihuahua		Villa Aldama, Chihuahua	
	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	5	10	0	7	9	8	3	8	6	8
Feb.	3	6	0	5	0	5	0	5	1	5
Mar.	0	5	0	3	0	5	0	5	0	5
April	11	10	0	7	0	8	1	6	24	9
May	30	13	0	11	1	19	2	13	40	13
June	26	42	41	30	87	47	77	39	60	39
July	17	113	23	69	55	97	60	90	4	65
Aug.	174	123	80	64	197	113	184	91	249	78
Sept.	21	86	58	60	76	87	154	77	34	72
Oct.	95	30	0	19	3	25	2	24	100	28
Nov.	23	8	18	6	12	8	14	10	12	13
Dec.	7	8	0	9	0	10	0	10	1	9
Yearly	412	454	220	290	440	432	497	378	531	344

RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

IN MILLIMETERS

	Presa Luis L. Leon, Chihuahua		La Trasquila, Chihuahua		Ojinaga (IB&WC), Chihuahua		Ojinaga (M.S. of Mexico), Chihuahua		Sierra Mojada, Coahuila	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	7	5	9	0	9	3	8	3	16
Feb.	0	4	2	7	0	8	3	6	0	7
Mar.	0	3	0	3	0	4	0	4	0	6
April	1	7	7	6	0	9	1	8	0	9
May	0	15	0	7	0	15	1	15	0	25
June	36	33		28	13	34	13	31	99	54
July	19	55		82	8	40	8	39	19	68
Aug.	161	71		68	67	43	67	40	73	75
Sept.	47	53		75	16	42	39	41	58	74
Oct.	0	20		25	3	24	2	25	36	32
Nov.	13	8		8	14	10	14	10	6	12
Dec.	0	10		11	0	9	0	10	3	16
Yearly	277	286		329	121	247	151	237	297	394

	El Guaje, Coahuila		La Chuparrosa, Coahuila		Amistad Res. near Tlaloc, Coahuila		La Amistad, Coahuila		Represa Amistad, Coahuila	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	25	1	9	0	15	0	18	0	10
Feb.	0	11	9	14	0	19	19	25	9	15
Mar.	0	8	0	12	T	19	0	21	0	14
April	0	21	0	29	7	26	25	37	17	24
May	32	27	6	37	0	48	24	66	25	44
June	0	16	0	32	46	48	0	51	0	39
July	7	64	1	31	0	63	1	48	0	45
Aug.	23	44	110	43	166	48	115	21	91	34
Sept.	6	82	43	53	84	72	85	74	71	71
Oct.	0	19	3	33	9	40	17	45	23	42
Nov.	0	8	22	16	18	23	23	28	25	17
Dec.	0	5	9	10	25	15	10	21	7	10
Yearly	68	330	204	319	355	436	319	455	268	365

	Cd. Acuna, Coahuila		Presa Centenario, Coahuila		Palestina, Coahuila		Jimenez, Coahuila		Presa Cabeceras, Coahuila	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	15	0	15	0	20	0	18	0	12
Feb.	14	24	14	21	12	26	17	23	9	19
Mar.	1	20	0	22	0	20	5	20	3	15
April	20	46	24	39	11	45	21	44	16	43
May	57	64	37	69	45	69	18	61	33	65
June	0	55	0	65	0	60	3	63	4	57
July	1	46	0	44	0	55	0	44	7	68
Aug.	105	40	100	53	116	55	193	45	93	70
Sept.	75	82	58	83	55	82	72	76	79	113
Oct.	35	59	66	60	81	56	145	60	47	64
Nov.	24	21	24	24	33	23	28	28	32	29
Dec.	17	17	0	16	6	19	5	18	6	14
Yearly	349	489	323	511	359	530	507	500	329	569

	Presa San Miguel, Coahuila		Ejido San Miguel, Coahuila		Emiliano Zapata, Coahuila		Piedras Negras, Coahuila		Zaragoza, Coahuila	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	15	0	12	0	23	0	20	0	30
Feb.	16	23	0	8	3	28	10	23	1	22
Mar.	1	19	0	8	0	28	0	17	1	19
April	29	39	0	17	30	44	34	51	21	55
May	96	70	3	26	12	90	64	90	93	78
June	3	69	32	37	9	77	7	67	52	63
July	12	66	18	28	0	62	2	57	17	57
Aug.	126	59	16	45	85	50	93	55	148	56
Sept.	75	96	44	41	61	64	98	81	49	71
Oct.	90	55	10	12	71	45	39	63	62	43
Nov.	37	30	10	8	33	44	41	23	8	24
Dec.	11	16	0	7	3	23	3	19	0	19
Yearly	496	557	133	249	307	578	391	566	452	537

RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

IN MILLIMETERS

Month	Allende, Coahuila		Villa Hidalgo, Coahuila		Jarita, Nuevo Leon		Nv. Laredo (M. S. of Mexico), Tamps.		Nv. Laredo (IB&WC), Tamaulipas	
	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	14	0	20	0	20	0	23	3	21
Feb.	0	23	0	22	1	28	0	23	0	25
Mar.	0	15	8	16	0	15	1	17	0	14
April	13	43	12	47	8	45	15	35		38
May	91	66	89	73	6	79	54	63	28	76
June	33	53	63	58	3	45	42	56	35	65
July	51	46	37	32	59	39	72	33	104	38
Aug.	105	55	99	53	139	61	97	45	156	58
Sept.	22	76	145	78	34	65	107	73	89	80
Oct.	84	46	76	50	35	51	44	49	16	56
Nov.	28	20	24	24	25	30	58	26	18	29
Dec.	0	17	10	19	11	27	8	23	3	21
Yearly	427	474	563	492	321	505	498	466		521

Month	Muzquiz, Coahuila		Sabinas, Coahuila		Juarez, Coahuila		Presa Carranza, Coahuila		Lag. de Salinillas, Nuevo Leon	
	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	21	0	15	0	16	0	18	0	18
Feb.	0	16	2	17	21	15	0	17	0	19
Mar.	0	18	2	10	0	10	5	12	10	13
April	67	31	35	33	50	38	24	32	24	34
May	28	91	72	69	76	56	11	52	28	60
June	56	81	2	52	0	43	51	47	9	50
July	42	73	141	45	62	24	23	27	42	25
Aug.	205	76	128	52	196	34	127	48	127	57
Sept.	168	124	59	83	17	78	14	78	31	78
Oct.	140	53	64	45	97	42	44	42	109	52
Nov.	16	29	16	16	17	16	18	15	24	17
Dec.	5	20	9	13	2	14	2	16	13	18
Yearly	727	633	530	450	538	386	319	404	417	441

Month	Progreso, Coahuila		Ocampo, Coahuila		Ejido 1ro de Mayo, Coahuila		Lampazos, Nuevo Leon		Cuatro Cienegas, Coahuila	
	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	2	13	0	12	0	21	1	19	0	9
Feb.	1	18	8	7	6	8	3	18	8	8
Mar.	0	9	0	4	0	6	0	13	0	4
April	15	30	4	17	0	29	15	29	0	9
May	20	51	50	34	19	32	53	48	17	20
June	42	54	16	40	28	35	12	53	57	20
July	123	31	21	38	0	28	32	43	18	25
Aug.	97	48	45	40	14	15	159	37	39	31
Sept.	2	75	29	48	21	34	19	114	27	36
Oct.	97	45	50	28	0	24	96	52	19	19
Nov.	15	16	4	11	0	5	10	25	0	10
Dec.	4	13	0	13	0	5	4	19	0	11
Yearly	418	403	227	292	88	242	404	470	185	202

Month	Monclova, Coahuila		Candela, Coahuila		Castanos, Coahuila		Vallecillo, Nuevo Leon		Nueva Cd. Guerrero, Tamaulipas	
	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	2	12	2	19	0	14	2	22	0	25
Feb.	5	13	2	12	0	13	0	19	3	25
Mar.	0	7	0	2	0	5	13	12	0	12
April	5	15	0	30	0	27	10	45	5	36
May	25	36	29	41	49	48	80	52	59	69
June	34	34	66	51	25	51	12	76	43	64
July	32	45	36	54	30	44	23	39	4	36
Aug.	44	59	179	59	66	58	114	55	132	53
Sept.	31	80	55	65	39	66	8	103	51	97
Oct.	74	31	67	36	108	40	87	50	31	47
Nov.	14	15	10	16	19	8	16	20	12	27
Dec.	3	16	0	12	2	6	3	17	6	21
Yearly	269	363	446	397	338	380	368	510	346	512

RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

IN MILLIMETERS

	Paras, Nuevo Leon		Sabinas Hidalgo, Nuevo Leon		Garza Ayala, Nuevo Leon		Miguel Aleman, Tamaulipas		Cd. Mier, Km. 8 SW, Tamaulipas	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	1	19	5	23	2	25	0	25	0	24
Feb.	1	19	5	19	0	15	2	24	4	37
Mar.	1	13	0	16	3	12	0	12	0	15
April	7	24	17	34	6	37	28	39	16	36
May	21	49	33	68	34	52	0	57	23	77
June	8	66	36	83	41	65	0	69	0	78
July	10	40	14	60	5	74	23	42	20	42
Aug.	70	58	173	59	155	63	210	58	145	67
Sept.	37	83	10	145	19	95	65	115	45	114
Oct.	42	51	148	59	100	53	42	55	85	69
Nov.	13	20	15	22	12	35	7	22	9	24
Dec.	5	16	2	17	2	30	23	21	7	19
Yearly	216	458	458	605	379	556	400	539	354	602

	El Alamo, Nuevo Leon		Sombreretillo, Nuevo Leon		Agualeguas, Nuevo Leon		La Escondida, Nuevo Leon		General Trevino, Nuevo Leon	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	37	2	50	0	39	3	46	0	33
Feb.	0	17	2	20	20	19	0	26	0	24
Mar.	5	13	0	15	0	16	0	21	0	14
April	15	48	27	52	50	42	27	60	32	47
May	17	62	12	43	0	56	0	43	0	72
June	11	65	0	86	0	52	17	77	16	57
July	10	22	20	60	21	38	4	45	8	29
Aug.	67	38		54	91	63	154	98	96	62
Sept.	27	69	32	142	63	50	64	104	26	89
Oct.	55	38	156	45	8	38	51	43	39	39
Nov.	25	15	15	26	0	16	24	21	9	14
Dec.	6	20	3	21	3	19	8	39	0	27
Yearly	238	444		614	256	448	352	623	226	507

	Parras, Coahuila		General Cepeda, Coahuila		Hipolito, Coahuila		San Juan de Vaqueria, Coahuila		Espinazo, Nuevo Leon	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	6	19	8	14	2	18	5	28	18	32
Feb.	1	8	1	11	0	8	1	11	2	13
Mar.	0	7	0	7	0	8	0	6	0	5
April	5	10	0	12	0	13	0	21	1	28
May	30	31	94	24	2	12	12	42	11	51
June	39	45	78	51		8	56	59	3	28
July	68	64	100	78	50	15	32	79	52	38
Aug.	54	68	88	73	26	17	111	94	134	40
Sept.	12	64	37	70	55	27	76	67	13	50
Oct.	42	32	14	29	54	21	4	36	27	30
Nov.	13	15	6	13	17	10	6	10	15	13
Dec.	0	16	0	13	0	5	2	7	0	15
Yearly	270	379	426	395		162	305	460	276	343

	Reata, Coahuila		Gomez Farias, Coahuila		Saltillo, Coahuila		Arteaga, Coahuila		Ramos Arizpe, Coahuila	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	17	12	2	43	12	16	0	5	60	15
Feb.	0	7	9	19	1	12	0	10	2	9
Mar.	0	6	0	4	0	8	0	3	0	7
April	0	13	0	22	4	17	16	16	3	14
May	0	24	3	46	14	29	16	29	18	24
June	1	28	6	49	64	50	25	41	6	25
July	71	29	34	51	11	64	57	63	32	37
Aug.	36	37	46	57	42	61	24	66	10	33
Sept.	37	43	26	54	29	63	22	74	48	47
Oct.	48	23	4	24	10	30	0	36	37	21
Nov.	18	12	7	11	3	19	0	10	3	11
Dec.	2	10	0	23	0	16	0	14	0	14
Yearly	230	244	137	403	190	385	160	367	219	257

RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

IN MILLIMETERS

	Huachichil, Coahuila		Carbonera, Nuevo Leon		San Antonio de las Alazanas, Coahuila		San Rafael, Nuevo Leon		La Huasteca, Nuevo Leon	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	10	80	0	21	0	32	1	31	8	16
Feb.	10	42	18	13	7	18	10	21	2	4
Mar.	0	14	0	11	0	11	0	13	3	6
April	0	29	0	24	0	25	1	23	3	15
May	32	108	0	42	36	52	46	42	15	46
June	145	107	13	64	31	64	26	53	22	38
July	17	93	61	71	80	81	18	60	2	31
Aug.	3	61	21	71	37	76	69	65	127	39
Sept.	96	85	62	65	56	66	86	56	26	88
Oct.	13	43	5	38	14	43	9	44	160	35
Nov.	0	14	0	21	10	23	3	27	0	5
Dec.	0	24	0	21	4	25	2	23	0	16
Yearly	326	700	180	462	275	516	271	458	368	339

	Agua Blanca, Nuevo Leon		Potrero de Abrego, Coahuila		Cienega del Toro, Nuevo Leon		El Canada, Nuevo Leon		Mimbres, Nuevo Leon	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	33	24	23	28	3	35	14	17	0	41
Feb.	9	13	1	17	10	15	0	15	12	27
Mar.	12	13	2	25	4	19	0	17	12	25
April	4	21	0	38	11	38	8	26	4	39
May	22	50	28	40	25	64	5	73	23	73
June	51	59	16	38	38	60	10	63	93	89
July	51	81	6	23	32	71	17	23	17	70
Aug.	140	85	164	71	110	77	182	60	273	90
Sept.	101	129	43	57	117	85	38	114	127	99
Oct.	192	59	14	28	16	47	71	75	49	52
Nov.	5	21	1	25	0	20	8	20	5	29
Dec.	0	17	0	27	5	19	2	10	2	32
Yearly	620	572	298	417	371	550	355	513	617	666

	Hacienda Mamulique, Nuevo Leon		Cerritos, Nuevo Leon		La Arena, Nuevo Leon		Ejido Marin, Nuevo Leon		Dr. Gonzales, Nuevo Leon	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	5	27	12	27	6	23	7	35	8	46
Feb.	11	10	7	16	1	18	0	16	2	14
Mar.	11	12	0	14	7	14	0	14	0	14
April	0	39	8	48	3	31	0	29	0	38
May	24	43	27	97	0	70	0	58	0	70
June	38	70	158	145	26	80	31	65	31	76
July	38	60	26	117	18	65	47	46	34	39
Aug.	138	71	282	147	193	78	161	65	212	73
Sept.	3	102	110	287	20	124	70	102	135	86
Oct.	90	41	437	113	79	58	45	37	22	31
Nov.	22	25	256	30	12	18	12	16	79	25
Dec.	6	24	1	15		18	4	30	3	50
Yearly	386	524	1,324	1,056		597	377	513	526	562

	Tepehuaje, Nuevo Leon		Cabezones, Nuevo Leon		Pobladores, Nuevo Leon		Cerro Prieto, Nuevo Leon		El Realito, Nuevo Leon	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	8	43	7	32	10	50	8	31	8	34
Feb.	1	18	2	21	5	20	0	16	2	13
Mar.	11	15	3	26	1	13	3	16	0	15
April	5	47	21	61	3	42	2	38	3	38
May	4	82	1	95	11	55	0	103	0	72
June	21	82	35	102	92	62	29	96	0	73
July	13	44	8	66	0	25	1	44	3	50
Aug.	149	77	272	145	228	58	200	81	168	82
Sept.	81	122	165	208	80	112	71	137	14	111
Oct.	58	46	77	82	50	42	93	58	68	43
Nov.	13	17	3	26	0	17	2	19	1	16
Dec.	2	21		20	8	43	5	25	15	28
Yearly	366	614		884	488	539	414	664	282	575

RAINFALL ON THE RIO GRANDE WATERSHED

IN MEXICO

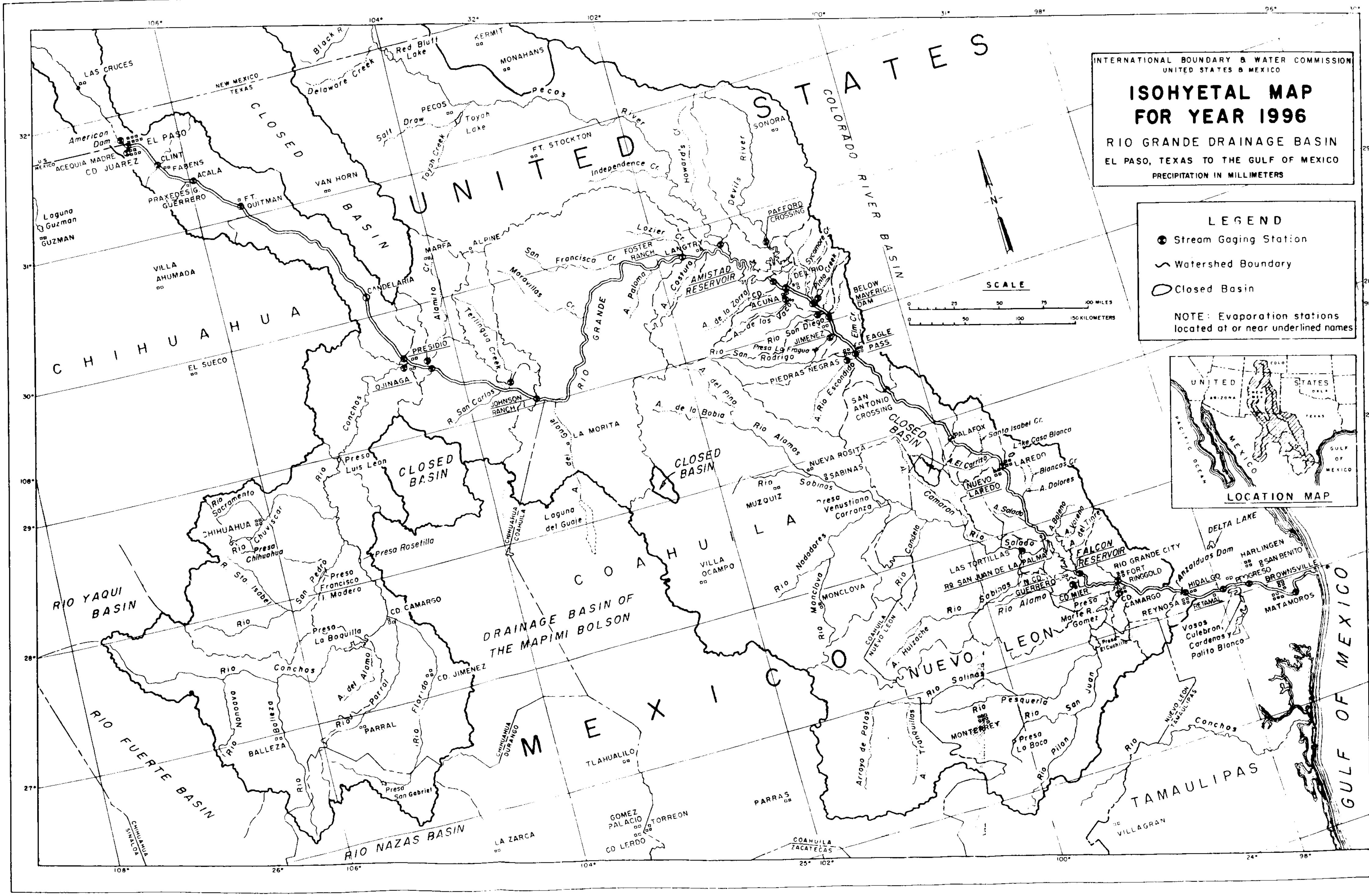
IN MILLIMETERS

	El Cuchillo, Nuevo Leon		Madero(Los Aldamas) Nuevo Leon		La Pomona, Nuevo Leon		General Bravo, Nuevo Leon		Vaquerias, Nuevo Leon	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	7	19	5	32	8	34	7	22	9	40
Feb.	0	15	2	20	1	15	0	16	1	21
Mar.	0	12	0	16	5	23	0	14	2	22
April	2	33	5	34	0	51	5	36	3	39
May	11	62	0	74	3	97	0	74	3	90
June	35	68	8	77	43	81	30	70	21	72
July	0	45	4	56	1	48	1	53	12	31
Aug.	142	73	144	93	238	76	105	69	155	66
Sept.	26	107	11	115	140	124	7	108	77	101
Oct.	38	54	36	36	95	37	28	47	90	47
Nov.	10	15	14	15	4	15	16	22	2	19
Dec.	0	15		22	19	32	2	20		43
Yearly	271	518		590	557	633	201	551		591

	El Brasil, Nuevo Leon		Villa Cardenas, Tamaulipas		Comales, Tamaulipas		Camargo, Tamaulipas		Cd. Diaz Ordaz, Tamaulipas	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	7	32	3	41	0	24	0	27	3	31
Feb.	0	24	3	29	3	22	3	27	3	30
Mar.	0	11	8	17	0	14	0	18	0	14
April	2	36	69	52	8	42	17	36	54	38
May	11	67	0	61	5	54	14	69	18	73
June	35	67	30	75	0	57	0	69	38	71
July	0	40	0	43	0	37	0	35	0	36
Aug.	142	54	140	71	71	70	105	51	104	54
Sept.	26	84	226	113	6	104	13	113	111	93
Oct.	38	42	207	67	46	59	57	54	81	65
Nov.	10	17	27	31	13	22	10	30	15	29
Dec.	0	17	14	31	5	23	3	28	13	26
Yearly	271	491	727	631	157	528	222	557	440	560

	Retamal, Tamaulipas		Reynosa Km. 22 SW, Tamaulipas		Rio Bravo, Tamaulipas		Bajo Rio San Juan, Tamps., No. 3-47		Bajo Rio San Juan, Tamps., No. 3-55	
Month	1996	Average	1996	Average	1996	Average	1996	Average	1996	Average
Jan.	0	29	1	32	0	34	0	46	0	47
Feb.	0	28	1	21	2	27	6	35	5	38
Mar.	5	17	5	16	2	17	5	16	2	18
April	14	35	37	38	34	40	38	41	25	46
May	22	65	17	77	6	60	15	83	13	71
June	16	61	2	70	15	67	38	84	59	82
July	0	38	5	45	25	56	3	50	0	55
Aug.	92	66	136	62	66	76	104	63	113	67
Sept.	55	89	39	99	87	129	257	115	136	110
Oct.	61	61	67	55	92	69	109	64	107	72
Nov.	8	28	13	25	42	30	86	28	24	23
Dec.	12	29	6	27	10	25	13	34	8	36
Yearly	285	546	329	567	381	630	674	659	492	665

	Bajo Rio San Juan, Tamps., No. 3-58		Bajo Rio San Juan, Tamps., No. 3-60		Bajo Rio San Juan, Tamps., No. 3-63					
Month	1996	Average	1996	Average	1996	Average				
Jan.	0	47	0	41	0	45				
Feb.	110	37	5	31	4	40				
Mar.	2	19	5	17	2	15				
April	8	38	8	39	18	37				
May	18	74	38	73	18	70				
June	15	76	40	84	58	88				
July	0	59	0	45	5	45				
Aug.	89	60	106	59	122	68				
Sept.	101	122	91	126	96	120				
Oct.	101	73	147	72	136	69				
Nov.	17	25	13	26	35	25				
Dec.	11	35	20	34	20	33				
Yearly	472	665	473	647	514	655				



INTERNATIONAL BOUNDARY & WATER COMMISSION
UNITED STATES & MEXICO
ISOHYETAL MAP
FOR YEAR 1996
RIO GRANDE DRAINAGE BASIN
EL PASO, TEXAS TO THE GULF OF MEXICO
PRECIPITATION IN MILLIMETERS
LEGEND
Stream Gaging Station
Watershed Boundary
Closed Basin
NOTE: Evaporation stations located at or near underlined names
SCALE
100 MILES
150 KILOMETERS
LOCATION MAP
UNITED STATES
MEXICO
CHIHUAHUA
COAHUILA
NUEVO LEON
TAMAULIPAS
GULF OF MEXICO
COLORADO RIVER BASIN
CLOSED BASIN
DRAINAGE BASIN OF THE MAPIMI BOLSON
RIO YAQUI BASIN
RIO FUERTE BASIN
RIO NAZAS BASIN
RIO GRANDE
EL PASO
CD JUAREZ
AMISTAD RESERVOIR
FALCON RESERVOIR
LAREDO
NUEVO LAREDO
EAGLE PASS
PIEDRAS NEGRAS
DEL RIO
CD. ACUNA
PRESIDIO
OJINAGA
BROWNSVILLE
MATAMOROS

AVERAGE RAINFALL ON SUBDIVISIONS OF THE RIO GRANDE WATERSHED
With Averages for the 126 Years 1871 - 1996, Inclusive

In Millimeters

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.

	El Paso to Fort Quitman (6,933 Square Km)		Fort Quitman to Above Rio Conchos (7,915 Square Km)		* Above Rio Conchos to Johnson Ranch (9,795 Square Km)		Johnson Ranch to Foster Ranch (33,623 Square Km)	
Month	1996	Period Average	1996	Period Average	1996	Period Average	1996	Period Average
Jan.	4	12	9	10	0	9	0	12
Feb.	5	10	2	7	0	7	2	10
Mar.	0	8	0	6	0	5	0	10
April	17	7	10	9	0	10	4	19
May	0	11	0	16	6	20	28	38
June	37	20	71	32	15	30	12	42
July	34	55	22	71	33	48	24	46
Aug.	51	48	53	61	76	49	76	51
Sept.	47	37	59	50	48	42	55	55
Oct.	3	23	5	26	2	22	9	31
Nov.	7	11	12	10	13	9	15	15
Dec.	0	15	0	14	0	10	0	14
Yearly	205	257	243	312	193	261	225	343

	Pecos River below Sheffield (8,780 Square Km)		# Foster Ranch to Amistad Dam (7,249 Square Km)		Devils River (11,150 Square Km)		+ Amistad Dam to Eagle Pass (4,209 Square Km)	
Month	1996	Period Average	1996	Period Average	1996	Period Average	1996	Period Average
Jan.	0	17	0	18	0	18	0	19
Feb.	1	22	6	22	6	20	5	23
Mar.	0	19	0	24	5	26	0	24
April	25	45	4	42	18	44	6	43
May	34	48	10	72	29	67	10	72
June	6	60	3	62	15	65	8	63
July	13	47	3	46	20	47	5	47
Aug.	158	50	113	47	94	54	85	48
Sept.	78	64	43	75	72	74	47	77
Oct.	15	46	3	51	23	55	79	52
Nov.	43	23	25	26	44	37	18	26
Dec.	1	19	6	21	5	25	7	22
Yearly	374	460	216	506	331	532	270	516

	! Eagle Pass to Laredo (9,829 Square Km)		** Laredo to Falcon Dam (8,726 Square Km)		## Falcon Dam to Rio Grande City (1,212 Square Km)		United States Side Below Rio Grande City (2,554 Square Km)	
Month	1996	Period Average	1996	Period Average	1996	Period Average	1996	Period Average
Jan.	0	19	5	21	2	23	2	33
Feb.	1	21	9	22	3	22	3	29
Mar.	0	23	0	20	0	22	7	25
April	19	43	16	36	22	31	8	36
May	52	78	71	80	22	61	13	72
June	13	62	24	52	1	55	35	65
July	28	38	57	51	38	46	1	44
Aug.	78	56	149	49	127	53	107	59
Sept.	59	75	51	77	32	88	108	109
Oct.	36	48	39	44	41	48	95	63
Nov.	22	24	16	38	15	20	20	34
Dec.	5	25	11	22	10	18	9	32
Yearly	313	512	448	512	313	487	408	601

* Excluding Rio Conchos, Alamito Creek, and Terlingua Creek
\# 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

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

The precipitation records of stations listed below began on the date shown and extend through 1996. 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. With the exception of Las Cruces, New Mexico, all United States precipitation stations listed below are in Texas, while those in Mexico are in the indicated state as shown.

IN THE UNITED STATES

NAME OF STATION	TYPE GAGE	LATI-TUDE	LONGI-TUDE	ELEV. METERS	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
A.A. Baker Ranch	R	29° 44'	101° 08'	524	July 1962	Devils River	I. B. & W. C.
A.M. Potter Ranch	S	29° 46'	103° 25'	1,036	1952	Johnson Ranch - Foster Ranch	A. M. Potter
Adobes Ranch	C	29° 46'	104° 34'	777	# 1950	Fort Quitman - Above Rio Conchos	I. B. & W. C.
American Dam	S	31° 47'	106° 32'	1,137	# 1938	El Paso - Fort Quitman	I. B. & W. C.
Amistad Dam	R	29° 27'	101° 01'	351	July 1962	Foster Ranch - Amistad Dam	I. B. & W. C.
Amistad Reservoir near Comstock	C	29° 32'	101° 12'	344	# 1970	Foster Ranch - Amistad Dam	I. B. & W. C.
Anzalduas Dam	S	26° 08'	98° 20'	39	1972	Lower Rio Grande Valley	I. B. & W. C.
Apache Ranch	C	27° 56'	99° 56'	152	#May 1953	Eagle Pass - Laredo	Ranch Foreman
Big Satan Creek Station	C	29° 34'	100° 57'	351	Nov. 1968	Devils River	I. B. & W. C.
Bill Shannon Ranch	C	29° 57'	104° 40'	817	#July 1956	Fort Quitman - Above Rio Conchos	Bill Shannon
Brotherton Ranch	S	29° 42'	101° 19'	427	1961	Langtry - Below Amistad Dam	Perry Calk
Buoy No. 11	C	29° 30'	101° 10'	**	#Dec. 1969	Foster Ranch - Amistad Dam	I. B. & W. C.
CCWID # 11 (Bayview Dist. Off.)	S	26° 08'	97° 21'	8	# 1952	Lower Rio Grande Valley	CCWID #11
Cliff Lowry Ranch No. 1	R	29° 28'	100° 52'	454	July 1962	Devils River	I. B. & W. C.
Comstock	R	29° 41'	101° 10'	466	#May 1939	Foster Ranch - Amistad Dam	I. B. & W. C.
Corralitos Ranch	C	27° 07'	99° 25'	105	1953	Laredo - Falcon Dam	I. B. & W. C.
Dead Man's Canyon near Comstock	C	29° 47'	101° 19'	399	Sept. 1967	Pecos River below Sheffield	I. B. & W. C.
Devils Lake	R	29° 34'	100° 58'	349	#May 1939	Devils River	I. B. & W. C.
Devils River at Cauthorn Ranch	S	30° 04'	101° 06'	505	#April 1976	Devils River	I. B. & W. C.
Eagle Pass	S	28° 42'	100° 30'	248	1964	Eagle Pass - Laredo	I. B. & W. C.
Ed Crane Ranch	S	29° 50'	101° 05'	497	# 1955	Devils River	E. J. Crane Jr.
Edinburg City Water Plant	S	26° 18'	98° 10'	30	# 1934	Lower Rio Grande Valley	City of Edinburg
El Indio	S	28° 31'	100° 19'	221	#June 1941	Eagle Pass - Laredo	Mrs. Courtney
Evans Creek near Comstock	C	29° 32'	101° 06'	360	#July 1969	Devils River	I. B. & W. C.
Falcon Dam	S	26° 33'	99° 08'	98	April 1950	Laredo - Falcon Dam	I. B. & W. C.
Fort Hancock Bridge	S	31° 16'	105° 51'	1,067	#April 1940	El Paso - Fort Quitman	I. B. & W. C.
Garciasville	R	26° 20'	98° 41'	61	#April 1957	Lower Rio Grande Valley	I. B. & W. C.
Gillis Headquarters	S	29° 36'	100° 47'	430	1968	Amistad Dam - Eagle Pass	Jake Schiller
Gillis Ranch	S	29° 40'	101° 03'	439	# 1965	Devils River	Walter Gillis
Goldwire Ranch	C	29° 44'	100° 57'	514	Nov. 1968	Devils River	I. B. & W. C.
Guayuco Arroyo	R	31° 10'	105° 40'	1,097	#May 1940	El Paso - Fort Quitman	I. B. & W. C.
HCWCID No. 6 Goodwin Pump No. 3	S	26° 16'	98° 24'	53	1953	Lower Rio Grande Valley	HCWCID No. 6
HCWCID No. 6 Goodwin Pump No. 4B	S	26° 18'	98° 22'	64	1953	Lower Rio Grande Valley	HCWCID No. 6
H.K. Fawcett Ranch	C	29° 52'	100° 53'	488	# 1941	Devils River	I. B. & W. C.
H.T. Fletcher Ranch	S	30° 12'	104° 16'	1,554	# 1939	Alamito Creek	Hayes Mitchell Jr.
H.T. Miers Ranch Headquarters	C	29° 44'	100° 50'	536	# 1957	Devils River	I. B. & W. C.
H.T. Miers Ranch No. 2	R	29° 43'	100° 53'	488	April 1964	Devils River	I. B. & W. C.
Harlow Ranch	C	29° 49'	101° 10'	517	#Mar. 1969	Devils River	I. B. & W. C.
Huisache Ranch	C	26° 57'	99° 21'	117	Aug. 1953	Laredo - Falcon Dam	I. B. & W. C.
Hutto Ranch No. 1	R	29° 30'	100° 50'	378	# 1964	Devils River	I. B. & W. C.
Hutto Ranch No. 2	R	29° 38'	100° 54'	369	# 1964	Devils River	I. B. & W. C.
J.G. Brite Ranch	R	29° 33'	101° 01'	351	#Sept. 1962	Devils River	I. B. & W. C.
Johnson Ranch	C	29° 01'	103° 23'	625	#July 1933	Johnson Ranch - Foster Ranch	I. B. & W. C.
Jones Ranch	S	30° 43'	100° 58'	732	#Oct. 1962	Devils River	Mrs. Jones
Keisling Ranch	S	28° 23'	100° 17'	226	Dec. 1958	Eagle Pass - Laredo	I. B. & W. C.
Kerr Mitchell Ranch	S	30° 13'	104° 00'	1,356	#Mar. 1941	Alamito Creek	Mrs. K. Mitchell
La Feria Materials Yard	V	26° 10'	97° 50'	18	# 1960	Lower Rio Grande Valley	CCWCID #3
La Feria Pumping Plant	S	26° 03'	97° 50'	18	# 1952	Lower Rio Grande Valley	CCWCID #3
La Joya	C	26° 15'	98° 29'	46	#April 1957	Lower Rio Grande Valley	I. B. & W. C.
La Mota Ranch	S	29° 33'	103° 59'	1,175	#Feb. 1943	Alamito Creek	John Rice
Las Cruces	S	32° 19'	106° 47'	1,187	1975	Caballo Dam - El Paso	I. B. & W. C.
Las Moras Creek	S	29° 00'	100° 38'	244	1958	Amistad Dam - Eagle Pass	I. B. & W. C.
Laughlin Air Force Base	S	29° 21'	100° 47'	329	Dec. 1958	Amistad Dam - Eagle Pass	U. S. A. F.

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 THE UNITED STATES

NAME OF STATION	TYPE GAGE	LATI-TUDE	LONGI-TUDE	ELEV. METERS	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Lewis Ranch	S	29° 32'	100° 40'	427	# 1964	Amistad Dam - Eagle Pass	B.C. Lewis Jr.
Lewis James Ranch	S	30° 11'	102° 07'	998	# 1966	Johnson Ranch - Foster Ranch	Lewis James
Long Ranch	R	29° 27'	100° 56'	347	Oct. 1971	Devils River	I. B. & W. C.
Los Ebanos	C	26° 14'	98° 34'	46	#April 1957	Lower Rio Grande Valley	I. B. & W. C.
Lowry Ranch No. 2	R	29° 37'	100° 55'	354	May 1965	Devils River	I. B. & W. C.
Martin King Ranch	R	29° 43'	101° 02'	445	#Nov. 1954	Foster Ranch - Amistad Dam	I. B. & W. C.
Maverick County Canal Headgate	S	29° 10'	100° 46'	265	#Mar. 1948	Amistad Dam - Eagle Pass	MCWCID #1
Mercedes LRGFCP Office	S	26° 07'	97° 56'	22	1994	Lower Rio Grande Valley	I. B. & W. C.
Mercedes Pump	S	26° 04'	97° 54'	!	1938	Lower Rio Grande Valley	I. B. & W. C.
Middle Fork San Pedro	C	29° 29'	100° 52'	357	#June 1969	Devils River	I. B. & W. C.
North Fork San Pedro	C	29° 31'	100° 53'	349	#June 1969	Devils River	I. B. & W. C.
Owens Ranch	S	30° 48'	102° 42'	686	#July 1963	Pecos River below Sheffield	Mrs. W. Owens
Pafford Crossing	C	29° 40'	101° 00'	360	Mar. 1960	Devils River	I. B. & W. C.
Pecos River near Langtry Station	C	29° 48'	101° 26'	384	July 1967	Pecos River below Sheffield	I. B. & W. C.
Penitas (Edinburg Pumping Plant)	S	26° 14'	98° 27'	30	July 1957	Lower Rio Grande Valley	M. Stevens
Pinto Creek Station	C	29° 09'	100° 43'	265	#Dec. 1958	Amistad Dam - Eagle Pass	I. B. & W. C.
Presidio (IBWC)	S	29° 34'	104° 23'	792	#Nov. 1949	Above Rio Conchos - Johnson Ranch	I. B. & W. C.
Prosser Ranch No. 1	C	29° 53'	101° 14'	521	Mar. 1965	Pecos River below Sheffield	I. B. & W. C.
Prosser Ranch No. 2	C	29° 48'	101° 15'	564	#Mar. 1965	Devils River	I. B. & W. C.
Prosser Ranch No. 3	C	30° 02'	101° 16'	616	#Mar. 1965	Pecos River below Sheffield	I. B. & W. C.
Redford	C	29° 29'	104° 13'	762	#July 1954	Above Rio Conchos - Johnson Ranch	I. B. & W. C.
Rio Grande near Dryden	R	29° 48'	102° 08'	411	May 1976	Johnson Ranch - Foster Ranch	National Weather Service
Roma (International Bridge)	S	26° 24'	99° 01'	70	# 1941	Falcon Dam - Rio Grande City	I. B. & W. C.
Ross Foster Ranch	C	29° 45'	101° 46'	375	May 1961	Johnson Ranch - Foster Ranch	I. B. & W. C.
Rough Canyon near Del Rio	C	29° 34'	100° 56'	350	#June 1969	Devils River	I. B. & W. C.
San Benito Pump	S	26° 03'	97° 45'	15	Oct. 1933	Lower Rio Grande Valley	CCWCID No. 2
Sellers Ranch	C	29° 34'	101° 02'	363	#Mar. 1960	Devils River	I. B. & W. C.
Shafter	S	29° 49'	104° 19'	1,195	#July 1968	Above Rio Cochos - Johnson Ranch	Raymond Wylic
Stewart Ranch	R	29° 35'	100° 52'	405	#April 1960	Devils River	I. B. & W. C.
Study Butte	S	29° 19'	103° 32'	777	July 1977	Terlingua Creek	Shirley Willard
Terlingua Creek Station	C	29° 12'	103° 36'	675	#Mar. 1952	Terlingua Creek	I. B. & W. C.
Trees Farm	R	28° 38'	100° 25'	219	#Mar. 1959	Eagle Pass - Laredo	I. B. & W. C.
Tuffy Whitehead Ranch	R	29° 37'	101° 07'	433	July 1962	Devils River	I. B. & W. C.
United Irrigation District	S	26° 11'	98° 24'	!	#Aug. 1961	Lower Rio Grande Valley	United Irrig. District
Van Dalsem Farm	C	28° 27'	100° 19'	213	# 1959	Eagle Pass - Laredo	I. B. & W. C.
Vinegaroon	C	29° 56'	100° 45'	543	#May 1966	Devils River	I. B. & W. C.
Walker Ranch	C	29° 49'	101° 13'	466	#Aug. 1969	Devils River	I. B. & W. C.
Wardlaw Standart Ranch	S	29° 18'	100° 38'	326	April 1977	Pinto Creek	Hadly Wardlaw
Zapata	S	26° 54'	99° 16'	116	1992	Laredo - Falcon Dam	I. B. & W. C.
Zuberbueler Ranch	S	29° 41'	101° 14'	445	#Feb. 1975	Foster Ranch - Amistad Dam	J.U. Zuberbueler

S Standard R Recording C Cumulative ! Not Available # Some months or years missing

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

IN MEXICO

NAME OF STATION	TYPE GAGE	LATI-TUDE	LONGI-TUDE	ELEV. METERS	RECORD BEGAN		WATERSHED SUBDIVISION	OBSERVER
Agualeguas, Nuevo Leon	S	26° 19'	99° 33'	184	#	1979	Rio Alamo	S. A. R. H.
Allende, Coahuila	S	28° 21'	100° 51'	357		1947	Eagle Pass-Laredo	C. N. A.
Agua Blanca, Nuevo Leon	S	25° 30'	100° 30'	2,690		1958	Rio San Juan	C. N. A.
Amistad Reservoir near Tlaloc, Coahuila	C	29° 26'	101° 07'	366	#	1970	Foster Ranch - Amistad Dam	I. B. & W. C.
Anahuac, Nuevo Leon	S	27° 15'	100° 08'	200	#June	1933	Rio Salado	C. N. A.
Arteaga, Coahuila	S	25° 24'	101° 00'	1600	#Jan.	1958	Rio San Juan	C. N. A.
Bajo Rio San Juan, Tamps.								
No. 3-47	S	25° 58'	98° 07'	!		1964	Rio San Juan	C. N. A.
No 3-55	S	25° 52'	98° 12'	!		1964	Rio San Juan	C. N. A.
No. 3-58	S	25° 50'	98° 11'	!	#	1964	Rio San Juan	C. N. A.
No. 3-60	S	25° 46'	98° 10'	!	#	1964	Rio San Juan	C. N. A.
No. 3-63	S	25° 41'	98° 06'	!	#	1964	Rio San Juan	C. N. A.
Cabezones, Nuevo Leon	S	24° 59'	99° 45'	!	#	1962	Adjacent to Rio San Juan	S. A. R. H.
Camargo, Chihuahua	S	27° 42'	105° 10'	1,204	#May	1903	Rio Conchos	Meteor. Service of Mexico
Camargo, Tamaulipas	S	26° 19'	98° 50'	68	#	1921	Rio San Juan	S. A. R. H.
Candela, Coahuila	S	26° 50'	100° 40'	!	#	1970	Rio Salado	C. N. A.
Carbonera, Nuevo Leon	S	24° 49'	100° 47'	!	#	1958	Rio San Juan	S. A. R. H.
Castanos, Coahuila	S	26° 47'	101° 27'	2,440	#Oct.	1932	Rio Salado	Meteor. Service of Mexico
Cd. Acuna, Coahuila	S	29° 20'	100° 53'	274		1951	Amistad Dam-Eagle Pass	C. I. L. A.
Cd. Diaz Ordaz, Tamaulipas	S	26° 14'	98° 36'	40	#	1953	Lower Rio Grande Valley	S. A. R. H.
Cd. Juarez, Chihuahua	S	31° 45'	106° 27'	1,127		1903	El Paso-Ft Quitman	I. B. & W. C.
Cd. Mier, Tamaulipas	S	26° 26'	99° 09'	80	#Oct.	1955	Falcon Dam-Rio Grande C.	I. B. & W. C.
Cerritos, Nuevo Leon	S	25° 31'	100° 12'	!	#	1958	Rio San Juan	S. A. R. H.
Cerro Prieto, Nuevo Leon	S	25° 56'	99° 23'	270	#May	1959	Rio San Juan	S. A. R. H.
Chihuahua, Chihuahua	S	28° 38'	106° 04'	1,450		1900	Rio Conchos	Meteor. Service of Chihuahua
Cienega del Toro, N. L.	S	25° 05'	100° 20'	2,137	#	1958	Rio San Juan	S. A. R. H.
Comales, Tamaulipas	R	26° 11'	98° 55'	80	#	1940	Rio San Juan	S. A. R. H.
Cuatro Cienegas, Coahuila	S	26° 59'	102° 04'	742		1923	Rio Salado	C. N. A.
Delicias, Chihuahua	S	28° 11'	105° 28'	1,130	#Aug.	1933	Rio Conchos	C. N. A.
Dr. Gonzalez, Tamps.	S	25° 48'	99° 52'	318		1978	Rio San Juan	C. N. A.
Ejido 1ro de Mayo, Coah.	S	27° 13'	101° 13'	!		1980	Rio Salado	C. N. A.
Ejido Marin, Nuevo Leon	S	25° 50'	100° 00'	!	#Mar.	1979	Rio San Juan	S. A. R. H.
Ejido San Miguel, Coah.	S	29° 02'	100° 58'	!		1976	Amistad-Eagle Pass	C. N. A.
El Alamo, Nuevo Leon	S	26° 29'	99° 46'	!	#	1968	Rio Alamo	I. B. & W. C.
El Brasil, Nuevo Leon	S	25° 53'	98° 59'	!	#July	1979	Rio San Juan	S. A. R. H.
El Canada, Nuevo Leon	S	25° 48'	100° 16'	!	#Jan.	1958	Rio San Juan	C. N. A.
El Cuchillo, Nuevo Leon	S	25° 43'	99° 16'	180	#June	1938	Rio San Juan	S. A. R. H.
El Guaje, Coahuila	S	28° 05'	103° 15'	970		1979	Johnson Ranch-Langtry	C. N. A.
El Realito, Nuevo Leon	S	25° 18'	99° 21'	!	#	1971	Rio San Juan	S. A. R. H.
Emiliano, Zapata, Coah.	S	29° 01'	100° 49'	!		1976	Amistad-Eagle Pass	C. N. A.
Espinazo, Nuevo Leon	S	26° 15'	101° 05'	!	#	1980	Rio Salado	S. A. R. H.
Garza Ayala, Nuevo Leon	S	26° 29'	100° 03'	!	#	1968	Rio San Juan	S. A. R. H.
General Bravo, Nuevo Leon	S	25° 48'	99° 11'	180	#Sept.	1906	Rio San Juan	S. A. R. H.
General Cepeda, Coahuila	S	25° 24'	101° 29'	1,485	#Aug	1926	Rio San Juan	S. A. R. H.
General Trevino, N. L.	S	26° 13'	99° 28'	!	#Oct	1976	Rio Alamo	S. A. R. H.
Gomez Farias, Coahuila	S	24° 58'	101° 03'	!	#	1979	Rio San Juan	C. N. A.
Hacienda Mamulique, N. L.	S	26° 07'	100° 14'	!	#Sept.	1973	Rio San Juan	S. A. R. H.
Hidalgo del Parral, Chih.	S	26° 56'	105° 39'	1,750	#Mar.	1903	Rio Conchos	Meteor. Service of Mexico
Hipolito, Coahuila	S	25° 42'	101° 24'	!	#	1980	Rio San Juan	S. A. R. H.
Huachichil, Coahuila	S	25° 12'	100° 50'	2,100		1980	Rio San Juan	C. N. A.
Jarita, Nuevo Leon	C	27° 26'	99° 48'	207	#Mar	1961	Laredo-Falcon Dam	S. A. R. H.
Jimenez, Chihuahua	S	27° 08'	104° 56'	1,377	#	1951	Amistad Dam-Eagle Pass	Meteor. Service of Mexico
Jimenez, Coahuila	S	29° 04'	100° 40'	248		1951	Amistad Dam-Eagle Pass	C. I. L. A.
Juarez, Coahuila	S	27° 37'	100° 44'	275		1969	Rio Salado	C. N. A.
Km. 135, Chihuahua	S	28° 22'	105° 37'	1,306	#	1962	Rio Conchos	C. N. A.
La Amistad, Coahuila	S	29° 27'	101° 05'	316	#Feb.	1977	Amistad Dam-Eagle Pass	I. B. & W. C.
La Arena, Nuevo Leon	S	25° 46'	100° 01'	!	#	1968	Rio San Juan	S. A. R. H.
La Boquilla, Chihuahua	S	27° 32'	105° 25'	1,320	#June	1910	Rio Conchos	C. N. A.
La Escondida, Nuevo Leon	S	26° 16'	99° 46'	300	#Feb.	1979	Rio San Juan	S. A. R. H.
La Huasteca, Nuevo Leon	S	25° 32'	100° 30'	!	#	1979	Rio San Juan	S. A. R. H.
La Junta, Chihuahua	S	28° 45'	107° 59'	1,670	#Jan.	1925	Adjacent to Rio Conchos	C. N. A.
La Pomona, Nuevo Leon	S	24° 59'	99° 12'	!	#Mar.	1979	Rio San Juan	S. A. R. H.
La Trasquila, Chihuahua	S	29° 08'	107° 08'	!	#	1962	Adjacent to Rio Conchos	C. N. A.
Lag. de Salinillas, N. L.	S	27° 23'	100° 26'	230	#	1940	Rio Salado	S. A. R. H.
Lampazos, Nuevo Leon	S	27° 02'	100° 30'	341	#May	1903	Rio Salado	S. A. R. H.
Las Burras, Chihuahua	S	29° 31'	105° 25'	1,096	#July	1949	Rio Conchos	C. N. A.
Las Virgenes, Chihuahua	S	28° 09'	105° 38'	1,220	#	1943	Rio Conchos	C. N. A.

S Standard R Recording C Cumulative ! Not Available # Some months or years missing

LOCATION OF RAINFALL STATIONS ON THE RIO GRANDE WATERSHED

IN MEXICO

NAME OF STATION	TYPE GAGE	LATI-TUDE	LONGI-TUDE	ELEV. METERS	RECORD BEGAN	WATERSHED SUBDIVISION	OBSERVER
Madero (Los Aldamas), NL	S	26° 02'	99° 12'	!	#May 1970	Rio San Juan	C. N. A.
Miguel Aleman, Tamps.	S	26° 24'	99° 02'	56	# 1951	Falcon Dam-Rio Grande C.	S. A. R. H.
Mimbres Nuevo Leon	S	24° 58'	100° 16'	1,750	# 1958	Rio San Juan	S. A. R. H.
Monclova, Coahuila	S	26° 54'	101° 25'	586	1897	Rio Salado	C. N. A.
Muzquiz,Coahuila	S	27° 53'	101° 31'	504	#June 1923	Rio Salado	S. A. R. H.
Nueva Cd. Guerrero,Tamps.	S	26° 35'	99° 15'	106	#May 1954	Laredo - Falcon Dam	I. B. & W. C.
Nuevo Laredo, Tamps.	S	27° 30'	99° 30'	126	# 1950	Eagle Pass - Laredo	I. B. & W. C
Nuevo Laredo, Tamps.	S	27° 30'	99° 30'	126	# 1975	Eagle Pass - Laredo	S. M. N.
Ocampo, Coahuila	S	27° 19'	102° 24'	1,149	#May 1960	Adjacent to Rio Salado	S. A. R. H.
Ojinaga (IBWC), Chih.	S	29° 34'	104° 25'	788	#April 1954	Rio Conchos	I. B. & W. C.
Ojinaga, Chihuahua	S	29° 34'	104° 25'	800	# 1906	Rio Conchos	Meteor. Service of Mexico
Ojo Caliente, Chihuahua	S	27° 37'	105° 16'	1,222	# 1942	Rio Conchos	C. N. A.
Palestina, Coahuila	S	29° 09'	100° 59'	330	1931	Amistad-Eagle Pass	S. A. R. H.
Paras, Nuevo Leon	S	26° 30'	99° 31'	165	# 1958	Rio Alamo	S. A. R. H.
Parras, Coahuila	S	25° 27'	102° 10'	1,680	1958	Rio San Juan	S. A. R. H.
Piedras Negras, Coahuila	S	28° 43'	100° 31'	249	1907	Eagle Pass-Laredo	Meteor. Service of Mexico
Pobladores, Nuevo Leon	S	25° 31'	99° 24'	!	# 1982	Rio San Juan	S. A. R. H.
Potrero de Abrego, Coah.	S	25° 17'	100° 21'	!	# 1985	Rio San Juan	S. A. R. H.
Presa Cabeceras, Coah.	S	29° 09'	101° 07'	!	1964	Amistad-Eagle Pass	C. N. A.
Presa Carranza, Coah.	S	27° 31'	100° 37'	240	1927	Rio Salado	C. N. A.
Presa Centenario, Coah.	S	29° 13'	100° 57'	!	1964	Amistad-Eagle Pass	C. N. A.
Presa Chihuahua, Chih.	S	28° 34'	105° 10'	1,595	Oct. 1961	Rio Conchos	C. N. A.
Presa Luis L. Leon, Chih.	S	28° 57'	105° 17'	!	Oct. 1964	Rio Conchos	S. A. R. H.
Presa San Miguel, Coah.	S	29° 02'	100° 57'	!	1964	Amistad-Eagle Pass	C. N. A.
Progreso, Coahuila	S	27° 25'	101° 00'	370	#Feb. 1943	Rio Salado	S. A. R. H.
Ramos Arizpe, Coahuila	S	25° 32'	100° 57'	1,399	#April 1907	Rio San Juan	Meteor. Service of Mexico
Reata, Coahuila	S	26° 08'	101° 05'	936	#July 1944	Rio San Juan	S. A. R. H.
Represa Amistad, Coahuila	R	29° 26'	101° 02'	280	#June 1969	Amistad Dam-Eagle Pass	I. B. & W. C.
Retamal, Tamaulipas	S	26° 02'	98° 02'	82	#Oct. 1949	Lower Rio Grande Valley	I. B. & W. C.
Reynosa, Tamaulipas	R	26° 06'	98° 19'	40	# 1941	Lower Rio Grande Valley	C. N. A.
Rio Bravo, Tamaulipas	S	25° 59'	98° 06'	26	# 1958	Lower Rio Grande Valley	C. N. A.
Sabinas, Coahuila	S	27° 51'	101° 07'	340	1922	Rio Salado	C. N. A.
Sabinas, Hidalgo, N. L.	S	26° 30'	100° 10'	314	#May 1958	Rio Salado	I. B. & W. C.
Saltillo, Coahuila	S	25° 26'	101° 00'	1,610	1886	Rio San Juan	C. N. A.
San Antonio de las Alazanas, Coahuila	S	25° 15'	100° 35'	2,170	# 1958	Rio San Juan	S. A. R. H.
San Juan de Vaqueria,Coah	S	25° 15'	101° 13'	!	# 1980	Rio San Juan	C. N. A.
San Rafael, Tamaulipas	C	26° 54'	99° 30'	!	#Nov. 1967	Rio Salado	I. B. & W. C.
Sierra Mojada, Coahuila	S	27° 07'	103° 42'	1,256	1897	Johnson Ranch-Langtry	C. N. A.
Sombreretillo, Nuevo Leon	S	26° 18'	99° 58'	!	1970	Rio San Juan	S. A. R. H.
Tepehuaje, Nuevo Leon	S	25° 30'	99° 46'	!	#June 1979	Rio San Juan	S. A. R. H.
Vaqueria, Nuevo Leon	S	25° 08'	99° 04'	!	#Mar. 1979	Rio San Juan	S. A. R. H.
Vallecillo, Nuevo Leon	S	26° 40'	99° 59'	274	#June 1958	Rio Salado	S. A. R. H.
Villa Aldama, Chihuahua	S	28° 50'	105° 55'	1,262	#Aug. 1906	Rio Conchos	Meteor. Service of Chihuahua
Villa Cardenas, Tamps.	S	23° 56'	98° 55'		1953	Lower Rio Grande Valley	C. N. A.
Villa Hidalgo, Coahuila	S	27° 47'	99° 52'	200	# 1951	Eagle Pass-Laredo	I. B. & W. C.
Zaragoza, Coahuila	S	23° 58'	99° 46'	1,370	#Aug. 1977	Eagle Pass-Laredo	C. N. A.

S Standard R Recording ! Not Available # Some months or years missing

EVAPORATION IN THE RIO GRANDE BASIN IN THE UNITED STATES

In Millimeters

Tabulated below are records of evaporation observed at seven 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 46 meters, and all brush, tall weeds, and other obstructions within 30 meters of the fenced enclosures. Within the enclosures all vegetation has been eradicated or kept trimmed to within 0.10 meter 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," on preceeing pages of this bulletin.

Records were obtained by means of:

1. Standard National Weather Service pan. A circular pan, 1.22 meters in diameter and 0.25 meter deep, made of 22-gage galvanized iron, is set on a wooden platform with the rim of the pan 0.41 meter above the ground. The water level is maintained between 0.05 and 0.08 meter 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, 0.61 meter in diameter and 0.91 meter deep, made of 22-gage galvanized iron, is set in the ground with the rim of the pan 0.08 meter above the ground surface and the top covered with a circular screen of No. 4 (6 millimeter) galvanized hardware cloth. This type of pan, equipped with an automatic feed tank that maintains the water at a level 0.08 meter below the rim of the pan, was in operation at Martin King Ranch.

3. An evaporometer, developed by the United States Section of the Commission and calibrated against a 0.61 meter pan described above, was in operation at Presidio, Johnson Ranch, Long Ranch, and at a site 11.3 kilometers east of Brownsville.

Month	Presidio		Johnson Ranch		Martin King Ranch		Long Ranch	
	1996	Average 1949-1996	1996	Average 1949-1996	1996	Average 1956-1996	1996	Average 1971-1996
Jan.	75	83	174	91	161	84	81	57
Feb.	142	114	289	129	183	100	100	70
Mar.	148	180	281	210	246	164	93	115
April	190	220	541	259	349	204	225	146
May	352	263	888	316	394	227	198	158
June	179	281	398	322	499	270	349	197
July	261	267	668	324	509	307	311	223
Aug.	187	246	428	287	394	297	185	204
Sept.	121	198	270	233	216	216	248	154
Oct.	127	158	330	184	294	170	145	115
Nov.	68	108	224	121	153	112	55	68
Dec.	63	79	162	88	114	86	51	53
Total	1,913	2,197	4,653	2,564	3,512	2,237	2,041	1,560

Month	Amistad Dam		Falcon Dam		Brownsville			
	1996	Average 1963-1996	1996	Average 1956-1996	1996	Average 1958-1996		
Jan.	131	96	127	101	83	77		
Feb.	144	120	144	130	89	90		
Mar.	190	203	216	209	105	123		
April	277	251	285	255	134	151		
May	322	274	361	291	125	150		
June	392	324	382	334	153	159		
July	406	368	433	384	222	183		
Aug.	322	341	312	349	142	174		
Sept.	185	247	234	247	129	138		
Oct.	194	191	163	191	123	123		
Nov.	121	125	140	134	94	98		
Dec.	74	91	107	100	149	83		
Total	2,758	2,631	2,904	2,725	1,548	1,549		

EVAPORATION IN THE RIO GRANDE BASIN IN MEXICO

In Millimeters

Tabulated below are records of evaporation observed at nine stations operated and maintained by the Mexican Section of the Commission. Eight stations are along the Rio Grande from Cd. Acuna, Coahuila to Retamal, 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 46 meters and of all brush and tall weeds within 30 meters of the fenced enclosures. The Ojinaga station is 9 meters landward of the east Rio Conchos levee with a concrete V-shaped irrigation ditch and road between the levee and the 8 x 8-meter woven wire pen, which encloses a 150-cm evaporation pan and a 70 x 50-cm shelter with thermometers. Inside the enclosures, all vegetation has been eradicated or kept trimmed to within 0.08 meter of the ground surface. 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."

The type of pan used at all these stations was a standard National Weather Service-type pan, 1.22 meters in diameter and 254 millimeters inches deep, made of 22-gage galvanized iron, set on a wooden platform with the rim of the pan 406 millimeters above the ground. The water level was maintained between 51 and 76 millimeters 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 a Spanish water bulletin published by the Mexican Section of the Commission.

	Ojinaga, Chihuahua		La Amistad, Coahuila		Cd. Acuna, Coahuila		Jimenez, Coahuila	
Month	1996	Average 1954-1996	1996	Average 1977-1996	1996	Average 1951-1996	1996	Average 1951-1996
Jan.	62	87	115	88	108	82	105	93
Feb.	103	124	134	114	112	110	125	119
Mar.	145	201	180	182	158	184	216	185
April	146	249	245	230	216	215	271	208
May	464	312	318	250	249	239	325	235
June	395	326	319	293	292	280	314	278
July	266	312	358	335	315	316	300	312
Aug.	198	272	261	314	237	289	209	286
Sept.	140	212	173	231	147	207	163	210
Oct.	222	166	139	174	123	149	166	154
Nov.	174	105	109	112	78	93	135	101
Dec.	67	80	64	83	56	73	109	83
Total	2,382	2,446	2,415	2,406	2,091	2,237	2,438	2,264

	Villa Hidalgo, Coahuila		Nuevo Laredo, Tamaulipas		Nueva Cd. Guerrero, Tamaulipas		Cd. Mier, Tamaulipas	
Month	1996	Average 1951-1996	1996	Average 1964-1996	1996	Average 1954-1996	1996	Average 1955-1996
Jan.	115	90	67	97	110	84	123	90
Feb.	134	117	23	123	144	107	145	120
Mar.	180	179	52	200	213	181	223	196
April	245	227		253	284	218	295	235
May	318	258	213	276	327	252	340	266
June	319	301	363	325	354	289	381	307
July	358	341	418	367	409	332	402	352
Aug.	261	311	330	336	275	302	279	313
Sept.	173	227	214	248		220	169	236
Oct.	139	173	190	192	165	166		184
Nov.	109	113	136	128	148	117	141	122
Dec.	64	85	74	95	99	85	82	90
Total	2,415	2,422		2,640		2,353		2,511

	Retamal, Tamaulipas							
Month	1996	Average 1951-1996						
Jan.	115	98						
Feb.	125	115						
Mar.	153	166						
April	186	194						
May	245	206						
June	230	222						
July	277	250						
Aug.	256	243						
Sept.		192						
Oct.	171	157						
Nov.	117	112						
Dec.	77	96						
Total		2,051						

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 0.41 meters above the ground and 2.74 meters southwest of either a 0.61 or 1.22-meter 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 kilometers 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 – In Degrees Celsius

In The United States

Month	Amistad Dam, Texas				Falcon Dam, Texas			
	Mean 1996	Average 1963–1996	1996 Max.	1996 Min.	Mean 1996	Average 1950–1996	1996 Max.	1996 Min.
Jan.	12	10	29	–4	16	13	33	–4
Feb.	16	13	37	–1	19	15	39	–2
Mar.	17	17	32	–3	20	19	36	–1
April	23	22	41	6	25	24	42	6
May	30	25	38	10	29	27	41	15
June	32	28	42	19	31	29	42	22
July	33	30	40	23	32	30	42	22
Aug.	30	29	41	21	29	30	43	19
Sept.	27	26	35	10	29	27	41	14
Oct.	23	21	34	6	25	23	36	7
Nov.	18	16	30	1	22	18	36	5
Dec.	13	12	29	–6	17	14	31	–7
Yearly	23	21	42	–6	25	22	43	–7

In Mexico

Month	Ojinaga, Chihuahua				La Amistad, Coahuila				Cd. Acuna, Coahuila			
	Mean 1996	Average 1954–1996	1996 Max.	1996 Min.	Mean 1996	Average 1977–1996	1996 Max.	1996 Min.	Mean 1996	Average 1951–1996	1996 Max.	1996 Min.
Jan.	10	10	28	–1	11	11	27	–4	10	10	30	–7
Feb.	17	17	30	10	14	13	34	–3	14	12	37	–5
Mar.	18	18	37	–1	15	17	29	0	15	17	31	–1
April	25	25	39	12	15	22	38	5	22	22	39	4
May	27	27	42	12	28	26	37	14	28	25	38	14
June	31	31	43	21	31	29	42	20	31	29	42	21
July	30	30	40	21	33	31	42	23	32	30	41	23
Aug.	31	31	40	19	29	31	40	20	30	30	41	20
Sept.	24	24	35	14	26	27	34	11	26	26	35	8
Oct.	21	21	34	5	21	22	32	4	21	21	35	4
Nov.	15	15	32	–2	16	16	27	1	16	15	29	0
Dec.	10	10	26	–6	11	12	28	–5	11	11	29	–7
Yearly	22	22	43	–6	21	21	42	–5	21	21	42	–7

Month	Jimenez, Coahuila				Villa Hidalgo, Coahuila				Nuevo Laredo, Tamaulipas (13–20)			
	Mean 1996	Average 1951–1996	1996 Max.	1996 Min.	Mean 1996	Average 1951–1996	1996 Max.	1996 Min.	Mean 1996	Average 1964–1996	1996 Max.	1996 Min.
Jan.	11	11	27	–4	13	12	29	0	16	13	35	0
Feb.	14	14	39	–4	17	14	38	–3	14	15	34	–2
Mar.	17	18	38	0	17	19	34	–1	17	20	31	6
April	22	22	42	4	24	23	42	5	25	24	41	10
May	30	25	41	11	30	27	40	12	28	27	43	14
June	32	29	43	19	32	29	42	24	32	30	43	19
July	33	30	42	15	32	30	41	22	33	31	42	23
Aug.	31	30	41	21	31	30	42	20	31	31	42	22
Sept.	28	27	38	9	28	27	37	11	30	28	39	12
Oct.	22	22	38	1	24	22	37	3	22	24	36	10
Nov.	16	16	30	1	19	17	34	1	20	19	33	5
Dec.	12	12	27	–6	14	13	29	–6	15	15	30	–8
Yearly	22	21	43	–6	23	22	42	–6	24	23	43	–8

TEMPERATURE, HUMIDITY, AND WIND

Temperature – In Degrees Celsius

In Mexico

Month	Neuvo Cd. Guerrero, Tamaulipas				Cd. Mier, Tamaulipas							
	Mean 1996	Average 1958–1996	1996 Max.	1996 Min.	Mean 1996	Average 1955–1996	1996 Max.	1996 Min.				
Jan.	15	14	32	–1	16	13	34	–3				
Feb.	18	16	39	–1	20	16	39	0				
Mar.	18	20	35	2	20	20	37	2				
April	24	24	42	5	25	25	44	8				
May	29	27	40	10	32	28	43	12				
June	32	30	43	21	34	30	44	24				
July	32	31	41	22	34	31	43	24				
Aug.	30	30	42	22	31	31	43	22				
Sept.	29	28	40	15	24	28	35	7				
Oct.	24	24	37	8	25	24	37	7				
Nov.	21	19	35	5	21	19	33	2				
Dec.	16	15	31	–6	16	15	33	–7				
Yearly	24	23	43	–6	25	23	44	–7				

TEMPERATURE, HUMIDITY AND WIND

Mean Wind Speed – Kilometers Per Hour

In the United States

Month	Martin King Ranch, Texas		Amistad Dam, Texas		Falcon Dam, Texas	
	1996	Average 1956–1996	1996	Average 1963–1996	1996	Average 1950–1996
Jan.	5.4	3.9	5.4	3.2	3.5	3.4
Feb.	3.9	4.7	4.7	3.6	3.9	4.0
Mar.	8.1	6.1	6.0	4.2	5.2	4.5
April	9.8	6.4	5.7	4.3	7.0	5.1
May	14.2	7.0	7.1	4.3	9.1	5.2
June	11.6	7.5	5.8	4.5	7.0	5.3
July	11.2	7.1	5.0	4.2	7.6	5.5
Aug.	9.1	6.5	3.6	3.8	5.4	4.8
Sept.	6.8	5.2	2.2	3.4	3.9	3.7
Oct.	7.8	5.0	3.3	3.2	3.1	3.2
Nov.	8.0	4.3	5.0	3.1	6.9	3.5
Dec.	5.4	3.7	3.8	3.0	2.7	3.2
Yearly	8.4	5.6	4.8	3.7	5.4	4.3

Mean Relative Humidity – Percent

In the United States

Month	Amistad Dam, Texas		Falcon Dam, Texas	
	1996	Average 1963–1996	1996	Average 1950–1996
Jan.	44	60	44	67
Feb.	49	58	46	64
Mar.	45	53	41	61
April	40	56	42	62
May	56	63	50	65
June	49	62	45	64
July	49	59	40	60
Aug.	63	59	53	62
Sept.	69	63	49	66
Oct.	60	62	52	65
Nov.	64	61	69	66
Dec.	61	60	72	67
Yearly	54	60	50	64

In Mexico

Month	Nueva Cd. Guerrero, Tamaulipas	
	1996	Average 1961–1996
Jan.	64	77
Feb.	72	74
Mar.	75	70
April	70	71
May	69	76
June	67	74
July	68	71
Aug.	80	72
Sept.	70	76
Oct.	81	76
Nov.	75	76
Dec.	83	78
Yearly	73	74

DRAINAGE BASIN AND IRRIGATED AREAS
Along the Rio Grande and Tributaries - 1996

The total area within the outer rim of the Rio Grande basin is about 868,945 square kilometers, but it contains large areas, especially along its southwestern boundary, that contribute no surface runoff to the Rio Grande. Such noncontributing areas constitute about 47 percent of the total area, leaving 456,701 square kilometers of productive watershed which is listed in the tabulation below.

The irrigated areas shown below are listed in accordance with the location of their diversions 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.

On the United States side, only the areas irrigated in 1996 are shown, except that in the reaches below Falcon Dam, the figures shown represent acreages which were subject to irrigation in 1996 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 1996. The irrigated area data tabulated are the best data that could be obtained.

DESIGNATION OF AREAS AND GAGING STATIONS	Drainage Basin Square Kilometers			Irrigated Areas - Hectares		
	United States	Mexico	Total	United States	Mexico	Total
Above Elephant Butte Dam	67,141	0	67,141			
Elephant Butte Dam to Caballo Dam	3,354	0	3,354	0	0	0
Above Caballo Dam	70,495	0	70,495	0	0	0
Caballo Dam to American Dam	5,317	0	5,317	34,067	0	34,067
Above American Dam	75,812	0	75,812	34,067	0	34,067
American Dam to Acala Station	1,740	1,409	3,149	18,643	4,743	23,386
Above Acala Gaging Station	77,552	1,409	78,961	52,710	4,743	57,453
Acala Station to Fort Quitman Station	1,717	2,056	3,773	5,867	0	5,867
Above Fort Quitman Gaging Station	79,269	3,465	82,734	58,577	4,743	63,320
Fort Quitman Station to Above Presidio Station	4,263	3,652	7,915 a)	1,671	76	1,747
Above Presidio Station above Rio Conchos	83,532	7,117	90,649	60,248	4,819	65,067
Rio San Pedro above Francisco I. Madero Dam	0	10,778	10,778	0	12,183	12,183
Rio Conchos above Boquilla Dam	0	10,282	10,282	0	7,824	7,824
Boquilla Dam to Luis L. Leon Dam	0	38,490	38,490	0	4,203	4,203
Luis L. Leon Dam to mouth of river	0	8,837	8,837	0	4,730	4,730
Rio Conchos - Total	0	68,387	68,387	0	28,940	28,940
Alamito Creek above Gaging Station	3,895	0	3,895	0	0	0
Presidio Station Above Rio Conchos to Presidio Station below Rio Conchos - excluding above tributaries	881	235	1,116	580	99	679
Presidio Station above Rio Conchos to Presidio Station below Rio Conchos - Total	4,776	68,622	73,398	580	29,039	29,619
Above Presidio Station below Rio Conchos	88,308	75,739	164,047	60,828	33,858	94,686
Terlingua Creek above Gaging Station	2,771	0	2,771	0	0	0
Presidio Station below Rio Conchos to Johnson Ranch Station - excluding Terlingua Creek	2,831	5,848	8,679	261	498	759
Presidio Station below Rio Conchos to Johnson Ranch Station - Total	5,602	5,848	11,450	261	498	759
Above Johnson Ranch Gaging Station	93,910	81,587	175,497	61,089	34,356	95,445
Johnson Ranch Station to Foster Ranch Station	16,607	17,016	33,623	127	0	127
Above Foster Ranch Gaging Station	110,517	98,603	209,120	61,216	34,356	95,572
Pecos River above Girvin(In the State of Texas)	76,566	0	76,566	2,601	0	2,601
Pecos River, Girvin to Station near Langtry	14,548	0	14,548	0	0	0
Station near Langtry to Station at Mouth (Discontinued)	334	0	334	0	0	0
Pecos River - Total	91,448	0	91,448	2,601	0	2,601
Devils River above Pafford Crossing	10,259	0	10,259	0	0	0
Pafford Crossing to Station at Mouth (Discontinued)	891	0	891	0	0	0
Devils River - Total	11,150	0	11,150	0	0	0
Foster Ranch Station to Amistad Dam excluding above tributaries	1,033	6,164	7,197	0	0	0
Foster Ranch Station to Amistad Dam- Total	103,631	6,164	109,795	2,601	0	2,601
Above Amistad Dam	214,148	104,767	318,915	63,817	34,356	98,173
Amistad Dam to Below Amistad Dam Gaging Station	13	10	23	0	0	0
Above the Below Amistad Dam Gaging Station	214,161	104,777	318,938	63,817	34,356	98,173
Below Amistad Dam Station to Del Rio Station	155	259	414	96	19	115
Above Del Rio Gaging Station	214,316	105,036	319,352	63,913	34,375	98,288
Arroyo Las Vacas above Gaging Station	0	906	906	0	157	157
San Felipe Creek above Gaging Station	119	0	119	660	0	660

DRAINAGE BASIN AND IRRIGATED AREAS
Along the Rio Grande and Tributaries - 1996

DESIGNATION OF AREAS AND GAGING STATIONS	Drainage Basin Square Kilometers			Irrigated Areas - Hectares		
	United States	Mexico	Total	United States	Mexico	Total
Pinto Creek Above Gaging Station	645	0	645	101	0	101
Rio San Diego above Gaging Station	0	2,209	2,209	0	2,144	2,144
Gaging Station to mouth of river	0	16	16	0	855	855
Rio San Diego - Total	0	2,225	2,225	0	2,999	2,999
Del Rio Station to Jimenez Station - excluding above tributaries	1,733	285	2,018	b) 15,591	1,201	16,792
Del Rio Station to Jimenez Station - Total	2,497	3,416	5,913	15,591	4,357	19,948
Above the Jimenez Gaging Station	216,813	108,452	325,265	80,265	38,732	118,997
Rio San Rodrigo - Total	0	2,717	2,717	0	946	946
Jimenez Station to Piedras Negras Station-excluding Rio San Rodrigo	1,375	378	1,753	165	102	267
Jimenez Station to Piedras Negras Station-Total	1,375	3,095	4,470	165	1,048	1,213
Above Piedras Negras Gaging Station	218,188	111,547	329,735	80,430	39,780	120,210
Rio Escondido above Gaging Station	0	3,779	3,779	0	0	0
Rio Escondido - Total	0	3,810	3,810	0	0	0
Piedras Negras Station to El Indio Station - excluding Rio Escondido	614	533	1,147	0	556	556
Piedras Negras Station to El Indio Station - Total	614	4,343	4,957	0	556	556
Above El Indio Gaging Station	218,802	115,890	334,692	80,430	40,336	120,766
El Indio Gaging Station to Laredo Gaging Station	3,201	5,481	8,682	2,915	533	3,448
Above Laredo Gaging Station	222,003	121,371	343,374	83,345	40,869	124,214
Rio Salado above Venustiano Carranza Dam	0	41,002	41,002	0	0	0
Rio Salado-Venustiano Carranza Dam to Las Tortillas Gaging Station	0	18,969	18,969	0	1,780	1,780
Rio Salado-Las Tortillas Gaging Station to River Road Crossing	0	435	435	0	0	0
Rio Salado- Total	0	60,406	60,406	0	1,780	1,780
Laredo Station to Falcon Dam - excluding Rio Salado	5,289	3,437	8,726	c) 5,607	980	6,587
Laredo Station to Falcon Dam - Total	5,289	63,843	69,132	5,607	2,760	8,367
Amistad Dam to Falcon Dam - excluding above tributaries	12,380	10,383	22,763	25,135	3,391	28,526
Above Falcon Dam	227,292	185,214	412,506	88,952	43,629	132,581
Rio Alamo above Gaging Station	0	4,339	4,339	0	0	0
Rio San Juan above Marte Gomez Dam	0	33,010	33,010	0	0	0
Rio San Juan - Marte Gomez Dam to Camargo Gaging Station	0	505	505	0	32,186	32,186
Rio San Juan - Total	0	33,538	33,538	0	32,186	32,186
Falcon Dam to Rio Grande City Station - excluding above tributaries	575	637	1,212	1,711	390	2,101
Falcon Dam to Rio Grande City Station - Total	575	38,514	39,089	1,711	32,576	34,287
Above Rio Grande City Gaging Station	227,867	223,728	451,595	90,663	76,205	166,868
Rio Grande City Station to Anzalduas Dam	2,466	2,067	4,533	68,492	2,045	70,537
Anzalduas Canal				0	83,827	83,827
Above Anzalduas Dam	230,333	225,795	456,128	159,155	162,077	321,232
Anzalduas Dam to Progreso Station(Discontinued)	34	423	457	48,479	487	48,966
Above Progreso Gaging Station	230,367	226,218	456,585	207,634	162,564	370,198
Progreso Station to San Benito Station	18	23	41	126,513	135	126,648
Above San Benito Gaging Station	230,385	226,241	456,626	334,147	162,699	496,846
San Benito Station to Brownsville Station	36	39	75	28,912	1,216	30,128
Above Brownsville Gaging Station	230,421	226,280	456,701	363,059	163,915	526,974
Brownsville Station to Gulf of Mexico				1,653	0	1,653
Falcon Dam to Gulf of Mexico - excluding Rio Alamo and Rio San Juan				275,760	88,100	363,860
Amistad Dam to Gulf of Mexico excluding above tributaries				300,885	91,491	392,376
Above Gulf of Mexico				364,712	163,915	528,627

a) Area subject to irrigation during the year.
b) Includes 15,591 hectares irrigated from the Maverick Canal below Mile 13 gaging station.
c) Includes 45 hectares irrigated from small reservoirs.

08-4507.00 SUPPLEMENTARY DATA - INTERNATIONAL AMISTAD RESERVOIR
DEDUCED INFLOWS

Considering that a knowledge of the mean daily inflows reaching the International Amistad Reservoir would serve a useful purpose, such data have been deduced for 1996 showing the flows as closely as they can be approximated. These data are based on the daily operation of the International Amistad Reservoir, taking into account: a) record of gage heights at the dam; b) releases; c) filtrations; d) elevation-area-capacity tables based on 1992 survey; and e) rate of evaporation measured at the dam.

Flow contributions from different sources, 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 Foster Ranch, Pecos River near Langtry, and Devils River at Pafford Crossing.

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 Amistad Reservoir.

MEAN DAILY DISCHARGE IN CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	39.2	35.4	39.4	35.3	36.0	45.9	36.8	33.8	298	43.1	48.5	42.8
2	37.1	34.0	38.2	35.2	39.5	46.0	53.9	32.5	229	36.5	44.3	40.9
3	36.7	35.4	36.7	35.2	42.3	47.5	50.2	29.3	89.2	42.3	38.7	39.2
4	36.8	34.5	39.2	37.6	38.6	49.8	47.0	27.7	80.3	46.7	38.5	35.8
5	36.9	33.8	38.8	43.7	46.7	39.3	41.7	29.3	82.0	53.8	36.0	39.2
6	36.5	35.0	37.9	43.5	43.9	44.0	44.1	32.7	98.5	56.4	38.6	40.1
7	37.2	35.2	36.4	42.2	42.8	46.9	40.1	55.8	75.8	55.3	38.2	38.2
8	35.1	35.1	35.1	43.5	38.0	46.5	43.2	46.9	70.2	80.4	37.7	34.3
9	35.5	34.9	34.4	41.9	36.6	45.7	41.1	56.7	68.3	100	39.4	35.1
10	35.5	36.1	33.9	35.5	40.4	43.9	44.5	52.4	71.3	101	41.2	35.9
11	35.9	36.5	31.7	36.7	43.4	42.8	45.1	44.8	60.6	106	40.2	38.2
12	36.9	36.0	31.7	39.5	49.5	41.6	49.2	41.3	57.3	113	42.6	38.7
13	37.0	36.3	31.5	37.9	41.2	41.5	48.4	46.4	210	123	40.8	40.2
14	38.5	39.4	34.7	38.1	36.8	40.0	57.6	73.8	296	131	38.6	41.3
15	38.3	40.0	36.5	34.0	38.4	42.0	52.5	43.2	581	139	38.7	43.7
16	38.1	39.1	37.7	31.2	34.7	42.1	91.7	37.3	198	145	42.7	41.8
17	38.6	39.3	37.3	28.5	36.9	43.8	80.0	37.1	272	143	44.5	40.8
18	39.7	39.7	37.6	27.2	31.0	45.6	50.3	29.4	176	98.0	40.4	42.3
19	36.9	39.8	37.0	27.6	31.3	42.4	58.0	26.5	92.9	60.1	43.0	39.7
20	36.8	40.5	37.7	31.7	34.2	45.3	61.7	32.1	112	54.8	40.8	39.5
21	37.3	39.5	33.4	31.7	36.4	41.6	51.9	33.0	95.5	52.2	42.5	39.7
22	37.8	40.0	31.3	33.5	34.5	45.1	45.9	44.7	77.9	48.8	40.3	38.3
23	38.8	39.8	31.1	35.5	30.3	43.4	46.8	84.7	74.9	46.8	38.6	37.1
24	35.8	39.2	33.5	34.7	29.1	41.3	44.7	200	86.6	46.9	64.0	35.7
25	34.4	40.6	34.2	37.3	31.3	40.9	46.8	182	167	44.8	41.0	32.1
26	34.6	38.9	33.1	40.9	40.3	45.9	40.1	146	90.4	46.2	35.7	34.6
27	34.3	39.6	31.3	43.8	42.2	40.9	37.3	76.6	90.9	48.7	36.6	36.4
28	34.2	38.5	33.7	71.9	46.5	42.0	35.6	67.9	80.1	62.9	38.2	36.5
29	35.8	38.2	35.5	48.6	39.8	98.5	36.8	111	63.2	55.4	44.9	39.4
30	36.9		36.0	38.2	42.2	55.6	37.2	315	39.7	51.5	49.8	39.0
31	35.3		33.4		441		35.6	256		48.5		38.7
Sum	1,138.4	1,090.3	1,089.9	1,142.1	1,595.8	1,377.8	1,495.8	2,325.9	4,084.6	2,281.1	1,245.0	1,195.2

Current Year 1996								Period 1977-1996			
Month	Extreme Gage Meters		Extreme-Cubic Meters per Second				Average	Volume-Thousand Cubic Meters			
	High	Low	Day	ϕ High	Day	ϕ Low		Total	Average	Maximum	Minimum
Jan.			18	39.7	28	34.2	36.7	98,358	160,941	368,798	98,358
Feb.			25	40.6	5	33.8	37.6	94,202	155,194	432,864	92,197
Mar.			1	39.4	23	31.1	35.2	94,167	173,458	322,164	94,167
April			28	71.9	18	27.2	38.1	98,677	190,066	437,055	98,677
May			12	49.5	24	29.1	51.5	137,877	242,963	472,211	137,877
June			29	98.5	5	39.3	45.9	119,042	257,542	562,118	119,042
July			16	91.7	128	35.6	48.3	129,237	253,020	496,282	107,307
Aug.			30	315	19	26.5	75.0	200,958	329,038	1,037,318	124,908
Sept.			15	581	30	39.7	136	352,909	382,756	1,624,752	114,484
Oct.			16	145	2	36.5	73.6	197,087	382,361	1,172,715	110,732
Nov.			24	64.0	26	35.7	41.5	107,568	178,454	560,631	99,013
Dec.			15	43.7	25	32.1	38.6	103,265	142,903	321,211	97,632
Yearly				581		26.5	54.8	1,733,347	2,848,696	5,003,493	1,595,141

ϕ Mean daily

! And other days

08-4611.00 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 1996 showing the flows as closely 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 1992 survey; and d) rate of evaporation measured at the dam and 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 CUBIC METERS PER SECOND 1996 --- ANNUAL AND PERIOD SUMMARY

Day	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	56.4	45.7	24.4	11.5	128	176	61.6	21.6	255	45.0	174	23.6
2	33.8	29.4	10.5	15.9	74.6	196	51.1	12.3	206	59.1	43.7	42.9
3	11.7	30.9	29.9	30.7	71.0	156	72.3	21.6	107	76.1	39.0	46.4
4	33.8	24.8	32.7	44.8	68.6	171	52.1	18.2	64.0	123	36.8	38.0
5	57.2	28.4	32.4	29.1	77.8	142	24.3	24.0	45.6	131	42.9	33.0
6	39.4	41.8	35.3	15.5	62.2	105	27.9	23.1	49.9	95.2	25.6	46.7
7	21.7	57.5	36.5	51.5	89.3	77.1	19.6	20.3	46.5	91.3	66.4	32.3
8	24.3	48.9	7.80	74.1	90.5	71.5	29.1	41.9	37.2	78.4	26.4	39.3
9	49.4	51.8	15.7	47.0	71.6	66.6	48.6	35.4	39.2	57.7	25.7	35.9
10	45.6	51.5	28.7	20.1	99.3	53.5	63.8	13.7	49.6	48.2	38.0	47.9
11	33.7	33.8	26.1	47.8	84.7	66.1	269	31.9	40.1	40.6	24.5	38.9
12	37.6	31.6	20.8	32.2	60.6	61.3	157	19.7	56.3	47.0	45.6	40.5
13	38.2	33.2	35.5	36.6	62.5	64.6	113	30.3	43.8	40.4	38.4	27.9
14	49.0	32.1	39.0	38.8	65.9	55.2	68.9	40.2	175	30.0	29.3	26.1
15	32.1	39.6	27.9	28.3	59.3	62.1	43.0	28.0	180	41.1	26.7	28.5
16	42.0	29.2	29.9	2.92	56.3	58.5	33.1	21.8	124	32.0	41.3	33.6
17	54.2	23.1	25.8	15.7	57.9	65.6	13.0	17.6	110	37.7	46.9	13.2
18	35.3	42.5	52.1	31.1	61.9	63.9	29.7	21.2	186	33.9	30.9	29.5
19	31.4	28.5	4.17	37.3	61.9	56.0	12.9	27.2	280	26.3	35.0	9.90
20	40.8	36.0	13.9	18.5	61.1	63.6	30.0	29.6	203	18.9	44.4	60.0
21	29.7	30.6	19.3	13.7	62.3	58.1	15.3	30.2	109	36.8	54.2	29.7
22	41.4	29.6	21.1	46.4	59.2	58.2	18.2	53.6	72.3	25.2	23.3	51.9
23	38.7	46.3	28.4	5.37	54.8	66.0	24.7	64.7	48.6	30.7	9.86	67.2
24	38.6	23.1	38.6	3.54	38.3	52.0	20.8	138	47.5	29.7	19.4	58.4
25	49.9	28.9	29.5	23.7	48.7	69.7	17.4	210	70.3	41.5	46.9	43.5
26	26.0	28.1	8.76	55.4	73.1	55.5	18.3	163	229	30.2	27.6	22.9
27	29.1	43.4	18.3	55.6	72.3	61.8	26.5	179	183	27.8	58.6	45.2
28	38.3	42.7	23.0	60.7	59.4	54.8	27.0	102	79.9	31.2	43.8	41.6
29	34.3	5.14	40.2	26.3	59.5	65.3	18.8	69.5	63.1	45.7	8.59	37.2
30	33.3		35.5	32.3	224	57.8	15.6	77.8	58.0	103	35.2	45.2
31	36.8		16.7		206		16.5	170		262		42.4
Sum	1,163.7	1,018.14	808.43	952.43	2,422.6	2,430.8	1,439.1	1,757.4	3,258.9	1,816.7	1,208.95	1,179.30

Current Year 1996

Month	Extreme Gage Meters High	Extreme Gage Meters Low	Extreme Cubic Meters per Second Day	ϕ High	Day	ϕ Low	Average	Volume-Thousand Cubic Meters Total	Period 1968-1996 Average	Maximum	Minimum
Jan.			5	57.2	3	11.7	37.5	100,544	169,393	311,728	62,457
Feb.			7	57.5	17	23.1	35.1	87,967	205,611	558,835	67,760
Mar.			18	52.1	19	4.17	26.1	69,848	220,229	552,528	65,454
April			8	74.1	16	2.92	31.7	82,290	259,411	705,205	61,564
May			30	224	24	38.3	78.1	209,313	402,294	948,240	125,635
June			2	196	24	52.0	81.0	210,021	363,320	950,659	57,491
July			11	269	19	12.9	46.4	124,338	322,866	1,302,981	41,298
Aug.			25	210	2	12.3	56.7	151,839	284,143	1,262,218	79,452
Sept.			19	280	8	37.2	109	281,569	433,492	1,779,529	128,943
Oct.			31	262	20	18.9	58.6	156,963	386,376	1,684,800	69,890
Nov.			1	174	29	8.59	40.3	104,453	200,840	664,762	50,154
Dec.			23	67.2	19	9.90	38.0	101,892	167,411	376,047	52,879
Yearly				280		2.92	53.2	1,681,037	3,415,386	7,690,727	1,578,946

ϕ Mean daily