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WATER BULLETIN NUMBER 14

Flow of the Rio Grande and Tributary Contributions

From San Marcial, New Mexico
to the Gulf of Mexico

1944

WITH MAXIMUMS, MINIMUMS AND NORMALS

STORAGE CAPACITIES AND WATER IN STORAGE

SOURCES OF RIVER FLOW

DIVERSIONS

SILT, CHEMICAL AND SANITARY ASPECTS OF WATER QUALITY

RAINFALL AND EVAPORATION

DRAINAGE BASIN AND IRRIGATED AREAS

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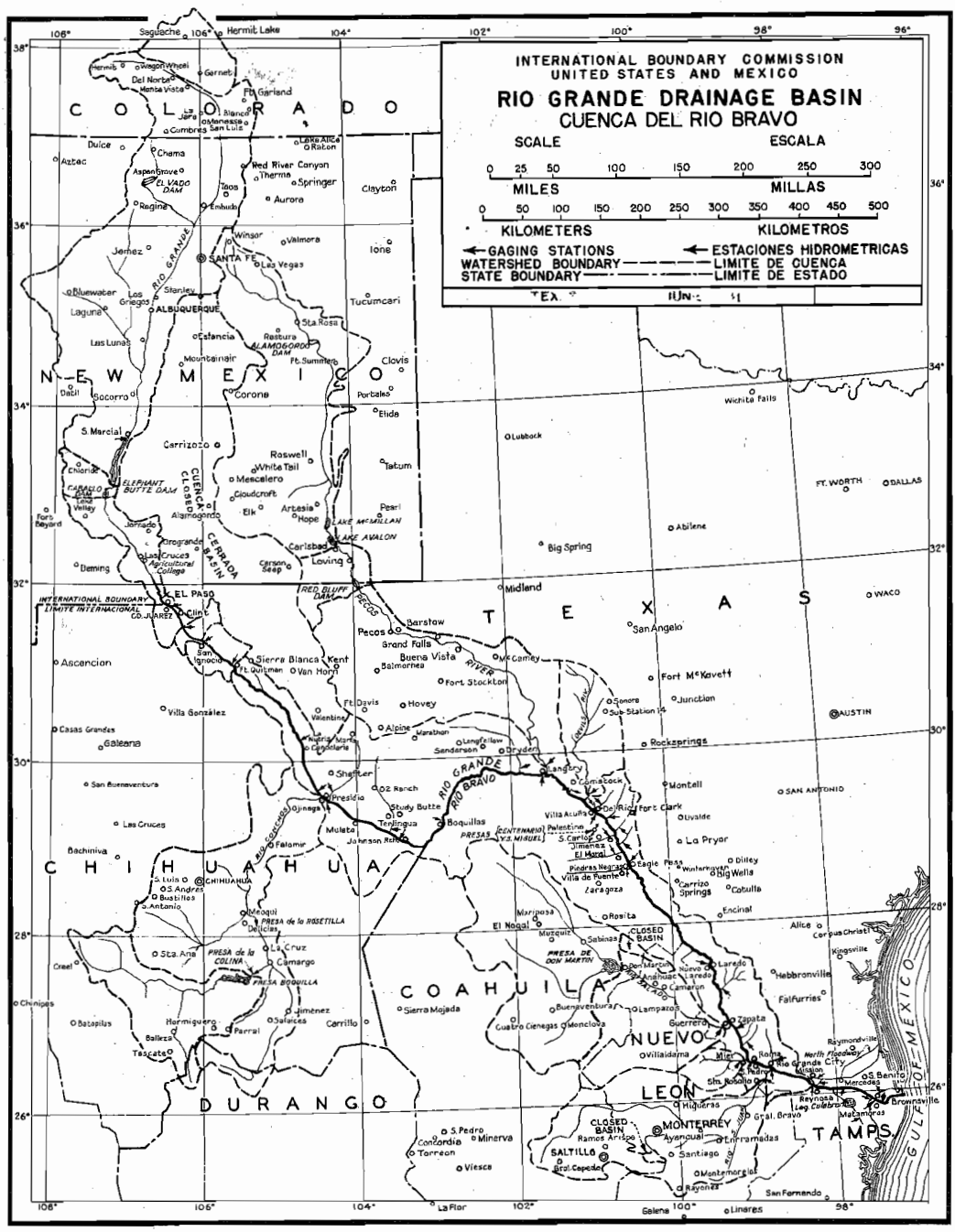


RIO GRANDE DRAINAGE BASIN

CUENCA DEL RIO BRAVO

FOREWORD

This compilation of stream discharges and related data is the fourteenth unified publication relative to the cooperative determination of the flow of the international portion of the Rio Grande. The first such publication was Water Bulletin No. 1, covering the year 1931. These data are published jointly by the United States and Mexican Sections of the International Boundary Commission and represent the results of stream flow measurements and related data from the Rio Grande and important tributaries near their confluence, from San Marcial, New Mexico, which is at the head of Elephant Butte reservoir, to the Gulf of Mexico, for the year 1944 as well as adjustments to and authentications of hydrographic records.

International stream gaging was begun in 1889 with the operation of the station at El Paso, Texas. A number of stations on the Lower Rio Grande and tributaries below El Paso were established in 1900 and operated until 1914. From 1914 to 1923, all such work was suspended except for a few months in 1919 and 1920. In 1923 the work was resumed and carried on independently by the two countries until 1931, when the present cooperative work began.

The duties and functions of the United States Section of the International Water Commission were transferred to the United States Section of the International Boundary Commission by Act of June 30, 1932. On January 1, 1932, the Mexican Section of the International Boundary Commission similarly took over the duties of the Mexican Section of the International Water Commission. On January 1, 1935 an International Water Commissioner for Mexico was again appointed, and though separated, the two Commissions functioned as one. In January 1941, the two Mexican Commissions were again combined into one.

This cooperative arrangement for obtaining hydrologic data is the result of the concurrence and agreement by both sections of the International Commission that a coordinated result should be insured and that an accurate and complete hydrographic record of international flow is necessary.

Of stream gaging stations on the Rio Grande, those at Juarez, Eagle Pass, Laredo, Roma, Buenos Aires, and Matamoros were operated in 1944 by the Mexican Section of the Commission, the others by the United States Section. Each section operated the gaging stations on tributaries entering the Rio Grande from its own country, or on floodways or diversions within its borders.

Of the 335,500 square miles of total area within the outer rim of the Rio Grande Basin, about 48.8% yield no run-off to the Rio Grande, leaving 171,887 square miles of productive watershed. Approximately 2,870,000 acre feet per year is the average virgin yield of the upper 61,600 square miles of watershed above Fort Quitman and Girvin (on the Pecos) where 1,140,000 acres are irrigated and 3,600,000 acre feet of reservoir capacity regulates the flow. Approximately 3,630.000 acre feet per year is the average virgin yield of the upper 33,600 square miles of the Rio Conchos, Rio Salado, and Rio San Juan where 458,000 acres are irrigated and 3.522.000 acre feet of reservoir capacity regulates the flow. About 2,562,000 acre feet per year is the average virgin yield of the remaining lower 76,700 square miles of watershed in both countries where 764.000 acres are irrigated and only 290,000 acre feet of reservoir capacity regulates the flow. From the Rio Grande 3.750,000 acre feet per year, average, escapes to the Gulf of Mexico.

For finding all of the data for a particular stream measuring station or a particular subject, etc.; please refer to the index to all Water Bulletins included herein.

A factual picture of the Rio Grande along the international boundary, the various important aspects of the quantity and quality of its water and the uses thereof, is more easily gained from the mass of essential detailed data in the Water Bulletins if the reader will look to the generalizations of the data which appear at the lower side and right-hand side of the tabulations and also to the maps and graphs.

Acknowledgments

Some of the data published herein relative to drainage basin and irrigated areas, chemical and bacteriological analyses, stored water, evaporation and rainfall have been furnished by the following agencies within the two countries: United States Department of Agriculture, United States Bureau of Reclamation, United States Army. U. S. Soil Conservation Service, Rio Grande Compact Commission. Texas Agricultural and Mechanical College, Texas State Board of Health, El Paso City-County Health Unit, El Paso Department of Water and Sewerage, Cameron County Health Unit, Red Bluff Water Power Control District, National Irrigation Commission of Mexico, Cia. Agricola y de Fuerza Electrica del Rio Conchos, S.A., Mexican Department of Agriculture and Development. National Bank of Agricultural Credit of Mexico, Meteorological Service of Mexico, and private individuals and corporations. Specific acknowledgment is made where the data appear.

FOREWORD

General Hydrologic Conditions for 1944

Along and Adjacent to The International Portion of the Rio Grande

During 1944, the precipitation was, in general, slightly above normal and evaporation and temperature were, in general, about normal on both sides of the Rio Grande basin.

As a whole, the monthly average amount of water in storage on the United States side and on the Mexican side of the Rio Grande basin was a little above normal. Some of the reservoirs on both sides were below normal, notably Don Martin Reservoir in Mexico, and the reservoirs on the Pecos River in the United States.

The yearly flow of the Rio Grande was about normal from San Marcial to Upper Presidio. From Lower Presidio to Laredo, it was very much below normal, and from the Rio Salado to the Gulf, it was a little below normal, except at Rio Grande City, where it was a little above normal due to excessive flow from the Rio San Juan from Mexico.

Except for Alamito Creek, all measured tributaries on the United States side flowed less than normal in 1944. For the second successive year the flow from Goodenough spring was the minimum flow of record. All measured Mexican tributaries above Zapata flowed less than normal, except Arroyo Las Vacas which flowed the maximum annual volume of record. Below Zapata, the Rio Alamo contributed its greatest annual volume of record and the Rio San Juan flow was about 174% of normal.

Flood peaks in 1944 were not numerous nor high. Above Zapata only one or two relatively small floods occurred, notwithstanding the fact that a 25,000 second foot flood peak wrecked the Las Vacas Creek gaging station on the Mexican side opposite Del Rio. At Rio Grande City, only three flood peaks greater than 50,000 second feet passed. The two largest of these (one of 87,700 and the other of 106,000 second feet) caused some flow in the floodways on the United States side of the Lower Rio Grande Valley. On the Mexican side, they destroyed the Buenos Aires gaging station and caused the greatest rate of overflow on the Mexican side in the last 15 years. At Lower Brownsville, the highest flood crest was 26,200 second feet on September 15. and the flow here was above 14,000 second feet from August 25 to October 2.

In contrast, there was a shortage of irrigation water in the Lower Rio Grande Valley with no flow passing Lower Brownsville part, or all, of each day for seven days in July and 20 days in August.

The amount of water consumed in irrigation per acre of land was about normal, thus reflecting the near normal rainfall, evaporation, and temperatures. There was an overall decrease in the acreage irrigated on the United States side within the basin, as well as the Mexican side; consequently, the total water diverted and consumed in irrigation in the basin was below normal.

Municipal diversions from the Rio Grande were, in general, above normal.

The 1944 sanitary sampling and assaying of Rio Grande water extended from above El Paso to below Laredo.

Along two stretches of the river, the chloride content of the water was found to be above the 250 parts per million concentration recommended as a limit for municipal use. These stretches of river were from below El Paso to Presidio, and from the Pecos River's confluence to the Gulf. In this latter stretch, the high chloride concentration was shown to coincide with abnormally high salt concentration in the Pecos River.

The annual tonnage of salts, or total dissolved solids carried by the Rio Grande in 1944, were slightly below normal in the stretch from San Marcial to the Pecos. From the Pecos to the Gulf, the annual tonnage was very much below normal. The total tonnage of salts leaving the El Paso-Juarez valley at Fort Quitman gaging station was a little greater than that entering the valley at El Paso Station. In fact, the data since 1929 now indicate that salts are deposited in the valley in those years when the annual flow at Fort Quitman is less than about 255,000 acre feet per year, and when the annual flow is more than that, then salts are removed from the valley. In 1944, for the fourth successive year. the contribution to Rio Grande flow by the Pecos River was very much above normal salt concentration; the average concentration being 5.22 tons per acre foot. A fuller understanding of this menacing development may be gained from page 70 of Water Bulletin No. 12.

At San Marcial, New Mexico. at Eagle Pass, and at Roma, there passed down the Rio Grande, respectively, 4,740, 4,750, and 11,200 acre feet of suspended silt. These amounts were, respectively, 45.7%, 49.7%, and 87.8% of normal. The suspended silt discharged from the Rio Alamo was 1,990 acre feet which was 316% of normal. The records for 1943 and 1944 show suspended silt at Buenos Aires and at Retamal Canal to be about the same percent by weight as at Roma; the Pecos River discharge was found to be less than .01% of suspended silt by weight in 1944.

RIO GRANDE AT SAN MARCIAL STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car and winch located at railroad bridge about one mile below San Marcial, New Mexico, and 177.1 miles above the American Dam at El Paso, Texas. The recorder is on the upstream end of the first bridge pier from the south abutment of the bridge and the zero of its gage is 4,455.38 feet, United States Coast and Geodetic Survey sea level datum. On February 17, 1943, while the deck of the railroad bridge was being raised about 12 feet, the recorder was moved to the downstream side of the Val Verde highway bridge 1.8 miles upstream from the railroad bridge. Elevation of zero of the gage at the highway bridge was not determined. The recorder was returned to the original location on the railroad bridge on June 25, 1943.

RECORDS: Based upon 122 meter measurements by wading and from cable about 1,000 feet above railroad bridge. Computations by shifting channel methods. 1944 records good. Records available: January 1895 to December 1944. Monthly records 1895-1943 will be found in Water Bulletin No. 13.

REMARKS: For gage history 1895 to 1938 see Water Bulletins Nos. 4, 7, and 8. El Vado and smaller reservoirs and many irrigation diversions and drainage returns above this station in Colorado and New Mexico, modify the river flow.

COMPARATIVE FLOWS FROM RECORDS: Momentary Peak: Max. October 11, 1904, 50,000 sec. ft. with water surface level of 4,459.5 feet on U.S.C.& G.S. datum about .25 mile above the present station gage. This is the greatest flood peak flow in, at least, the past 116 years, or since 1828. Min. sometimes dry. See Water Bulletin No. 6, page 79, for large peak flows since 1828 and their average frequency.

Average Daily: Max. Oct. 11, 1904, 33,000 sec. ft.; Min. sometimes dry.
Average Monthly: Max. May 1941, 16,159 sec. ft.; Min. sometimes dry.
Average Yearly: Max. 1941, 3,911 sec. ft.; Min. 1902, 277 sec. ft.
Average of Two Successive Years: Max. 1941-1942, 3,300 sec. ft.; Min. 1899-1900, 487 sec. ft.
Average of Three Successive Years: Max. 1905-1907, 2,830 sec. ft.; Min. 1900-1902, 609 sec. ft.
Average of Four Successive Years: Max. 1905-1908, 2,390 sec. ft.; Min. 1899-1902, 539 sec. ft.
Average of Five Successive Years: Max. 1905-1909, 2,260 sec. ft.; Min. 1898-1902, 697 sec. ft.
Average of Ten Successive Years: Max. 1903-1912, 1,980 sec. ft.; Min. 1931-1940, 1,140 sec. ft.
Average of Fifty Years: 1895-1944, 1,560 sec. ft.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	792	798	714	567	589	7,310	2,000	254	197	971	514	668
2	‖ 780	776	674	460	815	7,170	1,830	194	136	735	554	646
3	‖ 768	743	627	527	977	7,410	1,900	144	85.4	511	478	642
4	‖ 755	685	636	551	767	7,660	1,910	113	72.2	408	444	620
5	743	692	641	553	759	8,190	1,910	74.7	89.2	371	395	548
6	665	741	730	463	943	8,280	1,920	62.9	80.6	285	341	564
7	648	802	896	326	906	7,770	1,780	130	55.6	279	403	713
8	374	700	966	323	855	7,160	1,660	194	60.3	275	511	734
9	278	671	830	411	1,100	5,940	1,860	313	42.2	273	578	743
10	282	681	704	610	1,470	4,660	1,920	453	28.5	265	554	724
11	261	695	605	752	2,200	3,980	2,150	1,040	29.0	228	530	700
12	278	696	563	1,160	3,570	3,910	1,950	1,460	41.6	238	472	734
13	399	722	552	1,070	4,890	3,680	1,560	1,460	178	213	429	764
14	362	733	449	689	5,650	3,430	1,360	1,040	172	195	422	767
15	371	700	598	697	6,540	3,900	1,180	958	158	194	457	730
16	437	635	736	1,030	7,480	3,780	1,140	985	186	250	462	703
17	471	676	858	1,200	7,520	3,300	1,140	839	265	458	476	703
18	610	664	772	1,020	8,200	3,090	1,140	978	334	2,070	505	702
19	720	734	783	1,060	9,090	3,250	991	1,380	413	2,660	498	683
20	855	698	710	1,020	9,290	3,260	722	2,260	547	2,260	482	670
21	968	663	837	‖ 900	8,410	2,760	808	2,470	477	3,200	476	689
22	825	627	1,020	‖ 800	8,350	2,650	1,510	1,580	344	1,460	508	673
23	787	676	1,050	‖ 830	7,960	2,420	2,770	897	249	926	529	684
24	735	749	941	833	7,590	2,000	1,940	537	203	718	557	687
25	694	804	826	924	7,180	1,770	1,410	327	258	680	557	718
26	721	754	705	845	6,990	2,380	1,170	399	272	607	577	781
27	1,080	729	687	626	7,500	2,990	939	425	407	593	622	845
28	1,500	710	642	507	9,200	2,510	744	420	523	680	687	925
29	1,050	748	707	550	9,460	2,120	585	396	497	620	707	903
30	850		594	573	8,830	2,140	456	398	632	575	708	942
31	827		583		8,060		354	319		526		902
Sum	20,886	20,702	22,636	21,877	163,141	130,870	44,709	22,500.6	7,032.6	23,724	15,433	22,507

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High	Day	Low	Day	Average Second Feet	Total Acre Feet	Period 1924-1944 Acre Feet Normal	Maximum	Minimum
Jan.	10.57	8.29	1,700	28	19.3	8	674	41,400	44,417	72,600	17,400
Feb.	10.51	9.99	833	13	538	22	714	41,100	47,763	77,100	29,600
Mar.	10.84	9.97	1,080	22	353	14	730	44,900	60,058	119,000	23,400
Apr.	11.03	9.86	1,430	12	280	8	729	43,400	130,873	432,000	16,850
May	13.24	10.60	9,650	29	545	1	5,260	324,000	288,478	994,000	4,450
June	13.00	11.47	8,750	6	1,720	25	4,360	260,000	167,760	609,000	228
July	13.05	10.55	3,500	23	286	31	1,440	88,700	60,647	246,000	0
Aug.	12.56	9.78	2,680	21	58.0	6	726	44,600	48,104	275,000	1,620
Sept.	11.89	9.84	1,070	30	27.3	11	234	13,900	54,658	308,000	2,920
Oct.	13.40	10.71	3,420	21	166	15	765	47,100	42,458	221,000	0
Nov.	12.12	11.27	736	28	310	6	514	30,600	34,755	171,000	2,550
Dec.	12.36	11.62	946	28	432	6	726	44,600	44,213	95,300	15,100
Yearly	13.40	8.29	9,650		19.3		1,410	1,024,300	1,024,184	2,832,100	244,489

‖ Estimated.

RIO GRANDE AT BELOW ELEPHANT BUTTE DAM STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car with winch. Prior to January 17, 1939, the recorder was located at the south side of the pool immediately below the dam. The cable was 1 mile below the recorder. Zero of this gage was elevation 4,255.10 feet on United States Coast and Geodetic Survey sea level datum. On January 17, 1939, a temporary water-stage recorder was established 1900 feet below the dam with zero of the gage at elevation 4,242.24. On March 29, 1939, the zero of this gage was changed to elevation 4,240.94 on the above-mentioned sea level datum. On April 25, 1942, the water-stage recorder was moved to a point 100 feet above the cable. Zero of this gage is 4,242.09 feet on the above-mentioned sea level datum. Elephant Butte Dam is 135.1 river miles above the American Dam at El Paso.

RECORDS: Based upon 52 meter measurements during the year and a stable rating curve. Records available 1915 to 1944. 1944 records excellent. Records furnished by the El Paso Office of the United States Bureau of Reclamation. Monthly records 1915-1943 will be found in Water Bulletin No. 13.

REMARKS: The station described here is operated by the Reclamation Bureau. It has been the official station since 1931. Prior to 1931 it was located at other points in the immediate vicinity. See United States Geological Survey Water Supply Papers. The river flow at this station is completely modified by irrigation diversions, drainage returns and reservoirs. Elephant Butte Dam is 42.0 river miles downstream from the San Marcial gaging station at the upper end of Elephant Butte Reservoir. Beginning December 1940 hydro-electric power generation facilities for 27,000 K.V.A. began operating here.

COMPARATIVE FLOWS FROM RECORDS: Average Daily: Max., May 22, 1942, 8,200 sec. ft.; Min., varies according to power generation.

Average Monthly:	Max.	May 1942,	7,590 sec. ft.;	Min.	Jan. 1930,	3.0	sec. ft.
Average Yearly:	Max.	1942,	2,510 sec. ft.;	Min.	1935,	881	sec. ft.
Average of Two Successive Years:	Max.	1941-1942,	1,930 sec. ft.;	Min.	1918-1919,	946	sec. ft.
Average of Three Successive Years:	Max.	1941-1943,	1,660 sec. ft.;	Min.	1935-1937,	985	sec. ft.
Average of Four Successive Years:	Max.	1941-1944,	1,550 sec. ft.;	Min.	1934-1937,	1,020	sec. ft.
Average of Five Successive Years:	Max.	1938-1942,	1,430 sec. ft.;	Min.	1933-1937,	1,040	sec. ft.
Average of Ten Successive Years:	Max.	1916-1925,	1,270 sec. ft.;	Min.	1928-1937,	1,060	sec. ft.

Average of Thirty Years: 1915-1944, 1,220 sec. ft.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,090	1,120	1,180	1,140	1,100	1,160	1,190	1,620	1,140	890	1,120	1,250
2	1,010	1,100	1,190	1,010	1,220	1,190	675	1,630	1,210	993	1,130	911
3	1,080	1,120	1,260	1,100	1,150	1,150	1,070	1,660	872	1,120	1,130	1,050
4	1,060	1,200	1,190	1,180	1,180	901	986	1,750	862	1,060	1,090	1,220
5	1,120	1,160	1,030	1,180	1,190	1,090	1,120	1,630	995	1,130	937	1,250
6	1,380	983	1,130	1,200	1,190	1,110	1,280	1,390	1,120	1,060	1,030	1,300
7	1,500	1,090	1,130	1,200	974	1,250	1,500	1,650	1,040	1,060	1,120	1,350
8	1,560	1,140	1,180	1,140	1,160	1,570	1,410	1,490	1,180	934	1,160	1,430
9	1,170	1,180	1,190	1,030	1,260	1,350	1,150	1,480	1,200	1,020	1,110	1,370
10	1,420	1,170	1,140	966	1,260	1,380	1,250	1,430	1,060	1,150	1,110	1,060
11	1,390	1,110	1,140	1,040	1,220	1,110	1,520	1,580	1,170	1,140	1,090	1,300
12	1,390	1,130	1,120	1,160	1,210	1,320	1,580	1,560	1,210	1,180	898	1,430
13	1,250	993	1,050	1,160	1,200	1,400	1,700	1,290	1,160	1,150	1,140	1,390
14	1,080	1,140	1,250	1,200	958	1,420	1,750	1,530	1,180	1,090	1,210	1,320
15	1,020	1,140	1,180	1,130	1,110	1,470	1,750	1,440	1,200	857	1,230	1,270
16	907	1,210	1,200	1,000	1,210	1,330	1,480	1,560	1,180	1,030	1,270	1,180
17	990	1,160	1,200	1,130	1,250	1,330	1,600	1,540	1,000	1,210	1,290	1,020
18	1,020	1,180	1,220	1,160	1,260	1,160	1,470	1,600	1,150	1,140	1,210	1,310
19	1,070	1,190	984	1,190	1,260	1,240	1,770	1,620	1,150	1,130	1,000	1,400
20	1,030	979	1,240	1,190	1,300	1,310	1,730	1,480	1,180	1,150	1,130	1,570
21	1,050	1,130	1,160	1,290	928	1,230	1,670	1,610	1,160	1,110	1,210	1,590
22	1,140	1,130	1,160	1,210	1,130	1,200	1,660	1,520	1,150	991	1,130	1,510
23	1,000	1,190	1,180	1,110	1,160	1,250	1,420	1,240	1,170	1,150	1,100	1,350
24	1,160	1,150	1,210	1,180	1,170	1,220	1,630	1,240	984	1,220	1,090	1,120
25	1,240	1,170	1,170	1,250	1,230	989	1,680	1,200	1,180	1,170	1,040	984
26	1,490	1,170	1,080	1,220	1,090	1,000	1,740	1,150	1,090	1,160	918	1,240
27	1,550	1,040	1,150	1,220	1,110	1,152	1,740	998	1,060	1,100	1,000	1,240
28	1,260	1,120	1,230	1,200	907	1,190	1,700	1,070	1,130	1,100	1,170	1,290
29	1,070	1,230	1,260	1,240	958	1,190	1,760	1,100	1,090	974	1,210	1,260
30	944		1,220	1,010	1,160	1,130	1,630	1,100	1,130	1,080	1,200	1,450
31	1,010		1,190		1,170		1,650	1,100		1,200		1,110
Sum	36,451	32,825	36,214	34,436	35,675	36,792	46,261	44,258	33,403	33,749	33,473	39,525

Month	1944 Extreme Gage Feet High	Low	ϕ Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1924-1944 Acre Feet Normal	Maximum	Minimum
Jan.			8	1,560	16	907	1,180	72,300	16,932	86,500	184
Feb.			29	1,230	20	979	1,130	65,100	32,756	76,300	969
Mar.			3	1,260	19	984	1,170	71,800	60,796	88,700	1,520
Apr.			21	1,290	10	966	1,150	68,300	109,486	162,000	57,200
May			20	1,300	28	907	1,150	70,800	117,648	467,000	67,800
June			8	1,570	4	901	1,230	73,000	125,971	363,000	64,400
July			19	1,770	2	675	1,490	91,800	124,652	211,000	73,900
Aug.			4	1,750	27	998	1,430	87,800	117,076	161,000	74,700
Sept.			2	1,210	4	862	1,110	66,300	72,371	129,000	25,000
Oct.			24	1,220	15	857	1,090	66,900	27,749	72,100	506
Nov.			17	1,290	12	898	1,120	66,400	27,223	158,000	884
Dec.			21	1,590	2	911	1,280	78,400	26,006	87,300	916
Yearly				1,770		675	1,210	878,900	858,666	1,818,800	637,544

ϕ Mean Daily.

RIO GRANDE AT BELOW CABALLO DAM STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car and winch located .80 river mile below Caballo Dam, and 106.8 river miles above American Dam at El Paso. Elevation of zero of the gage was 4,147.90 ± .2 feet from February 26, to October 7, 1938, when it was changed to 4,146.90 ± .2 feet. On October 13, 1938, it was again changed to 4,145.90 ± .2 feet. All elevations are on United States Coast and Geodetic Survey sea level datum.

RECORDS: Based upon 93 meter measurements during the year. Records available: February 26, 1938, to December 31 1944. 1944 records excellent. Records furnished by the El Paso Office of the United States Bureau of Reclamation. Monthly records 1938-1943 will be found in Water Bulletin No. 13.

REMARKS: This gaging station was installed by the Bureau of Reclamation on the Rio Grande on February 26, 1938, to measure the flow from the Caballo reservoir. The river flow here is completely modified by reservoirs and irrigation diversions and drainage returns above this station. This station is about 1.5 miles upstream from Percha Dam (a low diversion dam) at which point records have been kept in past years. Small accretions to the river take place between this station and Percha Dam. 1,600 acre feet of water, not accounted for in the tables below, were diverted in 1944 from Caballo reservoir into a small irrigation canal (Bonito Lateral) just below the dam.

COMPARATIVE FLOWS FROM RECORDS:

Average Daily: Max. May 20, 1942, 7,650 sec. ft.; Min. Dec. 12, 1940, ‡ 1.3 sec. ft.
Average Monthly: Max. May 1942, 6,710 sec. ft.; Min. Dec. 1940, 1.4 sec. ft.
Average Yearly: Max. 1942, 2,480 sec. ft.; Min. 1941, 972 sec. ft.
Average of Two Successive Years: Max. 1942-1943, 1,870 sec. ft.; Min. 1940-1941, 990 sec. ft.
Average of Three Successive Years: Max. 1942-1944, 1,640 sec. ft.; Min. 1939-1941, 1,020 sec. ft.
Average of Four Successive Years: Max. 1941-1944, 1,480 sec. ft.; Min. 1938-1941, 1,040 sec. ft.
Average of Five Successive Years: Max. 1938-1942, 1,380 sec. ft.; Min. 1940-1944, 1,320 sec. ft.
Average of Seven Years: 1938-1944, 1,300 sec. ft.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.7	9.0	791	2,310	2,040	1,610	2,170	2,390	2,360	567	5.0	5.0
2	5.7	9.7	791	2,550	2,040	1,580	1,960	2,450	2,460	648	4.9	5.0
3	5.7	9.4	678	2,460	1,980	1,720	1,980	2,600	2,460	752	4.9	84.4
4	4.8	9.0	753	2,210	1,890	1,710	2,100	2,850	2,450	747	5.0	178
5	3.7	9.7	1,110	2,220	1,830	1,760	2,140	3,000	2,250	348	4.9	146
6	4.0	* 9.5	1,110	2,180	1,900	1,820	2,170	2,880	2,060	10.7	4.9	129
7	3.5	* 9.7	1,090	2,140	1,910	1,910	2,340	2,810	1,770	4.6	4.9	82.4
8	3.3	10.0	1,020	2,320	1,880	1,930	2,340	2,810	1,700	4.2	4.9	258
9	3.3	11.0	902	2,480	1,960	1,900	2,280	2,440	1,700	4.2	4.8	773
10	3.8	10.5	736	2,480	1,880	2,000	2,230	1,860	1,700	4.2	4.7	773
11	3.8	10.5	1,030	2,320	1,770	2,100	2,230	1,740	1,710	4.2	4.6	678
12	3.1	10.5	1,200	2,350	1,700	2,100	2,230	1,860	1,710	4.2	4.5	465
13	3.3	10.5	1,270	2,660	1,780	2,100	2,210	1,910	1,620	4.2	4.3	318
14	3.3	373	1,370	2,470	1,820	2,080	2,000	2,040	1,530	4.2	4.3	104
15	4.0	1,040	1,360	2,440	1,870	2,010	1,980	2,040	1,530	642	4.3	6.9
16	3.3	965	1,110	2,370	1,860	1,920	2,390	2,210	1,530	993	4.3	5.3
17	3.7	799	1,190	2,360	1,930	2,070	2,390	2,320	1,480	940	4.6	5.3
18	4.3	746	1,590	2,160	1,930	2,210	2,390	2,160	1,440	915	4.6	5.3
19	4.5	657	1,720	2,170	1,430	2,230	2,390	1,910	1,400	762	4.6	5.2
20	4.4	560	1,720	2,360	1,680	2,310	2,360	1,880	1,350	492	4.6	5.1
21	5.5	535	1,650	2,330	2,000	2,410	2,250	1,980	1,240	199	4.6	5.1
22	7.0	407	1,540	2,260	1,990	2,290	2,230	1,980	1,080	6.2	4.6	5.1
23	6.9	445	1,660	2,260	1,950	2,320	2,120	2,150	994	5.3	4.7	5.2
24	7.2	440	1,920	2,270	1,900	2,380	1,620	2,140	944	5.3	4.8	5.2
25	4.9	387	2,210	2,260	1,850	2,410	1,540	1,990	799	5.2	4.9	5.3
26	4.6	542	2,280	2,190	1,840	2,390	1,820	2,030	607	5.2	4.9	5.3
27	5.6	700	2,170	2,030	1,900	2,350	1,980	2,060	467	5.2	4.9	5.2
28	6.9	791	2,170	1,920	1,910	2,280	2,090	2,050	368	5.2	5.0	5.1
29	8.5	791	2,260	2,010	1,910	2,260	2,480	2,160	307	5.2	5.0	5.1
30	8.2		2,330	2,040	1,910	2,190	2,490	2,290	404	5.0	5.0	5.0
31	8.8		2,260		1,730		2,440	2,290		5.0		5.0
Sum	155.3	10,307	44,991	68,580	57,970	62,350	67,340	69,280	43,420	8,102.5	142.0	4,088.5

Month	1944 Extreme Gage Feet High	Low	ϕ Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1938-1944 Acre Feet Average	Maximum	Minimum
Jan.			31	8.8	12	3.1	5.0	308	1,929	4,850	97
Feb.			15	1,040	‡ 1	9.0	355	20,400	25,580	64,300	7,260
Mar.			30	2,330	3	678	1,450	89,200	79,486	95,100	49,300
Apr.			13	2,660	28	1,920	2,290	136,000	133,443	212,000	106,000
May			‡ 1	2,040	19	1,430	1,870	115,000	150,429	412,000	91,500
June			‡21	2,410	2	1,580	2,080	124,000	154,657	354,000	114,300
July			30	2,490	25	1,540	2,170	134,000	141,200	234,000	109,000
Aug.			5	3,000	11	1,740	2,230	137,000	134,686	179,000	110,000
Sept.			‡ 2	2,460	29	307	1,450	86,100	84,186	181,000	43,800
Oct.			16	993	‡ 8	4.2	261	16,100	17,581	35,400	2,840
Nov.			‡ 1	5.0	‡13	4.3	4.7	282	8,277	14,400	282
Dec.			‡ 9	773	‡ 1	5.0	132	8,110	8,369	16,000	83.3
Yearly				3,000		3.1	1,190	866,500	939,823	1,795,620	703,547

* Partly estimated. ϕ Mean daily. ‡ And other days.

RIO GRANDE AT EL PASO STATION

DESCRIPTION: Staff gage and cable with sit-down cable car and winch located in the pass opposite Courchesne quarry, 4 miles northwest of El Paso, Texas, and 5 miles northwest of Cd. Juarez, Chihuahua, and .9 river mile above the American Dam. Zero of gage is 3,720.51 feet above United States Coast and Geodetic Survey mean sea level datum. Also water-stage recorder 1 mile further upstream with zero of its gage 3,722.30 feet on the same datum. This latter gage has been the official gage since August 3, 1938. For items of gage history see previous Water Bulletins.

RECORDS: Discharges in 1944 were computed by taking the sum of the flows in the American Canal and the flows at the Below American Dam Station. 1944 records good. Records available: 1889-1944. Monthly records 1889-1943 will be found in Water Bulletin No. 13.

REMARKS: Reservoirs on the Rio Grande and its tributaries, also many irrigation diversions and drainage returns, completely modify the river flow at this station.

COMPARATIVE FLOWS FROM RECORDS: Momentary Peak: Max., June 12, 1905, 24,000 sec. ft. with 6.0 feet stage (lower gage). This is the greatest peak flow in the past 116 years or since 1828, or possibly longer. Min., sometimes dry. See Water Bulletin No. 6, page 79, for all large peak flows since 1828 and their average frequency. Since Elephant Butte Dam was closed in 1915, the largest peak flow to pass this station was 13,500 sec. ft. on September 3, 1925. See Water Bulletin No. 10, page 77, for peak flood flows 1916-1937.

Average Daily:	Max.	June 12, 1905,	23,680 sec. ft.;	Min.		Sometimes dry.
Average Monthly:	Max.	June 1905,	14,300 sec. ft.;	Min.		Sometimes dry.
Average Yearly:	Max.	1905,	2,780 sec. ft.;	Min.	1902, 70.1	sec. ft.
Average of Two Successive Years:	Max.	1905-1906,	2,160 sec. ft.;	Min.	1899-1900, 168	sec. ft.
Average of Three Successive Years:	Max.	1905-1907,	2,280 sec. ft.;	Min.	1900-1902, 269	sec. ft.
Average of Four Successive Years:	Max.	1904-1907,	1,880 sec. ft.;	Min.	1899-1902, 227	sec. ft.
Average of Five Successive Years:	Max.	1903-1907,	1,790 sec. ft.;	Min.	1898-1902, 367 ϕ	sec. ft.
Average of Ten Successive Years:	Max.	1903-1912,	1,560 sec. ft.;	Min.	1893-1902, 650 ϕ	sec. ft.
Average of Fifty-six Years:	1889-1944,	1,000 sec. ft.				

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	401	149	423	1,020	1,250	1,240	1,140	1,480	1,260	1,110	340	237
2	364	149	450	1,050	1,150	1,280	1,140	1,360	1,210	832	325	232
3	236	147	480	1,170	1,140	1,140	1,210	1,210	1,310	539	315	234
4	228	144	601	1,360	1,160	1,150	1,190	1,080	1,690	540	309	227
5	217	142	718	1,130	1,120	1,170	1,220	1,130	1,620	595	300	225
6	211	144	589	980	1,080	1,030	1,140	1,470	1,580	680	324	222
7	204	147	523	884	1,120	1,020	1,150	1,580	1,480	655	327	242
8	204	156	636	981	1,290	1,130	1,120	1,610	1,310	535	300	303
9	201	149	683	1,080	1,090	1,140	1,460	1,800	1,270	471	274	309
10	195	142	691	1,390	1,110	1,310	1,510	2,730	1,330	437	281	308
11	192	139	642	1,370	1,170	1,280	1,410	1,880	1,330	414	282	283
12	192	139	655	1,040	1,120	1,240	1,230	1,520	1,180	382	276	461
13	184	142	599	1,080	1,060	1,280	1,210	1,460	1,090	403	277	509
14	182	152	704	1,330	1,040	1,300	1,300	1,540	1,080	396	274	387
15	180	152	662	1,290	1,100	1,160	1,340	1,440	1,100	385	261	349
16	178	149	714	1,270	1,070	1,130	1,340	1,570	1,270	379	258	369
17	180	189	693	1,580	1,090	1,040	1,320	1,730	1,300	349	266	333
18	171	504	908	1,320	1,090	999	1,520	1,560	1,250	363	271	308
19	166	436	648	1,340	1,150	1,080	1,440	2,690	1,200	436	276	247
20	163	424	755	1,240	1,160	1,160	1,380	1,840	1,040	435	274	253
21	162	392	871	1,300	1,250	1,150	1,500	1,600	1,030	539	265	241
22	158	401	835	1,540	1,440	1,200	1,530	1,360	966	495	254	235
23	159	425	761	1,500	1,240	1,340	1,820	1,300	1,010	435	253	226
24	163	407	638	1,480	1,160	1,280	2,000	1,340	992	412	264	227
25	169	486	658	1,440	1,130	1,260	1,580	1,430	1,040	360	290	223
26	172	489	886	1,370	1,090	1,460	1,400	1,460	3,280	332	273	223
27	168	492	1,370	1,190	1,130	1,490	1,250	1,360	2,410	339	262	223
28	163	429	1,170	1,330	1,300	1,320	1,160	1,360	1,330	449	258	235
29	155	414	1,080	1,250	1,350	1,240	1,240	1,240	1,000	418	247	241
30	150		1,080	1,260	1,270	1,160	1,460	1,160	991	399	241	226
31	149		1,150		1,230		1,610	1,110		374		216
Sum	6,017	7,830	23,273	37,565	36,150	36,179	42,320	47,400	39,949	14,888	8,417	8,554

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1924-1944 Acre Feet Normal	Maximum	Minimum
Jan.	4.10	3.45	1	405	31	144	194	11,900	11,267	ϕ 17,500	8,210
Feb.	4.68	3.37	18	575	12	137	270	15,500	20,904	52,200	7,230
Mar.	6.19	4.05	27	2,120	1	345	751	46,200	40,737	62,500	18,400
Apr.	6.20	4.99	10	2,050	7	865	1,250	74,500	67,739	139,000	44,900
May	6.43	5.46	22	1,800	9	1,030	1,170	71,700	81,288	357,000	47,600
June	6.13	5.25	10	1,530	17	948	1,210	71,800	81,597	304,000	56,200
July	7.50	5.48	24	2,770	6	1,090	1,370	83,900	86,395	198,000	68,900
Aug.	7.70	5.44	19	4,800	4	1,020	1,530	94,000	89,597	158,000	61,000
Sept.	7.63	4.97	26	4,570	29	858	1,330	79,200	69,019	171,000	41,700
Oct.	5.48	4.01	1	1,470	26	332	480	29,500	27,501	57,900	17,800
Nov.	4.14	3.85	1	343	30	238	281	16,700	18,199	29,500	11,400
Dec.	4.60	3.80	12	533	31	206	276	17,000	17,013	27,700	9,590
Yearly	7.70	3.37		4,800		137	843	611,900	611,256	1,559,200	453,900

ϕ This figure was erroneous in Water Bulletins 5 to 11.

Note: Momentary Peak for May 1942 was 7,740 sec. ft. on May 18.

RIO GRANDE BELOW AMERICAN DAM STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights located 3,200 feet below the American Dam and 1.5 miles above the International Dam, near the El Paso Smelting Works, west of El Paso, Texas. The zero of the gage is 3,712.30 feet, United States Coast and Geodetic Survey sea level datum. The American Dam is 1,241.4 river miles above the Gulf of Mexico.

RECORDS: Based upon 39 meter measurements at normal and low stages during the year. Computations by shifting channel methods. 1944 records good. Records available: June 1, 1938, to December 31, 1944. Monthly records 1938-1943 will be found in Water Bulletin No. 13.

REMARKS: The operation of this station began June 2, 1938, when the American Dam first began operating. At this dam part of the flow passing the El Paso gaging station (see preceding page) was diverted into the American Canal (see records of "Diversions from the Rio Grande" elsewhere herein) and the remainder, including excess flood flows, passed this gaging station. Reservoirs, diversions, and drainage returns in the United States above this point completely modify the river flow.

COMPARATIVE FLOWS FROM RECORDS:

Momentary Peak:	Max. May 18, 1942,	6,770 sec.ft.;	Min. Feb. 14, 1942,	" 0.3 sec.ft.
Average Daily:	Max. May 20, 1942,	6,040 sec.ft.;	Min. Oct. 28-31, 1939,	1.2 sec.ft.
Average Monthly:	Max. May 1942,	4,880 sec.ft.;	Min. Dec. 1942,	2.0 sec.ft.
Average Yearly:	Max. 1942,	1,510 sec.ft.;	Min. 1943,	125 sec.ft.
Average of Two Successive Years:	Max. 1941-1942,	846 sec.ft.;	Min. 1943-1944,	130 sec.ft.
Average of Three Successive Years:	Max. 1940-1942,	608 sec.ft.;	Min. 1939-1941,	151 sec.ft.
Average of Four Successive Years:	Max. 1939-1942,	490 sec.ft.;	Min. 1940-1943,	487 sec.ft.
Average of Five Successive Years:	Max. 1939-1943,	417 sec.ft.;	Min. 1940-1944,	417 sec.ft.

Average of Six Years: 1939-1944, 370 sec. ft.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	" 3.0	149	20.8	75.6	179	196	158	161	177	66.2	" 3.0	" 3.0
2	" 3.0	149	31.5	97.1	207	176	160	139	168	" 6.0	" 3.0	" 3.0
3	153	147	32.5	99.0	222	165	166	136	178	" 6.0	" 3.0	" 3.0
4	228	144	35.7	103	237	157	166	132	188	" 6.0	" 3.0	" 3.0
5	217	142	39.3	107	245	163	172	132	164	" 5.0	" 3.0	" 3.0
6	211	144	33.4	107	233	164	173	128	155	" 5.0	" 3.0	" 3.0
7	204	147	33.7	111	242	168	176	244	155	" 5.0	" 3.0	" 3.0
8	204	156	38.0	109	247	178	180	302	157	" 5.0	" 3.0	" 3.0
9	201	149	36.6	111	236	173	184	611	156	" 5.0	" 3.0	" 3.0
10	195	142	35.1	219	231	172	182	1,660	161	" 5.0	" 3.0	" 3.0
11	192	139	33.6	113	223	173	171	725	163	" 4.0	" 3.0	" 3.0
12	192	139	35.1	112	221	180	169	391	154	" 4.0	" 3.0	" 3.0
13	184	142	32.7	110	220	178	170	339	146	" 4.0	" 3.0	" 3.0
14	182	90.5	34.2	191	225	165	176	168	149	" 4.0	" 3.0	" 3.0
15	180	5.9	35.9	124	224	169	179	158	160	" 4.0	" 3.0	" 3.0
16	178	4.4	35.7	114	219	167	180	182	172	" 4.0	" 3.0	" 3.0
17	180	4.0	33.6	123	222	157	181	477	161	" 4.0	" 3.0	" 3.0
18	171	5.0	38.8	138	224	158	205	385	163	" 4.0	" 3.0	" 3.0
19	166	5.3	37.5	140	230	162	233	1,490	168	" 4.0	" 3.0	" 3.0
20	163	3.7	36.2	141	237	160	178	489	171	" 4.0	" 3.0	" 3.0
21	162	3.1	34.8	144	240	160	179	326	179	" 4.0	" 3.0	" 3.0
22	158	2.5	36.9	141	236	166	188	167	188	" 4.0	" 3.0	" 3.0
23	159	2.8	35.4	161	223	163	387	168	203	" 4.0	" 3.0	" 3.0
24	163	3.7	32.7	119	210	160	813	162	208	" 4.0	" 3.0	" 3.0
25	169	2.6	29.0	116	211	163	347	159	226	" 4.0	" 3.0	" 3.0
26	172	2.6	29.8	114	211	166	158	191	2,150	" 3.0	" 3.0	" 3.0
27	168	2.9	81.5	122	224	160	169	164	1,220	" 3.0	" 3.0	" 3.0
28	163	2.2	45.8	129	227	154	177	158	194	" 3.0	" 3.0	" 3.0
29	155	2.2	38.3	126	222	155	187	161	145	" 3.0	" 3.0	" 3.0
30	150		40.2	131	209	154	179	162	149	" 3.0	" 3.0	" 3.0
31	149		36.3		213		332	165		" 3.0		" 3.0
Sum	5,175	2,032.4	1,130.6	3,747.7	6,950	4,982	6,675	10,432	8,128	*192.2	"90.0	" 93.0

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	⊕ Period 1938-1944 Acre Feet Average	Maximum	Minimum
Jan.	5.72	4.27	4	254	1	" 3.0	167	10,300	8,845	10,600	6,480
Feb.	5.40	4.30	8	161	29	2.2	70.1	4,030	7,867	32,800	1,900
Mar.	5.82	4.30	27	277	1	3.5	36.5	2,240	5,295	17,500	2,020
Apr.	6.38	4.72	10	620	1	34.8	125	7,430	19,102	74,500	6,360
May	5.57	5.10	21	264	1	125	224	13,800	61,017	300,000	12,500
June	5.43	5.24	1	215	30	149	166	9,880	48,150	250,000	9,770
July	7.56	5.15	24	1,440	26	148	215	13,200	34,914	155,000	11,900
Aug.	7.93	5.06	19	3,170	4	132	337	20,700	27,946	114,000	6,040
Sept.	8.17	5.20	26	3,640	29	145	271	16,100	30,834	124,000	3,530
Oct.	5.29	4.31	‡ 1	161	26	" 3.0	* 6.2	* 381	5,220	19,000	197
Nov.	4.37	4.27	‡ 1	" 3.0	‡ 1	" 3.0	" 3.0	" 179	3,590	8,700	153
Dec.	4.34	4.29	‡ 1	" 3.0	‡ 1	" 3.0	" 3.0	" 184	2,528	7,760	120
Yearly	8.17	4.27		3,640		2.2	136	98,424	255,308	1,093,553	90,256

⊕ The average maximum and minimum discharges for January through May are for the period 1939-1944.

" Estimated. * Partly estimated. ‡ And other days.

OUTFALLS FROM DEEP WELLS

Near El Paso, Texas, and Juarez, Chihuahua.

Between the Below American Dam Station and the Juarez Station, several outfall ditches or pipe lines discharge water into the Rio Grande. the source of which is from deep wells in the vicinity of El Paso and Juarez. except some of the water from the El Paso Sewage Outfall. which is from the Rio Grande. During 1944, such outfalls contributed a total of 13,516 acre feet of water to the Rio Grande flow, which is equivalent to an average steady flow of 18.6 second feet during the year. Of this total flow, 18.3 second feet, or 13.298 acre feet, came from the United States side, while 0.3 second feet, or 218 acre feet, came from the Mexican side. On the remainder of this page will be found details concerning these outfalls.

El Paso Electric Company, Santa Fe Street Plant, Cooling Water Waste

This outfall enters the river 3.3 miles below the American Dam. From the company's pumping records, it is calculated that 1,586 acre feet flowed into the river in 1944. This corresponds to an average flow of 2.2 second feet.

Juarez Sewage Outfall

This outfall enters the river 4.7 miles below the American Dam. From several inspections, this outfall is estimated at 218 acre feet for 1944, which corresponds to an average flow of 0.3 second foot.

Peyton Packing Company Waste

This outfall enters the river 5.7 miles below the American Dam. From several inspections, an average flow of 0.5 second foot, or 363 acre feet is estimated to have entered the river from this source.

El Paso Sewage Outfall

This outfall enters the river 6.6 miles downstream from the American Dam. The 1944 record of total outfall consists of flows measured by a Parshall meter and estimates by the Department of Water and Sewerage of the City of El Paso. of amounts which by-passed the meter. The breakdown of this total into water from deep wells, or from the Rio Grande, is made in cooperation with the El Paso Water and Sewerage Department.

Month	1944					Period 1936-1944
	From Deep Wells "		From Rio Grande "		Total	Average
	Mean Second Feet	Acre Feet	Mean Second Feet	Acre Feet	Acre Feet	Acre Feet
Jan.	12.0	738	0.7	42	780	602
Feb.	12.4	712	0	0	712	583
Mar.	11.9	732	1.9	115	847	619
Apr.	11.4	678	3.0	181	859	656
May	11.3	697	4.1	254	951	689
June	13.0	773	4.1	246	1,019	725
July	13.1	804	5.6	347	1.151	769
Aug.	13.3	818	5.2	321	1,139	737
Sept.	11.3	671	6.4	379	1,050	691
Oct.	14.7	901	1.9	118	1.019	687
Nov.	12.2	724	3.2	190	914	657
Dec.	11.5	708	3.3	200	908	659
Annual	12.3	8,956	3.3	2.393	11,349	8,074

" Estimated.

RIO GRANDE AT JUAREZ STATION

DESCRIPTION: Water-stage recorder, and cable with sit-down cable car equipped for winch and heavy weights, located 2.5 miles downstream from El Paso, Texas, and Juarez, Chihuahua. This station is on the rectified channel of the Rio Grande, 7.0 river miles below the American Dam at El Paso, Texas, and 4.9 river miles below the International Dam. On January 1, 1943, the zero of this gage was lowered 3.28 feet. The zero of the present gage is 3,683.98 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 177 meter measurements during the year, 154 by the Mexican and 23 by the United States Section. Computations by shifting channel methods. 1944 records good. Records available: April 1, 1938, to December 31, 1944. Monthly records 1938-1943 will be found in Water Bulletin No. 13.

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

COMPARATIVE FLOWS FROM RECORDS: Momentary Peak: Max., May 18, 1942, 6,600 sec. ft. with a gage height of 11.15 feet.; Min., December 22, 1944, 15.2 sec. ft. with a gage height of 2.17 feet.

Average Daily: Max. May 20, 1942, 6,460 sec. ft.; Min. Dec. 21, 1944, 17.0 sec. ft.
Average Monthly: Max. May 1942, 5,300 sec. ft.; Min. Feb. 1941, 85.1 sec. ft.
Average Yearly: Max. 1942, 1,820 sec. ft.; Min. 1940, 371 sec. ft.
Average of Two Successive Years: Max. 1942-1943, 1,180 sec. ft.; Min. 1939-1940, 396 sec. ft.
Average of Three Successive Years: Max. 1942-1944, 971 sec. ft.; Min. 1939-1941, 417 sec. ft.
Average of Four Successive Years: Max. 1941-1944, 840 sec. ft.; Min. 1939-1942, 766 sec. ft.
Average of Five Successive Years: Max. 1940-1944, 749 sec. ft.; Min. 1939-1943, 720 sec. ft.
Average of Six Years: 1939-1944, 692 sec. ft.

Mean Daily Diacharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	291	177	230	706	816	720	671	971	788	766	385	59.7
2	273	162	237	703	699	752	664	961	802	442	360	39.9
3	253	158	243	816	685	646	720	802	837	266	346	37.4
4	267	153	349	964	671	625	710	731	1,144	273	332	81.2
5	256	156	505	763	618	650	738	756	1,165	340	317	203
6	227	146	427	639	590	558	653	1,000	1,070	442	328	209
7	210	176	315	554	618	558	632	1,148	968	424	327	230
8	221	199	420	611	731	604	611	1.194	826	352	321	293
9	217	165	498	696	593	629	940	1,158	819	227	287	299
10	212	149	502	957	583	734	992	1,769	886	222	196	305
11	226	147	448	957	639	816	886	1,243	876	442	94.3	280
12	214	150	501	675	636	657	738	996	791	385	55.8	325
13	195	146	406	671	526	738	756	1,024	674	417	42.7	284
14	178	149	445	985	523	795	865	1,006	632	420	39.6	153
15	171	118	388	865	568	664	883	943	657	388	39.9	96.4
16	170	82.3	424	819	551	667	862	950	738	392	93.6	106
17	170	87.6	516	1,137	544	597	826	1,112	770	364	263	86.9
18	190	288	636	858	544	537	978	1.038	802	360	279	84.4
19	161	232	381	872	568	604	925	1,752	724	378	284	85.1
20	167	223	448	798	586	671	872	1,077	593	274	300	20.1
21	179	196	632	812	674	667	1,010	1,035	583	343	269	17.0
22	169	207	576	1,052	770	696	1,755	897	505	271	261	23.7
23	168	238	516	1,123	731	837	1,618	840	509	194	256	109
24	166	229	371	1,056	650	777	1,928	872	537	148	252	132
25	175	285	420	1,035	674	805	1,254	939	501	91.8	238	142
26	173	284	1,080	985	579	844	957	957	2,458	71.0	223	124
27	171	301	1,530	823	590	929	819	954	2,038	106	140	134
28	169	216	883	869	802	777	763	886	780	190	70.3	226
29	162	197	816	823	780	745	862	802	551	448	45.9	250
30	156		763	890	710	685	982	780	572	403	57.2	244
31	156		830		710		1,141	756		389		229
Sum	5,416.9		25,514		20,984		31,349		10,228.8		4,908.8	
	6,113		16,736		19,959		29,011		25,596		6,503.3	

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1938-1944 Acre Feet Average	Maximum	Minimum
Jan.	3.54	2.82	2	360	30	156	197	12,130	11,735	⊕ 13,270	⊕ 9,440
Feb.	3.51	2.03	18	331	16	23.0	187	10,740	14,547	⊕ 42,690	⊕ 4,730
Mar.	5.09	2.99	27	2,040	1	186	540	33,200	28,630	⊕ 45,790	⊕ 14,140
Apr.	5.15	3.38	10	1,750	9	491	850	50,610	50,614	111,500	30,900
May	5.09	3.51	28	1,100	7	321	644	39.590	75,019	325,100	23,400
June	5.74	3.97	25	1,150	18	494	699	41,620	73,896	272,400	32,140
July	6.86	3.90	24	3,050	28	731	936	57,540	64,701	162,500	42,400
Aug.	7.09	3.77	19	3,040	31	720	1,010	62.180	60,847	127,300	38,700
Sept.	7.22	3.31	26	4,170	29	480	853	50.770	54,159	143,800	22,300
Oct.	4.46	2.23	1	957	27	51.9	330	20,290	20,360	45,390	11,600
Nov.	3.48	2.13	1	396	16	37.4	217	12,900	11,321	13,350	8,640
Dec.	3.54	2.17	12	381	22	15.2	158	9,740	10,807	17,510	7,510
Yearly	7.22	2.03		4,170		15.2	553	401,310	476,636	1,315,890	269,460

⊕ Period 1939-1944.

RIO GRANDE AT ISLAND STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights, located near Clint, Texas, and San Augustin, Chihuahua. This station is on the rectified channel of the Rio Grande 27.1 river miles below the American Dam at El Paso, Texas. The zero of the gage is 3,608.99 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 74 meter measurements during the year. 53 by the United States and 21 by the Mexican Section. Computations by shifting channel methods. 1944 records good. Records available: August 17,1938, to December 31, 1944. Monthly records 1938-1943 will be found in Water Bulletin No. 13.

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

COMPARATIVE FLOWS FROM RECORDS: Momentary Peak: Max., May 19, 1942, 6,490 sec. ft.; Min., sometimes dry.
Average Daily: Max. May 19, 1942, 6,140 sec. ft.; Min. sometimes dry.
Average Monthly: Max. May 1942, 4,880 sec. ft.; Min. Nov. 1940, .2 sec. ft.
Average Yearly: Max. 1942, 1,490 sec. ft.; Min. 1940, 60.6 sec. ft.
Average of Two Successive Years: Max. 1941-1942, 824 sec. ft.; Min. 1939-1940, 64.6 sec. ft.
Average of Three Successive Years: Max. 1941-1943, 601 sec. ft.; Min. 1939-1941, 95.2 sec. ft.
Average of Four Successive Years: Max. 1941-1944, 486 sec. ft.; Min. 1939-1942, 444 sec. ft.
Average of Five Successive Years: Max. 1940-1944, 400 sec. ft.; Min. 1939-1943, 386 sec. ft.
Average of Six Years: 1939-1944, 345 sec. ft.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	47.1	147	36.7	133	181	143	29.7	247	46.4	313	22.9	* 14.6
2	105	151	34.8	58.6	75.2	160	101	69.0	45.1	233	20.5	* 13.7
3	131	147	32.9	99.0	42.8	122	124	10.8	92.9	96.3	17.4	* 12.9
4	183	149	44.9	104	64.8	164	63.8	19.2	314	36.5	14.3	* 12.0
5	242	151	153	136	37.3	92.2	30.8	29.5	481	28.6	14.8	* 11.1
6	205	151	102	27.3	33.5	43.2	55.6	56.0	386	26.7	45.7	11.9
7	192	147	35.6	25.9	31.4	35.5	21.5	94.1	370	37.3	24.8	11.9
8	208	181	33.7	111	112	60.5	29.7	402	214	20.2	21.5	11.9
9	230	172	84.9	403	72.4	90.1	96.9	493	137	23.0	20.1	11.9
10	225	146	52.3	398	32.6	106	251	1,170	314	25.7	19.5	11.9
11	201	130	59.9	279	92.0	364	125	749	317	25.7	40.8	11.9
12	175	120	214	54.6	63.9	175	77.6	325	242	25.7	17.4	11.9
13	164	116	75.8	53.6	34.5	168	37.8	521	144	25.7	14.9	28.0
14	160	116	45.7	151	50.4	224	31.8	254	67.2	25.0	12.7	11.9
15	156	121	50.6	179	79.8	125	31.8	282	81.6	25.0	13.2	11.3
16	150	86.9	37.1	124	40.3	89.1	55.4	179	175	23.5	13.7	11.4
17	136	59.5	45.6	275	37.1	73.0	50.4	354	402	23.5	14.8	11.4
18	142	113	100	158	46.9	106	66.2	218	247	21.9	14.2	11.4
19	157	55.5	88.2	43.1	20.0	105	206	1,410	169	24.2	12.4	10.8
20	159	70.1	51.3	90.2	52.7	37.7	67.6	919	91.1	36.7	12.4	89.7
21	176	47.8	93.0	44.6	240	25.6	99.6	453	37.2	16.3	13.4	93.1
22	167	22.9	52.2	192	198	16.9	348	405	32.5	72.8	15.3	91.6
23	169	18.4	28.1	339	148	14.4	989	167	28.7	34.6	15.6	183
24	166	17.6	27.0	230	112	23.7	1,240	280	32.7	23.6	16.9	202
25	161	18.8	25.7	203	73.2	187	594	281	100	21.4	17.2	198
26	154	53.5	26.5	190	54.7	81.8	280	366	1,590	21.4	17.5	186
27	129	174	156	132	95.3	168	359	408	2,060	25.1	18.3	91.6
28	140	106	111	140	299	120	271	216	369	52.3	17.2	223
29	135	40.5	63.6	189	262	65.6	173	113	304	159	15.9	232
30	138		29.4	382	229	41.6	207	68.8	195	69.7	15.9	229
31	142		73.9		190		287	49.1		30.5		210
Sum	5,045.1	3,029.5	2,065.4	4,947.4	3,101.8	3,227.9	6,401.2	10,608.5	9,085.4	1,623.9	551.2	2,272.8

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	⊕ Period 1938-1944 Acre Feet Average	Maximum	Minimum
Jan.	10.49	9.28	5	262	1	19.0	163	10,000	9,817	11,900	7,900
Feb.	10.63	9.55	27	192	25	15.4	104	6,010	10,653	37,000	2,930
Mar.	11.27	9.49	27	408	31	10.9	66.6	4,100	6,822	21,000	876
Apr.	11.50	9.48	30	1,140	14	23.6	165	9,810	16,275	70,500	1,190
May	11.10	9.52	21	699	19	18.0	100	6,150	54,522	299,800	1,050
June	11.22	9.40	11	986	23	9.2	108	6,400	45,688	241,000	1,310
July	12.28	9.37	23	2,780	8	19.0	206	12,700	28,605	118,500	4,840
Aug.	12.12	9.20	19	2,770	3	5.1	342	21,000	27,932	* 99,400	4,990
Sept.	12.32	9.08	26	3,540	24	25.3	303	18,000	31,351	119,200	1,760
Oct.	10.28	9.00	1	416	26	19.2	52.4	3,220	9,901	42,800	1,620
Nov.	9.85	8.85	6	166	‡19	12.4	18.4	1,090	1,934	5,840	11.5
Dec.	10.02	8.93	29	241	19	10.3	73.3	4,510	4,631	12,900	1,050
Yearly	12.32	8.85		3,540		5.1	142	102,990	248,131	1,079,340	43,965.5

* Partly estimated. ‡ And other days.

⊕ The average, maximum and minimum discharges for January through August are for the period 1939-1944.

RIO GRANDE AT COUNTY LINE STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights located 0.8 mile downstream from the El Paso-Hudspeth county line. This gaging station is on the rectified channel of the Rio Grande, 47.3 river miles below the American Dam at El Paso, Texas. The zero of the gage is 3,547.59 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 72 meter measurements during the year. 51 by the United States and 21 by the Mexican Section. Computations by shifting channel methods. 1944 records good. Records available: January 1, 1938, to December 31, 1944. Monthly records 1938-1943 will be found in Water Bulletin No. 13.

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

COMPARATIVE FLOWS FROM RECORDS:

Momentary Peak:	Max. May 19, 1942,	6,340 sec. ft.;	Min. Mar. 5, 1939,	44.3 sec. ft.
Average Daily:	Max. May 18, 1942,	6,180 sec. ft.;	Min. Mar. 4, 1939,	46.8 sec. ft.
Average Monthly:	Max. May 1942,	4,920 sec. ft.;	Min. Mar. 1939,	104 sec. ft.
Average Yearly:	Max. 1942,	1,720 sec. ft.;	Min. 1940,	179 sec. ft.
Average of Two Successive Years:	Max. 1941-1942,	1,050 sec. ft.;	Min. 1939-1940,	193 sec. ft.
Average of Three Successive Years:	Max. 1941-1943,	820 sec. ft.;	Min. 1938-1940,	244 sec. ft.
Average of Four Successive Years:	Max. 1941-1944,	704 sec. ft.;	Min. 1938-1941,	277 sec. ft.
Average of Five Successive Years:	Max. 1940-1944,	598 sec. ft.;	Min. 1938-1942,	566 sec. ft.

Average of Seven Years: 1938-1944, 507 sec. ft.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	328	157	145	189	585	287	301	708	393	715	305	163
2	341	158	133	284	275	250	346	434	419	625	278	156
3	332	158	102	301	272	278	335	321	454	477	246	160
4	305	154	93.4	163	248	397	275	234	791	339	233	178
5	293	152	232	282	240	351	268	200	933	283	214	182
6	273	148	321	144	231	242	247	408	646	301	209	198
7	282	148	176	129	361	259	220	490	614	375	192	182
8	278	184	113	151	465	275	255	700	470	419	203	175
9	269	179	177	524	352	258	268	997	424	317	185	238
10	249	149	209	343	254	285	348	1,270	459	296	195	308
11	230	132	172	698	334	516	310	1,320	586	289	254	317
12	211	126	290	236	240	347	281	708	572	308	235	339
13	200	127	236	171	236	283	238	872	511	300	266	369
14	209	119	142	158	395	293	249	760	401	316	220	411
15	191	132	154	399	446	265	250	685	316	350	164	345
16	165	134	131	302	233	204	259	574	459	270	163	302
17	189	100	158	427	208	194	282	688	716	276	223	327
18	214	133	194	494	210	194	261	918	645	248	263	332
19	229	261	313	282	237	199	320	1,410	475	204	307	355
20	234	260	213	293	262	186	322	1,810	425	207	303	322
21	225	269	196	234	317	194	340	1,050	391	174	309	300
22	230	235	188	298	327	197	642	904	375	208	305	285
23	232	218	148	862	327	214	1,300	653	360	252	301	304
24	246	234	137	651	329	223	1,700	645	513	166	308	298
25	261	231	128	487	272	336	1,360	613	449	157	237	293
26	281	251	132	507	298	359	802	630	1,740	* 134	341	278
27	234	363	180	413	340	353	624	709	2,340	" 130	326	239
28	181	208	302	303	414	400	540	652	976	" 183	232	260
29	143	193	184	415	440	372	575	476	657	" 310	168	276
30	150		131	782	370	352	694	373	477	" 207	176	308
31	150		142		363		823	312		" 302		292
Sum	7,355	5,313	5,572.4	10,922	9,881	8,563	15,035	22,524	18,987	9,138	7,361	8,495

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1938-1944 Acre Feet Average	Maximum	Minimum
Jan.	3.47	2.76	8	374	30	126	237	14,600	15,814	20,000	11,300
Feb.	3.82	2.50	27	444	17	86.2	183	10,500	17,061	47,900	7,360
Mar.	3.95	2.52	28	532	4	79.8	180	11,100	15,811	38,900	6,370
Apr.	4.32	2.70	30	1,590	7	119	364	21,700	25,706	84,200	7,870
May	4.35	2.85	1	1,610	18	195	319	19,600	56,477	303,000	6,980
June	4.11	2.75	11	658	20	180	285	17,000	49,631	239,000	6,870
July	5.24	2.77	24	2,320	7	218	485	29,800	42,843	140,000	11,400
Aug.	5.55	2.92	19	2,780	31	299	727	44,700	40,400	123,000	15,500
Sept.	5.80	2.96	27	3,150	24	280	633	37,700	46,570	140,000	8,290
Oct.	3.65	2.65	1	910	26	134	295	18,100	24,557	61,400	11,200
Nov.	3.39	2.70	26	355	30	153	245	14,600	14,976	20,400	8,230
Dec.	3.52	2.65	14	429	2	143	274	16,800	17,153	29,700	8,770
Yearly	5.80	2.50		3,150		79.8	353	256,200	366,999	1,247,500	129,680

" Estimated. * Partly estimated.

RIO GRANDE AT FORT QUITMAN STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights located on the rectified Rio Grande channel 1.5 miles below Old Fort Quitman, and 81.1 river miles below the American Dam at El Paso. The zero of the new gage is 3,450.57 feet, United States Coast and Geodetic Survey datum. See Water Bulletin No. 7 for a gage history of this station.

RECORDS: Based upon 85 meter measurements during the year, 62 by the United States and 23 by the Mexican Section. Computations by shifting channel methods. 1944 records good except in November and December when the gage height-discharge relationship was not reliable. Discharges for these two months were determined from meter measurements and reference to related gaging stations. Records available: January 1923 to December 1944. Careful estimates covering all months in the period 1889-1923 are shown in Water Bulletin No. 12. Monthly records 1889-1943 will be found in Water Bulletin No. 13.

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

COMPARATIVE FLOWS FROM RECORDS #: Momentary Peak: Max., about June 20, 1905, 17,000 sec. ft. This is the greatest flow in the last 116 years. See pages 71 and 72 of Water Bulletin No. 8 for the magnitude and average frequency of floods in the period 1828 to 1938. Min., frequently dry prior to January 1915. **

Average Daily: Max., June 20, 1905, 17,000 sec. ft. ⊕; Min., frequently dry prior to January 1915.

Average Monthly: Max. May 1942, 5,030 sec. ft.; Min. Frequently dry.

Average Yearly: Max. 1905, 2,140 sec. ft.; Min. 1902, 42.4 sec. ft.

Average of Two Successive Years: Max. 1905-1906, 1,650 sec. ft.; Min. 1899-1900, 83.3 sec. ft.

Average of Three Successive Years: Max. 1905-1907, 1,800 sec. ft.; Min. 1900-1902, 131 sec. ft.

Average of Four Successive Years: Max. 1904-1907, 1,460 sec. ft.; Min. 1899-1902, 111 sec. ft.

Average of Five Successive Years: Max. 1903-1907, 1,350 sec. ft.; Min. 1898-1902, 211 sec. ft.

Average of Ten Successive Years: Max. 1903-1912, 1,150 sec. ft.; Min. 1931-1940, 244 sec. ft.

Average of Fifty-six Years: 1889-1944, 581 sec. ft.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	319	228	362	69.0	531	346	377	665	246	971	* 464	* 260
2	361	217	300	146	222	289	519	393	182	1,020	* 430	* 262
3	333	213	267	230	162	303	710	329	198	784	* 396	* 274
4	316	231	299	127	134	498	384	273	356	501	* 363	* 260
5	293	225	290	99.0	148	677	202	203	1,630	368	* 390	* 268
6	307	227	396	123	214	298	157	220	897	320	* 370	* 251
7	282	234	265	72.9	288	311	129	317	666	391	* 340	* 246
8	286	262	212	62.8	255	297	83.2	288	626	489	* 325	* 276
9	269	290	210	151	210	352	103	926	522	461	* 320	* 303
10	258	256	241	252	206	780	199	1,280	503	383	* 320	* 340
11	237	218	278	323	218	807	* 123	1,670	730	300	* 315	* 326
12	237	179	340	196	303	809	‡ 91.2	948	627	323	* 315	* 354
13	225	185	298	130	133	245	‡ 82.1	969	579	356	* 310	* 374
14	202	181	221	118	148	285	‡ 94.3	939	447	317	* 310	* 354
15	197	187	190	225	307	301	‡ 70.4	713	388	299	* 300	* 332
16	210	173	123	165	193	308	‡ 62.5	696	413	389	* 300	* 358
17	249	157	100	268	138	191	‡ 56.3	682	672	348	* 300	* 385
18	297	141	114	334	101	216	‡ 50.6	726	893	322	* 300	* 398
19	338	178	232	200	104	204	‡ 45.1	672	611	349	* 300	* 375
20	343	314	214	200	109	126	‡ 54.2	1,790	505	300	* 300	* 351
21	337	308	112	172	252	100	* 434	1,080	411	250	* 300	* 340
22	317	302	118	164	635	105	‡1,490	691	446	243	* 325	* 342
23	311	292	80.4	437	356	300	‡ 392	604	341	190	* 315	* 333
24	299	277	65.5	521	275	170	‡2,360	642	346	188	* 310	* 330
25	293	302	* 49.0	389	318	362	1,760	662	478	195	* 310	* 333
26	304	332	‡ 41.5	368	232	830	1,120	547	881	223	* 325	* 326
27	291	464	‡ 41.5	331	643	344	851	590	2,610	238	* 320	* 334
28	259	365	128	304	381	485	671	590	1,460	266	* 325	* 357
29	242	354	119	292	996	482	542	388	1,110	418	* 325	* 373
30	235		88.2	453	657	480	517	300	920	504	* 325	* 365
31	229		72.9		522		609	303		361		* 369
Sum	8,676	7,292	5,868	6,922.7	9,391	11,301	*14,338.9	21,096	20,694	12,067	*9,948	*10,149

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1924-1944 Acre Feet Normal	Maximum	Minimum
Jan.	2.96	2.04	7	470	29	189	280	17,200	13,049	20,900	5,370
Feb.	3.22	2.06	27	641	13	128	251	14,500	14,373	50,100	3,510
Mar.	3.00	1.38	6	463	26	41.5	189	11,600	12,559	38,900	1,090
Apr.	3.37	1.47	23	700	7	50.4	231	13,700	15,882	77,000	1,200
May	3.48	1.66	29	1,760	18	69.6	303	18,600	30,094	309,000	880
June	5.20	1.54	10	3,260	22	70.5	377	22,400	27,625	240,000	3,630
July	6.90	1.38	24	3,750	20	37.8	463	* 28,400	26,948	140,000	4,300
Aug.	4.88	1.69	20	2,240	5	153	681	41,800	34,241	* 127,000	4,430
Sept.	5.86	1.73	27	3,040	2	163	690	41,000	38,728	147,000	6,980
Oct.	3.47	2.15	1	1,200	24	188	389	23,900	24,738	66,500	4,520
Nov.	3.05	2.11	1	* 464	‡15	* 300	* 332	* 19,700	16,168	24,500	4,990
Dec.	3.20	2.26	18	* 398	7	* 246	* 325	* 20,100	16,763	31,000	5,640
Yearly	6.90	1.38		3,750		37.8	374	272,900	271,168	1,270,400	102,420

‡ And other days. ‡ Estimated. * Partly estimated. ** Elephant Butte Reservoir closed January, 1915.
⊕ Estimated from peak flow at El Paso and Upper Presidio. # Including estimated records.

RIO GRANDE AT UPPER PRESIDIO STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights located 7.8 river miles above the confluence of the Rio Conchos and about 10 miles northwest of the towns of Presidio, Texas, and Ojinaga, Chihuahua, and 285.7 river miles below the American Dam at El Paso, Texas. Zero of gage is 2,579.82 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based on 51 meter measurements during the year. Computations by shifting channel methods. 1944 records good. Records available: April 1900 to March 1914; September 1919 to March 1920; January 1927 to December 1944. Careful estimates covering all the months when dependable measured records were not available in the period 1889-1926 are shown in Water Bulletin No. 12. Monthly records 1889-1943 will be found in Water Bulletin No. 13.

REMARKS: Reservoirs in the United States, as well as many irrigation diversions and drainage returns in the United States and Mexico, completely modify the river flow.

COMPARATIVE FLOWS FROM RECORDS: # Momentary Peak: Max., ⊕: June 12, 1912, 15,200 sec. ft. From local testimony of flood heights, this is the greatest flow in the past 53 years or longer. Min., sometimes dry. See pages 71 and 72 of Water Bulletin No. 8 for the magnitude and average frequency of floods during the previous periods of record. On May 26, 1942, a gage height of 10.57 feet was reached with a flow of 5,160 sec. ft. The level of this river surface was the highest reached during the years 1923-1944, inclusive. According to local testimony, this is the highest level reached in the past 53 years or longer. The datum of the gage in 1912 is unknown.

Average Daily ⊕: Max. June 12, 1912, 15,200 sec. ft.; Min. sometimes dry.
Average Monthly ϕ: Max. June 1912, 10,150 sec. ft.; Min. sometimes dry.
Average Yearly ϕ: Max. 1907, 1,970 sec. ft.; Min. 1934, 75.0 sec. ft.
Average of Two Successive Years ϕ: Max. 1906-1907, 1,560 sec. ft.; Min. 1899-1900, 125 sec. ft.
Average of Three Successive Years ϕ: Max. 1905-1907, 1,690 sec. ft.; Min. 1900-1902, 152 sec. ft.
Average of Four Successive Years ϕ: Max. 1905-1908, 1,380 sec. ft.; Min. 1899-1902, 144 sec. ft.
Average of Five Successive Years ϕ: Max. 1905-1909, 1,240 sec. ft.; Min. 1933-1937, 188 sec. ft.
Average of Ten Successive Years ϕ: Max. 1905-1914, 1,080 sec. ft.; Min. 1931-1940, 213 sec. ft.
Average of Fifty-six Years ϕ: 1889-1944, 557 sec. ft.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	365	267	381	53.9	143	350	230	* 428	391	896	311	330
2	312	259	438	51.0	120	336	227	" 353	335	776	405	311
3	388	258	358	51.8	179	321	215	* 393	277	715	351	300
4	365	256	346	53.7	312	251	206	" 323	309	787	399	285
5	395	255	314	41.0	188	204	192	* 307	494	697	408	277
6	407	257	294	36.9	146	186	186	251	1,300	609	371	261
7	381	258	270	40.0	105	190	163	233	1,440	524	331	253
8	357	270	290	69.5	82.7	274	120	265	999	466	325	243
9	348	271	406	65.0	71.7	372	92.2	264	767	419	326	232
10	347	385	361	59.9	73.9	274	75.0	214	720	420	321	240
11	322	326	288	50.5	83.5	255	70.0	232	674	444	320	249
12	319	293	265	39.8	82.7	770	* 77.4	647	603	* 422	324	264
13	316	283	257	38.0	68.1	1,020	" 51.0	978	592	376	323	303
14	312	269	269	42.7	63.6	540	38.3	793	658	324	314	307
15	311	255	289	122	67.4	451	41.8	642	541	301	311	322
16	320	* 245	352	89.3	77.9	281	47.4	944	470	707	310	336
17	310	* 239	255	71.7	74.1	219	34.7	" 758	445	374	306	391
18	308	* 232	214	59.5	62.3	207	29.9	* 731	659	346	298	393
19	309	* 228	198	55.7	56.5	183	25.2	662	520	357	294	345
20	300	219	178	65.6	58.0	168	18.6	" 629	603	332	297	331
21	298	214	172	95.7	65.5	122	15.8	" 612	* 545	318	334	348
22	303	210	162	133	69.3	91.0	11.4	* 1,040	* 469	296	335	330
23	302	219	199	85.7	75.6	91.5	25.5	* 979	407	285	327	320
24	302	262	176	63.6	80.7	65.9	1,390	" 1,130	355	283	317	307
25	299	280	145	58.5	85.2	60.6	1,260	" 1,040	357	285	314	310
26	292	295	115	100	125	316	1,720	* 1,100	345	294	319	314
27	282	310	103	286	314	181	1,650	* 1,450	* 521	303	322	371
28	286	314	86.0	226	225	182	* 988	" 920	676	280	333	374
29	274	318	69.0	177	199	290	* 741	710	" 538	270	319	390
30	282		61.1	170	302	222	* 644	568	* 1,200	261	331	372
31	286		57.9		265		* 533	514		253		347
Sum	9,998	7,747	7,369.0	2,553.0	3,921.7	8,474	*11,119.2	*20,110	18,210	13,420	9,896	9,756

Month	1944 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1924-1944 Acre Feet Normal	Maximum	Minimum
Jan.	1.18	.38	1	464	1	266	323	19,800	12,383	24,400	644
Feb.	.95	.11	10	406	17	210	267	15,400	12,611	40,800	1,420
Mar.	1.16	-.67	2	466	31	50.7	238	14,600	10,827	39,100	285
Apr.	.65	-.88	27	311	14	35.2	85.1	5,060	8,972	41,600	0
May	1.26	-.74	27	525	19	52.9	127	7,780	22,817	240,000	0
June	3.93	-.68	13	1,370	25	57.0	282	16,800	22,055	216,000	830
July	5.85	-1.15	24	2,130	22	10.0	359	* 22,100	27,554	156,000	13.3
Aug.	4.64	.03	26	1,630	7	205	649	* 39,900	38,190	133,000	2,170
Sept.	4.82	.45	7	1,700	4	255	607	36,100	41,690	* 151,000	3,140
Oct.	4.54	.50	1	1,500	31	251	433	26,600	32,688	105,000	0
Nov.	1.19	.53	1	425	19	287	330	19,600	16,329	34,500	0
Dec.	1.08	.43	29	412	9	226	315	19,400	15,477	30,900	374
Yearly	5.85	-1.15		2,130		10.0	335	243,140	261,593	1,176,700	54,315

* Partly estimated. " Estimated. ⊕ Since daily records began in 1900. ϕ Beginning with 1889.
\# Including estimated records.

RIO CONCHOS NEAR OJINAGA, CHIHUAHUA

DESCRIPTION: The Rio Conchos enters the Rio Grande 3.7 miles above the International Highway Bridge between Presidio, Texas, and Ojinaga, Chihuahua, 2.0 miles above the Lower Presidio gaging station on the Rio Grande, 7.8 miles below the Upper Presidio gaging station on the Rio Grande, and 293.5 river miles below the American Dam at El Paso, Texas.

RECORDS: Based on discharge records of the Rio Grande at Upper Presidio and Lower Presidio stations and estimated irrigation diversions and arroyo inflow between these two stations. 1944 records good. Records available: May 1900 through 1913, and May 1932 through 1944. Careful estimates covering all the months when dependable measured records were not available in the period 1896-1926 are shown in Water Bulletin No. 12. Monthly records 1896-1943 will be found in Water Bulletin No. 13.

REMARKS: The Boquilla storage reservoir, as well as diversions for irrigation in the Rio Conchos basin, greatly modify the river flow. The Colina reservoir with 21,900 acre feet capacity and a maximum surface area of 1,160 acres, located about 10.5 miles downstream from Boquilla Dam, and the Rosetilla reservoir, located about 52.7 miles further downstream, with a capacity of 15,400 acre feet and a maximum surface area of 840 acres, are used for power development only. The daily river flow may be modified by these reservoirs, but, except for evaporation, the monthly flow is not. Power generation facilities #: Boquilla 14,647 K.W., Colina, 3,620 K.W., Rosetilla, 5,150 K.W.

COMPARATIVE FLOWS FROM RECORDS: ** Momentary Peak: Max., September 11, 1904, 162,000 sec. ft. This is the largest flow from the Rio Conchos for the past 116 years or longer. See pages 71 and 72 of Water Bulletin No. 8 for the magnitude and average frequency of floods from the Rio Conchos since 1828. Min., May 14, 1904, 3.0 sec. ft. The second lowest recorded flow was 19.0 sec. ft., which occurred on August 18, 1937.

Average Daily ⊕: Max. Sep. 11, 1904, 148,900 sec.ft.; Min. May 14, 1904, 5.0 sec.ft.
Average Monthly ⊕: Max. Sep. 1904, 24,540 sec.ft.; Min. May 1902, 11.0 sec.ft.
Average Yearly ⊕: Max. 1914, 3,720 sec.ft.; Min. 1922, 348 sec.ft.
Average of Two Successive Years ϕ: Max. 1905-1906, 3,290 sec.ft.; Min. 1921-1922, 647 sec.ft.
Average of Three Successive Years ϕ: Max. 1904-1906, 3,210 sec.ft.; Min. 1935-1937, 917 sec.ft.
Average of Four Successive Years ϕ: Max. 1904-1907, 2,840 sec.ft.; Min. 1934-1937, 901 sec.ft.
Average of Five Successive Years ϕ: Max. 1904-1908, 2,540 sec.ft.; Min. 1933-1937, 1,090 sec.ft.
Average of Ten Successive Years ϕ: Max. 1897-1906, 2,030 sec.ft.; Min. 1928-1937, 1,250 sec.ft.
Average of Forty-nine Years: 1896-1944, 1,710 sec. ft.

1944									Period 1924-1944		
Month	Extreme Gage Feet		Extreme Second Feet				Average Second Feet	Total Acre Feet	Acre Feet		
			High		Low						
	High	Low	Day		Day				Normal	Maximum	Minimum
Jan.			1	2,130	20	535	971	59,700	62,667	147,000	20,300
Feb.			4	1,410	29	384	630	36,300	52,314	87,700	29,100
Mar.			11	1,640	28	305	636	39,100	47,171	80,800	20,900
Apr.			3	888	30	139	388	23,100	36,088	79,700	5,000
May			27	2,710	26	139	271	16,700	43,883	148,000	3,950
June			11	1,380	30	81.0	255	15,200	48,916	91,900	8,720
July			24	6,420	6	23.0	687	42,200	95,114	502,000	15,800
Aug.			24	15,300	7	82.0	386	23,700	147,562	601,000	11,300
Sept.			14	43,200	1	307	6,280	374,000	310,143	1,173,000	10,400
Oct.			1	3,120	26	792	1,780	110,000	182,010	798,000	34,600
Nov.			1	1,180	10	505	633	37,700	65,219	110,000	29,000
Dec.			29	857	22	402	579	35,600	58,729	97,700	23,800
Yearly				43,200		23.0	1,120	813,300	1,149,816	2,431,850	509,600

⊕ Beginning with 1900. ϕ Beginning with 1896. # Data from June 1934 issue of "Irrigacion en Mexico". ** Including estimated records.

ARROYO LAS VACAS NEAR VILLA ACUÑA, COAHUILA

Corrections to the records of 1938, 1939, and 1940.

The discharges greater than 848 second feet recorded in the years 1938, 1939, and 1940 were estimated by extension of a discharge curve based only upon low-stage measurements as no high-stage measurements were available. In later years sufficient measurements were made at high stages to permit the discharge curve to be reliably extended. This extended curve makes necessary the following corrected record for discharges above 848 second feet. The following table corrects the records as published in Water Bulletins 8, 9, and 10.

Year	Month	Day	Discharge in Second Feet			Acre Feet	
			Daily	Maximum	Monthly Mean	Month	Year
1938	April	17	147	3,400	7.8	462	
1938	July	22	75.6				
1938	July	23	1,590	4,170			
1938	July	24	193		63.2	3,890	
1938	August	29	441	2,340	19.1	1,170	6,696.4
1939	March	25	438	2,460	16.6	1,020	
1939	July	13	166	1,570	8.5	514	
1939	August	5	364	4,200			
1939	August	12	92.2		19.8	1,210	
1939	Sept.	27	45.2				
1939	Sept.	28	183	1,830	12.4	727	5,130
1940	March	24	766	2,430	36.7	2,260	
1940	April	4	43.4				
1940	April	5	1,190	6,250			
1940	April	6	805		77.0	4,580	
1940	August	13	487	1,730	26.8	1,650	12,758

RIO GRANDE AT LOWER PRESIDIO STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car equipped for winch and heavy weights located about 1.70 miles above the international highway bridge between Presidio, Texas, and Ojinaga, Chihuahua, 2.0 miles below the confluence of the Rio Conchos with the Rio Grande, and 295.5 river miles below the American Dam at El Paso, Texas. Zero of gage is 2,556.42 feet, United States Coast and Geodetic Survey sea level datum.

RECORDS: Based on 49 meter measurements during the year. Computations by shifting channel methods. 1944 records good. Records available: May 1900 through March 1914; January 1924 through December 1944. Careful estimates covering all months when dependable measured records were not available in the period 1896-1926 are shown in Water Bulletin No. 12. Monthly records 1896-1943 will be found in Water Bulletin No. 13.

REMARKS: Station moved to its present location on June 14, 1932. Previously it was located 11.1 miles further downstream and .4 mile above the Alamito Creek confluence. See Water Bulletin No. 1 for description of the old station. Reservoirs in the United States, also Boquilla, Colina, and Rosetilla reservoirs on the Rio Conchos, as well as many irrigation diversions and drainage returns in the United States and Mexico, greatly modify the river flow.

COMPARATIVE FLOWS FROM RECORDS: * Momentary Peak: September 11, 1904, 162,000 # second feet; Min. May 14, 1904, 3.0 second feet. See pages 71 and 72 of Water Bulletin No. 8 for the magnitude and average frequency of floods since 1828.

Average Daily ⊕: Max. Sep. 11,1904, 149,200 sec. ft.; Min. May 14,1904, 5.0 sec. ft.
Average Monthly ⊕: Max. Sep. 1904, 24,870 sec. ft.; Min. May 1902, 11.0 sec. ft.
Average Yearly ⊕: Max. 1906, 4,870 sec. ft.; Min. 1922, 756 sec. ft.
Average of Two Successive Years ϕ: Max. 1905-1906, 4,850 sec. ft.; Min. 1939-1940, 982 sec. ft.
Average of Three Successive Years ϕ: Max. 1905-1907, 4,460 sec. ft.; Min. 1934-1936, 1,090 sec. ft.
Average of Four Successive Years ϕ: Max. 1904-1907, 4,230 sec. ft.; Min. 1934-1937, 1,070 sec. ft.
Average of Five Successive Years ϕ: Max. 1904-1908, 3,740 sec. ft.; Min. 1933-1937, 1,270 sec. ft.
Average of Ten Successive Years ϕ: Max. 1905-1914, 3,100 sec. ft.; Min. 1928-1937, 1,490 sec. ft.
Average of Forty-nine Years: 1896-1944, 2,240 sec. ft.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,620	1,280	821	748	291	580	304	680	733	3,950	1,220	794
2	1,700	1,130	873	698	269	672	286	568	1,430	3,610	1,120	926
3	1,310	1,020	761	780	305	670	276	550	1,680	3,410	1,190	890
4	1,530	1,460	879	618	444	553	264	532	1,360	3,380	1,280	889
5	1,580	1,240	999	593	403	518	230	441	2,870	3,210	1,220	793
6	1,610	1,020	837	499	556	520	215	369	3,520	2,990	1,150	864
7	1,260	854	1,080	433	458	488	208	330	2,880	2,660	1,030	777
8	948	824	1,170	401	384	581	190	382	1,990	2,550	1,070	889
9	1,280	757	1,300	393	324	643	199	516	1,800	2,470	916	962
10	1,370	812	1,350	378	379	614	282	663	2,180	2,550	840	889
11	1,450	1,060	1,590	364	508	960	574	562	8,850	2,400	892	999
12	1,170	840	1,600	666	423	1,130	1,450	706	13,500	2,360	885	938
13	¤ 1,290	728	1,100	741	353	1,520	2,540	* 1,180	34,200	2,300	¤ 886	986
14	¤ 1,180	727	1,130	677	312	866	1,100	* 1,000	37,600	2,160	¤ 887	840
15	¤ 1,270	770	1,100	682	288	718	1,080	797	16,700	2,050	¤ 887	784
16	¤ 1,300	970	1,060	663	277	585	780	1,060	10,800	2,190	¤ 888	769
17	* 1,180	826	781	493	290	444	641	892	8,710	1,720	¤ 889	837
18	1,190	979	668	404	344	387	614	817	6,870	1,730	¤ 890	822
19	1,150	947	661	342	272	339	624	847	5,940	1,850	¤ 891	766
20	932	787	628	300	242	305	477	888	5,020	1,910	¤ 891	869
21	1,190	679	782	287	273	264	410	928	4,280	2,070	¤ 892	821
22	1,300	740	759	333	283	224	412	1,210	3,870	2,070	¤ 893	749
23	1,380	926	614	296	266	279	432	1,340	3,600	1,790	¤ 894	833
24	1,190	814	532	257	272	211	* 4,080	6,150	3,240	1,590	¤ 895	795
25	1,440	804	470	239	260	194	¤ 1,800	1,420	3,080	1,320	¤ 896	906
26	1,230	738	516	262	275	487	¤ 3,210	1,100	3,360	1,130	¤ 896	908
27	1,160	765	467	425	984	328	¤ 3,320	¤ 1,660	3,910	1,350	¤ 897	1,070
28	1,310	784	407	394	796	309	¤ 2,480	* 1,370	4,050	1,530	898	1,020
29	1,170	746	711	335	531	360	* 1,680	896	4,420	1,550	948	1,180
30	1,260		743	307	582	312	1,160	1,190	4,400	1,280	852	1,060
31	1,150		692		596		868	929		1,520		1,090
Sum	40,100	26,027	27,081	14,008	12,240	16,061	32,186	31,973	206,843	68,650	*28,883	27,715

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1924-1944 Acre Feet Normal	Maximum	Minimum
Jan.	3.86	2.70	1	2,490	20	837	1,290	79,500	75,043	164,000	30,400
Feb.	3.32	2.45	4	1,660	21	646	897	51,600	64,914	99,700	33,900
Mar.	3.45	2.14	11	1,920	28	388	874	53,700	57,967	89,400	21,200
Apr.	2.67	1.86	13	845	25	234	467	27,800	44,379	84,100	4,460
May	4.14	1.85	27	2,910	26	257	395	24,300	66,346	270,000	3,660
June	3.27	1.65	13	1,620	25	184	535	31,900	70,636	267,000	9,250
July	6.39	1.66	24	7,560	8	173	1,040	63,800	121,671	564,000	23,900
Aug.	10.32	1.97	24	16,600	7	304	1,030	63,400	185,252	675,000	29,300
Sept.	16.66	3.35	14	43,900	1	714	6,890	410,000	351,833	1,324,000	17,000
Oct.	5.12	2.84	1	4,090	26	1,040	2,210	136,000	214,700	864,000	41,000
Nov.	3.20	2.55	1	1,440	10	824	963	* 57,300	81,562	141,000	37,800
Dec.	3.01	2.44	29	1,240	7	731	894	55,000	74,195	116,000	31,400
Yearly	16.66	1.65		43,900		173	1,450	1,054,300	1,408,498	3,466,700	662,700

¤ Estimated. * Partly estimated. # Revised on account of better data after the 1938 flood.
⊕ Beginning with 1900. ϕ Beginning with 1896. ** Including estimated records.

ALAMITO CREEK STATION NEAR PRESIDIO, TEXAS

DESCRIPTION: Water-stage recorder, about 1,800 feet above confluence with the Rio Grande, and six miles below Presidio, Texas, and Ojinaga, Chihuahua. This creek enters the Rio Grande .4 river mile below the lower end of the Presidio Valley and 306.9 river miles below the American Dam at El Paso, Texas. Zero of gage is 2,541.42 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon four meter measurements during the year and a rating curve, the high points of which are determined by slope-area calculations, and the medium and low points of which are determined by meter measurements; also, upon numerous estimates by the hydrographer at low flow. Computations by shifting channel methods. 1944 records fair. Records available: January 1, 1932. to December 31, 1944.

REMARKS: The flow of this spring-fed creek is modified by a small irrigation reservoir (San Estaban) 10.5 miles south of Marfa and by irrigation diversions for about 805 acres of land below the reservoir. The low flow is steady, being from springs. The high flow is erratic, being from storms. The drainage area above this station is 1,504 square miles, all in the United States, 461 square miles of which are above San Estaban Dam and 1,043 square miles below it.

COMPARATIVE FLOWS FROM RECORDS: Momentary Peak: Max. July 20, 1937, 9,670 sec. ft. with a gage height of 5.33 feet.; Min. May 1932, .87 sec. ft.

Average Daily:	Max. Oct. 24 1941,	3.290	sec.ft.;	Min. May 1-22, 1932,	.87	sec.ft.
Average Monthly:	Max. Sept. 1936,	329	sec.ft.;	Min. Feb. 1935,	2.0	sec.ft.
Average Yearly:	Max. 1941,	55.9	sec.ft.;	Min. 1934,	8.8	sec.ft.
Average of Two Successive Years:	Max. 1935-1936,	49.7	sec.ft.;	Min. 1933-1934,	9.5	sec.ft.
Average of Three Successive Years:	Max. 1935-1937,	40.8	sec.ft.;	Min. 1938-1940,	17.5	sec.ft.
Average of Four Successive Years:	Max. 1935-1938,	35.0	sec.ft.;	Min. 1937-1940,	18.9	sec.ft.
Average of Five Successive Years:	Max. 1932-1936,	32.5	sec.ft.;	Min. 1939-1943,	23.5	sec.ft.
Average of Ten Successive Years:	Max. 1935-1944,	29.8	sec.ft.;	Min. 1934-1943,	11.2	sec.ft.

Average of Thirteen Years: 1932-1944, 27.7 sec. ft.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	5.0	3.5	3.5	3.5	3.5	3.5	4.5	3.5	3.5	6.0	3.5	3.5
2	4.0	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	6.0	3.5	3.5
3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	152	3.5	3.5
4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	1,260	7.7	3.5	3.5
5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	2,080	3.0	3.5	3.5
6	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	1,160	3.0	3.5	3.5
7	3.5	3.5	3.5	3.5	3.5	3.5	3.5	581	520	3.0	3.5	3.5
8	3.5	3.5	3.5	3.5	3.5	3.5	3.5	162	360	3.0	3.5	3.5
9	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	210	3.0	3.5	3.5
10	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	110	3.0	3.5	3.5
11	3.5	3.5	3.5	3.5	3.5	231	3.5	3.5	45.0	3.0	3.5	3.5
12	3.5	3.5	3.5	3.5	3.5	20.6	3.5	3.5	15.0	3.0	3.5	3.5
13	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	7.0	3.0	3.5	3.5
14	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	5.0	3.0	3.5	3.5
15	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	3.0	3.5	3.5
16	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	267	3.0	3.5	3.5
17	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	293	3.0	3.5	3.5
18	3.5	3.5	3.5	3.5	3.5	3.5	3.5	219	4.0	3.0	4.0	3.5
19	3.5	3.5	3.5	3.5	3.5	3.5	3.5	132	4.0	3.0	3.5	3.5
20	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	4.0	3.0	3.5	3.5
21	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	4.0	3.0	3.5	3.5
22	3.5	3.5	3.5	3.5	3.5	3.5	522	3.5	4.0	3.0	3.5	3.5
23	3.5	3.5	3.5	3.5	3.5	652	51.3	3.5	4.0	3.0	3.5	3.5
24	3.5	3.5	3.5	3.5	3.5	67.9	1,190	708	4.0	3.0	3.5	3.5
25	3.5	3.5	3.5	3.5	3.5	706	3.5	509	4.0	3.0	3.5	3.5
26	3.5	3.5	3.5	3.5	3.5	124	3.5	67.9	5.0	3.0	3.5	3.5
27	3.5	3.5	3.5	3.5	621	5.0	3.5	91.1	5.0	3.0	3.5	3.5
28	3.5	3.5	3.5	3.5	70.4	5.0	3.5	5.0	170	3.0	3.5	3.5
29	3.5	3.5	3.5	3.5	3.5	5.0	3.5	3.5	13.0	3.5	3.5	3.5
30	3.5		3.5	3.5	3.5	5.0	3.5	3.5	6.0	3.5	3.5	3.5
31	3.5		3.5		3.5		3.5	3.5		3.5		3.5
Sum	110.5	101.5	108.5	105.0	792.9	1,891.5	1,862.3	2,552.5	6,577.5	254.2	105.5	108.5

Month	1944 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second Feet High Day	Extreme Second Feet High	Extreme Second Feet Low Day	Extreme Second Feet Low	Average Second Feet	Total Acre Feet	Period 1932-1944 Acre Feet Normal	Maximum	Minimum
Jan.	2.86	2.69	1	5.0	‡ 3	3.5	3.6	219	204	273	123
Feb.	2.70	2.69	‡ 1	3.5	‡ 1	3.5	3.5	201	188	234	111
Mar.	2.70	2.68	‡ 1	3.5	‡ 1	3.5	3.5	215	201	270	123
Apr.	2.72	2.69	‡ 1	3.5	‡ 1	3.5	3.5	208	252	743	119
May	4.68	2.55	27	2,150	‡ 1	3.5	25.6	1,570	1,775	8,520	184
June	4.66	1.93	25	2,500	‡ 1	3.5	63.0	3,750	2,295	* 6,360	206
July	5.30	1.92	24	3,590	‡ 1	3.5	60.1	3,690	3,045	6,650	249
Aug.	5.50	2.39	24	3,100	‡ 1	3.5	82.3	5,060	4,207	16,330	216
Sept.	5.72	2.39	4	4,400	‡ 1	3.5	219	13,000	4,868	19,600	179
Oct.	3.50	2.59	3	650	‡ 5	3.0	8.2	504	2,562	19,200	157
Nov.	2.75	2.60	18	14.0	‡ 1	3.5	3.5	209	276	807	119
Dec.	2.60	2.56	‡ 1	3.5	‡ 1	3.5	3.5	215	234	408	117
Yearly	5.72	1.92		4,400		3.0	39.7	28,841	20,107	40,444	6,397

‡ Other days. * Partly estimated.

TERLINGUA CREEK STATION NEAR TERLINGUA, TEXAS

DESCRIPTION: Water-stage recorder and cable with sit-down cable car located about 12 miles south of Terlingua, Texas. 2.4 miles above the confluence with the Rio Grande at the lower end of Santa Helena Canyon. Zero of gage is 2,192.01 ± .5 feet above mean sea level, United States Geological Survey datum. This creek enters the Rio Grande 371.6 river miles below the American Dam at El Paso, Texas.

RECORDS: Based upon numerous estimates by hydrographer at low flow, and the rating curve, the higher points of which were determined by slope-area calculations and the medium and low points of which were determined by meter measurements. Computations by shifting channel methods. 1944 records poor. Records available: January 1, 1932, to December 31, 1944.

REMARKS: The flow of this spring-fed creek is modified by irrigation diversions above the station. The low flow is steady, being from springs; the high flows are erratic, being from storms. On September 2, 1943, the "A" frame at this station on the east side of the creek was washed away and has not been replaced. The cable anchorage in the rock hill and the gage well on the west side were undamaged.

COMPARATIVE FLOWS FROM RECORDS: Momentary Peak: Max.. May 24, 1935, 34,900 sec. ft. with a gage height of 17.59 feet.; Min., September 29-30, 1937, " 0 sec. ft.

Average Daily: Max. June 1,1937. 17,200 sec.ft.; Min. Sep.29-30.1937, " 0 sec.ft.
Average Monthly: Max. June 1937, 921 sec.ft.; Min. Oct. 1934, .83 sec.ft.
Average Yearly: Max. 1937. 146 sec.ft.; Min. 1943, 5.5 sec.ft.
Average of Two Successive Years: Max. 1936-1937. 114 sec.ft.; Min. 1942-1943, 8.6 sec.ft.
Average of Three Successive Years: Max. 1935-1937, 111 sec.ft.; Min. 1942-1944, 11.5 sec.ft.
Average of Four Successive Years: Max. 1935-1938. 101 sec.ft.; Min. 1940-1943, 20.5 sec.ft.
Average of Five Successive Years: Max. 1935-1939, 99.7 sec.ft.; Min. 1940-1944, 19.9 sec.ft.
Average of Ten Successive Years: Max. 1932-1941. 66.5 sec.ft.; Min. 1934-1943, 59.0 sec.ft.
Average of Thirteen Years: 1932-1944, 53.8 sec. ft.

Mean Daily Discharge in Second Feet 1944 —— Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.1	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 4.0	" 5.0	" 3.0	" 3.0	" 3.0
2	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 4.0	" 5.0	" 3.0	" 3.0	" 3.0
3	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 4.0	" 32.4	" 200	" 3.0	" 3.0
4	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 4.0	" 500	" 10.0	" 3.0	" 3.0
5	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 4.0	" 65.0	" 3.0	" 3.0	" 3.0
6	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 4.0	" 50.0	" 3.0	" 3.0	" 3.0
7	2.0	10.5	2.0	2.0	2.0	" 3.0	" 4.0	" 4.0	" 20.0	" 3.0	" 3.0	" 3.0
8	2.0	12.4	2.0	2.0	2.0	" 3.0	" 4.0	" 500	" 10.0	" 3.0	" 3.0	" 3.0
9	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 150	" 4.0	" 3.0	" 3.0	" 3.0
10	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 4.0	" 4.0	" 3.0	" 3.0	" 3.0
11	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 4.0	" 4.0	" 3.0	" 3.0	" 3.0
12	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 4.0	" 4.0	" 3.0	" 3.0	" 3.0
13	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 4.0	" 4.0	" 3.0	" 3.0	" 3.0
14	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 4.0	" 4.0	" 3.0	" 3.0	" 3.0
15	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 4.0	" 4.0	" 3.0	" 3.0	" 3.0
16	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 4.0	" 4.0	" 3.0	" 3.0	" 3.0
17	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 4.0	" 4.0	" 3.0	" 3.0	" 3.0
18	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 563	" 3.0	" 3.0	" 3.0	" 3.0
19	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 362	" 3.0	" 3.0	" 3.0	" 3.0
20	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 100	" 3.0	" 3.0	" 3.0	" 3.0
21	2.0	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 10.0	" 3.0	" 3.0	" 3.0	" 3.0
22	2.0	2.0	2.0	2.0	2.0	" 3.0	" 150	" 70.2	" 3.0	" 3.0	" 3.0	" 3.0
23	2.0	2.0	2.0	2.0	2.0	" 50.0	" 20.0	" 40.7	" 3.0	" 3.0	" 3.0	" 3.0
24	2.0	2.0	2.0	2.0	2.0	" 100	" 500	" 356	" 3.0	" 3.0	" 3.0	" 3.0
25	2.0	2.0	2.0	2.0	2.0	" 50.0	" 4.0	" 10.0	" 3.0	" 3.0	" 3.0	" 3.0
26	2.0	2.0	2.0	2.0	2.0	" 200	" 4.0	" 316	" 3.0	" 3.0	" 3.0	" 3.0
27	2.0	2.0	2.0	2.0	"600	" 4.0	" 4.0	" 113	" 3.0	" 3.0	" 3.0	" 3.0
28	2.0	2.0	2.0	2.0	" 70.0	" 4.0	" 4.0	" 10.0	" 150	" 3.0	" 3.0	" 3.0
29	2.0	2.0	2.0	2.0	" 3.0	" 4.0	" 4.0	" 5.0	" 10.0	" 3.0	" 3.0	" 3.0
30	2.0		2.0	2.0	" 3.0	" 4.0	" 4.0	" 5.0	" 3.0	" 3.0	" 3.0	" 3.0
31	2.0		2.0		" 3.0		" 4.0	" 5.0		" 3.0		" 3.0
Sum	64.1	76.9	62.0	60.0	*731.0	" 482.0	" 782.0	"2,675.9	" 916.4	" 297.0	" 90.0	" 93.0

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1932-1944 Acre Feet Normal	Maximum	Minimum
Jan.	.50		1	7.0	♀ 2	2.0	2.1	127	184	743	82.7
Feb.	1.27		7	50.0	♀ 1	2.0	2.7	153	124	223	73.4
Mar.			♀ 1	2.0	♀ 1	2.0	2.0	123	172	489	72.4
Apr.			♀ 1	2.0	♀ 1	2.0	2.0	119	1,450	15,500	55.1
May			27	" 600	♀ 1	2.0	* 23.6	* 1,450	6,100	* 26,000	117
June			26	" 200	♀ 1	" 3.0	" 16.1	" 956	8,905	54,800	59.5
July			24	" 500	♀ 1	" 4.0	" 25.2	" 1,550	6,117	26,800	621
Aug.	7.65		26	" 4,000	♀ 1	" 4.0	" 86.3	" 5,310	4,850	* 26,680	123
Sept.			4	" 500	♀18	" 3.0	" 30.5	" 1,820	7,777	24,600	223
Oct.			3	" 500	♀ 5	" 3.0	" 9.6	" 589	2,466	8,100	50.8
Nov.			♀ 1	" 3.0	♀ 1	" 3.0	" 3.0	" 179	455	" 2,980	64.9
Dec.			♀ 1	" 3.0	♀ 1	" 3.0	" 3.0	" 184	406	3,080	90.0
Yearly				" 4,000		2.0	* 17.3	* 12,560	39,006	105,807	3,958.0

" Estimated * Partly estimated ♀ And other days

RIO GRANDE AT JOHNSON RANCH STATION

DESCRIPTION: Water-stage recorder and cable with stand-up cable car, with winch, located about 2 miles above Johnson Ranch, about 14 miles below Castolon, Brewster County, Texas, and Santa Helena Ranch, Chihuahua, Mexico, and 392.9 river miles below the American Dam at El Paso, Texas. Zero of the gage is 2,045.30 feet above mean sea level according to adjustment of 1943 in United States Geological Survey datum.

RECORDS: Based upon 8 meter measurements during the year. Computations by shifting channel methods. 1944 records fair. Records available: April 1936, to December 1944.

REMARKS: The river flow at this station is greatly modified by many irrigation diversions and drainage returns and by large reservoirs in the United States and Mexico.

EXTREME FLOWS: From high water marks, it was determined that a stage of 24.6 feet was reached October 3, 1932; the estimated discharge for this stage was 97,000 second feet. The lowest flow to pass this station since records began was 23.1 second feet on June 6, 1938.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,230	1,220	760	" 590	276	1,060	249	" 820	950	4,560	" 1,260	" 930
2	1,260	1,280	699	" 575	245	836	264	" 650	878	4,140	" 1,410	" 910
3	1,570	1,160	826	" 620	240	498	226	" 540	910	3,810	" 1,300	" 820
4	1,430	1,300	755	" 600	231	544	218	" 530	3,700	3,600	" 1,200	" 880
5	1,310	1,080	725	" 650	230	530	213	" 500	3,950	3,620	" 1,220	" 920
6	1,480	1,110	881	" 575	323	* 686	196	" 430	9,500	3,430	" 1,250	" 900
7	1,520	1,420	806	" 550	333	* 503	176	" 360	4,780	3,350	" 1,200	" 850
8	1,390	1,280	823	" 470	455	" 342	204	" 800	2,770	" 3,100	" 1,180	" 850
9	1,090	1,130	997	" 410	414	" 321	248	" 900	1,960	" 2,700	" 1,070	" 840
10	1,050	995	1,080	" 380	343	" 401	279	" 950	1,520	" 2,500	" 1,100	" 850
11	1,380	785	1,180	" 370	292	* 1,990	255	" 900	2,170	" 2,600	" 960	" 935
12	1,260	925	1,240	" 350	784	2,030	325	" 800	7,820	" 2,330	" 900	" 910
13	1,320	914	1,460	" 350	447	1,030	760	" 650	12,000	" 2,300	" 875	" 970
14	1,070	789	1,190	" 550	389	1,630	1,960	" 600	24,600	" 2,500	" 900	" 980
15	1,240	718	950	* 655	335	1,230	1,590	" 700	35,900	" 2,200	" 850	" 960
16	1,290	754	1,010	579	288	* 961	" 1,200	* 732	18,900	" 2,000	" 850	" 875
17	1,150	825	996	578	258	" 611	" 1,100	819	13,300	" 2,050	" 870	" 800
18	1,280	832	918	531	248	" 508	" 900	1,360	9,580	" 1,800	" 850	" 800
19	1,140	898	715	432	333	" 470	" 800	2,120	7,470	" 1,800	" 835	" 810
20	1,240	923	" 650	376	278	" 439	" 770	949	6,230	" 1,850	" 850	" 810
21	1,020	854	" 640	314	253	" 409	" 780	726	5,270	" 1,860	" 900	" 800
22	1,040	755	" 650	257	221	" 369	" 850	742	4,530	" 1,900	" 870	" 840
23	1,240	669	" 750	235	219	" 330	" 800	810	4,050	" 2,000	" 910	" 840
24	1,250	832	" 725	235	223	* 512	" 900	2,220	3,810	" 1,960	" 980	" 790
25	1,360	840	" 580	243	201	* 1,380	" 2,300	9,530	3,450	" 1,750	" 950	" 815
26	1,190	773	" 510	230	199	* 797	" 2,200	2,540	3,220	" 1,520	" 920	" 810
27	1,390	788	" 450	225	866	" 475	" 1,950	2,410	3,430	" 1,260	" 920	" 880
28	1,230	709	" 480	225	1,760	* 821	" 1,900	2,320	4,080	" 1,100	" 1,000	" 890
29	1,160	737	" 430	251	979	* 1,460	" 1,800	1,670	4,230	" 1,250	" 925	" 1,020
30	1,300		" 380	300	608	* 356	" 1,500	1,080	4,590	" 1,450	" 900	" 1,030
31	1,220		" 570		1,810		" 1,250	1,190		" 1,470		" 1,150
Sum	39,100	27,295	*24,826	*12,706	14,081	*23,529	*28,163	*41,348	209,548	*73,760	"30,205	"27,465

Month	1944 Extreme Gage Feet High	1944 Extreme Gage Feet Low	1944 Extreme Second Feet High Day	1944 Extreme Second Feet High	1944 Extreme Second Feet Low Day	1944 Extreme Second Feet Low	1944 Average Second Feet	1944 Total Acre Feet	ϕ Period 1936-1944 Acre Feet Average	Maximum	Minimum
Jan.	2.90	2.11	2	1,730	22	920	1,260	77,600	67,950	86,400	35,900
Feb.	2.64	1.79	7	1,450	23	662	941	54,100	61,112	80,900	49,300
Mar.	2.70		13	1,500	30	" 380	* 801	* 49,200	52,425	85,300	31,100
Apr.		.96	15	* 655	29	217	* 424	* 25,200	28,588	79,300	8,990
May	4.07	.96	27	3,380	25	197	454	27,900	80,144	240,000	19,900
June	4.35	" 1.24	11	3,840	9	" 316	* 784	* 46,700	95,478	251,000	17,700
July			26	" 2,200 #	7	" 176	* 908	* 55,900	174,244	620,000	43,900
Aug.			25	9,530	7	360	*1,330	* 82,000	189,911	485,000	36,000
Sept.	15.50	2.07	15	38,600	3	800	6,980	416,000	499,033	1,404,000	* 59,800
Oct.			1	4,560 #	28	"1,100	*2,380	* 146,000	248,544	929,000	* 75,600
Nov.			2	" 1,410	‡15	" 850 #	"1,010	" 59,900	83,567	164,000	40,500
Dec.			31	" 1,150 #	24	" 790 #	" 886	" 54,500	72,544	* 110,000	29,600
Yearly				38,600		" 176	1,510	1,095,000 *	1,653,540	3,461,400 ⊕	⊕ 741,300

ϕ Beginning April 1, 1936 ⊕ The yearly maximums and minimums are for the period 1937 to 1944 only
" Estimated # Mean daily ‡ And other days * Partly estimated

RIO GRANDE AT LANGTRY STATION, TEXAS

DESCRIPTION: Water-stage recorder, and cable with stand-up cable car and winch, located at Langtry, Texas, 79.5 miles above Villa Acuña, Coahuila, and 614.1 river miles below the American Dam at El Paso, Texas. Zero of the gage is 1,091.69 feet above mean sea level. United States Coast and Geodetic Survey datum.

RECORDS: Based upon 22 meter measurements during the year. Computations by shifting channel methods. 1944 records good. Records available: May 1900 to October 1914; December 1919 to March 1920; and January 1924 to December 1944.

REMARKS: Large reservoirs and many irrigation diversions, and drainage returns in the United States and Mexico, greatly modify the river flow.

EXTREME FLOWS: The highest recorded gage height was on June 18, 1922, when the extreme gage height was 56.9 feet; the estimated discharge for this stage from extension of the rating curve was 204,000 second feet. The lowest flow ever recorded was in May 1904, with an extreme of 270 second feet. On pages 75 and 76 of Water Bulletin No. 9 will be found a record of flood occurrences since 1864 at this station.

CORRECTIONS: The mean daily discharge for August 11, 1906, should be 51,700 second feet, the monthly and annual discharges in acre feet, as published in Water Bulletins Nos. 7 and 9, are in error; the correct amounts are 1,353,000 acre feet and 4,033,600 acre feet, respectively. December 1908, as published in Water Bulletin No. 7, is in error; the correct amount is 41,400 acre feet, and the yearly amount is 1,931,000 acre feet.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	1,520	1,550	1,090	815	542	1,240	1,040	1,560	1,810	4,360	1,730	1,220
2	1,540	1,580	1,060	782	518	1,600	1,140	1,320	1,580	6,090	1,770	1,200
3	1,620	1,540	1,070	812	516	1,450	848	1,240	1,540	6,820	1,590	1,240
4	1,600	1,540	1,080	922	557	1,270	688	1,140	1,390	5,230	1,700	1,250
5	1,700	1,480	1,060	884	554	1,150	608	1,050	1,260	4,620	1,580	1,150
6	1,830	1,510	1,110	914	539	1,040	591	959	11,700	3,940	1,450	1,140
7	1,660	1,370	1,110	883	530	1,120	584	883	9,550	3,620	1,450	1,200
8	1,670	1,540	1,050	935	538	1,110	579	849	8,240	3,340	1,470	1,170
9	1,750	1,550	1,140	868	535	961	579	836	4,800	3,150	1,460	1,170
10	1,780	1,440	1,170	804	560	1,020	635	933	3,240	3,020	1,430	1,110
11	1,640	1,310	1,140	783	632	895	780	1,390	2,660	2,910	1,350	1,130
12	1,460	1,190	1,280	729	703	962	678	1,390	2,340	2,780	1,350	1,100
13	1,500	1,170	1,330	697	799	3,900	631	1,190	3,600	2,760	1,300	1,190
14	1,640	1,130	1,420	671	734	2,840	631	1,240	9,040	2,680	1,220	1,180
15	1,670	1,190	1,510	652	853	1,940	630	950	16,300	2,630	1,160	1,210
16	1,580	1,240	1,610	627	819	1,820	940	887	26,900	2,790	1,170	1,250
17	1,440	1,150	1,410	608	721	1,720	1,880	979	26,700	2,470	1,150	1,230
18	1,630	1,080	1,280	757	685	1,490	1,340	1,420	13,400	2,330	1,150	1,220
19	1,550	1,080	1,310	816	947	1,270	1,190	1,090	11,100	2,330	1,170	1,140
20	1,520	1,120	1,290	814	711	1,060	1,160	1,060	8,260	2,320	1,150	1,110
21	1,540	1,180	1,200	812	949	992	1,020	2,200	7,410	1,990	1,130	1,120
22	1,490	1,190	1,100	750	678	928	938	1,630	6,370	1,980	1,150	1,130
23	1,520	1,230	1,010	683	639	858	900	1,220	5,160	2,090	1,210	1,120
24	1,400	1,200	974	631	638	797	1,030	1,080	4,000	2,100	1,160	1,110
25	1,420	1,140	954	576	631	746	959	1,090	3,280	2,320	1,210	1,160
26	1,550	1,060	1,000	580	629	710	1,110	4,090	3,820	2,160	1,310	1,120
27	1,600	1,110	1,000	560	634	885	2,690	7,750	3,800	1,950	1,270	1,090
28	1,570	1,160	932	530	644	1,330	2,330	5,700	3,510	1,810	1,180	1,140
29	1,590	1,110	884	523	671	1,000	1,830	3,440	3,680	1,610	1,180	1,130
30	1,580		838	544	908	971	1,960	* 2,670	4,390	1,480	1,280	1,190
31	1,540		806		1,650		1,960	2,450		1,540		1,270
Sum	49,100	37,140	35,218	21,962	21,664	39,075	33,879	55,686	210,830	91,220	39,880	36,190

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1924-1944 Acre Feet Normal	Maximum	Minimum
Jan.	1.86	1.35	6	1,860	25	1,350	1,580	97,400	99,247	* 245,000	52,300
Feb.	1.64	1.02	8	1,640	27	1,050	1,280	73,700	83,560	* 117,000	48,900
Mar.	1.68	.75	16	1,640	31	806	1,140	69,900	80,667	118,000	48,100
Apr.	1.10	.35	20	1,030	28	514	732	43,600	65,267	105,000	30,100
May	1.83	.33	31	1,790	3	494	699	43,000	109,989	271,000	32,300
June	3.62	.52	13	4,460	27	678	1,300	77,500	110,980	299,000	37,310
July	3.14	.39	27	3,620	10	580	1,090	67,200	161,773	719,000	56,100
Aug.	9.75	.68	27	16,300	10	809	1,800	110,000	227,552	* 730,000	67,700
Sept.	17.35	1.17	17	33,300	5	1,210	7,030	418,000	418,303	1,410,000	35,700
Oct.	5.75	1.63	2	8,430	30	1,450	2,940	181,000	272,620	1,063,000	55,200
Nov.	1.99	1.33	2	1,830	18	1,130	1,330	79,100	107,990	* 211,000	56,600
Dec.	1.52	1.27	31	1,310	27	1,080	1,170	71,800	95,679	135,000	49,800
Yearly	17.35	.33		33,300		494	1,836	1,332,200	1,833,627	3,851,500	879,000

* Partly estimated

PECOS RIVER STATION NEAR COMSTOCK, TEXAS

DESCRIPTION: Water-stage recorder, and cable with sit-down cable car and winch, located at the Pecos High Bridge on the railroad 12 miles northwest of Comstock, Texas. 5.5 miles above the confluence with the Rio Grande. This river enters the Rio Grande 638.2 river miles below the American Dam at El Paso, Texas. Zero of the gage is 1,058.01 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 20 meter measurements during the year. Water-stage recorder installed May 11, 1942. Computations by shifting channel methods. 1944 records good. Records available: March 17, 1898, to December 3, 1898, and May 1900 to December 31, 1944.

REMARKS: The river flow is completely modified at this station by many irrigation diversions and drainage returns, and by the reservoirs of the Carlsbad irrigation project in New Mexico, and the Red Bluff reservoir in Texas. For dry weather losses and gains in the Pecos River channel from Sheffield to the Rio Grande, see page 47, Water Bulletin No. 11, and the last table on page 70, Water Bulletin No. 12.

EXTREME FLOWS: The greatest recorded flow was on September 1, 1932, when the extreme gage height was 38.25 feet and the extreme flow was 116,000 second feet. An extreme gage height of 35.75 feet was reported on April 6, 1900; discharge based upon 1935 rating curve was 107,000 second feet. The lowest flow ever recorded was on August 31, 1930, when the extreme gage height was - 0.15 foot and the extreme flow was 97 second feet. On pages 75 and 76 of Water Bulletin No. 9 will be found a record of flood occurrences since 1899 at this station.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	427	302	291	298	217	221	192	178	306	358	275	290
2	515	321	310	276	224	211	221	175	284	349	276	291
3	440	321	306	248	224	208	189	172	276	439	276	300
4	396	310	298	238	287	211	183	166	269	369	277	300
5	362	294	287	" 238	302	208	178	163	262	328	273	301
6	337	298	294	238	269	284	175	169	4,460	327	274	301
7	333	302	298	238	227	186	172	166	1,420	335	272	302
8	314	318	306	241	217	186	172	163	525	330	272	298
9	302	387	314	241	211	186	169	160	450	321	269	293
10	306	366	337	227	205	192	166	163	404	325	270	286
11	302	314	321	224	208	205	166	166	387	316	270	290
12	302	291	302	221	205	357	163	166	370	311	271	289
13	321	287	310	211	208	378	166	169	387	307	271	285
14	337	310	302	211	208	353	169	169	374	302	272	285
15	329	302	294	211	198	294	189	169	353	290	269	288
16	321	306	287	208	195	266	189	169	341	285	269	288
17	318	302	294	" 250	201	262	205	169	329	285	278	288
18	314	291	294	258	214	238	211	175	321	284	279	287
19	314	284	291	241	302	227	205	175	314	288	290	287
20	314	284	273	349	248	221	205	180	298	291	291	290
21	310	284	269	298	298	208	201	195	298	287	292	289
22	306	287	284	217	284	198	189	230	310	284	284	286
23	306	276	310	211	241	195	189	248	310	280	285	289
24	310	269	266	201	224	189	272	248	329	276	286	285
25	302	298	252	195	291	186	345	234	366	273	290	285
26	310	294	248	198	266	180	276	764	410	273	291	285
27	329	302	241	195	262	178	234	664	760	274	292	284
28	318	287	230	192	258	175	211	814	444	274	292	287
29	314	294	255	192	258	175	198	576	378	274	293	291
30	306		358	198	248	186	189	396	358	275	294	298
31	298		349		227		178	333		275		298
Sum	10,313	8,781	9,071	6,964	7,427	6,764	6,167	8,084	16,093	9,485	8,393	9,016

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1924-1944 Acre Feet Normal	Maximum	Minimum
Jan.	1.21	.49	2	623	31	294	333	20,500	26,521	78,200	12,900
Feb.	1.08	.42	9	555	24	269	303	17,400	20,762	62,300	10,900
Mar.	.77	.24	22	409	29	208	293	18,000	19,424	40,700	11,100
Apr.	2.78	.18	20	1,730	28	189	232	13,800	17,820	42,400	9,520
May	.76	.19	19	404	16	192	240	14,700	38,132	156,000	10,800
June	1.32	.12	6	683	29	172	225	13,400	39,092	197,000	13,300
July	.80	.09	24	422	12	163	199	12,200	24,520	84,200	7,620
Aug.	6.04	.07	26	5,630	9	158	261	16,000	21,354	50,400	7,620
Sept.	7.99	.48	6	8,960	21	291	536	31,900	48,825	324,420	6,190
Oct.	2.88	1.79	3	897	31	271	306	18,800	56,408	486,000	9,520
Nov.	1.84	1.75	18	302	15	266	280	16,600	32,228	209,000	10,300
Dec.	1.83	1.76	5	309	10	282	291	17,900	26,259	91,800	12,200
Yearly	7.99	.07		8,960		158	291	211,200	371,345	1,330,900	176,780

" Estimated

GOODENOUGH SPRING STATION NEAR COMSTOCK, TEXAS

DESCRIPTION: Water-stage recorder and light cable (winch operated, for carrying current meter and light weights only), located 4,000 feet above confluence with Rio Grande and 11.75 miles southwest of Comstock, Val Verde County, Texas. The stream from this spring enters the Rio Grande 664.9 river miles below the American Dam at El Paso. Zero of gage is 971.9 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 13 meter measurements during the year. Computations by shifting channel methods. 1944 records good. Records available: February 23, 1929, to December 1944. Annual discharges for the years 1924 to 1928, inclusive, were estimated as were the monthly discharges for January and February 1929. See page 52, Water Bulletin No. 6.

REMARKS: The flow of this spring channel is very uniform and is not modified by diversions or storage. When the Rio Grande reaches a flow of about 35,000 second feet near this station, then backwater from the Rio Grande reaches this gaging station.

EXTREME FLOWS: The highest recorded gage height was on September 18, 1941, when the extreme gage height was 4.57 feet, discharge 846 second feet. The lowest flow ever recorded was on August 28, 1944, when the extreme flow was 75.7 second feet with a gage height of 0.43 feet. Backwater from the Rio Grande reached a gage height of 13.86 on September 4, 1935, and 17.30 on September 1, 1932.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	" 101	" 100	99.5	91.5	103	129	97.2	92.8	113	139	128	118
2	" 101	" 100	100	91.3	104	127	97.2	92.0	108	137	128	119
3	" 101	" 100	100	90.3	104	124	96.8	91.2	104	137	127	121
4	" 101	" 100	99.4	91.0	105	122	96.5	90.8	103	155	127	121
5	" 101	" 101	99.8	91.1	106	121	96.4	89.7	103	161	126	117
6	" 101	" 101	99.6	91.4	107	118	96.4	88.9	102	158	127	118
7	" 101	" 101	98.3	91.8	108	118	95.9	88.5	103	152	126	116
8	" 101	* 101	97.7	92.2	109	116	96.5	87.7	103	148	127	116
9	" 99.8	100	98.1	92.5	110	115	96.5	87.0	104	144	127	116
10	" 99.7	100	98.5	92.3	110	114	97.1	86.5	107	140	129	114
11	" 99.7	102	98.6	91.6	112	113	97.4	86.1	109	138	128	115
12	" 99.6	103	98.7	91.7	113	112	97.6	85.6	111	136	128	114
13	" 99.4	104	97.8	92.4	114	110	97.6	85.2	111	136	128	115
14	" 99.3	103	97.5	92.8	115	109	97.9	84.4	110	133	128	114
15	* 99.3	102	97.3	92.8	116	108	97.9	83.6	111	132	127	115
16	98.7	102	97.7	92.5	118	107	97.8	82.9	111	130	126	116
17	98.3	101	97.8	92.6	118	106	97.7	83.0	113	130	125	116
18	* 98.5	100	98.9	92.2	119	105	98.0	83.6	112	130	126	115
19	" 98.4	99.3	99.6	92.7	124	105	96.9	84.7	112	131	126	115
20	" 98.7	99.2	100	93.0	128	104	96.4	85.9	112	132	122	116
21	" 98.9	99.2	100	92.8	133	103	96.0	87.2	113	132	121	115
22	" 98.7	98.4	100	92.8	137	102	95.5	86.7	114	131	121	115
23	" 98.9	98.0	101	93.4	142	101	95.5	87.1	115	132	121	116
24	" 99.2	98.2	101	94.8	138	100	95.0	87.5	114	130	122	116
25	" 99.1	99.5	101	96.1	138	99.3	95.2	88.8	114	130	122	116
26	" 99.3	101	100	96.8	140	98.5	95.5	88.3	117	128	118	115
27	" 99.3	101	97.3	97.9	139	98.1	95.3	92.2	142	128	120	112
28	" 99.5	101	91.3	98.9	137	97.8	95.6	77.2	149	128	120	112
29	" 99.7	99.4	90.8	100	134	97.3	95.1	87.1	148	128	117	112
30	" 99.6		91.1	102	132	97.0	94.7	106	144	128	119	111
31	" 99.8		91.5		131		93.6	118		128		110
Sum	*2,915.2		2,805.2		3,277		2,746.2		4,222		3,577	
	*3,089.4		3,039.8		3,744		2,988.7		3,432		3,737	

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1924-1944 Acre Feet Normal	ϕ Maximum	ϕ Minimum
Jan.	.87	.75	‡ 1	101	17	98.3	99.7	* 6,130	8,690	19,620	6,130
Feb.	.96	.64	13	105	23	97.0	101	* 5,780	7,740	17,030	5,350
Mar.	.84	.48	23	101	29	90.4	98.1	6,030	8,179	17,770	5,900
Apr.	.63	.46	30	102	3	90.0	93.5	5,560	7,753	16,580	5,560
May	1.28	.50	27	144	1	102	121	7,430	8,458	16,840	6,950
June	.94	.59	1	129	30	96.7	109	6,500	8,538	16,040	6,500
July	.73	.56	18	98.3	31	93.3	96.4	5,930	8,767	16,460	5,930
Aug.	1.22	.47	27	145	28	75.7	88.6	5,450	8,528	15,840	5,450
Sept.	1.19	.64	28	151	6	92.8	114	6,810	11,039	" 41,490	6,550
Oct.	1.32	1.06	5	162	19	127	136	8,370	9,940	* 25,870	6,840
Nov.	1.09	.90	2	129	29	117	125	7,410	9,139	21,850	6,540
Dec.	.94	.65	3	122	31	109	115	7,090	8,967	20,470	6,380
Yearly	1.32	.46		162		75.7	108	78,490	105,738	192,840	78,490

ϕ Maximum and minimum figures are for the period 1929-1944
‡ And other days " Estimated * Partly estimated

DEVILS RIVER STATION NEAR DEL RIO, TEXAS

DESCRIPTION: Water-stage recorder on main highway bridge, 12 miles northwest of Del Rio, Texas, and 4.5 miles above confluence with the Rio Grande. Devils River enters the Rio Grande 680.1 river miles below the American Dam at El Paso, Texas. High-stage measurements from highway bridge, low-stage measurements by wading. Zero of gage is 951.80 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 12 meter measurements during the year. 1944 records good. Records available: May 1900 to March 1914 at a point .8 mile above Southern Pacific Railroad bridge; September 2,1932, to December 31, 1944, at highway bridge 2 miles upstream from railroad bridge.

REMARKS: The monthly flow of this spring-fed river is not modified, but the daily flow is modified by 2 power dams, with a combined hydro-electric generating capacity of 3,100 K.V.A., the operation of which began in 1929. There are irrigation diversions for only 8 acres from this river.

EXTREME FLOWS: The highest recorded gage height was on September 1, 1932, when the extreme was 41.0 feet at the present station and the extreme flow was 597.000 second feet. (See Special Flood Report 1932 by the United States Section of this Commission.) This corresponds to a flow of 143 second feet per square mile of watershed. Better topographic maps now available show the Devils River watershed above this gaging station to be 4,185 square miles instead of 4,060 square miles as previously reckoned. Zero flow sometimes occurs for a few hours at this station. When this happens, the gage height falls to .84 foot or below. On pages 75 and 76 of Water Bulletin No. 9 will be found a record of flood occurrences since 1832 at this station.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	364	316	386	276	256	297	292	215	314	375	287	241
2	395	317	329	284	237	289	242	217	309	352	291	313
3	336	301	345	272	251	280	240	265	332	375	299	289
4	352	306	336	294	332	259	236	388	335	376	308	314
5	318	304	321	279	219	298	234	237	339	366	307	313
6	334	263	296	280	300	546	235	255	10,200	344	281	310
7	331	283	295	278	232	257	245	215	6,290	347	312	252
8	309	296	293	282	252	318	242	203	2,720	344	294	265
9	275	285	299	285	253	278	218	228	1,070	371	320	293
10	295	282	309	275	234	263	241	222	714	349	277	269
11	303	292	301	266	222	368	242	226	613	323	276	248
12	303	270	311	270	263	402	210	223	569	311	327	270
13	345	267	302	274	239	269	246	223	558	306	252	269
14	312	273	306	268	252	300	245	224	471	314	317	288
15	309	273	337	263	208	248	259	223	459	328	372	231
16	293	284	307	271	210	302	246	222	416	311	299	284
17	302	281	304	266	244	264	260	200	433	316	300	251
18	309	262	327	266	189	258	246	239	377	306	309	305
19	291	283	314	269	282	267	240	241	381	300	316	247
20	280	303	299	283	332	292	240	241	376	291	321	236
21	313	286	298	279	1,440	261	223	233	379	303	297	265
22	278	279	346	293	444	244	222	233	380	301	292	256
23	328	263	311	364	294	234	194	241	380	299	279	234
24	264	308	299	195	271	236	241	302	399	231	303	283
25	283	313	302	201	233	237	226	356	375	360	305	255
26	310	302	296	216	263	235	223	236	396	294	258	235
27	311	290	304	268	318	236	214	370	521	295	277	274
28	287	517	301	260	536	236	221	364	548	291	277	251
29	294	423	282	250	322	234	229	447	512	276	302	258
30	291		276	281	338	256	225	428	409	273	266	252
31	296		277		306		212	324		278		257
Sum	9,611	8,722	9,609	8,108	9,772	8,464	7,289	8,241	31,575	9,906	8,921	8,308

Month	1944 Extreme Gage Feet High	1944 Extreme Gage Feet Low	1944 Extreme Second Feet High Day	1944 Extreme Second Feet High	1944 Extreme Second Feet Low Day	1944 Extreme Second Feet Low	1944 Average Second Feet	1944 Total Acre Feet	Period 1924-1944 Acre Feet Normal	Period 1924-1944 Acre Feet Maximum	Period 1924-1944 Acre Feet Minimum
Jan.	1.73	1.07	7	612	31	124	310	19,100	24,055	* 45,250	14,500
Feb.	1.73	.80	28	634	6	52.1	301	17,300	21,476	* 36,880	13,300
Mar.	1.72	.81	3	620	15	55.3	310	19,100	22,483	39,420	14,000
Apr.	1.76	.96	20	655	3	87.1	270	16,100	24,971	67,800	11,100
May	3.22	.68	21	4,130	19	7.6	315	19,400	46,302	356,900	10,500
June	2.08	.95	6	1,130	‡22	49.2	282	16,800	40,486	285,000	15,000
July	1.68	.96	17	530	2	54.1	235	14,500	45,481	377,000	14,500
Aug.	1.89	.90	3	791	8	17.9	266	16,300	25,478	* 51,000	15,500
Sept.	7.25	1.05	6	26,100	26	169	1,050	62,600	93,715	895,990	13,900
Oct.	1.60	.79	3	623	24	9.0	320	19,600	48,789	349,000	18,600
Nov.	1.67	.69	8	647	15	0	297	17,700	26,860	60,300	15,900
Dec.	1.57	.90	3	519	26	42.0	268	16,500	24,846	49,520	15,900
Yearly	7.25	.68		26,100		0	351	255,000	444,942	1,284,080	237,400

‡ And other days * Partly estimated

ARROYO LAS VACAS NEAR VILLA ACUNA, COAHUILA

DESCRIPTION: Water-stage recorder, and cable with sit-down cable car, located 1.5 miles upstream from Villa Acuña, Coahuila, and 1.8 miles upstream from the confluence with the Rio Grande just above Del Rio-Villa Acuña international bridge. This confluence is 693.5 river miles below the American Dam at El Paso, Texas. Zero of the gage is 884.15 feet, United States Coast and Geodetic Survey datum. Prior to September 7,1939, a staff gage at the same location and on the same datum was used.

RECORDS: Based upon 148 meter measurements during the year, 146 by the Mexican and 2 by the United States Section. Computations by shifting channel methods. 1944 records good. Records available: Occasional estimates from June 1935 to March 20, 1938, after which the present record extends to December 31, 1944.

REMARKS: The low flow of this stream is spring-fed.

COMPARATIVE FLOWS FROM RECORDS: Momentary Peak: Max. Oct. 3,1944, 25,640 sec.ft. with a gage height of 17.45 feet. Min. 0.7 sec.ft. on various days in November 1938 and on March 16,1940, with a gage height of 0.98 ft.

Average Daily: Max. Oct. 3,1944, 3,530 sec.ft.; Min. Nov.1939 & Mar.1940, 0.7 sec.ft.
Average Monthly: Max. Oct. 1944, 153 sec.ft.; Min. Jan 1938, 1.1 sec.ft.
Average Yearly: Max. 1944, 25.8 sec.ft.; Min. 1938, 9.2 sec.ft.
Average of Two Successive Years: Max. 1943-1944, 25.4 sec.ft.; Min. 1938-1939, 8.1 sec.ft.
Average of Three Successive Years: Max. 1942-1944, 20.8 sec.ft.; Min. 1938-1940, 11.3 sec.ft.
Average of Four Successive Years: Max. 1941-1944, 19.4 sec.ft.; Min. 1938-1941, 12.4 sec.ft.
Average of Five Successive Years: Max. 1940-1944, 19.1 sec.ft.; Min. 1938-1942, 12.4 sec.ft.
Average of Seven Years: 1938-1944, 15.9 sec. ft.

CORRECTION: See page 17 for revisions of 1938, 1939, and 1940 records.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	* 13.1	6.4	14.5	6.7	6.4	11.3	5.6	2.5	5.3	6.0	6.7	6.7
2	* 13.1	6.4	12.4	6.4	4.2	11.0	5.6	2.8	5.6	6.4	8.8	7.4
3	* 13.1	6.4	12.0	4.6	3.9	11.0	5.7	2.8	6.4	3,530	6.7	10.2
4	* 13.1	4.9	12.0	5.3	5.7	11.0	5.6	2.4	4.9	727	6.7	11.3
5	* 13.1	4.9	12.0	5.3	5.7	9.2	4.2	2.5	3.2	72.8	6.4	11.0
6	* 13.1	6.4	12.0	3.5	5.7	309	4.2	2.8	4.2	47.3	6.3	11.0
7	* 13.1	6.4	11.6	5.0	5.3	29.3	4.2	2.8	4.2	27.6	6.4	10.6
8	* 13.1	7.4	11.6	5.3	3.5	18.4	4.2	2.8	4.2	27.2	6.3	10.2
9	* 13.1	7.4	11.6	3.9	3.9	15.5	4.2	2.5	3.2	21.2	6.4	10.2
10	* 10.6	7.1	11.6	4.2	4.2	13.4	4.2	2.4	3.2	17.0	4.6	9.9
11	* 10.6	7.1	11.3	4.2	5.7	14.8	2.8	2.5	3.2	17.3	4.6	9.5
12	* 10.6	7.1	11.3	4.2	4.6	11.6	2.8	2.4	3.2	16.2	4.6	8.8
13	* 10.6	8.8	11.3	4.2	4.6	11.3	2.8	2.5	2.8	15.2	4.6	8.1
14	* 10.6	9.2	11.3	3.9	4.6	11.0	2.8	2.4	2.8	15.9	4.9	7.8
15	* 10.6	11.3	11.0	3.9	4.6	8.8	3.2	2.5	2.8	17.0	5.6	7.1
16	* 8.8	11.3	11.0	3.9	4.6	9.9	3.2	2.4	2.8	13.4	5.6	5.3
17	* 8.8	9.5	11.0	3.9	4.6	9.2	3.5	2.5	2.8	13.4	5.6	6.7
18	* 8.8	11.3	9.2	3.9	71.3	8.5	3.5	2.5	2.8	13.1	7.1	4.9
19	* 8.8	11.3	9.2	3.9	448	7.8	3.5	2.8	2.8	12.7	6.7	4.9
20	8.8	11.3	9.2	20.8	55.8	7.8	3.2	2.1	2.8	12.4	6.4	5.3
21	7.4	9.2	9.2	22.2	593	7.8	3.2	2.5	2.8	12.4	6.4	6.0
22	7.4	8.8	8.8	7.4	32.5	6.7	3.2	3.2	2.8	12.4	6.4	6.4
23	7.4	8.5	8.8	5.3	20.8	5.6	3.2	4.6	2.8	12.4	6.3	6.0
24	7.4	252	8.8	5.7	16.2	3.9	3.2	2.5	2.8	12.0	6.4	7.1
25	7.4	186	9.5	4.9	23.3	5.3	3.2	2.4	2.8	12.0	8.1	6.7
26	6.4	23.3	9.9	4.2	81.9	3.5	3.2	3.2	97.1	8.5	7.8	5.3
27	4.9	15.9	10.6	5.3	18.4	5.3	3.2	4.2	137	7.8	7.8	5.3
28	6.3	14.8	7.8	4.2	15.5	4.2	3.2	3.9	17.3	8.1	7.4	5.3
29	6.4	13.8	7.1	4.2	13.4	5.6	3.2	124	7.8	6.4	7.1	7.1
30	6.3		7.1	6.4	13.1	4.2	2.8	66.4	5.6	6.7	7.1	7.1
31	6.4		6.7		11.3		2.1	9.2		6.7		5.6
Sum	*299.2	694.2	321.4	176.8	1,496.3	591.9	112.7	277.0	352.0	4,734.5	191.8	234.8

Month	1944 Extreme Gage Feet High	1944 Extreme Gage Feet Low	1944 Extreme Second Feet High Day	1944 Extreme Second Feet High	1944 Extreme Second Feet Low Day	1944 Extreme Second Feet Low	1944 Average Second Feet	1944 Total Acre Feet	Period 1938-1944 Acre Feet Average	Period 1938-1944 Acre Feet Maximum	Period 1938-1944 Acre Feet Minimum
Jan.	* 1.48	* 1.31	#	* 13.1	#	* 4.9	* 9.7	* 593	365	697	" 79.4
Feb.	5.48	1.31	24	2,160	#	4.9	23.9	1,380	458	1,380	" 113
Mar.	1.54	1.44	1	14.5	#	6.7	10.4	637	841	2,260	" 181
Apr.	2.17	1.38	20	250	6	3.5	5.9	351	1,196	4,580	168
May	6.63	1.38	19	3,150	8	3.5	48.3	2,970	1,386	4,310	156
June	5.54	1.35	6	1,980	26	3.5	19.7	1,170	512	1,170	118
July	1.57	1.48	#	5.7	31	2.1	3.6	224	1,866	7,040	224
Aug.	3.44	1.44	29	646	20	2.1	8.9	549	911	1,650	234
Sept.	4.17	1.51	26	1,090	#	2.8	11.7	698	1,511	6,850	119
Oct.	17.45	1.35	3	*25,640	#	6.0	153	9,390	1,610	9,390	134
Nov.	1.38	1.31	#	8.8	#	4.6	6.4	380	527	" 1,670	106
Dec.	1.41	1.38	#	11.3	#	4.9	7.6	466	419	704	132
Yearly	17.45	1.31		*25,640		2.1	25.9	18,808	11,602	18,808	5,130

" Estimated. # Various days of the month. * Partly estimated.

RIO GRANDE AT DEL RIO STATION

DESCRIPTION: Water-stage recorder, located on the downstream side of a pier of the international highway bridge between Del Rio, Texas, and Villa Acúna, Coahuila, and 693.4 river miles below the American Dam at El Paso, Texas. Measurements from highway bridge. Zero of gage 863.80 feet above mean sea level, United States Coast and Geodetic Survey datum. Prior to February 20. 1942, the zero of this gage was one foot higher.

RECORDS: Based upon 16 meter measurements during the year, 3 by the United States Section and 13 jointly by the United States and Mexican Sections. Computations by shifting channel methods. 1944 records good. Records available: December 1923 to December 1944. Records are also available for station 11 miles upstream from May 1900 to April 1915; and for station 7.5 miles upstream at McKee's Switch from December 1919 to March 1920. Several small springs, but no important tributaries, enter the river between the various station sites.

REMARKS: The river flow is greatly modified at this station by many irrigation diversions and drainage returns and by large reservoirs in the United States and Mexico.

EXTREME FLOWS: The highest recorded gage height was on September 1, 1932, when the extreme gage height was 34.5 feet, discharge 605,000 second feet. This is the greatest rate of discharge ever recorded at any point on the Rio Grande. (See Special Flood Report 1932 by American Section of this Commission.) The lowest flow ever recorded was in May 1940, when the extreme gage height was -.39 feet and the extreme flow 890 second feet. Numerous records of extreme flows may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet 1944 —— Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,570	2,370	2,030	1,580	1,320	2,500	1,660	2,340	3,170	5,600	2,420	2,030
2	2,620	2,400	2,010	1,570	1,340	2,120	1,700	2,010	2,650	5,490	2,570	2,040
3	2,510	2,400	1,990	1,520	1,280	2,340	1,870	1,790	2,430	12,600	2,620	2,080
4	2,590	2,350	1,980	1,520	1,370	2.320	1,560	1,840	2,360	10,700	2,480	2,100
5	2,510	2,360	1,980	1,640	1,420	2.100	* 1,390	1,650	2,060	5,900	2,560	2,080
6	2,590	2,290	1,940	1,610	1,440	2.890	* 1,300	1,510	18,000	4,940	2,420	1,980
7	2,750	2,350	1,940	1,640	1,400	1,950	* 1,190	1,450	23,800	4,730	2,320	1,930
8	2,570	2,230	1,960	1,600	1,350	1,920	* 1,210	1,340	14,200	4,720	2,320	1,990
9	2,540	2,380	1,920	1,640	1,370	1,890	* 1,210	* 1,280	8,070	4,550	2,290	1,970
10	2,600	2,410	2,020	1,580	1,340	1,680	* 1,140	* 1,260	5,540	4,540	2,290	1,960
11	2,680	2,320	2,060	1,530	1,360	1,880	* 1,220	1,330	4,540	4,030	2,260	1,900
12	2,570	2,210	2,080	1,480	1,440	1,710	* 1,340	1,890	3,810	3,840	2,220	1,910
13	2,430	2,040	2,160	1,480	1,520	1,960	* 1,280	1,910	3,370	3,700	2,210	1,890
14	2,450	2,010	2,220	1,430	1,600	4,290	* 1,210	1,710	6,490	3,730	2,130	1,950
15	2,540	2,060	2,310	1,400	1,610	3,420	* 1,200	1,770	11,100	3,660	2,100	1,940
16	2,560	2,040	2,380	1,390	1,590	2,670	* 1,230	1,500	19,500	3,690	2,020	1,940
17	2,480	2,100	2,450	1,360	1,720	2,620	* 1,360	1,430	30,500	3,660	2,010	1,950
18	2,340	1,990	2,320	1,360	1,600	2,420	2,370	1,390	21,800	3,460	2,020	1,960
19	2,450	1,960	2,190	1,460	2,390	2,190	1,940	1,960	13,000	3,370	2,040	1,950
20	2,420	1,970	2,250	1,640	1,960	2,000	1,770	1,670	10,200	3,350	2,040	1,890
21	2,400	2,010	2,130	3,600	4,000	1,730	1,690	1,620	8,350	3,280	2,010	1,830
22	2,420	2,060	2,060	1,740	2,100	1,540	1,530	2,650	7,440	2,980	1,980	1,860
23	2,370	2,060	1,990	1,690	1,680	1,450	1,430	2,310	6,580	2,980	1,970	1,860
24	2,400	2,340	1,790	‼ 1,500	1,520	* 1,380	1,370	1,990	5,940	2,970	2,040	1,850
25	2,230	2,480	1,730	‼ 1,440	1,460	* 1,320	1,580	1,760	5,660	3,050	2,010	1,890
26	2,310	2,060	1,720	‼ 1,380	1,650	* 1,290	1,580	1,730	5,240	3,140	1,970	1,890
27	2,450	1,940	1,740	‼ 1,340	1,550	* 1,260	1,590	9,580	6,390	3,000	2,090	1,860
28	2,430	2,100	1,750	* 1,310	1,810	* 1,350	2,980	6,280	5,480	2,830	2,060	1,860
29	2,420	2,160	1,640	1,290	1,570	1,970	2,680	7,440	4,750	2,670	2,000	1,850
30	2,430		1,600	1,300	1,560	1,680	2.310	4,170	5,010	2,500	1,990	1,910
31	2,420		1,600		1,590		2,400	3,630		2,380		1,930
Sum	77,050	63,450	61,940	47,020	50,910	61,840	50,290	76,190	267,430	132,040	65,460	60,030

1944									Period 1924-1944		
Month	Extreme Gage Feet		Extreme Second Feet				Average Second Feet	Total Acre Feet	Acre Feet		
			High		Low						
	High	Low	Day		Day				Normal	Maximum	Minimum
Jan.	1.94	1.46	7	2,960	18	2,210	2,490	153,000	171,941	344,000	103,000
Feb.	3.00	1.24	24	4,990	27	1,870	2,190	126,000	145,785	229,970	96,200
Mar.	1.75	‡ 1.08	17	2,650	31	1,580	2,000	123,000	144,450	224,670	94,700
Apr.	3.89	.80	21	6,960	29	1,240	1,570	93,300	131,092	200,000	83,300
May	3.90	.75	21	7,130	3	1,200	1,640	101,000	219,050	* 742,000	68,200
June	3.08	‼ .60	6	5,270	27	‼ 1,140	2,060	123,000	219,573	704,000	107,000
July	2.20	‼ .55	28	3,440	‡ 7	‼ 1,070	1,620	* 99,800	253,105	*1,228,000	97,800
Aug.	7.70	* .69	27	18,100	10	1,200	2,460	151,000	294,827	865,000	124,000
Sept.	11.90	1.30	7	42,100	5	2,090	9,190	547,000	605,194	2,754,590	72,600
Oct.	13.52	1.39	3	50,200	31	2,260	4,260	262,000	417,998	1,634,000	110,000
Nov.	1.68	1.14	3	2,710	22	1,880	2,180	130,000	191,986	467,000	108,000
Dec.	1.41	1.10	5	2,240	21	1,760	1,940	119,000	171,673	295,180	102,000
Yearly	13.52	‼ .55		50,200		‼ 1,070	2,800	2,028,100	2,966,674	6,041,720	1,639,000

‼ Estimated. * Partly estimated. ‡ Various days of the month.

SAN FELIPE CREEK STATION NEAR DEL RIO, TEXAS

DESCRIPTION: Water-stage recorder at Silos farm road bridge 1.75 miles south of Del Rio, Texas, 2 miles above the confluence with the Rio Grande and 4 miles below the Del Rio gaging station on the Rio Grande. This stream enters the Rio Grande 695.2 river miles below the American Dam at El Paso, Texas. Low and medium flow measurements by wading or from bridge. High flows by slope-area measurements. Zero of gage is 875.05 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 12 meter measurements during the year. Computations by shifting channel methods. 1944 records good. Records available: September 1, 1931, to December 31, 1944.

REMARKS: The flow of this spring-fed creek was greatly modified in 1944 by municipal diversions at Del Rio of 1,829.7 acre feet and by irrigation diversions above this station.

COMPARATIVE FLOWS FROM RECORDS: Momentary Peak: Max., June 14, 1935, 45,000 sec. ft. with a gage height of 23.20 feet.; Min., December 19, 1934, 2.2 sec. ft.

Average Daily: Max. June 14, 1935, "16,200 sec.ft.; Min. Nov. 30, 1934, 2.5 sec.ft.
Average Monthly: Max. June 1935, 805 sec.ft.; Min. Feb. 1935, 8.8 sec.ft.
Average Yearly: Max. 1935, 136 sec.ft.; Min. 1934, 30.7 sec.ft.
Average of Two Successive Years: Max. 1935-1936, 107 sec.ft.; Min. 1937-1938, 46.8 sec.ft.
Average of Three Successive Years: Max. 1935-1937, 86.1 sec.ft.; Min. 1937-1939, 49.7 sec.ft.
Average of Four Successive Years: Max. 1932-1935, 79.1 sec.ft.; Min. 1937-1940, 51.0 sec.ft.
Average of Five Successive Years: Max. 1932-1936, 78.9 sec.ft.; Min. 1937-1941, 49.9 sec.ft.
Average of Ten Successive Years: Max. 1932-1941, 64.4 sec.ft.; Min. 1933-1942, 61.3 sec.ft.
Average of Thirteen Years: 1932-1944, 63.2 sec. ft.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	70.6	69.6	37.6	39.0	40.1	38.6	43.1	29.0	48.7	58.3	46.4	48.1
2	57.3	68.6	37.6	38.2	42.5	39.3	38.5	29.1	* 44.6	54.8	45.6	48.1
3	55.6	68.5	38.3	39.0	43.3	37.1	37.7	29.1	* 44.6	1,300	45.5	54.0
4	55.6	68.5	40.4	39.7	53.8	37.7	36.3	29.1	* 43.8	1,310	45.5	51.4
5	57.3	68.5	39.6	39.7	46.6	37.7	37.9	29.2	43.9	80.6	45.4	50.6
6	56.6	68.5	39.6	40.5	45.8	424	35.7	31.9	83.4	73.7	45.4	50.7
7	56.6	66.6	41.8	39.1	45.8	63.3	38.1	29.9	55.6	71.8	44.5	49.9
8	56.6	67.5	41.7	38.3	44.9	57.7	38.1	29.2	54.7	70.1	44.4	49.1
9	56.6	66.5	42.4	37.6	44.9	58.6	39.0	29.3	54.7	69.2	44.4	50.0
10	55.7	66.5	42.4	39.8	45.8	57.6	37.6	27.9	57.4	68.4	45.1	50.0
11	55.7	66.5	40.7	42.2	50.8	58.6	36.9	27.9	54.7	65.7	45.9	49.2
12	59.2	66.5	38.3	42.3	46.6	54.0	37.8	* 28.0	51.2	64.0	45.8	49.2
13	59.2	66.5	38.3	41.5	40.0	51.3	37.9	* 28.0	49.7	60.2	46.6	49.3
14	59.2	66.4	38.2	42.3	37.0	52.2	36.3	28.7	48.9	56.7	45.7	49.3
15	59.3	66.4	38.1	41.5	35.5	51.2	34.9	29.4	48.9	" 55.7	45.6	49.3
16	58.4	66.4	37.3	42.3	30.3	46.9	34.3	28.1	48.9	" 55.7	44.8	49.4
17	58.4	66.4	39.5	41.6	30.3	44.5	35.1	28.1	49.7	" 54.8	44.7	50.2
18	60.2	66.4	41.8	37.8	29.6	40.3	33.0	28.1	48.9	" 54.8	48.8	49.4
19	60.2	66.3	42.6	38.5	57.7	38.0	33.0	28.9	48.1	" 53.8	51.1	48.7
20	60.2	67.3	43.4	70.9	38.3	37.9	35.3	29.6	48.1	* 52.8	49.5	50.3
21	64.0	66.3	46.0	112	172	34.1	35.4	26.9	48.2	52.0	48.6	48.7
22	69.6	66.3	44.3	45.7	42.9	36.4	35.5	30.3	48.2	51.1	49.4	49.6
23	70.7	66.2	42.7	45.8	41.3	36.3	33.4	42.1	48.2	50.3	49.5	48.8
24	71.7	200	42.7	43.3	41.2	37.0	34.2	41.3	49.8	50.2	50.3	49.6
25	69.7	289	41.9	41.7	42.0	36.4	32.8	40.5	49.8	49.4	49.5	49.6
26	71.7	67.0	37.3	42.5	44.4	34.2	38.2	46.0	83.7	48.4	48.8	49.7
27	71.7	62.2	38.9	42.5	43.5	34.2	29.6	48.7	62.3	47.5	48.0	48.9
28	70.6	61.3	38.1	42.5	42.7	34.3	30.3	77.9	57.9	47.5	48.8	48.0
29	70.6	49.7	42.0	43.3	42.6	35.9	31.1	110	58.0	47.4	49.6	51.4
30	70.6		41.2	39.4	43.4	43.0	31.7	74.6	57.3	47.4	48.9	59.2
31	69.6		38.9		41.0		31.7	52.0		46.5		58.3
Sum	1,939.0	2,272.4	1,253.6	1,330.5	1,446.6	1,688.3	1,100.4	1,168.8	1,591.9	4,268.8	1,412.1	1,558.0

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	⊕ Period 1932-1944 Acre Feet Normal	Maximum	Minimum
Jan.	1.58	1.05	1	109	4	54.7	62.5	3,850	4,172	7,070	934
Feb.	7.78	.85	24	2,380	29	37.7	78.4	4,510	2,897	5,490	487
Mar.	1.08	.82	25	55.4	25	34.2	40.4	2,490	2,673	4,190	1,300
Apr.	4.92	.82	20	879	1	34.4	44.4	2,640	2,893	* 6,120	566
May	4.98	.71	21	899	16	26.9	46.7	2,870	4,080	6,700	2,310
June	8.59	.79	6	2,950	28	31.3	56.3	3,350	6,745	* 47,900	1,440
July	1.02	.71	26	51.8	27	28.2	35.5	2,180	3,432	* 6,650	1,120
Aug.	2.75	.64	29	292	11	24.1	37.7	2,320	3,226	5,590	1,280
Sept.	3.21	.88	26	392	3	41.5	53.1	3,160	4,929	19,100	2,070
Oct.	16.10	.93	3	14,800	31	46.5	138	8,470	4,126	8,470	1,710
Nov.	1.05	.87	18	55.6	14	41.0	47.1	2,800	3,198	5,560	526
Dec.	1.10	.92	30	61.0	18	45.3	50.3	3,090	3,296	5,820	496
Yearly	16.10	.64		14,800		24.1	57.5	41,730	45,667	98,137	22,202

⊕ The average maximum and minimum discharges for September, October, November, and December are for the period 1931-1944. " Estimated. * Partly Estimated.

PINTO CREEK STATION NEAR DEL RIO, TEXAS

DESCRIPTION: Water-stage recorder, cable with sit-down cable car equipped for winch and heavy weights, and concrete control dam, 0.6 mile below Del Rio - Eagle Pass highway and 5.5 miles above confluence with the Rio Grande. This creek enters the Rio Grande 717.7 river miles below the American Dam at El Paso, Texas. Zero of gage is 854.61 feet above mean sea level, United States Coast and Geodetic Survey datum. Also a series of pipe gages (high stage indicating gages) 750 feet upstream from the gage well.

RECORDS: Based upon 18 meter measurements during the year and stable rating curve. 1944 records good. Records available: November 1928 to December 31, 1944.

REMARKS: The flow of this spring-fed creek is modified by small irrigation diversions above the gaging station.

COMPARATIVE FLOWS FROM RECORDS: Momentary Peak: Max. Aug. 31, 1932, 54,650 sec. ft. with a gage height of 21.08 feet.; Min., sometimes dry.

Average Daily:	Max. Aug. 31. 1932,	24,380	sec. ft.;	Min.		sometimes dry.
Average Monthly:	Max. Aug. 1932,	792	sec. ft.;	Min.		sometimes dry.
Average Yearly:	Max. 1932.	105	sec. ft.;	Min.	1937,	3.7 sec. ft.
Average of Two Successive Years:	Max. 1932-1933.	60.9	sec. ft.;	Min.	1939-1940,	7.9 sec. ft.
Average of Three Successive Years:	Max. 1931-1933.	45.5	sec. ft.;	Min.	1942-1944,	8.8 sec. ft.
Average of Four Successive Years:	Max. 1932-1935.	58.5	sec. ft.;	Min.	1939-1942,	9.5 sec. ft.
Average of Five Successive Years:	Max. 1932-1936,	49.8	sec. ft.;	Min.	1939-1943,	10.3 sec. ft.
Average of Ten Successive Years:	Max. 1929-1938.	34.1	sec. ft.;	Min.	1935-1944,	23.3 sec. ft.

Average of Sixteen Years: 1929-1944, 25.1 sec. ft.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	8.9	6.4	9.0	6.2	5.1	8.4	5.2	0	0.6	1.3	1.9	2.3
2	8.3	6.3	8.9	5.9	5.2	8.1	6.0	0	" 0.3	1.1	1.9	2.2
3	7.5	6.5	8.6	5.9	4.9	7.8	4.9	0	0	* 1.0	1.8	3.6
4	7.3	6.4	20.3	5.8	3.2	7.5	3.3	0	0	81.1	1.8	3.4
5	7.3	6.1	8.5	5.8	3.2	7.3	3.0	0	0	50.3	2.0	3.6
6	7.3	6.1	8.0	5.8	3.2	378	2.6	0	" 0.5	17.0	2.0	2.2
7	7.3	6.0	7.9	5.7	3.3	22.9	2.3	0	2.4	6.6	1.9	1.8
8	7.2	6.0	7.7	5.7	2.8	22.6	1.8	0	2.4	6.9	1.5	1.8
9	7.0	6.0	7.6	5.7	2.6	12.9	1.5	0	1.3	6.3	1.2	1.8
10	" 7.0	6.0	7.8	5.4	2.7	8.3	1.0	0	0.7	4.0	1.1	1.7
11	" 6.9	5.9	7.6	5.2	2.8	18.4	0.8	0	0.5	3.5	1.0	1.8
12	" 7.1	5.8	7.5	5.1	2.9	7.8	0.8	0	" 0.1	3.5	1.0	2.0
13	7.1	5.8	7.3	5.0	2.6	6.7	0.6	0	0	3.2	0.9	2.2
14	7.1	5.7	7.2	5.0	2.4	6.5	0.4	0	0	2.9	0.8	2.2
15	7.1	5.7	7.1	4.9	2.2	6.2	0.2	0	0	2.7	0.8	2.2
16	7.1	5.4	6.9	4.7	2.1	5.9	0.1	0	0	2.4	0.7	2.4
17	7.2	5.6	6.8	4.7	2.1	5.5	0	0	0	2.4	0.7	2.6
18	7.2	5.7	6.8	4.6	2.3	5.4	0	0	0	2.3	1.7	2.7
19	7.2	5.9	6.7	4.6	6.6	5.2	0	0	0	2.3	2.4	2.7
20	7.1	6.0	6.6	8.8	30.4	5.0	0	0	0	2.3	2.2	2.7
21	7.0	6.2	6.7	13.5	520	5.0	0	0	0	2.3	2.1	2.7
22	7.0	6.3	10.5	8.3	47.5	3.3	0	0	0	2.5	2.1	2.7
23	6.9	6.5	6.6	5.4	22.3	2.8	0	0	0	2.7	2.2	2.7
24	6.7	29.8	6.5	5.0	11.4	2.5	0	0	12.6	3.0	2.2	2.7
25	6.7	247	6.5	5.0	12.1	2.3	0	0	2.9	2.9	2.2	2.7
26	6.6	52.3	6.5	4.8	18.1	1.7	0	0	2.7	2.6	2.0	2.7
27	6.5	28.3	6.4	4.7	260	1.5	0	0	6.3	2.6	2.2	2.7
28	6.4	12.5	6.4	4.7	61.3	1.2	0	0	2.4	2.3	2.2	2.7
29	6.7	9.4	6.3	4.4	20.9	1.3	0	" 0.5	1.7	2.3	2.1	2.7
30	6.4		6.2	4.4	9.9	3.0	0	1.3	1.5	2.3	2.3	2.6
31	6.4		6.2		8.6		0	1.0		2.3		2.6
Sum	219.5	517.6	239.6	170.7	1,084.7	581.0	34.5	2.8	38.9	230.9	50.9	77.4

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1929-1944 Acre Feet Normal	Maximum	Minimum
Jan.	2.71	2.52	1	9.9	‡28	6.4	7.1	435	493	2,110	0
Feb.	5.73	2.51	25	1,100	15	5.3	17.8	1,030	473	1,860	8.3
Mar.	3.68	2.58	4	50.9	‡30	6.2	7.7	475	593	2,500	4.3
Apr.	4.13	2.51	20	109	‡29	4.4	5.7	339	862	3,600	43.0
May	7.95	2.41	21	3,070	‡16	2.1	35.0	2,150	2,548	20,500	28.0
June	8.46	2.41	6	3,720	28	0.9	19.4	1,150	2,392	30,000	0
July	2.58		2	6.1	‡17	0	1.1	68.4	3,392	30,000	0
Aug.	2.44		30	1.8	‡ 1	0	0.1	5.6	3,368	48,700	0
Sept.	3.54		24	40.5	‡ 3	0	1.3	77.2	2,173	17,300	0
Oct.	4.07	2.20	4	120	3	0.9	7.4	458	937	4,000	0
Nov.	2.52	2.41	21	4.6	‡16	0.7	1.7	101	421	2,150	0
Dec.	2.52	2.46	4	3.8	10	1.4	2.5	154	ϕ 515	ϕ 2,180	ϕ 0
Yearly	8.46			3,720		0	8.9	6,443.2	18,167	# 76,259.3	#2,651.4

Partly estimated for the period 1924-1944. ‡ And other days. " Estimated. * Partly estimated.
ϕ Period 1928-1944.

RIO SAN DIEGO STATION AT JIMENEZ, COAHUILA

DESCRIPTION: Water-stage recorder and cable with sit-down cable car. Masonry and concrete Cipoletti weir control for measuring discharges up to 700 second feet. The station is located 4.4 miles west of Jimenez, Coahuila, and five miles above the confluence with the Rio Grande. This stream enters the Rio Grande 722.4 river miles below the American Dam at El Paso, Texas. Zero of the gage is 828.90 feet United States Coast and Geodetic Survey mean sea level datum.

RECORDS: Based upon 4 meter measurements during the year and the weir discharge table. 1944 records good. Records available: 1924-1944. The records from 1922 to September 1932 are considered doubtful.

REMARKS: The weir control at this station was constructed in November 1932. The flow of this spring-fed stream is modified by two small storage reservoirs, San Miguel and Centenario on the Irrigation District of San Carlos, Coahuila, and by irrigation of Dolores Hacienda just above this station. One-fourth mile down stream from this gaging station, water was diverted for irrigating about 1,236 acres of land in the Jimenez Community.

COMPARATIVE FLOWS FROM RECORDS: Momentary Peak: Max.; Sept. 18, 1941, about 75,200 sec. ft. with a gage height of 20.96 feet. According to local inhabitants, the water level at the present gage reached the same height in 1905 as on September 18, 1941, but because of channel conditions, it is thought that the maximum flow in 1905 was less than in 1941, even though the gage heights were the same. Min.; The river was dry on several occasions from April to June 1939.

Average Daily: Max. Sept. 18, 1941, 23,200 sec. ft.; Min. Dry several days April and May, 1939.
Average Monthly: Max. May 1935, 1,960 sec. ft.; Min. April 1939, 18.7 sec. ft.
Average Yearly: Max. 1935. 526 sec. ft.; Min. 1939, 37.8 sec. ft.
Average of Two Successive Years: Max. 1935-1936, 334 sec. ft.; Min. 1938-1939, 58.3 sec. ft.
Average of Three Successive Years: Max. 1933-1935, 288 sec. ft.; Min. 1937-1939, 54.0 sec. ft.
Average of Four Successive Years: Max. 1933-1936, 251 sec. ft.; Min. 1937-1940, 63.9 sec. ft.
Average of Five Successive Years: Max. 1933-1937. 210 sec. ft.; Min. 1936-1940, 79.1 sec. ft.
Average of Twelve Years: 1933-1944, 161 sec. ft.

Mean Daily Discharge in Second Feet 1944 —— Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	87.2	74.8	63.2	42.0	32.8	87.2	24.0	24.0	284	413	304	192
2	87.2	74.9	63.2	42.0	32.8	87.2	32.9	24.0	304	389	304	192
3	87.2	74.9	63.2	42.0	32.8	87.2	32.8	16.2	284	389	304	192
4	87.2	74.9	63.2	32.9	32.8	87.2	32.9	16.2	284	434	284	209
5	87.2	74.9	63.2	32.9	32.8	87.2	32.8	24.0	265	434	284	209
6	87.2	74.8	52.3	32.9	32.8	265	32.9	24.0	336	434	284	192
7	74.8	63.2	63.2	24.0	42.0	129	32.8	24.0	325	459	264	175
8	74.9	63.2	52.3	32.9	32.8	114	32.9	24.0	265	434	264	175
9	74.9	63.2	63.2	32.9	42.0	87.2	32.8	24.0	265	389	264	175
10	74.9	74.9	52.3	32.9	42.0	87.2	32.9	24.0	265	413	246	159
11	74.8	74.9	42.0	42.0	32.8	87.2	32.8	24.0	245	413	246	159
12	74.9	74.9	52.3	32.9	24.0	74.9	32.9	24.0	245	413	246	159
13	74.9	63.2	52.2	32.9	32.8	74.9	24.0	24.0	245	413	227	144
14	74.9	63.2	52.3	32.9	32.8	74.9	24.0	24.0	245	413	227	143
15	74.9	63.2	52.3	32.8	42.0	74.9	24.0	32.8	245	389	227	143
16	74.8	63.2	52.3	42.0	42.0	74.9	24.0	24.0	245	389	227	144
17	74.9	63.2	52.3	32.8	42.0	74.9	32.9	32.8	245	367	227	143
18	74.9	52.2	52.3	32.8	52.3	63.2	32.8	24.0	245	367	227	143
19	74.9	52.3	52.3	32.8	302	52.3	32.9	24.0	245	367	227	143
20	74.9	63.2	52.2	32.9	235	32.8	42.0	16.2	245	367	246	144
21	74.8	63.2	42.0	32.8	1,904	32.8	42.0	16.2	246	346	227	143
22	74.9	52.3	42.0	32.8	367	32.8	42.0	16.2	227	325	227	143
23	74.9	52.3	42.0	32.8	175	32.8	42.0	24.0	227	325	227	143
24	63.2	52.3	42.0	32.8	143	32.8	42.0	74.9	227	325	227	144
25	63.2	87.2	42.0	32.8	129	32.8	42.0	52.3	245	325	227	159
26	74.9	87.2	42.0	24.0	114	32.8	32.9	42.0	371	325	227	159
27	63.2	74.9	42.0	24.0	209	42.0	24.0	52.3	671	325	209	159
28	74.9	63.2	42.0	24.0	143	32.8	24.0	63.2	346	325	209	159
29	74.8	63.2	42.0	24.0	129	24.0	24.0	52.3	390	325	209	159
30	63.2		52.3	24.0	114	24.0	24.0	399	413	325	209	175
31	63.2		52.3		114		24.0	246		304		175
Sum	2,336.7	1,943.0	1,594.4	978.2	4,734.3	2,122.9	984.9	1,512.6	8,690	11,661	7,327	5,053

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1933-1944 Acre Feet Normal	Maximum	Minimum
Jan.	2.95	2.89	#	87.2	#	63.2	75.4	4,630	8,228	36,430	2,910
Feb.	2.99	2.85	25	100	#	52.3	67.0	3,850	5,539	25,760	1,970
Mar.	2.89	2.82	#	63.2	#	42.0	51.4	3,160	5,089	21,500	2,140
Apr.	2.82	2.76	#	42.0	#	24.0	32.6	1,940	5,573	16,820	1,110
May	6.23	2.76	21	4,030	12	24.0	153	9,390	16,158	120,000	1,290
June	4.43	2.76	6	1,130	#	24.0	70.8	4,210	10,428	62,240	1,420
July	2.82	2.76	#	42.0	#	24.0	31.8	1,950	7,728	21,550	1,210
Aug.	4.04	2.72	30	798	#	16.2	48.8	3,000	7,100	19,950	2,030
Sept.	4.63	3.25	27	1,180	#	227	290	17,240	19,587	84,620	2,210
Oct.	3.81	3.38	7	611	#	304	376	23,130	24,369	⊕ 146,640	⊕ 1,950
Nov.	3.38	3.22	#	304	#	209	244	14,530	14,974	⊕ 68,290	⊕ 1,960
Dec.	3.22	3.08	#	209	#	143	163	10,020	9,453	⊕ 45,160	⊕ 2,060
Yearly	6.23	2.72		4,030		16.2	134	97,050	134,226	381,720	27,460

Various days of the month. ⊕ Period 1932-1944.

RIO SAN RODRIGO STATION NEAR EL MORAL, COAHUILA

DESCRIPTION: Water-stage recorder and cable with sit-down cable car. Reinforced concrete control weir for measuring the flow up to 177 second feet. This station is located 10.6 miles west of the town of El Moral, Coahuila, 19.3 miles northwest from Piedras Negras and 11.2 miles above the confluence with the Rio Grande. Zero of the gage is 879.95 feet above sea level, United States Coast and Geodetic Survey datum. This stream enters the Rio Grande 735.4 river miles below the American Dam at El Paso, Texas.

RECORDS: Based upon 4 meter measurements during the year and the 1942 rating table, the lower portion of which conforms to the weir table. The upper portion of the rating table is based upon meter measurements. 1944 records good. Records available: 1922 to 1944. The records from 1922 to September 1932 are considered doubtful.

REMARKS: This station was constructed in October 1932 at a point 1,640 feet upstream from Paso de las Mulas. Zero of this gage was 884.27 ft. above mean sea level. In December 1938, the station was moved 3,300 feet downstream to the present site. The flow of this spring-fed river was modified by irrigation diversions above and below this station.

COMPARATIVE FLOWS FROM RECORDS: Momentary Peak: Max. Sept. 7, 1932, 81.200 sec. ft. with a gage height of 16.08 feet at the first station location. Min. Frequently dry with a gage height of 0.0 feet.

Average Daily: Max. Sept. 7, 1932, 27,900 sec. ft.; Min. frequently dry.
Average Monthly: Max. Sept. 1932, 4,270 sec. ft.; Min. Dry during July 1939.
Average Yearly: Max. 1932, 576 sec. ft.; Min. 1939, 10.2 sec. ft.
Average of Two Successive Years: Max. 1932-1933, 335 sec. ft.; Min. 1938-1939, 21.5 sec. ft.
Average of Three Successive Years: Max. 1932-1934, 235 sec. ft.; Min. 1937-1939, 20.1 sec. ft.
Average of Four Successive Years: Max. 1932-1935, 226 sec. ft.; Min. 1937-1940, 26.1 sec. ft.
Average of Five Successive Years: Max. 1932-1936, 195 sec. ft.; Min. 1936-1940, 34.3 sec. ft.
Average of Ten Successive Years: Max. 1932-1941, 121 sec. ft.; Min. 1934-1943, 64.6 sec. ft.
Average of Thirteen Years: 1932-1944, 110 sec. ft.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	50.2	37.4	21.2	12.0	8.1	16.3	12.0	2.1	2,281	367	184	152
2	50.2	31.4	21.2	8.1	8.1	16.2	16.3	2.1	1,437	325	173	152
3	43.8	31.4	21.2	8.1	8.1	16.3	16.2	2.1	939	284	173	162
4	43.8	26.1	21.2	8.1	8.1	16.2	16.3	2.1	657	270	173	152
5	37.4	26.1	21.2	8.1	8.1	16.2	16.2	4.9	512	256	173	142
6	37.4	26.1	21.2	8.2	4.9	31.4	12.0	4.9	540	228	173	142
7	37.4	26.1	21.2	12.0	8.1	26.1	12.0	4.9	* 1,109	242	173	142
8	31.4	26.1	21.2	12.0	8.1	21.3	12.0	4.9	* 756	229	163	142
9	31.4	26.1	21.2	8.1	8.1	21.2	12.0	0	448	228	162	132
10	31.4	21.2	21.2	8.1	8.1	16.3	12.0	0	399	229	163	132
11	31.4	21.2	21.2	8.1	8.1	16.2	8.1	0	367	218	162	132
12	31.4	21.2	21.2	8.1	37.4	16.2	8.1	0	339	206	163	132
13	37.4	21.2	16.2	8.2	26.1	16.3	8.1	0	325	206	162	132
14	37.4	21.2	16.2	8.1	16.2	16.2	4.9	0	297	195	163	132
15	37.4	21.2	16.2	8.1	12.0	16.2	5.0	0	270	195	162	132
16	31.4	26.1	16.2	8.1	12.0	16.3	4.9	0	242	195	163	132
17	31.4	26.1	16.2	8.1	12.0	16.2	5.0	0	218	184	162	132
18	31.4	26.1	16.2	8.2	8.1	16.2	4.9	0	195	184	173	132
19	31.4	26.1	16.2	8.1	125	16.3	5.0	0	173	184	184	123
20	31.4	26.1	16.2	8.1	31.4	16.2	4.9	0	162	184	173	122
21	31.4	26.1	16.2	8.1	167	16.2	5.0	0	162	184	173	122
22	31.4	26.1	12.0	8.1	105	16.3	4.9	0	152	184	163	123
23	31.4	21.2	12.0	8.2	43.8	12.0	5.0	0	142	184	162	122
24	31.4	21.2	12.0	8.1	31.4	12.0	4.9	0	142	184	173	122
25	31.4	37.4	12.0	8.1	26.1	12.0	5.0	0	142	184	162	123
26	31.4	26.1	12.0	4.9	21.2	12.0	4.9	0	206	184	152	122
27	31.4	21.2	12.0	5.0	21.2	12.0	2.1	0	325	184	152	122
28	31.4	21.2	12.0	4.9	21.2	12.0	2.1	37.4	399	184	152	123
29	37.4	21.2	12.0	5.0	26.1	12.0	2.1	50.2	431	184	152	122
30	37.4		12.0	4.9	21.2	12.0	2.1	2,839	399	184	152	122
31	37.4		12.0		21.2		2.2	3,955		184		123
Sum	1,089.8	736.2	520.2	239.3	871.5	488.3	236.2	6,909.6	14,166	6,633	4,970	4,097

Month	1944 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second Feet High Day	Extreme Second Feet High	Extreme Second Feet Low Day	Extreme Second Feet Low	Average Second Feet	Total Acre Feet	Period 1932-1944 Acre Feet Normal	Maximum	Minimum
Jan.	.36	.26	#	50.1	#	31.4	35.2	2,160	3,523	14,850	171
Feb.	.49	.20	25	79.5	#	21.2	25.4	1,460	2,523	11,580	555
Mar.	.20	.10	#	21.2	#	8.1	16.8	1,030	2,424	9,900	576
Apr.	.13	.07	#	12.0	#	4.9	8.0	475	2,011	6,870	382
May	1.44	.07	19	431	#	4.9	28.1	1,730	5,537	42,330	58.0
June	.49	.13	6	79.5	#	12.0	16.3	969	5,322	37,630	30.0
July	.16	.03	#	16.2	#	2.1	7.6	469	3,751	12,170	0
Aug.	6.56	0	30	5,120	#	0	223	13,710	4,441	13,710	39.0
Sept.	4.66	.72	1	2,930	#	142	472	28,100	28,772	* 253,960	471
Oct.	1.35	.85	1	381	#	184	214	13,160	11,099	81,360	815
Nov.	.85	.75	#	184	#	152	166	9,860	5,551	24,450	535
Dec.	.79	.66	#	162	#	123	132	8,130	4,552	19,060	131
Yearly	6.56	0		5,120		0	112	81,253	79,506	414,310	7,436

* Partly estimated. # Various days of the month.

RIO GRANDE AT EAGLE PASS STATION

DESCRIPTION: Water-stage recorder and cable with stand-up cable car and winch located .5 mile above the international highway bridge between Eagle Pass, Texas and Piedras Negras, Coahuila, and 754.6 river miles below the American Dam at El Paso, Texas. Zero of the gage is 682.91 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 166 meter measurements, 155 by the Mexican and 11 by the United States Section during the year. Computations by shifting channel methods. 1944 records good. Records available: May 1900 to April 1916; November 1923 to December 1944.

REMARKS: The river flow is greatly modified at this station by many irrigation diversions, drainage returns, and large reservoirs in the United States and Mexico. On April 10, 1939, the operation and maintenance of this station was turned over from the United States Section to the Mexican Section of the Commission.

EXTREME FLOWS: The greatest recorded flow was on September 2, 1932, when the extreme gage height was 49.00 feet, discharge 569,000 second feet. (See Special Flood Report 1932 by the United States Section of this Commission.) The lowest flow ever recorded was on August 19, 1937, when the extreme gage height was 2.22 feet and the extreme flow 632 second feet. Numerous records of extremes may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,490	2,410	2,330	1,580	1,190	1,570	1,700	2,230	6,180	5,510	2,590	2,210
2	2,550	2,250	2,060	1,500	1,160	2,370	1,500	2,130	4,770	5,900	2,640	2,340
3	2,550	2,330	2,150	1,560	1,220	2,100	1,560	1,780	3,810	6,820	2,750	2,480
4	2,530	2,320	2,030	1,470	1,150	2,340	1,700	1,600	3,320	18,360	2,740	2,560
5	2,620	2,280	1,960	1,450	1,230	2,370	1,500	1,550	3,040	7,490	2,680	2,540
6	2,510	2,140	1,940	1,570	1,190	5,580	1,390	1,600	4,100	6,600	2,800	2,620
7	2,620	2,150	1,930	1,510	1,260	3,040	1,410	1,470	23,520	5,620	2,630	2,380
8	2,670	2,120	1,940	1,570	1,300	2,130	1,250	1,400	15,470	5,650	2,630	2,150
9	2,440	1,980	2,050	1,540	1,210	2,030	1,160	1,340	10,450	5,440	2,520	2,130
10	2,550	2,190	2,120	1,650	1,130	1,980	1,150	1,280	7,130	5,050	2,470	1,960
11	2,700	2,170	2,180	1,570	1,190	1,750	1,110	1,230	5,790	4,910	2,550	1,880
12	2,690	2,040	2,070	1,450	1,160	1,940	1,070	1,220	4.840	4,410	2,510	1,880
13	2,560	1,910	2,120	1,440	1,220	1,850	1,110	1,690	4.170	4,270	2,540	1,980
14	2,490	1,870	2,230	1,350	1,300	2,420	1,150	1,880	3,990	4,240	2,410	1,970
15	2,360	1,840	2,370	1,320	1,340	4,060	1.180	1,600	9.250	4,130	2,330	2,060
16	2,430	1,810	2,390	1,250	1,360	3,510	1.170	1,610	13,950	4,130	2,250	2,080
17	2,460	1,920	2,430	1,340	1,290	2,880	1,160	1,370	19,880	4,170	2,220	2,100
18	2,320	1,990	2,470	1,300	1 410	2,470	1.250	1,260	27,300	4,030	2,240	2,160
19	2,240	1,880	2,300	1,290	2,610	2,370	2,170	1,300	15,150	3,850	2,300	2,170
20	2,360	1,830	2,130	1,330	2,600	2,250	1.830	1,730	11,900	3,740	2,320	2,180
21	2,280	1,830	2,180	2,070	9,040	2,020	1,620	1,550	9,390	3,740	2,270	2,140
22	2,350	1,860	2,130	3,280	3,920	1,730	1,540	1,500	8,050	3,440	2,290	2,100
23	2,330	1,940	1,970	1,660	2,390	1,550	1,380	2,530	7,200	3,390	2,300	2,120
24	2,420	1,990	1,860	1,660	1,920	1,420	1,350	2,570	6,820	3,230	2,370	2,020
25	2,330	3,830	1,800	1,400	1,740	1,380	1,370	1,960	6,710	3,330	2,440	2,030
26	2,140	2,550	1,730	1,350	1,700	1,380	1,480	1,700	6,040	3,420	2,340	2,110
27	2,290	2,120	1,750	1,220	2,040	1,350	1,480	2,330	8,330	3,510	2,350	2,090
28	2,450	2,050	1,800	1,250	2,910	1,280	1,490	10,380	6,780	3,350	2,350	2,020
29	2,500	2,190	1,750	1,240	2,220	1,250	2,870	6,250	5,580	3,080	2,480	2,010
30	2,430		1,680	1,100	1,750	1,810	2,500	8,930	5,190	3,000	2,230	2,040
31	2,470		1,560		1,500		2.230	7,660		2,760		2,080
Sum	76,130	61,790	63,410	45,270	58,650	66,180	46,830	78,630	268,100	150,570	73,540	66,590

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1924-1944 Acre Feet Normal	Maximum	Minimum
Jan.	3.35	2.72	7	3,080	26	1,990	2,460	151,000	187,520	365,000	104,400
Feb.	4.82	2.33	25	6,430	21	1,510	2,130	122,600	154,841	254,250	99,200
Mar.	3.15	2.13	17	2,840	31	1,270	2,050	125,800	152,441	247,440	95,900
Apr.	4.23	1.71	21	4,840	30	858	1,510	89,790	140,736	219,000	89,790
May	7.74	1.64	21	16,670	4	823	1,890	116,300	253.451	* 869,000	77,500
June	6.17	2.03	6	11,020	29	1.170	2,210	131,300	255,942	1,005,000	113,340
July	3.31	1.80	29	3,170	10	964	1,510	92,890	269.609	*1,255.000	92,890
Aug.	7.19	2.56	28	13,910	12	1,940	2.540	156,000	307,629	969,000	123,500
Sept.	11.22	3.08	18	29,660	6	2,540	8,940	531,800	636,960	2,857,410	80,900
Oct.	12.01	2.99	4	31,040	31	2,530	4,860	298,700	461,141	1,680,300	121,000
Nov.	3.28	2.62	2	3,040	30	2,070	2,450	145,900	219,783	512,800	109,000
Dec.	3.15	2.49	6	3,050	22	1,860	2,150	132,100	188,940	369,760	105,620
Yearly	12.01	1.64		31,040		823	2,880	2,094,180	3.228,993	6,668,460	1,798,000

* Partly estimated.

RIO ESCONDIDO STATION AT VILLA FUENTE, COAHUILA

DESCRIPTION: Water-stage recorder and cable with sit-down cable car, located 3.1 miles southwest of the City of Piedras Negras, Coahuila, on the outskirts of Villa de Fuente, 5 miles above the confluence with the Rio Grande and 5.6 miles below the confluence of the Rio San Antonio. This stream enters the Rio Grande 758.2 river miles below the American Dam at El Paso, Texas. Zero of gage is 717.78 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 43 meter measurements during the year. Computations by shifting channel methods. 1944 records good. Records available: 1922-1944. The records from 1922 to September 1932 are considered doubtful.

REMARKS: This station was built in September 1932. The flow of this spring-fed stream is modified by irrigation diversions in the drainage basins of the San Antonio and the Escondido.

COMPARATIVE FLOWS FROM RECORDS: Momentary Peak: ** Max. June 29, 1936, 24,000 sec. ft. with a gage height of 19.13 ft. On September 2, 1932, backwater from the Rio Grande reached a gage height of 9.91 ft. at this station. Min. Nov. 4, 1934, .35 sec. ft. with a gage height of .75 ft.

Average Daily:	Max. June 29, 1936,	6,710 sec. ft.;	Min. Nov. 1934,	0.7 sec. ft.
Average Monthly:	Max. Oct. 1932,	646 sec. ft.;	Min. July ϕ 1944,	1.8 sec. ft.
Average Yearly:	Max. 1932,	174 sec. ft.;	Min. 1943,	11.0 sec. ft.
Average of Two Successive Years:	Max. 1932-1933,	123 sec. ft.;	Min. 1942-1943,	13.4 sec. ft.
Average of Three Successive Years:	Max. 1932-1934,	96.8 sec. ft.;	Min. 1937-1939,	16.2 sec. ft.
Average of Four Successive Years:	Max. 1932-1935,	93.2 sec. ft.;	Min. 1941-1944,	18.7 sec. ft.
Average of Five Successive Years:	Max. 1932-1936,	88.6 sec. ft.;	Min. 1939-1943,	20.8 sec. ft.
Average of Ten Successive Years:	Max. 1932-1941,	55.8 sec. ft.;	Min. 1935-1944,	31.8 sec. ft.

Average of Thirteen Years: 1932-1944, 47.0 sec. ft.

Mean Daily Discharge in Second Feet 1944 —— Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	17.0	20.5	3.5	3.2	1.8	11.3	2.1	1.4	31.1	45.6	39.2	35.3
2	34.2	20.5	3.5	2.8	1.8	10.9	2.1	1.4	23.0	47.0	39.2	37.4
3	34.2	20.5	3.9	3.2	1.8	10.6	2.1	1.4	18.4	47.0	39.6	36.7
4	33.9	20.5	3.5	3.2	1.8	8.5	2.1	1.4	17.7	46.6	39.6	36.4
5	33.9	20.5	3.5	3.2	1.8	8.1	2.1	1.4	17.0	46.3	39.6	34.3
6	33.5	20.5	3.2	6.0	1.8	170	2.1	1.4	168	46.3	39.6	35.0
7	33.5	20.5	2.8	9.2	1.8	59.7	2.1	1.4	161	45.9	39.9	32.5
8	31.1	20.8	2.8	6.7	1.8	29.0	2.1	1.4	123	178	39.9	33.2
9	30.7	21.2	3.2	4.2	1.8	20.8	1.8	1.4	42.4	61.1	37.1	33.6
10	32.8	21.5	3.2	3.5	1.8	10.2	1.8	1.4	30.0	56.2	37.1	31.8
11	33.2	21.9	3.2	2.8	1.4	8.5	1.8	1.4	27.6	49.1	37.4	32.1
12	33.5	22.6	3.2	2.8	248	3.2	1.7	1.4	21.5	49.1	37.4	32.1
13	33.9	23.0	2.8	2.5	41.0	2.8	1.8	1.4	19.8	48.7	34.3	32.1
14	32.1	23.3	2.8	2.5	22.2	2.5	1.8	1.4	13.8	44.8	34.3	32.1
15	32.5	23.7	4.2	2.8	18.0	2.5	1.8	1.4	11.3	44.5	34.3	32.5
16	32.8	24.0	4.3	2.8	8.5	2.5	1.7	1.4	11.0	44.5	34.3	29.7
17	33.2	24.4	3.2	2.5	2.8	2.4	1.8	1.4	11.0	44.5	34.3	29.7
18	33.5	24.7	3.2	2.5	2.1	2.5	1.8	1.4	8.8	44.5	37.4	29.7
19	34.2	25.1	3.2	3.2	1.8	2.5	1.8	1.4	8.8	44.5	39.9	29.3
20	32.1	24.0	3.2	3.9	1.4	2.1	1.8	1.4	8.5	44.5	39.9	29.3
21	30.7	24.4	3.2	4.2	25.8	2.1	1.4	1.4	5.3	44.5	39.9	29.0
22	31.1	24.7	3.5	3.5	9.5	2.1	1.4	1.4	2.8	38.5	39.9	29.0
23	30.0	26.8	3.5	2.8	3.5	1.8	1.4	39.9	2.8	38.5	39.9	28.6
24	30.4	24.4	3.5	2.1	74.2	1.7	1.4	66.4	2.1	38.8	39.9	28.6
25	30.4	20.5	3.5	2.1	65.3	1.8	1.4	34.6	2.5	38.8	39.9	28.2
26	28.6	19.4	3.5	2.1	24.2	1.7	1.4	18.4	2.8	38.8	39.9	28.3
27	28.6	17.0	3.5	2.1	221	1.8	1.4	34.6	161	38.8	37.1	28.3
28	28.6	14.5	3.5	2.1	20.3	2.1	1.4	95.0	378	38.8	36.7	28.3
29	26.8	12.0	3.2	1.8	20.5	2.1	1.4	47.0	56.9	39.2	36.0	28.3
30	26.8		3.2	1.8	14.8	2.1	1.4	597	43.8	39.2	35.7	28.3
31	25.8		3.2		11.6		1.4	61.8		39.2		28.3
Sum	963.6	627.4	103.7	98.1	855.9	389.9	53.6	1,025.5	1,431.7	1,511.8	1,139.2	968.0

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1932-1944 Acre Feet Normal	Maximum	Minimum
Jan.	2.69	1.97	#	34.3	1	7.4	31.1	1,910	3,076	15,990	375
Feb.	2.36	2.33	#	26.8	#	12.0	21.6	1,240	1,790	9,990	179
Mar.	2.82	2.23	15	7.8	#	2.8	3.3	206	1,560	6,910	206
Apr.	2.46	2.17	#	7.8	30	1.8	3.3	195	1,832	5,360	195
May	7.22	2.10	27	1,290	20	1.4	27.6	1,700	4,235	23,850	494
June	4.63	2.00	6	53.7	#	1.8	13.0	773	3,658	19,730	618
July	2.00	1.94	#	2.1	#	1.4	1.7	106	2,116	9,290	106
Aug.	8.96	1.90	30	2,130	#	1.4	33.1	2,030	2,172	14,530	174
Sept.	6.53	2.10	27	1,170	24	2.1	47.7	2,840	2,941	14,340	186
Oct.	5.25	2.79	8	84.4	#	38.5	48.8	3,000	4,571	39,790	117
Nov.	2.79	2.72	#	39.9	#	34.3	38.0	2,260	2,952	25,590	101
Dec.	2.79	2.66	#	37.4	#	28.3	31.2	1,920	2,973	20,720	260
Yearly	8.96	1.90		2,130		1.4	25.0	18,180	33,876	126,090	7,969

* Partly estimated. ** The momentary maximum was erroneously reported in Water Bulletins Nos. 6 through 13.
ϕ Also Oct. and Nov., 1938, 1.8 sec. ft. # Various days of the month.

RIO GRANDE AT LAREDO STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car. Until May 22, 1942, the water-stage recorder was attached to the north abutment of railroad bridge over the Rio Grande between the cities of Laredo, Texas, and Nuevo Laredo, Tamaulipas, 884.3 river miles below the American Dam at El Paso, Texas. On June 10, 1942, the water-stage recorder was installed on the downstream side of the first pier of the same bridge on the Mexican side. The elevation of the zero of the gage was not changed. Zero of the gage at the recorder is at elevation 351.50 feet. The cable is located 2 miles upstream from the railroad bridge. Zero of the gage at the cable is elevation 353.15 feet. All gage elevations are on United States Coast and Geodetic Survey sea level datum.

RECORDS: Based upon 166 meter measurements during the year. 164 by the Mexican and 2 by the United States Section. Computations by shifting channel methods. 1944 records good. Records available: May 1900 to March 1914 and from October 1922 to December 1944.

REMARKS: The river flow at this station is modified by many irrigation diversions, drainage returns, and large reservoirs in the United States and Mexico.

EXTREME FLOWS: The greatest recorded flow at this station was on September 3, 1932, when the peak gage reading was 52.20 feet, the flow being 402,000 second feet. On June 20, 1938, a minimum flow of 777 second feet was reached with a gage height of 4.04 feet. Numerous records of extreme flows may be found in previous Water Bulletins.

Mean Daily Discharge in Second Feet 1944 —— Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,850	2,550	2,160	1,670	1,230	1,880	1.240	2,290	12,500	5,510	3,170	2,590
2	2,760	2,660	2,220	1,630	4,870	1,660	1,860	2,110	7,660	5,540	3,000	2,520
3	2,800	2,700	2,300	1,680	3,230	1,660	1,760	2,220	5,760	6,180	2,850	2,650
4	2,910	2,610	2,150	1,550	1,690	2,440	1,540	2,240	4,380	6,460	3,010	2,840
5	2,940	2,660	2,180	1,580	2,710	2,190	1,660	1,940	3,710	16,630	3,090	3,250
6	2,800	2,580	2,050	1,590	1,490	2,840	1,800	1,710	3,460	7,950	3,020	3,040
7	2,740	2,560	2,040	1,590	1,230	4,170	1,550	1,650	4,450	6,820	2,980	2,780
8	2,710	2,540	2,030	1,660	1,250	5,190	1,300	1,580	29,280	6,180	3,010	2,600
9	2,870	2,520	1,980	1,790	1,250	2,880	1,170	1,420	17,370	6,390	2,740	2,470
10	2,820	2,430	2,030	1,710	1,280	2,120	1,070	1,340	12,680	5,930	2,750	2,470
11	2,660	2,330	2,060	1,620	1,200	2,010	1,030	1,270	8,330	4,980	2,670	2,410
12	2,730	2,450	2,030	1,610	1,200	1,910	996	1,120	6,430	5,160	2,720	2,310
13	2,900	2,450	2,050	1,560	1,150	1,690	1,024	1,120	5,470	4,700	2,710	2,340
14	2,840	2,380	2,000	1,460	1,200	1,790	985	1,110	4,730	4,410	2,700	2,280
15	2,720	2,220	2,090	1,440	1,210	1,660	989	1,470	4,170	4,240	2,620	2,280
16	2,680	2,200	2,720	1,420	1,210	2,800	1,060	1,760	7,870	4,270	2,550	2,230
17	2,770	2,180	2,800	1,350	1,260	3,590	1,030	1,590	14,580	4,170	2,420	2,310
18	2,760	2,060	2,480	1,290	1,360	2,940	971	1,590	23,910	4,170	2,500	2,330
19	2,830	2,120	2,550	1,260	1,220	2,440	943	1,490	27,370	4,270	2,590	2,310
20	2,700	2,240	2,480	1,300	1,370	2,580	985	1,380	15,540	3,990	2,600	2,290
21	2,570	2,190	2,270	1,260	2,620	2,330	1,810	1,290	13,070	3,850	2,640	2,420
22	2,690	2,150	2,180	1,260	6,360	2,100	1.730	1,720	10.660	3,810	2,610	2,400
23	2,550	2,110	2,410	2,450	3,510	1,850	1,530	1,900	9,220	3,850	2,450	2,340
24	2,610	2,120	2,210	2,694	2,910	1,630	1,460	1,730	8,190	3,600	2,490	2,340
25	2,540	2,120	2,060	1,720	2,440	1,530	1,400	2,830	7,420	3,530	2,510	2,340
26	2,590	2,320	1,920	1,580	2,430	1,370	1,370	2,480	6,600	3,530	2,520	2,360
27	2,640	3,990	1,840	1,420	3,170	1,280	1,290	22,710	6,360	3,510	2,470	2,450
28	2,340	2,680	1,820	1,250	6,460	1,270	1,290	45,910	8,400	3,600	2,430	2,410
29	2,420	2,250	1,690	1,210	5,440	1,160	1,400	59,330	7,660	3,600	2,520	2,380
30	2,630		1,660	1,230	3,290	1,100	1,340	14,760	6,180	3,430	2,660	2,370
31	2,710		1,670		2,260		2,550	33,730		3,290		2,360
Sum	84,080	70,370	66,130	46,834	73,500	66,060	42,133	220,790	303,410	157,550	81,000	76,470

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1924-1944 Acre Feet Normal	Maximum	Minimum
Jan.	5.35	4.99	5	3,090	28	2,280	2,710	166,800	187,585	351,700	113,600
Feb.	6.10	4.79	27	5,190	18	2,010	2,430	139,600	154,163	237,400	99,400
Mar.	5.64	4.59	17	3,740	30	1,660	2,130	131,200	151,589	223,000	95,700
Apr.	5.77	4.13	23	4,130	30	1,160	1,560	92,900	148,682	401,000	92,900
May	8.10	4.10	22	11,160	14	1,090	2,370	145,800	288,431	906,200	112,700
June	7.09	4.07	7	7,770	30	1,070	2,200	131,000	296,205	1,390,200	89,200
July	5.22	4.00	31	2,740	19	943	1,360	83,570	285,030	1,250,200	83,570
Aug.	22.44	4.04	29	73,100	14	1,040	7,120	437,900	314,741	888,200	127,000
Sept.	12.14	5.48	8	32,630	7	3,320	10,110	601,800	673,836	3,116,700	87,300
Oct.	11.35	5.38	5	23,480	30	3,190	5,080	312,500	501,441	2,071,600	125,800
Nov.	5.38	4.95	1	3,250	24	2,360	2,700	160,700	226,641	570,800	122,100
Dec.	5.41	4.86	5	3,410	16	2,180	2,470	151,700	191,862	352,700	106,700
Yearly	22.44	4.00		73,100		943	3,520	2,555,470	3,420,206	7,310,300	1,862,800

RIO SALADO STATION AT CD. GUERRERO, TAMAULIPAS

DESCRIPTION: Water-stage recorder and cable with sit-down cable car and two reinforced concrete Cipoletti weirs, with a combined capacity of 636 second feet. These weirs were constructed in December 1938. This station is located at the place called "El Cable" about 6.2 miles above the confluence of the Rio Salado with the Rio Grande and 2 miles southwest of Ciudad Guerrero, Tamaulipas. This stream enters the Rio Grande 946.1 river miles below the American Dam at El Paso, Texas. Zero of gage is 265.74 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 160 meter measurements during the year and the weir discharge records. Computations by shifting channel methods for flows greater than 636 second feet. 1944 records good. Records available: 1901 to 1912; 1923 to 1944.

REMARKS: This station was entirely rebuilt by the Mexican Section of this Commission in December 1932, and an automatic water-stage recorder was installed. Prior to 1932, 3 gage readings were made here daily. The flow of the Rio Salado was greatly modified by the Don Martin reservoir, which forms a part of the Irrigation System of the Rio Salado, and by irrigation diversions above this station.

EXTREME FLOWS: The greatest recorded flow at this station was on September 7, 1933, when an extreme gage height of 18.86 feet was reached with a corresponding discharge of 43,800 second feet. The stream is sometimes dry. Numerous extremes may be found in previous Water Bulletins.

CORRECTION: The total acre feet for November 1924, as shown in Water Bulletins Nos. 5 and 6, is in error. The correct amount is 105,800 acre feet for November, and 1,160,974 acre feet for the year.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	24.4	16.6	9.9	9.9	5.3	313	14.5	0	11,690	1,260	313	156
2	24.4	16.6	9.9	9.9	5.3	183	192	0	4,626	971	295	162
3	24.4	16.6	8.5	8.5	427	119	886	0	2,430	886	286	169
4	26.5	16.6	8.5	6.7	2,020	79.8	477	0	1,670	833	295	169
5	26.5	18.4	8.5	6.7	410	52.2	558	0	1,210	756	295	175
6	26.5	20.5	8.5	5.3	84.1	540	381	0	950	692	371	175
7	24.4	20.5	6.7	18.4	45.9	3,510	463	0	1,409	908	252	162
8	24.4	20.5	8.5	35.7	28.6	4,100	388	0	4,020	1,240	220	162
9	22.2	16.6	9.9	31.1	18.4	1,324	197	0	8,760	1,640	204	156
10	20.5	16.6	9.9	22.2	16.6	540	113	0	13,700	992	197	149
11	20.5	14.5	9.9	16.6	16.6	304	72.4	0	16,560	975	197	143
12	18.4	12.7	9.9	12.7	14.5	190	51.4	0	6,280	915	190	143
13	16.6	12.7	9.9	11.3	12.7	119	35.7	0	2,520	696	190	143
14	16.6	12.7	9.9	9.9	9.9	75.6	26.5	0	2,060	625	190	143
15	16.6	11.3	9.9	8.5	6.7	54.4	20.5	0	1,660	600	190	143
16	16.6	12.7	9.9	6.7	5.3	40.6	14.5	0	1,390	565	190	143
17	18.4	12.7	8.5	5.3	3.9	31.1	11.3	0	1,200	540	183	143
18	18.4	12.7	12.7	5.3	3.9	166	9.9	0	1,060	508	183	136
19	18.4	12.7	26.5	6.7	9.9	295	8.5	0	964	484	183	136
20	18.4	11.3	244	9.9	22.2	79.8	5.3	0	879	463	183	130
21	18.4	11.3	119	9.9	20.5	57.2	5.3	0	791	441	190	124
22	16.6	12.7	66.0	9.9	16.6	45.9	3.9	157	710	420	190	124
23	16.6	12.7	43.4	8.5	12.7	31.1	2.8	3,670	653	399	190	124
24	16.6	12.7	33.2	6.7	11.3	22.2	1.8	20,160	643	388	197	124
25	16.6	12.7	28.6	5.3	12.7	16.6	1.8	15,860	632	381	197	124
26	16.6	12.7	24.4	5.3	163	22.2	1.8	13,810	964	371	190	124
27	16.6	11.3	22.2	3.9	2,468	31.1	0.7	5,230	3,060	484	175	124
28	16.6	11.3	20.5	3.9	10,740	24.4	0	7,734	5,650	410	169	124
29	16.6	9.9	16.6	5.3	6,250	18.4	0	15,500	2,480	371	162	119
30	14.5		12.7	5.3	1,460	20.5	0	22,490	1,660	331	162	119
31	14.5		12.7		590		0	26,560		313		119
Sum	603.3	412.8	839.2	311.3	24,911.6	12,406.1	3,943.6	131,171	102,281	20,858	6,429	4,387

Month	1944 Extreme Gage Feet High	1944 Extreme Gage Feet Low	1944 Extreme Second Feet High Day	1944 Extreme Second Feet High	1944 Extreme Second Feet Low Day	1944 Extreme Second Feet Low	1944 Average Second Feet	1944 Total Acre Feet	Period 1924-1944 Acre Feet Normal	Period 1924-1944 Acre Feet Maximum	Period 1924-1944 Acre Feet Minimum
Jan.	1.94	1.67	7	31.1	#	14.5	19.5	1,200	17,215	144,110	0
Feb.	1.80	1.57	8	22.2	29	9.9	14.2	819	12,039	98,520	0
Mar.	3.54	1.51	19	295	#	6.7	27.1	1,660	12,390	95,740	52.0
Apr.	2.03	1.44	8	38.1	#	3.9	10.4	617	12,328	54,500	56.4
May	12.50	1.44	28	13,810	#	3.9	804	49,410	45,595	* 253,000	5,110
June	8.01	1.64	8	4,450	25	12.7	414	24,610	40,054	192,000	1,620
July	5.68	1.21	3	1,320	#	0	127	7,820	21,009	100,000	228
Aug.	16.63	.59	24	28,570	#	0	4,230	260,180	29,025	260,180	81.0
Sept.	15.29	4.53	1	24,260	25	611	3,410	202,870	101,405	600,000	3,310
Oct.	7.05	3.61	7	2,790	31	313	673	41,370	74,352	673,070	1,710
Nov.	4.10	2.99	6	463	#	162	214	12,750	26,656	248,590	246
Dec.	3.08	2.76	#	183	#	119	142	8,700	19,371	198,160	46.0
Yearly	16.63	.59		28,570		0	843	612,006	411,439	1,350,260	101,770

Various days of the month. * Partly estimated.

RIO GRANDE AT ZAPATA STATION

DESCRIPTION: Water-stage recorder, and cable with stand-up cable car and winch, located about 3 miles below the town of Zapata, Texas. 7.5 miles northeast of Guerrero, Tamaulipas, 1.4 miles below the confluence of the Rio Salado with the Rio Grande, and 947.5 river miles below the American Dam at El Paso, Texas. Zero of the gage is at mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 59 meter measurements during the year, 47 by the United States and 12 by the Mexican Section. Computations by shifting channel methods. 1944 records good. Records available: January 1932 to December 31, 1944.

REMARKS: The river flow is greatly modified at this station by many irrigation diversions, drainage returns, and large reservoirs in the United States and Mexico.

EXTREME FLOWS: The greatest recorded flow was on September 4, 1932, when the extreme gage height was 262.07 feet and the extreme flow was 261,000 second feet. (See Special Flood Report 1932, by the United States Section of this Commission.) The lowest flow recorded was on July 20, 1944, when the extreme gage height was 219.59 feet and the extreme flow 882 second feet.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,700	2,680	2,300	1,780	1,230	1,900	1,530	2,500	*40,700	7,120	3,690	2,810
2	2,940	2,580	2,120	1,870	1,210	1,640	1,560	2,340	*17,900	6,480	3,530	2,790
3	2,880	2,700	2,280	2,520	6,030	1,580	2,610	2,080	*12,200	6,810	3,380	2,720
4	2,930	2,600	2,360	1,800	6,600	1,740	2,610	2,170	* 9,440	7,030	3,310	2,840
5	2,950	2,360	2,180	1,650	2,750	2,560	2,440	2,110	* 7,520	13,900	3,970	3,030
6	2,900	2,560	2,160	1,630	2,420	3,960	2,390	1,900	* 6,520	14,800	3,490	3,370
7	2,900	2,580	1,960	1,620	1,690	7.940	2,420	1,720	* 6,270	9,990	3,310	3,050
8	2,880	2,600	1,890	1,550	1,350	9,900	2,100	1,640	*19,200	9,720	3,320	2,890
9	2,760	2,550	1,890	1,670	1,300	7,700	1,740	1,590	*30,200	8.220	3,220	2,730
10	2,920	2,590	1,960	1,800	1,260	3,900	1,470	1.440	*28,700	7,300	2,920	2,650
11	2,870	2,530	1,970	1,660	1,290	2 900	1,260	1,340	*26,800	6,770	2,870	2,570
12	2,730	2,420	2,060	1,610	1,260	2,360	1,110	1,250	*16,100	6,220	2,890	2,550
13	2,870	2,600	1,990	1,580	1,240	2,220	1,000	1.180	* 9,070	5,890	2,940	2,500
14	2,870	2,600	2,020	1,580	1.200	1,990	1,010	1,160	* 7,520	5,220	2,970	2,480
15	2,920	2,470	2,050	1,460	1,240	2,060	963	1,110	* 6,440	5,100	2,940	2,400
16	2,800	2,340	2,160	1,420	1,290	1,930	938	1,310	* 6,080	4,950	2,990	2,390
17	2,820	2,260	4,010	1,360	1,240	2,980	1,070	1,750	*13,600	4,900	2,990	2,380
18	2,780	2,200	5,010	1,300	1,280	3,880	1,030	1,690	*24,100	4,850	2,910	2,480
19	2,800	2,190	4,790	1,320	1,420	3,350	971	1,670	*30.100	4,810	2,900	2,420
20	2,850	2,270	2,970	1,310	1,380	2,740	903	1,630	*26,200	4,790	2,900	2,450
21	2,730	2,310	2,770	1,400	1,480	2,670	943	1,500	*17,600	4,490	2,850	2,460
22	2,610	2,280	2,530	1,340	2,680	2,360	1,500	1,590	*13,600	4,480	2,840	2,490
23	2,700	2,220	2,360	1,310	8,400	2,160	1,730	7,130	*10,600	4,410	2,810	2,510
24	2,630	2,180	2,510	2,520	4,670	1,970	1,530	20,500	9,440	4,050	2,760	2,440
25	2,630	2,180	2,300	2,630	2,220	1,760	1,500	21,000	8,550	3,770	2,770	2,470
26	2,580	2,200	2,210	1,840	4,310	1,610	1,410	*17,400	8,040	4,020	2,750	2,500
27	2,630	2,720	2,130	1,650	5,310	1,470	1,310	*13,100	8,380	4,180	2,760	2,490
28	2,580	3,660	2,020	1,540	29,860	1,360	1,300	*41,500	11,900	4,100	2,740	2,550
29	2,440	2,650	1,860	1,330	19,060	1,310	1,310	*76,700	*10,300	4,170	2,650	2,630
30	2,530		1,800	1,280	7,210	1,280	1,450	*73,400	* 7,840	4,060	2,680	2,550
31	2,660		1,800		3,200		1,410	*56,300		3,820		2,510
Sum	85,790	72,080	74,420	49,330	127,080	87,180	46,518	*363,700	*450,910	190,420	91,050	81,100

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1932-1944 Acre Feet Normal	Maximum	Minimum
Jan.	220.97	220.70	14	3,050	29	2,400	2.770	170.000	207,136	* 484,450	119,000
Feb.	221.48	220.52	27	4,590	24	2,140	2,490	143,000	168,860	* 361,350	111,000
Mar.	222.46	220.31	18	8,250	31	1,770	2,400	148,000	177,852	292,000	124,000
Apr.	221.39	219.89	3	4,270	30	1.210	1,640	97,800	150,690	226,000	97,800
May	229.59	219.85	28	38,300	15	1,150	4,100	252,000	327,535	682,000	134,000
June	223.16	219.88	8	11,400	30	1.210	2,910	173,000	360,189	1,517,000	115,000
July	220.97	219.59	5	3,200	20	882	1.500	92.300	358,846	1,238,000	92,300
Aug.	239.05	219.74	30	91,600	15	1,060	11.730*	* 721,000	345,568	* 721,000	145,000
Sept.	228.17	221.54	9	34,300	7	5.970	15,000*	* 894,000	930,936	2,895,330	172,000
Oct.	226.51	221.17	5	26,600	31	3,700	6,140	378.000	655,134	2,396,440	165,000
Nov.	221.60	220.80	5	4,920	29	2,580	3,040	181.000	264,965	748,020	133,000
Dec.	221.13	220.73	6	3,430	25	2,420	2,620	161,000	218,705	591,380	116,000
Yearly	239.05	219.59		91,600		882	4.700	3,411,100	4,166,416	8,038,070	2,231,000

* Partly estimated.

RIO ALAMO STATION AT CD. MIER, TAMAULIPAS

DESCRIPTION: Water-stage recorder and cable with sit-down cable car and reinforced concrete weir for measurement of flows up to 177 second feet, located about 3.1 miles from the confluence of the Rio Alamo with the Rio Grande and .6 mile west of Ciudad Mier, Tamaulipas, Mexico, at a point called "Paso del Contaro". This stream enters the Rio Grande 984.6 river miles below the American Dam near El Paso, Texas. Zero of gage is 187.04 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 16 meter measurements at high flows during the year and the weir discharge tables at low flows. High flow computations by shifting channel methods. 1944 records good. Records available: July 1, 1923, to December 1944.

REMARKS: The flow of this spring-fed stream is modified by small storage and irrigation diversions above this station.

COMPARATIVE FLOWS FROM RECORDS: Momentary Peak: Max. September 7, 1933, 76,600 sec. ft. with a gage height of 26.90 ft.; Min. Sometimes dry.

Average Daily:	Max. Sept. 7, 1933,	42,020 sec. ft.;	Min.		Sometimes dry.
Average Monthly:	Max. Sept. 1933,	3,170 sec. ft.;	Min.		Sometimes dry.
Average Yearly:	Max. 1944,	505 sec. ft.;	Min.	1929,	16.6 sec.ft.
Average of Two Successive Years:	Max. 1932-1933,	339 sec. ft.;	Min.	1936-1937,	64.6 sec.ft.
Average of Three Successive Years:	Max. 1926-1928,	270 sec. ft.;	Min.	1935-1937,	72.0 sec.ft.
Average of Four Successive Years:	Max. 1925-1928,	271 sec. ft.;	Min.	1934-1937,	77.0 sec.ft.
Average of Five Successive Years:	Max. 1924-1928,	268 sec. ft.;	Min.	1934-1938,	81.6 sec.ft.
Average of Ten Successive Years:	Max. 1924-1933,	233 sec. ft.;	Min.	1934-1943,	112 sec.ft.

Average of Twenty-one Years: 1924-1944, 188 sec. ft.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	21.5	8.1	4.2	4.2	2.5	31.4	80.5	0	4,410	466	178	109
2	24.7	8.1	4.2	4.2	2.5	24.7	15.9	0	1,910	402	172	115
3	27.9	8.1	4.2	36.0	399	18.7	237	0	1,040	360	195	120
4	24.7	8.1	4.2	33.9	6,850	15.9	576	0	632	338	178	120
5	21.5	8.1	4.2	18.7	667	13.1	925	0	459	315	165	110
6	21.5	8.1	4.2	8.1	47.3	858	297	0	328	311	165	109
7	21.5	8.1	4.2	6.0	18.7	660	59.0	0	1,720	456	165	104
8	21.5	6.0	4.2	6.0	10.6	207	24.7	0	12,080	1,320	160	104
9	18.7	6.0	4.2	4.2	6.0	33.9	13.1	0	12,150	802	153	99.6
10	15.9	6.0	4.2	2.5	4.2	15.9	8.1	0	3,160	561	148	94.3
11	15.9	6.0	6.0	2.5	4.2	13.1	6.0	0	2,100	477	153	99.6
12	15.9	6.0	13.1	2.5	2.5	13.1	4.2	0	1,420	371	148	94.3
13	15.9	6.0	8.1	2.5	2.5	8.1	4.2	0	1,220	324	142	94.3
14	15.9	6.0	6.0	2.5	2.5	6.0	2.5	0	773	301	142	94.3
15	15.9	4.2	4.2	2.5	2.5	4.2	2.5	0	639	278	142	89.7
16	15.9	6.0	4.2	6.0	1.1	2.5	2.5	0	516	256	142	89.7
17	15.9	6.0	6.0	6.0	1.1	2.5	2.5	0	441	238	137	89.7
18	15.9	6.0	21.6	6.0	1.1	378	1.1	0	367	233	137	89.7
19	15.9	6.0	132	4.2	118	240	1.1	0	293	214	137	89.7
20	15.9	6.0	67.1	4.2	18.7	255	0	0	258	209	137	89.7
21	15.9	6.0	31.4	2.5	8.1	59.0	0	169	228	205	137	89.7
22	15.9	6.0	15.9	2.5	4.2	21.5	0	5,400	212	221	137	84.8
23	15.9	6.0	10.6	7.4	2.5	13.1	0	22,210	211	211	137	67.1
24	15.9	6.0	8.1	67.8	2.5	8.1	0	41,320	237	214	137	67.1
25	15.9	6.0	6.0	15.9	4.2	6.0	0	8,300	371	217	137	63.2
26	15.9	6.0	6.0	8.1	142	4.2	0	1,400	837	207	131	63.2
27	15.9	6.0	6.0	4.2	114	4.2	0	650	1,780	266	126	63.2
28	15.9	6.0	6.0	4.2	89.7	2.5	0	1,510	2,040	227	120	67.1
29	13.1	6.0	4.2	2.5	192	70.3	0	8,550	1,150	198	120	71.3
30	10.6		4.2	2.5	110	86.2	0	3,040	646	197	110	71.3
31	8.1		4.2		51.2		0	5,370		184		71.3
Sum	537.4	186.9	412.9	280.3	8,882.4	3,076.2	2,262.9	97,919	53,628	10,579	4,388	2,784.9

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1924-1944 Acre Feet Normal	Maximum	Minimum
Jan.	1.71	1.48	3	27.9	31	8.1	17.3	1,070	5,662	34,920	0
Feb.	1.48	1.41	#	8.1	#	4.2	6.4	371	3,823	25,550	67.2
Mar.	3.15	1.38	19	351	30	2.5	13.3	819	3,532	19,830	64.0
Apr.	2.69	1.35	24	165	#	1.1	9.3	556	6,434	26,710	86.0
May	11.48	1.35	4	12,320	#	1.1	287	17,620	17,210	* 137,000	209
June	5.28	1.38	6	2,110	#	2.5	103	6,100	16,034	83,240	0
July	5.28	.85	4	2,110	31	0	73.0	4,490	9,655	37,590	255
Aug.	24.93	.07	24	*60,390	#	0	3,160	194,200	17,139	194,200	0
Sept.	14.44	2.79	9	16,950	24	185	1,790	106,400	32,058	190,520	* 135
Oct.	5.51	2.79	8	2,560	31	184	341	20,980	15,422	51,620	0
Nov.	2.89	2.36	3	222	30	109	146	8,700	4,581	21,940	0
Dec.	2.43	2.03	#	120	#	63.2	89.8	5,520	4,639	* 15,000	124
Yearly	24.93	.07		*60,390		0	505	366,826	136,189	366,826	~~11,908.7~~

Various days of the month. * Partly estimated.

11,898.1

RIO GRANDE AT ROMA STATION

DESCRIPTION: Water-stage recorder at international bridge between Roma, Texas, and San Pedro, Tamaulipas, and 992.0 river miles below the American Dam at El Paso. Texas, and 14.9 river miles above the confluence of the Rio San Juan from Mexico. Zero of gage is 145.93 feet above mean sea level, U.S.C. & G.S. datum.

RECORDS: Based upon 184 meter measurements, 177 by the Mexican and 7 by the United States Section, during the year from bridge. Computations by shifting channel methods. 1944 records good. Records available: August 1900 to March 1914; November 1922 to December 1944.

REMARKS: The river flow is greatly modified at this station by many irrigation diversions, drainage returns, and large reservoirs in the United States and Mexico. This station was operated by the Mexican Section until March 1929, when operation and maintenance was begun by the United States Section. On August 1, 1939, the operation and maintenance of this station was turned over again to the Mexican Section of the Commission. Backwater from the Rio San Juan sometimes reaches this station. See Water Bulletin No. 3, page 50.

EXTREME FLOWS: The greatest recorded flow was on September 5, 1932, when the extreme gage height was 35.4 feet and the extreme flow 203,000 second feet. (See Special Flood Report 1932 by the United States Section of this Commission.) The lowest flow ever recorded was on July 29,1944, when the extreme flow was 809 second feet at a stage of -.66 feet. Records of other extreme flows may be found in previous Water Bulletins.

CORRECTION: The total acre feet for the month of August 1925, as published in Water Bulletins Nos. 5 and 6, is in error. A tentative figure of 933,000 acre feet is taken as being the correct amount, subject to further investigation. The total acre feet for December 1907, as published in Water Bulletin No. 7, is in error as two days record were omitted. The correct amount is 621,000 acre feet.

Mean Daily Discharge in Second Feet 1944 —— Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,690	2,640	2,290	1,620	1,170	3,320	1,390	1,230	55,440	8,510	3,740	2,690
2	2,780	2,610	2,080	1,660	1,160	2,540	1,490	2,400	22,920	7,310	3,640	2,820
3	2,960	2,570	2,050	2,180	1,610	2,080	1,940	2,080	13,030	6,990	3,470	2,760
4	2,790	2,610	2,250	2,040	16,810	1,840	3,130	2,080	8,930	6,820	3,470	2,780
5	2,690	2,500	2,260	1,730	6,250	1,900	4,030	2,210	6,990	8,050	3,880	2,900
6	2,790	2,470	2,100	1,550	2,130	3,640	3,150	2,050	5,790	17,900	4,030	3,210
7	2,850	2,580	2,110	1,490	2,230	8,160	2,560	1,820	6,250	9,430	3,660	3,390
8	2,790	2,540	1,900	1,450	1,450	9,360	2,320	1,620	20,800	13,740	3,460	3,110
9	2,750	2,570	1,810	1,400	1,250	8,860	1,920	1,510	42,020	9,320	3,500	2,920
10	2,690	2,460	1,890	1,540	1,270	4,560	1,550	1,480	32,810	8,620	3,200	2,730
11	2,860	2,390	1,970	1,580	1,220	3,250	1,310	1,420	28,780	7,980	3,080	2,580
12	2,790	2,310	1,970	1,480	1,240	2,360	1,170	1,300	21,860	6,960	2,990	2,610
13	2,720	2,300	1,970	1,430	1,160	2,200	1,050	1,180	11,510	6,290	2,980	2,630
14	2,880	2,470	1,920	1,470	1,120	2,070	1,030	1,140	9,150	5,760	3,050	2,620
15	2,970	2,400	1,910	1,450	1,080	1,900	1,040	1,050	7,700	5,330	3,090	2,620
16	2,810	2,290	1,910	1,370	1,100	1,900	957	992	6,670	5,120	2,950	2,560
17	2,670	2,160	2,010	1,320	1,120	1,880	932	1,190	9,570	5,010	2,890	2,540
18	2,600	2,070	4,380	1,280	1,090	3,670	1,020	1,630	17,800	4,870	2,820	2,490
19	2,670	2,050	6,280	1,250	1,240	4,560	964	1,530	27,720	4,940	2,790	2,570
20	2,720	2,060	3,200	1,250	1,300	3,430	872	1,510	26,840	5,010	2,860	2,510
21	2,720	2,180	2,720	1,210	1,220	2,830	809	1,420	16,740	4,870	2,880	2,590
22	2,550	2,120	2,510	1,250	1,370	2,610	936	7,270	13,770	4,730	2,890	2,640
23	2,480	2,020	2,240	1,240	4,480	2,210	1,560	29,800	10,910	4,660	2,970	2,620
24	2,520	2,040	2,150	1,340	6,820	2,090	1,640	52,260	9,500	4,480	2,970	2,560
25	2,500	2,050	2,210	2,750	4,100	1,860	1,430	36,370	8,690	4,060	2,910	2,510
26	2,660	2,080	2,030	2,170	7,200	1,680	1,320	17,940	9,570	4,000	2,860	2,490
27	2,560	2,100	1,940	1,610	5,470	1,580	1,170	15,750	10,170	4,020	2,800	2,480
28	2,610	3,140	1,850	1,430	28,990	1,450	1,140	34,470	14,480	4,130	2,800	2,460
29	2,490	2,980	1,690	1,300	27,690	1,410	1,160	70,630	13,950	4,170	2,750	2,540
30	2,370		1,630	1,230	10,560	1,650	1,170	85,460	10,520	4,200	2,660	2,590
31	2,540		1,620		5,830		1,280	57,740		3,990		2,600
Sum	83,470	68,760	70,850	46,070	150,730	92,850	47,440	440,532	500,880	201,270	94,040	83,120

Month	1944 Extreme Gage Feet High	1944 Extreme Gage Feet Low	1944 Extreme Second Feet High Day	1944 Extreme Second Feet High	1944 Extreme Second Feet Low Day	1944 Extreme Second Feet Low	1944 Average Second Feet	1944 Total Acre Feet	Period 1924-1944 Acre Feet Normal	Period 1924-1944 Acre Feet Maximum	Period 1924-1944 Acre Feet Minimum
Jan.	1.15	.62	15	2,970	30	2,330	2,690	165,600	219,251	467,400	119,500
Feb.	1.87	.36	28	3,920	#	2,010	2,370	136,400	178,806	349,000	108,400
Mar.	3.81	.03	19	7,350	#	1,620	2,290	140,500	181,761	325,500	99,000
Apr.	1.31	- .39	3	3,120	#	1,210	1,540	91,400	175,206	400,000	91,400
May	13.42	- .52	28	40,960	3	1,050	4,860	299,000	366,628	706,300	133,000
June	5.54	- .16	9	10,770	29	1,350	3,100	184,200	388,407	1,586,000	92,600
July	2.40	- .66	#	4,800	21	809	1,530	94,100	344,044	1,217,000	94,100
Aug.	22.80	- .46	29	97,110	16	992	14,210	873,800	366,581	* 933,000	142,900
Sept.	19.59	3.12	1	64,630	7	5,510	16,700	993,500	833,250	3,048,000	117,000
Oct.	9.12	2.00	6	21,930	31	3,880	6,490	399,200	605,783	2,372,000	163,500
Nov.	2.43	1.08	5	4,590	30	2,620	3,130	186,500	263,889	736,000	126,800
Dec.	1.71	.85	7	3,470	26	2,420	2,680	164,900	222,439	565,100	114,000
Yearly	22.80	- .66		97,110		809	5,140	3,729,100	4,146,045	8,098,000	2,227,000

Various days of the month. * Partly estimated.

RIO SAN JUAN BELOW AZUCAR DAM

DESCRIPTION: Azucar Dam is located on the Rio San Juan 12.4 miles upstream from the confluence with the Rio Grande. This confluence being 1,007.4 miles along the Rio Grande below the American Dam at El Paso, Texas. The zero of the reservoir gage at Azucar Dam is 7.64 feet above sea level, United States Coast and Geodetic Survey datum. The flow below this dam consists of small seepage through the bank near the dam, which is measured by a weir; leakage and releases from openings in the spillway, which is measured by current meter about 1,000 feet downstream; and spills from the spillway, which are computed from the spillway discharge curves.

RECORDS: Based upon weir discharges, current meter measurements, and spillway discharge curves, all by the Mexican National Irrigation Commission. Also, upon records of flow by the International Boundary Commission showing simultaneous differences of flow in the Rio Grande at Roma Station, just above the Rio San Juan confluence, and at Rio Grande City Station, just below this confluence. 1944 records fair. Records available: March 10, 1943 (the date when the diversion tunnel through the dam was closed), to December 31, 1944.

REMARKS: From May 28 to August 11, 1944, and from August 22 to November 16, 1944, water was spilling over the spillway. From August 12 to 16, about 19,457 acre feet of water were released from the reservoir for alleviating a shortage of irrigation water on the United States side of the Lower Rio Grande Valley. From November 15 to 24, small quantities of water were released in order to make repairs to the stop logs in the spillway openings. All of the water passing the dam flowed into the Rio Grande.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	4.2	4.9	3.9	4.6	4.2	417	*1,790	43.4	* 8,480	* 5,610	2,360 *	3.5
2	3.9	4.9	4.2	4.6	3.9	323	*1,490	34.6	* 18,400	* 5,830	2,190 *	3.5
3	3.9	4.6	4.2	8.5	3.9	302	*2.190	25.8	* 16,100	* 6,140	2,280 *	3.5
4	4.2	4.6	4.3	4.6	3.9	234	*2,620	26.5	* 12,500	* 6,110	1,830 *	3.5
5	4.3	4.2	4.2	4.2	6.7	158	*1,980	27.9	* 9,150	* 7,560	1,840 *	3.5
6	4.2	4.6	4.2	4.9	4.6	284	*3,200	26.5	* 7,450	* 7,560	1,450 *	3.5
7	4.2	4.6	4.6	5.0	4.6	406	*3.410	25.8	* 18,360	* 7,590	1,660 *	3.5
8	3.9	4.6	3.9	4.2	4.6	463	*3,020	24.4	* 36,020	* 7,560	1,840 *	3.5
9	4.3	4.2	3.9	4.3	4.6	512	*2,500	21.9	* 22,600	* 6,600	1,760 *	3.5
10	4.2	4.6	4.6	4.2	4.9	381	*2,090	20.8	* 23,340	* 7,520	1,780 *	3.5
11	4.2	4.2	4.6	4.2	4.6	345	*1,530	18.4	* 11,830	* 7,240	1,760 *	3.5
12	4.3	4.2	4.3	3.9	4.6	311	*1,350	957 *	* 7,560	* 6,890	* 929	3.5
13	3.9	4.2	4.6	3.5	4.6	219	*1,130	1,130 *	* 11,230	* 6,360	* 392	3.5
14	4.2	3.9	4.2	4.2	4.6	164	* 855	1,010 *	* 9,960	* 6,070	* 869	3.5
15	4.2	4.2	4.2	3.2	4.6	129	* 650	1,030 *	* 9,010	* 6,180	* 798	27.9
16	4.3	4.6	4.3	4.2	4.6	92.9	* 550	1,070 *	* 9,750	* 6,110	* 484	29.7
17	4.2	4.6	4.2	2.8	4.6	55.1	* 434	1,210 *	* 14,440	* 5,580	* 226	12.4
18	4.2	4.6	4.2	3.9	4.6	94.6	* 395	1,130 *	* 15,820	* 5,260	* 194	31.8
19	4.2	4.6	7.8	4.2	4.6	135	* 307	1,120 *	* 4,590	* 5,090	* 237	45.9
20	4.2	4.6	4.3	4.2	4.6	*1,340	* 251	1,080 *	* 4,520	* 4,980	* 177	60.0
21	4.2	4.6	4.9	4.2	5.3	*2,360	* 268	3,000 *	* 4,480	* 4,800	101	108
22	4.2	4.6	5.0	4.2	4.2	*2,020	* 251	25,920 *	* 3,350	* 4,730	94.6	156
23	4.2	4.2	4.2	3.9	4.2	*1,850	* 264	29,520 *	* 4,380	* 4,560	34.6	205
24	4.2	4.6	4.6	3.5	4.2	*1,444	* 273	30,730 *	* 5,090	* 4,450	36.0	272
25	4.2	4.6	4.6	4.2	5.7	*1,500	285	29,670 *	* 7,240	* 4,310	* 3.5	339
26	3.9	4.2	4.9	4.2	5.7	* 883	237	31,850 *	* 6.750	* 4,100	* 3.5	406
27	3.9	3.9	5.0	3.9	5.7	* 611	150	27,330 *	* 9,960	* 3,320	* 3.5	466
28	4.2	4.3	4.6	4.8	99.6	* 576	64.3	31,570 *	* 7,350	* 3,110	* 3.5	526
29	3.9	3.9	4.2	3.9	547	* 957	58.3	21,900 *	* 4,270	* 2,540	* 3.5	558
30	3.9		4.2	3.2	583	*2,300	51.9	10,590 *	* 5,400	* 2,330	* 3.5	583
31	3.9		4.6		533		45.6	29,130 *		* 2,260		604
Sum	127.9	128.4	139.5	127.4	1,889.5	*20,866.6	*33,690.1	*281,243.0	*329,380	*168,350	*25,343.2	4,479.7

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low ⊕ Day	Low ⊕	Average Second Feet	Total Acre Feet	Period 1943-1944 Acre Feet Average	Maximum	Minimum
Jan.			#	4.2	#	3.9	4.1	254			
Feb.			#	4.9	#	3.9	4.4	255			
Mar.			19	7.8	#	3.9	4.5	277	· 138	277	0
Apr.			3	8.5	17	2.8	4.2	253	126	253	0
May			30	583	#	3.9	61.0	3,750	1,875	3,750	0
June			21	* 2,360	17	55.1	696 *	* 41,390	20,695	* 41,390	0
July			7	* 3,410	31	45.6	1,090 *	* 66,820	35,700	* 66,820	4,580
Aug.			26	* 31,850	11	18.4	9,070 *	* 557,800	278,974	* 557,800	148
Sept.			8	* 36,020	22	*3,350	10,980 *	* 653,300	327,455	* 653,300	1,610
Oct.			7	* 7,590	31	*2,260	5,430 *	* 333,900	173,850	* 333,900	13,800
Nov.			1	* 2,370	#	* 3.5	845 *	* 50,270	25,608	* 50,270	946
Dec.			31	604	#	3.5	145	8,890	5,160	8,890	1,430
Yearly				36,020		2.8	2,370 *	*1,717,159			

Various days of the month. * Deduced from Roma and Rio Grande City discharges. ⊕ Mean daily.

RIO GRANDE AT RIO GRANDE CITY STATION

DESCRIPTION: Water-stage recorder, and cable with stand-up cable car and winch, located about 4 miles by river below Rio Grande City, Texas, 3.7 miles northeast of Camargo, Tamaulipas, 7.9 miles below the confluence of the Rio San Juan with the Rio Grande, and 1,015.3 river miles below the American Dam at El Paso, Texas. Zero of gage is at mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 101 meter measurements during the year, 90 by the United States and 11 by the Mexican Section. Computations by shifting channel methods. 1944 records good. Records available: January 1, 1932, to December 31, 1944.

REMARKS: When the water at this station rises above a gage height of about 149.20 feet, water overflows the left river bank beyond the station cable, but such water is measured. The river flow here is greatly modified by many irrigation diversions, drainage returns and large reservoirs in the United States and Mexico.

EXTREME FLOWS: The highest reported gage height was in 1909, when the extreme gage height was 159.2 feet, present gage datum, as reported by residents and confirmed by extreme gage height at Rio Grande City Weather Bureau gage and other points in the vicinity, as found in Joint Report of International Boundary Commission 1910-11. The lowest recorded flow was on May 9, 1940, when the extreme gage height was 124.10 feet, and the extreme flow 946 second feet.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,860	2,830	2,870	1,750	1,180	5,400	4,020	1,250	87,600	16,000	6,340	2,830
2	*2,870	2,810	2,480	1,760	1,140	4,160	3,260	1,850	64,100	14,200	6,150	3,000
3	*2,890	2,690	2,240	1,880	1,120	3,490	3,040	2,320	41,500	13,200	5,890	3,040
4	*2,920	2,750	2,190	2,460	8,600	3,050	4,190	2,080	29,200	13,200	5,830	2,970
5	*2,900	2,740	2,330	1,900	12,400	2,850	5,840	2,110	21,500	13,000	5,350	3,020
6	*2,890	2,650	2,160	1,650	3,980	3,410	6,110	2,100	16,200	24,700	5,810	3,210
7	*2,880	2,660	2,080	1,610	2,830	6,200	6,430	1,910	13,300	18,900	5,540	3,600
8	*2,880	2,650	2,010	1,660	2,350	9,790	6,090	1,700	24,700	20,000	5,410	3,470
9	*2,850	2,580	1,950	1,620	1,550	10,500	5,440	1,540	57,200	16,100	5,360	3,150
10	*2,840	2,520	1,980	1,610	1,440	5,600	4,550	1,510	65,100	16,000	5,320	2,970
11	*2,900	2,480	2,030	1,750	1,370	3,820	3,660	1,420	56,000	16,200	5,040	2,860
12	*2,920	2,430	2,050	1,660	1,350	3,180	2,910	1,430	41,100	15,300	4,910	2,780
13	*2,870	2,310	2,110	1,620	1,340	2,820	2,600	2,290	29,500	13,900	3,980	2,780
14	*2,870	2,390	2,100	1,570	1,290	2,580	2,250	2,380	22,800	12,700	3,370	2,740
15	*3,010	2,560	2,060	1,600	1,220	2,300	1,990	2,250	19,200	11,900	4,000	2,750
16	*3,020	2,420	2,080	1,540	1,150	2,130	1,780	2,150	16,800	11,600	3,960	2,690
17	*2,910	2,260	2,390	1,480	1,270	2,140	1,580	2,060	16,500	11,300	3,580	2,650
18	*2,900	2,180	3,660	1,440	1,220	2,720	1,440	2,470	24,000	10,700	3,190	2,630
19	*2,840	2,170	6,080	1,370	1,190	4,670	1,500	2,840	33,700	10,200	3,090	2,690
20	*2,870	2,170	5,300	1,380	1,370	4,200	1,360	2,720	36,700	10,100	3,100	2,710
21	2,900	2,220	3,270	1,300	1,740	4,910	1,230	2,660	27,000	10,100	3,040	2,720
22	2,840	2,330	2,830	1,260	1,480	5,250	1,150	4,500	21,300	9,760	3,050	2,800
23	2,740	2,130	2,540	1,310	2,980	4,740	1,260	33,400	17,200	9,520	3,120	2,850
24	2,770	2,140	2,420	1,340	7,120	4,140	1,940	59,600	15,400	9,280	3,140	2,910
25	2,560	2,150	2,430	2,010	5,680	3,610	1,740	83,400	14,700	9,000	3,090	2,890
26	2,680	2,180	2,310	2,600	4,170	3,040	1,600	66,900	16,000	8,440	3,020	2,920
27	2,680	2,250	2,180	1,830	7,230	2,640	1,490	50,100	16,400	8,120	2,970	"3,090
28	2,710	2,540	2,100	1,500	23,100	2,300	1,330	43,300	20,200	7,410	2,960	"3,130
29	2,720	3,640	1,940	1,480	37,500	2,060	1,240	66,300	21,900	7,330	2,950	"3,140
30	2,590		1,810	1,320	19,400	2,320	1,130	92,800	18,300	6,780	2,850	3,210
31	2,640		1,760		7,920		1,190	96,400		6,600		3,240
Sum	*87,720	71,830	77,740	49,260	167,680	120,020	85,340	639,740	905,100	381,540	125,410	91,440

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1924-1944 Acre Feet Normal	Maximum	Minimum
Jan.	126.12	125.48	15	* 3,040	30	2,530	*2,830	* 174,000	260,146	521,000	140,000
Feb.	126.60	125.04	29	3,840	23	2,130	2,480	142,000	204,952	* 368,690	125,000
Mar.	128.74	124.65	19	6,830	31	1,750	2,510	154,000	205,894	401,000	108,000
Apr.	125.86	123.86	26	2,860	24	1,230	1,640	97,700	197,401	395,000	97,700
May	138.08	123.73	29	40,500	3	1,080	5,410	333,000	427,575	833,000	153,000
June	131.02	"125.08	9	11,900	29	1,970	4,000	238,000	517,848	1,737,000	94,300
July	128.92	124.00	7	6,460	31	1,100	2,750	169,000	438,547	1,240,000	152,000
Aug.	149.82	124.12	31	106,000	2	1,190	20,600	1,269,000	445,808	1,280,000	150,000
Sept.	148.14	131.74	1	88,700	7	12,600	30,200	1,795,000	1,085,870	3,723,800	147,000
Oct.	135.47	127.78	6	28,400	31	6,440	12,300	757,000	783,151	2,852,270	204,000
Nov.	127.78	124.71	1	6,500	30	2,780	4,180	249,000	322,834	829,260	156,000
Dec.	125.33	124.43	7	3,680	18	2,590	2,950	181,000	268,621	625,260	143,000
Yearly	149.82	123.73		106,000		1,080	7,660	5,558,700	5,158,647	9,554,530	2,643,000

" Estimated. * Partly estimated.

RIO GRANDE AT HIDALGO STATION

DESCRIPTION: Water-stage recorder on the downstream side of the United States end of the Hidalgo-Reynosa international bridge near Hidalgo, Texas, and Reynosa, Tamaulipas, 1,084.8 river miles below the American Dam at El Paso, Texas, and 156.6 river miles from the Gulf of Mexico. Zero of the gage is United States Coast and Geodetic Survey mean sea level datum. Meter measurements are from the bridge.

RECORDS: Discharges based upon 14 meter measurements during the year. Discharge computations by shifting channel methods. Discharge records available: July 1928 to December 1931; September and October 1932; peak flows in September 1933 and in 1934, also January to July, and September 1935; peak flows May and October, and full record July and September 1936; full record April 26 to December 31, 1938, and January to November 1939. Complete gage height record and discharges only during peaks in 1940, 1941, 1942, 1943, and 1944.

REMARKS: On July 28, 1941, the zero of the gage was changed to United States Coast and Geodetic Survey mean sea level datum. At this time, it was found that the elevation previously reported (79.28 feet) in these Water Bulletins as the elevation of the zero of the gage was in error; the correct figure being 79.03 feet. All previously reported gage heights should be corrected accordingly. All gage heights reported here for 1944 are on this new datum. Another gage (Weather Bureau) at this bridge has a zero elevation of 79.03 feet. When the river at this station reaches a stage of about 100.5 feet, or a flow of about 60,000 second feet, water begins to flow into two floodway inlets on the United States side, viz: Hackney Lake Inlet about 4 miles upstream and Mission Inlet about 15 miles above this station, but the river may begin to overflow at Granjeno and Jardin de Flores at stages about 3.5 feet lower. The bottom of the river at this station is subject to considerable erosion during floods. See Water Bulletin No. 3, page 38.

EXTREME FLOWS: The highest recorded stage was in 1909 when 106.92 feet on the present gage was reached. In 1910, 103.85 was reached. These were before the present river bridge and highway embankments were constructed at this point. In 1932 the peak stage was 104.88 and the peak flow was 83,870 second feet. See previous Water Bulletins and Special Flood Report, 1932, by the United States Section of this Commission.

Mean Daily Gage Height in Feet — 1944

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	82.95	82.26	81.76	80.45	79.98	86.41	81.97	‖ 79.05	101.79	92.00	86.11	82.45
2	82.94	* 82.35	81.81	80.99	79.19	85.18	‖ 83.38	‖ 79.09	102.11	91.33	85.78	82.30
3	82.89	‖ 82.34	81.33	80.66	78.88	84.25	‖ 83.58	‖ 78.70	101.88	90.72	85.62	82.80
4	83.00	* 82.41	81.05	80.45	80.19	83.64	* 83.15	‖ 79.81	100.08	90.40	85.63	82.58
5	82.88	82.61	81.46	81.15	86.24	83.07	83.69	* 80.66	95.99	90.40	85.76	82.27
6	83.01	82.76	80.96	81.06	86.22	82.54	84.97	‖ 81.05	93.30	91.24	85.32	82.43
7	83.05	82.53	80.81	80.56	83.89	83.08	85.65	* 80.59	91.86	93.15	85.29	82.59
8	83.05	82.30	80.63	80.41	82.41	85.69	86.02	* 80.22	91.50	91.62	85.15	82.78
9	83.05	82.21	80.47	80.24	81.82	87.48	85.98	‖ 79.89	96.02	92.04	85.01	82.89
10	83.00	82.14	81.28	80.48	80.91	87.74	85.25	‖ 79.57	99.56	90.89	84.93	83.07
11	82.90	82.02	81.82	79.94	80.27	86.25	84.43	‖ 79.54	100.58	90.84	85.02	82.92
12	82.90	82.32	81.90	79.96	80.27	84.78	83.56	* 81.07	100.87	90.92	84.80	82.57
13	82.87	82.54	81.07	79.87	80.53	83.98	82.84	81.12	100.22	90.62	84.64	82.13
14	82.82	82.06	80.50	79.82	80.96	83.40	82.15	79.98	97.12	90.11	83.97	81.96
15	82.88	81.78	80.57	80.13	80.15	82.88	81.93	80.50	94.43	89.74	83.27	81.97
16	83.06	81.72	80.76	80.66	79.98	82.54	82.12	80.75	93.05	89.22	83.44	82.07
17	82.94	81.62	80.89	79.98	78.74	82.27	‖ 81.31	80.74	92.15	88.94	83.72	82.65
18	82.78	81.41	81.20	79.70	78.35	82.43	‖ 80.44	‖ 80.46	92.41	88.72	83.77	82.23
19	81.57	81.60	82.48	79.70	78.68	82.74	80.01	80.88	94.69	88.57	83.57	81.90
20	‖ 82.48	82.02	84.50	80.63	79.58	84.28	‖ 79.86	81.92	93.88	88.46	82.98	81.88
21	‖ 82.42	81.61	84.45	79.14	80.92	84.59	* 79.83	81.71	96.29	88.37	82.71	81.91
22	* 82.66	81.46	83.32	79.44	81.21	84.95	80.01	82.67	94.13	88.40	82.72	82.08
23	82.91	81.17	82.44	80.53	80.18	85.23	80.49	88.28	92.97	88.02	82.74	82.40
24	82.58	81.11	82.04	79.72	80.04	85.10	79.24	95.51	92.03	87.82	82.67	82.80
25	82.46	81.12	81.95	79.02	83.91	84.62	79.56	98.10	91.38	87.65	82.77	82.92
26	82.56	81.14	82.27	79.01	84.35	83.98	79.94	99.60	91.33	87.42	83.04	82.59
27	82.58	81.59	81.69	80.83	84.52	83.39	79.71	100.34	91.52	87.21	82.76	82.80
28	82.57	81.13	81.16	80.81	86.14	82.85	79.68	100.27	91.89	87.11	82.43	82.96
29	82.64	80.86	80.84	80.50	92.68	82.28	80.88	99.68	93.17	87.02	82.34	82.02
30	82.69		80.74	80.78	93.78	81.24	80.94	100.36	92.93	86.63	82.68	83.04
31	82.40		80.47		88.94		‖ 79.55	101.11		86.24		83.12
Sum												

1944									Period 1924-1944		
Month	Extreme Gage Feet		Extreme Second Feet				Average Second Feet	Total Acre Feet	Acre Feet		
	High	Low	Day	High	Day	Low			Normal	Maximum	Minimum
Mar.		80.30			9	1,120					
Apr.		78.71			26	562					
May		78.39			3	487					
May	94.89	78.17	30	32,500	18	433					
July		78.93			24	635					
Aug.	100.55	78.44	27	55,000	3	498					
Sept.	102.21		2	57,000							
Sept.	100.92		12	56,000							
Sept.	96.95		21	34,400							
Yearly	102.21	78.17		57,000		433					

RIO GRANDE AT BUENOS AIRES STATION

DESCRIPTION: Water-stage recorder and cable with cable car, located about 22.4 miles below the Hidalgo-Reynosa international bridge and 1.9 miles above the Retamal Canal intake and 9.3 miles south of Donna, Texas, and 1,107.2 miles below the American Dam at El Paso, Texas. Zero of the gage is 0.85 foot above United States Coast and Geodetic Survey mean sea level datum.

RECORDS: Discharges based upon 127 meter measurements. 125 by the Mexican and 2 by the United States Section during the year. Computations by shifting channel methods. 1944 records good. Records available: 1943 and 1944. Gage-height records for 1942 available in the office of the Mexican Section.

REMARKS: This station was constructed by the National Irrigation Commission of Mexico in order to ascertain the discharge and water surface elevation of the Rio Grande at the Retamal Canal intake. From January to June, 1942. 3 gage-height readings were made daily during low flow and more frequently during high flows. On June 26, 1942, a water-stage recorder was installed and meter measurements were begun. On September 1, 1944, this station was destroyed by flood and has not been rebuilt. During the remainder of 1944, gage readings were taken as needed according to variations in the water level. The river flow at this station is modified by many irrigation diversions, drainage returns, and large reservoirs in the United States and Mexico.

EXTREME FLOWS: The greatest recorded flow at this station was on September 2, 1944, when the peak gage reading was 84.28 feet, the flow being 49,100 second feet. On May 19, 1944, and several days during August 1944, the flow was zero with a gage height of 62.30 feet.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Mean Daily Gage Height 1944

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,880	2,250	1,390	879	840	8.300	1,840	0	84.05	77.36	71.03	67.95
2	2,880	2,280	1,780	1,100	438	5,510	2,710	0	84.25	76.54	70.73	67.72
3	2,790	2,350	1,560	1,140	266	4.060	3.570	0	84.28	75.75	70.51	67.91
4	2,870	2,390	1.240	925	583	3,330	3.030	326	84.02	75.36	70.41	68.08
5	2,920	2,460	1,370	1,080	7,240	2,760	3.330	823	81.53	75.30	70.44	67.68
6	2,910	2,580	1,280	1,270	9,850	2,310	4,630	968	78.35	75.72	70.24	67.68
7	3,080	2,540	1,070	922	4,310	2,340	5.650	992	76.57	78.05	70.01	67.85
8	3,060	2,260	975	795	2,430	4,770	6.110	798	75.98	76.80	69.95	67.98
9	3,000	2,130	872	1,060	953	8,860	6.140	618	79.43	77.07	69.91	68.11
10	2,880	2,120	1,120	1,150	1,200	10.560	5,370	459	83.00	75.89	69.85	68.11
11	2,800	2,070	1,710	720	802	7,770	4.560	352	83.86	75.66	69.85	68.31
12	2,850	2,180	1,900	604	650	5,230	3,640	735	83.99	75.72	70.01	68.04
13	2,840	2,310	1,510	593	699	3.960	2.860	1,190	83.99	75.56	69.85	67.72
14	2,790	2,170	996	551	883	3,180	2,180	996	82.78	75.10	69.36	67.45
15	2,750	1,860	886	604	897	2,680	1,840	629	80.25	74.84	68.73	67.39
16	2,880	1,670	1,050	848	565	2,360	1.890	840	78.84	74.31	68.54	67.39
17	2,950	1,540	1,260	872	413	2,160	1.700	1,000	77.66	73.82	68.83	67.78
18	2,770	1,350	1,390	554	189	2,270	1,010	918	77.46	73.59	69.00	67.88
19	2,610	1,380	2,040	509	0	2,490	643	950	79.56	73.36	68.93	67.39
20	2,460	1,750	4,030	494	257	3,850	501	1,570	81.40	73.23	68.57	67.22
21	2,440	1,790	4,590	473	922	4,800	424	1,950	81.73	73.13	68.14	67.22
22	2,600	1,550	3,320	339	1,340	4,800	491	2,520	79.82	73.13	68.04	67.32
23	2,810	1,360	2,570	611	975	5,160	618	11,260	78.41	72.87	68.11	67.55
24	2,790	1,300	2,150	851	396	5,160	625	42,380	77.39	72.60	67.98	68.04
25	2,460	1,300	1,950	367	2,820	4,590	271	38,490	76.74	72.41	68.01	68.21
26	2,430	1,300	1,990	207	4,200	3,990	392	43,440	76.61	72.28	68.24	68.11
27	2,520	1,470	1,920	523	4,170	3,060	385	42,730	76.90	72.01	68.24	68.11
28	2,560	1,520	1,480	1,190	6,290	2,370	312	44,140	77.17	71.85	67.88	68.31
29	2,580	1,250	1,210	943	29,420	2,070	607	44,850	78.25	71.75	67.72	68.37
30	2,620		1,070	943	30,400	1,890	1,010	45,910	78.35	71.55	67.85	68.37
31	2,540		936		15,860		696	45,910		71.16		68.37
Sum	85,320	54,480	52,615	23,117	130,258	126,640	69,035	377,744				

Month	1944 Extreme Gage Feet High	Extreme Gage Feet Low	Extreme Second Feet High Day	Extreme Second Feet High	Extreme Second Feet Low Day	Extreme Second Feet Low	Average Second Feet	Total Acre Feet	Period 1943-1944 Acre Feet Average	Acre Feet Maximum	Acre Feet Minimum
Jan.	68.14	67.39	8	3.090	31	2,330	2.750	169.200	228.000	286.800	169,200
Feb.	67.65	65.68	#	2,630	29	1.150	1,880	108.100	137,050	166,000	108,100
Mar.	69.32	65.09	21	4,730	#	802	1,700	104,400	120,500	136,600	104,400
Apr.	66.11	63.16	6	1.330	26	184	771	45.850	83,925	122,000	45,850
May	79.00	62.30	30	37,790	19	0	4.200	258.400	218 150	258,400	177,900
June	72.83	66.96	1	10,420	30	1,810	4,220	251.200	277,350	303,500	251,200
July	70.90	63.45	#	6,290	25	231	2,230	136.900	203,150	269,400	136,900
Aug.	83.99	62.76	31	46,260	#	0	12,190	749,300	432,600	749,300	115,900
Sept.											
Oct.											
Nov.											
Dec.											
Yearly											

Various days of the month.

RIO GRANDE FLOODWAY DISCHARGES IN THE LOWER RIO GRANDE VALLEY

On The United States Side — 1944

There are three floodways on the United States side of the Rio Grande delta which divert excess Rio Grande flood waters to the Gulf of Mexico. Such floodway discharges are measured at gaging stations known as North Floodway South of McAllen, South Floodway South of McAllen, and Rancho Viejo Floodway near Brownsville. The first two of these gaging stations are described in Water Bulletin No. 2, page 41. The third one is described in Water Bulletin No. 6, page 41. In 1944, no water passed through Rancho Viejo Floodway. Through the other two floodways, the following amounts of water passed during flood time.

North Floodway South of McAllen, Texas

Date	Second Feet	Extreme High		Acre Feet Total
		Gage Feet	Second Feet	
Aug. 28	141			280
" 29	410			813
" 30	239			474
" 31	328			651
Sept. 1	2,300			4,562
" 2	4,400	16.90	4,700	8,727
" 3	4,180			8,291
" 4	1,840			3,650
" 5	539			1,069
" 6	300			595
" 7	176			349
" 8	64.5			128
" 9	19.8			39
" 10	16.0			32
" 11	33.3			66
" 12	164			325
" 13	335	11.93	395	664
" 14	303			601
" 15	147			292
" 16	29.0			58
Period		16.90	4,700	31,666

South Floodway South of McAllen, Texas

Date	Second Feet	Extreme High		Acre Feet Total
		Gage Feet	Second Feet	
Aug. 27	1,170			2,321
" 28	2.770	17.57	3,540	5,494
" 29	139			276
" 30	1,360			2,698
" 31	6,730			13,349
Sept. 1	12,140			24,080
" 2	13,740	22.50	13,890	27,253
" 3	12,260			24,318
" 4	3,120			6,189
" 5	57			113
" 6	24			48
" 7	24			48
" 8	24			48
" 9	24			48
" 10	64			127
" 11	2,650			5,256
" 12	5,240	18.30	5,540	10,394
" 13	3,660			7,260
" 14	105			208
Period		22.50	13,890	129,528

North Floodway Near Sebastian, Texas — 1944

The channel of the North Floodway in the vicinity of Sebastian. Texas, serves as a drainage channel as well as a floodway. During 1944, an average of two measurements per month was made of the flow at this point. From these measurements and rainfall records the following table of estimated drainage flow was prepared. The salt burden carried by this drainage flow will be found elsewhere in this bulletin under the heading, "Chemical Analyses of Water Samples".

Month	Mean Daily Second Feet 1944			Acre Feet			
				Total 1944	Period 1940-1944 #		
	Average	Maximum	Minimum		Average	Maximum	Minimum
January	27.6	31.0	26.0	1,700	3,385	7,450	1,400
February	31.3	40.0	23.3	1,800	2,970	6,010	1,610
March	49.8	80.0	39.0	3,060	3,832	5,380	1,880
April	37.6	57.0	18.2	2,240	3,230	5,900	2,210
May	62.6	400	19.2	3,850	8,772	24,200	2,890
June	84.5	272	18.2	5,030	5,918	9,090	2,380
July	36.3	90.0	12.8	2,230	3,485	7,170	1,060
August	40.4	614	6.9	2,490	1,611	2,490	605
September	2,110	10,450	115	125,700	33,615	125,700	1,520
October	65.0	200	43.0	3,990	2,155	3,990	136
November	49.1	50.7	48.1	2,920	1,820	2,920	861
December	57.5	90.0	48.1	3,540	2,874	4,480	1,830
Yearly				158,550	73,667	158,550 ϕ	28,935 ϕ

Record began October 1940. ϕ Period 1941-1944.

On The Mexican Side — 1944

During the last days of August and the first days of September, the river overflowed between Reynosa and Rio Rico. The quantity of overflow is unknown but its maximum rate is estimated as 11,000 second feet.

There are several regular floodways on the Mexican side which divert excess Rio Grande flood water to the Gulf of Mexico. For the year 1944, the following information is known concerning such flood flows.

Retamal Canal

Full information on the flows through this canal are shown on page 53, hereof.

Floodway No. 3

This floodway was opened at 9 a.m., August 28. At 10 a.m., the gage reading was 10.20 meters and at 3:45 p.m., the gage reading was steady at about 10.15 meters. Flow was continuous during the remainder of the flood period of August and September. No other information is available.

RIO GRANDE AT MATAMOROS STATION

DESCRIPTION: Water-stage recorder and cable with sit-down cable car and winch. The water-stage recorder is attached to the central pier of the railroad bridge over the Rio Grande between Matamoros, Tamaulipas, and Brownsville, Texas, about 57.6 miles upstream from the Gulf of Mexico, and 1,183.8 river miles below the American Dam at El Paso, Texas. The cable and car are located 0.3 mile upstream from the bridge. Zero of present gage is 15.26 feet above mean sea level, United States Coast and Geodetic Survey datum.

RECORDS: Based upon 174 meter measurements during the year, 164 by the Mexican and 10 by the United States Section. The river bottom shifts greatly at this station. Computations by shifting channel methods. 1944 records fair. Records available: 1901 to 1913; 1923 to December 1944.

REMARKS: In May 1924 a recorder was established 0.6 mile upstream from the bridge. In September 1925 the recorder was moved to its present location. On October 3, 1930, the zero of the gage was lowered 5 feet. The river flow at this station is greatly modified by many irrigation diversions and by large reservoirs in the United States and Mexico. During floods only a portion of the river flow discharges past this station through the channel of the Rio Grande, as part finds outlet to the Gulf of Mexico through flood channels in both countries, which divert from the Rio Grande within 117.4 miles above this station.

EXTREME FLOWS: The greatest flow recorded here was on June 22, 1903, when a mean daily flow of 36,200 second feet occurred with a gage height of 13.2 feet. The greatest flow since 1923 was on September 16, 1942, when 32,300 second feet passed this station with a gage height of 22.51 feet. The highest gage reading was on October 2, 1936, when a reading of 22.57 feet, present gage, was reached, with a discharge of 29,600 second feet. In 1930 the river at this station was dry for a few days in March and April. On June 17, 1938, the minimum flow was 9.5 second feet with a stage of 1.44 feet.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,240	1,690	192	445	34.2	9,990	967	166	27,900	20,620	5,580	1,940
2	2,480	1,780	116	441	19.8	6,110	886	52.3	27,930	15,570	5,190	1,980
3	2,510	1,630	63.6	646	28.2	4,340	989	13.8	27,650	14,230	4,800	1,940
4	2,300	1,520	206	696	69.2	3,250	1,960	6.7	27,580	13,170	4,730	2,010
5	2,180	1,380	266	770	90.0	2,640	2,350	8.1	26,730	12,150	4,700	1,970
6	2,200	1,530	353	519	1,680	2,040	2,320	8.1	24,510	11,720	4,630	1,920
7	2,160	1,640	262	512	4,100	1,620	2,660	7.8	18,580	16,000	4,200	1,860
8	2,120	1,490	169	692	2,320	1,560	3,470	4.2	13,910	21,150	4,060	1,790
9	2,210	1,200	85.5	597	1,350	2,480	4,420	2.8	14,270	18,120	3,880	1,750
10	2,290	996	77.3	622	646	5,010	4,940	3.5	21,720	16,920	4,020	1,930
11	2,350	802	171	554	180	6,570	4,450	4.6	25,710	14,160	3,990	2,240
12	2,180	738	780	399	82.3	5,010	3,350	4.6	26,700	13,740	4,170	2,110
13	2,000	848	1,080	247	43.4	3,990	2,440	4.2	27,580	13,980	4,270	1,950
14	2,070	1,360	1,060	127	34.2	3,190	1,770	4.2	27,120	13,000	3,850	1,630
15	2,040	1,240	568	63.2	31.8	2,490	1,380	82.6	26,940	11,760	3,390	1,450
16	2,110	742	205	39.2	25.8	2,000	1,230	39.6	24,970	10,700	2,660	1,260
17	2,240	586	145	33.5	21.2	1,640	1,350	13.1	20,800	10,630	2,080	1,430
18	2,100	554	134	22.6	29.7	1,450	1,100	5.3	16,840	9,680	2,210	1,550
19	1,960	519	657	38.1	23.3	1,530	558	5.3	17,520	9,110	2,670	1,430
20	1,700	544	1,050	33.5	14.5	1,630	317	6.0	21,440	8,690	2,930	1,210
21	1,400	844	1,590	20.1	19.1	1.890	138	8.1	23,780	8,620	2,700	1,080
22	1,290	1,040	2,500	18.7	15.5	3.340	88.6	494	25,000	8.790	2,280	1,050
23	1,400	597	2.500	44.1	27.5	2,830	58.6	1,190	22,810	8,790	1,940	1,110
24	1,940	323	2,140	68.2	33.9	3.080	38.1	9,010	19,110	8,120	1,730	1,450
25	2,010	275	1,820	35.0	92.5	3,210	27.2	25,390	15,960	7,560	1,750	2,000
26	1,900	255	1.660	27.2	79.1	2,930	27.5	28,430	15,040	7,100	1,910	2,220
27	1,930	261	1,680	30.0	816	2,430	20.8	29,060	15,330	6,850	2,260	1,820
28	1,850	276	1,600	17.6	1,920	2,030	13.1	27,720	15,640	6,600	2,160	1,840
29	1,720	274	1,260	13.8	4,130	1,470	12.0	26,840	16,700	6,640	2,020	2,320
30	1,870		805	17.0	18,750	1,160	13.1	27,230	24,330	6,500	1,930	2,580
31	2,050		526		19,850		34.2	28,180		6,040		2,810
Sum	62,800	26,934	25,721	7,788.8	56,557.1	92,910	43,378.2	203,994.9	660,100	356,710	98,690	55,630

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1924-1944 Acre Feet Normal	Maximum	Minimum
Jan.	4.95	2.79	2	2,520	22	1,290	2,030	124,600	222,797	490,800	92,240
Feb.	4.10	0.33	1	1,840	27	244	929	53,420	152,717	328,300	28,470
Mar.	5.05	- 0.52	22	2,620	3	56.9	830	51,020	123,639	240,800	27,860
Apr.	1.80	- 1.12	5	840	30	10.9	260	15,450	114,925	317,800	15,450
May	17.81	- 1.08	31	*24,540	3	10.6	1,820	112,200	298,933	721,100	90,390
June	15.26	2.85	1	14,060	30	1,070	3,100	184,300	397,336	1,180,500	31,690
July	7.74	0.07	10	4,980	29	12.0	1,400	86,040	336,840	756,600	54,420
Aug.	20.60	- 0.16	28	29,950	9	2.8	6,580	404,600	309,123	833,700	63,200
Sept.	21.10	14.40	13	27,970	8	12,640	22,000	1,309,000	671,549	1,363,200	124,070
Oct.	17.36	9.09	1	21,470	31	5,760	11,510	707,500	601,981	1,408,500	124,280
Nov.	9.06	4.30	1	5,720	24	1,730	3,290	195,800	292,099	827,500	95,740
Dec.	5.54	2.95	31	2,910	22	1,050	1,790	110,300	223,683	594,200	69,710
Yearly	21.10	- 1.12		29,950		2.8	4.620	3,354,230	3.745,622	6,579,500	1,680,360

* Partly estimated.

RIO GRANDE AT LOWER BROWNSVILLE STATION

DESCRIPTION: Water-stage recorder, and cable with stand-up cable car and winch, located about 1,000 feet below the El Jardin pumping plant, about 6.6 river miles below Brownsville, Texas, and Matamoros, Tamaulipas, 50.4 miles upstream from the Gulf of Mexico, and 1,191.0 river miles below the American Dam at El Paso, Texas. Zero of gage is on United States Coast and Geodetic Survey mean sea level datum.

RECORDS: Based upon 69 current meter measurements, 68 by the United States and 1 by the Mexican Section made during the year. Computations by shifting channel methods. 1944 records fair. Records available: January 1934 to December 1944.

REMARKS: The river flow at this station is greatly modified by many irrigation diversions, drainage returns, and large reservoirs in the United States and Mexico. During floods, only a portion of the river flow discharges past this station through the channel of the Rio Grande, as part finds outlet to the Gulf of Mexico through flood channels in both countries, which divert from the Rio Grande within 124.6 miles above this station.

EXTREME FLOWS: On September 14, 1942, a peak discharge of 31,000 second feet was reached with a gage height of 33.24 feet. Additional data concerning peaks may be found in previous Water Bulletins. The river was dry at this station a few days in 1930; March 25-28, 1935; June 16-19, 1938; several days in 1940; several days in 1943; and several days in 1944.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2,080	1,680	175	418	0.2	11,800	810	136	24,600	17,300	5,260	1,790
2	2,320	1,450	75.0	399	5.2	7,010	719	60.2	24,700	15,300	4,950	1,760
3	2,400	1,380	33.3	471	5.1	5,140	734	37.2	24,900	13,400	4,570	1,750
4	2,250	1,360	226	494	12.4	3,860	1,550	41.0	25,000	12,100	4,500	1,760
5	2,140	1,260	210	598	0	2,860	2,130	35.7	25,100	11,300	4,480	1,720
6	2,130	1,370	193	474	865	2,010	2,240	34.4	24,500	11,100	4,450	1,590
7	2,040	1,540	150	382	3,840	1,480	2,570	23.5	19,600	13,900	4,050	1,580
8	1,970	1,450	125	553	2,620	1,320	3,150	23.6	14,300	17,600	3,780	1,500
9	2,060	1,170	46.7	503	1,440	2,260	3,940	20.1	13,100	16,100	3,630	1,510
10	2,170	965	24.2	537	608	4,980	4,520	15.3	19,400	15,800	3,630	1,620
11	2,200	826	39.5	467	233	6,740	4,260	7.1	22,300	13,800	3,600	1,980
12	2,080	739	530	400	14.6	6,050	3,410	8.4	23,600	13,200	3,670	1,920
13	1,880	746	831	238	8.2	4,510	2.470	3.6	24,700	13,200	3,740	1,720
14	2,030	1,080	854	109	0	3,320	1.810	0	25,600	12,600	3,390	1,650
15	2,030	1,220	582	96.1	0	2.560	1.430	34.9	26,100	11,800	3,010	1,420
16	2,040	834	262	75.1	0	2.050	1.280	15.5	25.200	10,900	2,550	1,200
17	2,160	548	113	38.1	0	1.580	1.300	14.0	21,400	10,300	2,040	1,320
18	2,040	488	108	14.7	0	1.370	1.160	32.4	17,500	9,700	2,080	1,480
19	1,890	482	536	7.9	0	1.460	679	41.3	16.900	9,170	2,500	1,330
20	1,600	498	974	2.5	0	1.660	333	57.0	20.300	8,790	2,750	1,100
21	1,270	673	1,360	4.8	0	1.880	171	74.9	22,600	8,520	2,650	895
22	1,120	888	2.360	0	0	2.760	127	184	23.900	8,420	2,300	856
23	1,170	616	2.540	0	2.3	3 050	58.8	869	22,900	8.290	1,960	895
24	1,590	373	2,290	8.2	248	3.440	19.4	5,240	19,700	7,710	1,720	1,120
25	1,760	257	1,900	0.7	38.9	3.770	0	17.600‡	16.700	7,270	1,650	1,540
26	1,650	178	1,670	2.3	0	3,690	0	23,100	15,100	6,820	1,700	1,930
27	1,600	164	1,600	5.6	123	2,880	7.2	24,000	14,800	6,620	2,000	1,820
28	1,520	187	1,460	7.7	1,190	2,030	17.6	24,400	14,800	6,350	1,970	1,610
29	1,450	175	1,070	3.7	3,030	1,410	28.4	24,000	15,400	6,260	1,800	1,860
30	1,550		758	2.4	12,600	1,010	40.2	24,300	17,500	6,200	1,860	2,100
31	1,850		533		18,900		44.3	24,500		5,710		2,330
Sum	58,040	24,597	23,628.7	6,312.8	45,783.9	99,940	41,008.9	168,909.1	622,200	335,530	92,240	48,656

Month	1944 Extreme Gage Feet High	Low	Extreme Second Feet High Day	High	Low Day	Low	Average Second Feet	Total Acre Feet	Period 1934-1944 Acre Feet Normal	Maximum	Minimum
Jan.	15.83	13.42	3	2,420	22	1,100	1,870	115,000	194,927	299,000	88,200
Feb.	14.98	10.76	1	1,860	26	139	848	48,800	132,918	237,000	26,300
Mar.	15.76	9.70	23	2,570	10	21.7	762	46,900	114,327	199,000	29,700
Apr.	12.31	9.35	5	637	23	0	210	12,500	96,673	242,000	12,500
May	29.07		31	19,800	5‡	0	1,480	90,800	307,218	717,000	82,600
June	27.34	13.58	1	16,100	30	916	3,330	198,000	390.909	*1.161,000	32,000
July	18.93		10	4,590	25‡	0	1,320	81,300	348.109	759,000	65,900
Aug.	31.40		31	24,700	2‡	0	5,450	335,000	274.773	679,000	62,600
Sept.	32.08	25.89	15	26,200	9	12.200	20,740	1.234.000	678.000	1.337,000	134,000
Oct.	28.54	20.25	1	17,900	31	5,440	10,800	666.000	547,182	*1,427,000	200,000
Nov.	20.24	14.64	1	5.440	26	1,620	3,070	183,000	226,291	614,000	94,200
Dec.	16.11	13.20	31	2,390	22	852	1,570	96,500	179 555	341,000	64,800
Yearly	32.08			26,200		0	4 280	3,107.800	3,490,882	6,526,000	1,662,700

‡ And other days. * Partly estimated.

STORED WATER IN LARGE RESERVOIRS OF THE RIO GRANDE BASIN

In Thousands of Acre Feet

The data below cover all reservoirs in the Rio Grande Basin having over 15,000 acre-foot capacity. The monthly figures represent the acre feet of water in storage on the last day of each month.

The names of the reservoirs and the sources of the data are: Rio Grande, Continental, Santa Maria, Terrace, Mountain Home, Sanchez, Costilla, and El Vado data are from the Secretary of the Rio Grande Compact Commission. Bluewater data are from the Secretary of the Bluewater-Toltec Irrigation District. Elephant Butte, Caballo, Alamogordo, McMillen and Avalon data are from the United States Bureau of Reclamation. Red Bluff data are from the office of the Red Bluff Water Power Control District, Pecos, Texas. Willacy data are from the Willacy County Water Control and Improvement District No. 1.

The data for Boquilla Reservoir for 1944 is from the Compañia Agricola y de Fuerza Electrica del Rio Conchos, S. A. The data for Don Martin, Centenario and San Miguel are from the Banco Nacional de Credito Agricola, S. A. Data for Culebron, Villa Cardenas and Palito Blanco # 2 are from the National Irrigation Commission of Mexico. Regular water storage began in the new El Azucar Reservoir in March 1943. The data for storage in El Azucar are from the Lower San Juan Irrigation District of Tamaulipas, Mexico. For information on some temporary storage in El Azucar Reservoir in 1942 see Remarks under Rio San Juan Station at Santa Rosalia on page 39 of Water Bulletin No. 12.

On The United States Side

Month	Rio Grande (Capacity 51.1)		Continental (Capacity 26.7)		Santa Maria (Capacity 43.6)		Terrace (Capacity 17.7)		Mountain Home (Capacity 20.1)		Sanchez (Capacity 103.2)		Costilla (Capacity 15.7)		El Vado (Capacity 200.3)		Bluewater (Capacity 50.3)	
	1944	#Normal 1927-1944	1944	#Normal 1928-1944	1944	#Normal 1928-1944	1944	#Normal 1925-1944	1944	#Normal 1924-1944	1944	#Normal 1926-1944	1944	#Normal 1922-1944	1944	Normal 1935-1944	1944	#Normal 1927-1944
Jan.	6.1	14.5	¤ 8.2	4.0	3.5	7.5	2.2	2.6	1.5	4.9	13.6	13.8	2.6	4.0	34.0	52.4	6.8	6.8
Feb.	7.9	15.8	¤ 8.2	4.0	4.9	8.2	2.8	3.1	1.6	5.3	14.3	13.8	2.8	4.3	37.2	53.0	7.0	8.1
Mar.	9.8	17.1	¤ 8.2	4.0	5.6	9.8	3.4	3.5	2.1	5.6	14.9	14.6	3.6	4.8	43.4	57.5	7.8	13.0
Apr.	12.7	16.9	8.3	4.2	6.4	11.7	5.1	4.1	2.7	6.2	16.6	16.4	5.0	6.1	72.6	118.4	6.8	17.0
May	39.2	26.2	19.5	6.6	21.7	17.1	15.0	7.6	8.4	8.6	27.6	22.0	11.0	8.7	193.1	174.4	4.9	14.6
June	51.8	28.8	22.2	7.6	41.0	19.6	17.7	9.6	10.8	8.7	29.6	20.9	10.7	7.7	199.7	164.0	2.3	11.5
July	38.9	17.6	21.1	5.8	37.1	13.3	11.6	6.3	6.6	6.3	22.2	14.8	5.9	4.5	188.0	131.2	0.9	9.7
Aug.	14.0	7.5	18.1	4.7	13.0	5.5	5.2	3.2	1.8	3.9	11.4	11.9	2.6	2.9	129.8	90.2	0.2	8.3
Sept.	13.8	6.9	17.7	4.8	9.2	5.3	2.9	2.6	0.2	3.5	8.9	13.0	1.2	2.4	87.1	65.0	0	8.0
Oct.	13.8	8.3	¤17.7	4.4	9.2	5.7	2.9	2.8	0.5	3.6	9.3	13.8	1.4	2.8	79.8	57.3	0	7.5
Nov.	15.9	12.0	¤17.7	4.5	9.7	6.6	3.0	2.2	1.0	4.1	9.5	13.6	1.5	3.2	82.2	54.7	0	7.3
Dec.	17.4	13.5	¤17.7	5.2	10.2	7.1	3.0	2.5	1.4	4.4	9.5	13.3	1.7	3.5	85.2	57.7	0	6.9
Avg.	20.1	15.4	15.4	5.0	14.3	9.8	6.2	4.2	3.2	5.4	15.6	15.2	4.2	4.6	102.7	89.6	3.1	9.9
Max.	51.8	51.8	22.2	22.2	41.0	42.1	17.7	17.7	10.8	16.4	29.6	62.4	11.0	15.1	199.7	199.7	7.8	47.1
Min.	6.1	0	¤ 8.2	0	3.5	0	2.2	0	0.2	0	8.9	1.6	1.2	¤ 0	34.0	2.3	0	0

Month	Elephant Butte (Capacity 2,219.0)		Caballo (Capacity 346.0)		Alamogordo (Capacity 157.0)		McMillan and Avalon (Capacity 4.4.8)		Red Bluff (Capacity 310.0)		Willacy (Capacity 25.0)		Total In United States Reservoirs (Capacity 3,630.5)	
	1944	Normal 1915-1944	1944	#Average 1938-1944	1944	#Average 1937-1944	1944	#Normal 1908-1944	1944	#Average 1936-1944	1944	#Average 1939-1944	1944	Estimated Normal
Jan.	1,219.5	1,052.6	245.9	197.3	48.4	80.0	15.9	33.7	228.0	172.4	17.5	17.0	1,853.7	1,683.5
Feb.	1,199.8	1,055.4	281.5	179.3	55.7	83.9	14.5	34.3	236.0	176.5	18.4	14.9	1,828.6	1,659.9
Mar.	1,173.0	1,045.6	261.0	150.4	24.4	68.2	27.1	32.1	228.0	174.7	16.7	16.7	1,829.0	1,617.6
Apr.	1,141.4	1,057.4	197.3	120.6	25.5	67.3	12.2	22.4	193.0	152.4	8.8	17.3	1,714.4	1,638.4
May	1,339.0	1,207.3	155.6	109.9	43.0	85.4	3.4	26.7	173.0	180.2	10.9	15.7	2,065.3	1,911.0
June	1,511.6	1,264.4	107.7	90.0	44.9	73.1	16.5	24.9	154.4	203.7	17.1	19.6	2,238.0	1,954.1
July	1,503.8	1,202.6	72.0	73.5	8.9	77.9	5.6	20.6	125.5	184.2	14.8	19.8	2,062.9	1,788.1
Aug.	1,450.5	1,124.5	33.2	51.6	12.1	73.7	1.5	18.7	105.8	165.3	17.9	16.8	1,817.1	1,588.7
Sept.	1,393.0	1,080.9	30.8	42.8	6.8	72.5	5.6	20.9	116.0	154.1	18.5	18.1	1,711.7	1,500.8
Oct.	1,364.5	1,075.5	81.1	75.5	13.0	76.4	10.4	23.9	122.4	155.6	13.8	18.6	1,739.8	1,531.7
Nov.	1,323.4	1,076.8	143.6	118.6	20.9	67.6	11.0	25.8	131.4	159.5	16.2	16.6	1,787.0	1,573.1
Dec.	1,290.6	1,079.3	207.1	161.6	29.6	70.6	18.9	30.5	142.8	164.9	16.5	18.5	1,851.6	1,639.5
Avg.	1,325.8	1,110.2	151.4	114.3	27.8	74.7	11.9	26.2	163.0	170.3	15.6	17.5	1,880.3	1,672.2
Max.	ϕ1,522.4	ϕ2,302.8	ϕ284.9	ϕ346.6	55.7	156.3	27.1	85.5	236.0	327.5	18.5	27.3	2,238.0	
Min.	ϕ1,130.1	3.3	ϕ 8.0	ϕ 1.9	6.8	6.8	1.5	0	105.8	11.0	8.8	8.8	1,711.7	

On The Mexican Side

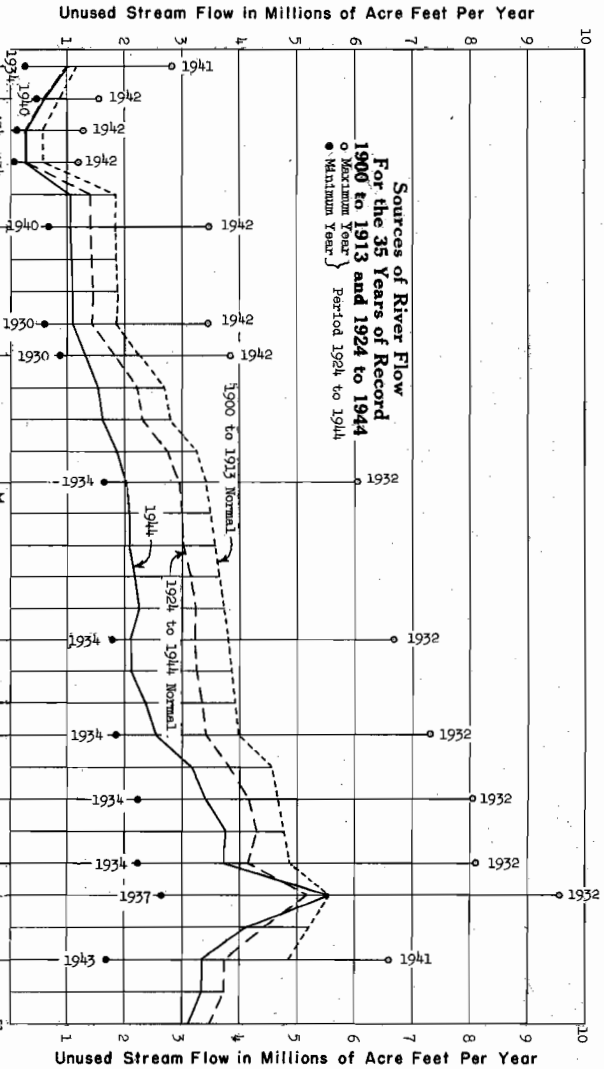
Month	Boquilla (Capacity 2,116.0)		Centenario and San Miguel (Capacity 19.9)		Don Martin (Capacity 1,123.0)		El Azucar ** (Capacity 282.9)		* Culebron (Capacity 244.9)		Total in Mexican Reservoirs (Capacity 3,786.7)	
	1944	#Normal 1914-1944	1944	Normal 1934-1944	1944	Normal 1930-1944	1944	Estimated Normal	1944	#Average 1939-1944	1944	Estimated Normal
Jan.	1,829.5	1,539.6	16.3	11.8	57.0	374.2	259.6	250	66.6	66.7	2,229.0	2,242.3
Feb.	1,828.2	1,510.5	18.1	11.7	52.9	361.4	255.7	220	57.2	57.0	2,212.1	2,160.6
Mar.	1,789.1	1,464.6	14.6	9.2	40.1	342.0	249.2	170	46.5	44.8	2,139.5	2,030.6
Apr.	1,704.3	1,405.4	7.7	7.4	33.1	328.0	234.9	130	19.5	34.3	1,999.5	1,905.1
May	1,599.6	1,344.5	9.1	8.8	36.2	319.8	287.0	80	19.6	44.1	1,951.5	1,797.2
June	1,509.5	1,254.0	8.1	8.1	25.4	322.3	289.4	170	53.8	60.1	1,886.2	1,814.5
July	1,491.9	1,293.3	4.9	8.1	19.9	318.0	277.7	200	48.0	53.9	1,842.4	1,873.3
Aug.	1,480.5	1,471.8	5.5	8.5	174.1	317.6	364.0	250	120.1	61.3	2,144.2	2,109.6
Sept.	1,996.8	1,640.4	13.9	11.8	546.3	387.7	296.7	285	101.8	69.4	2,955.5	2,392.3
Oct.	1,939.3	1,630.0	19.0	12.5	667.5	407.7	211.8	280	143.3	82.0	2,980.9	2,412.2
Nov.	1,907.7	1,594.1	16.9	11.2	707.4	422.1	242.1	270	133.9	73.8	3,008.0	2,371.2
Dec.	1,877.6	1,580.1	20.6	11.8	721.5	425.1	297.5	260	124.6	73.6	3,041.8	2,350.6
Avg.	1,746.2	1,477.4	12.9	10.1	256.8	360.5	272.1	213.6	77.9	60.1	2,365.9	2,121.6
Max.	1,996.8	2,224.5	20.6	20.6	721.5	1,163.4	364.0		143.3	143.3	3,041.8	
Min.	1,480.5	37.6	4.9	0.6	19.9	0.7	211.8		19.5	18.2	1,842.4	

Some months missing. ¤ Estimated. ϕ Daily extreme. * Combined storage of Culebron, Villa Cardenas, and Palito Blanco #2.
** Capacity at 70 meters elevation. Spillway under construction.

SOURCES OF RIVER FLOW

A distinction must be made clear between the figures in the table at the lower or left side of this page showing average annual unused run-off, and the graphical part of the page, showing average annual unused stream flow. As an illustration of this distinction, consider these two different values at Langtry. Both values are expressed as average annual amounts tributary to the station. The amount shown graphically above or to the right of the page is the water which actually flowed past this station. On the other hand, the amount shown by figures below, or to the left of the page, is the water which actually flowed past this station, and from which a certain amount of water is subtracted, and to which certain other amounts of water are added. In the case of Langtry, these subtractive and additive amounts of water are (a) Subtractive - the water which ran off the watershed into Boquilla reservoir in years prior to 1924, and was drawn from the reservoir during the period 1924-1944. (b) Additive - the water impounded since 1924 and remaining in Caballo and Elephant Butte reservoirs at the close of 1944. (c) Additive - the water impounded since 1924 in El Vado and several small reservoirs on the Upper Rio Grande in New Mexico and Colorado, and which remained therein at the end of 1944. This additive carry-over storage in El Vado and the small reservoirs on the Rio Grande above San Marcial averaged 6,570 acre feet per year. In Caballo and Elephant Butte reservoirs, the carry-over storage averaged 5,310 acre feet per year additive. The carry-over storage in Boquilla reservoir averaged 12,300 acre feet per year subtractive. Other carry-over storage figures are: Alamogordo, Avalon, McMillan, and Red Bluff on the Pecos River, 6,920 acre feet per year additive. Centenario and San Miguel on the Rio San Rodrigo, 980 acre feet per year additive. Don Martin on the Rio Salado, 34,360 acre feet per year additive. El Azucar on the Rio San Juan, 14,170 acre feet per year additive.

Average Annual Unused Run-off A.F. Per Sq. Mi.		
1900-1913	1924-1944	
46.8*	41.7*	SAN MARCIAL
		Unmeasured
29.7*	21.3*	EL PASO
		Unmeasured
" 17.1*	8.8*	FORT QUITMAN
		Unmeasured
16.6*	7.8*	UPPER PRESIDIO
51.0	46.0	RIO CONCHOS
		Unmeasured
		LOWER PRESIDIO
		ALAMITO CREEK
23.6	21.6	TERLINGUA CREEK
		Unmeasured
		JOHNSON RANCH
		Unmeasured
28.6*	23.1*	LANGTRY
12.3	10.7	PECOS RIVER
"115,000	105,700	GOODENOUGH SPG.
106	106.3	DEVILS RIVER
55.3	72.5	Unmeasured
28.1*	24.4*	DEL RIO
		SAN FELIPE CREEK
		PINTO CREEK
109	70.4	RIO SAN DIEGO
		RIO SAN RODRIGO
		Unmeasured
30.5*	25.8*	EAGLE PASS
		RIO ESCONDIDO
29.7	35.7	Unmeasured
		EL JARDIN (Est.)
		Unmeasured
30.5*	26.2*	LAREDO
27.2	20.7	RIO SALADO
		Unmeasured
		ZAPATA
60.9	62.1	RIO ALAMO
		Unmeasured
31.0*	26.6*	ROMA
		#
32.6*	30.5*	RIO GRANDE CITY DIVERSIONS
		OVERFLOW & LOSS
		MATAMOROS DIVERSIONS
		OVERFLOW & LOSS
		LOWER BROWNSVILLE



* Unused run-off at and above gaging station. " Estimated. # San Juan plus unmeasured. Prior to March 1943, the San Juan flowed into the Rio Grande and afterwards it was mostly retained in Azucar Reservoir.

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

DESCRIPTION: This gaging station is an open channel rating station in concrete lined canal with water-stage recorder located 396 feet below the head gates at the American Dam near El Paso, Texas. The center of the American Dam is about .03 mile upstream from the point where the Western Land Boundary joins the River Boundary between the United States and Mexico. Measurements are made at the downstream end of the first covered section of this canal. Zero of the gage is 3,712.09 feet above U.S.C. & G.S. sea level datum.

RECORDS: Based upon 26 current meter measurements during the year and a stable rating curve.1944 records excellent. Records available: June 2, 1938, to December 31, 1944. Monthly records 1938-1943 will be found in Water Bulletin No. 13.

REMARKS: This canal diverts water from the Rio Grande at the American Dam near El Paso, Texas, 2.1 river miles above the International Dam near Juarez, Chihuahua. This canal was constructed by the United States Section in connection with the American Dam. Operation began June 2, 1938. Water from this canal discharges into the Franklin Canal from which some is frequently returned to the Rio Grande at spillways 2.2, 2.7, and 3.6 river miles below the American Dam. At times, two small diversions are made from this canal. See lower part of second page, hereafter, for details concerning these two diversions.

COMPARATIVE FLOWS FROM RECORDS: Momentary Peak: Max. Mar. 27, 1944, ⊕ 1,840 sec. ft.; Min. ** sometimes dry.
Average Daily: Max. Sep. 4, 1944, ⊕ 1,500 sec. ft.; Min. ** sometimes dry.
Average Monthly: Max. Aug. 1943, ⊕ 1,210 sec. ft.; Min. ** sometimes dry.
Average Yearly: Max. 1943, ⊕ 748 sec. ft.; Min. 1940, ⊕ 491 sec. ft.
Average of Two Successive Years: Max. 1943-1944, ϕ 728 sec. ft.; Min. 1940-1941, ϕ 508 sec. ft.
Average of Three Successive Years: Max. 1942-1944, ϕ 700 sec. ft.; Min. 1939-1941, ϕ 528 sec. ft.
Average of Four Successive Years: Max. 1941-1944, ϕ 656 sec. ft.; Min. 1939-1942, ϕ 557 sec. ft.
Average of Five Successive Years: Max. 1940-1944, ϕ 623 sec. ft.; Min. 1939-1943, ϕ 595 sec. ft.
Average of Six Years: 1939-1944, ϕ 614 sec. ft.

Mean Daily Discharge in Second Feet 1944 —— Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	398	‖ 1.0	402	945	1,070	1,040	983	1,320	1,080	1,040	337	234
2	361	‖ 1.0	418	953	945	1,100	975	1,220	1,040	826	322	229
3	82.8	‖ 1.0	448	1,070	920	977	1,040	1,070	1,130	533	312	231
4	‖ 1.0	‖ 1.0	565	1,260	923	993	1,020	944	1,500	534	306	224
5	‖ 1.0	‖ 1.0	679	1,020	876	1,010	1,050	1,000	1,460	590	297	222
6	‖ 1.0	‖ 1.0	556	873	847	864	962	1,340	1,430	675	321	219
7	‖ 1.0	‖ 1.0	489	773	879	850	977	1,340	1,320	650	324	239
8	‖ 1.0	‖ 1.0	598	872	1,040	954	937	1,310	1,150	530	297	300
9	‖ 1.0	‖ 1.0	646	973	852	966	1,280	1,190	1,110	466	271	306
10	‖ 1.0	‖ 1.0	656	1,170	875	1,140	1,330	1,070	1,170	432	278	305
11	‖ 1.0	‖ 1.0	608	1,260	946	1,110	1,240	1,160	1,170	410	279	280
12	‖ 1.0	‖ 1.0	620	933	897	1,060	1,060	1,130	1,030	378	273	458
13	‖ 1.0	‖ 1.0	566	970	837	1,100	1,040	1,120	941	399	274	506
14	‖ 1.0	61.2	670	1,140	812	1,130	1,120	1,370	931	392	271	384
15	‖ 1.0	146	626	1,170	874	989	1,160	1,280	943	381	258	346
16	‖ 1.0	145	678	1,160	851	960	1,160	1,390	1,100	375	255	366
17	‖ 1.0	185	659	1,460	865	881	1,140	1,250	1,140	345	263	330
18	‖ 1.0	499	869	1,180	866	841	1,320	1,180	1,090	359	268	305
19	‖ 1.0	431	611	1,200	922	919	1,210	1,200	1,030	432	273	244
20	‖ 1.0	420	719	1,100	920	996	1,200	1,350	869	431	271	250
21	‖ 1.0	389	836	1,160	1,010	988	1,320	1,270	851	535	262	238
22	‖ 1.0	399	798	1,400	1,200	1,030	1,340	1,190	778	491	251	232
23	‖ 1.0	422	726	1,340	1,020	1,180	1,430	1,130	809	431	250	223
24	‖ 1.0	403	605	1,360	945	1,120	1,190	1,180	784	408	261	224
25	‖ 1.0	483	629	1,320	921	1,100	1,230	1,270	818	356	287	220
26	‖ 1.0	486	856	1,260	878	1,290	1,240	1,270	1,130	329	270	220
27	‖ 1.0	489	1,290	1,070	906	1,330	1,080	1,200	1,190	336	259	220
28	‖ 1.0	427	1,120	1,200	1,070	1,170	986	1,200	1,140	446	255	232
29	‖ 1.0	412	1,040	1,120	1,130	1,080	1,050	1,080	855	415	244	238
30	‖ 1.0		1,040	1,130	1,060	1,010	1,280	1,000	842	396	238	223
31	‖ 1.0		1,110		1,020		1,280	941		371		213
Sum	869.8	5,810.2	22,133	33,842	29,177	31,178	35,630	36,965	31,831	14,692	8,327	8,461

Month	Extreme Gage Feet 1944 High	Extreme Gage Feet 1944 Low	Extreme Second Feet 1944 High Day	Extreme Second Feet 1944 High	Extreme Second Feet 1944 Low Day	Extreme Second Feet 1944 Low	Average Second Feet 1944	Total Acre Feet 1944	# Period 1938-1944 Acre Feet Average	Acre Feet Maximum	Acre Feet Minimum
Jan.	6.80		1	407	♀ 4	‖ 1.0	28.1	1,730	2,771	8,110	61.5
Feb.	7.60		18	569	♀ 1	‖ 1.0	200	11,500	12,943	19,500	5,170
Mar.	11.30	6.45	27	1,840	1	341	714	43,900	38,508	50,100	24,450
Apr.	10.73	8.24	10	1,630	7	753	1,130	67,100	58,817	70,900	45,800
May	10.58	8.41	22	1,540	13	788	941	57,900	52,533	69,000	39,700
June	10.27	8.43	27	1,390	7	797	1,040	61,800	56,171	65,700	51,200
July	10.69	8.72	31	1,540	24	834	1,150	70,700	59,643	70,700	42,600
Aug.	10.88	8.79	19	1,630	19	863	1,190	73,300	60,829	74,600	44,000
Sept.	10.81	8.05	26	1,670	29	717	1,060	63,100	47,686	63,100	38,200
Oct.	9.91	6.18	1	1,310	26	311	474	29,100	25,371	39,000	13,100
Nov.	6.44	5.78	6	342	16	233	278	16,500	13,870	21,000	5,630
Dec.	7.51	5.67	12	530	31	203	273	16,800	14,510	25,500	8,440
Yearly	11.30			1,840		‖ 1.0	707	513,430	443,652	541,610	356,622

The average maximum and minimum discharges for January through May are for the period 1939-1944.
** Except for seepage of less than 2.0 sec. ft. ϕ Beginning June 1939. ⊕ Beginning June 1938.
♀ And other days. ‖ Estimated.

DIVERSIONS FROM THE RIO GRANDE INTO THE ACEQUIA MADRE

Near Juárez, Chihuahua

DESCRIPTION: Water-stage recorder and bridge for meter measurement located about 260 feet below the canal intake at the International Dam at Juarez, Chihuahua, which is 2.1 river miles below the American Dam at El Paso, Texas. Prior to July 29, 1944, the station was located 1 mile below the canal intake.

RECORDS: Based upon 114 meter measurements during the year, 91 by the Mexican Section and 23 by the American Section. Computations by shifting channel methods. 1944 records good. Records available: 1938-1944.

REMARKS: In 1944, 53,340 acre feet were distributed to 15,778 acres of land irrigated in the first unit under the canal where a diversion duty of 3.38 acre feet per acre was obtained. The remainder of the water from this canal was used, together with drainage water (which entered the canal at the lower end of the first unit), to irrigate lands further down the canal.

COMPARATIVE FLOWS FROM RECORDS: Momentary Peak: Max. July 21,1944, 480 sec.ft. with a gage height of 6.00 ft. Min. Dry through January, February, October, November, and December of each year.

Average Daily: Max. May 10, 1942, 339 sec. ft.; Min. Dry during 5 months of each year.
Average Monthly: Max. July 1942, 247 sec. ft.; Min. Dry during 5 months of each year.
Average Yearly: Max. 1942, 116 sec. ft.; Min. 1941, 76.3 sec. ft.
Average of Two Successive Years: Max. 1941-1942, 106 sec. ft.; Min. 1940-1941. 78.4 sec. ft.
Average of Three Successive Years: Max. 1942-1944, 98.9 sec. ft.; Min. 1939-1941, 79.8 sec. ft.
Average of Four Successive Years: Max. 1941-1944, 90.8 sec. ft.; Min. 1938-1941, 80.9 sec. ft.
Average of Five Successive Years: Max. 1940-1944, 88.6 sec. ft.; Min. 1938-1942, 87.9 sec. ft.
Average of Seven Years: 1938-1944, 87.2 sec. ft.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	0	0	0	55.8	171	194	152	159	174	59.3	0	0
2	0	0	0	97.1	213	172	156	170	166	0	0	0
3	0	0	0	96.1	221	172	158	159	175	0	0	0
4	0	0	0	103	241	172	150	151	185	0	0	0
5	0	0	0	103	251	172	164	157	161	0	0	0
6	0	0	0	98.2	243	164	159	159	168	0	0	0
7	0	0	0	99.9	244	172	149	161	164	0	0	0
8	0	0	0	101	245	176	148	159	160	0	0	0
9	0	0	0	106	226	169	160	188	158	0	0	0
10	0	0	0	118	227	166	166	235	157	0	0	0
11	0	0	0	110	220	162	160	205	154	0	0	0
12	0	0	0	118	221	176	159	209	160	0	0	0
13	0	0	0	111	211	166	161	193	154	0	0	0
14	0	0	1.1	106	216	164	167	161	161	0	0	0
15	0	0	25.4	115	221	168	158	147	164	0	0	0
16	0	0	27.2	112	218	168	156	161	173	0	0	0
17	0	0	24.0	126	221	172	158	186	174	0	0	0
18	0	0	29.3	125	214	169	169	202	166	0	0	0
19	0	0	29.3	119	211	167	180	208	162	0	0	0
20	0	0	29.3	118	217	159	173	204	181	0	0	0
21	0	0	26.1	106	228	167	172	181	183	0	0	0
22	0	0	30.7	105	236	164	197	148	177	0	0	0
23	0	0	30.7	106	225	158	178	150	183	0	0	0
24	0	0	29.0	101	215	154	121	147	182	0	0	0
25	0	0	29.3	107	222	154	132	152	180	0	0	0
26	0	0	31.1	102	218	153	154	154	241	0	0	0
27	0	0	40.3	112	228	160	156	151	242	0	0	0
28	0	0	37.4	121	226	156	166	155	202	0	0	0
29	0	0	29.0	118	221	158	173	153	155	0	0	0
30	0		29.3	125	215	154	157	156	155	0	0	0
31	0		26.1		213		167	162		0		0
Sum	0	0	504.6	3,241.1	6,899	4,978	4,976	5,283	5,217	0	0	0

Month	Rainfall: Average 1944	Rainfall: Normal 1938 to 1944	Extreme Second Feet — 1944: High Day	High	Low Day	Low	Average Second Feet 1944	Acre Feet: Total 1944	Period 1938-1944: Average	Maximum	Minimum
Jan.	.32	.48					0	0	0	0	0
Feb.	1.06	.37					0	0	0*	0	0
Mar.	.05	.30	27	108	#	0	16.3	1,000	2,674	5,540	1,000
Apr.	T	.22	10	209	14	59.7	108	6,430	7,929	11,720	6,040
May	.63	.41	8	261	1	118	223	13,680	13,837	17,380	11,200
June	1.45	1.06	1	231	23	140	166	9,870	11,381	15,700	9,760
July	1.70	1.33	21	480	24	17.7	161	9,870	10,480	15,170	7,910
Aug.	1.60	1.54	18	293	8	83.3	170	10,480	9,067	12,380	5,200
Sept.	.97	1.46	27	315	30	136	174	10,350	7,590	12,380	2,240
Oct.	.81	.79	1	152	#	0	1.9	118	116	328	0
Nov.	.61	.46					0	0	0	0	0
Dec.	.79	.64					0	0	0	0	0
Yearly	9.99	9.06		480		0	85.1	61,798	63,074	83,930	55,320
Acreage Irrigated on the First Unit Only								15,778	ϕ15,988	ϕ 17,090	13,967 ϕ
Mean Acre Feet per Acre on the First Unit Only								3.38	ϕ 3.25	ϕ 3.90	2.80 ϕ
Average Rainfall in Inches (Entire Valley Floor above Island)								9.99	9.06	16.70	5.85

Various days of the month. ϕ Period 1939-1944.

DIVERSIONS FROM THE RIO GRANDE IN THE EL PASO VALLEY OF TEXAS

RECORDS: July 1, 1938, to December 31, 1944.

REMARKS: The diversions of water listed below were made for use on lands in the El Paso Valley of Texas, lying between the American Dam and Fort Quitman gaging station.

The diversions were measured for 69,611 acres, or 98.8% of the total area. This area lies above the lower end of the Hudspeth County Conservation and Reclamation District Number One. These water-measurement and acreage records were furnished by the El Paso office of the United States Bureau of Reclamation. For 820 acres, (or 1.2% of the total area) lying below the Hudspeth District and above the Fort Quitman gaging station, the diversions were estimated.

From two diversions (the Franklin Canal below the Leon Street Wasteway and the Riverside Canal), there has been deducted the water spilled back to the river at 3 points, viz: 9.0, 19.0, and 26.1 river miles below the American Dam at El Paso. There is considerable re-use in this area of drainage and waste water from within the area. Final drainage water returns to the Rio Grande.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	150	0	362	1,044	1,176	906	903	1,253	1,084	567	251	179
2	92.2	0	352	950	1,018	929	657	1,281	1,074	623	274	254
3	65.8	0	360	1,086	979	941	853	1,161	946	568	290	258
4	65.8	0	437	1,080	1,010	867	956	1,103	809	497	300	177
5	66.9	0	250	1,021	976	1,066	970	1,089	883	494	298	236
6	20.3	0	353	903	954	922	950	1,328	977	570	243	185
7	0	0	319	832	971	953	831	1,443	951	621	319	197
8	0	0	441	899	987	918	789	1,339	868	505	301	266
9	0	0	568	810	1,033	1,007	894	1,055	805	525	316	303
10	0	0	588	1,129	943	885	855	846	699	325	252	322
11	0	0	486	1,086	983	779	999	832	894	340	317	352
12	0	0	204	901	973	906	1,056	1,009	836	360	287	427
13	0	0	593	935	1,014	870	973	754	950	365	398	525
14	0	0	523	961	708	880	1,042	907	777	329	302	401
15	0	145	545	1,097	907	986	1,189	1,042	966	360	283	324
16	0	115	506	938	892	1,000	1,105	1,174	825	411	159	289
17	0	200	631	892	848	989	1,043	1,224	729	311	267	323
18	0	212	794	1,107	838	852	1,242	1,046	880	358	290	323
19	0	410	658	1,088	900	976	1,352	807	888	337	326	238
20	0	313	603	1,206	766	992	1,203	474	898	401	347	167
21	0	463	836	1,193	659	992	1,220	887	828	382	339	150
22	0	465	810	1,250	882	932	1,043	1,012	785	415	322	98.3
23	0	456	729	1,070	901	1,047	678	884	798	335	247	12.2
24	0	458	630	1,190	940	1,035	670	836	791	309	308	12.2
25	0	474	644	1,249	909	841	711	872	724	295	352	12.2
26	0	435	702	1,141	955	955	829	933	706	301	310	84.1
27	0	246	1,126	1,155	748	1,081	874	929	562	282	309	50.6
28	0	409	1,188	1,195	603	1,026	1,049	1,039	695	300	346	7.1
29	0	403	1,167	1,067	825	1,064	1,219	1,054	565	301	264	7.1
30	0		869	833	862	1,008	1,031	1,074	557	327	233	12.2
31	0		942		867		1,297	994		368		11.1
Sum	461.0	5,204	19,216	31,308	28,027	28,605	30,483	31,681	24,750	12,482	8,850	6,203.1

Month	Rainfall: Average 1944	Rainfall: Normal 1938 to 1944	⊕Extreme Second Feet — 1944: High Day	High	Low Day	Low	Average Second Feet 1944	Acre Feet: Total 1944	** Period 1938-1944: Average	Maximum	Minimum
Jan.	.34	.51	1	150	‡ 7	0	14.9	914	418	914	0
Feb.	1.15	.40	25	474	‡ 1	0	179	10,320	10,548	15,010	3,720
Mar.	.05	.32	28	1,188	12	204	620	38,110	35,238	46,340	21,600
Apr.	T	.23	22	1,250	9	810	1,044	62,100	56,505	69,050	49,400
May	.68	.44	1	1,176	28	603	904	55,590	50,743	67,100	41,700
June	1.56	1.14	27	1,081	11	779	954	56,740	55,578	68,580	49,100
July	1.83	1.43	19	1,352	2	657	983	60,460	57,311	62,570	44,200
Aug.	1.72	1.66	7	1,443	20	474	1,022	62,840	57,586	75,640	48,020
Sept.	1.05	1.57	1	1,084	30	557	825	49,090	39,914	49,090	22,500
Oct.	.87	.85	2	623	27	282	403	24,760	20,723	25,700	13,900
Nov.	.65	.49	13	398	16	159	295	17,550	14,873	17,800	9,960
Dec.	.85	.69	13	525	‡28	7.1	200	12,300	11,723	13,640	9,370
Yearly	10.75	9.73		1,443		0	621	450,774	411,160	500,690	355,883
Irrigated Acreage								70,431	67,419	70,431	61,751
Mean Acre Feet Per Acre								6.40	# 6.09	# 7.12	# 5.21
Average Rainfall in Inches								10.75	9.73	17.96	6.29

⊕ Mean Daily. # Period 1939-1944. **Jan.-June for the period 1939-1944; July-Dec. for the period 1938-44.
‡ And other days.

DIVERSIONS FROM THE RIO GRANDE BETWEEN AMERICAN DAM AND INTERNATIONAL DAM Near El Paso, Texas

Two small diversions on the American side and none on the Mexican side were made in this section in 1944, either directly from the Rio Grande, or from the American Canal. From information furnished by the American Smelting and Refining Company and the Globe Mills, Inc., and from frequent inspection, it is estimated that the Smelter diversion averaged 1 second foot and the Globe Mill averaged .5 second foot. Thus a total of 1,089 acre feet were diverted in 1944.

DIVERSIONS FROM THE RIO GRANDE INTO THE MAVERICK CANAL EXTENSION BELOW THE POWER PLANT

Near Eagle Pass, Texas

The Maverick Canal diverts water for power and irrigation from the Rio Grande into Texas at a point 17.4 river miles below the international bridge between Del Rio, Texas, and Villa Acuña, Coahuila, and 711.0 river miles below the American Dam at El Paso, Texas. The tail water from the hydroelectric plant (cap. 9,000 K.V.A.) returns to the river about 32.2 miles farther downstream.

The Maverick Canal Extension begins at the hydroelectric plant about 9 miles northward from Eagle Pass, Texas. The water-stage recorder is located on a wooden pile bridge about 1 mile below the headgate. Meter measurements are from bridge. Irrigation first began from this canal extension in June 1938. Records of canal discharge began April 1, 1939, and extend to December 31, 1944.

From this canal extension in 1944 there were 11,494 acres of land irrigated, northward and southward from Eagle Pass, as indicated in the table below. Under the Maverick Canal above the power plant, the Maverick County Water Control and Improvement District reported that in 1944 the cultivated area was 5,376 acres, all of which were irrigated. Some waste water from this canal extension reaches the river below the Eagle Pass gaging station.

Mean Daily Discharge in Second Feet 1944 —— Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	174	171	149	146	* 150	89.4	‖ 165	137	41.3	‖ 130	‖ 194	141
2	218	172	175	187	147	104	179	130	116	‖ 126	‖ 197	136
3	179	171	52.3	145	122	96.0	157	122	162	‖ 122	200	156
4	172	171	179	153	133	105	157	122	159	117	255	134
5	171	170	184	151	‖ 131	106	137	127	137	144	193	125
6	166	218	164	160	‖ 130	96.6	131	120	122	137	134	118
7	169	163	139	159	‖ 128	100	123	121	109	143	191	121
8	166	188	139	158	‖ 127	98.8	136	123	113	174	190	117
9	203	187	133	185	125	113	171	‖ 124	114	140	193	121
10	168	188	144	157	128	112	129	‖ 126	139	139	196	133
11	168	196	155	141	‖ 130	117	128	‖ 127	123	126	182	124
12	* 168	183	203	144	‖ 133	113	134	‖ 129	126	136	193	122
13	‖ 167	205	130	143	‖ 136	113	137	‖ 130	119	146	176	117
14	‖ 166	174	146	141	‖ 139	114	131	‖ 132	118	149	172	122
15	‖ 165	175	149	135	‖ 142	114	124	‖ 133	103	203	176	122
16	‖ 164	173	144	175	‖ 144	113	171	‖ 135	110	147	191	121
17	‖ 163	181	165	128	147	124	133	135	137	160	167	143
18	‖ 162	184	173	128	151	147	148	133	119	152	181	135
19	‖ 161	171	209	134	149	130	167	140	108	‖ 155	179	138
20	160	166	194	152	171	131	157	168	110	‖ 158	180	129
21	162	186	192	168	183	127	147	134	111	‖ 161	168	120
22	174	191	194	‖ 166	171	118	151	140	112	‖ 164	168	118
23	216	188	190	‖ 164	173	104	178	151	116	‖ 167	171	115
24	163	190	168	‖ 162	159	117	143	148	174	‖ 170	148	163
25	162	192	169	‖ 160	156	140	134	137	150	‖ 173	143	169
26	153	193	187	‖ 158	112	114	128	134	145	‖ 176	173	138
27	141	207	164	‖ 156	158	136	129	162	138	‖ 179	170	134
28	169	182	158	‖ 154	111	121	133	137	144	‖ 182	189	133
29	183	188	160	‖ 152	109	‖ 135	138	138	‖ 140	‖ 185	173	131
30	226		142	‖ 150	90.7	‖ 150	156	99.0	‖ 135	‖ 188	173	137
31	187		142		89.5		135	29.9		‖ 191		167
Sum	*5,366	5,324	4,992.3	*4,612	4,275.2	3,498.8	4,487	*4,023.9	3,750.3	*4,840	5,416	4,100

Month	Rainfall: Average 1944	Rainfall: Normal 1924 to 1944	Extreme Second Feet —1944: High Day	High	Low Day	Low	Average Second Feet 1944	Acre Feet: Total 1944	Period 1939-1944: Average	Maximum	Minimum
Jan.	1.50	0.87	30	248	26	73.6	173	* 10,600	7,000	* 10,600	‖ 2,140
Feb.	1.00	0.73	6	231	20	67.5	184	10,600	5,967	10,600	‖ 2,120
Mar.	0.57	0.86	‡19	216	3	5.5	161	9,900	6,532	9,900	‖ 1,150
Apr.	0.32	1.54	13	204	17	41.4	154	* 9,150	6,698	10,300	3,430
May	4.90	3.34	27	203	26	34.2	138	8,480	5,905	9,690	2,840
June	1.80	2.33	27	191	1	58.9	117	6,940	6,182	9,520	3,750
July	0.11	1.88	‡ 2	186	7	67.5	145	8,900	6,873	8,900	4,510
Aug.	6.06	1.79	30	186	31	29.6	130	* 7,980	6,463	8,880	3,480
Sept.	2.14	2.94	24	184	1	27.6	125	7,440	6,273	8,530	4,600
Oct.	1.66	1.57	15	217	11	35.2	156	9,600	7,918	9,730	5,130
Nov.	1.22	0.80	4	297	6	67.4	181	* 10,700	8,193	* 10,700	4,170
Dec.	1.63	1.26	25	185	1	73.0	132	8,130	8,290	10,400	4,280
Yearly	22.91	19.91		297		5.5	150	108,420	82,294	109,350	44,950
Irrigated Acreage								11,494	9,938	11,644	6,439
Mean Acre Feet per Acre											
Average Rainfall in Inches								22.91	ϕ 19.91	ϕ 29.27	ϕ11.80

‖ Estimated. * Partly estimated. ϕ Period 1924-1944. ‡ And other days.

DIVERSIONS FROM THE RIO GRANDE

ON THE UNITED STATES SIDE BELOW RIO GRANDE CITY STATION

Diversions from the Rio Grande for irrigation are made here almost entirely by pumping. 90.0% of the water diverted was measured at the diversion point. The remainder was estimated. A very small part of the measurements were made by plant efficiency and power input; otherwise, measurements were by Venturi Meters, open channel rating stations, and Deflection Meters developed by this Commission. There is some re-use within the area, of drainage water from the area. Drainage water from this area does not return to the Rio Grande. During the year 68,939 acre feet of water were diverted and used on the new Willacy County Irrigation District, where 71,399 acres were cultivated, of which 56,199 acres were irrigated. The cultivated area and water diverted to Willacy County are all included in the tables below. During the year 2,853 acres were cultivated in Starr County below Rio Grande City gaging station, of which 1,806 acres were irrigated from the Rio Grande. The cultivated areas shown here are all supplied with irrigation facilities. More than one crop per year is often grown on some of the land. The area actually irrigated this year was 88.5% of the 465085 cultivated area.

COMPARATIVE FLOWS FROM RECORDS:

ϕ Average Daily:	Max. June 15, 1942,	3,640 sec.ft.;	Min. Dec. 25, 1938,	0.8 sec.ft.
Average Monthly:	Max. Mar. 1927,	2,540 sec.ft.;	Min. June 1930,	25.2 sec.ft.
Average Yearly:	Max. 1942,	1,450 sec.ft.;	Min. 1941,	653 sec.ft.
Average of Two Successive Years:	Max. 1942-1943,	1,430 sec.ft.;	Min. 1930-1931,	681 sec.ft.
Average of Three Successive Years:	Max. 1942-1944,	1,400 sec.ft.;	Min. 1930-1932,	733 sec.ft.
Average of Four Successive Years:	Max. 1941-1944,	1,210 sec.ft.;	Min. 1930-1933,	729 sec.ft.
Average of Five Successive Years:	Max. 1940-1944,	1,220 sec.ft.;	Min. 1930-1934,	744 sec.ft.
Average of Ten Successive Years:	Max. 1935-1944,	1,080 sec.ft.;	Min. 1929-1938,	821 sec.ft.
Average of Twenty-three Years:	1922-1944,	967 sec.ft.		

Mean Daily Discharge in Second Feet 1944 —— Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	11	1,060	2,680	1,390	2,170	683	1,980	2,270	433	181	1,730	1,640
2	79	1,040	2,750	1,100	2,140	620	1,290	1,840	371	518	2,100	1,550
3	292	1,090	2,740	1,510	1,460	722	963	1,680	331	802	1,590	1,000
4	277	1,240	2,480	1,430	15	706	391	1,790	455	992	1,190	2,000
5	638	704	2,020	1,620	923	1,030	537	1,930	421	834	738	1,780
6	594	544	2,770	1,670	2,450	1,190	888	1,990	670	1,000	1,780	1,550
7	710	1,580	2,740	1,690	2,220	640	940	2,490	571	559	1,780	1,630
8	489	1,760	2,630	1,090	2,960	450	462	2,560	637	177	1,860	1,960
9	308	1,930	2,450	491	3,090	516	168	2,340	307	320	1,420	1,610
10	559	1,920	796	1,770	2,870	225	1,280	2,130	732	379	1,370	892
11	1,040	2,050	543	1,870	2,170	59	1,610	1,350	710	643	981	1,380
12	727	1,250	793	1,930	1,810	525	1,990	333	823	541	617	1,560
13	557	856	2,270	1,960	1,340	372	2,240	1,460	748	313	1,990	1,820
14	763	1,800	2,510	1,870	1,070	533	1,920	2,780	1,340	572	1,860	2,170
15	376	2,170	2,270	1,590	1,980	943	1,450	2,520	729	458	2,010	1,970
16	235	2,150	2,050	1,260	1,790	1,200	584	2,150	559	999	2,130	1,400
17	1,050	2,210	1,780	2,090	2,000	1,280	2,020	2,150	374	986	1,580	796
18	1,200	2,220	1,060	1,930	1,720	287	2,160	2,250	531	900	884	1,980
19	1,300	1,480	449	1,800	1,500	433	2,190	2,010	983	885	588	2,160
20	1,660	1,010	1,650	1,750	378	425	1,940	1,780	1,018	853	1,250	2,130
21	1,510	1,720	1,760	1,520	111	502	1,870	1,850	765	630	1,500	2,080
22	1,280	2,160	1,670	1,160	909	721	1,550	916	755	317	1,760	1,820
23	498	2,430	1,810	850	2,540	735	1,150	1,130	738	1,300	1,800	1,140
24	1,200	2,400	1,070	1,910	2,550	628	2,080	1,020	570	1,350	1,900	621
25	1,030	2,340	823	2,040	2,480	247	2,110	1,050	903	1,690	1,180	329
26	791	2,140	395	1,760	2,360	1,390	1,940	960	285	1,580	673	1,750
27	949	1,720	1,660	1,710	2,070	1,390	2,110	999	58	1,580	1,750	928
28	1,150	2,450	1,970	1,940	1,200	2,200	1,600	976	137	1,140	1,750	597
29	481	2,550	1,970	1,900	566	2,040	347	677	160	670	1,510	577
30	325		1,880	1,560	593	2,030	1,150	582	245	1,720	827	588
31	1,100		1,870		858		2,670	433		1,690		407
Sum	23,179	49,974	56,309	48,161	52,293	24,721	45,580	50,396	17,359	26,579	44,098	43,815

Month	Rainfall: Average 1944	Rainfall: Normal 1922 to 1944	Extreme Second Feet — 1944 ⊕: High Day	High	Low Day	Low	Average Second Feet 1944	Acre Feet: Total 1944	Period 1922-1944: Normal	Maximum	Minimum
Jan.	.57	1.50	20	1,660	1	11	748	46,000	37,409	71,000	7,700
Feb.	.26	.97	29	2,550	6	544	1,720	99,100	63,166	134,000	6,960
Mar.	1.77	1.33	6	2,770	26	395	1,820	112,000	83,731	156,000	14,100
Apr.	.40	1.23	17	2,090	9	491	1,600	95,500	70,336	123,000	29,300
May	4.63	3.53	9	3,090	4	15	1,690	104,000	62,527	135,000	4,510
June	2.38	2.93	28	2,200	11	59	824	49,000	57,283	129,000	1,500
July	1.65	2.05	31	2,670	9	168	1,470	90,400	56,816	155,000	10,000
Aug.	7.47	1.89	14	2,780	12	333	1,630	100,000	72,667	132,000	19,100
Sept.	3.26	4.84	14	1,340	27	58	579	34,400	48,826	110,000	8,020
Oct.	1.79	2.07	30	1,720	8	177	857	52,700	56,482	102,000	21,400
Nov.	.98	1.36	16	2,130	19	588	1,470	87,500	51,823	99,300	11,500
Dec.	1.11	1.97	14	2,170	25	329	1,410	86,900	39,235	110,000	10,400
Yearly	26.27	25.67		3,090		11	1,320	957,500	700,301	1,051,000	472,500
Average Acreage Cultivated below Rio Grande City								525,520	365,376	543,119	216,300
Mean Acre Feet per Acre								1.82	1.92	2.68	1.03
Average Rainfall in Inches								26.27	25.67	38.84	16.68

⊕ Mean Daily. ϕ Period 1938-1944.

DIVERSIONS FROM THE RIO GRANDE INTO THE RETAMAL CANAL

Near Rio Bravo, Tamaulipas

DESCRIPTION: Cable with car and water-stage recorder .87 mile below canal head gate. Zero of gage is .85 ft. above United States Coast and Geodetic Survey sea level datum. Head gate about 1,000 ft. from river bank. Canal leaves river about 24 river miles below Hidalgo-Reynosa bridge near Hidalgo, Texas, and 1,108.8 river miles below American Dam at El Paso, Texas.

RECORDS: Based upon 179 meter measurements during the year. Computations by shifting channel methods. 1944 records good. Records available: September 1939 to December 1944.

REMARKS: Retamal Canal capacity is about 7,000 sec. ft. It empties into Culebron reservoir which, in turn, discharges into Villa Cardenas reservoir from which a canal leads to Palito Blanco No. 2 reservoir. These reservoirs are used for irrigation purposes. During Rio Grande floods, flood water may escape from Villa Cardenas via floodway No. 1 to the Gulf of Mexico. In 1944, 103,784 acres with irrigation facilities were cultivated under Retamal Canal, of which 19,274 acres were irrigated with 21,078 acre feet of water, and 84,510 acres were dry farmed.

COMPARATIVE FLOWS FROM RECORDS: Momentary Peak: Max. Sept. 12, 1944, 6,990 sec. ft.; Min. sometimes dry.
Average Daily: Max. Sept. 12, 1944, 6,920 sec. ft.; Min. sometimes dry.
Average Monthly: Max. Sept. 1944, 3,280 sec. ft.; Min. sometimes dry.
Average Yearly: Max. 1944, 703 sec. ft.; Min. 1943, 232 sec. ft.
Average of Two Successive Years: Max. 1943-1944, 466 sec. ft.; Min. 1942-1943, 308 sec. ft.
Average of Three Successive Years: Max. 1942-1944, 438 sec. ft.; Min. 1941-1943, 315 sec. ft.
Average of Four Successive Years: Max. 1941-1944, 413 sec. ft.; Min. 1940-1943 315 sec. ft.
Average of Five Successive Years: 1940-1944, 392 sec. ft.

Mean Daily Discharge in Second Feet 1944 — Annual and Period Summary

Day	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	256	179	67.4	0	0	1,041	140	0	6,460	1,540	936	186
2	258	183	119	0	0	632	217	0	6,680	1,460	812	174
3	244	191	89.4	0	0	431	341	0	6,530	1,390	713	196
4	258	195	57.9	0	0	320	286	0	6,180	1,330	685	230
5	274	202	67.4	0	558	262	277	0	5,400	1,340	706	171
6	271	213	67.4	0	1,194	217	487	0	3,310	1,310	643	151
7	279	200	42.4	0	516	221	685	23.7	2,790	1,660	586	164
8	279	172	29.7	0	244	519	731	0	2,440	1,520	586	180
9	267	161	20.1	0	103	1,160	710	0	3,810	1,500	561	204
10	250	161	31.8	0	70.3	1,384	664	0	4,130	1,380	537	237
11	243	161	104	0	0	904	487	0	3,150	1,330	540	250
12	252	173	127	0	0	512	336	0	6,920	1,360	576	199
13	259	189	74.2	0	0	357	223	27.6	6,430	1,360	547	153
14	255	181	29.0	0	0	254	150	17.0	6,000	1,280	431	143
15	245	139	17.0	0	0	209	107	0	4,060	1,240	304	144
16	262	102	30.0	0	0	190	96.1	0	1,620	1,150	272	143
17	280	97.8	58.6	0	0	174	89.4	0	1,480	1,300	312	174
18	247	86.9	70.6	0	0	182	45.2	0	1,500	1,520	311	192
19	219	81.9	134	0	0	212	0	0	1,690	1,670	263	142
20	254	117	374	0	0	364	0	62.2	1,890	1,690	188	132
21	195	129	516	0	0	477	0	105	1,930	1,640	173	136
22	214	90.1	367	0	84.8	512	0	322	1,820	1,610	191	149
23	232	74.2	249	0	44.8	590	0	1,250	1,670	1,530	198	178
24	228	55.8	194	0	0	561	0	3,920	1,560	1,450	180	235
25	186	49.4	157	0	230	477	0	5,400	1,480	1,340	196	278
26	169	51.6	147	0	456	374	0	6,000	1,440	1,300	240	246
27	193	62.9	142	0	448	297	0	6,140	1,420	1,180	254	227
28	209	79.5	116	0	706	561	0	6,320	1,440	1,150	181	244
29	219	56.9	96.8	0	2,758	179	0	6,321	1,520	1,140	146	252
30	223		78.0	0	3,814	139	0	6,290	1,590	1,080	158	254
31	214		0		2,221		0	6,290		960		261
Sum	7,434	3,835.0	3,673.7	0	13,447.9	13,712	6,071.7	48,488.5	98,340	42,710	12,426	6,025

Month	Rainfall Average 1944	Rainfall Normal 1922 to 1944	Extreme Second Feet — 1944 High Day	High	Low Day	Low	Average Second Feet 1944	Acre Feet Total 1944	Period 1939-1944 Average	Maximum	Minimum
Jan.	.57	1.50	17	285	26	165	240	14,750	⊕ 12,096	25,080	2,090
Feb.	.26	.97	6	217	29	47.7	132	7,610	⊕ 5,131	9,320	85.0
Mar.	1.77	1.33	21	544	9	0	119	7,290	⊕ 7,518	20,100	0
Apr.	.40	1.23	#	0	#	0	0	0	⊕ 4,046	10,300	0
May	4.63	3.53	30	4,030	#	0	434	26,670	⊕ 19,994	26,670	12,610
June	2.38	2.93	1	1,320	30	127	457	27,200	⊕ 21,376	27,200	5,480
July	1.65	2.05	8	770	#	0	196	12,040	⊕ 10,684	20,680	360
Aug.	7.47	1.89	31	6,360	#	0	1,560	96,180	⊕ 29,424	96,180	138
Sept.	3.26	4.84	12	6,990	27	1,410	3,280	195,100	72,705	195,100	3,970
Oct.	1.79	2.07	17	1,700	31	932	1,380	84,720	55,723	93,990	28,620
Nov.	.98	1.36	1	950	29	137	414	24,650	14,185	24,650	3,370
Dec.	1.11	1.97	25	278	20	126	194	11,950	11,578	20,000	3,070
Yearly	26.27	25.67		6,990		0	700	508,160	264,460	508,160	168,290
Acreage Cultivated								103,784			
Mean Acre Feet per Acre								.20			
Average Rainfall in Inches **								26.27	ϕ 25.67	ϕ 38.84	ϕ 16.68

ϕ Period 1922-1944. # Various days of the month. ⊕ Period 1940-1944. ** These are approximate rainfalls only and are from the United States side of the Lower Rio Grande Valley.

MUNICIPAL WATER USES

Tabulated below are yearly and monthly amounts of water pumped into the municipal distribution systems of several towns along the Rio Grande. The municipal and industrial water supply for the El Paso area in Texas and Juarez in Chihuahua came from deep wells (See Outfalls from Deep Wells, page 11, hereof) prior to November 7, 1943, when the city of El Paso began diverting some water from the Rio Grande for municipal use. The Del Rio water comes from San Felipe Springs, the Eagle Pass water comes from infiltration wells in or adjacent to the bed of the Rio Grande, the Guerrero water comes from the Rio Salado, the others from the Rio Grande. Because of changing conditions, the period records are limited here to the past ten years. For earlier records see earlier water bulletins.

On The United States Side In Acre Feet

Month	El Paso				Del Rio			
	1944	# Period 1943-1944			1944	# Period 1935-1944		
		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	70.6				115.7	77.2	115.7	45.5
Feb.	0				119.9	81.1	121.6	52.9
Mar.	200.7				152.9	110.2	158.0	75.5
Apr.	363.6				176.9	124.7	176.9	87.1
May	552.6				154.2	134.3	170.4	95.0
June	536.3				196.2	159.5	196.2	119.0
July	671.2				267.7	182.3	267.7	128.7
Aug.	588.5				180.3	159.8	254.0	79.8
Sept.	638.9				157.2	129.4	165.0	93.1
Oct.	193.4				114.4	105.6	125.9	76.4
Nov.	261.1	219.0	261.1	176.8	104.7	86.0	125.9	59.3
Dec.	273.2	232.3	273.2	191.4	89.6	76.7	107.4	51.9
Yearly	4,350.1				1,829.7	1,426.8	1,902.1	1,016.5

Month	Eagle Pass				Laredo			
	1944	Period 1935-1944			1944	Period 1935-1944		
		Normal	Maximum	Minimum		Normal	Maximum	Minimum
Jan.	46.9	47.1	55.7	37.7	317.7	196.8	317.7	147.8
Feb.	51.1	49.1	52.0	44.0	334.5	209.7	334.5	164.4
Mar.	64.6	57.1	67.1	43.3	391.0	245.6	391.0	162.4
Apr.	76.9	70.3	83.9	60.3	464.6	291.7	464.6	145.5
May	75.8	65.8	77.5	55.4	512.4	303.3	512.4	194.6
June	89.6	76.4	108.0	49.4	520.0	325.4	520.0	181.8
July	110.2	87.9	113.3	61.2	633.9	347.3	633.9	209.1
Aug.	91.0	89.2	112.4	69.5	574.9	381.8	614.3	271.4
Sept.	84.6	78.2	90.5	49.6	434.4	303.5	434.4	236.1
Oct.	81.6	65.3	92.1	41.0	482.0	279.0	482.0	199.6
Nov.	61.4	57.6	99.9	39.9	350.5	252.9	377.8	173.5
Dec.	68.1	51.2	68.1	39.5	328.5	216.7	328.5	139.8
Yearly	901.8	795.2	901.8	698.6	5,344.4	3,353.7	5,344.4	2,447.7

Month	Roma				Rio Grande City				Brownsville			
	1944	Period 1935-1944			1944	Period 1935-1944			1944	Period 1935-1944		
		Normal	Maximum	Minimum		Normal	Maximum	Minimum		Normal	Maximum	Minimum
Jan.	3.4	8.0	14.3	2.4	14.8	20.8	36.7	14.8	158.5	93.5	158.5	58.7
Feb.	4.0	7.5	12.9	2.4	18.9	20.0	29.5	16.4	171.9	95.3	171.9	54.6
Mar.	5.2	6.6	9.5	2.0	21.0	25.0	35.4	19.5	173.4	112.6	173.4	66.2
Apr.	6.8	6.8	9.2	2.7	21.3	27.5	36.2	20.6	185.4	118.5	187.2	71.7
May	5.9	9.5	14.3	2.2	21.1	30.4	38.4	21.1	189.0	117.2	209.9	73.1
June	6.2	9.2	13.8	2.2	19.4	28.5	31.9	19.4	176.4	123.0	190.6	68.0
July	7.4	9.6	14.3	3.0	17.1	31.1	35.1	17.1	200.3	141.1	236.8	78.4
Aug.	6.8	9.6	14.3	3.5	18.5	32.4	47.7	18.5	211.1	153.6	247.6	89.5
Sept.	5.3	8.8	13.8	2.5	17.1	26.0	36.2	17.1	163.8	114.4	169.4	67.4
Oct.	6.1	6.6	9.5	2.9	19.0	24.4	35.8	19.0	154.8	115.1	159.0	66.3
Nov.	4.7	6.3	9.2	2.6	15.9	19.8	34.5	15.9	132.5	106.0	154.3	62.3
Dec.	4.0	6.3	9.5	2.3	13.9	19.5	36.0	13.9	121.2	99.4	158.1	60.0
Yearly	65.8	94.8	135.8	44.3	218.0	305.4	402.2	218.0	2,038.3	1,389.7	2,156.3	865.3

On The Mexican Side

Month	Nuevo Laredo				Guerrero				Matamoros			
	1944	Period 1935-1944			1944	Period 1943-1944			1944	Period 1942-1944		
		Normal	Maximum	Minimum		Average	Maximum	Minimum		Average	Maximum	Minimum
Jan.	125.0	105.0	125.0	93.8	5.5	5.2	5.5	5.0	80.2	73.5	80.2	" 68.4
Feb.	130.0	103.2	130.0	89.0	4.7	4.6	4.7	4.5	75.6	70.8	75.6	" 68.4
Mar.	154.0	126.1	154.0	105.6	5.0	5.6	6.3	5.0	87.3	77.3	87.3	" 68.5
Apr.	176.0	145.0	183.6	109.2	7.3	7.3	7.3	7.3	79.4	74.3	79.4	" 68.4
May	194.3	148.6	201.4	101.6	7.5	7.8	8.0	7.5	80.8	75.7	80.8	" 68.4
June	224.1	156.0	224.1	121.6	8.5	8.5	8.5	8.5	88.6	77.3	88.6	" 68.5
July	299.6	167.4	299.6	115.2	10.1	9.6	10.1	9.0	92.1	81.2	92.1	" 68.4
Aug.	300.2	175.2	300.2	117.9	11.3	10.7	11.3	10.1	82.2	85.1	104.8	" 68.4
Sept.	251.0	146.4	251.0	107.7	8.5	7.9	8.5	7.3	88.2	80.5	88.2	" 68.5
Oct.	272.1	143.3	272.1	105.7	7.5	7.0	7.5	6.5	91.4	81.6	91.4	" 68.4
Nov.	179.7	119.4	179.7	82.3	6.1	5.5	6.1	4.9	85.2	77.8	85.2	66.8
Dec.	146.7	108.2	146.7	74.6	5.5	5.2	5.5	5.0	79.4	75.5	79.4	70.0
Yearly	2,452.7	1,643.8	2,452.7	1,343.1	87.5	84.9	87.5	82.4	1,010.4	930.6	1,010.4	* 821.1

" Estimated. * Partly estimated. # Some months missing.

SUSPENDED SILT IN THE RIO GRANDE AND SOME TRIBUTARIES AND DIVERSIONS—1944

The gravimetric percentages of dried silt reported here were determined from numerous water samples taken in small necked bottles. Two methods of sampling were used.

A. By lowering one open bottle into the water at one or more verticals in the stream cross section, being careful to approach but not to strike bottom and thus to secure an integrated sample at all depths.

B. By sampling in three bottles each at the surface of the stream, one bottle at the mid-point and one bottle at each side, one-sixth of the width from the water's edge. Numerous experiments have shown that the mean of three samples so taken gives 0.908 of the mean suspended silt in the stream cross section within reasonable limits of accuracy. (See Tech. Bull. No. 382, 1933, U. S. Dept. Agr.)

The gravimetric percentages of dried silt were determined from the samples by two methods:

1. By determining the silt in a single monthly composite which was composed by using from each individual sample an amount proportional to the river flow represented by that sample. (One filtering, drying, and weighing each month.)
2. By determining the silt in each sample bottle. (One filtering, drying, and weighing for each bottle.)

For visualization and comparison the assumption is indulged here that 1,452 tons of silt would occupy one acre-foot in a reservoir bottom, which is equivalent to saying that one cubic foot of silt thus situated would weigh 66.7 pounds. See Water Bulletin No. 7, page 63, for data as to the average density of Rio Grande silt in Elephant Butte reservoir.

Samples at San Marcial, Langtry, and Pecos River were collected by the U.S. Section, Method A, analyzed by the U.S. Section, Method 1.

Samples at Eagle Pass and Roma were collected by the Mexican Section, Method A, Analyzed by the U. S. Section, Method 1.

Samples at Rio Alamo, Retamal Canal, and Buenos Aires were collected by the Mexican Section, Method B, analyzed by the Mexican Section, Method 2.

Month	1944							Period of Record		
	Tons		Number of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot			
	Water	Silt		Average	Maximum Sample	Minimum Sample		Average	Maximum	Minimum
Rio Grande at San Marcial Station										Period 1925-1944
Jan.	56,329,000	207,854	30	.369			143.2	178.0	374.4	27.8
Feb.	55,832,000	156,330	29	.280			107.7	260.3	1,027.0	23.3
Mar.	61,048,000	198,406	30	.325			136.6	298.8	1,012.0	45.5
Apr.	59,001,000	191,753	29	.325			132.1	759.7	3,780.0	18.6
May	439,985,000	1,108,762	29	.252			763.6	1,500.9	5,610.4	5.8
June	352,951,000	1,104,737	30	.313			760.8	1,193.9	9,322.0	2.4
July	120,578,000	1,337,210	28	1.109			920.9	1,010.3	6,672.0	0
Aug.	60,683,000	1,211,840	31	1.997			834.6	1,755.6	11,710.0	83.4
Sept.	18,967,000	175,065	30	.923			120.6	2,307.0	17,470.0	120.6
Oct.	63,983,000	948,228	31	1.482			653.0	798.5	6,520.0	0
Nov.	41,622,000	117,790	29	.283			81.1	139.3	604.8	7.2
Dec.	60,700,000	129,898	29	.214			89.5	158.0	346.4	30.3
Yearly	1,391,679,000	6,887,873	355	.495			4,743.7	10,360.3	41,317.6	2,459.7
Rio Grande at Langtry Station										Record began April 1944
Apr.	59,231,000	4,738	4	.008			3.3			
May	58,427,000	22,202	4	.038			15.3			
June	105,384,000	130,676	4	.124			90.0			
July Aug.	241,553,000	2,222,288	7	.920			1,530.5			
Sept. Oct.	814,617,000	6,459,913	6	.793			4,449.0			
Nov. Dec.	205,158,000	34,877	4	.017			24.0			
Period	1,484,370,000	8,874,694	29	.598			6,112.1			
Pecos River Station near Comstock										Record began June 1943
June 1943	23,310,000	2,040	15	.00875			1.40			
July "	26,959,000	20,758	17	.07700			14.30			
Aug. "	18,175,000	1,212	15	.00667			.83			
Sept. "	19,121,000	904	15	.00473			.62			
Oct. "	22,425,000	561	15	.00250			.39			
Nov. "	21,012,000	122	15	.00058			.08			
Dec. "	25,392,000	404	15	.00159			.28			
Period	156,394,000	26,001	107	.0166			17.90			
Jan. 1944	27,814,000	537	15	.00193			.37			
Feb. "	23,682,000	604	12	.00255			.42			
Mar. "	24,464,000	1,497	14	.00612			1.03			
Apr. "	18,782,000	727	12	.00387			.50			
May "	20,030,000	1,604	15	.00801			1.10			
June "	18,242,000	1,675	15	.00918			1.15	1.28	1.40	1.15
July "	16,632,000	599	14	.00360			.41	7.36	14.30	.41
Aug. "	21,802,000	717	16	.00329			.49	.66	.83	.49
Sept. "	43,402,000	12,283	18	.02830			8.46	4.54	8.46	.62
Oct. "	25,581,000	831	14	.00325			.57	.48	.57	.39
Nov. "	22,636,000	1,811	8	.00800			1.25	.66	1.25	.08
Dec. "	24,316,000	1,945	5	.00800			1.34	.81	1.34	.28
Yearly	287,383,000	24,830	158	.00864			17.09			
Rio Grande at Eagle Pass Station										Period 1934-1944.
Jan.	205,320,000	53,383	24	.026			36.8	26.7	124.0	0.1
Feb.	166,645,000	33,329	18	.020			23.0	16.4	32.1	2.6
Mar.	171,014,000	20,522	27	.012			14.1	31.8	187.9	4.7
Apr.	121,444,000	18,217	28	.015			12.5	51.8	204.3	3.0
May	158,177,000	107,560	25	.068			74.1	760.3	4,217.8	31.2
June	178,485,000	301,640	29	.169			207.7	1,063.7	3,821.0	24.5
July	126,299,000	94,724	29	.075			65.2	1,301.0	7,835.8	65.2
Aug.	212,062,000	1,179,065	34	.556			812.0	1,366.8	5,306.9	166.5
Sept.	724,403,000	4,665,155	44	.644			3,212.9	3,629.4	10,802.8	60.7
Oct.	406,081,000	389,838	32	.096			268.5	1,165.2	5,816.7	190.0
Nov.	198,334,000	17,850	26	.009			12.3	111.8	305.5	12.3
Dec.	179,591,000	14,367	27	.008			9.9	27.0	84.1	1.1
Yearly	2,847,855,000	6,895,650	343	.242			4,749.0	9,551.9	20,842.8	1,768.3

SUSPENDED SILT IN THE RIO GRANDE AND SOME TRIBUTARIES AND DIVERSIONS—1944

Month	1944							Period of Record		
	Tons		Number of Samples	Gravimetric Percentages			Acre-Feet at 1,452 Tons Per Acre Foot			
	Water	Silt		Average	Maximum Sample	Minimum Sample		Average	Maximum	Minimum
Rio Alamo Station										Period 1934-1944
Jan.	1,449,000	0	8	0	0	0	0	4.3	21.8	0
Feb.	504,000	0	6	0	0	0	0	0.1	0.6	0
Mar.	1,114,000	0	7	0	0	0	0	6.6	45.4	0
Apr.	756,000	0	7	0	0	0	0	32.4	227.4	0
May	23,955,000	86,238	10	.360	‡ .213	0	59.4	48.4	229.7	2.2
June	8,296,000	11,614	8	.140	.339	0	8.0	73.1	471.0	0
July	6,103,000	15,319	8	.251	.369	0	10.6	29.3	98.8	0
Aug.	264,084,000	2,334,503	9	.884	1.122	0	1,607.8	220.0	1,607.8	0
Sept.	144,633,000	419,436	6	.290	.391	.081	288.9	124.0	362.9	1.5
Oct.	28,531,000	22,825	4	.080	.108	.034	15.7	88.9	557.9	0
Nov.	11,834,000	592	5	.005	.028	0	0.4	1.2	5.2	0
Dec.	7,511,000	0	8	0	0	0	0	2.0	16.1	0
Yearly	498,770,000	2,890,527	86	.580	1.122	0	1,990.8	630.3	1,990.8	154.5

‡ Estimated.

Rio Grande at Roma Station										Period March 1929-1944.
Jan.	225,115,000	42,772	28	.019			29.5	48.0	168.7	0.4
Feb.	185,443,000	14,835	28	.008			10.2	27.8	121.0	0.8
Mar.	191,080,000	137,578	33	.072			94.8	153.1	1,825.3	1.3
Apr.	124,249,000	13,667	27	.011			9.4	239.6	1,345.0	0.7
May	406,513,000	2,199,235	31	.541			1,514.6	1,382.4	5,232.4	88.6
June	250,413,000	320,529	30	.128			220.8	1,306.2	7,216.0	52.7
July	127,944,000	56,295	31	.044			38.8	1,399.4	9,070.0	19.3
Aug.	1,188,097,000	5,405,841	46	.455			3,723.0	1,508.5	3,723.0	113.2
Sept.	1,350,853,000	7,389,166	42	.547			5,089.0	4,345.8	17,998.0	42.8
Oct.	542,817,000	700,234	31	.129			482.3	2,148.6	9,241.0	133.0
Nov.	253,622,000	15,217	30	.006			10.5	177.3	659.7	4.8
Dec.	224,171,000	17,934	29	.008			12.4	65.0	319.0	1.0
Yearly	5,070,317,000	16,313,303	386	.322			11,235.3	12,801.7	30,839.0	2,314.0

Retamal Canal Station										Period 1943-1944
Jan.	20,049,000	2,606	5	.013	.034	.002	1.8	2.6	3.5	1.8
Feb.	10,343,000	310	3	.003	.004	.001	0.2	0.5	0.8	0.2
Mar.	9,908,000	8,521	4	.086	.188	.006	5.9	3.0	5.9	0.1
Apr.	0	0	0	0	0	0	0	.02	.04	0
May	36,268,000	266,932	6	.736	1.094	.071	183.8	114.6	183.8	45.5
June	36,981,000	70,264	10	.190	.343	.038	48.4	60.8	73.3	48.4
July	16,375,000	17,521	5	.107	.142	.033	12.1	57.8	103.5	12.1
Aug.	130,772,000	893,173	10	.683	1.164	.006	615.1	314.0	615.1	12.8
Sept.	265,219,000	957,441	9	.361	.686	.237	659.4	341.4	659.4	23.3
Oct.	115,187,000	157,806	5	.137	.263	.070	108.7	81.4	108.7	54.2
Nov.	33,512,000	9,383	5	.028	.041	.010	6.5	5.0	6.5	3.6
Dec.	16,249,000	975	5	.006	.015	.002	0.7	3.3	5.9	0.7
Yearly	690,863,000	2,384,932	67	.345	1.164	.001	1,642.6	984.42	1,642.6	326.54

Rio Grande at Buenos Aires Station										Period 1943-1944
Jan.	230,105,000	27,613	5	.012	.030	.001	15.5	23.0	26.9	19.0
Feb.	146,930,000	7,346	3	.005	.008	.002	5.1	6.4	7.8	5.1
Mar.	141,901,000	137,644	5	.097	.234	.011	94.8	48.0	94.8	1.3
Apr.	62,346,000	43,642	4	.070	.089	.005	30.1	16.2	30.1	2.3
May	351,301,000	2,199,144	10	.626	1.020	.022	1,514.6	962.2	1,514.6	409.7
June	341,543,000	645,516	10	.189	.365	.043	444.6	662.8	881.1	444.6
July	186,185,000	175,014	8	.094	.143	.011	120.5	740.2	1,359.9	120.5
Aug.	1,018,760,000	6,122,748	12	.601	1.027	.014	4,216.8	2,213.1	4,216.8	209.4
Sept.			Station destroyed by flood September 1, 1944. Sampling discontinued.							
Oct.										
Nov.										
Dec.										
Yearly										

CHEMICAL ANALYSES OF WATER SAMPLES FROM RIO GRANDE AND TRIBUTARIES – 1944

The chemical analyses reported here for the Pecos River at Girvin Power Plant were made by the Texas State Department of Health, all others were made by the United States Department of Agriculture at Riverside, California. All analyses were from composites made up periodically from independent water samples composed by taking from each sample an amount of water proportional to the acre footage of river flow represented by that sample. This compositing and the determination of the specific electrical conductances of the independent water samples was done by the United States Section of the International Boundary Commission.

Water samples from the stations at Eagle Pass, Rio Salado, Roma, and Buenos Aires were gathered by the Mexican Section of this Commission. Water samples from the stations at Caballo Dam and Leasburg Dam were gathered by the United States Bureau of Reclamation. Water samples from the Pecos River at Girvin Power Plant were gathered by A. Z. Denman. All others were gathered by the United States Section of this Commission.

To convert "Milligram Equivalents" to parts per million by weight, multiply each ion by its appropriate conversion factor. These factors are (HCO_3 + CO_3), 30.5; Cl, 35.5; SO_4, 48; Ca, 20; Mg, 12.16; Na, 23; NO_3, 62. To convert tons per acre foot to parts per million, multiply tons per acre foot by 735.5.

Conductance, reported in the tables as (K x 10^5 at 25°C), is a relative measure of the total salt concentration in the water samples. (See Circular No. 232 U.S. Dept. Agr., July 1932.) It is a definite statement of an important physical property of the solution.

Descriptions of the sampling stations will be found in the forward part of this bulletin where the stream discharges are reported for these same stations.

CHEMICAL ANALYSES OF WATER SAMPLES FROM RIO GRANDE AND TRIBUTARIES – 1944

Month	No. of Samples	Total Tons of Per Acre Foot	Total Tons of Dissolved Solids	Mean Kx10⁵ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Water Samples from Rio Grande at San Marcial Station															
Jan.	30	0.74	30,600	82.3	0.15	8.1	45	20	3.44	1.19	3.85	3.21	3.52	1.64	.01
Feb.	29	0.67	27,500	75.2	0.15	7.9	45	19	3.14	1.03	3.40	3.16	3.12	1.44	.01
Mar.	30	0.66	29,600	72.0	0.14	8.1	44	18	3.04	1.03	3.16	3.02	3.02	1.31	.01
Apr.	29	0.69	29,900	75.8	0.15	8.0	45	18	3.13	1.03	3.45	3.11	3.23	1.36	T
May	29	0.39	126,000	44.3	0.10	7.9	40	14	1.93	0.64	1.71	2.09	1.64	0.60	.01
June	30	0.35	91,000	38.1	0.08	7.9	36	11	1.82	0.54	1.32	1.98	1.33	0.42	.01
July	28	0.68	60,300	70.7	0.15	7.9	42	12	3.16	0.99	2.97	2.47	3.98	0.87	.01
Aug.	31	1.06	47,300	106	0.20	8.0	43	12	4.97	1.30	4.74	2.52	7.44	1.32	.03
Sept.	30	0.83	11,500	86.8	0.19	8.0	44	15	3.78	1.22	3.99	3.00	4.72	1.39	T
Oct.	31	0.97	45,700	102	0.15	7.9	44	14	4.53	1.42	4.61	2.86	6.25	1.49	.03
Nov.	29	0.72	22,000	79.0	0.11	7.9	44	17	3.44	1.08	3.54	3.28	3.47	1.36	T
Dec.	29	0.70	31,200	76.1	0.08	7.9	44	18	3.27	1.05	3.42	3.21	3.20	1.41	.01
Mean @	355ϕ	0.539	552,600ϕ	58.7	0.114	7.93	42	14	2.60	0.820	2.44	2.42	2.66	0.858	.011
Period Average		0.669	701,000	73.6			43	17	3.15	1.07	3.12	2.56	3.53	1.22	
Tons of Constituents, 1944									72,600	13,900	78,200	103,000	178,000	42,400	
Average Tons Period 1933-1944									90,100	18,600	102,000	112,000	242,000	61,900	
Water Samples from Rio Grande at Caballo Dam															
Jan.	31	0.91	280	106	0.22	8.0	54	22	3.39	1.63	5.79	4.89	3.73	2.39	.01
Feb.	29	0.60	12,200	68.4	0.12	8.0	41	18	3.08	1.03	2.82	2.77	2.95	1.24	T
Mar.	31	0.58	51,700	68.8	0.12	7.7	42	18	2.92	1.01	2.85	2.62	3.02	1.21	T
Apr.	30	0.60	81,600	70.2	0.12	7.9	43	18	3.02	1.02	2.99	2.67	3.14	1.26	.01
May	31	0.62	71,300	70.5	0.11	7.9	45	19	2.79	1.07	3.11	2.42	3.28	1.36	T
June	30	0.63	78,100	71.1	0.10	7.9	46	19	2.70	1.05	3.23	2.37	3.38	1.31	T
July	31	0.67	89,800	74.8	0.12	8.0	44	18	3.04	1.07	3.28	2.80	3.39	1.39	.01
Aug.	31	0.67	91,800	74.5	0.14	8.0	43	18	3.15	1.07	3.22	2.85	3.35	1.37	T
Sept.	30	0.68	58,500	77.0	0.15	8.0	44	20	3.23	1.10	3.44	2.96	3.35	1.57	T
Oct.	31	0.55	8,860	61.7	0.10	8.1	40	20	2.80	0.86	2.48	2.50	2.49	1.27	.01
Nov.	30	0.91	257	108	0.17	8.2	55	23	3.39	1.61	6.08	4.90	3.64	2.62	T
Dec.	31	0.63	5,110	71.3	0.10	7.9	43	19	3.06	1.02	3.03	2.83	3.03	1.39	T
Mean @	366 ϕ	0.634	549,507 ϕ	72.1	0.121	7.93	44	19	2.98	1.05	3.14	2.67	3.26	1.35	.003
Period Average		0.720	614,000	78.8			44	18	3.38	1.18	3.55	2.73	3.98	1.44	
Tons of Constituents, 1944									70,400	15,000	85,100	96,000	185,000	56,400	
Average Tons Period 1931-1944									78,500	16,700	94,600	96,700	222,000	59,000	
Water Samples from Rio Grande at Leasburg Dam															
Jan.	31	1.11	3,540	122	0.17	7.9	46	26	5.10	1.56	5.69	3.75	5.54	3.33	.01
Feb.	29	0.69	11,600	78.2	0.18	7.9	41	19	3.53	1.13	3.28	2.96	3.50	1.49	.01
Mar.	31	0.66	48,900	74.9	0.14	7.8	42	19	3.51	1.11	3.16	2.91	3.30	1.44	T
Apr.	30	0.66	79,800	75.8	0.13	7.8	42	18	3.35	1.07	3.22	2.91	3.35	1.41	T
May	31	0.70	73,800	78.4	0.13	7.9	43	18	3.44	1.15	3.47	3.06	3.51	1.46	T
June	30	0.71	78,600	80.6	0.15	7.9	43	18	3.51	1.18	3.47	3.11	3.61	1.51	.01
July	31	0.72	87,100	79.2	0.14	8.3	44	20	3.39	1.14	3.53	3.01	3.61	1.62	T
Aug.	31	0.71	89,800	79.2	0.14	8.0	43	19	3.37	1.17	3.47	2.98	3.57	1.52	T
Sept.	30	0.72	66,200	80.2	0.15	8.3	44	20	3.48	1.07	3.54	3.03	3.52	1.69	T
Oct.	31	0.80	12,100	86.7	0.19	8.1	43	21	3.88	1.10	3.82	3.21	3.84	1.92	T
Nov.	30	1.12	4,520	119	0.23	8.0	46	23	5.02	1.70	5.71	3.63	6.06	2.94	T
Dec.	31	0.84	9,400	94.3	0.09	7.9	43	21	4.18	1.31	4.12	3.41	4.28	2.00	.01
Mean @	366 ϕ	0.706	565,360 ϕ	79.2	0.141	8.00	43	19	3.45	1.14	3.45	3.02	3.54	1.55	T
Period Average		0.778	639,000	84.5			44	20	3.66	1.26	3.89	2.89	4.21	1.76	
Tons of Constituents, 1944									75,300	15,100	86,400	100,000	185,000	59,900	
Average Tons Period 1931-1944									81,900	17,200	100,000	98,400	226,000	69,900	
Water Samples from Rio Grande at El Paso Station															
Jan.	31	1.70	20,200	187	0.32	8.1	57	34	6.09	2.25	11.28	4.79	8.00	6.62	T
Feb.	29	1.40	21,700	156	0.28	7.7	56	32	5.17	1.82	8.96	4.15	6.74	5.12	T
Mar.	31	0.96	44,400	107	0.14	8.0	49	26	4.10	1.40	5.39	3.41	4.72	2.87	T
Apr.	30	0.92	68,500	104	0.16	8.0	49	25	4.01	1.37	5.16	3.36	4.58	2.67	T
May	31	0.98	70,300	111	0.16	8.3	50	26	4.16	1.42	5.58	3.50	4.84	2.96	T
June	30	1.01	72,500	113	0.10	8.3	51	27	4.11	1.40	5.76	3.47	4.97	3.11	T
July	31	0.99	83,100	111	0.16	8.3	53	28	3.81	1.41	5.90	3.17	5.04	3.16	T
Aug.	31	1.01	94,900	112	0.19	8.2	51	27	4.12	1.38	5.80	3.53	4.92	3.13	T
Sept.	30	1.02	80,800	113	0.17	8.0	52	28	4.15	1.44	5.97	3.43	4.99	3.27	T
Oct.	31	1.43	42,200	159	0.19	8.2	55	33	5.39	1.90	9.06	4.35	6.77	5.42	T
Nov.	30	1.73	28,900	191	0.23	7.9	58	34	6.07	2.22	11.53	4.90	8.26	6.89	T
Dec.	30	1.58	26,900	174	0.23	8.0	57	33	5.75	2.05	10.32	4.78	7.51	6.07	.01
Mean @	365 ϕ	1.07	654,400 ϕ	119	0.169	8.14	52	28	4.29	1.49	6.32	3.58	5.24	3.47	T
Period Average		#1.11	#669,000	122			52	30	4.48	1.62	6.66	3.50	5.47	3.82	
Tons of Constituents, 1944									71,500	15,100	121,000	90,900	209,000	102,000	
Average Tons Period 1930-1944									73,600	16,200	125,000	87,500	215,000	111,000	

** Percent of Total Cations @ Weighted Mean # Period 1929-1944
*** Percent of Total Anions ϕ Total

CHEMICAL ANALYSES OF WATER SAMPLES FROM RIO GRANDE AND TRIBUTARIES – 1944

Water Samples from Rio Grande at Fort Quitman Station

Month	No. of Samples	Total Tons of: Per Acre Foot	Total Tons of: Dissolved Solids	Mean Kx10⁵ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Jan.	7	2.56	44,000	288	0.32	8.1	61	51	8.31	3.36	18.27	4.50	9.94	15.12	.03
Feb.	6	2.40	34,800	271	0.34	7.9	62	52	7.25	3.09	17.17	3.66	9.41	14.33	T
Mar.	7	2.45	28,400	281	0.29	7.9	63	56	7.05	3.39	17.80	3.01	9.38	15.95	T
Apr.	5	2.84	38,900	323	0.33	8.0	62	58	8.50	3.84	20.48	3.46	10.22	19.21	T
May	7	2.82	52,500	323	0.36	7.9	63	59	8.40	3.73	20.35	3.36	10.20	19.21	T
June	6	2.79	62,500	321	0.29	8.3	63	57	8.49	3.40	20.47	3.75	10.23	18.90	T
July	6	2.22	63,000	253	0.27	8.3	62	54	6.93	2.57	15.60	3.46	8.26	13.95	T
Aug.	9	2.03	84,900	225	0.26	8.1	61	51	6.35	2.62	13.87	3.47	7.82	11.69	.01
Sept.	6	1.91	78,300	216	0.30	8.3	60	50	6.36	2.51	13.10	3.55	7.51	11.04	T
Oct.	6	2.66	63,600	302	0.32	8.2	62	55	8.33	3.42	19.11	3.83	9.99	17.14	T
Nov.	6	2.77	54,600	310	0.36	7.9	61	53	8.90	3.44	19.67	4.59	10.60	17.00	.01
Dec.	6	2.58	51,900	288	0.32	8.0	61	52	8.49	3.22	18.09	4.61	9.80	15.61	.03
Mean ⊕	77ϕ	2.41	657,400ϕ	272	0.306	8.12	62	54	7.55	3.08	17.06	3.75	9.12	15.00	.006
Period Average		2.19#	585,000#	245			60	54	7.11	2.82	15.12	3.47	8.04	13.57	
Tons of Constituents, 1944									56,200	13,900	146,000	42,400	163,000	197,000	
Average Tons Period 1930-1944									52,500	12,600	128,000	39,000	142,000	177,000	

Water Samples from Rio Grande at Upper Presidio Station

Month	No. of Samples	Total Tons of: Per Acre Foot	Total Tons of: Dissolved Solids	Mean Kx10⁵ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Jan.	5	2.65	52,500	298	0.38	8.0	62	52	8.25	3.40	19.08	3.95	10.65	16.07	T
Feb.	4	2.88	44,400	322	0.38	8.0	63	55	8.50	3.57	20.95	3.41	11.38	18.26	T
Mar.	4	2.34	34,200	265	0.37	8.0	62	52	7.12	3.04	16.71	3.36	9.49	14.08	T
Apr.	5	3.30	16,700	372	0.44	8.1	62	57	9.94	4.47	23.54	3.41	12.81	21.83	T
May	4	3.42	26,600	388	0.42	8.3	63	59	10.21	4.51	24.56	3.01	13.19	23.28	T
June	4	2.50	42,000	285	0.33	8.1	62	56	7.91	3.00	17.59	2.96	9.49	16.17	.01
July	4	1.81	40,000	204	0.25	8.0	60	52	6.08	2.08	12.49	2.77	7.20	10.86	.01
Aug.	4	2.14	85,400	242			60	52	7.20	2.47	14.77	3.27	8.52	12.85	.01
Sept.	5	1.90	68,600	216	0.25	7.9	62	51	5.80	2.29	13.32	2.87	7.76	11.02	T
Oct.	4	2.54	67,600	288	0.29	8.0	63	55	7.47	3.25	18.38	3.02	10.02	16.19	T
Nov.	4	2.79	54,700	316	0.35	7.7	65	56	7.74	3.59	20.69	2.99	11.13	18.08	T
Dec.	5	2.76	53,500	310	0.35	7.9	63	55	8.27	3.58	20.05	3.72	10.86	17.58	T
Mean ⊕	52 ϕ	2.41	586,200 ϕ	272	0.311	7.97	62	54	7.41	3.00	17.19	3.19	9.57	14.99	.003
Period Average		1.87	561,000	211			59	50	6.39	2.37	12.46	3.10	7.49	10.68	
Tons of Constituents, 1944									49,100	12,100	131,000	32,200	152,000	176,000	
Average Tons Period 1935-1944									52,300	11,800	117,000	38,600	147,000	155,000	

Water Samples from Rio Conchos near Ojinaga, Chihuahua

Month	No. of Samples	Total Tons of: Per Acre Foot	Total Tons of: Dissolved Solids	Mean Kx10⁵ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Jan.	5	0.98	58,500	108	0.19	7.9	48	24	4.38	1.35	5.33	3.41	4.95	2.69	.01
Feb.	4	0.87	31,600	92.6	0.22	8.1	46	14	4.03	1.16	4.38	3.26	4.87	1.36	T
Mar.	4	0.80	31,300	85.4	0.17	7.8	42	16	3.88	1.15	3.66	2.96	4.42	1.41	T
Apr.	5	0.83	19,200	89.6	0.20	8.0	48	18	3.55	1.19	4.32	2.62	4.88	1.61	T
May	4	0.93	15,500	99.1	0.18	8.3	44	18	4.51	1.09	4.41	2.47	5.82	1.84	.01
June	4	0.97	14,700	103	0.14	8.3	46	19	4.51	1.13	4.78	2.53	6.00	1.99	.01
July	5	0.79	33,300	84.2	0.18	7.8	45	19	3.70	0.96	3.79	2.36	4.52	1.65	.01
Aug.	4	0.90	21,300	95.6	0.09	7.9	37	16	4.92	1.02	3.44	3.69	4.30	1.51	.03
Sept.	6	0.51	191,000	54.2			37	16	2.77	0.57	1.94	2.08	2.43	0.85	
Oct.	4	0.75	82,500	80.3	0.14	8.0	41	15	3.91	0.94	3.33	3.18	3.80	1.26	.01
Nov.	5	1.08	40,700	118	0.13	7.9	46	25	5.13	1.43	5.55	3.46	5.66	2.99	.01
Dec.	2	0.99	39,200	105		7.9	43	16	4.91	1.32	4.72	3.44	5.91	1.73	T
Mean ⊕	52 ϕ	0.707	574,800 ϕ	75.7		7.93	42	18	3.56	0.876	3.17	2.64	3.68	1.35	.018
Period Average		0.558	650,000	60.1			37	14	3.16	0.753	2.29	2.49	2.80	0.853	
Tons of Constituents, 1944									78,900	11,800	80,600	89,100	196,000	52,900	
Average Tons Period 1935-1944									100,000	14,500	83,400	120,000	213,000	47,900	

Water Samples from Rio Grande at Langtry Station

Month	No. of Samples	Total Tons of: Per Acre Foot	Total Tons of: Dissolved Solids	Mean Kx10⁵ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Apr.	4	0.97	42,300	110	0.21	8.0	49	31	3.91	1.65	5.24	2.79	4.80	3.42	.01
May	6	0.95	40,800	108			49	31	3.79	1.60	5.08	2.71	4.66	3.32	
June	6	1.09	84,500	121	0.08	8.3	51	33	4.63	1.24	6.04	2.76	5.27	4.04	.04
July	5	1.11	74,600	122	0.17	8.1	51	30	4.76	1.23	6.27	3.27	5.33	3.69	.03
Aug.	3	0.80	88,000	87.8			51	30	3.46	0.89	4.55	2.37	3.87	2.68	
Sept.	4	0.50	209,000	54.5	--	7.9	45	21	2.44	0.58	2.50	2.20	2.17	1.15	.03
Oct.	2	0.99	179,000	108			45	21	4.78	1.14	4.89	4.31	4.25	2.25	
Nov.	2	1.23	97,300	137	0.22	7.9	52	35	4.79	1.88	7.12	3.03	5.90	4.90	.03
Dec.	3	1.32	94,800	147			52	35	5.15	2.03	7.67	3.26	6.36	5.28	
Mean ⊕	35 ϕ	0.834	910,300 ϕ	92.0		7.97	48	28	3.69	1.06	4.47	2.85	3.85	2.57	.029
Period Average															
Tons of Constituents, 1944 ‡									110,000	19,100	153,000	129,000	274,000	135,000	
Average Tons Period 1935-1944															

Water Samples from Pecos River at Girvin Power Plant

Month	No. of Samples	Total Tons of: Per Acre Foot	Total Tons of: Dissolved Solids	Mean Kx10⁵ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
May 25 to Aug. 7	71	17.52	138,000	1.744		7.6	65	64	36.23	36.60	132.58	2.79	72.04	132.16	.02
Aug. Sept.	36	13.69	164,000	1,358		7.8	62	61	31.39	27.38	97.45	3.41	57.40	97.13	.03
Oct.	24	15.46	98,600	1,530		7.5	64	61	36.13	30.35	120.02	3.90	70.44	114.14	.04
Nov.	22	16.64	95,700	1,645		7.7	63	65	37.52	32.24	121.32	3.51	64.19	125.17	.01
Dec.	23	15.90	98,900	1,597		7.7	64	65	35.53	31.66	118.36	3.51	62.69	121.16	.02
Mean ⊕	ϕ176	15.57	595,200 ϕ	1,548		7.68	64	63	34.77	31.20	115.45	3.40	64.48	115.32	.025
Period Average															
Tons of Constituents, 1944 ‡									36,200	19,700	138,000	5,390	161,000	213,000	
Average Tons Period 1935-1944															

** Percent of Total Cations ⊕ Weighted Mean ‡ Period Total
*** Percent of Total Anions ϕ Total # Period 1929-1944

CHEMICAL ANALYSES OF WATER SAMPLES FROM RIO GRANDE AND TRIBUTARIES – 1944

Water Samples from Pecos River Station

Month	No. of Samples	Total Tons of: Per Acre Foot	Total Tons of: Dissolved Solids	Mean Kx10⁵ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Jan.	15	6.39	131,000	672	0.45	7.7	62	63	14.59	13.40	45.17	1.88	24.99	45.77	.01
Feb.	12	6.10	106,000	651	0.42	7.9	62	63	14.07	13.18	43.73	2.27	23.64	44.15	T
Mar.	14	6.53	118,000	685	0.40	7.9	62	63	14.69	13.31	46.28	1.83	25.52	47.18	T
Apr.	12	6.28	86,700	676	0.39	7.8	63	63	13.92	13.04	45.20	1.28	25.30	46.18	T
May	15	5.54	81,400	593	0.40	8.0	61	62	12.87	11.59	38.79	1.60	22.88	39.24	.01
June	15	4.72	63,200	508	0.33	8.3	61	61	10.91	9.62	32.46	1.81	18.83	32.77	.03
July	14	4.54	55,400	495	0.36	7.9	62	62	10.33	9.59	32.21	1.64	18.44	32.34	.01
Aug.	16	4.52	72,300	484	0.37	7.9	61	62	10.59	9.25	31.55	1.65	18.11	31.65	.03
Sept.	18	2.66	84,900	292	0.19	8.1	57	57	7.57	5.24	17.03	2.09	10.80	17.01	.03
Oct.	14	5.24	98,500	566	0.39	7.9	60	61	13.15	10.87	36.66	2.49	21.17	36.94	.01
Nov.	7	5.68	94,300	600	0.40	7.9	61	62	13.69	11.52	39.78	2.34	22.45	40.62	.01
Dec.	4	6.13	110,000	647			61	62	14.79	12.44	42.96	2.53	24.24	43.86	
Mean ⊕	156 ϕ	5.22	1,101,700ϕ	557	0.364	7.94	61	62	12.37	10.76	36.50	1.99	20.76	36.96	.013
Period Average		4.25	1,834,000	443			54	54	13.85	8.32	25.60	2.59	19.32	25.82	
Tons of Constituents, 1944									71,200	37,600	241,000	17,400	286,000	376,000	
Average Tons Period 1935-1944									163,000	59,400	346,000	46,400	545,000	537,000	

Water Samples from Devils River Station

Month	No. of Samples	Per Acre Foot	Dissolved Solids	Mean Kx10⁵ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Mar.	2	0.29	5,540	35.4			16	15	1.94	1.16	0.60	2.81	0.26	0.53	
Apr.	2	0.27	4,350	32.9	0.06	8.3	16	15	1.81	1.09	0.56	2.62	0.24	0.50	.03
May	2	0.21	4,070	25.6			16	15	1.41	0.85	0.44	2.04	0.19	0.39	
June	1	0.26	4,370	31.6			15	13	1.74	1.01	0.49	2.57	0.23	0.43	
July	3	0.25	3,620	30.4	0.07	7.9	15	13	1.72	1.00	0.49	2.55	0.22	0.43	.03
Aug.	1	0.24	3,910	29.2			15	13	1.63	0.95	0.46	2.41	0.21	0.40	
Sept.	2	0.22	13,800	24.6			12	8	1.88	0.42	0.30	2.02	0.16	0.20	
Oct.	1	0.30	5,880	33.5		7.7	12	8	2.60	0.58	0.42	2.79	0.23	0.28	.13
Nov.	3	0.31	5,490	39.4			12	11	2.56	1.06	0.51	3.37	0.23	0.46	
Dec.	3	0.31	5,120	39.4	0.05	7.9	12	11	2.62	1.08	0.52	3.45	0.23	0.47	.04
Mean ⊕	20 ϕ	0.257	56,150 ϕ	30.6		7.92	14	11	1.97	0.811	0.441	2.53	0.208	0.364	.069
Period Average															
Tons of Constituents, 1944 ‡									11,700	2,930	3,010	22,900	3,000	3,790	
Average Tons Period 1935-1942															

Water Samples from Rio Grande at Eagle Pass Station

Month	No. of Samples	Per Acre Foot	Dissolved Solids	Mean Kx10⁵ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Jan.	24	1.43	216,000	164	0.26	7.7	57	48	4.16	2.83	9.21	2.03	6.24	7.76	.04
Feb.	18	1.36	167,000	159	0.21	7.9	57	50	3.97	2.70	8.81	1.83	5.88	7.70	.03
Mar.	27	1.51	190,000	175	0.25	8.0	57	50	4.48	2.96	9.75	2.18	6.42	8.55	.03
Apr.	28	1.42	127,000	166	0.18	8.0	57	51	3.97	2.94	9.01	1.78	6.15	8.30	.03
May	25	1.05	122,000	124	0.16	8.0	53	47	3.39	2.14	6.35	1.93	4.34	5.67	.03
June	29	1.11	146,000	129	0.17	8.1	56	46	3.47	1.89	6.86	1.62	5.02	5.73	.04
July	29	1.13	105,000	131	0.18	7.9	57	47	3.37	2.07	7.13	1.64	5.15	5.97	.03
Aug.	34	1.04	162,000	118	0.16	8.0	52	42	4.07	1.39	6.02	2.30	4.39	4.88	.04
Sept.	44	0.67	357,000	75.3	0.06	8.0	43	29	3.32	0.92	3.15	2.48	2.70	2.18	.06
Oct.	32	0.90	269,000	103	0.14	7.9	48	37	3.82	1.45	4.85	2.54	3.82	3.73	.03
Nov.	26	1.23	179,000	143	0.16	7.8	52	44	4.57	2.32	7.32	2.68	5.21	6.30	.03
Dec.	27	1.40	185,000	163	0.12	7.9	55	48	4.53	2.68	8.86	2.34	6.05	7.78	.03
Mean ⊕	343 ϕ	1.06	2,225,000 ϕ	122	0.147	7.94	52	43	3.82	1.87	6.26	2.24	4.53	5.20	.040
Period Average		1.18	3,822,000	132			47	40	4.97	2.06	6.22	2.47	5.39	5.27	
Tons of Constituents, 1944									218,000	64,800	410,000	195,000	620,000	525,000	
Average Tons Period 1938-1944									440,000	111,000	631,000	333,000	1,143,000	825,000	

Water Samples from Rio Salado Station

Month	No. of Samples	Per Acre Foot	Dissolved Solids	Mean Kx10⁵ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Jan.	13	0.82	984	91.6	0.33	7.9	42	27	3.63	1.71	3.85	1.93	4.79	2.44	Tr.
Feb.	14	1.05	860	112	0.30	7.7	39	26	4.76	2.22	4.51	2.17	6.28	2.97	.03
Mar.	12	4.81	7,980	428	1.32	7.9	44	29	17.24	11.07	22.56	1.88	34.60	14.69	Tr.
Apr.	13	5.35	3,300	479	1.70	8.0	46	30	18.72	12.09	26.05	1.73	38.95	17.25	Tr.
May	18	0.97	47,900	106	0.32	7.9	43	27	4.25	1.79	4.48	1.73	6.01	2.86	.03
June	13	0.38	9,350	43.0	0.06	8.0	29	18	2.40	0.50	1.21	1.89	1.52	0.75	.04
July	14	1.01	7,900	110	0.36	7.7	45	29	4.51	1.42	4.80	1.70	6.31	3.21	.01
Aug.	10	0.33	85,900	38.3	0.11	7.7	25	14	2.32	0.50	0.96	2.08	1.18	0.53	.04
Sept.	13	0.61	124,000	68.6	0.17	7.9	33	25	3.49	1.15	2.25	2.25	2.72	1.74	.13
Oct.	16	0.72	29,800	83.5	0.18	7.9	35	29	4.03	1.40	2.91	2.67	3.20	2.41	.15
Nov.	12	1.29	16,400	143	0.35	7.7	40	33	5.85	2.94	5.98	2.80	6.91	4.97	.17
Dec.	12	1.77	15,400	189	0.52	7.7	43	35	7.16	4.14	8.60	2.63	10.22	6.98	.18
Mean ⊕	160 ϕ	0.572	349,774 ϕ	64.0	0.169	7.81	34	24	3.20	1.04	2.17	2.16	2.69	1.54	.081
Period Average		0.961	261,000	100.0			40	28	4.51	1.79	4.21	1.94	5.64	2.92	
Tons of Constituents, 1944									53,400	10,500	41,500	54,800	108,000	45,400	
Average Tons Period 1935-1944									33,400	8,060	35,900	21,900	100,300	38,300	

** Percent of Total Cations ⊕ Weighted Mean ‡ Period Total
*** Percent of Total Anions ϕ Total

CHEMICAL ANALYSES OF WATER SAMPLES FROM RIO GRANDE AND TRIBUTARIES – 1944

Month	No. of Samples	Total Tons of: Per Acre Foot	Total Tons of: Dissolved Solids	Mean Kx10⁵ @25°C	Boron p.p.m.	pH	% Na **	% Cl ***	Mean Milligram Equivalents per Liter: Ca	Mg	Na	CO_3 + HCO_3	SO_4	Cl	NO_3
Water Samples from Rio Grande at Roma Station															
Jan.	28	1.39	230,000	161	0.23	7.9	56	47	4.28	2.82	8.86	2.27	6.15	7.36	.03
Feb.	28	1.44	196,000	164	0.22	8.1	55	47	4.58	2.78	8.94	2.57	6.04	7.65	.03
Mar.	33	1.46	205,000	168	0.28	8.1	56	48	4.61	2.77	9.24	2.32	6.30	8.05	.03
Apr.	27	1.52	139,000	178	0.26	8.0	56	50	4.52	3.05	9.72	2.14	6.72	8.75	Tr.
May	31	0.78	233,000	93.5	0.18	8.3	51	41	3.05	1.27	4.58	1.97	3.21	3.68	.03
June	30	0.87	160,000	101	0.10	8.3	50	41	3.45	1.31	4.81	2.06	3.66	4.03	.04
July	31	1.15	108,000	132	0.12	8.0	54	45	3.92	1.95	6.99	2.01	5.14	5.90	.01
Aug.	46	0.46	402,000	54.2	0.12	7.9	40	28	2.48	0.67	2.10	1.98	1.79	1.45	.03
Sept.	42	0.56	556,000	64.0	0.13	7.9	40	27	2.97	0.77	2.48	2.34	2.24	1.68	.04
Oct.	31	0.86	343,000	99.4	0.08	7.9	45	35	3.99	1.38	4.42	2.70	3.70	3.43	.04
Nov.	30	1.14	213,000	133	0.18	7.8	50	42	4.42	2.16	6.57	2.61	4.95	5.51	.03
Dec.	29	1.35	223,000	158	0.26	7.9	54	47	4.58	2.66	8.33	2.36	5.94	7.25	.04
Mean ⊕	386 ϕ	0.807	3,008,000 ϕ	93.7	0.149	7.97	48	38	3.38	1.36	4.41	2.26	3.39	3.52	.033
Period Average		0.954	3,069,900												
Tons of Constituents, 1944									344,000	83,900	514,000	350,000	826,000	633,000	
Average Tons Period 1935-1944															
Water Samples from Rio Grande at Rio Grande City Station															
Jan.	12	1.41	245,000	162	0.23	8.0	55	46	4.43	2.73	8.69	2.47	6.24	7.36	.04
Feb.	12	1.41	200,000	164	0.24	8.1	55	47	4.54	2.83	9.05	2.47	6.09	7.66	.03
Mar.	11	1.47	226,000	171	0.23	8.0	56	49	4.57	2.80	9.43	2.17	6.42	8.25	.01
Apr.	16	1.53	149,000	179	0.22	8.2	57	51	4.44	3.09	9.86	2.04	6.52	8.85	T
May	18	0.79	263,000	93.2	0.17	8.2	51	42	3.11	1.26	4.51	1.91	3.21	3.76	.03
June	13	0.84	200,000	98.7	0.13	8.3	49	40	3.51	1.38	4.63	2.15	3.60	3.80	.04
July	14	0.98	166,000	112	0.22	7.9	52	39	3.70	1.55	5.62	2.21	4.49	4.38	.01
Aug.	19	0.46	584,000	52.7	0.11	7.8	40	24	2.47	0.65	2.06	1.93	1.96	1.27	.03
Sept.	16	0.50	898,000	57.6	0.10	7.9	35	23	2.90	0.75	1.98	2.28	2.03	1.31	.04
Oct.	13	0.70	530,000	81.5	0.12	7.9	40	30	3.65	1.19	3.25	2.63	2.97	2.43	.03
Nov.	12	1.03	256.000	119	0.14	7.8	48	40	4.26	1.92	5.64	2.69	4.43	4.71	.04
Dec.	12	1.38	250,000	159	0.20	7.9	52	45	4.99	2.62	8.31	2.86	5.88	7.23	.03
Mean ⊕	168 ϕ	0.714	3,967,000 ϕ	82.6	0.133	7.9	45	35	3.26	1.20	3.65	2.26	3.02	2.82	.033
Period Average		0.883	4,486,000	100			44	36	3.94	1.58	4.42	2.29	4.00	3.57	
Tons of Constituents, 1944									494,000	110,000	635,000	521,000	1,097,000	756,000	
Average Tons Period 1935-1944									546,000	133,000	702,000	483,000	1,329,000	876,000	
Water Samples from Rio Grande at Buenos Aires Station															
Jan.	12	1.43	242.000	164	0.23	8.1	54	45	4.74	2.75	8.94	2.67	6.25	7.31	.03
Feb.	12	1.39	150,000	161	0.25	8.1	55	47	4.51	2.75	8.80	2.57	5.90	7.60	.01
Mar.	12	1.33	139,000	153	0.28	7.9	55	48	4.39	2.36	8.30	2.17	5.65	7.14	.03
Apr.	12	1.49	68,300	174	0.23	8.0	56	49	4.51	2.85	9.50	2.14	6.64	8.35	T
May	19	0.82	212,000	98.9	0.22	8.0	51	42	3.19	1.39	4.79	2.04	3.42	3.92	.03
June	15	0.74	186,000	86.4	0.14	8.3	47	37	3.23	1.19	3.87	2.14	3.14	3.06	.03
July	17	0.90	123,000	102	0.20	7.7	50	37	3.64	1.40	5.03	2.21	4.13	3.78	.01
Aug.	17	0.51	382,000	58.0	0.09	7.9	39	24	2.73	0.80	2.21	2.24	2.08	1.38	.03
Sept.				Station destroyed by flood September 1, 1944. Sampling discontinued.											
Oct.															
Nov.															
Dec.															
Mean ⊕	116 ϕ	0.824	1,502,300ϕ	95.3	0.16	8.0	49	38	3.36	1.42	4.56	2.25	3.50	3.58	.027
Period Average															
Tons of Constituents, 1944															
Average Tons Period 1935-1942															
Water Samples from North Floodway Near Sebastian, Texas															
Jan.1 to June 30	13	2.09	37,000	239	0.97	7.9	59	55	5.93	3.84	14.18	2.18	8.68	13.26	tr.
July 1 - Aug. 30	4	2.48	8.680	281	1.29	8.1	61	56	6.29	4.81	17.05	1.87	10.63	15.92	.01
Aug. 31 to * Sept. 9	10	0.40	43,900	45.7	0.08	7.9	35	23	2.32	0.60	1.58	1.82	1.62	1.05	.03
Sept. 10 to Oct. 12	4	0.89	17,200	105	0.32	7.7	51	43	3.22	1.55	4.92	2.46	3.51	4.48	.03
Oct.13 - Dec. 31	5	2.48	20,100	281	1.29	8.1	61	56	6.29	4.81	17.05	1.87	10.63	15.92	.01
Mean ⊕	36 ϕ	0.80	126,880 ϕ	91.7	0.297	7.89	50	43	3.12	1.39	4.53	1.94	3.30	3.92	.025
Period Average		1.36	100,500	152.0			53	49	4.67	2.42	7.96	2.32	5.37	7.45	
Tons of Constituents, 1944									13,500	3,640	22,500	12,800	34,200	30,000	
Average Tons Period 1941-1944									9,420	2,970	18,400	7,130	25,950	26,600	

** Percent of Total Cations ⊕ Weighted Mean
*** Percent of Total Anions ϕ Total

ELECTRICAL CONDUCTANCE OF WATER SAMPLES

1944

San Marcial Station

Date	$K \times 10^5$ @25°C	Date	$K \times 10^5$ @25°C	Date	$K \times 10^5$ @25°C	Date	$K \times 10^5$ @25°C	Date	$K \times 10^5$ @25°C	Date	$K \times 10^5$ @25°C	Date	$K \times 10^5$ @25°C	Date	$K \times 10^5$ @25°C	Date	$K \times 10^5$ @25°C	Date	$K \times 10^5$ @25°C
January		February		March		April		May		June		July		August		September		October		November	
1	84.2	3	78.9	6	69.5	8	88.5	13	53.7	14	38.1	19	54.5	20	135	21	78.6	24	80.1	27	80.6
2	81.9	4	77.5	7	69.3	9	89.2	14	47.3	15	34.9	20	55.3	21	139	22	78.1	25	76.7	28	80.2
3	80.8	5	77.5	8	66.7	10	82.9	15	48.1	16	37.0	21	70.4	22	139	23	81.7	26	77.5	29	80.3
4	80.8	6	77.2	9	70.0	11	78.3	16	45.8	17	37.2	22	133	23	85.6	24	82.2	27	78.4	30	81.6
5	81.8	7	74.8	10	70.5	12	77.6	17	42.4	18	37.5	23	131	24	81.9	25	77.8	28	75.1	December	
6	81.1	8	75.7	11	73.0	13	69.6	18	42.1	19	36.9	24	111	25	82.1	26	77.2	29	76.0	1	80.7
7	82.1	9	75.1	12	67.8	14	75.1	19	42.1	20	35.7	25	109	26	87.6	27	76.8	30	75.7	2	79.2
8	81.8	10	75.1	13	68.4	15	74.7	20	36.0	21	36.7	26	106	27	78.4	28	77.3	31	75.9	3	75.3
9	83.2	11	74.6	14	78.4	16	70.9	21	35.5	22	39.0	27	97.4	28	78.4	29	125	November		4	78.4
10	82.6	12	74.7	15	75.3	18	70.2	22	34.9	23	38.9	28	81.1	29	83.3	30	124	1	74.6	5	78.2
11	93.5	13	72.3	16	75.0	19	68.1	24	35.9	24	40.1	29	81.2	30	73.9	October		2	75.0	6	80.4
12	86.1	14	73.7	17	70.9	20	68.1	25	38.8	25	42.7	30	77.3	31	74.0	1	102	3	76.0	7	79.6
13	87.6	15	73.5	18	69.6	21	69.0	25	36.2	26	44.6	31	77.2	September		2	88.7	4	79.2	8	79.3
14	95.9	16	73.0	19	70.4	22	77.2	26	37.6	27	40.7	August		1	82.0	3	87.8	5	78.3	9	77.6
16	93.4	17	73.7	20	68.6	23	76.2	27	37.2	28	37.6	1	84.1	2	89.2	4	88.5	6	79.6	10	76.8
17	91.9	18	74.1	21	69.1	24	76.7	28	49.0	29	37.6	2	81.2	3	89.2	5	81.6	7	75.4	11	77.1
18	80.8	19	72.8	22	64.9	25	70.6	29	37.0	30	38.3	3	87.1	4	95.2	6	82.1	8	75.4	12	78.6
19	80.6	20	73.8	23	68.2	26	72.2	30	34.3	July		4	86.1	5	93.6	7	84.1	9	75.5	13	75.4
20	84.2	21	72.9	24	66.9	27	72.6	31	35.2	1	40.8	5	107	6	94.3	8	48.5	10	73.5	14	74.8
21	79.1	22	74.0	25	67.3	28	84.2	June		2	43.0	6	101	7	106	9	50.0	11	73.9	15	76.8
22	78.6	23	73.6	26	74.9	29	80.5	1	35.3	3	41.9	7	100	8	97.1	10	82.4	12	73.6	16	76.3
23	77.9	24	73.5	27	74.0	30	80.0	2	39.1	6	102	8	81.9	9	97.3	11	83.6	13	79.6	17	76.6
24	77.5	25	73.9	28	74.1	May		3	37.7	7	68.9	9	79.1	10	109	12	83.3	14	77.5	18	76.8
25	77.2	26	75.3	30	76.2	1	77.1	4	35.2	8	69.8	10	79.3	11	104	13	82.8	15	78.3	19	74.3
26	77.6	27	74.7	31	75.6	2	74.6	5	33.6	9	55.9	11	123	12	104	14	85.6	16	79.4	20	74.4
27	75.4	28	72.4	April		3	75.3	6	32.9	10	52.2	12	118	13	83.7	15	83.1	18	80.5	21	75.7
28	75.8	29	69.9	1	80.9	4	76.1	7	32.0	11	51.5	13	120	14	79.1	16	85.0	19	79.5	24	75.3
29	83.4	March		2	79.6	5	73.8	8	33.1	12	47.1	14	85.5	15	79.2	17	106	20	79.8	25	75.3
30	83.3	1	71.0	3	78.1	6	72.4	9	34.1	13	47.7	15	85.5	16	79.4	18	123	21	80.5	26	75.4
31	83.4	2	73.5	4	80.2	7	68.5	10	35.3	15	48.1	16	86.6	17	80.3	19	104	22	78.5	27	74.3
February		3	74.8	5	78.8	8	65.8	11	35.6	16	50.4	17	71.6	18	80.1	20	129	23	78.3	28	74.1
1	80.6	4	74.9	6	77.6	9	69.5	12	35.9	17	50.8	18	85.5	19	71.5	21	129	24	79.7	29	74.1
2	78.6	5	76.8	7	86.2	10	65.9	13	38.8	18	50.6	19	146	20	79.1	22	121	25	81.3	30	74.9
																23	80.1	26	81.3	31	74.7

El Paso Station

January		February		March		April		May		June		July		August		September		October		November	
1	143	3	210	7	128	9	105	12	108	14	106	17	118	19	109	21	124	24	167	27	190
2	151	4	211	8	115	10	106	13	111	15	116	18	108	20	107	22	129	25	171	28	191
3	159	5	211	9	105	11	96.0	14	115	16	115	19	111	21	108	23	131	26	186	29	194
4	166	6	209	10	104	12	110	15	112	17	123	20	112	22	116	24	124	27	186	30	195
5	177	7	209	11	106	13	107	16	113	18	121	21	110	23	120	25	135	28	171	December	
6	185	8	203	12	109	14	108	17	110	19	121	22	112	24	122	26	97.7	29	169	1	197
7	189	9	200	13	111	15	98.9	18	114	20	115	23	111	25	119	27	72.7	30	176	2	196
8	195	10	206	14	111	16	103	19	109	21	114	24	103	26	117	28	93.3	31	177	3	197
9	195	11	208	15	107	17	96.2	20	113	22	114	25	106	27	120	29	108	November		4	199
10	198	12	211	16	107	18	103	21	114	23	110	26	114	28	117	30	123	1	183	5	200
11	197	13	211	17	108	19	100	22	112	24	113	27	117	29	117	October		2	188	6	201
12	196	14	210	18	100	20	104	23	110	25	111	28	119	30	119	1	115	3	188	7	200
13	199	15	211	19	109	21	101	24	106	26	112	29	120	31	124	2	126	4	191	8	187
14	199	16	214	20	113	22	98.2	25	110	27	107	30	117	September		3	153	5	192	9	178
15	200	17	211	21	97.8	23	95.4	26	111	28	110	31	107	1	121	4	161	6	193	10	172
16	200	18	161	22	102	24	96.8	27	117	29	112	August		2	120	5	143	7	188	11	174
17	201	19	124	23	105	25	98.9	28	111	30	119	1	106	3	121	6	141	8	188	12	166
18	202	20	126	24	113	26	101	29	105	July		2	109	4	113	7	138	9	194	13	115
19	202	21	133	25	115	27	103	30	112	1	119	3	113	5	111	8	148	10	187	14	118
20	202	22	128	26	111	28	99.2	31	111	2	118	4	119	6	111	9	165	11	189	15	146
21	202	23	129	27	96.3	29	103	June		3	113	5	119	7	113	10	173	12	193	16	151
22	203	24	127	28	96.3	30	104	1	110	4	114	6	110	8	118	11	179	13	196	17	159
23	206	25	129	29	101	May		2	113	5	119	7	107	9	119	12	185	14	195	18	161
24	203	26	127	30	100	1	107	3	113	6	119	8	106	10	122	13	182	15	194	19	177
25	205	27	125	31	104	2	107	4	110	7	116	9	109	11	119	14	187	16	198	20	183
26	203	28	131	April		3	109	5	113	8	120	10	101	12	126	15	185	17	196	21	187
27	200	29	134	1	99.8	4	109	6	119	9	111	11	109	13	126	16	179	18	193	22	190
28	201	March		2	103	5	111	7	110	10	107	12	110	14	131	17	189	19	193	23	191
29	204	1	124	3	97.2	6	111	8	116	11	107	13	121	15	130	18	191	20	191	24	194
30	207	2	127	4	95.4	7	113	9	112	12	114	14	119	16	126	19	173	21	194	25	195
31	206	3	123	5	98.5	8	110	10	111	13	119	15	120	17	121	20	160	22	194	26	196
February		4	123	6	102	9	114	11	110	14	116	16	114	18	117	21	148	23	194	27	196
1	209	5	109	7	107	10	112	12	114	15	113	17	115	19	117	22	139	24	193	28	190
2	208	6	115	8	105	11	106	13	111	16	114	18	113	20	125	23	164	25	188	30	193
																		26	190	31	194

Fort Quitman Station

January		February		March		April		May		June		July		August		September		October		November	
2	248	2	313	8	243	12	304	17	375	17	309	25	163	20	153	23	333	21	351	29	318
5	267	9	301	11	220	19	297	20	444	21	450	27	247	23	246	27	158	25	320	December	
12	290	12	317	15	258	22	370	24	310	28	290	August		26	274	28	159	November		2	338
16	301	16	324	22	316	26	288	31	268	July		2	288	30	317	October		1	281	6	340
19	302	23	227	26	491	May		June		5	350	9	249	September		4	264	4	308	13	303
26	314	26	227	29	312	3	343	3	319	12	441	12	241	6	251	11	331	8	326	16	266
29	334	March		April		6	330	8	334	19	565	16	250	13	263	18	338	15	334	20	296
		1	253	8	449	10	344	14	323	25	164	20	154	20	259	20	320	22	321	27	280

Upper Presidio Station

January		February		March		April		May		June		August		September		October		November		December	
2	311	5	326	11	263	15	382	20	385	24	379	5	295	9	193	14	289	11	322	9	344
8	269	12	296	18	267	22	365	27	370	July		12	255	16	254	21	340	18	321	16	333
15	300	19	336	25	346	29	331	June		1	343	19	236	23	240	28	349	26	322	23	293
22	315	26	360	April		May		3	360	8	320	26	235	30	165	November		December		30	276
29	319	March		1	413	6	444	10	161	22	315	September		October		4	313	4	330		
		4	254	8	461	13	370	17	255	29	174	2	263	7	237						

ELECTRICAL CONDUCTANCE OF WATER SAMPLES

1944

Rio Conchos near Ojinaga, Chihuahua

Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C
January		February		March		April		May		June		July		August		September		October	
3	149	5	83.4	4	97.8	1	82.5	6	120	3	104	1	108	5	109	11	86.4	16	73.8
10	125	12	85.7	11	79.2	8	86.5	13	104	10	104	8	126	14	88.5	13	31.8	23	70.8
17	84.5	19	107	18	79.1	15	94.8	20	113	17	103	15	61.2	21	103	October		November	
24	83.6	26	89.0	25	89.0	22	102	27	68.8	24	96.9	22	89.9	29	79.1	1	75.9	1	86.1
31	83.8					29	109					29	95.1			8	98.4	7	84.7

Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C
																		November	
																		13	96.9
																		20	106
																		27	104
																		December	
																		11	105
																		18	105

Langtry Station

Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C
April		May		May		June		June		July		August		September		September		October	
4	113	4	91.7	21	79.6	6	84.0	25	100	14	112	2	90.9	5	109	17	36.9	20	111
17	95.6	13	97.8	27	89.1	13	152			19	173	15	117	7	79.4	October		November	
21	103	16	147			17	101	4	126	28	113	25	71.6	9	93.7	1	97.7	22	131
27	120	18	144	2	144	20	143	5	85.8										

Pecos River at Girvin Power Plant

Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C
May		June		June		July		July		August		September		October		November		November	
25	1,694	10	1,740	27	1,851	13	1,817	31	1,721	18	1,346	16	1,494	10	1,342	2	1,588	25	1,636
26	1,708	11	1,686	28	1,851	14	1,783	August		19	1,559	17	1,454	11	1,489	4	1,636	26	1,662
27	1,681	12	1,566	29	1,851	15	1,601	1	1,649	20	1,559	18	1,362	12	1,489	5	1,636	27	1,662
28	1,681	13	1,500	30	1,818	16	1,534	2	1,737	21	1,496	20	1,098	15	1,553	6	1,636	28	1,662
29	1,654	14	1,685	July		17	1,554	3	1,795	22	1,417	21	1,279	16	1,531	8	1,688	30	1,688
30	1,681	15	1,738	1	1,853	18	1,577	5	1,649	23	1,036	23	1,310	17	1,510	9	1,662	December	
31	1,681	16	1,766	2	1,733	19	1,577	6	1,761	24	828	24	1,359	18	1,469	11	1,662	1	1,645
June		17	1,765	3	1,820	20	1,599	7	1,761	28	1,036	25	1,449	19	1,510	12	1,636	3	1,574
1	1,716	18	1,709	4	1,851	21	1,576	8	1,766	29	1,099	30	1,553	20	1,531	13	1,662	4	1,551
2	1,716	19	1,803	5	1,851	22	1,577	9	1,795	30	1,110	October		21	1,575	16	1,662	6	1,530
3	1,716	20	1,793	6	1,881	23	1,645	10	1,737	31	1,197	1	1,599	22	1,622	17	1,636	7	1,530
4	1,689	21	1,792	7	1,914	24	1,597	11	1,766	September		4	1,599	23	1,599	18	1,612	8	1,551
5	1,714	22	1,853	8	1,914	25	1,598	12	1,737	2	1,223	5	1,531	25	1,553	19	1,636	9	1,551
6	1,714	23	1,853	9	1,914	26	1,619	13	1,737	3	1,328	6	1,430	26	1,551	20	1,662	10	1,551
7	1,741	24	1,853	10	1,912	27	1,644	14	1,737	8	1,098	7	1,449	27	1,553	22	1,662	11	1,551
8	1,714	25	1,853	11	1,912	28	1,669	15	1,737	9	1,345	8	1,469	28	1,531	23	1,662	12	1,574
9	1,740	26	1,851	12	1,879	29	1,695	16	1,737	10	1,266	9	1,412	31	1,599	24	1,636	13	1,597

Pecos River Station near Comstock, Texas

Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C
January		February		March		April		May		June		July		August		September		September	
2	691	1	683	9	734	12	674	10	559	7	557	7	464	8	512	3	474	27	369
4	642	3	679	11	744	14	665	12	664	9	464	9	528	10	494	5	375	29	441
6	662	5	638	13	766	16	644	14	622	11	389	11	522	12	517	6	47.1	October	
8	687	7	666	15	740	18	702	16	524	13	462	13	504	14	486	6	55.9	1	548
10	691	9	692	17	740	20	665	18	501	15	518	15	499	16	475	6	143	3	551
12	719	11	706	19	720	22	712	20	406	17	513	17	494	18	475	7	57.0	5	506
14	709	13	602	21	697	24	697	22	551	19	644	19	516	20	481	9	159	7	467
16	687	15	683	23	692	26	697	24	644	21	742	21	583	22	517	11	345	9	503
18	691	17	701	25	605	28	661	26	709	23	593	23	648	24	520	13	381	11	522
20	705	19	711	27	642	30	665	28	692	25	550	25	655	26	651	15	446	13	590
22	709	21	631	29	663	May		30	673	27	451	29	309	27	142	17	516	15	613
24	670	23	631	31	635	2	652	June		29	390	August		28	703	19	483	17	642
26	674	March		April		4	614	1	436	July		2	594	30	430	21	478	19	634
28	682	5	709	8	683	6	604	3	441	1	445	4	391	September		23	502	21	642
30	678	7	744	10	712	8	811	5	575	3	498	6	545	1	796	25	523	23	627
										5	526								

Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C
																		October	
																		30	673

Devils River Station

Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C
March		April		May		June		July		July		September		October		November		November	
21	37.1	5	35.7	5	26.2	17	32.6	5	31.9	19	32.0	11	23.3	5	32.7	7	36.7	22	38.1
23	34.6	20	32.0	18	26.5			14	33.0	August		17	24.7			17	37.0	December	
										18	30.5							6	37.0

Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C
																		December	
																		29	38.8

Eagle Pass Station

Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C
January		February		March		April		June		July		August		September		September		October	
3	164	10	169	24	160	27	172	2	149	5	120	6	137	3	96.4	21	71.2	20	122
4	163	11	170	25	159	28	170	3	129	6	131	7	128	5	97.9	22	73.6	21	120
5	170	18	167	26	165	29	173	4	129	7	131	8	131	4	128	23	81.0	22	129
6	168	19	167	27	169	30	175	5	128	8	128	9	132	5	142	24	89.6	23	128
7	157	21	168	29	163	May		7	77.0	9	137	10	114	6	134	25	87.7	24	134
8	161	22	177	30	156	1	176	8	106	10	151	11	136	7	44.3	26	76.2	25	134
10	157	23	176	31	159	2	170	9	102	11	150	11	138	7	60.9	27	73.7	26	128
11	163	25	158	April		3	168	10	101	12	125	13	151	7	44.1	27	108	27	127
12	164	26	88.3	1	158	4	171	11	111	13	120	13	141	7	61.5	28	109	29	135
14	159	28	174	2	170	5	174	12	112	14	127	15	137	8	94.4	30	107	30	134
15	158	29	172	3	174	6	163	13	96.6	15	126	16	141	8	93.4	October		31	131
17	172	March		4	175	8	178	14	97.3	16	114	17	147	9	64.6	1	98.7	November	
18	168	1	173	5	170	9	175	15	144	17	110	19	138	9	64.7	2	92.4	1	129
19	166	2	161	6	187	10	172	16	144	18	136	20	133	10	55.7	4	40.8	2	134
20	165	3	172	7	185	11	171	17	183	19	136	21	128	10	55.6	4	40.4	3	136
21	172	4	171	8	173	12	182	18	114	20	114	22	103	11	61.0	5	88.6	6	136
22	165	5	168	9	173	13	181	19	114	21	147	23	118	12	73.2	5	89.4	7	142
24	162	6	173	10	175	15	164	20	109	22	150	24	126	13	73.1	6	85.6	8	145
25	165	7	178	12	175	16	168	21	137	23	170	25	133	14	106	6	86.1	9	144
26	171	8	187	13	179	17	171	22	138	24	162	26	152	15	105	7	105	10	143
27	169	9	175	14	184	19	96.3	23	157	25	144	27	151	16	99.6	8	96.6	11	140
28	165	10	180	15	178	20	134	24	156	26	144	28	152	16	99.0	9	96.4	12	140
29	167	11	176	16	179	22	71.5	25	160	27	151	28	132	17	60.5	10	102	13	142
31	171	12	194	17	175	23	66.6	26	168	28	156	29	107	17	59.0	11	99.6	14	138
February		14	200	18	167	24	87.0	27	154	30	139	29	107	18	45.2	12	111	15	143
1	165	16	191	19	169	25	120	28	158	31	122	30	87.5	18	45.0	13	111	16	144
2	157	17	190	21	174	26	109	29	145	August		30	87.6	18	55.3	14	115	17	156
3	162	18	194	22	144	29	102	30	142	1	104	31	78.6	18	56.9	15	114	18	153
4	163	20	175	23	118	30	138	July		2	98.7	31	79.2	19	56.6	16	114	19	151
7	164	21	174	24	117	31	149	2	110	3	138	September		19	55.5	17	115	20	150
8	165	22	169	25	119	June		3	120	4	138	2	74.2	20	52.7	18	115	21	150
9	162	23	168	26	117	1	144	4	120	5	135	2	74.1	20	62.9	19	121	22	151
																		23	152
																		31	175

ELECTRICAL CONDUCTANCE OF WATER SAMPLES

1944

Rio Salado Station

Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C	Date	Kx10⁵ @25°C
January		February		March		April		May		June		July		August		September		October		November	
1	121	4	63.4	8	247	17	437	19	39.8	14	35.8	17	85.8	26	33.8	30	86.5	25	104	29	168
3	117	7	66.2	13	278	19	430	22	105	16	39.0	19	81.8	30	31.9	October		27	108	December	
5	108	9	72.9	15	292	21	419	26	164	19	35.7	24	80.8	30	32.6	1	45.9	31	121	1	151
7	96.1	11	81.5	17	304	24	413	27	364	21	35.9	26	82.8	September		2	55.7	November		6	187
10	88.6	14	98.1	20	397	26	428	27	536	23	36.3	27	80.2	6	66.3	4	63.5	1	124	8	187
14	91.0	16	112	22	508	28	436	28	97.0	26	39.7	28	82.7	13	49.3	6	66.9	3	120	11	195
17	89.0	18	127	27	543	30	429	28	72.1	28	40.1	31	83.6	14	56.6	8	77.4	6	126	13	197
19	85.6	21	147	29	549	May		29	80.5	30	40.1	August		15	66.1	9	100	8	128	15	193
21	78.6	23	164	31	540	1	419	30	34.1	July		23	31.9	18	91.1	10	95.0	10	169	18	191
24	68.0	25	176	April		3	426	31	82.3	1	41.5	23	46.5	20	109	11	76.1	13	155	20	198
26	65.4	28	200	3	536	4	76.4	June		3	85.2	23	41.2	22	108	13	63.0	15	151	22	193
28	64.7	29	204	5	536	8	60.2	1	42.0	5	60.0	24	32.2	25	110	16	110	17	138	25	194
31	64.1	March		7	536	10	67.9	2	45.5	7	206	25	34.2	26	111	18	100	20	137	29	201
February		1	211	10	485	12	72.0	5	52.5	10	112	25	36.0	27	144	20	105	24	158	31	225
1	63.6	3	221	12	463	15	76.2	6	50.3	12	116	25	38.6	28	132	22	90.4	27	163		
2	63.7	6	237	14	447	17	77.4	12	56.7	14	104	26	48.0	29	113						

Roma Station

January		February		March		April		May		June		August		August		September		October		November	
1	173	8	161	14	188	19	195	25	127	29	121	2	132	28	66.6	20	57.0	20	110	24	134
3	150	10	161	14	121	20	189	26	114	30	132	3	177	29	35.8	20	57.7	21	110	25	140
4	156	11	163	15	149	21	189	27	63.8	July		4	177	29	34.9	21	49.6	22	111	26	145
5	162	12	165	16	176	22	186	28	51.5	1	101	5	159	29	34.9	21	49.6	23	111	27	144
6	162	13	163	17	160	23	180	29	57.2	2	127	6	164	30	43.1	22	53.7	24	110	28	144
7	166	14	164	18	181	24	186	30	64.0	3	127	7	181	30	38.5	23	62.7	25	110	29	145
8	168	15	165	19	166	25	186	31	58.7	4	141	8	155	30	38.8	24	69.2	26	110	30	147
9	160	16	165	20	180	26	189	June		5	90.0	9	119	31	40.0	25	78.7	27	114	December	
10	160	17	162	21	156	27	189	1	57.0	6	110	10	125	31	36.4	26	71.7	28	113	1	146
11	161	18	162	22	156	29	182	2	57.0	7	112	11	139	September		27	64.6	29	125	2	145
12	171	19	162	23	170	30	176	3	76.7	8	132	12	135	1	68.0	27	69.2	30	124	3	143
13	175	20	165	24	200	May		4	73.1	9	160	13	113	1	56.2	28	76.9	31	127	4	145
14	164	21	166	25	197	1	180	5	73.7	10	159	14	104	2	42.4	28	75.8	November		5	148
15	155	22	173	26	194	2	183	6	112	11	160	15	117	4	76.7	29	61.5	1	129	6	151
16	155	23	171	27	174	3	169	7	95.4	12	150	16	131	5	76.6	29	61.4	2	127	7	154
17	155	24	169	28	192	4	100	8	74.9	13	145	17	143	6	72.1	30	79.6	3	125	8	155
18	162	25	173	29	182	5	83.9	9	93.7	14	129	18	144	7	73.5	October		4	127	9	146
19	161	26	173	30	170	6	110	10	120	15	130	19	146	8	41.0	1	84.1	5	122	10	158
20	156	27	168	31	178	7	88.4	11	109	16	127	20	140	8	41.5	2	70.3	6	124	11	159
21	153	28	178	April		8	86.0	12	124	17	125	21	133	9	86.7	3	78.4	7	130	12	151
22	160	29	170	1	183	9	66.4	13	123	18	133	22	84.9	9	89.2	4	99.6	8	129	13	151
23	160	March		2	181	10	62.3	14	91.1	19	137	22	90.5	10	58.1	5	101	9	127	14	160
24	172	1	174	3	170	11	67.8	15	70.9	20	136	23	46.1	10	55.6	6	96.7	10	127	15	164
25	162	2	176	4	127	12	98.9	16	80.4	21	139	23	46.1	11	40.8	6	96.5	11	129	16	162
26	166	3	182	5	173	13	146	17	82.9	22	144	24	37.2	11	48.9	7	100	12	128	17	167
27	160	4	182	7	165	14	132	18	113	23	145	24	36.0	12	42.1	7	101	13	127	19	171
28	165	5	129	8	154	15	131	19	113	24	149	25	41.7	12	44.0	10	84.0	14	134	20	170
29	165	6	124	9	166	16	170	20	106	25	142	25	40.3	13	60.6	11	97.4	15	139	21	167
February		7	135	11	168	17	180	21	111	26	141	25	40.9	13	56.0	12	87.8	16	136	22	168
1	164	8	162	12	166	18	178	22	112	27	140	26	69.2	14	58.9	13	93.7	17	140	23	168
2	161	9	171	13	173	19	176	23	137	28	131	26	66.5	15	56.1	14	100	18	141	24	168
3	161	10	177	14	179	20	168	24	135	29	130	26	71.0	17	75.3	15	94.4	19	135	25	172
4	167	11	173	15	183	21	186	25	138	30	138	27	52.4	18	78.2	16	98.4	20	135	26	168
5	165	12	168	16	184	22	187	26	138	31	154	27	54.3	18	78.3	17	105	21	134	27	171
6	159	13	184	17	183	23	188	27	139	August		27	52.1	19	103	18	105	22	136	28	168
7	160	13	168	18	185	24	179	28	153	1	143	28	63.0	19	102	19	107	23	134	29	167
																				31	166

Rio Grande City Station

January		February		March		April		May		June		July		August		September		October		November	
4	155	10	161	24	195	25	187	26	125	26	120	26	140	24	54.5	13	46.6	16	74.4	25	143
7	167	14	161	28	193	27	187	27	98.2	28	118	29	138	26	40.6	15	50.2	19	79.5	27	145
10	160	18	165	30	183	29	188	28	68.1	30	114	31	138	26	40.3	18	60.7	21	82.4	29	145
12	161	19	164	April		May		29	50.3	July		August		28	46.4	20	64.3	23	84.2	December	
14	184	21	164	1	177	1	177	31	61.3	2	89.1	2	155	28	46.6	20	61.7	27	92.2	2	147
17	157	24	168	3	179	3	186	June		4	109	4	177	30	40.7	22	57.9	30	104	4	149
19	171	26	173	5	172	5	95.5	5	85.1	6	99.8	7	164	30	41.2	26	67.2	November		6	151
21	167	29	172	7	153	5	79.4	7	93.3	8	93.8	9	168	September		28	69.0	1	104	8	156
23	157	March		9	173	8	116	9	85.7	10	112	11	116	2	45.7	October		5	102	11	161
26	170	3	179	12	169	10	78.0	10	89.6	12	122	13	114	2	46.4	2	70.2	8	105	13	158
28	164	8	155	14	172	12	70.5	12	106	14	119	15	94.8	4	61.8	4	77.1	11	108	15	163
31	165	10	171	17	182	14	147	14	121	16	114	17	104	6	62.4	6	87.3	15	113	18	168
February		13	169	19	186	16	115	16	73.7	18	111	19	127	9	74.6	7	88.3	15	117	20	176
1	160	16	177	20	166	18	180	19	130	20	124	21	135	9	76.1	10	69.8	17	138	22	180
4	164	18	182	21	169	20	181	21	91.0	22	126	23	45.0	10	56.2	12	74.0	20	137	26	162
7	163	19	182	22	189	24	186	23	97.1	24	146	24	56.5	11	39.2	14	80.6	23	133	29	155
9	161	21	114	24	184	24	58.3														

Buenos Aires Station

January		February		March		April		May		May		June		July		August		August	
3	164	1	158	1	173	3	174	1	190	25	171	10	63.9	3	114	19	112	14	130	30	59.9
5	173	2	162	3	174	5	182	3	189	26	183	11	89.2	4	87.9	21	112	16	141	31	41.7
7	198	3	160	6	176	7	176	5	182	27	176	12	91.8	5	91.5	24	122	18	97.5	* December	
10	168	7	160	8	184	10	138	6	97.0	28	149	14	110	7	108	26	126	21	113	13	149
12	170	9	161	11	187	12	166	8	97.3	29	73.4	16	109	8	83.4	28	139	23	104	15	169
14	163	11	159	13	167	14	169	10	98.7	30	54.4	20	74.5	9	93.6	31	142	23	98.2	18	158
17	183	14	162	15	174	17	170	12	117	31	65.0	21	86.7	10	96.2	August		24	93.9	20	166
19	162	16	165	17	174	19	178	15	70.4	June		23	105	11	95.5	4	133	25	60.6	22	166
21	160	21	161	24	116	21	181	17	76.7	1	64.0	26	101	12	102	7	152	26	51.0	25	173
26	158	23	161	27	172	24	189	19	90.5	2	66.9	28	113	14	111	9	176	27	46.2	27	166
28	167	25	165	29	198	26	190	22	189	5	89.5	30	122	17	113	11	159	28	48.1	29	160
31	164	28	171	31	190	28	188	24	182	7	59.5									31	158

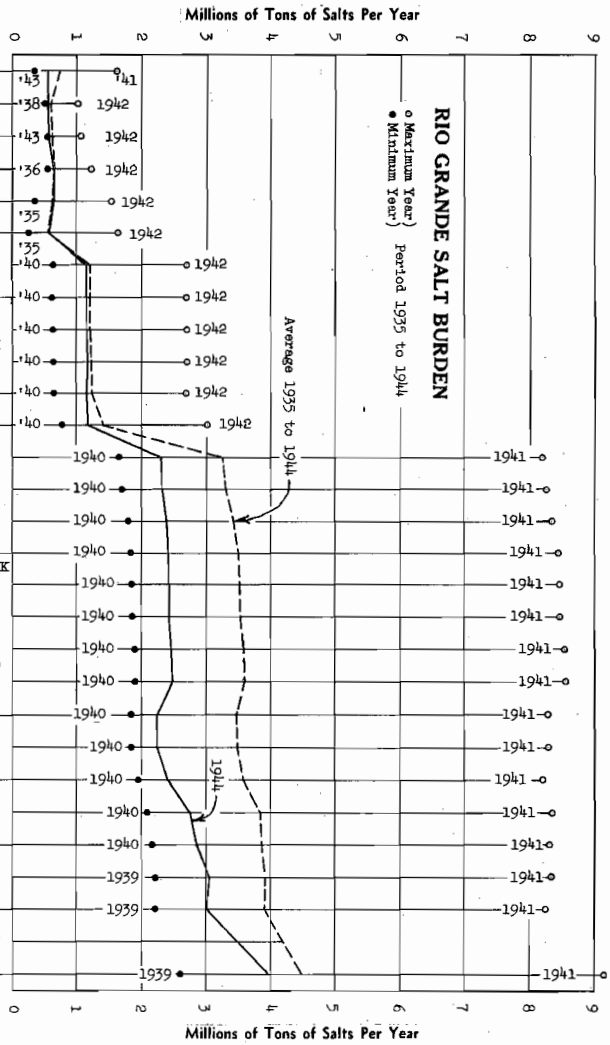
North Floodway Near Sebastian, Texas

January		February		March		April		May		June		July		September		October		November		December	
7	284	7	302	9	269	3	257	10	320	7	210	24	273	14	83.5	9	151	5	293	7	279
31	292	25	280	21	268	28	336	26	147	29	376	August		27	98.7	26	302	25	280	30	346
								30	94.1	July		4	292								
										7	250	29	266								

RIO GRANDE SALT BURDEN

The graphical and tabular results below are based upon the chemical analyses shown on the preceding pages as well as upon similar data in previous Water Bulletins. For some tributaries, the results are based upon curves showing the approximate relationship between salt concentration and amount of stream flow. For other stations and stream contributions, the results are arrived at by secondary deductions. At stations carrying the sign * the results are based upon the analysis of water samples.

Concentration Tons/Acre Foot 1944	Average 1935 to 1944	
.54 *	.64	SAN MARCIAL
		Unmeasured
.63 *	.69	CABALLO DAM
		Unmeasured
.71 *	.75	LEASBURG DAM
		Unmeasured
1.07 *	1.05	EL PASO
		Unmeasured
2.41 *	2.00	FORT QUITMAN
		Unmeasured
2.41 *	1.87	UPPER PRESIDIO
.71 *	.56	RIO CONCHOS
		Unmeasured
1.10	.82	LOWER PRESIDIO
.30	.34	ALAMITO CREEK
.76	.55	TERLINGUA CREEK
		Unmeasured
1.06	.70	JOHNSON RANCH
		Unmeasured
.89 *	.73	LANGTRY
5.22 *	4.25	PECOS RIVER
.26	.58	GOODENOUGH SPG.
.26 *	.29	DEVILS RIVER
		Unmeasured
1.18	1.14	DEL RIO
.40	.55	SAN FELIPE CREEK
.40	.57	PINTO CREEK
.43	.38	RIO SAN DIEGO
.21	.24	RIO SAN RODRIGO
		Unmeasured
1.06 *	1.08	EAGLE PASS
.51	.56	RIO ESCONDIDO
		Unmeasured
.94	1.01	LAREDO
.57 *	.96	RIO SALADO
		Unmeasured
.83	.98	ZAPATA
.57	.51	RIO ALAMO
		Unmeasured
.81 *	.95	ROMA
		RIO SAN JUAN
		Unmeasured
.71 *	.88	RIO GRANDE CITY



SANITARY ASPECTS OF WATER QUALITY

The sanitary water sampling and assay program along the Rio Grande is a joint undertaking of the Texas State Health Department, the Federal Department of Public Health of Mexico, and the American and Mexican Sections of this Commission. Some cooperation was rendered by the Pan-American Sanitary Bureau and the United States Public Health Service. Analyses of samples were made in the El Paso City-County Health Laboratory, the El Paso Water Plant Laboratory, the laboratory of the Central Power and Light Company water plant at Laredo, the Cameron County Health Unit Laboratory, and a mobile laboratory of the State. All analyses were made under the "Rules of Laboratory Procedure" set out on page 75 of Water Bulletin No. 13. The "Most Probable Numbers" (M. P. N.) of coliform organisms per 100 c. c. of sample water were obtained from the analyses by means of the M. P. N. table shown on pages 75 and 76 of Water Bulletin No. 13. Some analyses were made for Biological Oxygen Demand (B.O.D.) and for Dissolved Oxygen (D.O.). The results of all of these analyses for 1944 are tabulated below for each of the sampling points.

Analysis of the records published in these Water Bulletins since 1932 for Nuevo Laredo, since October 1942 for Laredo, and since 1937 for El Paso show that the monthly average coliform density in Rio Grande water at these points correlates quite well with surface washings of the tributary watershed as indicated by rainfall or surface inflow to the river.

RIO GRANDE AT EL PASO

Date 1944	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.
Mar. 21	101		160
28	112		360
Apr. 4			230
11	81.3		2,300
18	83.4		930
25	84.7		210
May 2	87.3		360
9			620
16	74.2		620
23	75.2		620
30	74.9		620
June 6	74.7		620
13	68.0		1,600
20	72.7		2,300
27	74.0		22,000
July 6	69.8		620
25			110
Aug. 1			1,100
8			1,600
15			1,100
22			70,000
29			2,100
Totals	1,133.2		110,180
Average	80.9		5,008

FRANKLIN CANAL AT WATER PLANT

Date 1944	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.
Jan. 5	84.2		2,300
13	90.5		2,300
19	94.3		1,600
Feb. 9	88.7		2,100
17	98.8		540
23	106		2,300
Mar. 1	109		2,300
9	86.1		130
15	110		2,300
22	114		60
29	120		160
Apr. 12	81.9		1,100
19	86.5		540
26	89.4		360
Aug. 22			2,300
23			1,200
25			6,200
26			9,400
28			1,100
29			3,600
30			9,400
31			1,100
Sept. 1			3,400
2			2,300
4			2,300
6		1.0	3,600
7			3,600
8			3,600
9			6,200
12			6,200
13			930
14		2.8	2,300
15			6,200
16			3,600
18		2.4	3,600
19			3,400
20			6,200
21			3,600
22		2.7	3,600
23			8,100
25			3,600
26		4.1	8,000
27			11,000
28			9,300
29			3,600
Oct. 4		1.2	
10		1.4	11,000
17		1.4	270
24		1.9	5,500
31		2.1	3,600
Nov. 2		2.1	2,300
3			2,300
7	95.6	2.3	6,200
9			2,300
11			3,600
14	83.7	1.7	6,200
16			6,200
18			2,300
21	85.3	1.5	2,300
23			930
25			2,300
28			620
Dec. 2			3,600
5			3,600
7			2,300
9			1,600
12	81.7		3,600
14			6,200
16			1,600
19	82.6	2.5	11,600
21			360
23			350
26	74.2	0.9	930
28			2,300
30			3,600
Totals	1,862.5	31.9	259,580
Average	93.1	2.0	3,508

RIO GRANDE AT YSLETA-ZARAGOZA BRIDGE

Date 1944	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.
Jan. 5	74.1		16,000
12	75.9		110,000
19	79.4		54,000
Feb. 9	73.4		62,000
16	70.0		360,000
23	78.0		620,000
Mar. 1	86.4		230,000
8	69.5		620,000
15	91.4		160,000
22	88.7		360,000
29	112		2,400,000
Apr. 4			360,000
12	85.1		1,100,000
19	75.5		360,000
26	77.5		940,000
May 2	71.3		160,000
9			160,000
16	62.3		230,000
23	63.4		550,000
30	64.4		230,000
June 6	69.2		620,000
13	62.2		940,000
20	58.5		360,000
27	60.8		550,000
July 6	53.9		210,000
25			360,000
Aug. 1			360,000
8			110,000
15			620,000
22			360,000
29			550,000
Sept. 5			550,000
9		5.8	
12			360,000
19		6.9	
19			620,000
26			62,000
26		5.3	
Oct. 3			360,000
3		6.4	
10			2,200,000
10		6.1	
17		4.8	
17			62,000
24		5.8	
24			1,100,000
31		7.8	
31			160,000
Nov. 7	56.6	5.0	162,000
7			1,600,000
11		9.4	
14			14,000,000
21		7.8	940,000
21			1,100,000
28			620,000
28			620,000
Dec. 5			230,000
5			93,000
12	62.5		1,100,000
12			14,000,000
19	56.3	10.8	7,000,000
19			360,000
26	57.7	5.6	1,100,000
26			3,800,000
Totals	1,936.0	87.5	66,321,000
Average	71.7	6.7	1,205,836

RIO GRANDE AT FORT QUITMAN

Date 1944	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.
Jan. 5	84.0		2,100
12	80.4		1,100
19	86.8		2,300
Feb. 9	102		260
16	108		0
23	111		9,400
Mar. 1	112		8,100
8	88.4		6,200
15	134		620
22	126		93
29	133		2,800
Apr. 5			110
12	92.9		24,000
19	98.4		1,100
26	105		2,300
May 3	111		160
10			360
17	98.8		3,600
24	87.6		1,100
31	88.9		2,300
June 8	85.9		3,600
14	78.3		5,300
21	82.5		360
28	80.3		3,600
July 5	86.5		1,100
25			240,000
Aug. 2			1,600
9			38,000
16			70,000
23			140,000
30			24,000
Sept. 6			23,000
13			110,000
20			23,000
27			1,400,000
Oct. 4			220,000
11			16,000
18			6,200
25			6,200
Nov. 1			9,300
8			6,200
15			360
22			6,200
29			1,600
Dec. 6			2,300
12			3,600
20			1,600
27			9,400
Totals	2,261.7		2,440,723
Average	98.3		50,848

RIO GRANDE AT UPPER PRESIDIO

Date 1944	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.
May 18	91.8		80
20	86.1		230
24	91.8		210
June 6	95.5		93
7	101		930
11	101		80
15	95.1		1,600
16	96.3		2,300
18	101		1,100
20	99.4		230
22	100		60
24	107		2,300
26	105		1,100
28	99.4		210
29	98.3		230
July 1	100		6,200
3	98.1		6,200
4	100		160
6	102		360
Totals	1,868.8		23,673
Average	98.4		1,246

RIO CONCHOS

Date 1944	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.
May 18	96.3		60
20	104		23
24	94.1		80
June 6	99.4		26
7	102		0
11	96.2		70,000
15	99.9		93
16	100		60
18	103		110
20	101		93
22	101		93
24	115		93
26	111		160
28	104		160
29	100		160
July 1	106		93
3	103		620
4	106		93
6	105		110
Totals	1,942.9		72,127
Average	102		3,796

LOWER PRESIDIO

Date 1944	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.
May 18	95.4		160
20	96.6		110
24	93.7		110
June 6	95.4		210
7	103		60
11	99.4		3,600
15	98.6		1,600
16	97.4		3,600
18	100		620
20	99.1		160
22	102		110
24	111		160
26	108		620
28	102		93
29	98.1		210
July 1	102		2,100
3	100		6,200
4	102		540
6	100		620
Totals	1,903.7		20,883
Average	100		1,099

LANGTRY

Date 1944	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.
Sept. 17			3,600

GOODENOUGH SPRING

Date 1944	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.
Sept. 18			2.6

DEVILS RIVER

Date 1944	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.
Sept. 17			60

UEL RIO

Date 1944	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.
Sept. 7			9,400
8			6,200
9			620
10			540
11			1,100
12			1,100
13			1,100
14			360
15			160
16			620
17			340
18			6,200
19			930
20			230
21			360
22			110
23			210
24			270
25			230
Oct. 2			210
3			270
4			360
5			230
9			330
10			620
11			230
27			230
28			160
30			110
31			93
Nov. 1			110
2			110
3			62
Totals			33,205
Average			1,006

SAN FELIPE SPRINGS

Date 1944	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.
Sept. 12			0
18			0
Totals			0
Average			0

EAGLE PASS

Date 1944	D. O. Percent Saturation	B. O. D. Parts Per Million	Coliform Organisms per 100 c. c.
Sept. 7			2,500
8			6,200
9			1,100
10			1,100
11			620
12			160
13			620
14			620
15			620
16			360
17			270
18			210
18			930
19			360
20			210
21			270
22			360
23			270
24			270
25			360
Oct. 2			620
3			360
4			230
5			210
6			360
7			620
8			620
9			130
10			210
11			360
27			360
28			360
29			210
30			110
31			93
Nov. 1			210
2			160
3			62
Totals			22,495
Average			592

SANITARY ASPECTS OF WATER QUALITY

Date 1944	Coliform Organisms per 100 c. c.
LAREDO WATER PLANT	
Jan. 4	36
7	160
11	230
14	230
18	36
21	36
25	36
28	16
Feb. 1	62
4	360
8	36
11	11
15	23
18	36
22	36
25	23
29	110
Mar. 3	160
7	93
10	34
14	110
17	360
21	210
24	36
28	130
31	28
Apr. 4	62
7	33
11	36
14	62
18	110
21	36
25	230
28	110
May 2	3,600
5	24,000
9	620
12	110
16	36
19	160
23	2,300
26	2,300
30	2,300
June 2	360
6	2,300
9	3,600
13	930
16	360
20	230
23	620
27	230
30	360
July 4	36

Date 1944	Coliform Organisms per 100 c. c.
LAREDO WATER PLANT	
July 7	1,100
11	230
14	230
18	160
21	1,600
25	62
28	360
Aug. 1	2,300
4	2,300
8	2,300
11	360
15	620
18	110
22	1,100
25	790
29	38,000
Sept. 1	24,000
5	2,300
8	16,000
12	1,600
15	3,600
22	2,300
26	2,300
29	2,400
Oct. 3	1,100
6	11,000
10	1,100
13	3,800
17	110
20	360
24	210
27	62
31	340
Nov. 2	160
7	93
10	110
14	79
17	170
21	62
24	62
28	230
Dec. 1	23
5	14,000
8	110
12	36
15	62
19	16
22	6
26	16
29	23
Totals	187,218
Average	1,818

Date 1944	Coliform Organisms per 100 c. c.
9.1 MILES BELOW LAREDO R.R. BRIDGE	
Jan. 4	5,000
11	2,300
18	620
25	6,200
Feb. 1	38,000
8	6,200
15	9,400
29	9,400
Mar. 7	24,000
13	3,600
21	22,000
28	7,000
Apr. 4	3,600
11	490
18	38,000
25	3,600
May 2	38,000
9	11,000
16	16,000
23	1,600
30	24,000
June 13	140,000
20	140,000
27	140,000
July 11	16,000
18	14,000
25	6,200
Aug. 8	16,000
Sept. 5	940
12	6,200
19	11,000
26	3,600
Oct. 3	2,300
24	110
31	62
Nov. 7	2,400
14	1,100
28	14,000
Dec. 12	14,000
19	2,300
Totals	800,222
Average	20,006

Date 1944	Coliform Organisms per 100 c. c.
RIO GRANDE ABOVE ZAPATA BRIDGE	
Nov. 8	110
12	110
17	620
Totals	840
Average	280

Date 1944	Coliform Organisms per 100 c. c.
RIO SALADO NEAR MOUTH	
Nov. 8	0
15	36
17	23
Totals	59
Average	20

Date 1944	Coliform Organisms per 100 c. c.
RIO ALAMO NEAR MOUTH	
Nov. 8	620
15	230
Dec. 4	110
Totals	960
Average	320

Date 1944	Coliform Organisms per 100 c. c.
ROMA	
Nov. 8	26
9	26
10	110
11	23
15	62
19	230
20	110
21	1,100
22	620
28	230
Dec. 4	620
5	360
12	62
19	160
Totals	3,739
Average	267

Date 1944	Coliform Organisms per 100 c. c.
RIO GRANDE CITY	
Nov. 8	160
11	230
15	110
19	360
20	620
21	62
22	1,100
28	360
29	620
30	230

Date 1944	Coliform Organisms per 100 c. c.
RIO GRANDE CITY	
Dec. 1	230
2	110
4	360
5	110
5	360
7	620
8	230
9	24,000
10	36
11	620
12	360
12	230
14	110
15	62
16	230
17	110
18	62
19	160
19	62
21	230
22	110
Totals	32,254
Average	1,040

Date 1944	Coliform Organisms per 100 c. c.
MERCEDES PUMP	
Nov. 28	110
29	360
30	160
Dec. 1	110
2	360
3	360
4	36
5	62
5	110
7	62
8	110
9	230
11	36
12	36
13	36
15	110
18	23,000
19	110
21	230
22	230
22	230
Totals	26,088
Average	1,242

Date 1944	Coliform Organisms per 100 c. c.
LOWER BROWNSVILLE	
Nov. 29	16,000
30	2,600
Dec. 1	1,100
2	11,000
3	2,300
4	6,200
5	62,000
5	3,600
7	36,000
8	2,300
9	600
11	23,000
12	36,000
13	6,200
15	9,300
18	110
19	36,000
22	36,000
Totals	290,310
Average	16,128

Date 1944	Coliform Organisms per 100 c. c.
NORTH FLOODWAY ONE MILE EAST OF STATE HIGHWAY SOUTH OF SEBASTIAN	
Dec. 7	70,000
12	6,200
19	62,000
Totals	138,200
Average	46,067

Date 1944	Coliform Organisms per 100 c. c.
ARROYO COLORADO AT WESLACO BRIDGE	
Dec. 21	360,000
21	24,000,000
Totals	24,360,000
Average	12,180,000

Date 1944	Coliform Organisms per 100 c. c.
ARROYO COLORADO AT RIO HONDO BRIDGE	
Dec. 6	70,000
11	240,000
19	700,000
Totals	1,010,000
Average	336,667

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED IN INCHES— 1944

The rainfall records shown below have not been published elsewhere. The source of each record, and type of rain gage used, are shown below. Latitude, longitude, and elevation of each rainfall station will be found in one of the following indexes.

In Water Bulletin No. 10 will be found an index, by years, to rainfall stations and their records. This index covers all available records for stations in the Rio Grande basin on the United States side below Las Cruces, New Mexico, and a fringe adjacent thereto, for the years 1850 to 1940. It also covdre a similar area on the Mexican side for the years 1894 to 1940.

On later pages of this bulletin will be found an index, by months, to all stations with available records, longer than eleven months, for the years 1938 to 1944, inclusive. It covers the same area on the United States side as the former index.

American Dam Near El Paso

Recording Gage — Record by U.S. Section, I.B.C.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																						.01		.03	.06	.38						.48	.44
February						.01	.72									.06								.89			.36					1.44	.38
March																		.05	.04													.09	.39
April																																0	.32
May																											.31					.31	.22
June						.54	T																	.07	.34	.05			.04			1.04	1.16
July								.07	.06				.14							.24	.20	.56	1.16									2.43	1.38
August	.01				.12	.02		1.07										.21														1.43	1.34
September																.39										.11						.50	1.21
October															T									T	.02	.32	.65	.24				1.23	.65
November						.04										.15	.04							.11								.37	.35
December																									T		.32	.05				.37	.45
																															Total 1944	9.69	
																															Period Average 1938-1944		8.27

Fort Bliss, Texas

Standard 8 inch Rain Gage — Record by U.S. Army

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January							.02																T		.05	.31						.38	.56
February				T	T	T	.64	T					T			.10								.23	T		.38					1.35	.40
March																T		.07	.12													.19	.31
April									T												T											T	.36
May	T									.01		T			T									T		1.61	.21					1.83	.61
June						.26	T													T	T	.05		.30	.20	.05			T	.40		1.26	.62
July	.04			.06		T	.01	T	T				T	.01		.05	.11	.17		.02	.14	.36	.75									1.72	1.32
August	.03				.10		T	.05	.01	T				T			T	.25	.01				T	.19	T							.64	1.76
September			T	.07		T									.18								T	T	.14	.02	T	T				.38	1.35
October															.01			T	T						T	.29	.91	.30				1.51	.85
November					T	T										.26	.05	.04	T				T	.14								.53	.49
December																								T	T	T	.45	.02	T			.50	.46
																															Total 1944	10.29	
																															‡ Period Normal 1924-1944		8.91

‡ Some months missing.

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES—1944

Yaleta, Texas

Standard 8 inch rain gage — Record by Bureau of Reclamation

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1940					.13																.55											.68	
Feb. "		.41								.06																						.41	
Mar. "																																.06	
Apr. "																							T									T	
May "								.65												.15	.18											.98	
June "											T	T									.05		.59			.02			.02			.66	
July "																	.39			.02							.05			.04		.50	
Aug. "					.08						.12												.06									.26	
Sept. "																		T	.02	.10									.05			.15	
Oct. "		.03	.04								.11	.36																				.54	
Nov. "						.02	.09	T										.21					.31	.03								.66	
Dec. "																.03															.25	.28	
Total 1940																																5.18	
Jan. 1941	.14	.16									.11																	.02	T			.43	
Feb. "	.05				.25		.12															.02										.45	
Mar. "											T	T		T		1.59	T				.04			T								1.63	
Apr. "		.07																T				T		.05	.41	.21						.74	
May "	.03																.32					.32	.47		.51							1.65	
June "			T	T													T	T							.26		T		T			.26	
July "						.07			.05		.11							T			.21	T					.70				.17	1.31	
Aug. "			.41		T	.06	T	T	.07			.55	T		T							.68	T					.03	.60	T		2.40	
Sept. "							T	.09			.06	T								.16	1.80	.09					.65	1.00	.01			3.68	
Oct. "			.12								T													.34	T			T	.34	.61		1.40	
Nov. "																			T					T			.43					.43	
Dec. "									T	.18	.38																					.56	
Total 1941																																15.14	
Jan. 1942		.07											T																			.07	
Feb. "										T																	.39	.05				.44	
Mar. "																																0	
Apr. "					.06	.10	.11	.06													.20	.09	T									.62	
May "																																0	
June "				T																			.08									.08	
July "	.10		.14																	.43				.29	.01							.97	
Aug. "		.26							.01		.79		T	.80	.15						.11	.87	.91	.22			.04		T	.12	.01	4.29	
Sept. "					T					.04	.27	T						.25	.04	T												.58	
Oct. "	.36	.48								.39	T	.12					.06												T			1.41	
Nov. "																																0	
Dec. "			T		.99														T	.24												1.23	
Total 1942																																9.69	

Island Station

Recording Gage — Record by U.S. Section, I.B.C.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Period Average 1939-1944
January																									.06	.12						.20	.34
February				.03			.28	.68																.02			.23					1.24	.42
March																			.04													.04	.31
April																																0	.22
May																										.03	.14					.17	.39
June						.06	.05																	.02	.02	.01			.04			.20	.54
July															.08						.22	.36	.33									.99	.74
August						1.19		.22	.05					.12				.77						.04								2.37	1.40
September			.03	.08											.07										.14	.03		.85				1.20	1.34
October																											.62	.21				.83	.80
November																.18	.20	.05						.06	.03							.52	.46
December																											.36	.03				.39	.53
Total 1944																																8.15	
Period Average 1939-1944																																	7.49

Fabens - Guadalupe Bridge, Texas

Standard 8 inch Rain Gage — Record by U.S.Section, I.B.C.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Period Average 1940-1944
January							.10																	T		.16	.12					.37	.36
February						T		.78																.02				.22				1.02	.54
March																																0	.41
April									T																							T	.32
May	T																										.31	.18				.49	.61
June						.49	.02															.05		.01	.66				T			1.23	.82
July			T				.10	T													.07	.15	.26									.50	.46
August					.21			1.46		.07				.12				.72					.06									2.67	2.19
September			.28	.51										T	.04										.09		T	.07				.99	1.89
October																											.87	.10				.97	1.03
November						T	T								T	.21	.24	.08						.15								.68	.43
December																								T		T	.57	T				.57	.70
Total 1944																																9.59	
# Period Average 1940-1944																																	9.78

Fabens, Texas

Recording Gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Period Average 1940-1944
January																										.30	.05					.35	.38
February				.13			.21	.59																			.25					1.18	.57
March																																0	.45
April																																0	.38
May																											.12					.12	.34
June						.05	.06			.04														.20	.41							.76	1.02
July														.13						.18	.35	.10	.64									1.40	2.03
August				.15	.53			.47	.32			.22		.80				.08	.51													3.08	2.19
September					.20																						T					.20	1.83
October																											.60	.20				.80	1.04
November																	.35	.20	.05													.60	.47
December																											.03	.01				.04	.52
Total 1944																																8.53	
# Period Average 1940-1944																																	10.92

County Line Station

Recording Gage — Record by U.S. Section, I.B.C.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Period Average 1938-1944
January																							.02		.06	.22						.30	.48
February				.04			.13	.15																	.01		.33					.66	.32
March																			.02													.02	.40
April																																0	.41
May																										.20	.78					.98	.33
June						.05	.23			.84												1.04		.26	.18	.02						2.62	.85
July								.03													.18	.04	.84									1.09	1.16
August				.02	.34			.36	.42					.10				.23	.21				.02	.02								1.72	1.93
September				.90	.22											.02									.11	.02		.10				1.37	1.30
October																											.47	.25				.72	.74
November																	.08	.08							.09							.25	.43
December																								.08		.15	.41	.28				.92	.60
Total 1944																																10.65	
Period Average 1938-1944																																	8.95

Fort Hancock Bridge, Texas

Standard 8 inch rain gage — Record by U.S. Section, I.B.C.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Period Average 1940-1944
January												T													.10	.25						.35	.38
February				.15			.55																	.02		.30	.05					1.07	.36
March																		.05														.05	.30
April																																0	.31
May																										.58						.58	.81
June						.04	T			.14													.68		.12	.44						1.42	1.82
July													.05								.99	.26	.61									1.91	1.21
August				.13	.10			.44				.27					.08		.10					.14								1.26	1.66
September			.28	1.35	.08											.20									.28	.10						2.29	1.64
October											T																	.36	.28			.64	.99
November																.05	.26	.03					.08	.11								.51	.41
December																								.04		.32	.61					.97	.84
Total 1944																																11.05	
# Period Average 1940-1944																																	11.09

Some months missing.

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES—1944

Madden Arroyo Highway (U. S. 80) Bridge, Texas

Recording Gage — Record by U.S. Section, I.B.C.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.02											.03													.02	.14						.21	.20
February				.10			.20	.05								.01											.31		.02			.69	.27
March																																0	.03
April																																0	.89
May																										.02	.34					.56	.38
June						.09	.10			.39												.95		.02	.19							1.67	1.16
July								.03					.08			.05				.05	.35	.11	.70									1.37	.96
August					.05	.08		.60	.05												.49			.10								1.57	1.99
September				.45	.10											.05	.03								.26	.15			.06			1.10	1.80
October																											.48	.26				.74	1.12
November																.02	.20							.25	.10							.57	.37
December																										.34	.53	.11				.98	.93
Total 1944																																9.26	
# Period Average 1941-1944																																	10.10

West Small, Texas

Standard 8 inch rain gage — Record by W. L. Newell

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.19																									.25						.44	.38
February				.26				.50																				.40				1.16	.62
March										.10																						.10	.29
April																																0	.80
May																											.59					.59	.51
June						.05	.12			.73												.53		.18	.31							1.92	1.37
July			.09									.14									.65		1.11									1.99	1.91
August								.66									.30							.11								1.07	2.68
September				.86	1.04												.31								.28	.17						2.06	2.10
October																																	1.27
November																.10	.16	.19						.12	.07							.64	.50
December																										.30	.57	.20				1.07	.91
Total 1944																																	
# Period Average 1940-1944																																	12.74

Guayuco Arroyo Highway (U. S. 80) Bridge, Texas

Recording Gage — Record by U.S. Section, I.B.C.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.11											.02													.01	.12						.26	.23
February				.25	.01		.14	.20								.01								.06			.19		.01			.87	.33
March																																0	.22
April																																0	.39
May																											.04	.62				.66	.49
June						.17	.03			.86												.45		.19	.28							1.98	.86
July	.10		.03										.25	.02				.08			.40	.19	.82								.09	1.98	1.72
August						.18		.46	.09												.05			.18		.20						1.16	1.52
September			.04	1.51	.14												.04								.20	.25		.05				2.23	2.16
October																											.37	.45				.82	1.12
November																.10	.28	.02						.04	.10							.54	.34
December																										.36	.58	.10				1.04	.88
Total 1944																																11.54	
# Period Average 1940-1944																																	10.06

Fort Quitman Station

Recording Gage — Record by U. S. Section, I. B. C.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.23											.03														.16						.42	.60
February				.06	.04		.66	.20																.03			.16					1.15	.35
March																			.02													.02	.26
April																																0	.40
May																											.88					*.88	.53
June									.25	.73	.20											.16		.10	.44							*1.88	.50
July			.11			.05							.51								1.54	.67										*2.68	1.56
August				.12	.01		.18	.20	.04		.04					.13		.08			.22		.02	.09		.04						1.17	1.56
September			.14	.77		.04											.08								.28	.30						1.61	1.49
October																											.12	.24				.36	.68
November																.25	.24						.02	.02	.09							.62	.41
December																								.02	T	.16	.78	.03				.99	.58
Total 1944																																11.78	
# Period Average 1937-1944																																	9.35

* Partly estimated

Neely Ranch, Texas

Standard 8 inch rain gage — Record by Mrs. Tom Neely

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																											.20					0	.12
February								.30																								.50	.23
March																																0	.01
April																																0	.11
May																											1.20					1.20	.61
June									.30	.25	.10											.20			.42							1.27	1.15
July																					.80	1.50										2.30	2.38
August												.20											.09	.53								.82	2.12
September				.60	.17												.10									.60						1.47	2.19
October																																0	.99
November																.55	.20															.75	.23
December																											.85					.85	.78
Total 1944																																9.16	
# Period Average 1941-1944																																	10.92

Indian Hot Springs, Texas

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Aug. 1939				.04				.03			.04	.03		.80																		.94	
Sept. "													.13		.10											.05						.28	
Oct. "								.66																								.66	
Nov. "																								.14	.45					.30	.10	.99	
Dec. "																										.16						.16	
Jan. 1940							.09																									.09	
Feb. "																																0	
Mar. "																									.05							.05	
Apr. "																																0	
May "										.05							.33					.14	.20									.72	
June "										.55													.72		.32							1.59	
July "																	.22								.15				.18		.28	.83	
Aug. "	.10					.12		.10				.35						1.40							.24							2.31	
Sept. "	.23		.95																													1.18	
Oct. "									.10	.20	.40	.60	.30	.20																		1.80	
Nov. "								.10	.70																							.80	
Dec. "											.05	.10														.20						.35	
Total 1940																																9.72	
Jan. 1941		.50										.40																				.90	
Feb. "	.25							T	T	.35															.18							.78	
Mar. "																	.20															.20	
Apr. "																											.55	.65	.35			1.55	
May "															T										.95	.10						1.05	
June "														.35	.10											T			.20	.05	.90	1.40	
July "	.15							.07														.10	1.95			.05			.15		.25	2.72	
Aug. "				T	.60	.10					.07		.97				1.10			1.40		.95		.40		.45						5.34	
Sept. "	.07	.13		.18								.45										8.30	.38						.20			3.61	
Oct. "	.15									.06	.04													.50	1.55	1.05	.90		.10			4.85	
Nov. "																																0	
Dec. "																																0	
Total 1941																																21.80	

Some months missing.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Indian Hot Springs, Texas													
1942								1.27	.60	.60	0	.60	

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES—1944

Ryan Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.50													.08												.29						.71	.39
February	.11						.09	.20															.05	.08			.26					.79	.89
March																	.03		.01													.04	.03
April																																0	.28
May																											2.10					2.10	1.70
June							.12		.48	.88												.34	.18		.25	.08		.85				3.18	1.89
July							.35				.15										1.73	.67	1.30									4.20	3.11
August						.03	.07				.15				.10		.96						3.08	.50								4.89	3.38
September							.81																			1.40						2.21	2.77
October																																0	1.19
November																	.53															.53	.59
December																											1.24					1.24	.89
Total 1944																																19.89	
# Period Average 1941-1944																																	16.37

S. E. Bunton Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																										.35						.35	.15
February							.40																			.40						.80	.27
March																																0	.10
April																																0	.46
May																											.70					.70	1.50
June										.25															.45							.70	1.44
July																							2.40									2.40	2.28
August					.70			.32									.70							.55		.35						2.42	2.20
September			.55	.40	1.58												.16									.80						3.43	3.50
October																																0	1.14
November																	.96															.96	.62
December																											1.53					1.53	1.78
Total 1944																																15.29	
# Period Average 1941-1944																																	15.52

Bunton Bros. Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Oct. 1940									.25	1.40	.14		.07																			1.86	
Nov. "							.40	.70																								1.10	
Dec. "																										.14						.14	
Jan. 1941																																	
Feb. "						.22																										.22	
Mar. "																																	
Apr. "																																	
May "	.13	.08													.14	.55	.45	.38					.80	.39	.05							2.97	
June "	.23			.16																	.09	.06				.20		1.95				1.99	
July "	.24	.97					.07	.05	.24	.50																.56				.25	.13	3.01	
Aug. "					.26							1.33										.67						.22			.04	2.52	
Sept. "																																	
Oct. "	.90									.42	.80										.20	.05	.55	.90						.22		4.44	
Nov. "																																0	
Dec. "							.24		.26		.50																					1.00	

Oscar Medley Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																																0	.09
February																																0	0
March																																0	0
April																																0	0
May									T	T	.91								T	T												1.79	1.65
June		1.16						.27	.77	.55												2.85			.50	.25	.63					5.50	5.13
July			.25				.10					.17	.29										1.10									1.91	
August				.20			.17		.50								.55				.20			3.14								5.16	2.58
September			.31	.61	.83																					1.20		.20				3.15	2.56
October		.13																														.13	.99
November																																	
December																																	.59
# Period Average 1941-1944																																	

Jimmie Logan Ranch (Watts Ranch)

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.25																									.26						.51	.38
February																																0	.10
March																																0	.32
April																																0	.64
May																											1.00					1.00	1.76
June							.43			.62												.38	.65	.14		.85						3.07	2.42
July												.94										.35	.34									1.63	2.76
August													1.02				1.08						3.40									5.50	4.37
September				1.50																						1.25						2.75	2.97
October																																0	1.18
November																																0	.41
December																																0	.90
Total 1944																																14.46	
# Period Average 1941-1944																																	18.23

Smith Bros. Ranch

Recording gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
July 1940																																	
Aug. "																																	
Sept. "	.12													.55																		.67	
Oct. "							.03		.40	2.48	.20	.12																				3.23	
Nov. "				.05		.70	.55																									1.30	
Dec. "										.10															.10							.20	
Jan. 1941	.40	.05	.05							.25	.20																				.20	1.15	
Feb. "														.46																		1.11	
Mar. "																						.65											
Apr. "																																	
May "																																	
June "				1.25						.08						.02												1.11	.75			3.21	
July "						.10			.50						.38						.40		.31	.06	.05	1.47						4.54	
Aug. "			.21		.04				.33														.87		.87		1.27	1.04		.12	.68	3.89	
Sept. "		.30								.77	.40	.20					.10	.07				.90								.40		3.34	
Oct. "	.45									.46												.84			.21	1.03	.20			.13	1.00	4.65	
Nov. "															.58						.33											.58	
Dec. "										.35	.09																					.44	
Jan. 1942		.04																														.04	
Feb. "										.15																.03						.18	
Mar. "																																0	
Apr. "			.03	.04						.04					.03	.11						.07	.02									.34	
May "																						.37	.76			.14					3.48	4.75	
June "			.11	.23				.53					.12														.03					1.02	
July "																.36			.13	.16		.07				.03					.05	.88	
Aug. "	1.11	.14						.20			.17			.25		.05			.41	.05	.07				.13	.86	.10		.09		.10	3.03	
Sept. "		.10				.03					.41								.01	.15		.18	.02									.90	
Oct. "										.07	.80					.15	.62	.04	.23													2.91	
Nov. "			.32	.06																												.38	
Dec. "																																	

Some months missing.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
S. E. Bunton Ranch													
1943	.09	0	0	0	.85	2.50	.85	0	3.40	0	1.30	2.04	11.03

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES— 1944

Marfa, Texas

Standard 8 inch rain gage — Record by Army Air Force

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	1.02						T	T				.01	.01													.14						1.18	1.02
February	.13				.01	.04	.35	.11																.99			.44					1.87	.94
March																	T	.11														.11	.05
April																																0	.02
May																				T							.72	.78				1.49	1.44
June					.52		.01		.18	1.02	.27		.05									T	1.35					.01	T			3.21	2.65
July							.14	T	.12	.04		.01						T			.26	.34	.29	.10						T		1.20	2.89
August						.85	.33	.07	T	T			T	.02		T	.76	.51					.54	.13	T	.61			T			3.82	2.04
September			.93	.74	2.86	.09	.06	T																T	.14	.64	.68		.16			6.30	4.55
October		T	.07								T																	T				.07	.38
November			.01												T	.15	.08	.42					T	T								.66	.90
December					T																				.01	.62	.72	.08		.30		1.73	1.05
																														Total 1944		21.64	
																														# Period Average 1942-1944			17.97

Townsend Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.26																															.26	.54
February	.17			.10			.36	.20																	.20							1.03	.34
March																																0	.28
April																																0	.81
May																											1.07					1.07	1.53
June							.16		.37	.45																						.98	.95
July						.30																.20	1.35	.96							.78	3.59	3.62
August						1.11	.15		.15		.05			.12		.15	.58							2.45	.30	.25						5.71	3.62
September			1.74	.92	.66	.05																			.50	1.23		.24				5.14	3.70
October																																0	.96
November																	.44															.44	.54
December																											1.12			.20		1.32	1.23
																														Total 1944		19.54	
																														# Period Average 1941-1944			18.08

W. M. Allison Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	1.16																															1.16	
February							.20																									.20	
March																		.12														.12	
April																																0	
May																											1.10					1.10	
June																																	
July																					.56											.56	
August					.20					1.00				.20			2.50						5.00									8.90	
September						1.86																				1.66						3.52	3.38
October																																0	0
November																																0	.98
December																																	
																														# Period Average 1943-1944			

D. O. Atkinson Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																																0	
February																																0	
March																																0	
April																																0	
May																											1.10					1.10	
June					.18		.19		.37	2.11											1.60				.28							4.73	
July																					1.44		.30	.34	.04							2.12	2.94
August				.16		.26											2.30						4.50									7.22	4.00
September			1.00																													1.00	.50
October																																0	0
November																																0	.55
December																																	
																														# Period Average 1943-1944			

Bloys Camp

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.82																															.82	.36
February			.38		.38			.90																			.55					2.21	.84
March																																0	0
April																																0	.11
May																											.90	.10				1.00	1.71
June								.50	.80	.47												2.62			.24							4.43	3.55
July													.21								.50	.70	.50									1.91	2.13
August						.62	.45										1.21							3.30								5.58	5.28
September			.40	.71	1.48	.12																		.25	1.21				.20			4.35	3.29
October																																	1.63
November																.40	.28	.17														.85	.53
December																										.48	.50	.75				1.67	.94
																														# Period Average 1941-1944			26.31

H. B. Holmes Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																																0	0
February																																0	0
March																																0	0
April																																0	.94
May																											2.15					2.15	1.98
June										.75																	.75					1.50	
July																																	3.78
August						2.40	.21				.34			.22			.98							2.55								6.70	3.52
September	.50		.70		4.00																											5.20	3.90
October																																	1.08
November																																	.41
December																																	.63
																														# Period Average 1941-1944			18.44

Kerr Mitchell Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																																0	.05
February																																	0
March																																0	.17
April																																0	.96
May																											1.71					1.71	1.03
June								.20	.15	.75												1.94										3.04	1.70
July																						.40	.86									1.26	1.93
August						1.17	.47		.31					.31	.37		.88	.20					1.14									4.35	3.19
September			1.15	2.56	.58																					1.30					.31	6.20	3.45
October																																0	1.08
November																																0	.33
December																											.60					.60	.96
																														Total 1944			
																														# Period Average 1941-1944			18.85

W. B. Mitchell's Sons Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																																0	0
February																																0	0
March																																0	0
April																																0	0
May																											1.00					1.00	.78
June							.15			.97																						1.12	
July									.40																							.40	1.36
August					1.10					.95							1.25	.35														3.65	3.45
September			1.10	1.75	1.25																						1.40	.15				5.65	3.38
October																																0	2.88
November																																0	0
December																											1.20		.45			1.65	1.22
																														Total 1944		13.47	

Some months missing.

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES—1944

Clay Mitchell Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1940					.12																.53											.65	
Feb. "		.13			.03										.15																	.31	
Mar. "											.07													.46								.53	
Apr. "																																0	
May "						.23	.05								1.17						.23	.35						.14	.24			2.39	
June "				.50	.10		.24		.02		.22									.14		.57							.16			2.15	
July "			.30													1.00		.20										.62	.04		.10	2.26	
Aug. "		1.59				.68	.06	.40				1.90	.50												.29	.12						5.34	
Sept. "	1.00										3.51	.27																				1.00	
Oct. "								.25	.20	.20																						3.78	
Nov. "										.12															.15							.65	
Dec. "																																.27	
																															Total 1940	19.33	
Jan. 1941		.50										.50																			.17	.97	
Feb. "														.15								.09			.45							0	
Mar. "																									1.25	1.60	.10	.13		.05		.69	
Apr. "		.38										.28				.02		.10				.20		.44	.06		.16	1.09				3.15	
May "					.20																							.12	.45	.12		2.73	
June "																																.89	
July "			.10										.20					.50		.50		.34	.08			.90	.78				.08	3.48	
Aug. "			.45							.15							.16				.15		.70					.30			.97	2.85	
Sept. "		.45	.45				.17				1.20						.22				.23		.14									2.86	
Oct. "	1.20								.67	.17		.40									.50	1.34		.80	.65	.08				.13		6.14	
Nov. "														.05																		.65	
Dec. "							.15			.20	.86																					1.21	
																															Total 1941	25.03	
Jan. 1942																																0	
Feb. "							T			T														.01								.01	
Mar. "																	.06															0	
Apr. "																																.06	
May "																							.50									.50	
June "																						.93							.22			1.15	
July "																		.44			.16											.60	
Aug. "								.45						.10		.60			.30	.21			.60		.70				.23		.12	3.31	
Sept. "																				.30		.65	.55							.22		1.72	
Oct. "											.30																					.30	
Nov. "			.32																													.32	
Dec. "																				.40												.40	
																															Total 1942	8.37	
Jan. 1943								.48																								.48	
Feb. "																																0	
Mar. "																																0	
Apr. "																																0	
May "				.12																	.59						.15	.90				1.76	
June "															.20				.60										.23			1.03	
July "																																	
Aug. "													.34																			.34	
Sept. "																																	
Oct. "																																	
Nov. "																																	
Dec. "				.75																				.79								1.54	
Jan. 1944	1.08																															1.08	.64
Feb. "																																0	.06
Mar. "																																0	.24
Apr. "																																0	.64
May "												.61															2.20					2.81	2.04
June "																																0	1.04
July "																																0	1.58
Aug. "																		.93					1.83									2.76	2.93
Sept. "		1.02																														1.02	1.65
Oct. "																																	3.41
Nov. "																																	.34
Dec. "																																	.86
																															Total 1944		
																															# Period Average 1940-1944		15.43

Walker Place

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	2.00																															2.00	
February								.42																			.19					.61	.30
March																																0	0
April																																0	.07
May												1.02														.86	1.43					2.23	1.77
June								.20	.22	.80												1.26	.65		.13							3.26	2.00
July																					1.10											1.10	.95
August						.93								.51					1.40				2.55									5.39	3.03
September		.82																														.82	1.47
October																																0	.88
November																																0	.88
December																																	.94
																															# Period Average 1942-1944		

H. T. Fletcher Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	1.10											.05													.16							1.51	1.11
February					.05		.51																	.09			.16					.61	.15
March																					T											T	.06
April																																0	.80
May									T	T	.91								T	T						.23	.63					1.79	1.25
June							.18		.16	.78			T	T								.63	.07	.69		.16						2.67	1.76
July				T			.57	.04				.17						T			.12	.14	.47							T		1.81	2.65
August						T	.18	T	.36	.04			.03	.11		.07	.89	1.12			.05			4.68		.39						7.00	4.54
September			.70	.42	.09	T	T																	.05	.01							1.25	1.98
October			.03						T																	T		T				.03	1.37
November			T									T			.14	.21	.19	.07														.61	.52
December		.02																								.42	.71	.03		.18		1.36	.55
																															Total 1944	19.34	
																															Period Average 1939-1944		16.92

Turney Fletcher Ranch

Recording gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	1.10											.07																				1.32	.80
February					.05		.15																	.04			.20					.44	.17
March																	.08					T										.08	.28
April																																0	.05
May										T		.12							T	T						.30	.61					1.03	1.43
June							.15		.35	1.00			.06	.05									.75			.20						2.56	1.82
July			T				1.00					1.52									.30	.35		.20						T	.80	4.17	2.65
August						.25	.50			.05			.01	.30				2.32			.14			3.62	.05		.10					7.14	3.83
September			.80	.25	1.05	.30																			T	.20	1.17		.16			3.93	2.69
October			T																													T	1.61
November			T									T				.12	.08	.24														.44	.48
December			.02																							.55	.64	.05		.16		1.42	.96
																															Total 1944	22.53	
																															# Period Average 1940-1944		16.77

McFarland Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	1.03																															1.03	.52
February																												.76				.76	.25
March																																0	.30
April																																0	.79
May																											2.35					2.35	1.69
June																																	1.08
July												.86											.27	.60								1.73	3.43
August					.25		.50				.75			.17				2.50					4.00	.50								8.67	4.48
September				2.00																						1.41						3.41	3.55
October		.13																														.13	.87
November																			.42													.42	.40
December																													1.83			1.83	1.50
																															Total 1944		
																															# Period Average 1941-1944		18.86

Some months missing.

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES—1944

O. M. Bunton Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	1.05											.04													.05							1.14	.61
February	.10					.11																			.03		.15					.39	.17
March																																0	.27
April																																0	.67
May																											.95					.95	1.11
June	.15						.14		.40	.95				.06																		1.70	1.52
July							.82		.10			.92										.12		.19	.39							2.54	2.44
August						.15	.25			.08				1.10				2.80				.12		3.50	.30							7.78	4.43
September			.83		2.00																					1.42						4.25	3.34
October																																	1.47
November																	.40															.40	.43
December																											1.12			.12		1.24	1.19
# Period Average 1941-1944																																	17.45

F. C. Mellard Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																																0	0
February																																0	0
March																																0	0
April																																0	.63
May																											2.00					2.00	1.83
June										1.40												1.80										3.20	2.31
July																																0	
August																								2.50								2.50	1.25
September			1.00	1.50																							1.10					3.60	2.44
October																																	1.62
November																																	
December																																	
# Period Average 1941-1944																																	

Rideout Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																																0	0
February							.23																									.23	.08
March																																0	0
April																																0	.70
May																											1.20					1.20	1.52
June			.22		.12		.45			.85	.15												.75									2.54	2.67
July																					1.65			.80								2.45	2.48
August																			1.35													1.35	1.44
September					4.50																											4.50	2.77
October																																0	1.90
November																																0	0
December																																	
# Period Average 1941-1944																																	

A. L. Baugh Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.73																															.73	.49
February																																0	0
March																																0	.30
April																																0	0
May																											1.25					1.25	.90
June							.93		.22	.55													.80		.30							2.10	3.17
July																					1.02		.50									1.62	2.14
August																		1.41					1.20									2.61	2.10
September			.44	.92	.25																					1.05						2.66	2.39
October																																0	.18
November																		.55														.55	.70
December																											1.35					1.35	1.10
Total 1944																																12.87	
# Period Average 1942-1944																																	13.47

La Mota Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.52	.60									.01	.07																				1.20	.60
February						.10	.22	.10																			.06					.48	.24
March																																0	.22
April																																0	0
May							.01																				1.46					1.47	1.48
June											.56			.12								1.23		.43			.20					2.54	
July							.03														.50	.01	.02									.56	
August													.10	.13	1.00	.06	.61				.04		1.71									3.65	1.88
September				.71	1.17	.81	.10	.85	.15																.14	.10						3.43	2.43
October																																0	0
November																	.04	.08		.82												.94	.72
December																											.85					.85	.42
Total 1944																																15.12	
# Period Average 1943-1944																																	

R. D. Harper Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																																0	.08
February																																	.05
March																																0	.15
April																																0	.87
May																											.90					.90	2.18
June			.20						.45	.50														1.52								2.67	2.10
July																								.50								.90	2.50
August						.70	.20											.62						1.50								3.02	3.59
September			2.62																						1.10							3.72	2.67
October																																0	1.22
November																		.55														.55	.42
December																											1.55					1.55	1.22
# Period Average 1941-1944																																	17.05

S. S. (Ted) Harper Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																																0	0
February						.32																										.32	.15
March																																0	.14
April																																0	.70
May																											.90					.90	2.31
June																																0	2.12
July																				.20			.40	1.07								1.67	2.60
August						.18			.12														2.61									2.91	2.04
September					2.95	.33		.18									.10									.95						4.53	3.16
October			.62																													.62	1.46
November																			.65													.65	.32
December																											1.48					1.48	1.45
Total 1944																																13.02	
# Period Average 1941-1944																																	16.45

McCracken Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.90																									.06						.96	.48
February						.09	.05																									.14	.13
March																																0	.09
April																																0	.57
May																											.36					.36	1.33
June							.14											.75							.85	.90						2.64	1.74
July						.87	.36																	1.36								1.36	2.08
August						.06												.73					4.00									5.96	3.02
September				1.64	1.65																					.18	.13	.70				4.36	3.02
October																																0	1.67
November																		.55					.07									.62	.53
December																										.63	.70					1.33	1.00
Total 1944																																17.73	
# Period Average 1941-1944																																	15.68

Some months missing.

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES—1944

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Standard 8 inch rain gage — H. M. Greenwood (Cienega Ranch) — Record by Soil Conservation Service																																	
January	.84																															.84	.41
February								.21																				.12				.33	.20
March																		.10	.11													.21	.07
April																																0	.87
May																											.36					.36	1.98
June	.08						.25			.49													.96	.75	.56			.07				3.16	2.45
July			.10						.14												.12			.64								1.00	2.18
August						1.29			.35		.09							.29						4.00					.09			6.31	2.94
September			2.51	1.78	.13	.12											.13											.90				5.57	4.27
October	.40								.70											.05												1.15	1.78
November																	.54															.54	.50
December																											1.37			.03		1.40	1.19
Total 1944																																20.67	
# Period Average 1941-1944																																	18.84
Standard 8 inch rain gage — Crawford T. Mitchell Ranch — Record by Soil Conservation Service																																	
Oct. 1940										.35	1.20	.50	.90																			2.95	
Nov. "																												.01				.01	
Dec. "																															.08	.08	
Jan. 1941		.30		.10								.80																.02				1.22	
Feb. "																																	
Mar. "														.14							.14				.22							.50	
Apr. "																									1.30	1.40	.30	.30				3.30	
May "		.30										.50						.75						.75							.50	2.80	
June "						.20								.10		.15											.30	1.10		.35		2.20	
July "	.30	.15	.35																	.15		.80					.35					2.30	
Aug. "																																	
Sept. "				1.05			.20						.10				.20				.10	.20										1.85	
Oct. "											.16	.50										1.45		.75	.80							3.66	
Nov. "																																0	
Dec. "																																0	
Jan. 1942																																0	
Feb. "							T		T		.01													.05								.06	
Mar. "																																0	
Apr. "								T		T							.10															.10	
May "																							.20									.31	
June "			.13					.53																							.31	.66	
July "							.17									.18		.35	.20											.08		.98	
Aug. "								.45							.90	1.10				.20				.20				.10		.55	.15	3.45	
Sept. "		.45					.25															.35										1.05	
Oct. "											.35							.20														.55	
Nov. "																																0	
Dec. "																																	
Recording Gage — Rawls Ranch — Record by Soil Conservation Service																																	
January																																.09	
February																																0	
March																																0	
April																																0	.74
May																																	1.52
June																																	1.46
July										.05											.21	.08										.34	1.58
August						.15		.65							.20		.45	.30					.75	.45			.05					3.00	1.22
September					1.35	.65	.10																		.15	.41	.04					2.70	2.60
October		.10																												.65		.75	.25
November																																	.15
December																									1.20							1.20	.93
# Period Average 1941-1944																																	10.54
Standard 8 inch rain gage — Loma Vista Ranch — Record by Soil Conservation Service																																	
January	1.20																															1.20	.50
February																										.78						.78	.26
March																																.28	.28
April																																0	.90
May																											1.03					1.03	1.15
June							.35	.09		.73													.55				.61					2.33	2.15
July							.67		.04	.52											.06	.27		.23								1.69	1.64
August					.35	1.04	.33	.06								.16	2.03															3.97	2.16
September			.81	.89			.22									.16											.80		.15			3.03	3.16
October		.30																														.30	.94
November																	.37	.40														.77	.44
December																											.55	.75		.22		1.52	1.13
Total 1944																																16.62	
# Period Average 1941-1944																																	14.61
Standard 8 inch rain gage — B. H. Davis Ranch — Record by Soil Conservation Service																																	
Jan. 1943								.50																								.50	
Feb. "																																0	
Mar. "																								.18								.18	
Apr. "	.10																															.10	
May "																				.22	.78							.42				1.42	
June "													.22		.40	.46			1.08					.70			.70			.20		3.76	
July "															1.18			.36		.20												1.74	
Aug. "																										.25						.25	
Sept. "		.15																							1.85							2.00	
Oct. "																																0	
Nov. "														.10													1.04					1.14	
Dec. "				.69				.15																.35								1.19	
Total 1943																																12.28	
Jan. 1944	.68																															.68	.54
Feb. "							.32																				.39					.71	.36
Mar. "																																0	.12
Apr. "																																0	.63
May "																											1.10					1.10	1.60
June "		.22		.39						1.12																						1.73	2.62
July "																							.42									.42	1.68
Aug. "						2.05		.70									2.10						1.04									5.89	3.56
Sept. "			1.40	2.76	2.52																					.69						7.37	3.14
Oct. "																																0	.93
Nov. "																		1.09														1.09	.51
Dec. "																											1.05					1.05	.89
Total 1944																																20.04	
# Period Average 1940-1944																																	16.98
Standard 8 inch rain gage — Crosson Ranch,																																	
January	.68																															.68	.52
February							.70																				.58					1.28	.37
March																																0	.18
April																																0	.47
May																											.98					.98	1.38
June		.26								1.02																						1.28	2.18
July																						.65	.76									1.41	2.65
August						.40		.15								.20	2.05						1.82	.38								5.00	2.61
September			1.35		1.68	.95		.52																		1.07						5.75	3.02
October																																0	.83
November																		.70														.70	.72
December																											1.28					1.28	.73
Total 1944																																18.36	
Period Normal 1935-1944																																	15.66

Some months missing.

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES— 1944

W. B. Mitchell (Escondida Ranch)

Standard 6 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1940					.30																.80											1.10	
Feb. "		.10													.20																	.30	
Mar. "																																0	
Apr. "																																0	
May "					1.70	.40		.10	.05																							2.25	
June "			.60		.90																											1.50	
July "	.20											.75															.55		.50	.50		2.50	
Aug. "						.60	.25	.10				1.20	1.60	.70																		4.45	
Sept. "																																	
Oct. "										.35	1.20	.50	.90																			2.95	
Nov. "																																	
Dec. "																																0	

C. F. Thomas Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																																0	.18
February							.19																			.20						.39	.20
March																	.06															.06	.05
April																																0	
May																									.45							.45	.95
June					.19		.17		.21	1.16				.18									.55									2.46	1.63
July								.08											1.52		.28											1.88	2.74
August					.56				.30								1.34						1.09	.58								4.02	2.01
September			.75	2.00	.89			.28																		.15 1.32						5.24	4.64
October																																0	.12
November																																0	
December																											1.75					1.75	1.48
																															Total 1944	16.25	
																															# Period Average 1942-1944		

Earnest Jones Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.74																															.74	.36
February							.34																			.26						.60	.20
March																																0	.07
April																																0	.78
May																											.67					.67	1.83
June										1.84													.50									2.34	2.52
July																					1.67		1.32									2.99	4.12
August						.86	.20										.90						1.50	.18		.15						3.59	2.52
September			.70	2.38	.90																					1.10						5.08	3.38
October																																0	1.22
November																																	.52
December																											1.72				.74	2.46	1.86
																															# Period Average 1941-1944		18.76

Steve Stumberg Ranch

Recording gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.60																									.10		.28				.72	.50
February	.06				.07		.29																					.70				.70	.35
March																												0				0	.16
April																												0				0	0
May																		2.76	.10	.11					.25			.31			.24	3.77	3.48
June					.48			.11			.28		.70																			1.57	1.32
July							.45		.35		.70										.45		.06									2.01	1.00
August						.10				.05						.32							.35	.12		.15						1.09	.94
September					.80	.20	.50																.20	.04						.10		1.64	3.40
October														.23																		.23	.12
November														.15	.25	1.15								.80				.25				2.60	1.72
December																						.60						.20	1.95			2.75	1.85
																															Total 1944	17.08	
																															Period Average 1943-1944		14.44

Sanderson, Texas

Standard 8 inch rain gage — Record by U. S. Weather Bureau

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.90												.66													.18					.04	1.78	.75
February																																	.60
March																																	.21
April																																0	.96
May															.20					.36							.58					1.14	3.06
June														.32																		.32	.98
July																						.50	.10									.60	1.06
August																	1.10							.25		1.39		.45	.04			3.16	1.89
September						2.05	.56																	1.49		.09						4.19	2.31
October		.34	.15					.42																								.91	1.34
November																		.67	.25					.40								1.32	1.16
December			.04																								.40	.34				.78	.87
																															Total 1944		
																															# Period Average 1939-1944		15.21

Red Bluff Dam No. 2

Standard 8-inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Nov. 1939									T								T								.05	T	.02	.05	.02			.14	
Dec. "																							.10			.28						.38	
Jan. 1940						.05	T												T		.14											.17	
Feb. "			.02	.14	.02			T								.01																.19	
Mar. "																																0	
Apr. "					.03	T																										.03	
May "									.18										.30		.07	1.33							T			1.88	
June "																			.21	.24		T		.16					2.59			3.20	
July "			.10																											.03		.13	
Aug. "								.13			.38	.70	.16	.05											.05							1.55	
Sept. "																																0	
Oct. "											.80	.54	.16																			1.80	
Nov. "							.06		.07																							.13	
Dec. "							.06					.04		T																		.10	
																															Total 1940	9.18	
Jan. 1941		.15				.14	.20	.06				.05																.20	.20			.60	
Feb. "																																.92	
Mar. "																	.25				.15	.27	T		.35	.17	T					.67	
Apr. "																												.94	1.32			2.26	
May "	T	.70	.28	T						.04	.32	T		.03		T			T		.14	2.30	.04	4.91				.70	.08	.15	.02	9.71	
June "					.11	.80									.51													.51	.20			1.93	
July "								T			.06		.08										.11		T			.04				.29	
Aug. "							.12													.07	T		.09									.28	
Sept. "	.05		.02	.42					.25		.05	.28	.05					1.50	.21			2.09	.41						.17	.06		5.57	
Oct. "	.48											.15			.04	T						.04	T	1.31	.77					.17	.14	3.10	
Nov. "																						.10										.10	
Dec. "							T			.04		.16																				.20	
																															Total 1941	25.63	

Some months missing.

Big Bend State Park

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1942	.05	.21	0	0	.63	1.17	.51	5.69	4.51	1.08	0	.06	13.93

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES—1944

Red Bluff Dam No. 2

Standard 8-inch rain gage — Record by U. S. Weather Bureau

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1942			.03											T																		.03	
Feb. "										.06																						.06	
Mar. "				T			T																									T	
Apr. "						.07	.02	.09	.18								.18	.03				T	.02									.52	
May "																							.60									.60	
June "				.03				T																			T					.03	
July "		.81	.03						.07	.21															.04		.18					1.34	
Aug. "									.12	.05				T	.03							T	.09	.02			.01	.10				.42	
Sept. "	1.48						.05	.06										.35		T												1.94	
Oct. "		.08								.18			.45			.05		.04											.08			.76	
Nov. "																																	
Dec. "						.91														1.20	.20											2.31	

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1943																																0	
Feb. "																								.18								.18	
Mar. "																																.03	
Apr. "																		.03														.03	
May "										.15									T	.04	.32	.45	T							.07		1.03	
June "											1.27																			1.58		2.85	
July "	.39	.06	.02	.01						.62											.29				.08					.11		1.60	
Aug. "																																0	
Sept. "																								.24	.14	T						.38	
Oct. "	.50	T			.11																											.61	
Nov. "																										.18	T					.18	
Dec. "																																	

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1944			.38			T						.09	T													.20			.20			.57	.34
Feb. "	.09	T						.13											.02													.44	.32
Mar. "																																0	.17
Apr. "																																0	.58
May "				.04																									T			.04	2.65
June "							.31	.02	.11		1.11	.85											T						.36			2.16	2.03
July "														.24					T				1.00	.11								1.35	.94
Aug. "					.74	.03											1.05	.52						.88	T							3.22	1.09
Sept. "			T	.08	2.34	.12	T								T									.06			1.92	T				4.52	2.48
Oct. "															.01															.02		.03	1.26
Nov. "																.74	.60	.37														1.71	.45
Dec. "																		.55														.55	.71
																															Total 1944	14.59	
																															Period Average 1939-1944		13.02

J. O. Kingston Ranch

Standard 8-inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1943																																	
Feb. "																																0	
Mar. "																																0	
Apr. "																																0	
May "																				.10	1.35							.20				1.65	
June "																.15					.85		.45				.35		.20	1.20		3.20	
July "																																	
Aug. "																																0	

The 1943 record published in Water Bulletin No. 13 is in error.
The correct 1943 record is shown here.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1944																																	
Feb. "																																	.12
Mar. "																																0	.14
Apr. "																																0	.08
May "																																	1.40
June "							.30	1.15							1.00							.50				.13						3.08	2.66
July "																						.45	.15	.45								1.05	.82
Aug. "																	1.38															1.38	1.39
Sept. "			.40	.35		1.35					1.03	1.60												1.05	.05	.45	1.55					7.85	6.34
Oct. "																																	
Nov. "																																	
Dec. "																																	
																																#Period Average 1941-1944	

Toyahvale, Texas

Standard 8-inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1938				.05	.06	.04								1.02	.02		.01											.04				.15	
Feb. "														.03	.01						.04											1.09	
Mar. "			.02																													.10	
Apr. "			.01	.01																					.03							.05	
May "									1.50	.85	.08																					2.43	
June "						.28										.11							1.55	1.54	2.36	1.85						7.69	
July "			.23							.04	.45							.01	.23	.62	2.00	.39	.07		.75							4.79	
Aug. "				.40									.01																.98	.22		.91	
Sept. "		.11		.12			1.42				.07			1.04																		2.76	
Oct. "										.03										.25												.88	
Nov. "																																	
Dec. "																								.40								.40	
Jan. 1939							.23		.02	.48	.76					.05				.25		.16					.27					1.74	
Feb. "																																.07	
Mar. "																				.41									2.04			.41	
Apr. "																																2.04	
May "																																	
June "																																	
July "					.07							.70	.32															.26		.33		.04	1.72
Aug. "					1.17		.10	.08					.89																			1.64	
Sept. "																										.38						.38	
Oct. "								.49															.36									.87	
Nov. "								.05	.12							.32	.02							.36	.10			.17	.18			1.32	
Dec. "																						.06			.31							.37	

San Pedro Ranch, North Field

Standard 8-inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1942			.09							.08					.07																	.12	
Feb. "															.02																	.10	
Mar. "	.04						.03																									.07	
Apr. "									.51														.30									.81	
May "																																	
June "					.51																											.51	
July "																						.55										.55	
Aug. "														.04			.80						.85									1.69	
Sept. "	3.40						.10																									3.50	
Oct. "		.10												.08					.78										.20			1.16	
Nov. "													.07					.45														.52	
Dec. "						.88														.35												.63	
Mar. 1943																							.65									.65	

Some months missing.

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES—1944

San Pedro Ranch, South Field

Standard 8-inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1942			.05												.05																	.06	
Feb. "										.08					.02																	.10	
Mar. "	.05						.03																									.06	
Apr. "									.41														.10									.51	
May "																																	
June "					.52																											.52	
July "																						.20										.20	
Aug. "														.03			.95						.70									1.68	
Sept. "	3.60						.05																									3.65	
Oct. "		.05												.07					.60										.10			.82	
Nov. "													.02					.35														.37	
Dec. "						.30														.30												.60	
Mar. 1943																							.90									.90	

Joe Schlegel Ranch

Standard 8-inch gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1940																																	
Feb. "																																	
Mar. "																																	
Apr. "																																	
May "																																	
June "											.01		.02	.18				.05	.68			2.42		.91					.45			4.73	
July "																											1.00		.52			1.52	
Aug. "						.07	.06					1.34	.22	.01																	2.08	3.80	
Sept. "	.05																															.05	
Oct. "											.22	.49	.69	.17																		1.59	
Nov. "								1.35	.50															.04								1.89	
Dec. "											.01	.04	.13	.03	.02	.01																.24	
Jan. 1941		.34	.13		.19					.02		.57	.14					.05				.03	.01	.09				.14	.03	.07	.18	1.66	
Feb. "	.04	.32				.13		.56															.23									.98	
Mar. "												.02						.17							.23							.65	
Apr. "			.01												.03								.01			1.38	.51			.16		1.90	
May "	.02	.33	.48		.03						.16	.05						.96	.03				.15	.05	.59	.09	.15					3.09	
June "																																	
July "																																	
Aug. "																																	
Sept. "																																	
Oct. "																																	
Nov. "																																	
Dec. "																																	

Wm. Hoefs Ranch

Standard 8-inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
June 1940																										.77			.30			1.07	
July "											.19																.99		.20			1.51	
Aug. "							.15						1.46												.40						1.89	3.90	
Sept. "	.05																															.05	
Oct. "											.23	.52	.70	.19																		1.74	
Nov. "								1.35	.47															.04								1.87	
Dec. "																			.19													.19	
Jan. 1941															1.29			.04														1.33	
Feb. "		1.28				.12					.42																					1.82	
Mar. "		.09																										.80				.89	
Apr. "																									1.52	.33		.11				1.96	
May "		1.23										.40					.85				.17		.85		.58							3.76	

Hayter Ranch

Standard 8-inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1943						.09																										.09	
Feb. "																																0	
Mar. "																								.02								.02	
Apr. "																			.06													.06	
May "						.05								.02					.04	.50	3.05	.22						1.10	.05	.81		5.03	
June "												.42		2.45		1.33												.35				5.16	
July "																																	
Aug. "																																0	
Sept. "																								.71	.37	.11						.99	
Jan. 1944						.26		.08											.02	.02						.23						.61	.14
Feb. "																																0	.25
Mar. "																																0	.21
Apr. "																				.06	.10				.02			.24		.05		.47	.75
May "																																	2.92
June "																																	3.37
July "																																	1.17
Aug. "																																	3.93
Sept. "																																	2.80
																																#Period Average 1941-1944	

Reid Bros. Ranch

Standard 8-inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1943			.20					.12																								.52	
Feb. "																																0	
Mar. "																																0	
Apr. "																		.12														.12	
May "																				.12	.10	.90	.34						.08	.35		1.89	
June "																	1.00	.11	3.00		.50							.28		.20		5.09	
July "	.36	.46	.47	.53	.05					.20										.20												2.07	
Aug. "														.20				.40														.60	
Sept. "																								1.30	.50	.16		.12		1.05		3.13	
Oct. "		.30																														.30	
Nov. "				.14																						.90						1.04	
Dec. "				.25						.25									.50													.90	
																															1943 Total	15.46	
Jan. 1944		.39		.03			.35																	.65								.77	.41
Feb. "																																.65	.33
Mar. "																																0	.34
Apr. "																																0	1.04
May "																																	2.71
June "	.66								.94													1.00										2.60	2.49
July "												1.06											1.00									2.06	1.94
Aug. "																																4.02	3.98
Sept. "																																6.46	4.06
Oct. "																																	1.67
Nov. "																																1.35	.60
Dec. "																																	1.16
																																#Period Average 1941-1944	20.73

\# Some months missing.

Merrill Ranch

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1939	2.42	7	.07	.03	1.04	1.05	4.03		.43	1.03	1.95	1.59	
1940	.45												

J. W. Merrill Ranch

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1939	2.42	0	.08	.04	1.05	.20	4.03	.10	.43	1.04	1.95	1.45	12.80
1940	.45	0	.02	.01	.13	5.60	.60	2.50	.30	4.60	1.50	1.20	16.91
1941	1.50	3.30	.60	1.05	5.77	2.80	5.80	3.87	5.75	3.60	.50	1.30	35.84
1942	.01	.26	.01	.96	3.30	3.03	1.77	2.87	1.20	1.52	.50	1.35	16.78

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES—1944

Grand Falls, Texas

Standard 8 inch rain gage — Record by U. S. Weather Bureau

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1940																																	
Feb. "		.02	.08													.24																.34	
Mar. "										.02														.18								.20	
Apr. "				2.25	.14																											2.39	
May "							1.50		1.65								.06					.55	.15									3.91	
June "											.02	.10		.02					.02	.75	.03		.10	.25	.01				.18	.10		1.58	
July "													.55																			.55	
Aug. "						.04	.05						.84	.17			.15										.10				.30	1.65	
Sept. "	.04										.27																					.31	
Oct. "								.93	.89	.07	1.20	.65	.36	.58																		2.86	
Nov. "																							.10									1.32	
Dec. "							.06				.02	.03	.20		.01																	.32	
Jan. 1941	.08		.22	.05							.15		.02															.25	.02	.04	.20	1.03	
Feb. "	.07	.12			.16			.26														.06			.15							.82	
Mar. "																		.38			.05	.22	.11		.60							1.36	
Apr. "														.06	.02											1.44			.09			1.61	
May "		.53		1.00							.42	.07						.30		.45	.10			1.18		1.15						5.20	
June "			.10	.35	.20	.75									1.10														.22			2.72	
July "												.01			.02									.02	.09				.13			.26	
Aug. "						.54												.14						.39				.02			.29	1.55	
Sept. "	.30			2.06				.27	3.00		.06		.08	.18			.17	.19	.17 ?										.06			6.37	
Oct. "	.57		.08								.03				2.26						.14		.95		1.75					.04		5.80	
Nov. "																					.07											.07	
Dec. "								.15			.22	.38																				.75	
																													Total 1941			27.48	
Jan. 1942															.24																	.24	
Feb. "											.11																					.11	
Mar. "	.05																															.05	
Apr. "						.03		.28							.02								.08									.41	
May "																						.60					.53			.08		1.41	
June "					.26			.05																								.31	
July "	.48																							.02								.50	
Aug. "			.68												.20				.06					.68	.77						2.50	4.89	
Sept. "			.18														.71	.05														.58	Total
Oct. "						.08							.15				.27												.01	.09		.60	11.84
Nov. "				.32																												.32	
Dec. "				.05	.06	.32	.14													.16	.71											1.42	
Jan. 1943					.08	.05											.03								.09							.21	
Feb. "																																0	
Mar. "		.01																						1.23								1.24	
Apr. "																																0	
May "						.07				.10					.05				.07	.16	.65	.70	1.22									3.02	
June "																																	
July "	.05				.85					.20				1.39	.22																	2.72	
Aug. "																																0	
Sept. "																							No daily record available for September.									1.24	
Oct. "	.33	.02		.04	.30																											.69	
Nov. "																										.88	.06					.94	
Dec. "					.10					.22														.15	.42							.89	
Jan. 1944	.45	.05										.30	.12																			.92	.60
Feb. "	.24				.12			.92											.03								.12					1.43	.54
Mar. "																																0	.57
Apr. "																																0	.88
May "											.15											.26			.29	.07					.10	.87	2.88
June "	.20	.05						.58			.58	.28														.04						1.73	1.58
July "										.65	.24												.05	.05								.89	.97
Aug. "							.04											1.30						.37	.10		1.13	.06				3.02	2.22
Sept. "						2.00	.10																		.19		.78					3.07	2.39
Oct. "			2.05																													2.05	2.40
Nov. "																.30	.16	.65	.08													1.19	.77
Dec. "		.05		.25	.05																					.30	.22	.35				1.22	.92
																													Total 1944			16.39	
																													# Period Average 1940-1944				16.78

Stone Ranch

Standard 8-inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1943					.20			.05																								.25	
Feb. "																																	
Mar. "																																0	
Apr. "																																0	
May "																					.49						.25	.67	.19			1.60	
June "												.30		.40		.90														.25		1.85	
July "		.60															.25			.63												1.48	
Aug. "																																0	
Sept. "																							1.20		.20					.90		2.30	
Oct. "	.23	.38																														.61	
Nov. "																									.30	.46	.31					.86	
Dec. "																																1.07	
Jan. 1944	.31																															.31	.22
Feb. "					.20			.21												.02							.22					.65	.40
Mar. "																																0	.04
Apr. "																																0	.56
May "																																	
June "									.45	1.31															.59							2.35	1.77
July "																						.26	.28		.34							.54	1.39
Aug. "																	1.86															2.20	3.45
Sept. "			.85	.97	.90	1.28																				.81						4.81	2.47
Oct. "																																	.42
Nov. "																.74	.97	.09														1.80	.96
Dec. "																										#Period Average 1941-1944							

Fort Stockton, Texas

Standard 8-inch rain gage — Record by U. S. Weather Bureau

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
May 1940							.47		.18								.63					.41	.22									1.91	
June "										.01		.02		.18				.06	.68			2.42		.02					.45			3.84	
July "																											1.00		.52			1.52	
Aug. "						.07	.08						1.34	.22	.01																	1.72	
Sept. "	2.08	.05																														2.13	
Oct. "											.22	.49	.62	.17																		1.50	
Nov. "								1.35	.50															.04								1.89	
Dec. "	.03										.01	.04	.13	.03	.02	.01																.27	
Jan. 1941		.34	.13		.19						.02	.37	.14					.05										.14	.03	.07	.18	1.66	
Feb. "	.04	.32				.13		.36													.03	.01	.09									.98	
Mar. "												.02						.17				.23			.23							.65	
Apr. "				.01											.03								.01			1.38	.31		.16			1.90	
May "	.02	.33	.48		.03						.16	.05						.96	.05			.15	.05	.39	.09	.15						3.09	
June "				.05		2.86				.69		.09			.65													.45	2.62			7.39	
July "	1.33										.13				.38									.03								1.87	
Aug. "		.15									1.45		.61											.27				.04	.05			2.55	
Sept. "				.84				.65	.18			.33		.14			.33	.65	.05										.04			3.21	
Oct. "																																	
Nov. "								.29				.81		.01																		1.11	
Dec. "																																	
Jan. 1942			?											.03	.10	.01																.14	
Feb. "											.12				.05										.03							.25	
Mar. "	?																															?	
Apr. "				.39					.25	.01													.03									.68	
May "																		.07				.10				.03						.20	
June "				.42	.58	.02																										.96	
July "			.07						.15		.14	.14										.60										1.10	
Aug. "																.05	.30					.09		.65	.08						2.27	3.58	

Some months missing.

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES—1944

Fort Stockton, Texas

Standard 8-inch rain gage — Record by U. S. Weather Bureau

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																																	.90
February																																	.59
March																																	.32
April																																	1.29
May								T			T									.05	T											.55	1.54
June	.15							.14		.27	.57			.01										.53			.10	.26			.26	1.78	3.49
July	.25									.32													.49	.33								1.35	1.46
August	1.57				.53					.25	1.45													.09			.03					3.92	2.89
September				.20	.68	2.12	.19																.49	.20		.14						4.08	3.12
October			.12																													.12	.81
November																.06	.22	.39	.11													.78	1.34
December				T	T	.04																				.06	.24	.76				1.10	.83
# Period Average 1940-1944																																	18.58

Pecos River Station

Standard 8 inch rain gage — Record by U.S. Section, I. B. C.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	1.14											.06														.50		T			.10	1.80	1.12
February	.06							.04														.01		.01			.09					.24	.72
March																	.45	.15							.04							.61	.82
April																				.43									T	T		.43	1.75
May	.01									.03								1.38	.13	.07					.25		.26					2.13	2.19
June					T	.07		.05		.05	.09	.04																		.15		.41	1.68
July																	.30					.01	T									.31	1.37
August																						T	.50			1.22	.15	.83	.21	.09		3.00	2.40
September			T			3.47	.01																	.38		2.00	.46					6.32	2.29
October	.02	.01	.50																													.53	.97
November															T			.46					.02									.48	.79
December	.02	.30	.20	.20																					T	.07	.10	.01	.02	T		.92	.99
Total 1944																																17.28	
# Period Average 1938-1944																																	17.09

Comstock, Texas

Standard 8 inch rain gage — Record by G. A. Humphreys

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.47												.50													.25		.03			.08	1.33	.73
February	.08																							.59			.11					.78	.67
March														.12			.60	.15			.39											1.26	.95
April																				.39												.39	2.02
May			.46															.56	.19	.33					.34		1.00					2.88	2.84
June						1.44					.50																			.50		2.44	1.95
July																																0	.52
August																						.40		1.00							2.50	4.40	3.68
September						3.60																				1.35	.13					5.08	2.08
October							1.30																									1.30	1.95
November																		.56						.10								.66	.84
December				.76																										.24		1.00	1.27
Total 1944																																21.52	
# Period Average 1939-1944																																	19.50

J. F. Runge Ranch

Standard 8 inch rain gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January														.70												.50						1.20	.58
February	.20							.45																	.20		.90	.42				2.17	1.08
March									.25									.50			.05	.10										.90	.95
April																													.23	.40		.63	1.71
May	.22			.20					.65									.20			T	.75					.18					2.20	2.43
June						.80		.40																								1.20	.84
July			.10																													.10	1.36
August							1.20										.47	1.30	.25						.60			1.85				5.67	3.36
September						1.85																				.20	.97					3.02	4.10
October			.85																													.85	2.28
November																.60		.70							.11							1.41	.60
December			.13	.50																							.85				.23	1.71	1.31
Total 1944																																21.06	
# Period Average 1941-1944																																	20.60

H. K. Fawcett Ranch

Recording Gage — Record by Soil Conservation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
---	---	---	---	---	---	---	---	---	---	---	---	---	---	.01	---	---	---	---	---	.25	---	---	---	---	---	---	---	---	---	---	---	2.06	.78
February																								.28				.70				.98	.39
March														.50			.05	.90					.31									1.76	1.09
April																																0	1.16
May						.95												.87	.21	.13					.18	2.33						4.65	2.38
June						2.38																										2.38	1.69
July																	2.40															2.40	1.41
August																										1.00		.48	.20			1.68	1.94
September						2.87																	.75	.35								3.97	3.75
October				.30																												.30	1.97
November																				.50												.50	1.50
December																																0	.63
Total 1944																																20.66	
# Period Average 1941-1944																																	18.69

Devils Lake, Texas

Standard 8 inch rain gage — Record by Central Power & Light Co.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	.18	1.33	.46
February																					.03											.83	.57
March														.46				.48	.04			.52						.67				1.50	.95
April																				.05												.05	1.51
May	.21			.36															.80	.10	1.95				.25							3.67	2.51
June						.60		.10		.05	.65																			.15		1.75	1.77
July																																0	.71
August																							.62			.42		.85	.90			2.79	2.22
September						2.02																				1.00						3.02	1.56
October			.57					.61																								1.18	1.51
November														.56				.67						.42								1.65	1.08
December		.41	.52																									.18				1.11	1.08
Total 1944																																18.86	
# Period Average 1939-1944																																	15.93

Quemado, Texas

Standard 8 inch rain gage — Record by Walter F. Cox

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.19												.19									.02						.55		.02	.13	1.08	.48
February	.53									.30			.02						.06			.07		1.06								1.71	.85
March															.09	.04																.50	.19
April								.05																						.08		.13	2.05
May	.14			.20											.15				1.63	.22	.85					.10						3.29	3.11
June					.05	.95					.04																			.30		1.34	1.06
July																									.03							.03	.45
August					.20											.06						.20	1.40	.68		.19	.18	.42	.56	.03		3.32	2.32
September						.40	.27	.12																.08		2.70						3.57	4.26
October			.08	.07		.17		.78																								1.10	.61
November																.06	.04	.32				.46										.88	.98
December	.20	.86	.37	.02	.12	.09																				.03		.17				1.86	1.10
Total 1944																																18.81	
# Period Average 1941-1944																																	17.46

El Indio, Texas

Standard 8 inch rain gage — Record by J. R. Jones

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	.34	---	.09	.49	.70
February					.08																											.08	.54
March		.10												.08																		.18	.21
April																																0	.13
May	3.75			.09															.15					.92		1.31	1.19					7.41	4.94
June						.30																								1.33		1.63	1.73
July																																0	.97
August																						.45	.67			2.22		2.00	.22	2.83		8.39	3.15
September					.33																					.55	.07					.97	3.65
October				.32		.60																										.92	.62
November																		.64						.46								1.10	.83
December			.95		.40	.13																										1.48	1.06
Total 1944																																22.65	
# Period Average 1941-1944																																	18.53

Some months missing.

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES-- 1944

Standard 8 inch rain gage — **Laredo Water Plant** — Record by plant operators

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1930									.01		.01	T	.01							T	T					.01	.02	T	T			.06	
Feb. "			.07												.70													.01	T			.78	
Mar. "											.04	.02	T	.05	.16						T							.39	T			.66	
Apr. "															T			.51						.10	.10	1.27			.10			2.08	
May "						.04				.33	.16	T					.14						1.04					.08	.67	.20	.29	2.97	
June "									.14	.58	.55	.51			.09	.28	.13					T										2.64	
July "				.05	T			T	.18														.05									.88	
Aug. "																					.29											.29	
Sept. "				.15				.03							1.53	.01											T	.88	.16	.04		2.22	
Oct. "						.77				.05		1.86	.05					.01				.01	2.57	.02				.01	1.22	.02		6.59	
Nov. "						.32	.09	.82	.78	.17	.16	.34	.06	.01								T							.02		T	2.77	
Dec. "				T						T											.04											.04	
																																Total 1930	21.38
Jan. 1931									.09	.28	.33	.15			.26	.49								T		.20	.04	.46	1.47	.21		3.92	
Feb. "						T	.05	.37			.02	.01			.36	.01							T			T	.04					.84	
Mar. "															.55	.29																.84	
Apr. "										.18			.06	T				T			T		.03	T		T	T	.07	.01			.35	
May "	.15	.03	.83		.42	.32	.10		.31	T							.01	2.02		.79		T	T			T	1.14	1.04		.52	.99	6.49	
June "										.16											T				T	T						2.34	
July "										.07						.16	1.67	.18	.54						T	T						2.62	
Aug. "			.09								1.47					.05				.06	T	.86	.17	.05								2.70	
Sept. "								T			.04	T	T		.13	.05					T					T	.01					.21	
Oct. "		.28	.01																						.53							.82	
Nov. "																				.02				.12				.01	T	.07		.22	
Dec. "	.07	.04			T	.84	.69	.15				T				.07	T		.04			T	T						.01			1.91	
																																Total 1931	25.26
Jan. 1932		T	.01	.02								.01	T				.01	.86				.05	T		.02	.03						1.01	
Feb. "	.06																	.02	.49	.17	.02											.76	
Mar. "		.43			T		.02			.40																						.85	
Apr. "																	.11	.09								.15	.07	.06	1.84			2.32	
May "										1.00	1.89	.16			.64											.24						3.93	
June "																						.01	.24	.09						1.06		1.40	
July "					T	.07											T															.07	
Aug. "																		.17	.22	T	.03		.11	T	.02	.02	.01			T		.58	
Sept. "	1.11												.07							.10	.21	.01	.10	.84		T	.65	.34	.27	.04		3.53	
Oct. "	.10			.04																	T											.14	
Nov. "			T					.04									.02							.03								.09	
Dec. "								T	.02	T	.01	.01	.03	.08	.10	.01			.01	T	.05	.12	T									.36	
																																Total 1932	15.04
Jan. 1933					.25	T	.10	.02			.02	T			.09	.12	T		T	T						.23	.04		.07	.02		.23	
Feb. "		T				.26	.01																									1.06	
Mar. "		.02	.29			.11					.20															T						.42	
Apr. "				.34										T									.57	.01								.92	
May "														T											.23	T	.43		.39			1.05	
June "											.09	.45	T					.01														.55	
July "								.46												.01			.19		.82							1.48	
Aug. "					.56					T	.53	T	.02		.15	T								T	.03				.01	.09	1.84	3.25	
Sept. "					3.59	.04	.07							T	.05	1.29				.02				2.10	.09		.19					7.44	
Oct. "	T	.37	.01							T					1.14																	1.52	
Nov. "		T			T	.23	.14	T	T	T	.02	.02	T																	T		.41	
Dec. "		T		T													T										T	.04	.07	.01	T	.12	
																																Total 1933	18.37
Jan. 1934	T	T	.06		.01	.66				.14	.55					.57	.24	.06					.23	T	T	.02	.07	.06	T	.46	.23	3.36	
Feb. "				T						.02	.05						.09									.06		.11				.33	
Mar. "	.04	.03																						.14	.04							.25	
Apr. "						.61	.16	.58	.65			.77	.04	.08		.01	.23	T	.02								.02	.11				3.28	
May "	T													T	.15									.05	T							.20	
June "		.92																												.03		.95	
July "										.12		.06										.29	.09	.16	.20	1.69		.38	.20			3.12	
Aug. "		.25														.01									.12						.08	.46	
Sept. "	.18		.18								.16	.26			1.42															.27		2.47	
Oct. "																.10	.03															.13	
Nov. "															1.64				T													1.64	
Dec. "					.03	.29	.11										.02	.01								.19	.18	.01	T	.01		.85	
																																Total 1934	17.04
Jan. 1935						.04	.04		.02	.45	.05	T 1.05	.05	.01	.03					T	.12						.50	.06	.27	1.30	.01	.21	
Feb. "	.01								.06									.03														1.73	
Mar. "																				.04						.97						2.83	
Apr. "			.67	.05	.02	.01				.30						.02	.02		T		.04	.44	.72						T		T	1.01	
May "		1.14	.09		.95				.03	.42	.53	.65	.01	.11	3.45									.02				.04				2.29	
June "																																7.44	
July "																		.25	.16				1.03	.27	.23	.42						2.36	
Aug. "														.26														.38			.03	.67	
Sept. "				-	.34	.75		.01	.65	.03												.58	1.65	.32	.02		.05					4.40	
Oct. "																		.01					.09	.15	.09					.02	.03	.39	
Nov. "	.02	.01					T	.06			.03			T	1.56	.07	.07	.02	T					.01	.05		T					1.90	
Dec. "				.16	.09	.03	.05	.01	T	.14	1.75			T			T	T	.03	T	.08			.02	.11	.08	.14	.02	T	.15	.01	2.85	
																																Total 1935	27.48
Jan. 1936	T																									T	.05	.01	.05	.01	.01	.13	
Feb. "					T	.08			.03								T									.06	.04		.06			.27	
Mar. "	.15	.65	.05		T			.01			T	.06	.03																			.96	
Apr. "								T													1.04	.01					.55	.11				1.71	
May "									1.29	T	T			.45	T							.04	1.40	.09	1.90	T		.54				6.01	
June "												.12		.05										.05				.01	T	2.10		2.33	
July "			.10				T	T		.21	.01	.87	1.06	.04									T									2.29	
Aug. "					.04						.30							.01	.04	.03	.01					.04		T	T	1.19	.49	2.15	
Sept. "	.01		T	T			.02		.10				2.78	.14		1.41		.25	.15	T	.12	T		.09		T	.01		T	.25		5.33	
Oct. "							.15					T										T	.12	.04	.04	T	.24	.10	.20	T	T	.39	
Nov. "			.06					T	T	T											.03		T		T		.01	.01		T		.11	
Dec. "		.01	.01	.13	.05								.42	.02												T	.08					.72	
																																Total 1936	22.90
Jan. 1937	.01			.02		.03		.02	.08	.02			T			T						.02			T		T	T	.26	.01	.01	.48	
Feb. "	T	.02	.09	.07	T		T											.01								.01	.03					.22	
Mar. "		.02	.08	T	.09	.09								.02								T	T					.09	.18			.50	
Apr. "													.01											.03								.04	
May "					.06	.09					.02	.03	.35	T									T	T		T			T		.03	.58	
June "	.56						T																						.20			.76	
July "				.39			.06	.50	.20	.03																		T	T			1.18	
Aug. "												.30			.15	.06			T	T						T						.51	
Sept. "			T	.53				T	.01			.58				T	.06	.35														1.33	
Oct. "										T	.11	.09	.09	T		.04																.26	
Nov. "			T											T							T	.23	T				T					.23	
Dec. "	.56		T	1.02	.42			T	.02	.06	.02	.04	.03	.01	.09	.03				.33	.47	.33		T		.04		.03	.20	.03	.02	3.73	
																																Total 1937	10.02
Jan. 1938				.10	.30			.01	.15	T									T		T	.10	1.13									1.79	
Feb. "						T		T	T						T	T	T			.05	.51							T				.36	
Mar. "	.23	.01					T	.03															.19				.01	T				.47	
Apr. "															T		.41	.10	.12			.02										.65	
May "							T	.08		.18					.21	.38							.22	1.11								2.18	
June "										.03			T			T				.02	.23	T					.18	.12				.58	
July "									.24																					.20	.07	.51	
Aug. "	T																							T		.85	1.27	.16				1.68	
Sept. "							T	.09		T	.06			.48	.87		.18	.07														1.69	
Oct. "							.13			.01	T												.01									.15	
Nov. "																																0	
Dec. "																							T	.50	1.42	.02		.01		.03	.02	2.00	
																																Total 1938	12.06

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES—1944

Laredo Water Plant

Standard 8-inch gage — Record by Plant Operators

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1939										T	T	.04											.08		T	.25	.36	T				.73	
Feb. "		T															.05	.03	.05		T		T	.03								.14	
Mar. "							.03								T		.02	.04					T		T							.09	
Apr. "							T					T	.01								T					T			.10			.11	
May "			.50	.16	1.20								1.25	T										.40	.09							3.60	
June "			1.77	.02			T	.07																								1.86	
July "									.04	1.39	.93	.11																				2.47	
Aug. "	T	1.69		.01	T						.08					.85		T	T	.08	T							.01				2.12	
Sept. "								T	.72	1.45	T	.37	.08			.11	.08	.08	T	.06										.03		2.98	
Oct. "										2.39	.01	.01			T	.08												.01				2.55	
Nov. "										T	.59	.04													T			T	.09	.03		.75	
Dec. "															T		T							.05	.65	.02						.72	
																															Total 1939	18.10	
Jan. 1940	.02				T	.08						.02						.03		.22		.15	.01		T							.53	
Feb. "	T	T	T	T	.03				.04				.18	.05	T											.02						.32	
Mar. "					.01							.09							.01	1.15			.07	1.12	.16	.07	.02		.02			2.71	
Apr. "						.08					.01						T							T					.02			.11	
May "	T						.26		.01								.85	T	T	.05	T	.05	.01				2.01	1.03	.05			4.32	
June "							.01		2.21		.87			.03		.03			.53	.03				.26	.03		T		.50			4.90	
July "												T		T	.11						.01											.12	
Aug. "									1.15				T	.10						T										.25	T	1.50	
Sept. "					T		.03												.05	.02		.01	.01		T							.10	
Oct. "						T	.27				.02	T			.65									4.15	.50				T	.02		5.59	
Nov. "					1.00	.07	.42	.32	.07													T		.02				.01				1.91	
Dec. "							.03				T		.08	.21	.54			.13	.13	.89	.28											2.69	
																															Total 1940	24.80	
Jan. 1941		.06	.04					T					T	T			T							T	.02	T	.90	.48		T	.15	1.65	
Feb. "	.14				.32	.14		.09									T			T	.05	.60	.28		T	.09						1.70	
Mar. "			.01			T	.59					.02	.04		.02	T	.35	.11	.03	.02	.03	.06		.19	.08	.08						1.63	
Apr. "										T	T	T	T				.04		T			.07	T	T	.09	.40	.97		.95			2.52	
May "		.76			.15													.26	.20		.67	.28	T	T					.22	.02		2.56	
June "					.69						.04	.14	.36							T	.87	2.86	.09	.30	.26							5.61	
July "				.20	.02						.04	T																				.26	
Aug. "					T				.01																	.07	.83					.91	
Sept. "									1.26	.92	.02					.18	.17	.97	.05				.02		.03	.20	.36		.13	T		4.33	
Oct. "	.02							T		.16	.01					.09								.02					T	T		.23	
Nov. "																		T	T	.07	.21	.03		T		.03	.03	.01				.38	
Dec. "					.01			.14		.18	.02	.01	.02		.09	.02	T		.02	.03	.08	.01								T	.02	.83	
																															Total 1941	22.41	
Jan. 1942	.01	T		T	.04	.17	.04							.02	.08		T												T			.36	
Feb. "			.02	.02				.01	.02	.27	.02		.25	.16	T							.06	T									.85	
Mar. "				.41																	T											.41	
Apr. "						T	T	.13									T		.05	T	.23	T	T				T					.41	
May "				.03	.47	.01	.32	.07											2.63					.46								3.99	
June "		.08				.02																			.12							.22	
July "	.74	T	.88	.52	2.63	.67	.03															T	.15						T			5.47	
Aug. "					T	.18											.79	.10	T											.28	.82	2.32	
Sept. "	.03			.04	1.56	.55	1.60	3.66			.02	.02		.03	.01					.01												7.53	
Oct. "				.85	.15														.08	.01								.01		T		1.10	
Nov. "										.01																						.01	
Dec. "									.05	T				T						T	.15			.01	T							.19	
																															Total 1942	22.84	
Jan. 1943				.16	.02	.08	.06	.81	.02		.08	.10	.02												.02	.01						1.38	
Feb. "	.04	.09		.12	.01													.01														.27	
Mar. "		.01												T				T						.39	.15							.55	
Apr. "																					.26											.26	
May "					.13	.01			.02						T							T	.08					.16	.03	.74		1.17	
June "					.05	.02							.22				.38	.02														.69	
July "									.25	T	.26	.35	.72	.04																		1.62	
Aug. "																													.04			.04	
Sept. "	.07	.99	.17			.59		.29	.04						.01	.04	T						.14	T	.18	.39	.20			.70		3.81	
Oct. "	.35	.01	T						.07	.50	.02																					.95	
Nov. "		.04													.09												.15			.02		.30	
Dec. "			.25	.24			.08		.01	.02				.23	.01								.02							.99	1.05	
																															Total 1943	19.09	
Jan. 1944	.43	.02				.04							.32																		.12	.93	1.12
Feb. "	.15												.14						.15	.09	1.01											1.54	.74
Mar. "									.05	.39						.01	.67	.57				.02										1.71	.95
Apr. "		.02						.08																								.30	1.07
May "				.17																				T	.07	.13	1.52	.03				1.92	2.86
June "						.97												.28												.03		1.28	2.24
July "																																0	1.59
Aug. "																								.30		1.52	2.04		.05	.03	.03	3.99	1.54
Sept. "						.09	.65	.04													.02			.06	T	.30	.14					1.30	3.26
Oct. "												T																				T	1.42
Nov. "															.02	.78	.19	.39	.07				.10	.09	.01				.09			1.74	.83
Dec. "		.15	.07		1.65																					.07	.11	.63	.02		.01	2.71	1.37
																															Total 1944	17.38	
																															Period Normal 1930-1944		19.01

Roma, Texas

Standard 8 inch rain gage — Record by U. S. Section, I. B. C.

January	.06																	.03	.09	T										.18	.12	.36	1.54
February									.32	.04						.03		1.15														.12	.58
March																																1.54	1.00
April																																0	.80
May			.15	1.00																				.12			.70	.18				2.15	1.60
June							.87											.66											.44	.30		2.27	4.10
July				.76																												.76	1.68
August																					1.54	3.18	1.30	.58			.24	.45	T	T		7.09	2.22
September							.58																		.15	.26						.79	3.73
October						.50																										.50	1.82
November															.08			.10			T	.08										.26	.40
December	.50																									.22	.10	T				.82	.88
																															Total 1944	16.46	
																															Period Average 1941-1944		20.35

Rio Grande City, Texas

Recording gage — Record by U. S. Section, I. B. C.

January	.01																											.04	.05		.19	.29	1.04
February																			.02	.02												.04	.54
March									.24	.52	.09					.50		.44														1.79	1.38
April																																0	.92
May				1.01																					.24		.14	.19				1.58	1.13
June						1.47												.52	.05										1.35	1.25		4.62	3.86
July	.05		.02	.04																												.11	.56
August																				.10	.01	3.45	1.38	.23	.02			.42	.19	.30		6.10	1.76
September								.10	.02		.01														.13	.29						.55	2.84
October								.27																								.27	1.52
November				.30												.02		.09	.02			.09	.03	.05		.01						.61	.46
December	.05	.06			.05																					.19	.14	.27	.03		.06	.85	1.28
																															Total 1944	16.79	
																															‡ Period Average 1939-1944		17.36

‡ Some months missing.

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES—1944

Standard 8 inch rain gage — **Sharyland Road** — Record by United Irrigation Co.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1937																																	
Feb. "																																	
Mar. "							.85	.05																						.20		.50	
Apr. "													.12	.12																		.24	
May "							1.00						.90															.23				2.13	
June "		1.12																														1.12	
July "				.25		1.10	2.80	2.40	.30																							6.85	
Aug. "																											.30					.30	
Sept. "									.10							.50									.60							1.20	
Oct. "									.05																							.05	
Nov. "																																0	
Dec. "	.70			1.35				1.30			.22							.10										.55	.25			4.47	

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1938				.28	.28	.85				.40																						1.21	
Feb. "																				.52	.25											.77	
Mar. "	.62						.20																.15									.97	
Apr. "																		1.02	.05						.28							1.35	
May "																																	
June "																																	
July "																																	
Aug. "	1.59			.80																								3.60		.90		6.80	
Sept. "		.80		.27			.15			.17		.10																				1.49	
Oct. "										1.15												.10										1.85	
Nov. "						.80																	.30									1.10	
Dec. "																					.40									.12		.52	
Total 1938																																	

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1939																										1.00	.50					1.50	
Feb. "																	.18	.08														.26	
Mar. "																.20	.15															.35	
Apr. "												3.10									1.15						.65					4.90	
May "													3.45																	.55	.05	4.05	
June "																																	
July "										.50	.75																					1.25	
Aug. "	.65															.32																.97	
Sept. "										.25	1.40	.28						.90														2.83	
Oct. "									.48					.25																		.73	
Nov. "																												.10				.10	
Dec. "													.20												.15							.35	
Total 1939																																	

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1940																						.18				.05						.23	
Feb. "														.25																		.25	
Mar. "																			.65	2.20				1.60								4.45	
Apr. "																																0	
May "									1.50							.22			.10													1.82	
June "										.10				1.85	.08											.55						1.98	
July "			.70	.55									.45	.10																		1.80	
Aug. "																							.15									.15	
Sept. "						.70	.35					.20										.40										1.65	
Oct. "															.40									.39					.95			1.65	
Nov. "							.28																	.25								.53	
Dec. "															.68					2.15	1.70											4.48	
Total 1940																																18.99	

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1941				.10																						.42	3.08					3.60	
Feb. "					.55																	.55			.10	.05						1.85	
Mar. "							.25											.70		.35		.50		.80	1.25							3.85	
Apr. "																							.20		.25	1.60		1.10				3.15	
May "			.10	3.80																	2.90			.12		.40						7.32	
June "		.10									.25									.15		1.45		1.00	1.25							4.20	
July "																																0	
Aug. "						1.25																										1.25	
Sept. "										2.80								.20	.50						.70		.30					4.50	
Oct. "			.50	.25					1.15							1.18							.65				1.65			.30		5.48	
Nov. "					.25																											.25	
Dec. "																																	

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1942					.20	.20	.25	.20																								.85	
Feb. "									.10			.12		.40					.12		.02											.76	
Mar. "																												.32				.32	
Apr. "																											.05					.05	
May "							.12		1.25					.18																		1.55	
June "		.05																		.25		4.55			.70	.10				.80		6.45	
July "				.05		.20					.05			.05									.32				.10					.77	
Aug. "				.18	.22	.41																										.81	
Sept. "												.50			.10																	.60	
Oct. "						.60											1.35	.15														2.10	
Nov. "																																0	
Dec. "										.38										.12												.50	
Total 1942																																	

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1943				1.28				.55	.45		.30																					2.58	
Feb. "																		.08														.08	
Mar. "															.05									.75								.80	
Apr. "																					1.10											1.10	
May "								.28																.25				.40	.68		1.95	3.56	
June "																																	
July "																																0	
Aug. "																																0	
Sept. "								1.22	.40						.10										.10	3.20	.20		.02			5.24	
Oct. "		.75								.88	.08																					1.71	
Nov. "				.10			.05									2.60		.15						.40		.30						3.60	
Dec. "									.10		.30				.25									.30	.22						.55	1.72	

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1944							.10																	.15	.05							.30	1.47
Feb. "	.08												.05															.05				.18	.51
Mar. "										.68							.05															.73	1.50
Apr. "																																0	1.55
May "																																	1.85
June "																																	3.44
July "																																	1.78
Aug. "																																	1.47
Sept. "																																	2.50
Oct. "																																	1.85
Nov. "																																	.80
Dec. "																																	2.01
∮ Period Average 1937-1944																																	28.68

Standard 8-inch rain gage — **Edinburg, Texas** — Record by Irrigation District

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1934											.40				.50	.60	.10					.20					1.20			.80	.10	3.90	
Feb. "											.10																.10					.20	
Mar. "	.20	.10																								.10						.40	
Apr. "					.10											.10											.20					.40	
May "														.30	.20																	.50	
June "																										.20						.20	
July "										1.50	.80		.10											.20	1.60	.40			2.00			6.60	
Aug. "																.10																.10	
Sept. "	1.20								.20	.30					.40															.70		2.80	
Oct. "																.09																.09	
Nov. "														.04																		.04	
Dec. "						.30																				.80						1.10	
Total 1934																																	

∮ Some months missing.

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES—1944

Edinburg, Texas

Standard 8-inch rain gage — Record by Irrigation District

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1935	.10																				.70											.80	
Feb. "												.70																				.70	
Mar. "																															.10	.10	
Apr. "																			1.00			.50										1.50	
May "						.70				1.30											.50	1.40							.80			4.70	
June "				1.20			.50		.40	1.30	.50	.30																				4.20	
July "													.20													.30						.50	
Aug. "																				1.00						.30						1.30	
Sept. "					.90				.70	.40											.40	.80	.10	2.40	.60	.70	.20					7.20	
Oct. "																		1.00	.30												.50	1.80	
Nov. "	.20	.10			.20											.20																.70	
Dec. "											.50										.20				.20						.40	1.30	
Total 1935																																24.80	
Jan. 1936																													.10			.10	
Feb. "									.20																							.20	
Mar. "		.30									.10																					.40	
Apr. "								.40									.40					.60					.10					1.50	
May "									.10	1.50		.30	.70		.20								.50		.40			.20				3.90	
June "																									.50							.50	
July "		.30	.20	.10				.20		.40		.30	.20	T					.30	T		.60										2.30	
Aug. "																			.60	.60	.20								.60	.70	.60	2.80	
Sept. "										T		.60	1.50														T	.30	T			3.80	
Oct. "																										.20			.30	.10		.60	
Nov. "			.20																													.20	
Dec. "											.20	.10	.90	.20																		1.40	
Total 1936																																17.10	
Jan. 1937					No daily record available.																											1.20	
Feb. "					No daily record available.																											.50	
Mar. "			T				.20													T										.10		.30	
Apr. "													.20																			.20	
May "							.80						1.60															.20	T	T		2.60	
June "		1.00																														1.00	
July "			1.00	.20		.80	2.00	1.50	.30	T						.10	T															5.90	
Aug. "																									T							T	
Sept. "									.30							.20	.30								.30							1.10	
Oct. "									.10		.10			T	T																	.20	
Nov. "		T		T																		.30										.30	
Dec. "	.60			2.00	.90									.30	1.00	.50				.20								.90				6.40	
Total 1937																																19.70	
Jan. 1938				.40	.30				.40																							1.10	
Feb. "																					.60					T						.60	
Mar. "																							.25									.25	
Apr. "																		1.06	.71													1.77	
May "										.40					.30									.30	.10							1.10	
June "																.20	T			.30	.10											.60	
July "																																0	
Aug. "	1.50			T	T																						T	4.30		T		5.80	
Sept. "				T	T			.40	.90	.20	.30																.40					2.20	
Oct. "												.30																				.30	
Nov. "																																	
Dec. "				.40	.30				.40																							1.10	
Jan. 1939								.10				.10														.30	1.20					1.70	
Feb. "																	.20						T									.20	
Mar. "																	.10	.20														.30	
Apr. "												1.10									.70											1.80	
May "						Daily record incomplete.																										2.60	
June "		1.00					.30											.10														1.40	
July "										.30	1.60	.90																			.70	3.50	
Aug. "	.50	.10																								.20						.80	
Sept. "								.30		.50	2.00	.40		T				.50	.30											T		4.00	
Oct. "										.25		.20																				.40	
Nov. "																												.10				.10	
Dec. "																									.10							.10	
Total 1939																																16.90	
Jan. 1940																						.20										.20	1.29
Feb. "														.20																		.20	.37
Mar. "																			.50	1.90	.30			.80	.20							3.70	.78
Apr. "																																0	1.02
May "									4.50								T						T									4.50	2.84
June "										.30				1.50														.25				2.05	1.42
July "				.60										.40																		1.00	2.83
Aug. "																																	1.70
Sept. "																																	3.52
Oct. "																																	.56
Nov. "																																	.97
Dec. "																																	1.90
Total 1940																																	
Period Average 1934-1940																																	18.50

Weslaco, Texas

Standard 8-inch rain gage — Record is by State Agricultural Experiment Station.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
Jan. 1934			.04			.03				.05	.69		.01			.63	1.37					.59	.38	.03	.01	T	1.15		.06	.63	.10	5.77
Feb. "				.01				.01	.03	.15	.03																.20	.10				.53
Mar. "	.27	.52						.02						T	.01			.15						.02	.09	.01						1.09
Apr. "					.44			.02						.10																		.56
May "											.16	.31													.18							.65
June "		.13																							.05							.18
July "									.05	.23	.32	.50	.26											.33	.46	.11			.73	.45	.10	3.44
Aug. "	.25																.04															.39
Sept. "	.57	.06		.88						.86	.57				1.03	.14	.05			.01	.08	.05				.09		.02	.02	.20	4.63
Oct. "														.15	.25		.61															1.01
Nov. "		.12													.49																	.61
Dec. "					.06	.69	.12											.04									.58					1.49
Total 1934																																30.35
Jan. 1935	.37																				.36											.73
Feb. "	.01							.04		.11	.08	.63																	.06	.02	.12	.83
Mar. "																																.84
Apr. "						.41														.54	.06	.97	.02				.33					1.92
May "										1.15											.83								2.92			4.71
June "				3.34			.01	1.88	.34	1.50	1.08	.19	.15												.06		.57					9.12
July "													.26	.22											.19	.16	.38	.01				1.22
Aug. "			T	.64							.01							.41	.06	.30										T		1.42
Sept. "	.02				.32					.75				.21							1.20	.04	.07	1.15	.35	.06	.05					4.29
Oct. "					.24													.59	.12	.21				.03	.25	.01					.72	2.17
Nov. "	.26	.01			.02						.02				.03	.18	.04	.02														.58
Dec. "		1.03	.04		.24	.01				.50	.91			.02						.10	.06			.01	.05	.30	.06	.02		.23	.24	3.82
Total 1935																																30.98
Jan. 1936												.01															.07	.25	.03	.04		.38
Feb. "		.01				.03			.58	.05	.05	.02							.01	.04		.01				.02	.13		.04			.97
Mar. "	.06	.02	.14				.34				.10	.01	.12																			.79
Apr. "							.04										.27			T			.58				.01					.90
May "									.22		1.50		.05	.28	.24							.17			.10	.04		T	.21	T		2.21
June "																				T	.15						T			T		.15
July "		.12	.01	.05			.88	.13	.01	1.07	.02	.94	.52	1.13		.02													T			4.90
Aug. "	T														T		.45	.31	.08									.37	1.49	.69		3.39
Sept. "	.84					.17	.10	.02		T		.01	.85	.10			.16	.16			T	.03		.85	T		1.16	.73	.19			4.77
Oct. "							.12															.04	.04	.03	T	.22	.03	.13	.25	.02		.88
Nov. "			.03	.13									.04			.08		.01			.01		T				T	.01		T		.31
Dec. "		T		.10	.22						.19	.12	1.16	.32											.05			.05	T		.03	2.22
Total 1936																																22.47

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES— 1944

Weslaco, Texas

Standard 8.inch rain gauge — Record is by State Agricultural Experiment Station.

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1937																																1.90	
Feb. "																																1.03	
Mar. "		.05	.11	.10	.12	.01	.06	.07						T						.24		T		.02					.05	.16		.99	
Apr. "		T										.06	.40																			.46	
May "		T					.94						2.25	.03															.30	.06		3.38	
June "		2.61					.03												T					T								2.64	
July "			.45	.34	.08	.41	.96	1.39	.17	.40					.03	.43	.05															4.71	
Aug. "																			T	T					.40							.49	
Sept. "							.07	.85								T	.14								.37	.01						.84	
Oct. "									.25		1.73			T					.05			.03										2.04	
Nov. "						.55			T													.27	.02									.84	
Dec. "	.47	.02		.05	1.70		.08		.01	.11	.04	.04		.72	.26	1.15			T	.16	.04	.04			T	.04		.01	.41	.01	.01	5.31	
																																Total 1937 24.83	
Jan. 1938	.02	T			.13	T			.19	.06	T	T				T		.02		T				.02	.01	.17	.17	.19	.06	.85	.01	1.90	
Feb. "						.01														.06	.79	T				T	.02					.88	
Mar. "	.46							.96	T	.01														.24	.01							1.68	
Apr. "			.05	.01														.85	.23													1.14	
May "				.10				.04	.34	T		.02	T		.14										.79			T				1.43	
June "														T		.35	.17		T	.65	.76	.27						.14				2.32	
July "															.07																	.07	
Aug. "	.05			T																	T			.11	.04			.01	4.70	.17		T	5.08	
Sept. "					T	T	.03		.65	.25	.39	T			T											.20		T			.21		1.73	
Oct. "	T						.01				.41																					.42	
Nov. "			.04				.40											T						.27	.14			.15	.03		T	.93	
Dec. "																									.19	.41	.07			.04	.34	1.05	
																																Total 1938 18.65	
Jan. 1939												.17										.33	.03	.01		.26	.68	.12				1.60	
Feb. "																.12	.05	.04					.03	.03								.27	
Mar. "		.04													.85	.01	.61	.02														1.53	
Apr. "											.54	.43									3.38	.02					.01	.04				4.42	
May "				.18	.32			T	T			T	1.82															.05		.01	.11	2.49	
June "	.11	.77	.65			.07	1.00	.05													T											2.65	
July "										.06	.77	.40	T	.04																	.05	1.36	
Aug. "	.33	.05																			1.15					.88			.06			1.87	
Sept. "										.54	.40	.63		.03	.03		.05	.76	.02	.03	T									.05		2.54	
Oct. "												.15	.02		T	.01								.06				.01				.25	
Nov. "			.04								T	.04													T	T		T	.09			.17	
Dec. "	T																								.08	.08		.09				.25	
																																Total 1939 19.40	
Jan. 1940		T		.02		.02						.02								T	.02	.24			.04							.36	1.81
Feb. "					.04				.03				T	.13	.05	T	T															.25	.68
Mar. "					T														.64		1.73											4.24	1.51
Apr. "				.02		T				.02																			T			.04	1.35
May "									.85								T			T		T							.05			.90	2.37
June "										.64	1.03			.05	T					.15	T					.10				.03		2.04	2.73
July "			.41	.30										.56	.77	.01			.02	.61												2.48	2.60
Aug. "										.27		.42																				.69	1.90
Sept. "				.04	.11	.53	.28	.08	.03										.05			T	.26									1.38	2.87
Oct. "							.25						.02										.04			.46	.02					.79	1.08
Nov. "			.01			.06	.14	.27	.12										T		.22	.12	.06	.47	.05							1.32	.71
Dec. "						.08	.08	.12						.12	.80			.02	.19	1.47	2.92	1.25										7.05	5.03
																																Total 1940 21.74	
																																Period Average 1934-1940	22.64

Mercedes Pump

Standard 8 inch rain gauge — Record by Plant operator

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1932																																	
Feb. "		.04		.03	.01								.10						.05	.09	.54	T										.86	
Mar. "					.60																										1.80	2.40	
Apr. "								.03										.25									3.70	.42	.01	1.90		6.31	
May "											.02	1.05	.09			.15	.53															1.84	
June "																							.30	.41	.06	.44			.01	.69		1.91	
July "					.07	.31											.49															.87	
Aug. "																			.01		.50	.51	.04		.11	.05		.10	.38	.45		2.15	
Sept. "																																	
Oct. "	.16				.03									1.83	1.08						.02											3.12	
Nov. "															.05																	.08	
Dec. "									.01	.05	.03		.01	.12	.08	.08		.03	.20	.07	.01	.08	.01			.14						.88	
Jan. 1933												.14	.08		.09															.10	.01	.42	
Feb. "	.01			.06	.11	.48									.01		.01			.01	.01					.05						.75	
Mar. "			.08	.55	.15																		.02									.80	
Apr. "					.08									.02												.08						.18	
May "																									4.70	.61	.81			.10		6.22	
June "													.58		.09			.06														.86	
July "						1.80	1.10		.22	.01																	.90		.18			4.21	
Aug. "											.54	1.30			.03	1.37		.03										.05	.07	.51	.20	4.10	
Sept. "	.05														.65	.02									.09	.12	.07	.15	.14			2.02	
Oct. "		.27	1.75	.01							.02				.03				.07													2.19	
Nov. "			1.35	.01		.20	.17	.11	.01	.07	.08	.04																				2.02	
Dec. "	.02																										.06	.05	.01			.14	
																																Total 1933 23.91	
Jan. 1934			.06	.05							.75	.02			.01	.03	.68	.02				.01	.36	.52				.30	.05	.16	.38	3.36	
Feb. "											.16	.08																.22				.46	
Mar. "	.23	.25						.38							.09			.03	.02						.20	.02						1.22	
Apr. "					.40		.01							.22														.03				.66	
May "												.37	.02		.25											.03						.67	
June "		.38																														.38	
July "									.04	.04	.78	.18	.55	.08											.31	1.52	.02		.09	.47		4.08	
Aug. "	.18		.13							.12							.03	.01														.47	
Sept. "	.02	.72		.66						.01	.14	.55	.01		.30	.68			.02	.05		.16	.54						.04	.04		3.94	
Oct. "	.02											.40			.01	.20	.65	.14														1.40	
Nov. "			.01												.14	1.36																1.51	
Dec. "					.42	.78	.10										.02									.26	.01					1.39	
																																Total 1934 19.74	
Jan. 1935	.65	.12				.01															.24											1.02	
Feb. "	.02									.08	.41	.08	.60																			1.19	
Mar. "								.05	.05								.01												.08	.01	.32	.52	
Apr. "							.10													.39				.26				.46				1.01	
May "					.02	.12				1.47											.66							2.00				4.27	
June "	.01		.01	3.85	.25		.10	.10	.90	1.93	1.35	.03												.09				.42				8.34	
July "	.05										.05	.24	.50													.70	.38	.43	.09	.92		3.34	
Aug. "				.78							.15									.23												1.16	
Sept. "									.64					.47	.05						.26	.33	1.19	.30	.17	.04	.23					3.68	
Oct. "																		.33	.47	.01				.05	.15	.02				.12		1.15	
Nov. "	.76	.09													.61	.09	.01															1.49	
Dec. "		1.26	.02	.01	.05	.12	.02		.02		2.21								.06		.01				.05	.11	.51	.05	.03			.32	4.85
																																Total 1935 32.22	
Jan. 1936						.01	.01	.01														.01						.06	.13	.05	.03	.31	
Feb. "			.03	.01		.04			.47	.19	.02	.03	.01						.01	.04								.28				1.13	
Mar. "			.22					.02	.07			.01	.12	.01																		.43	
Apr. "								.02									.16	.02		.04		.50						.01	.01			.76	
May "									.12	1.48			.71	2.60	1.30					.25		.51	.20	.12	.04	.05			.01	.32	.67	8.36	
June "																				.18											.07	.25	
July "		.40	.20				.20	.57		.02	.02	.86	.50	1.83		.08		.01												.12		4.81	
Aug. "		.08						.04											.64								.01		1.47	2.84	.02	1.36	6.46	
Sept. "																																	
Oct. "							T															T	.10				.19	.01		.31	.13	.74	
Nov. "				.12												.01	.04			.02		.42							.01			.62	
Dec. "					.38							.20	.35	1.48																.01	.01	2.43	

‡ Some months missing.

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES—1944

Standard 8 inch rain gage — **Mercedes Pump** — Record by plant operator

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1937																																1.79	
Feb. "																																1.33	
Mar. "			.02	.06	.08	.01		.07	.07											T	1.79				.02					.21		2.35	
Apr. "												.07	.47																			.54	
May "							.85						2.85															.44				4.14	
June "	.02		.92																		.01											.95	
July "				1.11	.19		.29	.93	1.28	.87	.01	.03					.22	.07														4.94	
Aug. "																												.32				.52	
Sept. "					.03			.17	.03								.16									.73						1.14	
Oct. "										.08	.04	.06																				.18	
Nov. "																						.03	.22									.25	Total 1937
Dec. "		.02			1.38		.03			.07	.08	.07		.03	.95	1.60				.08	.02						.07		.69	.01		5.10	23.01
Jan. 1938				.20	.55				.27	.02		.01											.04									1.09	
Feb. "						.05												.01		.27	.06					.02						.41	
Mar. "	.19	.07						1.57	.05		.03														.08					.02		1.81	
Apr. "																		1.70	.36	.03												2.09	
May "					.05				.03	.21					.17										.01			.10				.55	
June "																.03	.31				.48	.61		.14				.05				1.60	
July "										.10														.18								.28	
Aug. "													.25															.80	1.72			2.77	
Sept. "						.11		.03	.21	.40	.85	.58				.63																2.81	
Oct. "												.06																				.06	
Nov. "				.04			.57																.03	.29			.11	.02				.86	
Dec. "																								.58	.06					.31		.95	
																															Total 1938	15.30	
Jan. 1939	.01											.03					.01						.16		.15		.61	.50				1.47	
Feb. "																.04	.29	.15	.03					.03								.83	
Mar. "																																.33	
Apr. "				.01	.20	.05		.01					1.00		3.49							2.73						.03			.16	3.76	
May "				.93			.50	.78	.05																							3.92	
June "	.04	.95	.42																			.02										5.69	
July "											.41	.09																				.50	
Aug. "	.15	.46																				.28	.50	.01				.03		.05		1.48	
Sept. "	.02									.46	.21	.49	.02			.10		.48	.46	.09												2.31	
Oct. "													.20				.02															.24	
Nov. "												.03																	.06			.09	
Dec. "	.01																									.09		.08				.18	
																															Total 1939	18.20	
Jan. 1940						.01																.10	.08									.19	
Feb. "					.08				.01						.08		.02															.19	
Mar. "																			.93		1.73				.25	.15						3.06	
Apr. "				.03																												.03	
May "										.78							.06	.04		.03												.91	
June "											.03	1.83		.05						.11	.05	.02	.03				.25	.04				2.41	
July "			.47	.30									.10	.29		.26	.02				.73		.05									2.23	
Aug. "										.15	.01														.11							.27	
Sept. "						1.00	.45	.55												.10			.07									2.17	
Oct. "														.20									.30		.38	.14						1.02	
Nov. "						.01	.04	.07	.04												.12	.10	.07	.01	.21							.67	
Dec. "						.03		.24			.01			.03	.63				.22	.89	1.32	3.90										7.27	
																															Total 1940	20.42	
Jan. 1941		.01	.11		.08		T			.01											.23	.36	.36				.01	3.20	.05		T	3.47	
Feb. "		.05		.01	.02	.36		.10				T	T		.05			.82	T	.49	T	T	1.82	.23	.18	.03	.01					1.57	
Mar. "						.01	.25					T					.61		.19		.07	.01	.02		.27	.05	2.80	.85	T			4.04	
Apr. "																						2.80	T	T	.34				.57			4.08	
May "			.33		1.66	.07					.08	.03								1.09	.39	2.50	.20	1.00	.11	.73	.01					5.99	
June "								.01																								6.15	
July "				1.61							.01		1.09	.01																		2.72	
Aug. "						.47	.57		.08	.16																						1.28	
Sept. "		.50								.18	.32	.07	T						1.70	.82						.17	.11	.22	.02			4.11	
Oct. "		.01	.06	.68		.01	T					.22					.29														.08	1.35	
Nov. "	.23	.03			T	.13	T														.08	.05	.01									.53	
Dec. "			1.13					.08	.19		.73				T	.12				.05	.33	.01							.05	.43	3.13	
																															Total 1941	38.42	
Jan. 1942	.10	.02				.16	.43	.01	T	.02				.01	.26					.06												1.07	
Feb. "				.01					.01		.09	T	T	.15					.19	T	.10		.08									.63	
Mar. "	.14																											.08				.22	
Apr. "				T																.04		.04						.01				.09	
May "					.02			2.47	.08						.14							.17										2.88	
June "						.08	T														.20	.71	4.26	.27	.19	.12						5.83	
July "	.14	.02			.07	.31	.11																				.01	.18	.05			.89	
Aug. "		.18			.48	.45	.01												.19	.30				.20		.03		.52				2.36	
Sept. "									.67			.53	.03	.36	.57											.03						2.19	
Oct. "					.40									.05					.38	.04						.06						.95	
Nov. "				.16																												.16	
Dec. "						.02				.02	.02									T	.15	.01										.22	
																															Total 1942	17.47	
Jan. 1943				.63	.03		.17	.20	.55	.02	.01	.17	.37					.01	.02								.02					2.22	
Feb. "																		.08	.11							.08						.27	
Mar. "														T										.40								.40	
Apr. "																.01						.05										.04	
May "							.16																.03		.23	.76	.07	1.82			1.57	4.64	
June "									.13			.14	.26				.26	.43														1.22	
July "													T						.07													.07	
Aug. "						.01	.01																					.26		.08		.38	
Sept. "								.12	.24	1.11	.43			.06	.06	.05	.03	.10						.07	.26	.24	1.78	.03	.09			4.69	
Oct. "		.52								.90	.13																					1.55	
Nov. "							.03							.07	.68	.88									.08	.15	.05	.22				2.16	
Dec. "				.41	.02		.15	.03	.01		.78	.02		.02	.25									.44	.11						.03	2.25	
																															Total 1943	19.89	
Jan. 1944	.06	.03					.06						.01						.12	.03	.04			.03	.04				.04	.01		.30	1.39
Feb. "	.09												.06	.01					.43													.57	.79
Mar. "						.03				.49	.16					T	.03	.11	.43										.10			1.35	1.46
Apr. "																																0	1.52
May "					.18														.01		.02				.03	.07		.10	1.09	.03		1.33	3.53
June "							.12			.05	1.52	.17	.06	.01				.62	.45										1.07			1.07	2.90
July "		.09	.24		.01	.41	.01																									.76	2.38
Aug. "																					.10	.42	1.52	.06			.02	.74	.42	.02	3.58	6.88	2.31
Sept. "							.05	.01								.06						.04			.09	1.29	.93					2.47	2.89
Oct. "						T	.15	.51	1.07																			T				1.73	1.21
Nov. "					.26											.02	.09	.07	.10	.04		.03	.11									.72	.86
Dec. "			.01		.50	T																		T			.69	.02	.02	.01	T	1.18	2.32
																															Total 1944	21.36	
																															# Period Average 1932-1944		23.37

Standard 5 inch rain gage — **San Benito Pump** — Record by pump operators

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1935																																	
Feb. "																																	
Mar. "																																	
Apr. "																																	
May "																																	
June "																																	
July "																																	
Aug. "																																	
Sept. "																																	
Oct. "			1.34						.64	.40								.65	.45													3.48	
Nov. "			.35		.25		.25		.35																							1.20	
Dec. "																											.58					.58	

Some months missing.

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES—1944

Standard 8 inch rain gage — San Benito Pump — Record by pump operators

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1934											.46												.82	.80			1.50		.10	.35		4.05	
Feb. "										.10																		.38				.48	
Mar. "		.10						.10										.11						.20								.51	
Apr. "					.28									.40													.10					.78	
May "																									.45							.45	
June "																									.45							.45	
July "										.40		.55	.25											.20	1.82			1.53	.44			4.59	
Aug. "	.55																								.30							.85	
Sept. "	.65	.60	.31							.85	.15		.30	.55								.26					.35	.15		.75		4.92	
Oct. "															.32		.46															.78	
Nov. "															1.00																	1.00	
Dec. "					.25	.90																				.75						1.90	
Total 1934																																20.74	
Jan. 1935	.82																				.26											1.08	
Feb. "										.25		.55																				.80	
Mar. "									.17																						.22	.39	
Apr. "						.60													.86							1.30						2.76	
May "						.61				1.26											.26								2.71			4.84	
June "			1.39	.20			.15		.90	1.15	1.70	.10											.30				.71					6.60	
July "																.25									.30		1.10					1.65	
Aug. "			.45	.40																1.00							.20					2.05	
Sept. "					.77				1.75												.65	.30	1.63		.71	.32	.55					6.68	
Oct. "																		1.31													.50	1.81	
Nov. "																																0	
Dec. "		.15			.01	.04	.02				1.18				.02					.10	.01	.01				.70		.04			.41	2.69	
Total 1935																																31.35	
Jan. 1936																																0	
Feb. "									.75																		.47					1.22	
Mar. "			.13					.26				.15																				.54	
Apr. "																						1.12										1.12	
May "										1.14			.25		.35					.51								.41			2.66	
June "																				.48										.10		.58	
July "			.48				.47	.10				.48	.54	1.10																		3.17	
Aug. "																			.63								.10		1.70	1.30	.73	4.46	
Sept. "					.30		3.00	.50				.75	.50					.50		.55				1.29		.17	1.95					9.21	
Oct. "																										.16			.16	.30		.62	
Nov. "																.10																.10	
Dec. "				.25							.26		.35	.85																		1.71	
Total 1936																																25.39	
Jan. 1937																											No daily record available.					1.49	
Feb. "																																1.00	
Mar. "		.27																		1.45												1.72	
Apr. "												.47	.40																			.87	
May "							.80						1.18															.80				2.78	
June "																																0	
July "		.61	.95	.27		1.08	1.26	.85	.52						.35																	5.89	
Aug. "																										.87						.87	
Sept. "																.25									.22							.47	
Oct. "											.86		.38			.46																1.70	
Nov. "			.35			.65																.15										1.16	Total 1937
Dec. "	.24			1.40							.10			1.00		2.46				.15								.80				6.15	24.10
Jan. 1938			.14		.21				.37														.10									.82	
Feb. "																																0	
Mar. "	.17							2.52	.12														.37									3.38	
Apr. "																			2.45	.31												2.76	
May "														.30		.15								.10			.77					1.32	
June "																				.60	.40	.80										1.80	
July "																																0	
Aug. "																											.40	1.65				2.05	
Sept. "						.21			.28	.87	.68																					2.04	
Oct. "										.21	.22																					.43	
Nov. "							.18							.25									.25				.10					.78	
Dec. "													.31											1.15	.06					.26		1.78	
Total 1938																																16.96	
Jan. 1939																							.15	.21		.26	.55					1.02	
Feb. "																																.15	
Mar. "																	.31															.31	
Apr. "												.35									.95											1.30	
May "					.19								1.45																	1.00	.10	2.74	
June "	.40	.52				3.00	3.20	1.00																								8.12	
July "										1.00																					.57	1.57	
Aug. "	.50									.10																.30						.90	
Sept. "									.65	.10	.75								.30	.12												1.92	
Oct. "														T																		T	
Nov. "																																0	
Dec. "																									.09	.11		T				.20	
Total 1939																																18.23	
Jan. 1940																						.50										.50	
Feb. "				.13																												.13	
Mar. "																			.50	2.25				.16								2.91	
Apr. "																																0	
May "									.80																							.80	
June "									.18	1.34	.77									.15		.65				.27						3.36	
July "				.60										.75		.21				.27			.22									2.05	
Aug. "																																0	
Sept. "						1.10	.85												.15			.34										2.44	
Oct. "															.12							.52		.25	.30				.53			1.72	
Nov. "					.21	.35	.25														.31	.70		.45								2.87	
Dec. "					.25		.27							.80						.21	1.50	2.00	2.50									7.53	
Total 1940																																23.51	
Jan. 1941	.10				.50		.10													.21		.12	.70				2.57					2.57	
Feb. "							1.09													1.40		.38	1.63	.15								1.75	
Mar. "																				.20				.22		2.68	.95					4.65	
Apr. "																					3.52							.80	.12			4.02	
May "			.25		1.10															1.50	2.00	.46	1.25	.67	.55							5.79	
June "																																6.43	
July "													1.36																			1.36	
Aug. "						.60																										.60	
Sept. "										.45	.80	.25						1.35	.45	.66						1.95						5.91	
Oct. "			.71																										.53		.35	1.59	
Nov. "					.75																											.75	
Dec. "		.70								.75					.15				.23	.53												2.36	
Total 1941																																37.76	
Jan. 1942					.15	.30							.35																			.80	
Feb. "													.15						.20		.25											.60	
Mar. "																																0	
Apr. "																																0	
May "							3.04	2.28																								5.32	
June "					.20															.41	.52	4.50	.20		.10					1.45		7.38	
July "				.12		.47																						1.05	.15			1.79	
Aug. "					.40	.35																										.75	
Sept. "					.82		.20		.75		.50			.61						.15					1.25							4.28	
Oct. "				.25															.65								.25					1.15	
Nov. "			.76	.26																												1.02	
Dec. "																																0	
Total 1942																																23.09	

RAINFALL ON UNITED STATES SIDE OF RIO GRANDE WATERSHED

INCHES-- 1944

Standard 8 inch rain gage — San Benito Pump — Record by pump operators

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1943								.44			1.10																					1.54	
Feb. "																			.10													.10	
Mar. "																									.25							.25	
Apr. "																					.35											.35	
May "																								.26				.45	1.55	.25	1.10	3.61	
June "																																0	
July "																																0	
Aug. "																															.10	.10	
Sept. "								2.00	.35	1.80	.35		.31			.50								.72	1.04	.51						7.58	
Oct. "	.30									1.00																						1.30	
Nov. "													.75																			.75	
Dec. "		.08		.50	.02				.01		.80		.07	.05	.22									.59								2.28	
Total 1943																																17.86	
Jan. 1944																							.65									.65	1.30
Feb. "																	.16															.16	.59
Mar. "					T					.34	.31						.08	.20	.50			T							T			1.37	1.44
Apr. "																																0	1.27
May "				.22																						.61		2.55				3.38	3.06
June "						1.25												.25														1.50	3.29
July "		.68		1.25																												1.93	2.18
Aug. "																				.31	.85	1.00						.71			2.42	5.29	1.63
Sept. "							.54	.15															1.70	.15		1.00						3.54	4.45
Oct. "								1.00																								1.00	1.30
Nov. "			.25															.25														.50	.79
Dec. "					.75																											.75	2.33
Total 1944																																20.07	
‡ Period Average 1933-1944																																	23.63

‡ Some months missing.

AVERAGE RAINFALL ON THE RIO GRANDE WATERSHED AND SUBDIVISIONS

IN INCHES

The records below show average monthly rainfalls on the entire Devils River Watershed above Devils River Station and on the entire Lower Rio Grande Valley area on the United States side from Rio Grande City Station to the Gulf and lying within the outer limits of present irrigation districts. Earlier records beginning with 1871 will be found in Water Bulletins No. 10, p. 78; No. 12, p. 84, and No. 13, p. 86.

Devils River Watershed

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1944	1.60	1.35	.96	1.12	2.67	1.55	.46	2.98	3.58	1.77	1.96	1.23	21.23
Total	49.10	45.62	88.73	136.95	197.58	158.77	134.68	165.98	226.03	160.27	135.57	83.05	1,624.33
Avg.	.66	.62	1.20	1.85	2.67	2.69	1.82	2.24	3.05	2.17	1.83	1.15	21.95

For the 74 years, 1871 to 1944, inclusive.

United States Side Below Rio Grande City

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1944	.57	.26	1.77	.40	4.63	2.58	1.65	7.47	3.26	1.79	.98	1.11	26.27
Total	92.42	74.47	88.74	95.48	216.26	185.56	139.86	164.34	325.35	175.62	108.05	103.05	1,768.20
Avg.	1.24	1.01	1.20	1.29	2.92	2.51	1.89	2.22	4.40	2.37	1.46	1.39	23.90

For the 74 years, 1871 to 1944, inclusive.

The records below show average monthly rainfalls on entire Rio Grande Watershed subdivisions on both sides of the river. One covers the Watershed from the El Paso Station to that at Fort Quitman. The other similarly from Fort Quitman Station to Upper Presidio Station. Earlier records beginning with 1871 will be found in Water Bulletins No. 12, p. 84 and No. 13, p. 86.

Watershed El Paso to Fort Quitman

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1944	.39	1.30	.06	T	.77	1.77	2.08	1.95	1.19	.99	.74	.97	12.21
Total	33.93	29.06	25.83	22.48	29.36	61.92	180.50	150.60	109.43	66.78	36.25	47.66	793.80
Avg.	.46	.39	.35	.30	.40	.84	2.44	2.04	1.48	.90	.49	.64	10.73

For the 74 years, 1871 to 1944, inclusive.

Watershed Fort Quitman to Upper Presidio

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1944	.68	.64	.03	0	.68	1.39	1.79	2.77	3.52	.25	.78	1.26	14.29
Total	26.68	19.91	19.64	28.29	46.47	52.28	250.01	194.99	152.85	68.88	32.11	43.95	974.54
Avg.	.36	.27	.27	.38	.63	1.35	3.38	2.63	2.07	.93	.43	.59	13.17

For the 74 years, 1871 to 1944, inclusive.

RAINFALL ON MEXICAN SIDE OF RIO GRANDE WATERSHED

INCHES —1944

The 1944 rainfall records shown hereunder have not been published elsewhere. The source of each record and the type of rain gage used are shown with each record. The latitude, longitude, and elevation of each station will be found in the index to rainfall stations in W. B. 10 or with station records in subsequent Water Bulletins.

Standard 8-inch rain gage — Juárez, Chih. — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January						T		T			T												T		.51	.10	T					.41	.34
February				T	.01	T	.82	T					T				.14							.13	.02		.30					1.42	.42
March																		.12	T						.15							.12	.55
April																																0	.45
May																										.33						.33	.45
June						.20	T													.01	T	.46		.48	.33	.03		.10	.13			1.74	.74
July	.10						T						T		T	T	.04				1.73	1.77	.18									3.82	1.27
August	T				.05		.88	.11										.27														1.46	1.55
September			T	.31	T									.11	.06								T	T	.08	T						.56	1.37
October															T				T						.06	.36	1.34	.15	T			1.91	1.01
November					T	.04										.29	.04	.03	T				T	.12	T							.58	.61
December																								T	T	T	.59	.04				.63	.51
Total																																12.92	
‡Period Normal 1903-1944																																	9.07

‡ Some months missing.

RAINFALL ON MEXICAN SIDE OF RIO GRANDE WATERSHED

INCHES — 1944

La Junta, Chib.

Standard 8 inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																							T		.24						.07	.31	.86
February						.30																		.21								.51	.45
March								.68									.19															.87	.24
April																																0	.09
May																																0	.33
June																																	1.72
July	T	1.25	.42	T	.33	.42	.16	.01				.30	.37	.17	.38	.20	T	.79	.08	.59	.39	1.04	.01				.05				T	6.92	5.17
August							.24		.23	.56	1.04			.69	.49		.07	T		.15	T		.54		.26	.26						4.53	5.20
September		.04	.53	.27	.06	.01								.19											.01							1.11	2.21
October												.06											.16	.10	.32		.11	.02				.77	1.28
November												.08					.10					.14	.12									.44	.48
December																								.10	.48	.10	.12					.80	.80
																																#Period Normal 1925-1944	18.60

Guerrero, Chib.

Standard 8-inch rain gage — Record by National Irrigation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	T																								.33						.10	.43	.46
February				.24	.43	.08																	T	.08	T	.10						.95	.42
March								T	.06	.04							.06	T														.16	.24
April																																0	.19
May									.27				.04	.06																		.37	.28
June							T														T	1.14	.47	T	T	.02	.04	T	T	T		1.67	1.61
July	.59	T	.04	.08			.74	.24	.16	.08	T			T	.16		.78			.71	.06	T										3.64	4.23
August							.28	.16	1.20	.79	T		.31	.39		.12						.06	T					.08				3.39	5.05
September		.02		.20		.08	.16	.24	.10				T	T					2.00						T	.33						3.13	3.52
October															.03							.06	.63	.24		.32	.08	.16	.01			1.55	1.14
November												.03			T	.02						.10	.04	.06								.25	.67
December																							T	.04	.06	.51						.61	.81
																															Total	16.11	
																																#Period Normal 1905-1944	18.62

Parral, Chib.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																																	.18
February						T																										T	.24
March																																T	.15
April																																0	.07
May																																0	.39
June						T			T	.16											T	.12	T	.24		.23						.75	1.75
July						.04	.04					.08			.20							.20	.39									.95	4.27
August						T					.12					.87									.31	.28	.47	.31	.20			2.56	4.28
September		.24	.35		.94	.43	.91	1.77	.12																							4.76	4.18
October																											.16					.16	1.34
November																	T					.24										.24	.75
December																									.08		.16					.24	.52
																																#Period Normal 1905-1944	18.08

Las Virgenes, Chib.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																							.05		.01							.06	.18
February				.06	.07	.12																										.25	.12
March																																0	0
April																																0	0
May																																0	.22
June																																	
July																																	
August										T				.07		.24								.48								.79	.94
September			.63				.37	1.06																T	1.16	.20						3.40	2.74
October														.02	.16																	.18	.49
November																	.25	.13				T	.02									.40	.38
December																									.26	.17	.31					.74	1.62
																																#Period Average 1943-1944	

Balleza, Chib.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1943				T	.12			.04																								.16	
Feb. "																																0	
Mar. "																																0	
Apr. "																										T						T	
May "																										T			T			T	
June "					T	.04	.16	.20	.20	.20				T	.08	.12	.16	.08			.08	.16	.12				.30	.30	.20			2.40	
July "	.31	T	T	T											.20	.24	.24	.31	T										T			1.30	
Aug. "		T			.31	.32	.24	.	.32	.39				.32	.35					.35	.31		.39	.35	.24	.47	.71	.24				5.31	
Sept. "	.31	1.18	1.38							.20										1.38	1.26	1.46	1.34	1.42	.76							10.71	
Oct. "								.63		.79	T																					1.42	
Nov. "																								T								T	
Dec. "		.04				.59	.39	.40	.08																							1.50	
																															Total 1943	22.80	
Jan. 1944																									.39							.39	.28
Feb. "					T																		.43	T								.43	.28
Mar. "																																0	0
Apr. "																																	
May "																																0	0
June "																					.04	.12	.12									.28	1.34
July "	.08	.31	.16		.79	.63					.35	.31	.20	.47			.12	.79			1.57	1.26		1.42								8.46	4.88
Aug. "															1.18								.79	.04		.51	.55	1.18				4.05	4.68
Sept. "	.39			1.10	1.18	.95	.35	.31							T									1.38	.24							5.90	8.30
Oct. "																			.16				.04		.08	.04						.38	.87
Nov. "	T		.16														.14				.55	.63										1.48	.74
Dec. "																T	T							T	T	T						T	.75
																																#Period Average 1943-1944	

La Boquilla, Chib.

Standard 8-inch rain gage — Record by Rio Conchos Hydro-Electric Company

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																							.10									.10	.31
February						.07																										.07	.17
March																	.09															.09	.21
April																																0	.17
May																																0	.70
June						.06													.13				.70	.10	.14							1.13	1.55
July							1.74	.02	.10	.14				.02							.10	.10										2.22	2.92
August							.45																	.22			.04	.20	.76			1.67	3.00
September	.58				.04	.29	.70	1.33	.03															.38		.57						3.98	3.13
October																																0	1.01
November					.26												.07	.22				.15	.23									.93	.46
December*																								.12			.10					.22	.42
																															Total	10.35	
																																#Period Normal 1910-1944	14.05

Hormiguero, Chib.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January							T	T				T	T										.02			.10						.12	.49
February				T	.04	.16																										.20	.29
March																	.10															.10	.14
April																																0	.13
May									T	.04																	.31					.35	.50
June														T					T		T	.02	.20	.16	.08	.35	.21					1.02	2.08
July				.33		.08	.06	.27				.24	.08	.02	.14	.08		T				.12	.31		T							1.73	5.29
August						.42	.71	.04		.06	.32				.47	.63									.39	.35	.43	.49	1.85			6.16	6.16
September		.63	.71		1.26	.47	2.64	4.09	.47	T	T													T	1.22	.30						11.79	5.86
October	T																											.28				.28	1.74
November				.47														.16				.47	.43									1.53	.68
December											T	.12													.14		.25					.49	.78
																															Total	23.77	
																																#Period Normal 1925-1944	24.14

Some months missing.

RAINFALL ON MEXICAN SIDE OF RIO GRANDE WATERSHED

INCHES — 1944

Delicias, Chih.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																							.04			.04						.08	.33
February				.04	T	.20																		T								.24	.18
March																	T															T	.13
April																																0	.17
May																																0	.28
June							.06																.06		.04					.01		.19	1.46
July						.02	1.84	T	.02	.34			T								.02		.53									2.17	2.53
August					.04		.06	.37	T				.04	.06		.28	.06						T	.81		.04	T	.08	.15			1.09	2.51
September		.30	.41		.02	.10	.49	1.60	.01	T															.94	.39	.02					4.38	2.59
October																																0	.80
November																	.16	.12			T	T	.02									.30	.40
December																									.28	.12	.33					.73	.53
																															Total	9.98	
																															#Period Normal 1933-1944		11.91

Chihuahua, Chih.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.06							T					T													T						.06	.27
February					.13	.24																		T								.37	.25
March																																	.26
April																																	.19
May																											.02					.02	.39
June						T				.03									T			.06	.09	.22	.21	.03			.01			.61	1.53
July		T					.15	.12	.03	.02		T		.06	.04	T		T			.01	.06	.08	.02				T				.59	3.53
August					T	.02	.28	.03	T	T	.02	.17		T	.19	.15	.04						T	.04	.32	T	T		.04			1.30	5.53
September			.08	1.24	.12	.10	.24	.78	.04						.16									T	.41	1.00	.26					4.37	5.39
October		.08										.79		.02					T					T		T	.02	T	T			.82	.93
November															T	.06	T	.23						.01	.01							.31	.54
December																										T	.01	.25				.26	.42
																															Total		
																															#Period Normal 1900-1944		15.23

Ojinaga, Chih.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1943			T				.20									T															T	.20	
Feb. "																						T		.16								.16	
Mar. "														T					T													T	
Apr. "													T						.86	T								.16				1.02	
May "						.78		.51		.02				.02	T				.04	T								.12	T	.67		2.20	
June "																																	
July "																																	
Aug. "																																	
Sept. "	.09	T				T															T	.02	.09	.15	.04	.01	T					.40	
Oct. "	T								T															T								T	
Nov. "														.08										T	T	.16	.31		T			.55	
Dec. "																																	
Jan. 1944	.55	T															.08									T						.63	.16
Feb. "					T	T	.01																T									.01	.23
Mar. "		T						T									T															T	.23
Apr. "																																0	.22
May "										T	T										T	T		.63								.63	.62
June "							.55		T	.39				T									.39			.20		.39	.40			2.32	.88
July "																							T	T	T							T	.98
Aug. "									T								T				T	T	T.15	.08		T		T				3.23	1.62
Sept. "			.87	.87	T	.08	T	T	T							.78								T								2.60	1.49
Oct. "		T																														T	.91
Nov. "															T	.16	.55	.55	T													1.26	.49
Dec. "																									.39	.20	.39					.98	.40
																															Total	11.66	
																															#Period Normal 1906-1944		8.25

Falomir, Chih.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																									.01						T	.01	.23
February				.12		.05																										.17	.23
March																	T															T	.42
April																																	.31
May																										.13	.08					.21	1.01
June																																	2.34
July																																	4.48
August																																	9.88
September																																	15.06
October																																	.32
November																																	.15
December																																	3.18
																															#Period Average 1924-1944		35.61

San Antonio, Durango

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January												T	T										.23		T	T		T				.13	.44
February	T		T	.03	T	.06																T	T	.09								.18	.09
March									.03								.21															.24	.12
April																																0	0
May							T		T	T	T				.02	T																.02	.05
June	T				T	T	T		T	.54											T	T	.09	.19		T	T		T	T		.82	3.59
July	.02		T	T	.71	.05	.70	.06	.12	.05	T	T	T	.05	.25	T				.01	.08	.36	T	.10		.24						2.80	3.33
August						1.09	.31	.15		T	.14	.07			T	.07						.08	T	.30		.28	.28	1.15	.07	T	T	3.69	2.88
September		.06	.68		.07	1.91	1.32	1.07	.67	T	T	T	T		.16	.12								T	.36	.44	.48		T			7.48	6.00
October	T	.59																										.18	T			.77	.92
November				T	T												T	.09			T	.37	.46									.92	.51
December											T	T	T												.03		.01		T			.04	.32
																															Total	17.39	
																															Period Average 1943-1944		19.35

Palestina, Coah.

Standard 8-inch rain gage — Record by National Irrigation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	1.18	.19	T									.59	.59												T	T	.28				.28	3.11	1.23
February	.27	.08										.28											T	.51	T							1.14	.78
March																																0	.95
April																																	1.30
May	.39		.35							.51								1.69	.39	1.73					.95		.40		T			6.41	3.25
June					1.30	T	T																									1.30	2.15
July																																0	2.26
August																						.12	1.06			T	.32	.47	2.48			4.45	2.35
September																																	3.72
October																																0	.91
November		.67														.12	T	1.14		T			.31									2.24	.87
December		.24	.91	.20	.11	.11																										1.57	1.36
																															#Period Normal 1931-1944		21.13

Villa Acuña, Coah.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1943				.51	.14												T	T													T	.65	.59
Feb. "	T	T																														T	.47
Mar. "													T										.12	.88								1.00	.30
Apr. "							1.73								.06																	1.79	1.81
May "									.14											1.65	2.76							.34	.31			5.20	4.32
June "				1.54	T	T						T	T									.10										1.44	1.21
July "										3.01	T																					3.01	1.64
Aug. "																																0	1.86
Sept. "	.25		.06													.77						T		.08	.10	.98				.08		2.52	3.14
Oct. "	.23	.18		.22					T	.12	T																					.69	2.34
Nov. "	1.40																								.06	.65	.55			T		2.66	1.49
Dec. "	T			1.02	.06	T	.08	.12	.24													.08	.43								2.79	4.82	1.92
																															Total	25.58	
																															#Period Average 1941-1943		21.29

Some months missing.

RAINFALL ON MEXICAN SIDE OF RIO GRANDE WATERSHED

INCHES — 1944

Piedras Negras, Coah.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1943																																.59	
Feb. "	.12	.06	.01	.02	.05	.31	T	.14				.08	.01					T	.03													.24	
Mar. "																							T	.03	T				T			.03	
Apr. "	.19						T	.13							T		T			T												.32	
May "						T		T						T		T			T	T	.31	2.27	T					.14	.11	.86	T	3.69	
June "	T			.93	.01	T	T						T	T			T	T				T										.94	
July "									T	.25	.07	.99	T	T												.02	.46					1.79	
Aug. "																		T														T	
Sept. "	T	2.24		.15		T			.42							.83	T							T	.02	2.85	.01					6.32	
Oct. "	2.66	.02	T						.04	.18	.07	.07																				3.04	
Nov. "	.31	.60													T	.25										.01	.44			.02		1.61	
Dec. "			.29	.15	.53	.04	.16	.01	.06	.06		T		.02									.05	.03		T	.06				.04	1.52	
																																Total 1943	20.09
Jan. 1944	.74					T	.02					.12	.24				T									T		.06	.38	.01	.06	1.53	.71
Feb. "		.20											.07				T		.05	.01	.01	.05	T	T	T	.02	T					.41	.80
Mar. "								.17	.03	T			.02	.02	.20		T	.02				.27						T				.72	.91
Apr. "	T						T											.01							T	T			T			.01	1.47
May "	.12		T	.15						.01	.04								.03	.13	.05	.58		T	.69	.81	.24	1.51		T		4.14	2.81
June "				T	T	.15	.06	.03			.01									T									.26	.15		.65	2.57
July "	T					.04																										.04	1.17
Aug. "					T											.07						.51	.41	.36		.06	.68	2.21	.25	4.17		8.72	1.79
Sept. "						.16	.22	.01	.05															T		.74	.04	T				1.22	3.04
Oct. "	T		.24	.18				.50																	T							.92	1.92
Nov. "				T											.02	.19	.06	.33					.15	.27	.02							1.04	1.80
Dec. "	.08	.50	.66	.12	.30	.03																		.02		.02	.03	.07	T	T	T	1.83	1.05
																														Total		21.24	
																														#Period Normal 1907-1944			19.44

Muzquiz, Coah.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January										T	.39						.45	.32					T	.59	.32	T						2.05	.99
February	.20										.39	.51													T	.12						1.22	.48
March			T						.20									T	.20													.40	1.14
April																		.20														.20	1.02
May																																	3.71
June								T	.20																					.78		.98	3.86
July																									.35	.20						.55	2.09
August																							2.76	.39		1.26	.98	3.75	2.36	.39		11.89	2.99
September					.91	.98	T																	1.18	.71	1.38						5.16	5.37
October	T			.98	.59			.79	.39															.31	.87	.20						4.13	2.38
November						.39	.47	.58	T	T					.20	.98	.40	.59				.87	.98	1.18	T							6.38	1.55
December																																	1.28
																																#Period Normal 1923-1944	26.26

Presa Guadalupe, Coah.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																							.03						.09		.12	.17	.50
February	.10	.07	.02																				T									.19	.10
March														.02	T			.44														.46	.23
April																																0	.09
May										.51						T																.51	1.02
June																			.02				T	T						T		.02	.97
July						T			T															.28								.28	.34
August					T	.57	.12				.16		T			.41						T	.13		T	.54	1.18	.88	.12			4.11	2.18
September							.39	.08	.14																							.61	1.29
October																												T				T	.84
November															T	.14		.27	.04		T	.21		.24								.90	1.19
December																																	.24
																																#Period Average 1940-1944	8.82

Nueva Rosita, Coah.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.08																											.27		T	.30	.55	.88
February																																	.52
March			T						T						T		T	.12														.12	.44
April								T										.20												T		.20	1.19
May			T	T						2.76						T	.08	.75						T	.39		.39	T				4.37	3.06
June				T	.59	T					T							T	.27											.16		1.02	2.00
July	.58			.24	.08	T	.16										T							.20								1.26	1.80
August					.51																	1.38	1.18	.12		.87	.47	.12	.59	.47		5.51	1.73
September						.79	.51	T			T	T				T	T					.08	T	.94	.08	1.29						3.63	2.24
October	T	.19	T	T			.16	T																		.08						.43	1.39
November				T	T						T	T			T	T	T	T				.35	T									.35	.68
December	T	T	.08	.23																					T	T	.12	.04		T		.47	.93
																																#Period Normal 1925-1944	16.82

Sabinas, Coah.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.12					T						T															T	.20	T	T	.11	.43	1.04
February	.02											T						T	.02					T								.04	1.45
March			T													T	T	.12														.12	.88
April																		T														T	1.21
May										1.69							.12	.36									.59					2.76	3.64
June				T	.23		.16				.10							.04	.20													.73	1.99
July					T	T	.04																	T								.04	1.55
August						.87	T					T		.20	T			T	.15	T	1.32	1.46	.96	1.06	.61	.88	1.54	1.06	.96	.67		11.74	2.47
September						1.93	.10	T		.02	T														.51	.16	1.57					4.09	4.56
October		.16	.04				.32	.37															.37	T		.10						1.36	.89
November				T												.06	.04	.20				.27	.20	.04								.81	.68
December		.04																							T		T	.04		T		.08	.73
																														Total		22.20	
																														#Period Normal 1922-1944			21.07

Progreso, Coah.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.11																												T	T	.09	.20	
February																		.02														.02	.02
March																	.02	.04														.05	.03
April		.07																T														.07	.04
May			.01							.42						.02	.75	.12		.01				.48	.28		.48					2.55	1.75
June						.12		.08										.03												.63		.86	.85
July	T						.12																									.12	.06
August																					T	2.58	.14			1.59	3.59	.04	.32		T	8.26	4.13
September						3.94	1.07	.08										T					T	.55	.19	1.20						7.03	6.46
October	T	.08	T				.04	.75																		T						.85	1.04
November	T			T	T											.02	T	.29	.13				.13	T		T			T			.57	.44
December	.08	T		.31			T			T									T						T	.21	.16	T				.76	.88
																														Total		21.35	
																														#Period Average 1943-1944			

Villa Juárez, Coah.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.15										T																	T		.10	.14	.39	1.63
February	T	T																T	T	.10	.04											.14	.05
March														T	.14	.10																.24	.30
April		.26																														.26	.06
May				.06						.14							T	.69						T	1.40		.15				2.44	1.95
June					.11	T	.35				.14																					.58	.96
July																																0	.96
August				T																		2.56	.30	.18		1.91	2.18	.33	.59	T		8.05	4.55
September						.62	.26	T																	T	.96	T					1.84	2.16
October		T																								T						T	2.68
November			.16													T	.16	.22	.33				.33							.22		1.42	.73
December				.23																					T		.14	T				.37	.60
																														Total		15.73	
																														#Period Average 1930-1944			16.65

Some months missing.

RAINFALL ON MEXICAN SIDE OF RIO GRANDE WATERSHED

INCHES —1944

San Buenaventura, Coah.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1943				T	T		.02	.98																								1.00	.71
Feb. "																																0	.92
Mar. "																								.14								.14	.26
Apr. "															.15																	.15	.38
May "																		.26		T	.79								.66		.72	2.43	1.52
June "			T	.09		.56				T			.08			T			T	T		.13										.86	1.51
July "		T									.17	1.86													T							2.03	1.73
Aug. "												T																				T	1.52
Sept. "		.68			3.15			.13								.44	.13						.14	.60	.47	T						5.74	2.30
Oct. "	.08								1.22																							1.30	1.23
Nov. "	.90	.23																				T		T	.08		.30			.14		1.65	.60
Dec. "			.06	.49	T	T	T			T				.14						T	.13	.09										.91	.85
																															Total	16.21	
																															#Period Normal 1926-1943		13.16

Don Martin, Coah.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.19	T	T								.01											T		T				.05	T	.08	.25	.58	.91
February		T				T	T											.02	.02	.03	.02											.09	.56
March															.01	.15	.19	T														.35	.66
April		.81											.04			.20													.02			.87	1.29
May			.01	.03						.12							.01	.57						T	.50		.35	T				1.59	2.24
June					.31	.13	.67											.08	.01													1.40	2.07
July																																0	1.28
August																						2.26	.76	.03		2.56	2.09	.29	.45	.10		8.34	1.92
September	.24					2.68	.58	.01	.01	T	T	T	T											.01	.35	.56	T					4.44	2.77
October			.01				1.39																			.08						1.48	1.63
November				T											T	.04	.15	.37					.88	.02								.86	.68
December	.21	.14		.55																					.06	.01	.10	.01				1.06	1.01
																															Total	21.04	
																															#Period Normal 1927-1944		16.93

Lag. de Salinillas, N. L.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1943					.08	.39	.04	.39	.61	.04	.12	.02																				1.69	
Feb. "		.12	T		T												.04	T														.16	
Mar. "																									.26							.26	
Apr. "																					.08											.08	
May "							1.69								.39								.71	T				T	T	.79	.04	3.62	
June "					.20	.08	T												T													.28	
July "											.04		.28														1.02				.04	1.38	
Aug. "																																	
Sept. "																																	
Oct. "																																	
Nov. "																																	
Dec. "																																	
Jan. 1944	.04											.08						.04						T				.06	T	.04	.17	.39	1.07
Feb. "	.02																	.18	.02	T	.02											.10	.49
Mar. "								T							.16		.13															.47	.95
Apr. "		.35																														.35	.71
May "	T		T	.06						.20								.04						.08	.06		.39	T				.83	3.09
June "					.59	.08	.11											.24												.04		.96	1.89
July "	.10		T	T																												.10	.47
Aug. "																					.45	1.06	.71			5.39	3.31	.39	.87	.02		12.20	5.67
Sept. "						1.03	.53	.06	T															.51	.24	1.86						4.53	2.50
Oct. "			T				.04	.04																		.04						.12	.75
Nov. "				T											.05	.10	.05	.41					.31	.01			.01					.94	.58
Dec. "	.30	.26		.47	.04																				.01		T	T			.01	1.09	.83
																															Total	22.08	
																															#Period Average 1940-1944		18.98

Monclova, Coah.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																												T		T	T	T	.52
February	.06	.04																T	T													.10	.49
March		T															.18	.21														.39	.35
April																																	.60
May																																	1.57
June																																	1.89
July																																	1.71
August																																	1.54
September																																	3.16
October																																	1.83
November																																	.63
December																																	.65
																															#Period Normal 1897-1944		13.75

Anahuac, N. L.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.08											.25																		.04	.16	.53	.99
February	T											.02						.02	.04	T	.04											.14	.41
March			T	T				T	T		T			T		.08	.47	.26														.75	.84
April		.37						T												.10							T					.47	1.08
May			.12	.16				T		.12								T		.37			T	.05	.08		.55	T				1.45	2.97
June					1.30	.26	.71											.22												.82		3.31	1.50
July					.45																											.45	1.04
August					.02																.33	1.06	.53			.95	2.64	.30	.18	.13		6.16	1.94
September						.67	.94	T	.08								.02							.81	.18	1.10						3.80	3.15
October							.04																			.24						.28	1.10
November															.09	.20	.04	.38					.23	.04			.06					1.04	.55
December	.49	.26	.06	.02	.02																					.04	T		.04	T		.93	1.17
																															Total	19.31	
																															#Period Normal 1933-1944		16.74

Rayones, N. L.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																																0	.63
February		T																T														T	.53
March																	.25	.31														T	.36
April																													T			T	.48
May			.31														T	.33					.28									.88	1.39
June						.30												3.80	.29									T	.91			5.30	2.94
July		.14											T																			.14	1.18
August														.24						1.82	1.11	1.81	.94				.48			.79	.08	7.27	3.05
September			T	.52	1.94						.55					.35					.52		.80	.30	.83							5.81	3.05
October						.37	.72																									1.09	1.74
November																						.29	T	T								.29	.49
December																											T					T	.38
																															Total	21.34	
																															#Period Normal 1926-1944		16.20

Guerrero, Tamps.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.04											.08																T		.08	.11	.23	.97
February									.18	T								.16	.10	T												.34	.51
March	.04															T	.18	.55														.95	.85
April		.14						.21										T														.35	.55
May			2.10	1.58																				.55		2.28	1.69					8.20	3.17
June						1.38												.75										.41	T			2.54	1.64
July	.04		T	.43	.75	T																										1.22	1.85
August				.41	T														T	.53	2.68	.18	.79			.94	.39	T	.79			5.71	2.55
September							.08													T			.47	.79	.24	T						1.58	2.98
October							1.26														T				.47							1.73	1.65
November				.20											.31	T	T	.04				.34										.89	.60
December																																	1.72
																															Total		
																															#Period Average 1936-1944		19.04

Some months missing.

RAINFALL ON MEXICAN SIDE OF RIO GRANDE WATERSHED

INCHES —1944

Allende, N. L.

Recording Gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January												T																		T	.26	.26	1.21
February		T																T	.06	.05			.01						T			.14	.94
March		T		.20				.08	T						T		.16	.18														.52	1.35
April		.52															T	T									T	T	T			.52	2.20
May		T	T	.16			T	T		.75		.24					T	T		T			T		.31	T	.16	.18	T	T		1.80	3.82
June						1.84	T			.11							T	3.17	.39										.48			5.99	7.62
July	3.74	.31	1.10	1.11		.50										T	.16															6.72	3.31
August				.60	T	3.02	3.67	.61	T	T	.73		.26	T	T		2.17	T	.08	2.97	1.23	3.54	1.30	.46			1.17	1.01	.07	.41	.22	12.98	4.88
September							5.87	2.36			T										.67	T	.63	.18	.92	T	T	2.22	T			15.16	8.53
October																										T	.19					8.42	4.84
November				.81											.36	.16	.15	.12		T	.22			.25			T					2.07	1.73
December	.30	.15		.28																			T4		T	.20	.15	.17	T			1.23	1.66
																													Total			55.81	
																													Period Average 1938-1944				42.29

Los Ramones, N. L.

Recording Gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	.08																												T	.08	.04	.20	1.01
February																		.22	.02	T	T											.24	.45
March								T	T							.02	.08	1.10														1.20	.98
April																														.08		.08	2.14
May			.10	.02						.35	1.06		T						T	.04			.24	T	.04		.12	T	T			1.97	1.95
June					.02	.08												1.02	.10										.24	1.54		2.80	4.62
July	.79		.16		.41	.61										.01	.35															2.52	2.52
August					T	1.10															.75	8.74	.87	.08			.08	1.10	T	.31		13.23	4.41
September						1.14	2.87	.04		T					T		T	T					T	1.02	.32	.08				.04		5.51	4.56
October			.34				1.04	1.20																		.16						2.64	1.85
November															T	T	T	T			.05	.33	.18									.56	.55
December	.16	.06																				T				.04	.04	T				.30	.59
																													Total			31.06	
																													Period Average 1939-1944				25.63

Montemorelos, N. L.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	T												T	T																T	.30	.30	.93
February		T	T			T				T			T					T	.12	.06	.04	T	.05	T	T	T	T	T	T			.27	.98
March			T	T	T	T									.04	.13	.35	.24	T			T										.76	1.21
April		1.04	T					T										T										T				1.04	2.08
May				.24				T	.06	.22	T	.66								T			.21	.31	T	T	T	.10	T			1.80	2.88
June					T	1.42	.45							.33				2.76	.32	T								1.06	.73	.04		7.13	4.41
July	.64	.08	.55	T	.20						T				T	T																1.47	2.33
August				.06	T															T	.41	3.15	.46	.19			1.58	.81	.06	.08	.20	7.02	3.69
September						3.19	1.71	1.00	.04	T	2.50	T	T		T					T	.51	T	.56	.64	.81	T	T	.32	T			11.88	5.24
October						T	.57	.53	T	T																.26	.50	T				1.86	2.68
November		.45		.20	T										T	.16	.04	.06		.11	.23	.46	.09	T		T	.08					1.83	2.00
December	.22	T	T	.18							T	T	T														.06	.08	.08	T		.70	1.23
																													Total			35.46	
																													Period Normal 1904-1944				29.56

Villa de Santiago, N. L.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																													T	T	T	T	1.04
February												T																				T	1.02
March		T								.02						.02			.87													.91	1.15
April		1.08																										T				1.08	1.67
May									.39	.85	.01	.32				T	T	T	.02				T	.06	.04			T	T			1.67	3.38
June					.18	.96			.14								2.26	1.50										.28		.16		7.50	6.01
July	.69	.26	.63	.03	.68	1.00										.34												1.14	.30	T	.59	3.65	3.38
August											.39	T								.10	1.61	6.81	1.56	.31		T	2.65					15.24	5.40
September						2.85	4.68				1.50				T	2.87	.45				.37		.27	.04	1.34	T	T	.59	.04			15.00	9.80
October			.08			1.50	2.68	.98																	T	.33						5.57	4.62
November				.45	.14										.18	.14	T	T	.04	.02	T											.97	1.71
December	.24	.03	.16	.05																				.04		.02	.01	T		.02	T	.57	1.26
																													Total			52.16	
																													Period Normal 1903-1944				40.44

Cadereyta, N. L.

Recording Gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																													.04	.09	.13	.26	.91
February		.01																.08	.06	.04												.19	.98
March	.06	.01							.01	.03						.16	.20	.41				.32										1.20	1.44
April		.30																.01										.07				.38	2.00
May			1.08							1.45	.03	.89						.01						.41	.35		.10	.21	.02		.01	3.96	2.96
June				.01		.11			.19	.02								2.60	.24									.05	.11	.01		3.34	4.49
July	1.38	.01	.35	.02	.02	.03										.12	.03															1.76	2.83
August				.11	.09	.07														.71	.78	5.83	.91	.72			6.03	.60	.03	.12	.10	16.10	3.46
September						1.89	2.62	.65		.96					.04		T					.02	.79	.27	.46			.03	.03	T		7.76	4.80
October							.50	.99																		.01						1.50	2.55
November				.11	.01										.04	.04	.06	.03			.11	.18	.18									.76	1.63
December	.44	.08	.01	.19																			T			.01	.16	.04	.02	.03		.98	.98
																													Total			38.19	
																													Period Normal 1904-1944				28.63

Las Comitas, N. L.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
---	---	---	---	---	---	---	---	---	---	---	---	.02	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	.04	.03	.09	.44
February	.03	.02														.05	.11	.55														.05	.21
March																		.36														.71	.36
April		.05																										.04				.09	.62
May										.02		.07					.01	.03	.02					.13			.16	.17				.61	.69
June		.02				.44												3.39	.04									.13		.03		4.05	4.74
July					.44	.17																										.61	1.47
August												.30	.03								.20	6.35	.30	.10			.12	.01	.88	1.73	.37	10.40	3.77
September	.03	.01				1.97	1.48	.32	.05	.09	.11					.19	.01				.32		.43	.02	1.40	.01		.56				7.00	5.54
October			.05				1.12	.81																								1.98	1.36
November																	.01	.07	.02		.03	.15	.02									.30	.51
December																							.03									.03	1.01
																													Total			25.92	
																													Period Average 1940-1944				20.72

Las Enramadas, N. L.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	.14	.05	.25	1.14
February	.06																	.09	.01	.02												.12	.55
March		T							.04	.02	.01					.26	.12	.57														.82	.87
April			.03	.01																.02												.06	1.17
May	.79		.96	.06	T					.15	.31	.07	.03							.66				.18	.02		.27	.08				3.58	3.25
June						1.18												3.62	.47										.02	.02		5.32	4.07
July		1.04		.67		.06																										1.77	2.98
August				.02	.73																1.58	3.15	.47	.20							.63	6.78	3.44
September					.50	2.34	3.54	.53															.38	.39	1.10	.14				.06		8.85	5.51
October							1.57	.75																		.16						2.48	1.94
November						.13										.05					.10	.49	T									.77	.79
December		.25		.06																						.20	.08	T				.59	1.02
																													Total			31.52	
																													Period Normal 1926-1944				26.53

El Cuchillo, N. L.

Recording Gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	.06	.22	.32	1.43
February	T					.04												T	T													T	.31
March									T	.03						.04	.02	.66								T						.75	.49
April																		T		T									T			T	.94
May				.02	.10					.36	.01		T					.89	T	.71			.58	.02	.14		.64	.26				3.73	1.90
June						.31												1.55	T										.57	.69		3.12	2.98
July	.14	T	T	T	2.46											.03																2.63	1.57
August				T		.20															1.50	4.41	.59				.63	.60	T	.86		8.83	2.52
September					T	.14	1.31	.01									.14				.08			1.52	.66	1.22						5.02	4.48
October							.13	.81																		.24	T					1.18	1.83
November																T	T	T		T	.05	.48	.21	T						T		.74	.45
December	.19	.05									T																.02	T	T	T		.86	.84
																														Total		26.98	
																														Period Average 1938-1944			19.80

* Some months missing.

RAINFALL ON MEXICAN SIDE OF RIO GRANDE WATERSHED

INCHES —1944

Santa Catarina, N. L.

Recording Gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January												.03	.03																	.17	.12	.32	2.09
February		.04																														.04	.55
March																	.13	.20														.33	.30
April		.22																.02														.24	.58
May						.02				.32		.06												.05								.45	.73
June							1.34											2.36														3.70	3.78
July	.16		.17	.16		.13																										.62	2.12
August				.09										.02	.07						.34	4.17	.07	.47			1.00	.02	.63	1.18	.03	8.13	3.75
September						1.57	.95	.19			.06					.28							.08	.06	.81					T		4.04	3.74
October			T				3.35	.06																								3.41	1.46
November															T	T		.11	T		.04	.23	.05							T		.43	.34
December	T	.03		T	.03																					T	T				T	.05	1.32
																															Total	21.79	
																															#Period Average 1938-1944		20.94

Saltillo, Coah.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal
January												.04	T						.04											.09	.05	.22	.65
February		.26	T																													.26	.53
March															.07	.36	.17	.31														.91	.39
April		T																												T		T	.72
May				.06			.03			.10						.06	.03	.10						.02								.40	1.02
June	.11															T		.33	.08											.25		.77	2.14
July	.04					.06	.36												.30	.02												1.28	2.84
August					.06	.06					.10			.65	.07	T	.08	.06	.68	T		.67	.16	.02	.02	.45	.46		.98	1.10	.06	5.70	2.59
September	.16		T		.04	.90	.86	.09	T	T																				.25		2.28	2.59
October			.27			T																	T	T				.04				.31	1.28
November			T			T											.10	.08	T	T	.04	.71	.14	T								1.07	1.04
December	T				.03							T																				.03	.69
																															Total	13.23	
																															#Period Normal 1886-1944		16.48

Gral Cepeda, Coah.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal
January																								T			T	.10		.18	T	.28	.61
February	.07	.21																											T			.28	.52
March		.06	T							T				.21	T	.10	.26	.13														.76	.30
April																																0	.26
May				T					T	.14						.09	.07	.04							T						T	.34	.85
June	T	.28			T	.13				T	.33							.23	.45										.13	.33		1.58	2.51
July	.06	.04	.05		.59	.45							.05	.07	.05		.31	T	T	T	T											1.48	4.19
August				.13	.58	.23									T	T	.04	T				.49	.45			.53	.66	.15	1.57	.25	T	5.20	3.18
September	.18				1.12	.73	.29	T																T					.19	T		2.51	3.30
October			T				.22	T																			.04					.26	1.40
November					T														.07		.18	.56	.10	.02								.93	.60
December	T				.05								.05											T	.02	T						.12	.74
																															Total	13.74	
																															#Period Normal 1926-1944		18.44

Ramos Arizpe, Coah.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal
January																																0	.56
February		.28	T																													.28	.36
March															.20	.31	.16															.67	.34
April																																	.49
May										.27																						.47	.76
June		.79														.51																1.10	1.22
July	T					.39																										.39	1.58
August						.12															T	.87				.20		.71	T	T		1.90	1.43
September						T								T												.55		.12				.67	1.67
October			T																													T	.62
November																		T	.08	.12		.35										.55	.51
December																																0	.62
																															#Period Normal 1907-1944		10.09

Gral. Bravo, N. L.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal
Jan. 1943			.81	T	T	T	.03		.95	T	T									T									.02			1.81	
Feb. "																									T	T						T	
Mar. "						T	T					T																			.39	.39	
Apr. "	T														T																	T	
May "																							T		T	T						T	
June "		T																						.39								.39	
July "								.39				.45													.24							1.06	
Aug. "																													T	.39	.03	.42	
Sept. "						.79	.59	1.02		.03				T	2.36	.03	T	T				T	T	T	1.46	T		.03	.39			6.70	
Oct. "								T	1.61	T				.39																		2.00	
Nov. "		T		T										T	T		.79									1.57						2.36	
Dec. "																							.59							.71		1.30	
																															Total 1943	16.43	
Jan. 1944																																	.81
Feb. "																																	.34
Mar. "																																	.58
Apr. "																																	1.07
May "																																	2.77
June "																																	2.99
July "																																	2.62
Aug. "																																	2.24
Sept. "																																	3.83
Oct. "						.32	1.18																									1.50	1.28
Nov. "																	T	T	T	.20	.16	.16								.39		.91	.97
Dec. "																																	1.05
																															Total		
																															#Period Normal 1906-1944		20.55

Cuesta de los Fierros, N. L.

Recording Gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal
January		T	T	T			T					T	T			T	T			T	T	T		.02		T			T	.05	.07	.15	.40
February	T	.12		T				T			T											T										.12	.30
March								T																								T	.16
April																		T														T	.24
May				.01						.29	.02													.16								.48	.48
June											.01							.78	.10										.02	.10		1.01	1.93
July					.04	.30																										.34	.86
August						.04	.01							.14	.11	.08						T	4.62	.01	.02		.67		.16	1.18		7.04	2.37
September		.01				.63	.45	.06																		.69						1.86	2.25
October			.14				.13	.06																								.33	.82
November																.06	.02	T				.14	.23	.09	.08				T			.62	.40
December		.04	.02	.03	.02							.01														.01			T			.13	.75
																															Total	12.08	
																															#Period Average 1939-1944		10.98

Monterrey, N. L.

Recording Gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal
January					T							.02																		T	.06	.08	.71
February	T	.02											.01				.17	.12	T					T								.32	.65
March		T						.03								.08	.01	.18														.30	.78
April		.78	.04															.06										.10				.98	1.20
May				.01					T	1.24	T	.77					.01	T		.02					.51	.21		.01	.08			2.80	1.73
June						1.12			.12	.29								3.23	.12										.06		.19	5.33	2.97
July	.04	.22	.03	1.63	.47	.27											T															2.66	2.32
August				.08										T							T	1.04	5.94	.37	.28		3.35	2.05	.80	.82	.02	14.79	3.16
September		T				2.28	1.66	.06			.18			T		1.18	.06							.02	.13	.80	.01	.05				6.43	5.82
October		.08	T				1.77	.15																			.19	.04				2.23	5.06
November	T			.06											.58	.11	.02	.08	.01		.05	.25	.02									1.18	1.46
December	.30	.11	T	.14	.04																						.09	.04	.01	.04	.01	.78	.86
																															Total	57.64	
																															#Period Normal 1896-1944		24.90

Some months missing.

RAINFALL ON MEXICAN SIDE OF RIO GRANDE WATERSHED

INCHES —1944

Laguna de Sanchez

Recording Gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																																0	.59
February		.10	.14																													.24	.44
March																.16	.09	.71														.96	.38
April		.45																T														.45	1.41
May										.14		.39					08	.14						.12								.87	1.48
June						.14											.24	5.61										T	T	.24		6.23	5.58
July	.16	.16	.30		.31	.59								.18																		1.32	3.76
August				T		T														T	.93	5.14	1.34	.35			.37	.18	.51	.85	.31	10.16	3.75
September			T			1.50	2.04	T	.14	.59	.45					.24					.20		.51	.20	1.53	T	.31	.08				7.83	6.29
October			.18				.73	.65																		T	T					1.56	1.26
November				T													T	T		T	T	.57										.57	.57
December																							.08									.08	.86
																														Total		30.27	
																														Period Average 1941-1944			26.37

Topo Chico, N. L.

Recording Gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																													T	.24	.18	.42	.78
February	T																	.12	.12				T									.24	.26
March									.12	T						T	T	.04														.16	.65
April		.57																T														.57	.88
May			T	T					T	1.22	T	.35												.10	.20		T	T		T		1.87	1.58
June						.32				.04								2.63	.26									.06	.18	.39		3.88	4.21
July	T			.95	T	.18										.18															T	1.32	1.40
August																					.71	4.98	.18				2.56	2.06	.59	1.18	.06	12.32	3.45
September						1.46	1.55								T	.37	.10	T					T	.18	.63			T	.04	.04		4.57	4.84
October	T	.37					2.01	.04																		T						2.42	1.77
November				.33											.49	T		.08			.06	.24	T									1.20	1.32
December	.18	.12	.14	.17																			T			.09	T	T	T			.70	1.11
																														Total		29.47	
																														Period Average 1939-1944			22.19

Campamento Comales, Tamps.

Recording Gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																								T				.02		.05	.08	.15	1.14
February																		.05	.04	.01	.01						T					.09	.32
March									.25	.05						.21	.03	.72														1.33	1.13
April		.63																.03														.66	1.45
May			.04	.92														T		1.88			.02	.37			.72	.07				4.02	2.49
June						.87												1.32											.40	1.02		3.61	2.90
July	.01			.93	.35																											1.29	1.25
August																				.14	1.73	3.62	1.00	.13			.06	.39		.51		7.58	3.10
September					.01	.10	.31									.01								.35	.87	.39						2.04	2.98
October							.08																									.08	1.80
November															.04	.02		.02			.04	.09	.08				.01					.30	.51
December	.35	.16			.02																					.11	.08		.01			.73	1.40
																														Total		21.88	
																														Period Average 1938-1944			20.47

Ciénegas de Flores, N. L.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January		.04				.09							T																.10	.14		.37	2.18
February	.13	.17																.11	.15					T	T	T						.54	.38
March	.10	.07						T	.09	.21	.04	.11		T		.09	.13	.18														1.02	.82
April		.07																									T	.04				.11	1.11
May			.06							1.14	.54	.25				.09			.06						.34		.06	.22				2.76	2.69
June				T					T	T	T							2.68	.29									.33	.14	.13		3.57	3.20
July	.10			2.61	.10	.13										.15																3.09	2.09
August	T				T																1.41	6.32	.62	.26			5.31	1.21	.38	.29		15.80	4.25
September						1.67	2.90	.19			.21				.09	.15	.21	.05				.06	.62	.69	.33	.17		.25	.13			7.72	5.32
October			T				.35	.14																		.17	T					.75	1.72
November				.23		.06	.05								.18	.07	.13	.23	T		.19	.40	.22	.07	T							1.83	.78
December	.56	.61	.27	.25												.05										.25	.18	.10	.04	.04		2.35	1.29
																														Total		39.91	
																														Period Average 1938-1944			25.83

Higueras, N. L.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
Jan. 1943				.28	.43	.11	.22	.47	.04	.02	.04	.01																				1.68	
Feb. "																	T	.06							.07							.13	
Mar. "								.03	T				.05																		T	.08	
Apr. "	.29															.10	T															.39	
May "																							T	T			.35	.06				.41	
June "					.19	.33														.02	.14			T	.14	.08						.90	
July "	.34								T	.11		.02	.64				.03									.25	.05		.04		T	1.48	
Aug. "																									T		.03	T	T	T		.03	
Sept. "	1.85					.99		.08	.40	.33						.08		T						.20	.06	T	T	.16	.04	.02		4.15	
Oct. "	.18	.01		.12	.11				.78	T	T	.08																				1.28	
Nov. "	.34	T	.06	T																		T	.03		.53	.08	.06			T		1.10	
Dec. "			.36	.07		.13	.06	T					T	.41	T								.12	.06							.34	1.45	
																																Total 1943	13.02
January																																	.93
February																																	.55
March																																	.61
April																																	1.27
May																																	1.69
June																																	2.84
July																																	2.46
August																																	3.02
September																																	4.38
October							.30	.04																		.01						.35	1.67
November				T						T						.08	.01	.05	.06	T	.01	.04	.20	.09	.01		T					.55	.97
December																																	.88
																														Total			
																														Period Normal 1906-1944			21.25

Cerralvo, N. L.

Recording Gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January						.02																								.11	.18	.31	1.17
February																		.09	.05							T						.14	.35
March	T								.19	.08		.02				.27	.11	.29														.96	.74
April																			.02													.02	1.09
May			T						T	.53									.04	.34			.35	.03	3.58	T	.01	.12	.01			5.01	4.88
June						.77												.42											.10	.91		2.20	5.60
July	.07								.48																							.55	1.86
August				T		.11															1.40	9.28	.98	.04			.63	.65	.01	.37		13.47	3.35
September						.55	5.00										.13							.06	.44	.65						6.81	6.68
October							3.61	.24																								3.85	2.89
November																.05	.06	.04								.17						.32	.67
December	.27	.12		.14																						.06				.02		.61	.74
																														Total		34.25	
																														Period Average 1938-1944			30.02

La Tableta, N. L.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	T	T	T			.02							T																	.18	.15	.35	1.18
February	T	T																.03	.01	T	.01											.05	.36
March					T			T	.06	.02	T			T		.04	.02	.65														.77	.95
April																		T										T		.04		.04	.79
May			2.77	.01						.24	T							.50	T	.85			1.21	.27	.02		.57	.12				5.94	3.13
June						.21	.09											1.10	T									.18	.92	.01		2.44	5.04
July	T	T	.17		.85											.01	.06															1.07	1.67
August				.23		T														T	1.11	5.89	.96	.04			.39	.53	.01	1.65	.01	10.82	2.94
September					T	.10	1.76	.01								.08					T		.06	.98	.28	.97		.16				5.70	5.27
October							.36	.31																		.12						.79	2.45
November	T	T			T	T	T						T			.08		T	.01	T	.05	.07	.31	.21	.01	.08	.01					.75	.67
December	.18	.08	T	T		T	T	T										T			T			T	T	.01	.02	T	T	T		.89	.93
																														Total		27.01	
																														Period Average 1939-1944			25.38

† Some months missing.

RAINFALL ON MEXICAN SIDE OF RIO GRANDE WATERSHED

INCHES — 1944

Mendez, Tamps.

Standard 8-inch rain gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																								T						T	T	T	1.86
February			T																T	T			T									T	.50
March								T					.14		1.44	.59					T					T	T					2.17	1.34
April		T																T												T		T	1.06
May			T									T	T				T	.64			T	T		.34	.56		1.67	T				3.21	3.34
June						.30				T	T		T				T	.57										.53	T	T		1.40	5.32
July	.21	.71		1.32	.34																										T	2.58	1.53
August																				.69	2.14	1.71	2.29	.26	T		1.02	1.04	.40	1.29	.15	10.99	4.34
September						.26	1.49	.16			T					.15							.31	1.44	.84	T						4.65	4.48
October								.36	.40																	T						.76	.96
November																	T	T	T	T	.46	.22	T				.14					.82	.51
December	.09	T																					T					T	.26			.35	.80
																															Total	26.93	
																															Period Average 1939-1944		26.04

Linares, N. L.

Recording Gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	T									T															T					.10	.26	.36	1.10
February		.04	.01															.06	.08	.07	T		.99	T								1.25	.89
March	T			T	T			.01	T	T				.16	.01	.06	.51	.39										.06				1.20	1.09
April		.10																T		.14												.24	2.41
May			.05	1.07	T				1.48	1.65		.56					.47	.18	.01		T		.06	.98	.01	.01	.10	.43		.45		7.45	3.54
June	T					.71											.17	1.66	.78									.59	.06	.23		4.20	4.26
July	.47	1.02	.12	.98	.39													.08														3.06	3.49
August				.22	T														T		1.62	1.97	1.07	1.64			.79	5.38	.02	.44	.98	12.13	3.07
September					.11	1.39	3.19	.37		T	.67		.02								.26	.05	.17	1.48	1.32	T	.02	1.83	.04			10.90	6.59
October					T	T	.04	.48																		.36	.43	.01				1.35	2.75
November				.08	T										.07	.10	.06	.04	T	T	.44	.20	.17	T			.06					1.22	1.48
December	.51	.08	.02	.13	.01																					.02	.11	.08	.05			1.01	1.19
																															Total	44.32	
																															Period Normal 1900-1944		51.86

Villagrán, Tamps.

Recording Gage — Record by National Irrigation Commission

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January								T	.26																					.33		.59	.30
February																	.09	.04														.13	.97
March										.32																						.32	.70
April																																0	1.46
May			.33						.35	.61	.57	.41	.09										.41	.80			.40	.25				4.22	6.72
June						T		.32	T					.73	.60	.69				.41						.33	.41	.33	.29	.26		4.17	5.70
July	4.41	2.36	.71	T	.81	.04												.08														8.41	2.86
August	.95	.04	.02	.75	T	T															.59	.12	1.89	.74	T		5.94	4.09	.02	5.29	2.22	17.94	8.44
September					.02	3.21	2.28	.54	T	.55	.33		.32	T	.41	T	T	T	.17		.26			.41	.54	.06		.18	1.28			10.56	8.02
October			.79	T			.22	.67																		.32	.74					2.74	2.82
November					.06					T		T			T	.08	.02	.02		.55	.57	.12	.02	.02								1.46	1.56
December	.27	.10	.08													T										.04	.03	.02	.02			.56	.25
																															Total	51.10	
																															Period Average 1939-1944		39.80

Reynosa, Tamps.

Recording Gage — Record by National Irrigation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	T				T	T			T	T					T			.06	T			T		.11	T			.09	.06	T		.32	1.68
February			T				.09			T				T			T	.05	.05	.06	.05	T										.30	.50
March	T			T				T	.44	T					T	.04	.09	.32	T			T						T		T		.89	.94
April	.09		.06					T										T														.15	.27
May			.05	.05							T				T					T			T	T	.19	.17	2.63	.52		T	T	3.61	4.23
June						.44				.09	.18	.05	.10				T	1.64														2.50	3.19
July	.04	.05	.16	T	.23										.16	.23	.63		T													1.30	3.00
August																	T		T		T	4.84	.32	.65	T	T	.23	.96	T	1.42	.20	8.62	2.74
September							T									.83						.59	.75	.47								2.64	2.93
October					.07	T	.83	.68		.07												T							T			1.65	2.14
November			T		T										T	.25	.15	.17	T		.13	.18	.08	T	T					T		.96	.98
December						T	T							.25	T	T	T	.15	.10		.09	.08	.33									1.00	1.12
																															Total	24.14	
																															Period Average 1941-1944		22.72

Control (C I-K-9), Tamps.

Standard 8-inch rain gage — Record by National Irrigation Service

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January																																	
February																																	
March																																	
April																																	
May																																	
June																																	4.18
July																																	1.02
August																						.10		T								.10	1.64
September																																	6.04
October	T					.18	.27	.43											T	T	T											.88	1.21
November			.12	.04	.47											.20	.10	T	T	.18	.20	.13	T	T	T	T	T	T	T			1.44	.94
December			.10	.59			T									.24					T			T								.93	.62
																															Period Average 1942-1944		

Matamoros, Tamps.

Standard 8-inch rain gage — Record by Meteorological Service of Mexico

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total	Normal or Average
January	T				.02		.01																	.16				.02			T	.21	1.56
February		T	.02										.25					.21	.04	T		T	.02					T				.54	.95
March		T			.01				.10	.10					T		.13	.28	.06		T	T						.02	.15			.85	1.16
April		.83																.03					.02			T						.88	1.52
May				.30				T										.05		T					.13	.49	T	3.18	T			4.15	3.04
June																																	3.84
July		2.72	1.81	T	.24	.19										.22	.02															5.20	2.41
August																					.72	1.70	.23				.24	.04			2.77	5.70	1.76
September	.05				.11	.71	T	1.73	.01							.03								.06	1.51	1.96	.14					6.35	3.23
October							.65	.58																			.02					1.25	2.90
November		.02		.02		T											.02	.04	.04	.02	.14	.08	T	T			.04	.06				.48	1.62
December		T	T	.11	.69	T											.01								.06	.01	T	.01	T		.10	.99	2.09
																															Period Normal 1912-1944		28.08

* Some months missing.

EVAPORATION IN THE RIO GRANDE BASIN

Three types of land pans are used for determining evaporation in the Rio Grande basin below San Marcial, New Mexico. The results reported below are inches evaporation from such pans.

1. Circular land pan 4 feet in diameter and 10 inches deep, made of 22 gage galvanized iron, set on wooden platform on top of ground. Water in pan kept at about 7 to 8 inches depth. Measurements by micrometer hook gage. This type of pan was used in Jornada, Elephant Butte, Caballo Dam, State College, Yeleta, Alamogordo Dam, Red Bluff Dam, Balmorhea (Weather Bureau), Grand Falls, Dilley, and all Mexican stations. This is the standard Weather Bureau pan. Prior to November 1938, a floating pan, described in previous bulletins, was used at Jornada.

2. Circular land pan 6 feet in diameter and 2 feet deep, made of 22 gage galvanized iron, set with top of pan 4 inches above ground. Water in pan kept at about 16 to 18 inches deep. Measurements by micrometer hook gage. This type of pan was used at Balmorhea (A. & M. College) and Weslaco.

3. Circular land pan 10 feet in diameter and 22 inches deep, set with the top edge of the pan about 1.5 inches above ground. Water in pan is kept about 17 inches deep. Measurements by micrometer hook gage. This type of pan is used at Winterhaven.

The United States Weather Bureau furnished the records for Elephant Butte, Caballo Dam, Jornada, New Mexico State College, Yeleta, Alamogordo Dam, Red Bluff Dam, Balmorhea, Grand Falls, and Fort Stockton. From Texas A. & M. College came records of Balmorhea, Winterhaven, and Weslaco. The Mexican records are from the Meteorological Service of Mexico and the National Irrigation Commission.

The latitude, longitude, and elevation of all stations is shown either in Water Bulletin No. 12, page 94, or Water Bulletin No. 13, page 93.

In The United States

	Elephant Butte Dam N. M.		Caballo Dam N. M.		Jornada, N. M.		State College, N. M.		Ysleta, Texas *U. S. Weather Bureau*		Alamogordo Dam, N. M.		Red Bluff Dam, Texas	
	1944	#Normal 1933-1944	1944	# Average 1942-1944	1944	# Average 1938-1944	1944	Normal 1924-1944	1944	# Average 1939-1944	1944	# Average 1939-1944	1944	# Average 1939-1944
Jan.	1.98	3.22	2.52	3.05	1.80	2.51	2.66	2.97	2.38	2.84		2.85	2.59	3.14
Feb.	5.19	5.00	4.79	5.24	3.43	3.78	3.89	4.41	3.33	4.46	3.78	4.19	3.87	5.08
Mar.	9.06	8.67	9.20	9.07	7.78	7.16	8.02	7.36	8.40	8.18	8.32	7.80	9.56	8.86
Apr.	13.18	12.10	12.34	11.99	11.23	10.27	11.17	9.67	12.32	11.01	9.70	9.95	13.45	11.21
May	14.61	14.81	14.28	15.72	12.77	12.94	12.05	11.50	12.68	13.22	13.20	12.17	15.22	13.06
June	18.70	16.97	17.14	17.26	15.10	14.58	13.64	12.76	13.44	13.49	14.99	13.37	15.92	13.93
July	13.18	14.22	13.28	13.46	13.86	12.46	12.26	11.50	11.48	12.04	13.01	12.78	14.43	13.66
Aug.	12.15	12.61	11.90	11.95	10.72	10.74	10.22	10.06	9.97	10.35	12.55	11.91	12.21	12.45
Sept.	10.13	9.52	9.70	9.20	8.15	8.47	7.43	8.12	6.98	8.09	9.36	9.31		9.95
Oct.	6.55	7.66	6.26	6.70	6.21	6.07	6.65	6.07	6.61	6.12	6.14	6.90	5.67	6.60
Nov.	3.85	4.85	3.94	4.56	3.18	3.71	3.52	3.82	3.34	3.63	4.34	4.31	3.88	4.26
Dec.	2.47	3.15	2.74	2.65	1.84	2.36	2.33	2.63	2.16	2.60	1.78	2.97	2.07	3.18
Total	111.05	112.78	108.09	110.85	96.07	95.05	93.84	91.07	93.09	96.03		98.51		105.38

	Balmorhea, Texas *Texas A. & M. College*		Balmorhea, Texas *U. S. Weather Bureau*		Grand Falls, Texas		Fort Stockton, Texas		Winterhaven, Texas		Dilley, Texas		Weslaco, Texas	
	1944	Normal 1926-1944	1944	# Average 1940-1944	1944	# Average 1940-1944	1944	# Average 1940-1944	1944	Normal 1931-1944	1944	#Normal 1928-1944	1944	Normal 1932-1944
Jan.	1.66	2.39	2.32	2.44	3.16	3.48		3.42	1.79	1.90	3.54 *	2.71	2.05	2.34
Feb.	2.22	3.28	3.42	3.80	4.23	4.99		4.70	1.96	2.58	2.52 *	3.42	2.66	2.90
Mar.	5.30	5.18	6.66	6.33	9.29	8.39		8.52	3.96	4.61	5.79 *	5.88	4.07	4.19
Apr.	6.90	6.39	9.30	8.27	14.17	12.25		10.17	5.61	5.52	8.79 *	7.16	4.89	5.21
May	8.04	7.36	10.21	8.95	14.70	12.77	13.59	11.64	5.17	6.22	8.67 *	7.90	5.37	5.82
June	8.80	7.91	11.13	9.23	15.64	13.51	15.39	12.31	6.50	7.44	9.91 *	9.29	5.84	6.44
July	8.56	7.67	11.20	9.56	12.89	13.22	15.07	12.69	8.20	8.17	13.26	10.42	7.00	6.85
Aug.	6.79	6.89	8.79	8.64	10.98	12.08	13.71	10.08	7.35	8.11	11.45 *	10.46	6.33	6.85
Sept.	3.91	5.29	4.76	6.19	7.58	8.49	8.20	8.24	4.78	5.83	7.97	7.40	4.72	4.66
Oct.	3.85	4.17	4.48	4.84	7.74	7.13	6.46	6.22	4.29	4.50	7.08	5.95	4.09	4.48
Nov.	2.49	2.85	3.06	2.94	4.12	4.42	4.68	4.11	2.41	2.90	4.42 *	3.59	2.69	3.22
Dec.	1.80	2.02	2.04	2.33	2.24	2.91	2.55	3.53	1.73	1.84	2.08	2.59	2.27	2.36
Total	60.32	61.40	77.37	73.54	106.67	103.64		95.63	53.75	59.62	85.48 *	76.77	51.98	55.33

In Mexico

Month	San Buenaventura, Chih.			San Antonio, Durango		La Junta, Chih.		Villalba, Chih.		La Boquilla Dam, Chih.		Delicias, Chih.		Palestina, Coah.	
	1942	1944	#Normal 1928-1944	1944	Average 1933-1944	1944	# Average 1936-1944	1944	# Average 1940-1944	1944	Average 1938-1944	1944	# Average 1940-1944	1944	#Normal 1931-1944
Jan.	3.23	2.52	3.54	3.94	4.30	1.74	2.88	5.05	5.49	4.00	3.92	3.71	3.84	4.71	5.32
Feb.	4.31	5.09	4.68	6.73	6.47	3.40	3.82	7.67	7.35	5.55	5.52	5.80	5.26	3.66	4.77
Mar.	7.19	6.55	7.13	8.50	9.47	6.21	6.24	11.35	11.18	9.84	8.90	9.48	8.62	6.16	7.18
Apr.	8.26	9.12	9.03	11.61	11.68	9.39	9.11	14.37	14.04	13.36	11.05	10.26	10.14		8.41
May	11.40	10.47	10.71	11.92	12.17	10.88	10.74	14.88	15.59	15.26	13.49	11.79	11.96	7.52	9.48
June	11.42	11.21	11.05	12.42	10.45	10.61	10.24		14.10	15.41	13.01	11.72	11.86	8.04	10.81
July	9.06	9.48	8.88	10.34	8.56	7.08	7.19	12.75	11.21	13.39	10.92	10.48	10.39	9.11	11.33
Aug.	5.92	9.03	7.46	8.78	8.48	7.59	6.08	10.01	9.20	11.11	8.79	8.75	8.38	10.93	11.70
Sept.	5.27	6.20	6.65	7.11	6.00		5.05	6.02	6.82	6.69	7.00	7.95	7.27		9.22
Oct.	4.48	6.02	5.78	7.25	5.94	5.02	4.70	6.54	6.81	7.34	6.17	6.15	6.06	7.75	8.42
Nov.	3.69	3.47	3.90	5.29	4.56	3.04	3.20	5.11	5.17	4.69	4.30	4.26	4.27	5.37	6.75
Dec.	2.69	2.60	2.91	4.46	3.88	2.13	2.46	3.66	4.33	3.20	3.25	3.04	3.48		5.56
Total	76.92	81.76	81.72	98.35	91.96		71.71		111.29	109.84	96.32	93.39	91.53		98.95

Month	Presa De Guadalupe, Coah.		Sabinas, Coah.		Don Martin, Coah.		Lag. De Salinillas, N. L.							Anahuac, N. L.	
	1944	# Average 1939-1944	1944	# Average 1941-1944	1944	#Normal 1927-1944	1936	1937	1938	1939	1943	1944	# Average 1936-1944	1944	#Normal 1933-1944
Jan.	2.72	3.68	2.11	2.76	2.65	3.46		3.99	4.19	4.78	4.43	3.78	4.00	2.23	2.60
Feb.	7.00	5.86	4.99	4.00	4.37	4.45	5.03		5.22	6.64	5.54	5.73	5.18	3.78	3.50
Mar.	8.94	8.67	8.75	7.76	6.44	7.61			9.71	10.24	8.59	7.96	8.42	5.84	6.15
Apr.		11.03	11.03	10.23	8.51	9.38			10.83	13.13	10.87		10.70	8.12	7.84
May		12.60	11.53	10.54	9.50	10.71		11.31	13.39	12.19	12.51		11.46	9.21	8.94
June	12.36	11.49	15.08	12.22	11.06	12.36		12.22	15.07	12.13	13.07		12.04	9.59	10.38
July	12.11	11.20	15.88	13.34	12.52	12.84		12.55	15.24	16.41	13.80		13.30	12.24	11.07
Aug.	11.07	10.09	9.50	12.62	11.13	12.49	12.22	15.61		10.47	14.85		12.51	9.31	10.98
Sept.	7.46	7.63	7.08	7.24	5.40	8.58	7.91	9.98	9.34	10.49	7.08		8.63	4.93	7.16
Oct.	5.63	5.78	5.59	6.07	4.29	6.45	6.20	8.50	9.05	7.12	5.06		7.13	4.62	5.41
Nov.	3.70	3.67	4.06	3.78	2.62	4.14	3.96	5.57	7.13	4.16	3.89		5.10	2.93	3.40
Dec.		2.85	1.84	2.19	2.14	3.05	3.92	2.19	4.46	4.69	2.51		3.76	1.91	2.32
Total		94.55	97.44	92.75	80.63	95.52				112.45	102.20		102.23	74.71	79.75

Month	Montemorelos, N. L.		El Cuchillo, N. L.		Cienaga De Flores, N. L.		La Tableta, N. L.		Comales, Tamps.				Control (C 1-K-9)	
	1944	# Average 1941-1944	1944	# Average 1940-1944	1944	# Average 1941-1944	1944	# Average 1941-1944	1938	ϕ 1939	1944	# Average 1938-1944	1944	#Average 1942-1944
Jan.	3.38	2.72	4.07	3.93	3.40	3.87	4.18	3.90		4.69	4.58	4.07		
Feb.	3.83	2.74	5.85	5.16	4.61	4.86	5.30	4.59		6.48	6.50	5.73		
Mar.	4.79	5.26	8.62	7.93	7.41	7.69	7.67	7.43	9.02	8.78	8.96	8.29		
Apr.	5.30	5.51	10.72	10.07	8.85	8.72	9.80	8.73	10.00	10.68	13.04	10.47		
May	5.92	6.24	10.90	11.60	9.11	9.08	8.92	8.95	10.85	10.60	13.48	11.92		
June	6.34	6.49	11.87	11.54	9.89	9.40	9.45	8.98	13.95	12.30	14.02	12.68		
July	7.98	8.48	13.53	13.79	10.45	9.83	11.56	10.27	16.42	16.20	16.52	14.99		7.04
Aug.	7.33	8.49	12.34	14.04	9.49	10.54	11.32	11.14	12.95	13.04	15.09	13.99	7.22	7.82
Sept.	3.52	5.10	7.08	8.67	6.00	6.63	5.88	6.24	8.09	9.38	9.09	9.16		
Oct.	3.30	3.58	5.86	6.66	4.92	4.80	4.91	5.36	8.07	7.73	8.44	7.72	4.61	5.26
Nov.	2.06	2.51	3.79	4.65	4.27	4.02	3.85	3.94	6.63	4.98	5.16	5.38	4.72	4.62
Dec.	1.81	2.02		4.04	1.61	2.91		3.64	4.56	4.48	4.15	4.21	4.13	4.02
Total	55.50	58.94		102.00	80.01	91.99		82.97		109.56	119.03	108.61		

Some months missing. * Partly estimated. ϕ This corrected record supersedes an erroneous one published in W.B. 11, p. 80.

DRAINAGE BASIN AND IRRIGATED AREAS

Along the Rio Grande and Tributaries—1944

The drainage basin areas tabulated below are taken from the best available sources, including topographic maps. The total area within the outer rim of the Rio Grande Basin is about 335,500 square miles. But, in many places, and particularly along the southwestern side of the basin, large areas yield no run-off to the Rio Grande. Such non-yielding areas constitute about 48.8% of the total area encompassed by the outer rim of the basin leaving 171,887 square miles of productive watershed. Only the productive watershed areas are listed below.

The irrigated areas listed hereunder include only areas below San Marcial gaging station on the Rio Grande and below Girvin gaging station on the Pecos River. These figures are from the most reliable sources and are the best figures available. Below Roma the figures are for cultivated acreages, all of which have irrigation facilities, but a small part of which is farmed without irrigation in favorable seasons. (See pages 52 and 53, hereof.)

For drainage basin and irrigated areas in previous years, see the heading of each gaging station in Water Bulletins Nos. 1 to 8, and see table in Water Bulletins No. 9, page 90, No. 10, page 102, No. 11, page 81, No. 12. pages 96 to 98, and No. 13, pages 94 and 95.

DESIGNATIONS OF AREAS AND GAGING STATIONS	Drainage Basin—Square Miles			Irrigated Areas—Acres			
	In		Total	In			Total
	United States	Mexico		United States	Mexico Primary	Mexico Secondary	
Above San Marcial Station	24,717	0	24,717				
San Marcial to Elephant Butte Dam	1,747	0	1,747	0	0	0	0
Above Elephant Butte Dam	26,464	0	26,464	0	0	0	0
Elephant Butte Dam to Caballo Dam	1,290	0	1,290	96	0	0	96
Above Caballo Dam	27,754	0	27,754	96	0	0	96
Caballo Dam to El Paso Station	1,513	0	1,513	99,158	0	0	99,158
Above El Paso Station	29,267	0	29,267	99,254	0	0	99,254
El Paso Station to American Dam	4	0	4	0	0	0	0
Above American Dam	29,271	0	29,271	99,254	0	0	99,254
American Dam to Juarez	41	47	88				
Above Juarez Station	29,312	47	29,359				
Juarez to Island	146	472	618				
Above Island Station	29,458	519	29,977				
Island to County Line	485	186	671				
Above County Line Station	29,943	705	30,648				
Guayuco Arroyo, above U.S. 80 Highway Bridge	162	0	162				
County Line to Fort Quitman, excluding Guayuco Arroyo	501	679	1,180				
County Line to Fort Quitman, including Guayuco Arroyo	663	679	1,342				
El Paso Station to Fort Quitman Station - total	1,339	1,384	2,723	70,431	49,915	0	120,346
Above Fort Quitman Station	30,606	1,384	31,990	169,685	49,915	0	219,600
Quitman Arroyo (I.B.C. name) above measuring point near its mouth	36	0	36				
Quitman Arroyo (I.B.C. name) above rocky canyon	18	0	18				
Red Light Arroyo (I.B.C. name) (Quitman Arroyo on U.S.G.S. Maps) above measuring point near its mouth	260	0	260				
Van Horn Creek, above measuring point near its mouth	117	0	117				
Fort Quitman to La Nutria, excluding Quitman Arroyo, Red Light Arroyo, and Van Horn Creek	628	886	1,514				
Fort Quitman to La Nutria - total	1,041	886	1,927	‡ 1,150	5,680	0	6,830
Above La Nutria Station	31,647	2,270	33,917	170,835	55,595	0	226,430
Capote Creek, above measuring point near its mouth	93	0	93				
La Nutria to Upper Presidio - total	580	503	1,083	1,480	9,390	0	10,870
Above Upper Presidio Station	32,227	2,773	35,000	172,315	64,985	0	237,300
Rio Conchos, above Boquilla Dam	0	7,322	7,322	0	2,970	0	2,970
Rio Conchos, below Boquilla Dam	0	17,419	17,419	0	173,700	12,100	185,800
Rio Conchos - total	0	24,741	24,741	0	176,670	12,100	188,770
Upper to Lower Presidio, excluding Rio Conchos	21	5	26	750	0	0	750
Upper Presidio to Lower Presidio - total	21	24,746	24,767	750	176,670	12,100	189,520
Above Lower Presidio Station	32,248	27,519	59,767	173,065	241,655	12,100	426,820
Alamito Creek, above gaging station	1,504	0	1,504	‡ 805	0	0	805
Terlingua Creek, above gaging station	1,070	0	1,070	‡ 288	0	0	288
Lower Presidio to Johnson Ranch, excluding Alamito and Terlingua	1,439	2,671	4,110	2,030	3,710	0	5,740
Lower Presidio to Johnson Ranch - total	4,013	2,671	6,684	3,123	3,710	0	6,833
Above Johnson Ranch Station	36,261	30,190	66,451	176,188	245,365	12,100	433,653
Johnson Ranch to Boquillas	471	3,735	4,206	0	0	0	0
Above Boquillas Station	36,732	33,925	70,657	176,188	245,365	12,100	433,653
Maravillas Creek, above proposed gaging station	2,192	0	2,192	0	0	0	0
Lozier Creek, above gaging station	1,806	0	1,806	0	0	0	0
Boquillas to Langtry, excluding Maravillas and Lozier	2,125	2,595	4,720	0	0	0	0
Boquillas to Langtry - total	6,123	2,595	8,718	0	0	0	0
Johnson Ranch to Langtry, excluding Maravillas and Lozier	2,596	6,330	8,926				
Johnson Ranch to Langtry - total	6,594	6,330	12,924	0	0	0	0
Above Langtry Station	42,855	36,520	79,375	176,188	245,365	12,100	433,653

‡ Estimated.

DRAINAGE BASIN AND IRRIGATED AREAS
Along the Rio Grande and Tributaries—1944

DESIGNATIONS OF AREAS AND GAGING STATIONS	Drainage Basin—Square Miles			Irrigated Areas—Acres			
	In		Total	In			Total
	United States	Mexico		United States	Mexico Primary	Mexico Secondary	
Pecos River, above Girvin	29,562	0	29,562		0	0	
Pecos River, Girvin to I.B.C. gaging station	5,731	0	5,731	" 419	0	0	" 419
Pecos River, above I.B.C. gaging station	35,293	0	35,293	" 419	0	0	" 419
Goodenough Spring, above gaging station	1	0	1	0	0	0	0
Devils River, above Juno gaging station	2,947	0	2,947	0	0	0	0
Devils River, below gaging station near Juno to I.B.C. gaging station	1,238	0	1,238	0	0	0	0
Devils River, above I.B.C. gaging station	4,185	0	4,185	0	0	0	0
Las Vacas Arroyo, above gaging station	0	146	146	0	741	494	1,235
Langtry to Del Rio, excluding above tributaries	416	2,495	2,911	3	0	0	3
Langtry to Del Rio - total	39,895	2,641	42,536	422	741	494	1,657
Above Del Rio Station	82,750	39,161	121,911	176,610	246,106	12,594	435,310
San Felipe Creek, above gaging station	62	0	62	835	0	0	835
Sycamore Creek, above gaging station	515	0	515	42	0	0	42
Pinto Creek, above gaging station	229	0	229	100	0	0	100
Rio San Diego, above gaging station	0	931	931	0	21,000	0	21,000
Las Moras Creek, above gaging station	162	0	162	327	0	0	327
Rio San Rodrigo, above gaging station	0	586	586	0	3,210	3,210	6,420
Del Rio to Eagle Pass, excluding above tributaries	527	581	1,108	16,870	8,150	0	25,020
Del Rio to Eagle Pass - total	1,495	2,098	3,593	18,174	32,360	3,210	53,744
Above Eagle Pass Station	84,245	41,259	125,504	194,784	278,466	15,804	489,054
Rio Escondido, above gaging station	0	1,130	1,130	0	6,180	8,650	14,830
Arroyo Amole - total	0	482	482	0	0	0	0
Eagle Pass to El Jardin, excluding above tributaries	736	1,191	1,927	1,814	247	0	2,061
Eagle Pass to El Jardin - total	736	2,803	3,539	1,814	6,427	8,650	16,891
Above El Jardin Dam Site	84,981	44,062	129,043	196,598	284,893	24,454	505,945
Santa Isabella Arroyo, above river road	350	0	350	0	0	0	0
El Jardin to Laredo, excluding Santa Isabella	387	1,079	1,466	4,605	1,480	0	6,085
El Jardin to Laredo - total	737	1,079	1,816	4,605	1,480	0	6,085
Eagle Pass to Laredo, excluding above tributaries	1,123	2,270	3,393	6,419	1,727	0	8,146
Eagle Pass to Laredo - total	1,473	3,882	5,355	6,419	7,907	8,650	22,976
Above Laredo Station	85,718	45,141	130,859	201,203	286,373	24,454	512,030
Dolores Creek, above gaging station	606	0	606	0	0	0	0
Rio Salado, above Don Martin Dam	0	13,819	13,819	0	54,360	8,900	63,260
Rio Salado, below Don Martin Dam	0	7,709	7,709	0	25,700	10,130	35,830
Rio Salado, above gaging station	0	21,528	21,528	0	80,060	19,030	99,090
Laredo to Zapata, excluding above tributaries	491	942	1,433	" 6,008	1,240	0	7,248
Laredo to Zapata, including Dolores, and excluding Salado	1,097	942	2,039	" 6,008	1,240	0	7,248
Laredo to Zapata - total	1,097	22,470	23,567	" 6,008	81,300	19,030	106,338
Above Zapata Station	86,815	67,611	154,426	207,211	367,673	43,484	618,368
El Tigre Arroyo, above gaging station	261	0	261	0	0	0	0
Rio Alamo, above gaging station	0	1,675	1,675	0	4,940	5,440	10,380
Zapata to Roma, excluding above tributaries	771	315	1,086	1,940	0	0	1,940
Zapata to Roma, including El Tigre and excluding Alamo	1,032	315	1,347	1,940	0	0	1,940
Zapata to Roma - total	1,032	1,990	3,022	1,940	4,940	5,440	12,320
Above Roma Station	87,847	69,601	157,448	209,151	372,613	48,924	630,688
Rio San Juan, above Azucar Dam	0	12,473	12,473	0	102,550	67,210	169,760
Los Olmos Creek, above gaging station	535	0	535	0	0	0	0
Mexican Side, below Azucar dam and San Pedro de Roma and above Reynosa	0	817	817	0	8,650	0	8,650
Roma to Rio Grande City, excluding above tributaries	143	387	530	# 2,350			
U.S.Side, Roma to Rio Grande City, including Los Olmos	678	0	678	# 2,350			
Roma to Rio Grande City - total	678	12,860	13,538	# 2,350			
Above Rio Grande City Station	88,525	82,461	170,986	211,501			
Rio Grande City to Hidalgo	415	430	845				
Above Hidalgo Station	88,940	82,891	171,831		483,813	116,134	
Hidalgo to Mercedes Bridge Station	15	15	30		19,270	ϕ 84,510	
Above Mercedes Bridge Station	88,955	82,906	171,861		503,083	200,644	
Mercedes Bridge to Matamoros Station	11	11	22				
Above Matamoros Station	88,966	82,917	171,883		503,083	200,644	
Matamoros to Lower Brownsville Station	2	2	4		0	0	
Rio Grande City to Lower Brownsville Station	443	458	901	* 525,520			
Above Lower Brownsville Station	88,968	82,919	171,887	737,021	503,083	200,644	1,440,748

" Estimated. # Includes 1,950 acres of dry farmed. ϕ Dry farmed in 1944. * Includes 56,102 acres of dry farmed.

469,418

AUTHENTICATED AND OTHER DISCHARGES

The tabulation below shows publications in which may be found the discharges at gaging stations on the Rio Grande and on tributaries and outfalls near their confluence with the Rio Grande as well as on floodways and diversions leading from the Rio Grande, from San Marcial, New Mexico, to the Gulf of Mexico. For stations from San Marcial to Lower Presidio, the table covers all measured discharges as well as carefully estimated discharges since the earliest feasible dates for times when flows were not measured. For Devils River the table covers all periods when flows were measured. For all other stations the table covers only the measured discharges within the two periods, 1900 to 1914 and 1924 to 1944.

All Rio Grande and tributary discharges authenticated by this Commission, including the latest revisions, are segregated from the other discharges in the following listing. Listed among the other discharges are those not yet authenticated and those superseded.

In the following table B means Water Bulletins, of various numbers, published by this Commission. P means Water Supply Papers of various numbers published by the United States Geological Survey. An exponent indicates the Water Bulletin number in which a revision has been made. * indicates daily and monthly discharges. # indicates monthly discharges. ## indicates period discharges. ϕ indicates annual discharges. ⊖ indicates daily gage heights.

Within The Period	Where Published
San Marcial	
AUTHENTICATED	
1895 - 1943	B. 13 #
1895 - 1896	B. 7 ##, 12 #
1924 - 1935	B. 6 #
1931 - 1944	B. 1 ± 14
Seepage 1936-1937	B. 7 *
OTHER	
Feb.1895, Apr.1896	B. 12^{13}, P. 358 *
1897 - 1931	P.* 358, 388, 408, 438, 458, 478, 508, 528, 628, 668, 688, 703, 718, 733.
Mar., Apr. 1932	B. $2^{6,13}$, P.* 733
1933 - 1943	P.* 748, 763, 788, 808, 828, 858, 878, 898, 928, 958, 978.
Seepage 1936-1937	P.# 828
Below Elephant Butte Dam	
AUTHENTICATED	
1915 - 1943	B. 12 #, 13 #
1915 - 1916	B. 10 *
1938 - 1944	B. 8 ± 14
OTHER	
June, 1915	B. 10^{13}
1916 - 1943	P.* 458, 478, 508, 528, 548, 568, 588, 608, 628, 648, 668, 688, 703, 733, 748, 763, 788, 808, 828, 858, 878, 898, 928, 958, 978.
Below Caballo Dam	
AUTHENTICATED	
1938 - 1944	B. 8 ± 14, 13 #
OTHER	
1938 - 1943	P.* 878, 898, 928, 958, 978
El Paso	
AUTHENTICATED	
1889 - 1943	B. 13 #
1889, 1893 - 1896	B. 7 ϕ, 12 #
Jan. 1898	B. 12 *
April-July 1914	B. 7 *
Dec. 1915	B. 7 #, 12 #
1924 - 1935	B. 6 #
1931 - 1944	B. 1 ± 14
OTHER	
1889 - 1893	P.* 358
1897 - 1915	P.* 358, 388, 408, 568,
Jan., Feb. 1893	B. 12^{13}
Jan., Aug. 1930	B. 6^{13}
1916 - 1931	P.* 568, 588 608, 628 648, 668, 688, 703, 718.
American Canal	
AUTHENTICATED	
1938 - 1944	B. 8 ± 14, 13 #
Below American Dam	
AUTHENTICATED	
1938 - 1944	B. 8 ± 14, 13 #
Acequia Madre	
AUTHENTICATED	
1938 - 1944	B. 8 ± 14, 13 #
Diversions in the El Paso Valley	
AUTHENTICATED	
1938 - 1944	B. 8 ± 14
Outfalls Near El Paso	
AUTHENTICATED	
1936 - 1944	B. 8 # 14

Within The Period	Where Published
Juarez	
AUTHENTICATED	
1938 - 1944	B. 8 ± 14, 13 #
Island	
AUTHENTICATED	
1938 - 1944	B. 8 ± 14, 13 #
Tornillo Bridge	
AUTHENTICATED	
1924 - 1927	B. 5 *
1924 - 1937	B. 13 #
1931 - 1937	B. 1 ± 7
OTHER	
1927 - 1931	P.* 668, 688, 703, 718.
County Line	
AUTHENTICATED	
1938 - 1944	B. 8 ± 14, 13 #
Near Fort Hancock	
AUTHENTICATED	
1900 - 1903	B. 13 #
OTHER	
1900 - 1903	P. 358 *
Fort Quitman	
AUTHENTICATED	
1889 - 1943	B. 13 #
1889 - 1923	B. 12 #
1924 - 1935	B. 6 #
1931 - 1944	B. 1 ± 14
OTHER	
Jul.1924, June 1928	B. 6^{13}
1923 - 1931	P.* 568, 588. 608, 628. 648, 668, 688, 703, 718.
La Nutria	
AUTHENTICATED	
1935 - 1941	B. 5 ± 11, 6 #, 13 #
Upper Presidio	
AUTHENTICATED	
1889 - 1943	B. 13 #
1889 - 1900	B. 12 #
1900 - 1913	B. 7 #
1914 - 1926	B. 12 #
Sept.1919, Aug.1932	B. 8 *
June 1927, Jul.1932	B. 9 #
1927 - 1930	B. 3 *, 4 *
1928 - 1931	B. 6 #
1933 - 1935	B. 6 #
July 1937	B. 10 #
1931 - 1944	B. 1 ± 14
OTHER	
1900 - 1914	P.* 358, 388
1919 - 1920	P.* 508
1923 - 1926	P.* 568, 588, 608, 628.
1926	B. 4^{12}
June 1927	B. 4^{9}
1924 - 1927, 1932	B. 6^{12}
July, Aug. 1932	B. 2^{8}, B. 2^{9}
June, July 1933	B. 3^{4}
Annual 1931	B. 1^{4}
July 1937	B. 7^{10}
Rio Conchos at Ojinaga, Chih.	
AUTHENTICATED	
1896 - 1943	B. 13 #
1896 - 1900	B. 12 #
1900 - 1913	B. 7 #
1914 - 1926	B. 12 #
1927 - 1935	B. 5 #, 6 #
1933 - 1937	B. 7 #
1936 - 1944	B. 6 # 14
OTHER	
1924 - 1926	B. 6^{13}
1924 - 1932	B. 7^{13}
1924 - 1935	B. 5^{13}

Within The Period	Where Published
Lower Presidio	
AUTHENTICATED	
1896 - 1943	B. 13 #
1896 - 1900	B. 12 #
1900 - 1913	B. 7 #
1914 - 1926	B. 12 #
1927 - 1935	B. 6 #
1933 - 1937	B. 7 #
1931 - 1944	B. 1 ± 14
OTHER	
1900 - 1915	P.* 358, 388, 408
1919 - 1920	P.* 508
1923 - 1926	P.* 568, 588, 608, 628.
1924 - 1930	B. 3^{13}, 4^{13}
1924 - 1926	B. 6^{13}
1924 - 1932	B. 7^{13}
Alamito Creek	
AUTHENTICATED	
1932 - 1944	B. 2 ± 14, 6 #
OTHER	
Aug., Dec. 1934	B. 4^{13}
Jan. 1937	B. 7^{13}
Terlingua Creek	
AUTHENTICATED	
1932 - 1944	B. 2 ± 14, 6 #
OTHER	
June, Sept. 1937	B. 7^{8}
Johnson Ranch	
AUTHENTICATED	
1936 - 1944	B. 6 ± 14
Boquillas	
AUTHENTICATED	
1924 - 1935	B. 5 #, 6 #
1931 - 1936	B. 1 ± 6
OTHER	
1928 - 1931	P.*668, 688, 703, 718.
Lozier Creek	
AUTHENTICATED	
1932 - 1935	B. 2 ± 5, 6 #
Langtry	
AUTHENTICATED	
1900 - 1913	B. 7 #, 9 *
1924 - 1927	B. 4 *
1924 - 1935	B. 6 #
1931 - 1944	B. 1 ± 14
OTHER	
1900 - 1914	P.* 358, 388, 408.
1904, 1906, 1908	B. 7^{3}, 7^{14}
1919 1920	P.* 508
1924 - 1931	P.* 588, 608, 628, 648, 668, 688, 703, 718.
Pecos River	
AUTHENTICATED	
1900 - 1913	B. 7 #
1924 - 1935	B. 6 #
1931 - 1944	B. 1 ± 14
OTHER	
1900 - 1931	P.* 358, 388, 408, 438, 458, 478, 508, 528, 548, 568, 588, 608, 628, 648, 668, 688, 703, 718.
Goodenough Spring	
AUTHENTICATED	
1924 - 1929	B. 5 ϕ
1924 - 1935	B. 6 # ϕ
1931 - 1944	B. 1 ± 14
OTHER	
1929 - 1931	P.* 688, 703, 718.

AUTHENTICATED AND OTHER DISCHARGES

Within The Period	Where Published
Devils River	
AUTHENTICATED	
1900 - 1913	B. 7 #
Jan, Feb, Mar, 1914	P.* 388
1924 - 1935	B. 6 #
1931 - 1944	B. 1 ± 14
OTHER	
1871 - 1939	B. 9 (Graph)
1900 - 1913	P.* 358, 388
Nov. 1902	B. 7^{11}
1923 - 1931	P.* 588, 608, 628, 648, 668, 688, 703, 718.
June 1932	B. 2^{6}
May 1925, Oct. 1927	B. 6^{13}
Feb. 1929	B. 6^{13}
Jan. 1936	B. 6^{10}
Cienegas Creek	
AUTHENTICATED	
1931 - 1935	B. 1 ± 5, 5 #
Del Rio	
AUTHENTICATED	
1900 - 1913	B. 7 #
1924 - 1935	B. 6 #
1931 - 1944	B. 1 ± 14
OTHER	
1900 - 1915	P.* 358, 388, 408.
1919 - 1920	P.* 508
1923 - 1931	P.* 588, 608, 628, 648, 668, 688, 703, 718.
May 1925	B. 6^{13}
Arroyo Las Vacas	
AUTHENTICATED	
1935 - 1944	B. 6 ± 14
OTHER	
1938, 1939, 1940	B. 8^{14}, 9^{14}, 10^{14}
San Felipe Creek	
AUTHENTICATED	
1931 - 1935	B. 6 #
1931 - 1944	B. 1 ± 14
OTHER	
June 1935	B. 5^{10}
Sycamore Creek	
AUTHENTICATED	
1932 - 1935	B. 2 ± 5, 6 #
Maverick Canal	
AUTHENTICATED	
1939 - 1944	B. 9 ± 14
Pinto Creek	
AUTHENTICATED	
1928 - 1935	B. 6 #
1931 - 1944	B. 1 ± 14
OTHER	
1928 - 1931	P.* 688, 703, 718.
Rio San Diego	
AUTHENTICATED	
1932 - 1935	B. 6 #
1932 - 1944	B. 2 ± 14
Las Moras Creek	
AUTHENTICATED	
1932 - 1935	B. 2 ± 5
OTHER	
Oct. - Dec. 1934	B. 4^{5}, 6^{5} ‡
Rio San Rodrigo	
AUTHENTICATED	
1932 - 1935	B. 6 #
1932 - 1944	B. 2 ± 14
OTHER	
1941	B. 11^{13}

Within The Period	Where Published
Eagle Pass	
AUTHENTICATED	
1900 - 1913	B. 7 #
1924 - 1926	B. 4 *
1924 - 1935	B. 6 #
1931 - 1944	B. 1 ± 14
OTHER	
1900 - 1916	P.* 358, 388, 408, 438.
1923 - 1931	P.* 588, 608, 628, 648, 668, 688, 703, 718.
Rio Escondido	
AUTHENTICATED	
1932 - 1935	B. 6 #
1932 - 1944	B. 2 ± 14
Laredo	
AUTHENTICATED	
1900 - 1913	B. 7 #
1924 - 1930	B. 3 *, 4 *
1924 - 1935	B. 6 #
1931 - 1944	B. 1 ± 14
OTHER	
1900 - 1914	P.@ 358, 388
1922 - 1926	P.* 568, 588, 608, 628.
Oct. 1926	B. 4^{9}
Sept. 1934	B. 4^{9}, 6^{9}
Dolores Creek	
AUTHENTICATED	
1932 - 1936	B. 2 ± 6, 6 #
Rio Salado	
AUTHENTICATED	
1900 - 1913	B. 7 #
1924 - 1935	B. 5 #, 6 #
1926 - 1930	B. 3 *, 5 *
1931 - 1944	B. 1 ± 14
OTHER	
1900 - 1913	P.@ 358
Nov. 1924	B. 5^{14}, 6^{14}
Zapata	
AUTHENTICATED	
1932 - 1935	B. 6 #
1932 - 1944	B. 2 ± 14
OTHER	
Sept. 1938	B. 8^{10}
El Tigre Creek	
AUTHENTICATED	
1932 - 1936	B. 2 ± 6, 6 #
Rio Alamo	
AUTHENTICATED	
1924 - 1944	B. 1 ± 14, 6 #
Roma	
AUTHENTICATED	
1900 - 1913	B. 7 #
1924 - 1935	B. 5 #, 6 #
1931 - 1944	B. 1 ± 14
OTHER	
1900 - 1914	P.@ 358, 388.
Dec. 1907	B. 7^{14}
1922 - 1925	P.* 568, 588, 608.
Aug. 1925	B. 5^{14}, 6^{14}
1929 - 1931	P.* 688, 703, 718
Sept., Oct. 1932	B. 2^{3}
Rio San Juan at Santa Rosalia, Tamps.	
AUTHENTICATED	
1900 - 1913	B. 7 #
1924 - 1930	B. 3 *, 5 *
1924 - 1935	B. 6 #
1931 - 1943	B. 1 ± 13
OTHER	
1900 - 1913	P.@ 358
Sept. 1932	B. 2^{6}

Within The Period	Where Published
Rio San Juan below Azucar Dam	
AUTHENTICATED	
1943 - 1944	B. 13 ± 14
Los Olmos Creek	
AUTHENTICATED	
1932 - 1936	B. 2 ± 6, 6 #
Rio Grande City	
AUTHENTICATED	
1924 - 1935	B. 5 #, 6 #
1932 - 1944	B. 2 ± 14
OTHER	
Aug. 1932	B. 2^{10}
Sept. 1937	B. 7^{11}
U. S. Diversions below Rio Grande City	
AUTHENTICATED	
1922 - 1937	B. 7 #
1938 - 1944	B. 8 ± 14
North Floodway South of McAllen	
AUTHENTICATED	
1926 - 1935	B. 2 ± 5
1938 - 1944	B. 8 ± 14
South Floodway South of McAllen	
AUTHENTICATED	
1926 - 1935	B. 2 ± 5
1938 - 1944	B. 8 ± 14
North Floodway South of Sebastion	
AUTHENTICATED	
1940 - 1944	B. 10 # 14
Hidalgo	
AUTHENTICATED	
1928 - 1931	B. 6 #
1931 - 1936	B. 1 ± 6
1938 - 1939	B. 8 ± 9
1940 - 1944	B. 10 @ 14.
OTHER	
1928 - 1931	P.* 668, 688, 703, 718.
Buenos Aires	
AUTHENTICATED	
1943 - 1944	B. 13 ± 14
Retamal Canal	
AUTHENTICATED	
1939 - 1944	B. 9 ± 14
Mercedes Bridge	
AUTHENTICATED	
1932, 1935 - 1937	B. 2 *, 5 ± 7
1938 - 1941	B. 8 @ 11
Rancho Viejo Floodway	
AUTHENTICATED	
1935 - 1936	B. 5 *, 6 *
1938 - 1944	B. 8 ± 14
Matamoros	
AUTHENTICATED	
1900 - 1913	B. 7 #
1926 - 1930	B. 3 *, 5 *
1924 - 1935	B. 6 #
1931 - 1944	B. 1 ± 14
OTHER	
1900 - 1914	P.@ 358, 388
1922 - 1926	P.* 568, 588, 608, 628.
Lower Brownsville	
AUTHENTICATED	
1934 - 1935	B. 6 #
1934 - 1944	B. 4 ± 14

‡ Record for Oct., Nov., and Dec., 1934, correct as published in W.B. 5, erroneous as shown in W.B. 4 and 6.

INDEX TO PRECIPITATION RECORDS

For United States rainfall stations within or adjacent to the Rio Grande Basin below Las Cruces and Carlsbad, New Mexico, this index shows the location and elevation of each such station as well as the publication or file where each month's record for the seven years, 1938 to 1944, may be found.

The letters and numbers used as monthly symbols in the body of the index have the following meanings:

c and C	refer to "Climatological Data", a monthly publication of the U. S. Weather Bureau.
h and H	refer to "Hydrologic Bulletin" or "Hydrologic Network", a monthly publication of U. S. Weather Bureau and the U. S. Army Engineers.
n and N	refer to "Water Bulletins" published yearly by this Commission.
8 to 14	refer to the numbers of the Water Bulletins.
c, h and n	indicate that a standard rain gage was used.
C, H and N	indicate that a recording rain gage was used.
f	refers to the files of this commission and indicates that the records may be partly or largely estimated from surrounding stations.

UNITED STATES SIDE 1938 —1944

Name of Station	Latitude	Longitude	Elevation	1938	1939	1940	1941	1942	1943	1944
				WHERE MONTHLY RECORDS MAY BE FOUND						
Agua Nueva	26°54'	98°36'	468			hhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Alamogordo #1	32°52'	105°55'	4,600	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	c c	
Alamogordo #2	32°53'	105°57'	4,320	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc ccc cc	cccccc cccccc	cccccc cccccc
Allison, W. M. Ranch	30°00'	104°18'	4,900						13 nnnn	nnnnn 14 nnnnn
Alpine	30°21'	103°39'	4,480	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
American Dam	31°47'	106°32'	3,730	NNNNNN 8 NNNNNN	NNNNNN 9 NNNNNN	NNNNNN 10 NNNNNN	NNNNNN 11 NNNNNN	NNNNNN 12 NNNNNN	NNNNNN 13 NNNNNN	NNNNNN 14 NNNNNN
Andrews	32°17'	102°35'	3,195					HHHHHH	HHHHHH HHHHHH	hhhhhh hhhhhh
Antelope Springs(T.C. Mitchell)	30°12'	103°55'	4,750			hh hhhh	h hhhh hhhhhh	hhhhhh hhhhhh	hhhhfh fhhhhh	hhhhhh hh
Asherton	28°26'	99°46'	575				HHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHH	HHH HHH
Atkinson, D. O. Ranch	29°58'	104°18'	4,630						13 nnnnnn	nnnnnn 14 nnnnn
Bakersfield	30°41'	102°21'	3,140			hhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Balmorhea #4	30°59'	103°46'	3,200		10 nnnn	nnnnnn 10 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 12 nnnnnn	nn nnn 13 n	
Balmorhea	31°00'	103°41'	3,075	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Balmorhea	31°00'	103°41'	3,075			HHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH
Barnhart	31°08'	101°11'	2,595			hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Baugh, A. L. Ranch	29°51'	104°03'	3,820					13 nnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Benavides	27°36'	98°25'	420			HHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH
Big Bend State Park	29°16'	103°18'	5,150	nnnnnn 8 nnnnnn	nnnnnn 9 nnnnnn	nnnnnn 10 nnnnnn	nnnnnn 11 nnnnnn	nnnnnn 14 nnnnnn	hhhhh	hfhhhh hhhhhh
Big Lake	31°11'	101°27'	2,690			ffH HHHHHH	ffHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHfff
Bloys Camp	30°31'	104°07'	5,000				fn 12 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnn nn
Bracketville	29°19'	100°25'	1,050	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Brite Ranch	30°20'	104°32'	4,625	ffffff ffffff	ffffff ffffff	ffffff ffHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH
Brownsville	25°54'	97°30'	34	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Brownsville(airport)	25°55'	97°28'	40				hhhhhh hhhhhh	hhh HH	HHHHHH HHHH	HHHHHH HHHHHH
Brunson Ranch	31°59'	101°42'	2,605			hhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Buena Vista	31°12'	102°39'	2,420			HHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHfHHH HHHfHH
Bunton, Bill, Ranch*	29°56'	104°21'	4,550	f ff ff fff	f ff ff fff	f ff 14 ff nnn	n nn 14 nn nnn	hhhhhh hhh	h h h hhhhh	hhhhhh hhhhhh
Bunton, D. M.	30°06'	104°13'	5,000	ffff ffffff	ffff ffffff	ffff ffffff	nnnn 12 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Bunton, S. E. Ranch	30°23'	104°35'	4,900				nnnn 12 nnnnn	nnnnnn 12 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn
Cambray	32°13'	107°20'	4,220	cccccc cccccc	cccccc cccccc	cccccc cc				
Cameron Ranch	26°38'	98°30'	327				hhh hhhhhh	hhhhhh hhhhhh	hhhhh hhhhhh	hhhhhh hhhhhh
Candelaria	30°08'	104°41'	2,850	nnnnnn 8 nnnnnn	nnnnnn 9 nnnnnn	nnnnnn 10 nnnnnn	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Carlsbad	32°25'	104°13'	3,120	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Carlsbad Caverns	32°10'	104°26'	4,250	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Carrizo Springs	28°31'	99°50'	650	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Carson Seep	32°07'	104°43'	6,500	cccccc cccccc	cccccc cccccc	cccccc cccccc	c cc cc			
Cartledge Ranch	29°50'	104°00'	3,740					13 nnn	nnnnnn 13 nn nnn	
Chancellor	30°42'	103°11'	3,400			HHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH
Childress Ranch	31°00'	104°02'	4,000		10 nnnn	nnnhhh 10 hhhhhh	hhhhhh hhhhhh	hhhhhh hhhh	hhhhh	hhhhhh
Christoval	31°13'	100°30'	1,995			hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Cline	29°15'	100°05'	1,010			hhhh hhhhhh	hhhhhh hh	hhhhhh hhhh h	hhhhhh hhhhhh	hhhhhh hhhhh
Coats Ranch	30°32'	102°15'	3,000			fff fff f	ffff fff f	fff fff f	fff fff f	fff fff f
Comstock	29°41'	101°11'	1,530		nn 9 nnnnnn	nnnnnn 10 nnnnnn	nnnnnn 11 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Coopers Store	29°35'	103°08'	2,680						hhhhh	hhhhhh hhhhhh
Cope Ranch	31°41'	101°18'	2,600			hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Cornudas Service Station	31°46'	105°28'	4,000	ffffff ffffff	ffffff ffffff	ffhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhh hhhhhh	h hhh hhh hh
Cottonwood Dam(San Felipe)	31°33'	106°05'	3,830	ffffff ffffff	ffffff ffffff	fffffH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHH HH
County Line	31°23'	105°59'	3,550	NNNNNN 8 NNNNNN	NNNNNN 9 NNNNNN	NNNNNN 10 NNNNNN	NNNNNN 11 NNNNNN	NNNNNN 12 NNNNNN	NNNNNN 13 NNNNNN	NNNNNN 14 NNNNNN
Crane(near)	31°24'	102°20'	2,595			hhhh hhhhhh	hh	H HHHHHH	HHHH	HH HHH HHHHHH
Crosson Ranch	30°03'	103°41'	4,760	nnnnnn 8 nnnnnn	nnnnnn 9 nnnnnn	nnnnnn 10 nnnnnn	nnnnnn 11 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Crystal City	28°41'	99°50'	570			h h	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Dalberg	30°58'	104°58'	4,190	ffffff ffffff	ffffff ffffff	ffffff ffffff	ffffff ffffff	ffffff ffff		
Davis, B. H. Ranch	30°07'	103°44'	5,000			hh hhhhfh	hhhhhh hhhhhh	hhhhhh hhhhhh	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn
De Long Ranch(Bearce Ranch)	30°59'	100°48'	2,400		nnnnnn 13 nnnnnn	hhhhhh hfhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Del Rio	29°22'	100°54'	940	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC
Devils Lake	29°34'	100°59'	1,080		nn 9 nnnnnn	nnnnnn 10 nnnnnn	nnnnnn 11 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Dryden	30°03'	102°07'	2,140	nnnnnn 8 nnnnnn	nnnnnn 9 nnnnnn	nnnnnn 10 nnnffff	ffffff ffffff	ffffff ffffff	ffffff ffffff	ffffff ffffff
Duncan Ranch	30°49'	103°49'	3,880		n 12 nnnnn	nn 12 nnnnnn	nnnnnn 12 nnnn			
Eagle Pass	28°40'	100°28'	743	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Eagle Pass	28°43'	100°30'	720				HHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH
Edinburg	26°17'	98°10'	100	nnnnnn 14 nnnn n	nnnnnn 14 nnnnnn	nnnnnn 14 n				
Eldorado	30°52'	100°36'	2,420			fffHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HfHHHH HHHHHH
Eldorado(near)	30°46'	100°44'	2,400			fff ffffff	ffffff ffhhff	hfhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
El Indio	28°31'	100°19'	725				n 11 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
El Paso	31°46'	106°29'	3,780	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC
El Paso Airport	31°48'	106°24'	3,910			H	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH
Encinal	28°03'	99°18'	558	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Escondido Ranch	30°13'	104°00'	4,450			nnnnnn 14 nnnn n	hffhhh hhhhhh	hhhhhh hhhhhh	hhhh h hh	hh h hhhhhh
Fabens(R.40)	31°32'	106°04'	3,880	ffffff ffffff	ffffff ffffff	fffffN 12 NNfNNN	NNNNfN 12 NNNNNN	NNNNNN 12 NNNNNN	NNNNNN 13 NNNNNN	NNNNNN 14 NNNNNN
Fabens(Rec.)	31°30'	106°09'	3,610	ffffff ffffff	fffnnn 10 nnnnnn	nnnnnn 10 nnnnnn	nnnnnn 11 nnnnnn	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Fabens Guadalupe Bridge	31°26'	106°08'	3,610	ffffff ffffff	ffffff ffffff	fffnnn 10 nnnnnn	nnnnnn 11 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Fawcett, H. K. Ranch	30°00'	100°44'	2,000			fff ffffff	nnnnnn 13 nnnnnn	nnnnnn 13 nnnnnn	nnnnnf 13 fffffn	nnnnnn 14 nnnnnn
Finlay	31°16'	105°37'	3,960	ffffff ffffff	ffffff ffffff	ffffnn 10 nnnnnn	nnnnnn 11 nnnnnn	nnnnnf 12 ffff		
Fletcher, H. T. Ranch	30°12'	104°16'	5,090	ffffff ffffff	nnnnnn 12 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Fletcher, T. Ranch	30°10'	104°25'	4,850	f f ff ffffff	f f ff ffffff	f f ff 13 ffNNNN	NNNNNN 13 NNNNNN	NNNNNN 13 NNNNNN	NNNNNN 13 NNNNNN	NNNNNN 14 NNNNNN
Fort Bliss	31°49'	106°25'	3,890	nnnnnn 8 nnnnnn	nnnnnn 9 nnnnnn	nnnnnn 10 nnnnnn	nnnnnn 11 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Fort Clark	29°18'	100°25'	1,050	nnnnnn 10 nnnnnn	nnnnnn 10 nnnnnn	nnnnnn 10 nnnnnn	nnnnnn 11 nnnnnn	nnnnnn 12 nnnn		
Fort Clark	29°18'	100°27'	1,080				HHHHH HHHHHH	HHHHHH HHHHHH	H HH HHHHHH	HHHHHH HHHHHH
Fort Davis	30°36'	103°53'	4,800			cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc	cccccc cccccc
Fort Hancock Bridge	31°16'	105°51'	3,500	ffffff ffffff	ffffff ffffff	fffnnn 10 nnnnnn	nnnnnn 11 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Fort McIntosh	27°30'	99°31'	460			H	HHHHHH HHHH	HHHHHH HHHHH	HHHHHH H	
Fort Quitman	31°06'	105°36'	3,430	NNNNNN 8 NNNNNN	NNNNNN 9 NNNNNN	NNNNNN 10 NNNNNN	NNNNNN 11 NNNNNN	NNNNNN 12 NNNNNN	NNNNNN 13 NNNNNN	NNNNNN 14 NNNNNN
Fort D. A. Russell(Marfa)	40°19'	104°01'	4,670	nnnnnn 8 nnnnnn	nnnnnn 9 nnnnnn	nnnnnn 10 nnnnnn	nnnnnn 11 nnnnnn	nnnnnn 12 nnnn		
Fort Stockton	30°54'	102°53'	2,980			hhhhhh h		h hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Fort Stockton	30°50'	102°51'	3,050	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Fort Stockton	30°57'	102°53'	2,880			nn 14 nnnnnn	nnnnnn 14 nnn n	nnnnnn 14 nn		nn 14 nnnnnn
Freer	27°52'	98°37'	600			hhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Garden City	31°45'	101°25'	2,625	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Girvin	31°05'	102°24'	2,300			hhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Grand Falls	31°21'	102°52'	2,550	cccccc cc		nnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	n nnnn 14 nnnnnn	nnnnnf 14 nnnnnn	nnnnnn 14 nnnnnn
Greenwood H.M. (Cienega Ranch)	29°47'	104°13'	4,000	ffff ffffff	ffff ffffff	ffff ffffff	nnnn 12 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Guadalupe Pass	31°52'	104°50'	5,500			HHHH HHHHHH	HHHHH			
Guayuco Arroyo	31°10'	105°40'	3,600	ffffff ffffff	ffffff ffffff	ffffNN 11 NNNNff	ffffff 11 ffNNNN	NNNNNN 12 NNNNNN	NNNNNN 13 NNNNNN	NNNNNN 14 NNNNNN
Harlingen	26°12'	97°43'	37	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Harper, R. D.	29°49'	104°03'	3,660				nnn 12 nnnnnn	nnn nn 12 nnnnnn	nnnnnn 13 nnnnnn	n nnnn 14 nnnnnn
Harper, S. S.	29°47'	104°05'	3,690				nnn 12 nnnnn	nnnnnn 12 nnn n	nnnnn 13 nnnn n	nnnnnn 14 nnnnnn
Haymond	30°09'	103°01'	3,870			fff ffffff	ffffff ffffff	ffffff ffffff	ffffff ffffff	ffffff ffffff
Hayter Ranch	30°53'	103°28'	3,350				nnnn 12 nnnnnn	nnnnnn 12 nn	nnnnnn 14 nn	nnnn 14
Hebbronville	27°20'	98°42'	550	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Hidalgo	26°05'	98°14'	106	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Hoefs, Wm. Ranch	31°01'	103°28'	3,090			n 14 nnnnnn	nnnnn 14			
Holmes, H. B. Ranch	30°16'	104°03'	4,630				nnn 12 nnnnnn	nnnnnn 12 nnnnn	n n 13 nnnnn	nnnnnn 14 nn
Hot Springs	29°10'	103°00'	1,900		fffff	HHHHH HH	HHHHHH HHHHHH	HHHHHH HH	HHHH	HHHHHH HHHHHH
Humble Pump Station	30°17'	100°18'	2,290			hhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Imperial	31°16'	102°43'	2,520			hh hhhhhh	hh hhh hhhhhh	hhhhhh hhhh		
Indian Hot Springs	30°50'	105°18'	3,885	ffffff ffffff	ffffff 14 fnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	ffffff fhhhhh	hh h	hh hh hhhhhh
Island Station	31°32'	106°14'	3,630	FFFFFF FFFFFF	NNNNNN 9 NNNNNN	NNNNNN 10 NNNNNN	NNNNNN 11 NNNNNN	NNNNNN 12 NNNNNN	NNNNNN 13 NNNNNN	NNNNNN 14 NNNNNN
Johnson Ranch	29°01'	103°23'	2,050	nnnnnn 8 nnnnnn	nnnnnn 9 nnnnnn	nnnnnn 10 nnnnnn	nnnnnn 11 nnnnnn	nnnnnn 12	13 nnnn	fff
Jones, C. B. Ranch	30°49'	100°08'	2,145			hhhhhh hhh	hhhhh hhhhhh	h hhhh hhhh h	hhhhhh hhhhhh	hhhhhh hhhhh
Jones, E. Ranch	29°58'	103°55'	4,760				nn 12 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnn n
Jones, M. W. Ranch	30°59'	100°20'	2,330			hhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Judkins	31°43'	102°38'	2,920						hhhh	hhhhhh hhhhhh
Junction	30°29'	99°47'	2,180	cccccc cccccc	cccccc cccccc	cccccc	cccccc cccccc	cccccc cc ccc	cccccc cccccc	cccccc cccccc
Kelly Ranch(George Jones)	30°32'	104°16'	5,320				NNNN 12 NNNNN	N NNNN 12 NN	NNNNNN 13 NN N	
Kennedy Ranch	30°26'	103°51'	4,180				NNNN 12 NNNNNN	N N 12		

Also known as; * Lucius Bunton or Bunton Brothers.

INDEX TO PRECIPITATION RECORDS

UNITED STATES SIDE 1938—1944

Name of Station	Latitude	Longitude	Elevation	WHERE MONTHLY RECORDS MAY BE FOUND 1938	1939	1940	1941	1942	1943	1944
Kingston Ranch	30°52'	103°49'	3,700			h hhhhhh	hhhhhh hhhhhh	hhhhhh hh	hhhhhh	hhhhhh hh
Kingston, J. O.	30°56'	103°50'	3,470				n 12 nnnnnn	nnnnnn 12 nn	nnnnnn 14 n	nn n 14 nnn
Kountz Ranch	30°53'	103°46'	3,800		10 NNNN	NNNHHH 14 HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH
La Mota Ranch	29°33'	103°59'	3,750						nnnnn 13 nnnnn	nnnnnn 14 nnnnnn
Langtry	29°48'	101°24'	1,397	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	ccccc cccccc	cccccc cccccc	cccccc cccccc
Langtry #2	29°48'	101°34'	1,250			HHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHH HH
Laredo	27°30'	99°30'	421	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Laredo Airport	27°33'	99°30'	424		hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hHHHHH	HHHHHH HHHHHH
Laredo Water Plant	27°33'	99°31'	410	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn
La Tuna	32°00'	106°34'	4,018						hhhh hhhhhh	hhhhhh hhhhhh
Lawhon, Woodward & Thompson	30°15'	104°25'	4,550	ff	ff	ff	n 12 nnnnnn	n 12 n	n 13 n	ffff
Leakey	29°44'	99°46'	1,675			HHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHH	HH H H	HHHHHH HHHHHH
Logan Ranch (Watts Ranch)	30°01'	104°27'	5,300	ffffff ffffff	ffffff ffffff	ffffff ffffff	nnnnnn 12 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Loma Alta	29°55'	100°46'	2,200			f	fff f f	fff f H	HHHHHH HHHHHH	HHHHHH HHHHHH
Loma Vista Ranch	30°13'	103°47'	5,450				nnnn 12 nnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Madden Arroyo	31°13'	105°46'	3,500	ffffff ffffff	ffffff ffffff	ffffff ffffff	ffffff 11 ffNNNN	NNNNNN 12 NNNNNN	NNNNNN 13 NNNNNN	NNNNNN 14 NNNNNN
Marathon	30°13'	103°15'	4,040			fhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh fhhhhh	hhhhhh fhhhhf
Marfa Army Air Field	30°16'	103°52'	4,950					f	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Marfa	30°19'	104°02'	4,688			HHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HfHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH
McAllen	26°15'	98°13'	114				h hhhhhh	hhhhhh hhhhhh	h hhhh hhhhhh	hhhhhh hhhhh
McCamey	31°12'	101°13'	2,454	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
McCracken Ranch	29°51'	104°14'	4,250	fff ffffff	fff ffffff	fff ffffff	nnn 12 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
McDonald Observatory	30°40'	104°01'	6,790		10 NNNN	NNNHHH 10 HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH
McFarland Ranch	30°06'	104°16'	5,200				nnnn 12 nnnnnn	nnnn n 12 nn	nnnnn 13 nnnnnn	nnnnn 14 nnnnnn
McIntosh Ranch	30°43'	100°34'	2,370			f ffffff	fffffh hhhhhh	hhhhhh hhfhff	fhhhhh hhhhhh	hhhhhh hhhhhh
Medley, Oscar, Ranch	30°32'	104°11'	5,720				12 nnnn	nnnnnn 12 n	nnnnnn 13 n n	nnnnnn 14 nnnn
Mellard, F. C. Ranch	30°04'	104°05'	4,470				n n 12 nnn	nnnnn 12 n n	nnnn 13 n n	nnnnnn 14 nnn
Menard	30°55'	99°47'	1,960	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Mentone	31°43'	103°36'	2,700						hhhh	hhhhhh hhhhhh
Mercedes	26°13'	97°52'	66	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Mercedes Pump	26°04'	97°54'	60	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn
Merrill, J. W. Ranch	30°31'	104°04'	5,490		nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn		
Merrill Ranch	30°31'	104°00'	5,600		ffffff f ffff	fhhhhh hhhhhh		h hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Merrill, R. K. Ranch	30°36'	104°00'	5,180			12 nnn	nnnnnn 12 nnnnNN	NNNNNN 12 NNNNNN	NNNNNN 13 N	
Mertzon	31°17'	100°49'	2,170				h hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Midland (Airport)	31°56'	102°12'	2,870				HH H HH HHH	HHHH H HH HHH	HHHHHH HHHHHH	HHHHHH HHHHHH
Midland	32°01'	102°02'	2,779	cccc		cc				cccccc cccccc
Miller, C. E. Ranch (Valentine)	30°37'	104°38'	4,240	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Mission	26°14'	98°20'	140	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Mitchell, Clay Ranch	30°13'	104°05'	4,660			nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nn n	nnnnnn 14 nnn
Mitchell, Crawford T.	30°09'	103°53'	4,775			n 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnn		
Mitchell, Kerr	30°13'	104°00'	4,450				nnnn 12 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Mitchell, W. B. Sons	30°16'	104°00'	4,710				12 nnnnnn	nnnnnn 12 nn	ffff	nnnnnn 14 nnnnnn
Montell	29°32'	100°01'	1,300	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	
Moore, W. E. Ranch	31°07'	103°44'	2,900		10 nnnn	nnnnnn 10 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 12 nnnnnn	nn n n 13 n	
Mt. Locke	30°40'	104°01'	6,790	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Murr Ranch	30°41'	100°05'	2,350			hhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhh	hh hhh hhhhhh
Myers Ranch	29°48'	100°49'	1,625			HH HHHHHH	HHHH H H H	f f f	f f f	
Neely Ranch	30°59'	105°32'	3,350		fff	fff	11 nnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
New Mexico A. & M. College	32°17'	106°45'	3,860	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC
Orogrande	32°22'	106°05'	4,170	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC	CCCCCC CCCCCC
Ozona	30°31'	101°10'	2,350			fHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHfH	HHHHHH HHHHHH	HHHHHH HHHHHH
Pandale	30°12'	101°35'	1,980						hhh	hh hhh hh hhh
Pecos	31°26'	103°31'	2,580	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Pecos River Station	29°45'	101°21'	1,060	nnnn 8 nnnnnn	nnnnnn 9 nnnnnn	nnnnnn 10 nnnnnn	nnfnnn 11 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Petan Ranch	30°04'	104°28'	5,450				nnn 12 nnnnn	nnnn 12	f f	
Pine Springs	31°55'	104°47'	5,630		cccccc cccccc	cccccc cccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Popham Ranch	30°53'	103°33'	3,300		10 nnnnn	nnnhhh 10 hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hfhhhh hhhhhh	hhhhhh hhhhhh
Port Isabel	26°03'	97°12'	15	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Presidio	29°34'	104°23'	2,694	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Prewitt Ranch	31°16'	103°30'	2,560		10 nnnn	nnnhhh 10 hhhhhh	hhhhhh hhhhhh	hhh hh hhhhhh	hhhh hhhhhh	hhhhhh hhhhhh
Quemado	28°56'	100°37'	765				11 nn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Rawls Ranch	29°40'	104°02'	3,830				NNN 12 NNN NN	NNNNNN 12 N NNN	NNNNN 13 N N	NN 14 NNNN N
Raymondville	26°35'	97°47'	31	cccccc ffcccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc ccc c
Red Bluff Dam #1	31°54'	103°55'	2,820			hhhhH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH
Red Bluff Dam #2	31°54'	103°55'	2,820		14 nn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnn n	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnn
Reed Ranch	31°15'	103°07'	2,660			h hhhhhh	hhhhhh hh			
Reid Brothers	30°45'	103°35'	3,840				nnnn 12 nnnnnn	n 12 n	nnnnnn 14 nnnnnn	nnnn n 14 nnn n
Reiley Ranch	30°38'	100°15'	2,130			ffHH HHHHHH	HHfHHf HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHH
Rideout Ranch	29°56'	104°03'	4,000				nnn 12 nnnnnn	nnnnnn 12 nnnn n	n nn 13 nnnn	nnnnnn 14 nnnnnn
Rio Grande City	26°20'	98°47'	150		10 NNNNNN	NNNNNN 10 NNNNNN	NNNNNN 11 NNNNNN	NNNNNN 12 NNNNNN	NNNNNN 13 NNNNNN	NNNNNN 14 NNNNNN
Riogrande	26°22'	98°48'	168	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Roberts Dam	31°31'	106°03'	3,997	ffffff ffffff	ffffff ffffff	fffffn 10 nnfnnn	nnnnhn 12 nnnnnn	fhhhfh hhhhhh	hhhhhh h	
Rock Springs	30°00'	100°12'	2,400	fffccc		HHHf HHHHHH	HHHHff ffHHHH	HHfffH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH
Roma	26°24'	91°01'	230				nnnnnn 11 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Roosevelt	30°30'	100°04'	1,925			hhhhhh hhhhfh	hhfhhh hhhhhh	hhhhhh hhhfhf	hhhhhh hhhhhh	hhhhhh hhhhhh
Rose, Landon & Son	30°12'	102°22'	3,400						ffff	ffff ffffff
Runge Ranch	30°56'	100°34'	2,400			f ffffff	ffffff 13 nnnnnn	nffnnn 13 nnnnfn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Rust Circle Bar Ranch	31°12'	100°10'	2,175			h h hhhhhh	h hhh hhhhh	h h h hh	hhhhhh hh h	hh h hhh hh
Ryan Ranch	30°27'	104°26'	4,490	ff	ff	ff	nnn 12 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Salt Flat	31°45'	105°03'	3,650				H HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH
San Angelo	31°28'	100°25'	1,847	cccccc cccccc	cccccc cccccc	cccccc cccccc	c c c cc	ccc cccccc	cccccc cccccc	cccccc cccccc
San Benito	26°10'	97°36'	37	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
San Benito Pump	26°03'	97°45'	50	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn
Sanderson	30°08'	102°23'	2,780		nn 10 nnnnnn	nnnnnn 10 nnnnnn	nn nnn 11 nnnnnn	nnn 12 nnnn	nnnnnn 13 nnnnnn	n nnn 14 nnnnnn
Sanderson	30°08'	102°23'	2,780			HHHH HHHHHH	HHHHHH H	H H HHH	HHHHHH HHHHHH	HHH
Sanderson	30°08'	102°23'	2,810			10 nnn	nnnnnn 11 nnnnnn			
San Manuel	26°34'	98°07'	72				HHHH	HHHHHH HHffHH	HHHHHH HHHHHH	HHHH H HHH
San Pedro Ranch (South Field)	31°02'	102°45'	2,695					nnnn n 14 nnnnnn	n 14	
San Pedro Ranch (North Field)	31°03'	102°42'	2,630					nnnn n 14 nnnnnn	n 14	
Saragosa	31°04'	103°39	2,850		10 NNNN	NNNNHH 10 HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH H	
Schlegel, Joe Ranch	30°53'	103°51'	2,900			n 14 nnnnnn	nnnnn 14			
Seven Springs Ranch**	30°50'	103°47'	4,600			nn 12 nnnnnn	nnnnnn 12 nn			hhhhf hhhhhh
Sharyland Road	26°13'	98°17'	120	nnnn 14 nnnnn	nnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnn	nnnnnn 14 nnnnnn	nnnnn 14 nnnnnn	nnnn 14
Sheffield	30°41'	101°50'	2,190			HHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH
Sierra Blanca	31°10'	105°21'	4,510			ffHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHH H	HHHHHH HH	HHHHH HHHHHH
Smith Brothers	30°29'	104°06'	5,230			14 NNNN	N N N 14 NNNNNN	NNNNNN 14 NNNNN	HHHHHH HHHHHH	HHHHHH HHHHHH
Socorro	31°41'	106°19'	3,660	cccccc cccccc	cccccc cccccc	cfcccf cccccf	cccccc ccccfc	cfcccc ccccc	c	
Stevenson, R. L. Ranch	29°49'	104°30'	3,350	ffff fffff	ffff fffff	ffff fffff	nnnn 12 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nNNNN	HHHH
Stiles	31°24'	101°28'	2,580			hhhhhh hhhf	h hhhh fhhh h	fhhhff fhfh	hhhhhh hfff	f fffh hhfhhh
Stone Ranch	30°46'	103°28'	3,500				12 n	nnnn n 12 nnnnnn	n nnnn 14 nnnnn	nnnn n 14 nnn n
Stumberg Ranch	30°11'	102°53'	4,300						NNNNNN 13 NNNNNN	NNNNNN 14 NNNNNN
Substation	30°16'	100°36'	2,600	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Telegraph	30°20'	99°54'	1,880			hhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhfh hhh
Terlingua	29°19'	103°37'	2,900			HHHH HHHHHH	H HH	H HHH HH H	HHHHHH HHHHHH	HHHHHH HHHHHH
Thomas, C. F. Ranch	30°01'	103°57'	4,640					13 n n	nnnnnn 13 nnnn	nnnnnn 14 nnnnnn
Tinnin Ranch	31°31'	104°08'	3,580			HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH
Toyah	31°20'	103°48'	2,950						hhhhh	hhhhhh hhhhhh
Toyahvale	30°53'	103°44'	3,300	nnnnnn 14 nnnn n	nnnn n 14 nnnnnn					
Townsend Ranch	30°16'	104°10'	4,680				nnnn 12 nnnnnn	nnnn n 12 nnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
Upland	31°23'	102°00'	2,755			HHff HHHHHH	HHHHHH HHHfHH	HfHHfH HHfHHH	HHHHHH HHHHHH	HHHHHH HHHfHH
Uvalde	29°14'	99°49'	937	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Valentine	30°35'	104°30'	4,420	ffffff ffffff	ffffff ffffff	ffffff ffffff	ffffff ffffff	ffffff ffff		
Van Horn	31°02'	104°50'	4,010	ffffff ffffff	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
Walker Place	30°12'	104°09'	5,320					nn n 12 nnnn	nnnn 13 nnnnn	nnnnnn 14 nnnnn
Weslaco	26°10'	97°59'	80	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
West Small	31°16'	105°33'	4,070	ffffff ffffff	ffffff ffffff	ffffnn 10 nnnnfn	nnnnnn 11 nnnnnn	nnnnnn 12 nnnnnn	nnnnnn 13 nnnnnn	nnnnnn 14 nnnnnn
White Sands Nat'l. Monument***	32°46'	106°10'	4,000		cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc	cccccc cccccc
White Sands	32°46'	106°11'	3,995			H HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHH H HHHHHH
Wink	31°47'	103°13'	2,810	c cccccc	cccccc cccccc	cccccc ccccc	cccccc cccccc	cccccc cccccc		
Wink (Airport)	31°47'	103°13'	2,810			HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH
Winterhaven Experiment Station	28°38'	99°52'	600			hhhhhh	hhhhhh hhhhhh	h hhh hhhhhh	hhhhhh hhhhhh	hhhhhh hhhhhh
Woods, S. T. Ranch	29°55'	104°25'	5,000				nnnnn 12 nnnnnn	nnnn 12	f	
Ysleta	31°42'	106°20'	3,650	ffffff ffffff	fnnnnn 10 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	nnnnnn 14 nnnnnn	hhhhhh hhfhhh	hhhhfh hfffff
Zapata	26°53'	99°19'	300			HHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH	HHHHHH HHHHHH
Zapata	26°53'	99°19'	270	nnnnnn 8 nnnnnn	nnnnnn 9 nnnnnn	nnnnnn 10 nnnnnn				
Zeitler Ranch	31°08'	102°32'	2,430			hh hhhhhh	hhhhhh hhhhhh	hhh		

Also known as; ** W. N. McCutchen, *** White Sands.

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