DEPARTMENT OF THE INTERIOR
Ray Lyman Wilbur, Secretary

U. S. GEOLOGICAL SURVEY
George Otis Smith, Director

Water-Supply Paper 608

SURFACE WATER SUPPLY OF THE UNITED STATES

1925

PART VIII. WESTERN GULF OF MEXICO BASINS

NATHAN C. GROVER, Chief Hydraulic Engineer
C. E. ELLSWORTH and ROBERT FOLLANSBEE
District Engineers

Prepared in cooperation with the States of
TEXAS and COLORADO

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1929

For sale by the Superintendent of Documents, Washington, D. C. - - - - - - Price 30 cents

CONTENTS

ILLUSTRATION

SURFACE WATER SUPPLY OF WESTERN GULF OF MEXICO BASINS, 1925

AUTHORIZATION AND SCOPE OF WORK

This volume is one of a series of 14 reports presenting results of measurements of streams in the United States during the year ending September 30, 1925.

The data presented in these reports were collected by the United States Geological Survey under the following authority contained in the organic law (20 Stat. L., p. 394):

Provided, That this officer [the Director] shall have the direction of the Geological Survey and the classification of public lands and examination of the geological structure, mineral resources, and products of the national domain.

The work was begun in 1888 in connection with special studies relating to irrigation. Since the fiscal year ending June 30, 1895, successive appropriation bills passed by Congress have carried the following item:

For gaging the streams and determining the water supply of the United States, and for the investigation of underground currents and artesian wells, and for the preparation of reports upon the best methods of utilizing the water resources.

Annual appropriations for the fiscal years ending June 30, 1895–1926

1895	$12, 500. 00	1911–1917	$150, 000. 00
1896	24, 500. 00	1918	175, 000. 00
1897–1899	50, 000. 00	1919	148, 244. 10
1900	70, 000. 00	1920	175, 000. 00
1901–1902	100, 000. 00	1921–1923	180, 000. 00
1903–1906	200, 000. 00	1924–1925	170, 000. 00
1907	150, 000. 00	1926	165, 000, 00
1908–1910	100, 000. 00		

In this work many private and State organizations have cooperated, either by furnishing records or by assisting in their collection. Acknowledgments for cooperation of the first kind are made in connection with the description of each station affected; cooperation of the second kind is acknowledged on page 10.

Measurements of stream flow have been made at about 5,120 points in the United States and also at many points in Alaska and the Hawaiian Islands. In July, 1925, 1,710 gaging stations were being maintained by the Geological Survey and the cooperating

organizations. Many miscellaneous discharge measurements were made at other points. In connection with this work data were also collected in regard to precipitation, evaporation, storage reservoirs, river profiles, and water power in many sections of the country and will be made available in water-supply papers from time to time.

DEFINITION OF TERMS

The volume of water flowing in a stream—the "run-off" or "discharge"—is expressed in various terms, each of which has become associated with work of a certain class. These terms may be divided into two groups—(1) those that represent a rate of flow, as second-feet, gallons per minute, miner's inches, and discharge in second-feet per square mile, and (2) those that represent the actual quantity of water, as run-off in inches, acre-feet, and millions of cubic feet. The principal terms used in this series of reports are second-feet, second-feet per square mile, run-off in inches, and acre-feet. They may be defined as follows:

"Second-feet" is an abbreviation for "cubic feet per second." A second-foot is the rate of discharge of water flowing in a channel of rectangular cross section, 1 foot wide and 1 foot deep, at an average velocity of 1 foot per second. It is generally used as a fundamental unit from which others are computed.

"Second-feet per square mile" is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly both as regards time and area.

"Run-off in inches" is the depth to which an area would be covered if all the water flowing from it in a given period were uniformly distributed on the surface. It is used for comparing run-off with rainfall, which is usually expressed in depth in inches.

An "acre-foot," equivalent to 43,560 cubic feet, is the quantity required to cover an acre to the depth of 1 foot. The term is commonly used in connection with storage for irrigation.

The following terms not in common use are here defined:

"Stage-discharge relation," an abbreviation for the term "relation of gage height to discharge."

"Control," a term used to designate the section or sections of the stream below the gage which determine the stage-discharge relation at the gage. It should be noted that the control may not be the same section or sections at all stages.

The "point of zero flow" for a given gaging station is that point on the gage—the gage height—at which water ceases to flow over the control.

EXPLANATION OF DATA

The data presented in this report cover the year ending September 30, 1925. At the beginning of January in most parts of the United States much of the precipitation in the preceding three months is stored in the form of snow or ice, in ponds, lakes, and swamps, or as ground water, and this stored water passes off in the streams during the spring break-up. At the end of September, on the other hand, the only stored water available for run-off is possibly a small quantity in the ground; therefore, the run-off for the year beginning October 1 is practically all derived from precipitation within that year.

The base data collected at gaging stations consist of records of stage, measurements of discharge, and general information used to

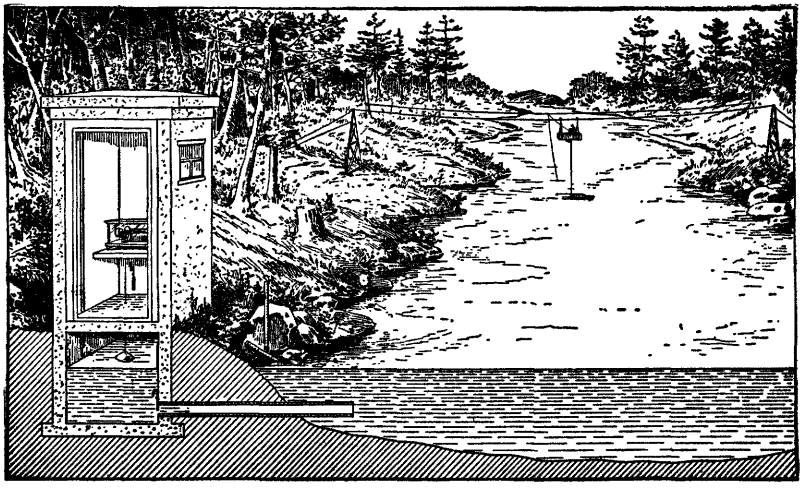

FIGURE 1.—Typical gaging station

supplement the gage heights and discharge measurements in determining the daily flow. The records of stage are obtained either from direct reading on a staff gage or from a water-stage recorder that gives a continuous record of the fluctuations. Measurements of discharge are made with a current meter by the general methods outlined in standard textbooks on the measurement of river discharge. A typical gaging station, equipped with water-stage recorder and measuring cable and car, is shown in Figure 1.

From the discharge measurements rating tables are prepared that give the discharge for any stage. The application of the daily gage heights to these rating tables gives the daily discharge from which the monthly and yearly mean discharge are computed.

The data presented for each gaging station in the area covered by this report comprise a description of the station, a table giving results of discharge measurements, a table showing the daily discharge, and a table of monthly and yearly discharge and run-off.

If the base data are insufficient to determine the daily discharge, tables giving daily gage heights and results of discharge measurements are published.

The description of the station gives, in addition to statements regarding location and equipment, information in regard to any condition that may affect the permanence of the stage-discharge relation, covering such subjects as the occurrence of ice, the use of the stream for log driving, shifting of channel, and the cause and effect of backwater. It gives also information as to diversions that decrease the flow at the gage, artificial regulation, maximum and minimum recorded stages, and the accuracy of the records.

The table of daily discharge gives the discharge in second-feet corresponding to the mean of the gage heights read each day. At stations on streams subject to sudden or rapid diurnal fluctuation the discharge obtained from the rating table and the mean daily gage heights may not be the true mean discharge for the day. If such stations are equipped with water-stage recorders, the mean daily discharge may be obtained by averaging discharge for parts of the day or by use of the discharge integrator, an instrument operating on the principle of the planimeter and containing as an essential element the rating curve of the station.

In the table of monthly discharge the column headed "Maximum" gives the mean flow for the day when the mean gage height was highest. As the gage height is the mean for the day, it does not indicate correctly the stage when the water surface was at crest height, and the corresponding discharge was consequently larger than that given in the column. Likewise, in the column headed "Minimum," the quantity given is the mean flow for the day when the mean gage height was lowest. The column headed "Mean" gives the average flow in cubic feet for each second during the month. On this average flow computations recorded in the remaining columns which are defined on page 2 are based.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of stream-flow data depends, primarily, (1) on the permanence of the stage-discharge relation and (2) on the accuracy of observations of stage, measurements of flow, and interpretation of records.

A paragraph in the description of the station gives information regarding the (1) permanence of the stage-discharge relation, (2) precision with which the discharge rating curve is defined, (3) refinement of gage readings, (4) frequency of gage readings, and (5) methods of applying daily gage heights to the rating table to obtain the daily discharge.

For the rating curves "well defined" indicates, in general, that the rating is probably accurate within 5 per cent; "fairly well defined," within 10 per cent; "poorly defined," within 15 to 25 per cent. These notes are very general and are based on the plotting of the individual measurements with reference to the mean rating curve.

The monthly means for any station may represent with high accuracy the quantity of water flowing past the gage, but the figures showing discharge per square mile and run-off in inches may be subject to gross errors, caused by including large noncontributing districts in the measured drainage area, by lack of information concerning water diverted for irrigation or other use, or by inability to interpret the effect of artificial regulation of the flow of the river above the station. "Second-feet per square mile" and "run-off in inches" are therefore not computed if such errors appear probable, and are also omitted for stations on streams draining areas in which the annual rainfall is less than 20 inches. All figures representing "second-feet per square mile" and "run-off in inches" previously published by the Geological Survey should be used with caution because of possible unknown but inherent sources of error.

Many gaging stations on streams in the irrigated sections of the United States are located above most of the diversions from those streams, and the discharge recorded does not show the water supply available for further development, as prior appropriations below the stations must first be satisfied. To give an idea of the amount of prior appropriations, a paragraph on diversions is presented in each station description. The figures given can not be considered exact, but represent the best information available.

The table of monthly discharge gives only a general idea of the flow at the station and should not be used for other than preliminary estimates. The tables of daily discharge allow more detailed studies of the variation in flow. It should be borne in mind, however, that the observations in each succeeding year may be expected to throw new light on records previously published.

PUBLICATIONS

Investigation of water resources by the United States Geological Survey has consisted in large part of measurements of the volume of flow of streams and studies of the conditions affecting that flow, but it has comprised also investigation of such closely allied subjects as irrigation, water storage, water powers, underground waters, and quality of waters. Most of the results of these investigations have been published in the series of water-supply papers, but some have appeared in the bulletins, professional papers, annual reports, and monographs.

The result of stream-flow measurements are now published annually in 12 parts, each part covering an area whose boundaries coincide with natural-drainage features as indicated below:

Part I. North Atlantic basins (St. John River to York River).
II. South Atlantic and eastern Gulf of Mexico basins (James River to the Mississippi.
III. Ohio River basin.
IV. St. Lawrence River basin.
V. Upper Mississippi River and Hudson Bay basins.
VI. Missouri River basin.
VII. Lower Mississippi River basin.
VIII. Western Gulf of Mexico basins.
IX. Colorado River basin.
X. Great Basin.
XI. Pacific basins in California.
XII. North Pacific slope basins, in three volumes:
A, Pacific slope basins in Washington and Upper Columbia River basin.
B, Snake River basin.
C, Pacific slope basins in Oregon and Lower Columbia River basin.

Water-supply papers and other publications of the United States Geological Survey containing data in regard to the water resources of the United States may be obtained or consulted as indicated below:

1. Copies may be purchased at nominal cost from the Superintendent of Documents, Government Printing Office, Washington, D. C., who will furnish list giving prices.

2. Sets of the reports may be consulted in the libraries of the principal cities in the United States.

3. Complete sets are available for consultation in the local offices of the water-resources branch of the Geological Survey, as follows:

Boston, Mass., 2500 Customhouse.
Albany, N. Y., 904 Home Savings Bank Building.
Trenton, N. J., Statehouse.
Charlottesville, Va., University of Virginia.
Asheville, N. C., 608 City Hall.
Chattanooga, Tenn., 830 Power Building.
Columbus, Ohio, Engineering Experiment Station, Ohio State University.
Madison, Wis., c/o Railroad Commission of Wisconsin.
Chicago, Ill., 1510 Consumers Building.
Rolla, Mo., Rolla Building, School of Mines and Metallurgy.
Austin, Tex., Capitol Building.
Helena, Mont., 45–46 Federal Building.
Denver, Colo., 403 Post Office Building.
Tucson, Ariz., 104 Agriculture Building, University of Arizona.
Salt Lake City, Utah, 313 Federal Building.
Boise, Idaho, Federal Building.
Idaho Falls, Idaho, 228 Federal Building.
Tacoma, Wash., 404 Federal Building.
Portland, Oreg., 606 Post Office Building.
San Francisco, Calif., 303 Customhouse.
Los Angeles, Calif., 600 Federal Building.
Honolulu, Hawaii, Territorial Office Building.

A list of the Geological Survey's publications may be obtained by applying to the Director of the United States Geological Survey, Washington, D. C.

Stream-flow records have been obtained at about 5,120 points in the United States, and the data obtained have been published in the reports tabulated below:

Stream-flow data in reports of the United States Geological Survey

[A=Annual Report; B=Bulletin; W=Water-Supply Paper]

Report	Character of data	Year
10th A, pt. 2	Descriptive information only	
11th A, pt. 2	Monthly discharge and descriptive information	1884 to Sept., 1890.
12th A, pt. 2	do	1884 to June 30, 1891.
13th A, pt. 3	Mean discharge in second-feet	1884 to Dec. 31, 1892.
14th A, pt. 2	Monthly discharge (long-time records, 1871 to 1893)	1888 to Dec. 31, 1893.
B 131	Descriptions, measurements, gage heights, and ratings	1893 and 1894.
16th A, pt. 2	Descriptive information only	
B 140	Descriptions, measurements, gage heights, ratings, and monthly discharge (also many data covering earlier years).	1895.
W 11	Gage heights (also gage heights for earlier years)	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also similar data for some earlier years).	1895 and 1896
W 15	Descriptions, measurements, and gage heights, eastern United States, eastern Mississippi River, and Missouri River above junction with Kansas.	1897.
W 16	Descriptions, measurements, and gage heights, western Mississippi River below junction of Missouri and Platte, and western United States.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also some long-time records).	1897.
W 27	Measurements, ratings, and gage heights, eastern United States, eastern Mississippi River, and Missouri River.	1898.
W 28	Measurements, ratings, and gage heights, Arkansas River and western United States.	1898.
20th A, pt. 4	Monthly discharge (also for many earlier years)	1898.
W 35 to 39	Descriptions, measurements, gage heights, and ratings	1899.
21st A, pt. 4	Monthly discharge	1899.
W 47 to 52	Descriptions, measurements, gage heights, and ratings	1900.
22d A, pt. 4	Monthly discharge	1900.
W 65, 66	Descriptions, measurements, gage heights, and ratings	1901.
W 75	Monthly discharge	1901.
W 82 to 85	Complete data	1902.
W 97 to 100	do	1903
W 124 to 135	do	1904.
W 165 to 178	do	1905.
W 201 to 214	do	1906.
W 241 to 252	do	1907–8.
W 261 to 272	do	1909.
W 281 to 292	do	1910.
W 301 to 312	do	1911.
W 321 to 332	do	1912.
W 351 to 362	do	1913.
W 381 to 394	do	1914.
W 401 to 414	do	1915.
W 431 to 444	do	1916.
W 451 to 464	do	1917.
W 471 to 484	do	1918.
W 501 to 514	do	1919–20.
W 521 to 534	do	1921.
W 541 to 554	do	1922.
W 561 to 574	do	1923.
W 581 to 594	do	1924.
W 601 to 614	do	1925.

NOTE.—No data regarding stream flow are given in the 15th and 17th Annual Reports.

The records at most of the stations discussed in these reports extend over a series of years, and miscellaneous measurements at many points other than regular gaging stations have been made each year. An index of the reports containing records obtained prior to 1904 has been published in Water-Supply Paper 119.

The following table gives, by years and drainage basins, the numbers of the papers on surface-water supply published from 1899 to 1923. The data for any particular station will be found in the reports covering the years during which the station was maintained. For example, data for Machias River at Whitneyville, Maine, 1903 to 1921, are published in Water-Supply Papers 97, 124,165, 201, 241, 261, 281, 301, 321, 351, 381, 401, 431, 451, 471, 501, and 521, which contain records for the New England streams from 1903 to 1921. Results of miscellaneous measurements are published by drainage basins.

Numbers of water-supply papers containing results of stream measurements, 1899–1925

[For basins included see p. 6]

Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII		
												A	B	C
1899 [a]	35	[b] 35, 36	36	36	36	[c] 36, 37	37	37	[d] 37, 38	38, [e] 39	38, [f] 39	38	38	38
1900 [g]	47, [h] 48	48	48, [i] 49	49	49	49, [j] 50	50	50	50	51	51	51	51	51
1901	65, 75	65, 75	65, 75	65, 75	[k] 65, 66, 75	66, 75	[k] 65, 66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75
1902	82	[b] 82, 83	83	[l] 82, 83	[k] 83, 85	84	[k] 83, 84	84	85	85	85	85	85	85
1903	97	[b] 97, 98	98	97	[k] 98, 99, [m] 100	99	[k] 98, 99	99	100	100	100	100	100	100
1904	[n] 124, [o] 125, [p] 126	[p] 126, 127	128	129	[k] 128, 130	130, [q] 131	[k] 128, 131	132	133	133, [r] 134	134	135	135	135
1905	[n] 165, [o] 166, [p] 167	[p] 167, 168	169	170	171	172	[k] 169, 173	174	175, [s] 177	176, [r] 177	177	178	178	[t] 177, 178
1906	[n] 201, [o] 202, [p] 203	[p] 203, 204	205	206	207	208	[k] 205, 209	210	211	212, [r] 213	213	214	214	214
1907–8	241	242	243	244	245	246	247	248	249	250, [r] 251	251	252	252	252
1909	261	262	263	264	265	266	267	268	269	270, [r] 271	271	272	272	272
1910	281	282	283	284	285	286	287	288	289	290	291	292	292	292
1911	301	302	303	304	305	306	307	308	309	310	311	312	312	312
1912	321	322	323	324	325	326	327	328	329	330	331	332-A	332-B	332-C
1913	351	352	353	354	355	356	357	358	359	360	361	362-A	362-B	362-C
1914	381	382	383	384	385	386	387	388	389	390	391	392	393	394
1915	401	402	403	404	405	406	407	408	409	410	411	412	413	414
1916	431	432	433	434	435	436	437	438	439	440	441	442	443	444
1917	451	452	453	454	455	456	457	458	459	460	461	462	463	464
1918	471	472	473	474	475	476	477	478	479	480	481	482	483	484
1919–20	501	502	503	504	505	506	507	508	509	510	511	512	513	514
1921	521	522	523	524	525	526	527	528	529	530	531	532	533	534
1922	541	542	543	544	545	546	547	548	549	550	551	552	553	554
1923	561	562	563	564	565	566	567	568	569	570	571	572	573	574
1924	581	582	583	584	585	586	587	588	589	590	591	592	593	594
1925	601	602	603	604	605	606	607	608	609	610	611	612	613	614

[a] Rating tables and index to Water-Supply Papers 35–39 contained in Water-Supply Paper 39. Tables of monthly discharge for 1899 in Twenty-first Annual Report, Part IV.
[b] James River only.
[c] Gallatin River.
[d] Green and Gunnison Rivers and Grand River above junction with Gunnison.
[e] Mohave River only.
[f] Kings and Kern Rivers and south Pacific slope basins.
[g] Rating tables and index to Water-Supply Papers 47–52 and data on precipitation, wells, and irrigation in California and Utah contained in Water-Supply Paper 52, Tables of monthly discharge for 1900 in Twenty-second Annual Report, Part IV.
[h] Wissahickon and Schuylkill Rivers to James River.
[i] Scioto River.
[j] Loup and Platte Rivers near Columbus, Nebr., and all tributaries below junction with Platte.
[k] Tributaries of Mississippi from east.
[l] Lake Ontario and tributaries to St. Lawrence River proper.
[m] Hudson Bay only.
[n] New England rivers only.
[o] Hudson River to Delaware River, inclusive.
[p] Susquehanna River to Yadkin River, inclusive.
[q] Platte and Kansas Rivers.
[r] Great Basin in California, except Truckee and Carson River basins.
[s] Below junction with Gila.
[t] Rogue, Umpqua, and Siletz Rivers only.

COOPERATION

The work of measuring streams in Texas during the year ending September 30, 1925, was carried on in cooperation with the State through the board of water engineers, consisting of John A. Norris, chairman, G. S. Clark, and A. H. Dunlap, to whom special acknowledgments are due for the efficient and cordial manner in which they represented the State in the cooperative investigations.

The following organizations have aided in the collection of records by furnishing funds or otherwise assisting: United States Weather Bureau, American and Mexican sections of the International Boundary Commission, Texas Reclamation Department, State Tubercular Sanitorium; Corpus Christi, Dallas, Fort Worth, San Antonio, Brownwood, Lufkin, Louisiana Gravity Canal Co., Walker-Caldwell Water Co., Guadalupe Water Power Co., Medina Valley Irrigation Co., Planters & Merchants Mills, Ward County Irrigation District No. 1, Brady Chamber of Commerce, Snyder Chamber of Commerce, Missouri, Kansas & Texas Railway, Texas & Pacific Railway, Tarrant County Water Improvement District No. 1, St. Louis Southwestern Railway, Texas & New Orleans Railroad, International & Great Northern Railway, Galveston, Harrisburg & San Antonio Railway, Gulf, Colorado & Santa Fe Railway, Leslie Harrison, Boxley & King, and E. N. Cory.

Acknowledgment is made in the description of the gaging stations for records furnished by cooperating parties.

DIVISION OF WORK

Data for stations in Texas and in New Mexico except station on Rio Grande below Elephant Butte Dam were collected and prepared for publication under the direction of C. E. Ellsworth, district engineer, assisted by C. E. McCashin, A. G. Fiedler, J. W. Bones, W. E. Armstrong, D. S. Wallace, Trigg Twichell, R. G. West, H. C. Pritchett, T. A. Slack, E. H. Morgan, J. L. Saunders, S. D. Breeding, C. C. Crosnoe, E. A. Schlaudt, Tate Dalrymple, W. C. Dodd, M. N. Aitken, A. C. Cook, L. M. Hamby, N. C. Magnuson, H. W. McCue, Morris Reedy, J. A. Muncey, M. C. Hankins, C. B. Thames, W. T. Guyton, Kate Casparis, and Katherine E. Hickey.

Data for stations on Rio Grande below Elephant Butte Dam, N. Mex., and on Goose Creek near Wagonwheel Gap, Colo., were prepared for publication under the direction of Robert Follansbee, district engineer, assisted by P. V. Hodges, and Mrs. Florence H. Scott.

The records were reviewed and manuscript assembled by J. W. Mangan.

GAGING-STATION RECORDS

CALCASIEU RIVER BASIN

CALCASIEU RIVER NEAR OBERLIN, LA.

LOCATION.—NW. ¼ NW. ¼ sec. 7, T. 5 S., R. 4 W., at Oberlin-Mittie highway bridge, 3¼ miles northwest of Oberlin and 11 miles by air line above mouth of Whiskey Chitto Creek.

DRAINAGE AREA.—808 square miles (measured on post-route map and project map of Louisiana Gravity Canal Co.).

RECORDS AVAILABLE.—August 21, 1922, to January 31, 1925, when station was discontinued.

GAGE.—Gurley 8-day water-stage recorder on downstream side of bridge, near left bank; inspected by Welman Bradford.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel curved. Banks composed of sand; wooded; subject to overflow. Bed composed of fine sand; shifts. One channel at low stages and several channels at high stages. Control not known, but shifts.

EXTREMES OF DISCHARGE.—Maximum stage during period from water-stage recorder, 14.86 feet at 1.30 a. m. January 19 (discharge, 10,500 second-feet); minimum discharge, 44 second-feet October 18, 19, 22, 26, 27, November 11–14.

1922–1925: Maximum stage recorded, 18.48 feet at 6.55 a. m. April 7, 1923 (discharge, about 34,700 second-feet; determined from extension of rating curve); minimum discharge, 42 second-feet August 16, 1924.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined, but insufficient measurements during period to intelligently apply shifts. Operation of water-stage recorder satisfactory but improper attendance render gage heights doubtful. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day on days of rapid fluctuation. Records poor.

The following discharge measurements were made:

October 8, 1924: Gage height, 0.80 foot; discharge, 47.3 second-feet.
January 10, 1925: Gage height, 5.40 feet; discharge, 742 second-feet.
August 7, 1925: Gage height, 0.33 foot; discharge, 53.1 second-feet.

Daily discharge, in second-feet, of Calcasieu River near Oberlin, La., for the period October 1, 1924, to January 31, 1925

Day	Oct.	Nov.	Dec.	Jan.	Day	Oct.	Nov.	Dec.	Jan.
1	48	45	50	117	16	46	46	58	2,490
2	46	45	50	116	17	46	46	58	3,480
3	46	46	50	111	18	44	46	57	8,360
4	46	45	53	112	19	44	46	56	9,470
5	46	46	56	118	20	45	46	52	6,830
6	47	45	54	108	21	45	48	51	5,390
7	48	45	54	102	22	44	49	52	4,320
8	48	45	56	98	23	45	51	58	3,740
9	48	45	55	137	24	45	49	66	3,850
10	47	45	54	574	25	45	48	68	3,540
11	47	44	56	1,560	26	44	49	70	3,020
12	46	44	61	3,180	27	44	50	75	2,550
13	47	44	58	4,320	28	45	51	78	2,080
14	46	44	58	3,740	29	45	51	84	1,650
15	46	45	57	2,880	30	46	49	95	1,200
					31	45	-------	113	841

Monthly discharge of Calcasieu River near Oberlin, La., for the the period October 1, 1924, to January 31, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	48	44	45.8	2,820
November	51	44	46.6	2,770
December	113	50	61.7	3,790
January	9,470	98	2,580	159,000
The period				168,000

CALCASIEU RIVER NEAR KINDER, LA.

LOCATION.—In sec. 31, T. 6 S., R. 5 W., at Gulf Coast Railway bridge, three-fourths mile below mouth of Whiskey Chitto Creek and 4 miles west of Kinder, Allen Parish.

DRAINAGE AREA.—1,760 square miles (measured on post-route map and project map of Louisiana Gravity Canal Co.).

RECORDS AVAILABLE.—August 23, 1922, to January 31, 1925, when station was discontinued.

GAGE.—Gurley 8-day water-stage recorder attached to downstream side of railway bridge pier; inspected by Welman Bradford.

DISCHARGE MEASUREMENTS.—Made by wading or from railway bridge.

CHANNEL AND CONTROL.—Channel straight for 300 feet above and below station. Banks composed of sand and clay, heavily wooded, and subject to overflow. Several channels at high stages. Bed composed of fine sand; fairly permanent. Control not known.

EXTREMES OF DISCHARGE.—Maximum stage during period from water-stage recorder, 16.39 feet at 2 a. m. January 20 (discharge, 23,500 second-feet); minimum discharge, 309 second-feet October 2, 8, and 19.

1922–1925: Maximum stage recorded, 21.69 feet at 10 p. m. December 23, 1924 (discharge, 68,000 second-feet, determined from extension of rating curve and subject to error); minimum stage, 0.81 foot at 11 a. m. August 9 to 1 p. m. August 10, 1924 (discharge, 200 second-feet).

DIVERSIONS.—Kinder Canal Co.'s pump diverts water 2 miles upstream and above mouth of Whiskey Chitto Creek. About 7,000 acres of rice were irrigated in 1922.

REGULATION.—Kinder Canal Co.'s pump affects flow at low stages.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined. Operation of water-stage recorder satisfactory. Daily discharge determined by applying to rating table mean daily gage height ascertained from recorder graph by inspection, by means of planimeter from January 1–31, and by shifting-control method from October 1 to December 31. Records poor.

The following discharge measurements were made:

October 7, 1924: Gage height, 0.88 foot; discharge, 310 second-feet.

January 10, 1925: Gage height, 4.22 feet; discharge, 1,550 second-feet.

August 7, 1925: Gage height, −0.16 foot; discharge, 210 second-feet (velocity measured by surface floats and accuracy doubtful).

Daily discharge, in second-feet, of Calcasieu River near Kinder, La., for the period October 1, 1924, to January 31, 1925

Day	Oct.	Nov.	Dec.	Jan.	Day	Oct.	Nov.	Dec.	Jan.
1	313	325	325	536	16	309	325	380	8,530
2	309	325	325	606	17	309	325	377	8,020
3	313	325	325	658	18	309	325	377	11,800
4	316	325	322	676	19	309	325	377	18,900
5	316	325	325	676	20	313	325	370	22,300
6	313	325	332	676	21	316	325	380	16,900
7	313	325	423	676	22	316	325	387	13,200
8	309	325	501	676	23	319	325	460	10,300
9	309	325	501	712	24	322	325	518	6,980
10	309	325	430	1,570	25	325	325	518	5,140
11	309	325	400	3,860	26	325	325	571	4,500
12	309	325	413	6,170	27	325	325	606	4,060
13	309	325	407	9,080	28	325	325	588	3,660
14	309	325	390	12,200	29	325	325	554	3,240
15	309	325	380	11,200	30	325	325	554	2,830
					31	325	-------	501	2,320

Monthly discharge of Calcasieu River near Kinder, La., for the period October 1, 1924, to January 31, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	325	309	315	19,400
November	325	325	325	19,300
December	606	322	430	26,400
January	22,300	536	6,210	382,000
The period				447,000

SABINE RIVER BASIN

SABINE RIVER NEAR GOLDEN, TEX.

LOCATION.—At highway bridge on main road between Golden and Grand Saline, 50 feet below mouth of Blair Creek, 3 miles above mouth of Grand Saline Creek, and 5½ miles southwest of Golden, Wood County.

DRAINAGE AREA.—1,200 square miles (measured on base map of Texas).

RECORDS AVAILABLE.—June 26, 1924, to September 30, 1925.

GAGE.—Vertical staff gage attached to piling on downstream side of bridge; read by E. G. Bennett.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of silt and débris. Channel straight for 2,000 feet above and below station. One channel for low and medium stages and three for high stages. Banks of earth, covered with grass, and subject to overflow. Brush and light timber scattered throughout channel. Low-water control composed of mud and drift just below gage. Control for high stages is bed and banks of stream and brush and trees in channel and along banks.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 18.3 feet May 12 (discharge, about 7,800 second-feet); no flow July 30 and August 8 to September 12.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve fairly well defined below 2,000 second-feet and extended above. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table except as noted in footnote to daily-discharge table. Records good.

Discharge measurements of Sabine River near Golden, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 29	0.89	2.0	Apr. 14	3.27	68.4	May 4	11.00	565
Mar. 6	1.69	13.3	Apr. 15	2.56	39.9	May 5	7.42	224
Apr. 7	1.67	11.0	May 1	14.79	2,070	July 16	.82	1.21
Apr. 13	3.90	126	May 4	12.68	945			

Daily discharge, in second-feet, of Sabine River near Golden, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.1	9.6	6.8	2.6	11	16	1.8	1,950	9.6	62	0.2	0
2	5.6	8.8	9.6	2.5	8.8	23	2.0	2,830	7.4	7.4	.3	0
3	4.0	8.8	11	2.6	8.2	20	2.3	2,970	4.0	4.0	.3	0
4	4.0	7.4	12	2.5	7.4	19	4.6	1,230	3.8	3.1	.2	0
5	2.7	6.8	19	2.5	6.9	16	20	224	3.6	3.1	.2	0
6	2.3	5.6	24	2.1	6.2	12	19	42	3.5	5.0	.1	0
7	1.5	5.0	29	1.9	5.7	9.8	12	134	3.1	101	.1	0
8	1.5	6.2	74	1.7	7.2	7.4	11	288	2.7	42	0	0
9	1.0	6.2	101	1.7	8.0	6.4	36	660	2.5	16	0	0
10	1.0	6.2	71	1.7	7.4	5.7	80	1,270	9.6	14	0	0
11	1.0	8.1	38	6.2	21	5.0	116	3,390	190	10	0	0
12	.5	14	27	6.4	19	4.4	174	7,800	246	3.1	0	0
13	.5	188	24	7.4	14	4.0	160	5,870	537	2.6	0	2.3
14	.5	182	19	8.1	10	3.6	101	4,280	586	1.5	0	2.6
15	.5	146		10	7.2	3.1	38	3,110	253	1.9	0	2.3
16	.5	26		11	6.9	2.8	116	2,240	134	1.7	0	1.5
17	.5	21		12	6.7	2.8	188	1,530	80	1.3	0	1.3
18	.5	20		13	9.8	2.6	186	492	52	1.1	0	1.0
19	.5	15		14	9.1	2.3	98	246	19	1.0	0	.7
20	.5	13		20	7.4	2.0	34	80	10	.9	0	.5
21	.5	10	10	26	6.7	2.0	19	44	7.4	.7	0	.2
22	.5	10		168	9.1	1.8	10	27	6.4	.5	0	.2
23	.5	10		146	47	1.8	6.2	16	5.0	.2	0	.2
24	.5	10		116	54	1.8	5.5	15	5.0	.2	0	.3
25	.5	8.8		74	180	1.7	4.8	128	3.1	.2	0	.5
26	8.8	8.8		50	128	1.7	184	164	4.0	.2	0	.6
27	7.4	8.8		34	74	1.5	420	134	5.0	.1	0	.4
28	7.4	8.8		26	19	1.5	810	101	8.8	.1	0	.3
29	6.2	7.4	2.2	20	-------	1.5	1,150	47	5.0	.1	0	.2
30	6.8	6.2	2.5	15	-------	1.5	1,370	21	4.0	0	0	.2
31	8.8	-------	2.6	13	-------	1.7	---------	16	-------	.1	0	------

NOTE.—Braced figure shows estimated mean discharge for period indicated.

Monthly discharge of Sabine River near Golden, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	8.8	0.5	2.75	169
November	188	5.0	26.4	1,570
December	101	----------	19.8	1,220
January	168	1.7	26.4	1,620
February	180	5.7	25.2	1,400
March	23	1.5	6.01	370
April	1,370	1.8	179	10,700
May	7,800	15	1,330	82,000
June	586	2.5	73.7	4,380
July	101	0	9.20	565
August	0.3	0	.05	2.8
September	2.6	0	.51	30.3
The year	7,800	0	144	104,000

SABINE RIVER NEAR LONGVIEW, TEX.

LOCATION.—Just below International-Great Northern Railroad bridge, 1 mile above Longview-Henderson highway bridge, and 3 miles southwest of Longview, Gregg County.

DRAINAGE AREA.—3,010 square miles (measured on base map of Texas).

RECORDS AVAILABLE.—January 1, 1904, to December 31, 1906; October 21, 1923, to September 30, 1925.

GAGE.—Combined inclined and vertical staff gage on left bank; read by J. B. Parkhill.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge 1 mile below gage.

CHANNEL AND CONTROL.—Bed composed of soapstone, sand, and drift; practically permanent. Channel is straight for 300 feet above and 600 feet below gage. Right bank is of earth, wooded, and not subject to overflow; left bank of earth, wooded, and subject to overflow at extremely high stages. Banks fairly permanent. Control is soapstone shallows and drift logs, 200 feet below gage; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 16.51 feet May 21 (discharge, 3,760 second-feet); minimum discharge, 14 second-feet August 29–31.

1904–1906; 1924–1925: Maximum stage recorded, 35.05 feet May 19, 1905 (discharge, 19,500 second-feet, determined from extension of rating curve and subject to error); minimum discharge that of August 29–31, 1925.

DIVERSIONS.—None of consequence.

REGULATION.—Slight effect at extremely low stages by pump just above gage.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records good.

Discharge measurements of Sabine River near Longview, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*	1911	*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 2	3.25	220	May 3	9.86	1,730	Aug. 13	1.58	29.5
Apr. 8	3.29	256	May 5	11.40	2,060			
Apr. 14	5.65	695	July 17	1.63	52.8			

Daily discharge, in second-feet, of Sabine River near Longview, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	34	98	201	273	449	273	1,140	201	33	36	18
2	147	34	92	229	273	538	258	1,420	187	31	33	18
3	122	36	92	243	273	520	243	1,640	147	30	33	18
4	98	37	98	229	273	466	229	1,870	122	29	36	17
5	86	37	110	201	258	382	215	2,050	104	28	33	17
6	73	37	122	187	258	334	201	2,200	92	27	32	17
7	65	37	134	173	258	303	215	2,230	80	26	31	16
8	57	75	366	166	258	273	229	2,170	69	25	36	17
9	53	60	398	166	258	258	303	1,840	64	24	75	19
10	47	55	288	201	258	243	593	1,320	55	37	63	19
11	45	80	258	273	243	229	556	1,120	53	36	51	18
12	45	98	229	350	229	215	502	1,240	47	32	40	39
13	45	110	201	415	215	215	574	1,520	45	30	36	229
14	41	116	201	415	215	201	631	1,870	39	43	31	303
15	37	128	201	415	215	201	710	2,290	37	58	28	201
16	37	134	187	366	229	201	831	2,590	382	53	24	229
17	37	288	173	382	215	201	770	2,850	612	43	23	215
18	36	415	160	538	201	215	538	3,160	710	34	20	160
19	34	350	160	670	201	215	366	3,380	574	33	18	128
20	34	258	147	690	201	215	288	3,640	318	49	17	116
21	31	201	140	631	201	201	288	3,760	187	45	17	104
22	31	173	134	556	201	201	303	3,720	128	33	17	80
23	31	166	134	466	258	187	258	3,270	104	30	17	66
24	31	160	128	398	382	173	201	1,870	86	27	16	61
25	31	147	128	366	415	166	160	670	74	26	16	54
26	31	134	134	382	415	166	134	318	59	24	15	46
27	31	122	134	432	398	154	128	229	49	24	15	39
28	31	110	134	415	350	147	166	180	43	23	15	37
29	31	98	134	382	------	160	303	187	38	24	14	36
30	31	98	147	318	------	215	770	243	36	25	14	36
31	34	------	166	288	------	318	------	243	------	35	14	------

Monthly discharge of Sabine River near Longview, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	147	31	50.3	3,090
November	415	34	128	7,590
December	398	92	169	10,400
January	690	166	359	22,100
February	415	201	265	14,700
March	538	147	257	15,800
April	831	128	375	22,300
May	3,760	180	1,810	112,000
June	710	36	158	9,410
July	58	23	32.8	2,020
August	75	14	27.9	1,720
September	303	16	79.1	4,710
The year	3,760	14	311	226,000

SABINE RIVER AT LOGANSPORT, LA.

LOCATION.—At highway bridge between Logansport, DeSoto Parish, La., and Haslam, Tex., 200 feet above Houston East & West Texas Railway bridge a quarter of a mile west of Houston East & West Texas Railway station at Logansport, and 3 miles above mouth of Grand Cane Bayou.

DRAINAGE AREA.—4,860 square miles (measured on base maps of Texas and Louisiana).

RECORDS AVAILABLE.—July 1, 1903, to December 31, 1906, and October 1, 1923, to September 30, 1925. Records of stage have been obtained by United States Weather Bureau since July 1, 1903.

GAGE.—Chain gage attached to upstream handrail of highway bridge; read by J. F. Dry.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and mud; practically permanent. Channel straight for 2,000 feet above and below gage. Banks of sand and earth, sodded, fairly clean, permanent, and not subject to overflow. Control is soft rock ledge 25 miles below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 12.24 feet at 6.45 p. m. May 25 (discharge, 3,100 second-feet); minimum stage, not determined but probably less than 32 second-feet during early part of September.

1903–1906; 1924–1925: Maximum stage recorded, 35.8 feet May 26, 1905 (discharge, 16,300 second-feet, determined from old rating and subject to error); minimum stage not determined but was probably less than 32 second-feet during early part of September, 1925.

DIVERSIONS.—None of consequence.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent but backwater may exist at times from tributaries entering pool below gage or from wind. Rating curve well defined. Gage read to hundredths twice daily from October 1 to August 31, and to tenths once daily thereafter. Daily discharge determined by applying mean daily gage height to rating table. Daily records poor; monthly records fair.

COOPERATION.—Gage-height record furnished by United States Weather Bureau.

Discharge measurements of Sabine River at Logansport, La., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 4	2.55	348	May 6	7.35	1,660	July 2	0.61	97.3
Feb. 11	5.34	741	May 11	9.53	2,320	Aug. 14	—.33	46.1
Mar. 21	4.70	725	May 22	11.64	3,250			

Daily discharge, in second-feet, of Sabine River at Logansport, La., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	277	38	148	290	540	678	317	251	331	128	58	
2	264	38	148	290	505	721	303	251	317	94	53	
3	317	34	138	303	454	721	317	488	290	87	55	
4	345	33	128	317	438	743	331	812	277	81	58	
5	290	32	138	317	406	743	522	1,120	264	87	60	
6	239	32	148	317	438	721	505	1,300	239	94	60	
7	192	32	148	317	488	721	488	1,660	227	94	58	
8	159	32	138	345	540	721	454	1,830	227	87	58	
9	148	33	138	454	699	616	438	2,140	215	87	60	
10	128	34	203	540	836	540	406	2,110	192	87	60	
11	119	36	277	636	836	438	375	2,140	159	87	58	
12	110	36	360	743	812	390	454	2,180	128	87	51	
13	102	36	406	743	789	375	699	2,080	128	87	47	
14	94	38	390	743	721	360	766	1,690	119	81	47	
15	87	39	331	721	657	345	721	1,800	119	78	45	
16	81	51	290	789	471	345	678	1,970	110	75	43	100
17	81	78	251	1,010	406	596	699	2,080	110	72	43	
18	78	94	227	1,410	375	789	721	2,180	110	70	43	
19	75	119	227	1,620	375	836	766	2,360	102	70	41	
20	72	128	227	2,080	360	721	789	2,600	138	70	41	
21	68	159	227	2,080	345	678	743	2,780	303	70	43	
22	65	192	215	1,690	360	577	678	2,920	540	70	43	
23	62	203	192	1,440	375	522	558	3,020	488	72	41	
24	58	227	192	1,180	406	488	438	3,090	375	72	41	
25	55	239	192	1,010	406	422	345	3,090	290	70	39	
26	55	239	181	860	422	390	303	2,920	227	68	39	
27	53	215	181	721	505	360	290	2,390	159	65	39	
28	47	192	181	678	636	303	290	1,240	138	62	38	
29	45	170	181	636	-------	303	277	766	128	60	36	
30	41	159	215	596	-------	303	264	540	119	60	34	
31	39	-------	290	577	-------	345	-------	505	-------	60	33	-------

NOTE.—Braced figure gives estimated mean discharge for period indicated.

Monthly discharge of Sabine River at Logansport, La., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	345	39	124	7,630
November	239	32	99.6	5,930
December	406	128	216	13,300
January	2,080	290	821	50,500
February	836	345	521	29,000
March	836	303	542	33,300
April	789	264	498	29,600
May	3,090	251	1,820	112,000
June	540	102	219	13,000
July	128	60	78.5	4,820
August	60	33	47.3	2,910
September	----------	----------	[a] 100	3,950
The year	3,090	----------	425	308,000

[a] Estimated.

SABINE RIVER AT SABINETOWN, TEX.

LOCATION.—At ferry, Sabinetown, Sabine County, just below mouth of Palo Gaucho Bayou and 10 mines east of Hemphill.

DRAINAGE AREA.—6,750 square miles (measured on base maps of Texas and Louisiana).

RECORDS AVAILABLE.—October 9, 1923, to August 31, 1925, when station was discontinued.

GAGE.—Vertical staff on right bank, just below ferry; read by A. F. Smith.

DISCHARGE MEASUREMENTS.—Made from boat or ferry at ferry cable.

CHANNEL AND CONTROL.—Bed composed of sand; shifting. Channel above gage is fairly deep and clean and below station is shallow with a great deal of driftwood. Channel straight for 900 feet above and below station. Left bank wooded and not subject to overflow. Right bank is sparsely wooded and subject to overflow at a stage of 25-foot gage height. Control is rock shoals half a mile below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 10.90 feet at 5.30 p. m. January 17 (discharge, 7,420 second-feet); minimum discharge, 61 second-feet August 25–31.

1924–1925: Maximum stage recorded, 28.7 feet from 7.30 a. m. to 4 p. m. June 4, 1924 (discharge, about 33,500 second-feet); minimum stage that of August 25–31, 1925.

DIVERSIONS.—None of consequence.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined between 80 and 3,200 second-feet and fairly well defined above. Gage read to hundredths twice daily. Daily discharge determined by shifting-control method. Records good.

Discharge measurements of Sabine River at Sabinetown, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 12	1.27	238	May 23	5.78	3,080	July 25	0.49	94.8
Jan. 15	5.22	2,500	July 3	.97	190	Aug. 15	.43	79.9

Daily discharge, in second-feet, of Sabine River at Sabinetown, Tex., for the period October 1, 1924, to August 31, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	551	118	290	375	785	643	574	305	785	340	89
2	505	118	262	375	482	643	689	247	643	290	89
3	438	118	247	459	459	689	785	262	597	199	83
4	396	118	276	459	785	689	835	262	482	179	78
5	417	118	322	505	785	643	835	223	396	169	78
6	438	118	305	505	735	643	835	551	375	159	78
7	438	118	340	505	735	643	835	785	375	159	78
8	358	118	322	528	735	643	735	1,520	358	150	78
9	340	118	322	551	785	643	689	1,730	340	142	78
10	322	118	276	1,190	1,120	689	643	2,030	322	134	78
11	276	118	276	1,660	1,450	643	574	2,190	262	125	78
12	247	118	276	3,470	1,730	643	551	2,270	247	142	78
13	223	118	290	3,070	1,660	574	551	2,350	247	142	78
14	199	118	305	2,670	1,580	551	597	2,590	235	142	78
15	199	118	375	2,590	1,450	551	785	2,990	199	159	78

Daily discharge, in second-feet, of Sabine River at Sabinetown, Tex., for the period October 1, 1924, to August 31, 1925—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
16	179	118	551	4,680	1,260	551	835	2,350	179	159	78
17	179	118	505	7,230	785	1,880	785	2,030	179	150	78
18	169	134	459	7,140	735	4,600	785	2,030	169	125	71
19	150	150	438	5,900	689	4,510	785	2,270	159	125	66
20	134	159	438	5,100	643	3,470	785	2,510	169	118	63
21	125	159	417	4,940	597	2,750	885	2,750	438	118	63
22	118	179	417	4,680	597	1,580	885	2,910	417	110	63
23	118	199	375	4,270	592	1,260	785	3,070	417	102	63
24	118	223	358	4,110	597	1,060	689	3,230	528	102	63
25	110	247	340	3,870	574	885	528	3,470	574	95	61
26	118	262	340	1,880	597	689	482	3,630	505	95	61
27	142	290	340	1,580	597	689	459	3,630	482	102	61
28	125	340	340	2,030	597	643	375	3,310	417	95	91
29	118	358	322	1,190	-------	574	358	2,350	322	95	61
30	118	305	322	1,060	-------	551	340	1,660	276	89	61
31	118	-------	358	940	-------	551	-------	1,320	-------	95	61

Monthly discharge of Sabine River at Sabinetown, Tex., for the period October 1, 1924, to August 31, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	551	110	241	14,800
November	358	118	167	9,940
December	551	247	349	21,400
January	7,230	375	2,560	158,000
February	1,730	459	862	47,900
March	4,600	551	1,150	71,000
April	885	340	676	40,200
May	3,630	223	2,030	125,000
June	785	159	370	22,000
July	340	89	142	8,740
August	89	61	72.0	4,430
The period				523,000

SABINE RIVER NEAR BON WIER, TEX.

LOCATION.—At Gulf, Colorado & Santa Fe Railway bridge, 1,000 feet below ferry crossing on highway between Newton, Tex., and Merryville, La., a quarter of a mile below mouth of Quicksand Creek and 1¼ miles east of Bon Wier, Newton County.

DRAINAGE AREA.—8,390 square miles (measured on base maps of Texas and Louisiana).

RECORDS AVAILABLE.—October 6, 1923, to September 30, 1925. United States Weather Bureau has obtained records of stage since December 8, 1913.

GAGE.—Chain gage attached to upstream side of railroad bridge.

DISCHARGE MEASUREMENTS.—Made from railroad bridge.

CHANNEL AND CONTROL.—Bed composed of sand; shifts. Channel straight for 400 feet above and 150 feet below gage. Banks of earth, heavily wooded, and subject to wide overflow. Two channels at low stages and seven at high stages. Control is sand bar with logs lodged therein, 1,000 feet below gage; shifting.

EXTREMES OF DISCHARGE.—Maximum stage not determined. Minimum stage recorded, 0.50 foot September 11, 22, and 24 (discharge, 185 second-feet).

1924–25: Maximum stage recorded, 20.3 feet December 25 and 26, 1923 (discharge, about 41,400 second-feet); minimum stage, that of September 11, 22, and 24, 1925.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined. Chain gage read to tenths once daily. Daily discharge determined by shifting-control method February 27 to May 31 and by applying daily gage height to rating table June 1 to September 30. From October 1 to February 26 discharge estimated by comparison with flow at other stations and with discharge measurements and from study of rainfall as an index. Records fair except for estimated periods for which they may be poor.

Discharge measurements of Sabine River near Bon Wier, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 10	2.31	849	Feb. 27	3.66	1,660	June 25	1.48	483
Dec. 13	2.10	674	Apr. 29	2.39	967	Aug. 8	.81	271

Daily discharge, in second-feet, of Sabine River near Bon Wier, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						1,640	1,320	930	1,960	680	210	235
2						1,520	1,320	885	1,520	680	210	235
3						1,580	1,320	800	1,260	680	260	235
4						1,520	1,320	800	1,060	640	260	210
5						1,520	1,360	460	1,060	495	260	210
6						1,520	1,420	460	930	495	260	210
7						1,520	1,420	460	800	460	260	210
8						1,580	1,420	460	800	425	260	210
9						1,470	1,360	1,060	760	425	260	210
10						1,470	1,320	1,470	760	390	260	210
11						1,520	1,260	1,960	760	425	260	185
12						1,520	1,220	2,520	680	720	260	260
13						1,520	1,220	2,700	680	640	260	290
14					2,340	1,420	1,220	2,990	640	425	235	290
15						1,520	1,120	3,280	600	390	260	320
16	660	540	820	4,460		1,360	1,160	3,280	600	390	260	425
17						1,420	1,260	4,000	565	1,060	260	320
18						1,520	1,320	3,380	530	840	235	290
19						1,360	1,320	2,620	530	840	235	290
20						3,780	1,260	2,350	495	680	210	260
21						5,520	1,260	2,350	495	460	210	235
22						5,520	1,320	2,520	530	390	210	185
23						4,310	1,320	2,700	565	390	210	210
24						2,700	1,260	2,900	600	390	235	185
25						2,620	1,320	3,080	640	355	320	235
26						2,180	1,220	3,380	565	320	290	355
27					1,640	1,880	1,060	3,480	760	320	260	530
28					1,640	1,700	565	3,680	760	320	260	680
29					-------	1,580	885	3,480	680	320	260	760
30					-------	1,470	885	3,380	760	290	260	720
31		-------			-------	1,640	-------	3,280	-------	290	235	------

NOTE.—Braced figures give estimated mean discharge for periods indicated.

Monthly discharge of Sabine River near Bon Wier, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October			[a] 660	40,600
November			[a] 540	32,100
December			[a] 820	50,400
January			[a] 4,460	274,000
February			2,290	127,000
March	5,520	1,360	2,050	126,000
April	1,420	565	1,230	73,500
May	4,000	460	2,290	141,000
June	1,960	495	778	46,300
July	1,060	290	504	31,000
August	320	210	249	15,300
September	760	185	307	18,200
The year		185	1,350	975,000

[a] Estimated.

SABINE RIVER NEAR RULIFF, TEX.

LOCATION.—At Kansas City Southern Railway bridge between Ruliff, Newton County, Tex., and Starks, Calcasieu Parish, La., 1½ miles east of Ruliff and 5 miles below mouth of Cypress Creek.

DRAINAGE AREA.—9,450 square miles (measured on base maps of Texas and Louisiana).

RECORDS AVAILABLE.—October 1, 1924, to September 30, 1925. Records of stage have been kept by Kansas City Southern Railway since August 17, 1907.

GAGE.—Staff gage attached to webbing and adjacent to upstream iron pier on left bank; read by J. M. Edwards.

DISCHARGE MEASUREMENTS.—Made from railroad bridge or from boat near gage.

CHANNEL AND CONTROL.—Bed composed of sand and mud; subject to shift. Channel straight for 600 feet above and below station. Banks of earth; covered with trees and brush; fairly permanent; subject to overflow. Low-stage control is shifting sand bars; high-stage control indefinite.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 12.3 feet January 22 and 23 (discharge, 16,400 second-feet); minimum stage, 1.10 feet September 11 (discharge, 372 second-feet).

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to tenths once daily from October 1 to January 18 and twice daily to hundredths from January 19 to September 30. Work of the observer doubtful. Daily discharge determined by applying mean daily gage heights to rating table except as noted in footnote to daily-discharge table. Records poor.

COOPERATION.—Records of stage from October 1 to January 18 furnished by Kansas City Southern Railway.

Discharge measurements of Sabine River near Ruliff, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 12	3.56	1,110	Apr. 25	4.01	1,320	Aug. 6	1.44	447
Jan. 20	11.48	12,900	June 24	2.35	777			
Feb. 19	6.34	2,800	Aug. 6	1.44	464			

Daily discharge, in second-feet, of Sabine River near Ruliff, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,200	719	813	1,230	3,890	2,120	1,860	1,080	3,040	910	478	478
2		719	845	1,230	3,340	1,800	1,500	1,050	2,680	877	478	450
3		719	877	1,190	2,950	1,700	1,500	1,050	2,050	845	450	423
4	1,320	719	943	1,230	2,770	1,650	1,450	1,010	1,750	845	450	423
5	1,160	719	943	1,270	2,590	1,650	1,450	977	1,500	877	450	423
6	1,160	719	1,010	1,230	2,500	1,650	1,450	943	1,320	845	478	423
7	1,080	719	1,050	1,230	2,500	1,650	1,450	877	1,230	813	450	423
8	1,080	719	1,230	1,230	2,500	1,600	1,500	877	1,120	781	450	397
9		719	1,230	1,320	2,420	1,600	1,550	845	1,050	750	450	397
10		719	1,270	1,400	2,420	1,600	1,500	845	1,010	719	423	397
11		719	1,160	2,260	3,240	1,600	1,450	1,160	1,050	719	423	372
12		719	1,120	3,890	4,370	1,600	1,450	1,550	943	719	423	450
13		719	1,080	5,020	4,490	1,600	1,400	1,920	943	688	423	423
14		719	877	5,820	4,130	1,600	1,320	2,340	910	750	423	450
15		719	813	6,200	3,770	1,550	1,320	2,680	877	750	423	507
16		719	943	6,010	3,340	1,500	1,230	2,860	845	719	423	597
17		719	1,010	6,010	3,240	1,700	1,230	3,040	813	719	423	657
18		719	1,010	7,440	3,040	1,860	1,190	3,240	750	719	423	719
19		719	1,080	10,200	2,860	2,050	1,230	3,340	781	1,010	423	688
20	900	719	1,050	13,000	2,500	1,860	1,320	3,140	750	1,050	423	627
21		719	1,160	15,000	2,340	1,920	1,320	2,770	750	877	423	597
22		719	1,160	16,400	2,120	3,660	1,320	2,500	719	781	423	507
23		750	1,190	15,900	2,050	4,130	1,320	2,420	750	719	450	423
24		750	1,270	15,000	1,980	4,130	1,320	2,590	750	688	450	397
25		781	1,320	13,800	1,980	3,550	1,320	2,770	750	627	423	397
26		781	1,320	12,200	1,980	2,860	1,320	2,860	719	597	423	507
27		781	1,360	9,920	1,980	2,420	1,320	3,040	719	597	450	597
28		781	1,400	8,570	1,920	2,120	1,270	3,140	719	597	478	627
29		781	1,400	7,020	-------	1,860	1,160	3,240	877	507	450	813
30		781	1,320	5,470	-------	1,750	1,160	3,340	943	507	478	943
31		-------	1,230	4,130	-------	1,650	-------	3,340	-------	478	478	------

NOTE.—No record Oct. 1-3; discharge estimated. Gage-height record Oct. 9-31 doubtful; discharge estimated.

Monthly discharge of Sabine River near Ruliff, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	----------	----------	971	59,700
November	781	719	733	43,600
December	1,400	813	1,110	68,400
January	16,400	1,190	6,510	400,000
February	4,490	1,920	2,830	157,000
March	4,130	1,500	2,060	127,000
April	1,860	1,160	1,370	81,700
May	3,340	845	2,160	133,000
June	3,040	719	1,100	65,700
July	1,050	478	745	45,800
August	478	423	442	27,200
September	943	372	518	30,800
The year	16,400	372	1,710	1,240,000

LAKE FORK OF SABINE RIVER NEAR QUITMAN, TEX.

LOCATION.—At bridge on highway between Mineola and Quitman, 1 mile below mouth of Dry Creek and 2 miles south of Quitman, Wood County.

DRAINAGE AREA.—586 square miles (measured on base map of Texas).

RECORDS AVAILABLE.—June 27, 1924, to September 30, 1925.

GAGE.—Staff gage in three sections, on left bank, attached to trees and to bridge pier; read by Carl Clark.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel composed of mud and débris; fairly permanent; straight for 300 feet above and below gage. Banks of sand and earth; sodded and covered with brush; fairly permanent. Left bank not subject to overflow; right bank subject to overflow for 1,200 feet from low-water channel at a stage of about 14 feet. Control, 1,000 feet below gage, consists of mud and sand bar with logs and trees lodged therein and is subject to shift.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 14.50 feet at 6.30 p. m. May 14 (discharge, about 1,920 second-feet); no flow July 12–17 and August 20 to September 10.

1924–1925: Maximum stage recorded, that of May 14, 1925; no flow for several periods in 1924 and 1925.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 1,000 second-feet and extended above. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records fair.

Discharge measurements of Lake Fork of Sabine River near Quitman, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.ft.*
Dec. 28	1.10	2.32	Apr. 14	4.74	117	May 17	9.68	519
Mar. 5	2.06	26.4	Apr. 15	2.77	48.2	May 18	6.62	167
Mar. 7	1.91	17.1	May 1	11.52	922	July 17	.19	[a].01
Apr. 6	5.78	212	May 3	3.78	81.3			
Apr. 7	4.18	105	May 17	10.55	618			

[a] Estimated.

Daily discharge, in second-feet, of Lake Fork of Sabine River near Quitman, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.8	0.1	1.4	5.9	15	40	6.0	891	5.7	1.6	7.0	0
2	1.9	.1	1.4	6.3	16	41	17	400	4.4	1.0	66	0
3	1.6	.1	1.2	7.3	16	34	34	106	3.5	.3	28	0
4	1.4	.1	1.6	7.0	14	29	56	47	2.6	.2	16	0
5	1.0	.1	2.2	6.7	14	26	90	32	1.9	.1	6.3	0
6	.7	.1	14	7.0	15	23	170	23	1.6	.1	3.3	0
7	.5	.1	14	8.8	17	20	98	59	1.3	.1	1.9	0
8	.4	.2	9.9	11	22	18	50	228	1.0	.1	1.2	0
9	.4	.2	6.3	11	35	15	150	376	.8	.1	.9	0
10	.4	.8	4.2	10	36	14	270	638	.7	.1	.4	0
11	.4	6.2	4.4	19	26	13	270	1,010	.5	.1	.2	1.1
12	.3	86	4.7	28	21	12	400	1,070	8.8	0	.2	114
13	.2	234	4.0	34	22	11	353	1,040	13	0	.2	26
14	.2	122	3.4	30	19	9.4	106	1,580	8.4	0	.2	30
15	.3	66	2.9	34	17	8.6	47	1,780	3.8	0	.1	53
16	.2	23	2.6	32	15	7.3	34	1,250	1.5	0	.1	17
17	.1	16	2.5	30	13	7.5	30	596	1.0	0	.1	7.3
18	.1	5.1	2.7	30	10	7.5	22	160	.7	11	.1	4.7
19	.1	3.6	3.0	38	9.2	7.1	20	47	1.4	5.1	.1	2.4
20	.1	5.0	2.7	44	9.4	6.5	16	30	1.8	1.7	0	1.0
21	.1	2.9	2.6	50	9.0	5.9	11	23	1.0	.8	0	.5
22	.1	2.7	2.7	47	17	5.6	8.4	18	.8	.4	0	.2
23	.1	2.2	2.9	41	35	5.1	7.0	15	.3	.2	0	.2
24	.1	1.9	3.0	36	44	5.0	5.4	12	.2	.1	0	.1
25	.1	1.8	3.0	30	47	4.9	7.7	9.9	.2	.1	0	.1
26	.1	1.8	2.9	26	59	4.9	38	7.9	.4	.1	0	.1
27	.1	1.8	2.8	22	50	4.4	234	6.3	.1	.1	0	.1
28	.1	1.6	2.7	19	44	3.8	481	40	.1	.1	0	.1
29	.1	1.4	3.1	17	-------	3.4	638	21	.1	.4	0	.1
30	.1	1.4	4.6	17	-------	4.7	808	12	.4	1.9	0	.1
31	.1	-------	5.7	16	-------	5.0	-------	8.1	-------	1.4	0	-------

Monthly discharge of Lake Fork of Sabine River near Quitman, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	2.8	0.1	0.46	28
November	234	.1	19.6	1,170
December	14	1.2	4.04	248
January	50	5.9	23.3	1,430
February	59	9.0	23.8	1,320
March	40	3.4	13.0	799
April	808	5.4	149	8,880
May	1,780	6.3	372	22,900
June	13	.1	2.27	135
July	11	0	.88	54
August	66	0	4.27	262
September	114	0	8.60	512
The year	1,780	0	52.1	37,700

NECHES RIVER NEAR REESE, TEX.

LOCATION.—At Texas & New Orleans Railroad bridge, 500 feet above highway bridge, 1¼ miles below mouth of Killough Creek, and 2 miles west of Reese, Cherokee County.

DRAINAGE AREA.—851 square miles (measured on base map of Texas).

RECORDS AVAILABLE.—April 10, 1924, to September 30, 1925.

GAGE.—Staff gage in two sections attached to downstream end of center pier of railroad bridge and to old piling 63 feet below center line of railroad bridge; read by John Bowden. Gage is an inverted gage and zero is base of rail.

DISCHARGE MEASUREMENTS.—Made from railroad bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of mud; covered with brush; fairly permanent. Channel straight for half a mile above and below station. Banks of earth, covered with trees and brush, subject to overflow at a stage of −10.0 feet. Control consists of shallow place in bed of stream, half a mile below gage; covered with small trees and brush; probably permanent, except for drift lodging in brush.

EXTREMES OF DISCHARGE.—Maximum mean daily discharge during year, 460 second-feet May 16; no flow July 25–30 and September 10–11.

1924–1925: Maximum stage, −12.5 feet at 3.45 p. m. May 30, 1924 (discharge, not determined); no flow July 25–30 and September 10–11, 1925.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to half-tenths three or four times weekly. Daily discharge determined by applying mean daily gage height to rating table. Discharge for days of no gage-height record interpolated. Records poor.

The following discharge measurements were made:

December 28, 1924: Gage height, −23.95 feet; discharge, 78.3 second-feet.

March 5, 1925: Gage height, −23.09 feet; discharge, 205 second-feet.

July 10, 1925: Gage height, −26.51 feet; discharge, 3.5 second-feet.

Daily discharge, in second-feet, of Neches River near Reese, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	7.0	74	148	188	297	81	31	28	31	13	1.0
2	15	8.0	74	177	177	256	81	34	24	31	10	1.0
3	13	9.0	70	227	177	227	81	54	17	28	7.0	1.0
4	14	9.0	67	227	168	214	81	74	15	21	5.0	.8
5	14	10	67	227	158	200	81	74	14	14	5.0	.5
6	15	13	200	227	158	200	81	63	12	7.0	4.5	.5
7	13	14	322	227	158	200	81	52	9.3	6.0	4.0	.5
8	12	14	311	200	158	172	81	52	7.0	5.0	4.0	.5
9	11	16	298	200	158	143	84	47	6.0	5.0	4.5	.2
10	11	19	284	214	158	143	227	66	5.0	3.0	4.0	0
11	11	22	284	220	158	128	270	84	5.0	2.7	4.0	0
12	10	25	284	227	150	118	284	88	5.0	2.3	4.0	44
13	9.0	31	270	227	150	118	256	143	4.5	2.0	4.0	30
14	9.0	37	256	256	150	118	242	185	4.2	2.0	4.0	17
15	8.5	60	242	284	146	118	227	227	4.0	1.5	4.0	15
16	8.0	64	234	363	143	118	108	460	4.0	1.2	4.0	7.0
17	8.0	67	227	407	143	143	81	450	4.0	1.0	4.0	5.0
18	7.7	67	177	418	143	143	67	428	3.0	.9	4.0	4.5
19	7.3	68	128	428	143	128	62	407	2.5	.9	3.8	4.0
20	7.0	70	114	428	143	128	57	407	2.3	.8	3.5	4.0
21	7.0	74	99	428	143	128	47	407	2.2	.7	3.2	4.0
22	7.0	74	84	428	144	128	31	363	2.0	.6	3.0	4.0
23	7.0	74	84	428	160	128	31	265	2.0	.5	2.8	4.0
24	7.0	74	81	428	177	128	25	166	2.0	.2	2.5	5.5
25	7.0	74	81	383	227	118	22	67	2.0	0	2.2	7.0
26	7.0	78	81	338	377	118	22	57	2.0	0	2.1	7.0
27	7.0	80	82	311	363	108	22	52	2.2	0	2.0	6.5
28	7.0	81	84	256	338	98	22	42	2.1	0	1.8	6.0
29	7.0	78	84	227	-------	93	25	34	2.0	0	1.5	5.5
30	7.0	76	108	214	-------	88	28	31	4.0	0	1.4	5.0
31	7.0	-------	118	200	-------	81	-------	30	-------	6.5	1.2	-------

Monthly discharge of Neches River near Reese, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	31	7.0	10.0	618
November	81	7.0	46.4	2,760
December	322	67	160	9,860
January	428	148	289	17,800
February	377	143	181	10,000
March	297	81	146	8,980
April	284	22	96.3	5,730
May	460	30	159	9,800
June	28	2.0	6.61	393
July	31	0	5.64	347
August	13	1.2	4.00	246
September	44	0	6.37	379
The year	460	0	92.5	66,900

NECHES RIVER NEAR DIBOLL, TEX.

LOCATION.—At Houston East & West Texas Railway bridge, 75 feet above Diboll-Livingston highway bridge, 2½ miles below mouth of Alabama Creek, and 7 miles south of Diboll, Angelina County.

DRAINAGE AREA.—2,670 square miles (measured on base map of Texas).

RECORDS AVAILABLE.—November 5, 1923, to August 31, 1925, when station was discontinued.

GAGE.—Chain gage attached to upstream end of crossties, about center of truss; read by Mrs. Bettie Cole or E. M. Harris.

DISCHARGE MEASUREMENTS.—Made from railway bridge or by wading.

CHANNEL AND CONTROL.—Channel straight above and below station. Bed composed of mud, sand, and débris; fairly permanent. Right bank subject to overflow at a stage of 10 feet; left bank not subject to overflow. At a stage of 15 feet there are 12 channels. For low and medium stages control is rapids below gage. Control for high stages indefinite; probably permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 8.88 feet at 5.20 p. m. January 18 (discharge, 1,100 second-feet); no flow August 15–22.

1924–1925: Maximum stage recorded, 15.40 feet December 23, 1923 (discharge, about 14,800 second-feet); no flow August 15–22, 1925.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table except as noted in footnote to daily-discharge table. Records fair.

Discharge measurements of Neches River near Diboll, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 25	2.20	39.7	Feb. 3	5.90	543	July 11	1.99	30.5
Jan. 13	6.34	600	June 27	1.59	12.6	July 28	1.33	6.2

Daily discharge, in second-feet, of Neches River near Diboll, Tex., for the period October 1, 1924, to August 31, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	265	28	220	308	570	406	308	126	220	11	6.0
2	250	32	220	336	570	406	322	112	190	9.7	7.3
3	220	32	220	364	540	406	350	112	161	9.4	8.8
4	205	30	220	392	525	406	350	112	133	9.1	9.1
5	175	34	220	364	525	435	350	112	105	9.4	7.3
6	168	32	220	378	510	435	336	112	84	9.7	4.8
7	154	31	235	406	510	450	336	119	64	9.7	3.8
8	147	29	235	420	480	450	322	126	52	10	2.8
9	133	25	250	435	465	450	308	133	48	26	2.0
10	119	22	250	495	465	450	294	140	40	36	1.8
11	98	32	265	570	450	435	294	154	36	30	1.2
12	91	38	265	600	435	420	294	154	34	21	.8
13	78	43	280	615	435	406	294	154	31	16	.8
14	67	46	280	615	435	406	294	175	28	18	.1
15	61	43	294	615	435	392	294	190	25	24	0
16	59	46	308	630	435	392	280	190	23	54	0
17	53	62	336	720	420	378	294	168	24	37	0
18	48	69	364	1,070	406	378	294	161	22	21	0
19	45	76	378	1,040	392	378	294	175	21	15	0
20	42	84	378	1,040	392	378	294	220	19	13	0
21	40	90	378	925	378	378	280	235	17	13	0
22	41	98	378	832	392	378	280	250	17	11	0
23	39	112	364	776	378	378	250	280	15	8.8	.4
24	38	154	350	734	378	364	235	280	14	7.9	21
25	37	190	336	705	378	350	220	280	14	6.8	38
26	37	220	322	675	392	350	190	294	14	6.6	20
27	37	235	308	660	392	336	175	294	12	6.4	21
28	30	235	294	630	406	336	161	308	11	5.6	19
29	27	250	280	600	-------	322	147	308	12	5.4	12
30	30	235	294	585	-------	322	147	294	11	5.4	6.8
31	28	-------	294	585	-------	308	-------	250	-------	5.0	4.6

NOTE.—Record incomplete; discharge partly estimated Oct. 28–30, Dec. 18, and Jan. 9–12.

Monthly discharge of Neches River near Diboll, Tex., for the period October 1, 1924, to August 31, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	265	27	92.3	5,680
November	250	22	88.4	5,260
December	378	220	291	17,900
January	1,070	308	617	37,900
February	570	378	446	24,800
March	450	308	390	24,000
April	350	147	276	16,400
May	308	112	194	11,900
June	220	11	49.9	2,970
July	54	5.0	15.2	934
August	38	0	6.43	396
The period				148,000

NECHES RIVER NEAR ROCKLAND, TEX.

LOCATION.—At ferry on highway between Rockland and Zavalla, half a mile above Texas & New Orleans Railroad bridge, 1 mile north of Rockland, Tyler County, and 2 miles below mouth of Billams Creek.

DRAINAGE AREA.—3,540 square miles (measured on base map of Texas).

RECORDS AVAILABLE.—October 1, 1923, to September 30, 1925. United States Weather Bureau has obtained records of stage since July 1, 1903.

GAGE.—United States Weather Bureau staff gage in three sections attached to trees on left bank.

DISCHARGE MEASUREMENTS.—Made from railroad bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of rock; permanent. Channel straight for 150 feet above and 300 feet below gage. Right bank of earth; probably shifting; subject to overflow at a stage of 20 feet. Left bank of same nature and subject to overflow at a stage of 12 feet. Banks heavily wooded in overflow portion. Control is rock shoals, 2,000 feet below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.3 feet January 19 (discharge, 2,520 second-feet); minimum stage, −1.2 feet August 23 and 24 (discharge, 7 second-feet).

1924–25: Maximum stage recorded, 22.1 feet June 2–3, 1924 (discharge, about 14,200 second-feet); minimum stage, that of August 23–24, 1925.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curves well defined. Gage read to tenths once daily. Daily discharge determined by applying daily gage height to rating table. Records fair.

COOPERATION.—Gage-height record furnished by United States Weather Bureau.

The following discharge measurements were made:

February 26, 1925: Gage height, 1.14 feet; discharge, 358 second-feet.

June 22, 1925: Gage height, −0.67 foot; discharge, 34.1 second-feet.

August 3, 1925: Gage height, −0.95 foot; discharge, 9.8 second-feet.

Daily discharge, in second-feet, of Neches River near Rockland, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	181	55	141	229	585	375	315	119	208	38	9	29
2	181	55	141	229	585	375	315	104	208	38	9	29
3	181	55	141	229	555	375	315	104	188	29	9	20
4	181	55	160	256	555	375	256	91	151	29	9	20
5	181	55	160	256	555	375	256	91	151	29	9	20
6	160	50	181	315	555	405	285	91	151	20	9	12
7	124	50	181	345	525	405	285	91	135	20	9	9
8	124	50	160	345	525	405	285	91	119	20	9	9
9	109	50	141	375	1,480	405	285	91	78	20	9	9
10	85	50	141	495	1,030	405	256	495	78	12	9	9
11	76	55	160	525	890	405	256	169	67	12	8	12
12	76	55	160	555	715	405	230	315	67	38	8	20
13	68	55	160	555	680	405	230	375	57	38	8	20
14	68	55	160	585	555	375	230	375	57	38	8	20
15	68	55	181	585	435	375	230	435	47	38	8	12
16	61	55	181	960	435	375	230	315	47	38	8	12
17	61	55	181	1,820	435	405	230	208	47	29	8	9
18	61	55	181	2,300	405	435	230	188	47	91	8	9
19	61	55	204	2,520	405	435	230	169	47	78	8	9
20	61	61	256	2,300	405	435	208	169	38	38	8	9
21	61	61	285	2,020	375	435	208	169	38	29	8	9
22	55	61	285	1,480	375	435	208	169	29	29	8	9
23	55	76	285	1,260	375	405	208	188	29	29	7	9
24	55	124	315	1,060	375	345	188	188	29	20	7	9
25	55	124	315	1,300	345	345	188	188	29	20	8	9
26	50	124	315	820	345	345	188	208	29	12	12	12
27	50	141	285	750	345	315	169	208	29	12	12	20
28	50	141	256	715	345	315	169	208	29	12	12	20
29	50	141	256	680	-------	315	151	208	29	12	12	29
30	55	141	229	645	-------	375	151	208	20	12	20	47
31	61	-------	229	615	-------	345	-------	208	-------	9	29	------

Monthly discharge of Neches River near Rockland, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	181	50	89.2	5,480
November	141	50	73.8	4,390
December	315	141	207	12,700
January	2,520	229	875	53,800
February	1,480	345	542	30,100
March	435	315	385	23,700
April	315	151	233	13,900
May	495	91	201	12,400
June	208	20	75.9	4,520
July	91	9	28.7	1,760
August	29	7	9.84	605
September	47	9	15.7	934
The year	2,520	7	227	164,000

NECHES RIVER AT EVADALE, TEX.

LOCATION.—At Gulf, Colorado & Santa Fe Railway bridge, 500 feet west of Evadale railroad station, Jasper County, and 600 feet below mouth of Mill Creek.

DRAINAGE AREA.—7,910 square miles (measured on base map of Texas).

RECORDS AVAILABLE.—July 1, 1904, to December 31, 1906; October 1, 1923, to September 30, 1925.

GAGE.—Vertical staff gage attached to trees on left bank, 135 feet upstream from center line of railway track; read by F. B. Kirkpatrick.

DISCHARGE MEASUREMENTS.—Made from railway bridge, by wading three-fourths mile above, or from boat half a mile above.

CHANNEL AND CONTROL.—Bed composed of mud and sand; shifts. Channel straight for 500 feet above and below gage. Left bank wooded and not subject to overflow; right bank of earth, fairly clean, and begins to overflow at a stage of 5 feet and at a stage of 16 feet is overflowed for a considerable distance. Low-water control is a sand bar, 1½ miles below gage, shifting. High-stage control is indefinite. Log jams may cause change in stage-discharge relation during high stages. The zero of the gage is 7.2 feet above mean sea level.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 13.94 feet at 7 a. m. January 21 (discharge, 9,800 second-feet); minimum stage, −0.35 foot September 10 (discharge, 148 second-feet, determined from extension of rating curve).

1904–1906; 1924–1925: Maximum stage recorded, 19.0 feet from 7 a. m. June 1 to 7 a. m. June 7, 1924 (discharge, 40,700 second-feet). Minimum stage that of September 10, 1925.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined above 180 second-feet and extended below. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Shifting-control method used March 25 to June 20. Records fair.

Discharge measurements of Neches River at Evadale, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 8	2.22	593	Feb. 20	5.77	1,720	Aug. 4	−0.13	176
Dec. 2	2.19	567	Apr. 28	2.57	760	Aug. 8	−.16	187
Feb. 17	6.75	2,210	June 23	.56	276			

Daily discharge, in second-feet, of Neches River at Evadale, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1	424	370	550	939	2,780	1,380	1,310	691	667	266	213	200
2	444	370	573	939	2,550	1,340	1,340	717	643	252	200	187
2	484	370	573	969	2,450	1,340	1,270	691	643	252	187	187
4	550	370	596	939	2,350	1,710	1,270	667	619	266	187	174
5	573	370	619	939	2,250	1,310	1,270	619	573	266	174	187
6	596	370	643	969	2,150	1,270	1,310	619	550	266	174	174
7	573	370	717	1,030	2,050	1,270	1,270	596	527	280	187	174
8	573	370	797	1,030	2,000	1,240	1,200	573	484	308	174	161
9	573	370	769	1,130	2,000	1,240	1,160	550	464	294	174	161
10	550	370	769	1,420	2,300	1,240	1,130	550	444	266	161	148
11	527	370	769	1,900	3,190	1,240	1,130	643	424	252	161	161
12	504	370	769	2,350	3,470	1,240	1,130	825	424	239	161	187
13	484	370	717	2,660	3,050	1,240	1,130	1,200	424	239	161	187
14	484	370	717	2,660	2,660	1,240	1,060	1,130	404	252	174	174
15	464	370	717	2,660	2,450	1,200	1,030	1,030	404	266	174	226
16	444	370	717	2,910	2,300	1,200	1,030	1,060	370	294	161	266
17	424	370	717	4,150	2,200	1,500	999	1,160	338	323	161	266
18	424	370	717	6,580	2,050	1,670	999	1,060	338	353	161	239
19	424	370	717	8,320	1,900	1,580	969	939	323	353	174	213
20	404	370	743	9,550	1,760	1,420	969	881	308	323	174	200
21	404	387	769	9,750	1,620	1,460	969	969	294	294	174	174
22	404	404	825	9,200	1,580	1,800	909	939	280	308	161	174
23	387	424	939	7,500	1,580	2,050	881	881	280	353	174	161
24	387	464	939	7,200	1,580	2,100	853	825	266	353	161	174
25	370	484	969	6,200	1,540	1,950	853	797	266	323	174	200
26	370	464	969	5,220	1,500	1,850	825	797	280	294	187	239
27	370	464	969	4,700	1,460	1,620	797	797	294	280	200	252
28	370	444	939	4,150	1,420	1,460	769	797	294	266	200	280
29	370	464	939	3,750	-------	1,340	717	717	308	252	213	323
30	370	527	909	3,400	-------	1,310	717	691	280	226	226	353
31	370	-------	909	3,120	-------	1,270	-------	691	-------	213	213	------

Monthly discharge of Neches River at Evadale, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	596	370	455	28,000
November	527	370	398	23,700
December	969	550	774	47,600
January	9,750	939	3,810	235,000
February	3,470	1,420	2,150	119,000
March	2,100	1,200	1,450	89,400
April	1,340	717	1,040	62,000
May	1,200	550	810	49,800
June	667	266	407	24,200
July	353	213	283	17,400
August	226	161	180	11,100
September	353	148	207	12,300
The year	9,750	148	994	720,000

MUD CREEK AT PONTA, TEX.

LOCATION.—At Texas & New Orleans Railroad bridge, 800 feet above highway bridge, three-fourths mile west of Ponta, Cherokee County, and 1 mile below mouth of Sandy Creek.

DRAINAGE AREA.—481 square miles (measured on base map of Texas).

RECORDS AVAILABLE.—April 15, 1924, to September 30, 1925.

GAGE.—Staff gage on downstream side of Texas & New Orleans Railroad bridge. The gage is graduated from −2.0 to −27.0 feet and gage readings give distance below base of rail. Gage read by J. M. Langley.

DISCHARGE MEASUREMENTS.—Made from railroad bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of mud and sand; covered with brush and small trees; fairly permanent. Channel straight for 150 feet above and 75 feet below gage. One channel at all stages. Banks of earth, covered with brush and trees; not subject to overflow. Channel covered with brush and trees; probably forms control for all stages. Drift and débris lodging on trees and brush may cause shifting of control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, −20.0 feet January 19–23 (discharge, 324 second-feet); no flow July 26–30, August 18–25, 31, September 1, 5–12.

1924–1925: Maximum stage recorded, −12.72 feet at 5.32 a. m. May 30, 1924 (discharge, 10,600 second-feet, determined from extension of rating curve and subject to considerable error); no flow for several periods.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths but not regularly. Daily gage height determined from graph drawn from gage readings. Daily discharge determined by applying mean daily gage height to rating table. Discharge estimated for periods of missing gage height. Records poor.

Discharge measurements of Mud Creek at Ponta, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 16	−23.77	6.37	June 29	−24.77	0.86	Aug. 20	−25.20	0
Dec. 27	−22.58	40.7	July 10	−24.78	.97			
Mar. 7	−21.92	77.8	July 16	−24.88	.50			

Daily discharge, in second-feet, of Mud Creek at Ponta, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	7.2	25	83	105	144	46	8.3	3.7	1.3	3.7	0
2	8.6	7.6	23	94	100	132	60	11	3.3	1.9	3.8	.2
3	7.4	8.3	23	110	100	100	64	11	3.1	1.9	3.9	.1
4	8.3	8.8	25	100	100	100	67	11	3.0	1.9	4.0	.2
5	8.2	9.2	29	94	100	110	60	8.1	2.8	1.8	2.8	0
6	7.8	10	33	83	105	100	51	7.4	2.6	1.8	2.4	0
7	7.6	10	38	70	105	83	43	6.8	2.4	1.4	1.9	0
8	7.4	10	40	64	110	78	40	6.1	2.4	1.2	1.6	0
9	7.1	11	46	70	116	74	40	5.6	2.3	1.1	1.3	0
10	7.0	14	48	116	110	70	51	6.1	2.2	1.1	1.0	0
11	6.7	14	46	150	175	67	70	6.8	2.1	.8	.9	0
12	6.4	14	51	188	175	60	74	10	2.0	.7	.7	0
13	6.1	15	54	188	175	60	78	29	1.9	.7	.5	1.3
14	6.1	20	60	201	150	64	70	43	1.8	.7	.3	2.7
15	5.9	20	67	214	132	60	48	78	1.7	.9	.2	2.3
16	5.9	20	57	214	116	60	36	78	1.5	.8	.2	1.9
17	5.9	20	48	268	83	70	28	48	1.5	.7	.1	1.4
18	5.8	20	46	296	78	94	24	29	1.3	.9	0	1.0
19	5.7	25	43	324	78	88	20	20	1.2	.9	0	.6
20	5.7	31	40	324	78	110	17	12	1.2	.8	0	.5
21	5.7	38	38	324	74	127	16	8.3	1.2	.7	0	.4
22	5.7	38	38	324	78	116	12	7.5	1.2	.4	0	.3
23	5.6	38	38	324	88	94	9.2	6.0	1.2	.3	0	.2
24	5.6	36	38	310	122	74	8.5	5.7	1.1	.2	0	.3
25	5.8	36	38	254	132	67	8.3	5.3	.9	.1	0	.4
26	5.9	33	38	201	150	57	7.6	4.7	.7	0	.1	.4
27	5.9	31	38	188	150	51	7.0	4.4	.6	0	.2	.5
28	6.1	29	38	162	150	46	7.0	4.0	.5	0	.2	.6
29	6.7	27	38	150	-------	43	7.2	3.8	.4	0	.1	.6
30	7.2	26	48	127	-------	43	7.6	3.8	.5	0	.1	.7
31	7.2	-------	64	110	-------	46	-------	3.7	-------	31	0	------

Monthly discharge of Mud Creek at Ponta, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	11	5.6	6.71	413
November	38	7.2	20.9	1,240
December	67	23	41.8	2,570
January	324	64	185	11,400
February	175	74	116	6,420
March	144	43	80.3	4,930
April	78	7.0	35.9	2,140
May	78	3.7	15.9	977
June	3.7	.4	1.74	104
July	31	0	1.81	111
August	4.0	0	.97	60
September	2.7	0	.55	33
The year	324	0	41.9	30,400

ANGELINA RIVER NEAR LUFKIN, TEX.

LOCATION.—At Houston East & West Texas Railway bridge, 800 feet above mouth of Lamana Bayou and 8 miles north of Lufkin, Angelina County.

DRAINAGE AREA.—1,580 square miles (measured on base map of Texas).

RECORDS AVAILABLE.—October 29, 1923, to September 30, 1925.

GAGE.—Chain gage attached to upstream side of bridge; read by C. A. Martin.

DISCHARGE MEASUREMENTS.—Made by wading or from railway bridge.

CHANNEL AND CONTROL.—Channel straight for some distance above and 200 feet below gage. Bed composed of sand and mud with trees and drift lodged therein; shifts. Left bank of mud and sand and subject to overflow above 9-foot stage; right bank of same material and not subject to overflow at gage. Banks covered with trees and brush. Control for low stages is remains of old dam, 300 feet below gage; fairly permanent. High-stage control indefinite.

EXTREMES OF DISCHARGE.—Maximum discharge recorded during year, 642 second-feet January 23–27; minimum discharge, 14 second-feet August 27, 28, 31, and September 1–3.

1924–1925: Maximum stage recorded, 13.90 feet at 6.30 a. m. June 5, 1924 (discharge, 19,500 second-feet, determined from extension of rating curve and subject to considerable error); minimum discharge occurred in 1925.

DIVERSION.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table except as noted in footnote to daily-discharge table. Records good.

The following discharge measurements were made:

January 13, 1925: Gage height, 8.04 feet; discharge, 458 second-feet.

January 28, 1925: Gage height, 8.40 feet; discharge, 585 second-feet.

June 13, 1925: Gage height, 2.90 feet; discharge, 22.6 second-feet.

Daily discharge, in second-feet, of Angelina River near Lufkin, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	99	34	138	247	419	351	234	67	44	19	17	14
2	87	36	138	290	419	351	234	62	42	18	18	14
3	77	37	138	335	419	351	247	57	36	17	17	14
4	67	37	131	351	401	335	261	55	31	17	21	15
5	57	38	131	367	384	320	275	53	31	19	25	15
6	51	40	138	384	384	320	275	53	29	22	31	16
7	49	42	145	384	401	305	261	53	27	21	42	16
8	48	43	152	401	437	290	247	53	27	19	40	16
9	46	44	152	437	437	290	247	51	26	19	40	15
10	44	46	160	455	419	275	234	49	26	21	34	15
11	44	46	160	499	401	290	234	49	25	19	29	15
12	43	48	168	499	384	261	234	57	24	19	26	16
13	40	49	176	455	367	247	234	93	23	20	23	16
14	38	51	176	455	367	247	234	93	22	21	21	16
15	36	53	176	437	384	234	234	99	21	21	20	16
16	34	55	176	401	384	247	222	145	21	22	21	16
17	34	57	176	367	367	275	212	193	21	23	19	17
18	32	60	176	367	351	320	202	247	20	25	17	16
19	32	67	176	384	351	351	184	261	20	21	16	16
20	31	72	176	437	351	367	168	234	20	19	16	17
21	31	82	176	499	335	351	146	212	20	19	16	18
22	31	111	176	600	320	351	124	160	19	18	16	19
23	30	117	176	642	320	351	105	131	19	17	16	19
24	30	124	176	642	335	335	93	93	18	17	15	20
25	30	124	176	642	335	320	82	77	18	17	15	20
26	30	131	184	642	320	305	82	93	17	18	15	21
27	31	138	193	642	335	290	72	67	17	19	14	21
28	31	138	193	562	335	261	72	49	17	20	14	19
29	32	138	193	499	-------	261	67	46	17	19	15	19
30	34	138	202	499	-------	261	72	49	16	17	15	18
31	34	-------	212	455	-------	247	-------	46	-------	17	14	-------

NOTE.—Record incomplete and discharge partly estimated Dec. 25 to Jan. 24. Discharge interpolated Apr. 22, June 12, and Aug. 12.

Monthly discharge of Angelina River near Lufkin, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	99	30	43.0	2,640
November	138	34	73.2	4,360
December	212	131	168	10,300
January	642	247	461	28,300
February	437	320	374	20,800
March	367	234	302	18,600
April	275	67	186	11,100
May	261	46	98.3	6,040
June	44	16	23.8	1,420
July	25	17	19.4	1,190
August	42	14	21.2	1,310
September	21	14	16.8	1,000
The year	642	14	148	107,000

ATTOYAC BAYOU NEAR CHIRENO, TEX.

LOCATION.—At highway bridge between Nacogdoches and San Augustine, 1 mile below mouth of Woodson Creek and 3 miles northeast of Chireno, Nacogdoches County.

DRAINAGE AREA.—502 square miles (measured on base map of Texas).

RECORDS AVAILABLE.—January 24, 1924, to August 29, 1925, when station was discontinued.

GAGE.—Chain gage attached to upstream side of bridge; read by Uriah Rogers.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel straight above and below gage. Bed and banks of sand and mud; subject to shift. Banks are overflowed at a stage of about 15 feet when there are three channels. Overflowed area covered with trees and discarded tree tops left from lumbering operations. Low-water control of rock, 1 mile below gage; high-water control indefinite.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 13.48 feet at 7 a. m. January 12 (discharge, 926 second-feet); minimum stage, 2.40 feet August 27 (discharge, 7.0 second-feet).

1924–1925: Maximum stage recorded, 18.88 feet at 7 a. m. June 3, 1924 (discharge, about 8,260 second-feet); minimum stage that of August 27, 1925.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records good.

Discharge measurements of Attoyac Bayou near Chireno, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 23	5.12	108	Feb. 10	10.28	584	July 3	3.20	19.9
Jan. 14	11.38	678	Mar. 19	8.32	369	Aug. 15	2.72	11.6

Daily discharge, in second-feet, of Attoyac Bayou near Chireno, Tex., for the period October 1, 1924, to August 29, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	55	52	77	228	180	133	260	68	46	20	13
2	55	52	77	188	204	126	220	60	42	22	22
3	55	52	77	204	252	126	188	60	40	25	38
4	55	55	102	204	304	120	156	52	36	25	48
5	52	58	164	180	295	120	133	48	34	26	44
6	52	52	164	156	268	114	120	46	32	40	42
7	55	52	148	133	212	114	108	42	28	133	40
8	58	55	140	148	204	108	114	38	28	126	40
9	55	58	140	500	470	114	133	42	28	102	40
10	52	58	126	784	590	114	114	40	26	56	16
11	52	58	102	910	440	114	126	36	28	40	16
12	49	61	97	910	331	114	126	56	28	40	18
13	52	65	92	806	236	108	126	87	22	38	16
14	49	65	92	674	212	120	126	180	22	36	13
15	49	65	87	520	188	133	92	295	22	82	11
16	49	65	87	652	188	172	82	412	22	176	11
17	49	65	87	751	204	839	77	286	20	120	11
18	47	65	82	850	188	652	72	322	22	140	12
19	47	65	82	850	164	385	72	260	22	133	11
20	49	82	102	828	164	228	72	140	22	90	11
21	49	108	114	806	148	212	64	72	20	32	10
22	49	97	108	762	156	172	60	68	22	38	9.0
23	49	92	108	630	172	156	56	52	19	32	9.0
24	52	87	102	358	188	140	52	52	19	25	8.0
25	49	82	102	340	188	126	48	64	20	22	7.8
26	52	77	97	236	172	126	48	97	19	19	7.5
27	52	77	97	228	156	120	48	140	19	19	7.0
28	49	82	97	220	140	114	52	108	22	14	9.0
29	52	77	102	212	-------	126	64	77	22	13	13
30	52	73	126	196	-------	220	72	60	24	13	-------
31	49	-------	126	188	-------	295	-------	48	-------	14	-------

Monthly discharge of Attoyac Bayou near Chireno, Tex., for the period October 1, 1924, to August 29, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	58	47	51.3	3,150
November	108	52	68.4	4,070
December	164	77	107	6,550
January	910	133	473	29,100
February	590	140	236	13,100
March	839	108	189	11,600
April	260	48	103	6,110
May	412	36	110	6,760
June	46	19	25.9	1,540
July	176	13	55.2	3,390
August 1-29	48	7	19.1	1,100
The period				86,500

AYISH BAYOU AT SAN AUGUSTINE, TEX.

LOCATION.—At San Augustine-Nacogdoches highway bridge, one-fourth mile west of courthouse in San Augustine, San Augustine County, and 5 miles above the mouth of Bernard Creek.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—July 24, 1924, to August 31, 1925, when station was discontinued.

GAGE.—Vertical staff gage attached to downstream side of left abutment of highway bridge; read by J. B. Whitten.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel; practically permanent. Channel straight for several hundred feet above and below gage; one channel at all stages. Banks are of earth; fairly permanent and not subject to overflow. Control is indefinite.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 6.70 feet at noon March 16 (discharge not determined); minimum discharge, 1.3 second-feet August 18–23.

1924–25: Same as given above.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined below 30 second-feet and does not cover the range of stage. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table, using shifting-control method January 14 and June 23 to August 31. Records poor.

Discharge measurements of Ayish Bayou at San Augustine, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 23	1.29	7.79	May 12	1.74	27.5	July 25	0.99	2.16
Jan. 14	1.37	6.95	May 28	1.10	2.97	Aug. 15	.98	1.61
Mar. 19	1.62	19.8	July 3	1.06	1.46			

Daily discharge, in second-feet, of Ayish Bayou at San Augustine, Tex., for the period October 1, 1924, to August 31, 1925

Day	Oct.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	4.9				7.0	13	2.4	2.4	1.6	1.8
2	4.4				7.0	12	2.4	2.4	1.6	1.8
3	4.0				7.0	12	2.3	2.4	1.4	1.8
4	4.0				7.0	11	2.3	2.3		1.8
5			7.3		7.0	11	2.3	2.3	22	1.8
6			7.0		7.0	10	2.3	2.3	3.8	1.6
7			7.0		7.0	10	2.3	2.3	2.6	1.6
8			26		7.0	10	2.1	2.1	2.3	1.6
9			50		7.0	18	2.6	2.1	2.8	1.6
10				9.6	7.0	14	5.4	2.1	2.8	1.6
11				8.0	7.0	13	4.0	2.1	2.8	1.4
12				7.6	7.0	11	30	2.1	2.8	1.4
13	3.6			7.0	7.0	8.9	11	2.1	2.8	1.4
14			7.0	7.3	7.6	6.0		2.1	2.6	1.4
15				7.6	8.0	4.9		2.1	22	1.4
16				7.3		4.0		2.1	46	1.4
17				7.3		3.4	50	2.1	28	1.4
18				7.0		3.2	31	2.0	19	1.3
19				7.0	26	3.0	20	1.8	12	1.3
20				7.0	16	2.8	16	1.7	8.0	1.3
21				7.0	14	2.4	9.9	1.7	4.4	1.3
22				7.6	13	2.4	4.4	1.6	3.4	1.3
23		7.6		9.9	11	2.3	3.2	1.6	3.2	1.3
24				8.0	9.6	2.3	3.2	1.6	3.0	1.4
25				7.6	9.6	2.1	3.2	1.6	2.1	1.6
26				7.6	8.9	2.1	2.8	1.6	2.3	2.0
27				7.0	8.9	2.1	2.6	1.6	2.3	1.8
28				7.0	9.6	2.1	2.4	2.0	2.1	1.8
29					17	6.5	2.4	2.0	2.0	1.8
30					15	3.0	2.4	1.8	2.0	1.7
31					13		2.4		2.0	1.8

NOTE.—Gage height in feet, for days when stage was beyond limits of rating curve and discharge not computed as follows: Jan. 10, 2.24; Mar. 16, 3.00; Mar. 17, 4.90; Mar. 18, 2.70; May 14, 2.84; May 15, 3.08; May 16, 2.25; and July 4, 2.23. No record Oct. 5–12 Oct. 14 to Dec. 22, Dec. 24 to Jan. 4, Jan. 11–13, and Jan. 15 to Feb. 9.

Monthly discharge of Ayish Bayou at San Augustine, Tex., for the period February 10 to August 31, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
February 10-28	9.9	7.0	7.60	286
April	18	2.1	6.95	414
June	2.4	1.6	2.00	119
August	2.0	1.3	1.56	96

VILLAGE CREEK NEAR KOUNTZE, TEX.

LOCATION.—At Gulf, Colorado & Santa Fe Railway bridge, 4 miles east of Kountze, Hardin County, and 8 miles below mouth of Beech Creek.

DRAINAGE AREA.—838 square miles (measured on base map of Texas).

RECORDS AVAILABLE.—May 14, 1924, to September 30, 1925.

GAGE.—Chain gage attached to upstream side of railway bridge; read by Ocie Adams. Zero of gage is base of railway rail and therefore all gage readings are minus.

DISCHARGE MEASUREMENTS.—Made from railway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand; shifts. Channel straight for 500 feet above and 200 feet below gage. Banks of earth; covered with trees, grass, and brush; subject to overflow. Low-water control is an accumulation of trees and logs partly buried in sand 200 feet below gage; subject to shift and accumulation of more drift. High-stage control is bed and banks of stream.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, −17.80 feet at 1.30 p. m. January 21 (discharge, 2,800 second-feet); minimum discharge, 38 second-feet August 20 and 21.

1924–1925: Maximum stage recorded, −11.19 feet June 2, 1924 (discharge, not determined); minimum discharge occurred in 1925.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 1,000 second-feet and poorly defined above. Gage read to hundredths irregularly. Daily discharge determined by applying daily gage height to rating table. Records fair.

Discharge measurements of Village Creek near Kountze, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 8	−27.93	137	Apr. 23	−28.03	128	Aug. 8	−29.10	47.1
Dec. 2	−27.40	178	June 23	−28.69	72.7			
Feb. 17	−26.01	353	Aug. 4	−29.15	47.2			

Daily discharge, in second-feet, of Village Creek near Kountze, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	108	116	188	210	290	256	232	108	108	92	47	59
2	108	116	188	199	256	244	244	108	108	85	47	56
3	116	116	178	199	244	244	221	128	78	82	44	59
4	116	116	178	204	232	232	210	148	78	78	44	65
5	120	116	178	210	221	210	189	140	78	78	47	62
6	124	65	178	210	210	210	168	140	78	78	47	59
7	132	78	178	210	199	210	168	140	78	92	47	56
8	132	108	178	210	199	204	158	132	78	85	44	50
9	124	116	188	210	199	199	158	132	85	82	44	44
10	116	124	188	221	188	199	158	140	100	78	44	44
11	108	124	188	330	178	188	158	148	88	78	44	41
12	108	124	199	440	178	188	173	188	92	76	44	50
13	108	124	199	860	178	199	188	210	100	74	44	71
14	100	124	199	979	168	210	178	168	100	71	44	92
15	100	124	199	1,100	246	210	168	168	100	71	44	108
16	100	124	210	1,520	325	210	158	168	100	71	42	108
17	100	124	210	1,560	355	256	148	163	88	71	41	88
18	96	124	210	1,610	340	256	140	158	85	71	41	74
19	102	132	221	1,660	310	244	136	140	82	78	41	65
20	108	140	221	2,000	296	244	132	140	78	85	38	64
21	108	140	226	2,800	282	232	132	124	74	78	38	62
22	100	140	232	2,600	282	232	132	108	71	78	41	56
23	100	170	244	1,830	282	232	124	100	71	65	41	50
24	96	199	256	1,220	296	221	116	96	71	62	41	50
25	96	199	256	985	296	221	116	92	71	59	41	59
26	102	188	269	750	296	221	112	88	71	56	53	65
27	108	188	269	641	296	188	108	85	71	53	62	66
28	108	188	250	405	269	188	108	85	98	50	68	68
29	108	188	232	388	-------	194	108	85	124	47	62	96
30	108	188	256	325	-------	199	108	85	108	47	62	108
31	116	-------	221	325	-------	210	-------	96	-------	47	62	-------

Monthly discharge of Village Creek near Kountze, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	132	96	109	6,700
November	199	65	137	8,180
December	269	178	212	13,100
January	2,800	199	852	52,400
February	355	168	254	14,100
March	256	188	218	13,400
April	244	108	155	9,220
May	210	85	129	7,960
June	124	71	87.1	5,180
July	92	47	71.5	4,400
August	68	38	46.7	2,870
September	108	41	66.5	3,960
The year	2,800	38	195	141,000

TRINITY RIVER BASIN

WEST FORK OF TRINITY RIVER AT BRIDGEPORT, TEX.

LOCATION.—At Chicago, Rock Island & Gulf Railway Co.'s pumping plant one-fourth mile below Balsora-Bridgeport highway bridge, half a mile southwest of railway station at Bridgeport, Wise County, and 1¼ miles below mouth of Gentry Creek.

DRAINAGE AREA.—1,010 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—October 1, 1914, to September 30, 1925. Records of stage have been obtained by United States Weather Bureau since August 12, 1908, at highway bridge a quarter of a mile upstream from present station.

GAGE.—Vertical staff gage in five sections on left bank attached to trees, three-eighths mile above Rock Island Dam; read by F. G. Howard.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of clay, gravel, and sand. Banks are slightly wooded; subject to overflow at a stage of 25 feet. Channel straight for 100 feet above and below station. Control is a 4-foot concrete dam, three-eighths mile below station; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 13.25 feet at 7 a. m. May 9 (discharge, 2,630 second-feet); no flow during large part of year.

1908–1925: Maximum stage recorded, 28.9 feet June 8, 1915 (discharge not determined); no flow during several periods.

DIVERSIONS.—Practically the only diversion above station is by the city of Bridgeport, which diverts a small amount for municipal uses.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve fairly well defined. Gage read to hundredths twice daily and oftener during floods. Daily discharge determined by applying mean daily gage height to rating table. Records good.

Discharge measurements of West Fork of Trinity River at Bridgeport, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 9	6.01	0.7	May 1	7.44	373
Apr. 29	8.87	1,200	Aug. 13		0

Daily discharge, in second-feet, of West Fork of Trinity River at Bridgeport, Tex., for the year ending September 30, 1925

Day	Oct.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.4		4.2	0.5	0.1		425	1.6	0.3		
2	4.5		2.8	.3	.1		125	.6	.1		
3	3.6		2.5	.3	.1		52	.4	.1		
4	2.3		2.5	.2	.1		25	.3	7.2		
5	1.2		2.1	.2	.1		14	.2	250		
6	.6		2.1	.2	.1		30	.1	358		
7	.4		1.6	.2	.1		1,410		758		
8	.2		1.2	.2	.1		1,410		358		
9	.1		.7	.1			2,620		71		
10			.9				2,360		25		
11			1.6				2,080	152	14		
12	67		.6	.1			1,350	46	9.0		0.2
13	20		.4	.1			1,160	103	6.0		55
14	11		.3	.1			965	82	4.8		222
15	6.6		.3	.1			238	495	4.5		402
16	5.1		.3	.1			64	675	2.1		148
17	4.2		.4	.1			28	114	.5		520
18	3.0		2.5	.1			18	44	.3		171
19	3.0		3.6	.1			14	26	.1		38
20	2.1		2.8	.1			11	16			19
21	.6		2.3	.1			9.6	17			12
22	.4		1.6	.2			7.2	8.4			8.4
23	.2		.6	.1			6.0	8.4		20	5.1
24	.1		.5	.1			5.4	8.4		2.5	5.4
25	.1		.5	.1			5.7	74		.3	4.2
26		11	.4	.1		23	6.0	12		.1	270
27		12	.5	.1		2,300	5.1	2.8		.1	595
28		6.0	.5	.1		1,290	4.2	1.4			570
29		6.0	.7			1,220	3.6	1.8			103
30		6.0	.6			1,020	3.0	.5			30
31		4.8	.5				1.8				

NOTE.—No flow during periods for which no discharge is given.

Monthly discharge of West Fork of Trinity River at Bridgeport, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	67	0	4.57	281
November	0	0	0	0
December	12	0	1.48	90.8
January	4.2	.3	1.36	83.5
February	.5	0	.14	7.9
March	.1	0	.03	1.6
April	2,300	0	195	11,600
May	2,620	1.8	466	28,700
June	675	0	63.0	3,750
July	758	0	60.3	3,710
August	20	0	.74	45.6
September	595	0	106	6,300
The year	2,620	0	75.4	54,600

WEST FORK OF TRINITY RIVER AT LAKE WORTH DAM, ABOVE FORT WORTH, TEX.

LOCATION.—Just above Lake Worth Dam, 4 miles above confluence with Clear Fork and 4½ miles northwest of Tarrant County courthouse in Fort Worth.

DRAINAGE AREA.—1,870 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—October 1, 1923, to September 30, 1925. Incomplete records of stage have been obtained by city of Fort Worth since June 1, 1917.

GAGE.—Gurley 8-day water-stage recorder in concrete valve tower just above dam and 300 feet to right of spillway; read by W. G. Musick.

DISCHARGE MEASUREMENTS.—Made by wading or from bridge 2 miles below gage.

CHANNEL AND CONTROL.—Bed and banks of lake of mud; permanent. Bed and banks at measuring section of sandy loam; fairly permanent; banks at measuring section subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.12 feet at 6 a. m. May 10 (discharge, 2,960 second-feet); no flow October 1 to May 1, May 30 to July 8, and July 19 to September 30.

1924–25: Maximum stage recorded, 2.25 feet November 18, 1923 (discharge, 8,390 second-feet); no flow for large part of 1924 and 1925.

DIVERSIONS.—Diversions for municipal use only. Amount not known.

REGULATION.—Storage above dam causes considerable regulation.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Operation of water-stage recorder satisfactory. Daily discharge determined by applying to rating table mean daily gage height determined from recorder graph by inspection or by use of planimeter. Records good.

The river was dry on August 10 and September 4 when station was visited by engineers of the Geological Survey.

Daily discharge, in second-feet, of West Fork of Trinity River at Lake Worth Dam, above Fort Worth, Tex., for the year ending September 30, 1925

Day	May	July	Day	May	July	Day	May	July
1	------	------	11	2,440	62	21	102	------
2	25	------	12	2,280	62	22	70	------
3	318	------	13	2,320	54	23	30	------
4	302	------	14	2,240	27	24	30	------
5	168	------	15	2,020	25	25	22	------
6	180	------	16	1,230	12	26	12	------
7	1,140	------	17	759	4.0	27	4.0	------
8	1,900	------	18	380	1.6	28	3.2	------
9	2,170	1.6	19	214	------	29	1.6	------
10	2,800	27	20	144	------	30	------	------

NOTE.—River dry on days for which no discharge is shown.

Monthly discharge of West Fork of Trinity River at Lake Worth Dam, above Fort Worth, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May	2,800	0	752	46,200
July	62	0	8.91	548
The year	2,800	0	64.6	46,700

NOTE.—River dry during months for which no discharge is given.

WEST FORK OF TRINITY RIVER AT FORT WORTH, TEX.

LOCATION.—At old intake pump house of Fort Worth Power & Light Co.'s plant, in Fort Worth, Tarrant County, 150 feet above Paddock viaduct and one-fourth mile below mouth of Clear Fork of Trinity River.

DRAINAGE AREA.—2,430 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—October 11, 1920, to September 30, 1925. Records of stage have been kept by United States Weather Bureau at Paddock viaduct since March 1, 1910.

GAGE.—Gurley graph water-stage recorder in old pump house of Fort Worth Power & Light Co; inspected by employee of city of Fort Worth.

DISCHARGE MEASUREMENTS.—Made by wading, from highway bridge 1,000 feet above, or from North Twelfth Street Bridge 2 miles below gage.

CHANNEL AND CONTROL.—Channel straight for 500 feet above and 1,000 feet below station. Right bank brushy and not subject to overflow; left bank with a protection levee but subject to overflow at high stages. Bed composed of rock, gravel, and clay. Control is a concrete dam just below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 8.48 feet at 1 p. m. May 10 (discharge, 8,000 second-feet); no flow July 24–31, August 12–25, and September 3–11.

1910–1925: Maximum stage recorded, 23.95 feet at 12.20 p. m. April 25, 1922 (discharge, 85,000 second-feet). No flow for several periods.

DIVERSIONS.—The city of Fort Worth diverts for municipal use about 15 second-feet from storage reservoir on West Fork known as Lake Worth.

REGULATION.—Flow is partly regulated by storage at Lake Worth which has a capacity of about 30,000 acre-feet.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Operation of water-stage recorder satisfactory except for short breaks in record. Daily discharge determined by applying to rating table mean daily gage height obtained from recorder graph by inspection or by use of planimeter, averaging discharge for fractional parts of a day for days of considerable fluctuation, except as noted in footnote to daily-discharge table. Records good.

River visited on August 10, 1925, and found dry.

Daily discharge, in second-feet, of West Fork of Trinity River at Fort Worth, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.4	2.0	8.4	1.4	14	11	11	36		1.0	0.2	0.9
2	6.0	4.4	9.6	1.8	12	9.6	8.4	24		.7	4.4	.5
3	6.0	3.6	9.6	1.6	12	9.6	8.4	307		.7	4.4	0
4	6.0	3.6	14	1.4	14	8.4	8.4	328	17	7	1.8	0
5	3.6	2.0	9.6	1.6	14	7.2	11	202		165	3.6	0
6	6.0	3.6	8.4	1.4	15	8.4	7.2	215		11	1.6	0
7	7.2	3.6	15	.7	14	7.2	7.2	4,950	1.6	3.6	.9	0
8	5.2	20	11	.9	17	9.6	7.2	3,990	3.6	2.8	.9	0
9	6.0	9.6	12	1.4	15	9.6	2.8	2,410	2.8	2.0	.7	0
10	9.6	7.2	12	17	14	9.6	2.8	5,350	55	6.0	.6	0
11	2.8	3.6	12	17	14	8.4	2.0	2,800	15	45	.2	0
12	4.4	6.0	9.6	18	12	8.4	5.2	2,220	3.6	47	0	.6
13	6.0	6.0	9.6	15	12	9.6	3.6	2,160	3.6	36	0	
14	9.6	7.2	12	11	14	9.6	3.6	2,100	2.0	38	0	
15	8.4	8.4	6.0	12	17	11	3.6	1,720		38	0	1.0
16	6.0	14	8.4	12	17	8.4	1.8	1,320		24	0	
17	9.6	8.4	8.4	18	17	8.4	1.4	1,220		14	0	
18	9.6	9.6	17	36	15	7.2	1.4	597		8.4	0	
19	9.6	14	14	15	15	8.4	2.8	307		5.2	0	1.2
20	8.4	20	45	17	15	7.2	4.4	179		1.6	0	1.2
21	6.0	14	39	17	11	6.0	2.0	130	1.5	1.0	0	1.2
22	5.2	12	33	17	22	7.2	1.2	86		.6	0	.9
23	7.2	17	26	15	15	6.0	1.8	60		.3	0	.6
24	15	9.6	20	11	12	5.2	1.6	55		0	0	17
25	6.0	11	14	15	9.6	6.0	33	47		0	0	4.4
26	6.0	12	7.8	14	11	6.0	554	40		0	1.6	6.0
27	8.4	12	1.6	14	8.4	5.2	1,250	36		0	2.8	9.6
28	6.0	9.6	1.6	12	8.4	7.2	278	33	.9	0	1.8	6.0
29	3.6	8.4	1.8	12	-------	12	72	33	1.6	0	.9	7.2
30	13	11	1.6	12	-------	9.6	42	29	1.8	0	1.2	6.2
31	2.0	-------	2.0	11	-------	9.6	-------	31	-------	0	1.0	-------

NOTE.—Braced figures give estimated mean discharge for periods indicated. Discharge partly estimated Dec. 27, May 31, June 7, 14, 28, Sept. 12 and 19. No record and discharge interpolated Dec. 22-26.

Monthly discharge of West Fork of Trinity River at Fort Worth, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	15	2.0	6.99	430
November	20	2.0	9.11	542
December	45	1.6	12.9	793
January	36	.7	11.3	695
February	22	8.4	13.8	766
March	12	5.2	8.28	509
April	1,250	1.2	78.0	4,640
May	5,350	24	1,070	65,500
June	-------	.9	7.10	422
July	165	0	14.6	898
August	4.4	0	.92	57
September	17	0	2.31	137
The year	5,350	0	104	75,400

WEST FORK OF TRINITY RIVER AT GRAND PRAIRIE, TEX.

LOCATION.—At highway bridge on Grand Prairie-Sowers-Irving road, 1 mile northeast of Grand Prairie, 1½ miles above mouth of Bear Creek, and 4½ miles above mouth of Mountain Creek.

DRAINAGE AREA.—2,890 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—March 27 to September 30, 1925.

GAGE.—Chain gage attached to downstream handrail of bridge; read by L. M. Lewis or Jack Key.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of silt deposits; fairly permanent. Channel straight for 100 feet above and 150 feet below bridge. Right bank of shale, and not subject to overflow; left bank sparsely covered with timber and at high stages subject to overflow for three-fourths mile. One channel at low and moderate stages and several at high stages. Low-water control is shale shoals 1,000 feet below gage; high-stage control is indefinite. Water from Bear Creek 1½ miles below may cause backwater at times.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 25.00 feet at 3.30 p. m. May 8 (discharge not determined); minimum discharge, 3.2 second-feet at 6 p. m. June 6.

DIVERSIONS.—Numerous small diversions above gage; amount not known. Largest diversion is by city of Fort Worth of about 15 second-feet.

REGULATION.—Flow regulated by storage at Lake Worth which has a capacity of about 30,000 acre-feet.

ACCURACY.—Stage-discharge relation not permanent. Rating curve fairly well defined below 5,000 second-feet. Gage read to hundredths twice daily. Daily discharge determined by shifting-control method except as noted in footnote to daily-discharge table. Records fair.

Discharge measurements of West Fork of Trinity River at Grand Prairie, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 20	2.30	27.8	Apr. 28	10.08	1,350	May 20	5.64	368
Apr. 16	2.25	19.7	Apr. 30	3.10	116	July 29	2.09	9.18

Daily discharge, in second-feet, of West Fork of Trinity River at Grand Prairie, Tex., for the year ending September 30, 1925

Day	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-------	32	78	20	15	20	14
2	-------	27	64	15	10	18	10
3	-------	24	64	19	10	12	12
4	-------	27	256	11	23	10	16
5	-------	22	300	12	214	18	14
6	-------	28	228	7.4	64	25	6.6
7	-------	25	-------	4.8	34	17	4.5
8	-------	25	-------	5.8	20	12	10
9	-------	23	-------	6.6	18	10	6.6
10	-------	22	-------	88	20	10	9.0
11	-------	23	-------	63	11	14	10
12	-------	21	-------	35	11	12	11
13	-------	21	2,460	23	48	8.6	39
14	-------	21	2,340	7.0	60	7.8	58
15	-------	20	2,220	11	57	8.2	24
16	-------	•20	1,800	16	64	13	15
17	-------	19	1,320	7.8	60	9.0	12
18	-------		1,300	5.4	39	5.4	9.5
19	-------		800	7.8	27	6.2	11
20	-------		380	5.8	22	7.0	14
21	-------	20	256	8.6	17	7.4	10
22	-------		186	5.4	14	7.8	7.4
23	-------		132	10	12	10	8.6
24	-------		93	10	14	17	29
25	-------		78	48	20	14	104
26	-------	22	57	10	20	11	68
27	25	780	54	6.2	18	11	31
28	23	1,350	44	7.8	12	13	20
29	23	732	36	13	9.0	12	15
30	35	115	31	21	10	12	20
31	34	-------	20	-------	10	16	------

NOTE.—Mean daily gage height in feet on days when discharge was beyond limits of rating curve as follows: May 7, 17.50; May 8, 24.75; May 9, 24.50; May 10, 23.80; May 11, 23.90; May 12, 18.50. Braced figure shows estimated mean discharge for period indicated. No record and discharge interpolated Apr. 14, 15, and 29.

Monthly discharge of West Fork of Trinity River at Grand Prairie, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
March 27-31	35	23	28.0	278
April	1,350		119	7,060
May		20		
June	88	4.8	17.0	1,010
July	214	9.0	31.7	1,950
August	25	5.4	12.1	743
September	104	4.5	20.6	1,230

TRINITY RIVER AT DALLAS, TEX.

LOCATION.—At Commerce Street viaduct in Dallas, Dallas County, 800 feet below Texas & Pacific Railway bridge and 5 miles below confluence of Elm and West Forks of Trinity River.

DRAINAGE AREA.—6,000 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—October 1, 1898, to December 31, 1899 (discharge, not determined); July 1, 1903, to December 31, 1906; and October 1, 1920, to September 30, 1925. United States Weather Bureau gage-height record available since 1903.

GAGE.—Chain gage attached to downstream handrail of Commerce Street viaduct; read by C. J. Anderson.

DISCHARGE MEASUREMENTS.—Made by wading, from Commerce Street viaduct, or from "Miller's Ferry" bridge 6 miles below gage.

CHANNEL AND CONTROL.—Channel practically straight for 1,000 feet above and 600 feet below station. Right bank composed of clay and gravel, wooded, and subject to overflow; left bank not subject to overflow except at extremely high stages. Bed composed of clay and gravel; fairly permanent. Low-water control is gravel and clay shoal 300 feet below gage; high-water control not known. A lock and dam, 13 miles below gage, will back water at station to a gage height of 11.65 feet when wickets are closed. This, however, rarely occurs.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 34.17 feet at 7.50 a. m. May 11 (discharge, 17,700 second-feet); minimum stage, 3.95 feet at 7.45 a. m. August 22 (discharge, 7.5 second-feet).

1898–1899; 1903–1906; 1921–1925: Maximum stage recorded, 42.35 feet at 5.15 a. m. April 27, 1922 (discharge, 75,100 second-feet); minimum stage, 4.27 feet at 4 p. m. September 11, 1924 (discharge, 6.8 second-feet).

Maximum flood on record from United States Weather Bureau records, 52.6 feet at 6 p. m. May 26, 1908 (discharge, not determined). During drought of 1917–1918, discharge was practically zero. Low stages not comparable, owing to shifting of control.

DIVERSIONS.—Only known diversions are for municipal uses. No irrigation of importance above.

REGULATION.—Low-water flow is partly regulated by municipal dams on West Fork, 40 miles above, and on Elm Fork gage 6 miles above gage.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records good except for extremely low stages for which they are fair.

The following discharge measurements were made:
March 10, 1925: Gage height, 4.67 feet; discharge, 34.3 second-feet.
August 6, 1925: Gage height, 4.36 feet; discharge, 13.2 second-feet.

Daily discharge, in second-feet, of Trinity River at Dallas, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	21	23	24	24	32	31	2,020	40	28	14	18
2	17	22	24	24	30	34	30	503	37	28	13	20
3	18	23	24	26	28	32	32	287	34	22	16	17
4	19	18	30	25	29	32	30	162	29	44	14	17
5	19	18	22	24	27	30	27	377	28	142	15	18
6	19	19	26	23	26	32	26	717	28	123	15	19
7	19	26	40	26	29	31	25	4,120	25	44	20	17
8	19	58	31	24	32	29	23	9,080	272	30	21	16
9	19	92	26	25	29	30	28	11,800	259	28	18	14
10	19	23	25	32	29	30	26	16,200	64	21	16	15
11	18	37	26	27	28	29	24	17,200	115	20	16	15
12	17	23	25	24	28	28	24	13,800	61	20	17	19
13	17	21	24	28	29	28	24	8,020	68	24	19	17
14	18	22	24	34	29	28	27	4,580	37	44	16	18
15	18	22	25	30	29	30	22	3,060	30	50	14	42
16	22	19	32	32	30	31	24	2,420	24	42	12	25
17	22	20	26	40	30	30	23	1,810	24	44	14	20
18	22	19	68	47	29	30	22	1,480	19	42	16	18
19	19	19	26	37	29	28	23	1,120	17	30	15	123
20	18	40	25	96	30	30	22	539	18	26	15	64
21	17	24	47	55	30	29	22	362	17	22	12	50
22	18	25	40	40	78	29	20	287	16	23	8.2	32
23	21	34	50	34	40	27	18	183	15	17	10	24
24	20	22	52	34	40	27	20	162	19	14	13	123
25	17	20	50	32	52	27	52	115	47	14	22	82
26	17	21	42	20	42	28	4,850	88	74	16	18	259
27	17	20	34	30	34	29	6,190	71	25	16	18	68
28	19	20	29	28	34	30	5,700	61	19	14	18	37
29	19	23	30	26	-------	30	6,130	55	19	11	17	26
30	19	24	32	19	-------	37	4,800	52	22	12	17	27
31	20	-------	29	26	-------	37	-------	42	-------	14	17	------

Monthly discharge of Trinity River at Dallas, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	22	16	18.7	1,150
November	92	18	26.5	1,580
December	68	22	32.5	2,000
January	96	19	32.0	1,970
February	78	24	33.0	1,830
March	37	27	30.1	1,850
April	6,190	18	944	56,200
May	17,200	42	3,250	200,000
June	272	15	50.1	2,980
July	142	11	33.1	2,030
August	22	8.2	15.7	964
September	259	14	42.0	2,500
The year	17,200	8.2	380	275,000

TRINITY RIVER NEAR ROSSER, TEX.

LOCATION.—At Lock No. 7, a quarter of a mile above Texas Midland Railroad bridge, a quarter of a mile below mouth of East Fork of Trinity River, and 2½ miles from Rosser, Kaufman County.

DRAINAGE AREA.—8,060 square miles (measured on topographic maps, United States Army progressive military maps, and base map of Texas).

RECORDS AVAILABLE.—July 25, 1924, to September 30, 1925, when station was discontinued.

GAGE.—Vertical staff on right bank near locks; read by A. C. McSpadden.

DISCHARGE MEASUREMENTS.—Made from railroad bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of solid rock, gravel, and sand; shifts. Channel straight for 200 feet above and below station. One channel at all stages. Banks are of earth and clay, wooded, high, and subject to overflow.

EXTREMES OF STAGE.—Maximum stage recorded during year, 27.3 feet at noon May 13; minimum stage, 0.54 foot during several periods.

1924–1925: Same as given above.

DIVERSIONS.—None of consequence.

REGULATION.—None.

ACCURACY.—Gage read to hundredths twice daily. Daily discharge not determined.

Discharge measurements of Trinity River near Rosser, Tex., during the period October 1, 1924, to October 18, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 11	0.64	64.7	Sept. 28	0.84	127
Aug. 7	.56	36.4	Oct. 18	14.54	4,140

Daily gage height, in feet, of Trinity River near Rosser, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.56	0.54	0.56	0.62	0.60	0.83	0.64	19.20	0.83	0.58	0.62	0.54
2	.56	.54	.58	.62	.60	.75	.62	15.40	.79	.58	.62	.55
3	.56	.54	.58	.60	.60	.68	.62	8.65	.75	.56	.61	.56
4	.54	.54	.60	.58	.60	.68	.60	5.00	.74	.58	.60	.56
5	.55	.54	.60	.58	.60	.66	.60	2.40	.73	.58	.59	.56
6	.56	.54	.60	.58	.60	.64	.60	1.95	.71	.59	.58	.56
7	.54	.54	.60	.58	.62	.64	.60	5.20	.70	1.03	.56	.56
8	.54	.64	.60	.58	.62	.64	.60	18.10	.68	.93	.56	.56
9	.54	.77	.62	.58	.62	.64	5.00	22.60	1.74	.89	.56	.56
10	.54	.92	.62	.61	.62	.64	1.75	24.40	2.36	.81	.56	.56
11	.54	.67	.62	.62	.62	.64	.72	24.70	1.24	.68	.56	.56
12	.56	.60	.62	.65	.60	.62	.64	25.60	1.20	.63	.56	.58
13	.56	.72	.62	.65	.60	.62	.62	27.15	1.18	.59	.56	.58
14	.54	.63	.62	.64	.60	.60	.62	26.55	1.02	.56	.56	.58
15	.54	.60	.61	.63	.60	.60	.64	25.15	.90	.56	.56	.58
16	.54	.56	.59	.62	.60	.60	.66	21.60	.85	.61	.56	------
17	.54	.56	.58	.63	.60	.60	.63	16.80	.81	.64	.56	------
18	.54	.56	.61	.67	.60	.58	.60	13.80	.70	.64	.55	------
19	.54	.56	.64	.82	.60	.58	.60	10.60	.69	.63	.54	------
20	.54	.61	.61	.81	.60	.58	.58	7.40	.68	.61	.54	------
21	.54	.62	.62	.72	.60	.60	.58	4.55	.65	.58	.54	------
22	.54	.61	.60	.78	.67	.61	.58	2.80	.61	.58	.56	.70
23	.54	.60	.62	.73	1.00	.62	.57	1.76	.57	.57	.56	.65
24	.54	.60	.64	.70	.95	.62	.55	1.28	.56	.56	.54	.65
25	.54	.60	.67	.68	.70	.61	.54	1.08	.56	.56	.54	1.25
26	.54	.60	.68	.66	.84	.60	3.20	1.00	.58	.56	.55	1.16
27	.54	.60	.66	.66	.90	.58	14.80	1.00	.68	.54	.57	1.15
28	.54	.57	.66	.64	.90	.58	17.55	1.00	.71	.54	.57	.79
29	.54	.56	.65	.64	-------	.58	18.60	1.00	.67	.65	.56	.76
30	.54	.56	.64	.63	-------	.62	19.20	.92	.63	.66	.54	.68
31	.54	-------	.62	.60	-------	.67	-------	.85	-------	.63	.54	------

NOTE.—No record Sept. 16–21; not much change in stage during this time.

TRINITY RIVER NEAR OAKWOOD, TEX.

LOCATION.—At International-Great Northern Railroad bridge, 4 miles northeast of Oakwood, Anderson County, and 5 miles below mouth of Keechi Creek.

DRAINAGE AREA.—12,800 square miles (measured on United States Army progressive military maps and base map of Texas).

RECORDS AVAILABLE.—October 1, 1923, to September 30, 1925. Records of stage have been obtained by United States Weather Bureau since September 1, 1904.

GAGE.—Chain gage attached to upstream side of railway bridge; read by George Ellis or C. A. Miller.

DISCHARGE MEASUREMENTS.—Made from railway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand, mud, and gravel. Channel straight for 400 feet above and half a mile below gage. Right bank of earth and not subject to overflow; left bank of earth, wooded, and begins to overflow at a stage of 32 feet. Control is three-fourths mile below gage; shifts. Channel above and below bridge is affected by log jams owing to sawmill operation.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 32.0 feet May 21 and 22 (discharge, 13,000 second-feet); minimum stage not determined but probably occurred during later part of August.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined above 40 second-feet. Gage read to tenths once daily. Daily discharge determined by applying daily gage height to rating table; shifting-control method used December 10 to April 29 and July 18 to September 30. Records fair.

COOPERATION.—Gage-height record furnished by United States Weather Bureau.

Discharge measurements of Trinity River near Oakwood, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 17	3.86	78.7	May 19	31.32	12,400	Aug. 21	3.31	43.4
Mar. 4	6.24	370	July 9	3.66	69.3	Sept. 30	5.05	209

Daily discharge, in second-feet, of Trinity River near Oakwood, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		28	98	198	251	708	128	5,690	265	80	62	42
2		35	98	224	224	644	128	6,740	198	359	62	42
3		58	120	237	211	411	137	7,810	198	128	62	42
4		58	98	237	165	376	137	7,290	186	128	58	42
5		54	105	237	165	411	137	7,130	175	105	58	42
6		50	98	224	155	326	137	3,240	146	86	155	42
7		50	98	211	165	503	198	2,240	137	75	105	42
8		54	198	175	146	447	175	1,310	128	66	98	42
9		50	447	175	146	411	146	686	128	58	92	42
10		50	265	237	175	186	137	2,040	112	54	86	42
11		54	224	237	165	165	137	5,860	112	46	86	42
12		75	198	237	165	165	310	7,690	137	42	80	70
13		86	175	224	165	165	890	8,860	146	42	80	62
14		112	165	224	165	165	866	9,680	165	42	80	280
15		128	155	310	155	137	447	10,100	211	50	80	295
16	85	112	137	342	165	146	280	10,700	224	54	62	582
17		98	237	376	165	146	155	11,200	237	54	58	582
18		98	224	280	175	146	137	11,800	280	58	50	310
19		251	211	251	211	146	128	12,200	237	58	46	146
20		211	224	224	186	146	112	12,500	155	58	42	75
21		198	211	310	175	146	112	13,000	128	58	35	75
22		186	211	295	175	146	112	13,000	112	62	35	70
23		137	224	280	186	146	92	8,920	105	62	42	70
24		112	137	265	186	146	92	2,690	105	62	28	128
25		105	120	265	186	146	92	1,140	98	58	35	198
26		105	112	265	295	146	80	623	98	58	46	155
27		105	105	251	686	146	80	602	98	58	54	137
28		137	105	237	820	146	75	522	80	62	42	120
29		112	105	211	-------	137	80	411	75	58	42	120
30		105	112	186	-------	128	2,610	376	66	58	42	198
31		-------	198	186	-------	128	-------	359	-------	62	42	------

NOTE.—Braced figure gives estimated mean discharge for period indicated.

Monthly discharge of Trinity River near Oakwood, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	----------	----------	85	5,230
November	251	28	100	5,980
December	447	98	168	10,300
January	376	175	246	15,100
February	820	146	222	12,400
March	708	128	242	14,900
April	2,610	75	278	16,600
May	13,000	359	6,010	370,000
June	280	66	151	9,010
July	359	42	74.2	4,560
August	155	28	62.7	3,860
September	582	42	138	8,200
The year	13,000	----------	657	476,000

TRINITY RIVER AT RIVERSIDE, TEX.

LOCATION.—At International-Great Northern Railroad bridge at Riverside, Walker County, 2 miles below mouth of Harmon Creek.

DRAINAGE AREA.—15,500 square miles (measured on topographic maps, United States Army progressive military maps, and base map of Texas).

RECORDS AVAILABLE.—January 1, 1903, to December 31, 1906; October 1, 1923, to September 30, 1925. Records of stage by United States Weather Bureau since July 1, 1903.

GAGE.—Chain gage attached to downstream side of railway bridge near center of drawbridge.

DISCHARGE MEASUREMENTS.—Made by wading, from highway bridge, or railway bridge.

CHANNEL AND CONTROL.—Channel straight for 400 feet above and 1,000 feet below gage. Bed composed of sand and clay; fairly permanent. Right bank not subject to overflow; left bank subject to overflow at extremely high stages. Control for low stages is rock and gravel riffle, 500 feet below gage; for high stages it is probably the lock and dam 10 miles below gage. Locks not used.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 16.6 feet May 24 (discharge, 12,800 second-feet); minimum discharge, 70 second-feet August 20–26 and September 8–13.

1903–1906; 1224–25: Maximum stage recorded, 36.7 feet at 7 a. m. April 28, 1924 (discharge, 58,200 second-feet, determined from extension of rating curve and subject to considerable error); minimum stage, that of August 20–26 and September 8–13, 1925.

DIVERSIONS.—None of importance.

Regulation.—None.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined above 100 second-feet. Gage read to tenths once daily. Daily discharge determined by shifting-control method. Records fair.

COOPERATION.—Gage-height records furnished by United States Weather Bureau.

Discharge measurements of Trinity River at Riverside, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 26	0.59	136	June 17	1.92	517
Feb. 6	1.49	350	July 29	.38	96
Mar. 27	1.04	314			

Daily discharge, in second-feet, of Trinity River at Riverside, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	300	130	250	275	410	615	300	210	655	130	85	85
2	250	130	250	300	410	785	300	210	575	130	85	85
3	250	130	250	380	380	875	300	4,820	505	115	85	85
4	250	130	230	380	350	785	300	6,440	470	150	85	85
5	230	130	250	350	350	575	300	7,200	410	325	85	85
6	230	130	230	350	350	540	300	7,290	410	275	85	85
7	230	130	230	350	325	505	300	6,520	380	230	85	100
8	210	130	230	350	325	505	300	4,650	350	210	150	70
9	210	130	250	410	325	470	350	2,680	325	190	275	70
10	190	130	300	440	325	440	350	1,600	300	150	230	70
11	170	130	410	575	325	410	380	1,130	300	150	170	70
12	170	130	470	470	325	380	350	1,080	275	130	150	70
13	170	130	410	470	325	380	350	4,820	275	150	115	70
14	150	130	350	470	325	380	350	7,120	250	130	85	100
15	150	130	325	470	325	380	350	9,050	250	130	85	85
16	150	150	300	575	325	380	875	9,850	230	230	85	85
17	130	150	275	695	325	380	875	10,300	505	230	85	85
18	130	190	275	2,680	325	380	695	10,600	540	190	85	170
19	130	210	275	975	300	380	505	11,000	470	170	85	410
20	130	210	275	785	325	350	410	11,400	440	170	70	505
21	130	250	250	695	325	350	350	12,000	380	130	70	410
22	130	230	230	615	325	350	300	12,300	350	115	70	300
23	130	300	230	540	325	350	300	12,700	325	100	70	210
24	130	380	230	470	325	325	275	12,800	300	100	70	170
25	130	325	210	505	325	325	250	10,900	250	100	70	150
26	130	275	210	540	350	325	230	6,440	230	100	70	115
27	130	275	210	505	380	325	230	2,760	230	100	85	100
28	130	250	210	505	410	325	210	1,420	210	85	85	100
29	130	250	230	470	-------	325	190	1,020	190	85	85	190
30	130	250	325	440	-------	300	210	875	170	85	85	210
31	130	-------	325	440	-------	300	-------	695	-------	85	85	------

Monthly discharge of Trinity River at Riverside, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	300	130	170	10,400
November	380	130	188	11,200
December	470	210	274	16,800
January	2,680	275	564	34,700
February	410	300	341	18,900
March	875	300	435	26,800
April	875	190	359	21,400
May	12,800	210	6,190	381,000
June	655	170	352	20,900
July	325	85	151	9,260
August	275	70	100	6,170
September	505	70	147	8,780
The year	12,800	70	782	566,000

TRINITY RIVER AT ROMAYOR, TEX.

LOCATION.—At Gulf, Colorado & Santa Fe Railway bridge, one-fourth mile west of railway station at Romayor, Liberty County, and 2½ miles below mouth of Big Creek.

DRAINAGE AREA.—17,200 square miles (measured on topographic maps, United States Army progressive military maps, and base map of Texas).

RECORDS AVAILABLE.—May 4, 1924, to September 30, 1925. Records of stage by United States Engineer Corps from July 28, 1915, to February 14, 1918.

GAGE.—Chain gage on downstream side of railway bridge; read by E. O. Elliot or L. I. Hart. Gage readings are from base of rail to water surface.

DISCHARGE MEASUREMENTS.—Made from upstream side of railway bridge.

CHANNEL AND CONTROL.—Bed composed of sand; shifts. Channel straight for 500 feet above and 200 feet below gage. Left bank is wooded and not subject to overflow; right bank is wooded and subject to overflow for a distance of 3 miles. Control is indefinite; probably shifts.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, −37.54 feet in afternoon of May 24 and morning of May 25 (discharge, 11,800 second-feet); minimum discharge, 132 second-feet August 21 and 22.

1924–1925: Maximum stage recorded, −23.20 feet at 7 a. m. June 4, 1924 (discharge, 39,700 second-feet, determined from extension of rating curve); minimum stage occurred in 1925.

DIVERSIONS.—None of consequence.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 22,000 second-feet. Gage read to hundredths once daily October 1 to May 15 and to hundredths twice daily May 16 to September 30. Daily discharge determined by applying mean daily gage height to rating table except as noted in footnote to daily-discharge table. Records fair.

Discharge measurements of Trinity River at Romayor, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 27	−52.71	276	May 8	−43.02	5,810	June 19	−52.52	341
Feb. 4	−51.29	659	May 9	−44.40	4,510	July 29	−53.23	148

Daily discharge, in second-feet, of Trinity River at Romayor, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.
1	415	270		515	690	540	415	415	1,120	270	148	155
2	365	250		540	660	630	390	415	825	270	155	155
3	340	270		540	660	720	390	440	720	270	155	148
4	340	250		515	630	790	390	720	515	250	155	148
5	365	250		540	660	755	415	2,060	540	210	140	140
6	440	240		570	660	720	415	5,810	515	210	140	140
7	415	250		570	660	720	415	6,710	490	210	140	140
8	390	240		600	825	630	415	5,810	490	270	140	140
9	340	240		630	825	630	415	4,670	490	315	140	140
10	340	230	480	690	825	600	415	4,030	490	290	140	148
11	340	220		825	755	540	415	3,510	440	290	140	148
12	328	230		895	660	515	415	2,950	415	250	162	148
13	315	230		930	600	515	415	6,530	340	220	270	148
14	365	230		860	540	600	415	2,540	315	200	230	148
15	340	240		790	540	490	415	5,630	290	170	155	155
16	315			1,340	540	465	415	7,510	290	190	140	155
17	315			2,360	540	465	415	8,820	270	315	148	155
18	340			4,270	515	465	415	9,300	270	270	140	155
19	378			5,450	515	465	440	9,540	290	270	140	155
20	415			4,430	465	465	415	9,900	440	250	140	155
21	365		270	2,810	465	465	440	10,000	490	220	132	240
22	315		490	1,740	465	415	440	10,600	540	220	132	415
23	390	480	465	1,340	490	415	415	11,100	515	210	162	415
24	340		440	1,080	490	440	415	11,700	440	190	200	365
25	340		415	965	490	415	415	11,600	440	180	190	340
26	305		415	860	490	415	415	10,300	440	170	170	340
27	270		415	860	490	415	415	7,410	340	162	155	390
28	270		390	790	490	415	415	4,110	315	162	180	250
29	290		415	790	-------	415	415	2,300	290	170	190	210
30	270		415	720	-------	415	415	1,740	290	162	180	210
31	270	-------	440	720	-------	415	-------	1,540	-------	155	155	------

NOTE.—Braced figures give estimated mean discharge for periods indicated. Record incomplete and discharge partly estimated Jan. 27 to Feb. 2, Feb. 5–9, Apr. 26 to May 7, and May 10–15. Discharge interpolated Oct. 12, 19, and 26.

Monthly discharge of Trinity River at Romayor, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	440	270	343	21,100
November	----------	220	361	21,500
December	----------	----------	457	28,100
January	5,450	515	1,310	80,400
February	825	465	594	33,000
March	790	415	528	32,400
April	440	390	415	24,700
May	11,700	415	5,800	356,000
June	1,120	270	455	27,100
July	315	155	226	13,900
August	270	132	160	9,850
September	415	140	205	12,200
The year	11,700	132	913	660,000

CLEAR FORK OF TRINITY RIVER AT FORT WORTH, TEX.

LOCATION.—At Texas & Pacific Railway bridge, 100 feet above highway bridge on the Fort Worth-Granbury road, 200 feet below upper Texas & Pacific Railway dam, 3 miles above confluence with West Fork of Trinity River, and 3 miles southwest of Tarrant County courthouse in Fort Worth.

DRAINAGE AREA.—522 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—March 8, 1924, to September 30, 1925.

GAGE.—Au continuous water-stage recorder attached to downstream side of left pier of Texas & Pacific Railway bridge. Prior to June 22 staff gage on right bank, 250 feet upstream from present location and set to different datum was used.

DISCHARGE MEASUREMENTS.—Made from highway bridge, from railroad bridge, or by wading.

CHANNEL AND CONTROL.—Channel straight for 300 feet above and below highway bridge. Bed at highway bridge composed of silt and is fairly permanent; bed at railroad bridge composed mostly of rock. Banks covered with small amount of brush, subject to overflow at extremely high stages. Control for all but extremely high stages is concrete dam 750 feet below gage; permanent. Railroad embankment below will probably be control for high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.70 feet at 7 a. m. May 7 (discharge, 7,400 second-feet); no flow October 1 to January 8 and June 15 to September 30.

1924–1925: Maximum stage recorded that of May 7, 1925; no flow for several periods.

DIVERSIONS.—Practically all of low flow is diverted 800 feet below gage by Texas & Pacific Railway; amount not known.

REGULATION.—Low flow regulated by dam just above gage.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined below 2,000 second-feet and fairly well defined above. Gage read to hundredths twice daily from October 1 to June 22 and operation of water-stage recorder satisfactory thereafter. Daily discharge determined by applying mean daily gage height to rating table. Shifting-control method used January 9 to February 10. Records good.

Discharge measurements of Clear Fork of Trinity River at Fort Worth, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 23	0.31	6.2	May 8	[c] 2.30	1,360
Feb. 10	.28	6.9	Sept. 4		0
May 7	[a] 5.16	[b] 6,180			

[a] Gage height by datum after June 22, 8.33 feet.
[b] Surface velocities observed for part of measurement and coefficient used to reduce to mean velocities.
[c] Gage height by datum after June 22, 4.50 feet.

Daily discharge, in second-feet, of Clear Fork of Trinity River at Fort Worth, Tex., for the year ending September 30, 1925

Day	Jan.	Feb.	Mar.	Apr.	May	June	Day	Jan.	Feb.	Mar.	Apr.	May	June
1	------	6.3	7.5	9.0	44	4.3	16	4.3	5.2	6.3	5.2	44	------
2	------	4.3	7.5	9.0	34	3.4	17	10	5.2	6.3	3.4	525	------
3	------	4.3	7.5	7.5	30	2.6	18	12	5.2	6.3	3.4	110	------
4	------	2.6	6.3	6.3	30	1.8	19	12	5.2	6.3	1.8	48	------
5	------	1.2	5.2	7.5	30	1.8	20	12	5.2	6.3	}	37	------
6	------	.4	5.2	7.5	40	1.8	21	9.0	7.5	6.3	}	30	------
7	------	.7	5.2	7.5	6 720	.7	22	6.3	12	7.5	1.0	19	------
8	------	4.3	5.2	7.5	1,710	1.8	23	6.3	10	7.5	}	19	------
9	0.4	4.3	5.2	6.3	810	44	24	6.3	7.5	7.5	}	14	------
10	4.3	6.3	5.2	5.2	4,820	7.5	25	6.3	7.5	7.5	}	14	------
11	2.6	7.5	5.2	5.2	384	1.8	26	6.3	7.5	7.5	422	10	------
12	2.6	7.5	5.2	5.2	130	.7	27	6.3	7.5	7.5	1,370	10	------
13	2.6	5.2	7.5	5.2	90	.7	28	6.3	7.5	7.5	362	10	------
14	2.6	5.2	7.5	5.2	65	.4	29	6.3	------	7.5	94	9.0	------
15	4.3	5.2	6.3	5.2	51	------	30	6.3	------	7.5	58	6.4	------
							31	6.3	------	7.5	------	7.5	------

NOTE.—Braced figure gives estimated mean discharge for period indicated. No flow Oct. 1 to Jan. 8 and June 15 to Sept. 30.

Monthly discharge of Clear Fork of Trinity River at Fort Worth, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
January	12	0	4.57	281
February	12	.4	5.65	314
March	7.5	5.2	6.60	406
April	1,370	----------	80.8	4,810
May	6,720	6.4	513	31,500
June	44	0	2.44	145
The year	6,720	0	51.8	37,500

NOTE.—No flow October to December and July to September.

MOUNTAIN CREEK NEAR GRAND PRAIRIE, TEX.

LOCATION.—At Grand Prairie-Duncanville highway bridge, 3½ miles southeast of Grand Prairie, Dallas County, and 5½ miles above confluence with West Fork of Trinity River.

DRAINAGE AREA.—267 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—March 5 to September 30, 1925.

GAGE.—Stevens continuous water-stage recorder at upstream side of bridge on left bank; inspected by Geological Survey engineers.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for 100 feet above and below gage. Bed of silt. Banks of earth; covered with timber; probably shifts; subject to overflow at high stages. One channel at low and intermediate stages and several at high stages. Levee 20 feet high 400 feet to right of bridge. Low-water control is mud bar three-fourths of a mile below gage; fairly permanent; high-stage control is stretch of creek and timber on banks.

EXTREMES OF DISCHARGE.—Maximum stage during period from water-stage recorder, 17.83 feet at 6 p. m. May 9 (discharge, about 3,300 second-feet); no flow March 5 to April 26, May 26 to September 12, and September 22–23.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve fairly well defined below 200 second-feet and poorly defined between 200 and 3,000 second-feet. Operation of water-stage recorder satisfactory. Daily discharge determined by applying to rating table mean daily gage height obtained from recorder graph, averaging discharge for intervals of a day on days of considerable fluctuation, except at extremely low stages when shifting-control method was used. Records poor.

Discharge measurements of Mountain Creek near Grand Prairie, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 9	----------	0	Aug. 14	----------	0
Apr. 27	9.40	198	Sept. 5	----------	0
May 9	17.23	• 2,870			

• Partly by float and estimate.

Daily discharge, in second-feet, of Mountain Creek near Grand Prairie, Tex., for the year ending September 30, 1925

Day	Apr.	May	Sept.	Day	Apr.	May	Sept.	Day	Apr.	May	Sept.
1		5.4		11		92		21		1.6	.1
2		2.2		12		29		22		.9	
3		1.1		13		21	23	23		.8	
4		.8		14		16	10	24		.3	32
5		.1		15		11	3.4	25		.1	244
6		.1		16		8.5	1.7	26			37
7		2,170		17		6.3	1.0	27	114		9.0
8		1,940		18		4.6	.6	28	97		2.5
9		2,070		19		2.7	.4	29	27		1.4
10		1,500		20		2.0	.2	30	9.6		1.0
								31			

NOTE.—No flow Mar. 5 to Apr. 26, May 26 to Sept. 12, and Sept. 22-23.

Monthly discharge of Mountain Creek near Grand Prairie, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
March 5-31	0	0	0	0
April	114	0	8.25	491
May	2,170	0	254	15,600
June	0	0	0	0
July	0	0	0	0
August	0	0	0	0
September	244	0	12.2	729
The period				16,800

ELM FORK OF TRINITY RIVER NEAR DENTON, TEX.

LOCATION.—At Texas & Pacific Railway bridge, 1 mile east of Mingo, 1 mile below mouth of Clear Creek, and 6 miles northeast of Denton, Denton County.

DRAINAGE AREA.—1,100 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—November 20, 1923, to September 30, 1925.

GAGE.—Chain gage attached to upstream side of bridge; read by Hughlon King.

DISCHARGE MEASUREMENTS.—Made from highway bridge, a quarter of a mile below gage, from railway bridge, or by wading.

CHANNEL AND CONTROL.—Channel straight for 50 feet above and 400 feet below gage. Bed of earth; permanent. Banks at gage are subject to overflow and at highway bridge below are subject to overflow at a stage of about 25 feet. At railway bridge, right bank is not subject to overflow; left bank is overflowed for a quarter of a mile at a stage of 29 feet. Control for low stages is gravel riffle 600 feet below gage, and is permanent; high-stage control indefinite.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 27.96 feet at 4.45 p. m. April 27 (discharge, 7,380 second-feet); no flow for several periods.

1924–1925: Maximum stage recorded, 29.05 feet at 9.05 a. m. March 20, 1924 (discharge, 8,330 second-feet); no flow for several periods.

DIVERSIONS.—None of importance. The railroad diverts 100,000 gallons a day just above gage.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 1,500 second-feet and fairly well defined above. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records good.

The following discharge measurements were made:
October 1, 1924: Gage height, 0.72 foot; discharge, 0.86 second-foot.
January 12, 1925: Gage height, 1.00 foot; discharge, 6.39 second-feet.
August 3, 1925: Discharge, 0 second-foot.

Daily discharge, in second-feet, of Elm Fork of Trinity River near Denton, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.5	0	1.6	4.0	4.3	4.2	3.8	69	3.7	0.6	0	46
2	1.3	0	1.6	4.4	4.3	3.6	4.8	48	3.6	.2	0	44
3	1.2	0	1.7	5.2	4.3	3.2	5.2	36	2.8	0	0	41
4	1.1	0	4.9	4.4	4.4	3.2	4.9	26	2.2	0	0	38
5	1.0	.3	2.3	4.2	4.6	3.0	3.7	20	1.9	0	0	36
6	1.3	0	3.7	4.0	4.6	3.0	2.8	24	1.7	0	0	32
7	1.1	0	5.2	4.4	4.6	3.1	2.8	344	1.6	11	0	30
8	1.1	.3	3.4	4.3	4.9	3.4	2.8	246	1.5	6.7	0	28
9	1.1	.4	2.5	4.3	4.9	3.7	2.5	4,770	1.5	3.8	0	26
10	1.0	.7	2.3	4.8	4.3	3.7	2.4	2,380	30	1.0	0	24
11	46	.7	2.3	5.9	3.7	3.7	2.4	617	25	.4	0	24
12	6.9	.4	2.3	5.7	3.4	3.6	4.0	104	4.8	0	0	21
13	2.8	.9	2.2	5.4	3.7	3.8	3.1	236	3.2	0	0	20
14	1.7	.9	2.3	5.4	3.4	3.7	2.3	795	2.4	0	147	19
15	1.2	1.0	2.3	5.4	3.4	3.4	2.1	356	1.7	0	12	2,180
16	1.0	1.0	2.2	5.0	3.2	3.6	1.9	97	1.0	0	2.1	761
17	.9	1.2	2.3	4.9	3.2	3.6	1.8	51	.7	0	1.1	78
18	.9	.9	2.3	6.9	3.4	3.6	1.9	44	.6	0	.4	19
19	.7	1.0	198	9.2	3.7	3.2	2.0	34	.2	0	0	8.0
20	.6	1.4	111	9.5	4.0	3.0	1.7	30	0	0	0	4.0
21	.6	1.4	97	12	5.0	3.1	1.5	24	.3	0	61	2.1
22	0	1.4	75	9.2	16	3.2	1.1	18	0	0	22	1.5
23	.3	1.4	15	8.2	22	3.6	.8	14	0	0	17	1.2
24	0	1.0	4.4	6.7	11	3.4	.6	11	0	0	6.1	1.3
25	.6	1.3	3.7	6.1	9.8	3.7	6.7	8.5	0	0	41	1.0
26	.6	1.4	3.1	5.7	6.7	3.6	1,080	7.3	22	0	54	1.4
27	.6	1.4	3.1	4.8	5.4	3.6	5,980	6.1	5.4	0	56	2.6
28	.4	1.4	3.1	4.8	4.6	3.6	3,250	6.7	2.1	0	56	2.8
29	.3	1.4	3.2	4.4	-------	4.0	863	5.7	1.5	0	54	1.7
30	.3	1.7	3.6	4.4	-------	4.0	118	4.9	.8	0	51	2.3
31	0	-------	4.0	4.4	-------	4.2	-------	4.6	-------	0	48	-------

Monthly discharge of Elm Fork of Trinity River near Denton, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	46	0	2.52	155
November	1.7	0	.83	49
December	198	1.6	18.4	1,130
January	12	4.0	5.74	353
February	22	3.2	5.74	319
March	4.2	3.0	3.53	217
April	5,980	.6	379	22,500
May	4,770	4.6	337	20,700
June	30	0	4.07	242
July	11	0	.76	47
August	147	0	20.3	1,250
September	2,180	1.0	117	6,940
The year	5,980	0	74.5	53,900

ELM FORK OF TRINITY RIVER NEAR CARROLLTON, TEX.

LOCATION.—At Carrollton Dam, 40 feet below highway bridge on Dallas-Denton road, 1 mile below confluence with Denton Creek, and 1½ miles west of Carrollton, Dallas County.

DRAINAGE AREA.—2,540 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—November 1, 1923, to September 30, 1925.

GAGE.—Vertical staffs attached to left wing wall of dam and to second pile bent from left concrete pier of bridge; read by J. L. Coleman.

DISCHARGE MEASUREMENTS.—Made from highway bridge, by wading, from boat, or from St. Louis Southwestern Railway bridge, 1 mile below.

CHANNEL AND CONTROL.—Channel straight for 150 feet above and below gage. Bed and banks are of loam and clean up to a stage of 5 feet, where there are trees and brush on banks. Left bank is subject to overflow for 1 mile at a stage of 8 feet. Control is a concrete dam up to a stage of about 8 feet; permanent. Valves pass water through dam at extremely low stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.80 feet in morning May 10 (discharge, 12,200 second-feet); no flow October 7–11, October 25 to November 20, January 27 to April 24, June 19 to August 13, and August 31, to September 16. (See "Accuracy.")

1924–25: Maximum stage recorded, 12.75 feet during morning of December 14, 1923 (discharge not determined); no flow during several periods.

DIVERSIONS.—None.

REGULATION.—Low flow completely regulated by Garza Dam, 20 miles above, and flow at high stages partly regulated by same.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 2,000 second-feet and poorly defined above. Discharge represents flow over dam only. Prior to August 9, during extremely low stages, valves in dam were leaking a small amount. Valves in dam were open from March 9 to April 24 and from September 1–15. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records fair.

The following discharge measurements were made:

January 14, 1925: Gage height, 0.17 foot; discharge, 4.29 second-feet.

August 8, 1925: Discharge, 0 second-foot.

September 4, 1925: Gage height, −1.30 feet; discharge, 0 second-foot.

Daily discharge, in second-feet, of Elm Fork of Trinity River near Carrollton, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Apr.	May	June	Aug.	Sept.
1	3.6	------	2.0	4.8	------	775	16.0	------	------
2	2.8	------	2.0	4.4	------	314	9.8	------	------
3	2.8	------	2.0	4.4	------	201	9.8	------	------
4	2.0	------	2.0	3.6	------	100	9.8	------	------
5	2.0	------	2.0	4.4	------	56	6.0	------	------
6	2.0	------	2.0	5.2	------	71	6.0	------	------
7	------	------	2.0	5.2	------	2,130	6.0	------	------
8	------	------	2.0	5.2	------	2,900	40	------	------
9	------	------	2.0	5.2	------	8,320	28	------	------
10	------	------	4.4	6.0	------	11,100	30	------	------
11	------	------	4.4	9.8	------	6,100	32	------	------
12	38	------	4.4	9.8	------	1,410	38	------	------
13	25	------	4.4	6.0	------	546	56	------	------
14	9.8	------	4.4	5.2	------	414	23	68	------
15	6.0	------	4.4	5.2	------	485	17	135	------

Daily discharge, in second-feet, of Elm Fork of Trinity River near Carrollton, Tex., for the year ending September 30, 1925—Continued

Day	Oct.	Nov.	Dec.	Jan.	Apr.	May	June	Aug.	Sept.
16	3.6	-------	4.4	5.2	-------	485	17	25	-------
17	3.6	-------	4.4	5.6	-------	268	5.2	6.0	707
18	3.6	-------	5.2	16	-------	192	2.4	4.8	188
19	2.0	-------	117	17	-------	139	-------	2.8	87
20	2.0	-------	80	12	-------	87	-------	1.8	56
21	2.0	2.0	80	7.9	-------	59	-------	1.4	45
22	2.0	2.0	50	6.0	-------	56	-------	1.2	40
23	2.0	2.0	50	6.0	-------	56	-------	25	38
24	2.0	2.0	50	6.0	-------	53	-------	5.6	50
25	-------	2.0	50	6.0	577	42	-------	3.2	40
26	-------	2.0	38	2.0	3,980	28	-------	2.4	38
27	-------	2.0	25	-------	3,040	23	-------	2.0	32
28	-------	2.0	21	-------	4,680	17	-------	1.8	28
29	-------	2.0	21	-------	5,060	17	-------	1.4	21
30	-------	2.0	17	-------	2,760	17	-------	1.0	17
31	-------	-------	6.0	-------	-------	17	-------	-------	-------

NOTE.—No flow for periods for which no discharge is given. (See "Accuracy.")

Monthly discharge of Elm Fork of Trinity River near Carrollton, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	38	0.0	3.77	232
November	2.0	0	.67	40
December	117	2.0	21.4	1,320
January	17	0	5.62	345
February	0	0	0	0
March	0	0	0	0
April	5,060	0	670	39,900
May	11,100	17	1,180	72,400
June	56	0	11.7	698
July	0	0	0	0
August	135	0	9.30	572
September	707	0	46.2	2,750
The year	11,100	0	163	118,000

ELM FORK OF TRINITY RIVER NEAR DALLAS, TEX.

LOCATION.—At city of Dallas pumping plant and dam (known as Record Crossing plant), 2,800 feet above Rock Island Railroad bridge, 1.2 miles above confluence with West Fork, and 5 miles northwest of Dallas, Dallas County.

DRAINAGE AREA.—2,660 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—October 17, 1920, to September 30, 1925.

GAGE.—Vertical staff attached to pump house; read by W. J. Selby.

DISCHARGE MEASUREMENTS.—Made from Record Crossing highway bridge, 200 feet below gage, from Rock Island Railroad bridge half a mile below or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel; shifting. Control is concrete dam; permanent. Left bank is wooded and not subject to overflow, except at extremely high stages; right bank wooded and subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 16.0 feet at 4 p. m. May 10 (discharge not determined on account of backwater); no flow during several periods.

1920–1925: Maximum stage recorded, 20.20 feet at 10 a. m. April 27, 1922 (discharge not determined; backwater from Trinity River existed this day which affected gage height); no flow during several periods.

DIVERSIONS.—No diversions except for municipal use, the largest being at Record Crossing plant. The sum of all diversions is believed to be but a small percentage of the total run-off during years of ordinary flow.

REGULATION.—Flow partly regulated by reservoir of city of Dallas at Carrollton, and Garza Dam above Carrollton.

ACCURACY.—Stage-discharge relation probably permanent except during backwater periods. Rating curve well defined below 1,100 second-feet, poorly defined between 1,100 and 6,200 second-feet, and fairly well defined above. Gage read to hundredths twice daily and oftener during floods. Daily discharge determined by applying mean daily gage height to rating table, averaging discharge for intervals of a day on days of considerable fluctuation, except as noted in footnote to daily-discharge table. Records fair.

Station visited by Geological Survey engineers January 15, August 6, and September 4; no flow on these days.

Daily discharge, in second-feet, of Elm Fork of Trinity River near Dallas, Tex., for the year ending September 30, 1925

Day	Apr.	May	June	Sept.	Day	Apr.	May	June	Sept.
1		1,250	0.8		16		570		
2		406			17		330		9.7
3		222			18		192		290
4		85			19		152		96
5		55			20		92		42
6		34			21		52		42
7		2,970			22		45		17
8					23		34		14
9			140		24		50		34
10		5,300	25		25	1,240	21		18
11			25		26	4,080	14		12
12			10		27	2,970	10		8.3
13			45		28	3,560	8.3		6.1
14		480	14		29	4,160	3.8		4.4
15		422	.8		30	3,900	1.4		
					31		1.4		

NOTE.—Braced figure shows estimated mean discharge for period included. No flow Oct. 1 to Apr. 24, June 2-8, June 16 to Sept. 16, and Sept. 30.

Monthly discharge of Elm Fork of Trinity River near Dallas, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April	4,160	0	664	39,500
May		1.4	1,270	78,000
June	140	0	8.69	517
September	290	0	19.8	1,180
The year		0	166	119,000

NOTE.—No flow for months for which no records are shown.

DENTON CREEK NEAR ROANOKE, TEX.

LOCATION.—At highway bridge on Fort Worth-Denton highway, 3 miles north of Roanoke, Denton County, 13 miles south of Denton, and 15 miles above confluence with Elm Fork of Trinity River.

DRAINAGE AREA.—704 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—October 12, 1923, to September 30, 1925.

GAGE.—Chain gage attached to downstream truss of bridge; read by G. W. Patterson.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed of rock and gravel; fairly permanent. Channel straight for 150 feet above and below gage. One channel at all stages. Right bank is subject to overflow at extremely high stages. Left bank has gentle slope, is wooded for 50 feet and beyond this is covered with tall grass and weeds, and at a stage of 24 feet is overflowed for 450 feet. Low-water control is a rock and gravel bar, 75 feet below gage; probably permanent. High-stage control indefinite. Change in control probably occurs at about 6-foot gage height.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 17.1 feet at 8.20 a. m. May 9 (discharge, not determined); no flow during several periods.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation probably permanent. Rating curve well defined below 100 second-feet and poorly defined between 100 and 900 second-feet. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table or as noted in footnote to daily-discharge table. Records for stages above 4 feet poor; otherwise fair.

Station visited by Geological Survey engineers October 1, January 12, August 3, and September 4; no flow recorded.

Daily discharge, in second-feet, of Denton Creek near Roanoke, Tex., for the year ending September 30, 1925

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	------	0.1	0.2	1.3	2.2	2.1	76	0.5	0.1	------
2	------	.2	.2	1.4	2.1	2.2	22	.4	.1	------
3	------	.2	.2	1.6	1.8	1.8	20	.3	.1	------
4	0.1	.3	.2	1.3	1.8	1.8	9.0	.2	.1	------
5	.1	.2	.2	1.6	1.8	2.1	5.9	.2	24	------
6	8.2	.1	.2	1.6	1.9	2.2	56	.1	9.8	------
7	16	.2	.2	1.9	2.1	1.8	------	.1	8.2	------
8	16	.2	.2	2.2	1.9	1.6	549	.2	1.6	------
9	16	.1	.2	2.1	1.8	1.0	------	.2	.6	------
10	.1	.1	.2	2.1	2.1	.7	786	.2	.2	------
11	.1	.1	.2	1.8	2.1	.7	218	23	.1	------
12	.1	.2	.2	1.6	1.9	.6	92	16	.1	------
13	.1	.2	.2	1.8	2.1	.4	51	4.0	.1	------
14	.1	.2	.2	1.6	1.9	.6	33	1.3	.1	64
15	.1	.2	.2	1.6	1.9	.5	22	1.1	------	3.8
16	.1	.2	.2	1.6	1.9	.6	14	.8	.1	.8
17	.1	.3	.3	1.8	2.1	.6	10	.4	------	.4
18	.1	.2	.3	1.4	1.9	.5	7.6	.2	------	------
19	.1	.2	.2	1.6	2.1	.4	6.2	.1	------	.1
20	.2	.2	.2	2.1	2.1	.3	5.0	.1	------	------
21	.1	.2	.2	2.1	1.6	.2	4.0	.1	------	------
22	.1	.2	4.2	2.2	1.6	.1	3.1	.1	------	.1
23	.1	.2	3.3	2.6	1.9	.1	2.9	------	------	.5
24	.1	.2	2.1	3.1	2.1	.1	2.2	------	------	.7
25	.1	.2	1.9	3.6	1.9	.15	1.6	.1	------	.6
26	.1	.2	1.8	3.8	1.8	1,040	1.3	.1	------	.5
27	.1	.2	1.3	3.3	1.4	1,060	.7	.1	------	.3
28	.1	.2	1.4	2.9	1.6	380	.8	.1	------	.1
29	.1	.2	.8	------	2.2	656	1.0	.1	------	.1
30	.1	.2	1.0	------	2.1	380	.7	.1	------	.1
31	------	.3	1.3	------	1.9	------	.6	------	------	.1

NOTE.—Mean daily gage height, in feet, when discharge was beyond limits of rating curve, and when discharge was not determined as follows: May 7, 8.18; May 9, 11.40. No flow Oct. 1 to Nov. 3, June 23, 24, July 15, 17–31, Aug. 1–13, 18, 20, 21, and Sept. 1–30.

Monthly discharge of Denton Creek near Roanoke, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
November	16	0	1.95	116
December	.3	.1	.19	12
January	4.2	.2	.76	47
February	3.8	1.3	2.0	113
March	2.2	1.4	1.92	118
April	1,060	.1	118	7,050
June	23	0	1.67	100
July	24	0	1.28	79
August	64	0	2.33	143

NOTE.—No flow during October and September.

EAST FORK OF TRINITY RIVER NEAR ROCKWALL, TEX.

LOCATION.—At bridge on State highway No. 1 between Dallas and Rockwall, 3 miles southwest of Rockwall, Rockwall County, and 7 miles below mouth of Pilot Creek.

DRAINAGE AREA.—831 square miles (measured on topographic maps, base map of Texas, and United States Army progressive military maps).

RECORDS AVAILABLE.—November 9, 1923, to September 30, 1925.

GAGE.—Chain gage attached to downstream side of bridge; read by J. T. Collum.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel curves at, above, and below bridge. Bed of earth and fairly permanent. Right bank is of earth, covered with weeds and grass, and not subject to overflow; left bank of earth, covered with weeds and grass, and at gage height of about 12 feet will overflow for 1,000 feet to the levee. One channel at all stages. Control indefinite but believed to be fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 13.67 feet at 6.30 a. m. May 12 (discharge, 2,970 second-feet); no flow during several periods.

1924–1925: Maximum stage recorded, 15.40 feet from 9.30 to 10.35 a. m. December 15, 1923, and at 6.15 a. m. May 31, 1924 (discharge, 7,390 second-feet); no flow for several periods.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records good.

The following discharge measurements were made:

January 16, 1925: Discharge, 0 second-foot.

June 3, 1925: Gage height, 1.46 feet; discharge, 10.8 second-feet.

August 5, 1925: Discharge, 0 second-foot.

Daily discharge, in second-feet, of East Fork of Trinity River near Rockwall, Tex., for the year ending September 30, 1925

Day	Jan.	Feb.	Mar.	Apr.	May	June	July
1		1.4	7.1		656	13	
2		1.3	4.8		93	10	
3		1.2	2.7		33	9.6	
4		1.0	2.4		21	8.7	
5		.3	2.4		14	6.8	
6		.1	2.3		28	4.9	
7			1.6		728	3.4	10
8			1.2		1,800	19	24
9			1.2		1,460	190	9.0
10			.8		1,800	262	2.9
11			.6	20	2,220	65	.4
12			.4	11	2,640	16	
13			.3	3.4	1,700	8.4	
14			.1	2.3	885	4.5	
15		2.7		.6	865	15	
16		2.9		4.8	800	16	
17		1.6		9.4	235	9.8	
18		.2		3.4	117	5.1	
19		.1		1.4	82	2.4	
20			.4	1.0	68	1.1	
21			.6	1.0	49	.6	
22	3.6	.7	.6	.1	35		
23	5.7	97	.2		26		
24	5.9	357	.2		26		
25	5.9	117		6.1	29		
26	3.6	38		208	117	13	
27	3.2	18		577	55	23	
28	2.6	11		929	23	7.6	
29	1.8			1,010	19	2.9	
30	1.8			1,220	17	.6	
31	1.7				14		

NOTE.—No flow Oct. 1 to Jan. 21, Feb. 7–14, 20, 21, Mar. 15–19, 25–31, Apr. 1–10, 23, 24, June 22–25, July 1–6, July 12 to Sept. 30.

Monthly discharge of East Fork of Trinity River near Rockwall, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
January	5.9	0	1.15	71
February	357	0	23.2	1,290
March	7.1	0	.96	59
April	1,220	0	134	7,950
May	2,640	14	537	33,000
June	262	0	23.9	1,420
July	24	0	1.49	92
The year	2,640	0	60.7	43,900

NOTE.—No flow during months for which no figures are given.

CHAMBERS CREEK NEAR EMHOUSE, TEX.

LOCATION.—At Ennis-Corsicana highway bridge, 200 feet below confluence with Waxahachie Creek and 4 miles north of Emhouse, Navarro County.

DRAINAGE AREA.—782 square miles (measured on topographic maps, base map of Texas, and progressive military maps of United States Army).

RECORDS AVAILABLE.—November 6, 1924, to July 18, 1925, when station was discontinued.

GAGE.—Chain gage attached to downstream handrail of bridge; read by Mary Roberts.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of earth. Channel straight for 200 feet above and 250 feet below gage. Banks of earth covered with brush; shifts; subject to overflow. Low-stage control is earth bar 250 feet below gage; shifts.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 5.40 feet at 8.10 a. m. May 11 (discharge, not determined); no flow for several periods.

DIVERSIONS.—Small diversions on Waxahachie Creek 10 miles above station; amount not known.

REGULATION.—Slight regulation at extremely low stages from dam on Waxahachie Creek.

ACCURACY.—Stage-discharge relation permanent. Rating curve fairly well defined below 3 second-feet and does not cover range of stage for year. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table except as noted in footnote to daily-discharge table. Records poor.

The following discharge measurements were made:

November 6, 1924: Gage height, 1.48; discharge, 0 second-foot.

December 3, 1924: Gage height, 2.33 feet; discharge estimated, 0.01 second-foot.

January 30, 1925: Gage height, 2.50 feet; discharge, 1.85 second-feet.

Daily discharge, in second-feet, of Chambers Creek near Emhouse, Tex., for the period November 6, 1924, to July 18, 1925

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
1		2.1		0.6	3.1		
2		1.8			3.4		
3				.4	3.4		4.9
4				1.2	2.6		3.1
5				.8	1.8		2.1
6				.8	1.8	4.4	1.2
7				1.8	1.8	3.4	3.8
8				3.1	1.2	2.6	
9				1.8	1.2		
10				1.6	1.2		
11		2.3		.6	1.2		
12				.6	1.2	3.8	
13				.6	1.2	3.1	
14				.6	1.2		
15				1.2	.6		
16				1.8	.6	3.1	
17				1.2	.6	1.6	4.9
18				1.2	.6	.6	3.4
19				1.2	.1	.4	4.4
20				1.8			4.9
21				1.8			3.8
22	0.4				.1		2.1
23					.1		1.2
24					.1		.6
25	4.9				.1		.4
26	2.6						
27	1.8					3.1	
28	2.1						
29	2.6						
30	2.1		3.1				
31			1.2		.1		

NOTE.—No record Oct. 1 to Nov. 5, Dec. 5-10, and Dec. 12 to Jan. 29. Gage heights in feet for days when stage was beyond limits of rating curve and discharge not determined as follows: Nov. 23, 2.82; Nov. 24, 2.75; Feb. 22, 2.82; Feb. 23, 3.45; Feb. 24, 3.25; Feb. 25, 3.00; Feb. 26, 2.85; Feb. 27, 3.05; Feb. 28, 3.10; Apr. 3, 2.75; Apr. 4, 2.95; Apr. 5, 2.72; Apr. 9, 4.17; Apr. 10, 3.15; Apr. 11, 2.85; Apr. 14, 2.85; Apr. 15, 2.90; Apr. 28, 3.75; Apr. 29, 3.38; Apr. 30, 3.70; May 1, 3.65; May 2, 2.90; May 8, 4.72; May 9, 4.70; May 10, 4.80; May 11, 5.15; May 12, 3.90; May 13, 3.15; May 14, 2.98; May 15, 2.82; May 16, 2.72. No flow Nov. 6-21; Dec. 3, 4, Feb. 2, Mar. 20, 21, 26-30, Apr. 1, 2, 20-25, May 26 to July 18.

Monthly discharge of Chambers Creek near Emhouse, Tex., for the period January 30 to July 18, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
January 30-31	3.1	1.2	2.15	8.5
February 1-21	3.1	0	1.18	49.0
March	3.4	0	.95	58.1
June	0	0	0	0
July 1-18	0	0	0	0

RICHLAND CREEK NEAR RICHLAND, TEX.

LOCATION.—At Houston & Texas Central Railroad bridge, 1 mile north of Richland, Navarro County, and 3 miles below mouth of Pinook Creek.

DRAINAGE AREA.—760 square miles (measured on topographic maps, base map of Texas, and progressive military maps of United States Army).

RECORDS AVAILABLE.—December 11, 1924, to February 11, 1925, when station was discontinued.

GAGE.—Chain gage attached to downstream guardrail of railroad bridge; read by Eddie Tigert.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of silt; shifts. Channel straight above and curved below gage. Banks composed of silt; shift and subject to overflow. Control for low stages is mud bar just below gage; at medium stage control probably is dam 1 mile below gage; high-stage control indefinite.

DIVERSIONS.—None of consequence.

REGULATION.—None.

ACCURACY.—No rating curve developed. Gage read to hundredths twice daily. Discharge was estimated from two measurements, daily gage readings, and study of rainfall as follows: December 11–31, 20.8 acre-feet; January 1–31, 30.7 acre-feet; February 1–11, 10.9 acre-feet.

The following discharge measurements were made:

December 11, 1924: Gage height, 1.67 feet; discharge, 0.40 second-foot.

January 29, 1925: Gage height, 1.19 feet; discharge, 0.48 second-foot.

SAN JACINTO RIVER BASIN

SAN JACINTO RIVER NEAR CONROE, TEX.

LOCATION.—At International-Great Northern Railroad bridge, 150 feet below highway bridge, 3 miles below mouth of Lake Creek, and 4 miles south of Conroe, Montgomery County.

DRAINAGE AREA.—832 square miles (measured on base map of Texas).

RECORDS AVAILABLE.—May 7, 1924, to September 30, 1925.

GAGE.—Staff gage attached to piling at eleventh bent from left abutment on downstream side of railway bridge; read by A. J. Lawrence, Jim Parker, or B. B. Beck. The zero of gage is base of rail.

DISCHARGE MEASUREMENTS.—Made from railway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand. One channel for low and medium stages and three for high stages. Channel straight for 150 feet above and 300 feet below gage. Banks covered with brush and trees and subject to overflow. Control is formed by riprap near bridge and by sand of bed of stream; shifts.

EXTREMES OF DISCHARGE.—Maximum stage during year not known but discharge probably about 440 second-feet January 18; minimum stage, −23.70 feet August 17, 19, 21, and 22 (discharge, 11 second-feet). All gage readings are minus as the zero of the gage is base of rail.

1924–1925: Maximum stage recorded, −5.20 feet at 5.30 p. m. May 30, 1924 (discharge, not determined); minimum stage occurred in August, 1925.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths once daily. Daily discharge determined by applying daily gage height to rating table except as noted in footnote to daily-discharge table. Records poor.

Discharge measurements of San Jacinto River near Conroe, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 26	−23.42	20.3	Feb. 5	−22.75	53.4	July 8	−23.60	13.2
Dec. 20	−22.95	36.7	June 17	−23.60	12.8	July 29	−23.66	11.2

Daily discharge, in second-feet, of San Jacinto River near Conroe, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	20	38	41		42	35	20	23	13	14	16
2	24	20	38	41		41	35	19	22	13	14	20
3	22	20	32	41	200	38	35	18	21	13	14	20
4	21	20	32	42		38	35	18	20	13	13	16
5	20	20	32	44	54	38	32	18	20	13	12	14
6	20	20	38	48	54	38	30	19	19	13	12	14
7	20	20	38	48	54	38	28	19	18	13	12	13
8	19	20	38	48	64	38	27	18	18	13	12	13
9	20	20	38	44	73	38	27	20	18	13	12	13
10	19	20	38	44	77	38	27	19	17	13	13	14
11	19	20	38	80	81	38	26	18	16	13	12	14
12	20	20	38	113	77	38	26	18	15	13	13	18
13	20	20	38	97	73	38	27	18	15	13	13	31
14	20	20	40	81	73	38	27	18	14	13	12	44
15	20	20	41	73	69	46	28	24	14	13	13	38
16	20	20	41	65	65	54	28	26	14	13	12	20
17	20	20	41	206	62	51	27	24	13	13	11	18
18	20	20	41		58	48	28	21	13	14	12	18
19	20	20	41		58	44	26	19	13	14	11	20
20	20	20	41		54	44	24	18	13	14	12	19
21	20	20	42		54	38	23	18	13	14	11	18
22	20	20	44		52	38	22	18	13	16	11	16
23	20	20	41		51	38	21	18	13	16	44	16
24	20	20	41		51	38	20	18	13	16	20	14
25	20	20	41	200	48	35	18	17	13	16	16	14
26	19	20	38		48	38	18	18	13	14	51	16
27	20	20	38		44	38	19	17	12	12	105	15
28	20	24	41		44	38	20	16	12	12	58	14
29	20	28	38		-------	36	19	16	12	12	32	14
30	20	33	38		-------	35	21	17	13	13	24	16
31	20	-------	113		-------	38	-------	20	-------	13	16	-------

NOTE.—Braced figures give estimated mean discharge for periods indicated. No record and discharge interpolated Oct. 5, 12, Nov. 2, 9, 16, 23, 30, Dec. 7, 14, 21, Jan. 4, Feb. 8, 15, 22, Mar. 1, 8, 15, 22, 29, Apr. 5, 12, 19, 26, May 3, 10, 17, 24, 31, June 7, 14, 21, 28, July 12.

Monthly discharge of San Jacinto River near Conroe, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	25	19	20.3	1,250
November	33	20	20.8	1,240
December	113	32	41.2	2,530
January	------	------	128	7,850
February	------	------	79.9	4,440
March	54	35	39.9	2,450
April	35	18	26.0	1,550
May	26	16	18.9	1,160
June	23	12	15.4	918
July	16	12	13.5	827
August	105	11	20.5	1,260
September	44	13	18.2	1,080
The year	------	11	36.7	26,600

BRAZOS RIVER BASIN

DOUBLE MOUNTAIN FORK OF BRAZOS RIVER NEAR ASPERMONT, TEX.

LOCATION.—At bridge on Aspermont-Hamlin highway in southeast corner of section 134, Texas & Pacific Railway block U, 8 miles below mouth of Mountain Creek, and 11 miles south of Aspermont, Stonewall County.

DRAINAGE AREA.—7,980 square miles, a large part of which is probably noncontributing (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—December 3, 1923, to September 30, 1925.

GAGE.—Chain gage attached to downstream side of bridge; read by I. E. Smith.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for 500 feet above and half a mile below gage. Bed composed of sand; shifts. Banks of clay; shifts; not subject to overflow. Control indefinite; shifts.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 12.38 feet at midnight April 7 (discharge, 25,700 second-feet, determined by slope method and subject to error); no flow during several periods.

1924–25: Maximum stage that of April 7, 1925; no flow during several periods.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve fairly well defined below 2,500 second-feet and extended above on basis of two slope measurements made at stages of 10.02 and 12.38 feet; extension subject to considerable error. Gage read to hundredths twice daily. Daily discharge not of sufficient accuracy for publication. Monthly records fair.

Discharge measurements of Double Mountain Fork of Brazos River near Aspermont, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	charge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 8	2.04	96.8	Mar. 28	------	0	June 25	1.11	[a] 0.02
Oct. 20	.98	[a] .2	Apr. 7	12.38	[b] 25,700	July 14	.88	[a] .15
Nov. 14	.96	0	Apr. 8	2.62	474	Aug. 11	3.54	1,680
Dec. 6	------	0	Apr. 20	.60	[a] .4	Sept. 4	2.00	56.7
Dec. 15	------	0	Apr. 25	3.93	2,400	Sept. 14	2.52	434
Jan. 12	------	0	Apr. 27	10.02	[b] 13,400	Sept. 21	1.68	66.4
Feb. 2	------	0	May 26	1.09	2.73			

[a] Estimated. [b] Determined by slope method, using Kutter's formula.

Monthly discharge of Double Mountain Fork of Brazos River near Aspermont, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	804	0	40.1	2,470
November	0	0	0	0
December	0	0	0	0
January	----------	0	3.5	21.8
February	0	0	0	0
March	0	0	0	0
April	3,400	0	672	40,000
May	2,310	3	240	14,800
June	157	0	17.5	1,040
July	508	0	26.9	1,660
August	3,730	0	450	27,600
September	6,210	12	629	37,400
The year	6,210	0	173	125,000

NOTE.—No flow Oct. 4, 5, Oct. 21 to Jan. 20, Feb. 1 to Apr. 6, June 17–24, 30, July 1, 16–29, and Aug. 1–6.

BRAZOS RIVER AT SEYMOUR, TEX.

LOCATION.—At bridge on Wichita Valley highway, three-fourths mile above Wichita Valley Railroad bridge, 1 mile southwest of courthouse in Seymour, Baylor County, and 1¼ miles above mouth of Seymour Creek.

DRAINAGE AREA.—14,500 square miles, a large part of which is probably noncontributing (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—November 30, 1923, to September 30, 1925.

GAGE.—Chain gage attached to downstream side of bridge; read by B. F. Bowman, jr.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for one-fourth mile above and below gage. Bed of sand; shifts. Banks of sand and covered with brush; shift; not subject to overflow. Control is sand bed of stream; shifts.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 9.50 feet from 9 p. m. to midnight April 27 (discharge not determined); no flow for several periods.

1924–25: Maximum stage recorded, that of April 27, 1925; no flow for several periods.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve fairly well defined below 15,000 second-feet and extended above. Gage read to hundredths twice daily. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day on days of considerable fluctuation, except as noted in footnote to daily-discharge table. Records fair.

Discharge measurements of Brazos River at Seymour, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 6	----------	0	Apr. 21	1.51	2.01	Aug. 3	2.96	334
Oct. 19	1.39	7.9	Apr. 27	7.74	[b] 14,600	Aug. 9	4.95	5,530
Nov. 12	----------	0	Apr. 28	6.53	[c] 8,860	Aug. 12	4.03	2,790
Dec. 5	----------	0	June 4	2.90	252	Aug. 19	2.31	114
Jan. 23	1.35	[a] .8	June 29	----------	0	Sept. 12	5.80	9,350
Mar. 27	----------	0	July 20	----------	0	Sept. 18	3.24	1,240

[a] Estimated.
[b] Float measurement.
[c] Surface velocities observed and coefficient used to reduce to mean velocity.

Daily discharge, in second-feet, of Brazos River at Seymour, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Jan.	Feb.	Apr.	May	June	July	Aug.	Sept.
1	7.2			47		274	705		925	2,600
2	2.0			27	414	158	454		1,460	936
3	.8			13	66	72	320		878	611
4				6.0	5.2	44	239		730	383
5				4.4	.5	27	151		742	294
6	.5			2.6		81	64	355	611	193
7	83			3.0		31	32	480	446	134
8	1,110			1.2	4,060	104	12	527	398	81
9	668				1,650	1,110	3.6	288	5,920	55
10	462				657	2,970	1.6	144	7,650	2,160
11	244				228	2,050	39	76	5,270	20,900
12	151				151	1,560	92	47	2,600	11,000
13	105				118	805	151	13	1,110	4,350
14	59				81	527	244	3.6	1,250	4,650
15					61	320	355	.7	730	12,900
16	38				36	206	307		446	8,360
17					44	213	162		294	1,110
18	16				44	176	64		140	768
19	7.2				18	137	29		104	646
20	4.4				3.4	92	9.6		83	454
21	36	2.8	0.2		1.2	70	1.0		61	480
22	104		.2	.6	2.4	59			47	262
23	72		.4		47	39			47	189
24	36		2.4		207	21			38	5,920
25	25		4.8		7,650	8.0			29	7,650
26	18		6.0		3,780	3.0			63	1,950
27	10		1.0		16,900				123	1,630
28	5.6		22		8,720				176	1,870
29	3.8		41		1,370				112	680
30	1.8		35		489				83	518
31			29						96	

NOTE.—Braced figure gives estimated mean discharge for period indicated. No flow Oct. 4, 5, 31, Nov. 1–20, 22–30, Dec. 1 to Jan. 20, Feb. 9–21, 23–28, Mar. 1–31, Apr. 1, 6, 7, May 27–31, June 22–30, July 1–5, and 16–31.

Monthly discharge of Brazos River at Seymour, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,110	0	108	6,640
November	2.8	0	.09	5.6
December	0	0	0	0
January	41	0	4.58	282
February	47	0	3.74	208
March	0	0	0	0
April	16,900	0	1,560	92,800
May	2,970	0	362	22,300
June	705	0	115	6,810
July	527	0	62.4	3,840
August	7,650	29	1,050	64,800
September	20,900	55	3,110	185,000
The year	20,900	0	528	383,000

BRAZOS RIVER NEAR MINERAL WELLS, TEX.

LOCATION.—At highway bridge on Mineral Wells-Palo Pinto highway, 4 miles west of Mineral Wells, Palo Pinto County, and 4 miles below mouth of Turkey Creek.

DRAINAGE AREA.—23,100 square miles, a large part of which is probably noncontributing (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—January 31, 1924, to September 30, 1925.

GAGE.—Chain gage attached to downstream handrail of bridge; read by Joe C. Savage.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for half a mile above and below gage. Banks fairly clean, and not subject to overflow. Control is a sand and gravel riffle, 1,000 feet below gage; shifts.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 15.40 feet at 7 a. m. September 13 (discharge, 46,900 second-feet); no flow March 4 to April 11, August 3, 4, and 7.

1924–25: Maximum stage recorded, that of September 13, 1925; no flow for several periods.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve fairly well defined. Gage read to hundredths twice daily. Daily discharge determined by shifting-control method. Records good.

Discharge measurements of Brazos River near Mineral Wells, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	4.20	172	Apr. 14	4.83	817	Sept. 13	14.68	a37,900
Nov. 21	3.32	4.77	Aug. 11	3.84	141			
Jan. 7	3.32	6.44	Sept. 12	14.49	a46,500			

a Surface velocities observed for part of measurement and coefficient used to reduce to mean velocities.

Daily discharge, in second-feet, of Brazos River near Mineral Wells, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1	230	4.8	1.2	1.2	18	1.6	0	5,820	184	25	4.0	752
2	190	4.0	.8	3.2	18	1.2	0	3,490	153	10	1.6	610
3	153	4.0	1.2	4.8	14	.4	0	2,390	135	4.0	0	315
4	110	8.0	2.0	6.4	10	0	0	1,650	113	41	0	184
5	87	6.4	1.6	4.8	8.0	0	0	1,360	517	390	1.6	474
6	68	6.4	1.6	4.8	7.2	0	0	2,000	1,000	280	1.6	1,000
7	53	5.6	1.2	5.6	7.2	0	0	40,200	1,060	102	0	752
8	41	5.6	1.2	4.8	5.6	0	0	18,800	800	110	350	657
9	28	4.8	1.2	3.6	6.4	0	0	17,400	536	366	267	430
10	23	7.2	1.2	5.6	5.6	0	0	12,800	465	248	195	336
11	28	7.2	1.2	6.4	4.8	0	0	20,800	398	144	267	267
12	71	7.2	1.2	4.8	4.8	0	1,110	17,900	294	84	10,200	32,700
13	77	6.4	.8	4.0	4.0	0	1,360	15,100	358	74	4,890	38,000
14	301	7.2	.8	3.6	3.6	0	900	8,460	308	294	3,250	16,500
15	255	7.2	.8	3.6	3.6	0	657	4,300	465	248	2,390	9,300
16	248	6.4	.8	5.6	3.2	0	322	3,250	536	287	1,580	21,300
17	173	4.8	.8	6.4	3.2	0	206	2,390	610	315	1,580	13,700
18	140	3.6	.8	10	2.8	0	135	1,820	526	230	1,500	6,850
19	106	3.6	.8	10	2.8	0	80	1,360	382	102	1,000	4,020
20	80	3.2	1.2	12	2.4	0	50	1,110	294	71	704	2,800
21	59	3.6	1.2	11	2.4	0	41	900	217	28	526	2,190
22	43	3.6	.8	7.2	3.6	0	28	752	168	28	414	1,650
23	26	3.2	.8	7.2	2.4	0	15	610	113	12	366	1,430
24	23	2.8	1.2	12	2.4	0	12	500	117	15	343	1,230
25	28	2.8	1.2	20	2.4	0	102	447	308	5.6	230	16,500
26	22	2.4	1.2	15	2.4	0	1,000	382	56	10	184	18,400
27	18	2.4	1.2	10	2.4	0	16,000	336	32	4.8	153	10,200
28	15	1.6	.8	8.0	2.0	0	20,800	308	87	3.2	153	6,350
29	11	1.6	.8	8.0	-------	0	29,500	267	56	2.0	900	6,150
30	8.0	1.2	.8	8.8	-------	0	11,000	242	46	5.6	950	3,750
31	5.6	-------	.8	14	-------	0	-------	212	-------	2.4	950	-------

Monthly discharge of Brazos River near Mineral Wells, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	301	5.6	87.8	5,400
November	8.0	1.2	4.63	275
December	2.0	.8	1.07	65.9
January	20.	1.2	7.50	461
February	18	2.0	5.54	308
March	1.6	0	.10	6.3
April	29,500	0	2,780	165,000
May	40,200	212	6,040	372,000
June	1,060	32	344	20,500
July	390	2.0	114	7,020
August	10,200	0	1,080	66,200
September	38,000	184	7,310	435,000
The year	40,200	0	1,480	1,070,000

BRAZOS RIVER NEAR GLEN ROSE, TEX.

LOCATION.—One-fourth mile above highway bridge on Glen Rose-Cleburne road crossing, 1¼ miles above confluence with Squaw and Paluxy Creeks, and 4 miles northeast of Glen Rose, Somervell County.

DRAINAGE AREA.—24,800 square miles, a large part of which is probably noncontributing (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—October 1, 1923, to September 30, 1925.

GAGE.—A combination vertical and inclined staff gage on right bank; read by J. B. Christenson.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for 1 mile above and below gage. Bed composed of rock, sand, and gravel; fairly permanent. Right bank of sand and clay and not subject to overflow; left bank of sand, wooded, and subject to overflow at a stage of 17 feet. Control for low water is a rock and gravel shoal, 600 feet below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 15.10 feet at 11 a. m. May 8 (discharge, 45,700 second-feet, determined from extension of rating curve and subject to error); minimum stage during period of doubtful record in March and April (discharge not determined).

1924–1925: Maximum stage occurred May 8, 1925. No flow September 7–9, 1924.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 30,000 second-feet and extended above. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records fair.

Discharge measurements of Brazos River near Glen Rose, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 6	0.25	24.0	Aug. 12	0.12	7.36
May 13	7.42	14,900	Sept. 14	10.64	[a] 27 500

[a] Surface velocities observed and coefficient used to reduce to mean velocities.

Daily discharge, in second-feet, of Brazos River near Glen Rose, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	640	65	22	22	26	12		9,700	224	79	53	273
2	501	63	21	20	26	12		6,060	186	71	39	740
3	407	60	20	20	26	12		2,890	154	65	33	540
4	353	58	29	20	22	9.8		2,510	132	58	31	620
5	299	53	26	20	26	9.8		1,760	114	55	29	620
6	240	45	26	20	24	9.8		1,630	105	216	26	362
7	208	43	26	20	22	9.8		8,760	96	380	29	232
8	186	65	24	16	28	9.8	2.8	40,200	96	371	50	240
9	172	74	22	16	26	8.4		19,900	353	299	29	580
10	148	74	20	22	26	7.0		17,400	790	201	22	620
11	128	71	20	26	26	7.0		13,300	670	123	20	550
12	123	60	18	26	24	6.6		19,900	501	107	9.1	610
13	110	55	16	22	18	6.1		16,400	482	137	7.0	30,700
14	107	50	16	20	14	5.7		13,600	416	172	5,460	28,400
15	118	45	16	22	14	5.2		8,760	560	160	3,340	11,000
16	107	41	16	24	14	5.2	137	5,170	482	148	2,690	10,000
17	160	37	16	31	16	5.2	660	4,090	290	137	2,030	17,100
18	292	33	16	41	16	4.8	550	3,590	248	132	1,560	11,300
19	273	33	15	41	14	4.5	389	2,510	232	123	1,380	6,360
20	265	82	14	41	14	4.0	299	2,030	335	103	1,500	3,110
21	232	89	20	41	14		216	1,630	371	89	1,260	2,690
22	208	76	26	39	43		148	1,100	317	76	930	2,340
23	166	53	31	37	31		132	1,040	232	71	620	2,030
24	137	41	37	33	29		114	820	186	65	472	1,890
25	118	33	41	33	26		96	690	160	58	398	1,760
26	110	29	35	33	22	2.8	89	570	132	50	326	10,000
27	103	29	33	29	16		1,500	472	118	48	290	16,100
28	96	26	29	29	14		13,900	398	172	60	256	9,700
29	89	26	29	29	-------		20,600	344	137	76	194	6,060
30	82	22	26	29	-------		25,100	290	179	96	137	3,340
31	74	-------	22	26	-------		----------	248	-------	96	128	-------

NOTE.—Braced figures give estimated mean discharge for periods indicated.

Monthly discharge of Brazos River near Glen Rose, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	640	74	202	12,400
November	89	22	51.0	3,040
December	41	14	23.5	1,440
January	41	16	27.4	1,680
February	43	14	22.0	1,220
March	12	----------	5.98	368
April	25,100	----------	2,130	127,000
May	40,200	248	6,700	412,000
June	790	96	282	16,800
July	380	48	126	7,780
August	5,460	7.0	753	46,300
September	30,700	232	6,000	357,000
The year	40,200	----------	1,360	987,000

BRAZOS RIVER AT WACO, TEX.

LOCATION.—At bridge of Texas Electric Co. (formerly called Southern Traction Co.), 100 feet above suspension bridge, in Waco, McLennan County, and 2½ miles below mouth of Bosque River.

DRAINAGE AREA.—28,500 square miles, a large part of which is probably noncontributing (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—September 14, 1898, to December 31, 1911, and October 1, 1914, to September 30, 1925. Record of stage has been obtained by United States Weather Bureau since August 9, 1900.

GAGE.—Stevens continuous water-stage recorder attached to downstream side of Texas Electric Co.'s bridge. From May 6, 1922, to February 12, 1925, United States Weather Bureau gage on suspension bridge 100 feet downstream was used. Gages were installed at same datum but readings probably differ slightly because of difference in location.

DISCHARGE MEASUREMENTS.—Made from first one-span highway bridge above gage or by wading.

CHANNEL AND CONTROL.—Bed of sand and gravel; shifts. Banks are clay; subject to overflow at extremely high stages. Channel straight above and below for several thousand feet. Position of control not known.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 21.1 feet at 8 a. m. May 9 (discharge, 55,200 second-feet); minimum discharge, about 24 second-feet March 27–30.

1898–1925: Maximum stage recorded, 39.7 feet December 3, 1913 (discharge not determined); no flow August 20–21, 1918, and probably several days in August, 1923.

DIVERSIONS.—Records of the Board of Water Engineers for the State of Texas show that numerous small diversions are made above station for mining, irrigation, and municipal uses, but total probably does not appreciably affect flow except during low stages.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve fairly well defined above 40 second-feet. Gage read to tenths once daily prior to February 12; operation of water-stage recorder satisfactory thereafter. Daily discharge determined by shifting-control method, averaging discharge for fractional parts of a day on days of considerable fluctuation, except as noted in footnote to daily-discharge table. Records October 1 to February 12, poor; fair thereafter.

COOPERATION.—Gage-height record from October 1 to February 12 furnished by United States Weather Bureau.

Discharge measurements of Brazos River at Waco, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	7.32	891	May 8	18.43	46,600	May 11	14.18	15,900
Feb. 10	5.35	55	May 9	20.94	[a] 57,100	May 12	13.65	13,300
Feb. 13	5.28	47.7	Do	19.63	41,500	May 13	15.24	23,000
Mar. 6	5.30	39.1	May 10	16.16	24,300	May 17	10.84	5,090
Apr. 21	6.56	516	Do	15.98	24,000	July 8	5.70	42.6
Apr. 30	16.2	[a] 26,900	May 11	14.95	20,000	Aug. 22	8.01	1,370

[a] Surface velocities observed for part of measurement and coefficient used to reduce to mean velocity.

Daily discharge, in second-feet, of Brazos River at Waco, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,180	150	150	150	125	52	162	16,600	476	135	115	242
2	1,100	150	150	150	125	49	189	6,650	432	107	140	198
3	885	150	150	150	125	48	115	4,600	385	82	92	177
4	738	150	150	150	103	46	105	3,370	356	75	83	310
5	604	150	150	150	125	45	101	2,670	310	63	64	574
6	487	150	150	125	103	42	94	2,140	279	54	51	574
7	432	150	150	125	86	38	86	1,790	254	46	44	622
8	380	150	150	125	51	37	79	21,800	242	42	39	526
9	288	150	150	125	36	36	94	47,600	220	41	37	360
10	209	150	150	125	43	36	94	26,000	531	94	36	254
11	177	150	150	150	36	36	86	20,500	400	145	34	1,020
12	150	150	150	150	29	35	76	14,600	375	177	33	16,600
13	150	150	150	150	49	34	67	20,500	610	145	33	3,780
14	125	150	150	150	46	33	62	14,400	487	101	215	38,600
15	125	150	150	150	46	33	52	13,200	410	75	1,600	23,500
16	125	150	150	150	47	32	52	8,300	385	65	2,780	8,600
17	125	150	150	150	46	32	48	4,900	342	88	2,290	10,100
18	125	150	150	150	46	32	46	3,440	426	83	2,040	13,600
19	125	150	150	150	44	30	44	3,440	338	71	1,740	8,300
20	125	209	150	150	43	29	580	2,560	234	59	1,380	5,400
21	125	209	150	150	45	28	504	2,240	212	52	1,220	3,900
22	209	177	150	150	48	28	360	1,890	189	46	1,380	3,020
23	177	604	150	150	53	28	270	1,600	206	50	1,380	2,560
24	177	246	150	150	54	27	198	1,340	234	62	1,260	2,290
25	150	177	150	150	53	26	168	1,140	202	74	906	2,040
26	150	150	150	150	53	26	155	990	165	67	724	1,600
27	150	150	125	150	54	24	155	850	145	57	556	11,100
28	150	150	125	150	53	24	150	724	216	50	465	10,200
29	150	150	125	150	-------	24	11,800	640	165	45	390	6,400
30	150	150	150	150	-------	24	24,000	574	115	41	333	5,000
31	150	-------	150	150	-------	36	-------	520	-------	55	297	-------

NOTE.—Discharge estimated on account of incomplete record Nov. 26 to Feb. 7 and Feb. 13.

Monthly discharge of Brazos River at Waco, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,180	125	303	18,600
November	604	150	174	10,400
December	150	125	148	9,070
January	150	125	146	8,980
February	125	29	63.1	3,500
March	52	24	33.9	2,080
April	24,000	44	1,330	79,300
May	47,600	520	8,120	499,000
June	610	115	311	18,500
July	177	41	75.7	4,660
August	2,780	33	702	43,200
September	38,600	177	6,050	360,000
The year	47,600	24	1,460	1,060,00

BRAZOS RIVER NEAR COLLEGE STATION, TEX.

LOCATION.—At Jones Bridge, 4 miles below Munson Shoals, 6 miles southwest of College Station, Brazos County.

DRAINAGE AREA.—38,500 square miles, part of which is probably noncontributing (measured on topographic maps, base map of Texas, and progressive military maps of United States Army).

RECORDS AVAILABLE.—February 23, 1918, to September 17, 1925, when station was discontinued.

GAGE.—Chain gage on upstream handrail of bridge; read by Lamar McRae.

DISCHARGE MEASUREMENTS.—Made from bridge.

CHANNEL AND CONTROL.—Bed composed of sand and mud; shifting. Location of control not known. Right bank subject to overflow at extremely high stages (about 40 feet).

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 32.90 feet at 6 p. m. May 10 (discharge, 58,000 second-feet); minimum discharge, 160 second-feet April 14 and August 16–17.

1918–1925: Maximum stage recorded, 53.0 feet from 1 to 3 a. m. September 12, 1921 (discharge not determined); minimum discharge, 92 second-feet September 4, 1918.

DIVERSIONS.—No important diversions above or below station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Gage read to tenths twice daily but work of observer not always reliable. Daily discharge determined by shifting-control method. Records fair.

Discharge measurements of Brazos River near College Station, Tex., during the period ending September 17, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 21	4.80	443	Jan. 11	4.59	391	Apr. 14	4.00	192
Oct. 25	4.88	460	Feb. 12	4.50	292	May 18	12.46	9,470
Nov. 18	4.41	352	Mar. 13	4.17	252	July 6	4.37	364
Nov. 28	5.21	667	Mar. 18	3.88	210	Sept. 12	4.80	511
Dec. 17	4.40	252	Apr. 13	4.05	167			

Daily discharge, in second-feet, of Brazos River near College Station, Tex., for the period ending September 17, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,220	400	380	290	275	275	190	15,500	1,490		215	550
2	2,080	400	340	340	245	260	190	16,500	1,280		202	460
3	1,920	420	322	340	245	260	190	9,200	1,080		190	460
4	2,080	420	322	340	245	260	190	6,860	1,080		190	360
5	2,220	420	322	305	230	260	190	5,110	1,080	425	190	275
6	2,150	380	305	305	230	260	190	4,200	945		190	275
7	2,080	360	305	322	230	260	190	3,700	945		190	275
8	2,080	340	305	322	230	275	190	3,230	825		190	460
9	1,420	360	305	322	230	275	190	11,500	715	400	190	482
10	885	360	290	360	230	275	190	40,000	715	380	190	505
11	715	360	290	400	230	275	180	26,600	688	290	170	505
12	550	340	290	340	245	275	180	21,100	688	245	170	505
13	632	305	290	305	245	260	180	16,900	660	230	170	13,200
14	632	305	275	275	245	290	160	19,800	660	230	170	13,200
15	605	322	275	275	245	290	170	16,300	825	230	170	24,400
16	578	322	275	275	245	305	170	14,900	1,010	260	160	22,100
17	550	322	260	275	245	305	170	12,100	945	322	160	11,200
18	528	322	290	275	245	290	170	9,920	945	322	2,220	-------
19	528	360	290	275	245	322	170	7,340	825	275	2,220	-------
20	482	360	290	260	245	322	170	5,740	825	245	2,080	-------
21	440	322	260	260	260	290	180	5,610	825	230	1,920	-------
22	420	305	260	260	260	275	180	4,420	825	230	1,630	-------
23	420	305	275	260	260	275	180	3,700	688	230	1,380	-------
24	420	305	275	260	260	260	215	3,230	550	230	1,420	-------
25	440	322	275	260	260	260	290	2,960	528	230	1,380	-------
26	420	380	275	260	260	245	290	2,540	528	215	1,380	-------
27	420	420	275	260	260	215	290	2,380	528	215	1,010	-------
28	420	528	290	245	260	215	260	2,380	528	215	688	-------
29	400	420	290	245	-------	215	245	2,220	505	215	688	-------
30	400	380	290	260	-------	202	4,000	1,920	505	215	660	-------
31	400	-------	290	275	-------	202	-------	1,700	-------	215	660	-------

NOTE.—Braced figure shows estimated mean discharge for period indicated.

Monthly discharge of Brazos River near College Station, Tex., for the period ending September 17, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	2,220	400	953	58,600
November	528	305	362	21,600
December	380	260	293	18,000
January	400	245	292	17,900
February	275	230	247	13,700
March	322	202	266	16,400
April	4,000	160	325	19,300
May	40,000	1,700	9,600	594,000
June	1,490	505	808	48,100
July	----------	215	306	18,800
August	2,220	160	724	44,500
September 1–17	24,400	275	5,250	177,000
The period	----------	----------	----------	1,050,000

BRAZOS RIVER AT ROSENBERG, TEX.

LOCATION.—At Rosenberg-Richmond highway bridge, at Rosenberg, Fort Bend County, 3 miles above mouth of Jones Creek.

DRAINAGE AREA.—44,000 square miles (measured on topographic maps, base map of Texas, and progressive military maps of United States Army).

RECORDS AVAILABLE.—October 1, 1922, to September 30, 1925. Records of stage have been obtained by United States Weather Bureau since July 1,1914.

GAGE.—Chain gage attached to downstream handrail of bridge; read by G. W. Nelson.

DISCHARGE MEASUREMENTS.—Made from highway bridge.

CHANNEL AND CONTROL.—Bed of sand; shifts. Channel straight 400 feet above and 700 feet below station. Right bank of sand and clay; left bank above bridge is wooded and below bridge is clean; subject to overflow at extremely high stages. Control is sand bed of stream; shifts.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 17.1 feet May 12 (discharge, 24,200 second-feet); minimum stage, 0.30 foot August 19–22 (discharge, 306 second-feet).

1923–1925: Maximum stage recorded, 33.0 feet December 16, 1923 (discharge, 64,800 second-feet, determined from extension of rating curve and subject to error); minimum stage that of August 19–22, 1925.

The United States Weather Bureau reports a stage of 56.4 feet (present gage datum) at 11 p. m. December 9, 1913.

DIVERSIONS.—No important diversions.

REGULATION.—None.

ACCURACY.—Stage-discharge relation probably permanent. Rating curve well defined. Gage read to tenths once daily. Daily discharge determined by applying daily gage height to rating table. Records fair.

COOPERATION.—Gage-height record furnished by United states Weather Bureau.

Discharge measurements of Brazos River at Rosenberg, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 22	1.76	850	Mar. 9	0.99	543	July 3	1.30	783
Nov. 25	1.30	638	Apr. 11	1.00	519	Aug. 10	.42	339
Jan. 8	1.34	661	May 12	17.10	22,900			
Feb. 10	1.38	678	May 13	16.44	22,600			

Daily discharge, in second-feet, of Brazos River at Rosenberg, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,120	845	845	645	685	565	425	565	1,880	685	395	1,380
2	3,670	805	845	685	685	565	425	530	1,750	685	395	1,020
3	2,740	765	885	685	685	530	425	5,210	1,620	645	365	975
4	2,470	765	845	685	645	530	645	14,600	1,440	645	365	805
5	2,230	765	765	685	645	530	530	9,650	1,380	605	365	765
6	1,880	765	765	685	645	530	495	8,480	1,280	605	365	725
7	1,750	725	765	645	645	530	495	6,800	1,120	530	335	685
8	1,620	725	765	645	645	530	495	4,240	1,060	530	335	605
9	1,440	725	765	685	645	530	495	3,340	930	530	335	565
10	1,380	725	725	685	645	530	495	2,930	845	685	335	565
11	1,330	685	685	685	645	530	495	9,650	765	685	335	495
12	1,160	685	645	685	645	530	460	24,200	685	605	335	495
13	1,160	645	685	685	645	495	460	23,000	605	530	335	930
14	1,060	645	725	725	645	495	495	19,500	530	530	335	805
15	1,020	645	725	725	645	495	460	15,900	605	530	335	975
16	1,020	645	725	805	605	495	425	17,800	530	495	335	9,820
17	975	645	725	930	605	495	425	17,400	495	495	335	21,700
18	975	645	685	930	605	530	425	14,400	530	495	335	20,200
19	845	605	685	805	605	530	425	12,300	530	460	306	13,600
20	845	605	725	725	605	495	460	9,820	685	460	306	9,140
21	805	605	725	725	565	495	460	8,970	645	460	306	12,300
22	805	605	805	725	565	495	460	5,860	645	460	306	11,200
23	765	605	725	725	565	460	425	4,720	605	425	1,440	7,540
24	765	605	725	725	565	460	395	3,240	765	425	1,560	5,860
25	765	645	685	725	565	460	365	2,640	765	425	1,380	6,250
26	765	685	685	725	565	460	365	2,640	845	425	1,280	4,240
27	765	685	685	725	565	460	365	2,470	845	425	1,560	3,670
28	765	725	685	685	565	460	335	2,160	765	425	1,750	3,240
29	765	725	685	685	------	460	425	2,160	725	395	1,620	2,930
30	765	725	685	685	------	460	565	2,020	685	395	1,750	2,840
31	845	------	645	685	------	460	------	1,820	------	395	1,560	------

Monthly discharge of Brazos River at Rosenberg, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	4,120	765	1,360	83,800
November	845	605	689	41,000
December	885	645	733	45,100
January	930	645	718	44,100
February	685	565	619	34,400
March	565	460	503	30,900
April	645	335	454	27,000
May	24,200	530	8,360	514,000
June	1,880	495	885	52,700
July	685	395	519	31,900
August	1,750	306	690	42,400
September	21,700	495	4,880	290,000
The year	24,200	306	1,710	1,240,000

SALT FORK OF BRAZOS RIVER NEAR ASPERMONT, TEX.

LOCATION.—At Aspermont-Guthrie highway bridge, 10 miles north of Aspermont, Stonewall County.

DRAINAGE AREA.—4,990 square miles, a large part of which is probably noncontributing (measured on base map of Texas).

RECORDS AVAILABLE.—December 5, 1923, to August 29, 1925, when station was discontinued.

GAGE.—Chain gage attached to downstream side of bridge; read by E. V. Smith.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for 1,000 feet above and below gage. Bed of sand; shifts. Banks of sand; sparsely wooded; not subject to overflow. Control not known but shifts.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 11.80 feet at 7.15 a. m. April 27 (discharge, 24,000 second-feet, determined by slope method and subject to considerable error); no flow during several periods.

1924–1925: Maximum stage that of April 27, 1925; no flow during several periods.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve fairly well defined below 3,000 second-feet and extended above through one slope measurement made at a stage of 11.80 feet with a discharge of 24,000 second-feet and extension subject to considerable error. Gage read to hundredths twice daily. Daily discharge not sufficiently reliable for publication. Monthly discharge fair.

Discharge measurements of Salt Fork of Brazos River near Aspermont, Tex., during the period ending August 29, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 7	2.88	245	Jan. 12	1.60	[a] 0.5	May 26	1.33	30.0
Oct. 20	1.57	[a] 0.6	Feb. 2	1.65	[a] 1.5	June 26	.95	[a] .6
Nov. 14	1.54	[a] .3	Mar. 28	1.50	[a] .02	July 14	.88	[a] .25
Dec. 6	1.54	[a] .3	Apr. 20		0	July 31	3.98	2,270
Dec. 15	1.59	[a] .4	Apr. 27	11.80	[b] 24,000	Aug. 8	4.41	2,360

[a] Estimated.
[b] Determined by slope method using Kutter's formula.

Monthly discharge of Salt Fork of Brazos River near Aspermont, Tex., for the period ending August 29, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	197	0	20.1	1,240
November	.4	0	.12	6.9
December	.9	.1	.42	25.6
January	16	.5	3.24	199
February	1.8	.1	.68	37.7
March	.2	0	.08	5.2
April	17,000	0	1,010	59,900
May	2,300	4.6	215	13,200
June	1,250	.1	75.7	4,510
July	2,190	0	86.2	5,300
August 1–29	3,450	.3	369	21,200
The period				106,000

NOTE.—No flow Oct. 1–5, Nov. 4, 5, 7, 8, 21, Mar. 20–26, 28–30, Apr. 20–22, July 18 and 25.

CLEAR FORK OF BRAZOS RIVER AT NUGENT, TEX.

LOCATION.—At highway bridge at Nugent, Jones County, 2 miles below mouth of Elm Creek.

DRAINAGE AREA.—2,220 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—February 10, 1924, to September 30, 1925.

GAGE.—Vertical staff on left bank 350 feet below highway bridge; read by C. F. Howard.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for 1,000 feet above and 400 feet below gage. Bed composed of rock; permanent. Banks covered with light brush and subject to overflow at extremely high stages. Control formed by rock shoal, 1,000 feet below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 11.3 feet at 2 p. m. May 10 (discharge, 5,560 second-feet); minimum discharge, 0.2 second-foot July 27 and 28.

1924–25: Maximum stage recorded, 11.65 feet at 7.20 p. m. May 26, 1924 (discharge, 5,800 second-feet); minimum stage that of May 10, 1925.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 2,000 second-feet and fairly well defined above. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records fair.

Discharge measurements of Clear Fork of Brazos River at Nugent, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 8	1.39	4.02	June 24	1.48	5.74	Sept. 11	4.05	630
Dec. 4	1.52	8.62	July 28	1.04	a10	Sept. 24	4.96	1,090
May 11	5.31	1,390	Aug. 1	3.93	670			
May 28	1.52	6.30	Aug. 16	1.48	6.61			

a Estimated.

Daily discharge, in second-feet, of Clear Fork of Brazos River at Nugent, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	3.3	4.0	4.5	5.0	3.5	3.2	35	270	5.0	630	357
2	5.5	3.3	7.1	4.8	5.0	3.5	52	21	327	80	32	327
3	4.2	3.3	10.0	4.8	4.8	3.5	14	12	49	217	16	230
4	4.0	3.3	7.6	4.8	4.8	3.4	8.8	6.0	28	8.2	7.1	17
5	3.5	3.3	4.5	4.5	4.8	3.5	6.6	5.8	17	163	3.2	10
6	3.5	3.3	4.2	4.5	4.8	3.5	5.0	13	12	68	2.4	6.6
7	4.0	3.8	4.2	4.5	4.5	3.5	4.0	404	9.8	21	2.1	5.5
8	204	3.4	4.0	4.5	4.2	3.4	3.2	554	9.3	13	180	4.8
9	298	3.0	3.5	4.5	3.8	3.3	2.9	3,020	8.8	10	122	3.2
10	54	2.9	4.2	4.2	3.5	3.3	2.7	4,780	12	5.5	30	270
11	18	3.1	4.5	4.2	3.5	3.3	9.3	1,650	137	3.3	24	805
12	11	3.1	5.0	4.2	3.5	3.2	24	404	41	2.8	10	1,280
13	9.3	3.3	4.5	4.2	3.5	3.1	38	230	20	2.3	73	1,140
14	7.6	3.3	4.5	4.2	3.5	3.3	20	86	15	2.1	32	670
15	5.5	3.3	4.5	4.2	3.5	3.2	14	36	8.8	2.0	27	101
16	5.5	3.4	5.0	4.2	4.0	3.2	7.1	27	6.0	2.1	5.0	42
17	5.5	3.4	5.0	4.2	4.0	3.3	5.2	19	5.0	1.5	2.9	30
18	5.0	3.8	5.0	4.2	3.8	3.3	13	12	4.0	1.2	2.3	24
19	4.8	4.0	5.0	5.2	4.0	3.1	10	5.5	131	.9	1.6	17
20	4.5	4.0	4.8	5.5	4.0	3.1	7.6	17	140	.7	1.2	14
21	4.2	4.0	4.5	6.6	4.5	3.1	6.0	12	42	.4	1.0	12
22	4.5	4.0	4.5	5.8	4.8	3.3	5.0	10	13	.4	.6	10
23	4.0	4.0	4.5	5.2	4.5	3.3	30	8.8	9.3	.4	.5	16
24	4.0	3.8	4.8	5.2	4.5	3.5	270	7.1	5.8	.4	.4	1,020
25	4.0	3.5	4.5	5.2	4.2	3.4	590	7.1	62	.3	.4	2,200
26	4.0	3.5	4.5	5.2	3.8	3.3	182	6.6	270	.3	.7	2,200
27	4.0	3.5	4.5	5.2	3.8	3.2	1,720	6.0	71	.2	1.8	855
28	4.0	3.5	4.5	5.2	3.8	3.2	388	7.1	20	.2	1.5	630
29	4.0	3.5	4.5	5.2	------	3.2	78	27	9.8	135	187	101
30	3.8	3.8	4.5	5.0	------	3.1	28	168	5.8	50	357	75
31	3.3	------	4.8	5.0	------	3.1	------	420	------	187	101	------

Monthly discharge of Clear Fork of Brazos River at Nugent, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	298	3.3	23.2	1,420
November	4.0	2.9	3.49	208
December	10	3.5	4.88	300
January	6.6	4.2	4.80	295
February	5.0	3.5	4.16	231
March	3.5	3.1	3.30	203
April	1,720	2.7	118	7,040
May	4,780	5.5	388	23,800
June	327	4.0	58.6	3,490
July	217	.2	31.7	1,950
August	630	.4	59.9	3,680
September	2,200	3.2	416	24,700
The year	4,780	.2	93.1	67,300

CLEAR FORK OF BRAZOS RIVER AT FORT GRIFFIN, TEX.

LOCATION.—At highway bridge on Fort Griffin-Throckmorton road, 600 feet below mouth of Collins Creek and half a mile east of Fort Griffin, Shackleford County.

DRAINAGE AREA.—3,970 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—December 9, 1923, to September 30, 1925.

GAGE.—Chain gage attached to downstream side of bridge; read by H. C. Herron.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for 200 feet above and 400 feet below gage. Bed composed of gravel; permanent. Banks of clay, underlain by a stratum of rock; sparsely wooded; fairly permanent. Left bank subject to overflow at a stage of 15 feet; right bank at a stage of 33 feet. At extremely high stages, bridge cannot be reached except by boat. Low-water control is gravel shoal, 300 feet below gage; fairly permanent. High-water control is probably channel and banks some distance below station.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 18.35 feet at 6.30 p. m. May 11 (discharge, 6,820 second-feet); minimum stage, 1.84 feet at 6 p. m. April 8 (no flow; this is also point of zero flow).

1924–1925: Maximum and minimum stages same as those for 1925.

DIVERSIONS.—Small amount diverted for municipal use. Amount not known.

REGULATION.—Possibly slight regulatory effect at low stages by power plant at Stamford.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records fair.

Discharge measurements of Clear Fork of Brazos River at Fort Griffin, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 29	2.22	7.12	May 11	18.29	[b] 6,760	July 30	2.65	27.9
Nov. 27	2.30	8.45	May 12	8.24	[b] 2,210	Aug. 10	5.06	840
Dec. 10	2.29	10.5	June 2	4.28	404	Sept. 1	4.17	367
Mar. 24	2.06	[a] .3	June 22	3.34	126	Sept. 25	13.92	4,280
Apr. 23	2.06	1.32	July 2	2.60	21.5			

[a] Estimated. [b] Surface velocities observed and coefficient used to reduce to mean velocities.

Daily discharge, in second-feet, of Clear Fork of Brazos River at Fort Griffin, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	9.4	12	13	6.0	6.0	1.6	115	15	31	58	328
2	16	7.2	14	13	6.0	6.0	1.6	74	582	24	148	182
3	22	7.2	16	11	6.0	6.0	1.2	56	506	17	306	306
4	12	8.4	19	15	6.6	6.6	1.0	36	290	16	99	416
5	7.8	7.8	14	16	7.8	6.6	1.0	30	93	273	42	306
6	14	6.6	11	15	8.4	7.2	.3	88	53	61	28	71
7	7.8	6.9	9.8	16	8.1	6.0	.3	416	42	47	25	40
8	18	6.3	9.4	14	7.8	6.6	.2	328	25	111	20	22
9	23	6.3	9.0	14	7.2	6.0	1,250	1,450	19	120	273	19
10	18	5.4	9.8	14	7.2	6.0	897	3,940	17	52	842	1,500
11	23	5.0	9.8	14	6.0	5.6	109	5,820	12	36	213	3,560
12	74	4.6	11	14	6.0	5.8	43	3,740	77	25	111	3,780
13	46	6.0	13	13	6.0	4.8	30	1,050	103	18	340	2,140
14	29	7.2	13	14	6.6	4.0	20	667	77	13	1,250	1,500
15	21	8.4	14	13	6.6	4.0	16	323	52	14	273	787
16	21	9.4	14	13	6.0	4.4	13	152	33	12	117	609
17	16	14	14	14	5.6	4.6	11	99	28	11	61	143
18	13	12	12	16	6.0	4.4	8.7	62	20	12	46	88
19	13	11	13	19	6.0	4.4	7.2	38	17	11	25	56
20	11	9.8	14	18	5.6	3.6	6.0	33	10	9.4	19	49
21	12	9.4	15	14	6.0	4.0	4.8	28	74	9.0	12	31
22	14	9.4	14	14	10	4.4	4.0	22	138	8.4	9.8	20
23	12	9.0	15	15	8.1	4.2	3.8	19	109	7.8	8.4	138
24	11	9.8	13	13	6.6	3.2	3.4	16	47	9.0	6.0	2,820
25	11	9.4	12	11	6.0	3.6	358	13	25	9.0	5.6	3,630
26	11	9.0	12	9.8	6.0	3.6	227	14	22	8.4	5.2	3,490
27	9.8	8.4	11	7.2	5.6	2.8	950	13	95	24	4.4	3,280
28	9.0	11	11	7.2	5.6	1.9	2,020	13	273	23	4.0	2,420
29	7.5	11	9.8	6.6	------	1.8	1,300	13	103	17	3.8	1,200
30	10	11	12	6.0	------	2.0	241	16	46	28	3.6	273
31	11	------	13	6.0	------	2.0	---------	14	------	27	28	------

Monthly discharge of Clear Fork of Brazos River at Fort Griffin, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	74	7.5	17.6	1,080
November	14	4.6	8.54	508
December	19	9.0	12.6	773
January	19	6.0	12.9	791
February	10	5.6	6.62	368
March	7.2	1.8	4.58	282
April	2,020	.2	251	14,900
May	5,820	13	603	37,100
June	582	10	100	5,960
July	273	7.8	35.0	2,150
August	1,250	3.6	142	8,700
September	3,780	19	1,110	65,800
The year	5,820	.2	191	138,000

CLEAR FORK OF BRAZOS RIVER AT CRYSTAL FALLS, TEX.

LOCATION.—At Walker-Caldwell Water Co.'s pumping plant, one-fourth mile north of Crystal Falls, Stephens County, and 1 mile above mouth of Hubbard Creek.

DRAINAGE AREA.—4,320 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—November 12, 1921, to September 30, 1925.

GAGE.—Vertical staff on right bank opposite pumping plant; read by J. M. Paschell.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge, 500 feet below gage.

CHANNEL AND CONTROL.—Channel straight 800 feet above and 400 feet below gage. Bed composed of rock. Right bank of clay, fairly clean, and high; left bank of clay, wooded, and subject to overflow during extremely high stages. Control is formed by concrete dam about 800 feet below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.70 feet at 8 a. m. May 7 (discharge, 9,400 second-feet, determined from extension of rating curve); no flow during several periods.

1921–1925: Maximum stage recorded, 18.25 feet at 10.30 p. m. April 30, 1922 (discharge, not determined); no flow during several periods each year

DIVERSIONS.—Large part of ordinary flow diverted for municipal use and mining.

REGULATION.—Low-water flow partly regulated by dam above gage.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 6,200 second-feet and extended above. Gage read to hundredths once daily. Daily discharge determined by applying mean daily gage height to rating table. Records fair.

Discharge measurements of Clear Fork of Brazos River at Crystal Falls, Tex. during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 29	1.04	[a] 4.5	Mar. 25		0	June 6	1.29	86
Nov. 24	.99	[a] 1.7	Apr. 23		0	July 22	.70	0
Dec. 10	1.00	[a] 2.0	May 12	4.59	[b] 6,390	Sept. 25	3.84	4,090
Jan. 25	1.08	11.0	May 13	3.35	2,960			

[a] Estimated.
[b] Surface velocities observed and coefficient used ot reduce to mean velocities.

Daily discharge, in second-feet, of Clear Fork of Brazos River at Crystal Falls, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	8.0	3.6	4.4	2.8	0.4	0	191	10	36	16	1.2
2	22	8.0	4.4	6.0	1.6	.4	0	110	658	16	12	290
3	16	5.2	5.2	6.0	1.6	.4	0	76	327	16	375	416
4	10	3.6	2.0	6.0	1.6	0	0	57	470	29	129	318
5	16	2.8	3.6	6.0	1.6	0	0	40	162	12	62	281
6	12	2.0	8.0	6.0	.8	0	0	754	87	155	32	93
7	8.0	1.2	4.4	8.0	.8	0	0	5,690	48	52	29	52
8	8.0	.4	5.2	10	.8	0	0	470	32	29	16	44
9	52	0	4.4	10	0	0	0	1,450	26	214	12	16
10	44	0	2.8	12	0	0	1,760	4,630	14	82	1,110	16
11	52	1.2	2.8	10	.8	0	246	4,890	10	44	395	2,500
12	142	1.2	2.8	8.0	.8	0	82	6,520	6.0	22	155	5,420
13	82	.4	3.6	6.0	.8	0	44	1,240	32	12	71	2,930
14	52	.4	3.6	6.0	.8	0	22	852	66	8.0	481	2,300
15	52	0	4.4	10	.4	0	16	405	66	8.0	915	1,040
16	52	0	4.4	10	.4	0	12	222	48	2.0	169	915
17	16	0	5.2	8.0	.4	0	8.0	110	26	1.2	76	299
18	12	0	19	14	0	0	8.0	66	14	.4	44	129
19	8.0	0	6.0	12	0	0	3.6	48	10	0	22	71
20	5.2	3.6	5.2	14	0	0	2.0	40	6.0	0	12	44
21	5.2	2.0	5.2	19	0	0	0	32	4.4	0	8.0	36
22	3.6	2.0	5.2	19	.4	0	0	19	2.8	0	5.2	22
23	8.0	1.2	6.0	14	.4	0	0	14	123	0	4.4	16
24	12	1.6	6.0	14	.4	0	0	14	87	0	16	4,130
25	8.0	1.2	8.0	14	0	0	0	10	44	0	2.0	4,380
26	8.0	.8	6.0	10	0	0	538	10	19	0	2.0	4,630
27	5.2	2.0	6.0	8.0	0	0	852	6	14	0	1.2	4,630
28	5.2	2.0	5.2	6.0	.4	0	2,020	6	6.0	0	0	2,300
29	4.4	3.6	6.0	4.4	-------	0	2,020	6	162	32	155	1,450
30	3.6	3.6	6.0	2.8	-------	0	470	6	87	5.2	12	550
31	12	-------	5.2	2.8	-------	0	-------	6	-------	4.4	3.6	-------

Monthly discharge of Clear Fork of Brazos River at Crystal Falls, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	142	3.6	24.9	1,530
November	8	0	1.93	115
December	19	2	5.34	328
January	19	2.8	924	568
February	2.8	0	.63	34.9
March	.4	0	.04	2.4
April	2,020	0	270	16,100
May	6,520	6	903	55,500
June	658	2.8	88.9	5,290
July	214	0	25.2	1,550
August	1,110	0	140	8,590
September	5,420	1.2	1,310	78,000
The year	6,520	0	231	168,000

CLEAR FORK OF BRAZOS RIVER NEAR ELIASVILLE, TEX.

LOCATION.—At suspension highway bridge near southern line of Young County. 2½ miles northeast of Eliasville, 6 miles above mouth of stream.

DRAINAGE AREA.—5,740 square miles, revised (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—November 12, 1915, to April 30, 1920; December 8, 1923, to August 31, 1925, when station was discontinued.

GAGE.—Chain gage attached to downstream handrail of bridge; staff gage at bridge from March 26 to August 31. Gages read by Fred Brooks.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed of sand and gravel; free from vegetation. Channel straight above and below station. One channel at all stages. Banks are wooded, composed of clay and sand, and are subject to overflow at a stage of 38 feet. Below 2-foot stage the control is gravel shoal, 800 feet below gage, and from 2 feet to 8 feet, it is a shoal 600 feet below gage. High-stage control not known. Both low-water controls subject to shift. There is a possibility of backwater from Brazos River during high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 22.0 feet at noon May 7 (discharge, 11,600 second-feet); no flow November 27, 28, March 7, 14, 24, April 4–9.

1916–1920; 1923–1925: Maximum stage recorded, 24.3 feet at 5 p. m. September 21, 1924 (discharge, 13,600 second-feet); no flow for extended periods.

DIVERSIONS.—Records of Board of Water Engineers for the State of Texas show numerous small diversions above station which probably reduce flow considerably at low stages. Two diversions are made between station and confluence with Brazos River.

REGULATION.—None of consequence except at extremely low stages.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined. Gage read to half-tenths twice daily from October 1 to March 25, but work of the observer not reliable. Gage read to hundredths twice daily thereafter. Daily discharge determined by shifting-control method or by comparison with flow at other stations, but daily-discharge records not sufficiently accurate for publication. Monthly records fair.

Discharge measurements of Clear Fork of Brazos River near Eliasville, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 28	3.88	10.5	Apr. 22	3.41	3.6	July 22	3.21	[a] 0.7
Nov. 26	3.32	[a] .2	May 12	14.95	[b] 4,780	Aug. 4	4.78	220
Dec. 9	3.20	[a] 1.5	May 13	11.63	[b] 3,890	Sept. 2	3.74	23.4
Jan. 24	3.92	13.4	June 5	4.68	191	Sept. 26	12.99	4,430
Mar. 26	3.19	[a] .20	June 30	4.38	108			

[a] Estimated.
[b] Surface velocities observed and coefficient used to reduce to mean velocities.

Monthly discharge of Clear Fork of Brazos River near Eliasville, Tex., for the period October 1, 1924, to August 31, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	144	2.8	22.3	1,370
November	3.6	0	1.60	95.2
December	----------	----------	5.76	354
January	----------	----------	6.77	417
February	3.3	.2	1.68	93.4
March	1.3	0	.30	18.2
April	1,910	0	283	16,800
May	9,420	3.2	1,360	83,700
June	487	2.4	81.1	4,830
July	790	.8	52.6	3,240
August	1,270	2.9	209	12,900
The period	----------	----------	----------	124,000

PALO PINTO CREEK NEAR SANTO, TEX.

LOCATION.—Half a mile above Texas & Pacific Railway bridge, one-fourth mile above mouth of Big Sunday Creek, and 1½ miles northeast of Santo, Palo Pinto County.

DRAINAGE AREA.—507 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—November 20, 1924, to September 30, 1925, when station was discontinued.

GAGE.—Inclined and vertical staff gage on left bank, 100 feet above rock falls; read by John D. Ranspot.

CHANNEL AND CONTROL.—Bed composed of rock, silt, and sand; permanent. Control is solid-rock ledge, which forms falls, 100 feet below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 8.35 feet May 7 (discharge not determined); no flow for greater part of period.

DIVERSIONS.—None of consequence.

REGULATION.—None.

ACCURACY.—No rating curve developed. Gage read to hundredths twice daily. Daily discharge not determined. No flow on days for which gage heights are not published.

Station visited by R. G. West on November 20, January 7, and August 11; no flow recorded.

Daily gage height, in feet, of Palo Pinto Creek near Santo, Tex., for the period November 20, 1924, to September 30, 1925

Day	Apr.	May	June	July	Aug.	Day	Apr.	May	June	July	Aug.
1		1.10			2.00	16		1.10			
2		1.08			1.92	17		1.08			
3					1.72	24			1.92		
4					1.42	25			3.00		
5				2.88	1.22						
						26	3.65		1.35		
6		1.85		1.78	1.10	27	3.58		1.12		
7		5.80		1.25		28	1.82		1.08		
8		5.25		1.08		29	1.35				
9		5.80				30	1.18			1.48	
10		2.92				31				1.75	
11		1.55									
12		1.25									
13		1.20									
14		1.18									
15		1.12									

NOTE.—No flow during the period Nov. 20, 1924, to Sept. 30, 1925, except on days given in the table.

PALUXY CREEK AT GLEN ROSE, TEX.

LOCATION.—At highway bridge in Glen Rose, Somervell County, 3 miles above mouth of stream.

DRAINAGE AREA.—424 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—October 27, 1923, to September 30, 1925, when station was discontinued.

GAGE.—Chain gage attached to downstream handrail of bridge; read by W. N. Carter.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed of solid rock. Channel straight for half a mile above and 300 feet below gage. One channel at all stages. Banks of earth and gravel, sodded, and not subject to overflow. No definite control, except bed of stream; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.30 feet at 9 a. m. November 10 (discharge not determined); no flow July 13–15 and 20–28.

1924–1925: Maximum stage recorded, 7.10 feet at 5 p. m. April 25, 1924 (discharge not determined); no flow for several periods.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 100 second-feet and extended above. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records for discharges below 100 second-feet, good; others poor.

The following discharge measurements were made:

February 5, 1925: Gage height, 0.54 foot; discharge, 7.72 second-feet.

May 13, 1925: Gage height, 0.66 foot; discharge, 14.9 second-feet.

August 12, 1925: Gage height, 0.27 foot; discharge estimated, 0.4 second-foot.

Daily discharge, in second-feet, of Paluxy Creek at Glen Rose, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.0	3.0	4.4	8.5	9.1	8.5	9.1	19	3.0	2.6	0.6	0.7
2	4.0	3.0	4.8	8.5	9.1	8.5	8.5	11	2.5	3.3	.6	.5
3	3.7	3.0	9.1	8.5	9.1	8.5	8.5	9.1	2.4	3.0	.6	.4
4	4.0	3.0	9.1	8.5	9.1	9.1	8.5	9.1	1.9	5.5	2.1	.4
5	4.4	3.0	8.5	8.5	9.1	8.5	8.5	9.1	1.9	4.8	4.4	.4
6	4.0	3.0	8.5	8.5	9.1	8.5	8.5	12	1.6	3.3	3.3	.4
7	4.0	3.0	8.5	8.5	9.1	8.5	9.1	45	1.6	1.9	2.6	.4
8	3.7	32	8.5	8.5	8.5	8.5	9.1	150	1.6	1.8	1.8	.4
9	4.0	12	8.5	8.5	8.5	9.1	9.1	113	9.7	1.2	1.4	.4
10	4.0	5.5	8.5	8.5	8.5	9.1	9.1	525	8.5	.9	1.2	.4
11	3.7	4.8	7.9	9.1	8.5	9.1	9.1	55	8.5	.5	.7	.4
12	3.7	9.1	7.4	9.1	8.5	9.1	8.5	26	7.9	.2	.9	16
13	3.3	8.5	7.4	9.1	8.5	9.1	7.4	17	6.2	0	.9	51
14	3.3	7.4	7.4	9.1	8.5	9.1	7.4	15	4.0	0	20	16
15	3.3	6.2	7.4	11	8.5	9.1	7.4	11	2.6	0	68	4.4
16	3.3	6.2	7.4	12	8.5	9.1	7.4	9.7	2.3	.2	22	1.2
17	3.3	6.2	7.4	12	8.5	9.1	7.4	9.1	1.8	.2	9.1	1.2
18	3.3	6.2	6.8	15	8.5	8.5	6.2	9.1	1.8	.2	4.0	.9
19	3.3	6.2	9.7	16	9.1	8.5	6.2	8.5	2.3	.1	2.6	.9
20	3.3	1,020	9.1	15	9.7	7.4	6.2	8.5	2.3	0	1.9	1.2
21	3.3	88	9.7	12	9.7	7.4	6.2	8.5	2.1	0	1.6	.9
22	3.0	28	12	11	16	7.4	6.2	7.4	1.4	0	1.2	.9
23	3.0	11	12	11	12	9.1	6.2	6.8	1.4	0	1.1	.9
24	3.0	7.4	12	9.1	9.7	9.1	6.2	6.2	1.4	0	1.2	1.8
25	3.0	6.2	12	9.1	9.1	9.1	6.2	5.8	71	0	1.2	9
26	3.0	6.2	12	9.1	9.1	9.1	6.2	5.5	63	0	.9	20
27	3.0	5.1	10	9.1	9.1	9.1	11	5.1	19	0	.9	7.4
28	3.0	4.4	9.7	9.1	9.1	9.1	32	4.0	6.2	0	.9	4.8
29	3.0	4.4	9.1	9.1	------	9.1	39	4.0	3.3	.2	.9	4.4
30	3.0	4.4	9.1	9.1	------	9.1	39	4.0	2.3	.4	.9	4.4
31	3.0	------	8.5	9.1	------	9.1	------	3.3	------	2.1	.9	------

Monthly discharge of Paluxy Creek at Glen Rose, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	4.4	3.0	3.45	212
November	1,020	3.0	43.9	2,610
December	12	4.4	8.79	540
January	16	8.5	9.97	613
February	16	8.5	9.28	515
March	9.1	7.4	8.76	539
April	39	6.2	10.6	634
May	525	3.3	36.5	2,240
June	71	1.4	8.18	487
July	5.5	0	1.05	64
August	68	.6	5.17	318
September	51	.4	6.07	361
The year	1,020	0	12.6	9,130

NOLANDS RIVER AT BLUM, TEX.

LOCATION.—At upper Gulf, Colorado & Santa Fe Railway bridge, a quarter of a mile northeast of Blum, Hill County, and 8 miles above mouth of stream.

DRAINAGE AREA.—275 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—July 29, 1924, to September 30, 1925, when station was discontinued.

GAGE.—Combined inclined and vertical staff at bridge on left bank; read by Miss Myrtis Haaf.

DISCHARGE MEASUREMENTS.—Made by wading or from railway bridge.

CHANNEL AND CONTROL.—Bed of solid rock with scattered boulders; permanent. Channel straight for 500 feet above and 400 feet below gage. Right bank of earth; permanent; not subject to overflow; left bank of rock and earth; permanent; subject to overflow at extremely high stages. Low-water control is gravel bar 300 feet below gage; permanent. Moderate and high-stage control is ruins of old masonry dam 350 feet below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year, 10.4 feet during night of May 13 (discharge, 8,060 second-feet, determined by slope method and subject to considerable error); no flow during several periods.

1924–25: Maximum stage that of May 13, 1925; no flow during several periods.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve poorly defined. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records poor.

Discharge measurements of Nolands River at Blum, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 2	2.82	[a] 1.2	May 16	3.24	24.2
May 14	2.98	4.51	Aug. 12	2.48	0
Do	10.40	[b] 8,060			

[a] Estimated. [b] Determined by slope method.

Daily discharge, in second-feet, of Nolands River at Blum, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Sept.
1		1.2	2.5	3.7	2.1	2.4	218	6.5		27	
2		1.2	2.5	3.7	1.8	2.3	4.6	4.9		4.3	
3	0.4	1.1	2.5	3.7	1.5	2.1	4.0	3.7		2.8	
4		1.2	40	3.4	1.5	1.8	4.0	3.1		2.0	
5		1.2	26	2.4	1.5	1.8	3.7	2.5		1.4	
6	5.5	1.2	5.5	2.3	1.5	1.7	3.7	3.1		.8	
7	5.2	1.4	4.9	2.1	1.5	1.5	3.4	487		.6	
8	4.9	2.5	4.9	2.1	1.8	1.5	3.1	455	200	.4	
9	4.3	2.4	4.9	2.4	1.7	1.5	3.1	2,110	218	.1	
10	4.0	2.4	4.6	2.5	1.9	1.3	2.5	920	10		
11	3.7	2.1	4.3	2.5	1.8	1.3	2.5	127	4.9		
12	3.7	2.1	4.0	2.4	1.7	1.2	2.5	111	4.3		
13	3.4	2.0	3.4	2.4	1.7	1.1	2.3	153	3.4		
14	3.4	2.0	3.4	2.4	1.7	1.1	2.1	200	2.3		
15	3.1	1.9	3.4	2.1	1.5	.9	2.0	149	1.8		
16	3.1	1.7	3.1	2.5	1.3	.8	1.9	25	1.4		
17	2.8	1.5	3.1	2.5	1.3	.8	1.7	26	.7		
18	2.5	1.5	4.6	2.5	1.3	.5	1.7	4.3	.1		
19	2.5	1.4	4.6	5.5	1.2	.5	1.5	2.0			
20	2.1	68	4.6	5.5	1.1	.5	1.3	1.4			
21	2.0	153	4.6	4.6	.9	.3	1.2	1.0			
22	2.0	5.5	4.6	4.3	4.9	.3	1.0	.8			
23	2.0	5.5	4.6	3.1	4.9	.2	.7	.6			
24	1.9	5.2	4.6	2.4	4.9	.1	.5	.3			80
25	1.9	4.9	4.6	2.4	4.3	.1	.5		64		3.1
26	1.8	4.0	4.6	2.4	3.7		.3		6.0		.9
27	1.7	3.7	4.6	2.4	3.1		4.3		2.5		.5
28	1.5	3.4	4.6	2.4	2.5		4.0		1.8		.2
29	1.4	3.1	4.0	2.1			188		1.3		.1
30	1.3	2.5	4.0	2.1			96		.8		.0
31	1.3		3.7	2.1						.9	

NOTE.—Braced figure gives estimated mean discharge for period indicated. No flow Mar. 26–31, May 25 to June 7, 19–24, July 10–30, Aug. 1 to Sept. 23, and Sept. 30.

Monthly discharge of Nolands River at Blum, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	5.5	0.4	2.42	149
November	153	1.1	9.69	577
December	40	2.5	5.98	368
January	5.5	2.1	2.87	176
February	4.9	.9	2.16	120
March	2.4	0	.89	54.9
April	218	.3	18.9	1,120
May	2,110	0	154	9,500
June	218	0	17.4	1,040
July	27	0	1.30	80
August	0	0	0	0
September	80	0	2.83	168
The year	2,110	0	18.4	13,400

AQUILLA CREEK NEAR AQUILLA, TEX.

LOCATION.—At lower highway bridge on lower Aquilla-Abbot road, half a mile below mouth of Dead Horse Creek and 2 miles southeast of Aquilla, Hill County.

DRAINAGE AREA.—309 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—December 9, 1924, to August 31, 1925, when station was discontinued.

GAGE.—Chain gage attached to upstream guard rail of highway bridge; read by Leslie Oleson or J. L. Taylor.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed of gravel, rock, and silt; fairly permanent. Channel curved at, above, and below gage. Right bank of rock, clay, and silt; permanent and subject to overflow at extremely high stages; left bank of silt, covered with trees and subject to overflow. Control is rock ledge and gravel bar 250 feet below gage; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 5.50 feet at 5 p. m. July 31 (discharge not determined); no flow during several periods.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 3 second-feet and extended above. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records poor.

Discharge measurements of Aquilla Creek near Aquilla, Tex., during the period ending August 31, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 9	2.37	[a] 0.50	May 18	2.66	2.82
Feb. 2	2.48	1.10	Aug. 12		0

[a] Estimated.

Daily discharge, in second-feet, of Aquilla Creek near Aquilla, Tex., for the period ending August 31, 1925

Day	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1			0.7	0.7		5.7			
2			.5	.7		1.4			
3			.2	.7	5.1	.8			2.6
4			.2	.7	2.0	.3			1.1
5			.2	.7	1.4	.2			.6
									.4
6			.2	.7	.8	.1			.4
7			.2	.7	.8	0			.1
8			.2	.7	.6				
9	0.5		.2	.7	.4				
10	.1	0	.2	.7	.4				
11	.1		.2	.6	.4				
12	.1		.2	.6	.4				
13			.2	.6	.4	5.7			
14			.2	.6	.4	4.8			
15			.2	.6	.2				
							0	0	
16			.2	.6	.1				0
17			.2	.6	.1	6.9			
18			.2	.6		2.9			
19			.2	.6		2.0			
20			.2	.6		.8			
21	0		.2	.6		.6			
22			1.0	.6		.2			
23			1.0	.6	0	.2			
24			1.0	.6		.2			3.5
25			1.0	.6		.1			1.2
26			1.0	.6		.2			.6
27			1.0	.6		.2			.3
28			.8	.6		.2			.1
29				.6		.1			
30				.6		.1			0
31				1.0		0		3.3	

NOTE.—Braced figures give estimated mean discharge for periods indicated. No record Jan. 21–31, May 8–12. Gage height, in feet, for days when stage was beyond limits of rating table and discharge not computed, as follows: Apr. 1, 4.29; Apr. 2, 3.19; Apr. 30, 3.18; May 15, 4.32; May 16, 3.22; Aug. 1, 3.24; Aug. 2, 3.09; and Aug. 23, 3.50.

Monthly discharge of Aquilla Creek near Aquilla, Tex., for the period December 9, 1924, to July 31, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
December 9–31	0.5	0	0.03	1.6
January 1–20	0	0	0	0
February	1.0	.2	.42	23.4
March	1.0	.6	.65	39.7
June	0	0	0	0
July	3.3	0	.11	6.5

NORTH BOSQUE RIVER NEAR CLIFTON, TEX.

LOCATION.—One-fourth mile above Gulf, Colorado & Santa Fe Railway bridge, 1⅜ miles northwest of Clifton, Bosque County, and 2 miles below confluence with Meridian Creek.

DRAINAGE AREA.—974 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—November 4, 1923, to September 30, 1925.

GAGE.—Staff gage attached to trees on right bank; read by Miss Belinda Swenson.

DISCHARGE MEASUREMENTS.—Made from railway bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for 1 mile below and one-fifth mile above station. Bed and banks composed of sand and earth; permanent. Banks slightly wooded and subject to overflow at a stage of 17 feet. Two channels above gage height 17 feet and three above 20 feet. Concrete dam 10 feet high, one-third mile below gage, serves as control to stage of 15 feet. Above this stage control is probably river channel below, which is composed of rock and clay; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.98 feet at 12.30 a. m. May 10 (discharge not determined). No flow June 25 and July 13–30.

1924–1925: Maximum stage recorded 9.65 feet at 7 a. m. April 26, 1924 (discharge not determined); no flow June 25 and July 13–30, 1925.

DIVERSIONS.—Railroad pumps about 100,000 gallons a day above dam and below gage.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 2,000 second-feet and extended above. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records good below 2,000 second-feet; others poor.

The following discharge measurements were made:

May 12, 1925: Gage height, 1.44 feet; discharge, 97.9 second-feet.

May 14, 1925: Gage height, 1.19 feet; discharge, 33.8 second-feet.

July 9, 1925: Gage height, 0.45 foot; discharge estimated, 2.5 second-feet.

Daily discharge, in second-feet, of North Bosque River near Clifton, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.2	3.2	8.0	5.0	4.0	5.0	2.4	1.0	1.1	6.0	147	4.0
2	3.0	2.9	6.0	6.0	5.0	4.0	2.4	1.0	.8	3.9	36	3.4
3	2.9	2.9	6.0	6.0	5.0	4.0	2.9	.9	.6	3.3	14	2.9
4	2.9	2.9	8.0	7.0	5.0	4.0	3.3	.8	.4	2.4	10	1.9
5	3.2	3.0	12	6.0	5.0	4.0	3.2	.7	.4	1.6	7.0	1.0
6	4.0	2.9	8.0	6.0	5.0	3.7	2.2	.6	.3	1.1	4.0	.6
7	4.0	3.3	6.0	6.0	5.0	3.7	1.6	3.3	.2	.6	3.4	.4
8	3.9	3.4	9.0	6.0	5.0	3.7	1.3	910	79	.4	2.9	.2
9	3.4	3.7	8.0	6.0	6.0	3.7	2.6	800	133	.3	2.9	.2
10	3.4	3.6	6.0	6.0	4.0	3.9	2.6	4,180	17	.2	1.2	.1
11	3.7	3.7	6.0	7.0	6.0	3.9	2.0	425	8.0	.1	.7	.1
12	3.6	5.0	8.0	6.0	6.0	3.9	1.6	102	3.7	.1	.4	467
13	2.9	4.0	6.0	6.0	6.0	3.7	1.3	47	3.3	0	643	300
14	2.5	3.7	8.0	6.0	6.0	3.7	1.1	28	2.5	0	71	71
15	2.2	4.0	7.0	6.0	6.0	3.7	.9	21	1.7	0	115	28
16	2.0	4.0	6.0	6.0	6.0	3.7	.8	14	1.1	0	47	17
17	1.8	3.9	6.0	10	5.0	3.9	.6	29	.7	0	21	12
18	1.6	4.0	7.0	10	6.0	3.7	.5	93	.5	0	11	8.0
19	1.6	4.0	3.9	10	6.0	3.9	.4	34	.3	0	6.0	4.0
20	1.5	173	4.0	10	6.0	4.0	.4	17	.2	0	3.9	3.7
21	1.4	133	5.0	9.0	4.0	3.9	.3	12	.2	0	3.4	2.9
22	1.6	75	4.0	9.0	3.6	4.0	.3	10	.1	0	2.4	1.7
23	2.0	31	4.0	9.0	3.7	3.9	.2	8.0	.1	0	584	1.0
24	2.6	19	4.0	9.0	21	3.7	.2	6.0	.1	0	93	11.0
25	3.0	14	4.0	8.0	12	3.2	.2	4.0	0	0	31	52
26	2.9	12	5.0	5.0	10	3.0	.2	3.7	28	0	17	37
27	3.0	10	5.0	3.9	8.0	2.7	.4	3.4	61	0	11	28
28	3.2	10	4.0	4.0	7.0	2.5	.5	3.2	24	0	19	17
29	3.2	8.0	6.0	4.0	------	2.4	.6	2.9	14	0	21	11
30	3.2	8.0	6.0	4.0	------	2.4	.8	2.3	9.0	0	12	8.0
31	3.4	------	6.0	4.0	------	2.4	------	1.6	------	460	7.0	------

Monthly discharge of North Bosque River near Clifton, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	4.0	1.4	2.80	172
November	173	2.9	18.7	1,110
December	12	3.9	6.19	381
January	10	3.9	6.64	408
February	21	3.6	6.33	352
March	5.0	2.4	3.61	222
April	3.3	.2	1.26	75
May	4,180	.6	218	13,400
June	133	0	13.0	776
July	460	0	15.5	952
August	643	.4	62.8	3,860
September	467	.1	37.2	2,210
The year	4,180	0	33.1	23,900

SOUTH BOSQUE RIVER NEAR SPEEGLEVILLE, TEX.

LOCATION.—At highway bridge half a mile below mouth of Hog Creek and 2 miles south of Speegleville, McLennan County.

DRAINAGE AREA.—388 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—March 24, 1924, to September 30, 1925.

GAGE.—Chain gage attached to upstream side of highway bridge; read by E. L. McLennan.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel straight 300 feet above and 750 feet below gage. Bed composed of sand and gravel; shifts. Right bank, subject to overflow; left bank lightly timbered and not subject to overflow. Control is gravel riffle 500 feet below gage; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.37 feet at 7.30 a. m. September 12 (discharge, 1,520 second-feet); no flow May 26 to September 11.

1924–1925: Maximum stage recorded, 17.7 feet at 8 a. m. May 26, 1924 (discharge not determined); no flow during period in 1924 and 1925.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined below 3,100 second-feet and extended above. Gage read to hundredths twice daily. Daily discharge determined by shifting-control method. Records fair.

Discharge measurements of South Bosque River near Speegleville, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	3.98	*0.8	Apr. 21	3.98	*0.2	July 8		0
Feb. 14	4.02	1.30	May 10	4.20	9.97	Aug. 22		0
Mar. 6	4.02	.75	May 14	3.92	*.5			

* Estimated.

Daily discharge, in second-feet, of South Bosque River near Speegleville, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Sept.
1	1.3	1.5	2.1	2.8	2.1	1.1	2.3	1.9	-------
2	1.1	1.7	2.1	2.5	2.1	1.1	1.5	1.1	-------
3	.9	1.5	2.3	2.5	2.1	.9	1.1	.7	-------
4	1.1	1.5	2.8	2.5	2.1	.7	.9	.7	-------
5	1.3	1.5	2.8	2.5	2.1	.7	.9	.4	-------
6	1.3	1.5	3.1	2.5	2.1	.7	.9	.4	-------
7	1.5	1.5	3.1	2.5	2.1	.7	.9	.4	-------
8	1.5	1.5	3.1	2.8	2.1	.5	.9	.4	-------
9	1.5	1.7	3.1	2.8	2.1	.7	.9	116	-------
10	1.3	1.7	3.1	2.8	1.9	.7	.9	9.9	-------
11	1.3	1.7	2.8	3.7	1.3	.7	.7	4.3	-------
12	1.3	1.9	2.8	3.4	1.3	.7	.7	2.5	513
13	1.3	1.9	2.5	2.8	1.3	.7	.7	1.7	14
14	1.3	1.9	2.8	2.5	1.5	.7	.7	1.1	6.4
15	1.1	1.9	3.1	2.5	1.5	.7	.7	.9	2.1
16	1.3	1.7	3.1	2.8	1.5	.7	.7	.5	1.5
17	1.1	1.7	3.4	4.0	1.5	.9	.4	.5	.7
18	1.3	1.7	3.4	4.9	1.5	.9	.4	.3	.3
19	1.3	1.7	3.4	4.0	1.5	1.1	.3	.5	.2
20	1.3	8.2	2.8	4.0	1.5	1.1	.2	.3	.2
21	1.3	4.9	2.8	2.8	1.5	1.1	.2	.3	.2
22	1.3	2.8	2.8	2.8	1 9	.9	.2	.3	0
23	1.5	2.1	2.8	2.5	1.7	.9	.2	.3	0
24	1.5	1.9	2.8	2.5	1.3	1.1	.2	.1	.7
25	1.5	1.7	2.8	2.5	1.3	1.1	.1	.1	.7
26	1.5	1.7	2.8	2.3	.9	1.1	.1	-------	.4
27	1.5	1.7	2.8	2.1	1.3	1.1	1.1	-------	.4
28	1.5	1.7	2.8	2.1	1.3	.9	1.1	-------	.3
29	1.5	1.7	2.8	1.9	-------	1.1	.9	-------	.3
30	1.5	1.9	3.1	1.9	-------	1.1	2.1	-------	.3
31	1.5	-------	3.1	2.1	-------	1.1	-------	-------	-------

NOTE.—No flow May 26 to Sept. 11.

Monthly discharge of South Bosque River near Speegleville, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1.5	0.9	1.34	82.3
November	8.2	1.5	2.07	123
December	3.4	2.1	2.87	177
January	4.9	1.9	2.78	171
February	2.1	.9	1.66	92.0
March	1.1	.5	.89	54.5
April	2.3	.1	.76	45.4
May	116	0	4.70	289
June	0	0	0	0
July	0	0	0	0
August	0	0	0	0
September	513	0	18.1	1,070
The year	513	0	2.91	2,100

LEON RIVER NEAR HAMILTON, TEX.

LOCATION.—At St. Louis Southwestern Railway bridge, 300 feet above Hamilton-Hico highway bridge, 3 miles below mouth of Bear Creek, and 6 miles north of Hamilton, Hamilton County.

DRAINAGE AREA.—1,900 square miles (measured on topographic maps or base map of Texas).

RECORDS AVAILABLE.—January 7 to September, 30, 1925.

GAGE.—Chain gage attached to upstream guardrail of railroad bridge; read by J. T. Dehart.

DISCHARGE MEASUREMENTS.—Made from railway bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for one-fourth mile above and below gage. Bed of sandy clay and loam with some débris lodged therein; fairly permanent. Banks of main channel covered with heavy growth of brush and light timber; subject to overflow at stage of 20 feet, when stream is one-fourth mile wide.

EXTREMES OF DISCHARGE.—Maximum stage during year, as determined by leveling to floodmarks, 15.9 feet May 9 (discharge not determined); no flow July 19 to August 2 and September 4–12.

DIVERSIONS.—None of consequence.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 800 second-feet. Gage read to hundredths once daily and one reading daily may not be true index to mean daily discharge for days of rapidly changing stage. Daily discharge determined by applying daily gage height to rating table except as noted in footnote to daily-discharge table. Records fair.

Discharge measurements of Leon River near Hamilton, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 8	2.67	[a] 4.0	June 27	4.96	212	June 28	3.50	64.9
May 15	5.26	256	Do	4.78	187	Aug. 27	2.18	[a] .5

[a] Estimated.

Daily discharge, in second-feet, of Leon River near Hamilton, Tex., for the year ending September 30, 1925

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	------	11	8.6	4.1	171	0.4	3.7	0	0.2
2	------	11	7.2	3.7	132	.4	.7	0	.1
3	------	11	5.9	3.3	54	.4	.5	249	.1
4	------	11	5.2	3.3	38	.3	.4	132	0.0
5	------	13	4.8	3.3	21	.2	.4	76	0
6	------	11	4.8	2.9	10	.2	.2	43	0
7	4.1	7.9	4.1	2.5	7.2	.2	64	18	0
8	4.1	7.9	4.8	2.5	112	195	127	4.4	0
9	4.1	8.6	4.8	1.8	------	20	64	1.0	0
10	4.1	8.6	4.8	1.3	------	.8	25	.7	0
11	5.2	8.6	4.8	1.3	------	.4	7.9	.6	0
12	4.8	7.9	4.8	1.2	------	.4	.7	.5	0
13	4.4	7.9	4.8	1.2	------	102	.7	.4	249
14	4.4	7.9	3.7	1.3	380	80	.5	.3	171
15	5.2	7.2	3.7	1.0	235	80	.2	.2	44
16	4.8	6.6	3.7	1.0	127	26	.2	.1	2.9
17	11	5.2	3.7	.8	117	5.2	.1	18	.8
18	12	5.2	3.7	.8	80	1.0	.1	1.0	.6
19	4.8	4.8	3.7	.8	48	.6	0	.6	.6
20	4.4	5.2	3.7	.7	30	.5	0	.4	.3
21	4.4	6.6	3.7	.7	22	.4	0	.3	.3
22	11	10	3.3	.6	9.3	.3	0	.2	.2
23	11	12	2.9	.5	5.2	.2	0	.2	.1
24	11	12	2.9	.5	2.2	.4	0	.1	.3
25	13	11	3.3	.4	1.2	.4	0	.1	235
26	11	16	3.7	.3	.8	.6	0	.2	12
27	13	14	3.7	.7	.8	183	0	.2	5.2
28	13	11	3.7	.8	.6	60	0	.1	2.9
29	13	------	3.7	580	.6	68	0	.1	.8
30	12	------	4.1	221	.6	26	0	.2	.6
31	11	------	4.1	------	.4	------	0	.2	------

NOTE.—Gage height, in feet, for days when stage was beyond limits of rating curve as follows: May 9, 15, 26; May 10, 11.00; May 11, 10.56; May 12, 10.18; May 13, 9.53.

Monthly discharge of Leon River near Hamilton, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
January 7-31	13	4.1	8.04	398
February	16	4.8	9.29	516
March	8.6	2.9	4.34	267
April	580	.3	28.1	1,670
June	195	.2	28.4	1,690
July	127	0	9.56	588
August	249	0	17.7	1,090
September	249	0	24.2	1,440

LEON RIVER NEAR BELTON, TEX.

LOCATION.—100 feet below bridge of Southwestern Traction Co., one-fourth mile above Temple-Belton highway bridge, 2 miles east of Belton, Bell County, and 2 miles above mouth of Nolan Creek.

DRAINAGE AREA.—3,550 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—October 1, 1923, to September 30, 1925.

GAGE.—Vertical staff on left bank attached to pump intake masonry; read by W. I. Massey.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of silt and mud and overlying decomposed rock. Banks composed of earth; fringed with trees at low water's edge; subject to overflow at extremely high stages. Low-water control is concrete and masonry dam, one-fourth mile below gage; permanent. High-water control is section of channel near railroad bridge below dam.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.30 feet at 8 a. m. May 10 (discharge, 5,360 second-feet); no flow April 26–27, July 1, 2, 22–31, August 1–12, 22, and September 7–11.

1924–1925: Maximum stage recorded, 8.80 feet from noon to 1 p. m. May 26, 1924 (discharge, 8,600 second-feet, determined from extension of rating curve and subject to error); no flow during several periods in 1925.

DIVERSIONS.—Several small pumping plants above; amount of water diverted not known.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 500 second-feet and poorly defined from 500 to 3,500 second-feet. Gage read to hundredths twice daily and oftener during floods. Daily discharge determined by applying mean daily gage height to rating table. Records fair.

Discharge measurements of Leon River near Belton, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 29	2.49	7.01	Mar. 5	2.46	15.4	May 10	4.44	1,560
Dec. 2	2.64	36.4	Do	2.46	18.4	May 16	4.27	1,110
Jan. 13	2.64	23.7	Mar. 16	2.46	15.6	July 10	2.35	4.16
Feb. 15	2.49	17.9	Apr. 23	2.30	16.6			

Daily discharge, in second-feet, of Leon River near Belton, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	10	44	26	35	10	8.6	41	17	0	0	10
2	8.6	8.6	41	26	35	10	8.6	22	14	0	0	8.6
3	8.6	8.6	41	26	35	10	8.6	202	12	24	0	7.7
4	8.6	8.6	41	26	35	10	8.6	250	10	28	0	5.0
5	8.6	8.6	35	26	35	10	6.8	152	10	22	0	3.0
6	8.6	10	29	26	35	11	5.9	117	9.5	16	0	.8
7	16	12	29	26	35	11	5.9	82	8.6	10	0	0
8	12	12	29	26	35	11	5.9	53	6.8	6.8	0	0
9	12	12	29	29	35	11	5.9	235	5.0	5.0	0	0
10	12	12	26	35	35	11	5.9	2,980	50	3.4	0	0
11	10	12	26	35	35	11	5.9	348	26	2.6	0	0
12	10	12	26	35	35	11	5.9	924	14	1.0	0	3,790
13	10	12	26	35	35	11	5.0	1,870	14	.2	5.0	208
14	8.6	12	26	35	29	11	5.0	1,530	14	26	8.6	41
15	8.6	12	26	35	13	10	4.6	1,420	14	22	5.0	22
16	8.6	12	26	35	13	10	4.2	1,320	14	13	20	14
17	6.8	12	26	35	13	10	4.2	829	12	7.7	20	196
18	6.8	14	26	35	13	10	3.8	535	9.5	5.0	10	152
19	6.8	14	26	35	13	10	3.8	447	8.6	4.2	5.0	73
20	6.8	23	26	35	13	10	3.8	222	8.6	3.0	3.0	32
21	6.8	23	26	35	14	10	3.4	117	23	1.0	.6	23
22	6.8	23	26	35	14	9.5	1.8	82	14	0	0	14
23	6.8	20	26	35	14	9.5	1.0	56	12	0	8.6	14
24	6.8	20	26	35	13	9.5	.8	41	10	0	4.6	14
25	6.8	17	26	35	13	9.5	.4	41	8.6	0	18	13
26	6.8	17	26	35	12	9.5	0	41	5.0	0	18	20
27	8.6	17	26	35	11	9.5	0	47	4.2	0	294	14
28	10	17	26	35	10	8.6	.4	35	2.6	0	78	152
29	10	17	26	35	-------	8.6	8.6	26	1.4	0	35	286
30	10	47	26	35	-------	8.6	22	23	.6	0	28	82
31	10	-------	26	35	-------	8.6	-------	18	-------	0	23	-------

Monthly discharge of Leon River near Belton, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	16	6.8	8.95	550
November	47	8.6	15.2	903
December	44	26	28.7	1,770
January	35	26	32.5	2,000
February	35	10	23.7	1,320
March	11	8.6	10.0	616
April	22	0	5.18	308
May	2,980	18	455	28,000
June	50	.6	12.0	712
July	28	0	6.48	398
August	294	0	18.9	1,160
September	3,790	0	173	10,300
The year	3,790	0	66.3	48,000

LITTLE RIVER NEAR LITTLE RIVER, TEX.

LOCATION.—At Missouri, Kansas & Texas Railway bridge, 150 feet west of Bartlett-Temple highway, 2 miles south of Little River, Bell County, and 4½ miles below confluence of Leon and Lampasas Rivers.

DRAINAGE AREA.—5,250 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—October 6, 1923, to September 30, 1925.

GAGE.—Chain gage attached to downstream guardrail of middle span of railway bridge; read by A. J. Lanham.

DISCHARGE MEASUREMENTS.—Made from downstream side of railway bridge, from highway bridge, or by wading.

CHANNEL AND CONTROL.—Bed composed of mud and silt, overlying decomposed rock; shifts. Banks covered with brush and light timber; subject to overflow. Channel straight for 250 feet above and 150 feet below gage. Control is a small brushy island, 150 feet below gage, which divides the stream at low stages into two channels; shifts. This island is submerged at high stages, when the control is probably a stretch of the channel below the island and a riffle at the highway bridge. Trees and brush on banks and on island probably serve as incomplete control at intermediate and high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 22.2 feet at 7 p. m. September 12 (discharge, 5,140 second-feet); minimum stage, 3.26 feet at 2.50 p. m. August 12 (discharge, 8.9 second-feet).

1924–25: Maximum stage recorded, 37.0 feet at 8 a. m. December 13, 1923 (discharge, 14,800 second-feet); minimum stage, that of August 12, 1925.

DIVERSIONS.—Several small diversions above station; amount diverted not known.

REGULATION.—Dam of Temple waterworks on Leon River may regulate flow at extremely low stages.

ACCURACY.—Stage-discharge relation not permanent. Rating curve fairly well defined. Gage read to hundredths twice daily and oftener during floods. Daily discharge determined by shifting-control method. Records fair.

Discharge measurements of Little River near Little River, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 29	3.92	52.3	Mar. 16	3.98	46.9	Aug. 12	3.26	8.65
Dec. 1	4.31	90.9	Apr. 23	3.60	34.4	Aug. 13	3.30	10.2
Jan. 14	4.13	68.8	May 16	11.59	1,920			
Feb. 14	4.06	63.3	July 11	3.42	16.6			

Daily discharge, in second-feet, of Little River near Little River, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	83	72	83	67	59	52	47	235	66	20	14	32
2	71	60	90	64	59	52	46	169	62	25	20	27
3	60	50	90	64	58	52	46	114	55	22	18	25
4	60	50	114	64	58	52	47	152	51	114	14	23
5	60	50	102	63	58	51	46	225	46	18	13	20
6	84	50	88	60	59	50	46	178	40	33	12	16
7	96	59	82	58	60	51	48	1,200	37	39	11	16
8	84	71	72	57	62	50	49	160	32	33	10	14
9	72	65	72	57	60	50	47	406	28	25	9.5	14
10	60	65	68	64	59	50	47	1,990	25	21	9.5	12
11	60	58	65	67	58	51	47	2,440	34	17	10	11
12	72	58	64	65	57	51	46	892	30	15	9.5	4,270
13	72	58	60	64	60	50	46	1,810	40	13	9.8	1,840
14	72	58	60	63	57	50	45	1,900	37	14	12	340
15	72	58	60	63	57	49	45	1,510	34	26	11	84
16	60	57	63	68	57	47	45	1,990	31	22	14	77
17	60	57	63	71	56	47	45	1,280	29	18	16	52
18	60	57	63	76	56	47	45	596	28	24	39	108
19	60	57	65	82	57	46	45	864	26	19	26	215
20	60	68	67	74	56	46	44	340	25	17	22	84
21	60	79	68	68	56	46	41	225	90	15	15	63
22	50	79	68	67	57	47	40	169	57	14	13	50
23	50	79	67	66	58	47	36	136	46	13	16	34
24	50	67	67	65	58	46	34	114	40	12	22	48
25	60	67	68	64	57	46	30	96	31	11	20	45
26	60	55	65	64	54	46	29	362	27	11	44	56
27	60	55	65	64	54	46	28	362	20	9.8	38	121
28	60	55	66	63	54	44	621	245	18	11	55	82
29	55	55	66	62	------	44	340	187	17	10	41	362
30	60	55	67	62	------	44	406	108	17	10	76	187
31	72	------	67	60	------	45	------	72	------	10	53	------

Monthly discharge of Little River near Little River, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	96	50	65.0	4,000
November	79	50	60.8	3,620
December	114	60	71.8	4,410
January	82	57	65.0	4,000
February	62	54	57.5	3,200
March	52	44	48.2	2,970
April	621	28	84.2	5,010
May	2,440	72	662	40,700
June	90	17	37.3	2,220
July	114	9.8	21.3	1,310
August	76	9.5	22.4	1,380
September	4,270	11	278	16,500
The year	4,270	9.5	123	89,300

LITTLE RIVER AT CAMERON, TEX.

LOCATION.—At McCowan Bridge, at Cameron-Rockdale highway crossing, 1 mile above Gulf, Colorado & Santa Fe Railway bridge, 2 miles southeast of Cameron, and 6½ miles below mouth of San Gabriel River,

DRAINAGE AREA.—7,030 square miles (measured on topographic maps, base map of Texas, and progressive military map of United States Army).

RECORDS AVAILABLE.—November 1, 1916, to September 30, 1925.

GAGE.—Chain gage attached to upstream handrail of bridge; read by Tracy Hobson.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of rock, boulders, sand, gravel, and clay; fairly permanent. Right bank of rock; subject to overflow at extremely high stages. Left bank of clay and gravel; slightly wooded; water flows through a draw at a stage of 27 feet and over road at a stage of 31.5 feet. A rough rock and gravel shoal 20 feet below gage serves as control for low and medium stages; may shift. During extremely high stages on Brazos River backwater may reach gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 14.2 feet in morning of September 14 (discharge, 4,290 second-feet); minimum stage, 2.40 feet at 7.20 p. m. July 30 (discharge, 10 second-feet).

1917–1925: Maximum stage recorded, 49.5 feet at 2.30 p. m. September 10, 1921 (discharge, 647,000 second-feet, determined by slope method, using value of 0.035 for "n" in Kutter's formula). Minimum discharge, 2.6 second-feet at 7 a. m. September 3, 5, and 7, 1918.

DIVERSIONS.—Numerous small diversions are made for irrigation and municipal uses, but such diversions have little effect on flow at station, except during extremely low stages. Records of the Board of Water Engineers for the State of Texas show that about 2,500 acres have been declared irrigated above station. No diversions of consequence below station. During time of low flow, water pumped by Cameron Power & Light Co. will affect flow at this station.

REGULATION.—Slight effect by pumping for city of Cameron.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table, except as noted in footnote to daily-discharge table. Records good.

Discharge measurements of Little River at Cameron, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 28	3.70	120	Feb. 14	3.71	108	July 12	2.95	38.2
Dec. 1	3.71	102	Mar. 14	3.62	88.9	Aug. 12	2.50	10.5
Dec. 13	3.92	140	Apr. 16	3.37	46.0	Sept. 22	3.96	192

Daily discharge, in second-feet, of Little River at Cameron, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	158	112	104	148	129	100	66	482	190	29	12	104
2	158	112	104	148	129	96	66	346	148	22	12	67
3	158	112	112	148	120	94	66	286	129	58	12	59
4	148	112	138	143	120	94	65	226	112	42	12	48
5	153	112	148	138	120	94	61	190	112	35	12	32
6	158	104	148	129	120	94	57	304	90	28	12	28
7	158	104	148	129	112	94	57	264	87	32	13	24
8	158	104	148	129	116	94	57	1,380	84	80	12	18
9	158	104	138	129	120	94	54	953	77	67	12	18
10	158	104	129		120	93	50	656	104	50	12	14
11	158	104	129	134	112	93	49	2,150	97	48	11	14
12	148	104	129		112	93	48	2,840	72	38	11	97
13	138	104		138	112	91	46	1,460	72	32	14	1,910
14	138	112		138	112	91	54	1,620	104	26	21	3,730
15	138	112		138	108	90	49	1,980	97	25	12	1,220
16	138	104			104	90	45	2,070	80	21	12	450
17	129	97	124	134	104	89	39	2,400	64	17	11	277
18	129	97			112	87	37	1,620	47	17	14	190
19	129	97		129	112	86	36	878	70	28	13	158
20	129	104		138	104	84	34	804	60	37	12	226
21	129	112		138	112	84	32	620	54	34	15	251
22	120	104	120	138	112	83	28	450	48	27	28	179
23	120	108	120	138	112	82	28	332	46	19	20	138
24	120	112	120	138	112	80	27	285	97	16	13	120
25	120	112	120	138	112	76	25	238	87	14	14	104
26	120	104	120	138	104	75	24	264	66	14	28	80
27	120	104	120	138	103	75	24	584	53	13	14	84
28	120	104	120	129	103	75	29	482	44	12	450	87
29	120	104	120	129	-------	74	44	389	34	12	138	214
30	120	104	138	129	-------	72	549	290	30	11	143	168
31	120	-------	138	129	-------	71	-------	240	-------	11	148	------

NOTE.—Braced figures show estimated mean discharge for periods indicated. No record and discharge interpolated Oct. 5, 12, 19, 26, Nov. 2, 9, 16, 23, 30, Dec. 7, 25, 28, Jan. 4, 25, Feb. 1, 8, 15, 22, Mar. 1, 8, 15, 22, 29, Apr. 5, 12, 19, 26, May 3, 24, 31, June 7, 21, 28, July 5, 26, Aug. 2, 9, 16, 23, 30, Sept. 6, 13, and 27.

Monthly discharge of Little River at Cameron, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	158	120	138	8,460
November	112	97	106	6,310
December	148	104	127	7,790
January	148	129	136	8,350
February	129	103	113	6,280
March	100	71	86.7	5,330
April	549	24	61.5	3,660
May	2,840	190	874	53,700
June	190	30	81.8	4,870
July	80	11	29.5	1,810
August	450	11	40.7	2,500
September	3,730	14	337	20,100
The year	3,730	11	178	129,000

COWHOUSE CREEK NEAR KILLEEN, TEX.

LOCATION.—At highway bridge on Killeen-Gatesville road, 1 mile below mouth of Brown Creek and 6 miles north of Killeen, Bell County.

DRAINAGE AREA.—650 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—September 25, 1924, to August 31, 1925, when station was discontinued.

GAGE.—Chain gage attached to upstream side of bridge; read by Bessie Potter.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for one-fourth mile above and below gage. Bed of rock, left half of which is overlain with thin layer of gravel; permanent. Banks of rock covered with earth; along main channel covered with heavy growth of brush and small timber. One channel at all but extremely high stages, when the left bank is overflowed and channel becomes about three-fourths mile wide and water backs up in natural depression on right bank about 200 feet from bridge and completely surrounds it. Low-water control is sand and gravel riffle just below gage; subject to slight shifts. Medium-stage control is boulder riffle 150 feet below gage; permanent. High-stage control not known.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 6.50 feet at 5.30 a. m. May 10 (discharge not determined); no flow April 19–26, June 5–9, and June 18 to August 13.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 230 second-feet and extended above. Gage read to hundredths once daily. Daily discharge determined by applying mean daily gage height to rating table, except as shown in footnote to daily-discharge table. Records fair.

Discharge measurements of Cowhouse Creek near Killeen, Tex., during the period September 25, 1924, to August 31, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Sept. 25	1.16	[a] 1.3	Apr. 28	1.28	[a] 1.0	May 15	1.77	51.5
Feb. 15	1.17	[a] 1.4	Do	2.64	227	July 9		0
Apr. 22	.98	0	Apr. 29	1.61	24.7			
Apr. 27	1.04	[a] .15	Do	1.54	19.5			

[a] Estimated.

Daily discharge, in second-feet, of Cowhouse Creek near Killeen, Tex., for the period September 25, 1924, to August 31, 1925

Day	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Aug.
1	------	0.7	0.6	1.4	1.6	1.4	1.2	1.1	20	0.6	------
2	------	.7	.6	13	1.4	1.3	1.0	1.0	15	.4	------
3	------	.6	.6	1.4	1.6	1.2	1.1	1.0	12	.2	------
4	------	.6	.7	1.7	1.4	1.2	1.1	.7	8.7	.1	------
5	------	.5	.7	1.7	1.4	1.3	1.1	.7	3.5	------	------
6	------	.5	.7	1.6	1.3	1.3	1.1	.7	2.0	------	------
7	------	.5	.6	1.7	1.5	1.3	1.1	.7	1.8	------	------
8	------	.2	.7	1.6	1.4	1.2	1.1	.7	3.5	------	------
9	------	.6	.8	1.5	1.4	1.2	1.1	.7	517	------	------
10	------	.5	.8	1.5	1.5	1.2	1.1	.5	703	75	----

Daily discharge, in second-feet, of Cowhouse Creek near Killeen, Tex., for the period September 25, 1924, to August 31, 1925—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11			0.5	1.0	1.5	1.5	1.2	1.1	0.5	109	26	
12			.5	1.1	1.5	1.5	1.1	1.1	.5	52	2.7	
13			.5	1.0	1.5	1.5	1.1	1.1	.4	18	1.6	
14			.4	1.1	1.4	1.4	1.2	1.0	.4	10	1.6	63
15			.4	1.0	1.2	1.4	1.1	.8	.4	50	1.2	58
16			.4	1.0	1.3	1.4	1.2	1.0	.3	18	1.0	5.5
17			.6	.8	1.3	1.7	1.2	1.0	.2	158	.6	3.3
18			.6	.8	1.6	1.7	1.2	1.1	.1	15		1.1
19			.5	1.0	1.4	2.0	1.1	1.1		2.0		1.1
20			.6	1.3	1.4	1.8	1.1	1.0		1.2		.6
21			.6	1.3	1.1	1.7	1.2	1.0		1.2		89
22			.6	2.3	1.3	1.7	1.2	1.0		1.1		3.5
23			.6	1.7	1.4	1.6	1.1	1.1		.8		1.8
24			.5	1.7	1.4	1.2	1.1	1.1		.7		29
25		1.0	.6	1.6	1.4	1.4	1.1	1.1		1.2		3.5
26		.8	.6	1.4	1.3	1.4	1.2	1.0		26		68
27		1.0	.7	1.4	1.3	1.3	1.2	1.0	.2	20		100
28		.5	.7	1.4	1.4	1.3	1.2	.9	52	1.6		40
29		.7	.7	1.3	1.4	1.4		.9	40	1.2		13
30		.7	.6	1.2	1.6	1.4		1.1	48	1.0		4.5
31			.6		1.6	1.3		1.1		1.1		2.0

NOTE.—Discharge May 9 and 10 from long extension of rating curve and subject to considerable error. No record and discharge interpolated Sept. 30, Oct. 1–6, 18, 25, Nov. 19, 27, and Mar. 5. Discharge estimated May 27. No flow Apr. 19–26, June 5–9, 18–30, July 1 to Aug. 13.

Monthly discharge of Cowhouse Creek near Killeen, Tex., for the period September 25, 1924, to August 31, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
September 25–30	1.0	0.5	0.78	9.3
October	.7	.2	.55	34.1
November	2.3	.6	1.07	63.9
December	13	1.1	1.82	112
January	2.0	1.2	1.49	91.4
February	1.4	1.1	1.19	66.2
March	1.2	.8	1.05	64.7
April	52	0	5.03	299
May	703	.7	57.3	3,520
June	75	0	3.70	220
July	0	0	0	0
August	100	0	15.7	966

LAMPASAS RIVER AT YOUNGSPORT, TEX.

LOCATION.—Half a mile northeast of Youngsport, Bell County, and 2½ miles below mouth of Rocky Creek.

DRAINAGE AREA.—1,240 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—February 5, 1924, to September 30, 1925.

GAGE.—Combined vertical and inclined staff on left bank, 500 feet above steel highway bridge; read by J. R. McClintock.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for half a mile above and below station. Bed composed of rock; permanent. Right bank of rock, overlain with clay. Left bank above and below gage is covered with light timber along stream, and is subject to overflow at extremely high stages. Right bank above gage is covered with light timber, and is not subject to overflow; below gage right bank is covered with scattered timber along the stream and is subject to overflow at extremely high stages. Control for low and medium stages is rock shoal, 50 feet below gage; permanent. High-stage control indefinite.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.62 feet at 7 a. m. May 15 (discharge, 3,020 second-feet); no flow July 17 to August 18. 1924–1925: Maximum stage recorded, 9.24 feet at 10 a. m. September 14, 1924 (discharge, 7,200 second-feet, determined from extension of rating curve); no flow July 17 to August 18, 1925.

DIVERSIONS.—Small amount diverted for municipal uses.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 2,000 second-feet and poorly defined above. Gage read to hundredths twice daily and oftener during floods. Daily discharge determined by applying mean daily gage height to rating table. Discharge below 2,000 second-feet good; fair above.

Discharge measurements of Lampasas River at Youngsport, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 29	2.76	9.75	Feb. 15	2.81	10.7	May 15	4.02	520
Dec. 2	2.81	10.7	Mar. 17	2.78	8.82	July 10	2.36	.5
Jan. 14	2.82	12.7	Apr. 23	2.53	5.34			

Daily discharge, in second-feet, of Lampasas River at Youngsport, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.6	8.2	11	16	16	10	9.6	92	10	3.0	------	6.0
2	9.6	7.5	11	16	16	11	9.6	62	7.5	2.5	------	4.6
3	9.6	7.1	12	16	15	9.6	9.6	26	7.1	2.0	------	4.0
4	8.9	8.2	13	15	16	9.6	9.6	21	6.4	1.4	------	3.8
5	8.9	8.2	11	13	13	9.6	8.2	16	5.6	1.1	------	3.5
6	8.2	7.1	12	13	13	9.6	7.1	12	5.6	3.4	------	3.5
7	8.2	7.5	11	15	13	9.6	7.1	78	5.6	3.0	------	3.4
8	8.2	7.1	11	16	11	9.6	6.4	95	5.6	2.0	------	3.3
9	8.2	8.2	12	16	11	10	6.4	178	5.6	1.6	------	3.1
10	8.2	8.9	13	19	11	11	6.4	980	5.0	1.2	------	2.6
11	7.5	9.6	13	19	11	11	5.6	610	5.0	.8	------	2.0
12	7.5	9.6	15	19	11	11	5.6	125	5.0	.4	------	610
13	7.1	9.6	13	16	11	11	5.6	60	5.0	.3	------	196
14	7.1	9.6	15	13	11	9.6	5.6	522	5.6	.2	------	121
15	8.2	9.6	16	13	12	9.6	6.0	1,400	4.6	.2	------	26
16	7.1	8.2	13	13	11	9.6	5.0	142	3.9	.1	------	15
17	7.5	8.2	15	16	12	9.6	4.3	346	3.5	------	------	8.9
18	7.5	8.2	17	19	11	9.6	3.9	106	3.1	------	------	6.7
19	7.5	8.2	13	19	11	9.6	3.9	45	3.1	------	3.9	5.6
20	7.1	9.6	13	19	12	9.6	3.7	26	2.9	------	3.5	5.6
21	7.1	9.6	13	17	13	9.6	3.5	17	2.5	------	3.0	5.0
22	8.2	9.6	13	16	11	9.6	3.3	15	2.5	------	2.2	4.0
23	7.1	9.6	15	13	11	9.6	2.8	10	2.3	------	1.5	3.7
24	7.1	9.6	16	13	11	9.6	2.7	8.9	2.0	------	2.1	33
25	7.5	9.6	11	11	11	9.6	2.5	70	1.1	------	1.7	133
26	7.1	9.6	12	12	10	9.6	2.3	259	28	------	1.7	65
27	7.5	8.2	12	13	11	9.6	129	78	9.6	------	1.5	40
28	7.1	8.2	12	13	9.6	11	420	35	5.0	------	95	30
29	7.1	9.6	13	15	------	11	307	21	3.8	------	35	17
30	7.1	9.6	16	16	------	9.6	133	16	3.2	------	15	13
31	7.5	------	16	16	------	9.6	------	12	------	------	8.9	------

NOTE.—No flow July 17 to Aug. 18.

Monthly discharge of Lampasas River at Youngsport, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	9.6	7.1	7.81	480
November	9.6	7.1	8.72	519
December	17	11	13.2	811
January	19	11	15.4	944
February	16	9.6	12.0	666
March	11	9.6	9.94	611
April	420	2.3	37.8	2,250
May	1,400	8.9	177	10,900
June	28	1.1	5.52	329
July	3.4	0	0.75	46
August	95	0	5.65	347
September	610	2.0	45.9	2,730
The year	1,400	0	28.5	20,600

SAN GABRIEL RIVER AT GEORGETOWN, TEX.

LOCATION.—One-fourth mile below confluence of North and South Forks of San Gabriel River, three-fourths mile below Georgetown-Belton highway bridge, and 1 mile northeast of Georgetown, Williamson County.

DRAINAGE AREA.—414 square miles (measured on topographic maps and base maps of Texas).

RECORDS AVAILABLE.—February 21, 1924, to August 31, 1925, when station was discontinued.

GAGE.—Inclined staff on right bank; read by Oscar Krieg or Mrs. A. C. Treuthardt.

DISCHARGE MEASUREMENTS.—Made from highway bridges three-quarters of a mile above or by wading.

CHANNEL AND CONTROL.—Bed of rock partly overlain with gravel and subject to slight change owing to aquatic growth. Channel straight for one-fourth mile above and 300 feet below gage. One channel at gage for all stages. Right bank of earth and rock and subject to overflow at extremely high stages; left bank wooded, and subject to overflow at medium stages. Control for stages below 8 or 9 feet is rock and gravel riffle, 10 feet downstream from second section of gage and is practically permanent except for aquatic growth. Between this and 11 feet the control is remains of concrete road crossing a quarter of a mile below gage. For higher stages, control is indefinite.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 7.00 feet at 7.40 a. m. May 10 (discharge, 3,000 second-feet); minimum stage, 1.87 feet August 20–22 (discharge, 2.2 second-feet).

1924–25: Maximum stage recorded, 12.1 feet about noon May 20, 1924 (discharge, 10,500 second-feet, determined from extension of rating curve and subject to considerable error); minimum stage that of August 20–22, 1925.

DIVERSIONS.—Several small diversions above; amount not known.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve fairly well defined. Gage read to hundredths twice daily. Daily discharge determined by shifting-control method. Records fair.

Discharge measurements of San Gabriel River at Georgetown, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 30	2.08	12.9	Mar. 20	2.12	4.82	July 14	1.91	3.76
Dec. 2	2.36	19.1	Apr. 22	1.98	5.22	Aug. 13	1.94	3.36
Jan. 15	2.11	12.8	Apr. 24	1.98	4.80			
Feb. 16	2.10	8.95	May 17	1.98	6.77			

Daily discharge, in second-feet, of San Gabriel River at Georgetown, Tex., for the period October 1, 1924, to August 31, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	48	12	16	14	12	7.0	5.4	17	8.6	5.6	3.4
2	48	12	18	13	11	6.6	5.4	7.4	9.0	6.0	3.8
3	48	11	18	13	11	6.6	5.6	5.2	8.6	5.8	3.6
4	48	11	16	13	11	6.4	5.4	4.4	8.6	5.6	3.6
5	48	11	16	13	11	6.4	5.6	4.2	8.6	5.4	3.6
6	43	11	16	13	11	6.2	5.6	19	8.6	5.6	3.4
7	41	11	15	14	11	6.2	5.4	423	8.2	5.4	3.4
8	36	11	15	14	11	6.2	5.4	398	7.4	5.2	3.6
9	35	12	14	14	10	6.2	5.6	1,000	7.8	5.4	3.6
10	33	12	15	14	10	6.0	11	1,320	7.8	5.2	3.6
11	28	12	15	15	9.8	6.2	6.0	100	7.8	5.2	3.6
12	22	12	15	13	9.4	5.8	5.8	17	7.8	5.0	3.2
13	21	13	15	13	9.4	5.8	5.8	16	7.8	5.0	3.2
14	21	13	15	12	9.4	5.4	5.4	15	7.8	4.4	7.0
15	20	13	15	12	9.4	5.4	5.0	12	7.8	3.8	5.0
16	19	13	14	13	9.4	5.6	4.8	7.0	7.8	3.8	3.0
17	18	14	13	13	9.0	5.6	5.0	6.8	7.4	3.8	2.7
18	18	15	14	13	8.6	5.4	4.8	8.6	6.4	3.8	2.7
19	16	15	13	12	9.0	5.2	5.0	9.4	6.4	3.6	2.4
20	16	15	13	12	9.0	4.8	5.0	7.0	6.6	3.6	2.4
21	15	14	13	12	9.0	5.0	5.2	6.6	6.4	3.8	2.4
22	14	14	13	12	9.0	5.2	5.2	6.6	6.6	4.0	2.2
23	14	14	14	12	8.2	5.2	5.0	6.6	6.6	4.0	2.4
24	15	15	14	12	7.4	5.4	4.8	6.6	6.4	4.0	2.6
25	15	15	13	12	7.4	5.4	4.6	8.2	5.8	3.4	2.4
26	15	15	13	12	6.8	5.2	4.6	32	5.4	3.6	652
27	14	16	13	11	7.0	5.4	7.4	11	5.2	3.6	166
28	13	15	13	12	6.8	5.0	5.2	8.2	5.2	3.6	9.8
29	13	15	14	12	-------	5.2	207	7.8	5.4	3.6	5.0
30	13	16	15	12	-------	5.2	23	8.2	5.4	3.4	4.2
31	12	-------	15	11	-------	5.4	-------	8.2	-------	3.4	4.0

Monthly discharge of San Gabriel River at Georgetown, Tex., for the period October 1, 1924, to August 31, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	48	12	25.2	1,550
November	16	11	13.3	789
December	18	13	14.5	895
January	15	11	12.7	785
February	12	6.8	9.39	522
March	7.0	4.8	5.70	350
April	207	4.6	12.8	764
May	1,320	4.2	113	6,960
June	9.0	5.2	7.17	427
July	6.0	3.4	4.44	273
August	652	2.2	29.8	1,830
The period	----------	----------	----------	15,100

SAN GABRIEL RIVER AT CIRCLEVILLE, TEX.

LOCATION.—At bridge on highway between Taylor and Granger, half a mile southeast of Circleville, Williamson County, half a mile above Missouri, Kansas & Texas Railway bridge, and 7 miles above mouth of Williamson Creek.

DRAINAGE AREA.—602 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—February 1, 1924, to September 30, 1925.

GAGE.—Chain gage attached to upstream rail of highway bridge; read by Van P. Slagle.

DISCHARGE MEASUREMENTS.—Made from highway bridge, from railroad bridge, or by wading.

CHANNEL AND CONTROL.—Bed composed of mud and gravel; shifting. One channel at all stages. Channel winding above and below gage. Banks covered with brush and light timber and subject to overflow at extremely high stages at which time the highway bridge is completely surrounded by water. Control formed by gravel riffle, 100 feet below gage; shifts.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 12.44 feet at 7 a. m. September 12 (discharge, 3,930 second-feet); minimum stage, 2.05 feet during afternoon of July 29 and 31 (discharge, 1.0 second-foot).

1924–25: Maximum stage recorded, 20.7 feet at 4.30 p. m. May 30, 1924 (discharge, 11,500 second-feet, determined from extension of rating curve). No flow September 5, 6, 8, and 11, 1924.

DIVERSIONS.—Several small diversions for municipal use above; amount not known.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curves fairly well defined. Gage read to hundredths twice daily but mean of two readings daily during floods may not be true index to mean discharge on account of rapid fluctuations. Daily discharge determined by shifting-control method. Records fair.

Discharge measurements of San Gabriel River at Circleville, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 30	2.60	29.7	Mar. 18	2.54	16.5	July 13	2.25	4.25
Dec. 3	2.63	28.4	Apr. 24	2.34	10.6	Aug. 12	2.17	1.91
Jan. 15	2.55	24.0	May 9	6.18	1,020			
Feb. 16	2.52	18.7	May 16	2.60	31.7			

Daily discharge, in second-feet, of San Gabriel River at Circleville, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	22	22	24	20	17	15	72	8.0	25	2.2	27
2	16	17	21	25	20	17	15	50	5.5	19	14	21
3	15	20	25	26	18	16	14	38	3.0	6.5	15	19
4	15	16	26	29	20	15	14	25	6.0	5.0	9.4	15
5	16	17	23	26	20	16	16	20	2.4	4.5	6.0	14
6	14	16	22	27	18	16	16	38	3.0	3.5	5.0	11
7	14	18	22	23	18	15	17	1,430	2.2	2.2	4.0	11
8	14	22	22	25	17	16	16	340	2.1	1.8	3.5	12
9	15	21	24	27	17	14	17	1,030	22	2.1	2.8	10
10	16	18	22	29	17	16	16	1,030	6.0	1.8	2.6	10

Daily discharge, in second-feet, of San Gabriel River at Circleville, Tex., for the year ending September 30, 1925—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	16	22	22	29	17	16	43	570	3.0	2.1	2.1	9.4
12	16	56	22	26	17	14	32	76	3.0	2.4	1.6	1,550
13	16	27	25	25	17	16	25	40	3.0	2.6	1.4	193
14	14	27	24	22	17	16	21	27	2.0	2.4	240	41
15	17	26	25	25	17	17	15	58	2.0	2.6	43	27
16	16	24	25	27	18	17	14	31	2.6	2.4	19	14
17	18	22	26	27	16	19	14	20	2.6	2.6	8.0	14
18	21	22	23	26	18	16	12	15	2.4	2.6	4.5	12
19	23	27	25	24	16	15	11	14	2.0	2.2	2.8	12
20	20	28	26	25	16	15	9.4	14	1.6	2.2	2.2	11
21	17	22	22	25	18	14	8.7	14	2.0	2.2	2.1	8.7
22	18	22	23	22	17	15	6.5	13	2.1	2.0	2.1	8.0
23	18	22	22	24	16	16	6.5	12	2.4	1.6	2.2	8.0
24	18	22	22	25	16	16	7.0	10	2.7	1.4	2.0	11
25	22	21	21	24	16	14	9.4	9.4	2.7	1.4	2.2	14
26	20	23	22	21	17	14	9.4	57	2.7	1.4	33	13
27	19	21	19	22	16	14	74	51	3.0	1.2	390	11
28	17	19	21	20	18	15	23	29	6.0	1.2	240	9.4
29	18	20	22	20	-------	16	136	17	11	1.1	47	114
30	23	21	26	20	-------	16	125	14	8.0	1.1	31	9.4
31	19	-------	25	20	-------	16	-------	10	-------	1.1	26	-------

Monthly discharge of San Gabriel River at Circleville, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	23	14	17.4	1,070
November	56	16	22.7	1,350
December	26	19	23.1	1,420
January	29	20	24.5	1,510
February	20	16	17.4	968
March	19	14	15.6	962
April	136	6.5	25.3	1,500
May	1,430	9.4	167	10,300
June	22	1.6	4.23	252
July	25	1.1	3.59	221
August	390	1.4	37.6	2,310
September	1,550	8.0	71.2	4,240
The year	1,550	1.1	36.0	26,100

BRUSHY CREEK AT COUPLAND, TEX.

LOCATION.—At Missouri, Kansas & Texas Railway bridge, half a mile north of Coupland, Williamson County, 8 miles south of Taylor, and 32 miles above confluence with San Gabriel River.

DRAINAGE AREA.—198 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—May 27, 1924, to September 30, 1925.

GAGE.—Chain gage attached to downstream guardrail of railroad bridge; read by S. J. Clay.

DISCHARGE MEASUREMENTS.—Made from railroad bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of clay and silt; brush and willows scattered throughout; shifting. Channel winding above and below station. Left bank slopes gently, is covered with light timber and brush, and is subject to overflow at extremely high stages. Right bank is covered with timber and brush along main channel and is subject to overflow at high stages. The overflow section is cultivated land. Control is indefinite, and will be affected by growth of brush and timber.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 16.8 feet at 9 a. m. September 12 (discharge, 1,220 second-feet); no flow June 29 to September 11.

1924–1925: Same as given above.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve fairly well defined. Gage read to hundredths about every other day. Daily discharge determined by applying daily gage height to rating table or by interpolation for days of missing gage height. Records poor.

Discharge measurements of Brushy Creek at Coupland, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 30	3.40	7.31	Mar. 18	3.14	1.20	Sept. 12	16.05	1,020
Dec. 3	3.60	7.49	Apr. 24	2.50	0	Do	13.60	682
Jan. 15	3.50	7.40	May 16	2.60	a.10	Do	12.29	562
Feb. 17	3.24	6.83	July 13	.31	0			

a Estimated.

Daily discharge, in second-feet, of Brushy Creek at Coupland, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Sept.
1	5.6	6.3	7.1	8.3	5.8	4.8	4.3	6.0	10	
2	7.6	6.3	7.8	7.6	5.6	4.3	4.3	4.0	6.3	
3	7.6	6.3	8.5	8.0	5.7	4.3	4.3		6.3	
4	7.6	6.3	8.2	7.8	5.9	4.3	4.3		4.9	
5	7.4	6.5	7.8	7.6	6.0	4.3	4.0		3.8	
6	7.1	6.7	7.6	7.4	5.8	4.3	3.8		3.8	
7	7.1	6.7	6.9	7.1	5.6	4.5	3.9		3.8	
8	6.9	6.7	6.3	7.6	5.6	4.7	4.0		3.8	
9	6.6	6.7	6.5	8.0	5.6	4.9		100	86	
10	6.3	6.7	6.7	8.5		4.6			90	
11	6.3	7.6	6.8	7.8		4.9	3.8			
12	6.3	7.2	7.0	7.1		4.8			42	
13	6.3	6.8	7.1	7.1	5.6	4.6			6.3	278
14	6.3	6.4	7.1	7.1		4.6	3.6		15	46
15	6.0	6.0	7.1	8.0		4.6	3.2		13	7.6
16	5.6	6.2	7.1	7.6		4.6	3.0	2.6	10	5.6
17	5.6	6.3	7.1	7.1	5.6	4.6	3.0	14	8.0	4.3
18	5.6	6.0	7.1	7.1	5.2	4.9	3.0	9.5	6.0	2.6
19	6.4	6.3	7.1	7.1	4.8	4.6	3.0	12	4.9	2.3
20	7.1	7.1	7.1	7.1	4.3	4.6	3.0	14	3.8	2.0
21	7.1	6.7	7.1	7.1	4.3	4.3	2.8	12	3.8	1.8
22	7.1	6.3	7.1	7.1	4.6	4.4	2.6	9.5	2.9	1.7
23	7.1	6.2	7.1	6.7	4.9	4.6	2.6	6.3	2.1	1.4
24	6.9	6.0	6.3	6.3	5.2	4.6	2.3	6.3	1.2	1.7
25	6.7	6.3	5.4	6.3	5.2	4.6	2.2	8.0	1.2	1.8
26	6.7	6.6	4.6	6.3	5.2	4.6	2.4	7.6	1.1	1.4
27	6.7	6.8	4.6	6.3	5.2	4.4	2.6	8.0	.9	1.2
28	6.8	7.1	4.3	6.3	5.2	4.3	8.5	16	.4	1.0
29	7.0	6.3	4.0	6.2		4.3	6.0	14		37
30	7.1	6.7	6.5	6.1		4.3		15		.8
31	6.7		9.0	6.0		4.3		9.0		.8

NOTE.—Braced figures give estimated mean discharge for periods indicated. No flow June 29 to Sept. 11.

Monthly discharge of Brushy Creek at Coupland, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	7.6	5.6	6.68	411
November	7.6	6.0	6.54	389
December	9.0	4.0	6.77	417
January	8.5	6.0	7.15	440
February	6.0	4.3	5.37	299
March	4.9	4.3	4.53	279
April	8.5	2.2	3.72	222
May		2.6	47.5	2,920
June	90	0	12.8	760
July	0	0	0	0
August	0	0	0	0
September	278	0	13.3	791
The year		0	9.57	6,930

YEGUA CREEK NEAR SOMERVILLE, TEX.

LOCATION.—At Gulf, Colorado & Santa Fe Railway bridge, one-fourth mile above Somerville-Brenham highway bridge, 2 miles south of Somerville, Burleson County, and 5 miles above mouth of Davidson Creek.

DRAINAGE AREA.—990 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—May 24, 1924, to September 30, 1925.

GAGE.—Chain attached to upstream side of railroad bridge; read by L. Moser or B. H. Herring. Zero of gage is base of rail; therefore all gage readings are minus.

DISCHARGE MEASUREMENTS.—Made from railroad bridge.

CHANNEL AND CONTROL.—Bed composed of sand and silt; shifts. Channel winding. Banks of sand and silt, covered with light timber and brush, with considerable swamp land above and below gage. One channel above bridge and several below at all stages. Control is indefinite and formed by natural channel below gage; composed of silt and clay and sand, with brush and light timber scattered throughout channel; subject to change owing to growth of brush.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, −30.70 feet at 8 a. m. July 7 (discharge, 30 second-feet); no flow during several periods.

1924–1925: Maximum stage recorded, −22.6 feet at 11 a. m. May 30, 1924 (discharge, 11,600 second-feet); no flow during several periods.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve fairly well defined. Gage read to hundredths but not regularly. Daily discharge determined by applying daily gage height to rating table or interpolating discharge for days of missing gage height. Records fair.

Discharge measurements of Yegua Creek near Somerville, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 26	−33.10	0	Feb. 12	−32.78	0	July 4		0
Nov. 27		0	Mar. 12	−32.77	5.05	Sept. 19	−32.80	a.5
Jan. 10	−32.85	a.1	Apr. 13		0			

a Estimated.

Daily discharge, in second-feet, of Yegua Creek near Somerville, Tex., for the year ending September 30, 1925

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	July	Sept.
1			0.3	0.7	0.7	0.4	3.8		
2		0.2	.3	.6	.7	.4	3.8		
3			.4	.6	.7	.4	2.0		
4			.4	.6	.7	.4	.1		
5		.1	.4	.6	.7	.4	.1		
6		.2	.4	.6	.7	.4	.1		
7		.2	.4	.6	.6	.4		30	
8		.2	.4	.6	.5	.4	.1	23	
9		.2	.4	.6	.5	.4	.1	9.5	
10		.2	.4	.6	.5	.3	.1	6.0	
11		.2	.4	.6	.6	.3	.1	2.8	
12		.2	.4	.5	.6	.3	.1	2.1	
13		.2	.4	.5	.5	.3	.1	1.4	0.1
14		.2	.4	.5	.5	.4	.1	1.0	.3
15		.2	.4	.5	.5	.4	.1	.7	.8
16		.2	.4	.5	.5	.4		.7	.8
17		.2	.4	.3	.5	.3		.6	.6
18		.2	.4	.5	.5	.3		.6	.4
19		.2	.4	.5	.5	.2		.3	.4
20		.2	.5	.5	.5	.2		.3	.4
21	0.1	.2	.6	.5	.5	.2		.3	.3
22	.2	.2	.6	.5	.5	.2		.2	.3
23	.1	.2	.7	.5	.5	.2		.1	.2
24	.1	.3	.7	.5	.5	.2			.2
25		.3	.7	.5	.5	.1			.2
26		.4	.7	.7	.4	.1			.2
27		.4	.7	.7	.4	.1			.2
28	.1	.4	.7	.7	.4	.1			.2
29	.2	.4	.7		.4	3.8			.2
30	.1	.4	.7		.4	3.8			.1
31		.4	.7		.4				

NOTE.—No flow for days for which no discharge is given.

Monthly discharge of Yegua Creek near Somerville, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	0	0	0.00	0
November	.2	0	.03	1.8
December	.4	0	.22	13.7
January	.7	.3	.50	30.5
February	.7	.5	.56	30.9
March	.7	.4	.53	32.5
April	3.8	.1	.53	31.3
May	3.8	0	.35	21.2
June	0	0	.00	0
July	30	0	2.57	158
August	0	0	.00	0
September	.8	0	.20	11.7
The year	30	0	.46	332

NAVASOTA RIVER NEAR EASTERLY, TEX.

LOCATION.—At International-Great Northern Railroad bridge, 3 miles below mouth of Steel Creek and 6 miles northeast of Easterly, Robertson County.

DRAINAGE AREA.—949 square miles (measured on topographic maps, progressive military maps of United States Army, and base map of Texas).

RECORDS AVAILABLE.—March 20, 1924, to September 30, 1925.

GAGE.—Vertical staff attached to downstream end of second timber bent from right bank; read by Mack McCullough. Zero of gage is at base of rail; therefore all gage readings are minus.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and silt; shifting; scattered trees and brush along edges of well-defined channel. Channel winding above and below gage. Banks of sand and earth; heavily wooded; subject to overflow at about —9-foot stage. Control is indefinite and formed by natural channel of stream below gage which has brush and débris lodged therein and small trees are scattered along banks within well-defined channel.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, —12.6 feet at 9.40 a. m. September 16 (discharge, 2,540 second-feet); no flow during several periods.

1924–1925: Maximum stage recorded, —10.2 feet at 2 p. m. June 2, 1924 (discharge, 6,730 second-feet); no flow during several periods.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve fairly well defined. Gage read to tenths irregularly prior to March 14 and once daily thereafter. Daily discharge determined by shifting-control method or interpolated or estimated for periods of missing gage height. Records poor.

Discharge measurements of Navasota River near Easterly, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 27	—25.00	0.95	Apr. 15	—23.80	13.1
Nov. 29	—24.23	13.2	July 7	—24.21	17.9
Jan. 12	—24.00	17.1			

Daily discharge, in second-feet, of Navasota River near Easterly, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	July	Aug.	Sept.
1							9.0			13
2							9.0			13
3	12						9.0	114		11
4							9.0	144		11
5				5.0			67	44		11
6	7.0						36	23		9.0
7	6.0					10	23	20		3.0
8	5.0						15	15		2.0
9	4.0						12	11		1.0
10		1.0		20			9.0	7.0		1.0
11	3.0						9.0	3.0		1.0
12				17			11	3.0		23
13							13	2.0		44
14							13	2.0		256
15					10	11	13	2.0		1,100
16			5.0			11	9.0	2.0		2,540
17						11	7.0	1.0		945
18						11	5.0	1.0		595
19	2.0					11	3.0	1.0		171
20		175				11	2.0	1.0		77
21				10		11		1.0		32
22		178				11		1.0		29
23		100				11			1.0	29
24						11			5.0	29
25		36				11			11	26
26						11			11	26
27	1.0	20				11			13	20
28						11			15	17
29	1.0	13				11			15	13
30		5.0				9.0			15	13
31						9.0			13	

NOTE.—Braced figures show estimated mean discharge for periods included. No flow Apr. 21 to July 2 and July 23 to Aug. 22.

Monthly discharge of Navasota River near Easterly, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October			4.00	246
November			28.7	1,710
December			5.00	307
January			9.42	579
February			10.0	555
March			10.4	641
April	67	0	9.43	561
May	0	0	0	0
June	0	0	0	0
July	144	0	12.8	789
August	15	0	3.19	196
September	2,540	1.0	202	12,000
The year	2,540	0	24.3	17,600

COLORADO RIVER BASIN

COLORADO RIVER AT COLORADO, TEX.

LOCATION.—At lower steel highway bridge at Colorado, Mitchell County, 1¼ miles below Texas & Pacific Railway bridge.

DRAINAGE AREA.—4,280 square miles, a large part of which is probably noncontributing (measured on base map of Texas).

RECORDS AVAILABLE.—November 28, 1923, to August 31, 1925, when station was discontinued.

GAGE.—Chain gage attached to upstream side of highway bridge; read by Paul Snively.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for half a mile above and below gage. Bed composed of sand and silt; shifts. Banks of sandy clay; covered with brush and light timber; subject to overflow at high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 11.40 feet during night of April 24 (discharge, 5,180 second-feet determined from mean curve between two slope measurements and subject to error). No flow during several periods.

1924–1925: Maximum stage occurred in 1925. No flow during periods in 1924 and 1925.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined below 850 second-feet and poorly defined above. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table, averaging discharge for intervals of a day on days of considerable fluctuation, or as noted in footnote to daily-discharge table; shifting control method used October 7 to May 8 and August 13–31. Records fair.

Discharge measurements of Colorado River at Colorado, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 21	3.04	[a] 0.40	Apr. 24	11.40	[b] 5,420	Aug. 17	3.45	23.1
Jan. 11	3.09	[a] .70	May 6	3.14	5.71			
Apr. 14	3.12	2.72	Aug. 7	11.10	[b] 4,690			

[a] Estimated. [b] Slope measurement.

Daily discharge, in second-feet, of Colorado River at Colorado, Tex., for the period October 1, 1924, to August 31, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	0.2		0.9		2.0	0.2	0.1	17	62	5	
2	.1		.6		2.0	.2	.1	6.8	38	5	
3	.1		.2		2.0	.1		7.7	19	482	
4			.2		2.0	.1		6.8	9.5	126	
5			.6	0.1	1.8	.1		12	7.7	87	
6	112		.9	.1	1.5	.1		6.8	8.2	48	
7	236		.9		1.1	.1		5.9	7.7	9.5	1,400
8	79		1.3		.6	.1		6.8	6.8	8.6	2,710
9	20		1.3		.2	.1		33	9.5	2.9	891
10	13		.9	.4	.1	.1	37	1,900	104	.9	670
11	4.7	0.2	.2	.7	.1	.1	18	2,540	19	.2	2,460
12	1.6	.1	.2	.6	.2	.1	6.8	1,160	9.5	.2	1,600
13	1.5	.2	.1	.2	.7	.1	5.0	399	7.7	.1	322
14	1.4	.2	.1	.2	1.5	.1	4.4	86	8.6	.1	74
15	1.2	.2	.1	.2	2.3	.1	5.0	44	9.5		57
16	1.1	.2		.2	2.3	.1	4.4	22	11		40
17	1.0	.1		.1	2.0	.1	2.6	16	10		24
18	.8	.2		1.6	2.0	.1	.2	9.5	11		22
19	.7	.1		1.6	1.5	.1	.2	7.2	12		9
20	.5	.2		2.0	1.1	.1	.2	7.2	9.5		8.2
21	.4	.1		2.0	1.1		.2	6.8	9.5		6.4
22	.4	.1		2.6	.9		.2	5.9	8.6		5.4
23	.4	.1		2.6	.7	.1	152	5.0	8.6		5.4
24	.2	0		3.0	.7	.1	1,900	4.4	9.5		5.4
25	.1	.1		3.0	.7	.1	2,300	3.8	800		5.4
26	.1	.1		4.4	.4	.1	670	2.0	380		4.7
27	.2	.1		2.6	.2		420	1.6	114		549
28	.1	.1		2.6	.2		102	1.3	66		953
29	.1	.1	.1	2.0			42	2.0	18	.8	130
30		.1	.1	2.0			30	49	7.2	.2	92
31			.1	2.0		.1		360			45

NOTE.—No record and discharge interpolated Oct. 14–20, Nov. 16, Jan. 10, Feb. 2, 8, Mar. 6, 8, 22, 29, May 17, June 14, 28, July 5, 6, 12, Aug. 15, 16, and 23. No flow for periods for which no discharge is given.

Monthly discharge of Colorado River at Colorado, Tex., for the period October 1, 1924, to August 31, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	236	0	15.4	944
November	.2	0	.09	5.2
December	1.3	0	.28	17.5
January	4.4	0	1.19	73.0
February	2.3	.1	1.14	63.3
March	.2	0	.09	5.4
April	2,300	0	190	11,300
May	2,540	1.3	217	13,400
June	800	6.8	60.1	3,570
July	482	0	25.0	1,540
August	2,710	0	390	24,000
The period				54,900

COLORADO RIVER NEAR ROBERT LEE, TEX.

LOCATION.—6 miles southwest of Bronte, 6 miles southeast of Robert Lee, Coke County, and 7 miles above former station near Bronte.

DRAINAGE AREA.—15,900 square miles, a large part of which is probably non-contributing (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—October 23, 1923, to September 30, 1925.

GAGE.—Vertical and inclined staff gage on right bank; read by Mrs. J. R. Smith.

DISCHARGE MEASUREMENTS.—Made by wading or from cable 20 feet below gage.

CHANNEL AND CONTROL.—Channel straight for a quarter of a mile above and a quarter of a mile below gage. Bed composed of ledge rock overlain in places with gravel and silt; fairly permanent. Banks covered with brush and light timber. Right bank subject to overflow at about 15-foot gage height; left bank subject to overflow at high stages. Control consists of rock and gravel shoal, a quarter of a mile below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 15.9 feet during morning of April 26 (discharge not determined). No flow February 12–23, March 11–31, April 1–11, 19–22.

1924–1925: Maximum stage, that of April 26, 1925; no flow during several periods.

DIVERSIONS.—Records of the Board of Water Engineers for the State of Texas show that about 1,700 acres have been declared irrigated in the area above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 5,000 second-feet and extended above. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Discharge interpolated September 5. Records below 5,000 second-feet good, and poor above.

Discharge measurements of Colorado River near Robert Lee, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 7	7.41	4,690	Oct. 9	2.72	380	Apr. 7	-------	0
Oct. 8	4.25	1,390	Oct. 30	1.00	[a] 2.0	Apr. 28	3.34	714
Do.	3.74	984	Nov. 12	.93	[a] .75	Sept. 26	4.89	2,010
Oct. 9	3.11	572	Dec. 16	.93	[a] .80			

[a] Estimated.

Daily discharge, in second-feet, of Colorado River near Robert Lee, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.0	2.0	0.4	0.4	0.3	0.8	0	205	590	83	218	254
2	4.0	2.0	20	.4	.2	.5	0	114	563	60	110	512
3	3.2	2.0	25	.4	.2	.4	0	99	202	50	85	173
4	2.0	2.0	23	.4	.2	.4	0	101	152	38	45	85
5	1.2	1.8	14	.4	.2	.3	0	62	103	167	24	67
6	801	1.7	9.6	.4	.2	.2	0	53	83	273	15	49
7	4,970	1.7	5.2	.4	.2	.2	0	36	82	188	10	41
8	1,430	1.7	3.6	.4	.2	.1	0	1,090	65	114	1,250	33
9	618	1.4	2.0	.4	.2	.1	0	1,900	1,250	70	2,680	26
10	128	1.2	2.0	.4	.2	.1	0	441	170	50	737	11
11	155	1.1	1.8	.4	.1	0	0	1,900	332	40	706	161
12	78	1.1	1.7	.4	0	0	1,170	2,900	396	24	3,100	11,600
13	59	1.0	1.6	.4	0	0	95	1,430	110	22	1,520	3,650
14	45	1.0	1.4	.3	0	0	2.0	706	68	16	769	1,090
15	37	.8	1.2	.3	0	0	1.7	374	66	11	332	2,080
16	31	.8	1.1	.3	0	0	.2	185	65	7.2	176	1,610
17	25	.6	1.1	.4	0	0	.2	128	60	5.2	103	1,250
18	22	.6	.8	.4	0	0	.1	89	45	3.6	75	590
19	18	.6	.6	.4	0	0	0	65	374	2.0	60	250
20	14	.5	.6	.4	0	0	0	56	39	1.7	50	144
21	12	.4	.5	.4	0	0	0	53	29	1.6	39	97
22	11	.4	.5	.4	0	0	0	32	24	1.2	25	73
23	9.6	.4	.4	.4	0	0	68	29	20	1.1	33	3,000
24	7.8	.4	.5	.4	1.1	0	87	27	52	1.0	43	14,400
25	7.2	.5	.4	.4	5.2	0	6,310	24	464	.5	20	15,100
26	6.0	.4	.3	.3	2.8	0	13,600	20	1,020	.5	24	2,480
27	6.0	.4	.3	.4	1.7	0	3,540	31	940	.4	440	706
28	4.8	.4	.5	.4	1.4	0	834	31	332	.3	247	418
29	3.6	.4	.5	.3	-------	0	488	66	218	.4	464	292
30	2.8	.4	.5	.3	-------	0	512	17,300	119	.5	676	202
31	2.0	-------	.5	.3	-------	0	-------	1,990	-------	71	396	-------

Monthly discharge of Colorado River near Robert Lee, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	4,970	1.2	275	16,900
November	2.0	.4	0.99	58.9
December	25	.3	3.92	241
January	.4	.3	.38	23.2
February	5.2	0	.51	28.6
March	.8	0	.10	6.1
April	13,600	0	890	53,000
May	17,300	20	1,020	62,600
June	1,250	20	268	15,900
July	273	.3	42.1	2,590
August	3,100	10	467	28,700
September	15,100	11	2,010	120,000
The year	17,300	0	414	300,000

COLORADO RIVER AT BALLINGER, TEX.

LOCATION.—Half a mile below Hutchins Avenue highway bridge, two-thirds mile below Gulf, Colorado & Santa Fe Railway bridge at Ballinger, Runnels County, and half a mile above mouth of Elm Creek.

DRAINAGE AREA.—16,800 square miles, a large part of which is probably noncontributing (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—December 11, 1915, to September 30, 1925. Records of stage have been obtained at Hutchins Avenue gage by United States Weather Bureau since July 1, 1903.

GAGE.—Staff gage on right bank; read by Lennis Brown.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Banks consist of clay and gravel, wooded, and subject to overflow at extremely high stages. Bed of hard clay, sand, gravel, and rock; shifting. Control is rock shoal, one-third mile below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 21.10 feet at 11 a. m. April 27 (discharge, about 17,000 second-feet, determined from extension of rating curve); minimum discharge, 0.20 second-foot at 8.05 a. m. April 8.

1916–1925: Maximum stage recorded, 26.0 feet during night of Agril 26, 1922 (discharge, about 28,000 second-feet, determined from extension of rating curve); no flow during several periods.

DIVERSIONS.—During low stages, a large part of flow is diverted a few miles above station for irrigation. Records of the Board of Water Engineers for the State of Texas show that about 6,900 acres have been declared irrigated above station.

REGULATION.—None of consequence.

ACCURACY.—Stage-discharge relation permanent. Rating curve fairly well defined below 1,000 second-feet and poorly defined from 1,000 to 14,000 second-feet and extended above. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records for low stages good and for medium and high stages fair.

Discharge measurements of Colorado River at Ballinger, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft*
Oct. 10	2.90	577	May 19	1.82	113	Sept. 28	2.97	627
Nov. 14	1.20	[a] 4.0	Sept. 10	1.47	32.2			
Apr. 8	1.07	[a].2	Sept. 25	16.15	[b] 12,890			

[a] Estimated.
[b] Surface velocities observed for part of measurement and coefficient used to reduce to mean velocity.

Daily discharge, in second-feet, of Colorado River at Ballinger, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	9.6	21	4.0	4.7	5.4	168	763	1,280	168	954	341
2	15	8.9	533	4.0	4.7	4.7	15	296	559	118	458	127
3	13	8.9	94	4.0	4.7	5.4	5.4	209	364	154	318	305
4	11	8.2	34	4.0	4.7	5.4	2.5	154	254	81	76	205
5	11	8.2	29	4.0	4.7	6.1	1.8	114	190	71	51	134
6	37	7.5	24	4.0	4.7	6.8	1.3	92	124	175	45	76
7	3,730	7.5	20	4.0	4.7	6.8	1.0	175	103	288	24	62
8	4,160	7.5	17	4.0	4.7	6.8	1.3	2,930	86	175	19	49
9	2,080	7.5	13	4.0	4.7	6.8	1.3	7,430	2,610	134	2,770	39
10	671	6.8	11	4.0	4.7	6.8	1.3	1,020	483	86	2,000	31
11	296	6.8	11	4.0	4.7	6.1	1.3	1,080	434	62	826	35
12	168	5.4	9.6	4.0	4.7	5.4	3.2	2,530	585	57	2,160	4,070
13	111	6.8	8.2	4.0	4.7	4.7	76	2,300	318	21	1,860	5,340
14	81	6.1	8.2	4.0	4.7	5.4	89	364	183	31	1,350	1,930
15	62	5.4	7.5	4.0	4.7	5.4	26	559	114	13	585	826
16	49	5.4	7.5	4.0	5.4	4.0	14	341	76	19	341	2,300
17	45	4.7	8.2	4.0	5.4	4.0	6.8	221	53	21	205	1,150
18	37	4.7	8.2	4.0	5.4	4.0	2.2	161	57	10	130	701
19	31	4.7	6.8	4.7	6.1	3.5	1.3	114	49	8.9	84	410
20	27	4.7	5.4	4.0	6.8	3.5	1.3	89	81	8.2	57	246
21	24	4.7	6.8	4.0	7.5	4.0	1.2	71	64	4.0	53	175
22	21	4.0	5.4	4.0	6.8	4.0	1.1	53	41	2.0	34	121
23	19	4.0	4.7	4.0	6.8	4.0	2.5	45	35	2.0	86	92
24	18	4.0	5.4	4.0	7.5	4.0	283	37	31	1.8	43	8,760
25	15	4.0	4.0	4.0	8.2	4.0	2,380	32	5,780	1.3	23	12,200
26	15	4.7	5.4	4.0	6.8	4.0	13,000	108	434	1.1	29	9,240
27	15	4.0	5.4	4.7	6.8	2.5	15,000	108	1,150	1.1	103	1,420
28	14	4.0	4.7	4.7	5.4	2.2	2,300	161	508	.9	641	641
29	12	4.0	4.0	4.7	-------	2.5	1,080	105	387	.9	250	434
30	11	4.0	4.0	4.7	-------	3.2	1,080	3,820	246	1.0	271	332
31	11	-------	4.0	4.7	-------	2.5	---------	9,140	-------	1.1	559	-------

Monthly discharge of Colorado River at Ballinger, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	4,160	11	382	23,500
November	9.6	4.0	5.89	350
December	533	4.0	30.0	1,850
January	4.7	4.0	4.14	254
February	8.2	4.7	5.55	308
March	6.8	2.2	4.64	285
April	15,000	1.0	1,180	70,500
May	9,140	32	1,120	68,700
June	5,780	31	556	33,100
July	288	.9	55.4	3,410
August	2,770	19	529	32,500
September	12,200	31	1,730	103,000
The year	15,000	.9	466	338,000

COLORADO RIVER NEAR MILBURN, TEX.

LOCATION.—At bridge on Brady-Brownwood highway, 1½ miles northwest of Milburn, McCollough County, and 1½ miles above mouth of Deep Creek.

DRAINAGE AREA.—24,600 square miles, a considerable percentage of which is probably noncontributing (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—November 20, 1923, to September 30, 1925.

GAGE.—Staff gage 50 feet upstream from bridge from 0 to 10.1 feet and chain gage attached to upstream side of bridge; read by J. W. McBride.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for half a mile above and for a quarter of a mile below station. Bed composed of gravel and silt; shifts. Banks of clay, covered sparsely with trees, and subject to overflow at extremely high stages. Control is a rock shoal a quarter of a mile below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year ending September 30, 1924, 25.03 feet at 6.10 a. m. April 27 (discharge, 20,500 second-feet); minimum stage, 3.08 feet at 7.30 a. m. August 10 (discharge, 0.6 second-foot).

Maximum stage recorded during year, 33.30 feet at 9.20 p. m. June 1 (discharge, 31,300 second-feet); minimum stage, 3.51 feet at 6.25 p. m. April 1 (discharge, 7.8 second-feet).

1924–25: Maximum stage recorded, that of June 1, 1925; minimum stage, 3.08 feet August 10, 1924 (discharge, 6 second-feet).

DIVERSIONS.—About 18,000 acres has been declared irrigated above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined from 35 to 2,000 second-feet, fairly well defined from 2,000 to 24,000 second-feet, and extended to cover the range of stage. Gage read to hundredths twice daily. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day on days of considerable fluctuation, or as noted in footnote to daily-discharge table. Records fair.

Discharge measurements of Colorado River near Milburn, Tex., during the years ending September 30, 1924 and 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
1923	*Feet*	*Sec.-ft.*	1924	*Feet*	*Sec.-ft.*	1924	*Feet*	*Sec.-ft.*
Nov. 20	5.88	520	Apr. 28	7.82	[a] 1,920	Dec. 31	4.42	60.6
Dec. 18	5.60	450	Apr. 29	6.60	1,250			
			May 16	10.51	[b] 4,860	1925		
1924			May 17	7.82	[c] 2,280	Apr. 11	3.86	17.5
Jan. 11	4.90	183	June 20	4.59	81	Apr. 29	11.26	[d] 5,730
Mar. 8	4.84	153	Sept. 29	4.70	126	do	10.55	[e] 4,690
Apr. 11	4.69	116	Nov. 10	4.24	42.4	May 18	5.83	437

[a] Discharge corrected for changing stage, 1,950 second-feet.
[b] Discharge corrected for changing stage, 4,980 second-feet.
[c] Discharge corrected for changing stage, 2,310 second-feet.
[d] Discharge corrected for changing stage, 6,070 second-feet.
[e] Discharge corrected for changing stage, 4,880 second-feet.

Daily discharge, in second-feet, of Colorado River near Milburn, Tex., for the years ending September 30, 1924 and 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1923–24												
1	-------	-------	219	252	148	236	158	615	2,030	20	2.0	486
2	-------	-------	219	236	145	236	148	456	1,220	18	1.6	685
3	-------	-------	252	219	150	219	132	382	2,030	16	1.5	456
4	-------	-------	269	213	153	213	132	548	2,130	14	1.3	361
5	-------	-------	236	195	139	189	132	304	1,220	13	1.2	269
6	-------	-------	236	183	134	183	129	322	860	13	1.0	210
7	-------	-------	219	186	120	172	117	6,520	580	13	1.0	156
8	-------	-------	210	183	110	153	115	1,220	430	14	1.0	92
9	-------	-------	198	178	115	148	120	2,960	342	13	.8	74
10	-------	-------	178	178	103	139	117	2,330	269	12	10	61
11	-------	-------	720	189	108	132	112	1,220	252	11	28	48
12	-------	-------	1,560	186	112	127	108	580	236	10	16	63
13	-------	-------	3,580	186	122	304	164	456	236	10	14	127
14	-------	-------	1,300	183	134	236	236	4,840	213	9.0	19	1,300
15	-------	-------	685	178	132	186	158	11,100	190	8.4	15	1,470
16	-------	-------	515	178	137	178	137	5,680	168	6.7	11	790
17	-------	-------	515	172	137	207	134	2,130	145	6.6	9.4	515
18	-------	-------	456	169	148	198	117	1,080	65	6.5	8.0	1,420
19	-------	-------	430	167	156	342	96	720	65	6.2	7.2	2,330
20	-------	515	404	167	142	825	78	1,470	76	6.1	6.5	825
21	-------	404	382	164	134	486	70	1,560	72	5.7	5.7	456
22	-------	342	361	161	134	430	63	580	65	4.9	5.0	361
23	-------	269	286	164	137	361	58	322	63	4.7	4.4	286
24	-------	236	153	161	129	304	54	252	52	4.2	3.9	181
25	-------	216	127	158	137	269	2,130	236	40	3.8	3.3	167
26	-------	192	66	164	178	252	12,000	5,480	33	3.8	3.0	269
27	-------	181	96	183	207	236	12,400	7,890	31	3.7	3.0	175
28	-------	164	103	178	219	219	1,830	4,220	29	3.2	3.0	164
29	-------	201	269	169	236	210	1,220	1,560	25	3.0	3.9	137
30	-------	219	269	153	-------	192	860	4,220	23	3.0	3.2	122
31	-------	-------	252	153	-------	172	-------	4,530	-------	2.8	195	-------
1924–25												
1	112	54	50	60	55	35	8	1,930	27,000	404	72	685
2	96	51	50	60	52	33	85	1,930	10,200	304	2,030	650
3	87	51	1,740	60	51	31	430	825	1,650	286	456	486
4	74	50	1,000	60	50	28	207	486	1,080	322	304	404
5	66	48	456	60	46	28	120	361	825	430	615	404
6	60	47	286	58	47	28	74	304	580	304	181	286
7	70	45	210	57	54	30	44	252	456	322	115	216
8	2,740	45	158	54	57	34	32	3,540	382	322	83	175
9	3,060	44	132	51	55	25	25	14,900	404	361	65	162
10	7,680	44	112	52	50	25	20	25,000	2,540	269	2,540	150
11	1,000	44	98	55	42	23	17	4,740	3,580	236	2,230	252
12	685	42	89	55	41	22	15	2,740	1,220	186	895	6,740
13	404	38	83	52	35	19	14	3,690	685	161	1,930	6,740
14	322	37	74	52	33	18	322	2,740	615	124	3,060	7,160
15	252	36	66	58	34	18	167	1,300	430	103	1,150	1,830
16	207	36	66	57	32	15	89	825	304	87	860	1,080
17	178	36	66	65	35	13	89	720	252	78	404	2,430
18	150	39	66	65	34	12	122	456	213	66	304	1,300
19	129	39	63	65	34	12	78	404	183	51	252	860
20	124	41	63	63	34	12	46	361	361	40	148	548
21	94	47	63	63	35	12	29	269	210	31	158	342
22	87	46	66	63	52	11	26	219	186	28	145	304
23	81	47	62	62	52	11	18	192	236	24	158	236
24	76	47	60	62	54	11	15	175	175	22	172	456
25	72	46	60	63	46	10	13	286	286	18	66	11,200
26	66	50	60	63	40	9	2,400	269	7,680	16	486	14,300
27	58	47	60	63	33	8.6	20,100	269	2,030	14	404	6,940
28	58	50	60	62	33	8.0	27,000	1,650	1,380	13	1,300	1,740
29	58	51	60	58	-------	8.2	10,400	1,380	930	12	2,330	930
30	57	51	60	55	-------	8.6	3,380	1,470	580	11	1,560	486
31	55	-------	60	55	-------	8.6	-------	6,770	-------	34	580	-------

NOTE.—Discharge interpolated June 14–16, 27, Oct. 29, 1924, and Sept. 9, 1925. Discharge partly estimated Nov. 12–15, 1924.

Monthly discharge of Colorado River near Milburn, Tex., for the years ending September 30, 1924 and 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
1923–24				
November 20–30	515	164	267	5,830
December	3,580	66	476	29,300
January	252	153	181	11,100
February	236	103	143	8,240
March	825	127	250	15,400
April	12,400	54	1,110	66,100
May	11,100	236	2,440	150,000
June	2,130	23	440	26,200
July	20	2.8	8.69	534
August	195	.8	12.5	771
September	2,330	48	469	27,900
The year	12,400	.8	471	341,000
1924–25				
October	7,680	55	589	36,200
November	54	36	45.0	2,680
December	1,740	50	181	11,100
January	65	51	59.0	3,630
February	57	32	43.4	2,410
March	35	8.0	18.3	1,120
April	27,000	8.0	2,180	130,000
May	25,000	175	2,600	160,000
June	27,000	175	2,220	132,000
July	430	11	151	9,280
August	3,060	65	808	49,700
September	14,300	150	2,320	138,000
The year	27,000	8.0	933	676,000

COLORADO RIVER NEAR TOW, TEX.

LOCATION.—At highway bridge 1¼ miles northeast of Tow, Llano County, 2 miles below mouth of Fall Creek and 6 miles northwest of Bluffton.

DRAINAGE AREA.—31,100 square miles, large part of which is probably noncontributing (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—October 26, 1923, to September 30, 1925.

GAGE.—Au continuous water-stage recorder attached to downstream side of bridge pier. Prior to April 16, chain gage attached to upstream handrail of bridge; read by W. A. Farris.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for 2 miles above and half a mile below gage. Bed of rock partly overlain with gravel and silt; fairly permanent. Banks covered with brush and light timber; subject to overflow only at extremely high stages. Control is rock ledge and boulder shoal, one-eighth mile below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 16.74 feet at 4 a. m. May 12 (discharge, 27,000 second-feet); minimum stage, 5.00 feet at 5 p. m. January 10 (discharge, 24 second-feet, determined from extension of rating curve and subject to slight error).

1924–1925: Same as given above.

DIVERSIONS.—Numerous small diversions in drainage basin above; amount not known.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined above 75 second-feet. Gage read to hundredths twice daily from October 1 to April 16. Operation of water-stage recorder satisfactory thereafter. Daily discharge determined by applying to rating table mean daily gage height or for days of considerable fluctuation by averaging discharge for intervals of a day. Records good.

Discharge measurements of Colorado River near Tow, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 7	5.82	163	Apr. 30	15.88	25,200	June 3	16.20	24,400
Apr. 16	5.63	118	Do	15.54	22,500	Sept. 12	6.30	451
Apr. 17	5.59	102	May 1	11.44	8,310			
Apr. 28	12.70	[a] 11,100	May 16	8.16	2,330			

[a] Surface velocities observed for part of measurement and coefficient used to reduce to mean velocities.

Daily discharge, in second-feet, of Colorado River near Tow, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	362	191	136	191	171	115	77	9,340	4,210	1,070	30	1,910
2	327	159	126	136	171	86	81	3,630	14,800	762		1,050
3	282	155	101	67	96	75	79	2,780	20,600	589		894
4	215	266	196	110	144	120	79	1,840	7,060	463		840
5	53	171	738	159	171	61	71	1,250	1,780	450		713
6	244	155	866	115	151	69	81	894	1,270	450	540	634
7	510	148	293	151	77	94	293	822	977	618		552
8	171	129	545	85	54	139	225	618	1,040	510		524
9	171	179	476	144	108	123	196	1,760	779	399		418
10	4,580	171	322	69	171	108	175	11,600	805	456	175	362
11	3,710	96	250	27	144	98	144	22,200	762	476	175	316
12	2,500	113	255	61	115	110	132	22,600	2,390	405	1,490	380
13	1,010	210	476	126	96	94	110	4,770	1,910	327	1,600	4,920
14	779	215	183	126	120	101	126	4,220	1,580	277	1,030	5,360
15	545	81	229	96	98	92	115	4,140	949	220	2,670	10,900
16	510	126	266	144	144	98	115	2,300	849	183	2,300	3,630
17	444	96	191	96	85	61	92	1,540	721	139	1,480	1,910
18	175	92	201	108	144	96	120	1,110	582	120	958	1,600
19	171	110	210	144	144	81	196	921	456	106	657	1,910
20	139	77	183	120	86	69	183	680	350	86	490	1,370
21	144	101	163	120	136	75	163	596	282	79	368	1,050
22	88	132	179	167	144	79	132	552	250	74	299	788
23	144	144	58	132	115	63	110	470	362	69	229	603
24	171	304	132	144	56	61	113	430	271	61	250	634
25	229	151	159	108	103	88	110	393	220	51	229	1,660
26	229	101	139	215	115	92	101	380	271	44	3,950	5,390
27	183	94	144	510	229	96	205	374	2,360	38	2,960	11,800
28	215	74	239	136	126	106	10,200	497	4,220	34	1,720	11,800
29	171	113	85	191	-------	98	19,500	912	2,040	33	840	3,550
30	201	71	136	101	-------	94	22,600	1,370	1,600	31	2,650	1,660
31	167	-------	77	476	-------	77	-------	2,740	-------	28	2,360	-------

NOTE.—Braced figure give estimated mean discharge for period indicated. Record incomplete and discharge partly estimated June 17–21.

Monthly discharge of Colorado River near Tow, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	4,580	53	608	37,400
November	304	71	141	8,380
December	866	58	250	15,400
January	510	27	148	9,070
February	229	54	125	6,970
March	139	61	90.9	5,590
April	22,600	71	1,860	111,000
May	22,600	374	3,480	214,000
June	20,600	220	2,520	150,000
July	1,070	28	279	17,200
August	3,950	30	1,070	65,900
September	11,800	316	2,640	157,000
The year	22,600	27	1,100	798,000

COLORADO RIVER AT MARBLE FALLS, TEX.

LOCATION.—At steel highway bridge, one-fourth mile south of Marble Falls, Burnet County, and 10 miles below mouth of Sandy Creek.

DRAINAGE AREA.—36,100 square miles, a part of which is probably noncontributing (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—October 1, 1916, to September 30, 1925. Miscellaneous discharge measurements were made in 1902. Records of stage have been obtained by United States Weather Bureau since January 1, 1908.

GAGE.—Chain gage on upstream side of bridge; read by N. C. Galloway.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of solid rock. Banks of rock, gravel, and clay; wooded and not subject to overflow. Rapids just below gage serve as fairly permanent control, except at times when sand and gravel collect.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 12.28 feet at 6.25 p. m. May 30 (discharge not determined); minimum stage, 0.74 foot at 6.40 p. m. July 30 (discharge, 74 second-feet; subject to error, owing to influence of wind on tape.

1900–1925: Maximum stage,[1] 23.9 feet April 7, 1900 (discharge, not determined); no flow August 7, 8, 11, and 25, 1918, caused by storing water above gage.

DIVERSIONS.—Several large projects have been proposed in drainage basin above station but none have been developed. Numerous small diversions for irrigation and municipal uses are made above station. Total amount diverted not known. Records of the Board of Water Engineers for the State of Texas show that approximately 36,000 acres have been declared irrigated by diversions above station. Little water is diverted between Marble Falls and Austin.

REGULATION.—None of importance, except possibly during extremely low stages.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 6,000 second-feet and poorly defined above, owing to the inability to read gage accurately on account of surge and inaccuracies in measurements due to high velocities and submerged drift. Gage read to hundredths twice daily, although influence of wind on long gage chain and surge of water at high stages probably introduce some error. Daily discharge above 6,000 second-feet not of sufficient accuracy for publication. Daily discharge for periods published determined by applying mean daily gage height to rating table. Records for low stages fair and for intermediate stages poor.

The following discharge measurements were made:

January 9, 1925: Gage height, 1.85 feet; discharge, 367 second-feet.

April 20, 1925: Gage height, 1.26 feet; discharge, 172 second-feet.

---

[1] United States Weather Bureau, Daily River Stages.

Daily discharge, in second-feet, of Colorado River at Marble Falls, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	762	344	344	388	388	268	208	------	------	1,800	98	1,120
2	688	324	344	388	366	268	208	------	------	1,360	158	2,050
3	552	324	344	388	388	286	222	3,930	------	946	1,060	1,300
4	522	304	344	366	366	252	208	2,600	------	762	2,230	1,060
5	438	286	413	366	366	252	170	2,050	3,220	653	1,960	1,060
6	438	304	897	366	366	268	195	1,570	2,410	552	1,240	897
7	413	304	1,430	366	366	252	195	1,880	1,960	552	897	805
8	413	304	1,000	366	344	252	195	2,410	1,570	618	653	688
9	413	304	805	366	344	252	492	4,190	1,720	618	522	653
10	388	286	688	438	324	268	413	5,930	1,240	522	388	552
11	4,460	304	585	388	324	252	324	------	1,240	492	344	465
12	5,620	304	585	388	324	252	304	------	1,120	653	286	552
13	2,600	304	492	388	324	268	268	------	3,220	522	2,230	413
14	1,500	324	465	388	324	252	268	------	848	438	1,800	------
15	1,180	324	438	366	324	236	236	5,620	1,880	344	1,240	------
16	897	304	413	388	324	222	195	4,190	1,240	304	3,220	------
17	762	324	438	388	344	236	208	3,220	1,120	268	2,600	3,220
18	688	324	438	388	344	236	195	2,230	897	222	1,640	2,140
19	585	304	388	388	324	222	195	1,720	762	208	1,120	2,320
20	552	324	366	388	304	222	182	1,430	618	195	848	2,140
21	522	304	366	388	304	236	252	1,120	522	182	618	1,640
22	465	324	388	388	304	236	252	1,000	492	148	522	1,240
23	438	304	366	388	304	236	222	897	438	158	438	1,000
24	413	304	366	388	286	236	208	725	438	137	344	1,000
25	413	304	324	388	286	208	195	653	465	137	304	1,570
26	413	268	344	388	286	222	158	618	366	122	344	4,190
27	388	304	366	388	268	236	252	552	344	118	------	------
28	388	304	366	366	268	208	366	522	5,930	111	1,880	------
29	344	304	388	366	------	208	------	653	3,010	93	1,800	------
30	366	324	413	366	------	208	------	------	2,600	77	1,120	3,010
31	344	------	413	388	------	222	------	------	------	78	4,190	------

NOTE.—Discharge above 6,000 second-feet not published. The following are the approximate mean daily stages, in feet, for days when discharge was not applied: Apr. 29, 8.44; Apr. 30, 10.10; May 1, 8.30; May 2, 5.20; May 11, 9.45; May 12, 10.57; May 13, 7.16; May 14, 4.93; May 30, 11.04; May 31, 6.84; June 1, 8.30; June 2, 7.65; June 3, 9.76; June 4, 8.16; Aug. 27, 5.72; Sept 14, 5.51; Sept. 15, 5.99; Sept 16, 5.65; Sept. 27, 7.18; Sept. 28, 8.23; and Sept. 29, 6.23.

Monthly discharge of Colorado River at Marble Falls, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	5,620	344	915	56,300
November	344	268	309	18,400
December	1,430	324	494	30,400
January	438	366	383	23,500
February	388	268	328	18,200
March	286	208	241	14,800
April 1–28	492	158	242	13,500
June 5–30	5,930	344	1,530	78,700
July	1,800	77	432	26,600

NOTE.—See footnote to daily-discharge table.

COLORADO RIVER AT AUSTIN, TEX.

LOCATION.—At Congress Avenue concrete viaduct in Austin, Travis County, half a mile below mouth of Shoal Creek, above mouth of Waller Creek, and 3½ miles below Austin Dam.

DRAINAGE AREA.—38,200 square miles, part of which is probably noncontributing (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—February 15, 1898, to September 30, 1925. Records of stage have been obtained by United States Weather Bureau since July 1, 1903.

GAGE.—Au 60-day water-stage recorder on downstream side of pier of viaduct; inspected by engineers of United States Geological Survey.

DISCHARGE MEASUREMENTS.—Made by wading or from upstream side of Montopolis highway bridge, 4 miles below gage.

CHANNEL AND CONTROL.—Channel straight for 1,000 feet above and 500 feet below gage. Right bank composed of clay and gravel and subject to overflow; left bank resembles right bank, except that it is not subject to overflow. Bed composed of rock, gravel, and sand; shifts. Control is gravel shoal 500 feet below gage; shifts.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 9.30 feet at 7.55 a. m. May 31 (discharge, 32,000 second-feet); minimum stage, −0.11 foot from 7 a. m. to 5 p. m. August 1 and from 8 p. m. August 1 to 6 a. m. August 2 (discharge, 88 second-feet).

1898–1925: Maximum stage recorded, 33.5 feet a few minutes after failure of dam which occurred at 11.30 a. m. April 7, 1900 (discharge, 236,000 second-feet, determined from extension of rating curve and subject to considerable error). At the time of failure the depth of water over crest of dam was 11.07 feet, with a computed discharge of 151,000 second-feet. According to information obtained from people living near Congress Avenue Bridge, water rose 6.1 feet as a result of failure. Therefore, the gage height corresponding to a discharge of 151,000 second-feet was 27.4 feet. According to a statement by Mr. W. P. Johnson, who was in charge of power plant at dam, the flood appeared to be practically at its crest when the dam failed. Minimum discharge, 13 second-feet at 6 p. m. August 18, 1918.

DIVERSIONS.—Records of the Board of Water Engineers for the State of Texas show that approximately 36,000 acres of land have been declared irrigated by diversions above the station. Most of the area irrigated is in the upper basin of the main stream and adjacent to large tributaries. Little water is diverted between Austin and Columbus.

REGULATION.—Flow entirely regulated at times by operation at Austin Dam, about 3½ miles upstream. Sluice gates, crest gates, and power plant at the dam were not in operation during the years ending September 30, 1919–1925. Capacity of reservoir about 24,000 acre-feet.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curves well defined. Operation of water-stage recorder satisfactory, except as noted in footnote to daily-discharge table. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day on days of considerable fluctuation. Records good.

Discharge measurements of Colorado River at Austin, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 8	0.80	574	Feb. 16	0.60	384	May 4	2.58	4,240
Oct. 30	.73	409	Mar. 7	.49	310	May 21	1.52	1,520
Nov. 20	.62	436	Mar. 30	.33	229	June 15	1.86	2,510
Dec. 12	.98	767	Apr. 24	.38	255	July 16	.69	366
Jan. 3	.73	486	Apr. 30	6.32	18,900	July 30	−.10	89.8
Jan. 19	.71	444	May 1	7.85	24,700	Aug. 20	1.48	1,350

Daily discharge, in second-feet, of Colorado River at Austin Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	733	398	370	490	442	325	222	24,800	11,600	2,580	91	1,290
2	689	398	398	474	465	308	222	15,600	7,490		94	2,050
3	755	377	420	482	435	276	252	6,960	11,200		102	2,260
4	755	390	450	465	442	308	238	4,180	21,700		108	1,940
5	722	358	405	458	450	320	190	3,150	15,200		446	1,390
6	678	384	428	442	450	286	182	2,380	6,260		1,560	994
7	616		428	435	435	303	204	1,820	3,230		1,440	855
8	598		689	428	490	270	211	1,460	2,480	1,470	1,030	750
9	578		1,040	420	435	286	234	2,080	2,050		726	657
10	550		975	442	482	292	225	4,480	1,730		540	550
11	516		833	428	428	303	234	5,390	1,580		412	520
12	1,070		733	450	377	248	314	20,800	1,330		332	657
13	3,660	400	645	428	398	266	370	27,100	1,220		277	1,110
14	3,480		598	428	405	325	351	13,600	1,730		240	885
15	2,270		542	435	390		308	6,260	2,450		798	4,020
16	1,600		499	474	384	325	266	5,560	2,210	367	1,080	7,320
17	1,220		490	450	384		230	4,830	1,820	325		6,790
18	1,000		499	420	358	325	222	3,400	1,390	265	1,900	3,800
19	820		542	428	377		222	2,650	1,180	215		2,480
20	700	435	458	435	377	290	185	2,050	994	191	1,400	1,840
21	656	420	405	442	377		175	1,540	900	179	810	2,010
22	578	412	398	442	412	256	168	1,260	738	172	714	1,690
23	524	405	420	435	384	256	188	1,010	591	154	560	1,350
24	474	390	458	435	351	261	238	915	490	138	463	1,100
25	465	364	405	435	370	252	243	810	480	132	395	930
26	450	377	405	465	332	243	222	702	429	120	325	960
27	428	384	412	450	312	256	270	690	412	110	283	2,100
28	412	377	428	398	292	204	238	580	412	98	570	7,660
29	405	358	435	420	-------	222	442	550	412	97	3,320	13,200
30	398	370	442	428	-------	225	18,000	490	2,930	91	2,580	9,420
31	420	-------	450	420	-------	230	-------	23,600	-------	103	1,860	-------

NOTE.—Braced figures give estimated mean discharge for periods indicated. Discharge interpolated Feb. 27, Mar. 18, and July 16.

Monthly discharge of Colorado River at Austin, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	3,660	398	910	56,000
November	435	358	393	23,400
December	1,040	370	519	31,900
January	490	398	441	27,100
February	490	292	401	22,300
March	325	204	280	17,200
April	18,000	168	836	49,700
May	27,100	490	6,150	378,000
June	21,700	412	3,550	212,000
July	-------	91	836	51,400
August	3,320	91	911	56,000
September	13,200	520	2,750	164,000
The year	27,100	91	1,500	1,090,000

EVAPORATION NEAR AUSTIN, TEX.

LOCATION.—At reservoir on Hill ranch, 1,000 feet from ranch house, 5 miles southeast of Austin, Travis County. Elevation, 475 feet above sea level.

RECORDS AVAILABLE.—April 1, 1916, to September 30, 1925.

EQUIPMENT.—Two evaporation pans, one floating on surface of reservoir about 30 feet wide by 250 feet long, which is supplied by spring, and the other on land about 30 feet from reservoir. Auxiliary equipment consists of hook gage, rain gage, anemometer, maximum and minimum thermometers and psychrometer.

ACCURACY.—Moss and weed growth in reservoir may at times affect results. Records from land pan more accurate than that from floating pan. Observations made daily at 8 a. m. Observer's work good.

COOPERATION.—Computations made by United States Weather Bureau.

Evaporation near Austin, Tex., for the year ending September 30, 1925

Month	Temperature (°F.)					Mean relative humidity (per cent)	Wind		Rainfall (inches)	Evaporation (inches)	
	Air		Water								
	Mean maximum	Mean minimum	Mean	Floating pan (mean)	Land pan (mean)		Average velocity (miles per hour)	Prevailing direction		Floating pan	Land pan
October	86.1i	54.2	70.2d	65.3	60.4	85.8	0.9	SE.	1.13	3.059	4.274
November	76.8	47.8	62.3	58.3	53.6	78.6	2.0	NE.	.06	3.181	4.151
December	59.3	38.4	48.8	51.0	49.9	84.0	2.5	S.	1.29	1.849	2.365
January	59.5	30.7	45.1	43.1a	35.5d	92.0	2.7	NW.	.51	1.646	2.292
February	72.8	42.8	57.8	53.2	49.1	78.0	3.2	SW.	.21	3.509	4.888
March	78.1c	50.1	64.1b	59.0	55.5	70.9	2.8	S.	.08	5.025	6.772
April	86.7a	61.4	74.0	67.5	64.8	74.7	2.7	S.	.96	6.110	8.076
May	89.9	62.2	76.0	71.6	69.2	73.6	2.3	S.	2.44	[a] 6.653	9.347
June	97.9a	72.9	85.4	79.3	75.0	79.0	2.4	S.	1.10	7.908	10.281
July	100.1c	74.0a	87.0b	80.8	76.3	80.2	2.0	S.	.58	8.977	11.413
August	94.1	71.8	83.0a	79.6	74.7	82.8	1.8	S.	1.99	6.835	9.766
September	90.7	69.6	80.2	78.7	75.1	85.4	1.2	S.	3.21	[a] 4.554	[a] 6.498
The year	82.7	56.3	69.5	65.6	61.6	80.4	2.2	S.	13.56	59.306	80.123

[a] Estimated.

NOTE.—Letters following figures indicate number of days missing: a, 1 day; b, 2 days; etc.

COLORADO RIVER AT COLUMBUS, TEX.

LOCATION.—At county highway bridge, 400 feet below Galveston, Harrisburg & San Antonio Railway bridge, in eastern edge of Columbus, Colorado County, 2 miles below mouth of Cummins Creek.

DRAINAGE AREA.—40,800 square miles, a large part of which is probably noncontributing (measured on topographic maps, base map of Texas, and progressive military maps of United States Army).

RECORDS AVAILABLE.—January 1, 1903, to December 31, 1911; May 22, 1916, to September 30, 1925. Records of stage have been obtained by United States Weather Bureau since January 1, 1903.

GAGE.—Gurley graph water-stage recorder; inspected by E. J. Frnka.

DISCHARGE MEASUREMENTS.—Made from upstream side of bridge or by wading.

CHANNEL AND CONTROL.—Channel straight above and below station for 400 feet. Right bank composed of earth and not subject to overflow; left bank subject to overflow above a gage height of 34 feet. Bed of sand; shifts. A sand and gravel section 350 feet below gage may serve as low-water control. Stage-discharge relation during medium and high stages may be controlled by a bend in river below bridge.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 19.64 feet at 8 a. m. May 14 (discharge, 21,100 second-feet); minimum discharge, 123 second-feet at 7.30 a. m. August 8.

1902–1911; 1916–1925: Maximum stage recorded, 38.3 feet May 5, 1922 (discharge, 79,500 second-feet, determined from extension of rating curve and subject to error); minimum discharge, 10 second-feet September 9 and 10, 1910.

DIVERSIONS.—Considerable water is diverted for irrigation in drainage basin above Austin, but between Austin and Columbus, little water is diverted. The station is above the irrigated rice belt which comprises several thousand acres. Records for the Board of Water Engineers for the State of Texas show that about 36,000 acres have been declared irrigated above Austin.

REGULATION.—Flow at Columbus during low stages partly controlled by storage at Lake Austin.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined. Operation of water-stage recorder not satisfactory owing to improper attendance. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day, on days of considerable fluctuation. Records fair.

COOPERATION.—Gage-height record furnished by United States Weather Bureau.

Discharge measurements of Colorado River at Columbus, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 23	7.66	1,180	Mar. 7	6.41	412	July 2	6.84	732
Nov. 26	6.60	568	Apr. 10	6.20	309	Aug. 10	8.15	1,230
Jan. 9	6.82	625	May 11	8.96	2,020			
Feb. 11	6.72	666	May 15	16.82	15,000			

Daily discharge, in second-feet, of Colorado River at Columbus, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,480	770	590	668	710	515	352	332	1,480	774	160	2,090
2	1,370	746	612	662	680	510	352	9,670	12,400	662	147	2,180
3	1,300	716	617	662	692	485	352	13,500	8,930	2,250	147	1,670
4	1,230	710	617	656	698	465	332	10,000	7,360	2,600	141	1,440
5	1,120	686	662	650	710	445	328	7,020	11,400	2,320	138	1,970
6	1,090	668	668	639	740	432	320	5,650	15,400	1,970	134	2,010
7	1,120	639	668	639	746	414	313	4,670	11,200	1,630	132	1,740
8	1,090	639	650	628	716	414	328	3,670	7,360	1,340	662	1,340
9	1,120	622	628	628	698	409	332	2,900	5,500	1,090	1,120	1,120
10	1,020	612	606	639	656	409	316	2,460	4,150	928	1,230	960
11	928	606	612	639	650	409	292	2,140	3,330	818	1,120	812
12	830	555	782	644	650	409	285	2,460	2,800	692	992	782
13	794	555	1,090	644	674	404	285	4,440	2,460	606	776	770
14	758	555	1,120	650	662	427	285	19,600	2,230	575	590	764
15	757	580	1,090	662	656	427	285	17,200	1,970	590	440	818
16	2,520	585	1,020	680	639	436	282	11,000	1,780	570	336	960
17	3,220	580	960	692	606	432	320	7,530	1,900	590	264	1,160
18	2,500	570	895	698	600	427	352	6,400	2,600	585	153	1,970
19	2,010	510	812	692	585	445	352	5,950	2,460	540	414	5,370
20	1,710	515	788	704	580	414	328	5,080	2,140	480	862	5,220
21	1,480	515	612	698	575	404	299	4,030	1,820	427	1,630	3,670
22	1,300	617	788	686	565	396	274	3,330	1,560	384	1,710	2,600
23	1,200	600	806	662	555	404	257	2,700	1,370	344	1,410	1,970
24	1,090	575	770	674	555	396	247	2,280	1,230	306	1,120	1,860
25	1,020	565	728	686	555	376	247	2,100	1,120	271	862	1,780
26	992	570	698	686	550	368	232	2,500	992	254	710	1,560
27	928	555	686	692	545	356	229	1,860	928	232	644	1,370
28	895	575	680	692	535	348	229	1,560	862	214	485	1,230
29	862	606	674	692	-------	348	460	1,340	776	195	418	1,200
30	824	590	674	698	-------	352	372	1,200	716	175	372	1,370
31	794	-------	668	734	-------	344	-------	1,090	--------	168	380	-----

NOTE.—Discharge determined from graph drawn from United States Weather Bureau gage readings to tenths once daily on following days: Nov. 12–14, 19–21, Dec. 21, Mar. 9–13, Apr. 26 to May 1, July 17, and Aug. 9–21.

Monthly discharge of Colorado River at Columbus, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	3,220	757	1,270	78,100
November	770	510	606	36,100
December	1,120	590	751	46,200
January	734	628	670	41,200
February	746	535	635	35,300
March	515	344	414	25,400
April	460	229	308	18,300
May	19,600	332	5,340	329,000
June	15,400	716	4,010	238,000
July	2,600	168	793	48,800
August	1,710	132	635	39,100
September	5,870	764	1,810	108,000
The year	19,600	132	1,440	1,040,000

COLORADO RIVER AT WHARTON, TEX.

LOCATION.—At highway bridge in western edge of Wharton, Wharton County, 200 feet below Galveston, Harrisburg & San Antonio Railway bridge.

DRAINAGE AREA.—41,200 square miles, a large part of which is probably noncontributing (measured on topographic maps, base map of Texas, and progressive military map of United States Army).

RECORDS AVAILABLE.—July 12 to August 31, 1916; July 3 to August 18, 1917; July 11 to August 4, 1918; and April 19, 1919, to September 30, 1925, when station was discontinued.

GAGE.—Gurley graph water-stage recorder attached to pier of highway bridge near left bank, inspected by A. F. Kaiser.

DISCHARGE MEASUREMENTS.—Made from highway bridge, from railway bridge, or by wading.

CHANNEL AND CONTROL.—Channel straight above and below station for a few hundred feet. Bed composed of sand and clay; subject to shift. Banks composed of clay; subject to overflow during extremely high stages. At a gage height of 34 feet, water enters a channel above station known as Caney Creek and flows thence to Gulf of Mexico. The Colorado River raft, several miles below station, probably serves as control for all but extremely low stages.

EXTREMES OF DISCHARGE.—Maximum stage from water-stage recorder, 22.35 feet at 11 a. m. May 15 (discharge, 22,100 second-feet); no flow at 7 p. m. August 6 (determined from poor gage-height record and poorly-defined curve and subject to considerable error).

1916–1925: Maximum stage recorded, 40.7 feet from 9 a. m. to 6 p. m. May 6, 1922 (discharge not determined); no flow August 6, 1925.

DIVERSIONS.—Station is in area of rice irrigation, roughly estimated to cover about 75,000 acres, about one-third of which is irrigated by diversions from Colorado River between Columbus and Wharton, and the remaining two-thirds by diversions below Wharton. During periods of maximum demands, practically the entire flow is diverted, unless the river is above ordinary stage.

REGULATION.—Flow at low and medium stages is regulated to some extent by storage in Lake Austin at Austin.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined above 40 second-feet. Operation of water-stage recorder satisfactory except for short breaks in record. Record August 1–11 subject to error on account of poor gage-height record. Daily discharge determined by applying to rating table mean daily gage height obtained from recorder graph by inspection or by use of planimeter, averaging discharge for intervals of a day on days of considerable fluctuation. Records prior to August 1 fair; poor thereafter.

Discharge measurements of Colorado River at Wharton, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 21	10.90	1,550	May 4	19.00	13,500	May 9	12.78	3,350
Nov. 25	9.16	572	May 5	17.24	8,960	Do	12.69	3,120
Jan. 7	9.43	611	Do	16.44	8,620	May 10	12.26	2,820
Feb. 9	9.36	628	May 6	15.36	6,340	May 15	22.20	21,600
Mar. 11	8.93	499	Do	15.02	5,730	Aug. 10	5.95	57.9
Apr. 9	8.55	432	May 7	14.44	5,130	Oct. 20	24.65	26,000
May 3	20.13	16,200	Do	14.05	4,670			
May 4	19.66	15,200	May 8	13.28	3,760			

Daily discharge, in second-feet, of Colorado River at Wharton, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,500	770	575	640	680	545	470	322	1,000	545	144	545
2	1,360	725	575	640	640	545	470	375	3,460	520	138	1,070
3	1,280	725	575	640	640	545	460	12,500	11,400	520	90	2,080
4	1,200	680	575	640	640	545	450	14,400	7,850	725	79	1,910
5	1,140	680	575	640	640	545	450	8,760	6,720	2,000	37	1,660
6	1,070	680	605	640	640	545	440	5,540	16,800	2,080	30	1,910
7	1,000	640	640	640	640	520	440	4,800	15,600	1,820	32	2,250
8	940	640	640	640	640	520	440	3,680	9,740	1,500	38	2,080
9	940	575	605	640	640	520	430	3,260	6,410	1,360	56	1,740
10	940	605	575	640	605	520	430	2,680	4,560	1,140	54	1,500
11	880	605	575	640	575	520	440	2,340	3,680	1,070	59	1,360
12	820	605	575	640	575	500	450	2,160	3,160	1,000		1,380
13	770	605	575	640	605	500	430	2,340	2,780	940		1,430
14	770	575	680	640	575	480	430	8,760	2,600	725		1,280
15	725	575	880	640	575	480	402	21,000	2,250	575		1,200
16	725	545	940	725	575	490	375	14,900	2,080	520		1,200
17	1,200	545	940	680	575	500	348	9,540	1,910	500	575	1,280
18	2,340	545	880	725	575	500	348	6,560	1,820	490		1,500
19	2,160	545	820	725	575	490	366	5,540	2,000	500		2,450
20	1,820	545	820	680	575	490	357	5,160	2,160	470		5,280
21	1,580	545		680	575	490	330	4,220	2,000	430		4,800
22	1,430	545		640	575	490	306	3,560	1,740	420		3,560
23	1,280	575		640	575	480	282	2,960	1,430	393	1,140	2,860
24	1,200	545	750	640	575	480	266	2,600	1,280	357	1,360	2,500
25	1,070	575		680	545	470	243	2,250	1,070	322	1,200	2,340
26	1,070	575		640	545	480	236	2,000	940	290	1,070	2,250
27	940	545	680	640	545	480	229	2,160	820	250	820	2,080
28	880	575	640	640	545	470	215	1,820	725	229	725	1,820
29	820	575	640	640	-------	470	174	1,430	640	201	725	1,740
30	770	575	640	640	-------	470	243	1,280	605	187	640	1,660
31	770	-------	640	640	-------	470	-------	1,140	-------	162	575	------

NOTE.—Braced figures give estimated mean discharge for periods indicated. Record incomplete and discharge partly estimated Dec. 27, Feb. 14, and Aug. 23.

Monthly discharge of Colorado River at Wharton, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	2,340	725	1,140	70,200
November	770	545	601	35,800
December	940	575	689	42,400
January	725	640	653	40,200
February	680	545	595	33,100
March	545	470	502	30,800
April	470	174	365	21,700
May	21,000	322	5,160	317,000
June	16,800	605	3,970	236,000
July	2,080	162	717	44,100
August	1,360	30	495	30,400
September	5,280	545	2,020	120,000
The year	21,000	30	1,410	1,020,000

COLORADO RIVER SEEPAGE INVESTIGATION

During the series of measurements the river was at a constant stage, except for small rise during the night of April 23 as noted in footnote below and discharge represents natural conditions.

Discharge measurements to determine seepage on Colorado River from Robert Lee, Tex., to Austin, Tex., in April, 1925

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet				
				Main stream	Tributary	Diversion	Gain or loss in section	Total gain or loss
Apr. 7	Colorado River	Robert Lee	0	0				
7	do	Gaging station near Robert Lee.	9	0				
7	Cow Creek	Mouth	9		0			
7	Colorado River	Former station near Bronte.	16	.1			+0.1	+0.1
7	do	Maverick-Miles crossing	30	0			−.1	0
7	Valley Creek	Mouth	44		0			
8	Colorado River	Gaging station at Ballinger.	50	.2			+.2	+.2
8	Elm Creek	Mouth	51		.2			
9	Colorado River	7 miles below Ballinger	57	.5			+.1	+.3
9	do	9 miles below Ballinger	59	.5			0	+.3
9	Mustang Creek	Mouth	60		0			
9	Colorado River	Nichols crossing	63	1.6			+1.1	+1.4
8	Concho River	Mouth	69		.2			
8	Colorado River	Below Concho	69	5.7			+3.9	+5.3
9	do	Trap crossing	72	8.2			+2.5	+7.8
8	do	Just above Criswell Springs.	75	10.7			+2.5	+10.3
8	do	Below Criswell Springs	76	10.3			−.4	+9.9
10	do	4 miles above Stacy	84	10.1			−.2	+9.7
10	do	8 miles below Stacy	96	11.3			+1.2	+10.9
10	do	Waldrip	104	13.2			+1.9	+12.8
10	do	Near Whan	118	12.8			−.4	+12.4
11	do	Gaging station near Milburn.	134	17.5			+4.7	+17.1
11	Bollinger pump	2¼ miles north of Bowser.	142			0		
11	McMullen and Prewitt pump	1½ miles north of Bowser.	146			0		
11	Colorado River	Near Bowser	150	16.6			−.9	+16.2
13	Dwyer pump	Regency	159			0		
13	Colorado River	do	159	15.6			−1.0	+15.2
13	S. M. Jones pump	1 mile below Regency	160			0		
13	Cottonwood Creek.	Mouth	163		0			

Discharge measurements to determine seepage on Colorado River from Robert Lee, Tex., to Austin, Tex., in April, 1925—Continued

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet				
				Main stream	Tributary	Diversion	Gain or loss in section	Total gain or loss
Apr. 14	Pecan Bayou	Month	173		0			
14	Colorado River	1 mile below Pecan Bayou.	174	18.0			+2.4	+17.6
13	do	Goathwaite-San Saba crossing.	185	22.2			+4.2	+21.8
14	Renfroe pump	1 mile below bridge	186			0		
14	Taylor Beaumont pump.	2 miles below bridge	187			0		
14	Miller pump	3 miles below bridge	188			0		
14	Mausby pump	4 miles below bridge	189			0		
14	Crawford pump	3 miles below Mausby	192			0		
14	Colorado River	5 miles above mouth of San Saba River.	194	23.4			+1.2	+23.0
15	do	2 miles above San Saba	197	19.9			−3.5	+19.5
15	Edmonson pump	1 mile above San Saba	198			0		
15	San Saba River	Mouth	199		67.2			
15	Colorado River	Near Chadwick	200	87.0			−.1	+19.4
16	Rough Creek	4 miles above bend	214		1.6			
16	McCurry pump	1½ miles above bend	216			2.0		
16	Colorado River	Bend	218	95.0			+8.4	+27.8
16	Cherokee Creek	Mouth	220		.3			
16	Lewis Fry pump	Just below Cherokee	220			0		
16	Cagle pump	do	220			0		
16	Frazier pump	do	220			0		
	Sulphur Springs	6 miles below bend	224					
	Gorman Creek	11 miles below bend	229					
17	Falls Creek	Mouth	241		2.4			
17	Colorado River	Gaging station near Tow	243	102			+4.3	+32.1
16	do	Gaging station at Tow	243	118				+32.1
16	Tanners pump	Below Tow	244			0		
16	Tow Creek	Mouth	244		.2			
16	Cowan Creek	do	245		.1			
16	Beaver Creek	do	246		.3			
16	Morgan Creek	do	251		.1			
17	Colorado River	Near Bluffton	251	107			−11.7	+20.4
17	Southwestern Graphite Co.'s pump.	One-fourth mile below Llano-Burnett road bridge.	252			.8		
17	Lion Creek	Mouth	252		0			
17	Campground Creek.	do	256		0			
17	Redrock Creek	do	258		0			
17	Colorado River	Bluffton-Kingsland road	262	76.3			−29.9	−9.5
17	Clear Creek	Mouth	262		0			
17	Spring Creek	do	263		0			
17	Peter Creek	do	265		0			
17	Powdermill Creek	do	269		0			
17	Llano River	do	274		69.0			
18	Colorado River	1 mile below mouth of Llano River near Kingsland.	275	196			+50.7	+41.2
18	Sandy Creek	Mouth	280		0			
18	Colorado River	1,000 feet below Sandy Creek.	280	179			−17.0	+24.2
20	Pecan Creek	Mouth	282		.2			
20	Slickrock Creek	do	284		0			
20	Colorado River	4 miles above Marble Falls.	285	163			−16.2	+8.0
20	Tiger Creek	Mouth	288		0			
20	Meeks pump	Five-eighths mile above Marble Falls.	289			0		
20	Phelps pump	One-half mile above Marble Falls.	290			0		
20	Stamford pump	Three-eighths mile above Marble Falls.	290			0		
20	Wagner pump	One-fourth mile above Marble Falls.	290			0		
20	Sparerib Creek	Mouth	290		0			
20	Marble Falls water supply.	Marble Falls	290			.3		
20	Colorado River	do	290	172			+9.3	+17.3
21	Flatrock Creek	Mouth	291		0			
21	Hamilton Creek	do	295		.2			
21	Sycamore Creek	do	295		0			
21	Doublehorn Creek	do	298		.5			

Discharge measurements to determine seepage on Colorado River from Robert Lee, Tex., to Austin, Tex., in April, 1925—Continued

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet				
				Main stream	Tributary	Diversion	Gain or loss in section	Total gain or loss
Apr. 21	Postoak Branch	Mouth	303		0			
21	Spanish Oak Creek.	do	304		0			
21	Little Cypress Creek.	do	307		.2			
22	Colorado River	Above mouth of Pedernales River.	316	226			+53.1	+70.4
22	Pedernales River	Mouth	316		3.2			
21	Cow Creek	do	317		.1			
22	Cedar Knob Spring	4 miles below mouth of Pedernales River.	320		.1			
22	Colorado River	Cox Ford	322	202			−27.4	+43.0
23	do	do.[a]	322	216				+43.0
22	Bee Creek	Mouth	324		.2			
23	Colorado River	Lohmans Ford	325	228			+11.8	+54.8
23	Sandy Creek	Mouth	334		.1			
23	Colorado River	Watson Ford	334	238			+9.9	+64.7
23	Cypress Creek	Mouth	335		.2			
23	Bull Creek	do	357		0			
24	Barton Creek	do	364		23.2			
24	City waterworks	Austin	364			10.8		
24	Shoal Creek	Mouth	364		3.5			
24	Lone Star Ice Co.	Austin	364		.1			
24	Colorado River	do	365	255			+.8	+65.5

[a] Small rise night of April 23 caused increase in discharge. A measurement was made at same point on April 24 to determine increase.

NOTE.—Columns headed "Gain or loss in section" and "Total gain or loss" show values computed from discharge of main stream, tributaries, and diversions.

DEEP CREEK NEAR SNYDER, TEX.

LOCATION.—1¼ miles southeast of Snyder, Scurry County, and 16 miles above confluence with Colorado River.

DRAINAGE AREA.—120 square miles (measured on base map of Texas).

RECORDS AVAILABLE.—November 23, 1923, to August 31, 1925, when station was discontinued.

GAGE.—Vertical staff on left bank, 1.4 miles downstream from concrete crossing and one-fifth mile below highway bridge; read by M. F. Davis.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel; shifts. Bed above gage congested with brush and débris and fairly clear below. One channel at all stages. Banks covered with light timber and brush; subject to overflow. Channel winding above gage and straight for 1,000 feet below. Low and medium stage control formed by rock shoal 700 feet below gage. Brush located in channel below control may act as incomplete control when shoals are submerged. High-stage control indefinite.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 15.5 feet during morning April 24 (discharge, 5,180 second-feet, determined by slope method and subject to considerable error); no flow during several periods.

1924–25: Same as given above.

DIVERSIONS.—None of consequence.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve poorly defined. Gage read to hundredths once daily. Daily discharge determined by applying mean daily gage height to rating table. Records poor.

Discharge measurements of Deep Creek near Snyder, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 21	[a] 1.22	0	Apr. 24	15.50	[c] 5,180
Jan. 11	1.44	[b] .15	Aug. 18	[a] 1.19	0
Apr. 14		0			

[a] Below point of zero flow. [b] Estimated. [c] Determined by slope method.

Daily discharge, in second-feet, of Deep Creek near Snyder, Tex., for the period October 1, 1924, to August 31, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Aug.
1			0.2	0.1		0.1	0.1	0.2	0.1	
2			.2	.1			.1	.2		
3			.1	.2	0.1			.2		
4			.1	.2				.2		
5			.2	.2				.1		
6			.2	.2	.1			.2		
7	0.1		.2	.1	.1	.1		.2		
8			.2	.1				.4		
9			.2					.1		
10			.7	.1				96		
11			.4	.1			.1	154		
12			.2				.1	3.5		75
13			.4	.1			.1	1.5		2
14		0.1	.7	.1	.1			.2		
15		.2	.2	.1				.1		
16		.2	.2	.1				.2		
17		.2	.1	.1				.2		
18		.2	.1	.1						
19		.1	.1	.1	.1					
20		.1	.1		.1					
21			.1	.1	.1					
22		.1	.1	.1						
23		.2					112			
24				.1		.1	923			
25		.1		.1			7.5			
26	.1				.1		7.0			
27		.2	.1	.1			1.4			
28		.1	.1	.2	.1	.1	.2	.1		
29		.2	.1	.1		.1	.2			
30		.2	.1				.2	104		
31								2.3		

NOTE.—No flow on days for which no discharge is given.

Monthly discharge of Deep Creek near Snyder, Tex., for the period October 1, 1924, to August 31, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	0.1	0	0.01	0.4
November	.2	0	.07	4.4
December	.7	0	.17	10.5
January	.2	0	.09	5.5
February	.1	0	.03	1.7
March	.1	0	.02	.9
April	923	0	35.1	2,090
May	154	0	11.7	722
June	.1	0	0	.2
July	0	0	0	0
August	75	0	2.5	154
The period				2,990

NORTH CONCHO RIVER NEAR CARLSBAD, TEX.

LOCATION.—Just above State Sanitorium Dam, 1½ miles below mouth of Live Oak Creek and 2 miles above Carlsbad, Tom Green County.

DRAINAGE AREA.—1,530 square miles (measured on base map of Texas).

RECORDS AVAILABLE.—March 27, 1924, to September 30, 1925.

GAGE.—Stevens continuous water-stage recorder attached to left side of dam; inspected by Geological Survey engineers. Prior to February 4, 1925, vertical staff on left bank near State pump station, just above dam; read by T. E. Heskew.

DISCHARGE MEASUREMENTS.—Made from cable 200 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of rock, overlain in places with gravel and silt with large pecan trees along edge of stream. Channel straight for 600 feet above and 400 feet below gage. Banks covered with brush and trees, and subject to overflow at extremely high stages. At about gage height of 12.5 feet and discharge of 25,000 second-feet, water runs over crest of banks on both sides of stream into draws which do not drain back into river but form lakes. Control is concrete dam just below gage; permanent. There is a notch in crest of dam as a part of a fish ladder, and during very dry periods this notch is closed. Point of zero flow with notch open, 1.67 feet; with notch closed, 2.21 feet.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 14.45 feet at 1.10 p. m. May 30 (discharge, 35,600 second-feet, determined from extension of rating curve and subject to considerable error); no flow April 21–22.

1924–25: Maximum stage that of May 30, 1925; no flow during several periods.

DIVERSIONS.—Several pumps in the drainage above which are reported to have a combined capacity of 40 second-feet; amount of water actually diverted not known, but flow materially affected at low stages.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve fairly well defined below 3,000 second-feet and extended through one discharge measurement made by slope method. Gage read to hundredths once daily January 1 to February 3, but work of observer not satisfactory. Operation of water-stage recorder satisfactory February 4 to September 30. Daily discharge determined by applying mean daily gage height to rating table, averaging discharge for intervals of a day on days of considerable fluctuation, except as noted in footnote to daily-discharge table. Records prior to February 3, poor; fair thereafter.

Discharge measurements of North Concho River near Carlsbad, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 7	2.62	61.6	Mar. 3	2.22	3.93	June 1	3.12	179
Oct. 21	2.21	[a]1.0	Apr. 27	4.39	670	June 2	2.76	91.7
Dec. 18	2.26	6.83	May 30	14.45	[b]35,800	Aug. 29	2.45	32.0

[a] Estimated. [b] Determined by slope method.

Daily discharge, in second-feet, of North Concho River near Carlsbad, Tex., for the year ending September, 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				7.6	7.6	4.2	2.1	54	219	15	154	16
2				7.6	7.6	4.2	2.3	37	111	13	36	11
3				7.6	7.6	4.2	2.3	29	71	13	19	10
4				7.6	5.9	4.2	3.4	26	50	15	13	9.3
5				7.6	6.8	2.5	4.2	22	37	13	11	8.4
6				7.6	5.9	2.3	6.8	19	31	12	10	7.6
7				7.6	5.9	2.1	6.8	17	26	11	9.3	7.6
8				7.6	5.9	2.0	6.8	2,200	25	10	8.4	7.6
9				7.6	5.9	2.0	6.8	231	180	9.3	6.8	5.9
10				7.6	5.9	1.6	6.8	138	69	9.3	6.8	5.9
11				7.6	5.9	1.2	5.9	54	17	9.3	1,270	43
12				7.6	5.9	.9	5.9	34	16	7.6	118	65
13				7.6	5.9	.7	5.0	29	13	7.6	45	28
14				7.6	5.9	.7	5.9	26	11	6.8	26	15
15				7.6	5.9	.6	5.0	26	10	5.9	19	10
16	5.0	5.0	5.0	7.6	5.9	.6	3.4	29	9.3	5.0	15	7.6
17				7.6	5.0	.6	2.1	28	8.4	5.0	11	6.8
18				7.6	5.0	.6	.7	26	8.4	3.4	7.6	5.9
19				7.6	5.0	.6	.3	21	8.4	2.3	4.2	5.0
20				7.6	5.0	.6	.2	18	8.4	2.1	5.0	4.2
21				7.6	5.0	.6	0	16	8.4	1.8	4.2	2.5
22				7.6	5.9	.6	0	13	8.4	1.8	3.4	2.3
23				7.6	5.0	.7		12	7.6	2.0	2.5	2.3
24				7.6	5.0	.7	7.0	11	24	1.4	2.1	7.6
25				7.6	4.2	.7		12	374	1.2	1.1	18
26				7.6	4.2	.7	8,240	15	58	1.1	43	9.3
27				7.6	4.2	.7	8,370	18	22	.7	1,220	5.9
28				7.6	4.2	1.1	164	54	16	.5	171	5.0
29				7.6	-------	1.1	87	34	16	.5	45	4.2
30				7.6	-------	1.4	73	20,600	16	.5	31	4.2
31				7.6	-------	1.8	-------	7,410	-------	2.5	43	-------

NOTE.—Braced figures show estimated mean discharge for periods included. Discharge partly estimated Feb. 12, 14, Aug. 23–28; interpolated Feb. 13. Records Jan. 1 to Feb. 3 subject to error, as work of observer is doubtful.

Monthly discharge of North Concho River near Carlsbad, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October			[a] 5	307
November			[a] 5	298
December			[a] 5	307
January	7.6	7.6	7.6	467
February	7.6	4.2	5.64	314
March	4.2	.6	1.8	92.2
April	8,370	0	568	33,800
May	20,600	11	1,010	62,000
June	374	7.6	49.3	2,930
July	15	.5	6.12	376
August	1,270	1.1	108	6,670
September	65	2.3	11.4	677
The year	20,600	0	150	108,000

[a] Estimated.

NORTH CONCHO RIVER AT SAN ANGELO, TEX.

LOCATION.—At county concrete viaduct in San Angelo, Tom Green County, 1 mile above confluence with South Concho River.

DRAINAGE AREA.—1,800 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—October 27, 1915, to September 30, 1925.

GAGE.—Stevens continuous water-stage recorder attached to left side of web of third pier of viaduct from left bank; inspected by Geological Survey engineers.

DISCHARGE MEASUREMENTS.—Made from second highway bridge upstream from gage or by wading.

CHANNEL AND CONTROL.—Bed composed of solid rock which is to some extent, covered in high-water channel with grass and moss; permanent. Channel straight for 800 feet above and 400 feet below gage. Banks of rock and clay; subject to overflow during high floods. About 20 feet below gage and at downstream side of viaduct is a concrete dam, about 4½ feet high, which before the viaduct was constructed served as part of low-water crossing. This dam forms an artificial control and insures a permanent stage-discharge relation. Portion of this dam removed temporarily September 10–30. Backwater probably occurs at this station when Concho River reaches a stage of 25 feet.

EXTREMES OF DISCHARGE.—Maximum stage from water-stage recorder, 18.70 feet at 11.30 p. m. May 30 (discharge not determined); no flow during several periods.

1916–1925: Maximum stage recorded, 19.3 feet at 7.30 p. m. April 26, 1922 (discharge not determined; backwater from Concho River probably existed); no flow for several periods.

DIVERSIONS.—Records of the Board of Water Engineers for the State of Texas show that about 600 acres have been declared irrigated by diversions from North Concho River, all above station.

REGULATION.—None of consequence.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 1,100 second-feet, poorly defined between 1,100 and 14,000 second-feet, and extended above. Operation of water-stage recorder satisfactory until September 10, when part of control dam was removed. Daily discharge determined by applying to rating table mean daily gage height obtained from recorder graph by inspection, averaging discharge for intervals of a day on days of considerable fluctuation. Records fair.

Discharge measurements of North Concho River at San Angelo, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 17	0.37	2.50	June 13	0.82	35.6
Apr. 26	7.19	13,800	Sept. 24	[a] 27.11	132

[a] Auxiliary gage-height hole was cut in dam Sept. 10.

Daily discharge, in second-feet, of North Concho River at San Angelo, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.8	88	7.0	7.4	4.9	2.6	379	490	21	20	60
2	0	.6	46	7.0	7.4	4.5	2.3	323	222	20	56	35
3	0	.4	27	7.0	7.0	4.5	2.3	271	142	23	28	22
4	0	.4	19	5.8	7.0	4.5	2.3	229	108	27	17	17
5	0	.4	17	5.8	7.0	3.7	2.0	204	84	51	11	14
6	584	.4	11	6.2	6.2	3.3	2.3	186	67	25	8.0	44
7	251	0	8.6	5.8	6.2	3.3	2.3	168	56	17	6.2	17
8	56	0	7.0	6.2	5.8	2.8	2.3	551	49	16	5.8	9.1
9	37	.2	6.2	6.2	5.4	2.6	2.0	813	46	14	5.8	7.4
10	76	.4	5.8	6.2	5.4	2.6	2.0	132	192	13	4.9	
11	47	.4	4.9	6.2	5.4	2.3	2.0	137	72	11	328	
12	26	.6	4.9	6.2	5.4	2.3	1.8	54	44	10	264	
13	16	.6	4.5	6.2	4.9	2.3	1.3	41	36	10	44	
14	8.0	.4	4.9	5.8	6.2	2.0	1.0	35	32	9.7	19	
15	5.8	.6	4.9	6.2	7.0	2.0	.8	27	30	9.7	11	
16	4.5	.6	4.9	6.2	7.0	2.3	.4	23	28	9.1	8.0	
17	3.3	.6	5.4	6.2	7.0	2.3	0	141	26	8.6	7.0	
18	2.8	.8	5.8	6.2	6.6	2.3	0	28	26	8.0	6.6	
19	2.6	.8	4.9	7.0	6.6	2.6	0	22	21	8.0	4.9	
20	2.3	.6	4.5	6.6	6.6	2.6	0	18	20	7.4	4.1	90
21	2.0	.6	4.5	6.6	7.0	2.8	0	17	17	7.4	2.8	
22	1.8	.4	4.5	6.6	8.0	3.0	0	15	17	7.4	2.6	
23	2.3	.4	4.5	7.0	7.4	3.3	0	13	15	7.0	2.3	
24	2.3	.4	4.9	7.4	7.0	3.3	0	11	305	7.0	1.8	
25	1.8	.6	5.4	8.0	7.0	3.3	3.7	10	520	7.0	1.3	
26	1.6	.6	5.4	7.4	6.2	3.0	4,940	10	127	6.6	50	
27	1.8	.6	5.8	8.0	5.4	2.6	4,350	10	49	6.6	559	
28	1.8	.6	5.8	8.0	5.4	2.3	339	349	33	6.6	490	
29	2.0	17	6.2	7.4	-------	2.0	530	56	26	6.2	162	
30	1.3	127	6.6	7.4	-------	2.6	470	6,400	24	6.2	84	
31	1.0	-------	7.0	7.4	-------	2.6	----------	21,000	-------	7.0	84	

NOTE.—Discharge May 31 from extension of rating curve and subject to considerable error. Braced figure shows estimated mean discharge for period included.

Monthly discharge of North Concho River at San Angelo, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	584	0	36.8	2,270
November	127	0	5.26	313
December	88	4.5	11.2	686
January	8.0	5.8	6.68	411
February	8.0	4.9	6.46	359
March	4.9	2.0	2.92	180
April	4,940	0	355	21,100
May	21,000	10	1,020	62,800
June	520	15	97.5	5,800
July	51	6.2	12.7	780
August	559	1.3	74.2	4,560
September	----------	----------	70.5	4,200
The year	21,000	0	143	103,000

CONCHO RIVER NEAR SAN ANGELO, TEX.

LOCATION.—Half a mile below confluence of North Concho and South Concho Rivers, 1¾ miles southeast of San Angelo, Tom Green County.

DRAINAGE AREA.—4,490 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—September 17, 1915, to September 30, 1925.

GAGE.—Stevens continuous water-stage recorder on right bank, 1,500 feet below an old ford; inspected by Geological Survey engineers.

DISCHARGE MEASUREMENTS.—Made by wading or from cable 1,500 feet above gage.

CHANNEL AND CONTROL.—Bed of solid rock and gravel. Channel straight for 1,000 feet above and below station. Right bank wooded, rocky, and not subject to overflow. Left bank of clay and gravel, covered with scattered trees, and subject to overflow at high stages. Rapids just below gage serve as control for medium and low stages, but affected by moss; position of control for high stages not known.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 31.2 feet at 2.30 a. m. May 31 (discharge, 78,400 second-feet, determined from extension of rating curve and subject to error); minimum stage, 0.46 foot from 11 a. m. July 26 to 3 a. m. July 29 (discharge, 2.0 second-feet).

1915–1925: Maximum stage recorded, 36.8 feet April 26, 1922 (discharge, 139,000 second-feet, determined from extension of rating curve and subject to considerable error); no flow November 29, 1921.

DIVERSIONS.—Flow at low stage materially affected by diversions above station. About a mile above mouth of South Concho River there is a storage dam. Records of the Board of Water Engineers for the State of Texas show that about 11,000 acres have been declared irrigated by water diverted above the station, and about 3,500 acres by diversions below station.

REGULATION.—Storage at dam 1 mile above mouth of South Concho River has slight effect on flow at station. No regulation of consequence on North Concho River.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 1,000 second-feet, fairly well defined from 1,000 to 22,000 second-feet, and poorly defined from 22,000 to 44,000 second-feet. Operation of water-stage recorder satisfactory. Daily discharge determined by applying to rating table mean daily gage height ascertained from recorder graph by inspection or by use of planimeter, averaging discharge for intervals of a day on days of considerable fluctuation. Records for low stages, good; for high stages, fair.

Discharge measurements of Concho River near San Angelo, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 17	1.15	22.3	May 28	7.31	3,740	May 31	9.68	5,860
Apr. 26	16.14	13,800	May 30	20.24	20,200			
May 9	5.46	2,000	May 31	22.36	21,600			

Daily discharge, in second-feet, of Concho River near San Angelo, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	39	54	48	53	32	21	154	1,060	50	31	268
2	46	38	357	47	53	32	16	103	422	52	64	120
3	46	38	198	47	48	31	16	81	290	85	101	78
4	47	35	96	47	44	28	12	66	260	214	18	63
5	51	33	72	47	43	27	18	58	293	419	12	58
6	560	33	62	46	40	23	18	52	272	192	9.3	114
7	272	30	59	44	38	25	13	46	248	92	7.4	67
8	108	28	54	52	36	23	5.8	1,580	230	60	4.9	58
9	121	29	47	54	38	21	4.5	7,780	211	48	4.6	53
10	149	31	45	53	39	20	6.5	698	301	38	3.2	52
11	96	32	45	54	36	18	4.9	1,340	151	29	261	766
12	71	32	46	52	37	16	3.2	458	90	30	351	902
13	57	42	47	53	40	15	2.8	195	78	28	64	265
14	50	45	47	52	41	18	3.3	185	72	18	40	143
15	43	44	50	53	39	18	20	254	60	12	28	99
16	40	45	54	52	39	18	6.3	128	42	5.8	15	78
17	38	48	53	54	43	20	3.4	341	36	5.6	13	67
18	38	38	52	54	43	19	2.8	106	43	5.2	9.0	76
19	38	30	45	54	42	16	4.2	74	37	3.9	7.4	63
20	38	42	44	54	43	14	3.8	66	31	3.0	4.9	57
21	37	58	46	54	43	11	2.9	58	26	4.2	4.2	53
22	36	52	48	53	43	8.4	2.4	54	23	2.4	3.0	59
23	42	48	50	50	39	6.3	3.8	45	20	2.4	13	57
24	42	46	50	47	38	7.4	6.3	34	94	2.3	7.4	456
25	40	45	50	47	34	11	7.7	35	1,440	2.2	2.3	122
26	40	43	52	46	32	10	7,250	36	419	2.0	420	76
27	41	43	52	46	30	8.0	7,080	34	172	2.0	1,820	71
28	40	43	53	45	29	2.8	458	2,340	101	2.0	768	64
29	39	42	53	41	------	11	840	465	74	2.1	265	60
30	44	42	53	41	------	15	272	12,900	60	2.1	146	59
31	40	------	51	45	------	22	------	33,200	------	10	192	------

Monthly discharge of Concho River near San Angelo, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	560	36	77.3	4,750
November	58	28	39.8	2,370
December	357	44	67.3	4,140
January	54	41	49.4	3,040
February	53	29	40.1	2,230
March	32	2.8	17.6	1,080
April	7,250	2.4	535	31,800
May	33,200	34	2,030	125,000
June	1,440	20	222	13,200
July	419	2.0	45.9	2,820
August	1,820	2.3	151	9,290
September	902	52	151	8,970
The year	33,200	2.0	288	209,000

CONCHO RIVER NEAR PAINT ROCK, TEX.

LOCATION.—At Concho, San Saba & Llano Valley Railroad bridge, a quarter of a mile below mouth of Kickapoo Creek, 1½ miles above highway bridge, and 2 miles northwest of Paint Rock, Concho County.

DRAINAGE AREA.—5,530 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—September 20, 1915, to September 30, 1925.

GAGE.—Stevens continuous water-stage recorder attached to downstream end of middle railroad bridge pier; inspected by engineers of Geological Survey.

DISCHARGE MEASUREMENTS.—Made by wading, from railroad bridge, or from highway bridge below.

CHANNEL AND CONTROL.—Bed composed of solid rock; smooth and permanent. Channel straight for 500 feet above and below gage. Right bank is of solid rock and not subject to overflow; left bank wooded and subject to overflow during high water. Permanent control during low and medium stages is a solid-rock shoal, 400 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 20.15 feet at 5 p. m. May 31 (discharge not determined); no flow April 6–8, 12, 13, and 24.

1915–1925: Maximum stage recorded, 27.5 feet at 11 a. m. April 27, 1922 (discharge not determined); no flow during several periods of every year except 1920 and 1921.

DIVERSIONS.—Records of the Board of Water Engineers for the State of Texas show that about 11,000 acres have been declared irrigated by diversions from Concho River, practically all of which are above station. Flow during low stages is materially affected by diversions.

REGULATION.—Ten storage dams of small capacity are located between this station and San Angelo. An abandoned dam 12 feet in height, known as "Four Mile Dam," is 4 miles below San Angelo, and a small dam 8 feet in height has been constructed for storage on Sims ranch just above station. None of the dams appreciably affect the flow by storing water, except during extremely low stages.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined below 6,000 second-feet, poorly defined between 6,000 and 19,000 second-feet, and extended above. Operation of water-stage recorder satisfactory. Daily discharge determined by applying to rating table mean daily gage height determined from recorder graph by inspection or by use of planimeter, averaging discharge for intervals of a day on days of considerable fluctuation; shifting-control method used December 4 to April 28. Records for low and medium stages, good; for high stages, poor.

Discharge measurements of Concho River near Paint Rock, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 13	1.41	35.1	Mar. 20	0.85	[a]0.7
Dec. 17	1.60	56.5	Sept. 23	1.59	58.6

[a] Estimated.

Daily discharge, in second-feet, of Concho River near Paint Rock, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	40	43	53	43	28	0.1	272	3,350	58	7.4	222
2	37	40	1,330	50	44	28	.1	151	720	44	4.7	218
3	35	40	376	47	48	26	.1	120	425	34	2.5	137
4	37	38	176	45	50	26	.1	104	328	32	1.8	102
5	37	37	102	45	48	25	.1	92	260	372	1.5	82
6	38	35	82	45	44	22	0	85	215	285	1.0	74
7	656	34	70	45	43	16	0	80	185	172	.7	99
8	194	33	63	44	40	14	0	1,580	169	115	.7	94
9	2,750	33	59	44	37	15	.1	16,600	169	82	.5	72
10	225	32	51	48	35	15	.1	7,580	151	67	.2	65
11	131	33	45	50	35	12	.1	1,780	293	50	.2	850
12	94	34	44	50	35	8.8	0	1,140	163	44	433	1,280
13	74	34	45	48	38	6.0	0	359	123	38	188	589
14	59	34	45	48	35	5.0	1.2	211	102	29	82	248
15	50	38	47	50	37	4.1	2.8	244	90	21	39	160
16	45	43	48	50	38	3.1	1.5	229	85	15	25	143
17	41	41	53	50	39	2.3	1.0	251	69	12	17	102
18	37	43	58	48	38	2.0	.7	298	55	8.3	15	87
19	38	45	55	53	40	1.5	1.0	140	45	6.0	12	85
20	38	43	50	53	40	1.0	.7	112	56	4.7	9.2	80
21	39	37	45	53	39	.5	.5	99	45	3.4	6.9	72
22	38	40	47	55	39	.2	.2	90	39	2.5	5.4	63
23	38	50	50	53	39	.5	.1	85	34	2.0	4.4	59
24	37	48	51	53	38	.5	0	82	25	1.5	3.1	261
25	40	45	51	51	35	.2	.1	74	1,750	1.0	2.5	378
26	40	44	51	50	32	.2	8,200	78	666	.7	4.4	140
27	39	43	53	47	30	.2		72	289	.2	1,710	92
28	40	43	53	45	30	.1		1,380	160	.2	1,430	76
29	41	43	53	45	-------	.1		1,170	118	.2	710	72
30	39	43	55	45	-------	.1	660	1,820	76	.1	215	65
31	40	-------	55	44	-------	.1	---------	29,800	-------	4.1	172	------

NOTE.—Braced figure shows estimated mean discharge for period included. Discharge partly estimated Apr. 30, May 9 and 10.

Monthly discharge of Concho River near Paint Rock, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	2,750	35	164	10,100
November	50	32	39.5	2,350
December	1,330	43	110	6,760
January	55	44	48.6	2,990
February	50	30	38.9	2,160
March	28	.1	8.50	523
April	-------	0	1,120	66,400
May	29,800	72	2,130	131,000
June	3,350	25	342	20,300
July	372	.1	48.5	2,980
August	1,710	.2	165	10,100
September	1,280	59	202	12,000
The year	29,800	0	370	268,000

CONCHO RIVER SEEPAGE INVESTIGATION

During this series of measurements the streams were at a constant stage and time interval was neglected. The distances given herewith have been revised since publication in Water-Supply Paper 478.

Discharge measurements to determine seepage on North Concho River from a point above Sterling City to confluence with South Concho River, in February and March, 1925

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet		
				Main stream	Gain or loss in section	Total gain or loss
Feb. 28	North Concho River	2 miles above McIntyre Dam	0	0		
28	do	McIntyre Dam	2	.2	+0.2	+0.2
28	do	McIntyre pumps	3.5	1.2	+1.0	+1.2
28	do	Above Sterling City	11.6	1.4	+.2	+1.4
28	do	Sterling City	12.1	1.2	−.2	+1.2
28	do	8.4 miles above Water Valley	23.5	1.0	−.2	+1.0
Mar. 2	do	5 miles above Water Valley	26.9	1.9	+.9	+1.9
2	do	0.6 mile above Water Valley	31.3	3.2	+1.3	+3.2
3	do	Near Carlsbad	37.0	3.9	+.7	+3.9
3	do	8.8 miles above San Angelo	45.6	3.1	−.8	+3.1
17	do	San Angelo *	54.4	2.5	−.6	+2.5
17	do	Half a mile above mouth	55.3	2.3	−.2	+2.3

* Discharge Mar. 3 about 2.5 second-feet.

Discharge measurements to determine seepage on Concho River from confluence of North and South Concho Rivers near San Angelo, Tex., to the mouth, in March, 1925

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet			
				Main stream	Diversion	Gain or loss in section	Total gain or loss
Mar. 17	Concho River	Near San Angelo	0	22.3			
17	Kaiser's pump	7.2 miles below confluence	7.2		3.1		
17	MacDonald's pump	7.4 miles below confluence	7.4		1.0		
17	Concho River	8.0 miles below confluence	8.0	16.4		−1.8	−1.8
18	Hart's pump	13 miles below confluence	13.0		1.2		
18	Lackey's pump	do	13.0		2.1		
18	Concho River	Mullins crossing	14.0	10.0		−3.1	−4.9
18	Richards pump	0.4 mile below Mullins crossing.	14.4		1.0		
18	Ollie May's pump	1 mile below Mullins crossing.	15.0		2.2		
18	Davis pump No. 1	1.5 miles below Mullins crossing.	15.5		2.2		
18	Davis pump No. 2	1.6 miles below Mullins crossing.	15.6		1.8		
18	Racketts pump	do	15.6		1.6		
18	Concho River	2 miles below Mullins crossing.	16.0	1.5		+.3	−4.6
18	do	3 miles below Mullins crossing due south of Miles.	17.0	4.4		+2.9	−1.7
19	do	do	17.0	11.1			−1.7
19	Allen pump No. 1	17.1 miles below confluence.	17.1		1.9		
19	Kennedy pump	17.1 miles below confluence, due south of Miles below bridge.			1.8		
19	Balcom pump	17.6 miles below confluence.	17.6		1.0		
19	Allen pump No. 2	do	17.6		1.5		
19	Reed pump	17.8 miles below confluence.	17.8		3.4		
19	Concho River	18 miles below confluence	18.0	1.5		0	−1.7
19	do	Wrights Dam	18.5	0		−1.5	−3.2
19	do	20.4 miles below confluence	20.4	0		0	−3.2
19	do	Rowena-Mereta Crossing	25.7	0		0	−3.2
20	do	Simm Dam	34.0	.2		+.2	−3.0
20	do	Paint Rock	37.0	.7		+.5	−2.5
20	do	Mouth	54.5	1.6		+.9	−1.6

Discharge measurements to determine seepage on South Concho River from Christoval, Tex., to confluence with North Concho River, in March, 1925

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet				
				Main stream	Tributary	Diversion	Gain or loss in section	Total gain or loss
Mar. 12	South Concho River.	Main spring	0	10.7				
12	Mill Spring	1 mile above Christoval	4		2.4			
12	South Concho River.	Christoval	5	21.6			+8.5	+8.5
12	Diversion at Christoval Dam.	do	5			8.0		
13	Return water from Christoval Dam.		9.1		1.8			
13	Diversion Broome Dam.	500 feet below Pecan Creek.	14.4			19.6		
13	South Concho River.	Just below Broome Dam.	14.4	8.4			+12.6	+21.1
13	Return water from Broome Dam.	2 miles below Pecan Creek.	16.4		7.1			
13	do	2.3 miles below Pecan Creek.	16.7		5.4			
14	South Concho River.	New City Dam	20.8	19.6			−1.3	+19.8
16	do	do	20.8	22.3				
16	do	Mouth	24.8	19.4			−2.9	+16.9

Discharge measurements to determine seepage on Middle Concho River from confluence of Kiowa Creek to mouth, in March, 1925

Date	Stream of diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet			
				Main stream	Tributary	Gain or loss in section	Total gain or loss
Mar. 10	Middle Concho River	Mouth of Kiowa Creek	0	0.1			
10	do	Mouth of Liveoak draw	6.8	0		−0.1	−0.1
10	do	7.8 miles below Kiowa Creek.	7.8	0		0	−.1
10	do	8.5 miles below Kiowa Creek.	8.5	.3		+.3	+.2
10	do	11.6 miles below Kiowa Creek.	11.6	0		−.3	−.1
10	do	14.1 miles below Kiowa Creek.	14.1	.9		+.9	+.8
10	do	Near Arden [a]	23.7	1.0		+.1	+.9
11	West Rocky Creek	Mouth	26.8		0.7		
11	Middle Concho River	Above East Rocky Creek	29.7	1.2		−.5	+.4
11	do	Baucum Dam	36.5	.1		−1.1	−.7
11	do	12-mile bridge	38.2	0		−.1	−.8
11	do	Half a mile above mouth of Spring Creek.	45.2	2.1		+2.1	+1.3
11	do	Below Spring Creek	45.7	7.3		+5.2	+6.5
11	do	Mouth	47.7	0		−7.3	−.8

[a] Measurement near Arden made about 2 miles above San Angelo-Mertzon road crossing.

Discharge measurements to determine seepage on Spring Creek from Seven Springs above Mertzon, Tex., to mouth, in March, 1925

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet: Main stream	Tributary	Diversion	Gain or loss in section	Total gain or loss
Mar. 6	Spring Creek	Just above Seven Springs, Mertzon.	0	0.7				
6	do	Just below Seven Springs	.1	12.2	11.5		11.5	11.5
6	Diversion	Mertzon	3			7.8		
6	Spring Creek	do	3	5.4			+1.0	+12.5
6	Diversion, Middle Ditch Dam.	1½ miles below Mertzon	4.5			2.7		
7	Spring Creek	3.7 miles below Mertzon	6.7	7.5			+4.8	+17.3
7	do	Tankersley-Sherwood crossing.	10.6	8.9			+.5	+17.8
7	do	11.3 miles below Mertzon, 2.2 miles above Tankersley.	14.3	4.4			−3.6	+14.2
7	do	1.2 miles above Russell Dam.	16.5	4.8			+.4	+14.6
7	do	Russell Dam	16.7	a 0				
8	do	0.1 mile above mouth of Dove Creek.	18.7	.8			+.8	+15.4
9	Elliott's pump	0.2 mile below mouth of Dove Creek.	19.0			3.1		
9	White's pump	0.8 mile below Dove Creek, 0.2 mile above Motel Dam.	19.6			1.9		
9	Motel ditch	Motel Dam	19.8			6.2		
9	Spring Creek	Below Motel Dam	19.9	.2			+10.6	+26.0
9	do	3.9 miles below Dove Creek.	22.7	2.4			+2.2	+28.2
9	do	Mouth	26.5	4.6			+2.2	+30.4

a No flow over dam owing to fact that gate of dam has been open and was only closed a day or so.

Discharge measurements to determine seepage on Dove Creek from a point about 9 miles above Knickerbacker to confluence with Spring Creek, in March, 1925

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet: Main stream	Diversion	Gain or loss in section	Total gain or loss
Mar. 4	Dove Creek	Source	0	13.0			
4	Diversion	Above Stilson Dam	.9		11.7		
4	Dove Creek	Below Stilson Dam	1.1	.7		−0.6	−0.6
4	Diversion	San Jose Dam	3.9		4.1		
4	Dove Creek	Half a mile below San Jose Dam.	4.4	8.6		+12	+11.4
5	do	do	4.4	7.6			
5	Diversion	Baze Dam	8.5		4.5		
5	Dove Creek	Knickerbacker	8.7	8.9		+5.8	+17.2
5	do	Above mouth	11.8	8.4		−.5	+16.7

NOTE.—Columns headed "Gain or loss in section" and "Total gain or loss" show values computed from discharge of main stream, tributaries, and diversions.

PECAN BAYOU AT BROWNWOOD, TEX.

LOCATION.—At city pumping plant of Brownwood, 800 feet above lower dam, three-eighths mile above Brownwood-Comanche highway bridge, 1 mile north of Brownwood, Brown County, and 2 miles above mouth of Adams Branch.

DRAINAGE AREA.—1,610 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—May 24, 1917, to June 30, 1918, and October 17, 1923, to September 30, 1925.

GAGE.—Combined inclined and vertical staff gage attached to trees on right bank, at rear and upstream end of city pumping plant; read by C. N. Davis.

DISCHARGE MEASUREMENTS.—Made from highway bridge three-eighths mile below gage, from cable at gage, or by wading.

CHANNEL AND CONTROL.—Bed composed of mud and clay. Channel straight above and below station. Banks wooded and subject to overflow during extremely high stages. At a stage of about 12 feet there is flow through sloughs to right and left which leave the bayou above gage and return below gage. City dam, 800 feet below gage, serves as control for stages when flow is confined within banks; dam has opening of 140 feet. When banks are submerged, water spreads over wide area and control not known.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 71.5 feet at 6.30 p. m. May 10 (discharge, 7,470 second-feet); no flow during several periods.

1917–1918; 1924–1925: Maximum stage recorded, 9.90 feet at 1 p. m. May 14, 1924 (discharge, 12,100 second-feet, determined from extension of rating curve and subject to error); no flow for several periods.

DIVERSIONS.—Records of the Board of Water Engineers for the State of Texas show 590 acres declared irrigated above station. City of Brownwood pumps water just below station. Two small pumps below control dam, but amount of water diverted not known.

REGULATION.—Flow at station regulated during normal flow by storage reservoir and pumping plants above. The city of Brownwood has a dam 2 miles above station to impound water for municipal use. Water is released from this reservoir when the supply is short in the pond at the gage from which the city supply is pumped. Backwater from the lower dam extends to upper dam. No regulation of consequence from irrigation above station.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 4,000 second-feet and poorly defined above. Gage read to hundredths twice daily and oftener during floods. Mean daily discharge determined by applying mean daily gage height to rating table, averaging discharge for intervals of a day on days of considerable fluctuation. Records good.

The following discharge measurements were made:

November 10, 1924: Gage height, −0.18 foot; discharge, 0 second-foot.
May 19, 1925: Gage height, 1.07 feet; discharge, 19.2 second-feet.
September 10, 1925: Discharge, 0 second-foot.

Daily discharge, in second-feet, of Pecan Bayou at Brownwood, Tex., for the year ending September 30, 1925

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
1	9.0		432	2.1		760	15
2	8.0		164		190	206	11
3	8.0		107		82	46	8.0
4	8.0		49		73	7.0	8.0
5	8.0		28		37	.8	6.2
6	8.0		25		7.0		3.2
7	7.0		116		3.2		.3
8	7.0		2,210		1.0		
9	6.2		5,640				
10	4.6		6,190				
11	4.6		715	17			4.0
12	3.9		246	8.0			958
13	9.0		135	3.2			550
14	6.2		56	.1		1,060	294
15	6.2		31			86	196
16	6.2		31			17	126
17	4.6		28			1.0	73
18	3.2		25				34
19	2.1		15				7.0
20	.8		.6				.8
21				31.0			
22				9.0			
23				2.1			
24							358
25							206
26				130			86
27		738		69			22
28		905		19			1.6
29		1,120		7.0		46	
30		630		1.2		234	
31			19		2,380	46	

NOTE.—No flow during periods for which no discharge is given.

Monthly discharge of Pecan Bayou at Brownwood, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	9.0	0	3.89	239
April	1,120	0	113	6,730
May	6,190	0	525	32,300
June	130	0	9.96	592
July	2,380	0	89.5	5,500
August	1,060	0	81.0	4,980
September	958	0	98.9	5,890
The year	6,190	0	77.6	56,200

NOTE.—No flow November to March.

SAN SABA RIVER AT MENARD, TEX.

LOCATION.—1,000 feet above steel highway bridge in Menard, Menard County, and half a mile below mouth of Las Moras Creek.

DRAINAGE AREA.—1,150 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—September 14, 1915, to September 30, 1925.

GAGE.—Combined inclined and vertical staff on right bank; read by Mrs. O. D. Parker.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge.

CHANNEL AND CONTROL.—Channel straight 450 feet above and 250 feet below gage. Bed composed of rock and gravel; fairly clean and permanent. Right bank composed of rock and clay, wooded, and not subject to overflow. Left bank similar in material, wooded, and subject to overflow at high stages. A rock and gravel shoal 100 feet below gage serves as control; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 9.30 feet at 4.30 p. m. May 29 (discharge, about 4,020 second-feet); minimum stage, 0.67 foot at 7.10 p. m. July 25 (discharge, 3.0 second-feet).

1915–1925: Maximum stage recorded, 13.6 feet at 2.30 a. m. September 16, 1915 (discharge, 8,610 second-feet, determined from extension of rating curve and subject to considerable error); no flow July 12–14 and 19–31, August 1–4 and 26–31, 1918.

DIVERSIONS.—Considerable land is irrigated with water diverted above station. Noyes Canal on right bank of river, which serves a considerable area, diverts a short distance above station. Record of the Board of Water Engineers for the State of Texas show that about 4,300 acres have been declared irrigated above station and about 7,700 acres below station.

REGULATION.—Flow controlled at low stages during irrigation season by diversions to Noyes Canal.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined between 20 and 85 second-feet and extended below through point of zero flow and above through one slope measurement made at a stage of 11.18 feet. Gage read to hundredths twice daily. Daily discharge determined by shifting-control method October 1–31 and December 1 to May 28 and for remainder of year by applying mean daily gage height to rating table. Records below discharge of 85 second-feet, good; fair, above.

Discharge measurements of San Saba River at Menard, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 5	1.42	20.8	May 13	1.29	25.3
Dec. 19	1.35	25.0	Aug. 15	1.00	9.09

Daily discharge, in second-feet, of San Saba River at Menard, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47	19	26	27	48	21	25	47	98	9.5	27	40
2	48	19	28	27	47	21	27	47	63	10	44	41
3	48	20	29	37	47	21	28	46	61	10	63	42
4	48	21	29	45	46	21	28	45	57	12	47	41
5	47	21	27	46	46	21	28	40	53	12	44	41
6	47	21	27	47	46	21	29	29	51	15	39	40
7	48	21	27	47	46	21	29	29	51	10	21	40
8	48	22	29	47	46	21	28	23	38	8.4	10	38
9	46	22	28	47	45	21	28	20	32	8.4	9.5	38
10	41	24	28	47	45	22	28	52	27	14	9.0	38
11	45	24	27	48	40	22	28	46	24	24	8.2	35
12	45	30	27	47	20	22	28	31	22	24	7.9	32
13	44	23	27	46	20	22	125	26	21	21	8.2	31
14	44	23	27	46	20	22	111	24	18	16	8.4	43
15	42	23	27	46	20	21	235	21	16	12	9.0	43
16	42	23	27	47	21	21	86	20	15	11	9.0	19
17	42	24	27	48	20	23	49	20	15	40	9.0	15
18	42	24	27	48	20	23	49	20	16	34	8.7	14
19	42	24	26	48	20	23	48	20	16	11	8.4	14
20	42	23	25	47	20	22	47	70	16	8.2	8.2	13
21	23	25	25	47	20	22	40	70	15	6.2	8.2	12
22	24	25	25	47	22	22	26	54	16	4.2	7.9	12
23	26	25	25	47	21	23	26	53	15	3.9	7.9	11
24	27	25	26	48	20	24	51	47	14	3.5	7.6	12
25	30	25	26	48	20	24	86	29	14	3.1	7.3	14
26	30	26	26	47	20	25	86	20	13	4.6	8.4	15
27	24	26	26	47	20	24	86	27	12	4.6	12	15
28	24	25	26	47	21	24	186	50	12	4.4	19	12
29	23	26	27	47	------	24	111	2,040	11	4.4	44	9.0
30	22	25	27	48	------	25	43	516	9.5	4.6	48	9.0
31	21	------	28	48	------	26	------	256	------	4.8	44	------

Monthly discharge of San Saba River at Menard, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	48	21	37.8	2,320
November	30	19	23.5	1,400
December	29	25	26.8	1,650
January	48	27	45.5	2,790
February	48	20	30.2	1,680
March	25	21	22.4	1,380
April	235	25	60.8	3,620
May	2,040	20	124	7,610
June	98	9.5	28.0	1,670
July	40	3.1	11.6	712
August	63	7.3	19.8	1,220
September	43	9.0	26.0	1,550
The year	2,040	3.1	38.1	27,600

SAN SABA RIVER NEAR SAN SABA, TEX.

LOCATION.—200 feet above Beveridge highway bridge, 1 mile below mouth of China Creek, 2 miles northwest of San Saba, San Saba County, and 3 miles below mouth of Richland Creek.

DRAINAGE AREA.—3,040 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—December 30, 1904, to December 31, 1906; September 11, 1915, to September 30, 1925. Miscellaneous discharge measurements previous to 1904.

GAGE.—Vertical and inclined staff on right bank; read by G. M. Pool.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge.

CHANNEL AND CONTROL.—Channel straight for 100 feet above and below station. Bed composed of rock and gravel; shifts. Left bank of gravel and clay, wooded, and not subject to overflow; right bank of clay and gravel, wooded, and subject to overflow during high water. A shoal at a ford about 75 feet below gage serves as control during medium and low stages; shifts.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 15.0 feet during night of May 11 and August 27 (discharge, 4,660 second-feet); minimum stage, 0.56 foot at 7.30 p. m. July 25 (discharge, 0.6 second-foot).

1904–1906; 1915–1925: Maximum stage recorded, about 37.0 feet April 26 or 27, 1922, determined from floodmarks on gage (discharge, not determined); no flow August 9 and 10, 1918.

DIVERSIONS.—Considerable water is diverted from stream and tributaries above station. There are also diversions below station but none near station. Flood water from Brady Creek at Brady is stored for municipal uses; capacity of reservoir not known, but probably small. Records of the Board of Water Engineers for the State of Texas show that about 9,300 acres have been declared irrigated by diversions above station and about 2,700 acres by diversions below station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Shifting-control method used October 1–15. Records good.

Discharge measurements of San Saba River near San Saba, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 8	1.74	85.8	May 18	1.99	116
Dec. 31	1.81	98.6	Sept. 12	3.22	415

Daily discharge, in second-feet, of San Saba River near San Saba, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	118	88	91	101	112	77	70	373	541	27	40	134
2	107	88	91	98	108	74	71	235	296	23	48	92
3	101	88	101	94	108	75	70	168	212	19	50	83
4	99	88	101	101	108	75	71	130	152	16	42	89
5	99	88	98	107	108	74	74	114	126	38	39	80
6	101	86	108	107	108	78	68	105	114	29	37	74
7	101	84	101	107	108	75	67	105	108	16	31	72
8	105	88	103	108	108	77	75	101	107	21	36	72
9	107	96	105	112	108	78	84	128	96	6.0	53	68
10	108	98	105	101	101	72	74	2,060	116	10	44	68
11	108	96	105	116	101	68	71	2,820	105	16	45	70
12	108	94	98	108	105	68	71	630	92	38	39	334
13	107	98	105	108	101	70	71	321	91	30	35	483
14	101	101	114	101	101	67	71	212	80	25	38	223
15	105	98	116	108	101	72	74	163	68	22	36	118
16	108	101	105	110	89	75	81	136	58	21	35	94
17	105	94	98	116	91	74	80	128	46	17	41	98
18	105	94	105	116	78	80	124	110	44	18	34	78
19	105	91	98	120	80	74	98	101	45	27	24	75
20	105	99	98	120	81	70	77	98	51	23	19	67
21	101	98	92	116	81	70	70	94	80	16	31	58
22	101	89	105	116	80	74	65	88	48	8.0	34	54
23	101	98	105	116	75	78	63	81	39	10	43	64
24	92	98	99	112	78	70	64	77	38	7.6	42	122
25	88	98	105	116	84	68	67	101	37	1.9	41	541
26	91	98	114	120	81	72	68	101	37	16	1,260	188
27	91	94	116	112	75	74	112	80	39	22	930	128
28	101	91	110	112	75	74	84	427	44	4.4	120	103
29	101	94	110	112	------	74	483	107	36	1.9	1,230	86
30	99	94	107	108	------	72	455	960	27	3.0	720	81
31	91	------	98	112	------	71	------	2,030	------	18	334	------

Monthly discharge of San Saba River near San Saba, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	118	88	102	6,270
November	101	84	93.7	5,570
December	116	91	103	6,360
January	120	94	110	6,770
February	112	75	94.1	5,220
March	80	67	73.2	4,500
April	483	63	102	6,100
May	2,820	77	399	24,600
June	541	27	99.1	5,900
July	38	1.9	17.8	1,090
August	1,260	19	179	11,000
September	541	54	130	7,730
The year	2,820	1.9	126	91,100

NOYES CANAL AT MENARD, TEX.

LOCATION.—Opposite gaging station on San Saba River and 1,000 feet above steel highway bridge, in Menard, Menard County.

RECORDS AVAILABLE.—March 13, 1924, to September 30, 1925.

GAGE.—Vertical staff on right bank; read by Mrs. O. D. Parker.

DISCHARGE MEASUREMENTS.—Made by wading near gage.

CHANNEL AND CONTROL.—Bed and banks consist of earth. Channel straight above and below station. Control is bed and banks of canal; shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.24 feet at 8 a. m. April 15 (discharge, 50 second-feet); no flow for several periods.

1924–25: Maximum stage that of April 15, 1925. No flow for several periods.

DIVERSIONS.—Small diversions; amount not known.

REGULATION.—Flow regulated by head gates.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined. Gage read to hundredths twice daily. Daily discharge determined by shifting-control method. Records good.

Canal diverts from right bank, 4 miles above Menard, and water is used for irrigation near Menard.

Discharge measurements of Noyes Canal at Menard, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 5	1.34	27.4	May 13	1.30	28.6
Dec. 19	1.28	25.2	Aug. 15	1.56	29.5

Daily discharge, in second-feet, of Noyes Canal at Menard, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		26	28	25		27	24		25	28	26	
2		26	28	25		27	24			28	24	
3		26	28	9.4		27	23			28	7.2	
4		26	28			27	23			28		
5		26	26			27	23			29		
6		27	26			28	23	28		26		
7		26	26			27	23	30		28	24	
8		26	26			28	24	28		27	30	
9		26	27			27	24	29	11	26	33	
10		26	27			27		29	28	23	31	
11		28	26		8.7	27		28	30	18	30	
12		28	26		28	28	23	30	27	19	30	
13		28	26		28	28	23	28	27	19	31	
14		28	26		26	27	23	29	28	18	36	
15		29	26		26	26	50	29	29	18	31	
16		29	26		28	26	26	28	27	7.2	30	26
17		29	27		28	26	11	28	28		30	29
18		29	27		26	27		29	30	7.2	31	29
19		29	26		26	26		28	28	31	29	27
20	24	27	26		27	26		28	27	30	30	28
21	26	28	26		27	26	13	28	29	30	28	27
22	26	28	26		28	26	31	29	27	24	31	27
23	26	28	25		28	24	31	29	32	24	31	30
24	26	28	25		27	24	32	28	31	24	30	28
25	28	28	26		27	24	31	30	29	23	29	29
26	28	28	25		27	24	31	29	29	24	30	28
27	29	28	25		27	24	31	29	29	24	34	31
28	28	28	25		27	24		32	30	25	32	28
29	26	28	25			24		35	27	25	8.7	29
30	29	28	24			24		28	28	26		29
31	27		24			24		25		28		

NOTE.—No flow on days for which no discharge is published.

Monthly discharge of Noyes Canal at Menard, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October (12 days)	29	24	26.9	641
November	29	26	27.5	1,640
December	28	24	26.1	1,600
January (3 days)	25	9.4	19.8	118
February (18 days)	28	8.7	26.1	982
March	28	24	26.0	1,600
April (22 days)	50	11	25.8	1,120
May (26 days)	35	25	28.9	1,490
June (23 days)	32	11	27.7	1,260
July (30 days)	31	7.2	23.8	1,420
August (26 days)	36	7.2	28.3	1,490
September (15 days)	31	26	28.3	843
The year				14,100

NORTH LLANO RIVER NEAR JUNCTION, TEX.

LOCATION.—500 feet above remains of old Wilson Dam, 1 mile below mouth of Bear Creek, 2½ miles above North Llano highway bridge, and 3 miles northwest of Junction, Kimble County.

DRAINAGE AREA.—914 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—September 14, 1915, to September 30, 1925.

GAGE.—Au continuous water-stage recorder on left bank; installed August 1, 1925; inspected by Gilford Evans. Prior to that, chain gage on left bank; read by W. M. Keen.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge, 2½ miles below station.

CHANNEL AND CONTROL.—Bed composed of solid rock. Channel straight above and below for 400 feet, with a series of pools and rapids. Left bank not subject to overflow. Right bank wooded and subject to overflow during high stages. One channel at all stages. Current sluggish at gage during low and medium stages. A solid-rock ledge of approximately 2-foot vertical fall at site of old dam serves as permanent control for medium and low stages, except slight effect from accumulation of moss during low stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 19.03 feet at 6 a. m. May 29 (discharge, 32,600 second-feet, determined by slope method and subject to error); minimum discharge, 11 second-feet April 24–26, August 21–31, September 1–11, and 23.

1915–1925: Maximum stage recorded, 23 feet about midnight April 24, 1923 (discharge, 43,100 second-feet, determined from extension of rating curve and subject to considerable error); no flow during several periods.

DIVERSIONS.—Records of the Board of Water Engineers for the State of Texas show that about 1,200 acres have been declared irrigated by diversions above station. During low stages such diversions materially reduce flow at station.

REGULATION.—No indication that flow at station is regulated.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined below 1,400 second-feet and extended above through two slope measurements. From October 1 to July 31, gage read to hundredths twice daily and operation of water-stage recorder satisfactory thereafter. Daily discharge determined by applying mean daily gage height to rating table, averaging discharge for intervals of a day on days of considerable fluctuation; shifting-control method used May 30 to September 30. Records below discharge of 1,400 second-feet, good; poor, above.

Discharge measurements of North Llano River near Junction, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 6	1.40	24.5	May 14	1.45	30.2	June 6	1.71	117
Feb. 10	1.42	25.6	May 29	19.03	[a] 32,600	Aug. 15	1.26	13.2

[a] Determined by slope method.

Daily discharge, in second-feet, of North Llano River near Junction, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	24	27	27	30	27	22	51	276	26	13	11
2	24	24	27	27	30	27	22	44	225	26	32	11
3	24	24	27	30	29	27	22	39	181	26	26	11
4	24	24	27	30	27	27	21	39	155	23	22	11
5	24	24	27	30	27	27	20	36	122	23	20	11
6	24	24	27	33	24	27	20	35	115	23	19	11
7	24	24	27	33	24	27	20	33	106	23	19	11
8	24	24	27	33	24	27	20	30	99	21	18	11
9	24	24	27	33	24	27	20	27	87	21	18	11
10	24	24	27	33	27	27	20	39	78	19	17	11
11	24	27	27	33	27	27	20	49	72	19	17	11
12	24	27	27	33	27	27	20	38	66	17	17	231
13	24	27	27	33	27	24	20	33	61	17	15	39
14	24	27	27	33	27	24	18	30	56	17	14	22
15	24	27	27	33	27	24	18	27	51	15	14	18
16	24	27	27	33	27	24	18	26	49	15	13	15
17	24	27	27	33	27	24	18	24	44	15	13	14
18	24	27	27	33	27	24	16	24	41	15	12	13
19	24	27	27	33	27	24	14	22	38	15	13	13
20	24	27	27	33	27	24	14	21	38	13	12	12
21	24	27	27	33	27	24	13	20	35	13	11	12
22	24	27	27	33	27	24	13	18	35	13	11	12
23	24	27	27	33	27	24	12	17	32	12	11	11
24	24	27	27	33	27	24	11	16	32	12	11	17
25	24	27	27	33	27	24	11	14	32	12	11	22
26	24	27	27	33	27	24	11	14	29	12	11	18
27	24	27	27	33	27	24	455	13	29	12	11	15
28	24	27	27	32	27	24	99	753	29	12	11	14
29	24	27	27	30	-------	24	90	21,900	26	12	11	13
30	24	27	27	30	-------	24	69	2,370	26	12	11	13
31	24	-------	27	30	-------	24	-------	407	-------	12	11	-------

Monthly discharge of North Llano River near Junction, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	24	24	24.0	1,480
November	27	24	26.0	1,550
December	27	27	27.0	1,660
January	33	27	32.0	1,970
February	30	24	26.9	1,490
March	27	24	25.2	1,550
April	455	11	38.9	2,310
May	21,900	13	845	52,000
June	276	26	75.5	4,490
July	26	12	16.9	1,040
August	32	11	15.0	922
September	231	11	24.5	1,280
The year	21,900	11	92.1	71,700

NORTH LLANO RIVER SEEPAGE INVESTIGATION

During this investigation the river was at a constant stage and the measurements represent the normal conditions.

Discharge measurements to determine seepage on North Llano River from a point 10.5 miles above Roosevelt to Junction, Tex., in February, 1925

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet			
				Main stream	Tributary	Gain or loss in section	Total gain or loss
Feb. 7	North Llano River	Last road crossing 10.2 miles above Roosevelt.	0	0			
7	do	8.1 miles above Roosevelt	2.1	12.7		+12.7	+12.7
8	do	Roosevelt	10.2	15.5		+2.8	+15.5
8	Menard Creek	300 feet above mouth and 1.6 miles below Roosevelt.	11.8		3.7		
8	North Llano River	1.9 miles below Roosevelt, 19.7 miles above mouth, 200 feet below mouth of Frog Branch.	12.1	19.0		−.2	+15.3
8	Copperas Creek	50 miles below Roosevelt	15.2		2.8		
9	North Llano River	Copperas school	16.0	22.0		+.2	+15.5
9	Big Bois D'Arc Creek	Mouth	16.7		.2		
9	North Llano River	Below mouth of Big Bois D'Arc Creek.	16.7	21.9		−.3	+15.2
9	do	At Calf Creek third crossing from Junction 10.8 miles below Roosevelt.	21.0	21.9		0	+15.2
9	do	14.8 miles below Roosevelt, 6.8 miles above mouth, second road crossing above Junction, 12 miles above Bear Creek.	25.0	22.8		+.9	+16.1
10	Bear Creek	Near Junction 5.6 miles above mouth.	26.2		3.3		
10	North Llano River	Near Junction 4.5 miles above mouth.	27.3	25.6		−.5	+15.6
14	do	At Junction	31.8	16.9		−8.7	+6.9

NOTE.—Columns headed "Gain or loss in section" and "Total gain or loss" show values computed from discharge of main stream.

LLANO RIVER NEAR JUNCTION, TEX.

LOCATION.—100 feet north of Kerrville-Junction road, 3 miles below confluence of North Llano and South Llano Rivers, and 3½ miles east of Junction, Kimble County.

DRAINAGE AREA.—1,760 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—September 13, 1915, to September 30, 1925.

GAGE.—Au continuous water-stage recorder on right bank; inspected by Gilford Evans. Prior to August 14 combination vertical and inclined staff were used; read by Bonnie Oliver.

DISCHARGE MEASUREMENTS.—Made by wading or from cable 400 feet above gage.

CHANNEL AND CONTROL.—Bed composed of solid rock; permanent. Channel straight for 700 feet above and 350 feet below gage. Left bank slightly wooded and subject to overflow during high water; right bank not subject to overflow. One channel at all stages, except above a stage of 11.3 when a small part of flow may follow a slough that leaves the river a short distance above gage and enters the main stream below gage. Control for low and medium stages is a rock ledge 75 feet below gage, having a fall of about 3 feet; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 23.3 feet May 29, determined by leveling to floodmarks (discharge, 76,900 second-feet, determined from extension of rating curve); minimum stage, 1.58 feet April 22–26 (discharge, 74 second-feet).

1915–1925: Maximum stage recorded, 26.3 feet at 3 a. m. September 16, 1915 (discharge, 98,800 second-feet, determined from extension of rating curve and subject to considerable error); minimum stage, 1.32 feet during August 23–28, 1918 (discharge, 13 second-feet).

DIVERSIONS.—Records of the Board of Water Engineers for the State of Texas show that about 2,500 acres have been declared irrigated by diversions above station and about 1,300 acres below station. Diversions materially reduce flow at station during low stages.

REGULATION.—Slight regulation by water-power plant on South Llano River at junction.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined below 1,700 second-feet and extended above through two slope measurements; extension subject to considerable error. Gage read to hundredths once daily from October 1 to August 14, and operation of water-stage recorder satisfactory thereafter. One reading daily may not be true index to mean daily discharge during medium and high stages owing to rapid fluctuations. Daily discharge determined by shifting-control method October 1 to November 30 and August 14 to September 30; for remainder of year by applying mean daily gage height to rating table. Records prior to August 14, fair; good thereafter.

Discharge measurements of Llano River near Junction, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 6	1.67	100	May 14	1.70	119	June 5	2.10	308
Feb. 14	1.65	101	May 29	23.3	[a] 76,900	Aug. 15	1.61	90.7

[a] Slope measurement.

Daily discharge, in second-feet, of Llano River near Junction, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	102	94	112	109	109	94	84	134	1,270	109	87	94
2	102	94	112	109	109	94	84	116	289	102	160	91
3	102	98	116	109	109	94	84	116	575	102	160	91
4	102	98	116	109	109	91	84	109	348	102	125	91
5	105	98	116	109	109	91	84	109	318	94	116	87
6	105	102	116	109	105	87	84	109	260	94	109	84
7	105	102	112	109	105	87	84	109	250	94	109	84
8	105	98	112	109	105	87	84	109	239	87	109	84
9	105	98	109	109	105	87	84	109	229	87	102	84
10	105	102	109	109	105	87	84	138	208	87	102	80
11	105	102	109	109	102	87	84	125	198	87	102	91
12	105	102	109	109	98	87	84	116	189	87	102	250
13	105	102	109	109	98	87	84	116	189	87	102	208
14	102	102	109	109	94	87	80	116	179	87	91	134
15	102	102	109	109	94	87	80	160	160	87	91	112
16	98	102	109	109	94	87	80	151	151	87	84	105
17	98	102	109	109	94	87	80	125	142	87	87	102
18	98	102	109	109	94	87	80	116	134	87	80	98
19	94	102	109	109	94	87	77	109	134	87	80	98
20	94	102	109	109	94	87	77	109	125	87	80	91
21	98	102	109	109	94	87	77	94	125	87	80	87
22	98	102	109	109	94	87	74	94	125	87	84	87
23	102	102	109	109	94	87	74	87	116	87	87	84
24	102	102	109	109	94	87	74	87	116	87	84	142
25	102	102	109	112	94	84	74	87	116	87	87	138
26	102	102	109	116	94	84	74	87	151	87	77	129
27	98	105	109	116	94	84	845	84	151	87	80	112
28	98	105	109	116	94	84	208	260	125	87	80	109
29	94	105	109	116	---	84	165	47,400	116	87	87	112
30	94	105	109	116	-------	84	156	21,190	116	87	87	112
31	94	-------	109	116	-------	84	-------	2,470	-------	87	94	------

Monthly discharge of Llano River near Junction, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	105	94	101	6,190
November	105	94	101	6,020
December	116	109	110	6,780
January	116	109	110	6,790
February	109	94	99.2	5,510
March	94	84	87.3	5,370
April	845	74	116	6,880
May	47,400	84	2,400	147,000
June	1,270	116	228	13,600
July	109	87	89.8	5,520
August	160	77	96.9	5,960
September	250	80	109	6,490
The year	47,400	74	307	222,000

LLANO RIVER NEAR CASTELL, TEX.

LOCATION.—4 miles above mouth of Hickory Creek, 6 miles east of Castell, Llano County.

DRAINAGE AREA.—3,510 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—November 17, 1923, to September 30, 1925.

GAGE.—Vertical and inclined staff gage on right bank; read by V. A. Grenwelge.

DISCHARGE MEASUREMENTS.—Made from cable 200 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of sand; shifts. Channel straight for several hundred feet above and below gage. Banks of earth, sand, gravel, and rock; sparsely timbered; permanent; not subject to overflow. One channel at all stages. Rock ledge, 200 feet below gage, forms control which angles across river; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 16.8 feet at 4 a. m. May 30 (discharge, about 59,500 second-feet; slope measurement); minimum stage, 1.19 feet at 7.20 p. m. July 30 (discharge, 44 second-feet).

1924–1925: Same as given above.

DIVERSIONS.—Several small diversions in drainage above; amount not known.

REGULATION.—Slight regulation at extremely low stages by pumps above.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 17,000 second-feet and poorly defined above. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records good.

Discharge measurements of Llano River near Castell, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 30	1.84	142	May 15	2.20	238	May 31	5.49	4,310
Feb. 18	1.76	122	May 30	16.80	a 59,400	June 4	2.84	552
Apr. 29	3.42	1,030	Do	10.68	b 17,000	Aug. 17	1.48	78.8
Apr. 30	2.76	532	Do	8.50	11,000			

a Determined by slope method.
b Surface velocities observed for part of measurement and coefficient used to reduce to mean velocities.

Daily discharge, in second-feet, of Llano River near Castell, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	138	112	134	140	132	110	100	375	1,660	107	70	130
2	120	110	146	138	134	107	101	223	990	101	2,440	126
3	114	110	142	138	134	107	101	178	680	98	1,260	122
4	107	108	155	138	134	124	101	150	565	94	350	110
5	104	107	165	136	130	107	100	134	460	92	235	95
6	101	110	148	136	130	112	98	126	375	86	155	84
7	95	110	144	136	130	110	96	217	328	80	138	80
8	92	110	138	138	130	108	95	720	305	76	122	75
9	92	110	126	138	130	107	98	990	270	75	110	76
10	110	110	122	142	130	104	102	1,040	252	73	104	73
11	126	112	130	142	126	104	98	805	235	68	98	74
12	122	114	128	138	118	101	96	288	226	66	92	205
13	122	126	128	138	118	101	95	211	205	66	86	565
14	114	122	126	138	118	102	95	205	193	66	86	460
15	110	124	126	138	118	101	95	252	175	68	94	223
16	107	122	124	138	118	101	95	530	165	70	92	155
17	107	122	126	142	122	101	92	288	158	75	86	126
18	107	120	126	142	122	100	92	217	148	80	78	114
19	102	120	126	142	122	100	92	170	158	82	75	108
20	107	122	128	138	122	98	86	138	172	72	75	102
21	110	122	126	138	124	98	82	126	162	69	72	98
22	114	122	126	138	122	100	79	116	150	64	70	92
23	110	122	126	138	114	102	75	108	132	58	68	89
24	114	120	126	136	114	102	74	104	90	54	69	760
25	118	122	126	136	110	104	70	101	80	50	76	1,200
26	118	122	138	134	108	101	69	118	102	47	80	211
27	116	122	138	138	110	98	104	128	235	46	79	223
28	122	122	138	136	112	98	1,420	114	150	45	76	187
29	122	122	138	138	-------	98	1,090	2,920	126	45	75	148
30	118	122	142	136	-------	98	495	23,200	108	45	107	136
31	118	-------	140	134	-------	100	-------	4,040	-------	45	187	-------

Monthly discharge of Llano River near Castell, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	138	92	112	6,900
November	126	107	117	6,980
December	165	122	134	8,240
January	142	134	138	8,490
February	134	108	123	6,810
March	124	98	103	6,360
April	1,420	69	183	10,900
May	23,200	101	1,240	76,000
June	1,660	80	302	18,000
July	107	45	69.8	4,290
August	2,440	68	220	13,500
September	1,200	73	208	12,400
The year	23,200	45	247	179,000

LLANO RIVER SEEPAGE INVESTIGATION

During the investigation the rivers were at a constant stage and discharge represents the natural conditions.

Discharge measurements to determine seepage on Llano River from junction of North and South Forks to mouth, in February, 1925

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet			
				Main stream	Tributary	Gain or loss in section	Total gain or loss
Feb. 14	Llano River	Junction of North and South Forks.	0	97.7			
14	do	1,000 feet below junction of North and South Forks.	.2	101		+3.3	+3.3
14	do	Above gage 3 miles below junction of North and South Forks.	3.0	101		0	+3.3
15	Johnson Fork of Llano River.	6.8 miles from junction of North and South Forks.	6.8		12.2		
15	Llano River	Just below mouth of Johnson Fork.	6.8	111		−2.2	+1.1
15	do	15 miles below junction of North and South Forks.	15.0	107		−4.0	−2.9
16	Bluff Creek	35.5 miles below junction of North and South Forks.	35.5		.7		
16	Llano River	1.5 miles below Bluff Creek.	37.0	114		+6.3	+3.4
16	James River	4 miles from Mason, ½ mile above mouth.	43.6		3.8		
17	Llano River	9 miles from Mason, 4 miles below James River.	44	114		−3.8	−.4
17	do	Three-fourths mile above mouth of Beaver Creek.	54.2	118		+4.0	+3.6
17	Beaver Creek	0.3 mile above mouth	55.0		.7		
18	Llano River	18.7 miles by road below Mason.	64.9	118		−.7	+2.9
18	do	Castell, 5 miles above gage	69.7	122		+4.0	+6.9
19	do	5.4 miles above Llano	74.7	114		−8.0	−1.1
19	do	Three-fourths mile above Llano.	82.3	119		+5.0	+3.9
20	do	Llano	83	118		−1.0	+2.9
20	Little Llano River	At mouth	90		1.10		
20	Llano River	3 miles below Little Llano River.	93	116		−3.1	−.2
20	Miller Creek	Near Llano	93.1		.10		
21	Llano River	Old Llano-Kingsland crossing.	94.2	121		+4.0	+3.8
21	do	Llano-Kingsland crossing	98.7	120		−1.0	+2.8
21	do	Kingsland	104.9	122		+2.0	+4.8

Discharge measurements to determine seepage on South Llano River from junction of West and South Forks of South Llano River to mouth at Junction, in February, 1925

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet			
				Main stream	Tributary	Gain or loss in section	Total gain or loss
Feb. 10	South Llano River	25.9 miles above mouth, just below junction of West and South Forks of South Llano River.	0	0.5			
10	do	24.2 miles above mouth	1.7	2.0		+1.5	+1.5
11	Spring on side of South Llano River	23.2 miles above mouth	2.7		8.9		
11	South Llano River	23.2 miles above mouth	2.7	15.7		+4.8	+6.3
11	do	22.1 miles above mouth	3.8	32.6		+16.9	+23.2
12	do	19.2 miles above mouth	6.7	32.7		−.1	+23.1
12	Big Paint Creek	19.2 miles above mouth	6.7		36.5		
12	South Llano River	18.9 miles above mouth, 0.3 miles below Big Paint Creek.	7.0	67.8		−1.4	+21.7
12	do	At Telegraph, 17.3 miles above mouth.	8.6	66.4		−1.4	+20.3
13	do	9.5 miles above mouth, 200 feet below Chalk Creek.	16.4	72.3		+5.9	+26.2
13	Cedar Creek	At Junction, 0.5 mile above mouth of South Llano River.	25.4		2.2		
14	South Llano River	At mouth at Junction, Tex.	25.9	74.8		+.3	+26.5

Discharge measurements to determine seepage on Johnson Fork of Llano River, from 8.3 miles above Segovia to 8.5 miles below Segovia in February, 1925

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet			
				Main stream	Tributary	Gain or loss in section	Total gain or loss
Feb. 6	Johnson Fork of Llano River.	8.3 miles above Segovia	0	1.9			
6	do	7.4 miles above Segovia	.9	8.9		+7.0	+7.0
6	Joy Fork of Johnson Fork of Llano River.	4.4 miles above Segovia	3.9		1.4		
6	Johnson Fork of Llano River.	4.3 miles above Segovia	4.0	13.8		+3.5	+10.5
6	do	50 feet below first crossing going from Kerville, 3 miles above Segovia.	5.3	14.6		+.8	+11.3
7	do	1.6 miles above Segovia	6.7	14.8		+.2	+11.5
7	do	1.7 miles below Segovia	10.0	13.8		−1.0	+10.5
7	do	3.8 miles below Segovia	12.1	13.0		−.8	+9.7
15	do	8.5 miles below Segovia	16.8	12.2		−.8	+8.9

NOTE.—Columns headed "Gain or loss in section" and "Total gain or loss" show values from discharge of main stream, tributaries, and diversions.

PEDERNALES RIVER AT STONEWALL, TEX.

LOCATION.—At Stonewall, Gillespie County, 2 miles below mouth of South Grape Creek.

DRAINAGE AREA.—647 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—July 22, 1924, to September 30, 1925.

GAGE.—Vertical staff on right bank; read by William Klier, jr.

DISCHARGE MEASUREMENTS.—Made from cable 300 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and silt. Channel straight for 300 feet above and 700 feet below gage. Left bank covered with brush and trees; right bank sparsely wooded. Banks not subject to overflow. Control is rock ledge at road crossing, 600 feet below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 8.2 feet at 2.30 a. m. May 9 (discharge, 10,700 second-feet, determined from extension of rating curve and subject to error); minimum stage, 0.33 foot July 30 and 31 (discharge, 1.8 second-feet).

1924–1925: Maximum and minimum stages same as given above.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 1,400 second-feet and fairly well defined between 1,400 and 7,000 second-feet and extended above. Gage read to hundredths twice daily and oftener during floods. Daily discharge determined by applying mean daily gage height to rating table. Records good.

Discharge measurements of Pedernales River at Stonewall, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 5	0.55	12.3	Aug. 17	0.40	[a] 3.0	Sept. 14	0.74	28.8
Mar. 30	.51	8.6	Sept. 12	2.72	[b] 1,340			
July 4	.36	[a] 1.8	Sept. 13	1.24	[c] 188			

[a] Estimated.
[b] Discharge corrected for changing stage, 1,430 second-feet.
[c] Discharge corrected for changing stage, 207 second-feet.

Daily discharge, in second-feet, of Pedernales River at Stonewall, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.2	6.6	8.7	12	11	9.4	8.7	12	8.7	3.0	3.5	9.4
2	6.2	6.6	12	12	11	9.4	8.7	9.4	7.1	3.0	397	7.1
3	6.2	7.1	10	12	11	9.4	8.7	8.0	6.2	3.0	27	5.8
4	6.6	7.1	10	12	10	8.7	8.0	7.6	5.3	2.8	8.7	4.4
5	6.6	7.1	10	12	10	8.7	8.0	7.1	5.3	2.5	5.3	3.5
6	6.6	7.6	10	12	11	8.7	8.0	7.1	4.8	2.5	4.4	3.5
7	7.1	8.0	10	12	11	8.7	7.0	6.6	4.4	2.5	4.4	3.5
8	7.1	7.6	10	12	11	9.4	8.0	7.1	4.4	2.5	3.5	3.0
9	7.1	7.6	10	12	10	9.4	8.7	1,170	4.0	2.2	3.5	3.0
10	8.0	8.0	10	12	10	9.4	8.0	59	3.5	2.5	3.2	3.0
11	8.0	8.0	10	12	9.4	9.4	8.0	24	3.5	3.0	3.0	3.0
12	8.0	8.0	10	12	9.4	9.4	7.6	14	3.5	74	3.0	1,170
13	7.1	8.0	10	11	9.4	9.4	7.6	12	3.5	87	17	164
14	7.1	8.0	10	11	10	9.4	7.1	9.4	3.5	7.1	22	32
15	7.1	8.0	11	12	10	9.4	7.1	8.0	3.2	4.0	9.4	17
16	7.1	8.0	11	12	10	8.7	7.1	7.1	3.2	3.5	4.4	12
17	7.1	7.6	11	12	10	8.7	6.6	7.1	3.2	11	3.5	9.4
18	7.1	7.6	12	12	10	8.7	6.6	6.6	3.2	4.4	3.0	8.0
19	7.1	7.6	11	12	10	8.0	6.6	6.2	3.2	3.0	3.0	7.1
20	7.1	8.0	11	12	10	8.0	6.2	6.2	3.2	2.5	3.0	6.2
21	7.1	8.0	11	12	11	8.0	5.8	5.3	3.2	2.5	3.0	6.2
22	8.7	8.0	12	12	10	8.0	5.3	5.3	3.2	2.5	3.0	5.3
23	7.6	7.6	12	12	9.4	8.7	5.3	4.4	3.0	2.5	8.7	4.8
24	8.0	7.6	12	11	9.4	9.4	5.8	4.4	3.0	2.2	19	847
25	8.0	7.6	12	11	9.4	9.4	5.3	6.2	3.0	2.2	11	145
26	7.6	7.6	12	11	9.4	8.7	5.3	5.8	3.5	2.2	6.2	27
27	7.6	8.0	12	11	9.4	8.7	6.2	6.2	3.5	2.0	5.3	19
28	7.6	8.0	12	11	9.4	8.0	93	7.1	3.2	2.0	4.4	14
29	7.6	8.0	12	11	-------	8.7	160	610	3.0	2.0	5.3	11
30	7.6	8.0	12	11	-------	8.7	18	19	3.0	2.0	15	9.4
31	7.1	-------	12	11	-------	8.7	-------	12	-------	1.8	18	-------

Monthly discharge of Pedernales River at Stonewall, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	8.7	6.2	7.26	446
November	8.0	6.6	7.68	457
December	12	8.7	10.9	670
January	12	11	11.7	718
February	11	9.4	10.1	559
March	9.4	8.0	8.88	546
April	160	5.3	15.4	919
May	1,170	4.4	67.1	4,130
June	8.7	3.0	3.95	235
July	87	1.8	8.06	496
August	397	3.0	20.3	1,250
September	1,170	3.0	85.5	5,080
The year	1,170	1.8	21.4	15,500

PEDERNALES RIVER NEAR SPICEWOOD, TEX.

LOCATION.—1½ miles above Austin-Marble Falls road crossing, 2½ miles below mouth of Fall Creek, and 8 miles southeast of Spicewood, Burnet County.

DRAINAGE AREA.—1,290 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—November 7, 1923, to September 30, 1925.

GAGE.—Vertical staff on right bank; read by J. W. Bowles.

DISCHARGE MEASUREMENTS.—Made from cable 250 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of cobblestones and coarse gravel, overlain in places with silt; fairly permanent. Channel straight for one-fourth mile above and 400 feet below gage. One channel at all stages. Left bank wooded; permanent; not subject to overflow. Right bank wooded; permanent; hugh boulders above 25-foot gage height; not subject to overflow. Control below gage height of 2 feet is gravel and rock riffle, 325 feet below gage. Control for high water is 400 feet below gage and composed of boulders and coarse gravel; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.85 feet in morning of May 10 (discharge, 1,360 second-feet); no flow June 23 to August 3 and August 27–30.

1924–1925: Maximum stage recorded, 10.45 feet at 7 a. m. June 2, 1924 (discharge, 8,480 second-feet, determined from extension of rating curve and subject to error); no flow June 23 to August 3 and August 27–30, 1925.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths twice daily and oftener during floods. Daily discharge determined by applying mean daily gage height to rating table, averaging discharge for intervals of a day, on days of considerable fluctuation. Records good.

Discharge measurements of Pedernales River near Spicewood, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 29	1.80	17.8	May 10	3.69	626
Mar. 19	1.78	16.0	Sept. 12	2.79	201
May 10	3.85	679			

Daily discharge, in second-feet, of Pedernales River near Spicewood, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Aug.	Sept.
1	14	17	22	28	21	17	14	110	52	------	9.4
2	14	17	25	27	21	16	14	65	33	------	8.1
3	14	17	29	27	21	16	13	41	21	------	6.9
4	14	17	30	27	20	16	13	31	17	222	6.0
5	14	17	30	25	20	16	12	20	14	87	5.4
6	14	16	32	25	20	16	12	17	11	46	4.6
7	14	16	32	24	20	16	12	15	9.7	26	4.2
8	14	16	32	24	20	16	12	14	7.8	18	3.6
9	14	18	28	24	20	16	13	14	7.2	16	4.8
10	14	18	26	27	19	15	13	841	6.3	13	5.4
11	14	18	25	26	18	15	12	192	5.8	10	5.0
12	14	19	24	26	18	15	11	124	5.0	8.7	41
13	13	19	22	27	18	15	10	78	4.2	7.2	353
14	13	20	23	27	17	16	10	42	3.6	6.3	400
15	13	20	24	28	17	15	9.7	29	3.6	5.4	137
16	14	20	24	26	17	15	9.0	21	2.7	4.6	68
17	14	20	25	25	17	15	8.4	18	2.2	4.0	40
18	14	20	27	25	17	16	8.4	15	1.6	3.1	28
19	15	21	26	25	17	16	7.5	14	1.2	2.4	21
20	16	22	25	28	18	15	6.6	12	.8	2.0	17
21	16	21	24	27	18	14	6.3	10	.6	1.8	14
22	16	21	24	27	19	14	5.8	8.7	.4	1.2	12
23	15	21	24	25	19	14	5.4	8.1	------	.7	10
24	14	21	25	24	18	14	5.0	7.2	------	.6	11
25	14	21	25	24	18	14	4.8	8.4	------	.4	16
26	14	20	25	24	17	14	4.4	7.5	------	.3	426
27	14	20	25	24	17	14	5.2	6.3	------	------	126
28	16	20	25	22	17	14	13	5.6	------	------	65
29	17	20	25	21	------	14	26	5.6	------	------	42
30	17	21	26	21	------	14	23	5.2	------	------	30
31	17	------	27	21	------	14	------	105.0	------	4.6	------

NOTE.—No flow June 23 to Aug. 3 and Aug. 27-30.

Monthly discharge of Pedernales River near Spicewood, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	17	13	14.5	892
November	22	16	19.1	1,140
December	32	22	26.0	1,600
January	28	21	25.2	1,550
February	21	17	18.5	1,030
March	17	14	15.1	926
April	26	4.4	10.6	634
May	841	5.2	61.0	3,750
June	52	0	7.02	418
July	0	0	0	0
August	222	0	15.8	974
September	426	3.6	64.0	3,810
The year	841	0	23.1	16,700

BARTON SPRINGS AT AUSTIN, TEX.

LOCATION.—Barton Springs issue from channel of Barton Creek, 1,600 feet above Austin-Bee Cave highway bridge, half a mile above confluence with Colorado River, and half a mile southwest of Austin, Travis County.

RECORDS AVAILABLE.—October 1, 1918, to September 30, 1925. Daily record of flow of Barton Creek, which closely approximates flow of Barton Springs, as the ordinary flow of the creek is from the springs, has been published from April 25, 1917, to September 30, 1918. Miscellaneous discharge measurements of Barton Creek made from 1894 to 1906 and during 1916 and 1917.

DISCHARGE MEASUREMENTS.—Made by wading Barton Creek above and below the springs in order to determine the flow of springs as indicated in table below.

Discharge of Barton Springs at Austin, Tex., during the year ending September 30, 1925

Date	Discharge	Date	Discharge	Date	Discharge
	Sec.-ft.		*Sec.-ft.*		*Sec.-ft.*
Oct. 9	56.4	Feb. 16	27.8	July 16	22.8
Oct. 30	46.8	Mar. 7	25.4	July 30	22.5
Nov. 20	40.5	Mar. 30	22.6	Aug. 30	19.2
Dec. 12	33.1	Apr. 24	23.2	Sept. 26	15.7
Jan. 2	28.4	May 21	22.0		
Jan. 20	30.1	June 15	22.2		

NOTE.—Measurements made in channel of Barton Creek below springs. There was no flow in Barton Creek above springs on the above dates.

LITTLE WALNUT CREEK NEAR AUSTIN, TEX.

LOCATION.—At Austin-Manor highway bridge, 1½ miles above confluence with Walnut Creek and 4½ miles northeast of Austin, Travis County.

DRAINAGE AREA.—12 square miles (measured on topographic maps).

RECORDS AVAILABLE.—April 25, 1924, to September 30, 1925.

GAGE.—Gurley 8-day water-stage recorder attached to downstream side of first concrete pier from right bank; inspected by Geological Survey engineers.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of clay; shifts. Channel winding above gage and straight for 150 feet below. Banks of gravel and clay; high; steep; shift. Control of clay, 150 feet below gage; shifts.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 3.25 feet at 9 p. m. May 7 (discharge, 815 second-feet); no flow during several periods.

1924–1925: Maximum stage recorded, 4.90 feet during night of September 21, 1924 (discharge not determined); no flow for several periods in 1925.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 15 second-feet, poorly defined from 15 to 53 second-feet, and extended above this on basis of measurements made during 1926. Operation of water-stage recorder satisfactory except for breaks in record as indicated in footnote to daily-discharge table. Daily discharge determined by applying to rating table mean daily gage height ascertained from recorder graph by inspection or by use of planimeter, averaging discharge for intervals of a day on days of considerable fluctuation. Records for low stages, fair; for high stages, poor.

Discharge measurements of Little Walnut Creek near Austin, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 21	0.07	[a] 0.6	Apr. 30	0.17	1.54
Apr. 20	0	[a] .03	May 24	−.04	0

[a] Estimated.

Daily discharge, in second-feet, of Little Walnut Creek near Austin, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Sept.
1	0.5	0.3	0.4	0.5	0.4	0.4	0.4	0.2	0.1	0.3	
2	.5	.3	.9	.4	.4	.4	.4	.2	.1		
3	.5	.4	.5	.3	.4	.4	.4	.1			
4	.5	.4	.4	.4	.4	.4	.2	.1			
5	8.5	.4	.3	.4	.4	.4	.2	.1			
6	1.4	.4	.3	.4	.4	.4	.2	.1			
7	.6	.4	.4	.4	.4	.4	.3	18			
8	.5	.4	.4	.4	.4	.4	.4	11			
9	.5	.4	.4	.4	.4	.4	.4	26			
10	.5	.5	.4	.4	.4	.4	.2	.3			
11	.5	.5	.4	.4	.4	.4	.2	.2			
12	.5	.5	.4	.5	.4	.3	.2	.2			9.8
13	.4	.5	.4	.5	.4	.3	.2	.2			3.8
14	.4	.4	.4	.5	.4	.3	.2	.2			.6
15	.4	.4	.4	.5	.4	.3	.2	.1			
16	.4	.4	.4	.5	.4	.4	.2				
17	.4	.4	.4	.5	.4	.4	.1				
18	.4	.4	.4	.5	.4	.4	.1	.1			
19	.4	.4	.4	.5	.4	.3	.1	.1			
20	.4	.6	.3	.5	.4	.4	.1	.1			
21	.4	.4	.3	.5	.4	.4	.1				
22	.4	.4	.4	.5	.5	.4					
23	.4	.4	.4	.5	.4	.4					
24	.4	.4	.4	.5	.4	.4	.2				
25	.4	.4	.4	.4	.4	.4	.2	.8			
26	.4	.4	.4	.4	.4	.4	.1	.4			
27	.4	.4	.4	.4	.4	.4	.4	.2			
28	.4	.4	.4	.5	.4	.3	.2	.2			
29	.4	.4	.9	.5		.4	.4	.2			
30	.4	.4	.8	.4		.4	.5	.2			
31	.4		.6	.4		.4		.2			

NOTE.—Discharge estimated Oct. 1–3, Dec. 3, Jan. 10–13, 31, Feb. 1–14, May 10–12, 19, 20, 31, June 1, and 2; interpolated Dec 31 and Jan. 1. No flow during periods for which no discharge is given.

Monthly discharge of Little Walnut Creek near Austin, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	8.5	0.4	0.73	44.8
November	.6	.3	.41	24.6
December	.9	.3	.44	27.2
January	.5	.3	.45	27.6
February	.5	.4	.40	22.4
March	.4	.3	.38	23.4
April	.5	0	.23	13.5
May	26	0	1.92	118
June	.1	0	.01	.4
July	.3	0	.01	.6
August	0	0	0	0
September	9.8	0	.47	28.2
The year	26	0	.46	331

ONION CREEK NEAR DEL VALLE, TEX.

LOCATION.—At Del Valle-Creedmoor highway crossing, 2 miles below mouth of Williamson Creek and 2½ miles southwest of Del Valle, Travis County.

DRAINAGE AREA.—337 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—May 15, 1924, to September 30, 1925.

GAGE.—Vertical staff attached to rock 250 feet above low-water concrete bridge; read by C. T. Sundberg.

DISCHARGE MEASUREMENTS.—Made by wading, from low-water concrete bridge, or from highway bridge 2 miles downstream.

CHANNEL AND CONTROL.—Bed composed of solid rock with some gravel. Channel straight for 500 feet above and 200 feet below gage. One channel at all stages. Right bank of rock and clay; fairly clean to a stage of 8 feet and above this point is covered with grass, light brush, and small trees; permanent; subject to overflow at extremely high stages. Left bank is ledge rock; clean up to a stage of 8 feet and above this point is covered with fairly heavy growth of brush and small trees; permanent; not subject to overflow. Control is formed by rock and gravel rapids and low-water concrete bridge, 250 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.90 feet at 9.25 a. m. September 12 (discharge, 254 second-feet); no flow during several periods.

1924–1925: Maximum stage recorded, 10.05 feet at 8 a. m. June 22, 1924 (discharge, 8,240 second-feet, determined from extension of rating curve subject to considerable error); no flow several periods in 1925.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curves fairly well defined below 1,000 second-feet and poorly defined above. Gage read to hundredths twice daily, but during rapidly changing stage mean of two readings daily may not be true index to mean daily discharge. Daily discharge determined by applying mean daily gage height to rating table, averaging discharge for intervals of a day on days of considerable fluctuation. Daily-discharge records not sufficiently accurate to warrant publication. Monthly discharge fair.

Discharge measurements of Onion Creek near Del Valle, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 8	3.67	3.34	Apr. 6	3.40	[a] 0.5	July 16	[b] 1.76	0
Nov. 15	3.52	1.77	Apr. 23	2.92	[a] .01	Aug. 13		0
Jan. 25	3.45	[a] 2.0	May 9	3.62	3.43	Sept. 12	5.68	221
Mar. 7	3.58	[a] 2.0	June 24	[b] 2.16	0			

[a] Estimated. [b] Below point of zero flow.

Monthly discharge of Onion Creek near Del Valle, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	3.3	1.6	2.39	147
November	2.4	1.4	2.04	122
December	3.7	1.6	1.97	121
January	2.0	1.5	1.78	110
February	2.3	1.5	1.65	91.6
March	2.4	1.4	1.83	112
April	19	.3	2.15	128
May	4.3	.2	1.87	115
June	.2	0	.01	.6
July	0	0	0	0
August	0	0	0	0
September	32	0	2.25	134
The year	23	0	1.49	1,080

NOTE.—No flow June 3 to Sept. 11.

GUADALUPE RIVER BASIN

GUADALUPE RIVER NEAR COMFORT, TEX.

LOCATION.—At low-water bridge and dam on State highway No. 27, 3½ miles below mouth of Verde Creek and 2.6 miles west of Comfort, Kendall County.

DRAINAGE AREA.—916 square miles (measured on topographic maps, progressive military maps of United States Army, and base map of Texas).

RECORDS AVAILABLE.—December 16, 1917, to September 30, 1925. Records prior to August 10, 1924, at a point 1 mile upstream.

GAGE.—Vertical staff on left bank; read by Gus Haufler.

DISCHARGE MEASUREMENTS.—Made by wading or from cable 400 feet above gage.

CHANNEL AND CONTROL.—Channel straight for 1,000 feet above and 400 feet below gage. Bed composed of gravel and silt; permanent. Water in two channels at extremely high stages. Right bank of earth, covered with trees, and not subject to overflow at cable. Left bank of earth, covered with trees, and subject to overflow at high stages. At extremely high stages water flows through second channel to left of gage and station can not be reached. Control below stage of 3 feet is concrete low-water bridge and dam with opening in center; permanent if opening is kept clear. For high stages control is gravel bar and earth banks; subject to shift.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 10.1 feet at 8.35 p. m. May 28 (discharge, 4,920 second-feet, determined from extension of rating curve and subject to error); minimum stage, 1.54 feet at 7.15 p. m. July 31 (discharge, 3.4 second-feet, determined from extension of rating curve and subject to slight error).

1917–1925: Maximum stage, about 41 feet August 21, 1919, determined from floodmarks near gage (discharge not determined); minimum stage, 0.80 foot August 2, 1918 (discharge, 0.4 second-foot).

DIVERSIONS.—Few pumping plants along stream about 8 miles above station. Records of the Board of Water Engineers for the State of Texas show that a total of about 400 acres have been declared irrigated by diversions above station.

REGULATION.—At Kerrville and Center Point dams are constructed and water used for mill purposes, but effect of regulation is slight, except during low stages.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined below 120 second-feet; fairly well defined between 120 and 3,200 second-feet; extended above. Gage read to hundredths twice daily and oftener during floods. Daily discharge determined by applying mean daily gage height to rating table; shifting-control method used November 9 to March 20. Records good.

Discharge measurements of Guadalupe River near Comfort, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 30	2.55	65.4	July 4	2.16	17.7
Jan. 6	2.60	65.8	July 22	2.22	23.0
Mar. 30	2.43	47.8			

Daily discharge, in second-feet, of Guadalupe River near Comfort, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	61	68	68	72	61	64	47	48	16	4.0	20
2	58	60	60	66	72	61	60	47	46	10	18	20
3	58	64	78	66	68	61	58	48	50	19	58	18
4	56	64	78	68	66	61	52	50	44	16	50	24
5	56	64	76	66	62	61	64	42	38	13	42	24
6	58	66	72	66	61	61	47	46	39	13	33	30
7	61	68	70	66	62	60	44	44	38	8.6	29	21
8	64	64	70	66	62	60	48	39	37	5.3	28	24
9	66	62	66	68	62	60	48	46	36	4.3	25	22
10	66	62	66	68	62	61	51	42	34	5.5	20	22
11	70	66	66	70	62	62	50	47	32	5.1	23	22
12	61	66	64	70	60	61	51	52	34	80	21	96
13	64	70	64	66	60	54	52	47	28	36	26	55
14	61	70	64	66	60	74	37	42	32	42	17	33
15	61	66	64	66	60	64	50	38	28	37	27	39
16	61	62	68	66	60	62	37	51	28	27	26	34
17	62	62	68	70	60	56	43	48	28	51	21	34
18	62	68	72	68	60	60	36	31	32	40	25	29
19	62	66	66	70	62	56	37	33	30	29	20	24
20	60	64	64	66	60	56	40	30	27	25	19	28
21	64	64	64	70	61	58	37	28	66	26	16	36
22	64	61	61	72	64	58	42	29	50	22	11	28
23	64	68	64	70	66	56	42	30	25	20	114	103
24	64	64	68	68	64	58	38	30	27	16	12	84
25	68	64	68	68	60	62	37	26	24	14	24	90
26	68	64	66	68	58	60	42	25	26	12	14	92
27	64	64	62	68	58	54	40	24	26	12	13	55
28	68	68	62	70	60	50	50	610	31	6.5	12	50
29	64	68	66	72	------	50	42	119	38	4.6	13	43
30	64	68	68	72	------	50	52	64	33	3.8	18	45
31	64	------	70	70	------	48	------	62	------	3.6	17	------

Monthly discharge of Guadalupe River near Comfort, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	70	54	62.5	3,840
November	70	60	64.9	3,860
December	78	60	67.2	4,130
January	72	66	68.2	4,190
February	72	58	62.3	3,460
March	74	48	58.6	3,600
April	64	36	46.4	2,760
May	610	24	61.8	3,800
June	66	24	35.2	2,090
July	80	3.6	20.1	1,240
August	114	4.0	25.7	1,580
September	103	18	41.5	2,470
The year	610	3.6	51.1	37,000

GUADALUPE RIVER NEAR SPRING BRANCH, TEX.

LOCATION.—At New Braunfels-Blanco City highway bridge known as Esser Bridge, 4 miles southeast of Spring Branch, Comal County, and 6 miles below mouth of Curry Creek.

DRAINAGE AREA.—1,430 square miles (measured on topographic maps, progressive military maps of United States Army, and base map of Texas).

RECORDS AVAILABLE.—June 28, 1922, to September 30, 1925.

GAGE.—Stevens continuous water-stage recorder attached to downstream side of pier on right bank; inspected by E. L. Jonas.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge.

CHANNEL AND CONTROL.—Channel straight for 200 feet above and 700 feet below gage. Bed composed of solid rock and gravel; permanent. Right bank of clay, wooded, and not subject to overflow; left bank of clay and gravel, covered wlth grass and brush, and subject to overflow at a stage of about 46 feet. Low-water control is a rock and gravel riffle, 350 feet below gage; shifts.

EXTREMES OF DISCHARGE.—Owing to unsatisfactory operation of water-stage recorder, maximum and minimum stages not determined during 1925.

1923–1925: Maximum stage recorded, 19.75 feet at 6.40 p. m. September 19, 1923 (discharge, 18,200 second-feet); minimum stage not definitely known, but probably 1.74 feet during period of missing record August 18, 1923 (discharge, 4.7 second-feet).

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Operation of water-stage recorder not satisfactory. Daily discharge determined by applying to rating table mean daily gage height, determined from recorder graph by inspection, or by use of planimeter, averaging discharge for intervals of a day, on days of considerable fluctuation. Records for low stages fair and for high stages poor.

Discharge measurements of Guadalupe River near Spring Branch, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 29	2.35	79.8	Mar. 28	2.26	64.6	May 30	3.05	286
Jan. 30	2.33	83.6	May 29	6.11	[a] 1,950	July 21	2.00	32.4

[a] Discharge corrected for changing stage, 2,040 second-feet.

Daily discharge, in second-feet, of Guadalupe River near Spring Branch, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	78	82	89	93	85	72	66	47	70	25		
2	80	82	102	93	87	72	64	46	61	31		
3	80	82	104	93	87	72	70	44	53	36		
4	82	82	107	93	87	74	66	44	44	31		
5	78	82	107	93	85	72	68	42	40	18		
6	76	82	102	91	82	74	64	42	34	15		
7	72	80	98	91	82	72	62	41	33	15		
8	76	82	98	91	85	70	61	42	36	15		
9	80	85	98	91	85	68	57	50	31	14		
10	82	82	95	91	82	68	59	59	28	13		
11	80	82	93	89	82	70	57	59	27	13		
12	80	85	93	89	78	82	59	44	26	16		
13	78	91	93	89	78	74	61	48	25	13		
14	76	93	93	91	76	74	61	48	22	28		
15	76	93	95	89	76	68	57	46	22	36		
16	74	93	95	89	76	68	57	42	19	26	30	45
17	74	87	93	87	78	61	52	36	18	22		
18	72	87		89	80	68	52	36	17	24		
19	72	87		87	80	68	48	33	15	20		
20	74	89		85	80	66	46	32	16	33		
21	72	89		89	80	66	44	31	15			
22	72	89		89	80	68	41	30	20			
23	78	91		85	80	68	41	27	27			
24	80	91	93	87	80	68	41	26	26			
25	78	91		89	78	66	38	27	50			
26	82	91		87	76	68	36	27	104	20		
27	85	91		89	72	70	40	28	41			
28	85	91		85	72	66	52	26	24			
29	82	91		85	-------	64	185	669	22			
30	82	89	93	85	-------	66	61	389	20			
31	82	-------	93	82	-------	64	-------	98	-------			

NOTE.—Braced figures show estimated mean discharge for periods included. Discharge estimated Dec. 30.

Monthly discharge of Guadalupe River near Spring Branch, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	85	72	78.0	4,800
November	93	80	87.1	5,180
December	107	-------	95.4	5,870
January	93	82	88.9	5,470
February	87	72	80.3	4,460
March	82	61	69.3	4,260
April	185	36	58.9	3,500
May	669	26	72.9	4,480
June	104	15	32.9	1,960
July	-------	-------	21.4	1,320
August	-------	-------	[a] 30.0	1,840
September	-------	-------	[a] 45.0	2,680
The year	669	-------	63.3	45,800

[a] Estimated.

GUADALUPE RIVER AT NEW BRAUNFELS, TEX.

LOCATION.—At highway bridge on San Antonio-Austin post road, 700 feet below International-Great Northern Railroad bridge, 1 mile below mouth of Comal River, and 1 mile northeast of center of New Braunfels, Comal County.

DRAINAGE AREA.–1,770 square miles (measured on topographic maps, progressive military maps of United States Army, and base map of Texas).

RECORDS AVAILABLE.—March 13, 1898, to December 30, 1899; January 27, 1915, to September 30, 1925.

GAGE.—Stevens water-stage recorder attached to downstream side of middle pier of highway bridge; inspected by engineers from Austin office.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of solid rock with pockets of coarse gravel. Banks of gravel, clay, and rock; slightly wooded; not subject to overflow. Rock and gravel shoal 600 feet below gage serves as control shifts.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 2.40 feet at 3 p. m. May 30 (discharge, 1,340 second-feet); minimum discharge, estimated at 9.0 second-feet for short intervals on several days in June, July, August, and September.

1898–99; 1915–1925: Maximum stage recorded, 28.6 feet at 3 a. m. September 10, 1921 (discharge, 56,600 second-feet, determined from extension of rating curve and subject to error); no flow for short intervals on each of several days in August and September, 1922, and on October 10, 1923, owing to regulation at dam 300 feet above gage.

DIVERSIONS.—Some water diverted for irrigation above station in Kerr and Comal Counties and for waterworks and other municipal uses in Kerr, Kendall, and Comal Counties; amount not known.

REGULATION.—Flow at this point entirely regulated at times by operation of power plants on Comal River and by plant 300 feet above.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined. Operation of water-stage recorder satisfactory, except for short break in record. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day, on days of considerable fluctuation. Records good.

Discharge measurements of Guadalupe River at New Braunfels, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 1	1.02	557	May 30	2.32	1,320	Aug. 24	−1.46	*9.0
Oct. 28	1.00	538	Do	2.12	1,200	Aug. 25	−1.16	12.3
Nov. 26	.90	495	May 31	1.36	689	Do	−1.49	*9.0
Jan. 29	.91	481	July 6	.46	296	Sept. 19	.63	312
Mar. 28	.84	443	July 20	.70	391	Do	.07	191
May 29	.69	421	Aug. 24	−1.02	20.4			

* Estimated.

Daily discharge, in second-feet, of Guadalupe River at New Braunfels, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	543	523	507	504	465	416	444	482	562	368	349	314
2	543	523	543	511	465	413	444	444	502	368	349	317
3	543	523	543	500	465	431	425	425	482	311	369	321
4	543	523	543	504	473	428	425	425	463	330	349	316
5	543	523	543	504	465	435	425	425	463	330	352	300
6	563	523	523	504	469	428	425	425	444	387	338	311
7	563	515	523	496	461	424	425	425	444	353	373	322
8	543		523	500	465	428	425	406	444	330	387	300
9	563		519	500	473	435	425	425	425	327	368	307
10	563		515	488	473	431	425	444	425	311	368	320
11	543		504	496	469	431	425	444	440	559	360	317
12	543		511	504	469	435	406	444	415	387	364	350
13	543		507	492	469	435	425	463	387	387	356	387
14	543		515	504	465	435	425	444	387	338	444	344
15	543		511	492	461	435	425	444	406	309	349	341
16	543	504	519	488	465	428	425	425	393	307	349	327
17	543		511	488	469	420	406	425	388	311	347	332
18	523		519	492	465	416	406	444	372	330	322	317
19	523		511	492	461	413	425	425	359	330	309	315
20	543		504	492	457	413	425	425	358	330	322	330
21	523		500	492	461	405	425	425	368	334	303	341
22	543		511	488	469	413	406	425	379	336	330	319
23	543		496	488	476	431	406	406	354	332	311	335
24	523		496	473	473	424	406	406	342	330	318	344
25	523		507	480	465	424	387	425	355	330	322	330
26	523	492	500	469	465	425	387	425	342	349	325	331
27	523	500	496	465	461	425	406	406	339	352	378	330
28	523	507	504	469	439	425	425	406	425	336	380	339
29	523	504	504	465	------	425	482	425	387	338	317	357
30	523	504	496	465	------	425	502	660	368	331	311	378
31	523	------	504	457	------	425	------	695	------	314	331	------

NOTE.—Braced figures show estimated mean discharge for periods included. Discharge estimated Nov. 7 and 26.

Monthly discharge of Guadalupe River at New Braunfels, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	563	523	538	33,100
November	523	----------	508	30,200
December	543	496	513	31,600
January	511	457	489	30,100
February	476	439	465	25,900
March	435	405	425	26,100
April	502	387	424	25,200
May	695	406	446	27,400
June	562	339	407	24,200
July	559	307	345	21,200
August	444	303	347	21,300
September	387	300	330	19,600
The year	695	300	436	316,000

GUADALUPE RIVER BELOW CUERO, TEX.

LOCATION.—Three-fourths mile above Heards Bridge on Arneckville road and 2½ miles southeast of Cuero, De Witt County.

DRAINAGE AREA.—5,070 square miles (measured on topographic maps, base map of Texas, and progressive military maps of United States Army).

RECORDS AVAILABLE.—August 6, 1916, to September 30, 1925 (fragmentary from May 29, 1919, to August 10, 1920). From December 26, 1902, to December 31, 1906; and August 19, 1915, to August 6, 1916, a station was maintained at Schleicher Bridge, 4 miles above this point. Discharge at two sites practically same.

GAGE.—Stevens water-stage recorder on left bank; inspected by E. B. Dietze.

DISCHARGE MEASUREMENTS.—Made from cable 40 feet above gage, from Schleicher highway bridge, from San Antonio & Aransas Pass Railroad bridge, 6 miles upstream, or by wading.

CHANNEL AND CONTROL.—Channel straight above and below station for 1,000 feet. Bed composed of gravel and small rock; shifts slightly. Left bank composed of sand and dirt, covered with brush and open timber; at stages above a gage height of 20 feet is subject to overflow, the water submerging an area for 1 mile. Right bank composed of sand and dirt, covered with brush and trees on sloping side and cultivated land on top, and subject to overflow at extremely high stages. Rock and gravel rapid 250 feet below gage serves as a control during low and medium stages; shifts slightly.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 2.93 feet at 11 a. m. May 1 (discharge, 1,600 second-feet); minimum discharge not determined.

1916–1925: Maximum stage occurred about October 20, 1919, when recorder was not in operation, and reached a height of about 32.2 feet as determined from floodmarks on gage house (discharge not determined); minimum stage recorded, approximately 0.58 foot from 9 to 10 a. m. November 1, 1917 (discharge, 80 second-feet, determined from extension of rating curve; possibly slightly in error).

A stage of 37.6 feet was reached November 4, 1913.

DIVERSIONS.—There are numerous small diversions above station for irrigation and municipal uses, but flow is probably not materially affected thereby, except possibly during extremely low stages.

REGULATION.—Flow partly regulated during low and medium stages by operation of water-power plants upstream, chiefly by a plant about 8 miles above.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined. Operation of water-stage recorder satisfactory, except for breaks in record as indicated in footnote to daily-discharge table. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day for days of considerable fluctuation. Records good.

Discharge measurements of Guadalupe River below Cuero, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 16	2.05	968	Feb. 10	1.85	805	Aug. 7	1.02	353
Nov. 21	1.90	806	Apr. 8	1.56	619			
Jan. 5	1.95	910	June 29	1.50	650			

Daily discharge, in second-feet, of Guadalupe River below Cuero, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	792	629	702		605	599	587	1,340	539	504	443	498
2	754	587	754	750	740	683	605	1,020	527	563	350	521
3	766	773	665		714	677	527	605	825	563	510	635
4	780	734	708	689	760	641	510	766	575	575	422	611
5	653	689	721	846	721	623	569	611	605	581	482	443
6	825	680	766	786	677	599	617	563	498	488	427	427
7	786	665	695	766	671	587	581	581	557	471	400	471
8	806	734	818	728	593	569	569	587	510	476	366	454
9	780	551	728	760	747	689	545	510	587	432	400	432
10	780	728	721	721	714	653	581	545	521	510	393	476
11	780	575	714	659	702	647	575	599	533	557	432	
12	605	754	714	792	665	653	539	641	515	471	422	
13	825	641	714	773	671	647	545	504	432	557	394	
14	780	683	605	740	659	665	527	545	533	545	400	
15	792	740	825	760	575	551	498	611	623	593	388	
16	890	504	773	754	760	683	551	471	328	510	383	
17	740	728	728	734	671	587	545	575		504	466	
18	734	671	728	659	708	641	482	488		438	454	
19	605	683	773	812	659	635	488	569		443	383	
20	825	629	641	760	659	641	545	488		460	388	
21	714	684	786	760	677	671	539	498		471	410	510
22	665	617	816	760	581	575	504	575	530	432	394	
23	740	587		721	714	653	515	460		410	356	
24	641	754		773	647	551	504	482		438	416	
25	689	695		611	665	623	449	563		422	394	
26	641	647		740	671	617	476	498		361	361	
27	780	671	750	740	683	599	533	493		504	372	
28	714	695		689	641	599	482	510	647	422	400	
29	677	689		728	-------	539	551	521	617	383	361	
30	747	515		721	-------	617	659	432	510	383	400	
31	721	-------		702	-------	545	-------	533	-------	416	563	-------

NOTE.—Braced figures show estimated mean discharge for periods included. Record incomplete; discharge partly estimated Oct. 16, June 16, 28, July 29, 30, and 31.

Monthly discharge of Guadalupe River below Cuero, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	890	605	743	45,700
November	773	504	664	39,500
December	825	605	737	45,300
January	846	611	740	45,500
February	760	575	677	37,600
March	689	539	621	38,200
April	659	449	540	32,100
May	1,340	432	587	36,100
June	825	328	544	32,400
July	593	361	480	29,500
August	563	350	411	25,200
September	----------	----------	506	30,100
The year	1,340	328	604	437,000

BLANCO RIVER AT WIMBERLEY, TEX.

LOCATION.—800 feet below mouth of Cypress Creek 1,200 feet above low-water concrete bridge on San Marcos-Wimberly road, and a quarter of a mile south of Wimberly, Hays County.

DRAINAGE AREA.—378 square miles (measured on topographic maps, progressive military maps of United States Army, and base map of Texas).

RECORDS AVAILABLE.—August 6, 1924, to September 30, 1925.

GAGE.—Inclined and vertical staff on left bank; read by L. Harrison.

DISCHARGE MEASUREMENTS.—Made from cable 100 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of rock and gravel. Channel straight for 500 feet above and below gage. Left bank composed of silt and gravel overlying limestone ledges, covered sparsely with trees, permanent, and not subject to overflow. Right bank of rock, sparsely wooded at low-water edge; permanent, and not subject to overflow. Solid rock ledge, 200 feet below gage, forms control; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 0.55 foot at 7 a. m. April 28 (discharge, 48 second-feet); minimum stage, 0.26 foot July 30 and 31 (discharge, 5.8 second-feet).

1924–1925: Maximum stage recorded, 3.15 feet at 2 p. m. Sept. 13, 1924. (Discharge about 1,600 second-feet); minimum stage, 0.26 foot July. 30 and 31, 1925.

DIVERSIONS.—None of consequence.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table or as noted in footnote to daily-discharge table. Records good.

The following discharge measurements were made:

October 15, 1924: Gage height, 0.42 foot; discharge, 23.8 second-feet.
January 9, 1925: Gage height, 0.41 foot; discharge, 24.1 second-feet.
March 27, 1925: Gage height, 0.36 foot; discharge, 14.8 second-feet.

Daily discharge, in second-feet, of Blanco River at Wimberley, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	23	23	23	21	18	18	21	9.0	9.0	7.4	12
2	27	23	31	23	21	18	18	18	9.0	9.0	18	10
3	27	23	27	23	21	18	17	18	9.0	9.0	18	9.0
4	27	23	24	23	21	18	17	16	9.0	9.0	16	9.0
5	27	23	24	23	21	18	16	16	9.0	9.0	11	9.0
6	27	23	24	23	21	18	16	14	10	9.0	10	8.2
7	27	23	24	23	21	18	16	14	10	9.0	9.0	8.2
8	27	23	24	23	21	18	16	14	10	9.0	9.0	8.2
9	27	23	24	23	21	18	16	29	10	9.0	9.0	7.4
10	27	23	24	24	21	18	16	18	10	9.0	9.0	7.4
11	27	24	24	23	21	18	16	14	10	11	9.0	7.4
12	27	24	23	23	21	18	16	13	9.0	18	9.0	9.0
13	27	24	23	23	21	18	16	13	9.0	11	8.2	16
14	27	24	23	23	21	18	16	13	9.0	9.0	10	9.0
15	26	23	23	23	21	18	16	13	9.0	9.0	9.0	9.0
16	24	23	23	23	21	18	16	13	9.0	9.0	9.0	8.0
17	24	23	23	23	20	18	16	13	9.0	9.0	9.0	9.0
18	24	23	23	23	20	18	16	13	9.0	9.0	9.0	8.2
19	24	23	23	23	20	18	16	13	9.0	8.2	9.0	8.2
20	24	23	23	23	20	18	16	13	9.0	8.2	9.0	8.2
21	24	23	23	23	20	18	16	12	9.0	7.4	7.4	8.2
22	24	23	23	21	20	18	16	12	9.0	7.4	7.4	8.2
23	24	23	23	21	20	18	16	12	9.0	7.4	7.4	9.0
24	24	23	23	21	20	18	16	12	9.0	7.4	7.4	10
25	24	23	23	21	18	18	16	16	9.0	7.4	9.0	11
26	24	23	23	21	18	18	14	11	9.0	7.4	9.0	11
27	24	23	23	21	18	17	14	11	9.0	6.6	9.0	12
28	24	23	23	21	18	18	34	11	9.0	6.6	9.0	10
29	24	23	23	21	-------	18	18	11	9.0	6.6	9.0	9.0
30	24	23	23	21	-------	18	17	11	9.0	5.8	9.0	9.0
31	24	-------	23	21	-------	18	-------	10	-------	5.8	9.0	------

NOTE.—Record incomplete; discharge interpolated Dec. 19–21, 25, Apr. 14–17, 19–21, June 5, 6, Sept. 23 and 24.

Monthly discharge of Blanco River at Wimberley, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	27	24	25.4	1,560
November	24	23	23.1	1,380
December	31	23	23.6	1,450
January	24	21	22.4	1,380
February	21	18	20.3	1,130
March	18	17	18.0	1,100
April	34	14	16.8	998
May	29	10	14.1	869
June	10	9.0	9.20	547
July	18	5.8	8.62	530
August	18	7.4	9.65	593
September	16	7.4	9.27	551
The year	34	5.8	16.7	12,100

SAN MARCOS RIVER AT OTTINE, TEX.

LOCATION.—At highway bridge one-fourth mile southwest of Ottine, Gonzales County, and 4 miles below mouth of Plum Creek.

DRAINAGE AREA.—Indeterminate.

RECORDS AVAILABLE.—June 22, 1915, to September 30, 1925.

GAGE.—Stevens continuous water-stage recorder on right bank just below pier installed March 27, 1925. Chain gage attached to upstream handrail of bridge used prior to that date; read by W. C. Meek.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand, clay, and gravel; shifts. Banks wooded. Right bank subject to overflow at gage height of 28.7 feet and left bank at 34.0 feet. Channel straight above and below station for 150 feet. Low-stage control is a shoal 150 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, about 9.5 feet, determined from silt marks in well April 29 (discharge, 1,480 second-feet). Owing to regulation no flow at noon March 31.

1915–1925.—Maximum stage recorded, 37.5 feet at 7.30 a. m. May 16, 1920 (discharge, 45,600 second-feet); no flow at 6.30 p. m. July 29, 1923, and at noon March 31, 1925.

DIVERSIONS.—Small amounts of water are diverted above station for irrigation and municipal uses, but only a small part of total run-off is used. Little water, if any, is diverted below station.

REGULATION.—Flow regulated by operation of small cotton gin a short distance above station. Operation of several small water-power plants in upper drainage basin near San Marcos and Martindale does not materially affect flow at this station.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined. Gage read to hundredths twice daily from October 1 to March 27. Operation of water-stage recorder satisfactory thereafter. Mean of two readings daily may not be true index to discharge owing to power regulation. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day on days of considerable fluctuation, except discharge estimated or partly estimated April 29–30, May 1, June 17, 26, and 27. Records fair.

Discharge measurements of San Marcos River at Ottine, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 13	2.86	218	Mar. 28	2.48	143	June 27	2.16	112
Nov. 17	2.69	169	Apr. 7	2.34	116	Aug. 12	2.74	222
Dec. 20	2.71	180	May 1	2.70	173	Sept. 17	2.20	86.5
Feb. 9	2.73	180	June 26	3.18	251	Sept. 29	2.42	113

Daily discharge, in second-feet, of San Marcos River at Ottine, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	196	110	162	155	129	168	134	248	112	151	151	376
2	196	182	168	155	110	116	111	165	111	133	156	254
3	211	148	182	155	129	142	124	141	116	126	172	158
4	196	162	175	142	116	148	117	129	116	120	147	112
5	196	168	168	142	148	129	117	134	112	116	167	126
6	211	155	175	142	129	136	126	169	109	114	163	98
7	226	148	168	136	122	168	121	145	103	111	176	91
8	226	155	168	155	122	129	124	124	124	130	167	132
9	196	155	168	162	162	162	109	114	119	139	158	119
10	211	155	168	162	129	129	92	124	110	119	158	125
11	211	142	162	142	155	142	114	110	103	137	168	126
12	196	148	162	148	136	142	112	129	89	189	175	172
13	196	155	162	136	148	136	114	116	98	125	156	1,070
14	175	175	162	155	155	142	114	108	108	130	167	503
15	182	162	162	155	168	136	124	108	108	147	159	154
16	168	136	168	155	168	142	111	120	100	138	169	115
17	175	162	168	142	155	136	124	100	99	126	169	103
18	175	175	182	155	168	136	114	117	97	146	154	102
19	168	162	182	148	148	175	121	122	103	147	179	106
20	162	182	182	155	168	136	105	111	112	124	181	98
21	175	168	182	148	155	142	120	112	111	133	141	98
22	182	168	168	142	136	142	121	109	126	139	152	92
23	196	168	182	142	162	142	114	115	121	147	167	96
24	168	175	196	136	162	129	119	110	126	143	130	96
25	182	168	182	142	136	129	117	112	116	141	75	103
26	196	182	182	129	148	136	116	155	204	139	133	112
27	196	162	182	142	155	148	117	122	139	141	103	132
28	211	168	182	129	175	133	172	111	141	132	142	148
29	175	162	182	122	-------	120	675*	116	142	158	245	90
30	182	129	182	129	-------	130		110	116	148	165	100
31	182	-------	168	129	-------	67	-------	112	-------	147	133	-------

Monthly discharge of San Marcos River at Ottine, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	226	162	191	11,700
November	182	110	160	9,490
December	196	162	174	10,700
January	162	122	145	8,900
February	175	110	146	8,120
March	175	67	138	8,470
April	-------	92	156	9,270
May	248	100	126	7,770
June	204	89	116	6,920
July	189	111	137	8,400
August	245	75	157	9,680
September	1,070	90	174	10,300
The year	1,070	67	152	110,000

PLUM CREEK NEAR LOCKHART, TEX.

LOCATION.—At steel highway bridge on Lockhart-Sea Willow-Tilmon highway, 700 feet below mouth of Dry Creek and 7 miles southeast of Lockhart, Caldwell County.

DRAINAGE AREA.—184 square miles (measured on topographic maps and base map of Texas).

RECORDS AVAILABLE.—January 13 to September 30, 1925.

GAGE.—Inclined and vertical staff on right bank at upstream side of bridge; read by Otto Anton.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed of sand and clay; shifts. Channel straight for 200 feet above and 250 feet below bridge. Banks of earth; heavily wooded; subject to overflow. Before bankful stage is reached at bridge banks are overflowed above, and the bridge is surrounded with water. Low-water control formed by clay and drift shoal 10 feet below gage; subject to shift. High-stage control indefinite.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 14.30 feet at 2.30 p. m. April 29 (discharge, 1,260 second-feet); no flow July 2 to September 11.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve fairly well defined. Gage read to hundredths twice daily and oftener during floods. Daily discharge determined by applying mean daily gage height to rating table, averaging discharges for intervals of a day on days of considerable fluctuation. Records good.

Discharge measurements of Plum Creek near Lockhart, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 14	0.75	2.4	Apr. 21	0.53	[a] 1.9	Apr. 30	2.64	45.0
Feb. 4	.75	[a] 1.0	Apr. 29	14.18	[b] 1,240	June 25	.33	[a] 1.3
Mar. 7	.75	2.7	Do	13 84	[c] 1,130	Aug. 13		0
Apr. 6	.72	2.18	Do	11.32	[d] 668			

[a] Estimated.
[b] Discharge corrected for changing stage, 1,210 second-feet.
[c] Discharge corrected for changing stage, 1,190 second-feet.
[d] Discharge corrected for changing stage, 763 second-feet.

Daily discharge, in second-feet, of Plum Creek near Lockhart, Tex., for the year ending September 30, 1925

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Sept.
1		2.8	2.8	2.8	52	1.8	0.3	
2		2.8	2.8	2.8	28	1.5		
3		2.8	2.8	2.8	8.3	1.5		
4		2.8	2.8	2.8	4.5	1.5		
5		2.8	2.8	2.7	117	1.4		
6		2.8	2.8	2.5	19	1.2		
7		2.8	2.8	2.6	7.5	1.1		
8		2.8	2.8	2.6	4.5	.9		
9		2.8	2.8	2.5	2.9	.8		
10		2.8	2.8	2.5	2.6	.8		
11		2.8	2.8	2.5	2.4	.7		
12		2.8	2.8	2.4	2.3	.8		137
13	3.0	2.8	2.8	2.3	1.9	.8		260
14	2.9	2.8	2.8	2.2	1.9	.8		18
15	3.0	2.8	2.8	2.1	1.9	.7		5.9

Daily discharge, in second-feet, of Plum Creek near Lockhart, Tex., for the year ending September 30, 1925—Continued

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Sept.
16	3.0	2.8	2.8	2.1	1.7	0.6	-------	2.8
17	3.0	2.8	2.8	2.1	1.6	.8	-------	1.8
18	3.0	2.8	2.8	2.0	1.5	.8	-------	.9
19	3.0	2.8	2.8	2.0	1.5	.8	-------	.6
20	3.0	2.8	2.8	1.9	1.5	.8	-------	.4
21	3.0	2.8	2.8	1.8	1.5	.8	-------	.4
22	3.0	2.8	2.8	1.7	1.5	2.3	-------	.4
23	2.8	2.8	2.8	1.7	1.6	3.9	-------	.4
24	2.8	2.8	2.8	1.7	1.7	2.2	-------	.4
25	2.8	2.8	2.8	1.7	2.0	1.2	-------	21
26	2.8	2.8	2.8	1.7	2.0	.7	-------	2.2
27	2.8	2.8	2.8	1.6	1.9	.6	-------	1.3
28	2.8	2.8	2.8	8.3	1.7	.5	-------	.7
29	2.8	-------	2.8	457	1.7	.4	-------	.5
30	2.8	-------	2.8	64	1.7	.3	-------	5.0
31	2.8	-------	2.8	-------	1.7	-------	-------	-------

NOTE.—No flow July 2 to Sept. 11.

Monthly discharge of Plum Creek near Lockhart, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
January 13-31	3.0	2.8	2.90	109
February	2.8	2.8	2.80	156
March	2.8	2.8	2.80	172
April	457	1.6	19.6	1,170
May	117	1.5	9.15	562
June	3.9	.3	1.1	65.5
July	.3	0	.01	.6
August	0	0	.00	0
September	260	0	15.3	912
The period				3,150

SAN ANTONIO RIVER AT SAN ANTONIO, TEX.

LOCATION.—At South Alamo Street Bridge in San Antonio, Bexar County, 4 miles below San Antonio Springs, the source of normal flow of river, and 1¼ miles above mouth of San Pedro Creek.

DRAINAGE AREA.—Indeterminate.

RECORDS AVAILABLE.—January 26, 1915, to September 30, 1925. Miscellaneous discharge measurements were made from 1895 to 1906.

GAGE.—Gurley graph water-stage recorder on right bank at downstream side of bridge; attended by employees of city of San Antonio.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel is straight for 100 feet below gage and curved above. Bed composed of sand, gravel, and silt. Control formed by gravel bar; shifts.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 4.50 feet at 4 p. m. May 10 (discharge, 641 second-feet); minimum discharge, 5.1 second-feet at 10 a. m. July 12.

1914–1925: Maximum stage recorded, 20.14 feet at 3 a. m. September 10, 1921, determined from floodmarks on gage (discharge, 15,300 second-feet, determined by slope method, using value of 0.035 and 0.050 for "n" in Kutter's formula). Minimum discharge, 5.1 second-feet at 10 a. m. July 12, 1925. City of San Antonio turned flow from well into river in summer of 1925 to keep it from going dry.

DIVERSIONS.—Quantity of water diverted above gage not known but is probably immaterial. Considerable land is irrigated from diversions below gage.

REGULATION.—Operation of water wheels at Guenther flour mills, just above gage, causes sharp fluctuations in stage.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve fairly well defined. Operation of water-stage recorder not satisfactory. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day on days of rapid fluctuations, or as noted in footnote to daily-discharge table. Records good.

The normal flow of San Antonio River comes from springs within city limits, but two tributaries from north furnish considerable run-off at times of heavy precipitation. Changes in mean daily stage during low flow are believed to be due to pumping from deep wells for the city water supply and the use of artesian water for irrigation in areas adjacent to the river, for it is thought that the wells draw from the underground reservoir that feeds river by springs.

Discharge measurements of San Antonio River at San Antonio, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	2.10	122	Dec. 2	2.92	275	Mar. 24	1.77	64.7
Nov. 2	2.06	100	Do	2.68	228	July 24	1.52	25.3
Nov. 21	2.06	97.3	Jan. 28	1.93	81.9			

Daily discharge, in second-feet, of San Antonio River at San Antonio, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	122	101	92	82	76	68	56	55	46	25		55
2	124	96	151	84	77	68	58	54	44	25		55
3	126	100	94	84	73	77	59	52	43	25		37
4	122	100	96	80	73	73	59	54	42	25	30	32
5	120	98	98	83	73	65	55	47	41	26		32
6	119	96	100	84	75	64	61	52	39	27		26
7	119	103	98	83	76	65	56	50	41	26		48
8	121	98	100	83	76	65	55	61	43	21	33	34
9	117	101	96	82	76	67	55	62	45	22	31	24
10	114		95	84	75	67	50	158	36	24	35	30
11	121		94	86	73	67	57	50	40	26	33	30
12	121	95	94	86	73	64		48	40	26	34	29
13	116		84	83	73	65		49	39	30	37	27
14	114		92	83	73	59		50	36	30	37	32
15	112	92	89	86	70	69	51	50	39	38	34	24
16	111	94	89	83	76	72		49	39	29	34	28
17	109	95		82	70	73		47	32	31	37	28
18	111		89	80	72	72	45	50	35	32	40	29
19	111			86	72	67	50	49	35	30	32	30
20	112	93	89	83	70	67	55	52	34	32	38	26
21	109		84	82	70	65	50	50	33	30	40	34
22	111	92	86	83	69	67	49	43	41	26	43	26
23	114	84	89	84	70	70	49	48	33	24	39	21
24	109	84	86	86	70	72	48	46	31	24	41	54
25	108	83	83	80	70	68	54	53	28		44	24
26	106	83		86	69	64	48	48	26		37	
27	112	89		80	69	61	54	48	18		36	
28	109		84	80	69	55	52	40	24	25	43	25
29	108	95		80	-------	58	52	45	26		47	
30	106	94		77	-------	59	54	45	26		61	
31	103	-------	84	82	-------	58	-------	46	-------		38	------

NOTE.—Owing to incomplete record, discharge interpolated Oct. 5; partly estimated Oct. 6, Nov. 9, 15, 17, 22, 29, Dec. 13, 20, 31, Apr. 11, 18, July 6, and Aug. 8. Braced figures show estimated mean discharge for periods included.

Monthly discharge of San Antonio River at San Antonio, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	126	103	114	7,020
November	103	83	93.8	5,580
December	151		91.9	5,650
January	86	77	82.8	5,090
February	77	69	72.4	4,020
March	77	55	66.2	4,070
April	61		52.9	3,150
May	158	40	53.3	3,270
June	46	18	35.8	2,130
July	38	21	26.7	1,640
August	61		36.6	2,250
September	55	21	31.3	1,860
The year	158	18	63.2	45,700

SAN ANTONIO RIVER AT CALAVERAS, TEX.

LOCATION.—One-fourth mile south of San Antonio & Aransas Pass Railway station in Calaveras, Wilson County, and 1 mile below mouth of Calaveras Creek.

DRAINAGE AREA.—1,780 square miles (measured on topographic maps, progressive military maps of United States Army, and base map of Texas).

RECORDS AVAILABLE.—March 12, 1918, to August 31, 1925, when station was discontinued.

GAGE.—Vertical staff on left bank near old brick plant; read by I. M. Smith or R. H. Moore.

DISCHARGE MEASUREMENTS.—Made from highway bridge half a mile above gage or by wading.

CHANNEL AND CONTROL.—Bed of sand and clay; shifts. Channel straight for 150 feet above and below station. Left bank wooded and not subject to overflow; right bank wooded and subject to overflow only at extremely high stages. Old bricks piled into channel form a semipermanent low-water control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 11.97 feet at 8 a. m. December 3 (discharge, 1,600 second-feet); minimum discharge, 48 second-feet August 21 and 22.

1918–1925: Maximum stage recorded, 42.0 feet at 4 a. m. September 11, 1921 (discharge not determined); minimum discharge, 15 second-feet at 8.30 a. m. September 14, 1918.

DIVERSIONS.—Medina Dam and Reservoir, with a storage capacity of 254,000 acre-feet, is on Medina River about 50 miles above its confluence with San Antonio River. Four miles below Medina Dam are diversion works, with a capacity of 850 second-feet. There were probably about 5,000 acres under irrigation in this project in 1922.

REGULATION.—The ordinary flow may be slightly affected by storage and diversions on Medina River.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined between 30 and 1,500 second-feet and extended above by means of $A\sqrt{d}$ method based on measurement made at a discharge of 11,000 second-feet and subject to error. Gage read to hundredths twice daily, but mean of two readings daily may not be true index to discharge, owing to rapid fluctuations. Daily discharge determined by shifting-control method. Records poor.

Discharge measurements of San Antonio River at Calaveras, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 11	2.74	167	Jan. 4	3.00	173	June 22	1.38	65.4
Nov. 19	2.73	183	Mar. 20	2.51	129	July 31	1.00	50.2

Daily discharge, in second-feet, of San Antonio River at Calaveras, Tex., for the period October 1, 1924, to August 31, 1925

Day	Oct.	Nov	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	162	179	198	170	154	138	122	95	89	57	52
2	170	179	251	170	154	138	130	95	89	57	52
3	162	179	1,270	170	146	130	122	95	89	60	67
4	162	179	618	170	146	130	115	95	83	60	95
5	162	179	198	170	146	130	115	95	83	60	62
6	179	179	179	162	138	130	108	89	83	60	62
7	162	179	188	146	122	130	115	83	83	57	62
8	162	179	179	146	138	130	122	89	83	57	64
9	162	179	179	162	138	130	130	95	89	54	62
10	162	179	179	170	146	130	115	101	83	54	60
11	162	188	179	162	146	138	108	1,110	83	57	57
12	162	188	179	162	146	130	101	442	83	83	54
13	162	188	179	162	146	130	101	170	83	72	52
14	162	198	179	162	146	130	101	146	83	72	50
15	162	188	179	162	146	130	101	130	83	64	50
16	162	188	179	162	146	130	101	122	77	60	52
17	162	188	179	162	146	138	101	115	77	77	52
18	162	188	179	154	138	138	101	115	77	77	52
19	162	179	179	154	146	130	101	115	67	67	52
20	162	188	179	154	146	130	95	115	67	62	50
21	162	188	179	154	146	122	95	115	67	60	48
22	170	188	170	154	146	130	95	108	64	64	48
23	179	188	179	154	146	130	89	108	64	89	67
24	188	188	170	154	146	138	89	101	67	83	633
25	179	188	170	154	138	130	89	101	64	64	89
26	179	188	170	154	138	130	89	101	64	62	62
27	179	198	170	154	138	122	89	101	62	60	64
28	179	198	170	154	130	122	89	95	60	62	57
29	179	198	170	154	------	122	89	95	57	57	60
30	179	198	170	154	------	122	95	95	57	54	67
31	179	------	179	154	------	122	------	89	------	50	130

Monthly discharge of San Antonio River at Calaveras, Tex., for the period October 1, 1924, to August 31, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	188	162	168	10,300
November	198	179	186	11,100
December	1,270	170	230	14,100
January	170	146	159	9,770
February	154	122	143	7,950
March	138	122	130	7,990
April	130	89	104	6,170
May	1,110	83	149	9,170
June	89	57	75.3	4,480
July	89	50	63.6	3,910
August	633	48	80.1	4,930
The period				90,000

SAN ANTONIO RIVER NEAR FALLS CITY, TEX.

LOCATION.—At Falls City-Campbellton highway bridge, half a mile above mouth of Scared Dog Creek and 3.4 miles southwest of Falls City, Karnes County.

DRAINAGE AREA.—2,070 square miles (measured on topographic maps, base map of Texas, and progressive military maps of United States Army).

RECORDS AVAILABLE.—April 14 to September 30, 1925.

GAGE.—Stevens continuous water-stage recorder just above bridge on left bank; inspected by Chris Ploch.

DISCHARGE MEASUREMENTS.—Made from highway bridge, by wading, or from bridge below Falls City.

CHANNEL AND CONTROL.—Channel straight for half a mile above and below gage. Bed composed of mud; shifts. Right bank of earth; wooded and subject to overflow at extremely high stages. Left bank of earth; wooded and not subject to overflow. One channel below 23-foot stage and two above. Control for low and intermediate stages is solid-rock ledge half a mile below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage during period from water-stage recorder, 5.08 feet at 4 p. m. July 11 (discharge, 3,290 second-feet); minimum stage, 1.01 feet August 2 (discharge, 48 second-feet).

DIVERSIONS.—Medina Reservoir, having a capacity of 254,000 acre-feet, is located on Medina River about 50 miles above its confluence with San Antonio River.

REGULATION.—Slight regulation by Medina Dam.

ACCURACY.—Stage-discharge relation permanent. Rating curve fairly well defined. Operation of water-stage recorder satisfactory, except for short breaks in record. Daily discharge determined by applying mean daily gage height to rating table. Records fair.

The following discharge measurements were made:

April 22, 1925: Gage height, 1.26 feet; discharge, 117 second-feet.

June 19, 1925: Gage height, 1.16 feet; discharge, 83.6 second-feet.

July 31, 1925: Gage height, 1.04 feet; discharge, 52.4 second-feet.

Daily discharge, in second-feet, of San Antonio River near Falls City, Tex., for the year ending September 30, 1925

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1	-------	129	106	78	51		16	145	166		68	57	84
2	-------	124	109	88	48		17	140	155	98	60	65	81
3	-------	140	114	176	57	215	18	140	150	95	74	60	71
4	-------	140	124	71	62		19	134	140	95	74	60	68
5	-------	134	129	68	81		20	129	140			62	68
6	-------	140	134	65	68	88	21	129	140	88		62	86
7	-------	145	134	65	65		22	129	129	84	74	60	68
8	-------	140	119	65	62		23	129	119	81		57	68
9	-------	134	119	65	62		24	129	119	78		129	68
10	-------	215	119	65	65	215	25	124	114	78			71
11	-------	661	114	674	62		26	129	109	78	62		129
12	-------	992	109	124	62		27	124	109	84	62	166	198
13	-------	680	102	129	62	119	28	124	114	74	60		106
14	155	259	98	74	60	182	29	134	109	71	60		84
15	150	182		74	60	84	30	134	106	71	60	88	303
							31	-------	102	-------	60	150	------

NOTE.—Braced figures show estimated mean discharge for periods indicated. Discharge partly estimated June 18, Aug. 30, Sept. 6, and 13.

Monthly discharge of San Antonio River near Falls City, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April	155	124	134	4,520
May	992	102	201	12,400
June	134	71	99.6	5,930
July	674	60	95.6	5,880
August	----------	48	84.1	5,170
September	----------	68	146	8,670
The period	----------	----------	----------	42,600

SAN ANTONIO RIVER AT GOLIAD, TEX.

LOCATION.—At Galveston, Harrisburg & San Antonio Railway bridge in Goliad, Goliad County, 6½ miles above mouth of Manahuilla Creek.

DRAINAGE AREA.—3,910 square miles (measured on topographic maps, progressive military maps of United States Army, and base map of Texas).

RECORDS AVAILABLE.—June 19, 1924, to September 30, 1925.

GAGE.—Chain gage attached to upstream guardrail of bridge; read by J. T. Lacy.

DISCHARGE MEASUREMENTS.—Made from railway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand; subject to shift. Channel straight for 150 feet above and half a mile below gage. Right bank is covered with heavy growth of brush and light timber and is subject to overflow at medium stages. Left bank is covered with heavy growth of brush and light timber and is not subject to overflow. Control is indefinite and formed by bed and banks of stream and brush along banks.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 11.9 feet at 7.30 a. m. July 13 (discharge, 1,830 second-feet); minimum stage, 3.19 feet August 24 (discharge, 58 second-feet).

1924–1925: Maximum stage recorded, 21.9 feet at 5.05 p. m. June 25, 1924 (discharge, about 5,110 second-feet); minimum stage that of August 24, 1925.

DIVERSIONS.—Medina Reservoir, having storage capacity of 254,000 acre-feet, is located on Medina River about 50 miles above its confluence with San Antonio River. Diversion works 4 miles below Medina Dam have a capacity of 850 second-feet.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined between 90 and 2,000 second-feet and extended below. Gage read to hundredths twice daily. Daily discharge determined by shifting-control method. Records fair.

Discharge measurements of San Antonio River at Goliad, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 20	4.57	212	Feb. 7	4.54	228	June 30	3.56	100
Nov. 21	4.66	209	Apr. 5	4.20	170	Aug. 6	3.65	91.4
Jan. 6	4.83	233	June 18	3.55	94.8			

Daily discharge, in second-feet, of San Antonio River at Goliad, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	216	216	203	230	216	203	178	154	115	93	81	409
2	216	216	203	230	216	203	166	143	115	93	110	306
3	216	203	230	216	216	203	178	133	115	97	673	133
4	216	190	230	216	230	203	166	133	115	172	93	463
5	230	190	954	216	230	203	166	133	110	172	97	259
6	230	203	735	230	230	203	166	133	110	97	93	340
7	230	203	499	230	230	203	166	133	110	89	93	216
8	216	203	259	230	230	203	166	133	110	89	93	154
9	216	216	259	230	230	203	166	133	110	89	89	391
10	203	216	244	230	230	190	166	244	106	89	77	556
11	190	216	230	230	230	203	178	154	106	110	77	230
12	203	216	230	230	216	203	166	908	106	274	77	216
13	203	203	230	230	216	190	166	633	106	1,100	73	216
14	203	203	230	230	216	190	166	735	102	259	69	203
15	216	216	230	230	216	190	154	374	102	178	69	306
16	203	203	230	230	216	190	154	203	97	124	65	203
17	216	203	230	230	216	190	143	178	97	106	65	115
18	216	203	230	230	216	190	133	154	97	102	65	102
19	216	203	230	216	216	190	133	154	106	102	65	85
20	216	203	230	216	216	190	133	154	97	97	65	89
21	216	203	230	216	216	190	133	143	92	97	65	93
22	216	203	230	216	216	190	133	133	89	97	65	85
23	216	203	230	216	216	203	133	133	89	93	62	93
24	216	203	230	216	216	190	133	133	89	85	58	93
25	216	203	230	216	216	190	133	133	89	77	62	110
26	216	203	230	216	216	190	133	133	89	85	190	143
27	216	203	230	216	216	190	133	124	97	97	374	357
28	216	203	230	216	203	190	133	124	110	93	143	115
29	216	203	230	203	------	178	133	124	143	89	102	230
30	216	203	230	216	------	178	143	124	106	81	97	143
31	216	------	230	216	------	178	------	124	------	77	102	------

Monthly discharge of San Antonio River at Goliad, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	230	190	214	13,200
November	216	190	205	12,200
December	954	203	279	17,100
January	230	203	222	13,700
February	230	203	220	12,200
March	203	178	194	11,900
April	178	133	152	9,020
May	908	124	211	13,000
June	143	89	104	6,200
July	1,100	77	145	8,930
August	673	58	113	6,960
September	556	85	215	12,800
The year	1,100	58	190	137,000

SAN PEDRO CREEK AT SAN ANTONIO, TEX.

LOCATION.—At south end of Missouri, Kansas & Texas Railway culvert, 200 feet south of Arsenal Street crossing, 1 mile above mouth of Salsamora and Martinez Creeks, 2 miles below San Pedro Springs, its source, and 2½ miles above confluence with San Antonio River.

DRAINAGE AREA.—Indeterminate.

RECORDS AVAILABLE.—July 20, 1916, to September 30, 1925.

GAGE.—Gurley 7-day water-stage recorder; inspected by engineers of city of San Antonio.

DISCHARGE MEASUREMENTS.—Made by wading or from bridge in vicinity.

CHANNEL AND CONTROL.—Bed and banks composed of smooth concrete; permanent. Low-stage control is a 4 by 4 inch timber bolted across bed of flume. Channel straight above and below station.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 4.8 feet at 1.45 p. m. May 10 (discharge, 680 second-feet, determined from extension of rating curve and subject to error); minimum stage, 0.35 foot for short period October 6–9 (discharge, 0.90 second-foot).

1916–1925: Maximum stage recorded, 8.6 feet at 11.30 p. m. September 9, 1921, when backwater from Alizan Creek existed (discharge not determined); minimum stage, 1.30 feet December 10 and 11, 1918 (discharge, 0.7 second-foot).

DIVERSIONS.—None.

REGULATION.—Flow partly regulated by small dam at swimming pool in San Pedro Park, a few miles above.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined below 200 second-feet and extended above by means of Kutter's formula, with a value for "n" of 0.014 at a 6-foot gage height. Operation of water-stage recorder not satisfactory as shown by breaks in record. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day on days of considerable fluctuation, or as noted in footnote to daily-discharge table. Records good.

Entire flow of San Pedro Creek, except during times of heavy precipitation, is furnished by San Pedro Springs, and flow at this station is believed to be that which reaches San Antonio River. Martinez and Salsamora Creeks carry no water except during heavy local rains and have been known to be dry for several years at a time.

Discharge measurements of San Pedro Creek at San Antonio, Tex, during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	0.39	1.94	Mar. 24	0.52	7.13
Jan. 24	.57	8.20	July 24	.38	2.50

Daily discharge, in second-feet, of San Pedro Creek at San Antonio, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.6	6.5	9.0	6.5	7.5	6.5	6.0	7.0		5.2	7.0	21
2	7.5	7.5	62	7.5	7.5	6.5	6.5	7.5		6.0	18	9.0
3	7.0	7.5	9.6	7.5	7.5	6.5	7.0	10	6.5	5.2	6.0	9.0
4	4.4	7.5	8.5		7.5	5.6	7.0	8.5		7.5	5.2	9.0
5	4.4	7.5	7.5		11	5.2	6.5	5.6		6.2	5.6	8.0
6	4.0	8.0	6.5		10	6.0	6.5	5.6	6.0	4.8	6.5	9.0
7	4.0	10	6.5		8.5	6.0	6.5	5.2	8.0	6.0	5.6	17
8	4.0	9.0	6.5			6.0	6.5	6.5	5.6	6.5	5.2	8.5
9	4.0	11	6.5			6.0	10	5.6	7.5	7.5	6.5	8.5
10	4.0	9.6	6.0			6.0	6.5	54	7.0	7.5	4.8	10
11	4.8	9.0	6.0		8.5	6.0	6.0		7.0	5.6	9.6	8.0
12	4.8	8.0	6.0			6.0	5.6		7.0	7.0	17	7.5
13	4.8	8.5	6.0			6.5	6.5		6.0	4.8	22	10
14	4.8	9.0	6.0	7.5		7.0	7.0		5.5	4.0	9.6	8.5
15	4.8	9.0	11		8.5	7.5	7.0		4.8	11	4.0	7.0
16	4.8	8.0	9.0		7.5	7.5	8.5	7.2	5.6	7.5	5.6	7.5
17	8.5	8.0	8.5		6.5	7.5	9.0		6.5	6.0	5.6	8.5
18	5.2	8.0	8.5		9.6	7.5	5.6		7.5	4.4	4.4	7.0
19	5.6	8.0	8.0		7.0	7.0	6.0		5.2	6.5	5.6	8.0
20		8.5	7.5		7.0	7.0	6.5		4.0	5.6	8.0	9.6
21	6.0	8.5	7.5		6.0	7.5		7.0	5.6	5.6	8.0	8.5
22		8.5	7.5		8.5	7.5	7.5	4.8	5.6	6.5	10	8.0
23		8.5	7.5		8.0	7.0		4.4	4.8	6.5	17	8.5
24		9.0	7.5	7.5	7.0	7.0		5.6	6.0	6.0	8.0	20
25	6.5	9.6	7.5	7.0	7.0	6.5	8.5	6.5	7.0	6.0	7.0	8.5
26	7.5	9.6	7.5	7.0	6.5	7.0	8.0	6.5	7.0		9.6	8.5
27	7.5	9.6	7.5	7.5	6.5	6.5	7.5	6.5	4.0	6.0	11	9.0
28	7.0	9.0	7.5	7.5	6.5	6.5	8.0		5.6		6.0	8.5
29	7.0	9.0	8.0	7.5	-------	6.5	7.5		4.4		8.0	8.0
30	7.0	9.0	8.0	7.5	-------	10	13	6.5	4.4	5.6	11	8.0
31	6.5	-------	6.5	7.5	-------	7.5	-------		-------	4.8	7.5	-------

NOTE.—Braced figures show estimated mean discharge for periods included. Discharge estimated or partly estimated Oct. 6, 19–25, Dec. 2, Jan. 4–23, Feb. 8–13, Mar. 6, Apr. 21–25, May 11–20, 28–31, June 1–5, 11–15, July 6, 24–30, Aug. 19–22, Sept. 2–5, 24, and 25. Discharge interpolated July 5.

Monthly discharge of San Pedro Creek at San Antonio, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	9.6	4.0	5.81	357
November	11	6.5	8.61	513
December	62	6.0	9.28	570
January	-------	-------	7.44	457
February	11	6.0	7.90	439
March	10	5.2	6.75	415
April	13	5.6	7.31	435
May	54	4.4	8.22	505
June	8.0	4.0	6.00	357
July	11	4.0	6.12	376
August	22	4.0	8.54	525
September	21	7.0	9.54	567
The year	62	4.0	7.62	5,520

MEDINA RIVER NEAR PIPE CREEK, TEX.

LOCATION.—3 miles above backwater from Medina Dam, 3½ miles above mouth of Pipe Creek, and 4 miles southwest of Pipe Creek post office, Bandera County.

DRAINAGE AREA.—412 square miles (measured on progressive military maps of United States Army).

RECORDS AVAILABLE.—December 6, 1922, to September 30, 1925.

GAGE.—Stevens 8-day water-stage recorder on left bank; inspected by R. E. Buck.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed consists of rock and gravel and some moss. Channel is straight for 1,000 feet above and below gage. Right bank rocky, thickly wooded with small trees and brush, and does not overflow; left bank of sand, gravel, and rock, sparsely covered with small trees, and begins to overflow at a stage of 9 feet. Low-water control, up to a stage of about 1.2 feet, consists of a concrete weir, 100 feet below gage. Weir is about 1.5 feet high for a width of 95 feet with abutments 4 feet higher than crest. A rock riffle 600 feet below gage serves as control for medium stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 12.42 feet at 10 p. m. May 28 (discharge, 8,640 second-feet, determined from extension of rating curve and subject to considerable error); minimum stage, 0.56 foot August 29 (discharge, 2.7 second-feet, determined from extension of rating curve and subject to error).

1922–1925: Maximum stage recorded, 15.36 feet at 1 p. m. April 25, 1923 (discharge not determined); minimum stage that of August 29, 1925.

DIVERSIONS.—None above. Medina dam and reservoir, with storage capacity of 254,000 acre-feet, is below. Diversion works have a capacity of 850 second-feet, but only a small percentage of this capacity was used 1923–1925.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve well defined below 300 second-feet and extended to 1,500 second-feet by means of formula $Q = C\ L\ h\ 3/2$, using coefficient for C derived from meter measurements at station and extended to 6,100 second-feet through three float measurements. Operation of water-stage recorder satisfactory. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day on days of considerable fluctuation. Records for low stages good and for high stages poor.

Discharge measurements of Medina River near Pipe Creek, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 31	0.70	18.8	Mar. 25	0.69	17.1	May 7	0.68	11.7
Do	.70	18.1	Do	.69	20.3	June 5	.67	13.4
Jan. 29	.72	23.3	Do	.69	20.0	July 25	.60	4.72

Daily discharge, in second-feet, of Medina River near Pipe Creek, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	17	19	25	23	22	17	33	22	9.1	3.3	3.3
2	25	17	20	25	22	22	17	25	19	8.2	3.6	3.0
3	23	16	20	23	22	22	17	22	17	8.2	3.3	3.3
4	23	16	22	23	22	20	17	19	16	7.3	3.6	3.3
5	23	17	22	23	22	22	16	17	14	7.3	3.3	3.3
6	23	16	23	22	22	22	16	15	12	7.3	3.3	3.6
7	22	17	23	22	22	22	16	13	11	7.3	3.0	3.6
8	22	17	22	22	20	20	17	11	11	6.4	3.3	5.4
9	23	17	20	23	20	20	17	76	12	6.4	3.3	5.4
10	25	17	22	23	20	20	17	194	11	5.4	4.5	6.4
11	25	17	20	23	20	20	17	114	10	4.5	4.5	7.3
12	25	17	22	25	20	20	16	37	10	102	4.5	7.3
13	23	17	20	26	20	20	14	28	9.1	60	5.4	7.3
14	22	17	20	28	20	20	14	25	9.1	23	4.5	6.4
15	20	17	20	25	20	19	16	22	8.2	17	4.5	6.4
16	20	17	22	23	20	19	16	17	7.3	13	4.5	4.5
17	20	16	22	23	20	20	16	17	6.4	11	4.5	4.5
18	20	16	22	25	20	22	14	16	7.3	10	4.5	4.5
19	19	14	22	25	20	22	13	14	7.3	10	4.5	4.5
20	19	14	23	25	20	20	13	13	20	10	3.6	5.4
21	19	16	22	25	20	20	13	12	28	9.1	3.3	6.4
22	17	14	20	26	17	20	13	12	12	9.1	3.3	6.4
23	19	14	19	25	17	20	13	10	10	9.1	3.6	7.3
34	19	14	20	23	19	20	14	9.1	11	7.3	3.6	66
25	17	14	19	23	19	19	13	9.1	11	5.4	3.6	54
26	17	16	20	22	20	20	13	8.2	11	5.4	3.6	25
27	17	16	20	20	22	19	14	9.1	11	6.4	3.3	13
28	17	16	20	22	22	19	17	747	10	5.4	3.0	14
29	17	17	20	23	-------	19	92	492	9.1	5.4	2.7	13
30	17	17	20	23	-------	19	48	41	9.1	4.5	3.0	12
31	17	-------	22	23	-------	17	-------	26	-------	3.6	3.0	-------

NOTE.—No record and discharge interpolated May 3–7 and June 25–26.

Monthly discharge of Medina River near Pipe Creek, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	25	17	20.6	1,270
November	17	14	16.1	958
December	23	19	20.9	1,280
January	28	20	23.7	1,460
February	23	17	20.4	1,130
March	22	17	20.2	1,240
April	92	13	18.9	1,120
May	747	8.2	67.9	4,170
June	28	6.4	12.1	718
July	102	3.6	13.0	802
August	5.4	2.7	3.73	229
September	66	3.0	10.5	626
The year	747	2.7	20.7	15,000

MEDINA RIVER NEAR RIOMEDINA, TEX.

LOCATION.—Just above Medina Valley Irrigation Co.'s diversion dam, 1 mile above Haby crossing, 4 miles below company's main dam, and 6 miles northwest of Riomedina, Medina County.

DRAINAGE AREA.—606 square miles (measured on progressive military maps of United States Army).

RECORDS AVAILABLE.—January 21, 1922, to September 30, 1925.

GAGE.—Gurley graph water-stage recorder attached to right upstream side of diversion dam; inspected by J. B. Milam.

DISCHARGE MEASUREMENTS.—Made from cable 2,000 feet below gage or by wading near Haby crossing, 1 mile below gage.

CHANNEL AND CONTROL.—Channel composed of rock and gravel; permanent. Banks composed of rock and earth and not subject to overflow. Control consists of concrete spillway dam; permanent. Point of zero flow over dam is 0.60 foot

EXTREMES OF DISCHARGE.—No flow over dam during year.

1922–1925: Maximum stage recorded, 1.70 feet at 2 a. m. April 26, 1924 (discharge not determined); no flow over dam for several periods.

DIVERSIONS.—Water is diverted to Medina Canal just above gage. About 5,000 acres irrigated in 1925. Maximum capacity of canal, 850 second-feet. See "Medina Canal near Riomedina."

REGULATION.—Flow regulated by main storage dam, 4 miles upstream, except when main reservoir is full and water flows over spillway.

ACCURACY.—Stage-discharge relation permanent. No flow over dam during year. Seepage flow past dam determined by taking mean monthly stage above dam and comparing this with measurements made during year. Records of seepage fair.

COOPERATION. Medina Valley Irrigation Co. furnishes daily gage readings of lake level which are used to determine the monthly seepage.

Discharge measurements of Medina River near Riomedina, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 1	−1.65	28.9	Jan. 28	−3.7	21.4	June 25	−2.0	26.3
Dec. 3	−.6	24.7	Mar. 26	−2.86	24.3			
Dec. 9	−.6	24.4	May 26	−3.9	19.6			

NOTE.—No flow over dam and measured discharge represents seepage in flow between dam and measuring section.

Monthly seepage past station on Medina River near Riomedina, Tex., measured at Haby crossing, 1 mile below dam, for the year ending September 30, 1925

Month	Mean discharge in second-feet	Run-off in acre-feet	Month	Mean discharge in second-feet	Run-off in acre-feet
October	26.0	1,600	May	26.0	1,600
November	27.0	1,610	June	26.0	1,550
December	23.0	1,410	July	27.0	1,660
January	20.0	1,230	August	22.0	1,350
February	22.0	1,220	September	16.0	952
March	20.0	1,230			
April	25.0	1,490	The year		16,900

MEDINA RIVER SEEPAGE INVESTIGATION

During these measurements the river was at a constant stage.

Discharge measurements to determine seepage on Medina River from a point 5.3 miles northwest of Lima, Tex., to a point 4 miles southwest of Pipe Creek, Tex., in June, 1925

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet				
				Main stream	Tributary	Diversion	Gain or loss in section	Total gain or loss
June 3	Medina River	5.3 miles northwest of Lima.	0	1.0				
3	do	3.5 miles northwest of Lima.	2.0	3.4			+2.4	+2.4
3	Onion Creek	3.4 miles northwest of Lima.	2.1		1.0			
3	Medina River	1.4 miles northwest of Lima.	4.5	6.4			+2.0	+4.4
3	Brewington Creek	0.8 mile northeast of Lima.	6.3		.2			
3	Medina River	3.4 miles southeast of Lima.	11.1	4.6			−2.0	+2.4
3	Chalk Creek	4.9 miles east of Lima	12.8		.2			
3	Medina River	5.0 miles southeast of Lima.	12.9	3.6			−1.2	+1.2
3	do	1 mile northwest of Medina.	16.1	8.4			+4.8	+6.0
3	South Prong of Medina River.	Medina	17.7		1.5			
3	Medina River	3.3 miles southeast of Medina.	22.8	10.5			+.6	+6.6
4	do	do	22.8	10.1				
4	Weinan Creek	5.5 miles northwest of Bandera.	25.6		.2			
4	Medina River	4.7 miles northwest of Bandera.	25.9	12.0			+1.7	+8.3
4	Medina River	Bandera	34.2	10.9			−1.1	+7.2
4	Myrtle Creek	1.4 miles northeast of Bandera.	36.2		.1			
4	Medina River	4.1 miles southeast of Bandera.	38.6	10.5			−.5	+6.7
5	Cold Springs	3 miles southwest of Pipe Creek post office.	41.7		5.0			
5	Medina River	do	41.8	13.4			−2.1	+4.6
5	do	4.2 miles southwest of Pipe Creek post office.	43.8	11.4			−2.0	+2.6

Discharge measurements to determine seepage on Medina River from Medina Valley Irrigation Co.'s diversion dam[a] to Losoya, near mouth of river, in May, 1925

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet				
				Main stream	Tributary	Diversion	Gain or loss in section	Total gain or loss
May 26	Medina River	Below diversion dam	0	15.5				
26	do	Haby crossing	.8	19.6			+4.1	+4.1
26	do	Yellow Bank School crossing.	4.8	22.0			+2.4	+6.5
26	do	Near Riomedina	7.6	24.8			+2.8	+9.3
26	Windmills		10.2 to 12.1			0.5		
26	Medina River	Below dam at Castroville.	17.2	17.2			−7.1	+2.2
27	do	do	17.2	18.0				
27	do	3 miles below Castroville.	19.5	20.7			+2.7	+4.9
27	Rice Irrigation Canal.	Near Lacoste	23.3			.8		
27	John Biebert Canal.		26.2			1.2		
27	Medina River	One-half mile north of Idylwild.	26.3	14.6			−4.1	+.8
27	do	At Cagnon road 5¼ miles northwest of Von Ormy.	31.8	9.2			−5.4	−4.6
28	do	do	31.8	8.8				
28	do	1½ miles northwest of Von Ormy, highway No. 2.	37.1	10.2			+1.4	−3.2
28	Medina River	1¾ miles southeast of Von Ormy.	41.8	11.7			+1.5	−1.7
28	do	4 miles southeast of Von Ormy.	45.2	9.2			−2.5	−4.2
28	do	3½ miles southwest of Earle.	47.3	11.0			+1.8	−2.4
28	Leon Creek	At mouth near Earle	51.1		1.4			
28	Medina River	Highway No. 9, Earle	51.3	10.0			−2.4	−4.8
28	Seepage from Mitchell Lake.		51.1 to 53.4		3.5			
28	Medina River	Losoya	55.1	14.7			+1.2	−3.6

[a] The dam is 63.8 miles below initial measurement for seepage investigation above the dam.

Discharge measurements to determine seepage on Medina River from spillway draw at main dam to Riomedina crossing, Tex., in December, 1924

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet				
				Main stream	Tributary	Diversion	Gain or loss in section	Total gain or loss
Dec. 9	Medina River	One-half mile below dam.	0	20.6				
9	do	Below diversion dam 150 feet below dam.	3.3	22.1			+1.5	+1.5
9	do	Haby crossing	4.1	24.4			+2.3	+3.8
9	do	Yellow Bank school	8.1	25.9			+1.5	+5.3
9	do	Riomedina crossing	10.9	27.2			+1.3	+6.6

NOTE.—Columns headed "Gain or loss in section" and "Total gain or loss" show values computed from discharge of main stream, tributaries, and diversions.

MEDINA CANAL NEAR RIOMEDINA, TEX.

LOCATION.—Just above upper end of flume No. 1 on Medina Valley Irrigation Co.'s main canal, one-third mile below head of canal and 6 miles northwest of Riomedina, Medina County.

RECORDS AVAILABLE.—March 30, 1922, to September 30, 1925. Station maintained during irrigation seasons of 1920 and 1921 by United States Department of Agriculture in cooperation with Texas Board of Water Engineers for seepage studies.

GAGE.—Gurley graph water-stage recorder with inside and outside staff gages; inspected by J. B. Milam.

DISCHARGE MEASUREMENTS.—Made by wading or from foot plank just above gage.

CHANNEL AND CONTROL.—Metal flume and concrete-lined canal; permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 2.03 feet June 5 and 6 (discharge, 128 second-feet); no flow December 3–9, January 11, 12, and August 17 to September 30.

1922–1925: Maximum discharge recorded, 128 second-feet June 26, 1923, and June 5 and 6, 1925. No flow for several periods.

DIVERSIONS.—Above all diversions from canal.

REGULATION.—Flow controlled by head gates. Canal ordinarily carries a small flow during nonirrigation season for domestic and stock water uses.

ACCURACY.—Stage-discharge relation permanent. Rating curve fairly well defined. Operation of water-stage recorder satisfactory. Daily discharge determined by applying to rating table mean daily gage height determined from recorder graph by inspection or by use of planimeter, averaging discharge for intervals of a day on days of considerable fluctuation. Records good.

Canal diverts from right bank of Medina River. Water used for irrigation near Lacoste and Natalia.

Discharge measurements of Medina Canal near Riomedina, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 1	0.62	13.3	June 25	1.92	123	July 1	1.98	113
Jan. 28	.83	24.6	July 1	1.28	49.8	July 27	1.94	109
Mar. 26	1.38	64.4	Do	1.68	83.1			

Daily discharge, in second-feet, of Medina Canal near Riomedina, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	22	16	41	15	29	59	48	48	116	103	97
2	30	16	32	16	28	64	51	44	116	110	88
3	32	16		16	29	64	59	48	116	98	77
4	31	16		16	31	73	59	55	122	110	62
5	31	12		15	35	78	64	59	128	110	59
6	31	.9		15	38	88	64	64	128	104	59
7	31	1.1		15	38	94	59	59	122	104	59
8	31	13		14	35	94	48	48	116	104	59
9	31	17		15	35	94	44	13	116	104	68
10	31	15	12	4.0	35	94	44	8.4	116	104	89
11	31	3.1	17		35	94	44	10	116	104	104
12	31	.6	17		35	99	59	16	110	102	110
13	31	2.6	23	19	35	99	68	23	110	89	111
14	31	25	21	29	35	99	78	32	116	68	112
15	30	29	20	28	35	99	88	32	116	59	108
16	30	29	11	28	35	88	94	32	116	43	39
17	30	30	10	28	32	83	99	32	122	43	
18	31	30	11	25	30	94	99	32	122	46	
19	32	30	11	22	30	94	94	32	122	56	
20	32	29	10	23	27	94	99	38	122	60	

Daily discharge, in second-feet, of Medina Canal near Riomedina, Tex., for the year ending September 30, 1925—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
21	32	29	10	22	27	88	104	44	122	78	----
22	32	29	10	21	27	78	104	55	122	83	----
23	32	28	8.4	22	30	73	104	78	122	88	----
24	32	28	7.0	21	41	68	99	94	122	95	----
25	32	28	8.2	21	51	59	99	99	116	95	----
26	31	21	13	23	48	55	99	104	116	96	----
27	30	8.9	9.7	25	35	55	78	110	110	104	----
28	30	11	9.5	26	44	55	64	104	110	95	----
29	28	41	9.5	30	----	55	73	110	110	95	----
30	17	51	9.2	31	----	55	51	122	116	97	----
31	17	----	12	31	----	51	----	122	----	97	----

NOTE.—No flow for periods for which no discharge is published.

Monthly discharge of Medina Canal near Riomedina, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	32	17	29.8	1,830
November	51	.6	20.2	1,200
December (24 days)	41	7.0	14.3	679
January (29 days)	31	4.0	21.2	1,220
February	51	27	34.5	1,910
March	99	51	78.6	4,830
April	104	44	74.6	4,440
May	122	8.4	57.0	3,510
June	128	110	118	7,010
July	110	43	88.5	5,440
August (16 days)	112	39	81.3	2,580
The year				34,600

CIBOLO CREEK AT SUTHERLAND SPRINGS, TEX.

LOCATION.—At highway bridge in Sutherland Springs, Wilson County, 5½ miles below mouth of Elm Creek.

DRAINAGE AREA.—665 square miles (measured on topographic maps, progressive military maps of United States Army, and base map of Texas).

RECORDS AVAILABLE.—June 22, 1924, to September 30, 1925.

GAGE.—Vertical staff on right bank at upstream side of highway bridge; read by J. S. Lane.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for 500 feet above and below gage. Bed composed of sandy clay; shifts. Banks are covered with heavy growth of brush and small timber; fairly permanent. Left bank not subject to overflow; right bank subject to overflow at a stage of about 39 feet at which time gage can not be reached from right bank. Control is rock shoal, a quarter of a mile below gage; shifts.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.56 feet at 5.30 p. m. December 2 (discharge, 32 second-feet); minimum discharge, 7.7 second-feet September 13.

1924–25: Maximum stage recorded, 8.48 feet at 10.20 a. m. June 23, 1924 (discharge, 1,700 second-feet); minimum discharge, 7.4 second-feet September 20, 1924.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curve fairly well defined. Gage read to hundredths twice daily. Daily discharge determined by shifting-control method. Records good.

Discharge measurements of Cibolo Creek at Sutherland Springs, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 18	2.36	21.2	June 2	2.14	11.7
Jan. 4	2.33	16.4	July 30	2.12	10.5
Mar. 19	2.28	15.0			

Daily discharge, in second-feet, of Cibolo Creek at Sutherland Springs, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.6	19	23	16	18	13	13	21	12	10	12	11
2	11	18	29	16	18	14	13	22	12	12	12	11
3	11	18	20	16	19	13	13	22	12	10	15	10
4	12	18	19	16	18	14	13	22	12	10	15	10
5	13	19	16	15	18	14	13	22	12	11	15	9.6
6	15	20	16	15	18	14	13	21	12	10	14	10
7	16	20	17	15	19	14	13	21	12	10	13	11
8	17	20	16	16	19	14	13	20	12	10	14	12
9	15	20	16	16	19	14	13	18	12	12	14	11
10	16	20	15	16	20	14	12	15	12	12	14	10
11	12	20	15	16	20	15	12	12	12	13	13	10
12	8.8	20	15	16	20	15	13	12	12	15	13	11
13	7.7	20	15	16	20	15	14	12	12	15	13	12
14	8.1	21	15	15	20	15	13	12	12	15	13	10
15	8.1	21	16	15	20	14	13	12	12	14	13	9.6
16	8.4	20	16	16	20	15	17	11	12	15	13	9.6
17	8.4	20	16	16	18	15	18	11	12	15	14	9.2
18	8.1	20	17	16	18	15	18	11	12	15	13	9.2
19	12	20	16	16	18	15	18	12	12	15	14	9.2
20	12	21	16	15	18	14	20	12	13	15	13	9.2
21	13	20	16	15	16	12	20	11	14	15	13	9.2
22	13	21	15	15	17	13	20	11	13	14	12	9.2
23	13	21	16	16	17	13	20	11	12	14	12	9.2
24	14	20	16	16	16	12	20	12	12	14	17	10
25	14	20	16	16	16	12	20	12	12	14	15	10
26	15	22	16	16	15	12	20	12	12	14	13	10
27	15	22	16	16	12	12	20	12	12	14	10	10
28	15	23	16	18	12	12	20	12	12	15	9.6	10
29	16	24	16	18	-------	13	20	12	11	15	11	10
30	16	23	16	18	-------	13	21	12	11	13	10	10
31	17	-----	16	18	-------	13	-------	12	-------	12	10	------

Monthly discharge of Cibolo Creek at Sutherland Springs, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	17	7.7	12.6	774
November	24	18	20.4	1,210
December	29	15	16.7	1,030
January	18	15	16.0	984
February	20	12	17.8	990
March	15	12	13.6	839
April	21	12	16.2	964
May	22	11	14.5	893
June	14	11	12.1	718
July	15	10	13.2	809
August	17	9.6	13.0	799
September	12	9.2	10.1	599
The year	29	7.7	14.7	10,600

NUECES RIVER BASIN

NUECES RIVER AT LAGUNA, TEX.

LOCATION.—1 mile northwest of Laguna, Uvalde County, 2.6 miles above Laguna-Uvalde road crossing, and 7½ miles below mouth of Montell Creek.

DRAINAGE AREA.—764 square miles (measured on topographic maps, base map of Texas, and progressive military maps of United States Army.

RECORDS AVAILABLE.—October 25, 1923, to September 30, 1925.

GAGE.—Stevens water-stage recorder on right bank; inspected by J. W. Bones. Prior to January 25, 1925, combined vertical and inclined staff on right bank, 2 miles downstream; read by Lilly Secrest.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Channel straight for 500 feet above and 2,400 feet below gage. Bed composed of rock; permanent. Right bank of rock, clean, permanent, and not subject to overflow; left bank of rock, gravel, and earth, covered with trees and brush, 1,000 feet of it subject to overflow at extremely high stages. Control is rock and gravel shoal 800 feet below gage; fairly permanent. Prior to January 25, 1925, at extremely low stages large part of flow probably went through gravel bar on left bank.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 12.0 feet at 1 a. m. May 30 (discharge, 15,600 second-feet); minimum stage, 0.43 foot October 1–3 (discharge, 12 second-feet).

1924–1925: Maximum stage that of May 30, 1925; minimum discharge, 8.9 second-feet September 9–11, 1924.

By levels to distinct drift line, the flood of September 21, 1923, reached a stage of 23.23 feet. The flood of 1913 reached about the same stage. Floods in 1903 reached a slightly higher stage.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation probably permanent. Rating curves fairly well defined. Gage read to hundredths twice daily prior to January 25 and operation of water-stage recorder satisfactory thereafter, except as shown by breaks in record. Daily discharge determined by applying mean daily gage height to rating table. Prior to January 25, it is believed that part of low-water flow passed through large gravel bar at station and was not measured. Records prior to January 26, fair; good, thereafter.

Discharge measurements of Nueces River at Laguna, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	[a] 0.43	11.4	Apr. 30	1.88	35.3
Jan. 26	1.94	34.6	Sept. 9	1.78	21.0
Jan. 26	[a] .55	30.9			

[a] Measurement made at old station, 2 miles downstream from present site.

Daily discharge, in second-feet, of Nueces River at Laguna, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	17	21	26	41	43	35	32	986		46	26
2	12	18	28	26	41	42	34	31	729		58	25
3	12	18	23	28	41	42	34	30	567		63	25
4	13	18	23	28	42	42	34	30	470		46	24
5	13	18	23	28	42	42	34	28	392		43	23
6	13	18	23	28	41	42	34	27	342		41	23
7	14	18	23	29	41	42	34	27	310		41	23
8	14	18	23	29	41	42	34	32			41	23
9	14	18	23	29	41	42	33	30	250		42	23
10	14	18	23	29	41	42	33	30			42	23
11	14	18	23	29	42	41	32	28			39	23
12	13	20	23	29	42	41	32	26	216		39	23
13	13	20	23	29	42	41	45	24	208		38	23
14	13	18	23	29	42	41	33	24	191	90	38	24
15	13	18	23	31	42	41	32	23	179		36	25
16	14	18	24	29	42	41	31	23	167		35	24
17	14	18	26	29	42	41	30	23	160		35	25
18	14	20	23	29	42	41	30	23	152		35	36
19	15	18	23	29	42	41	28	23			34	35
20	14	18	23	29	42	41	28	23			33	36
21	15	18	23	31	42	39	27	22			33	39
22	15	18	24	29	42	39	27	22			33	41
23	18	18	24	31	43	39	28	22			32	41
24	17	18	24	31	43	38	30	22			31	78
25	17	18	24	31	43	38	31	22	90		30	101
26	17	18	24	42	43	36	31	22			28	98
27	17	18	24	42	43	38	33	22		42	28	92
28	17	20	26	42	43	36	31	4,520		42	27	89
29	17	20	26	42	------	36	32	7,850		41	26	84
30	18	20	26	41	------	36	33	5,240		39	25	81
31	17	------	28	41	------	35	------	1,670	------	39	26	------

NOTE.—Braced figures show estimated mean discharge for periods included. Discharge partly estimated June 7 and July 27.

Monthly discharge of Nueces River at Laguna, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	18	12	14.6	899
November	20	17	18.4	1,090
December	28	21	23.9	1,470
January	42	26	31.5	1,930
February	43	41	41.9	2,330
March	43	35	40.0	2,460
April	45	27	32.1	1,910
May	7,850	22	641	39,400
June	986	------	238	14,200
July	------	------	79.1	4,860
August	63	25	36.9	2,270
September	101	23	41.9	2,490
The year	7,850	12	104	75,300

NUECES RIVER NEAR CINONIA, TEX.

LOCATION.—Just below suspension bridge near Oswald ranch, 2 miles east of Cinonia, Zavalla County, and 8 miles northeast of Crystal City.

DRAINAGE AREA.—2,150 square miles (measured on topographic maps, progressive military maps of United States Army, and base map of Texas).

RECORDS AVAILABLE.—July 5, 1915, to September 30, 1925, when station was discontinued.

GAGE.—Vertical staff on right bank, 200 feet below highway bridge; read by J. W. Lowe or R. Johnson.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed of clay and gravel. Banks wooded; subject to overflow at extremely high stages. Channel straight above and below station. An artificial concrete control was completed at site of gage on September 23, 1917; point of zero flow, 0.85 foot.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year by leveling to floodmarks about 50 feet 2 to 9 a. m. May 31 (discharge not determined); minimum stage, 1.14 feet May 28 (discharge, 2.2 second-feet).

1915–1925: Maximum stage recorded that of May 31, 1925. No flow during several periods of record.

According to local residents, the greatest flood on record occurred in 1913, when river reached a stage of about 53.2 feet by present gage datum.

DIVERSIONS.—Considerable water diverted above station for irrigation; amount not known.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 700 second-feet and extended above. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records good.

Backwater from a dam 40 feet high, about 20 miles below station, extends within 2 miles of station when reservoir is full. A large part of flow of river is known to seep into bed near Uvalde and return to surface just above station. The condition of the underground water may have an effect on this return water and thus help to equalize flow.

The following discharge measurements were made:

February 24, 1925: Gage height, 1.42 feet; discharge, 11.3 second-feet.

June 11, 1925: Gage height, 4.13 feet; discharge, 182 second-feet.

Daily discharge, in second-feet, of Nueces River near Cinonia, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.9	9.7	10	13	12	12	11	6.0	-------	36	21	15
2	8.9	9.3	11	12	12	11	10	6.0	-------	32	19	15
3	8.9	8.9	17	11	11	10	11	6.0	-------	30	19	13
4	8.9	8.9	18	11	11	11	10	5.3	706	28	19	13
5	8.9	8.9	11	11	10	11	10	5.3	429	28	18	12
6	18	8.9	8.9	10	10	11	10	5.3	330	28	18	12
7	15	8.5	8.9	10	11	11	9.7	5.3	304	27	17	12
8	13	8.1	10	10	11	11	10	6.6	280	26	16	12
9	12	8.1	12	10	12	11	10	6.0	248	25	16	13
10	10	9.7	9.7	10	11	10	10	6.6	201	25	16	13
11	10	10	8.5	11	9.7	9.7	10	6.6	166	25	18	14
12	10	10	7.4	12	9.7	9.3	9.7	7.4	145	28	14	38
13	9.7	10	7.4	12	10	11	11	7.0	124	30	13	38
14	9.7	9.7	8.9	12	10	10	9.3	5.6	112	29	12	15
15	8.9	9.7	9.7	11	11	11	8.9	4.7	106	27	10	14
16	8.9	9.7	10	10	11	11	8.1	4.7	100	25	11	14
17	8.5	9.7	12	11	11	11	7.4	4.7	94	23	12	13
18	8.1	9.7	10	12	10	11	7.4	4.1	82	22	13	12
19	8.9	8.9	9.3	12	9.7	12	7.0	4.1	76	21	13	12
20	8.9	8.9	7.7	12	9.7	11	6.6	3.5	70	21	14	12
21	8.9	8.9	7.4	11	9.7	12	6.6	3.5	67	21	14	13
22	8.9	8.9	10	12	11	13	6.0	3.3	61	20	13	13
23	8.9	8.1	10	12	11	14	6.0	3.1	56	19	12	12
24	8.9	8.1	11	12	11	17	6.0	2.6	53	19	12	12
25	9.7	7.4	11	11	10	14	5.3	2.6	50	19	13	17
26	10	7.4	11	12	10	12	5.3	2.6	48	19	12	17
27	10	6.6	11	11	10	12	5.3	2.4	46	18	12	14
28	9.7	6.3	11	12	10	10	6.0	2.2	43	17	11	14
29	9.7	6.0	11	11	-------	10	6.0	-------	40	16	11	14
30	9.7	6.0	12	11	-------	10	6.0	-------	38	16	12	18
31	9.7	-------	12	11	-------	10	-------	-------	-------	15	11	------

NOTE.—Partly estimated gage heights, in feet, for days when stage was beyond limits of rating curve and discharge not determined, as follows: May 29, 12.0; May 30, 34.0; May 31, 49.0; June 1, 42.2; June 2, 26.0; and June 3, 14.5.

Monthly discharge of Nueces River near Cinonia, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	18	8.1	9.94	611
November	10	6.0	8.63	514
December	18	7.4	10.5	644
January	13	10	11.3	692
February	12	9.7	10.6	586
March	17	9.3	11.3	694
April	11	5.3	8.19	487
May 1–28		2.2	4.75	264
June 4–30		38	151	8,080
July	36	15	23.7	1,460
August	21	10	14.3	877
September	38	12	15.2	904

NUECES RIVER AT COTULLA, TEX.

LOCATION.—100 feet above Farmer Dam, half a mile below International-Great Northern Railroad bridge, 1.9 miles, by road, from post office at Cotulla, La Salle County, and 3 miles below mouth of Salt Creek.

DRAINAGE AREA.—5,260 square miles (measured on topographic maps, progressive military maps of United States Army, and base map of Texas).

RECORDS AVAILABLE.—October 31, 1923, to September 30, 1925.

GAGE.—Vertical staff on left bank; read by Kathleen Lind.

DISCHARGE MEASUREMENTS.—Made from highway bridge 1 mile upstream or from railroad bridge.

CHANNEL AND CONTROL.—Bed composed of sand and silt. Channel straight for 1 mile above and below gage. Right bank of earth, covered with rushes and cat-tails, and at a stage of 3.5 feet is subject to overflow; left bank of earth, wooded, and subject to overflow at extremely high stages. Low-water control is a concrete and rock dam, 100 feet below gage. No vegetation on control proper, but much of the dam is only a few inches high and there is much aquatic growth just above dam which may affect stage-discharge relation. This control probably submerged at a stage of about 2 feet. At about a 4-foot gage height, another dam farther downstream probably serves as control and this dam is probably submerged at a stage of 6 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 14.89 feet from 10 a. m. to 1 p. m. June 3 (discharge, 49,500 second-feet); no flow during several periods.

1924–1925: Maximum stage that of June 3, 1925; no flow for several periods.

DIVERSIONS.—Most of low-water flow is diverted by pumping from storage reservoirs above; amount not known.

REGULATION.—Low-water flow regulated by storage reservoirs above.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths twice daily and oftener during flood periods. Daily discharge determined by applying mean daily gage height to rating table. Records fair.

Discharge measurements of Nueces River at Cotulla, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 23	1.09	26.4	June 2	9.76	27,100	June 6	6.70	10,500
May 31	1.94	903	Do	11.75	29,600	June 7	3.47	7,470
Do	2.04	1,700	June 3	14.89	49,500	June 8	2.40	2,780
June 1	2.66	3,500	June 4	12.95	29,000	June 9	2.00	2,160
Do	2.84	3,970	June 5	10.33	17,600	June 10	1.64	1,580
June 2	7.24	11,100	Do	9.94	15,800	June 30	1.04	20.8
Do	8.86	23,900	June 6	7.00	13,500	July 15	1.08	28.1

Daily discharge, in second-feet, of Nueces River at Cotulla, Tex., for the year ending September 30, 1925

Day	Oct.	Dec.	Jan.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	64		7.0		6.5	9.0	3,760	24		16
2	54		6.0		5.5	8.0	14,800	24	88	14
3	42		6.0		4.5	6.5	41,900	24	1,060	7.5
4	31		6.0		3.5	5.5	33,000	24	2,510	4.5
5	20	2.5	5.5		3.0	3.5	21,500	13	3,260	3.0
6	10	14	5.5		2.0	2.0	13,300	8.0	1,820	5.5
7	10	30	5.0		1.5	6.5	8,110	5.5	530	40
8	10	240	5.0		1.0	4.5	3,260	4.5	240	38
9	10	165	4.5		.5	3.0	2,880	2.0	104	30
10	8.5	88	4.0			2.0	1,060		48	72
11	7.0	88	4.0			.5	739		40	1,430
12	6.0	72	4.0				510	785	40	2,280
13	5.0	56	3.0				410	270	38	1,340
14	5.0	48	2.0				330	36	34	410
15	4.5	34	1.0				270	26	18	225
16	4.0	24					240	20	13	80
17	4.0	18					195	16	11	72
18	3.0	15					135	12	9.0	72
19	1.5	12				4.5	96	8.0	7.5	40
20		8.0				16	64	5.5	5.5	56
21		9.5				16	48	4.5	2.0	112
22		10		120		18	40	4.0		112
23		10		56		14	36	3.5		80
24		9.5		32		9.5	32	.5		210
25		9.0		18		7.5	32			900
26		9.0		14		5.5	28			992
27		8.5		10		4.5	28			1,180
28		8.5		9.0		2.5	26			1,410
29		8.0		9.0	12	.5	24			1,240
30		7.5		8.0	18		24			946
31		7.0		8.0		992			1.9	

NOTE.—No record and discharge interpolated Oct. 2–5. After June there was a leak through dam; leakage not known but believed to be small. No flow reported on days for which no discharge is shown.

Monthly discharge of Nueces River at Cotulla, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	64	0	9.66	594
November	0	0	0	0
December	240	0	32.6	2,010
January	7.0	0	2.21	136
February	0	0	0	0
March	120	0	9.16	563
April	18	0	1.93	115
May	992	0	36.8	2,260
June	41,900	24	4,900	291,000
July	785	0	42.6	2,620
August	3,260	0	319	19,600
September	2,280	3.0	447	26,600
The year	41,900	0	478	345,000

NUECES RIVER NEAR THREE RIVERS, TEX.

LOCATION.—At San Antonio, Uvalde & Gulf Railroad bridge, 2 miles southeast of Three Rivers, Live Oak County, and half a mile below mouth of Frio River.

DRAINAGE AREA.—15,600 square miles (measured on topographic maps, progressive military maps of United States Army, and base map of Texas).

RECORDS AVAILABLE.—July 1, 1915, to September 30, 1925.

GAGE.—Inclined and vertical staff on left bank or attached to piers of railroad bridge; read by Roy E. Kibbey.

DISCHARGE MEASUREMENTS.—Made by wading, from highway bridge half a mile below gage, or from railroad bridge at gage.

CHANNEL AND CONTROL.—Bed composed of adobe shale and sand; does not change greatly. Channel straight above and below station. Banks wooded and not subject to overflow except at extremely high stages. Position of high-water control not known. Prior to April 17 shoal just below gage was low-water control; shifts. After April 18 artificial concrete control 200 feet below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 36.75 feet at 6 p. m. June 10 (discharge, 17,600 second-feet); no flow during several periods.

1915–1925: Maximum stage recorded, 46.0 feet at 5 a. m. September 18, 1919 (discharge not determined, probably backwater due to Gulf storm. No flow during several periods of record.

DIVERSIONS.—Records of the Board of Water Engineers for the State of Texas show that about 10,000 acres have been declared irrigated by diversions from stream above station.

REGULATION.—None of consequence.

ACCURACY.—Stage-discharge relation not permanent. Rating curves well defined. Gage read to tenths or hundredths once daily. Daily discharge determined by applying daily gage height to rating table; shifting-control method used April 1–17. Discharge estimated April 22. Records fair.

Discharge measurements of Nueces River near Three Rivers, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 17	0.80	6.72	June 8	7.78	1,220	June 14	19.29	4,580
Nov. 20	.52	*1.0	June 9	27.17	9,520	June 15	15.23	3,290
Jan. 3	1.09	16.3	Do	32.46	12,500	Do	14.28	3,310
Mar. 13	.69	2.6	June 10	36.39	17,300	June 16	12.80	2,860
Apr. 21	1.15	*.10	June 11	35.63	14,900	Do	12.16	2,590
June 4	.77	0	June 12	33.50	10,800	June 17	11.03	2,080
June 6	3.98	343	June 13	28.37	7,270	Aug. 2	7.20	904
June 7	4.64	447	Do	26.05	6,980	Aug. 5	5.78	715
Do	5.35	613	June 14	20.83	5,010	Sept. 16	12.10	2,440

* Estimated.

Daily discharge, in second-feet, of Nueces River near Three Rivers, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	673	0.2	0.8	22	8.8	6.0	35	12	0	16	1.0	125
2	788	.8	149	17	8.8	6.0	35	16	0	9.6	1,060	248
3	908	.8	1,340	17	8.8	6.0	24	31	0	79	2,560	1,060
4	742	.8	1,890	17	8.8	6.0	19	12	3.0	1,450	760	560
5	136	.8	355	12	8.8	6.0	19	9.0	248	106	820	299
6	70	.8	375	12	8.8	6.0	12	7.0	331	95	635	157
7	124	.8	650	12	8.8	6.0	8.8	1.0	510	31	820	176
8	43	.2	836	12	8.8	3.5	8.8	0	2,440	14	1,150	880
9	35	.2	1,030	12	8.8	3.5	4.8	0	9,110	9.0	1,450	1,450
10	51	.0	355	12	8.8	3.5	4.8	0	16,400	4.6	1,780	1,090
11	70	.2	177	8.8	8.8	3.5	4.8	248	15,800	95	1,840	1,150
12	17	0	51	8.8	8.8	3.5	2.0	1,450	11,600	450	1,660	1,450
13	17	0	35	8.8	8.8	3.5	2.0	315	8,140	2,710	1,450	1,720
14	12	0	35	6.0	8.8	3.5	2.0	75	5,410	347	610	3,200
15	8.8	0	101	6.0	8.8	3.5	.8	137	3,560	195	137	3,420
16	8.8	2.0	80	6.0	6.0	3.5	.8	81	2,740	106	75	2,710
17	6.0	.8	51	6.0	6.0	17	.8	195	2,200	48	38	1,960
18	6.0	.2	35	6.0	6.0	12	1.0	117	685	214	33	1,180
19	6.0	.2	27	6.0	6.0	8.8	1.0	48	248	31	24	970
20	6.0	.8	27	6.0	6.0	6.0	1.0	25	195	22	18	331
21	3.5	.8	43	6.0	6.0	6.0	1.0	25	176	38	18	299
22	3.5	.8	43	6.0	6.0	742	.5	20	137	34	13	75
23	2.0	2.0	35	6.0	6.0	3,080	0	12	106	27	16	79
24	2.0	2.0	27	6.0	6.0	1,590	0	7.0	81	22	11	113
25	2.0	2.0	27	6.0	6.0	395	0	5.0	68	19	117	585
26	.8	2.0	27	6.0	6.0	455	0	3.0	43	16	24	510
27	.8	.8	22	6.0	6.0	495	0	3.0	37	11	17	940
28	.8	.8	22	8.8	6.0	355	0	0	68	7.4	5.6	1,120
29	.8	.8	22	8.8	------	276	0	0	81	3.6	4.4	1,150
30	.2	.8	22	8.8	------	136	117	0	34	2.8	4.2	1,600
31	.2	------	22	8.8	------	70	------	0	--------	1.4	3.8	------

Monthly discharge of Nueces River near Three Rivers, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	908	0.2	121	7,430
November	2.0	0	.75	44.4
December	1,890	.8	255	15,700
January	22	6.0	9.37	576
February	8.8	6.0	7.50	417
March	3,080	3.5	249	15,300
April	117	0	10.2	607
May	1,450	0	90.5	5,560
June	16,400	0	2,680	160,000
July	2,710	1.4	200	12,300
August	2,560	3.8	554	34,000
September	3,420	75	1,020	60,700
The year	16,400	0	431	313,000

NUECES RIVER AT CALALLEN, TEX.

LOCATION.—At old pump house for city of Corpus Christi, half a mile northwest of Calallen, Nueces County, and half a mile above edge of tidewater and breakwater dam.

DRAINAGE AREA.—16,900 square miles (measured on topographic maps, base map of Texas, and progressive military maps of United States Army.

RECORDS AVAILABLE.—August 2, 1915, to September 30, 1925.

GAGE.—Vertical staff attached to pipe-line support of old pump house; read by John W. Cunningham.

DISCHARGE MEASUREMENTS.—Made by wading at backwater or from cable 125 feet below gage.

CHANNEL AND CONTROL.—Bed composed of clay and gravel. Channel straight above and below station. Left bank wooded and bordered by levee constructed to prevent overflow; right bank wooded and not subject to overflow. Breakwater dam, which is loose rock fill half a mile below, serves as control. It leaks badly and is subject to change during floods. Flood damage is repaired by dumping loose rock on crest.

EXTREMES OF STAGE.—Maximum stage recorded during year, 9.20 feet at 8 a. m. June 16; minimum stage, −0.20 foot at 4 p. m. November 7.

1915–1925: During September, 1919, the river reached a stage of about 12 feet, as determined from floodmarks on gage. This was not only the highest stage reached during period covered by records but probably exceeds any that occurred for many years prior to the establishment of this station. Discharge indeterminate because of lowlands on left bank overflowing for a width of several miles. No flow August 23–28, 1918.

DIVERSIONS.—Considerable water taken from river for irrigation immediately above station, and river water is also used for irrigation throughout drainage above. City of Corpus Christi pumps water just below gage for municipal supply. They reported a consumption of 922 acre-feet during 1918.

REGULATION.—None of consequence.

ACCURACY.—Stage-discharge relation not permanent because of leakage through and repair to breakwater dam. Rating curve poorly defined. Gage read to hundredths twice daily. Daily discharge not computed because of changing control and insufficient discharge measurements. Records poor.

No discharge measurements were made at this station since 1919.

Daily gage height, in feet, of Nueces River at Calallen, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Apr.	May	June	July	Aug.	Sept.
1	3.35	0.45	0.50	2.88	0.50	0.52	2.42	0.95	1.32
2	3.20	.65	.55	2.70	.58	.40	2.28	1.05	1.38
3	3.38	.72	.60	2.58	.60	.45	2.00	1.35	1.80
4	3.52	.48	1.92	2.45	.50	.48	1.90	2.60	2.58
5	3.62	.20	4.42	2.35	.60	.48	1.82	4.25	3.40
6	3.42	−.10	4.65	2.40	.48	.40	3.12	3.60	3.28
7	3.00	.02	3.90	2.32	.55	.48	2.75	3.45	3.32
8	2.75	.22	3.30	2.25	.42	1.68	2.35	3.32	3.12
9	2.60	.45	3.60	2.10	.38	3.35	2.15	3.48	3.55
10	2.60	.62	3.82	2.00	.48	4.75	1.95	3.75	3.32
11	2.58	.52	4.00	2.00	.42	4.95	1.72	4.05	3.88
12	2.45	.38	3.68	2.12	.40	5.88	1.78	4.25	3.90
13	2.22	.52	3.02	2.10	.38	6.75	1.90	4.25	3.88
14	2.12	.50	2.78	1.92	3.42	7.65	3.55	4.12	4.28
15	2.10	.40	2.60	1.72	3.28	8.78	4.45	4.05	4.55
16	1.98	.58	2.60	1.55	2.75	9.15	3.15	3.40	4.82
17	1.80	.62	2.68	1.02	2.42	8.82	2.68	2.68	5.25
18	1.58	.40	2.78	.82	2.10	8.20	2.35	2.25	5.35
19	1.70	.40	2.85	.90	2.22	7.12	2.20	2.05	4.82
20	1.70	.42	2.80	.65	2.55	5.05	2.62	1.88	3.80
21	1.32	.45	2.72	.88	2.45	3.10	2.75	1.88	3.48
22	1.05	.45	2.68	.52	2.22	2.80	2.30	1.65	2.90
23	.95	.50	2.62	.48	2.02	2.65	2.08	1.65	2.48
24	.68	.50	2.60	.55	2.15	2.55	1.88	1.50	2.22
25	.70	.42	2.60	.45	1.95	2.40	1.75	1.38	2.52
26	.90	.48	2.52	.35	1.32	2.30	1.78	1.42	3.20
27	1.05	.42	2.48	.52	.72	2.20	1.58	1.50	3.05
28	.70	.42	2.42	.48	.50	2.22	1.42	1.32	3.42
29	.45	.40	2.40	.35	.42	2.05	1.25	1.60	3.88
30	.52	.50	2.40	.40	.45	2.15	1.08	1.68	3.80
31	.58	-------	2.38	-------	.60	-------	1.08	1.52	-------

NOTE.—No record Jan. 1 to Mar. 31.

NUECES RIVER SEEPAGE INVESTIGATION

During this series of measurements the river was at a constant stage.

Discharge measurements to determine seepage on Nueces River from Laguna to Cinonia, Tex., in April and May, 1925

Date	Location	Approximate distance	Discharge	Gain or loss in section	Total gain or loss
		Miles	*Sec.-ft.*	*Sec.-ft.*	*Sec.-ft.*
Apr. 30	Laguna	0	35.3		
30	Chalk Bluff	5.1	13.5	−21.8	−21.8
30	Cline crossing near Uvalde	18.9	0	−13.5	−35.3
30	Tom Nunn crossing	20.9	4.3	+4.3	−31.0
30	Tom Nunn hill	22.8	1.5	−2.8	−33.8
May 1	Old Eagle Pass road crossing	26.8	9.0	+7.5	−26.3
1	San Antonio, Uvalde & Gulf Railroad crossing	29.8	2.8	−6.2	−32.5
8	Habey ranch	31.6	0	−2.8	−35.3
8	Mouth of Live Oak Creek	34.5	.5	+.5	−34.8
1	Uvalde-La Pryor crossing	34.5	.5	0	−34.8
1	Due east of La Pryor	40.7	0	−.5	−35.3
1	La Pryor ranch house	43.2	0	0	−35.3
1	4 miles below La Pryor ranch house	47.4	8.0	+8.0	−27.3
2	2 miles above Cinonia	54.9	5.4	−2.6	−29.9

FRIO RIVER AT CONCAN, TEX.

LOCATION.—Half a mile below Concan post office, Uvalde County; four-fifths mile below what is known as "Shut In" and 3 miles below mouth of Blanket Creek.

DRAINAGE AREA.—485 square miles (measured on progressive military maps of United States Army and base map of Texas).

RECORDS AVAILABLE.—October 26, 1923, to September 30, 1925.

GAGE.—Inclined and vertical staff on right bank. Above 6.6 feet an overhanging chain gage on left bank is used. Gages read by H. G. Fletcher or C. T. McNair.

DISCHARGE MEASUREMENTS.—Made from cable, 123 feet upstream from gage or by wading.

CHANNEL AND CONTROL.—Bed of solid rock overlain on right side with small amount of gravel; permanent. Channel straight for one-fourth mile above and half a mile below station. Left bank of semiconglomerate; fairly permanent, and not subject to overflow. Right bank of sand and gravel, heavily wooded with trees and brush, permanent, and subject to overflow at a stage of 21 feet. Control is solid rock ledge 50 feet below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.30 feet at 3.15 p. m. May 28 (discharge not determined); minimum discharge, 12 second-feet from July 29 to August 2.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined below 50 second-feet; fairly well defined between 50 and 175 second-feet; extended above. Gage read to hundredths twice daily but observer not very reliable. Daily discharge determined by applying mean daily gage height to rating table; shifting-control method used June 29 to September 30. Records poor.

Discharge measurements of Frio River at Concan, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 1	1.54	24.0	Jan. 30	1.63	35.0	June 12	1.68	40.7
Oct. 11	1.54	26.0	May 13	1.58	30.9	June 27	1.66	40.5
Nov. 26	1.60	29.0	May 29	2.19	182	July 29	1.50	12.7

Daily discharge, in second-feet, of Frio River at Concan, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26	26	28	28	36	35	32	31	62	32	12	22
2	26	26	40	28	36	36	32	31	57	29	12	22
3	26	26	40	28	36	35	32	31	55	27	30	22
4	26	26	28	28	36	35	32	31	52	26	30	22
5	26	27	28	28	36	35	31	31	48	25	28	22
6	26	28	28	28	36	35	31	31	47	24	28	22
7	26	28	28	28	36	35	31	30	47	23	28	22
8	25	28	28	28	36	35	31	29	45	23	28	22
9	24	28	28	28	36	35	31	125	45	22	}	22
10	24	28	28	28	32	35	31	490	45	22	}	22
11	25	28	28	28	28	35	31	93	44	21	}	22
12	26	28	28	28	28	36	31	79	42	21	}	22
13	26	28	28	28	28	36	31	57	42	21	19	22
14	26	28	28	28	28	35	33	30	42	21	}	22
15	26	28	28	28	36	35	36	30	41	20	}	22
16	26	28	28	28	36	33	36	29	41	21	}	22
17	26	28	28	28	36	33	35	28	41	19	}	22
18	26	28	28	28	36	33	35	28	40	19	13	24
19	26	28	28	28	36	33	36	28	40	19	13	27
20	26	28	28	28	36	33	32	28	40	19	13	27
21	26	28	28	28	36	33	32	28	40	18	13	27
22	26	28	28	28	35	33	32	28	40	18	13	27
23	26	28	28	28	36	35	32	28	40	16	13	27
24	26	28	28	28	36	35	32	28	40	16	13	48
25	26	28	28	28	35	33	32	29	40	15	13	47
26	26	30	28	28	35	32	31	28	86	14	13	41
27	26	28	28	28	36	32	31	28	47	13	13	40
28	26	28	28	28	35	32	31	610	40	13	13	38
29	26	28	28	28	------	32	31	174	38	12	13	36
30	26	28	28	32	------	32	31	101	36	12	13	36
31	26	------	28	36	------	32	------	72	------	12	14	------

NOTE.—Braced figure shows estimated mean discharge for period included.

Monthly discharge of Frio River at Concan, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	26	24	25.8	1,590
November	30	26	27.8	1,650
December	40	28	28.8	1,770
January	36	28	28.4	1,750
February	36	28	34.6	1,920
March	36	32	34.0	2,090
April	36	31	32.1	1,910
May	610	28	78.8	4,850
June	86	36	45.4	2,700
July	32	12	19.8	1,220
August	30	12	17.7	1,090
September	48	22	27.3	1,620
The year	610	12	33.4	24,200

FRIO RIVER NEAR FRIO TOWN, TEX.

LOCATION.—300 feet below Frio ford on old Frio Town-Sabinal road, 1½ miles below mouth of Sabinal Creek, and 7 miles northwest of Frio Town, Frio County.

DRAINAGE AREA.—1,460 square miles (measured on topographic maps, base map of Texas, and progressive military maps of United States Army).

RECORDS AVAILABLE.—April 9, 1924, to September 30, 1925.

GAGE.—Vertical staff and chain gage on left bank; read by J. L. Tiner.

DISCHARGE MEASUREMENTS.—Made from cable 340 feet below staff gage or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel; permanent. One channel at all stages. Channel straight for half a mile above and below gage. Right bank wooded, permanent, and not subject to overflow. Left bank permanent and not subject to overflow. Low-water control is gravel riffle, 150 feet below staff gage; will probably shift during floods and during dry season weeds and grass grow on control. High-stage control is narrow section in river, 500 feet downstream from low-water control. Stage of change of control not known.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.30 feet May 11 (discharge not determined). No flow for several periods.

1924–25: Maximum stage occurred in 1925. No flow during large part of 1924 and 1925.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve poorly defined below 135 second-feet. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records fair.

The station was visited December 2, 1924, by J. W. Bones, and no flow recorded.

Daily gage height and daily discharge of Frio River near Frio Town, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 9	3.30	(a)	May 12	2.10	113	May 29	1.30	20
May 10	3.15	(a)	May 13	1.10	9.0	May 30	1.10	9.0
May 11	4.30	(a)	May 14	.90	1.6	May 31	.90	1.6

(a) Stage beyond limits of rating curve; discharge not determined.

NOTE.—No flow during year except for days shown in above table.

FRIO RIVER NEAR DERBY, TEX.

LOCATION.—At International-Great Northern Railroad bridge, 900 feet below mouth of Leona River, 400 feet below highway bridge, and 4 miles south of Derby, Frio County.

DRAINAGE AREA.—3,490 square miles (measured on topographic maps, progressive military maps of United States Army, and base map of Texas).

RECORDS AVAILABLE.—August 1, 1915, to September 30, 1925.

GAGE.—Vertical staff attached to railroad bridge pier; read by C. E. Harris.

DISCHARGE MEASUREMENTS.—Made from railroad bridge, from highway bridge, or by wading.

CHANNEL AND CONTROL.—Bed composed of rock, sand, and gravel. Channel curved above and below station, but straight at gage for 150 feet. Banks wooded and subject to overflow at extremely high stages. A concrete dam, 50 feet below gage, serves as control during low and medium stages; position of high-water control not known. Point of zero flow, gage height 0.07 foot, except when affected by moss on control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.34 feet at 8 a. m. May 12 (discharge, 874 second-feet); no flow for several periods.

1915–1925: Maximum stage recorded, 18.5 feet September 18, 1919 (discharge, 34,400 second-feet determined from extension of curves and subject to error); no flow during several periods of each year.

DIVERSIONS.—Small areas are irrigated by diversions in headwaters, but available information does not show that water is taken from stream immediately above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records good.

The following discharge measurements were made:
December 3, 1924: Gage height, 0.13 foot; discharge estimated, 1.0 second-feet.
June 29, 1925: Discharge, 0 second-foot.

Daily discharge, in second-feet, of Frio River near Derby, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr	May	June	July
1	0.1	0.5	1.0	3.2	5.3	2.1	2.1	0.5	175	------
2	.1	.5	1.0	4.2	4.2	2.1	2.1	.5	64	------
3	.1	.5	1.3	4.2	4.2	2.1	2.1	.5	22	------
4	.1	1.0	1.9	4.2	3.7	2.1	2.1	.5	11	------
5	.1	1.0	140	3.2	3.2	2.1	2.1	.3	5.3	------
6	.5	1.0	100	2.7	2.7	2.1	2.1	.3	2.9	------
7	1.0	1.0	32	2.7	2.7	2.1	2.1	.3	2.1	------
8	1.0	1.0	16	2.7	2.1	1.9	2.1	.5	1.0	------
9	1.0	1.0	13	2.7	1.6	1.6	2.1	.5	.3	------
10	1.0	1.0	9.2	2.4	1.6	1.3	2.1	.5	.1	------
11	1.0	1.0	8.4	2.7	1.3	1.3	2.1	.5	------	------
12	1.0	1.0	8.4	2.9	1.6	1.0	1.6	694	------	39
13	.5	1.0	8.4	2.9	1.9	1.0	1.6	170	------	5.3
14	.5	.5	8.4	3.2	2.1	1.0	1.6	113	------	1.3
15	.1	.5	7.4	4.2	2.1	1.3	1.3	37	------	.1
16	.1	.5	7.4	4.8	2.1	1.3	1.3	14	------	------
17	.1	.5	7.4	5.3	2.1	1.3	1.3	7.4	------	------
18	.1	.5	6.3	5.3	2.1	1.6	1.0	4.8	------	------
19	.1	1.0	6.3	4.2	2.1	2.1	1.0	2.9	------	------
20	.1	1.0	6.3	5.8	2.1	2.1	1.0	2.1	------	------
21	.1	1.0	5.3	8.4	2.1	2.1	1.0	3.2	------	------
22	.1	1.0	4.2	7.4	2.1	5.3	1.0	3.7	------	------
23	.1	1.0	3.2	6.3	2.4	7.4	.5	2.4	------	------
24	.1	1.0	2.7	6.3	2.7	3.7	.5	1.3	------	------
25	.1	1.0	2.7	6.3	2.7	2.7	.5	.5	------	------
26	.1	1.0	2.1	6.3	2.1	2.1	.5	------	------	------
27	.1	1.0	2.1	7.4	2.1	2.1	.5	------	------	------
28	.1	1.0	2.7	7.4	2.1	2.1	.3	------	------	------
29	.5	1.0	3.2	7.4	------	2.1	.3	------	------	------
30	.5	1.0	3.2	6.3	------	2.1	.3	------	------	------
31	.5	------	3.2	5.3	------	2.1	------	13	------	------

NOTE.—No flow during periods for which no discharge is given.

Monthly discharge of Frio River near Derby, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1.0	0.1	0.35	21.6
November	1.0	.5	.87	51.6
December	140	1.0	13.7	842
January	8.4	2.4	4.78	294
February	5.3	1.3	2.47	137
March	7.4	1.0	2.17	133
April	2.1	.3	1.34	79.7
May	694	0	34.7	2,130
June	175	0	9.46	563
July	39	0	1.47	90.6
August	0	0	0	0
September	0	0	0	0
The year	694	0	6.00	4,340

FRIO RIVER AT CALLIHAM, TEX.

LOCATION.—Half a mile below mouth of San Miguel Creek, 1 mile north of Calliham, McMullen County, and 12 miles west of Three Rivers.

DRAINAGE AREA.—5,450 square miles (measured on topographic maps, progressive military maps of United States Army, and base map of Texas).

RECORDS AVAILABLE.—October 1, 1924, to September 30, 1925.

GAGE.—Vertical staff in three sections on right bank attached to trees; read by J. C. Scroggins.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Channel straight for 700 feet above and 800 feet below gage. Bed composed of sandy clay; shifts. Right bank wooded, sodded, and not subject to overflow; left bank wooded, sodded, and at high stages is subject to overflow for 400 feet. Control is concrete dip, 100 feet below gage. There are five pipes under the slab to carry the low flow. Pipes clog and affect stage-discharge relation.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 16.1 feet at 10.50 a. m. March 22 (discharge, 4,140 second-feet); no flow for several periods.

DIVERSIONS.—Some water diverted above; amount not known.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined. Gage read to hundredths twice daily but gage-height record doubtful. Daily discharge determined by applying mean daily gage height to rating table. Shifting-control method used August 3–12 and September 1–30. Discharge estimated for several periods. Daily discharge not sufficiently accurate for publication. Records poor.

Discharge measurements of Frio River at Calliham, Tex., during the period September 27, 1924, to September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Sept. 27	2.81	10.0	Jan. 3	2.50	[a] 2.0	Aug. 3	4.82	457
Oct. 18	.46	[a] .01	Mar. 24	4.14	246	Sept. 16	2.55	1.87
Nov. 20		0	Apr. 21		0			
Dec. 5	2.93	19.3	June 5	.78	[a] .1			

[a] Estimated.

Monthly discharge of Frio River at Calliham, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October		0	0.40	24.4
November	0	0	0	0
December	137	0	11.4	702
January			.66	40.9
February			[a].2	11.1
March	2,580	0	150	9,240
April	30		1.47	87.7
May	250		35.9	2,210
June	51		4.76	283
July	470	0	52.5	3,230
August	2,110	0	114	7,010
September	351	.9	57.2	3,400
The year	2,580	0	36.2	26,200

[a] Estimated.

FRIO RIVER SEEPAGE INVESTIGATION

During this series of measurements the river was at a constant stage, and the measurements represent natural conditions.

Discharge measurements to determine seepage on Frio River from a point 11.8 miles above Leakey, Tex., to a point 7.0 miles below Concan, Tex., in June, 1925

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet				
				Main stream	Tributary	Diversion	Gain or loss in section	Total gain or loss
June 26	East Fork of Frio River.	11.8 miles above Leakey.	0	1.71				
26	Big Spring Creek.	Mouth 11.75 miles above Leakey.	.05		8.86			
26	East Fork of Frio River.	11.7 miles above Leakey.	.1	9.46			−1.11	−1.11
26	do	8.5 miles above Leakey.	3.3	12.1			+2.64	+1.53
26	Cypress Creek	8.0 miles above Leakey.	3.8		.96			
26	Grigsby-Norton ditch.	5.5 miles above Leakey.	6.3			.74		
26	Weston-Cooper-Cox ditch.	3.1 miles above Leakey.	8.7			.88		
26	East Fork of Frio River.	3.0 miles above Leakey.	8.8	8.91			−2.53	−1.00
26	West Fork of Frio River.	Mouth, 1.5 miles above Leakey.	10.3		0			
26	Frio River	1.0 mile above Leakey.	10.8	0			−8.91	−9.91
27	do	At Leakey	11.8	4.53			+4.53	−5.38
27	Spring Branch	At Leakey, one-half mile above mouth.	11.8		13.9			
27	Frio River	Five-tenths mile below Leakey.	12.3	25.0			+6.57	+1.19
27	do	3 miles below Leakey.	14.8	27.1			+2.1	+3.29
27	Lambardy ditch	4 miles below Leakey.	15.8		11.1			
27	do	7 miles below Leakey or 2 miles below Rio Frio.	18.8		[a] 5.0			
27	Frio River	11.5 miles below Leakey or 4.5 miles below Rio Frio.	23.3	26.4			+5.4	+8.69
27	do	15 miles below Leakey.	26.8	39.5			+13.1	+21.79
27	do	At Concan, 19½ miles below Leakey.	31.3	40.5			+1.0	+22.79
27	do	20½ miles below Leakey.	32.3	32.5			−8.0	+14.79
27	do	23½ miles below Leakey.	35.3	20.1			−12.4	+2.39
27	do	At Uvalde-Concan road crossing, 26 miles below Leakey.	37.8	6.30			−13.8	−11.41
27	do	26.3 miles below Leakey.	38.1	[a] 2.50			−3.8	−15.21
27	do	26.5 miles below Leakey.	38.3	0			−2.5	−17.71

[a] Estimated.

Discharge measurements to determine seepage on Dry Frio River from Clarks ranch house to a point 9½ miles below Reagan Wells, in June, 1925

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet			
				Main stream	Tributary	Gain or loss in section	Total gain or loss
June 28	Dry Frio River	At Clarks ranch house, 6 miles above Reagan Wells.	0	[a] 0.50			
28	do	3.6 miles above Reagan Wells, near Hurd School.	2.4	1.65		+1.15	+1.15
28	Mine Creek	At Hurd School, 3.5 miles above Reagan Wells.	2.5		[a] 0.5		
28	Dry Frio River	One-half mile below Reagan Wells.	6.5	5.16		+3.01	+4.16
28	do	4½ miles below Reagan Wells.	10.5	6.74		+1.58	+5.74
28	do	8 miles below Reagan Wells.	14.0	9.66		+2.92	+8.66
28	do	9½ miles below Reagan Wells.	15.5	0		−9.66	−1.00

[a] Estimated.

NOTE.—Columns headed "Gain or loss in section" and "Total gain or loss" show values computed from discharge of main stream, tributaries, and diversions.

LEONA RIVER NEAR DIVOT, TEX.

LOCATION.—At highway bridge on Divot-Pearsall road, 2½ miles northeast of Divot, Frio County, and 12 miles above mouth of River.

DRAINAGE AREA.—565 square miles (measured on topographic maps, base map of Texas, and progressive military maps of United States Army).

RECORDS AVAILABLE.—April 6, 1924, to September 30, 1925.

GAGE.—Vertical staff attached to pecan tree on left bank, 6 feet below bridge; read by E. N. Cory.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of earth and sand; fairly permanent. Channel straight for 600 feet above and 65 feet below gage. Banks of earth, wooded, and fairly permanent. Right bank subject to overflow at a stage of 12 feet; left bank not subject to overflow. One channel below stage of 9.7 feet; two at a stage of 12.2 feet; three at a stage of 13.1 feet; and four at a stage of 13.8 feet. The low-water control is 100 feet below gage and is composed of gravel and a partly buried log; will probably shift. Collection of logs and débris may easily change stage-discharge relation. High-water control indefinite.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.70 feet at 9 a. m. May 11 (discharge, 304 second-feet, determined from extension of rating curve and subject to error); no flow during several periods.

1924–1925: Maximum stage recorded, 14.17 feet at 5 a. m. June 24, 1924 (discharge not determined); no flow for several periods.

DIVERSIONS.—Several small diversions in drainage above; amount not known.

REGULATION.—Low-water flow regulated by dams above.

ACCURACY.—Stage-discharge relation permanent. Rating curve fairly well defined. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records fair.

The following discharge measurements were made:
December 3, 1924: Discharge, 0 second-foot.
December 4, 1924: Gage height, 5.55 feet; discharge, 203 second-feet.
December 5, 1924: Gage height, 5.91; discharge, 264 second-feet.

Daily discharge, in second-feet, of Leona River near Divot, Tex., for the year ending September 30, 1925

Day	Dec.	Jan.	Feb.	May	June	Day	Dec.	Jan.	Feb.	May	June
1	-------	1.6	11	-------	117	16	14	11	-------	12	------
2	-------	1.6	11	-------	58	17	12	11	-------	6.5	------
3	-------	1.6	11	-------	32	18	12	11	-------	12	------
4	181	1.2	11	-------	8.0	19	12	11	-------	12	------
5	175	.7	3.8	-------	2.7	20	12	11	-------	6.5	------
6	40	.7	.5	-------	.2	21	12	11	-------	1.6	------
7	34	.7	-------	-------	.4	22	12	11	-------	.6	------
8	22	-------	-------	-------	3.8	23	11	11	-------	.2	------
9	20	-------	-------	-------	.3	24	-------	11	-------	-------	------
10	20	-------	-------	-------	------	25	-------	11	-------	-------	------
11	20	-------	-------	272	------	26	3.8	11	-------	-------	------
12	22	-------	-------	87	------	27	1.6	11	-------	-------	------
13	22	-------	-------	127	------	28	1.6	11	-------	-------	------
14	19	11	-------	64	------	29	1.6	11	-------	-------	------
15	18	11	-------	34	------	30	1.6	11	-------	-------	------
						31	1.6	11	-------	222	------

NOTE.—No flow during periods for which no discharge is given.

Monthly discharge of Leona River near Divot, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
December	181	0	22.6	1,390
January	11	0	6.65	409
February	11	0	1.72	95.8
May	272	0	27.7	1,700
June	117	0	7.41	441
The year	272	0	5.58	4,040

NOTE.—No flow during months for which no discharge is given.

LEONA RIVER SEEPAGE INVESTIGATION

The river was at a constant stage during this series of measurements.

Discharge measurements to determine seepage on Leona River from highway bridge southeast of Uvalde to old Woodward ranch, in April, 1925

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet				
				Main stream	Tributary	Diversion	Gain or loss in section	Total gain or loss
Apr. 25	Leona River	Highway bridge southeast of Uvalde.	0	3.8				
25	Leona Valley Live Stock & Irrigation Co.'s canal.	Diversion No. 1	2.0			7.3		
25	Leona River	200 feet below Leona Valley Live Stock & Irrigation Co.'s canal, Dam No. 1.	2.1	1.8			+5.3	+5.3
27	do	White Place above Kincaid & Benton Irrigation Co.'s dam.	6.1	3.4			+1.6	+6.9
27	Kincaid Canal	300 feet below Kincaid Dam.	8.1			7.7		
27	Leona River	Below Kincaid Dam	8.1	0			+4.3	+11.2
27	do	3 miles below Kincaid Dam.	11.0	12			+12.0	+23.2
28	do	At Hackberry crossing	17.0	8			−4.0	+19.2
28	Batesville Canal	Above Batesville	20.1			5.0		
28	Leona River	Below Batesville Dam	20.1	1.1			−1.9	+17.3
28	do	1½ miles below Batesville.	22.1	*.4			−0.7	+16.6
28	do	3 miles below Batesville	23.3	*.5			+.1	+16.7
28	do	Ottenhouse ranch	26.4	*.3			−.2	+16.5
28	do	Old Woodward ranch	33.5	0			−.3	+16.2

* Estimated.

NOTE.—Columns headed "Gain or loss in section" and "Total gain or loss" show values computed from discharge of main stream, tributaries, and diversions.

ATASCOSA RIVER AT WHITSETT, TEX.

LOCATION.—At highway bridge on Crowther road, nine-tenths mile west of Whitsett, Live Oak County, and 4 miles below mouth of La Parita Creek.

DRAINAGE AREA.—1,170 square miles (measured on progressive military maps of United States Army and base map of Texas).

RECORDS AVAILABLE.—September 23, 1924, to September 30, 1925.

GAGE.—Chain gage attached to upstream side of highway bridge.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for 300 feet above and 200 feet below gage. Bed composed of sand, some snags; shifts. Banks of sand and clay, covered with trees and brush, and subject to overflow and shift. Control is bed and banks of stream; shifts.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 17.3 feet at 4.50 p. m. July 12 (discharge not determined); no flow during several periods.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve poorly defined below 200 second-feet. Gage read to hundredths but not regularly. Owing to poor gage-height record and badly shifting control, data insufficient for publication of daily or monthly discharge.

Total run-off September 23–30, 1924, 1,970 acre-feet.

Total run-off for year ending September 30, 1925, 15,500 acre-feet.

Discharge measurements of Atascosa River at Whitsett, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 17	0.49	[a] 1.0	Jan. 2	0.70	7.57	June 3		0
Nov. 20	.54	[a] 3.0	Apr. 11	.77	5.41	Aug. 4	1.10	18.1
Dec. 5	.94	16.9	Apr. 22	.36	[a] .1	Sept. 15	1.36	28.3

[a] Estimated.

RIO GRANDE BASIN

RIO GRANDE BELOW ELEPHANT BUTTE DAM, N. MEX.

LOCATION.—T. 13 S., R. 4 W., 1 mile below Elephant Butte Dam, Sierra County. Nearest tributary, Mescal Canyon, enters half a mile downstream.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—October 1, 1916, to September 30, 1925.

GAGE.—Stevens water-stage recorder on left bank.

DISCHARGE MEASUREMENTS.—Made from cable at gage.

CHANNEL AND CONTROL.—Bed composed of compact gravel; probably permanent. Control is gravel bar at mouth of Mescal Canyon; shifts.

REGULATION.—Flow controlled by Elephant Butte Dam which forms reservoir having capacity of 2,638,000 acre-feet.

EXTREMES OF DISCHARGE.—No data.

COOPERATION.—Records furnished by United States Bureau of Reclamation.

Daily discharge, in second-feet, of Rio Grande below Elephant Butte Dam, N. Mex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	880	300	430	5	500	1,240	2,160	2,090	1,970	1,940	1,000	0
2	650	300	430	5	500	1,240	2,160	1,900	1,810	1,250	2,010	0
3	650	300	430	5	600	1,240	2,120	1,900	1,810	800	1,930	0
4	650	300	430	5	680	1,240	2,120	1,900	1,810	2,410	1,650	120
5	650	300	430	5	680	1,230	2,120	1,900	1,810	1,860	1,590	470
6	650	300	430	5	680	1,230	2,120	1,850	1,860	2,200	1,420	470
7	650	300	430	5	680	1,230	2,130	1,720	2,020	2,150	1,320	910
8	650	300	430	5	680	1,230	2,130	1,720	2,020	1,990	1,010	1,220
9	650	300	430	5	680	1,230	2,130	1,720	2,070	1,740	420	1,220
10	650	300	390	5	680	1,230	2,130	1,720	2,230	1,500	590	1,200
11	650	300	300	5	680	1,220	2,130	1,720	2,230	1,620	1,010	1,200
12	650	300	300	5	680	1,220	2,170	1,720	2,420	1,990	1,010	1,200
13	650	300	340	5	680	1,220	2,370	1,720	2,550	1,660	1,010	1,010
14	650	300	370	5	710	1,300	2,370	1,720	2,550	1,500	1,010	1,010
15	570	300	370	5	810	1,460	2,370	1,720	2,480	1,990	1,090	1,010
16	480	300	370	5	825	1,460	2,370	1,720	2,260	2,000	2,010	1,010
17	480	400	370	5	825	1,460	2,370	1,790	2,260	2,300	2,010	1,010
18	480	430	370	5	825	1,460	2,370	2,020	2,260	2,300	1,960	1,010
19	480	430	370	5	825	1,460	2,430	2,020	2,260	2,300	2,050	1,010
20	480	430	370	5	825	1,460	2,630	2,020	2,260	2,300	2,100	1,010
21	480	430	370	5	825	1,460	2,630	2,090	2,260	2,440	1,700	1,010
22	480	430	370	5	870	1,460	2,590	2,300	2,260	2,630	1,400	1,010
23	480	430	370	5	920	1,460	2,450	2,300	2,220	2,740	1,550	1,010
24	480	430	370	5	920	1,460	2,370	2,300	1,950	2,750	2,010	1,010
25	480	430	370	5	920	1,460	2,370	2,300	1,760	2,480	2,010	1,010
26	480	430	370	5	920	1,530	2,370	2,300	1,500	2,360	2,010	1,010
27	480	430	370	285	920	1,720	2,370	2,300	1,580	2,520	2,010	1,010
28	480	430	370	525	1,080	1,720	2,320	2,160	1,880	2,360	2,010	1,010
29	480	430	370	475	-------	2,060	2,160	2,020	2,090	2,300	2,010	760
30	480	430	110	415	-------	2,160	2,160	2,020	2,090	1,800	2,010	0
31	400	-------	0	500	-------	2,160	-------	2,020	-------	0	1,510	-------

NOTE.—Figures have been changed slightly to comply with rules of computation used by Geological Survey.

Monthly discharge of Rio Grande below Elephant Butte Dam, N. Mex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	880	400	565	34,700
November	430	300	360	21,400
December	430	0	362	22,300
January	525	5	75	4,610
February	1,060	500	765	42,500
March	2,160	1,220	1,440	88,500
April	2,630	2,120	2,290	136,000
May	2,300	1,720	1,960	121,000
June	2,550	1,500	2,080	124,000
July	2,750	0	2,010	124,000
August	2,100	420	1,560	95,900
September	1,220	0	831	49,400
The year	2,750	0	1,190	864,000

RIO GRANDE NEAR EL PASO, TEX.

LOCATION.—At Courchesne's limekiln, 1 mile upstream from pumping house of smelter company, 4 miles north of El Paso, El Paso County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 10, 1889, to June 30, 1893, for station at Old Fort Bliss, 1,500 feet above Mexican Dam; January 25, 1895, to May 1, 1897, for station at pumping house of smelter company, 3 miles north of El Paso; and May 1, 1897, to September 30, 1925, at present location.

GAGE.—Continuous water-stage recorder.

DISCHARGE MEASUREMENTS.—Made from cable.

CHANNEL AND CONTROL.—Bed of sand; shifting. Banks have brush along edges and are not subject to overflow. One channel at all stages. Control is sand bed of stream; shifting.

EXTREMES OF DISCHARGE.—Maximum mean daily stage during year, 7.10 feet September 3 (discharge, 9,160 second-feet); minimum mean daily stage, 0.60 foot January 30–31 (discharge, 140 second-feet).

1889–1893; 1895–1925: Maximum mean daily discharge, 23,680 second-feet June 12, 1905. No flow for several periods.

DIVERSIONS.—Considerable water is diverted in Colorado and New Mexico; amount not known.

REGULATION.—Flow regulated by storage at Elephant Butte Dam, 120 miles above El Paso.

ACCURACY.—Stage-discharge relation not permanent. Daily discharge based largely on frequent current-meter measurements.

COOPERATION.—Daily discharge furnished by the Mexican section of the International Boundary Commission or United States Bureau of Reclamation. Monthly and yearly figures changed to agree with United States Geological Survey methods of computation.

Discharge measurements of Rio Grande near El Paso, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 1	1.74	723	Mar. 10	1.98	907	July 9	2.57	1,479
Oct. 6	1.73	722	Mar. 13	1.89	807	July 13	1.95	952
Oct. 9	1.59	633	Mar. 16	1.97	884	July 18	2.13	959
Oct. 13	1.52	601	Mar. 20	2.00	983	July 20	2.39	1,224
Oct. 16	1.42	527	Mar. 23	2.14	1,109	July 23	2.15	1,136
Oct. 20	1.19	381	Mar. 27	2.01	788	July 24	2.62	1,507
Oct. 23	1.28	318	Mar. 28	1.81	823	July 25	2.50	1,443
Oct. 27	1.54	409	Mar. 30	2.28	1,190	July 30	4.63	4,600
Nov. 30	1.44	399	Apr. 3	2.40	1,379	Aug. 1	6.27	7,346
Nov. 3	1.70	534	Apr. 6	2.54	1,448	Aug. 1	6.37	7,800
Nov. 6	1.55	455	Apr. 9	2.14	1,247	Aug. 2	6.51	7,989
Nov. 10	1.39	330	Apr. 13	2.34	1,327	Aug. 3	1.66	1,017
Nov. 13	1.38	372	Apr. 20	2.63	1,597	Aug. 6	2.37	1,528
Nov. 17	1.44	401	Apr. 24	2.42	1,397	Aug. 8	4.20	3,770
Nov. 20	1.09	270	Apr. 26	3.00	1,822	Aug. 10	2.68	1,910
Nov. 24	1.26	287	Apr. 30	2.61	1,617	Aug. 12	1.80	1,096
Nov. 27	1.28	290	May 1	2.40	1,356	Aug. 13	1.40	770
Dec. 1	1.30	335	May 5	2.18	1,183	Aug. 15	1.48	807
Dec. 4	1.52	379	May 6	2.27	1,276	Aug. 17	1.54	836
Dec. 8	1.50	468	May 7	2.26	1,219	Aug. 20	2.27	1,486
Dec. 11	1.62	498	May 11	2.49	1,402	Aug. 24	1.81	1,041
Dec. 15	1.42	447	May 13	2.10	1,026	Aug. 26	1.34	619
Dec. 18	1.53	528	May 19	2.33	1,260	Aug. 29	2.10	1,215
Dec. 22	1.58	498	May 25	2.56	1,510	Aug. 31	2.43	1,477
Dec. 25	1.40	324	May 28	2.61	1,566	Sept. 2	7.35	10,105
Dec. 29	1.63	596	June 1	2.45	1,456	Sept. 9	.80	601
Jan. 5	.99	242	June 3	2.22	1,343	Sept. 11	1.28	931
Jan. 12	.75	166	June 6	1.96	917	Sept. 14	1.44	984
Jan. 16	.74	152	June 8	2.29	1,206	Sept. 16	1.20	719
Jan. 24	.66	163	June 11	1.92	934	Sept. 17	1.05	666
Jan. 28	.65	150	June 13	1.92	961	Sept. 18	1.10	712
Feb. 4	1.32	377	June 15	2.52	1,430	Sept. 21	1.42	878
Feb. 10	1.64	608	June 22	2.49	1,435	Sept. 22	1.36	862
Feb. 17	1.50	554	June 25	2.37	1,318	Sept. 23	1.18	761
Feb. 21	1.70	694	June 26	2.36	1,209	Sept. 28	1.29	736
Feb. 24	1.77	696	June 29	2.19	1,021	Sept. 29	1.10	674
Feb. 28	1.75	672	July 1	2.05	1,048	Sept. 30	1.12	645
Mar. 3	1.80	698	July 6	1.53	635			
Mar. 7	2.04	925	July 7	2.82	1,754			

Daily discharge, in second-feet, of Rio Grande near El Paso, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	780	345	340	350	195	690	1,250	1,370	1,410	890	6,150	3,260
2	780	390	340	360	375	810	1,320	1,130	1,290	925	2,710	9,090
3	795	525	395	330	390	780	1,290	1,350	1,100	880	1,090	9,160
4	810	470	445	285	395	980	1,230	1,410	960	995	1,820	2,280
5	655	455	480	240	360	920	1,220	1,090	920	1,060	1,980	1,200
6	695	455	465	230	330	910	1,450	1,120	780	770	1,850	900
7	625	485	460	220	330	950	1,280	1,110	925	1,550	1,780	800
8	580	475	460	210	455	970	1,145	1,170	1,000	1,150	2,340	700
9	585	405	470	200	625	985	1,075	1,040	820	1,270	1,840	600
10	540	370	475	190	620	980	1,070	1,120	740	1,370	2,100	580
11	560	350	475	180	580	930	1,040	1,310	770	1,300	2,610	920
12	565	350	445	170	530	840	1,080	1,130	1,120	980	950	930
13	580	335	445	170	515	860	1,280	1,020	1,010	840	770	960
14	560	325	415	165	515	850	1,030	900	1,025	770	790	980
15	530	345	390	165	530	910	1,170	940	1,410	1,660	740	1,050
16	535	385	385	160	555	925	1,260	920	1,400	900	720	740
17	565	380	370	160	490	970	1,200	980	1,350	740	790	630
18	560	340	500	155	640	1,100	995	1,130	1,290	1,010	1,050	680
19	480	280	505	155	605	940	1,100	1,030	1,240	1,000	1,460	660
20	430	250	515	150	605	900	1,480	940	1,400	1,220	1,380	740

Daily discharge, in second-feet, of Rio Grande near El Paso, Tex., for the year ending September 30, 1925—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
21	350	255	470	150	635	900	1,370	990	1,430	1,095	1,320	880
22	335	295	465	150	640	870	1,450	995	1,440	1,000	1,700	850
23	325	280	440	150	670	1,000	1,350	950	1,270	1,025	1,800	700
24	350	295	480	150	640	1,030	1,260	1,080	1,430	1,410	990	670
25	355	295	460	145	630	950	1,310	1,480	1,300	1,370	780	680
26	375	300	440	145	600	940	1,420	1,240	1,460	1,640	810	730
27	415	305	440	145	585	930	1,730	1,200	1,270	1,900	1,200	690
28	370	300	510	145	680	760	1,260	1,520	1,140	1,400	1,150	730
29	360	300	540	145	-------	800	1,180	1,900	1,010	1,710	1,240	630
30	355	275	525	140	-------	1,170	1,550	1,730	790	3,600	1,390	640
31	335	-------	410	140	-------	1,025	-------	1,590	-------	2,790	1,540	------

NOTE.—All measurements prior to Dec. 31 were made by B. Garcia, an employee of Mexican section of International Boundary Commission; measurements thereafter made by employees of U. S. Bureau of Reclamation.

Monthly discharge of Rio Grande near El Paso, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	810	325	520	32,000
November	525	250	354	21,100
December	540	340	450	27,700
January	360	140	189	11,600
February	680	195	526	29,200
March	1,170	690	922	56,700
April	1,730	995	1,260	75,100
May	1,900	900	1,190	73,200
June	1,460	740	1,150	68,400
July	3,600	740	1,300	79,800
August	6,150	720	1,580	96,900
September	9,160	580	1,470	87,400
The year	9,160	140	910	659,000

RIO GRANDE BELOW OLD FORT QUITMAN, NEAR FINLAY, TEX.

LOCATION.—At lower end of valley of El Paso, Hudspeth County, 1½ miles below Old Fort Quitman, and 11½ miles south of Finlay, Hudspeth County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—January 1, 1922, to September 30, 1925.

GAGE.—Vertical staff on left bank.

DISCHARGE MEASUREMENTS.—Made from cable near gage.

CHANNEL AND CONTROL.—Bed consists of sand; shifting. Banks of sand and clay. Right bank sparsely vegetated; neither bank subject to overflow. Channel straight for 500 feet above and below station. Control is sand bed of stream; shifting.

EXTREMES OF DISCHARGE.—Maximum mean daily stage recorded during year, 7.02 feet September 11 (discharge, 2,600 second-feet); minimum mean daily discharge, 20 second-feet July 23 and 24.

1922–1925: Maximum mean daily discharge recorded, 2,600 second-feet August 26, 1923, and September 11, 1925; minimum mean daily discharge, that of July 23–24, 1925.

DIVERSIONS.—Considerable water diverted in Colorado, New Mexico, Texas, and Mexico; amount not known.

REGULATION.—Flow regulated by storage at Elephant Butte Dam, 120 miles above El Paso.

ACCURACY.—Stage-discharge relation not permanent, and discharge based on frequent discharge measurements.

COOPERATION.—Station maintained and records furnished by the Mexican section of the International Boundary Commission.

Discharge measurements of Rio Grande below Old Fort Quitman, near Finlay, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 2	3.09	386	Dec. 4	2.63	275	Mar. 27	2.45	215
Oct. 4	2.77	310	Dec. 6	2.40	219	Apr. 7	2.68	282
Oct. 7	2.89	342	Dec. 9	2.69	274	Apr. 14	2.53	243
Oct. 9	2.94	353	Dec. 11	2.98	335	Apr. 21	1.97	147
Oct. 11	2.74	313	Dec. 13	3.02	352	Apr. 28	2.75	300
Oct. 14	2.64	290	Dec. 16	3.18	404	May 5	2.85	335
Oct. 16	2.60	266	Dec. 18	3.05	350	May 12	2.99	357
Oct. 18	2.45	223	Dec. 20	2.94	313	May 19	1.92	135
Oct. 21	2.65	306	Dec. 23	2.93	309	May 26	1.63	96
Oct. 23	2.43	229	Dec. 27	3.10	349	June 9	2.21	191
Oct. 25	2.40	229	Dec. 30	3.00	333	June 16	2.12	171
Oct. 28	2.46	240	Jan. 3	3.25	394	June 23	3.15	425
Oct. 30	2.50	239	Jan. 7	2.91	300	June 29	3.38	463
Nov. 1	2.49	232	Jan. 10	2.69	258	July 6	1.82	104
Nov. 4	2.37	218	Jan. 14	2.38	202	July 13	2.50	309
Nov. 6	2.22	201	Jan. 17	2.29	185	July 27	1.46	81
Nov. 8	2.40	248	Jan. 21	2.27	183	Aug. 3	3.95	1,113
Nov. 11	2.43	232	Jan. 24	2.27	175	Aug. 10	5.42	1,644
Nov. 13	2.39	214	Jan. 28	2.09	153	Aug. 17	4.00	732
Nov. 15	2.17	185	Jan. 31	2.00	147	Aug. 22	3.61	617
Nov. 18	2.11	178	Feb. 4	1.99	138	Aug. 28	2.50	161
Nov. 20	2.26	194	Feb. 7	2.72	279	Sept. 3	4.66	1,191
Nov. 22	2.32	225	Feb. 11	2.64	262	Sept. 11	7.20	2,754
Nov. 25	2.20	185	Feb. 18	2.81	329	Sept. 18	3.75	675
Nov. 27	2.40	223	Feb. 27	3.10	376	Sept. 25	3.52	550
Nov. 29	2.39	220	Mar. 6	2.76	295			
Dec. 2	2.58	264	Mar. 20	2.64	260			

Daily discharge, in second-feet, of Rio Grande below Old Fort Quitman, near Finlay, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	375	230	245	350	145	300	185	360	590	265	630	430
2	385	225	260	330	145	290	170	315	600	175	960	465
3	350	220	290	380	140	330	155	330	600	135	1,115	580
4	305	220	270	345	135	335	185	305	485	110	1,125	1,475
5	285	210	230	330	160	325	240	320	400	80	1,200	1,275
6	300	245	215	330	290	300	295	365	355	110	1,250	1,370
7	350	235	210	305	255	350	275	340	265	255	1,325	1,425
8	360	250	245	275	270	345	265	300	230	260	1,435	1,625
9	355	235	280	260	255	360	280	295	200	210	1,645	1,850
10	340	225	300	255	270	375	250	290	195	145	1,650	2,250
11	305	230	330	250	255	390	240	325	175	200	1,675	2,600
12	310	230	335	235	315	410	235	385	140	190	1,750	2,500
13	305	210	355	220	375	400	235	305	110	215	1,740	1,475
14	290	205	400	200	385	360	245	275	85	260	1,700	1,075
15	285	190	410	195	350	240	220	245	135	230	1,725	900
16	275	195	405	185	320	235	245	190	170	200	1,015	840
17	255	185	390	190	305	275	175	140	170	130	740	760
18	220	180	345	190	295	335	160	155	165	145	625	715
19	210	190	330	175	320	280	175	130	225	160	935	600
20	285	200	315	180	275	255	165	125	250	95	490	530
21	305	230	300	185	290	250	150	115	255	35	550	495
22	300	225	285	175	325	275	160	100	320	25	595	500
23	230	225	305	190	320	280	185	80	405	20	420	540
24	225	200	290	180	350	365	220	100	430	20	435	560
25	220	185	290	160	370	355	240	60	390	25	500	565
26	220	215	315	145	365	290	235	90	355	25	430	545
27	230	220	345	150	370	225	240	115	410	30	330	520
28	240	215	325	155	315	180	300	215	445	105	240	505
29	245	220	320	155	-------	170	345	235	460	145	390	500
30	250	235	335	150	-------	160	340	350	410	240	340	505
31	250	-------	330	140	-------	195	-------	450	-------	235	320	-------

Monthly discharge of Rio Grande below Old Fort Quitman, near Finlay, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	385	210	286	17,600
November	250	180	216	12,900
December	410	210	310	19,000
January	380	140	225	13,800
February	385	135	284	15,800
March	410	160	298	18,300
April	345	150	227	13,500
May	450	60	239	14,700
June	600	85	314	18,700
July	265	20	144	8,880
August	1,750	240	945	58,100
September	2,600	430	999	59,500
The year	2,600	20	374	271,000

RIO GRANDE ABOVE PRESIDIO, TEX.

LOCATION.—1 mile above Haciendita, 8 miles above mouth of Rio Conchos, and 10 miles northwest of Presidio, Presidio County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 22, 1900, to March 31, 1914; September 1, 1919, to March 31, 1920; and August 1, 1923, to September 30, 1925.

GAGE.—Stevens 8-day water-stage recorder.

DISCHARGE MEASUREMENTS.—Made from cable near gage.

CHANNEL AND CONTROL.—Bed of sand. Channel straight 1,000 feet above and below station. Banks medium in height and steep. Control is sand bed of stream; shifts. At extremely high stages backwater from Rio Conchos reaches this station.

EXTREMES OF DISCHARGE.—Maximum mean daily discharge for year, 3,400 second-feet August 12; minimum mean daily discharge, 50 second-feet August 4.

1900–1914; 1919–20; 1923–1925: Maximum mean daily discharge, 18,100 second-feet September 15 and 16, 1919; no flow for several periods.

DIVERSIONS.—Considerable water diverted in Colorado, New Mexico, Texas, and Mexico; amount not known.

REGULATION.—Flow largely regulated by storage at Elephant Butte Dam, 120 miles above El Paso.

ACCURACY.—Stage-discharge relation not permanent. Daily discharge based largely on frequent discharge measurements.

COOPERATION.—Station maintained and records furnished by the Mexican section of the International Boundary Commission.

Discharge measurements of Rio Grande above Presidio, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	6.10	411	Dec. 19	6.5	438	May 11	6.38	428
Oct. 6	6.30	477	Dec. 22	6.5	445	May 18	5.95	312
Oct. 10	6.35	484	Dec. 26	6.4	411	May 25	5.20	175
Oct. 13	6.20	386	Dec. 29	6.5	471	June 1	6.54	606
Oct. 17	6.00	328	Jan. 5	6.58	474	June 8	6.56	598
Oct. 20	6.00	271	Jan. 12	6.43	431	June 15	5.30	257
Oct. 24	5.80	254	Jan. 19	6.05	310	June 22	4.97	143
Oct. 27	6.00	290	Jan. 26	5.93	314	June 29	6.65	605
Oct. 31	5.90	263	Feb. 2	5.78	225	July 6	6.64	628
Nov. 3	5.90	255	Feb. 9	5.65	204	July 13	5.72	283
Nov. 7	5.90	253	Feb. 16	6.12	346	July 20	6.19	417
Nov. 10	5.80	240	Feb. 23	6.37	411	July 27	4.87	78
Nov. 14	5.90	247	Mar. 2	6.46	434	Aug. 3	5.02	60
Nov. 17	5.90	236	Mar. 9	6.30	371	Aug. 10	8.25	1,447
Nov. 21	5.80	221	Mar. 16	6.45	370	Aug. 17	8.41	1,577
Nov. 24	5.70	206	Mar. 23	6.23	299	Aug. 24	6.71	756
Nov. 28	5.80	220	Mar. 30	6.21	299	Aug. 31	7.43	1,077
Dec. 1	5.9	227	Apr. 6	5.54	192	Sept. 7	8.37	1,764
Dec. 5	5.9	226	Apr. 13	5.75	231	Sept. 14	9.44	2,453
Dec. 8	6.1	265	Apr. 20	5.30	130	Sept. 21	7.49	1,093
Dec. 12	6.0	253	Apr. 27	4.92	89	Sept. 28	7.00	903
Dec. 15	6.3	379	May 4	5.78	260			

Daily discharge, in second-feet, of Rio Grande above Presidio, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	500	245	205	440	245	440	285	150	605	495	275	750
2	475	240	230	435	240	440	235	160	540	490	145	720
3	435	250	210	440	235	410	210	215	585	455	70	580
4	430	255	210	440	235	370	205	260	670	420	50	810
5	430	255	225	470	230	310	195	275	765	400	270	1,575
6	470	260	240	500	225	290	190	375	770	575	615	1,700
7	470	255	245	490	220	295	180	690	680	515	1,325	1,725
8	470	255	250	470	215	320	175	530	590	405	2,225	1,600
9	485	245	245	455	205	330	160	635	545	415	3,100	1,625
10	510	240	240	455	225	290	200	495	505	370	1,725	1,800
11	470	240	235	440	305	315	245	430	485	320	2,300	1,900
12	465	240	245	425	300	325	235	415	465	300	3,400	2,000
13	395	245	285	400	300	330	230	710	450	315	2,000	2,100
14	370	245	320	385	300	360	225	465	360	1,050	1,825	2,425
15	345	245	355	375	310	375	195	430	270	840	1,750	2,600
16	325	245	385	365	325	355	180	400	275	510	1,625	1,950
17	325	240	390	350	400	480	175	360	225	625	1,600	1,900
18	315	240	420	335	400	440	160	315	220	480	1,550	1,825
19	310	235	440	315	400	320	155	270	300	445	1,500	1,675
20	305	225	455	295	395	285	150	250	190	410	1,450	1,325
21	300	225	450	290	365	285	155	245	170	235	1,225	1,050
22	295	220	445	290	375	310	140	240	145	200	1,175	920
23	275	215	440	285	400	305	125	225	125	175	1,050	1,000
24	270	210	420	275	380	260	120	200	115	150	830	965
25	290	205	415	275	360	245	115	180	420	125	630	905
26	295	215	410	280	395	250	100	280	1,050	105	550	710
27	300	220	470	280	395	250	85	975	625	80	530	780
28	285	215	450	280	430	305	80	2,000	560	75	585	895
29	280	215	450	275	------	310	110	650	655	70	530	905
30	270	210	465	265	------	285	130	750	480	75	510	870
31	265	------	470	250	------	210	------	555	------	240	955	------

Monthly discharge of Rio Grande above Presidio, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	510	265	369	22,700
November	260	205	235	14,000
December	470	205	346	21,300
January	500	250	365	22,500
February	430	205	315	17,500
March	480	210	326	20,000
April	285	80	171	10,200
May	2,000	150	456	28,000
June	1,050	115	461	27,500
July	1,050	70	367	22,500
August	3,400	50	1,210	74,100
September	2,600	580	1,390	82,500
The year	3,400	50	501	363,000

RIO GRANDE BELOW PRESIDIO, TEX.

LOCATION.—At west end of canyon section of Rio Grande, 6 miles below Presidio, Presidio County, and 7 miles below mouth of Rio Conchos.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 1, 1900, to July 31, 1915; September 1, 1919, to March 31, 1920; August 1, 1923, to September 30, 1925.

GAGE.—Stevens continuous water-stage recorder.

DISCHARGE MEASUREMENTS.—Made from cable or from boat.

CHANNEL AND CONTROL.—Bed of sand; shifts. Right bank not subject to overflow. Left bank wooded and subject to overflow at a gage height of 20 feet for about 750 feet. Overflow area is cultivated land with small brush. Control consists of sand; shifts. Alamito Creek, an intermittent stream, reaching the river a quarter of a mile below station, is subject to torrential floods which bring large quantities of boulders and gravel into Rio Grande, forming a temporary dam which causes changes in stage-discharge relation.

EXTREMES OF DISCHARGE.—Maximum mean daily discharge during year, 18,200 second-feet September 7; minimum mean daily discharge, 825 second-feet April 25.

1900–1915; 1919–20; 1923–1925: Maximum stage recorded, 26.35 feet September 11, 1904 (discharge, 149,200 second-feet); minimum mean daily discharge, 5 second-feet May 4–14, 1904.

DIVERSIONS.—Considerable water diverted in Colorado, New Mexico, Texas, and Mexico; amount not known.

REGULATION.—Flow partly regulated by storage at Elephant Butte Dam, 120 miles above El Paso.

ACCURACY.—Stage-discharge relation not permanent. Determination of discharge based on frequent measurements.

COOPERATION.—Station maintained and records furnished by the Mexican section of the International Boundary Commission.

Discharge measurements of Rio Grande below Presidio, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 4	16.85	3,680	Feb. 3	14.38	1,272	June 6	14.73	2,001
Oct. 7	16.00	3,029	Feb. 7	14.39	1,253	June 9	14.55	1,864
Oct. 11	15.30	2,475	Feb. 10	14.40	1,280	June 13	14.10	1,523
Oct. 14	15.10	2,256	Feb. 14	14.46	1,345	June 16	14.05	1,539
Oct. 18	14.90	1,953	Feb. 17	14.65	1,425	June 20	14.15	1,576
Oct. 21	14.70	1,755	Feb. 21	14.58	1,425	June 23	14.00	1,411
Oct. 25	14.50	1,420	Feb. 24	14.70	1,537	June 27	15.36	2,245
Oct. 28	14.50	1,301	Feb. 28	14.72	1,550	June 30	17.32	4,132
Nov. 1	14.40	1,214	Mar. 3	14.78	1,603	July 4	16.67	3,366
Nov. 4	14.40	1,199	Mar. 7	14.60	1,492	July 7	16.76	3,826
Nov. 8	14.30	1,121	Mar. 10	14.63	1,503	July 11	17.74	5,690
Nov. 11	14.40	1,156	Mar. 14	14.47	1,368	July 14	17.25	4,389
Nov. 15	14.30	1,072	Mar. 17	14.55	1,361	July 18	17.28	4,653
Nov. 18	14.40	1,114	Mar. 21	14.33	1,146	July 21	16.31	3,897
Nov. 22	14.30	978	Mar. 24	14.64	1,270	July 25	15.70	3,290
Nov. 25	14.30	931	Mar. 28	14.32	1,119	July 28	15.62	2,829
Nov. 29	14.30	856	Mar. 31	14.24	1,061	Aug. 2	15.57	2,780
Dec. 2	14.40	848	Apr. 4	14.09	1,011	Aug. 4	18.89	7,358
Dec. 6	14.40	848	Apr. 7	14.12	1,057	Aug. 8	20.52	12,019
Dec. 9	14.40	817	Apr. 11	14.08	970	Aug. 11	20.61	13,401
Dec. 13	14.40	868	Apr. 14	14.08	996	Aug. 15	19.44	10,631
Dec. 16	14.60	1,009	Apr. 18	13.83	887	Aug. 18	18.41	8,448
Dec. 20	14.60	992	Apr. 21	13.90	897	Aug. 22	17.00	6,359
Dec. 23	14.60	1,016	Apr. 25	13.72	812	Aug. 25	17.38	7,374
Dec. 27	14.60	1,031	Apr. 28	13.88	918	Aug. 29	16.97	6,579
Dec. 30	14.60	1,037	May 2	13.96	925	Sept. 1	17.10	6,513
Jan. 3	14.56	1,053	May 5	14.09	963	Sept. 5	20.66	13,903
Jan. 6	14.58	1,064	May 9	14.29	1,008	Sept. 8	21.38	18,691
Jan. 10	14.59	1,101	May 12	14.12	942	Sept. 12	18.80	11,758
Jan. 13	14.52	1,102	May 16	14.00	895	Sept. 15	16.89	7,852
Jan. 17	14.51	1,097	May 19	14.10	954	Sept. 19	15.68	5,406
Jan. 20	14.38	1,103	May 23	13.86	882	Sept. 22	15.50	5,187
Jan. 24	14.32	1,142	May 26	13.89	1,007	Sept. 26	15.85	5,495
Jan. 27	14.39	1,210	May 30	15.13	2,108	Sept. 29	15.92	5,625
Jan. 31	14.30	1,213	June 2	14.63	2,006			

Daily discharge, in second-feet, of Rio Grande below Presidio, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,225	1,200	835	1,100	1,225	1,650	1,075	915	2,025	5,600	2,950	6,600
2	2,290	1,215	840	1,075	1,275	1,675	1,100	900	1,925	4,400	2,825	7,575
3	3,800	1,208	860	1,050	1,275	1,650	1,915	945	1,975	4,000	3,500	9,300
4	3,725	1,200	865	1,100	1,300	1,600	1,000	970	2,000	3,750	7,575	12,200
5	3,500	1,225	840	1,100	1,325	1,600	1,025	960	2,000	3,750	9,200	13,750
6	3,250	1,215	835	1,075	1,300	1,575	1,075	940	2,075	4,225	7,650	17,500
7	3,000	1,130	840	1,100	1,275	1,425	1,050	1,825	2,000	3,825	9,400	18,250
8	2,825	1,120	840	1,125	1,275	1,500	1,025	1,975	1,975	4,625	12,500	16,000
9	2,600	1,130	845	1,075	1,300	1,550	980	1,050	1,875	6,650	13,100	17,250
10	2,550	1,135	835	1,075	1,300	1,475	975	1,075	1,750	7,750	12,500	15,200
11	2,475	1,140	845	1,100	1,325	1,450	1,000	990	1,725	5,750	14,000	13,000
12	2,375	1,140	850	1,100	1,350	1,450	1,050	950	1,675	5,300	12,800	12,000
13	2,300	1,145	850	1,050	1,325	1,350	1,050	1,150	1,550	6,250	13,200	10,500
14	2,275	1,075	920	1,050	1,325	1,325	1,000	1,050	1,525	4,400	11,900	9,000
15	2,200	1,050	985	1,075	1,375	1,350	950	950	1,525	5,275	10,800	7,900
16	2,100	1,085	1,015	1,050	1,400	1,375	890	900	1,500	5,475	9,600	7,150
17	1,975	1,090	1,025	1,050	1,450	1,375	880	925	1,475	5,500	9,200	6,450
18	1,925	1,100	1,030	1,050	1,550	1,400	870	945	1,650	4,625	8,600	5,700
19	1,875	1,110	1,010	1,050	1,525	1,350	880	955	1,575	4,200	8,300	5,400
20	1,825	1,090	1,000	1,175	1,425	1,225	900	955	1,475	4,050	8,100	5,375
21	1,775	960	1,025	1,150	1,400	1,150	910	930	1,450	3,900	7,200	5,200
22	1,650	970	1,020	1,175	1,450	1,250	910	910	1,425	3,775	6,400	5,150
23	1,575	980	1,010	1,125	1,475	1,200	900	895	1,400	3,550	6,350	5,425
24	1,460	930	1,020	1,125	1,525	1,275	850	1,050	1,375	3,400	7,125	5,500
25	1,400	920	1,020	1,150	1,500	1,250	825	1,050	2,000	3,300	7,350	5,525
26	1,375	930	1,000	1,175	1,575	1,250	850	1,025	3,525	3,125	7,100	5,500
27	1,325	940	1,010	1,200	1,500	1,200	875	2,050	2,900	2,950	6,950	5,300
28	1,275	840	1,020	1,200	1,550	1,175	900	4,650	3,000	2,850	6,900	5,425
29	1,260	845	1,025	1,250	-------	1,150	920	2,225	2,950	2,800	6,675	5,625
30	1,260	860	1,015	1,225	-------	1,125	920	2,025	3,650	2,775	7,200	5,700
31	1,240	-------	1,020	1,200	-------	1,075	-------	1,800	-------	2,975	7,000	-------

Monthly discharge of Rio Grande below Presidio, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	3,800	1,240	2,150	132,000
November	1,220	840	1,070	63,400
December	1,030	835	940	57,800
January	1,250	1,050	1,120	68,600
February	1,580	1,220	1,390	77,100
March	1,680	1,080	1,370	84,200
April	1,920	825	985	58,600
May	4,650	895	1,290	179,200
June	3,650	1,380	1,960	17,000
July	7,750	2,780	4,350	267,000
August	14,000	2,820	8,510	524,000
September	18,200	5,150	9,010	536,000
The year	18,200	825	2,850	2,060,000

RIO GRANDE AT LANGTRY, TEX.

LOCATION.—At east end of canyon section, half a mile from Langtry, Val Verde County, and 13 miles above mouth of Pecos River.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 1, 1900, to October 15, 1914; December 1, 1919, to March 31, 1920; January 20, 1924, to September 30, 1925.

GAGE.—Vertical and inclined staff on right bank; read by H. T. Dodd.

DISCHARGE MEASUREMENTS.—Made from cable 500 feet below gage or by wading.

CHANNEL AND CONTROL.—Channel straight for 1 mile above and one-fourth mile below station. One channel at all stages. Bed consists of sand and gravel; fairly permanent. Right bank of rock, permanent, and not subject to overflow. Left bank of rock overlain with sand and not subject to overflow. Control is sand, gravel, and boulder riffle, 1,000 feet below gage; probably shifts at high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 18.0 feet at 8 a. m. May 29 (discharge, 50,000 second-feet, determined from extension of rating curve and subject to considerable error); minimum stage, 1.2 feet from 8 a. m. April 22 to 8 a. m. April 25 and 5 p. m. May 6 to 5 p. m. May 8 (discharge, 995 second-feet).

1900–1914; 1919–1920; 1924–1925: Maximum stage recorded, 34.25 feet September 13, 1904 (discharge, 132,000 second-feet); minimum discharge, 270 second-feet May 8 to 13, 1904. A float measurement by W. H. Dodd on September 16, 1919, at a stage of 46.9 feet, present gage datum (by levels to point shown by W. H. Dodd) showed discharge of 152,000 second-feet. A stage of 56.9 feet, present gage datum, was reached about June 18, 1922; determined by leveling to floodmark made by W. H. Dodd.

DIVERSIONS.—Considerable water is diverted in Colorado, New Mexico, Texas, and Mexico; amount not known. Records of the Board of Water Engineers for the State of Texas show that about 180,000 acres were irrigated in 1920 by diversions below station, practically all of which is in Hidalgo and Cameron Counties.

REGULATION.—Flow partly regulated by storage at Elephant Butte Dam, 120 miles above El Paso, and on Mexican tributaries.

ACCURACY.—Stage-discharge relation not permanent. Rating curves used from October 1 to May 27 well defined below 3,000 second-feet and poorly defined above, and one used from May 28 to September 30, is well defined below 34,000 second-feet and extended above. Gage read to tenths or half-tenths twice daily, and oftener during floods. Daily discharge determined by applying mean daily gage height to rating table. Records good.

Discharge measurements of Rio Grande at Langtry, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 4	2.40	2,590	Mar. 5	1.80	1,610	Aug. 11	11.13	23,300
Oct. 11	2.60	2,870	Mar. 13	1.70	1,540	Aug. 12	12.32	26,800
Oct. 18	2.10	2,110	Mar. 21	1.61	1,420	Aug. 13	12.34	27,100
Nov. 29	1.60	1,370	Apr. 18	1.35	1,120	Aug. 14	10.90	23,300
Dec. 6	1.60	1,220	May 4	1.24	1,080	Aug. 15	11.22	25,600
Dec. 13	1.60	1,550	May 9	1.30	1,120	Aug. 16	10.65	21,100
Jan. 7	1.70	1,580	May 15	1.46	1,290	Aug. 17	9.42	18,900
Jan. 17	1.70	1,540	June 21	1.72	1,190	Aug. 18	8.47	16,900
Jan. 23	1.70	1,440	July 4	4.21	6,080	Sept. 3	5.44	9,010
Feb. 3	1.62	1,350	July 25	2.88	2,730	Sept. 9	14.40	34,100
Feb. 19	1.70	1,420	Aug. 5	2.70	2,390	Sept. 21	4.56	6,410
Do	1.70	1,450	Aug. 9	8.09	15,900			
Feb. 25	1.70	1,590	Aug. 10	9.67	20,100			

Daily discharge, in second-feet, of Rio Grande at Langtry, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,700	1,640	1,380	1,500	1,500	1,500	1,380	1,080	2,840	3,210	5,000	8,120
2	2,520	1,640	1,380	1,500	1,500	1,500	1,380	1,040	2,340	3,020	2,840	8,120
3	2,520	1,640	1,380	1,500	1,380	1,500	1,380	1,040	2,340	4,520	2,670	8,600
4	2,520	1,640	1,380	1,500	1,380	1,500	1,280	1,040	2,040	5,720	2,670	11,100
5	2,880	1,500	1,380	1,500	1,380	1,640	1,220	1,040	1,890	4,760	2,500	16,600
6	3,270	1,500	1,380	1,500	1,380	1,640	1,220	995	1,760	4,520	2,670	22,800
7	7,380	1,500	1,380	1,500	1,380	1,640	1,180	995	1,760	4,520	8,840	26,800
8	11,600	1,500	1,380	1,500	1,380	1,640	1,180	995	1,760	4,520	14,700	34,800
9	7,700	1,500	1,380	1,500	1,380	1,640	1,180	1,080	1,510	4,520	15,500	33,300
10	3,270	1,500	1,380	1,500	1,380	1,640	1,180	1,220	1,450	4,280	20,100	28,000
11	2,880	1,500	1,380	1,500	1,380	1,640	1,180	1,500	1,390	5,960	23,900	23,600
12	2,520	1,500	1,380	1,500	1,380	1,500	1,180	1,910	1,390	6,680	26,500	24,500
13	2,200	1,500	1,380	1,500	1,380	1,500	1,640	1,380	1,280	7,400	26,200	20,100
14	2,060	1,500	1,380	1,500	1,380	1,500	1,500	1,280	1,280	6,680	23,300	14,200
15	2,200	1,500	1,500	1,500	1,380	1,380	1,280	1,220	1,220	5,960	23,900	15,200
16	2,060	1,500	1,500	1,500	1,380	1,380	1,180	1,220	1,170	4,760	22,500	12,600
17	2,060	1,500	1,500	1,500	1,500	1,380	1,180	1,180	1,170	4,760	19,000	11,600
18	2,060	1,500	1,500	1,500	1,500	1,380	1,180	1,700	1,170	5,720	16,300	9,340
19	1,910	1,500	1,500	1,500	1,500	1,380	1,080	1,570	1,170	4,760	15,200	8,840
20	1,910	1,500	1,500	1,500	1,500	1,380	1,080	1,080	1,170	4,280	15,200	7,400
21	1,910	1,500	1,500	1,500	1,500	1,380	1,040	1,080	1,170	4,280	12,100	6,680
22	1,770	1,500	1,500	1,500	1,500	1,380	995	1,080	1,170	4,050	11,300	6,200
23	1,640	1,500	1,500	1,500	1,500	1,380	995	1,080	1,170	3,620	10,100	5,240
24	1,640	1,500	1,500	1,500	1,500	1,380	995	1,080	1,450	3,020	9,590	7,640
25	1,640	1,500	1,500	1,500	1,500	1,380	1,220	1,080	1,220	2,840	9,090	7,640
26	1,640	1,500	1,500	1,500	1,500	1,380	10,400	1,080	1,170	2,670	9,590	5,240
27	1,640	1,500	1,500	1,500	1,500	1,380	5,660	5,400	1,170	2,500	9,090	4,760
28	1,640	1,380	1,500	1,500	1,500	1,380	1,910	27,100	1,220	2,340	9,090	4,280
29	1,640	1,380	1,500	1,500	-------	1,380	1,770	29,200	2,670	2,340	8,840	3,830
30	1,640	1,380	1,500	1,500	-------	1,380	1,180	16,000	3,410	2,190	8,360	3,620
31	1,640	-------	1,500	1,500	-------	1,380	--------	8,840	-------	2,340	7,880	-------

Monthly discharge of Rio Grande at Langtry, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	11,600	1,640	2,800	172,000
November	1,640	1,380	1,510	89,700
December	1,500	1,380	1,450	88,900
January	1,500	1,500	1,500	92,200
February	1,500	1,380	1,440	80,000
March	1,640	1,380	1,470	90,100
April	10,400	995	1,710	102,000
May	29,200	995	3,790	233,000
June	3,410	1,170	1,600	95,000
July	7,400	2,190	4,280	263,000
August	26,500	2,500	12,700	783,000
September	34,800	3,620	13,400	795,000
The year	34,800	995	3,980	2,880,000

RIO GRANDE NEAR DEL RIO, TEX.

LOCATION.—At international highway bridge, between Del Rio, Val Verde County, Tex., and Villa Acuna, Coahuila, Mexico, 3.2 miles by road from courthouse in Del Rio, and 12 miles below mouth of Devils River.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—December 17, 1923, to September 30, 1925. At a site 1 mile below mouth of Devils River from May 1, 1900, to April 30, 1915, and at McKee's Switch, 4½ miles below mouth of Devils River from December 1, 1919, to March 31, 1920. Several springs but no tributaries of consequence enter the river between present location and location 1 mile below Devils River. (See "Rio Grande near Devils River" in previous publications).

GAGE.—Vertical and inclined staff gage on left bank; read by T. N. McFarland.

DISCHARGE MEASUREMENTS.—Made from cable, 900 feet above low-water gage, or from bridge.

CHANNEL AND CONTROL.—Channel straight for half a mile above and 1,400 feet below station. Bed composed of solid rock overlain with about 2 inches of sand and gravel; permanent. Right bank at cable of sand and clay, and not subject to overflow. Left bank composed of sand and clay, sodded with grass and heavily wooded with small trees and brush and at a stage of about 13 feet subject to overflow for 3,000 feet. Both banks subject to shift. Low-water control is rock ledge, partly covered with sand and gravel, 500 feet below gage; probably permanent. High-stage control indefinite.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 22.0 feet at 5. p. m. May 29 (discharge not determined); minimum stage, 2.36 feet April 24 and 25 (discharge, 1,770 second-feet).

1900–1915;1919–20; 1923–1925: Highest stage recorded at gage 1 mile below mouth of Devils River, 36.5 feet April 6, 1900. Highest stage at gage 4½ miles below mouth of Devils River, 41.0 feet in September, 1919 (discharge not determined). Relation to present gage not known.

Highest stage on record occurred June 18 or 19, 1922, and reached a gage height by present datum of 32.8 feet, determined in 1924 by leveling to floodmark on Mexican bank pointed out by Mexican customs officer (discharge not determined). Minimum mean daily stage, 3.25 feet May 12, 1904 (discharge, 1,120 second-feet).

DIVERSION.—Considerable water diverted in Colorado, New Mexico, Texas, and Mexico; amount not known.

REGULATION.—Flow partly regulated by storage at Elephant Butte Dam, 120 miles above El Paso, on Pecos River and on Mexican tributaries.

ACCURACY.—Stage-discharge relation not permanent. Rating curves well defined. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table, except as noted in footnote to daily-discharge table. Records good.

Discharge measurements of Rio Grande near Del Rio, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 2	3.30	4,320	Apr. 2	2.56	2,180	Aug. 11	7.66	23,500
Oct. 7	4.76	10,200	Apr. 15	2.49	2,070	Aug. 12	7.87	24,500
Oct. 14	3.10	3,780	Apr. 24	2.36	1,780	Aug. 12	8.16	25,700
Nov. 27	2.64	2,410	Apr. 27	5.76	13,700	Aug. 13	8.12	25,800
Dec. 1	2.64	2,400	Apr. 27	4.62	8,860	Aug. 13	8.15	26,000
Dec. 10	2.64	2,370	May 6	2.48	1,970	Aug. 14	8.08	25,000
Dec. 16	2.68	2,550	May 12	3.70	5,580	Aug. 14	7.98	24,700
Jan. 5	2.70	2,560	May 18	2.56	2,240	Aug. 15	7.90	24,400
Jan. 9	2.70	2,610	June 23	3.08	2,430	Aug. 17	7.26	21,200
Jan. 21	2.68	2,420	June 26	3.95	5,790	Aug. 26	4.86	9,370
Jan. 28	2.66	2,410	July 7	3.99	5,280	Sept. 7	7.77	24,300
Feb. 20	2.62	2,420	July 22	3.81	5,230	Sept. 8	9.05	31,000
Mar. 3	2.66	2,490	July 29	3.20	3,100	Sept. 18	5.16	10,600
Mar. 10	2.68	2,530	Aug. 7	5.31	10,900	Sept. 24	4.12	6,680
Mar. 18	2.58	2,320	Aug. 8	6.08	15,500			

Daily discharge, in second-feet, of Rio Grande near Del Rio, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,550	2,530	2,420	2,530	2,300	2,420	2,190	1,980	16,800	5,540	3,720	10,400
2	4,120	2,530	2,420	2,530	2,300	2,420	2,190	1,980	10,400	4,870	9,460	9,900
3	3,830	2,530	2,420	2,530	2,300	2,420	2,190	2,180	6,990	5,540	5,540	11,200
4	3,830	2,530	2,420	2,530	2,300	2,420	2,190	2,080	5,540	7,770	4,870	9,460
5	3,690	2,420	2,420	2,530	2,300	2,420	2,080	2,080	5,200	6,990	4,270	12,600
6	4,740	2,420	2,420	2,530	2,300	2,420	2,080	2,080	4,560	6,240	4,270	20,400
7	8,160	2,420	2,530	2,530	2,300	2,530	2,080	1,980	4,560	6,240	11,200	24,000
8	9,820	2,420	2,530	2,530	2,300	2,530	2,080	2,080	4,560	5,540	15,400	30,000
9	14,300	2,420	2,420	2,530	2,300	2,530	2,080	2,180	4,270	5,890	14,800	33,400
10	6,180	2,530	2,300	2,530	2,300	2,530	1,980	2,080	4,870	5,890	17,800	31,700
11	4,420	2,530	2,300	2,530	2,300	2,420	1,980	2,080	4,270	5,200	21,800	28,400
12	3,830	2,420	2,420	2,530	2,300	2,420	1,870	4,870	3,990	9,460	25,100	24,600
13	3,690	2,420	2,530	2,530	2,300	2,420	1,870	3,210	3,990	10,800	26,200	25,100
14	3,550	2,420	2,530	2,530	2,300	2,300	2,900	2,970	3,720	8,180	25,100	19,800
15	3,420	2,420	2,530	2,530	2,300	2,300	2,190	2,860	3,720	9,460	24,600	14,800
16	3,280	2,420	2,530	2,530	2,420	2,300	2,080	2,400	3,720	9,460	25,100	14,000
17	3,150	2,420	2,530	2,530	2,420	2,300	1,980	2,290	3,460	9,460	20,800	12,200
18	3,150	2,420	2,530	2,530	2,420	2,300	1,980	2,290	3,460	9,460	18,800	11,200
19	3,150	2,420	2,530	2,530	2,300	2,300	1,870	2,400	3,460	7,380	18,400	9,460
20	3,020	2,420	2,420	2,530	2,300	2,190	1,980	2,510	3,210	7,770	16,800	7,770
21	2,900	2,420	2,420	2,530	2,420	2,190	1,870	2,290	3,720	6,240	13,000	7,770
22	2,900	2,300	2,420	2,420	2,420	2,300	1,870	2,180	3,460	5,540	12,600	6,990
23	2,900	2,300	2,420	2,420	2,530	2,420	1,870	2,180	3,460	5,200	12,200	6,240
24	2,900	2,300	2,530	2,420	2,530	2,300	1,770	2,080	3,460	4,270	10,400	6,610
25	2,770	2,300	2,530	2,420	2,420	2,300	1,770	1,980	3,460	4,560	10,400	6,240
26	2,770	2,300	2,530	2,420	2,420	2,190	1,870	1,870	5,540	4,270	9,900	7,770
27	2,770	2,420	2,530	2,420	2,420	2,190	9,900	3,720	3,460	3,990	11,200	6,990
28	2,650	2,420	2,530	2,420	2,420	2,190	7,770	-------	3,460	3,720	10,800	5,540
29	2,650	2,420	2,530	2,420	-------	2,300	2,970	-------	3,210	3,720	10,400	5,540
30	2,650	2,420	2,650	2,420	-------	2,300	2,180	-------	4,270	3,210	10,400	5,200
31	2,530	-------	2,650	2,300	-------	2,300	-------	26,200	-------	3,720	10,800	-------

NOTE.—Gage height, in feet, for days when stage was beyond limits of rating curve, and discharge not determined, as follows: May 28, 11.20; May 29, 19.10; May 30, 16.25.

Monthly discharge of Rio Grande near Del Rio, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	14,300	2,530	4,110	252,000
November	2,530	2,300	2,420	144,000
December	2,650	2,300	2,480	153,000
January	2,530	2,300	2,490	153,000
February	2,530	2,300	2,350	131,000
March	2,530	2,190	2,350	145,000
April	9,900	1,770	2,520	150,000
May				
June	16,800	3,210	4,740	282,000
July	10,800	3,210	6,310	388,000
August	26,200	3,720	14,100	865,000
September	33,400	5,200	14,200	844,000

RIO GRANDE AT EAGLE PASS, TEX.

LOCATION.—At international highway bridge between Eagle Pass, Maverick County, Tex., and Piedras Negras, Coahuila, Mex., 1 mile above Southern Pacific Railroad bridge and 4 miles below mouth of Elm Creek.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 1, 1900, to April 30, 1916; November 26, 1923, to September 30, 1925. United States Weather Bureau has obtained records of stage since January 1, 1901.

GAGE.—Vertical staff in six sections on left bank; read by employee of United States Weather Bureau.

DISCHARGE MEASUREMENTS.—Made from highway or railroad bridge.

CHANNEL AND CONTROL.—Bed composed of sand or limestone; permanent. Channel straight for half a mile above and 1 mile below station. One channel at all stages. Banks composed of sand and clay; subject to overflow for 600 feet on both sides of low-water channel at a stage of 14 feet. Drift collecting on temporary highway bridge may cause change in stage-discharge relation. Control probably a gravel bar around an old steel highway bridge span lying in river just below railroad bridge.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 33.7 feet at 11 a. m. May 30 (discharge not determined); minimum stage not determined.

1900–1916; 1923–1925: Maximum stage recorded, 34.6 feet at midnight June 29, 1905 (mean daily discharge, 238,300 second-feet June 30, 1905); minimum mean daily discharge, 1,030 second-feet April 15, 1913.

DIVERSIONS.—Considerable water is diverted in Colorado, New Mexico, Texas, and Mexico; amount not known.

REGULATION.—Flow partly regulated by storage at Elephant Butte Dam 120 miles above El Paso, on Pecos River, and on Mexican tributaries.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined between 1,900 and 35,000 second-feet, but there was insufficient data to extend it to cover range of stage for year. Gage read once daily but not to such a refinement to justify publication of daily discharge. Monthly discharge estimated by comparison with Del Rio and Laredo records in conjunction with discharge measurements. Records poor.

COOPERATION.—Gage-height records furnished by United States Weather Bureau.

Discharge measurements of Rio Grande at Eagle Pass, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 1	3.60	5,100	Mar. 17	2.48	2,350	Aug. 21	7.24	18,600
Oct. 9	5.78	12,400	Apr. 1	2.48	2,440	Aug. 22	6.76	16,000
Oct. 15	3.40	4,650	Apr. 14	2.30	2,280	Aug. 23	6.35	14,000
Nov. 26	2.78	3,010	Apr. 21	2.20	1,940	Aug. 24	6.02	11,500
Dec. 2	2.78	3,160	Apr. 28	4.70	8,580	Aug. 25	5.78	10,700
Dec. 11	2.68	3,030	May 7	2.26	2,250	Aug. 27	5.80	10,700
Jan. 3	2.78	3,190	May 13	3.28	4,410	Sept. 11	9.96	33,100
Jan. 12	2.78	3,190	June 24	3.20	3,180	Sept. 12	9.54	29,800
Jan. 19	2.70	3,040	July 8	4.15	5,380	Sept. 13	9.60	27,900
Jan. 26	2.68	2,950	July 13	6.20	12,200	Sept. 17	6.86	13,900
Feb. 21	2.58	2,730	July 28	3.50	4,070	Sept. 23	5.02	8,150
Mar. 2	2.58	2,920	Aug. 19	7.68	20,300			
Mar. 9	2.60	2,790	Aug. 20	7.60	20,000			

Monthly discharge of Rio Grande at Eagle Pass, Tex., for the year ending September 30, 1925

Month	Mean discharge in second-feet	Run-off in acre-feet	Month	Mean discharge in second-feet	Run-off in acre-feet
October	5,300	326,000	April	3,300	196,000
November	3,180	189,000	May 1–27	3,090	165,000
December	3,090	190,000	June	6,580	392,000
January	3,100	191,000	July	6,300	387,000
February	2,830	157,000	August	15,900	978,000
March	2,610	160,000	September	16,600	988,000

NOTE.—See "Accuracy" paragraph. Gage height, in feet, for days when stage was beyond limits of rating and discharge not estimated: May 28, 16.4; May 29, 18.0; May 30, 23.6; and May 31, 13.0.

RIO GRANDE NEAR LAREDO, TEX.

LOCATION.—At Mexican National Railroad bridge, Laredo, Webb County, 1 mile above international highway bridge and 2 miles above mouth of Arroyo Chacon.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 1, 1900, to March 31, 1914; November 1, 1922, to September 30, 1923. Records of stage have been obtained by United States Weather Bureau at international highway bridge since January 1, 1901.

GAGE.—Stevens continuous water-stage recorder at downstream side of left bridge abutment; installed in September, 1925. Prior to that date a Stevens continuous recorder on left bank, 1½ miles upstream. Relation between gages unknown.

DISCHARGE MEASUREMENTS.—Made from cable 50 feet below gage.

CHANNEL AND CONTROL.—Channel straight for 1,000 feet above and below gage. Right bank of sand and silt; wooded along edge for 25 feet from low-water edge and clean from there back; subject to overflow at a stage of about 10 feet. Left bank of sand and silt; wooded with mesquite, grangeno, and willows; subject to overflow at a stage of 30 feet; bed of sand; shifts. Control is bed and banks of stream; shifts.

EXTREMES OF DISCHARGE.—Maximum mean daily stage recorded during year. 34.50 feet May 31 (discharge, about 200,000 second-feet); minimum mean daily discharge, 1,850 second-feet May 28.

1900–1914; 1922–1925: Maximum stage recorded, that of May 31, 1925; minimum mean daily discharge, 955 second-feet August 17, 1910.

The highest stage known was about 46 feet June 20, 1922 (datum of gage from November 1, 1922, to September, 1925); discharge not determined.

DIVERSIONS.—Considerable water diverted in Colorado, New Mexico, Texas, and Mexico; amount not known.

REGULATION.—Flow partly regulated by storage at Elephant Butte Dam 120 miles above El Paso, on Pecos River, and on Mexican tributaries.

ACCURACY.—Stage-discharge relation not permanent. Owing to shifting of control daily discharge based on frequent discharge measurements.

COOPERATION.—Records furnished by the Mexican sectic of the International Boundary Commission.

Discharge measurements of Rio Grande near Laredo, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	5.70	5,070	Jan. 30	4.50	2,516	June 27	4.96	3,085
Oct. 7	5.90	5,081	Feb. 3	4.45	2,459	July 1	4.97	2,732
Oct. 10	7.72	8,400	Feb. 6	4.40	2,383	July 4	5.78	5,973
Oct. 14	5.90	5,599	Feb. 10	4.40	2,330	July 7	6.84	7,656
Oct. 17	5.55	5,209	Feb. 13	4.40	2,243	July 8	6.50	5,918
Oct. 21	5.30	5,008	Feb. 17	4.30	2,192	July 11	6.07	4,896
Oct. 24	5.15	4,243	Feb. 20	4.30	2,243	July 15	7.92	11,650
Oct. 28	5.00	3,870	Feb. 24	4.30	2,308	July 18	7.86	11,242
Oct. 31	4.95	3,641	Feb. 27	4.30	2,319	July 22	7.16	6,886
Nov. 4	5.85	3,396	Mar. 4	4.37	2,319	July 29	5.57	3,378
Nov. 7	4.85	3,336	Mar. 7	4.57	2,492	Aug. 1	5.55	3,228
Nov. 11	4.72	3,135	Mar. 11	4.59	2,633	Aug. 2	10.60	31,684
Nov. 14	4.75	3,056	Mar. 14	4.66	2,714	Aug. 5	6.39	4,375
Nov. 18	4.70	3,149	Mar. 18	4.59	2,524	Aug. 8	5.62	3,490
Nov. 21	4.65	2,850	Mar. 21	4.59	2,455	Aug. 10	9.47	14,435
Nov. 25	4.60	2,713	Mar. 25	4.50	2,928	Aug. 12	9.96	17,273
Nov. 28	4.65	2,789	Mar. 28	4.53	2,791	Aug. 13	11.24	22,794
Dec. 2	4.70	2,883	Apr. 1	4.42	2,349	Aug. 14	11.53	26,482
Dec. 5	4.70	2,961	Apr. 4	4.57	2,570	Aug. 15	11.57	29,935
Dec. 9	4.70	2,829	Apr. 8	4.19	2,128	Aug. 19	11.28	28,862
Dec. 12	4.65	2,712	Apr. 11	4.15	1,966	Aug. 22	9.78	15,626
Dec. 16	4.70	2,650	Apr. 15	4.22	2,145	Aug. 26	8.43	10,803
Dec. 19	4.70	2,642	Apr. 18	4.08	1,967	Aug. 29	8.01	9,320
Dec. 23	4.70	2,581	Apr. 25	4.20	1,992	Sept. 2	8.40	10,208
Dec. 26	4.70	2,477	Apr. 29	7.85	9,484	Sept. 8	17.50	54,855
Dec. 30	4.75	2,504	May 2	4.88	2,884	Sept. 9	12.70	30,333
Jan. 2	4.70	2,526	May 6	4.19	2,068	Sept. 10	12.50	27,704
Jan. 6	4.70	2,467	May 9	6.22	5,086	Sept. 11	12.80	31,104
Jan. 9	4.70	2,553	May 13	4.67	2,470	Sept. 12	12.45	29,107
Jan. 13	4.70	2,661	May 16	4.97	3,136	Sept. 14	12.40	27,464
Jan. 16	4.65	2,639	May 20	4.49	2,369	Sept. 18	9.37	12,639
Jan. 20	4.60	2,596	May 23	4.35	2,399	Sept. 30	7.10	6,825
Jan. 23	4.55	2,541	May 27	3.95	1,874			
Jan. 27	4.55	2,623	June 24	5.40	4,703			

Daily discharge, in second-feet, of Rio Grande near Laredo, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,750	3,430	2,825	2,550	2,475	2,250	2,350	4,100	110,000	2,700	3,200	12,600
2	5,175	3,420	2,875	2,550	2,575	2,225	2,350	2,800	20,000	3,700	23,200	12,900
3	5,150	3,410	4,300	2,550	2,525	2,250	2,375	2,350	11,600	5,050	13,500	12,100
4	5,250	3,395	3,850	2,475	2,400	2,325	2,625	2,175	10,000	5,800	12,600	11,800
5	5,250	3,330	2,950	2,450	2,375	2,250	2,375	2,050	7,300	6,200	4,599	11,600
6	5,000	3,340	2,800	2,575	2,350	2,250	2,325	2,075	5,650	7,400	4,025	10,700
7	5,050	3,300	2,750	2,575	2,325	2,500	2,325	2,050	5,300	7,600	3,600	17,300
8	5,400	3,275	2,700	2,600	2,300	2,450	2,275	2,025	4,900	5,950	3,850	42,400
9	8,600	3,260	2,825	2,600	2,250	2,550	2,050	4,700	4,725	5,550	8,300	27,000
10	8,900	3,200	2,800	2,625	2,225	2,550	2,100	2,575	5,025	5,025	13,800	29,000
11	7,000	3,135	2,775	2,625	2,225	2,600	2,000	2,600	4,400	4,900	13,500	30,800
12	6,400	3,065	2,700	2,650	2,225	2,600	2,000	3,125	4,500	5,500	18,000	28,800
13	6,200	3,000	2,625	2,650	2,200	2,600	1,975	2,625	4,300	6,300	22,300	27,200
14	5,550	3,025	2,675	2,650	2,200	2,825	1,900	3,175	4,025	10,000	25,200	27,400
15	5,375	2,975	2,675	2,625	2,175	2,650	2,125	3,625	3,825	11,150	28,700	23,000

Daily discharge, in second-feet, of Rio Grande near Laredo, Tex., for the year ending September 30, 1925—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	5,250	2,950	2,650	2,625	2,200	2,625	2,025	3,100	3,750	9,150	24,500	16,600
17	5,125	2,900	2,650	2,625	2,125	2,600	2,225	2,750	3,650	10,600	24,700	14,700
18	5,025	2,900	2,650	2,625	2,250	2,600	2,000	2,700	3,525	11,500	23,000	12,500
19	4,925	2,875	2,650	2,600	2,075	2,625	1,925	2,900	3,400	8,000	23,200	11,700
20	4,800	2,875	2,650	2,600	2,175	2,650	1,950	2,400	3,350	6,200	19,700	10,600
21	4,800	2,825	2,625	2,600	2,175	2,625	2,025	2,375	3,300	7,000	16,300	10,200
22	4,350	2,775	2,625	2,575	2,175	2,725	2,075	2,375	3,375	6,700	15,400	8,800
23	4,350	2,750	2,600	2,550	2,125	2,625	2,100	2,275	3,575	5,750	13,200	7,850
24	4,175	2,725	2,575	2,550	2,175	2,475	2,100	2,175	3,625	5,000	11,600	7,800
25	4,175	2,700	2,525	2,550	2,200	2,500	2,100	2,125	3,425	4,525	11,400	8,900
26	4,025	2,675	2,475	2,550	2,175	2,500	2,050	2,025	3,200	4,150	10,600	8,200
27	4,025	2,675	2,500	2,550	2,200	2,550	1,975	1,875	3,075	4,000	9,200	8,000
28	3,870	2,700	2,525	2,525	2,225	2,525	2,025	1,850	5,350	3,850	9,450	7,800
29	3,870	2,700	2,550	2,500	-------	2,400	9,200	39,000	3,825	3,500	9,350	6,900
30	3,650	2,725	2,500	2,500	-------	2,400	7,700	145,000	3,300	3,375	9,100	6,750
31	3,650	-------	2,475	2,500	-------	2,425	-------	206,000	-------	3,300	9,325	-------

NOTE.—Discharge May 29 to June 1 approximate.

Monthly discharge of Rio Grande near Laredo, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	8,900	3,650	5,170	318,000
November	3,430	2,680	3,010	179,000
December	4,300	2,480	2,750	169,000
January	2,650	2,450	2,570	158,000
February	2,580	2,080	2,250	125,000
March	2,820	2,220	2,510	154,000
April	9,200	1,900	2,550	152,000
May	200,000	1,850	14,700	906,000
June	110,000	3,080	8,640	514,000
July	11,500	2,700	6,110	376,000
August	28,700	3,200	14,100	870,000
September	42,400	6,750	15,700	936,000
The year	200,000	1,850	6,710	4,860,000

RIO GRANDE AT ROMA, TEX.

LOCATION.—At Roma, Starr County, just above United States customhouse and ferry crossing between Roma, Tex., and San Pedro, Mexico, and 9½ miles above mouth of Rio San Juan.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—August 14, 1900, to March 31, 1914; November 1, 1922, to September 30, 1925.

GAGE.—Stevens continuous water-stage recorder.

DISCHARGE MEASUREMENTS.—Made from cable.

CHANNEL AND CONTROL.—Bed of sand; shifts. First right bank covered with trees and brush and subject to overflow at extremely high stages for 600 feet; second right bank not subject to overflow. Left bank slightly wooded and consists of large boulders and rock and sand ledges and is not subject to overflow. Channel straight for 1,000 feet above and below station. Control is sand bed of stream and banks; shifts.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 24.0 feet June 1 (discharge, 155,000 second-feet); minimum mean daily discharge, 975 second-feet May 29.

1900–1914; 1922–1925: Maximum stage recorded that of June 1, 1925; minimum mean daily discharge, 810 second-feet March 28 and 29, 1912. On June 22, 1922, a stage of 3.24 feet, present gage datum, was reached (from levels by International Boundary Commission, Mexican section), and the discharge, as determined by United States Geological Survey engineers by the slope method, was 240,000 second-feet.

DIVERSIONS.—Considerable water diverted in Colorado, New Mexico, Texas, and Mexico; amount not known.

REGULATION.—Flow partly regulated by storage at Elephant Butte Dam, 120 miles above El Paso. Slight storage on Pecos River and Mexican tributaries.

ACCURACY.—Stage-discharge relation not permanent. Frequent discharge measurements made. Records good.

COOPERATION.—Station maintained and records furnished by the Mexican section of International Boundary Commission.

Discharge measurements of Rio Grande at Roma, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 2	6.70	10,442	Mar. 2	0.24	2,397	June 25	1.18	2,535
Oct. 6	6.60	10,328	Mar. 5	.26	2,430	June 29	2.35	3,010
Oct. 9	7.00	11,028	Mar. 9	.23	2,323	July 2	1.44	2,194
Oct. 13	6.40	10,506	Mar. 12	.24	2,296	July 6	1.60	2,276
Oct. 16	5.40	8,255	Mar. 16	.50	2,462	July 9	2.40	2,741
Oct. 20	4.30	7,086	Mar. 19	.22	2,367	July 13	2.00	2,677
Oct. 23	4.20	6,517	Mar. 23	1.50	3,445	July 15	4.50	4,594
Oct. 27	3.50	5,889	Mar. 26	1.45	3,241	July 16	3.60	4,178
Oct. 30	3.00	5,661	Mar. 30	.50	2,041	July 20	2.55	3,927
Nov. 3	2.80	5,325	Apr. 2	.40	1,943	July 23	2.75	4,028
Nov. 10	2.40	4,557	Apr. 6	.40	2,197	July 27	1.82	3,736
Nov. 13	2.30	4,648	Apr. 9	.30	2,102	July 30	.70	3,383
Nov. 17	2.20	4,263	Apr. 13	2.10	4,007	Aug. 3	11.65	24,126
Nov. 20	2.10	4,140	Apr. 16	.30	1,644	Do	10.00	18,752
Nov. 24	2.10	4,285	Apr. 20	.23	1,554	Aug. 4	7.40	12,029
Nov. 27	1.90	4,132	Apr. 23	.20	1,486	Aug. 6	4.87	6,475
Dec. 1	1.80	3,784	Apr. 27	.20	1,431	Aug. 10	6.97	10,528
Dec. 4	1.60	5,516	Apr. 30	3.40	6,678	Aug. 13	8.60	13,940
Dec. 8	1.20	3,682	May 4	1.47	2,359	Aug. 17	8.60	15,386
Dec. 11	1.00	3,645	May 7	.50	1,796	Aug. 20	7.90	14,024
Dec. 15	1.00	3,564	May 11	3.25	5,485	Aug. 24	6.40	10,933
Dec. 18	1.10	3,466	May 14	1.16	2,553	Aug. 27	4.20	6,673
Dec. 22	1.10	3,214	May 18	1.00	2,270	Aug. 31	4.20	6,439
Dec. 25	1.20	3,252	May 21	.90	2,205	Sept. 3	3.90	6,108
Dec. 29	1.10	3,163	May 25	.75	1,489	Sept. 7	5.77	8,874
Jan. 1	1.00	2,970	May 28	.65	1,165	Sept. 8	9.70	52,638
Jan. 5	1.14	2,999	May 30	14.85	56,107	Do	16.00	[a]113,150
Jan. 8	1.02	3,056	May 31	20.00	131,721	Do	17.00	[a]131,175
Jan. 12	.95	2,865	Do	21.00	135,000	Do	16.4	[a]109,837
Jan. 15	.90	2,839	June 1	23.00	149,064	Sept. 9	15.2	[a]93,897
Jan. 19	.85	2,855	Do	24.00	155,250	Do	15.0	[a]91,468
Jan. 22	.88	2,808	June 2	17.00	87,300	Do	14.0	[a]80,986
Jan. 26	.84	2,832	Do	15.00	61,920	Sept. 10	10.0	[a]56,405
Jan. 29	.78	2,827	Do	14.00	48,420	Sept. 11	9.75	[a]51,683
Feb. 2	.68	2,686	Do	13.00	42,375	Sept. 14	9.50	49,665
Feb. 5	.60	2,746	June 3	12.00	14,179	Sept. 17	7.65	39,303
Feb. 9	.50	2,602	June 4	9.50	9,646	Sept. 21	7.00	14,809
Feb. 12	.40	2,576	June 8	3.80	5,787	Sept. 24	4.20	9,181
Feb. 16	.40	2,535	June 11	3.50	5,532	Sept. 25	12.00	[a]65,848
Feb. 19	.34	2,541	June 15	2.12	3,069	Do	10.00	[a]43,610
Feb. 23	.30	2,506	June 18	1.90	2,886	Sept. 28	7.00	13,800
Feb. 26	.30	2,434	June 22	1.40	2,622			

[a] Made by surface floats.

Daily discharge, in second-feet, of Rio Grande at Roma, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10,900	5,350	3,775	2,975	2,750	2,475	2,125	6,575	154,000	2,275	2,300	6,250
2	10,450	5,275	4,100	2,975	2,725	2,400	2,150	6,750	97,000	2,200	4,100	5,350
3	10,300	5,200	4,400	2,975	2,750	2,400	2,175	5,000	13,500	1,625	19,500	5,175
4	10,250	5,125	3,875	2,950	2,750	2,400	2,225	3,175	8,900	2,525	13,700	6,100
5	10,330	5,000	4,025	3,000	2,725	2,450	2,350	2,650	7,600	2,225	8,000	6,275
6	10,380	4,900	3,675	3,025	2,700	2,500	3,050	2,050	6,950	2,275	6,900	6,150
7	10,800	4,800	3,650	2,975	2,700	2,475	2,325	1,875	6,300	2,600	6,350	7,475
8	12,250	4,725	3,650	2,950	2,675	2,450	2,200	1,850	5,800	3,600	5,900	78,000
9	11,075	4,600	3,650	2,950	2,650	2,375	2,125	1,750	5,700	2,825	5,400	89,000
10	11,125	4,550	3,625	2,950	2,625	2,375	1,875	2,125	5,500	2,600	8,900	63,500
11	11,025	4,500	3,625	2,950	2,600	2,325	1,725	3,775	5,500	2,450	11,000	51,675
12	11,025	4,425	3,600	2,925	2,600	2,400	1,750	4,300	5,500	4,650	10,500	51,700
13	10,500	4,400	3,575	2,900	2,575	2,400	2,100	3,650	5,300	2,700	12,000	52,900
14	9,900	4,375	3,550	2,875	2,575	2,325	2,600	2,675	3,250	2,525	15,600	50,000
15	8,700	4,300	3,525	2,875	2,575	2,325	1,800	2,350	3,075	4,225	17,000	48,500
16	8,250	4,275	3,500	2,875	2,575	2,700	1,675	3,525	2,950	4,375	16,800	43,700
17	7,750	4,200	3,450	2,850	2,575	2,775	1,600	3,025	2,875	4,050	15,500	41,200
18	9,500	4,150	3,450	2,850	2,550	2,475	1,450	2,300	2,900	4,075	15,900	37,300
19	8,750	4,150	3,250	2,850	2,525	2,375	1,675	2,250	2,900	4,175	15,600	37,500
20	8,700	4,125	3,300	2,825	2,525	2,325	1,525	2,175	2,900	4,025	14,400	15,700
21	7,950	4,050	3,275	2,825	2,525	2,350	1,500	2,375	2,775	3,850	14,000	15,500
22	6,900	4,030	3,225	2,850	2,550	2,375	1,500	1,475	2,625	3,950	14,300	11,300
23	6,325	4,000	3,225	2,825	2,500	3,125	1,500	1,390	2,650	3,975	13,500	10,700
24	6,200	3,975	3,175	2,800	2,525	3,800	1,525	1,425	2,550	3,875	11,600	9,175
25	6,200	3,990	3,225	2,775	2,525	3,925	1,525	1,375	2,525	3,800	11,000	41,200
26	5,890	3,925	3,175	2,850	2,475	3,300	1,525	1,190	2,525	3,750	9,500	38,000
27	5,890	3,900	3,175	2,800	2,450	3,225	1,500	1,175	2,400	3,725	7,200	26,500
28	5,890	3,900	3,200	2,800	2,450	2,575	1,450	1,025	2,300	3,725	6,675	13,600
29	5,750	3,880	3,225	2,775	-------	2,325	1,450	975	2,750	3,675	6,650	13,700
30	5,650	3,860	3,175	2,750	-------	2,075	5,375	32,000	2,900	3,425	6,600	16,400
31	5,375	-------	3,150	2,750	-------	2,000	-------	118,000	-------	3,325	6,450	-------

Monthly discharge of Rio Grande at Roma, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	12,200	5,380	8,710	535,000
November	5,350	3,860	4,400	262,000
December	4,400	3,150	3,500	215,000
January	3,020	2,750	2,880	177,000
February	2,750	2,450	2,600	144,000
March	3,920	2,000	2,570	158,000
April	5,380	1,450	1,980	118,000
May	118,000	975	7,300	449,000
June	154,000	2,300	12,500	743,000
July	4,650	1,620	3,330	204,000
August	19,500	2,300	10,700	660,000
September	89,000	5,180	30,000	1,780,000
The year	154,000	975	7,530	5,440,000

RIO GRANDE NEAR BROWNSVILLE, TEX.

LOCATION.—Opposite Matamoros, Tamaulipas, Mexico, half a mile above international railroad bridge and 1 mile above Brownsville, Cameron County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 29, 1900, to March 31, 1914 (discharge not computed); October 1, 1922, to September 30, 1925.

GAGE.—Stevens continuous water-stage recorder.

DISCHARGE MEASUREMENTS.—Made from cable near gage.

CHANNEL AND CONTROL.—Bed of sand; shifting. Channel straight for 500 feet above and 2,000 feet below station. Both banks of sand and clay; subject to overflow at extremely high stages. Control consists of sand; shifts.

EXTREMES OF DISCHARGE.—Maximum mean daily discharge, 26,700 second-feet September 12; minimum mean daily discharge, 225 second-feet May 30.

1923–1925: Same as given above.

DIVERSIONS.—Considerable water diverted in Colorado, New Mexico, Texas, and Mexico; amount not known.

Between Roma and Brownsville there are many lagoons (old river channels) that take river water during moderate floods, and a large area is overflowed deeply in large floods. Much of this water returns slowly to the river as the floods subside, thus making the flow more uniform at Brownsville than at Roma. During extremely high stages, large quantities also leave the river entirely, reaching the Gulf of Mexico by other channels.

REGULATION.—Flow partly regulated by storage at Elephant Butte Dam, 120 miles above El Paso.

COÖPERATION.—Records furnished by the Mexican section of International Boundary Commission.

Discharge measurements of Rio Grande near Brownsville, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 1	12.15	14,560	Jan. 29	2.58	2,488	May 25	0.54	1,127
Oct. 4	10.40	11,449	Feb. 2	2.60	2,596	May 28	−1.15	344
Oct. 6	10.00	11,323	Feb. 5	1.94	2,258	June 1	14.40	[a] 20,673
Oct. 9	9.60	10,071	Feb. 9	2.02	2,334	June 4	16.10	20,862
Oct. 13	12.20	14,763	Feb. 12	.86	1,315	June 9	9.97	9,546
Oct. 16	9.80	11,665	Feb. 16	.91	1,358	June 12	12.15	14,007
Oct. 20	8.60	8,276	Feb. 19	−.40	663	June 15	8.15	7,118
Oct. 22	7.80	7,481	Feb. 23	.23	979	June 18	6.70	5,304
Oct. 27	7.40	6,836	Feb. 27	−1.58	352	June 22	6.24	4,756
Oct. 31	6.50	5,514	Mar. 2	−.21	694	June 26	4.42	3,309
Nov. 3	6.60	5,584	Mar. 6	−1.60	309	June 29	4.40	3,277
Nov. 6	5.85	4,667	Mar. 9	−.80	624	July 2	4.02	2,960
Nov. 10	5.95	5,091	Mar. 12	−1.70	303	July 6	4.62	3,609
Nov. 13	5.00	4,409	Mar. 16	−1.60	307	July 9	4.09	3,303
Nov. 17	5.05	4,499	Mar. 18	−1.40	364	July 13	5.77	4,732
Nov. 20	4.10	3,545	Mar. 19	−1.07	453	July 16	5.62	4,584
Nov. 24	4.67	4,268	Mar. 23	.50	1,179	July 20	7.64	7,022
Nov. 28	3.75	3,348	Mar. 26	5.01	5,108	July 23	6.95	6,259
Dec. 2	3.78	3,357	Mar. 30	3.30	3,219	July 27	6.32	5,700
Dec. 4	5.85	7,500	Apr. 2	2.18	2,154	July 30	4.52	4,017
Dec. 8	5.51	5,037	Apr. 6	2.00	2,083	Aug. 3	3.53	3,416
Dec. 12	4.04	3,505	Apr. 9	.97	1,494	Aug. 6	15.35	22,550
Dec. 15	4.35	4,113	Apr. 13	1.75	1,616	Aug. 10	6.56	5,410
Dec. 18	3.40	3,110	Apr. 16	2.45	2,726	Aug. 13	10.62	13,549
Dec. 22	4.49	4,047	Apr. 20	2.35	2,440	Aug. 18	15.00	22,826
Dec. 26	4.58	4,138	Apr. 23	.70	1,206	Aug. 20	15.40	23,939
Dec. 29	4.65	4,326	Apr. 27	.10	872	Aug. 24	13.30	14,158
Jan. 2	4.50	4,129	Apr. 30	−1.62	242	Aug. 27	11.00	12,262
Jan. 5	4.35	4,089	May 3	5.20	6,906	Sept. 3	10.52	12,723
Jan. 8	3.99	3,931	May 4	6.05	6,674	Sept. 7	11.15	12,447
Jan. 12	4.20	3,943	May 7	2.87	2,628	Sept. 10	16.48	26,013
Jan. 15	3.43	3,376	May 11	1.11	1,553	Sept. 14	16.22	21,502
Jan. 19	3.55	3,581	May 14	3.45	3,483	Sept. 18	15.80	20,686
Jan. 22	2.87	2,678	May 17	2.18	2.139	Sept. 21	15.12	19,679
Jan. 26	2.87	2,730	May 21	1.08	1,572	Sept. 26	15.40	22,131

[a] Surface velocities only.

Daily discharge, in second-feet, of Rio Grande near Brownsville, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1	15,100	5,450	3,625	4,475	2,450	440	2,500	410	17,800	2,950	3,525	11,000
2	14,000	5,550	3,425	4,450	2,575	680	2,225	975	22,800	3,125	3,300	10,700
3	13,250	5,625	3,300	4,400	2,475	635	2,025	5,425	22,200	3,750	3,400	11,500
4	11,500	5,475	5,000	4,350	2,300	395	1,950	6,675	21,200	3,725	6,850	12,500
5	11,400	5,275	8,000	4,325	2,200	330	1,975	6,000	21,400	3,700	21,500	12,300
6	11,350	5,050	6,600	4,225	1,975	340	2,050	4,825	19,600	3,625	22,000	11,600
7	10,400	4,875	5,900	4,150	1,925	310	2,000	3,225	17,300	3,475	15,500	12,700
8	10,150	4,675	5,050	4,000	2,025	320	1,550	2,200	12,400	3,500	7,000	18,000
9	10,050	4,850	4,425	3,875	2,250	535	1,500	1,775	10,100	3,350	6,400	24,000
10	10,000	5,075	3,850	3,975	2,000	540	1,550	1,450	9,900	3,525	5,725	25,900
11	13,000	4,900	3,525	4,100	1,575	345	1,425	1,550	17,600	4,425	5,200	26,400
12	15,100	4,775	3,550	4,125	1,450	325	1,525	1,450	14,500	4,850	6,500	26,700
13	14,800	4,525	3,725	3,850	1,350	300	1,625	1,650	10,300	4,675	13,400	23,600
14	13,750	4,250	3,875	3,500	1,350	295	1,650	3,400	8,700	4,650	15,000	22,000
15	13,000	4,075	4,150	3,325	1,350	270	1,800	4,450	7,400	4,950	18,200	21,400
16	11,750	4,250	3,925	3,500	1,350	325	2,375	4,025	6,550	4,575	20,900	21,500
17	10,250	4,400	3,525	3,675	1,050	390	2,950	2,600	5,900	4,525	22,300	20,600
18	9,200	4,225	3,175	3,725	900	360	2,900	2,350	5,225	6,800	22,800	20,300
19	8,600	3,850	3,150	3,575	755	450	2,525	1,750	4,875	7,400	23,000	19,600
20	8,300	3,550	3,275	3,225	660	585	2,575	1,550	4,950	7,125	24,000	19,000
21	7,950	3,675	3,750	3,100	585	800	2,175	1,525	3,925	7,275	23,500	19,400
22	7,590	3,850	4,000	2,800	590	700	1,675	1,325	4,775	7,250	21,000	19,300
23	7,450	3,975	3,950	2,675	925	1,150	1,475	1,075	4,350	6,375	17,400	17,000
24	7,350	4,275	3,800	2,675	760	1,450	950	900	3,850	5,600	14,000	14,700
25	7,300	4,000	3,975	2,800	525	2,550	975	1,175	3,500	5,650	13,100	13,300
26	6,990	3,675	4,125	2,800	500	4,900	1,100	470	3,300	5,875	12,500	19,400
27	6,900	3,525	4,150	2,500	335	4,875	900	425	3,100	5,725	12,100	23,400
28	6,675	3,350	4,250	2,400	325	4,375	625	350	3,100	5,125	10,600	23,000
29	5,875	3,350	4,300	2,450	-------	3,825	410	265	3,275	4,500	9,975	21,000
30	5,700	3,400	4,375	2,475	-------	3,325	240	225	2,850	4,050	10,000	20,700
31	5,530	-------	4,275	2,350	-------	2,800	-------	1,525	-------	3,625	9,600	-------

Monthly discharge of Rio Grande near Brownsville, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	15,100	5,530	10,000	615,000
November	5,620	3,350	4,390	261,000
December	8,000	3,150	4,190	258,000
January	4,480	2,350	3,480	214,000
February	2,580	325	1,280	76,400
March	4,900	270	1,260	77,200
April	2,950	240	1,710	102,000
May	6,690	225	2,160	133,000
June	22,800	2,850	9,890	589,000
July	7,400	2,950	4,890	297,000
August	24,000	3,300	13,600	834,000
September	26,700	10,700	18,800	1,120,000
The year	26,700	225	6,310	4,580,000

RIO GRANDE SEEPAGE INVESTIGATION

During this series of measurements the river was at a constant stage and the measurements represent the natural conditions.

Discharge measurements to determine seepage on Rio Grande from Lajitas, Tex., to Del Rio, Tex., in February, 1925

Date	Stream or diversion	Location	Approximate distance in miles	Discharge in second-feet			
				Main stream	Tributaries	Gain or loss in section	Total gain or loss
Feb. 7	Rio Grande	Lajitas, Tex	0	1,060			
7	Terlingua Creek	Mouth	16.8		0		
8	Rio Grande	Sublett, Tex., one-half mile below Grand Canyon of Santa Helena and mouth of Terlingua Creek.	17.3	1,040		−20	−20
9	do	Near Mariscal dam site	60.5	1,040		0	−20
11	do	At Boquillas, Coahuila, Mex.	79.5	1,090		+50	+30
13	do	Stillwell crossing	94.0	1,120		+30	+60
15	do	Reagan Canyon	118.9	1,220		+100	+160
19	do	At Langtry	219.8	1,440		+220	+380
19	Pecos	Near Comstock	240.7		[a] 199		
20	Devils	Near Del Rio	281.2		[a] 378		
20	Rio Grande	do	293.1	2,420		+403	+783

[a] Taken from daily-discharge records at regular station.

NOTE.—Columns headed "Gain or loss in section" and "Total gain or loss" show values computed from discharge of main stream, tributaries, and diversions.

GOOSE CREEK NEAR WAGONWHEEL GAP, COLO.

LOCATION.—In SE. ¼ SW. ¼ sec. 27, T. 40 N., R. 1 E., at concrete dam of A. E. Humphreys reservoir, 6 miles south of Wagonwheel Gap, Mineral County. Nearest tributary, Roaring Fork, enters just above reservoir.

DRAINAGE AREA.—49 square miles (measured on topographic map).

RECORDS AVAILABLE.—October 1, 1924, to September 30, 1925.

GAGE.—Vertical staff attached to upstream face of dam some distance from spillway; read by Roy Lees.

DISCHARGE MEASUREMENTS.—Made by wading or from highway bridge just below dam.

CHANNEL AND CONTROL.—Control at concrete spillway which is permanent, except for flow through valves in dam at rare intervals.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.09 feet at 5 p. m. June 16 and 18 (discharge, 262 second-feet); minimum stage, 0.08 foot from November 29 to December 16 (discharge, 8 second-feet).

ICE.—Spillway kept open during winter.

REGULATION.—Creek partly regulated by reservoir which has capacity of 842 second-feet.

ACCURACY.—Stage-discharge relation permanent except at rare intervals when valve is opened; not affected by ice. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

COOPERATION.—Base data furnished by State engineer and A. E. Humphreys.

Discharge measurements of Goose Creek near Wagonwheel Gap, Colo., during the year ending September 30, 1924 and 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
1924	*Feet*	*Sec.-ft.*	1925	*Feet*	*Sec.-ft.*
Aug. 18	0.27	32.3	June 23	0.95	216
			Aug. 13	.34	42.3
1925			Sept. 15	.32	39.7
June 1	.80	167			

Daily discharge, in second-feet, of Goose Creek near Wagonwheel Gap, Colo., for, the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	10	8	9	9	9	15	75	157	113	59	59
2	10	10	8	9	9	9	12	75	135	112	59	61
3	11	10	8	9	9	9	14	91	99	130	59	59
4	10	12	8	9	9	9	15	94	111	140	61	59
5	10	12	8	9	9	9	15	96	129	155	59	59
6	10	10	8	9	9	9	15	95	120	150	56	59
7	11	10	8	9	9	9	15	93	111	140	54	59
8	12	9	8	9	9	9	14	90	117	135	59	59
9	11	8	8	9	9	9	14	88	123	111	61	54
10	11	8	8	9	9	9	17	87	138	111	61	54
11	12	8	8	9	9	9	18	86	148	108	59	54
12	14	10	8	9	9	9	25	85	157	99	59	54
13	12	11	8	9	9	9	25	88	120	97	54	54
14	12	11	8	9	9	9	28	90	141	88	56	54
15	15	10	8	9	9	10	29	88	167	83	54	49
16	12	10	8	9	9	10	33	97	252	80	63	54
17	12	10	9	9	9	9	36	88	252	77	52	54
18	15	10	10	9	9	9	47	94	248	77	52	54
19	12	10	11	9	9	9	30	120	245	72	59	108
20	10	11	10	9	9	9	30	135	248	72	54	85
21	10	11	11	9	9	10	29	135	245	72	54	77
22	10	11	10	9	9	10	25	105	239	75	52	75
23	10	9	9	9	9	10	22	108	229	72	59	72
24	10	9	9	9	9	10	21	108	193	70	70	68
25	10	9	9	9	9	10	21	129	135	66	72	63
26	10	9	9	9	9	12	56	141	129	66	68	63
27	10	9	9	9	9	12	63	141	123	66	66	63
28	10	9	9	9	9	12	72	141	111	68	66	61
29	10	8	9	9	-------	12	77	141	114	66	63	59
30	11	8	9	9	-------	12	77	151	114	61	68	56
31	11	-------	9	9	-------	15	-------	148	-------	61	61	-------

NOTE.—Valve in dam open May 5–14; no gage-height record June 30 to July 7; discharge based on comparison with flow of Uncompahgre River at Ouray.

Monthly discharge of Goose Creek near Wagonwheel Gap, Colo., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	15	10	11.1	682
November	12	8	9.7	577
December	11	8	8.7	535
January	9	9	9.0	553
February	9	9	9.0	500
March	15	9	9.9	609
April	77	12	30.3	1,800
May	151	75	107	6,580
June	252	99	162	9,640
July	155	61	93.3	5,740
August	72	52	59.5	3,660
September	108	49	62.0	3,690
The year	252	8	47.7	34,600

PECOS RIVER NEAR DAYTON, N. MEX.

LOCATION.—In sec. 13, T. 18 S., R. 26 E., 3 miles east of Dayton, Eddy County half a mile above mouth of Penasco River.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—March 24, 1905, to September 30, 1925.

GAGE.—Stevens 8-day water-stage recorder on right bank.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel; shifts. Right bank consists of clay; left bank of sand. Banks subject to overflow at stage of about 11.5 feet. Control not well defined.

EXTREMES OF DISCHARGE.—Maximum mean daily stage during year, 13.95 feet July 31 (discharge, 4,900 second-feet); minimum mean daily discharge, 20 second-feet July 20.

1905–1925: Maximum stage recorded, 15.9 feet for five or six hours during morning of September 18, 1919 (discharge not determined, probably exceeded previous maximum of 50,300 second-feet on July 25, 1915, which was derived from discharge at Lake McMillan and included flow of Penasco River); minimum mean daily discharge, 20 second-feet August 16, 18, 1923, and July 20, 1925.

DIVERSIONS.—Considerable water is diverted above station for irrigation; quantity not known, but not in conflict with rights of Carlsbad project of the United States Bureau of Reclamation, which serves about 20,000 acres near Carlsbad and stores part of the water used near Carlsbad in Lake McMillan, 10 miles below gage.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent, but periods of change are covered by discharge measurements. Operation of water-stage recorder satisfactory. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day on days of considerable fluctuation. Records good.

COOPERATION.—Daily-discharge records and list of discharge measurements furnished by United States Bureau of Reclamation.

Discharge measurements of Pecos River near Dayton, N. Mex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 9	5.92	105	June 13	5.23	45	July 31	14.10	5,000
Jan. 14	6.85	240	June 26	5.16	42	Aug. 2	10.00	1,035
Feb. 23	6.40	152	June 27	6.80	260	Aug. 7	12.17	2,628
Apr. 22	5.10	36	July 5	5.30	48	Aug. 12	11.60	2,322
Apr. 27	5.35	61	July 18	5.32	25	Aug. 27	10.00	1,040
May 7	5.32	57	July 24	11.05	1,815	Sept. 9	8.00	333
May 25	4.95	32	July 28	8.65	387			

Daily discharge, in second-feet, of Pecos River near Dayton, N. Mex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	63	147	169	249	160	128	67	71	100	88	2,190	431
2	63	147	169	249	174	134	64	62	74	64	1,076	590
3	58	144	169	245	192	129	71	62	52	53	647	671
4	58	139	169	255	186	118	69	77	43	53	440	444
5	63	136	172	398	174	118	58	66	43	53	747	482
6	81	128	172	404	165	115	69	47	41	329	3,105	419
7	91	131	181	361	157	108	69	64	34	531	3,030	268
8	126	136	181	355	152	108	59	93	43	190	2,915	231
9	105	131	218	344	152	115	61	84	43	96	3,705	290
10	206	134	253	336	147	108	64	84	43	61	3,630	237
11	251	129	249	324	141	108	61	80	43	61	2,730	257
12	212	129	237	309	139	105	58	81	43	65	2,280	510
13	177	131	233	292	139	104	60	73	43	55	1,359	984
14	190	144	227	245	160	94	47	75	40	48	695	473
15	181	152	241	229	197	90	53	71	36	35	570	1,658
16	157	155	272	239	218	90	53	60	31	24	456	2,620
17	144	160	314	235	210	97	44	62	29	21	389	1,624
18	134	160	358	229	214	91	39	66	23	22	331	923
19	131	181	347	229	218	79	36	58	33	24	279	603
20	131	194	309	259	218	75	37	54	35	20	247	440
21	131	186	266	263	195	75	39	44	37	21	227	721
22	126	181	237	270	179	75	37	34	52	35	190	2,055
23	126	176	214	289	152	75	39	37	52	1,220	630	1,392
24	126	169	314	304	139	71	39	39	45	2,325	1,658	1,824
25	125	169	332	292	136	73	44	33	43	2,660	747	1,232
26	191	172	410	249	134	69	50	48	55	2,075	506	923
27	251	172	375	233	128	63	58	62	299	729	647	506
28	212	172	339	219	128	58	69	77	205	395	562	366
29	190	172	334	201	------	63	63	117	186	2,380	395	326
30	169	172	257	183	------	69	69	185	129	3,295	506	314
31	160	------	253	177	------	75	------	134	------	4,900	503	------

***Monthly discharge of Pecos River near Dayton, N. Mex., for the year ending** September 30, 1925*

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	251	58	143	8,780
November	194	128	155	9,220
December	410	169	257	15,800
January	404	177	273	16,800
February	218	128	168	9,330
March	134	58	92.9	5,710
April	71	36	54.9	3,260
May	185	30	70.7	4,350
June	299	23	65.6	3,900
July	4,900	20	707	43,500
August	3,700	190	1,210	74,200
September	2,620	231	794	47,200
The year	4,900	20	334	242,000

PECOS RIVER AT CARLSBAD, N. MEX.

LOCATION.—In SE. ¼ sec. 6, T. 22 S., R. 27 E., at Green Street Bridge in Carlsbad, Eddy County, 300 feet downstream from Atchison, Topeka & Santa Fe Railway station, 1,500 feet above mouth of Dark Canyon, and 2,000 feet below Hagerman Dam.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 28, 1903, to March 31, 1908; May 13, 1914, to September 30, 1925.

GAGE.—Stevens 8-day water-stage recorder attached to downstream end of middle bridge pier; inspected by J. R. Yates.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and rock; shifts, owing to sand deposits. Banks of medium height; not subject to overflow. Location of control not known.

EXTREMES OF DISCHARGE.—Maximum mean daily stage during year, 7.25 feet August 10 (discharge, 8,940 second-feet); minimum mean daily stage, 0.56 foot January 27 and March 1 (discharge, 71 second-feet).

1903–1908; 1914–1925: Maximum stage recorded, about 21.0 feet August 7, 1916 (discharge, 85,700 second-feet [2]); minimum discharge, 30 second-feet September 30, 1918.

DIVERSIONS.—Large quantities of water are stored a few miles above station at Lakes McMillan and Avalon by the United States Bureau of Reclamation for irrigating land near Carlsbad. Water is also diverted for irrigation in valleys adjacent to river above Lake McMillan. Capacity of storage reservoirs in connection with the Carlsbad project, 58,500 acre-feet. Considerable water seeps into river between storage reservoirs and the gaging station, the quantity depending on amount being used for irrigation between the two points.

REGULATION.—Flow at this point completely controlled by storage reservoirs at the Carlsbad project, except during extreme floods.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined from 50 to 14,000 second-feet. Operation of water-stage recorder satisfactory. Daily discharge determined by shifting-control method. Records good.

COOPERATION.—List of discharge measurements and daily-discharge records furnished by United States Bureau of Reclamation.

Discharge measurements of Pecos River at Carlsbad, N. Mex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 15	0.62	88	Aug. 11	6.25	6,925
May 12	.62	85	Aug. 22	.65	99
July 29	.60	85			

Daily discharge, in second-feet, of Pecos River at Carlsbad, N. Mex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug	Sept.
1	84	76	118	92	76	71	103	106	81	84	84	139
2	84	109	100	92	73	73	103	112	81	86	86	157
3	84	118	130	92	76	76	103	97	84	86	89	166
4	84	109	97	89	76	78	100	103	81	78	89	175
5	86	106	92	86	76	76	97	100	81	78	120	166
6	84	109	92	84	78	78	97	100	84	81	1,230	175
7	84	109	103	76	78	86	97	100	86	84	359	170
8	84	115	109	106	78	78	95	100	89	76	857	170
9	84	118	103	103	76	84	92	92	95	81	8,600	175
10	87	118	87	100	78	84	95	92	95	84	8,940	197
11	84	115	86	103	81	81	103	97	97	86	6,270	192
12	78	106	95	115	84	84	100	92	95	84	4,480	224
13	86	118	103	92	106	78	103	95	95	89	2,220	214
14	87	121	118	81	103	86	106	95	97	89	1,110	224
15	81	121	118	100	100	86	103	95	97	86	148	248

[2] Discharge at Avalon Dam; reported by engineers of United States Bureau of Reclamation.

Daily discharge, in second-feet, of Pecos River at Carlsbad, N. Mex., for the year ending September 30, 1925—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	81	124	115	97	97	84	109	86	97	84	152	667
17	81	127	109	76	89	84	103	86	95	81	310	1,735
18	81	121	121	76	84	86	106	92	97	81	242	1,180
19	89	87	124	115	84	92	118	92	95	81	103	769
20	87	115	121	81	86	92	109	84	95	81	103	447
21	86	103	106	92	84	89	112	81	76	78	84	455
22	89	106	103	95	78	81	112	89	86	78	84	718
23	97	103	100	78	78	86	109	84	86	78	103	1,846
24	100	103	95	81	84	92	109	84	84	81	103	1,461
25	95	106	89	100	81	95	115	86	86	78	106	592
26	86	103	89	81	86	92	115	86	84	78	103	952
27	95	100	103	71	86	89	109	81	78	81	115	768
28	95	100	92	92	84	95	112	84	81	81	134	376
29	103	95	92	92	-------	97	106	84	84	86	115	322
30	103	95	92	73	-------	103	106	78	86	86	118	303
31	97	-------	92	73	-------	103	-------	78	-------	86	139	-------

Monthly discharge of Pecos River at Carlsbad, N. Mex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	103	81	87.9	5,410
November	127	76	109	6,460
December	130	86	103	6,340
January	115	71	89.8	5,520
February	106	73	83.6	4,640
March	103	71	85.8	5,270
April	118	92	105	6,240
May	112	78	91.3	5,620
June	97	76	88.3	5,250
July	89	76	82.3	5,060
August	8,940	84	1,190	73,000
September	1,850	139	513	30,500
The year	8,940	71	220	159,000

PECOS RIVER NEAR MALAGA, N. MEX.

LOCATION.—In sec. 18 or 19, T. 24 S., R. 29 E., 3½ miles southeast of Malaga, Eddy County, 4¼ miles below mouth of Black River.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 1, 1920, to September 30, 1925.

GAGE.—Stevens 8-day water-stage recorder on right bank; inspected by W. F. Gerlach.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Bed composed of solid rock covered with sand; shifts. Right bank solid rock and steep; left bank sand and high. Control is rock ledge overlain with sand, 500 feet below gage; shifts.

EXTREMES OF DISCHARGE.—Maximum mean daily discharge during year, 10,300 second-feet August 10; minimum mean daily stage, 3.24 feet July 28–29 (discharge, 32 second-feet, determined from extension of rating curve and subject to error).

1920–1925: Maximum stage recorded, 12.85 feet at 1 a. m. June 8, 1921 (discharge, 22,000 second-feet, determined from extension of rating curve and subject to error); minimum discharge, that of July 28–29, 1925.

In September, 1919, the river reached a stage of 26.4 feet (discharge not determined).

DIVERSIONS.—The Carlsbad project of the United States Bureau of Reclamation with reservoirs having a capacity of 58,500 acre-feet, diverts a large part of the natural run-off above Carlsbad, N. Mex. During season of irrigation considerable water is returned to the stream by seepage from lands near Carlsbad. In addition to water used by the Carlsbad project, some diversions are made for irrigation in the basin above the storage reservoirs of the Carlsbad project.

REGULATION.—Operation of the water-power plant of 300-horsepower capacity above station, just below Carlsbad, N. Mex., owned and operated by Carlsbad Electric Light & Power Co., does not materially regulate flow at gage. The flow is, however, regulated to a large extent by waters stored in the reservoirs of the Carlsbad project. In the season of irrigation the effect of the regulation is decreased by return seepage water, but during the winter the flow depends on water released at the reservoirs.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined above 100 second-feet. Operation of water-stage recorder satisfactory. Daily discharge determined by shifting-control method, averaging discharge for fractional parts of a day on days of considerable fluctuation. Records good.

COOPERATION.—Records furnished by United States Bureau of Reclamation.

Discharge measurements of Pecos River near Malaga, N. Mex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 29	3.74	162	Aug. 10	10.40	8,634
Jan. 15	3.72	137	Aug. 13	7.80	2,772
Apr. 24	3.39	73			

Daily discharge, in second-feet, of Pecos River near Malaga, N. Mex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	169	192	161	150	107	154	56	107	150	44	64	356
2	126	196	162	135	83	104	49	80	150	45	75	364
3	126	120	165	120	98	104	53	110	162	45	64	389
4	161	192	169	130	113	101	56	104	147	53	49	398
5	161	123	180	113	104	89	58	113	133	89	136	398
6	120	196	161	113	98	101	45	110	120	83	814	416
7	184	212	154	113	89	101	66	113	126	75	950	430
8	204	200	158	117	89	98	66	126	104	69	517	407
9	180	196	154	130	92	89	92	110	123	56	7,067	364
10	200	143	150	123	89	92	66	120	123	56	10,346	364
11	220	184	154	136	92	101	80	104	123	56	6,960	372
12	184	200	154	150	83	120	77	104	126	80	4,744	1,072
13	161	216	150	150	107	107	61	110	117	83	3,250	1,021
14	162	188	120	136	113	133	47	104	126	92	1,258	470
15	188	184	180	123	107	107	56	101	123	101	466	412
16	173	196	248	136	107	120	44	117	108	75	438	492
17	208	184	212	143	117	154	40	126	93	53	474	1,285
18	184	208	212	147	113	140	40	83	79	49	580	1,390
19	176	220	208	104	117	120	42	107	65	45	398	947
20	136	212	208	123	143	176	42	101	51	61	356	765
21	208	192	180	123	196	196	45	117	56	45	312	650
22	216	200	192	113	200	150	42	86	61	49	308	625
23	184	200	208	113	150	98	40	83	49	49	312	1,355
24	192	161	196	113	110	104	69	72	47	45	312	1,580
25	200	180	173	107	113	133	72	83	53	44	312	836
26	200	208	154	101	117	136	80	92	58	49	324	794
27	188	173	165	104	126	130	72	95	61	45	332	917
28	204	161	154	110	150	136	72	95	53	32	332	660
29	212	173	154	107	------	80	75	162	53	32	332	488
30	240	188	154	123	------	77	113	173	44	42	332	448
31	212	------	165	113	------	69	------	180	------	51	434	------

Monthly discharge of Pecos River near Malaga, N. Mex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	240	120	183	11,300
November	220	120	187	11,100
December	248	120	173	10,600
January	150	101	123	7,570
February	200	83	115	6,390
March	196	69	117	7,180
April	113	40	60.5	3,600
May	130	72	109	6,720
June	162	44	96.1	5,720
July	101	32	57.8	3,560
August	10,300	49	1,380	84,600
September	1,580	356	682	40,600
The year	10,300	32	275	199,000

PECOS RIVER NEAR ANGELES, TEX.

LOCATION.—In T. 26 S., R. 29 E., just below Pecos Valley Railroad bridge crossing Delaware Creek at its mouth, 2 miles north of New Mexico-Texas State line, 8½ miles northwest of Angeles, Reeves County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 27, 1914, to September 30, 1925.

GAGE.—Stevens continuous water-stage recorder, at first outcropping of rock on right bank 600 feet below railroad bridge and mouth of Delaware Creek; inspected by Geological Survey engineers.

DISCHARGE MEASUREMENTS.—Made by wading or from cable half a mile downstream.

CHANNEL AND CONTROL.—Bed and banks composed of sand, gravel, and rock; banks not subject to overflow. Control formed by a series of rapids 200 feet below gage; shifts.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 8.53 feet at 10 a. m. August 10 (discharge, 12,700 second-feet, determined from extension of curve and subject to error). Minimum discharge, 45 second-feet July 4 and 5.

1914–1925: Maximum stage recorded, 21.5 feet at 10 a. m. August 8, 1916, measured by leveling from floodmarks (discharge not determined); minimum discharge that of July 4 and 5, 1925.

ICE.—Stage-discharge relation not seriously affected by ice; open channel rating assumed applicable.

DIVERSIONS.—The Carlsbad project of the United States Bureau of Reclamation, with reservoirs having a capacity of 58,500 acre-feet, diverts a large part of the natural run-off above Carlsbad, N. Mex. During the season of irrigation considerable water is returned to the stream by seepage from lands near Carlsbad. In addition to the water used by the Carlsbad project some diversions are made for irrigation in the basin above the storage reservoir of the project.

REGULATION.—Operation of a water-power plant of 300-horsepower capacity above station, just below Carlsbad, N. Mex., owned and operated by Carlsbad Electric Light & Power Co., does not materially regulate flow at gage. The flow is, however, regulated to a large extent by waters stored in the reservoirs of the Carlsbad project. In the season of irrigation, the effect of the regulation is decreased by return seepage waters, but during the winter, the flow depends on water released at the reservoirs.

ACCURACY.—Stage-discharge relation not permanent. Standard rating curves well defined. Operation of water-stage recorder not satisfactory. Daily discharge determined by shifting-control method, averaging discharge for intervals of day on days of considerable fluctuation. Records fair.

Discharge measurements of Pecos River near Angeles, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 2	0.29	162	Mar. 25	0.06	122	Aug. 10	7.34	9,920
Oct. 14	.32	164	Apr. 7	−.10	79.5	Aug. 11	6.02	7,230
Nov. 21	.34	187	Apr. 24	−.10	74.2	Aug. 13	3.64	4,110
Dec. 11	.26	152	May 22	−.02	97.6	Aug. 14	1.22	746
Jan. 16	.17	146	June 9	−.06	85.2	Sept. 28	1.11	749
Feb. 3	.06	114	June 29	−.15	50.8			
Mar. 11	.09	135	July 24	−.15	54.9			

Daily discharge, in second-feet, of Pecos River near Angeles, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	187	197	169	133	137			120	137	49	78	
2	165	192	137	133	133			110	117	47	78	
3	140	197	148	127	120			91	117	47	80	
4	137	158	157	130	133		108	107	117	45	80	
5	157	192	157	124	140	135		96	107	56	375	
6	161	187	157	124	133			104	104	68	522	
7	238	197	144	124	127		80	107	96	702	1,500	
8	285	202	144	127	120		99	114	99	350	926	
9	178	192	153	130	127		107	124	88	232	2,600	
10	174	192	166	140	130		139	117	94	202	10,200	
11	178	161	157	144	120	133	117	124	96	202	7,400	
12	174	187	148	148	130		114	107	94	238	4,990	910
13	165	197	144	148	120		110	102	94	232	3,920	
14	157	207	153	157	137		99	102	94	222	1,450	
15	161	182	140	140	140		94	96	99	202	1,220	
16	169	187	187	144	137		94	99	104	186		
17	165	192	207	161			85	110	70	169		
18	169	187	187	157		130	70	114	56	153		
19	169	202	187	153			68	86	63	136		
20	161	197	182	130			78	85	61	120		
21	148	192	174	148			83	88	52	103		
22	187	174	169	144			83	88	58	87		
23	197	182	169	133	135		75	78	61	70	350	
24	178	178	178	130			75	75	52	54		1,370
25	182	161	169	124		127	80	78	51	54		1,010
26	187	174	157	130		137	94	85	52	54		1,700
27	182	182	137	127			102	96	51	56		1,700
28	187	165	133	137			96	107	54	61		728
29	192	161	130	133		108	88	313	51	66		476
30	197	169	130	130			104	182	51	70		374
31	217		130	144				161		75		

NOTE.—Discharge estimated or partly estimated Feb. 17 to Apr. 7, July 24, Aug. 16 to Sept. 23; interpolated July 16–23. Braced figures show estimated mean discharge for periods included.

Monthly discharge of Pecos River near Angeles, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	285	137	179	11,000
November	207	153	185	11,000
December	257	130	158	9,720
January	161	124	137	8,440
February			132	7,360
March			128	7,890
April	130	68	95.8	5,700
May	313	75	112	6,870
June	137	51	81.3	4,840
July	702	45	142	8,760
August	10,200	78	1,320	81,400
September			943	56,100
The year	10,200	45	303	219,000

PECOS RIVER NEAR PORTERVILLE, TEX.

LOCATION.—At highway bridge on Pecos-Porterville road, half a mile east of Arno station on Atchison, Topeka & Santa Fe Railway, 2 miles west of Porterville, Loving County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—February 1, 1922, to September 30, 1925.

GAGE.—Chain gage attached to downstream end of highway bridge; read by Tom Wright.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of silt, sand, and gravel; shifts.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 12.70 feet at 11 a. m. August 12 (discharge, 5,690 second-feet, determined from extension of rating curve and subject to considerable error); minimum discharge, 20 second-feet July 25.

1922–1925: Same as given above.

DIVERSIONS.—The Carlsbad project of the United States Bureau of Reclamation, which has reservoirs having a capacity of 58,500 acre-feet, diverts a large part of the natural run-off above Carlsbad, N. Mex. During the season of irrigation, considerable water is returned to stream by seepage from lands near Carlsbad. In addition to the water used by the Carlsbad project, some diversions are made for irrigation in the basin above the storage reservoir of the Carlsbad project.

REGULATION.—Operation of a water-power plant of 300-horsepower capacity above station, just below Carlsbad, N. Mex., owned and operated by Carlsbad Electric Light & Power Co., does not materially regulate the flow at gage. The flow is, however, regulated to a large extent by waters stored in the reservoirs of the Carlsbad project. In the season of irrigation, the effect of the regulation is decreased by return seepage waters, but during the winter the flow depends on water released at the reservoirs.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined below 1,000 second-feet, fairly well defined between 1,000 and 4,500 second-feet, and extended above. Gage read to hundredths once daily except Sundays. Daily discharge determined by shifting-control method. Discharge for approximately every seventh day interpolated. Records fair.

Discharge measurements of Pecos River near Porterville, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 1	1.02	144	Mar. 10	0.82	116	July 2	0.18	27.8
Oct. 18	1.00	142	Apr. 6	.54	59.9	July 25	.04	20.1
Nov. 22	1.14	173	Apr. 23	.51	59.6	Aug. 8	6.23	1,860
Jan. 19	1.08	153	May 26	.42	51.9	Aug. 9	2.96	568
Feb. 4	.92	139	June 4	.66	84.3	Aug. 10	11.63	5,290

Daily discharge, in second-feet, of Pecos River near Porterville, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	144	172	144	154	134	144	121	77	163	33	32	304
2	144	172	144	144	134	144	121	81	125	28	72	283
3	144	172	117	144	144	134	53	78	102	28	112	326
4	144	172	144	149	134	134	47	74	84	29	70	212
5	139	172	144	154	125	125	54	70	125	44	84	232
6	134	163	154	144	134	112	60	92	84	60	192	252
7	144	163	144	144	134	125	60	86	85	70	549	272
8	212	163	134	144	134	125	60	101	86	521	1,450	283
9	283	163	134	144	134	125	56	93	84	232	873	272
10	192	163	134	144	134	116	56	95	84	131	3,990	272
11	144	144	154	149	134	123	63	97	83	90	5,140	252
12	163	163	163	154	134	123	59	97	83	126	5,380	182
13	182	154	163	154	144	119	55	110	83	163	4,170	182
14	154	182	158	134	144	119	55	110	82	88	2,810	1,540
15	125	182	154	134	144	118	56	74	81	99	1,030	1,230
16	154	172	154	134	144	116	53	81	83	97	750	521
17	144	163	134	134	154	114	50	81	79	83	370	283
18	144	154	212	144	144	125	50	81	77	97	348	442
19	144	154	192	154	144	117	54	99	50	86	348	1,360
20	144	182	163	154	154	121	58	101	39	74	442	1,540
21	154	182	158	154	154	117	55	104	36	37	262	1,730
22	125	172	154	134	168	121	55	114	33	32	232	1,400
23	163	158	154	134	182	125	60	101	27	25	188	638
24	172	144	154	134	172	125	60	76	29	22	144	986
25	172	154	154	134	110	144	58	52	49	20	133	1,490
26	172	163	154	134	163	144	58	52	40	23	125	910
27	172	163	144	134	154	123	58	55	31	26	136	1,400
28	163	172	149	134	144	119	68	172	28	25	163	1,070
29	163	154	154	134	------	126	90	172	25	27	114	669
30	163	149	154	134	------	134	84	442	28	32	138	638
31	163	------	154	134	------	125	------	302	------	39	163	------

Monthly discharge of Pecos River near Porterville, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	283	125	160	9,840
November	182	144	165	9,790
December	212	117	152	9,370
January	154	134	142	8,730
February	182	110	144	7,990
March	144	112	125	7,700
April	121	47	62.9	3,740
May	442	52	110	6,780
June	163	25	69.6	4,140
July	521	20	80.2	4,980
August	5,380	32	968	59,500
September	1,730	212	706	42,000
The year	5,380	20	241	175,000

PECOS RIVER ABOVE BARSTOW, TEX.

LOCATION.—400 feet below dam and diversion of Barstow Canal (Ward County Irrigation District No. 1), and 10 miles northwest of Barstow, Ward County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—February 1, 1916, to May 11, 1921; March 22, 1922, to September 30, 1925.

GAGE.—Stevens continuous water-stage recorder on left bank; inspected by Geological Survey engineers. Gage used 1916–1921 was at a site 4 miles upstream.

DISCHARGE MEASUREMENTS.—Made by wading, from cable near gage, or from Texas & Pacific Railway bridge near Pecos.

CHANNEL AND CONTROL.—Channel straight for several hundred feet above and below station. Bed composed of rock; permanent. Banks of silt and sand; shift; subject to overflow at extremely high stages. Low-water control is rock ledge, 150 feet below gage; permanent. Point of zero flow is 1.27 feet.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 9.53 feet at 8.30 a. m. August 13 (discharge, 4,720 second-feet, determined from extension of rating curve and subject to considerable error); minimum stage, 1.39 feet April 23 (discharge, 0.3 second-foot).

1916–1925: Maximum stage recorded, 12.1 feet (by datum of former location) at 6 a. m. August 10, 1916 (discharge not determined); minimum discharge, 0.2 second-foot April 27–29, June 25 to July 10, July 13–20, and July 24 to August 21, 1923.

DIVERSIONS.—In addition to water diverted in New Mexico by the Carlsbad project, the three principal diversions in Texas are the Farmers Independent, Cedarvale (formerly Biggs), and Barstow Canals. Small amounts diverted by Boxley and Porterville irrigation systems. According to records of the Board of Water Engineers for the State of Texas, these projects have declared a total of 17,500 acres irrigated.

REGULATION.—Flow during low and medium stages regulated by storage reservoir on Carlsbad project in New Mexico and by diversion dams in Texas. Flood flow partly regulated by reservoirs on Carlsbad project.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 1,000 second-feet, fairly well defined between 1,000 and 3,500 second-feet, and extended above. Operation of water-stage recorder not satisfactory. Daily discharge determined by applying to rating table mean daily gage height obtained from recorder graph by inspection or by averaging discharge for intervals of a day except as noted in footnote to daily-discharge table. Records fair.

Discharge measurements of Pecos River above Barstow, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	1.44	[a] 0.5	Mar. 9	1.60	[a] 2.0	June 26	1.47	[a] 0.3
Oct. 20	1.73	[a] 3.0	Apr. 4	1.40	[a].2	Aug. 8	4.76	995
Jan. 12	1.58	[a] 2.0	Apr. 25	1.40	[a].2	Aug. 11	6.95	2,600
Jan. 20	2.16	32.0	May 15	1.49	[a].3			
Feb. 2	1.93	13.0	June 8	1.57	[a].5			

[a] Estimated.

Daily discharge, in second-feet, of Pecos River above Barstow, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	21	32	25	14		0.3	0.3	0.7	0.4	0.4	1.0
2	.4	.9	32	27	15		.3	.3	.5	.4	.4	
3	.4	.9	35	18	30		.3	.3	.6	.4	.4	
4	.5	.9	30	1.4	51		.3	.3	1.2	.4	.4	
5	.6	.9	23	1.4	41	1.0	.3	.3	1.2	.4	.5	
6	.6	.7	9.5	1.5	28		.3	.4	1.2	.4	.4	70
7	.8	.8	14	1.5	24		.4	.5	.9	.4	.8	
8	.8	1.4	15	1.2	24		.4	.5	.8	.4	516	
9	15	1.4	20	.9	8.5	.9	.4	.6	.8	.8	370	
10	38	1.7	32	.8	11	1.1	.3	.5	.8	.7	995	90
11	4.6	1.4	33	.8	9.2	1.1	.4	.6	.8	.6	2,280	90
12	3.6	.9	35	.8	.8	1.2	.4	.7	.7	.5	4,070	99
13	3.6	1.2	39	10	.7	1.1	.5	.6	.7	.5	4,390	72
14	2.8	1.4	42	24	.7	.9	.4	.6	.7	.5	3,030	200
15	3.2	62	47	28	.8	1.2	.4	.6	.7	.5	1,300	1,270
16	2.8	130	34	31	.7	1.4	.4	.5	.6	.5	816	800
17	2.8	127	73	33	.7	.9	.4	.6	.6	.5	242	301
18	3.2	120	48	29	.6	1.2	.3	.4	.5	.5	77	190
19	3.6	120	43	28	4.1	.9	.3	.5	.6	.5		160
20	3.6	48	63	31	11	.9	.3	.5	.5	.4		964
21	3.6	39	58	30	6.8	1.2	.4	.6	.5	.4		938
22	3.2	98	64	10	.5	1.1	.3	.6	.5	.4		1,040
23	2.2	54	57	1.1	.5	1.4	.3	.6	.5	.4		995
24	2.5	50	43	1.2	.8	1.9	.3	.6	.5	.4		651
25	11	30	42	7.6	1.5	1.7	.3	.6	.5	.4	1.0	404
26	30	30	39	19	1.5	1.1	.3	.6	.5	.4		970
27	34	26	36	16	1.1	.8	.4	.6	.5	.4		965
28	48	27	32	6.1	1.0	.8	.4	.6	.4	.4		540
29	53	32	24	1.2	-------	.8	.4	.6	.4	.4		525
30	46	37	7.8	7.4	-------	.8	.4	.5	.4	.4		600
31	35	-------	5.7	27	-------	.6	-------	2.8	-------	.4		386

NOTE.—Record incomplete and discharge partly estimated Nov. 26, Mar. 9, Apr. 29, May 14–15, June 17, Aug. 18, Sept. 9, 10, 12, 24, and 30; interpolated Jan. 11, Apr. 30, May 1, June 15–16. Braced figures show estimated mean discharge for periods included.

Monthly discharge of Pecos River above Barstow, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	53	0.4	11.6	714
November	130	.7	35.5	2,110
December	73	5.7	35.7	2,200
January	33	.8	13.6	835
February	51	.5	10.3	574
March	1.9	.6	1.06	65.5
April	.5	.3	.35	21.0
May	2.8	.3	.60	36.7
June	1.2	.4	.66	39.3
July	.8	.4	.45	27.7
August	4,390	----------	584	35,900
September	1,270	----------	423	25,100
The year	4,390	----------	93.5	67,600

PECOS RIVER NEAR GRANDFALLS, TEX.

LOCATION.—At site of old highway bridge where Grandfalls-Fort Stockton road formerly crossed Pecos River, 1½ miles above present Grandfalls-Fort Stockton road crossing at iron bridge, 2 miles below diversion dam for low-line (silt-line) canal of Imperial Irrigation Co., 3 miles south of Grandfalls, Ward County, and 4½ miles above diversion dam of Zimmerman project.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—November 6, 1915, to September 30, 1925. At iron bridge 1½ miles downstream from November 6, 1915, to August 3, 1917. Discharge at both points believed to be comparable.

GAGE.—Stevens water-stage recorder on downstream side of old bridge pier near left bank; inspected by engineers of Geological Survey.

DISCHARGE MEASUREMENTS.—Made by wading, from cable 50 feet above, or from iron bridge.

CHANNEL AND CONTROL.—Bed rough, solid rock, and permanent, except for small deposits of sand and gravel. Channel straight for 100 feet above and below station. One channel below gage height of 8 feet; above this stage banks, which are of dirt and wooded, subject to overflow. Rock ledge extending diagonally across stream just below gage serves as low-water control; shifts, owing to clogging of crevices.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 5.50 feet at 9 a. m. August 16 (discharge, 2,920 second-feet); minimum stage, 0.25 foot for several periods (discharge, 0.5 second-foot).

1915–1925: Maximum stage recorded, 9.6 feet from 2 to 6 a. m. September 25, 1919 (discharge, 13,000 second-feet); minimum discharge, 0.5 second-foot for several periods in 1925.

DIVERSIONS.—Station is 2 miles below diversion of low-line (silt-line) canal of the Imperial Irrigation Co., 18½ miles below diversion for the Imperial Reservoir (17,000 acre-foot capacity), 25½ miles below diversion for Ward County Water Improvement District No. 2 (of which the old Grandfalls project is a part), and 4½ miles above diversion for Zimmerman project. Available data show that tracts aggregating approximately 143,000 acres are irrigable between station and lower limits of Carlsbad project of the United States Bureau of Reclamation. Records of the Board of Water Engineers for the State of Texas show that about 58,000 acres were declared irrigated in Texas above the station. The effect of diversions is somewhat counterbalanced by water returned to stream by seepage. The only important diversion below station is that for the Zimmerman project, which has declared an irrigated area of 2,005 acres.

REGULATION.—Slight regulatory effect caused by operation of storage reservoirs on Carlsbad project.

ACCURACY.—Stage-discharge relation not permanent. Rating curves well defined. Operation of water-stage recorder unsatisfactory during the later part of the year on account of improper attendance. Daily discharge determined by applying to rating table mean daily gage height determined from recorder graph by inspection or by use of planimeter, averaging discharge for intervals of a day on days of considerable fluctuation. Records fair.

Discharge measurements of Pecos River near Grandfalls, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 10	0.53	11.4	Feb. 5	0.32	*2.0	June 25	0.32	*1.5
Oct. 28	.50	10.3	Mar. 8	.29	*1.0	Aug. 15	5.34	2,850
Nov. 24	.34	*2.0	Mar. 30	.31	*1.5	Aug. 16	5.20	2,630
Dec. 8	.32	*2.0	Apr. 27	.30	1.5	Aug. 18	1.40	175
Jan. 7	.30	*1.5	May 13	.32	*1.5			
Jan. 21	.30	*2.0	June 5	.30	*1.5			

* Estimated.

Daily discharge, in second-feet, of Pecos River near Grandfalls, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Feb.	Apr.	May	June	July	Aug.	Sept.
1	14	10	3.1	2.1	1.5	1.5	1.8	2.5	1.5	2.8		
2	10	9.9	2.8	2.1	1.3	1.5	2.1	2.5	1.3	2.5	500	
3	8.8	9.3	3.1	2.1	1.1	1.5	2.1	2.5	.9	2.1		
4	8.2	8.2	2.1	2.1	1.1	1.3	1.8	2.5	1.1	2.1	22.	
5	7.0	7.0	2.1	2.1	2.1	1.1	1.3	2.5	1.3	2.1	16.	
6	10	5.9	2.1	2.1	5.3	.9	2.5	2.5	1.3	1.8	15	
7	33	4.7	2.5	1.5	6.4	1.1	1.8	2.8	2.5	1.5	14.	
8	20	4.4	2.1	1.3	5.9	.9	1.8	2.8	2.1	1.3	7.6	
9	13	3.7	1.8	1.3	6.4	1.5	1.8	2.5	1.5	1.3	4.4	
10	14	3.4	2.1	1.5	6.4	1.1	1.8	2.5	1.5	1.3	139	
11	14	3.1	2.1	1.5	6.4	1.1	1.8	2.5	1.1	1.3	120	
12	16	3.1	2.1	1.5	6.4	.9	2.1	2.1	1.8	1.3	1,140	
13	19	3.1	2.1	1.5	7.0	1.5	1.5	2.1	1.3	1.8	1,870	
14	18	3.1	2.1	.9	6.4	.9	1.8	2.1	1.1	2.5	2,360	
15	16	3.1	2.1	1.5	6.4	.7	1.5	1.8	1.3	2.1	2,680	130
16	15	3.4	2.1	1.3	6.4	1.3	1.8	1.5	1.3	2.1	2,570	
17	13	3.4	2.1	1.3	7.0	1.3	1.8	1.8	1.3	2.8	798	
18	11	3.1	2.5	1.3	6.3	1.1	1.8	1.3	1.3	3.1	215	
19	10	3.1	2.1	1.3	3.1	1.1	1.5	1.5	1.3	3.4		
20	11	2.8	2.1	1.3	2.5	.7	1.5	1.5	1.5	3.4		
21	14	2.8	2.1	1.3	2.1	1.1	1.3	1.3	1.5	4.1		
22	14	2.8	2.5	1.5	2.1	1.1	.9	1.3	1.8	4.7		
23	13	2.8	2.5	1.5	1.5	1.1	1.8	1.8	1.8	5.3		
24	14	2.8	2.5	1.5	1.5	1.3	1.5	1.3	2.5	5.3		
25	16	3.1	2.5	1.5	1.5	1.1	1.1	1.1	3.4	5.9	50	
26	15	3.1	2.5	1.5	1.5	1.1	1.3	1.1	3.4	6.4		
27	12	3.1	2.5	1.5	1.8	.7	1.5	2.1	3.4	7.0		
28	11	3.1	2.8	1.3	1.5	1.1	1.5	2.5	2.8	7.0		
29	11	3.1	2.8	1.3	-------	1.3	1.8	2.1	2.8	6.4		
30	12	3.1	2.8	1.3	-------	1.5	2.1	1.5	2.8	7.0		335
31	12	-------	3.1	1.1	-------	1.3	-------	1.8	-------	7.0		------

NOTE.—Discharge partly estimated Aug. 5, 7, and Sept. 30; interpolated Aug. 6. Braced figures show estimated mean discharge for periods included.

Monthly discharge of Pecos River near Grandfalls, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	33	7.0	13.7	843
November	10	2.8	4.25	253
December	3.1	1.8	2.38	146
January	2.1	.9	1.51	93
February	7.0	1.1	3.89	216
March	1.5	.7	1.15	70.8
April	2.5	.9	1.69	101
May	2.8	1.1	1.99	122
June	3.4	.9	1.82	108
July	7.0	1.3	3.51	216
August	2,680	4.4	456	28,000
September	----------	----------	137	8,140
The year	2,680	.7	52.9	38,300

PECOS RIVER NEAR BUENAVISTA, TEX.

LOCATION.—At highway bridge on Fort Stockton-Midland road, 4½ miles east of Buenavista, Pecos County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—December 5, 1921, to September 30, 1925.

GAGE.—Stevens continuous water-stage recorder attached to left abutment of downstream side of bridge.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Composed of silt, sand, and gravel; shifts. Banks subject to overflow during extremely high stages.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 7.10 feet at 10 p. m. August 16 (discharge, 2,250 second-feet); minimum discharge, 6.5 second-feet at 7 p. m. July 27.

1921–1925: Maximum stage recorded, 7.77 feet at 2 a. m. October 19, 1923 (discharge, 2,640 second-feet, determined from extension of rating curve and subject to error); minimum discharge, that of July 27, 1925.

DIVERSIONS.—Station is below all diversions. During much of the time practically the only flow past station is waste and seepage water from the irrigated area above gage.

REGULATION.—Flow regulated by storage and diversion dams in New Mexico and Texas.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined above 20 second-feet and extended below. Operation of water-stage recorder satisfactory except for short breaks in record. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day on days of considerable fluctuation. Records fair.

Discharge measurements of Pecos River near Buenavista, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 10	0.70	25.9	Feb. 5	0.36	23.8	June 5	0.35	21.5
Oct. 29	.74	29.3	Mar. 7	.33	24.8	July 9	.46	16.4
Nov. 25	1.06	64.2	Mar. 31	.29	25.3	Aug. 16	6.94	2,160
Dec. 8	.66	32.9	Apr. 29	.33	29.6			
Jan. 21	.36	25.8	May 19	.24	20.3			

Daily discharge, in second-feet, of Pecos River near Buenavista, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	22			24	24	26	22	36	18	39	63
2	24	22			24	24	24	20	32	24	32	65
3	24	22			26	24	24	18	27	17	803	63
4	22	21			24	24	24	17	26	20	397	75
5	24	20	28		24	24	24	17	20	20	104	96
6	46	20			24	22	24	20	17	28	35	119
7	39	20			32	26	26	24	18	22	21	104
8	27	18	33		24	24	26	22	18	18	16	115
9	26	18	32		26	26	26	22	17	16	46	139
10	26	20			24	24	24	21	18	16	36	146
11	26	18		28	24	24	22	22	18	17	15	172
12	26	18			26	26	22	21	20	18	75	149
13	24	16			26	27	21	21	20	17	876	151
14	24	16			24	24	21	20	20	18	1,480	153
15	22	18			24	22	16	20	22	18	1,860	153
16	21	18			27	22	17	22	24	16	2,150	446
17	21	16			26	24	17	26	24	14	1,530	498
18	21	16			26	24	15	24	26	14	412	166
19	21	41			26	24	15	22	27	13	137	135
20	22	84	28		26	22	15	22	30	11	77	130
21	22	84		24	26	22	15	22	30	9.0	72	275
22	27	59		26	26	27	16	21	32	11	70	432
23	30	47		26	24	27	17	22	32	10	68	434
24	33	44		26	24	26	15	22	35	10	65	505
25	33	60		26	24	24	17	22	68	9.0	65	328
26	36	39		27	24	22	22	22	33	9.0	67	140
27	38	24		26	22	21	21	35	24	8.0	65	400
28	38			26	22	22	44	52	27	9.9	63	478
29	28	28		24	------	24	44	26	22	10	63	233
30	26			24	------	24	30	33	18	15	63	112
31	24	------		24	------	24	------	35	------	34	63	------

NOTE.—Braced figures show estimated mean discharge for periods indicated. Discharge partly estimated Nov. 27, Dec. 8–9, and Jan. 21.

Monthly discharge of Pecos River near Buenavista, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	46	21	27.3	1,680
November	84	16	30.2	1,800
December			27.4	1,680
January			27.1	1,660
February	32	22	25.0	1,390
March	27	21	24.0	1,480
April	44	15	22.3	1,330
May	52	17	23.7	1,460
June	68	17	26.0	1,550
July	51	8.0	16.3	1,000
August	2,150	15	350	21,600
September	505	63	216	12,800
The year	2,150	8.0	68.3	49,400

PECOS RIVER NEAR SHEFFIELD, TEX.

LOCATION.—At highway bridge on Fort Stockton-Ozona road, 3½ miles east of Sheffield, Pecos County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—October 10, 1921, to April 30, 1925, when station was discontinued.

GAGE.—Chain gage attached to upstream side of bridge; read by Kyle Smith or Leland Smith.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed of silt, sand, and gravel; shifts. Right bank not subject to overflow; left bank subject to overflow during extremely high stages.

EXTREMES OF DISCHARGE.—1921–1925: Maximum stage recorded, 640 feet at 8.30 a. m. October 20, 1923 (discharge, 2,460 second-feet). Minimum discharge, 15 second-feet at 6 p. m. August 15, 1923.

DIVERSIONS.—Station is below all diversions. During much of the time, practically the only flow past the station is waste and seepage water from irrigated area above.

REGULATION.—Flow partly regulated by storage and diversion dam in New Mexico and Texas.

ACCURACY.—Stage-discharge relation not permanent. Owing to badly shifting control and poor gage-height record discharge is estimated from measurements and by comparison with flow at other stations, and monthly discharge only is considered sufficiently accurate to publish. Records fair.

Discharge measurements of Pecos River near Sheffield, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 29	3.18	48.4	Jan. 22	2.25	54.9	Apr. 1	1.91	45.0
Nov. 25	3.45	82.2	Feb. 14	1.94	50.1	Apr. 28	1.98	35.5

Monthly discharge of Pecos River near Sheffield, Tex., for the period October 1, 1924, to April 30, 1925

Month	Mean discharge in second-feet	Run-off in acre-feet	Month	Mean discharge in second-feet	Run-off in acre-feet
October	45.0	2,770	March	48.0	2,950
November	52.7	3,140	April	40.0	2,380
December	55.0	3,380			
January	55.0	3,380	The period		20,800
February	50.0	2,780			

NOTE.—See "Accuracy."

PECOS RIVER NEAR COMSTOCK, TEX.

LOCATION.[3]—Pecos high bridge of Galveston, Harrisburg & San Antonio Railway, 12 miles northwest of Comstock, Val Verde County, 5½ miles above confluence with Rio Grande, and below all tributaries.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 1, 1900, to September 30, 1925. Also gage heights for 1898.

GAGE.—Vertical staff attached to downstream side of bridge pier on left bank; read by J. R. Hutchins.

DISCHARGE MEASUREMENTS.—Made from cable 1,000 feet above bridge.

CHANNEL AND CONTROL.—Banks and bed composed of rock and gravel; water flows through a series of rapids and pools in a canyon about 300 feet deep. Banks not subject to overflow. Stage-discharge relation at low stages changes slightly.

EXTREMES OF DISCHARGE.—Maximum stage during year, 23.6 feet at 1.30 a. m. May 28 (discharge, 65,000 second-feet, determined from extension of rating curve and subject to considerable error); minimum discharge, 134 second-feet May 26.

1900–1925: Maximum stage recorded, 35.75 feet April 6, 1900 (discharge not determined); minimum discharge, 106 second-feet July 29 to August 1, 1918.

DIVERSIONS.—Considerable water is diverted and stored above station for irrigation. Lakes McMillan and Avalon of the Carlsbad project of the United States Bureau of Reclamation, with a combined capacity of 58,500 acre-feet, are on Pecos River a few miles above Carlsbad, N. Mex. In addition to the water stored in New Mexico, water from Pecos River is used to irrigate large areas of land near Barstow and Grandfalls, Tex. No diversions below station. Return waters tend to equalize effects of diversions in lower part of drainage basin.

REGULATION.—Flow partly controlled by storage and diversions for irrigation above station. No water-power plants of any consequence operated in the drainage basin, except a public-utility plant of about 300 horsepower near Carlsbad, N. Mex.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined below 12,000 second-feet, poorly defined between 12,000 and 38,000 second-feet, and extended above. Gage read to hundredths twice daily and oftener during floods. Daily discharge determined by shifting-control method. Records good.

[3] Revised.

Discharge measurement of Pecos River near Comstock, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 6	0.59	220	Jan. 22	0.40	209	June 22	0.66	350
Oct. 10	.80	362	Feb. 24	.32	194	July 6	.50	282
Oct. 17	.58	276	Mar. 4	.30	167	July 24	.28	211
Nov. 28	.50	248	Mar. 12	.28	177	Aug. 18	2.48	1,410
Dec. 5	.49	235	Mar. 20	.26	186	Sept. 4	.66	339
Dec. 12	.50	238	Apr. 17	.16	164	Sept 19	.58	292
Jan. 6	.46	240	May 5	.45	252			
Jan. 16	.40	222	May 14	.86	358			

Daily discharge, in second-feet, of Pecos River near Comstock, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	222	262	245	245	212	179	190	182	1,100	317	5,820	995
2	218	262	245	245	206	182	184	280	800	298	1,350	570
3	218	245	245	228	199	179	184	356	710	280	770	399
4	212	245	228	228	199	167	179	280	652	298	652	336
5	215	245	245	245	199	170	184	262	625	280	468	336
6	222	245	228	245	199	170	182	245	598	280	399	336
7	1,660	245	228	245	199	173	184	202	570	280	336	336
8	710	245	228	245	199	173	179	190	544	280	518	336
9	421	228	228	245	196	176	179	193	544	262	468	317
10	399	225	222	228	196	179	179	179	544	245	421	317
11	336	225	209	228	196	176	176	182	518	262	377	298
12	298	225	245	228	196	176	187	865	468	298	336	995
13	298	225	228	222	190	173	179	570	468	245	377	518
14	298	228	225	222	190	179	170	377	444	245	317	298
15	280	245	222	222	196	173	170	280	444	245	298	298
16	280	228	225	222	196	170	170	222	421	262	298	298
17	280	228	228	222	196	179	164	206	399	245	421	298
18	280	228	225	218	193	176	159	187	399	245	1,350	298
19	262	228	215	218	199	179	162	182	377	245	1,660	298
20	262	228	218	215	196	184	159	164	356	245	1,580	298
21	262	228	225	212	202	187	164	159	356	228	995	493
22	262	228	225	209	199	199	154	154	336	222	740	421
23	262	228	225	209	193	222	149	146	336	225	598	356
24	262	228	225	209	193	190	164	139	317	212	468	399
25	262	225	228	209	193	182	164	139	2,230	212	444	652
26	262	222	228	209	187	190	164	134	468	209	399	570
27	262	225	228	199	187	184	468	2,870	444	199	336	518
28	262	245	228	202	182	182	262	29,000	377	209	336	598
29	262	245	228	209	-------	182	228	32,800	336	202	317	570
30	262	245	228	209	-------	187	190	6,160	336	206	280	493
31	262	-------	245	209	-------	187	-------	1,500	-------	1,130	317	-------

Monthly discharge of Pecos River near Comstock, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,660	212	331	20,300
November	262	222	235	14,000
December	245	209	229	14,100
January	245	199	223	13,700
February	212	182	196	10,900
March	222	167	181	11,100
April	468	149	188	11,200
May	32,800	134	2,540	156,000
June	2,230	317	551	32,800
July	1,130	199	278	17,100
August	5,820	280	756	46,500
September	995	298	441	26,300
The year	32,800	134	517	374,000

FARMERS INDEPENDENT CANAL NEAR PORTERVILLE, TEX.

LOCATION.—200 feet east of track of Santa Fe Railroad, 300 feet below head gates of canal in Reeves County, and 5 miles southwest of Porterville, Loving County.

RECORDS AVAILABLE.—February 9, 1922, to July 22, 1925, when station was discontinued.

GAGE.—Stevens continuous water-stage recorder; inspected by Geological Survey engineers.

DISCHARGE MEASUREMENTS.—Made by wading near gage.

CHANNEL AND CONTROL.—Bed of sand and clay. Control not known but shifts. Some water that passes this station is returned to river about 2 miles below gage.

EXTREMES OF DISCHARGE.—Maximum discharge during period, 96 second-feet at 5 p. m. February 24; no flow December 13 to February 12.

1924–1925: Maximum mean daily discharge recorded, 160 second-feet June 14, 1922; no flow for several periods.

DIVERSIONS.—Above all diversions.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined between 15 and 70 second-feet and extended above and below. Operation of water-stage recorder satisfactory. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day on days of considerable fluctuation. Records poor.

Canal diverts water from right bank of Pecos River for irrigation north of Pecos.

Discharge measurements of Farmers Independent Canal near Porterville, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 1	1.85	29.2	Mar. 10	1.12	27.7	June 4	1.50	25.8
Oct. 18	1.76	27.2	Apr. 6	1.40	34.2	June 26	1.81	19.1
Nov. 22	1.64	22.5	Apr. 23	1.18	24.6			
Dec. 9	1.56	20.2	May 14	1.74	32.1			

Daily discharge, in second-feet, of Farmers Independent Canal near Porterville, Tex., for the period October 1, 1924, to July 22, 1925

Day	Oct.	Nov.	Dec.	Feb.	Mar.	Apr.	May	June	July
1	29	23	21		41	52	33	32	23
2	28	23	22		1.5	47	37	27	23
3	28	23	21		7.6	38	44	27	23
4	28	23	20		30	32	40	25	22
5	25	22	21		30	32	29	32	21
6	25	21	21		30	32	27	32	25
7	26	22	21		28	28	30	25	32
8	29	21	21		28	35	36	25	33
9	33	22	21		28	36	33	24	33
10	32	23	21		28	39	39	24	59
11	30	22	21		27	44	43	14	55
12	29	22	8.6		27	58	36	7.1	51
13	29	22		43	27	49	36	10	86
14	28			74	27	47	32	7.1	53
15	28			72	28	45	25	8.7	35
16	27	22		76	27	40	25	13	50
17	28			77	27	39	23	15	43
18	28			77	26	37	24	26	47
19	23	22		77	43	29	28	5.3	42
20	16	22		80	52	19	30	.7	29

Daily discharge, in second-feet, of Farmers Independent Canal near Porter, Tex., for the period October 1, 1924, to July 22, 1925—Continued

Day	Oct.	Nov.	Dec.	Feb.	Mar.	Apr.	May	June	July
21	15	23		79	50	15	20	0.6	21
22	14	23		78	50	21	9.5	3.9	15
23	19	23		89	52	25	16	1.8	
24	23	22		96	53	26	12	1.2	
25	23	22		92	48	22	11	18	
26	23	22		83	43	23	6.7	18	
27	23	21		75	42	25	7.8	18	
28	23	22		76	45	30	21	18	
29	23	22			45	40	30	18	
30	23	22			54	39	55	19	
31	23				59		38		

NOTE.—Discharge estimated or partly estimated Oct. 1, Nov. 13–19, and June 23–26. No flow December 13 to February 12.

Monthly discharge of Farmers Independent Canal near Porterville, Tex., for the period October 1, 1924, to July 22, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	38	14	25.4	1,560
November	23	21	22.2	1,320
December (12 days)	22	0	20.0	475
January	0	0	0	0
February (16 days)	96	0	77.8	2,470
March	59	1.5	35.6	2,190
April	53	15	34.6	2,060
May	55	6.7	28.5	1,750
June	32	.6	16.5	985
July (22 days)	88	15	43.0	1,880
The period				14,700

CEDARVALE CANAL NEAR BARSTOW, TEX.

LOCATION.—At highway bridge 1½ miles below head gates, near head gates of Barstow Canal, below Boxley Canal pumping plant, and 8 miles northwest of Barstow, Ward County.

RECORDS AVAILABLE.—February 12, 1922, to August 5, 1925, when station was discontinued.

GAGE.—Stevens 8-day water-stage recorder; inspected by engineer of Geological Survey.

DISCHARGE MEASUREMENTS.—Made by wading.

DIVERSIONS.—Boxley Canal diverts water from this canal between river and gage but only at times when there is no flow past gage.

ACCURACY.—Stage-discharge relation not permanent. Rating curve not defined. Operation of water-stage recorder not satisfactory. Daily or monthly discharge not determined on account of poor gage-height record and backwater conditions. Total discharge for year estimated from partial gage-height record, comparison with flow at other stations, and discharge measurements. Records poor.

Canal diverts from left bank of Pecos River between Farmers Independent Canal and Barstow Canal and water used for irrigation near Barstow.

Total amount of water diverted by Cedarvale Canal during period October 1 to August 5 estimated at 9,050 acre-feet.

Discharge measurements of Cedarvale Canal near Barstow, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	3.24	76.7	Nov. 20	1.64	29.5	Feb. 2	2.98	38.9
Oct. 20	.47	.20	Jan. 6	2.96	64.8	Apr. 4	2.60	29.4

BOXLEY CANAL NEAR BARSTOW, TEX.

LOCATION.—One-fourth mile above Barstow Dam (Ward County Irrigation District No. 1), 7 miles northwest of Barstow, Ward County, and 8 miles north of Pecos.

RECORDS AVAILABLE.—October 1, 1923, to September 30, 1925, when station was discontinued. Miscellaneous measurements during 1922 and 1923.

GAGE.—Vertical staff on right bank 150 feet below pump discharge; read by E. Wolfe.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Channel straight for 800 feet below pumps; composed of earth, sand, and small gravel. Control not well defined but believed to be fairly permanent.

DIVERSIONS.—None above gage.

REGULATION.—Regulated by operation of pumps, 150 feet above gage.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined above 8 second-feet, extended above and below through point of zero flow. Gage read to hundredths when pumps were started or just before stopping or when changes were made in pumps. Daily discharge determined by applying mean daily gage height to rating table, but they are not sufficiently accurate to warrant publication. Monthly records fair.

Canal diverts water from left bank of Cedarvale Canal between Cedarvale Canal head gates and Cedarvale Canal gage, and water is used for irrigation near diversion.

Discharge measurements of Boxley Canal near Barstow, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 20	4.44	11.6	Apr. 25	4.38	10.7
Feb. 2	4.44	11.8	June 26	4.25	8.60
Mar. 9	4.40	11.3			

Monthly discharge of Boxley Canal near Barstow, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October (2 days)	6.8	6.8	6.8	27.0
January (10 days)	14	4.9	11.6	230
February (12 days)	14	2.9	11.3	268
March (10 days)	16	3.6	9.86	196
April (20 days)	16	2.2	8.35	331
May (15 days)	18	1.7	7.57	225
June (12 days)	16	.7	8.10	193
July (9 days)	16	.5	9.77	174
August (8 days)	21	9.0	15.5	246
The year				1,890

NOTE.—No flow for periods where discharge is not published.

BARSTOW CANAL NEAR BARSTOW, TEX.

LOCATION.—200 feet below head gates and dam of Ward County Irrigation District No. 1 and 8 miles northwest of Barstow, Ward County.

RECORDS AVAILABLE.—February 12, 1922, to September 30, 1925, when station was discontinued.

GAGE.—Au 60-day fuzee-type water-stage recorder attached to footbridge.

DISCHARGE MEASUREMENTS.—Made by wading or from bridge 2,500 feet below gage.

CHANNEL AND CONTROL.—Bed of rock and gravel; shifts. Low-water control is rock and gravel shoal 150 feet below gage. Point of zero flow, about gage height 0.70 foot.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 6.57 feet at 3 p. m. August 8 (discharge, 449 second-feet); no flow during several periods.

1922–1925: Maximum stage recorded, 7.42 feet at 8. a. m. August 30, 1923 (discharge, 499 second-feet); no flow for several periods of record.

DIVERSIONS.—Above all diversions.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined. Operation of water-stage recorder satisfactory except for short breaks in record. Mean daily gage heights obtained from recorder graph by inspection. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day on days of considerable fluctuation. Records fair.

Barstow Canal diverts water from left bank of Pecos River for irrigation and domestic use near Barstow.

Discharge measurements of Barstow Canal near Barstow, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	2.13	45.4	Mar. 9	2.86	83.6	July 15	1.71	13.2
Oct. 20	3.10	113	Apr. 4	1.42	7.72	Aug. 9	5.54	354
Nov. 20	2.98	104	Apr. 25	1.83	15.2	Aug. 21	4.00	199
Jan. 6	2.69	80.8	May 15	2.50	37.9			
Feb. 2	2.61	75.6	June 8	2.60	44.5			

Daily discharge, in second-feet, of Barstow Canal near Barstow, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	70	90	99	65	57	17	1.8	28	------	------	150
2	40	84	85	100	71	18	12	------	2.6	------	4.0	160
3	38	83	94	93	71	20	9.3	------	20	------		160
4	54	78	86	90	65	22	8.0	------	60	------	6.5	160
5	65	77	84	86	62	18	14	3.6	53	75	19	160
6	64	57	110	83	75	41	34	30	58	112	20	116
7	90	70	109	82	91	99	37	34	50	97	133	140
8	96	96	112	74	87	94	35	34	44	48	340	146
9	143	96	109	72	95	88	32	40	43	24	360	149
10	133	107	90	70	82	89	27	37	40	20	317	134
11	135	104	93	70	65	90	39	50	40	9.9	376	119
12	120	77	102	74	70	89	42	45	36	14	269	152
13	117	94	110	86	68	88	46	41	32	24	213	164
14	104	37	102	83	64	84	35	42	34	11	294	160
15	113	69	91	84	70	91	32	38	32	13	316	145

Daily discharge, in second-feet, of Barstow Canal near Barstow, Tex., for the year ending September 30, 1925—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	105	5.5	102	83	64	93	38	35	31	12	286	152
17	106	5.7	65	79	63	87	32	36	28	9.3	268	156
18	100	5.7	81	77	62	91	23	36	27	5.7	222	166
19	108	5.7	113	81	68	85	22	28	31	5.0	254	125
20	110	58	85	84	78	89	24	28	24	4.1	230	109
21	111	97	85	83	60	94	28	36	19	1.1	196	135
22	110	56	90	72	52	83	19	36	15	-------	197	116
23	93	92	84	74	54	92	14	32	4.6	-------	149	126
24	110	93	75	80	106	115	15	38	-------	-------	142	135
25	109	98	76	84	120	108	15	32	-------	-------	138	145
26	102	115	80	76	118	88	17	34	-------	-------	131	128
27	97	98	84	76	102	74	29	27	-------	-------	126	118
28	90	98	72	77	91	78	27	33	-------	-------	122	134
29	77	110	67	76	-------	86	37	22	-------	-------	83	148
30	66	98	84	83	-------	87	27	1.4	-------	-------	86	151
31	65	-------	98	71	-------	54	-------	159	-------	-------	121	-------

NOTE.—Braced figure gives estimated mean discharge for periods indicated. No flow for periods when discharge is not shown.

Monthly discharge of Barstow Canal near Barstow, Tex., for the year ending September, 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	143	38.	93.8	5,770
November	115	5.5	74.5	4,430
December	113	65	90.6	5,570
January	100	70	80.7	4,960
Febraury	120	52	76.4	4,240
March	115	18	77.2	4,740
April	46	8.0	26.2	1,560
May (28 days)	159	1.4	35.9	1,990
June (23 days)	60	2.6	32.7	1,490
July (17 days)	112	1.1	28.5	962
August (30 days)	376	----------	181	10,800
September	166	109	142	8,450
The year	----------	----------	----------	55,000

GRANDFALLS-BIG VALLEY CANAL NEAR BARSTOW, TEX.

LOCATION.—At head gates 10 miles southeast of Barstow, Ward County.

RECORDS AVAILABLE.—March 2, 1922, to November 7, 1925, when station was discontinued.

GAGE.—Stevens continuous water-stage recorder; attended by Geological Survey engineers.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed of clay. Control not known; shifts. Point of zero flow, gage height −0.40 foot.

EXTREMES OF DISCHARGE.—Maximum stage during period from water-stage recorder, 5.25 feet at 5 p. m. August 3 (discharge, 425 second-feet, determined from extension of rating curve and subject to considerable error); no flow for several periods.

1922–1925: Maximum stage recorded that of August 3, 1925. No flow for several periods.

DIVERSIONS.—Above all diversions.

ACCURACY.—Stage-discharge relation not permanent. Rating curve fairly well defined below 200 second-feet and extended above. Operation of water-stage recorder satisfactory except as noted in footnote to daily-discharge table. Daily discharge determined by applying mean daily gage height to rating table, averaging discharge for intervals of a day on days of considerable fluctuation. Shifting-control method used October 1 to August 1. Records fair below 200 second-feet and poor above.

Canal diverts from left bank of Pecos River for irrigation and domestic uses near Grandfalls.

Discharge measurements of Grandfalls-Big Valley Canal near Barstow, Tex., during the period October 1, 1924, to November 7, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 23	1.97	113	Mar. 10	1.26	69.9	May 12	0.65	26.0
Jan. 5	1.41	74.4	Apr. 3	.88	43.8	June 6	.80	19.3
Feb. 2	1.39	75.4	May 2	.73	30.2	July 6	.56	14.1

Daily discharge, in second-feet, of Grandfalls-Big Valley Canal near Barstow, Tex., for the period October 1, 1924, to November 7, 1925

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.	Oct.	Nov.
1	-------	92	67	65	72	48	31	29	15	222	-------	177	177
2	-------	95	72	74	73	46	30	23	14	270	117	173	177
3	-------	82	84	70	62	44	29	22	14	340	-------	173	173
4	-------	80	82	70	53	45	26	20	13	381	-------	173	173
5	-------	85	80	83	60	42	24	19	14	290	-------	173	177
6	-------	83	80	87	63	40	24	19	15	238	-------	169	177
7	-------	68	63	80	61	40	24	20	14	185	-------	169	181
8	-------	63	57	75	60	40	25	21	13	215	-------	169	------
9	-------	65	59	71	64	38	24	23	12	320	-------	173	------
10	-------	92	54	71	69	38	29	23	15	320	-------	173	------
11	-------	109	48	60	67	36	36	22	18	310	-------	173	------
12	-------	109	48	60	66	35	26	22	15	300	-------	173	------
13	-------	88	57	55	65	34	25	22	16	310	-------	173	------
14	-------	102	71	50	57	32	25	21	17	300	224	173	------
15	-------	109	71	48	54	31	23	22	16	310	169	173	------
16	15	102	68	46	56	31	23	21	15	320	163	173	------
17	102	95	70	53	54	30	25	21	17	320	215	173	------
18	125	98	98	61	52	28	26	21	19	310	215	173	------
19	129	106	109	61	51	26	25	20	18	246	172	173	------
20	129	98	92	64	50	26	23	20	17	181	133	173	------
21	109	125	88	63	49	25	22	20	15	181	144	173	------
22	79	137	85	64	51	25	21	19	15	202	185	177	------
23	109	129	80	59	51	26	22	19	15	173	157	177	------
24	109	121	61	59	51	25	23	25	15	-------	74	173	------
25	98	113	62	55	50	25	22	56	15	-------	51	173	------
26	83	113	61	55	50	25	23	26	14	-------	169	173	------
27	87	109	57	60	49	26	28	20	12	-------	137	173	------
28	88	113	62	63	49	26	26	19	12	-------	81	173	------
29	81	102	62	-------	49	35	29	18	12	-------	177	177	------
30	81	92	60	-------	49	33	35	15	12	-------	181	177	------
31	-------	78	53	-------	48	-------	26	-------	84	-------	-------	177	------

NOTE.—No flow Oct. 1 to Nov. 15, 1924. Record incomplete or missing and discharge partly estimated or interpolated Nov. 23, 1924, Aug. 7-9, 23, Sept. 2, 14, 28, Oct. 15-19, and Nov. 7, 1925. No record Aug. 24 to Sept. 1 and Sept. 3-13, 1925.

Monthly discharge of Grandfalls-Big Valley Canal near Barstow, Tex., for the period October 1, 1924, to November 7, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
November 16–30	129	15	94.9	2,820
December	137	63	98.5	6,060
January	109	48	69.7	4,290
February	87	46	63.6	3,530
March	73	48	56.6	3,480
April	48	25	33.4	1,990
May	36	21	25.8	1,590
June	56	15	22.3	1,320
July	84	12	17.0	1,050
August 1–23	381	173	271	12,400
October	177	169	173	10,700
November 1–7	181	173	176	2,450

NOTE.—No flow Oct. 1 to Nov. 15, 1924. No record Aug. 24–31, Sept 1, and 3–13, 1925.

IMPERIAL HIGH-LINE CANAL NEAR GRANDFALLS, TEX.

LOCATION.—4 miles below head gates of canal in Reeves County, 15 miles west of Grandfalls, Ward County.

RECORDS AVAILABLE.—March 14, 1922, to July 28, 1925, when station was discontinued.

GAGE.—Stevens continuous water-stage recorder; inspected by Geological Survey engineers.

DISCHARGE MEASUREMENTS.—Measurements made by wading or from bridge 300 feet above gage.

CHANNEL AND CONTROL.—Bed composed of coarse gravel. Banks of earth. Control not known; shifts. Points of zero flow, 0.10 foot gage datum.

EXTREMES OF DISCHARGE.—Maximum stage during period from water-stage recorder, 2.79 feet at 11 p. m. October 29 (discharge, 115 second-feet, determined from extension of rating curve and subject to considerable error); minimum stage, 0.26 foot for short periods, July 21, 22, 26, 27, 28 (discharge, 0.4 second-foot).

1922–1925: Maximum stage, 6.85 feet September 18, 1923 (discharge, not determined); no flow for several periods.

DIVERSIONS.—Above all diversions. Sand gates 300 feet above are opened occasionally for a short time to clean canal.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 85 second-feet and extended above. Operation of water-stage recorder not satisfactory. Daily discharge determined by applying to rating table mean daily gage height obtained from recorder graph by inspection, averaging discharge for intervals of a day on days of considerable fluctuation. Records fair.

Canal diverts water from right bank of Pecos River for irrigation near Imperial and Buenavista.

Discharge measurements of Imperial High-Line Canal near Grandfalls, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 9	2.14	80.6	Jan. 6	0.60	7.47	June 5	0.40	*1.50
Oct. 24	1.90	63.8	Feb. 5	.61	8.27	July 16	.29	*.50
Nov. 24	.84	16.8	Mar. 30	.56	6.34			
Dec. 8	.68	10.6	Apr. 27	.54	5.19			

* Estimated.

Daily discharge, in second-feet, of Imperial High-Line Canal near Grandfalls, Tex., for the period October 1, 1924, to July 28, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
1	34	87	13	6.9	6.5	7.6	5.8	5.8	3.0	1.5
2	29	84	12	6.2	6.9	7.5	6.9	5.4	2.5	1.4
3	27	82	12	6.5	7.6	7.4	4.7	4.7	2.1	1.4
4	28	66	12	7.2	8.0	7.3	5.4	3.8	1.9	1.2
5	31	58	12	7.4	8.0	7.2	5.4	3.8	1.9	1.4
6	49	53	12	7.6	8.7	7.1	5.4	4.0	2.1	1.4
7	41	46	12	7.6	9.1	7.0	5.4	4.4	2.3	1.4
8	80	45	11	6.9	8.3	6.9	5.4	4.4	2.7	1.4
9	76	62	9.8	6.5	8.7	6.9	5.4	4.4	2.5	1.3
10	71	66	11	6.5	8.0	6.8	5.4	4.4	2.3	1.2
11	106	60	12	6.9	8.0	6.8	5.4	5.4	2.1	1.1
12	104	84	12	5.1	8.0	6.8	5 4	5.8	1.9	1.0
13	98	74	11	3.6	8.3	6.7	5.4	4.4	1.9	.9
14	84	66	9.4	3.8	7.6	6.7	5.4	3.8	1.8	.8
15	71	76	9.4	4.4	7.6	6.7	5.4	3.4	1.6	.7
16	61	92	9.8	5.1	7.6	6.6	5.4	3.2	1.5	.6
17	53	38	9.1	5.8	7.6	6.6	5.4	3.4	1.4	1.0
18	58	19	8.7	6.5	8.0	6.6	5.4	3.4	1.4	1.0
19	79	20	9.1	7.2	9.1	6.5	5.4	3.4	1.4	.9
20	79	19	9.4	8.0	9.4	6.5	5.4	3.0	1.4	.7
21	76	18	9.4	8.7	9.1	6.5	5.4	2.7	1.4	.6
22	82	18	10	8.7	9.8	6.4	5.4	2.1	1.4	.6
23	98	18	11	8.3	8.3	6.4	5.4	2.5	1.4	.6
24	76	17	10	8.3	8.1	6.4	5.4	2.5	1.4	.7
25	82	17	9.4	7.6	8.0	6.3	5.4	1.9	2.3	.6
26	98	16	9.1	7.2	7.9	6.3	5.4	2.5	3.6	.6
27	104	15	8.7	6.9	7.8	6.3	5.4	3.8	3.0	.6
28	109	15	8.7	6.9	7.7	6.2	4.7	5.1	2.1	.6
29	109	15	9.1	6.9	-------	6.2	5.1	4.4	1.6	-------
30	106	14	8.7	7.2	-------	6.2	6.5	3.8	1.5	-------
31	98	-------	8.3	7.6	-------	5.4	-------	3.4	-------	-------

NOTE.—Record incomplete and discharge interpolated Nov. 21-23, Dec. 2-7, Jan. 5, 16-20, Feb 24 to Mar. 7, Mar. 9-29, Apr. 5-26, and July 7-15. Discharge partly estimated Oct. 9, Nov. 20, 24, Dec. 1, 8, Jan. 4, 6, 15, 21, Feb. 5, 6, 23, Mar. 8, and Apr. 27.

Monthly discharge of Imperial High-Line Canal near Grandfalls, Tex., for the period October 1, 1924, to July 28, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	109	27	74.3	4,570
November	92	14	45.3	2,700
December	13	8.3	10.3	633
January	8.7	3.6	6.77	417
February	9.8	6.5	8.13	452
March	7.6	5.4	6.67	410
April	6.9	4.7	5.44	324
May	5.8	1.9	3.84	236
June	13.6	1.4	1.98	118
July 1-28	1.5	.6	.97	53.9
The period				9,910

IMPERIAL LOW-LINE CANAL NEAR GRANDFALLS, TEX.

LOCATION.—Opposite gage on Pecos River near Grandfalls, 3 miles below head gates of canal, 4 miles west of Grandfalls, Ward County.

RECORDS AVAILABLE.—March 29, 1922, to July 14, 1925, when station was discontinued.

GAGE.—Stevens continuous water-stage recorder; inspected by Geological Survey engineers.

DISCHARGE MEASUREMENTS.—Made by wading or from footbridge near gage.

CHANNEL AND CONTROL.—Bed of clay, gypsum, and silt. Banks of earth. Control not known; shifts.

EXTREMES OF DISCHARGE.—Maximum stage during period from water-stage recorder, 1.61 feet at 5.30 p. m. February 18 (discharge, 36 second-feet); no flow February 13–17.

1922–1925: Maximum stage from silt marks in well, 4.25 feet September 18, 1923 (discharge, 254 second-feet, determined from extension of rating curve and subject to error); no flow for several periods.

DIVERSIONS.—Above all diversions. Sand gates 1½ miles above opened occasionally for short periods.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined. Operation of water-stage recorder not satisfactory. Daily discharge determined by applying to rating table mean daily gage height obtained from recorder graph by inspection or by shifting-control method, averaging discharge for intervals of a day on days of considerable fluctuation, or as noted in footnote to daily-discharge table. Records fair.

Canal diverts water from right bank of Pecos River for irrigation near Imperial and Buenavista.

Discharge measurements of Imperial Low-Line Canal near Grandfalls, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 28	0.90	7.65	Feb. 14	0.45	[a].01	June 5	0.78	[a] 2.50
Nov. 24	.78	4.25	Mar. 30	.82	5.28	June 25	1.15	9.89
Jan. 7	.86	6.28	Apr. 27	.80	3.44			
Feb. 5	.58	[a].40	May 13	.77	3.16			

[a] Estimated.

Daily discharge, in second-feet, of Imperial Low-Line Canal near Grandfalls, Tex., for the period October 28, 1924, to July 14, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
1			5.4		6.2	6.5	5.4	4.5	2.7	0.6
2			5.6		6.2	6.5	5.1	4.3	2.2	.6
3		6.4	5.9	6.4	4.9	6.8	4.8	3.5	2.0	.5
4			5.6		.6	6.8	4.8	3.0	1.9	.6
5			5.4		.6	6.5	4.8	2.7	1.9	.6
6		5.1	5.4	6.5	.5	6.5	4.5	2.7	1.6	.6
7		4.8	5.6	6.5	.4	6.8	4.3	2.7	1.4	.6
8		5.1	5.9	6.5	.3	6.8	4.3	2.7	1.4	.6
9		6.2	6.2	6.5	.1	6.5	4.8	3.0	1.3	.5
10		6.8		6.5	.1	6.2	4.5	3.1	1.0	.5
11		6.7		6.5	.1	6.2	4.0	3.1	1.2	.4
12		6.6		6.2	.1	6.2	4.5	3.2	1.2	.3
13		6.4		6.2		5.9	4.5	3.2	1.0	.5
14		6.3		6.2		5.9	4.5	2.7	.7	.6
15		6.1		6.2		5.9	4.0	2.5	.8	
16		5.8		6.2		6.2	3.8	2.2	.7	
17		5.7		6.2		5.9	3.8	2.2	.6	
18		5.5		6.2	9.6	5.9	3.5	2.0	.6	
19		5.4		6.2	14	5.9	3.0	2.2	.6	
20		5.2	6.4	6.2	7.9	5.6	3.0	2.2	.5	
21		5.0		6.2	6.8	5.6	2.7	1.8	.5	
22		4.9		6.2	6.5	5.6	2.2	1.8	.5	
23		4.7		6.5	6.2	5.4	2.5	1.8	.4	
24		4.5		6.5	6.5	5.4	2.7	1.8	.5	
25		4.8		6.5	6.5	5.6	2.7	1.6	7.6	
26		5.4		6.5	6.5	5.4	2.7	1.6	7.9	
27		5.4		6.8	6.5	5.1	3.5	2.2	2.5	
28	7.6	5.4		6.5	6.5	5.1	3.2	4.0	1.2	
29		5.4		6.8		5.4	3.2	4.5	.8	
30	6.4	5.4		6.5		5.4	4.5	5.1	.7	
31				6.5		5.1		3.8		

NOTE.—Braced figures give estimated mean discharge for periods indicated. No record Oct. 1–27. Record incomplete and discharge partly estimated Oct. 28, Nov. 24, Dec. 9, Jan. 6, May 9, 13; discharge interpolated Nov. 11–23 and May 10–12. No flow Feb. 13–17.

Monthly discharge of Imperial Low-Line Canal near Grandfalls, Tex., for the period October 28, 1924, to July 14, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 28-31			6.70	53.2
November			5.69	338
December			6.19	380
January			6.40	393
February	14	0	3.70	205
March	6.8	5.1	5.95	366
April	5.4	2.2	3.86	230
May	5.1	1.6	2.83	174
June	7.9	.4	1.60	95.0
July 1-14	.6	.3	.54	14.9
The period				2,250

LIMPIA CREEK NEAR FORT DAVIS, TEX.

LOCATION.—At State highway No. 27 crossing, 13½ miles northeast of Fort Davis, Jeff Davis County, and 8½ miles above mouth of Horse Thief Creek.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—February 27 to September 30, 1925.

GAGE.—Au 60-day water-stage recorder on right bank.

DISCHARGE MEASUREMENTS.—Made from cable 300 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed of gravel and small rock. Channel straight for 300 feet above and 200 feet below gage. One channel for low and medium stages and several for high stages. Banks composed of gravel, rock, and earth, sparsely covered with brush and weeds, and subject to overflow. Low-water control is concrete weir with steel edge. Intermediate and high-stage control is bed and banks of stream.

EXTREMES OF DISCHARGE.—Maximum stage during period from water-stage recorder, 5.95 feet at 5 p. m. August 11 (discharge, 2,250 second-feet, determined from extension of rating curve and subject to error); no flow for several periods.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 1,800 second-feet and extended above. Operation of water-stage recorder satisfactory. Daily discharge determined by applying to rating table mean daily gage height ascertained from recorder graph by inspection, averaging discharge for intervals of a day on days of considerable fluctuation. Records good.

Discharge measurements of Limpia Creek near Fort Davis, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 9		0	June 22		0	Aug. 5	2.95	437
May 16		0	Aug. 5	2.70	316	Do	2.49	249
May 31	1.72	10.1	Do	5.3	[a] 1,660	Aug. 6	2.07	58.7
Do	1.68	8.34	Do	4.75	[b] 1,270	Aug. 28	1.73	10.0
June 3		0	Do	3.6	705			

[a] Determined by float method.
[b] Determined by observing surface velocities and coefficient used to reduce to mean.

Daily discharge, in second-feet, of Limpia Creek near Fort Davis, Tex., for the period February 27 to September 30, 1925

Day	May	Aug.	Sept.	Day	May	Aug.	Sept.	Day	May	Aug.	Sept.
1			19	11		146	211	21		0.2	1.3
2			41	12		23	17	22		.6	1.3
3			52	13		14	11	23		.2	74
4			89	14		3.3	8.6	24		.3	68
5		192	68	15		.6	6.6	25		.3	22
6	0.7	100	121	16		.2	4.4	26		.4	13
7	1.3	106	47	17		.2	3.3	27		68	8.2
8		26	22	18		.2	2.1	28	2.6	18	5.8
9		146	14	19		.2	2.0	29	6.5	118	4.7
10		90	11	20		.2	1.8	30	131	121	3.6
								31	167	24	

NOTE.—No flow Feb. 27 to May 5, May 8–27, June 1 to Aug. 4.

Monthly discharge of Limpia Creek near Fort Davis, Tex., for the period February 27 to September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
February 27–28	0	0	0	0
March	0	0	0	0
April	0	0	0	0
May	167	0	9.97	613
June	0	0	0	0
July	0	0	0	0
August	192	0	38.7	2,380
September	211	1.3	31.8	1,890
The period				4,880

BARRILLA CREEK NEAR SARAGOSA, TEX.

LOCATION.—At Old Spanish Trail highway bridge, 2.8 miles from Reeves-Pecos county line, 15.5 miles by road southeast of Saragosa, Reeves County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—December 6, 1924, to September 30, 1925.

GAGE.—Au 60-day water-stage recorder attached to downstream side of concrete pier of bridge; inspected by Geological Survey engineers.

DISCHARGE MEASUREMENTS.—Made from highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed or sand, gravel, and small boulders; some vegetation; shifting. Channel straight for 300 feet above and 500 feet below gage. Banks fairly clean and subject to overflow. Low-stage control is gravel bar 30 feet below gage; shifts badly.

EXTREMES OF DISCHARGE.—Maximum stage during period from water-stage recorder, 8.81 feet at 1.10 a. m. July 31 (discharge, 5,700 second-feet, determined from extension of rating curve and subject to error); no flow during several periods.

DIVERSIONS.—Small diversions above. Amount not known.

REGULATION.—None of consequence.

ACCURACY.—Stage-discharge relation not permanent. Rating curve fairly well defined between 10 and 2,200 second-feet and extended above and below. Operation of water-stage recorder satisfactory. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day on days of considerable fluctuation. Accuracy of daily discharge too uncertain to justify publication. Monthly records fair.

Discharge measurements of Barrilla Creek near Saragosa, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 6		0	May 30	1.78	16.1	Aug. 7	1.42	25.0
Apr. 9		0	June 3		0	Do	3.88	1,100
Apr. 28		0	June 22		0	Do	4.12	1,280
Apr. 30	0.12	0	Aug. 6	1.96	151	Do	4.65	1,530
May 16		0	Do	2.10	197	Do	4.88	1,880
May 30	2.00	46.9	Do	4.75	*1,910	Do	4.82	1,860
Do	1.89	25.6	Aug. 7	1.54	34.7			

* Surface velocities observed and coefficient used to reduce to mean velocities.

Monthly discharge of Barrilla Creek near Saragosa, Tex., for the period December 6, 1924, to September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
December 6-31	0	0	0	0
January	0	0	0	0
February	0	0	0	0
March	0	0	0	0
April	405	0	31.7	1,890
May	289	0	32.4	1,990
June	46	0	1.72	102
July	810	0	35.0	2,150
August	613	0	51.2	3,150
September	284	0	29.5	1,760
The period				11,000

NOTE.—No flow Dec. 6 to Apr. 24, Apr. 28, May 1-6, 10-27, June 3 to July 29, Aug. 1-4, 15-30, Sept. 2, and 16-30.

DEVILS RIVER NEAR JUNO, TEX.

LOCATION.—500 feet below Bakers Crossing and Walter Baker ranch house, 2 miles above mouth of Phillips Creek, 8 miles below head water spring, and 13½ miles southwest of Juno, Val Verde County.

DRAINAGE AREA.—2,730 square miles (measured on topographic maps, progressive military maps of United States Army, and base map of Texas).

RECORDS AVAILABLE.—May 26 to September 30, 1925.

GAGE.—Au continuous water-stage recorder on left bank; inspected by W. C. Dodd.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of boulders and gravel; fairly permanent except for considerable aquatic growth. Channel straight for half a mile above and 1 mile below station. Right bank of gravel, sand, and clay; sodded and heavily wooded with trees and shrubs; subject to shift and overflow. Left bank of sand and clay; fairly clean; fairly permanent; not subject to overflow. Low-water control is bedrock with some gravel, 230 feet below gage; fairly permanent except for aquatic growth. At high and intermediate stages control is partly formed by gravel bar on right and may shift.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period May 26 to September 30, 15.8 feet at 11 p. m. May 29 (discharge, 43,700 second-feet, determined by slope method and subject to error); minimum stage, 2.01 feet May 26 (discharge, 92 second-feet).

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined below 350 second-feet, fairly well defined between 350 and 15,000 second-feet, and poorly defined above. Gage read to hundredths often May 26 to June 2. Operation of water-stage recorder satisfactory June 30 to September 30. Daily discharge determined by shifting-control method, averaging discharge for intervals of a day on days of rapid fluctuation. Records good.

Discharge measurements of Devils River near Juno, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 6		88.8	May 27	11.25	[a] 15,900	Aug. 8	2.16	119
May 20	2.01	79.0	May 29	15.8	[b] 43,700	Sept. 2	2.12	110
May 27	9.64	[a] 11,200	June 2	2.82	296			
Do	10.23	[a] 13,300	June 30	2.20	133			

[a] Made by surface floats and coefficient used to reduce to mean velocity.
[b] Made by slope method.

Daily discharge, in second-feet, of Devils River near Juno, Tex., for the period May 26 to September 30, 1925

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1		550	129	119	111	16			127	113	105
2		320	129	138	111	17			125	111	105
3			129	127	111	18			125	111	105
4			129	125	111	19			125	111	105
5			129	123	111	20			123	111	105
6			129	123	109	21			121	111	105
7			127	121	109	22		175	121	111	103
8			129	121	109	23			121	107	103
9		175	127	119	111	24			119	107	107
10			129	119	109	25			119	109	103
11			135	119	109	26	92		119	109	101
12			131	115	109	27	9,980		119	109	101
13			127	115	109	28	20,300		119	109	99
14			127	113	107	29	29,900	129	119	109	99
15			127	113	107	30	23,100	131	115	107	99
						31	3,800		119	113	

NOTE.—Braced figures give estimated mean discharge for periods indicated. Record incomplete, and discharge partly estimated May 30, 31, June 1, 2, and 29.

Monthly discharge of Devils River near Juno, Tex., for the period May 26 to September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 26-31	29,900	92	14,500	173,000
June			189	11,300
July	135	115	125	7,670
August	138	107	115	7,080
September	111	99	106	6,320
The period				205,000

DEVILS RIVER NEAR DEL RIO, TEX.

LOCATION.—2,200 feet above Southern Pacific Railroad bridge and mouth of Sells Creek, 1.8 miles below State highway No. 3 crossing, 1.9 miles northeast of Devils River station, and 12 miles northwest of Del Rio, Val Verde County.

DRAINAGE AREA.—4,000 square miles (measured on topographic maps, progressive military maps of United States Army, and base map of Texas).

RECORDS AVAILABLE.—December 6, 1923, to September 30, 1925. May 1, 1900, to March 31, 1914, at a site 1 mile downstream at station known as Devils River at Devils River.

GAGE.—Stevens continuous water-stage recorder on left bank; installed November 20. Prior to that date, staff gage in six sections on left bank to same datum.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed of solid rock; rough; permanent. High-water channel of rock overlain with gravel, with some trees and brush. Left bank of rock and clay, covered with timber, and not subject to overflow; permanent. Right bank is rough, rock bluff, covered with timber, and not subject to overflow. Channel straight 1,000 feet above and below station. Control is solid rock ledge, 80 feet below gage; rough; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year from water-stage recorder, 24.96 feet at 3 p. m. May 29 (discharge not determined); minimum stage, 1.67 feet from 6 p. m. to midnight May 15 (discharge, 318 second-feet).

1900–1914; 1924–1925: Maximum stage that of May 29, 1925; minimum mean daily stage, 2.0 feet June 8, 1912 (discharge, 245 second-feet).

On April 6, 1900, a stage of 25.4 feet was reached by datum of gage established on May 1, 1900. A stage of 30.15 feet present gage datum was reached in October, 1914, by levels to floodmarks in December, 1924.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 1,400 second-feet, poorly defined between 1,400 and 32,000 second-feet, and extended above. Gage read to hundredths once daily from October 1 to November 19, and operation of water-stage recorder satisfactory thereafter. Daily discharge determined by applying mean daily gage height to rating table, averaging discharge for intervals of a day on days of considerable fluctuation, or as noted in footnote to daily-discharge table. Records below discharge of 32,000 second-feet, good.

Discharge measurements of Devils River near Del Rio, Tex., during the year ending September 30, 1925

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	1.86	438	Mar. 7	1.75	354	May 31	6.56	11,200
Oct. 8	1.92	486	Mar. 11	1.76	367	June 2	3.00	1,420
Nov. 24	1.80	394	Mar. 19	1.74	353	Do	2.90	1,330
Dec. 4	1.82	408	Apr. 3	1.74	350	June 3	2.57	1,000
Jan. 2	1.80	407	Apr. 16	1.71	340	June 28	2.06	596
Jan. 20	1.80	383	Apr. 23	1.71	338	July 9	1.99	546
Jan. 29	1.80	373	May 1	1.72	350	July 23	1.96	508
Feb. 23	1.76	367	May 11	1.72	353	Sept. 1	1.98	532
Feb. 27	1.74	363	May 30	10.98	31,900	Sept. 29	1.93	494

Daily discharge, in second-feet, of Devils River near Del Rio, Tex., for the year ending September 30, 1925

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	460	410	410	398	396	366	359	341	2,690	573	542	542
2	454	410	410	396	410	366	359	341	1,380	565	550	519
3	448	410	410	403	403	366	359	341	1,070	558	813	512
4	443	410	410	410	396	366	353	341	887	565	573	504
5	438	410	410	410	396	366	353	335	805	558	542	504
6	1,030	410	410	410	396	359	353	335	748	550	534	504
7	542	410	410	403	396	366	353	330	708	542	527	496
8	466	410	410	410	403	366	359	335	700	534	527	496
9	466	410	410	403	396	366	359	341	821	534	519	496
10	452	410	410	396	396	366	359	347	780	534	527	496
11	452	410	410	396	396	372	347	353	684	573	519	489
12	438	410	410	396	390	372	347	335	668	644	519	504
13	438	410	410	390	390	359	347	330	652	573	512	550
14	438	410	410	390	396	359	347	324	644	550	504	519
15	438	410	410	390	390	359	341	324	644	550	504	504
16	424	410	410	396	390	359	341	324	636	542	504	504
17	424	410	410	396	390	366	335	330	636	534	504	496
18	424	410	410	396	378	372	341	335	628	527	504	496
19	424	410	410	396	378	359	347	335	612	519	504	496
20	424	410	410	396	378	359	347	335	612	512	504	496
21	424	410	409	396	384	359	335	335	612	512	504	489
22	424	410	408	396	390	378	335	330	589	512	504	489
23	410	410	407	396	378	390	341	341	581	512	496	489
24	410	410	406	396	366	366	353	347	573	512	496	496
25	410	410	405	396	372	366	353	353	676	512	512	496
26	410	410	404	410	359	359	378	347	597	512	504	489
27	410	410	403	403	359	359	372	378	612	512	504	481
28	410	410	402	396	359	359	353	1,930	589	504	504	481
29	410	410	401	396	-------	353	347	84,000	581	504	496	489
30	410	410	400	396	-------	359	347	46,500	573	512	496	489
31	410	-------	399	390	-------	359	-------	10,100	-------	573	604	-------

NOTE.—No record and discharge interpolated Oct. 1–4 and Dec. 21 to Jan. 1. Record incomplete and discharge partly estimated Jan. 2, June 8–10, and July 15–17. Discharge May 29 and 30 from long extension of rating curve and subject to considerable error.

Monthly discharge of Devils River near Del Rio, Tex., for the year ending September 30, 1925

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,030	410	454	27,900
November	410	410	410	24,400
December			408	25,100
January	410	390	398	24,500
February	410	359	387	21,500
March	390	353	364	22,400
April	378	335	351	20,900
May	84,000	324	4,890	301,000
June	2,690	573	766	45,600
July	644	504	539	33,200
August	813	496	527	32,400
September	542	481	500	29,800
The year	84,000	324	840	609,000

DEVILS RIVER SEEPAGE INVESTIGATION

During this investigation the stream was at a constant stage and the measurements represent the natural conditions.

Discharge measurements to determine seepage on Devils River from a point just below Beaver Lake to Del Rio-Comstock highway road crossing near Del Rio, Tex., in August, 1925

Date	Stream or diversion	Location	Approximate distance in miles from initial point	Discharge in second-feet			
				Main stream	Tributary	Gain or loss in section	Total gain or loss
Aug. 8	Devils River	Below Beaver Lake	0	1.6			
8	do		.2	0		−1.6	−1.6
8	Juno Springs (Headwater Springs).	Juno	3.2		5.8		
8	Devils River		4.2	0		−5.8	−7.4
8	do	Below Pecan Springs	13.8	42.2		+42.2	+34.8
8	do	First crossing above Bakers crossing.	19.3	78.1		+35.9	+70.7
8	do	Bakers crossing	22.3	119		+40.9	+111.6
9	do	1½ miles below Bakers crossing.	23.8	122		+3	+114.6
9	do	5½ miles below Bakers crossing.	26.6	132		+10	+124.6
9	do	7 miles below Bakers crossing.	32.5	148		+16	+140.6
10	do	3 miles above Dolans Creek	33.5	165		+17	+157.6
10	Dolans Creek	Mouth	36.5		34.2		
10	Devils River	Below Dolans Creek	36.5	[c]243		+43.8	+201.4
10	Dry Devils River	Mouth	45.4		0		
11	Devils River	Half a mile below Dry Devils River.	45.9	301		+58	+259.4
12	do	4 or 5 miles above Sellers ranch.	56.3	303		+2	+261.4
12	Swann-Shelton Springs	Half a mile above Sellers ranch.	60.8		[b]44.3		
13	Devils River	2½ miles below Sellers ranch.	63.3	[c]492		+144.7	+406.1
13	do	Del Rio-Comstock crossing	73.0	473		−19	+387.1

[c] Large increase from east side not measureable.
[b] Part of inflow only—not possible to measure total.
[c] Measurement subject to error owing to poor measuring conditions.

NOTE.—Columns headed "Gain or loss in section" and "Total gain or loss" show values computed from discharge of main stream, tributaries, and diversions.

MISCELLANEOUS DISCHARGE MEASUREMENTS

In addition to the records of flow obtained at the gaging stations and reported in the preceding pages, measurements were made at other points as shown by the following table:

Miscellaneous discharge measurements in western Gulf of Mexico basins during the year ending September 30, 1925

Date	Stream	Tributary to—	Locality	Discharge
				Sec.-ft.
Nov. 29	Sabine River	Gulf of Mexico	200 feet above mouth of Cypress Creek, 4 miles north of Deweyville, Tex.	678
Dec. 4	do	do	do	837
Apr. 25	do	do	do	1,090
June 24	do	do	do	749
Nov. 29	Cypress Creek	Sabine River	Mouth, 4 miles north of Deweyville, Tex.	.25
13	Bayou L'Anacoco	do	Mouth, near Merryville, La	86.5
Dec. 12	Cow Creek	do	One-half mile above mouth, near Belgrade, Tex.	114
Nov. 30	Neches River	Gulf of Mexico	2 miles below mouth of Village Creek at Lake View, Tex.	534
Dec. 3	do	do	do	836
Aug. 5	McFadden Canal	Diverts from Neches River.	Near Beaumont, Tex	8.0

Miscellaneous discharge measurements in western Gulf of Mexico basins during the year ending September 30, 1925—Continued

Date	Stream	Tributary to—	Locality	Discharge
				Sec.-ft.
Mar. 10	Trinity River	Gulf of Mexico	Lock and Dam No. 1, near Dallas, Tex.	46.0
10	do	do	Hutchins Bridge, near Hutchins, Tex.	53.3
10	do	do	Lock and Dam No. 2, near Wilmer, Tex.	56.2
11	do	do	Site of Lock and Dam No. 5, near Ferris, Tex.	61.8
Dec. 10	San Jacinto River	do	Beaumont Sour Lake & Western Railroad bridge, near Huffman, Tex.	180
Aug. 7	Spring	Brazos River	Fish hatchery, Seymour, Tex	.15
Sept. 17	Moorings artesian well	do	Steeles store, Tex	2.51
Mar. 16	South Concho River	Colorado River	1 mile above mouth of Middle Concho River, near San Angelo, Tex.	9.19
Jan. 8	Brady Creek	San Saba River	Mouth of Little Brady Creek 16 miles east of Brady, Tex.	4.4
Oct. 9	Barton Springs	Barton Creek	Mouth of concrete oval near Austin, Tex.	7.64
9	Old Mill Spring	do	Near Austin, Tex	4.85
30	do	do	do	4.23
Nov. 20	do	do	do	4.50
Dec. 12	do	do	do	2.62
Jan. 2	do	do	do	2.10
20	do	do	do	1.90
Feb. 16	do	do	do	1.12
Mar. 7	do	do	do	[a] 1.2
30	do	do	do	.81
Apr. 24	do	do	do	.90
May 21	do	do	do	.90
June 15	do	do	do	1.39
July 16	do	do	do	1.04
30	do	do	do	.80
Aug. 20	do	do	do	.44
Sept. 26	do	do	do	.37
July 22	Guadalupe River	Gulf of Mexico	At old gaging station near Comfort, Tex.	26.0
Aug. 25	do	do	1½ miles above mouth of Comal River near New Braunfels, Tex.	24.6
Nov. 26	do	do	One-half mile above mouth of Comal River near New Braunfels, Tex.	132
Aug. 24	do	do	do	25.2
Oct. 1	Comal River	Guadalupe River	Landa Park, New Braunfels, Tex	[b] 333
28	do	do	do	[b] 337
Nov. 26	do	do	do	[b] 337
Mar. 28	do	do	do	[b] 316
Aug. 24	do	do	do	[b] 295
25	do	do	do	[b] 290
Oct. 1	San Marcos River	do	Austin-San Antonio highway crossing, San Marcos, Tex.	197
Jan. 31	do	do	do	159
Mar. 27	do	do	do	169
July 2	do	do	do	116
20	do	do	do	118
Sept. 19	do	do	do	111
Dec. 3	Spillway draw	Medina River	Main dam near Riomedina, Tex	15.6
May 12	Frio River	Nueces River	Leakey-Bandera highway crossing, ½ mile from Leakey, Tex.	11.0
12	do	do	2½ miles below Leakey, Tex	19.7
12	do	do	Rio Frio, Tex	16.1
July 29	do	do	Below Concan, Tex	6.34
May 13	do	do	Concan-Uvalde road crossing near Uvalde.	.50
12	Rio Frio Canal	Diverts from Frio River.	Above laterals near Rio Frio, Tex	5.17
7	Sabinal River	Frio River	Vanderpool, Tex	1.5
7	do	do	Fourth road crossing on Sabinal-Utopia road, 4 miles below Utopia, Tex.	2.84
Apr. 4	Leona River	do	500 feet below Leona Valley Livestock & Irrigation Co.'s' dam 4 miles below Uvalde, Tex.	[a] 2.95
3	do	do	Hackberry road crossing between Batesville and Uvalde just below mouth of Camp Lake slough, 4 miles above Batesville, Tex.	12.2
4	Leona Valley Livestock & Irrigation Co.'s canal.	Diverts from Leona River.	Head of canal 4 miles below Uvalde, Tex.	5.6

[a] Estimated. [b] Total flow of springs. [c] Canal was diverting 5.6 second-feet.

Miscellaneous discharge measurements in western Gulf of Mexico basins during the year ending September 30, 1925—Continued

Date	Stream	Tributary to—	Locality	Discharge
				Sec.-ft
July 24	Pecos River	Rio Grande	New Mexico dam site, one-half mile above Texas-New Mexico line, three-quarters mile east of Corral, N. Mex.	49.0
24	do	do	Dam site No. 2, 4½ miles north of Orla, Tex.	47.6
24	do	do	Dam site No. 3, 5 miles northeast of Orla, Tex.	47.2
May 20	do	do	500 feet above highway bridge, near Girvin, Tex.	27.4
Jan. 15	"A" drainage ditch	Pecos River	Near Carlsbad, N. Mex	1.28
15	"E" drainage ditch	do	Near Loving, N. Mex	1.58
15	Cross Draw drain	do	do	3.5
16	Black River	do	Near Malaga, N. Mex	a 10.0
16	Delaware Creek	do	At mouth near Malaga, N. Mex	a 2.0
Oct. 17	San Solomon Springs	do	Near Balmorhea, Tex	37.7
Jan. 8	do	do	do	38.2
Mar. 4	do	do	do	36.3
June 2	do	do	do	34.3
Mar. 4	Giffin Spring	do	Just below first crossing near Balmorhea, Tex.	2.9
June 2	do	do	do	3.39
Oct. 16	Barstow drain ditch	do	Below Barstow, Tex	31.0
Jan. 20	do	do	do	38.2
May 12	Grandfalls-Big Valley Canal.	Diversion from Pecos River.	4 miles below gage near Barstow, Tex.	24.4
12	do	do	12 miles below gage near Barstow, Tex.	20.1
13	do	do	25 miles below gage near Barstow, Tex.	15.1
13	do	do	32 miles below gage near Barstow, Tex.	7.51
Oct. 11	Comanche Springs	do	Fort Stockton, Tex	47.7
Mar. 7	do	do	do	51.1
Apr. 25	Goodenough Springs	Rio Grande	Near Comstock, Tex	169
7	Devils River	do	Mouth of Dry Devils River near Comstock, Tex.	180
9	do	do	Rough Canyon, 6 miles above Del Rio-Comstock road crossing near Del Rio, Tex.	325
24	Las Vacas River	do	Near Villa Acuna, Coahuila, Mexico	2.9
27	do	do	do	62.0
May 6	do	do	do	8.5
12	do	do	do	14.8
18	do	do	do	10.6
June 23	do	do	do	10.4
26	do	do	do	11.3
July 7	do	do	do	7.33
22	do	do	do	4.07
29	do	do	do	3.44
Aug. 7	do	do	do	a 4.0
12	do	do	do	a 3.0
26	do	do	do	a 3.0
Sept. 18	do	do	do	a 4.0
24	do	do	do	a 6.0
Apr. 4	San Felipe Springs	do	Near Del Rio, Tex	62.2
Jan. 27	do	do	do	69.0
Apr. 13	San Diego River	do	Main road from Villa Acuna to Piedras Negras, 15 miles above mouth of river.	56.5
13	do	do	Near San Bicente, Mexico, 1,500 feet above mouth near Jimenez, Mexico.	48.4
14	San Rodrigo River	do	2,500 feet above mouth, half a mile west of Moral, Mexico.	23.1
8	Las Moras Creek	do	One-fourth mile below highway bridge to Fort Clark at Brackettville, Tex.	9.34

a Estimated.

INDEX