ERRATA

January 1, 1960

Texas Board of Water Engineers

BULLETIN 5807 A

Compilation of Surface Water Records in Texas Through September 1957

The errata on this and the succeeding 4 pages constitute all corrections to date in this publication. The corrections listed below on this sheet apply to the text material as indicated, and the corrections listed on the succeeding 4 pages apply to the tabular material.

Page 5, second list, the period of record for Brown County Water Improvement District No. 1 Canal near Brownwood, Tex. should be 1950-57.

Page 45, Station No. 8, in the Remarks paragraph, the capacity for Amarillo City Lake on Palo Duro Creek should be 5,120 acre-ft.

Page 71, Station No. 34, the Maximum contents should be 1,700,000 acre-ft, and the elevation should be 250.36 ft.

Page 74, Station No. 39, the last line in the Remarks paragraph should read, "--- closed Aug. 21, 1957. Water began flowing through conduits Sept. 25, 1957."

Page 116, Station No. 77, in the second table, the water-supply paper number for each of the years 1904-7 inclusive should show only 1342.

Page 144, Station No. 108, the drainage area should be 704 sq mi.

Page 202, Station No. 162, in the Extremes paragraph, the gage heights for maximum contents observed should be 2,116.70 ft, and for minimum contents observed should be 2,082.54 ft.

Page 205, Station No. 165, in the table, the contents for July 1957 should be 49,550 acre-ft.

Page 413, Station No. 357, in the Remarks paragraph, the capacity of Elephant Butte Dam should be 2,206,800 acre-ft, revised 1956.

Page 424, Station No. 366, the Extremes paragraph should read, "1900-14, 1923-57: Maximum discharge, 15,200 cfs June 12, 1912 (gage height, 14.85 ft at site and datum then in use); no flow at times."

Page 437, Station No. 376, in the Extremes paragraph, the date of the maximum discharge should be May 24, 1941.

Page 494, Station No. 434, the heading for the table in the center of the page should be "Monthly and yearly runoff, in acre-feet".

Monthly and yearly mean discharge, in cubic feet per second

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The Year
Page 39, Station No. 2													
1957											1,515		446
Page 77, Station No. 40													
1957								5,832				155	1,427
Page 135, Station No. 96													
1957								231	114	4.89			41.0
Page 237, Station No. 197													
1957												29.1	570
Page 417, Station No. 359													
1948													327
Page 463, Station No. 404													
1949													138
Page 466, Station No. 407													
1910												843	

Monthly and yearly runoff, in acre-feet

Year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The Year
Page 40, Station No. 2													
1957											93,140		323,200
Page 77, Station No. 40													
1957								358,600				9,210	1,033,000
Page 85, Station No. 48													
1939				71,420									672,300
Page 135, Station No. 96													
1957								14,210	6,800	301			29,650
Page 165, Station No. 128													
1941		644,100											
Page 171, Station No. 131													
1955					442,100								
Page 238, Station No. 197													
1957												1,730	412,600
Page 425, Station No. 366													
1911													690,100
1913													165,500
Page 472, Station No. 411													
1904													3,524,200
Page 479, Station No. 417													
1933													5,031,590

Yearly discharge, in cubic feet per second

Year	W.S.P.	Water year ending Sept. 30							Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff
		Discharge	Date				Inches	Acre-feet		Acre-feet
Page 40, Station No. 2										
1957					446			323,200		
Page 43, Station No. 5										
1941					70.9					
Page 48, Station No. 10										
1950									68.4	49,520
1951		41,700	May 16, 1951							
Page 48, Station No. 11										
1950									38.3	27,750
Page 77, Station No. 40										
1957					1,427	1.48	20.16	1,033,000		
Page 86, Station No. 48										
1939								672,300		668,900
Page 135, Station No. 96										
1957					41.0			29,650		
Page 238, Station No. 197										
1957					570			412,600		
Page 315, Station No. 264										
1935			May 19, 1935							
Page 389, Station No. 333										
1947			Oct. 9, 1946							
Page 406, Station No. 351										
1938			Dec. 29, 1937							
Page 418, Station No. 359										
1942					1,780					

Yearly discharge, in cubic feet per second

Year	W.S.P.	Water year ending Sept. 30							Calendar year	
		Momentary maximum		Minimum day	Mean	Per square mile	Runoff		Mean	Runoff
		Discharge	Date				Inches	Acre-feet		Acre-feet
Page 426, Station No. 366										
1911								690,100		
1912								1,254,700		
1943					417					
Page 436, Station No. 375										
1934								1,314,880		
Page 438, Station No. 376										
1938					182			131,600		
Page 450, Station No. 390										
1933				0.9						
Page 465, Station No. 405										
1939			May 4, 1939							
Page 467-468, Station No. 407										
1906					799					
1910					509					
Page 473, Station No. 411										
1932								4,421,640		
Page 479, Station No. 417										
1904								3,843,800		
1929								2,442,000		
1933								5,031,590		
Page 484, Station No. 421										
1944								3,365,100		
1947								3,007,800		

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TEXAS BOARD OF WATER ENGINEERS

Durwood Manford, Chairman
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O. F. Dent, Member

BULLETIN 5807 A

COMPILATION OF SURFACE WATER RECORDS IN TEXAS THROUGH SEPTEMBER 1957

RADIATION CONTROL
LIBRARY COPY

Prepared in cooperation with the Geological Survey
United States Department of the Interior
September 1958

PREFACE

The purpose of this report is to make available in summarized form the surface-water records collected at regular streamflow stations in the State of Texas through September 30, 1957.

Records collected over the years are found only in numerous individual volumes, many of which are out of print and difficult to obtain; therefore, the records are summarized and conveniently arranged in this report for maximum usefulness.

Data contained in this report were compiled jointly by the State Board of Water Engineers and the Surface Water Branch of the Geological Survey. Several State, Federal, and municipal agencies, as well as private organizations, have cooperated in the collection of the basic streamflow records and, so far as practical, individual and appropriate acknowledgment has been made throughout the report for all data or assistance obtained from the various sources.

COMPILATION OF SURFACE WATER RECORDS IN TEXAS

THROUGH SEPTEMBER 1957

INTRODUCTION

The first streamflow station in Texas was established on the Rio Grande at El Paso on May 10, 1889, under the provisions of the Act of Congress of October 2, 1888, which authorized an "Irrigation Survey" by the U. S. Geological Survey. A systematic streamflow study was begun by the Geological Survey in 1897 covering as many of the principal streams in Texas as the limited funds would permit. In 1915, the Texas Board of Water Engineers entered into a cooperative agreement with the Geological Survey for the collection of streamflow records on an expanded basis. Since that time the Board of Water Engineers and the Geological Survey have continued to expand the surface-water investigations through their own cooperative programs as well as through cooperative programs with the Corps of Engineers, U. S. Army; the Bureau of Reclamation, U. S. Department of Interior; the Soil Conservation Service, U. S. Department of Agriculture; and several river authorities and other political subdivisions of the State of Texas. Surface-water investigations are carried out under these cooperative programs in all river basins in Texas with the exception of the Rio Grande. The International Boundary and Water Commission, United States and Mexico, is responsible for maintaining a network of gaging stations in the Rio Grande basin for international use.

The data presented in this report consist of records of discharge of streams and contents of reservoirs summarized on a monthly and yearly basis for 436 gaging stations in Texas, of which 297 were in operation on September 30, 1957. Prior to the preparation of this report, the Geological Survey made a technical review of all records previously published, for the purpose of reevaluating the accuracy of the records and making corrections where necessary. At some stations additional basic field data obtained subsequent to original publication of records provided a basis for reinterpretation and recomputation to obtain more accurate records of discharge. All records were examined for computation errors and tested wherever possible by comparison with records of discharge at other stations and with weather data. Records that were found to be in need of substantial revision were recomputed or omitted if revision was not feasible. Estimates of discharge were made to fill short gaps to complete the continuity of the records whenever practicable.

The gaging stations that have been maintained on streams and reservoirs in Texas for which records are presented herein are listed in a bar-chart table of contents which shows the periods of record of discharge or storage, map number, and page for each gaging station. The geographical location of all streamflow and lake-level gages for which records are included in this report is shown by numbers on the accompanying set of four maps (pls. I-IV). The numbers on the maps correspond to the number for the gaging station in the bar-chart table of contents.

More detailed records collected at these stations are contained in the files and reports or bulletins of the Board of Water Engineers and the Geological Survey, in the annual series of water-supply papers of the Geological Survey, and in Water Bulletins of the International Boundary and Water Commission, United States and Mexico.

DOWNSTREAM ORDER OF LISTING GAGING STATIONS

In a downstream direction along the main stem, all stations on a tributary entering above a main-stem station are listed before the main-stem station. A tributary entering between two main-stem stations is listed between them. A similar order is followed in listing stations of first rank, second rank, and other rank of tributaries. To indicate the rank of any tributary on which a gaging station is situated and the stream to which it is immediately tributary, each indentation in the listing of gaging stations in the table of contents represents one rank. This downstream order and system of indention show which gaging stations are on tributaries between any two stations on a main stem and the rank of the tributary on which each gaging station is situated.

DEFINITION OF TERMS AND ABBREVIATIONS

The terms of streamflow and other hydrologic data, as used in this report, are defined as follows:

Cubic foot per second (cfs) is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

Cubic feet per second per square mile (cfsm) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Runoff in inches is the depth to which an area would be covered if all the water draining from it in a given period were uniformly distributed on its surface. The term is used for comparing runoff with rainfall, which is also usually expressed in inches.

Acre-foot is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43, 560 cubic feet. The term is commonly used in relation to storage west of the Mississippi River and was originally associated with irrigation.

The drainage area of a stream at a specified location is that area, measured in a horizontal plane, which is so enclosed by a topographic divide that direct surface runoff from precipitation normally would drain by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins or noncontributing areas within the area unless otherwise noted.

DESCRIPTION OF DATA

The data presented in this report for most of the gaging stations comprise a description of the station, tables of monthly discharge and runoff, and a yearly summary table.

The station description gives the location of the gaging station, drainage area, supplemental records available (for some stations), type and datum of gages, average discharge, extremes of discharge, and general remarks concerning the data. Records furnished by another agency are so identified. The location of the gaging station and the drainage area are obtained from the best available maps. When more than one site was used and the difference in drainage areas is significant, the area for the latest site is shown first followed by the areas for other sites in chronological order. For some stations a paragraph headed "Supplemental records available" refers to records other than those given in this report consisting of gage-height records for periods other than those for which discharge records are presented, records concerning quality of water, or results of periodic discharge measurements. The gage described first is the present gage or the one used most recently, followed by information in chronological order for all previous gages, giving changes in location, type of gage, or datum, all referred to the most recently used gage. The datum of the gage is the elevation of the zero of the gage above mean sea level. The average discharge for a station is the average of all complete water years where there are five or more complete years of record, even though the years are not consecutive. In general, the momentary maximum and minimum discharges and stages for the entire period of record are published in the "Extremes" paragraph with qualifications as necessary regarding the type of gage used and the completeness of the record. Under "Remarks" information is given on factors that affect the basin yield and runoff characteristics, such as upstream storage, regulation, diversion, and utilization, including a history of changes in these items when known.

Streamflow data summarized in this report are generally presented in two monthly tables and one yearly table. The first monthly table is a tabulation of the monthly and yearly mean discharge in cubic feet per second. These figures represent discharge passing the station and are unadjusted for storage or diversion upstream. Each monthly figure is the mean flow for the entire month; no record for part of a month is tabulated nor is a yearly figure given for only part of a year.

The second monthly table is a tabulation of monthly and yearly runoff in acre-feet, and the figures are unadjusted for storage or diversion upstream.

The third table contains a yearly summary of the streamflow data. The number of the water-supply paper or other publication in which the figures of daily and monthly discharge are published is shown in the column headed "W. S. P. No." For early years for which daily discharges were not published, the name of the report that contains daily gage heights, rating tables, and monthly discharges is shown. The momentary maximum discharge for each water year and

the date of occurrence is given whenever obtainable with qualifications as necessary. Occasionally, maximum daily discharges are given, but only when it was not practical to give momentary maximums. In addition, the summary table includes the minimum daily discharge for each water year if available, the yearly mean discharge in cubic feet per second, and the annual runoff in acre-feet for each calendar year, and for some stations in the Red, Sabine, Neches, and San Jacinto River basins, cubic feet per second per square mile and runoff in inches.

Records of reservoirs are given in a single table showing the contents at the end of each month or as otherwise footnoted.

A number of revisions and corrections were made in connection with the review of all streamflow records for the 1950 compilation report by the Geological Survey. The revisions of daily discharge will be published in the annual series of water-supply papers. The water-supply paper number in the third table includes the publication in which the revised figures will be published. As this report is designed to show only the latest figures available, no reference to revised or corrected figures is made. Certain periods of record were estimated to complete some months or water years; these are included in this report but are not footnoted.

Records for stations in the Rio Grande basin computed and published by the International Boundary and Water Commission, United States and Mexico, were furnished for calendar years and recomputed for this report on a water-year basis by the Geological Survey.

For a few stations, after reviewing the past records, it was found that part or all of the previously published records were grossly in error, yet the available basic data were such that the record could not be improved or revised. For such stations, a note listing the periods of records that have been discredited and not republished is given herein. This report does not include those stations for which the entire period of record previously published has been discredited. The stations so omitted are listed in the following table:

Stations omitted from this report for which the entire record should not be used

Station	Years
Brazos River at Brazos, Tex.	1914-20
Brazos River near San Felipe, Tex.	1938-45, 1954-57
Deep Creek near Snyder, Tex.	1923-25
Colorado River near Bronte, Tex.	1915-18
Colorado River at Marble Falls, Tex.	1916-26
Little Walnut Creek near Austin, Tex.	1924-26
Guadalupe River near Gonzales, Tex.	1915-22
Nueces River near Cotulla, Tex.	1915-18

Stations omitted from this report for which the entire record should not be used--con.

Station	Years
Frio Lake Outlet near Fowlerton, Tex.	1915-19
Frio River at Fowlerton, Tex.	1915-19
Nueces River at Calallen, Tex.	1915-18
Barilla Creek near Pecos, Tex.	1940

In addition to the above, records for some other stations in the State previously published by the Geological Survey in the annual series of reports are omitted from this report. In general, the records of such stations either are too fragmentary to allow computation of monthly mean discharge, or are records that did not measure streamflow, total diversion, or return flow, and are not considered important enough to warrant publication in this report. These stations are listed in the following table:

Previously published records which are not compiled in this report

Station	Period of Record
Trinity River at Liberty, Tex.	1938-57
Barker Reservoir near Addicks, Tex.	1945-57
Addicks Reservoir near Addicks, Tex.	1948-57
Brown County Water Improvement District No. 1 Canal near Brownwood, Tex.	1950
John Camp Pump near Orla, Tex.	1940-41
Joe B. Neel Pump near Riverton, Tex.	1940
M. R. Estes Pump near Mentone, Tex.	1940-41
Reeves County Water Improvement District No. 2 Canal near Mentone (Farmers Independent Canal near Porterville), Tex.	1922-25, 1939-57
Ward County Water Improvement District No. 3 Canal near Barstow, Tex.	1939-57
Cedarvale Canal near Barstow, Tex.	1922-25
Boxley Canal near Barstow, Tex.	1923-25
Margueretta flume near Pecos, Tex.	1898, 1900-1907
West Valley ditch near Pecos, Tex.	1904
Ward County Irrigation District No. 1 Canal (Barstow Canal) near Barstow, Tex.	1922-25, 1939-57
Drainage into Soda Lake near Barstow, Tex.	1939-41
Reeves County Water Improvement District No. 2 Canal wasteway near Pecos, Tex.	1939-41

Previously published records which are not compiled in this report--con.

Station	Period of Record
John T. Yarborough Pump near Pecos, Tex.	1940-41
Ward County Irrigation District No. 1 lateral No. 1 wasteway near Pecos, Tex.	1939-40
Barstow drainage ditch No. 1 near Barstow, Tex.	1939-40
Rock Quarry Draw near Barstow, Tex.	1939-40
Barstow drainage ditch below confluence of ditches 2, 3, and 4 near Barstow, Tex.	1939-41
Ward County Irrigation District No. 1 Canal wasteway below Barstow, Tex.	1940
Grandfalls-Big Valley Canal near Barstow, Tex.	1922-25, 1939-57
E. W. Fate Pump near Grandfalls, Tex.	1940-41
Pecos County Water Improvement District No. 2 upper diversion canal (Imperial Highline Canal) near Grandfalls, Tex.	1922-25, 1939-57
Ward County Water Improvement District No. 2 Canal near Grandfalls, Tex.	1939-57
Pecos County Water Improvement District No. 2 lower diversion canal (Imperial Lowline Canal) near Grandfalls, Tex.	1922-25, 1939-41
Pecos County Water Improvement District No. 2 Canal near Imperial, Tex.	1940-57
Pecos County Water Improvement District No. 2 west lateral wasteway near Buena Vista, Tex.	1940
Pecos County Water Improvement District No. 3 Canal near Grandfalls, Tex.	1939-40
Pecos County Water Improvement District No. 3 Canal near Imperial, Tex.	1940-57
Pecos County Water Improvement District No. 3 Canal below Buena Vista, Tex.	1940-41
Ward County Water Improvement District No. 2 lateral No. 2 wasteway below Grandfalls, Tex.	1939-40
Ward County Water Improvement District No. 2 Canal wasteway below Grandfalls, Tex.	1939-40
Pecos County Water Improvement District No. 2 east lateral wasteway below Buena Vista, Tex.	1940
Pecos County Water Improvement District No. 3 Canal wasteway below Buena Vista, Tex.	1940
Drainage from Powell Lake below Buena Vista, Tex.	1940-41

PUBLICATIONS

Reports on surface-water supply containing records from 1888 to 1957 for drainage basins in Texas except the Rio Grande basin are listed in table on page 8. Records for the Rio Grande basin are collected by the International Boundary and Water Commission and for the years 1931-57 are contained in its annual Water Bulletins Nos. 1-27, respectively. Prior to 1931, Rio Grande records are contained in the annual series of Geological Survey water-supply papers. The data for any particular gaging station, in general, will be found in the reports covering the years during which the station was maintained.

Numbers of Geological Survey Water-Supply Papers containing results of stream measurements in Texas, 1889-1957

Year	Part 7	Part 8	Year	Part 7	Part 8
1889	11th A	11th A	1925	607	608
1890	11th A	11th A	1926	627	628
1891	12th A	12th A	1927	647	648
1892	13th A	13th A	1928	667	668
1893	B 131	B 131	1929	687	688
1895	B 140	B 140	1930	702	703
1896	11	11	1931	717	718
1897	16	16	1932	732	733
1898	28	28	1933	747	748
1899	35-39	35-39	1934	762	763
1900	47-52	47-52	1935	787	788
1901	65, 66, 75	65, 66, 75	1936	807	808
1902	84	84	1937	827	828
1903	99	99	1938	857	858
1904	131	132	1939	877	878
1905	173	174	1940	897	898
1906	209	210	1941	927	928
1907	247	248	1942	957	958
1908	247	248	1943	977	978
1909	267	268	1944	1007	1008
1910	287	288	1945	1037	1038
1911	307	308	1946	1057	1058
1912	327	328	1947	1087	1088
1913	357	358	1948	1117	1118
1914	387	388	1949	1147	1148
1915	407	408	1950	1177	1178
1916	437	438	1951	1211	1212
1917	457	458	1952	1241	1242
1918	477	478	1953	1281	1282
1919-20	507	508	1954	1341	1342
1921	527	528	1955	1391	1392
1922	547	548	1956	1441	1442
1923	567	568	1957	a1511	a1512
1924	587	588	1958	a1561	a1562

A Annual Report.
B Bulletin.
a Not available as of September 1958.

Detailed information on stages and discharges of many streams in Texas during major floods has been included in special reports prepared cooperatively by the Board of Water Engineers and the Geological Survey or by some other agency. These reports are listed below in chronological order:

	Report	Issued by
W.S.P. 147	Destructive Floods in the United States in 1904	Geological Survey
W.S.P. 162	Destructive Floods in the United States in 1905	Do.
W.S.P. 488	The Flood in Central Texas in September 1921	Do.
	Flood of September and October 1932, International Portion of the Rio Grande	International Boundary and Water Commission, United States and Mexico
W.S.P. 771	Floods in the United States, Magnitude and Frequency	Geological Survey
W.S.P. 796-G	Major Texas Floods of 1935	Do.
W.S.P. 816	Major Texas Floods of 1936	Do.
W.S.P. 842	Floods in the Canadian and Pecos River Basins of New Mexico, May and June 1937	Do.
W.S.P. 847	Maximum Discharges at Stream-Measurement Stations through September 1938	Do.
W.S.P. 914	Texas Floods of 1938 and 1939	Do.
W.S.P. 1046	Texas Floods of 1940	Do.
Circ. 32	Flood of September 1946 at San Antonio, Texas	Do.
	Floods of 1948 along the International Portion of the Rio Grande	International Boundary and Water Commission, United States and Mexico
Circ. 99	Flood of August 1-6, 1950, at Wichita Falls, Texas	Geological Survey
W.S.P. 1137-I	Summary of Floods in United States during 1950	Do.
W.S.P. 1227-B	Floods of May 1951 in Western Oklahoma and Northwestern Texas	Do.
W.S.P. 1227-D	Summary of Floods in the United States During 1951	Do.
W.S.P. 1260-A	Floods of September 1952 in Colorado and Guadalupe River Basins, Central Texas	Do.
	Floods in Louisiana, Magnitude and Frequency	Louisiana Department of Highways
	Texas Floods of April, May, and June, 1957	Texas Board of Water Engineers

In addition to the published reports, the Board of Water Engineers and the Geological Survey have prepared a number of special reports containing detailed data on floods throughout the State. These reports, listed below, are out of print; however, file copies are available and may be consulted at the offices of the Board of Water Engineers or the Geological Survey in Austin:

Floods in Concho River Basin, 1925

Flood Flow of Texas Rivers, 1937

Flood of April 19-20, 1942, in Marine Creek at Fort Worth, Texas

Flood of July 1-3, 1945, at Balmorhea, Texas

Flood of May 17, 1949, at Fort Worth, Texas

Peak Discharges on Bull Creek and Tributaries, Scurry and Borden Counties, Texas - Flood of April 12, 13, 1954

Floods in Devils and Pecos River Basins of Texas, June 27, 28, 1954

Floods of April-June 1953, Sabine River Basin, Texas and Louisiana, and Neches River Basin, Texas

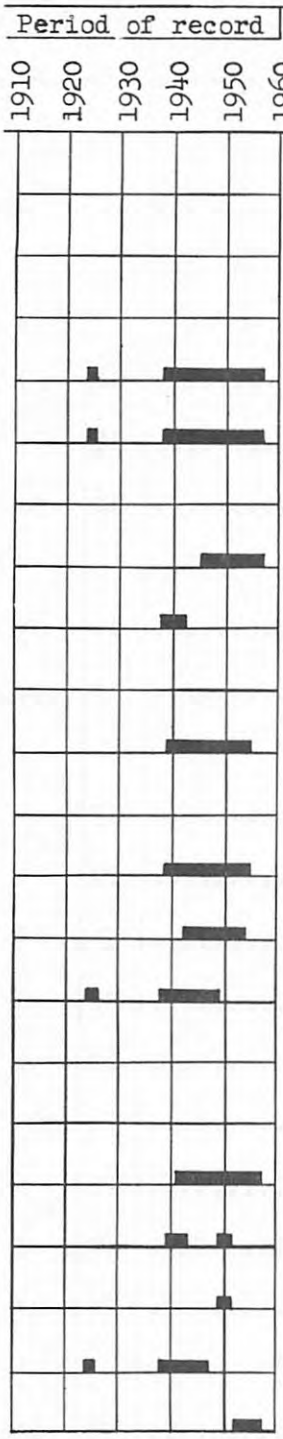
Texas Floods of September and October 1955

Water-supply papers not out of print may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C.; price lists will be furnished upon request. Complete sets of publications referred to herein may be consulted at the office of the Geological Survey in Austin. Some of these publications are available for reference at public libraries in the principal cities throughout the State.

The following bar chart shows the periods of record of discharge of streams and contents of reservoirs for all stations compiled in this report through September 30, 1957. Periods of record of stage only as shown in Bulletin 5807 B are not included. The stations are listed in downstream order (p. 2) and are numbered consecutively. The number is used to identify the stations on the maps (pls. I-IV) showing location of gaging stations. (See p. 1.)

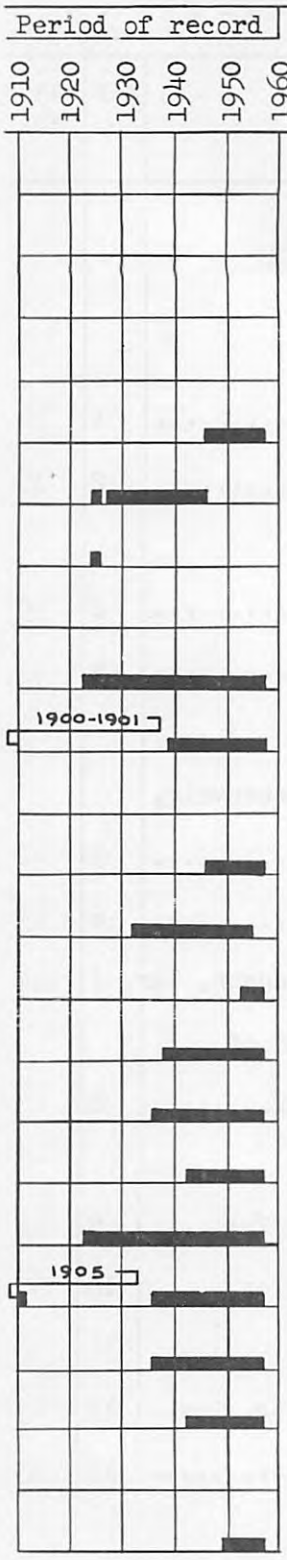
BAR CHART

Bar chart of gaging-station records



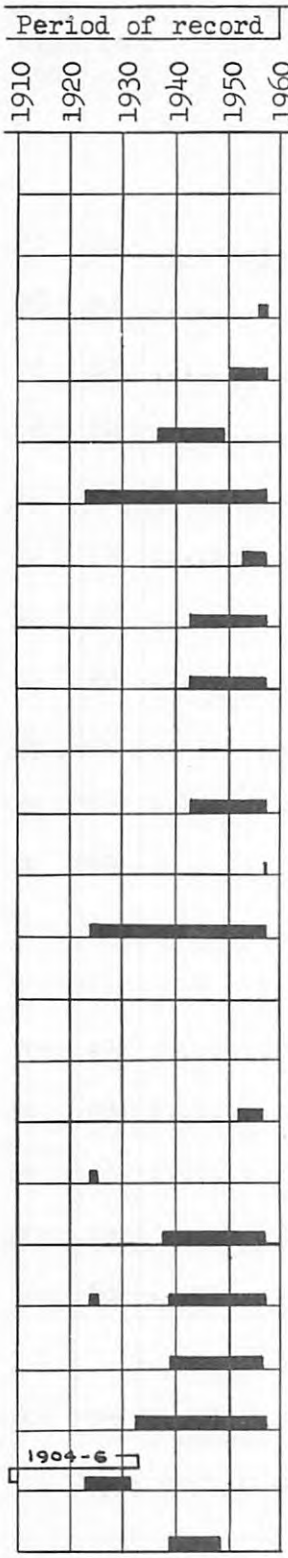
Gaging station	Map No.	Page No.
Mississippi River		
Arkansas River basin:		
Arkansas River:		
....Canadian River near Amarillo, Tex.....	1	38
....Canadian River near Canadian, Tex.....	2	39
North Canadian River:		
.....Palo Duro Creek near Spearman, Tex.....	3	40
.....Wolf Creek at Lipscomb, Tex.....	4	41
Red River basin:		
..Tierra Blanca Creek (head of Red River) at reservoir, near Umbarger, Tex.....	5	42
..Buffalo Lake near Umbarger, Tex.....	6	43
..Palo Duro Creek at Amarillo City Lake near Canyon, Tex.	7	44
..Prairie Dog Town Fork Red River (continuation of Tierra Blanca Creek) near Canyon, Tex.....	8	45
Tule Creek:		
.....North Tule Draw at reservoir near Tulia, Tex.....	9	46
..Prairie Dog Town Fork Red River near Brice, Tex.....	10	47
....Mulberry Creek near Brice, Tex.....	11	48
..Prairie Dog Town Fork Red River near Estelline, Tex..	12	48
....Salt Fork Red River near Wellington, Tex.....	13	49

Bar chart of gaging-station records--Continued



Gaging station	Map No.	Page No.
Mississippi River--Continued		
Red River basin--Continued		
Pease River:		
North Pease River:		
.....Quitaque Creek near Quitaque, Tex.....	14	50
....Pease River near Crowell, Tex.....	15	51
..Red River near Burkburnett, Tex.....	16	52
Wichita River:		
....Lake Kemp near Mabelle, Tex.....	17	53
....Wichita River at Wichita Falls, Tex.....	18	54
North Fork Little Wichita River:		
....Lake Kickapoo near Archer City, Tex.....	19	55
....Little Wichita River near Archer City, Tex.....	20	56
....Little Wichita River near Henrietta, Tex.....	21	57
..Red River near Terral, Okla.....	22	58
..Red River near Gainesville, Tex.....	23	59
..Lake Texoma near Denison, Tex.....	24	60
..Red River near Colbert, Okla.....	25	61
..Red River at Arthur City, Tex.....	26	63
..Red River at Index, Ark.....	27	64
....South Sulphur River (head of Sulphur River) near Cooper, Tex.....	28	65
.....North Sulphur River near Cooper, Tex.....	29	66

Bar chart of gaging-station records--Continued



Period of record (1910, 1920, 1930, 1940, 1950, 1960)	Gaging station	Map No.	Page No.
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Period of record (1910, 1920, 1930, 1940, 1950, 1960)	Gaging station	Map No.	Page No.
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	....Striker Creek near Summerfield, Tex.	64	104

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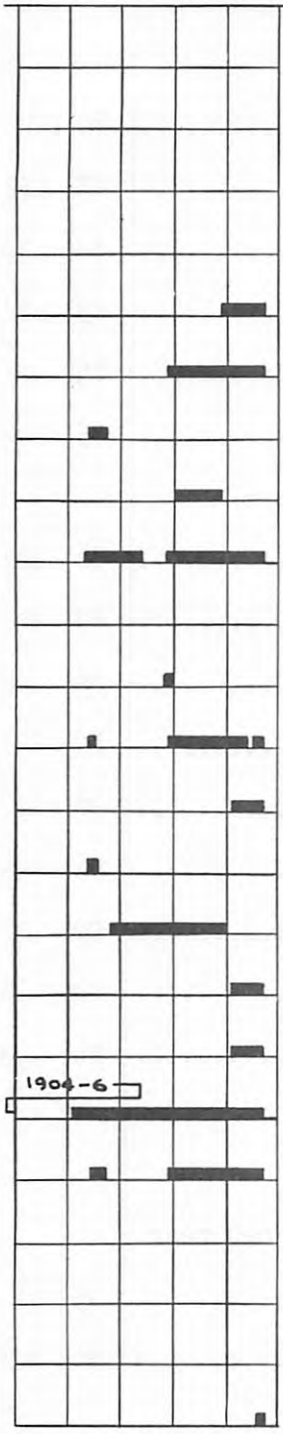

Period of record (1910, 1920, 1930, 1940, 1950, 1960)	Gaging station	Map No.	Page No.
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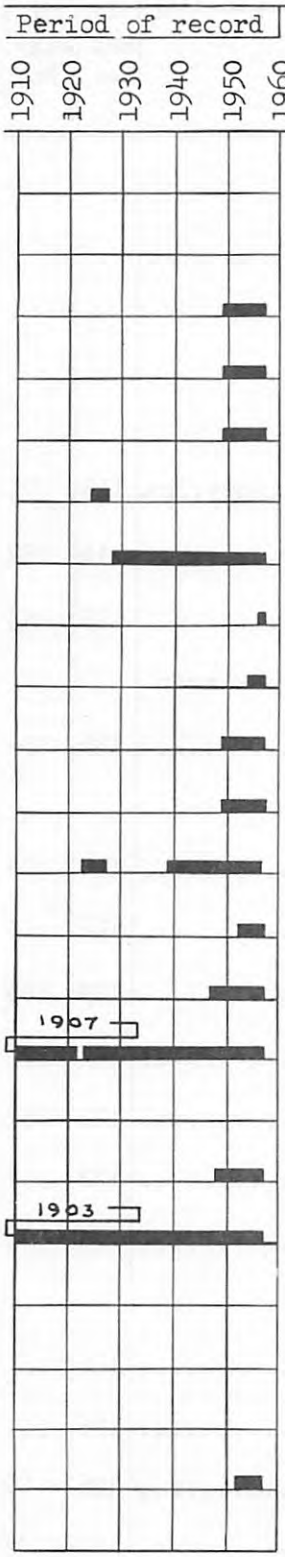

Gaging station	Map No.	Page No.
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Period of record (1910, 1920, 1930, 1940, 1950, 1960)	Gaging station	Map No.	Page No.
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	Trinity River--Continued		
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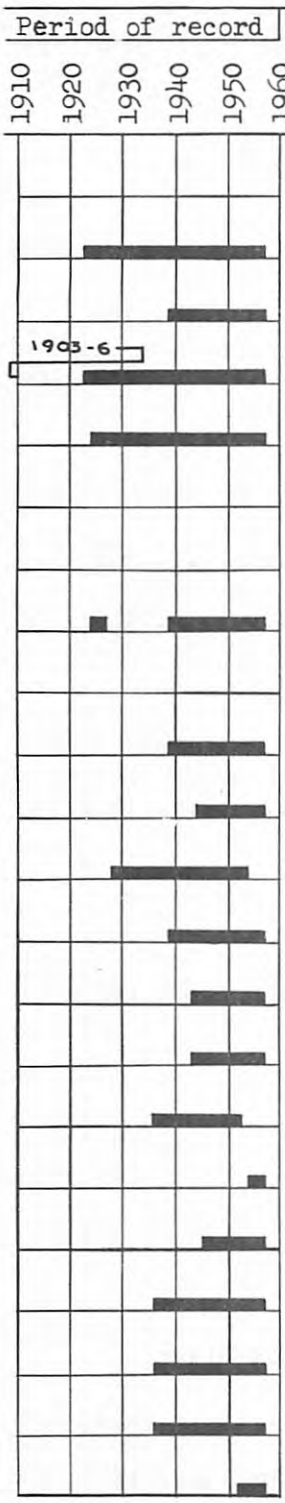

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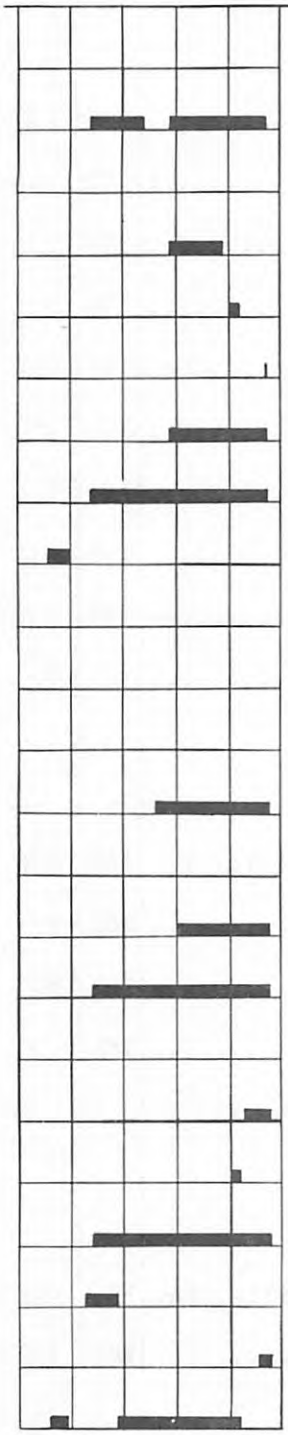

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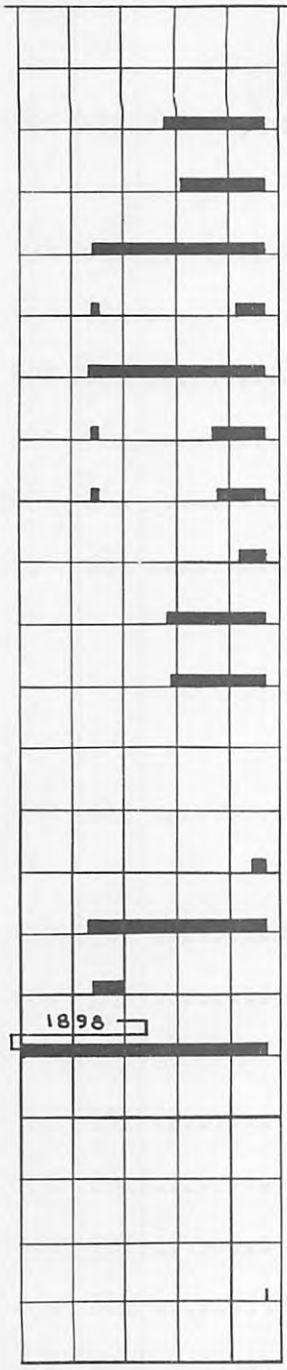

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.....Cow Bayou subwatershed No. 4 near Bruceville, Tex.	185	228
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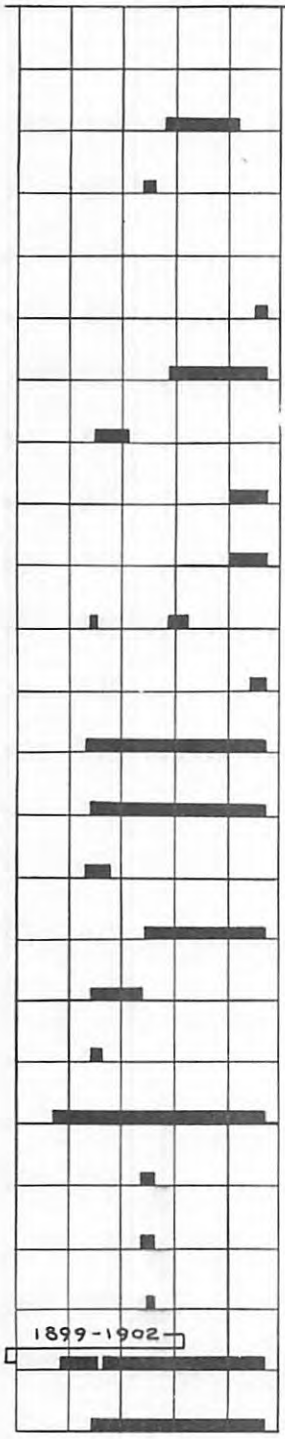

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....Cowhouse Creek near Killeen, Tex.	194	234
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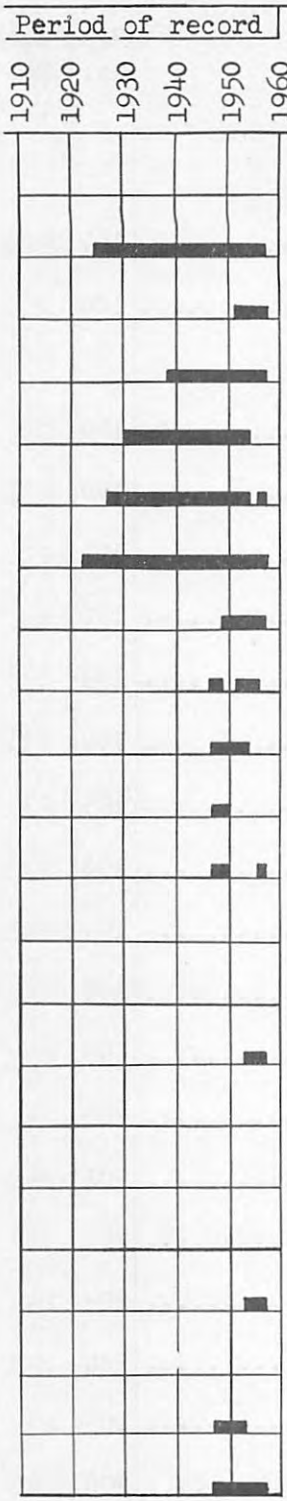

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Colorado River:		
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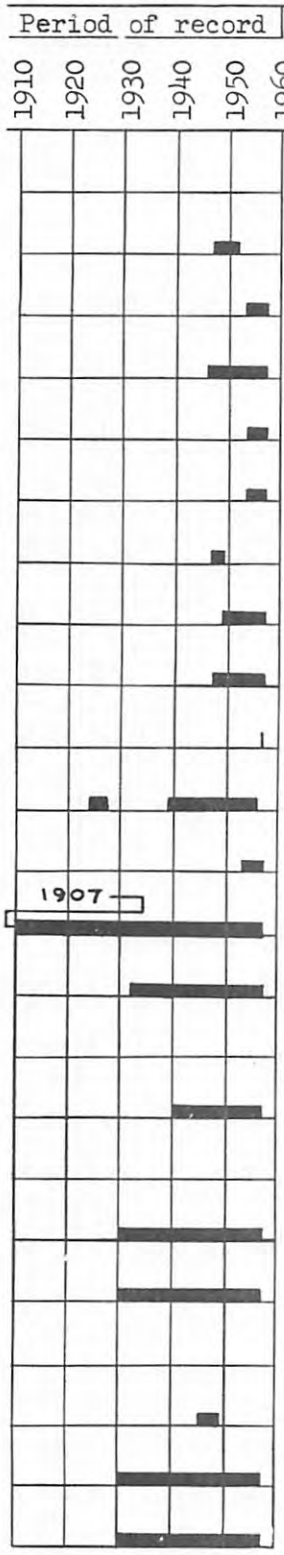

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Colorado River near Ira, Tex.	223	267
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Period of record (1910, 1920, 1930, 1940, 1950, 1960)	Gaging station	Map No.	Page No.
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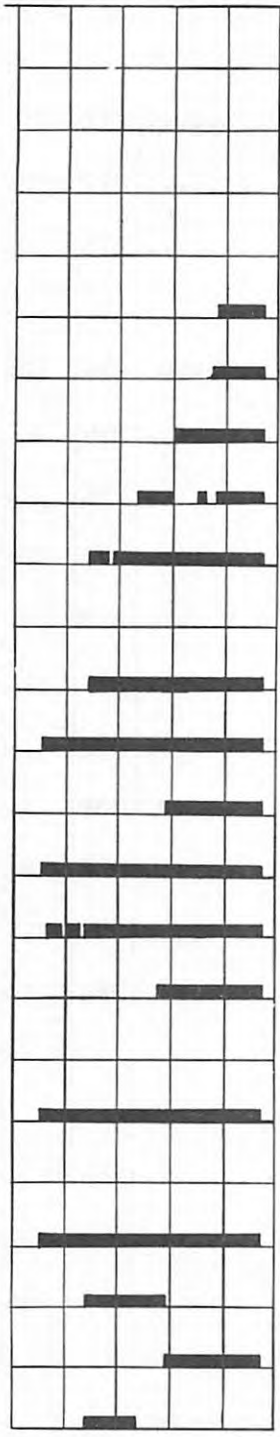

Period of record (1910, 1920, 1930, 1940, 1950, 1960)	Gaging station	Map No.	Page No.
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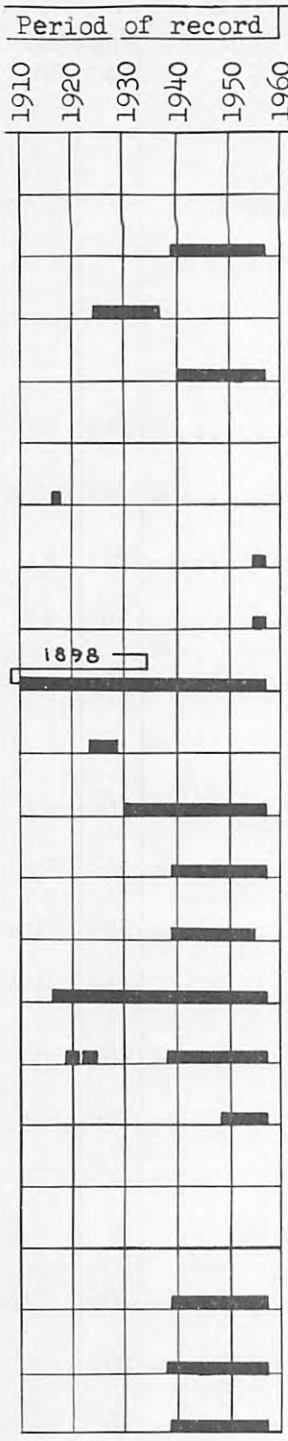

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..Onion Creek near Del Valle, Tex.	278	331
Colorado River at Smithville, Tex.	279	331
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Colorado River at Wharton, Tex.	283	337
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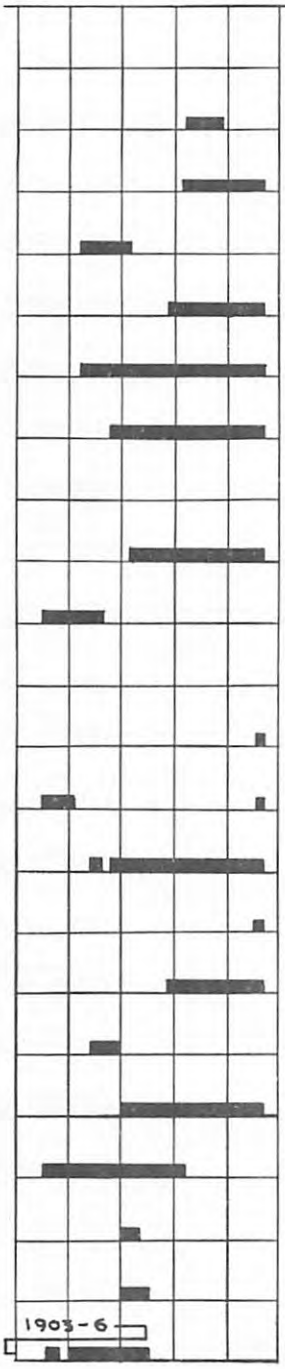

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..San Marcos River at San Marcos, Tex.	297	354
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....Blanco River near Kyle, Tex.	299	356
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..Peach Creek near Dilworth, Tex.	304	361
..Sandies Creek near Westhoff, Tex.	305	362
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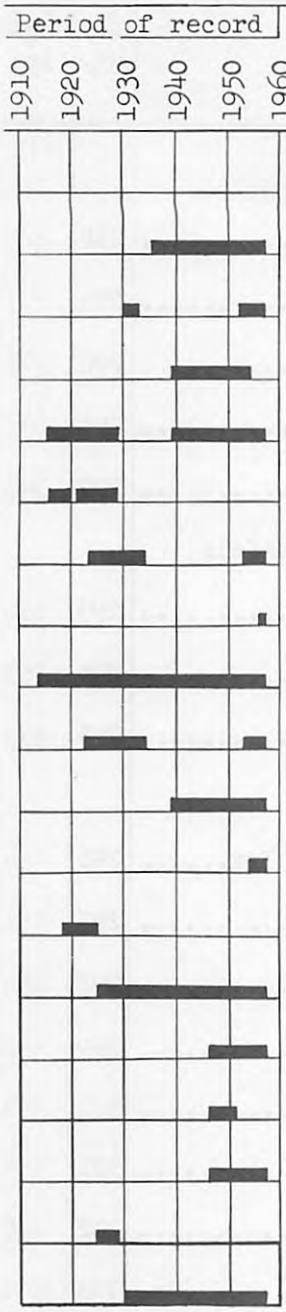

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Guadalupe River at Victoria, Tex.	307	364
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....San Pedro Creek at San Antonio, Tex.	311	369
....Medina River near Pipe Creek, Tex.	312	370
.....Red Bluff Creek near Pipe Creek, Tex.	313	371
....Medina Lake near San Antonio, Tex.	314	371
....Medina River near Riomedina, Tex.	315	372
....Medina River near San Antonio, Tex.	316	373
....Calaveras Creek near Elmendorf, Tex.	317	374
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..San Antonio River near Falls City, Tex.	319	375
....Cibolo Creek near Bulverde, Tex.	320	377
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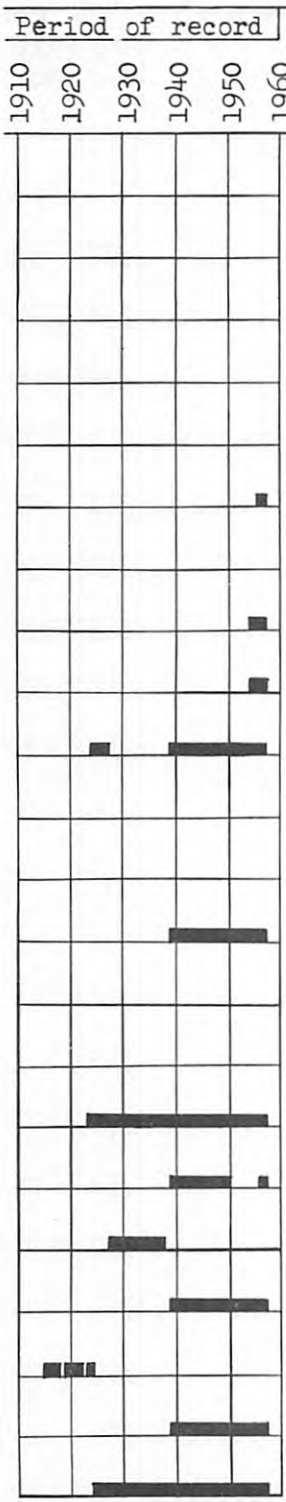
....Cibolo Creek at Selma, Tex.	322	378
....Cibolo Creek at Sutherland Springs, Tex.	323	379
....Cibolo Creek near Falls City, Tex.	324	380

Bar chart of gaging-station records--Continued

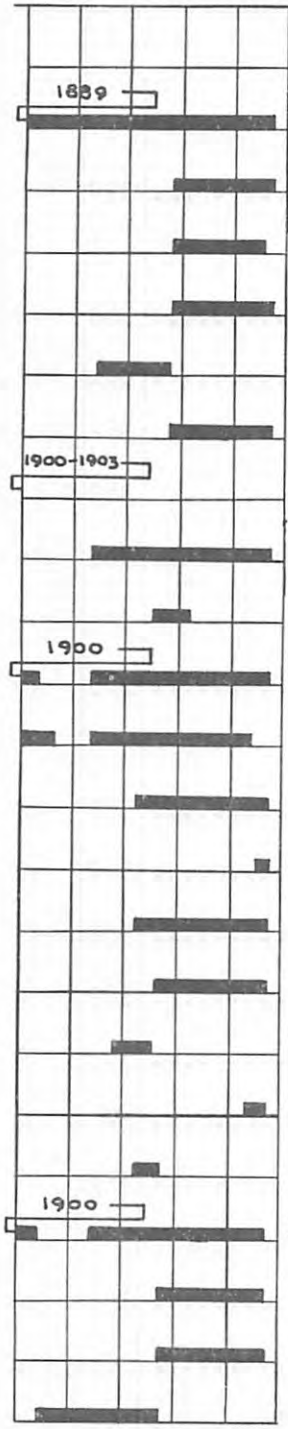


Period of record (1910, 1920, 1930, 1940, 1950, 1960)	Gaging station	Map No.	Page No.
	Guadalupe River basin--Continued		
	San Antonio River--Continued		
	Escondido Creek:		
	Panther Creek:		
	Unnamed tributary:		
	.....Escondido Creek subwatershed No. 1 near Kenedy, Tex.	325	381
	....Escondido Creek at Kenedy, Tex.	326	381
	.....Dry Escondido Creek near Kenedy, Tex.	327	382
	..San Antonio River at Goliad, Tex.	328	383
	Mission River basin:		
	Mission River at Refugio, Tex.	329	384
	Nueces River basin:		
	Nueces River at Laguna, Tex.	330	385
	..West Nueces River near Brackettville, Tex.	331	387
	Nueces River near Uvalde, Tex.	332	388
	Nueces River below Uvalde, Tex.	333	389
	Nueces River near Cinonia, Tex.	334	390
	Nueces River near Asherton, Tex.	335	390
	Nueces River at Cotulla, Tex.	336	392

Bar chart of gaging-station records--Continued

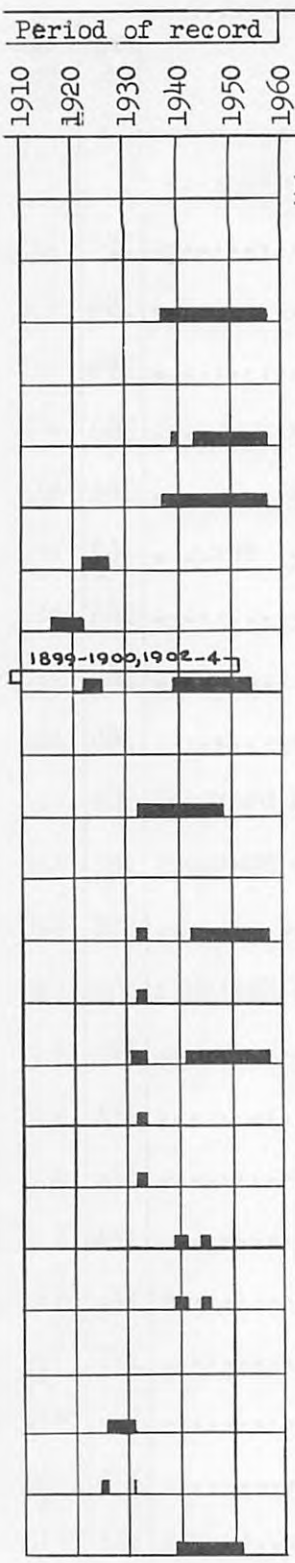
Period of record (1910, 1920, 1930, 1940, 1950, 1960)	Gaging station	Map No.	Page No.
	Nueces River basin--Continued		
	Nueces River near Tilden, Tex.	337	393
	..Frio River at Concan, Tex.	338	394
	....Dry Frio River near Reagan Wells, Tex.	339	396
	..Frio River below Dry Frio River near Uvalde, Tex.	340	397
	....Sabinal River near Sabinal, Tex.	341	397
	....Sabinal River at Sabinal, Tex.	342	398
	..Frio River near Frio Town, Tex.	343	399
	....Hondo Creek near Tarpley, Tex.	344	399
	....Hondo Creek near Hondo, Tex.	345	400
	.....Seco Creek near Utopia, Tex.	346	400
	.....Seco Creek near D'Hanis, Tex.	347	401
	Frio River:		
	....Leona River spring flow near Uvalde, Tex.	348	402
	....Leona River near Divot, Tex.	349	403
	..Frio River near Derby, Tex.	350	403
	..Frio River at Calliham, Tex.	351	405
	....Atascosa River near McCoy, Tex.	352	407
	....Atascosa River at Whitsett, Tex.	353	407
	Nueces River near Three Rivers, Tex.	354	409
	Lake Corpus Christi near Mathis, Tex.	355	411
	Nueces River near Mathis, Tex.	356	411

Bar chart of gaging-station records--Continued



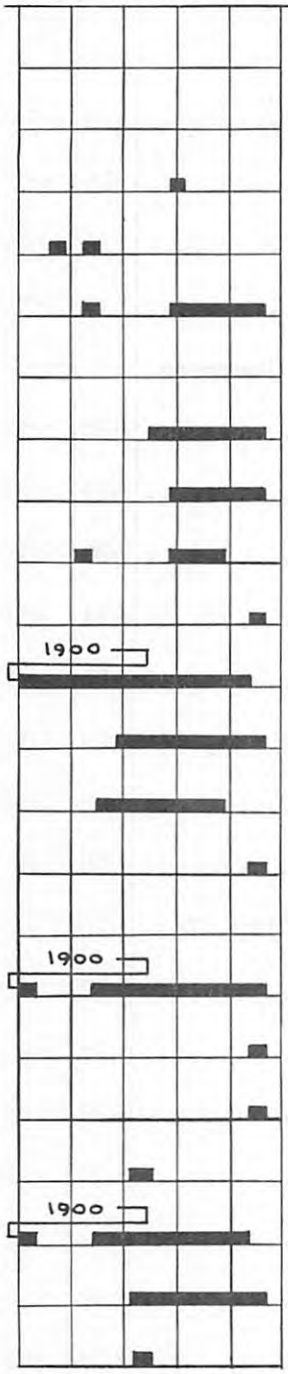
Gaging station	Map No.	Page No.
Rio Grande basin:		
Rio Grande at El Paso, Tex.	357	413
Rio Grande below American Dam	358	416
Rio Grande at Cd. Juarez, Chih., Mex.	359	417
Rio Grande at Island Station near El Paso, Tex.	360	418
Rio Grande at Tornillo Bridge near Fabens, Tex.	361	419
Rio Grande at County Line Station near El Paso, Tex.	362	420
Rio Grande near Fort Hancock, Tex.	363	421
Rio Grande at Fort Quitman, Tex.	364	422
Rio Grande at La Nutria, Tex.	365	423
Rio Grande above Presidio, Tex.(Upper Presidio Station)	366	424
Rio Grande above Presidio, Tex.(Lower Presidio Station)	367	426
..Alamito Creek near Presidio, Tex.	368	428
Rio Grande below Presidio, Tex.(Lower Presidio Station)	369	430
..Terlinqua Creek near Terlinqua, Tex.	370	430
Rio Grande at Johnson Ranch, Tex.	371	432
Rio Grande at Boquillas, Tex.	372	433
Rio Grande at Aqua Verde Station	373	434
..Lozier Creek near Langtry, Tex.	374	434
Rio Grande at Langtry, Tex.	375	435
..Pecos River at Red Bluff, N. Mex.	376	437
....Delaware River near Red Bluff, N. Mex.	377	438
..Pecos River near Angeles, Tex.	378	439

Bar chart of gaging-station records--Continued



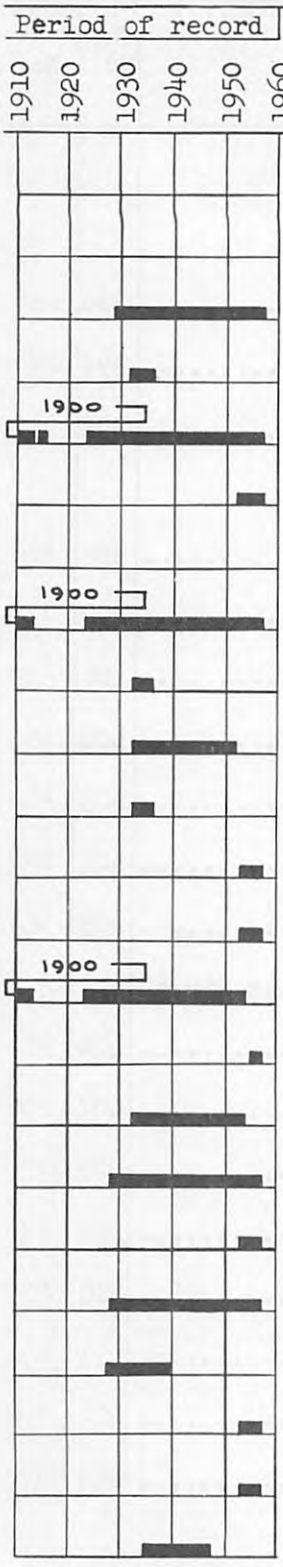
Gaging station	Map No.	Page No.
Rio Grande basin--Continued		
Pecos River--Continued		
..Red Bluff Reservoir near Orla, Tex.....	379	441
Pecos River:		
....Salt (Screwbean) Draw near Orla, Tex.....	380	441
..Pecos River near Orla, Tex.....	381	442
..Pecos River near Porterville, Tex.....	382	443
..Pecos River above Barstow, Tex.....	383	444
..Pecos River at Pecos, Tex.....	384	444
Toyah Creek:		
....Madera Canyon near Toyahvale, Tex.....	385	446
Toyah Creek:		
.....Phantom Lake Spring near Toyahvale, Tex.....	386	447
.....Giffin Springs at Toyahvale, Tex.....	387	448
.....San Solomon Springs at Toyahvale, Tex.....	388	449
.....West Sandia Spring at Balmorhea, Tex.....	389	450
.....East Sandia Spring at Balmorhea, Tex.....	390	450
....Toyah Creek near Pecos, Tex.....	391	450
.....Salt Draw near Pecos, Tex.....	392	451
Barrilla Creek:		
.....Limpia Creek near Fort Davis, Tex.....	393	452
.....Barrilla Creek near Saragosa, Tex.....	394	452
....Toyah Creek below Toyah Lake, near Pecos, Tex.....	395	453

Bar chart of gaging-station records--Continued



Gaging station	Map No.	Page No.
Rio Grande basin--Continued		
Pecos River--Continued		
..Pecos River below Barstow, Tex.	396	454
..Pecos River near Grandfalls, Tex.	397	454
..Pecos River below Grandfalls, Tex.	398	455
Comanche Creek:		
.....Comanche Springs at Fort Stockton, Tex.	399	456
..Pecos River near Girvin, Tex.	400	457
..Pecos River near Sheffield, Tex.	401	459
..Pecos River near Shumla, Tex.	402	459
..Pecos River near Comstock, Tex.	403	460
..Goodenough Springs near Comstock, Tex.	404	462
..Devils River near Juno, Tex.	405	464
..Devils River near Comstock, Tex. (Upper Devils River Station)	406	465
..Devils River near Del Rio, Tex.	407	466
..Devils River near Mouth	408	468
Rio Grande below Diablo Dam Site	409	470
..Cienegas Creek near Del Rio, Tex.	410	470
Rio Grande near Del Rio, Tex.	411	471
..San Felipe Creek near Del Rio, Tex.	412	473
..Sycamore Creek near Del Rio, Tex.	413	474

Bar chart of gaging-station records--Continued



Gaging station	Map No.	Page No.
Rio Grande basin--Continued		
Rio Grande below Maverick Dam	414	475
..Pinto Creek near Del Rio, Tex	415	475
..Las Moras Creek near Eagle Pass, Tex	416	477
Rio Grande at Eagle Pass, Tex	417	477
Rio Grande at San Antonio Crossing near Villa Guerrero, Coahuila, Mex	418	480
Rio Grande at Laredo, Tex	419	480
..Dolores Creek near San Ignacio, Tex	420	483
Rio Grande near Zapata, Tex	421	483
..El Tigre Arroyo near Zapata, Tex	422	485
International Falcon Reservoir near Falcon Heights, Tex	423	485
Rio Grande at Chapeno, Tex	424	486
Rio Grande at Roma, Tex	425	486
Rio Grande at Fort Ringgold, near Rio Grande City, Tex.	426	488
Rio Grande near Rio Grande City, Tex	427	489
..North Floodway south of McAllen, Tex	428	490
Rio Grande below Anzalduas Dam Site	429	491
..South Floodway south of McAllen, Tex	430	491
Rio Grande at Hidalgo, Tex	431	492
Rio Grande at Progreso Bridge, Tex	432	493
Rio Grande near San Benito, Tex	433	493
..Rancho Viejo Floodway near Brownsville, Tex	434	494

Bar chart of gaging-station records--Continued

Period of record (1910, 1920, 1930, 1940, 1950, 1960)	Gaging station	Map No.	Page No.
	Rio Grande basin--Continued		
1900	Rio Grande at Matamoros, Tamaulipas, Mex.....	435	494
	Rio Grande at Lower Brownsville, Tex.....	436	496

Maps showing geographical location of gaging stations may be found as follows:

Plate I, showing gaging stations 1-131, following page 171

Plate II, showing gaging stations 132-219, following page 263

Plate III, showing gaging stations 220-329, following page 386

Plate IV, showing gaging stations 330-436, following page 498

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1. Canadian River near Amarillo, Tex.

Location.--Lat 35°28'10", long 101°52'45", at bridge on U. S. Highways 87 and 287, 2,000 ft downstream from Pitcher Creek, 2.0 miles downstream from Panhandle & Santa Fe Railway bridge, and 19 miles north of Amarillo, Potter County.

Drainage area.--19,445 sq mi, of which 4,069 sq mi is probably noncontributing.

Supplemental records available.--Records of chemical analyses for the periods July 1948 to October 1949 and February 1950 to September 1957, suspended sediment loads for the period August 1949 to September 1952, and water temperatures for the period August 1949 to September 1957 are published in reports of the Geological Survey.

Gage.--Water-stage recorder and wire-weight gage. Datum of gage is 2,989.16 ft above mean sea level, datum of 1929. Jan. 16, 1924, to Dec. 31, 1925, chain gage, and Apr. 3 to June 1, 1938, wire-weight gage, at site of old bridge 20 ft upstream at same datum. June 2 to Dec. 5, 1938, wire-weight gage at present site and at same datum.

Average discharge.--20 years (1924-25, 1938-57), 472 cfs (341,700 acre-ft per year).

Extremes.--1924-25, 1938-57: Maximum discharge, 135,000 cfs July 25, 1941 (gage height, 15.7 ft), from rating curve extended above 100,000 cfs; no flow at times from January 1924 to December 1925 and Aug. 7, 8, 1940.
Flood of May 1914 reached a stage of about 24 ft; a higher stage probably occurred during flood in October 1904.

Remarks.--Some regulation by Conchas Reservoir in New Mexico. Extremely low flow maintained by sewage effluent from Amarillo sewage-disposal plant.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	467	453	268	572	501	154	336	924	365	-
1925	10.0	6.83	5.16	13.2	29.7	4.10	.90	453	145	2,420	2,810	2,510	707
1926	1,570	46.8	16.1	-	-	-	-	-	-	-	-	-	-
1938	-	-	-	8.13	19.8	8.13	39.1	825	2,738	1,803	184	2,415	-
1939	2,020	50.2	42.3	338	3.00	5.55	593	362	705	713	1,280	2.29	515
1940	1.79	2.91	2.70	15.5	31.3	1.86	1.83	550	136	53.9	389	186	115
1941	.78	190	36.9	16.1	11.4	29.5	208	6,804	5,288	4,880	2,648	8,016	2,351
1942	5,663	812	458	218	191	163	5,988	2,889	601	709	715	4,562	1,917
1943	1,072	360	126	519	31.0	7.77	21.3	17.0	1.26	619	178	2.19	250
1944	4.36	5.58	67.9	158	75.0	31.2	34.6	807	977	483	559	820	335
1945	51.1	15.6	166	132	40.5	5.27	5.44	4.60	65.8	43.4	646	98.2	107
1946	177	5.76	7.04	7.21	8.49	6.38	5.27	468	135	24.2	284	1,172	192
1947	1,953	98.9	35.1	45.2	14.2	36.4	21.5	751	99.9	389	102	3.82	301
1948	5.32	6.06	9.33	9.02	104	100	8.25	105	1,864	154	750	12.4	259
1949	26.8	84.5	5.85	15.1	50.9	36.9	160	1,567	1,748	1,292	633	392	504
1950	37.1	45.4	15.0	17.6	8.43	12.3	42.8	19.8	656	3,264	787	1,314	523
1951	134	14.5	16.2	23.3	47.4	28.7	14.8	1,174	223	563	74.0	30.6	198
1952	14.1	39.4	11.7	12.5	9.66	12.1	62.1	31.6	23.1	262	547	63.9	91.7
1953	10.0	11.0	13.1	16.4	10.1	10.6	10.0	9.38	9.02	504	788	31.2	121
1954	141	17.3	18.1	16.4	12.5	12.5	48.4	798	33.5	621	268	30.4	171
1955	1,056	17.9	10.7	14.8	14.0	8.94	611	1,226	316	445	393	250	367
1956	54.4	11.4	12.5	15.1	15.7	14.8	10.8	549	115	410	61.7	7.23	108
1957	7.18	8.93	10.9	9.18	11.6	16.2	122	751	662	219	1,691	216	313

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	28,700	26,100	16,500	34,000	30,800	9,180	20,600	56,800	21,700	-
1925	615	406	317	812	1,650	252	54	27,900	8,630	149,000	173,000	150,000	513,000
1926	96,400	2,790	987	-	-	-	-	-	-	-	-	-	-
1938	-	-	-	500	1,100	500	2,330	50,730	162,900	110,800	11,340	143,700	-
1939	124,200	2,990	2,600	20,750	167	342	35,270	22,240	41,950	43,860	78,430	136	372,900
1940	110	173	166	954	1,800	115	109	33,820	8,100	3,320	23,940	11,070	83,680
1941	48	11,330	2,270	990	635	1,810	12,380	418,400	314,600	300,100	162,800	477,000	1,702,000
1942	348,200	48,350	28,190	13,420	10,630	10,040	356,300	177,600	35,790	43,580	43,960	271,500	1,388,000
1943	65,940	21,450	7,740	31,910	1,720	478	1,270	1,050	75	38,040	10,920	131	180,700
1944	268	332	4,170	9,690	4,310	1,920	2,060	49,650	58,130	29,710	34,420	48,790	243,400
1945	3,140	930	10,210	8,120	2,250	324	324	283	3,920	2,670	39,730	5,840	77,740
1946	10,880	343	433	444	471	392	313	28,760	8,060	1,490	17,470	69,730	138,800
1947	120,100	5,880	2,160	2,780	788	2,240	1,280	46,190	5,940	23,910	6,260	227	217,800
1948	327	361	573	554	6,000	6,160	491	6,460	110,900	9,470	46,100	739	188,100
1949	1,650	5,030	360	926	2,830	2,270	9,510	96,320	104,000	79,460	38,930	23,320	364,600
1950	2,280	2,700	924	1,080	468	754	2,550	1,220	39,060	200,700	48,360	78,220	378,300
1951	8,270	865	998	1,430	2,650	1,760	879	72,160	13,250	34,610	4,550	1,820	143,200
1952	867	2,340	718	772	556	744	3,700	1,940	1,370	16,100	33,660	3,800	66,570
1953	616	654	805	1,010	561	653	596	577	537	30,980	48,470	1,860	87,320
1954	8,680	1,030	1,110	1,010	692	768	2,880	49,040	1,990	38,170	16,460	1,810	123,600
1955	64,930	1,070	657	913	779	550	36,340	75,370	18,800	27,390	24,150	14,860	265,800
1956	3,350	681	767	928	902	912	642	33,750	6,810	25,200	3,790	430	78,160
1957	441	532	667	564	645	998	7,230	46,190	39,390	13,450	104,000	12,820	226,900

Yearly discharge, in cubic feet per second, of Canadian River near Amarillo, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	587	44,400	Aug. 14, 1924	0	-	-	340	245,700
1925	607	34,700	Aug. 7, 1925	0	707	513,000	843	611,500
1938	857	48,000	June 15, 1938	.3	-	-	848	613,700
1939	877	46,700	Apr. 5, 1939	.2	515	372,900	336	243,600
1940	897	26,600	Aug. 8, 1940	0	115	83,680	133	96,880
1941	927	135,000	July 25, 1941	.4	2,351	1,702,000	2,919	2,113,000
1942	957	45,500	Oct. 23, 1941	1.0	1,917	1,388,000	1,461	1,058,000
1943	977	19,800	July 9, 1943	.6	250	180,700	125	90,360
1944	1007	12,500	June 2, 15, Aug. 28	1.2	335	243,400	348	253,000
1945	1037	18,300	Aug. 15, 1945	.2	107	77,740	104	75,120
1946	1057	30,300	May 29, 1946	1.2	192	138,800	353	255,300
1947	1087	39,500	Oct. 7, 1946	.4	301	217,800	126	90,880
1948	1117	22,200	June 24, 1948	1.1	259	188,100	267	193,900
1949	1147	97,000	May 16, 1949	1.7	504	364,600	502	333,500
1950	1177	63,100	July 7, 1950	1.0	523	378,300	528	382,500
1951	1211	27,700	May 16, 1951	4	198	143,200	189	137,000
1952	1241	13,000	Aug. 23, 1952	5.8	91.7	66,570	89.2	63,720
1953	1281	28,100	July 19, 1953	5.8	121	87,320	133	96,060
1954	1341	42,900	July 23, 1954	7.6	171	123,600	248	179,500
1955	1391	47,600	Apr. 30, 1955	4.0	367	265,800	282	204,000
1956	1441	27,400	May 24, 1956	1.9	108	78,160	103	75,000
1957	1511	66,900	May 24, 1957	1.6	313	226,900	-	-

2. Canadian River near Canadian, Tex.

Location.--Lat 35°55', long 100°22', at bridge on U. S. Highways 60 and 83, 500 ft downstream from Panhandle & Santa Fe Railway bridge, 1.2 miles downstream from Red Deer Creek, and 1.6 miles northeast of Canadian, Hemphill County.

Drainage area.--22,866 sq mi, of which 4,688 sq mi is probably noncontributing.

Supplemental records available.--July 1924 to August 1925, gage heights only.

Gage.--Water-stage recorder and two wire-weight gages. Datum of gage is 2,301.50 ft above mean sea level, datum of 1929. July 1, 1924, to Aug. 31, 1925, chain gage, Apr. 21 to Dec. 14, 1938, wire-weight gage, Dec. 15, 1938, to July 24, 1941, water-stage recorder (destroyed by flood July 25, 1941) and wire-weight gages, July 25, 1941, to Mar. 18, 1942, wire-weight gages, and Mar. 19, 1942, to Sept. 30, 1953, water-stage recorder and wire-weight gages, at site 300 ft upstream at same datum.

Average discharge.--19 years (1938-57), 622 cfs (450,300 acre-ft per year).

Extremes.--1924-25, 1938-57: Maximum discharge, 122,000 cfs Sept. 23, 1941 (gage height, 9.8 ft, from graph based on gage readings), from rating curves for two channels extended above 8,000 and 38,000 cfs; no flow at times.
Maximum stage known, about 20.0 ft, Oct. 2, 1904.

Remarks.--Extreme low flow maintained by springs discharging into river about 600 ft above gage. Some regulation by Conchas Reservoir in New Mexico. No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	-	-	-	16.3	36.0	48.8	336	615	4,016	1,577	113	2,983	-
1939	2,047	13.0	55.3	433	74.0	40.0	1,017	432	2,252	506	1,985	.54	743
1940	1.45	1.84	1.50	9.78	203	7.47	3.00	192	194	17.1	238	145	83.8
1941	1.22	287	102	105	214	220	347	8,164	8,976	6,118	3,524	7,399	2,963
1942	10,210	1,397	653	453	318	452	5,978	3,866	2,021	540	469	4,680	2,595
1943	1,477	336	136	541	91.9	57.1	32.5	155	13.4	361	46.6	.66	274
1944	1.21	1.26	86.3	383	181	50.1	61.3	839	991	605	254	847	358
1945	136	29.3	531	383	110	79.3	27.1	6.52	17.0	.14	586	21.2	162
1946	206	1.03	8.05	51.8	33.1	1.76	1.29	543	305	.65	294	1,762	267
1947	4,180	110	194	296	41.6	251	259	1,074	195	285	1.80	.48	583
1948	.75	3.74	4.65	17.4	152	289	2.41	32.4	2,629	94.4	1,186	17.8	367
1949	1.23	137	13.7	19.0	139	52.1	109	3,701	2,514	961	572	270	712
1950	57.5	11.6	29.6	74.0	55.3	2.31	4.03	77.1	482	3,848	1,269	1,856	653
1951	73.7	18.2	121	180	384	105	35.3	3,119	1,166	764	31.7	112	504
1952	34.8	148	51.1	60.2	29.8	19.6	19.8	1.51	.35	34.1	326	37.0	63.9
1953	1.62	1.97	36.2	152	47.8	26.7	1.51	5.61	121	903	1,028	.79	197
1954	435	71.5	35.5	172	122	72.3	133	1,270	3.17	403	195	4.04	246
1955	626	4.15	5.05	39.8	35.0	2.82	4.05	2,815	991	457	250	145	453
1956	34.8	3.14	3.55	17.0	74.9	5.61	2.69	878	418	197	10.6	.35	138
1957	1.06	2.05	2.16	1.53	34.5	138	389	2,078	675	225	1,539	240	448

Monthly and yearly runoff, in acre-feet, of Canadian River near Canadian, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	-	-	-	1,000	2,000	3,000	20,000	37,830	239,000	97,000	6,970	177,500	-
1939	125,900	774	3,400	26,650	4,110	2,460	60,530	26,560	134,000	31,140	122,000	32	537,600
1940	89	109	92	601	11,690	459	179	11,790	11,530	1,050	14,620	8,640	60,850
1941	75	17,080	6,290	6,470	11,880	13,550	20,640	502,000	534,100	376,200	216,700	440,300	2,145,000
1942	628,000	83,110	40,120	27,840	17,660	27,780	355,700	237,700	120,300	33,220	28,820	278,500	1,879,000
1943	90,790	20,020	8,350	33,240	5,110	3,510	1,940	9,550	799	22,200	2,870	39	198,400
1944	74	75	5,310	23,570	10,4 00	3,080	3,650	51,580	58,980	37,190	15,610	50,390	259,900
1945	8,380	1,740	32,630	23,550	6,130	4,870	1,610	401	1,010	8.3	36,030	1,260	117,600
1946	12,660	61	495	3,190	1,840	108	77	33,400	18,180	40	18,100	104,800	193,000
1947	257,000	6,550	11,950	18,180	2,310	15,430	15,410	66,010	11,600	17,540	111	29	422,100
1948	46	223	286	1,070	8,770	17,790	144	1,990	156,400	5,810	72,930	1,060	266,500
1949	76	8,160	844	1,170	7,720	3,200	6,470	227,600	149,600	59,090	35,200	16,090	515,200
1950	3,540	690	1,820	4,550	3,070	142	240	4,740	28,690	236,600	78,010	110,400	472,500
1951	4,530	1,080	7,460	11,040	15,750	6,460	2,100	191,800	69,400	46,970	1,950	6,550	365,200
1952	2,140	8,800	3,140	3,700	1,710	1,210	1,180	93	21	2,100	20,060	2,200	46,400
1953	100	117	2,220	9,360	2,650	1,640	90	345	7,220	55,500	63,220	47	142,500
1954	26,780	4,260	2,180	10,550	6,760	4,440	7,920	78,070	189	24,790	11,990	241	178,200
1955	38,470	247	311	2,450	1,940	173	241	173,100	58,960	28,110	15,400	8,640	328,000
1956	2,140	187	218	1,040	4,310	345	160	53,980	24,870	12,130	653	21	100,100
1957	65	122	133	94	1,910	8,470	23,150	127,800	40,190	13,840	94,610	14,260	324,600

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1938	857	a37,000	Sept. 8, 1938	-	-	-	987	714,400
1939	877	71,000	June 22, 1939	0.3	743	537,600	563	407,800
1940	897	8,790	Sept. 24, 1940	.2	83.8	60,850	116	84,000
1941	927	122,000	Sept. 23, 1941	0	2,963	2,145,000	3,969	2,873,000
1942	957	91,600	Oct. 1, 1941	.8	2,595	1,879,000	1,722	1,247,000
1943	977	13,900	Oct. 22, 1942	.4	274	198,400	117	84,720
1944	1007	11,000	June 4, 1944	0	358	259,900	409	297,200
1945	1037	8,860	Oct. 2, 1944	0	162	117,600	122	88,080
1946	1057	49,400	Sept. 12, 1946	.1	267	193,000	629	455,200
1947	1087	58,100	Oct. 7, 1946	0	583	422,100	203	147,200
1948	1117	22,200	June 21, 1948	.5	367	266,500	379	275,000
1949	1147	69,600	May 17, 1949	.5	712	515,200	707	512,200
1950	1177	24,400	July 8, 1950	.1	653	472,500	662	479,500
1951	1211	65,900	May 17, 1951	.1	504	365,200	506	366,200
1952	1241	10,700	Aug. 26, 1952	.1	63.9	46,400	47.8	34,710
1953	1281	20,600	Aug. 19, 1953	.1	197	142,500	239	173,300
1954	1341	12,200	July 25, 1954	0	246	178,200	254	184,000
1955	1391	79,000	June 28, 1955	.5	453	328,000	403	291,600
1956	1441	21,200	May 26, 1956	.1	138	100,100	135	97,830
1957	1511	77,600	May 25, 1957	.1	448	324,600	-	-

a Maximum for water year.

3. Palo Duro Creek near Spearman, Tex.

Location.--Lat 36°12', long 101°19', at bridge on State Highway 282, at abandoned town of Hansford, 6 miles west of Spearman, Hansford County, and about 18 miles upstream from Horse Creek.

Drainage area.--960 sq mi, of which 520 sq mi is probably noncontributing.

Gage.--Water-stage recorder. Datum of gage is 2,961.63 ft above mean sea level, datum of 1929.

Average discharge.--12 years (1945-57), 21.5 cfs (15,570 acre-ft per year).

Extremes.--1945-57: Maximum discharge, 21,200 cfs Oct. 7, 1946 (gage height, 19.87 ft); no flow at times.
Maximum stage known, about 22.5 ft Sept. 4, 1938, from floodmark (discharge, about 34,000 cfs). Flood of June 4, 1936, reached a stage of about 21 ft, from floodmark (discharge, about 26,100 cfs); discharge for the two floods from rating curve extended above 20,000 cfs by logarithmic plotting.

Remarks.--Diversion above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	-	-	-	-	-	-	-	-	-	-	5.68	41.4	-
1946	10.2	.50	.69	1.00	.69	.70	5.13	3.37	3.03	10.6	5.82	58.4	8.31
1947	835	6.03	3.16	3.00	2.33	1.91	2.45	4.36	42.0	3.42	.22	0	76.6
1948	4.57	.09	.20	.14	.31	.43	.43	2.95	2.98	6.15	13.6	.32	2.71
1949	.03	7.24	.40	.30	.42	.63	.85	64.3	5.60	3.72	4.92	.26	7.49
1950	4.18	.72	.90	.50	.74	.85	.77	.76	19.3	104	91.8	122	29.0

Monthly and yearly mean discharge, in cubic feet per second, of Palo Duro Creek near Spearman, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	5.42	2.42	2.52	2.50	2.63	1.97	2.13	349	9.31	2.71	1.04	.34	32.3
1952	.31	.97	.87	.85	1.15	1.00	61.1	1.51	.30	.56	15.0	.04	6.92
1953	0	.06	.55	.42	.42	.80	.29	.27	15.0	188	5.57	.56	18.0
1954	8.38	1.19	.89	.73	.54	.49	.97	1.93	157	21.3	15.2	.42	17.3
1955	73.3	1.90	2.09	2.11	1.27	.80	106	201	5.47	24.6	37.7	.54	38.5
1956	.05	0	0	.24	.95	1.50	.18	9.95	4.37	19.0	25.9	0	5.25
1957	.07	.26	.44	.62	.46	1.42	42.6	95.6	16.9	19.6	13.7	.88	16.2

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	-	-	-	-	-	-	-	-	-	-	349	2,460	-
1946	625	30	42	61	38	43	30.5	207	180	650	358	3,470	6,010
1947	51,360	359	194	184	129	117	146	268	2,500	210	13	0	55,480
1948	281	5.4	12	8.5	18	27	25	181	177	378	837	19	1,970
1949	1.6	431	25	18	23	38	50	3,950	333	229	303	15	5,420
1950	257	43	55	31	41	53	46	47	1,150	6,400	5,640	7,240	21,000
1951	333	144	155	154	146	121	127	21,440	554	166	64	20	23,420
1952	19	58	54	52	66	61	3,640	93	18	35	924	2.6	5,020
1953	0	3.6	34	26	23	49	17	16	893	11,570	343	33	13,010
1954	516	71	55	45	30	30	58	119	9,330	1,310	934	25	12,520
1955	4,510	113	129	130	70	49	6,300	12,370	326	1,510	2,320	32	27,860
1956	3.2	0	0	15	55	92	11	612	260	1,170	1,590	0	3,810
1957	4.4	15	27	38	25	87	2,540	5,880	1,010	1,200	844	52	11,720

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1057	3,430	Sept. 12, 1946	0	8.31	6,010	79.1	57,220
1947	1087	21,200	Oct. 7, 1946	0	76.6	55,480	5.34	3,860
1948	1117	820	Oct. 7, 1947	0	2.71	1,970	2.93	2,130
1949	1147	1,980	May 16, 1949	0	7.49	5,420	7.35	5,310
1950	1177	3,580	Aug. 1, 1950	0	29.0	21,000	29.4	21,280
1951	1211	4,930	May 17, 1951	0	32.3	23,420	31.7	22,920
1952	1241	3,060	Apr. 20, 1952	0	6.92	5,020	6.79	4,930
1953	1281	8,550	July 19, 1953	0	18.0	13,010	18.8	13,610
1954	1341	6,000	June 14, 1954	0	17.3	12,520	23.0	16,630
1955	1391	6,660	Apr. 30, 1955	0	38.5	27,860	31.9	23,110
1956	1441	1,290	July 19, 1956	0	5.25	3,810	5.31	3,850
1957	1511	1,810	May 25, 1957	0	16.2	11,720	-	-

4. Wolf Creek at Lipscomb, Tex.

Location.--Lat 36°14', long 100°16', at bridge on State Highway 305, in northwest corner of Lipscomb, Lipscomb County, and 2 miles upstream from Plum Creek.

Drainage area.--697 sq mi, of which 222 sq mi is noncontributing.

Gage.--Water-stage recorder and wire-weight gage. Datum of gage was 2,377.1 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Feb. 25, 1938, chain gage at same site and datum.

Average discharge.--5 years (1937-42), 39.7 cfs (28,740 acre-ft per year).

Extremes.-1937-42: Maximum discharge, 20,000 cfs Oct. 21, 1941 (gage height, 5.80 ft), from rating curve extended above 14,000 cfs on basis of velocity-area studies; no flow at times each year.

Remarks.--Some low-flow regulation by reservoir in Perryton State Park, 20 miles above station (capacity, 900 acre-ft).

Cooperation.--Records computed by Corps of Engineers and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	15	2	4	5.2	6.9	3.8	31.2	125	166	33.3	3.9	92.2	40.6
1939	0	0	.48	4.1	1.7	27.7	94.6	6.9	239	57.3	43.9	0	39.5
1940	0	0	0	.06	4.4	.74	.53	10.0	107	.26	55.0	34.2	17.6
1941	0	1.73	2.39	3.74	10.2	7.10	28.2	136	121	52.0	51.5	21.7	36.4
1942	510	39.6	19.8	12.8	13.5	11.1	21.4	32.6	54.2	7.5	23.0	16.5	64.3

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	922	119	246	321	385	232	1,860	7,660	9,900	2,040	240	5,480	29,400
1939	0	0	30	254	95	1,700	5,630	424	14,240	3,520	2,700	0	28,590
1940	0	0	0	4	254	46	32	613	6,360	16	3,380	2,040	12,740
1941	0	103	147	230	567	436	1,680	8,370	7,180	3,200	3,170	1,290	26,370
1942	31,370	2,360	1,220	787	748	680	1,280	2,010	3,230	464	1,410	982	46,540

Yearly discharge, in cubic feet per second, of Wolf Creek at Lipscomb, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1938	897, 1241	9,000	Sept. 4, 1938	0	40.6	29,400	38.9	28,150
1939	897, 1241	12,100	June 23, 1939	0	39.5	28,590	39.5	28,560
1940	897	4,780	June 10, 1940	0	17.6	12,740	17.9	13,000
1941	927	11,000	June 9, 1941	0	36.4	26,370	84.3	61,070
1942	957	20,000	Oct. 21, 1941	0	64.3	46,540	-	-

RED RIVER BASIN

5. Tierra Blanca Creek at reservoir, near Umbarger, Tex.

Location.--Lat 34°55', long 102°06', just upstream from dam, 2 miles south of Umbarger, Randall County, and 20 miles upstream from Palo Duro Creek.

Drainage area.--2,075 sq mi, of which 1,500 sq mi is probably noncontributing.

Gage.--Water-stage recorder in conduit tower. Datum of gage is 3,515.6 ft above mean sea level, datum of 1929. Prior to Aug. 29, 1940, staff gages located on the conduit tower.

Supplementary water-stage recorder and weir 9 miles upstream from dam. Prior to October 1940, weir located about 7 miles upstream from dam.

Average discharge.--14 years (1940-54), 13.7 cfs (9,920 acre-ft per year).

Extremes.--1938-54: Maximum discharge, 11,300 cfs June 6, 1941 (computed by rate of change in contents and outflow from reservoir); maximum reservoir gage height, 130.43 ft June 6, 1941; no flow at times.

Remarks.--Records given herein represent flow into reservoir. Gage-height record at dam used in computing flow into reservoir when stage at supplementary gage is above limits of rating.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	-	-	0.86	1.69	1.47	1.01	1.00	0.59	0.05	-	-	-	-
1941	0	0.06	0	.13	.35	.91	.59	386	438	30.0	3.90	10.5	70.9
1942	247	14.6	6.61	4.00	4.00	4.75	10.8	2.95	2.49	.50	8.73	15.6	27.2
1943	13.2	2.20	8.01	2.94	2.56	2.34	3.17	3.36	1.35	11.1	.02	0	4.24
1944	0	.20	1.35	1.73	1.54	1.34	1.12	.95	19.6	1.02	1.01	.41	2.50
1945	.27	.54	1.17	1.44	1.62	1.39	1.20	.44	0	0	38.3	.32	3.95
1946	1.24	.74	1.16	1.95	1.34	1.16	.77	.28	0	0	0	8.34	1.40
1947	66.5	2.31	2.06	2.42	1.97	2.31	1.71	47.6	4.18	.17	.02	0	11.1
1948	0	0	.47	.64	1.39	1.15	.47	.57	1.71	0	.54	1.03	.66
1949	0	.01	.21	.58	1.06	.83	1.38	162	22.9	5.47	1.00	.80	16.6
1950	.88	1.18	1.56	1.52	1.69	1.38	1.23	.34	2.27	70.4	6.71	23.1	9.45
1951	5.05	2.22	2.18	2.24	2.95	1.95	1.55	191	12.6	2.52	.41	.18	19.0
1952	.43	.87	1.29	1.54	1.70	1.35	2.54	1.35	1.03	9.67	.01	0	1.82
1953	0	.37	.97	1.02	.88	.95	20.6	.42	.01	0	2.85	.56	2.36
1954	89.7	1.55	.99	1.09	1.01	.71	.75	29.6	108	5.75	.46	.01	20.1

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1940	-	-	53	104	84	62	60	36	2.8	-	-	-	-
1941	0	3.8	0	7.7	19	56	35	23,750	26,060	476	240	647	51,290
1942	15,170	871	407	246	222	292	641	181	148	31	537	926	19,670
1943	815	131	493	181	142	144	189	207	80	685	1.4	0	3,070
1944	0	12	83	106	89	82	67	58	1,170	62	62	24	1,820
1945	17	32	72	88	90	85	71	27	0	0	2,360	19	2,860
1946	76	44	72	120	75	71	46	17	0	0	0	496	1,020
1947	4,090	137	127	149	109	142	102	2,930	249	10	1.0	0	8,050
1948	0	0	29	39	80	70	28	35	102	0	33	61	477
1949	0	.4	13	36	59	51	82	9,960	1,360	336	62	48	12,010
1950	54	70	96	94	94	85	73	21	135	4,330	413	1,380	6,840
1951	311	132	134	138	164	120	92	11,730	751	155	25	11	13,760
1952	27	52	80	95	98	83	151	83	61	595	.6	0	1,330
1953	0	22	60	63	49	59	1,220	26	.4	0	175	34	1,710
1954	5,520	92	61	67	56	44	44	1,820	6,450	354	29	.8	14,540

Yearly discharge, in cubic feet per second, of Tierra Blanca Creek at reservoir, near Umbarger, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1938	927	-	-	-	-	-	-	-
1939	927	-	-	-	-	-	-	-
1940	927	-	-	-	-	-	-	-
1941	927	a11,300	June 6, 1941	0	7.09	51,290	93.6	67,740
1942	957	a2,580	Oct. 24, 1941	0	27.2	19,670	6.44	4,660
1943	977	a1,000	Oct. 2, 16, 1942	0	4.24	3,070	2.38	1,720
1944	1007	a332	June 13, 1944	0	2.50	1,820	2.53	1,840
1945	1037	a1,700	Aug. 15, 1945	0	3.95	2,860	4.05	2,930
1946	1057	a1,280	Sept. 13, 1946	0	1.40	1,020	7.15	5,180
1947	1087	a2,200	May 15, 1947	0	11.1	8,050	5.13	3,720
1948	1117	43	June 24, 1948	0	.66	477	.64	461
1949	1147	a2,200	May 7, 1949	0	16.6	12,010	16.9	12,210
1950	1341	a3,500	July 18, 1950	0	9.45	6,840	9.94	7,200
1951	1341	9,760	May 17, 1951	0	19.0	13,760	18.4	13,340
1952	1341	239	July 18, 1952	0	1.82	1,330	1.72	1,250
1953	1341	764	Apr. 5, 1953	0	2.36	1,710	10.1	7,300
1954	1341	3,600	June 11, 1954	0	20.1	14,540	-	-

a Flow computed from change in contents of reservoir.

6. Buffalo Lake near Umbarger, Tex.

Location.--Lat 34°55', long 102°06', just upstream from dam on Tierra Blanca Creek 2 miles south of Umbarger, Randall County, and 20 miles upstream from Palo Duro Creek.

Drainage area.--2,075 sq mi, of which 1,500 sq mi is probably noncontributing.

Gage.--Water-stage recorder in conduit tower. Datum of gage is 3,515.6 ft above mean sea level, datum of 1929. Prior to Aug. 29, 1940, staff gages located on the conduit tower.

Extremes.--1938-54: Maximum reservoir gage height, 130.43 ft June 6, 1941 (contents, 25,100 acre-ft).

Remarks.--Records given herein represent total contents at end of month. Dam completed June 15, 1938. Reservoir capacity, 18,150 acre-ft at fixed spillway crest (gage height, 127.0 ft). Reservoir contents zero at 97.0 ft (elevation of control valve). The dam and outlet works were built and operated by the U. S. Soil Conservation Service. According to court order dated Jan. 14, 1941, the Soil Conservation Service is required to release 3 cfs during flood periods and the natural flow of Tierra Blanca Creek when inflow is less than 3 cfs. The reservoir is used for recreational purposes.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1938	-	-	-	-	-	-	-	-	600	574	354	240	-
1939	3,080	2,810	2,650	3,530	3,350	3,170	3,170	2,810	2,140	1,460	1,290	920	+ 680
1940	776	656	628	656	628	548	452	354	282	178	134	105	- 815
1941	93	92	92	88	86	86	81	20,300	18,530	17,600	16,670	16,120	+16,015
1942	18,820	17,980	17,670	17,600	17,260	16,880	16,760	15,800	14,700	13,590	13,370	13,280	- 2,840
1943	13,560	13,060	13,060	12,740	12,280	11,660	11,200	10,590	9,560	9,700	8,580	7,600	- 5,680
1944	6,920	6,440	6,680	6,680	6,560	6,080	5,640	5,340	5,540	5,140	4,460	4,360	- 3,240
1945	4,080	3,980	3,980	3,890	3,800	3,350	3,170	2,650	2,140	1,620	3,350	2,820	- 1,540
1946	2,650	2,400	2,220	2,310	2,060	1,760	1,390	1,000	884	600	496	776	- 2,044
1947	4,940	4,650	4,650	4,560	4,460	4,360	4,180	7,180	6,800	5,840	4,940	4,180	+ 3,404
1948	3,530	3,350	3,260	3,170	3,170	2,990	2,400	2,140	1,920	1,390	1,340	1,090	- 3,090
1949	920	884	812	848	848	776	712	10,140	11,820	11,040	9,990	9,560	+ 8,470
1950	9,000	8,580	8,440	8,160	7,740	6,920	6,320	5,740	5,040	9,700	9,420	10,440	+ 880
1951	9,840	9,420	9,140	9,000	9,000	8,440	7,880	18,150	17,780	16,670	15,250	14,220	+ 3,780
1952	13,560	13,230	13,060	12,900	12,440	11,820	11,500	10,740	9,840	9,280	8,160	7,180	- 7,040
1953	6,560	6,200	6,080	5,840	5,640	5,240	5,960	5,340	4,270	3,620	3,890	3,440	- 3,740
1954	8,020	7,600	7,320	7,180	6,800	6,320	5,840	7,040	14,220	13,060	12,120	11,040	+ 7,600

7. Palo Duro Creek at Amarillo City Lake near Canyon, Tex. 1/

Location.--Lat 35°02', long 102°02', at conduit tower in Amarillo City Lake, 200 ft upstream from dam, 0.4 mile upstream from Nigger Arroyo, and 6 miles northwest of Canyon, Randall County.

Drainage area.--982 sq mi, of which about 920 sq mi is probably noncontributing.

Gage.--Staff gage, read twice daily. Datum of gage is 3,584.42 ft above mean sea level, datum of 1929.

Average discharge.--12 years (1942-54), 3.76 cfs (2,720 acre-ft per year).

Extremes.--1942-54: Maximum gage height, 53.6 ft May 17, 1951; lake dry at times.
Maximum stage known since dam completed in 1927 occurred June 5-7, 1937, when lake reached a stage of about 54.5 ft (spillway crest at that time at gage height, 52.5 ft) according to the City of Amarillo Water Department.

Remarks.--Records given herein represent flow into lake and content on last day of month. Discharge below gage height 50.3 ft (spillway crest) determined from daily change in contents of lake; that above gage height 50.3 ft determined by algebraic summation of flow over spillway (computed from spillway rating curve) and change in contents of lake (computed from capacity curve and reduced to equivalent cubic feet per

1/ Formerly published as Palo Duro Creek near Canyon.

7. Palo Duro Creek at Amarillo City Lake near Canyon, Tex.--Continued

second). No adjustment for evaporation or seepage losses. Small spring flow into lake was measured occasionally, and discharges when inflow was less than lake losses were estimated on basis of these measurements. Dam completed February 1927. Capacity at spillway crest, 5,120 acre-ft. No water is diverted from lake. The lower part of the lake is surrounded by 10 water wells which are used to partly supply the city of Amarillo. The lake provides recharge to the sands and gravels of the underlying High Plains deposits (Ogallala formation) from which the wells draw water, in addition to the replenishment afforded by infiltration from rainfall on the surrounding area.

Cooperation.--Gage-height record furnished by city of Amarillo.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	-	-	-	-	-	-	-	0.87	1.34	-
1943	2.23	1.47	1.20	1.08	1.30	1.65	1.60	1.32	1.00	4.15	.84	.74	1.55
1944	1.00	1.50	1.56	1.40	1.25	1.10	.76	.52	.86	2.25	.90	.91	1.17
1945	1.30	1.39	1.50	1.56	1.36	1.10	.84	.70	.40	.10	6.77	.11	1.44
1946	.16	.20	.10	.10	.20	.30	.40	.28	.10	0	0	.14	.16
1947	43.8	1.50	1.15	.75	.80	.80	.53	2.03	0	0	0	0	4.35
1948	0	.10	.22	.39	1.14	.94	.30	.20	.20	.66	19.9	8.97	2.76
1949	.20	.30	.56	.80	.80	.90	1.68	13.3	6.84	1.78	1.55	.40	2.44
1950	.35	.94	1.38	1.13	.78	.62	.60	.65	2.00	61.0	5.11	7.39	6.92
1951	1.36	.90	.90	.90	1.00	.85	.80	170	7.37	2.25	.60	10.4	16.7
1952	.60	3.73	1.58	.90	.80	.80	.97	2.38	.29	.20	.10	.02	1.03
1953	.34	.86	.86	.50	.60	.70	.62	.48	.30	6.53	12.8	.40	2.11
1954	31.1	.87	.99	1.13	.89	.80	2.41	12.4	2.31	.29	.12	.04	4.51
1955	.09	.28	.40	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	-	-	-	-	-	-	-	53	80	-
1943	137	88	74	66	72	101	95	81	60	255	52	44	1,120
1944	61	89	96	86	72	68	45	32	51	138	55	54	847
1945	80	83	92	96	75	67	50	43	24	6.0	417	6.9	1,040
1946	10	12	6.1	6.1	11	18	24	17	6.0	0	0	8.1	118
1947	2,690	89	71	46	44	49	32	125	0	0	0	0	3,150
1948	0	6.0	12	24	66	58	18	12	12	41	1,220	534	2,000
1949	12	18	35	49	44	55	100	820	407	109	95	24	1,770
1950	22	56	85	69	43	38	36	40	119	3,750	314	440	5,010
1951	84	54	55	55	56	52	48	10,460	438	138	37	621	12,100
1952	37	222	97	55	46	49	58	147	17	12	6.1	1.0	747
1953	21	51	53	31	33	43	37	30	18	401	787	24	1,530
1954	1,910	52	61	69	49	49	143	765	138	18	7.3	2.4	3,260
1955	5.8	16	25	-	-	-	-	-	-	-	-	-	-

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1942	-	-	-	-	-	-	-	-	-	-	1,200	992	-
1943	808	640	500	350	240	151	95	72	26	72	19	0	- 992
1944	0	0	0	0	0	0	16	18	7	0	0	0	0
1945	0	0	0	0	0	0	0	0	0	0	56	14	+ 14
1946	0	0	0	0	0	0	0	0	0	0	0	0	- 14
1947	1,200	660	303	89	7	0	0	0	0	0	0	0	0
1948	0	0	0	0	0	0	0	0	0	3	345	271	+ 271
1949	14	0	0	0	0	0	0	186	139	14	0	0	- 271
1950	0	0	0	0	0	0	0	0	52	2,590	1,970	1,660	+1,660
1951	1,180	832	610	387	201	95	40	4,860	4,440	3,590	2,860	2,780	+1,120
1952	2,350	1,950	1,720	1,450	1,200	950	808	640	387	131	18	0	-2,780
1953	0	0	0	0	0	0	0	0	0	201	394	107	+ 107
1954	1,720	1,080	760	500	331	171	201	724	500	171	72	18	- 89
1955	0	0	0	-	-	-	-	-	-	-	-	-	-

8. Prairie Dog Town Fork Red River near Canyon, Tex.

Location.--Lat 35°01', long 101°54', 1.2 miles downstream from confluence of Palo Duro and Tierra Blanca Creeks, 2 miles upstream from Palo Duro Club Dam, and 3½ miles northeast of Canyon, Randall County.

Drainage area.--About 3,369 sq mi, of which about 2,658 sq mi is probably noncontributing.

Gage.--Water-stage recorder. Datum of gage is 3,455.0 ft above mean sea level, datum of 1929. Prior to Sept. 13, 1924, staff gage at site 300 ft upstream from old Palo Duro Club Dam and 2.3 miles downstream from present site at different datum. Sept. 13, 1924, to Oct. 21, 1926, and Apr. 6, 1938, to May 20, 1942, water-stage recorder at site 0.8 mile downstream from present site and at present datum.

Average discharge.--13 years (1924-26, 1938-49), 11.2 cfs (8,110 acre-ft per year).

Extremes.--1924-26, 1938-49: Maximum discharge, 6,650 cfs Oct. 24, 1941 (gage height, 12.03 ft, site then in use, from floodmark), from rating curve extended above 3,700 cfs by logarithmic plotting; no flow at times during each year.

Highest known flood prior to reconstruction of Palo Duro Club Dam in May 1941 occurred May 30, 1937, when river reached a stage of 9.7 ft, from floodmarks, at site 0.8 mile downstream.

Remarks.--Flow largely regulated by several reservoirs upstream; the principal ones are Buffalo Lake on Tierra Blanca Creek near Umbarger, 20 miles upstream (capacity, 18,150 acre-ft), and Amarillo City Lake on Palo Duro Creek, 13 miles upstream (capacity about 3,200 acre-ft). (See elsewhere in this report.) The major portion of flood water originating above these reservoirs ordinarily will be retained in them.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	16.1	17.7	11.2	9.06	4.00	37.3	6.68	2.32	-
1925	0.40	0.56	1.04	4.90	6.48	3.82	5.18	2.93	12.5	20.5	31.0	31.7	10.1
1926	13.7	5.79	4.34	3.95	3.23	2.80	2.80	26.0	30.6	.79	.25	0	7.87
1938	-	-	-	-	-	-	-	43.0	1.70	.02	.04	0	-
1939	194	0	0	1.06	0	0	4.34	0	21.0	.11	3.06	0	2.60
1940	0	0	0	0	0	0	0	16.6	0	0	0	0	1.41
1941	0	0	0	0	0	0	0	30.6	537	38.6	2.77	.12	50.2
1942	432	48.0	8.23	7.99	6.26	6.65	9.02	4.65	5.4	.57	0	0	44.3
1943	9.39	2.28	2.62	2.70	2.66	2.82	2.67	.82	.11	26.7	.01	0	4.45
1944	0	0	.02	1.52	1.16	1.26	.64	.03	1.73	21.0	.50	.17	2.36
1945	0	.003	.15	.32	.58	.29	.38	.05	0	0	1.82	0	.30
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	84.5	1.34	.21	.17	.04	.15	.47	55.9	1.29	0	0	0	12.2
1948	0	0	0	0	0	0	0	0	0	0	3.84	4.37	.68
1949	.25	12.8	.08	.19	.26	1.68	.65	48.6	40.6	.32	.38	4.73	9.23

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	924	1,090	664	557	238	2,290	411	138	-
1925	24.4	33.1	63.9	301	360	235	308	180	745	1,260	1,900	1,880	7,290
1926	845	344	267	243	179	172	167	1,600	1,820	48.6	15.3	0	5,700
1938	-	-	-	-	-	-	-	2,640	161	1.4	2.4	0	-
1939	119	0	0	65	0	0	258	0	1,250	6.7	188	0	1,890
1940	0	0	0	0	0	0	0	1,020	0	0	0	0	1,020
1941	0	0	0	0	0	0	0	1,880	31,930	2,370	170	7.1	36,360
1942	26,560	2,860	506	491	348	409	537	286	32	35	0	0	32,060
1943	577	136	161	166	148	173	159	51	6.3	1,640	.6	0	3,220
1944	0	0	1.4	93	66	78	38	2.0	103	1,290	31	10	1,710
1945	0	.2	8.9	1.9	32	18	22	3.4	0	0	112	0	216
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	5,200	80	13	11	2.2	9.1	28	3,440	77	0	0	0	8,860
1948	0	0	0	0	0	0	0	0	0	0	236	260	496
1949	15	762	5.0	12	14	104	39	2,990	2,420	20	23	282	6,690

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	587	-	-	-	-	-	-	-
1925	607	500	June 24, 1925	0	10.1	7,290	11.9	8,620
1926	627	1,460	May 27, 1926	0	7.87	5,700	-	-
1938	857	1,180	May 18, 1938	0	-	-	-	-
1939	877	1,520	June 21, 1939	0	2.60	1,890	2.44	1,770
1940	897	1,420	May 7, 1940	0	1.41	1,020	1.41	1,020
1941	927	3,890	June 7, 1941	0	50.2	36,360	91.6	66,280
1942	957	6,650	Oct. 24, 1941	0	44.3	32,060	4.16	3,010
1943	977	1,230	July 9, 1943	0	4.45	3,220	3.24	2,350
1944	1007	910	July 2, 1944	0	2.36	1,710	2.37	1,720
1945	1037	219	Aug. 5, 1945	0	.30	216	.29	206

Yearly discharge, in cubic feet per second, of Prairie Dog Town Fork Red River near Canyon, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1057	0	-	0	0	0	7.31	5,290
1947	1087	3,090	Oct. 7, 1946	0	12.2	8,660	4.93	3,570
1948	1117	237	Sept. 21, 1948	0	.68	496	1.76	1,280
1949	1147	1,000	Nov. 1, 1948	0	9.23	6,690	-	-

9. North Tule Draw at reservoir, near Tulia, Tex.1/

Location.--Lat 34°33', long 101°42', at walkway to conduit intake valve and 250 ft to left of concrete spillway, 1 mile upstream from mouth and 3.2 miles northeast of Tulia, Swisher County.

Drainage area.--About 189 sq mi, of which 124 sq mi is probably noncontributing.

Gage.--Water-stage recorder. Altitude of gage is about 3,310 ft (by barometer). Prior to September 29, 1939, staff gage at present site at datum 70.5 ft higher. September 29, 1939 to November 26, 1940, staff gage at present site and datum.

Average discharge.--16 years (1941-57), 2.87 cfs (2,080 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 5,430 cfs May 15, 1951, by slope-area measurement of peak flow; maximum gage height, 97.35 ft June 9, 1954; no flow at times during most years.

Remarks.--Records herein represent flow into reservoir. Discharge estimated on basis of monthly measurements of small springs flowing into creek above reservoir except for periods of rising stage when inflow was based on change in reservoir contents. At other times, discharge above gage height 91.9 (spillway crest) determined by algebraic summation of flow over spillway (computed from spillway rating curve), computed flow through conduit, and change in contents of reservoir (computed from capacity curve and reduced to equivalent cubic feet per second). No adjustment made for evaporation or seepage losses for periods when discharge was obtained from change in contents. Dam completed January 15, 1939. Reservoir capacity 654 acre-ft. Reservoir used for recreational purposes, and water is rarely released through outlet gate.

Cooperation.--Gage-height record furnished by city of Tulia, and capacity curve furnished by U. S. Soil Conservation Service.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	0.87	3.13	0.26	0.19	0	-
1940	0.05	0	0.01	0.03	0.08	0	0.67	.05	0	-	-	-	-
1941	-	-	0	0	.01	.11	.04	8.14	26.5	1.91	.40	.29	-
1942	62.8	.50	.52	.50	.53	.53	.60	.30	.33	.34	.52	6.67	6.27
1943	10.5	.20	.37	.20	.20	.20	.32	.32	.46	21.9	0	.08	2.95
1944	0	.07	.23	.25	.26	.20	.41	.44	.46	.36	.03	.20	.24
1945	.21	.36	.30	.38	.31	.29	.34	.09	.03	.24	.40	.12	.26
1946	.03	0	.02	.12	.01	.04	.10	.02	2.81	.05	.94	1.53	.47
1947	63.9	.40	.86	.31	.21	.15	.27	.70	.08	.04	0	0	5.68
1948	0	.09	.03	.04	.22	.09	.01	.15	.03	.01	.86	.26	.15
1949	0	.38	.03	.10	.27	.01	14.4	23.5	10.3	1.38	.08	.08	4.21
1950	.02	.03	.05	.07	.05	.03	.03	.46	2.27	4.32	1.18	1.76	.86
1951	0	0	.03	.04	.14	.01	.05	141	.17	.05	.05	0	12.0
1952	.07	.11	.10	.02	0	0	.16	.03	.01	.69	0	0	.10
1953	0	0	0	0	.01	.02	4.88	.02	.57	0	.03	0	.46
1954	1.37	0	0	0	0	0	.52	16.8	55.9	.15	.15	.06	6.21
1955	0	0	0	0	0	0	0	8.31	20.8	.12	0	.42	2.46
1956	.13	0	0	0	0	0	0	.45	.10	0	0	0	.06
1957	0	0	0	0	0	0	.26	2.72	23.3	4.09	11.3	.14	3.50

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	54	186	16	12	0	-
1940	3.0	0	0.4	1.8	4.4	0	40	2.8	0	-	-	-	-
1941	-	-	0	0	.6	6.7	2.4	501	1,580	117	25	17	-
1942	3,860	30	32	31	30	33	36	18	19	21	32	397	4,540
1943	645	12	23	12	11	12	19	20	28	1,350	0	4.8	2,140
1944	0	4.4	14	15	15	12	25	27	27	22	2.0	12	175
1945	13	22	18	23	17	18	20	5.6	1.6	14	25	7.3	186
1946	1.8	0	1.2	7.1	.4	24	6.0	1.2	167	3.0	58	91	339
1947	3,930	24	53	19	12	9.3	16	43	4.6	2.6	0	0	4,110
1948	0	5.6	1.6	2.2	12	5.4	.4	9.3	2.0	.8	53	15	107
1949	0	23	1.6	6.1	15	.8	856	1,440	611	85	4.8	4.6	3,050
1950	1.2	1.6	3.4	4.6	2.6	2.0	1.6	28	135	265	73	105	623
1951	0	0	2.0	2.4	7.7	.4	2.8	8,680	10	2.8	3.0	0	8,710
1952	4.6	6.5	6.1	1.2	0	0	9.5	1.8	.4	42	0	0	72
1953	0	0	0	0	.6	1.4	290	1.4	34	0	2.0	0	329
1954	84	0	0	0	0	0	31	1,030	3,330	9.1	9.1	3.4	4,500
1955	0	0	0	0	0	0	0	511	1,240	7.3	0	25	1,780
1956	8.1	0	0	0	0	0	0	27	5.8	0	0	0	41
1957	0	0	0	0	0	0	15	167	1,390	252	700	8.9	2,530

1/ Prior to October 1950, published as North Tule Creek at reservoir, near Tulia.

Monthly and yearly mean discharge, in cubic feet per second, of Prairie Dog Town Fork Red River near Estelline, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	35.5	5.09	75.4	1.26	0	0.63	174	809	1.58	-
1925	524	4.60	0	2.69	.01	0	50.2	227	73.2	361	1,690	994	330
1938	-	-	-	0	13.5	43.9	0.02	280	794	92.2	26.0	126	-
1939	20.4	0	0	61.0	0	0	5.17	16.2	183	16.8	121	0	36.3
1940	0	0	0	0	0	0	49.8	55.3	45.8	0	238	171	46.7
1941	.39	249	.34	.06	6.49	13.9	164	748	2,959	482	242	108	413
1942	1,359	84.5	64.2	12.3	2.05	14.4	410	6.92	33.2	30.5	63.7	28.1	178
1943	606	8.56	28.3	7.31	.20	0	146	200	127	272	0	1.93	118
1944	0	0	13.8	16.8	5.63	8.32	0	24.7	162	117	7.19	44.8	33.3
1945	72.8	10.4	102	15.1	4.00	23.3	97.9	13.4	25.9	172	45.9	13.4	50.2
1946	1.16	0	0	.52	6.67	.32	0	22.9	150	.71	176	251	50.5
1947	1,967	49.1	89.5	9.18	0	1.69	156	1,023	406	14.6	0	0	314

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	2,200	293	4,640	75.0	0	37.5	10,700	49,800	93.8	-
1925	32,200	274	0	165	.4	0	2,980	13,900	4,360	22,200	104,000	59,100	239,000
1938	-	-	-	0	750	2,700	1.2	17,190	47,270	5,670	1,600	7,520	-
1939	1,260	0	0	3,750	0	0	307	993	10,910	1,030	8,040	0	26,290
1940	0	0	0	0	0	0	2,960	3,400	2,730	0	14,620	10,190	33,900
1941	24	14,810	21	3.6	361	854	9,750	45,990	176,100	29,640	14,860	6,450	298,900
1942	83,560	5,030	3,950	755	114	883	24,400	426	1,980	1,880	3,920	1,670	128,600
1943	37,230	509	1,740	449	11	0	8,700	12,320	7,530	16,750	0	115	85,350
1944	0	0	851	1,030	324	512	0	1,520	9,650	7,180	442	2,660	24,170
1945	4,480	617	6,280	931	222	1,430	5,830	821	1,540	10,550	2,820	797	36,320
1946	71	0	0	32	370	19	0	1,410	8,900	44	10,790	14,910	36,550
1947	120,900	2,920	5,500	565	0	104	9,270	62,920	24,180	900	0	0	227,300

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	587	a19,700	Aug. 22, 1924	0	-	-	136	100,300
1925	607	21,500	July 30, 1925	0	330	239,000	-	-
1938	857	40,000	June 16, 1938	0	-	-	116	83,960
1939	877	9,500	June 21, 1939	0	36.3	26,290	34.6	25,030
1940	897	24,100	Sept. 5, 1940	0	46.7	33,900	67.1	48,760
1941	927	56,000	June 9, 1941	0	413	298,900	178	376,500
1942	957	24,100	Oct. 4, 1941	0	178	128,600	104	75,510
1943	977	51,200	Oct. 17, 1942	0	118	85,350	64.5	46,730
1944	1007	5,360	July 12, 1944	0	33.3	24,170	50.2	34,700
1945	1037	12,600	July 10, 1945	0	50.2	36,320	34.6	25,010
1946	1057	18,100	Aug. 28, 1946	0	50.5	36,550	229	165,800
1947	1087	38,600	Oct. 7, 1946	0	314	227,300	-	-

a Maximum during period January to September 1924.

13. Salt Fork Red River near Wellington, Tex.

Location.--Lat 34°57'25", long 100°13'30", at bridge on U. S. Highway 83, 4 miles downstream from Fort Worth & Denver City (Burlington) Railway bridge, 4½ miles south of Lutie, and 6½ miles north of Wellington, Collingsworth County.

Drainage area.--1,222 sq mi, of which 209 sq mi is probably noncontributing.

Supplemental records available.--Records of chemical analyses and water temperatures for period July 1952 to September 1954 are published in reports of Geological Survey.

Gage.--Water-stage recorder and wire-weight gage. Datum of gage is 1,941.41 ft above mean sea level, datum of 1929.

Average discharge.--5 years (1952-57), 92.0 cfs (66,610 acre-ft per year).

Extremes.--1952-57: Maximum discharge, 146,000 cfs May 16, 1957 (gage height, 19.00 ft), from rating curve extended above 11,000 cfs on basis of slope-area measurement at gage height 13.90 ft; minimum, 0.1 cfs June 19, 1952.

Remarks.--Daily discharge computed from wire-weight gage readings when flowing stream was away from recorder. Several small diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second, of Salt Fork Red River near Wellington, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	1.95	1.00	2.11	-
1953	4.06	19.2	10.8	9.00	15.9	19.1	27.9	8.52	1.76	482	49.5	6.29	55.3
1954	72.5	17.5	20.9	24.5	13.6	8.04	39.2	542	642	6.60	45.6	4.53	120
1955	5.19	6.04	6.50	14.1	17.4	5.27	4.18	317	528	32.6	8.63	3.64	78.9
1956	102	7.28	18.8	19.3	19.8	5.86	4.24	347	4.91	11.6	1.34	1.48	45.9
1957	25.1	2.33	3.26	5.38	12.7	40.8	412	1,181	68.6	4.12	125	14.8	160

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	120	62	126	-
1953	250	1,140	666	553	883	1,180	1,660	524	105	29,660	3,040	374	40,040
1954	4,460	1,040	1,280	1,510	757	494	2,330	33,340	38,190	406	2,810	270	86,890
1955	319	359	399	867	966	324	249	19,500	31,400	2,000	531	217	57,130
1956	6,280	433	1,160	1,180	1,140	360	252	21,320	292	715	82	88	33,300
1957	1,540	138	201	331	704	2,510	24,540	72,620	4,080	253	7,720	883	115,500

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1952	1241	-	-	-	-	-	-	-
1953	1281	63,400	July 19, 1953	0.7	55.3	40,040	61.8	44,760
1954	1341	95,900	June 10, 1954	2.9	120	86,890	112	81,180
1955	1391	23,700	June 19, 1955	2.2	78.9	57,130	88.3	63,930
1956	1441	18,400	May 27, 1956	.6	45.9	33,300	37.6	27,310
1957	1511	146,000	May 16, 1957	.7	160	115,500	-	-

14. Quitaque Creek near Quitaque, Tex.

Location.--Lat 34°14', long 101°07', about three-quarters of a mile upstream from W. F. Saul's ranch house, 1 mile downstream from Wilson Creek, 1½ miles upstream from Turkey Creek, and 10 miles southwest of Quitaque, Briscoe County.

Drainage area.--About 293 sq mi, of which 258 sq mi is probably noncontributing.

Supplemental records available.--Records of chemical analyses for the period November 1945 to November 1946 and June-July 1950 are published in reports of the Geological Survey.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,633.91 ft above mean sea level, datum of 1929.

Average discharge.--12 years (1945-57), 7.68 cfs (5,560 acre-ft per year).

Extremes.--1945-57: Maximum discharge, 6,060 cfs Aug. 4, 1957 (gage height, 6.33 ft), from rating curve extended above 70 cfs on basis of slope-area measurements at gage heights 2.70, 3.00, 5.59, 6.33, and 8.62 ft; maximum gage height, 8.62 ft June 28, 1955; minimum discharge, 1.1 cfs Aug. 4, 1956.

Remarks.--No diversion above station. Base flow comes from springs which emerge at the base of the Ogallala formation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	-	-	-	-	-	-	-	-	-	-	-	4.23	-
1946	5.52	4.55	4.87	5.55	5.43	5.72	5.24	4.29	4.51	3.49	3.48	7.50	5.00
1947	10.5	5.38	6.29	6.12	6.03	5.46	5.89	32.8	4.16	3.47	3.75	3.39	7.83
1948	4.40	6.37	6.09	5.85	7.11	6.25	5.88	5.37	5.42	3.89	4.35	10.2	5.92
1949	5.31	6.12	5.96	6.10	7.89	6.60	7.23	10.3	6.18	5.09	5.38	7.18	6.60
1950	5.99	5.45	6.71	7.40	7.17	6.12	5.58	5.10	7.36	12.2	7.14	27.5	8.63
1951	6.39	6.48	5.94	6.02	6.09	5.99	7.21	15.5	7.68	4.47	4.71	7.14	6.98
1952	4.79	5.26	5.60	5.80	5.70	5.65	7.17	7.62	3.95	4.93	3.83	4.14	5.37
1953	4.44	5.82	5.60	5.73	5.71	5.93	6.05	6.06	3.84	5.35	6.02	3.86	5.37
1954	5.50	4.91	5.29	5.36	5.75	5.44	5.52	30.5	5.97	3.61	9.65	3.35	7.61
1955	4.56	5.26	5.27	5.25	5.44	5.12	5.04	42.5	51.2	8.17	4.61	5.15	12.3
1956	7.72	4.47	5.34	5.69	5.53	4.55	5.33	9.14	4.75	3.13	2.43	2.97	5.09
1957	3.74	4.74	5.10	4.93	5.09	5.57	11.2	26.2	93.2	3.94	17.3	3.85	15.4

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	-	-	-	-	-	-	-	-	-	-	-	252	-
1946	340	271	300	342	301	351	312	264	268	214	214	446	3,620
1947	649	320	387	376	335	336	350	2,020	248	213	230	202	5,670
1948	270	379	374	360	409	385	350	330	322	239	268	608	4,290
1949	326	364	367	375	438	406	430	631	368	313	331	427	4,780
1950	368	324	412	455	398	376	332	314	438	750	439	1,640	6,250

Monthly and yearly runoff, in acre-feet, of Quitaque Creek near Quitaque, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	393	386	365	370	338	369	429	956	457	275	290	425	5,050
1952	295	313	344	357	328	348	427	468	235	303	235	246	3,900
1953	273	346	344	352	317	365	360	373	228	329	370	229	3,890
1954	338	292	325	330	320	334	328	1,880	355	222	594	199	5,520
1955	280	313	324	323	302	315	300	2,610	3,050	503	283	306	8,910
1956	474	266	328	350	318	279	317	562	283	192	150	177	3,700
1957	230	282	313	303	283	343	669	1,610	5,550	242	1,060	229	11,110

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1057	423	Sept. 19, 1946	2.7	5.00	3,620	5.62	4,070
1947	1087	1,720	May 10, 1947	2.5	7.83	5,670	7.37	5,330
1948	1117	520	Sept. 8, 1948	3.1	5.92	4,290	5.96	4,330
1949	1147	785	May 28, 1949	3.4	6.60	4,780	6.66	4,820
1950	1177	1,700	Sept. 4, 1950	3.6	8.63	6,250	8.68	6,290
1951	1211	780	Sept. 9, 1951	3.6	6.98	5,050	6.71	4,860
1952	1241	152	July 14, 1952	3.1	5.37	3,900	5.39	3,910
1953	1281	1,240	Aug. 15, 1953	2.8	5.37	3,890	5.36	3,880
1954	1341	970	May 10, 1954	3	7.61	5,520	7.56	5,480
1955	1391	4,470	June 28, 1955	3.6	12.3	8,910	12.5	9,060
1956	1441	700	May 27, 1956	1.1	5.09	3,700	4.76	3,450
1957	1511	6,060	Aug. 4, 1957	2.8	15.4	11,110	-	-

15. Pease River near Crowell, Tex.

Location.--Lat 34°06', long 99°41', at bridge on State Highway 283, 4 miles upstream from Raggedy Creek, 7 miles upstream from Kansas City, Mexico & Orient Railway (Santa Fe) bridge, and 8 miles north of Crowell, Foard County.

Drainage area.--3,037 sq mi, of which 559 sq mi is probably noncontributing.

Supplemental records available.--Records of chemical analyses for the period July 1942 to June 1943 are published in report of Geological Survey.

Gage.--Water-stage recorder and wire-weight gage. Datum of gage is 1,330.44 ft above mean sea level (Texas State Highway bench mark). Prior to Apr. 12, 1930, chain gage; Apr. 12, 1930 to May 17, 1935, water-stage recorder and chain gage; and May 18, 1935, to Feb. 11, 1939, non-recording gages at same site and datum.

Average discharge.--21 years (1924-26, 1927-46), 241 cfs (174,500 acre-ft per year).

Extremes.--1924-47: Maximum discharge, 106,000 cfs June 6, 1941; maximum gage height, 13.0 ft Sept. 18, 1936, from graph based on gage readings; no flow at times.
Maximum stage known, 19.6 ft June 4, 1891.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	10.9	4.97	46.8	99.2	11.4	330	1,182	435	579	-
1925	19.4	0.35	1.63	19.4	4.99	.62	389	1,127	51.4	85.3	1,160	1,063	329
1926	167	40.4	.23	.71	1.19	35.8	615	105	95.4	266	24.8	451	150
1927	-	-	-	60.7	18.7	6.25	47.8	117	161	18.9	7.16	74.2	-
1928	34.4	.5	1.0	1.0	5.0	0	2.2	171	160	197	164	5.6	62.4
1929	-	-	-	-	-	-	-	-	-	-	-	-	152
1930	94.6	26.9	3.10	11.3	18.3	47.3	120	69.4	.58	3.19	.88	39.7	33.5
1931	1,172	20.6	271	16.1	90.3	32.9	81.5	55.0	377	12.8	64.3	0	184
1932	182	93.0	63.6	74.3	12.1	.53	220	115	2,367	845	331	184	372
1933	3.86	.04	331	11.8	8.19	13.1	.02	288	5.10	588	524	379	182
1934	.81	13.6	9.07	5.87	1.36	20.9	12.3	76.5	128	17.3	311	375	81.0
1935	.09	29.5	.81	.44	1.22	495	911	4,116	634	90.2	481	173	584
1936	159	26.8	20.3	11.5	9.51	7.79	9.17	195	86.2	60.9	.99	3,563	341
1937	42.5	17.3	16.3	14.0	3.01	3.43	35.4	438	640	85.0	1,081	281	223
1938	317	14.1	7.39	3.51	23.8	64.7	31.9	563	1,616	112	128	6.09	240
1939	40.8	33.3	1.64	211	3.14	88.6	.95	185	1,530	296	273	.02	222
1940	65.3	.03	2.56	2.54	11.2	.16	136	213	28.1	13.0	830	108	119
1941	39.1	115	1.25	5.33	19.4	31.8	745	4,094	5,531	137	867	572	1,013
1942	2,018	111	84.2	38.2	20.0	19.5	1,150	60.0	15.5	21.2	36.6	556	346
1943	324	26.2	28.8	23.4	9.38	8.55	69.4	359	464	12.0	0	6.20	111
1944	8.77	4.37	18.2	16.7	14.9	11.1	6.33	91.3	564	43.4	55.7	68.4	74.7
1945	33.9	10.1	27.9	19.4	13.5	16.4	26.8	3.61	76.4	1,030	258	52.9	133
1946	34.0	6.52	5.08	12.9	7.15	1.68	.63	58.4	331	44.0	32.3	871	116
1947	867	34.4	28.5	15.1	4.38	8.18	69.1	2,430	57.9	-	-	-	-

Monthly and yearly runoff, in acre-feet, of Pease River near Crowell, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	--	-	668	286	2,880	5,900	702	19,600	72,650	26,700	345	--
1925	1,190	21	100	1,190	277	38	23,120	69,270	3,060	5,250	71,340	63,270	238,100
1926	10,300	2,410	14	44	66	2,200	36,600	6,440	5,680	16,380	1,520	26,860	108,500
1927	-	-	-	3,730	1,040	384	2,840	7,170	9,570	1,160	440	4,420	-
1928	2,120	30	62	62	288	0	131	10,520	9,520	12,140	10,100	333	45,300
1929	-	-	-	-	-	-	-	-	-	-	-	-	110,000
1930	5,820	1,720	191	695	1,020	2,910	7,140	4,270	35	196	54	236	24,300
1931	72,070	1,230	16,640	990	5,020	2,020	4,850	3,380	22,430	787	3,950	0	133,400
1932	11,180	5,530	3,910	4,570	696	33	13,090	7,070	140,800	51,970	20,370	10,900	270,100
1933	237	2.4	20,330	726	455	806	1.2	17,700	303	36,130	32,240	22,570	*131,500*
1934	50	806	558	361	76	1,290	734	4,700	7,590	1,060	19,130	22,290	58,640
1935	5.4	1,750	50	27	68	30,410	54,220	253,100	37,750	5,540	29,590	10,320	422,800
1936	9,790	1,590	1,250	705	547	479	545	11,970	5,130	3,740	61	212,000	247,800
1937	2,610	1,030	1,000	860	167	211	2,110	26,950	38,090	5,220	66,480	16,730	161,500
1938	19,510	840	455	216	1,320	3,980	1,900	34,600	96,150	6,860	7,880	362	174,100
1939	2,510	1,980	101	13,000	175	5,450	57	11,400	91,040	18,170	16,810	1.0	160,700
1940	4,020	2.0	157	156	644	9.7	8,090	13,090	1,670	800	51,010	6,400	86,050
1941	2,410	6,820	77	328	1,080	1,950	44,310	251,700	329,100	8,440	53,320	34,010	733,500
1942	124,100	6,630	5,180	2,350	1,110	1,200	68,430	3,690	920	1,300	2,250	33,080	250,200
1943	19,920	1,560	1,770	1,440	521	526	4,130	22,070	27,640	735	0	369	80,680
1944	339	260	1,120	1,030	858	680	377	5,610	33,560	2,670	3,420	4,070	54,190
1945	2,090	603	1,710	1,190	752	1,010	1,600	222	4,550	63,320	15,860	3,150	96,060
1946	2,090	388	313	793	397	104	37	3,590	19,670	2,710	1,980	51,850	83,920
1947	53,330	2,050	1,750	928	243	503	4,110	149,400	3,440	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	587	29,700	Aug. 22, 1924	0	-	-	181	131,000
1925	607	33,000	Sept. 14, 1925	0	329	238,100	345	249,500
1926	627	(a)	Sept. 28, 1926	0	150	108,500	-	-
1927	647	48,800	Oct. 3, 1926	0	-	-	45.5	32,970
1928	667	7,900	May 16, 1928	0	62.4	45,300	65.2	63,090
1929	687	37,200	May 12, 1929	0	152	110,000	162	117,100
1930	702	3,000	Apr. 29, 1930	0	33.5	24,300	147	106,500
1931	717	36,900	June 9, 1931	0	184	133,400	88.5	64,050
1932	732	37,400	July 6, 1932	0	372	270,100	372	270,100
1933	747	33,000	July 6, 1933	0	182	131,500	155	112,300
1934	762	18,000	Sept. 14, 1934	0	81.0	58,640	81.5	59,040
1935	787	74,700	May 17, 1935	0	584	422,800	599	433,700
1936	807	86,000	Sept. 18, 1936	0	341	247,800	330	239,800
1937	827	38,500	Aug. 22, 1937	0	223	161,500	195	141,500
1938	857	40,000	June 25, 1938	0	240	174,100	218	157,900
1939	877	63,200	June 21, 1939	0	222	160,700	221	160,300
1940	897	24,400	May 28, 1940	0	119	86,050	126	91,180
1941	927	106,000	June 6, 1941	0	1,013	733,500	1,188	860,100
1942	957	75,800	Apr. 28, 1942	0	346	250,200	190	137,600
1943	977	40,600	June 5, 1943	0	111	80,680	82.0	59,350
1944	1007	52,300	June 14, 1944	0	74.7	54,190	78.1	56,680
1945	1037	81,000	July 10, 1945	0	133	96,060	130	94,450
1946	1057	19,200	Sept. 13, 1946	0	116	83,920	191	138,300
1947	1087	30,400	May 16, 1947	0.2	--	-	-	-

a Not determined; previously published peak discharge found not reliable on basis of restudy of original data.

16. Red River near Burkburnett, Tex.

Location.--Lat 34°06', long 98°32', at former toll bridge between Burkburnett, Texas and Randlett, Oklahoma, about 1,000 ft downstream from bridge on U. S. Highways 277 and 281, and 2¼ miles northeast of Burkburnett, Wichita County.

Drainage area.--20,570 sq mi, of which 5,936 sq mi is probably noncontributing.

Gage.--Chain gage. Altitude of gage is about 960 ft (from topographic map).

Extremes.--1924-25: Maximum discharge, 38,000 cfs May 15, 1925 (gage height, 8.80 ft), from rating curve extended above 16,000 cfs; no flow at times.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	779	814	235	-
1925	735	124	93.0	261	156	81.4	2,150	3,570	985	352	3,170	-	-

Monthly and yearly runoff, in acre-feet, of Red River near Burkburnett, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	32,400	50,100	14,000	-
1925	45,200	7,400	5,720	16,000	8,660	5,010	128,000	220,000	58,600	21,700	195,000	-	-

17. Lake Kemp near Mabelle, Tex.

Location.--Lat 33°45', long 99°09', in outlet gate-control house, at dam on Wichita River, 6.2 miles north of Mabelle, Baylor County, and 10.2 miles northeast of Seymour.

Drainage area.--2,099 sq mi.

Gage.--Float type gage. Datum of gage is 2.40 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942.

Extremes.--1922-57: Maximum contents observed, 420,900 acre-ft June 30, 1941 (gage height, 1.149.6 ft); minimum observed since first appreciable storage, 26,160 acre-ft June 30, 1953 (gage height, 1,125.5 ft).

Remarks.--Lake is formed by a rock faced hydraulic earth-fill dam 7,500 ft long, having an uncontrolled semi-circular concrete service spillway 564 ft long. No flow has been permitted to pass over spillway. Storage began Oct. 1, 1922; dam completed Aug. 25, 1923. Capacity, 438,000 acre-ft between gage heights 1,067.0 ft (sill of 6 outlet conduits, 7 ft in diameter, controlled by lift-type gates) and 1,150.6 ft (crest of spillway). No dead storage. Two uncontrolled emergency spillways are located between the left end of dam and service spillway; one 70 ft long with crest at gage height 1,159.1 ft, and the other 335 ft long with crest varying from gage heights 1,159.6 to 1,162.9 ft. Water is used for irrigation in the Wichita River valley, and oilfield and industrial uses. Figures given herein represent total contents computed from gage readings at 8 a.m.

Cooperation.--Gage-height record furnished by Wichita County Water Improvement District Nos. 1 and 2. Capacity table based on survey of October and November 1944 furnished by Corps of Engineers.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1923	113	116	110	156	510	1,780	6,160	18,400	18,800	23,640	29,360	38,540	+ 38,540
1924	45,920	242,700	144,100	124,500	163,400	145,000	135,900	139,900	129,000	163,400	145,000	135,100	+ 96,560
1925	137,500	128,200	127,400	124,500	125,200	123,100	121,700	168,600	197,200	197,200	180,200	186,200	+ 58,800
1926	247,800	247,800	245,200	242,700	226,700	236,400	245,200	220,700	256,900	280,600	276,600	297,300	+111,100
1927	279,300	271,200	266,000	280,600	284,700	283,400	288,900	271,200	264,700	284,700	263,400	241,400	- 55,900
1928	234,000	235,200	232,700	224,300	214,700	223,100	220,700	198,400	227,900	245,200	237,700	220,700	- 20,700
1929	208,700	199,500	186,200	186,200	184,200	182,200	188,400	181,200	229,100	223,100	241,400	219,500	- 1,200
1930	298,700	303,200	291,700	282,000	271,200	287,500	282,000	268,600	280,600	287,500	254,300	224,300	+ 4,800
1931	180,200	278,000	278,000	271,200	271,200	291,700	295,900	303,200	298,700	300,200	250,400	213,500	- 10,800
1932	188,400	213,500	234,000	245,200	250,400	283,400	280,600	263,400	250,400	258,200	312,200	293,100	+ 79,600
1933	262,100	242,700	234,000	275,200	276,600	275,200	291,700	283,400	309,200	284,700	256,900	258,200	- 34,900
1934	262,100	256,900	253,000	259,500	258,200	259,500	267,300	276,600	283,400	254,300	201,800	166,700	- 91,500
1935	182,200	172,400	189,500	187,300	186,200	182,200	187,300	178,200	258,200	271,200	255,600	208,700	+ 42,000
1936	293,100	300,200	303,200	304,700	303,200	288,900	272,600	284,700	268,600	237,700	188,400	326,100	+117,400
1937	327,600	326,100	321,400	319,900	318,400	313,700	298,700	301,700	287,500	297,300	267,300	293,100	- 33,000
1938	288,900	306,200	304,700	301,700	342,000	338,800	340,400	358,000	338,800	310,700	309,200	293,100	0
1939	275,200	272,600	266,000	271,200	264,700	272,600	264,700	279,300	280,600	239,000	236,400	208,700	- 84,400
1940	193,900	162,200	175,200	173,400	175,200	163,100	162,200	176,200	183,200	163,100	170,500	165,800	- 42,900
1941	159,500	195,000	197,200	197,200	201,800	214,700	239,000	384,300	420,900	386,000	364,500	366,200	+200,400
1942	419,200	382,600	353,200	354,800	335,600	329,200	374,400	358,000	348,400	306,200	287,500	307,700	- 58,500
1943	329,200	329,200	334,000	332,400	324,600	319,900	334,000	345,200	351,600	310,700	268,600	245,200	- 62,500
1944	236,400	226,700	224,300	229,100	232,700	235,200	220,700	211,100	213,500	183,200	146,600	139,100	-106,100
1945	152,600	154,300	153,400	159,500	158,600	166,700	171,400	162,200	158,600	200,600	196,100	208,700	+ 69,600
1946	221,900	217,100	212,300	211,100	211,100	204,100	193,900	181,200	183,200	162,200	150,900	214,700	+ 6,000
1947	218,300	224,300	249,100	249,100	244,000	242,700	242,700	379,400	359,600	335,600	304,700	286,100	+ 71,400
1948	271,200	271,200	286,100	284,700	293,100	297,300	279,300	287,500	313,700	321,400	293,100	278,000	- 8,100
1949	276,600	271,200	262,100	263,400	272,600	280,600	271,200	313,700	350,000	330,800	312,200	338,800	+ 60,800
1950	343,600	332,400	306,200	286,100	288,900	276,600	275,200	324,600	327,600	371,100	361,200	350,000	+ 11,200
1951	278,000	263,400	258,200	253,000	263,400	262,100	247,800	284,700	293,100	263,400	237,700	239,000	-111,000
1952	232,700	230,300	220,700	204,100	192,800	184,200	177,200	186,200	156,800	139,900	101,600	79,050	-160,000
1953	63,200	57,320	57,320	54,050	54,500	60,700	54,050	43,580	26,160	43,970	67,200	58,280	- 20,770
1954	137,500	143,200	142,400	138,300	133,500	119,600	129,000	290,300	338,800	301,700	271,200	246,500	+188,220
1955	230,300	219,500	218,300	219,500	220,700	224,300	213,500	255,600	287,500	271,200	245,200	271,200	+ 24,700
1956	342,000	332,400	326,100	318,400	319,900	310,700	288,900	286,100	259,500	227,900	190,600	165,800	-105,400
1957	164,000	161,300	161,300	157,700	162,200	164,900	230,300	361,200	343,600	323,000	295,900	278,000	+112,200

18. Wichita River at Wichita Falls, Tex.

Location.--Lat 33°54'30", long 98°32'05", at bridge on Beverly Drive in Wichita Falls, Wichita County, 4 miles upstream from Fort Worth & Denver City Railway bridge and 8.4 miles upstream from Holliday Creek.

Drainage area.--3,140 sq mi, of which 2,099 sq mi is above Lake Kemp Dam.

Supplemental records available.--October 1910 to December 1911, gage heights at site 4 miles downstream. Records of yearly diversion from Lake Kickapoo for municipal use and release of sewage effluent by city of Wichita Falls for the water years 1956 and 1957 are published in reports of Geological Survey.

Gage.--Wire-weight gage. Datum of gage is 924.26 ft above mean sea level, datum of 1929. February 1900 to February 1902, staff gage (property of U. S. Department of Agriculture) at highway bridge about 4 milels downstream at different datum. October 1910 to December 1911, chain gage at site 4 miles downstream at different datum.

Average discharge.--20 years (1900-1901, 1938-57), 342 cfs (247,600 acre-ft per year).

Extremes.--1938-57: Maximum discharge observed, 17,800 cfs Oct. 3, 1941 (gage height, 24.0 ft); minimum observed, 6.0 cfs Feb. 21, 1939 (ice jam upstream).

Maximum discharge known, 50,000 cfs June 8, 1915, computed by Vernon L. Sullivan, engineer for Big Wichita River Irrigation Co.

Remarks.--Flow from 2,099 sq mi is regulated by Lake Kemp (capacity, 438,000 acre-ft) 71 miles upstream. Since completion of dam in 1923, no flow has been permitted to pass over spillway. Water is diverted from Diversion Reservoir (capacity, 40,000 acre-ft) 51 miles upstream for irrigation (42,000 acres under permit) in the vicinity of Wichita Falls. The city of Wichita Falls diverts water from Lake Kickapoo on the Little Wichita River for municipal use, and discharges sewage effluent into Wichita River below station.

Cooperation.--Records of diversions from Lake Kickapoo and releases of sewage effluent furnished by city of Wichita Falls.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	155	1,320	2,020	1,220	2,310	1,210	2,250	-
1901	2,240	943	109	41.7	33.9	24.1	19.8	3,540	547	74.7	131	440	679
1902	10.1	6.8	6.3	4.9	-	-	-	-	-	-	-	-	-
1938	-	-	-	-	-	-	176	2,023	1,697	269	262	110	-
1939	67.0	58.1	44.2	102	41.9	219	57.4	185	161	160	376	113	133
1940	65.8	59.2	46.5	43.5	44.6	53.2	182	319	212	192	292	115	136
1941	125	743	92.1	73.8	426	72.7	383	4,105	4,475	738	273	231	977
1942	4,017	1,130	265	98.3	351	91.0	1,031	354	198	117	98.5	87.5	656
1943	335	164	81.0	44.6	45.0	102	473	256	180	228	169	88.6	181
1944	74.8	55.6	71.5	62.2	77.9	72.2	64.1	76.7	71.0	110	179	72.5	82.5
1945	354	57.3	54.2	64.9	70.7	508	332	93.5	261	320	87.3	474	224
1946	401	45.9	39.7	45.2	51.3	42.3	42.4	71.3	79.7	72.8	147	384	119
1947	163	138	510	46.1	38.6	40.8	208	2,045	581	149	134	99.2	350
1948	75.6	81.5	145	43.2	89.8	76.2	69.5	494	545	219	184	79.5	175
1949	138	48.4	62.0	83.9	301	89.4	48.2	305	254	123	129	233	150
1950	234	167	415	392	186	77.1	199	999	250	825	2,791	2,619	767
1951	1,448	203	108	73.6	80.2	100	90.2	861	207	159	245	191	317
1952	181	107	55.8	50.2	66.1	62.3	104	199	91.2	189	176	159	120
1953	83	78	58.1	38.6	35	103	54.3	98.4	109	155	168	71.4	88.3
1954	762	158	51.1	47.1	42.7	59.0	149	1,428	667	105	121	99.6	310
1955	98.5	82.9	72.2	67.2	87.8	107	66.7	860	959	192	176	967	311
1956	3,355	432	128	89.1	61.0	65.1	103	341	100	133	115	104	423
1957	225	61.6	130	33.6	106	156	468	3,589	2,203	282	173	171	636

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1900	-	-	-	-	-	9,530	78,550	124,200	72,600	142,000	74,400	133,900	-
1901	137,700	56,110	6,700	2,560	1,880	1,480	1,180	217,700	32,550	4,590	8,060	26,180	496,700
1902	621	405	387	301	-	-	-	-	-	-	-	-	-
1938	-	-	-	-	-	-	10,450	124,400	101,000	16,530	16,140	6,520	-
1939	4,120	3,460	2,720	6,280	2,330	13,480	3,420	11,360	9,580	9,850	23,150	6,730	96,480
1940	4,040	3,520	2,860	2,670	2,560	3,270	10,840	19,610	12,600	11,790	17,930	6,850	98,540
1941	7,710	44,180	5,660	4,540	23,680	4,470	22,820	252,400	266,300	45,370	16,780	13,740	707,600
1942	247,000	67,240	16,280	6,050	19,490	5,600	61,330	21,760	11,780	7,210	6,050	5,200	475,000
1943	20,580	9,740	4,980	2,740	2,500	6,250	28,120	15,720	10,720	14,040	10,390	5,270	131,000
1944	4,600	3,310	4,400	3,820	4,480	4,440	3,820	4,720	4,220	6,780	11,000	4,310	59,900
1945	21,790	3,410	3,330	3,990	3,930	31,220	19,770	5,750	15,540	19,680	5,370	28,200	162,000
1946	24,660	2,730	2,440	2,780	2,850	2,600	2,520	4,380	4,740	4,480	9,040	22,860	86,080
1947	10,030	8,190	31,350	2,840	2,140	2,510	12,360	125,800	34,550	9,140	8,260	5,900	253,100
1948	4,650	4,850	8,910	2,650	5,160	4,680	4,140	30,350	32,420	13,440	11,310	4,730	127,300
1949	8,510	2,880	3,810	5,160	16,700	5,500	2,870	18,730	15,130	7,570	7,930	13,840	108,600
1950	14,400	9,930	25,490	24,100	10,310	4,740	11,820	61,400	14,860	50,740	171,600	155,900	555,300
1951	89,020	12,060	6,650	4,530	4,450	6,170	5,370	52,930	12,330	9,750	15,090	11,350	229,700
1952	11,160	6,390	3,430	3,090	3,800	3,830	6,200	12,250	5,430	11,610	10,810	9,460	87,460
1953	5,110	4,640	3,570	2,370	1,950	6,360	3,230	6,050	6,490	9,530	10,360	4,250	63,910
1954	46,850	9,370	3,140	2,890	2,370	3,630	8,890	87,820	39,710	6,470	7,460	5,930	224,500
1955	6,060	4,930	4,440	4,130	4,870	6,600	3,970	52,910	57,070	11,780	10,840	57,530	225,100

Monthly and yearly runoff, in acre-feet, of Wichita River at Wichita Falls, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	206,300	25,730	7,860	5,480	3,510	4,000	6,150	20,970	5,970	8,170	7,090	6,210	307,400
1957	13,820	3,670	8,020	2,060	5,900	9,560	27,840	220,700	131,100	17,320	10,630	10,180	460,800

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1900	(a)	-	-	-	-	-	-	-
1901	(a)	-	-	16	679	496,700	-	-
1904	(a)	-	-	-	-	-	-	-
1939	877	2,430	Mar. 26, Aug. 10	24	133	96,480	133	96,600
1940	897	2,830	Aug. 15, 1940	26	136	98,540	201	145,700
1941	927	15,500	June 4, 1941	29	977	707,600	1,354	980,600
1942	957	17,800	Oct. 3, 1941	20	656	475,000	248	179,800
1943	977	3,510	Apr. 18, 1943	26	181	131,000	149	108,100
1944	1007	720	Mar. 1, 1944	17	82.5	59,900	105	76,120
1945	1037	5,170	Sept. 30, 1945	26	224	162,000	226	163,300
1946	1057	4,490	Oct. 1, 1945	20	119	86,080	146	105,800
1947	1087	6,100	May 21, 1947	25	350	253,100	306	221,900
1948	1117	4,040	June 1, 1948	22	175	127,300	171	124,100
1949	1147	1,500	May 26, 1949	29	150	108,600	198	143,200
1950	1177	9,000	Aug. 4, 1950	44	767	555,300	847	613,200
1951	1211	6,670	May 20, 1951	49	317	229,700	197	143,000
1952	1241	1,210	May 28, 1952	15	120	87,460	110	79,800
1953	1281	2,400	July 2, 1953	23	88.3	63,910	152	110,000
1954	1341	4,710	May 13, 1954	24	310	224,500	249	180,600
1955	1391	7,200	Sept. 27, 1955	23	311	225,100	621	449,600
1956	1441	9,510	Oct. 5, 1955	42	423	307,400	128	93,060
1957	1511	7,200	May 3, 1957	22	636	460,800	-	-

a From Bull. 104 and 119 U. S. Department of Agriculture, Office of Experiment Stations.

19. Lake Kickapoo near Archer City, Tex.

Location.--Lat 33°39'45", long 98°46'45", at intake tower near left end of dam on North Fork Little Wichita River, 8.2 miles south of Mankins, and 9.2 miles northwest of Archer City, Archer County.

Drainage area.--275 sq mi.

Supplemental records available.--Records of monthly diversions for the period October 1948 to September 1957 by city of Wichita Falls are published in reports of Geological Survey.

Gage.--Staff gage prior to Dec. 22, 1946, and since Nov. 1, 1947. Datum of gage is at mean sea level, datum of 1929. Dec. 23, 1946, to Oct. 7, 1947, water-stage recorder at same site and datum.

Extremes.--1946-57: Maximum contents, 134,300 acre-ft Aug. 2, 1950 (elevation, 1,049.2 ft); minimum observed since September 1946 when appreciable storage was reached, 24,420 acre-ft Oct. 2, 1946 (elevation, 1,025.4 ft).

Remarks.--Lake is formed by a rock faced rolled earth-fill dam 6,800 ft long, containing a reinforced concrete ogee-type uncontrolled service spillway at right end of dam, 482.7 ft long. Dam completed Dec. 15, 1945, and storage began Feb. 1, 1946. Capacity, 106,000 acre-ft between elevations 1,000.92 ft (sill of two 48- x 60-in. outlet conduits) and 1,045.0 ft (crest of spillway). Maximum capacity, 220,000 acre-ft at elevation, 1,060 ft with 2-ft freeboard. No dead storage. Water is used as municipal supply for city of Wichita Falls. Accumulated storage prior to Sept. 13, 1946, was less than 2,000 acre-ft. Contents computed from gage readings at 8 a.m.

Cooperation.--Capacity curve, record of lake elevations and diversions for municipal use, furnished by city of Wichita Falls.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1946	-	-	-	-	1,000	-	1,500	-	1,300	-	1,980	24,600	-
1947	25,340	30,640	41,840	41,180	40,190	39,200	40,520	66,050	64,250	62,900	59,420	56,880	+32,280
1948	56,060	56,060	57,700	56,470	57,700	57,290	54,420	53,210	60,710	58,560	55,240	51,650	- 5,230
1949	49,330	47,480	46,000	47,850	50,090	50,090	48,220	56,060	64,700	60,710	58,560	61,140	+ 9,490
1950	62,450	60,280	59,420	58,990	57,700	54,010	56,470	75,460	74,940	107,300	107,300	106,600	+45,460
1951	102,200	98,480	96,650	94,820	92,420	91,830	88,290	92,420	90,650	84,850	78,150	77,050	-29,550
1952	74,420	71,820	69,860	68,900	66,980	64,250	62,900	63,800	58,990	55,650	51,260	46,520	-30,310
1953	43,900	42,500	42,170	40,520	39,200	42,500	41,180	40,190	35,660	40,190	40,850	37,700	- 9,040
1954	65,600	66,050	64,700	63,800	62,000	59,420	61,140	80,350	83,710	76,500	70,820	66,980	+29,280
1955	62,900	61,140	61,140	61,570	62,000	61,570	61,140	75,460	101,600	96,650	91,240	109,200	+42,200
1956	103,500	100,300	97,870	96,040	94,820	91,830	87,700	90,650	84,850	79,250	72,340	67,460	-41,740
1957	68,420	66,500	65,150	63,800	65,600	68,420	95,430	107,300	105,400	101,000	94,820	91,830	+24,370

20. Little Wichita River near Archer City, Tex.

Location.--Lat 33°40', long 98°36', at bridge on State Highway 79, 1.5 miles downstream from confluence of North and Middle Forks and 4.8 miles north of Archer City, Archer County.

Drainage area.--481 sq mi.

Supplemental records available.--Records of chemical analyses and water temperatures for period December 1952 to December 1955, and records of diversions from Lake Kickapoo for the period October 1948 to September 1957 are published in reports of Geological Survey.

Gage.--Staff gage. Datum of gage is 934.72 ft above mean sea level, datum of 1929. Prior to Aug. 17, 1954, water-stage recorder and concrete control at same site and datum.

Average discharge.--23 years (1932-55), 82.6 cfs (59,800 acre-ft per year).

Extremes.--1932-56: Maximum discharge, 17,900 cfs Oct. 31, 1941 (gage height, 26.18 ft); no flow at times during each year. Flood of June 1930 reached a stage of about 28 ft, from information by State Highway Department.

Remarks.--Since the flood of 1930, an additional bridge opening has been provided. Some regulation by Lake Kickapoo on North Fork. (See elsewhere in this report.) Diversion from Lake Kickapoo by city of Wichita Falls for municipal use.

Cooperation.--Records of diversions for municipal use furnished by city of Wichita Falls.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	-	-	-	-	80.1	207	1.61	124	-
1933	0.47	0	411	2.07	0.13	89.5	46.1	798	.67	6.17	93.1	85.9	130
1934	.14	8.92	20.6	8.36	91.2	219	40.1	1.41	8.66	0	2.17	108	42.0
1935	8.77	424	1.45	0	.73	238	24.8	669	480	130	1.94	99.9	174
1936	64.0	8.06	2.17	.01	0	0	.33	196	44.6	34.4	0	1,659	165
1937	47.5	.41	.24	.10	.10	163	67.4	18.7	39.6	.34	47.9	2.47	32.6
1938	91.9	9.55	9.10	92.4	290	254	21.1	144	371	11.3	.59	0	106
1939	0	16.6	.03	43.2	4.40	20.0	11.5	94.1	45.1	48.0	103	1.26	32.7
1940	111	3.08	6.60	.02	24.8	.05	123	251	297	124	81.5	0	85.3
1941	0	101	28.8	1.24	234	8.17	217	730	786	87.0	167	138	207
1942	1,417	397	76.2	.06	.10	1.35	1,142	6.73	46.1	.24	4.18	14.9	259
1943	255	139	43.5	.99	.10	58.6	202	35.4	48.9	15.5	0	0	66.8
1944	5.76	0	6.03	15.3	69.0	17.9	4.56	19.4	69.2	8.58	13.0	6.04	19.3
1945	143	14.8	6.23	10.6	60.9	341	286	3.07	8.22	283	4.67	92.6	105
1946	143	0	0	.40	2.48	3.07	1.69	.84	1.15	.21	1.97	125	23.3
1947	38.3	106	168	.13	0	3.31	58.3	257	.30	31.3	.01	.37	55.9
1948	55.7	28.7	31.7	20.6	10.9	3.95	2.95	27.5	108	36.9	13.8	3.39	28.7
1949	.36	.27	6.22	9.48	18.4	7.08	2.59	190	153	.56	5.73	48.8	36.9
1950	56.4	.04	3.15	5.89	.12	0	51.2	150	31.4	282	1,337	193	178
1951	1.95	.57	.14	.16	.76	.30	5.50	115	67.1	13.0	3.52	12.6	18.5
1952	3.45	4.36	0	.89	.57	3.50	1.56	28.2	.48	.49	6.17	8.07	4.85
1953	0	1.96	5.00	0	0	13.8	3.07	6.06	0	17.3	11.8	1.76	5.14
1954	314	6.69	.36	0	0	.10	74.5	249	65.5	.24	1.14	0	60.0
1955	6.77	1.42	4.87	7.13	17.0	9.85	24.1	83.5	110	2.54	.26	512	64.3
1956	297	0	0	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1932	-	-	-	-	-	-	-	-	4,770	12,720	99	7,400	-
1933	29	0	25,290	127	7.3	5,500	2,740	49,090	40	379	5,730	5,110	94,040
1934	8.5	531	1,270	514	5,070	13,460	2,390	86	515	0	134	6,440	30,420
1935	539	25,210	89	.2	41	14,600	1,480	41,160	28,570	8,010	119	5,950	125,800
1936	3,930	479	133	.4	0	0	20	12,060	2,660	2,110	0	98,720	120,100
1937	2,920	24	15	6.1	5.6	9,990	4,010	1,150	2,360	21	2,950	147	23,600
1938	5,650	568	560	5,680	16,090	15,600	1,250	8,850	22,080	696	36	0	77,060
1939	0	985	1.8	2,660	245	1,230	684	5,790	2,690	2,950	6,340	75	23,650
1940	6,830	183	406	1.2	1,420	3.0	7,320	15,440	17,660	7,630	5,010	0	61,900
1941	0	6,020	1,770	76	13,010	502	12,900	44,870	46,790	5,350	10,270	8,220	149,800
1942	87,100	23,620	4,680	4.0	5.6	83	67,980	414	2,740	14	257	885	187,800
1943	15,670	8,270	2,670	61	5.8	3,600	12,020	2,180	2,910	956	0	0	48,340
1944	354	0	371	943	3,970	1,100	271	1,190	4,120	528	802	359	14,010
1945	8,800	880	383	650	3,380	20,990	17,050	189	489	17,380	287	5,510	75,990
1946	8,760	0	0	25	138	189	101	52	68	13	121	7,420	16,890
1947	2,360	6,290	10,350	7.7	0	203	3,470	15,820	18	1,920	.8	22	40,460
1948	3,430	1,710	1,950	1,270	628	243	175	1,690	6,420	2,270	850	202	20,840
1949	22	16	382	583	1,020	436	154	11,710	9,110	34	352	2,900	26,720
1950	3,470	2.4	193	362	6.9	0	3,050	9,230	1,870	17,360	82,180	11,480	129,200
1951	120	34	8.7	9.7	42	19	327	7,080	3,990	801	216	747	13,390
1952	212	259	0	55	33	215	93	1,730	29	30	380	480	3,520
1953	0	117	307	0	0	851	183	372	0	1,060	723	105	3,720
1954	19,280	398	22	0	0	6.4	4,430	15,310	3,900	15	70	0	43,430
1955	416	84	300	438	943	606	1,430	5,130	6,570	156	16	30,460	46,550
1956	18,230	0	0	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second, of Little Wichita River near Archer City, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1932	827	-	-	-	-	-	-	-
1933	827	7,840	May 26, 1933	0	130	94,040	97.4	70,530
1934	827	2,510	Mar. 3, 1934	0	42.0	30,420	75.2	54,450
1935	827	5,940	May 6, 1935	0	174	125,800	144	104,500
1936	807	13,000	Sept. 17, 1936	0	165	120,100	163	118,500
1937	827	1,470	Mar. 14 or 15	0	32.6	23,600	37.9	27,420
1938	857	2,780	Mar. 30, 1938	0	106	77,060	98.5	71,270
1939	877	1,660	May 17, 1939	0	32.7	23,650	41.5	30,080
1940	897	2,610	June 17, 1940	0	85.3	61,900	85.8	62,270
1941	927	4,350	June 11, 1941	0	207	149,800	356	257,400
1942	957	17,900	Oct. 31, 1941	0	259	187,800	137	98,990
1943	977	2,620	Oct. 19, 1942	0	66.8	48,340	31.0	22,460
1944	1007	1,060	Feb. 29, 1944	0	19.3	14,010	32.2	23,350
1945	1037	2,030	July 10, 1945	0	105	75,990	103	74,680
1946	1057	2,150	Oct. 1, 1945	0	23.3	16,890	37.5	27,130
1947	1087	2,680	Dec. 12, 1946	0	55.9	40,460	39.4	28,550
1948	1117	1,140	Oct. 26, 1947	0	28.7	20,840	19.5	14,170
1949	1147	1,380	June 26, 1949	0	36.9	26,720	41.4	29,960
1950	1177	15,100	Aug. 2, 1950	0	178	129,200	174	125,700
1951	1211	1,330	May 20, 1951	0	18.5	13,390	18.9	13,700
1952	1241	426	May 28, 1952	0	4.85	3,520	4.78	3,470
1953	1281	450	July 24, 1953	0	5.14	3,720	31.8	22,990
1954	1341	4,400	Oct. 26, 1953	0	60.0	43,430	33.9	24,530
1955	1391	9,600	Sept. 26, 1955	0	64.3	46,550	88.4	63,980
1956	1441	-	-	0	-	-	-	-

21. Little Wichita River near Henrietta, Tex.

Location.--Lat 33°50'00", long 98°12'30", at bridge on State Highway 148, 1.5 miles northwest of Henrietta, Clay County, 4 miles upstream from Turkey Creek, and 5 miles upstream from Dry Fork Little Wichita River.

Drainage area.--1,037 sq mi.

Supplemental records available.--Records of chemical analyses and water temperatures for period December 1952 to December 1955 are published in reports of Geological Survey.

Gage.--Water-stage recorder and concrete control. Datum of gage is 831.57 ft above mean sea level, datum of 1929. Prior to June 26, 1953, wire-weight gage at same site and datum.

Extremes.--1953-57: Maximum discharge, 6,390 cfs May 2, 1957 (gage height, 18.36 ft); no flow at times.
Flood of 1908 reached a stage of about 21 ft, from information by State Highway Department.

Remarks.--Some regulation by Lake Kickapoo on North Fork. (See elsewhere in this report.) City of Henrietta diverts water from gage pool for municipal use.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	-	-	-	0	0	35.7	0	15.5	0	42.6	16.5	0.40	-
1954	1,050	57.6	5.42	0	0	0	118	904	272	4.87	0	0	204
1955	.75	0	4.83	65.3	28.6	15.5	49.2	273	336	13.8	.09	656	114
1956	649	1.38	0	5.97	.26	0	0	175	48.5	0	2.13	.77	74.6
1957	77.9	33.8	28.9	.003	43.4	67.4	842	3,280	693	6.63	.04	6.83	427

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	-	-	-	0	0	2,200	0	956	0	2,620	1,010	24	-
1954	64,580	3,430	333	0	0	0	7,040	55,600	16,210	299	0	0	147,500
1955	46	0	297	402	1,590	955	2,930	16,760	19,990	849	5.4	39,020	82,840
1956	39,920	82	0	367	15	0	0	10,740	2,890	0	131	46	54,190
1957	4,790	2,010	1,780	.2	2,410	4,150	50,100	201,600	41,210	408	2.2	406	308,900

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1953	1281	623	July 25, 1953	0	-	-	104	75,150
1954	1341	5,890	Oct. 26, 1953	0	204	147,500	110	79,490
1955	1391	5,430	Sept. 28, 1955	0	114	82,840	169	122,500
1956	1441	4,080	Oct. 1, 1955	0	74.6	54,190	31.4	22,770
1957	1511	6,390	May 2, 1957	0	427	308,900	-	-

22. Red River near Terral, Okla.

Location.--Lat 33°52'50", long 97°56'15", at bridge on U. S. Highway 81, a quarter of a mile downstream from Chicago, Rock Island & Pacific Railway bridge, 1.2 miles south of Terral, Jefferson County, 3.2 miles downstream from Little Wichita River, and at mile 872.

Drainage area.--28,723 sq mi, of which 5,936 sq mi is probably noncontributing.

Gage.--Water-stage recorder and wire-weight gage. Datum of gage is 770.31 ft above mean sea level, datum of 1929. Prior to Jan. 12, 1939, wire-weight gage at same site and datum.

Average discharge.--19 years (1938-57), 2,710 cfs (1,962,000 acre-ft per year).

Extremes.--1938-57: Maximum discharge, 197,000 cfs June 8, 1941 (gage height, 28.12 ft); minimum, 43 cfs Mar. 15, 1939.
Maximum stage known, that of June 8, 1941. Flood of May 19, 1935, reached a stage of 27.2 ft; floods of 1891 and May 1, 1908, are reported to have reached about the same stage.

Remarks.--Some regulation by Lake Kemp on Wichita River in Baylor County, Tex., Lake Kickapoo on North Fork Little Wichita River in Archer County, Tex., Lake Altus on North Fork Red River in Kiowa County, Okla., Lake Lawtonka and Lake Thomas in Cache Creek Basin in Comanche County, Okla. Principal diversions are from Wichita River for irrigation in vicinity of Wichita Falls, Tex. and from North Fork Red River for irrigation in vicinity of Altus, Okla. Many small diversions for irrigation upstream from gage. Amount of diversions or acreage irrigated not known. The city of Wichita Falls diverts water from Lake Kickapoo on North Fork Little Wichita River for municipal use and returns sewage effluent to Wichita River.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	-	-	-	795	5,020	3,870	2,233	10,570	8,326	1,064	694	375	-
1939	162	230	91.2	1,382	188	839	474	1,013	3,917	1,042	1,400	159	911
1940	391	102	107	76.5	188	66.1	769	2,201	1,729	2,361	2,237	1,161	953
1941	119	2,695	947	495	3,156	577	2,710	28,360	37,540	4,020	2,465	2,497	7,118
1942	22,890	9,221	2,375	1,241	1,059	1,027	16,520	3,773	3,309	551	1,392	3,477	5,578
1943	6,614	3,130	1,490	1,216	636	847	3,974	10,720	4,158	902	228	187	2,860
1944	167	131	354	555	719	1,165	1,100	713	3,967	942	569	847	931
1945	2,511	785	771	997	1,316	7,736	7,318	1,451	3,207	4,272	1,230	4,304	2,995
1946	6,341	427	390	1,085	1,283	589	458	1,197	2,450	958	263	2,566	1,503
1947	2,420	1,298	3,188	462	297	311	6,116	22,380	5,197	885	278	163	3,614
1948	366	426	1,424	315	1,008	2,280	802	2,089	3,477	1,390	645	127	1,197
1949	168	200	139	399	3,456	778	400	8,055	5,877	596	343	1,856	1,840
1950	1,192	402	547	651	1,529	295	680	7,453	3,318	8,077	9,267	7,906	3,463
1951	2,289	495	452	430	807	602	557	19,190	11,610	3,413	768	630	3,460
1952	614	585	244	310	273	385	1,199	5,048	1,441	663	222	192	936
1953	108	132	164	109	136	541	819	407	1,000	1,309	1,325	192	523
1954	7,994	1,918	966	300	224	188	904	14,520	3,497	291	269	142	2,632
1955	138	112	133	154	216	321	181	13,670	7,853	1,532	746	3,300	2,366
1956	15,100	1,191	494	414	465	240	237	4,100	1,448	636	184	109	2,074
1957	1,211	688	251	106	319	632	12,210	43,580	16,270	1,272	717	653	6,533

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	-	-	-	48,900	279,000	238,000	132,900	649,700	495,500	65,390	42,680	22,310	-
1939	9,950	13,680	5,610	84,990	10,420	51,560	28,190	62,290	233,100	64,090	86,070	9,460	659,400
1940	24,060	6,100	6,600	4,710	10,810	4,060	45,770	135,300	102,900	145,200	137,600	69,090	692,200
1941	7,320	160,400	58,220	30,470	175,300	35,460	161,300	1,744,000	2,234,000	247,200	151,500	148,600	5,154,000
1942	1,407,000	548,700	146,000	76,280	58,800	63,160	982,800	232,000	196,900	33,860	85,560	206,900	4,038,000
1943	406,700	186,300	91,600	74,740	35,350	52,060	236,500	659,200	247,400	55,480	14,020	11,110	2,070,000
1944	10,250	7,790	21,770	34,110	41,360	71,620	65,500	43,810	236,000	57,900	34,990	50,390	675,500
1945	154,400	46,730	47,410	61,310	73,080	475,700	435,500	89,210	190,800	262,700	75,650	256,100	2,169,000
1946	389,900	25,430	24,000	66,710	71,240	36,190	27,250	73,600	145,800	58,920	16,150	152,700	1,088,000
1947	148,800	77,250	196,100	28,400	16,470	19,120	363,900	1,376,000	309,300	54,430	17,070	9,710	2,617,000
1948	22,510	25,320	87,540	19,340	57,990	140,200	47,750	128,500	206,900	85,470	39,660	7,560	868,700
1949	10,320	11,920	8,520	24,520	192,000	47,810	23,780	495,300	349,700	36,620	21,070	110,400	1,332,000
1950	73,280	23,930	33,630	40,010	84,890	18,140	40,440	458,300	197,400	496,600	569,800	470,500	2,507,000
1951	140,700	29,480	27,800	26,460	44,820	37,010	33,130	1,180,000	691,100	209,800	47,240	37,490	2,505,000
1952	37,760	34,790	14,980	19,080	15,690	23,670	71,370	310,400	85,120	40,760	13,660	11,400	679,300
1953	6,650	7,880	10,110	6,680	7,550	33,280	48,750	25,000	59,520	80,510	81,480	11,440	378,800
1954	491,500	114,100	59,380	18,430	12,440	11,530	53,780	893,000	208,100	17,890	16,540	8,710	1,905,000
1955	8,490	6,690	8,190	9,470	12,000	19,720	10,770	840,300	467,300	94,190	39,740	196,300	1,713,000
1956	928,400	70,880	30,350	25,440	26,750	14,780	14,130	252,100	86,140	39,080	11,330	6,510	1,506,000
1957	74,460	40,930	15,410	6,500	17,700	38,880	726,400	2,679,000	968,400	78,200	44,100	38,860	4,729,000

Yearly discharge, in cubic feet per second, of Red River near Terral, Okla.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1938	857	-	-	-	-	-	2,768	2,004,000
1939	877	43,000	June 23, 1939	56	911	659,400	921	666,900
1940	897	22,400	July 2, 1940	46	953	692,200	1,214	881,400
1941	927	197,000	June 8, 1941	71	7,118	5,154,000	9,709	7,030,000
1942	957	91,000	Oct. 31, 1941	284	5,578	4,038,000	3,620	2,621,000
1943	977	43,500	May 29, 1943	114	2,860	2,070,000	1,969	1,426,000
1944	1007	38,700	June 16, 1944	47	931	675,500	1,218	884,200
1945	1037	56,600	Sept. 30, 1945	135	2,995	2,169,000	3,259	2,359,000
1946	1057	66,200	Oct. 1, 1945	138	1,503	1,088,000	1,479	1,071,000
1947	1087	82,000	May 19, 1947	88	3,614	2,617,000	3,218	2,330,000
1948	1117	18,000	June 25, 1948	67	1,197	868,700	1,052	764,100
1949	1147	33,700	May 21, 1949	62	1,840	1,332,000	1,978	1,432,000
1950	1177	53,800	May 12, 1950	140	3,463	2,507,000	3,556	2,574,000
1951	1211	164,000	May 19, 1951	243	3,460	2,505,000	3,308	2,395,000
1952	1241	30,300	May 19, 1952	130	936	679,300	849	616,400
1953	1281	13,000	Aug. 20, 1953	72	523	378,800	1,410	1,019,000
1954	1341	85,800	May 14, 1954	72	2,632	1,905,000	1,746	1,264,000
1955	1391	109,000	May 21, 1955	72	2,366	1,713,000	3,756	2,719,000
1956	1441	111,000	Oct. 7, 1955	72	2,074	1,506,000	836	607,100
1957	1511	110,000	June 4, 1957	50	6,533	4,729,000	-	-

23. Red River near Gainesville, Tex.

Location.--Lat 33°44', long 97°10', in SW¼ sec. 36, T. 9 S., R. 1 E., at bridge on U. S. Highway 77, a quarter of a mile downstream from Gulf, Colorado & Santa Fe Railway bridge, 5 miles downstream from Fish Creek, 7 miles north of Gainesville, and at mile 791.5.

Drainage area.--30,782 sq mi, of which 5,936 sq mi is probably noncontributing.

Supplemental records available.--Records of chemical analyses for the period May 1944 to September 1947, and chemical analyses and water temperatures for the period September 1952 to September 1957 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 627.91 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Jan. 17, 1939, wire-weight gage at same site and datum.

Average discharge.--21 years (1936-57), 3,350 cfs (2,425,000 acre-ft per year).

Extremes.--1936-57: Maximum discharge, 168,000 cfs June 9, 1941; maximum gage height, 26.53 ft May 21, 1951; minimum discharge observed, 48 cfs Jan. 27, 1940 (result of discharge measurement during period of ice effect).

Remarks.--Flow slightly regulated by Lake Kemp, since 1943 by Lake Altus, and since 1946 by Lake Kickapoo.

Cooperation.--Records collected and computed by Corps of Engineers and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-,	-	-	-	-	4,301	411	217	16,360	-
1937	4,496	486	360	427	306	1,495	1,954	1,236	9,366	1,050	2,500	2,300	2,172
1938	3,000	528	579	1,520	7,956	6,227	4,139	12,640	10,610	1,284	725	421	4,107
1939	203	271	129	1,365	293	880	956	949	3,985	1,341	1,499	228	1,010
1940	344	172	125	82.4	238	90.5	1,367	3,834	3,541	4,116	3,213	1,292	1,541
1941	183	3,632	1,449	721	5,178	1,144	4,671	29,450	43,510	5,302	2,310	3,189	8,362
1942	31,140	13,960	2,917	1,431	1,305	1,462	26,420	6,782	4,643	1,008	1,571	3,788	8,045
1943	6,632	3,703	1,630	1,511	838	1,331	4,737	13,530	5,772	1,033	264	218	3,453
1944	345	161	384	644	1,427	2,173	1,453	1,070	4,270	859	567	577	1,154
1945	2,871	1,031	1,039	1,119	2,227	13,740	11,030	2,473	4,037	5,008	1,702	3,953	4,193
1946	11,280	566	485	2,906	3,096	1,472	981	1,598	3,976	1,081	388	2,258	2,508
1947	2,494	1,604	5,423	626	398	432	6,358	23,610	5,528	1,076	309	199	4,041
1948	344	649	1,441	520	1,239	2,883	811	2,330	4,389	3,224	702	170	1,561
1949	165	192	153	386	3,669	1,097	572	8,449	6,629	874	399	2,644	2,085
1950	1,780	673	642	961	1,773	422	814	8,953	3,932	9,857	12,940	11,590	4,554
1951	2,837	689	569	562	922	943	629	19,600	18,060	4,797	942	800	4,298
1952	618	965	315	367	340	488	1,638	6,036	2,123	656	214	164	1,164
1953	119	142	179	126	151	804	1,047	754	1,164	1,626	1,408	242	651
1954	8,037	2,462	1,105	365	263	204	1,079	17,750	4,607	379	236	196	3,090
1955	181	137	181	200	245	437	248	14,420	10,010	1,765	732	2,857	2,630
1956	15,800	1,407	621	472	544	297	256	3,297	2,147	734	185	108	2,177
1957	1,179	834	655	174	496	897	13,130	47,780	20,900	1,606	941	718	7,484

Monthly and yearly runoff, in acre-feet, of Red River near Gainesville, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	-	255,900	25,290	13,320	973,500	-
1937	276,400	28,900	22,130	26,240	17,010	91,900	116,300	75,980	557,300	64,560	153,700	141,400	1,572,000
1938	185,500	31,430	35,600	93,460	441,900	382,900	246,300	777,200	631,300	78,930	44,610	25,050	2,973,000
1939	12,470	16,120	7,950	83,940	16,260	54,100	56,900	58,360	237,100	82,430	92,200	13,550	731,400
1940	21,150	10,230	7,690	5,070	13,680	5,560	81,360	235,700	210,700	253,100	197,600	76,870	1,119,000
1941	11,230	216,100	89,110	44,310	287,600	70,310	278,000	1,811,000	2,589,000	326,000	142,100	189,700	6,054,000
1942	1,915,000	830,500	179,400	87,990	72,480	89,920	1,572,000	417,000	276,300	62,010	96,620	225,400	5,825,000
1943	407,800	220,300	100,200	92,890	46,570	81,820	281,900	832,200	343,500	63,540	16,250	12,980	2,500,000
1944	21,240	9,570	23,590	39,570	82,060	133,600	86,480	65,780	254,100	52,790	34,880	34,320	838,000
1945	176,500	61,340	63,860	68,780	123,700	844,700	656,600	152,100	240,200	308,000	104,600	235,200	3,036,000
1946	693,400	33,650	29,840	178,700	171,900	90,500	58,350	98,260	236,600	66,450	23,870	134,400	1,816,000
1947	153,300	95,440	333,400	38,470	22,100	26,560	378,200	1,452,000	328,900	66,140	18,980	11,840	2,925,000
1948	21,170	38,630	88,630	31,970	71,280	177,200	48,230	143,200	261,200	198,200	43,170	10,100	1,133,000
1949	10,130	11,440	9,410	23,730	203,800	67,440	34,050	519,500	394,500	53,760	24,520	157,300	1,510,000
1950	109,400	40,050	39,490	59,080	98,460	25,950	48,450	550,500	234,000	606,100	795,500	689,900	3,297,000
1951	174,500	40,990	35,010	34,550	51,190	57,980	37,440	1,205,000	1,075,000	294,900	57,950	47,610	3,112,000
1952	37,980	57,440	19,360	22,540	19,560	29,990	97,470	371,200	126,300	40,350	13,190	9,740	845,100
1953	7,310	8,430	10,980	7,730	8,370	49,460	62,290	46,390	69,250	99,960	86,550	14,420	471,100
1954	494,200	146,500	67,920	22,430	14,600	12,520	64,230	1,091,000	274,100	23,320	14,540	11,640	2,237,000
1955	11,110	8,140	11,130	12,310	13,610	26,840	14,760	886,800	595,500	108,500	45,020	170,000	1,904,000
1956	971,200	83,730	38,170	29,050	31,280	18,270	15,230	202,700	127,800	45,150	11,360	6,440	1,580,000
1957	72,510	49,600	40,300	10,700	27,540	55,150	781,600	2,938,000	1,244,000	98,750	57,860	42,730	5,419,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1936	877	67,900	Sept. 28, 1936	148	-	-	-	-
1937	877	54,400	June 10, 1937	205	2,172	1,572,000	2,066	1,496,000
1938	877	67,600	May 24, 1938	220	4,107	2,973,000	3,810	2,758,000
1939	877	38,900	June 24, 1939	100	1,010	731,400	1,014	733,900
1940	897	37,500	July 3, 1940	a48	1,541	1,119,000	1,923	1,396,000
1941	927	168,000	June 9, 1941	100	8,362	6,054,000	11,970	8,663,000
1942	957	156,000	Oct. 4, 1941	436	8,045	5,825,000	5,011	3,628,000
1943	977	47,200	May 12, 1943	142	3,453	2,500,000	2,522	1,826,000
1944	1007	34,000	June 16, 1944	134	1,154	838,000	1,495	1,085,000
1945	1037	b52,000	Mar. 15, 1945	197	4,193	3,036,000	4,822	3,491,000
1946	1057	83,500	Oct. 2, 1945	179	2,508	1,816,000	2,267	1,641,000
1947	1087	71,000	May 20, 1947	131	4,041	2,925,000	3,442	2,492,000
1948	1117	24,400	June 26, 1948	102	1,561	1,133,000	1,399	1,016,000
1949	1147	44,000	May 22, 1949	85	2,085	1,510,000	2,303	1,667,000
1950	1177	51,200	May 13, 1950	271	4,554	3,297,000	4,639	3,358,000
1951	1211	146,000	May 21, 1951	350	4,298	3,112,000	4,111	2,976,000
1952	1241	32,300	May 20, 1952	144	1,164	845,100	1,043	757,100
1953	1281	9,820	Aug. 22, 1953	94	651	471,100	1,593	1,153,000
1954	1341	74,200	May 15, 1954	90	3,090	2,237,000	2,153	1,559,000
1955	1391	96,900	May 22, 1955	93	2,630	1,904,000	4,098	2,966,000
1956	1441	106,000	Oct. 8, 1955	86	2,177	1,580,000	895	649,700
1957	1511	102,000	June 5, 1957	97	7,484	5,419,000	-	-

a Minimum daily determined; occurred during period of ice effect.
b Maximum peak discharge; maximum discharge during the year, 52,500 cfs at 12 p.m. Sept. 30, stage rising.

24. Lake Texoma near Denison, Tex.

Location.--Lat 33°49', long 96°34', at Denison Dam on Red River, in NE¼ sec. 33, T. 8 S., R. 7 E., Indian Meridian, 1¼ miles upstream from Shawnee Creek, 1¾ miles upstream from Sand Creek, 4 miles northwest of Denison, Grayson County, and at mile 725.9.

Drainage area.--39,719 sq mi, of which 5,936 sq mi is probably noncontributing.

Supplemental records available.--Records of chemical analyses and water temperatures for the period May 1944 to September 1957 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Mar. 30, 1944, staff or wire-weight gage at same site and datum. Prior to Oct. 1, 1948, supplementary staff gage in Cumberland pool at same datum.

Extremes.--1942-57: Maximum contents, 5,991,300 acre-ft June 5, 1957 (elevation, 643.18 ft); minimum since power-pool stage was first reached, 1,607,400 acre-ft Mar. 1, 2, 1957.

Remarks.--Reservoir is formed by a rolled earth-fill dam. Flow was diverted through conduits July 27, 1942; regulated storage began Oct. 31, 1943; maximum power-pool stage was first reached Mar. 15, 1945. Capacity, 5,530,300 acre-ft at elevation 640.0 ft (crest of spillway) and 2,836,300 acre-ft at elevation 617.0 ft (maximum power pool). Dead and sediment storage, 1,106,000 acre-ft at elevation 590.0 ft in Denison pool. When contents are below 2,250,100 acre-ft, the reservoir is divided into two pools by protective levees around the Cumberland oilfield on the Washita River arm with the bottom of the outlet channel for the upper pool (known as Cumberland pool) at elevation 610 ft. At higher elevations the two pools are considered as being at a common level, contents being computed from the gage in the Denison pool. Reservoir is used principally for flood control and power development. Figures given herein represent total contents of both pools except for 22,800 acre-ft dead and sediment storage in Cumberland pool.

Cooperation.--Records furnished by Corps of Engineers.

Contents, in thousands of acre-feet, on last day of month, of Lake Texoma near Denison, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1942	-	-	-	-	-	-	-	-	-	4.93	8.71	8.99	-
1943	23.35	9.75	19.66	9.43	8.57	19.14	12.87	111.3	10.55	8.15	4.32	7.38	-1.61
1944	3.73	17.74	46.46	101.5	323.4	583.9	755.9	1,073	1,434	1,497	1,501	1,514	+1,506.6
1945	1,728	1,831	1,939	2,037	2,431	3,806	3,925	3,034	3,580	3,096	3,041	3,299	+1,785
1946	2,831	2,781	2,782	3,005	3,016	3,001	2,964	3,092	3,043	2,994	2,957	2,990	-309
1947	2,948	2,986	3,067	2,852	2,664	2,614	3,091	3,852	3,052	2,918	2,798	2,658	-332
1948	2,574.8	2,552.5	2,703.2	2,616.9	2,730	2,937.3	2,816	3,104.8	3,194.7	2,999.1	2,871.4	2,629.8	-28.2
1949	2,497.3	2,361.6	2,252.2	2,180.6	2,460.4	2,496.5	2,480.9	2,968.6	2,956.6	2,888.6	2,745.8	2,818.4	+188.6
1950	2,841.8	2,711.5	2,598.7	2,628.1	2,706.4	2,636.7	2,586.9	3,143.8	3,004	3,478.5	2,950.2	3,163.2	+344.8
1951	2,886.8	2,742.3	2,608.8	2,503.9	2,460.4	2,455.6	2,399.2	3,138	3,350	2,885	2,720.3	2,611.3	-551.9
1952	2,563.4	2,529.3	2,436.8	2,308.4	2,249.4	2,223.5	2,354.4	2,752.9	2,737.9	2,609.6	2,378.4	2,252.9	-358.4
1953	2,066.2	1,993.8	1,934.4	1,858.7	1,805.1	1,890.9	2,004.3	2,073.5	2,022.8	2,110	2,024.1	1,882	-370.9
1954	2,360.8	2,542.4	2,527.6	2,465.3	2,357.6	2,212.3	2,170.9	3,071.8	2,883.2	2,570.1	2,342.2	2,179.9	+297.9
1955	2,060.8	1,937.8	1,849	1,867.9	1,867.9	1,904.4	1,907	2,861.1	2,845.3	2,739.1	2,564.7	2,694.9	+515.0
1956	2,789.5	2,560.5	2,343.1	2,151.2	1,992.7	1,878	1,826.2	1,921.4	1,966.3	1,879.9	1,759	1,636.4	-1,058.5
1957	1,676.9	1,721.3	1,736.2	1,626.7	1,608.5	1,642.7	3,167.4	5,678	3,559.4	2,937.4	2,827.3	2,886.2	+1,249.8

25. Red River near Colbert, Okla. 1/

Location. --Lat 33°49', long 96°31', in E½ sec. 36, T. 8 S., R. 7 E., at old highway toll bridge, 1.3 miles downstream from Sand Creek, 2 miles south of Colbert, 2.9 miles downstream from Denison Dam, and at mile 723.0.

Drainage area. --39,777 sq mi, of which 5,936 sq mi is probably noncontributing.

Supplemental records available. --Gage-height records collected at various sites in this vicinity 1892-93, 1906-28, 1931-49 are contained in reports of U. S. Weather Bureau.

Gage. --Water-stage recorder. Datum of gage is 497.36 ft above mean sea level, datum of 1929. Oct. 9, 1923, to Sept. 30, 1931, chain gage at present site at datum 9.49 ft higher and Oct. 1, 1931, to Sept. 24, 1934, at datum 9.71 ft higher than present datum. Sept. 25, 1934, to July 28, 1942, water-stage recorder at site 0.6 mile upstream at datum 10.00 ft higher than present datum.

Average discharge. --34 years (1923-57), 5,358 cfs (3,879,000 acre-ft per year).

Extremes. --1923-57: Maximum discharge, 201,000 cfs May 21, 1935; maximum gage height, 32.0 ft Apr. 25, 1942, adjusted to present site and datum; minimum daily discharge, 12 cfs Jan. 10, 1944.
Maximum stage known, 45.5 ft May 26, 1908, present site and datum, from records of U. S. Weather Bureau.

Remarks. --Flow regulated since Oct. 31, 1943, by Lake Texoma. 2.9 miles above station. (See preceding page.)

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	34,900	14,800	9,880	2,820	1,720	4,960	9,590	6,230	2,670	1,680	1,340	1,110	7,680
1925	1,100	737	682	741	745	580	5,090	7,670	1,220	575	3,990	16,800	3,320
1926	6,160	2,830	759	1,580	1,020	1,940	6,000	5,900	3,390	7,370	9,030	5,020	4,280
1927	26,700	2,540	5,100	4,490	4,740	4,590	26,300	4,070	5,780	8,570	4,290	1,770	8,260
1928	6,190	1,300	2,780	2,200	2,840	1,710	6,310	16,600	19,700	8,100	3,020	891	5,980
1929	457	2,140	1,440	1,650	1,260	3,350	4,680	17,700	9,810	3,530	838	9,570	4,710
1930	2,290	2,500	1,710	1,680	5,170	2,140	1,390	21,900	8,660	1,330	581	939	4,190
1931	9,790	1,740	8,100	1,460	5,620	4,400	3,760	4,630	1,540	3,340	850	349	3,810
1932	4,820	5,000	4,720	13,600	11,800	2,970	3,070	5,830	15,400	12,700	2,580	3,560	7,150
1933	1,370	639	5,250	2,870	1,190	5,600	3,260	21,700	2,890	1,660	5,030	5,490	4,790
1934	1,717	1,052	1,187	1,843	1,807	5,011	3,011	3,749	2,236	454	210	5,354	2,300
1935	1,347	3,230	1,155	831	649	6,225	3,124	43,750	22,400	6,005	2,411	5,742	8,127
1936	1,594	1,654	5,057	1,170	899	1,054	658	8,928	6,869	1,230	417	16,560	3,829
1937	7,348	1,203	1,415	2,533	1,434	3,001	4,076	1,715	11,030	1,397	4,259	3,038	3,541
1938	3,775	968	1,548	2,625	19,810	10,370	7,815	18,660	11,530	2,577	1,509	969	6,757
1939	532	686	387	1,673	815	999	2,435	1,468	4,063	2,333	1,894	401	1,475
1940	412	402	240	182	494	249	3,525	7,449	7,099	7,240	3,698	1,380	2,705
1941	378	4,329	3,345	2,284	7,215	2,358	9,463	32,110	51,990	7,737	3,576	5,175	10,780
1942	41,030	25,460	5,249	2,896	2,882	3,190	43,450	14,570	10,950	2,875	2,721	6,140	13,450
1943	7,742	8,216	2,915	2,935	1,845	2,554	9,634	27,240	11,780	2,144	688	685	6,558
1944	741	482	447	277	237	202	253	138	389	165	681	111	344
1945	147	126	612	271	678	8,620	20,400	20,350	7,920	19,840	4,875	2,723	7,261
1946	27,370	2,364	1,007	4,229	9,459	4,744	4,097	3,746	8,866	4,436	2,159	1,992	6,200
1947	2,981	4,873	11,470	5,122	4,313	2,170	6,318	22,790	26,080	4,217	2,335	2,314	7,923
1948	2,197	1,341	2,351	2,434	2,604	2,689	3,466	2,839	5,995	11,650	2,549	2,124	3,528
1949	1,839	2,166	1,984	2,570	2,410	2,934	2,349	9,088	14,040	2,307	2,457	2,452	3,880
1950	2,946	2,765	2,949	2,538	3,104	1,772	2,378	13,860	8,661	7,206	25,570	10,330	7,049
1951	8,029	2,931	2,996	2,890	3,304	2,335	2,090	13,890	25,960	13,620	3,120	2,563	6,992
1952	1,841	1,660	1,815	2,654	1,837	1,895	3,031	2,461	2,844	2,709	3,140	1,692	2,301
1953	2,394	1,516	1,355	1,503	1,268	711	1,748	1,477	2,108	2,517	2,932	2,674	1,853
1954	2,196	1,186	2,221	2,010	2,196	2,493	2,716	12,400	9,555	4,608	3,187	2,462	3,950
1955	1,109	1,970	2,078	325	1,016	821	1,174	3,203	11,640	3,568	3,300	2,688	2,762
1956	14,760	4,773	4,052	3,627	4,016	2,250	1,089	2,057	1,449	1,580	1,381	1,423	3,550
1957	66.7	79.6	677	2,115	1,513	1,481	3,201	34,840	66,910	12,610	2,453	4,872	10,890

1/ Published 1923-34 as "near Denison, Tex."

Monthly and yearly runoff, in acre-feet, of Red River near Colbert, Okla.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	2,144,000	879,000	607,000	174,000	98,900	305,000	571,000	383,000	159,000	103,000	82,500	66,100	5,572,000
1925	67,500	43,900	41,900	45,600	41,400	35,700	303,000	472,000	72,900	35,300	245,000	1,000,000	2,404,000
1926	379,000	169,000	46,700	97,200	56,600	119,000	357,000	363,000	202,000	453,000	555,000	299,000	3,096,000
1927	1,640,000	151,000	314,000	276,000	263,000	282,000	1,566,000	250,000	344,000	527,000	264,000	106,000	5,983,000
1928	381,000	77,400	171,000	135,000	163,000	105,000	375,000	1,019,000	1,170,000	498,000	186,000	53,000	4,333,000
1929	28,100	127,000	88,500	101,000	70,000	206,000	278,000	1,087,000	584,000	217,000	51,500	569,000	3,407,000
1930	141,000	149,000	105,000	103,000	287,000	132,000	82,700	1,350,000	515,000	81,800	35,700	55,900	3,040,000
1931	602,000	104,000	498,000	89,800	312,000	271,000	224,000	285,000	91,600	205,000	52,300	20,800	2,760,000
1932	296,000	298,000	290,000	836,000	679,000	183,000	183,000	358,000	918,000	779,000	159,000	212,000	5,191,000
1933	84,200	38,000	323,000	176,000	66,100	344,000	194,000	1,332,000	172,000	102,000	309,000	327,000	3,467,000
1934	105,600	62,630	72,970	113,300	100,400	308,100	179,200	230,500	133,100	27,920	12,890	318,600	1,665,000
1935	82,830	192,200	71,000	51,090	36,040	382,800	185,900	2,690,000	1,333,000	369,200	148,300	341,700	5,884,000
1936	98,040	98,420	310,900	71,940	51,720	64,790	39,170	549,000	408,700	75,640	25,660	985,500	2,779,000
1937	451,800	71,600	86,990	155,800	79,660	184,500	242,600	105,500	656,500	85,890	261,900	180,800	2,564,000
1938	232,100	57,610	95,170	161,400	1,100,000	637,600	465,000	1,147,000	686,400	158,500	92,780	57,670	4,891,000
1939	32,710	40,820	23,770	102,900	45,250	61,430	144,900	90,290	241,800	143,500	116,500	23,880	1,068,000
1940	25,360	23,940	14,760	11,180	28,390	15,340	209,800	458,000	422,400	445,200	227,400	82,140	1,964,000
1941	23,220	257,600	205,600	140,500	400,700	145,000	563,100	1,975,000	3,093,000	475,800	219,900	308,000	7,807,000
1942	2,523,000	1,515,000	322,700	178,100	160,100	196,100	2,586,000	896,100	651,500	176,800	167,300	365,300	9,738,000
1943	476,000	488,900	179,200	180,400	102,500	157,000	573,300	1,675,000	701,300	131,800	42,310	40,730	4,748,000
1944	45,550	28,710	27,490	17,000	13,630	12,430	15,040	8,510	23,120	10,140	41,890	6,600	250,100
1945	9,060	7,480	37,640	16,660	37,670	530,000	1,214,000	1,251,000	471,300	1,220,000	299,800	162,100	5,257,000
1946	1,683,000	140,700	61,920	260,100	525,300	291,700	243,800	230,300	527,500	272,800	132,700	118,500	4,488,000
1947	183,300	290,000	705,500	314,900	239,500	133,400	376,000	1,401,000	1,552,000	259,300	143,600	137,700	5,736,000
1948	135,100	79,810	144,600	149,700	149,800	165,300	206,300	174,600	356,800	716,300	156,700	126,400	2,561,000
1949	113,100	128,900	122,000	158,000	133,900	180,400	139,800	558,800	835,400	141,900	151,100	145,900	2,809,000
1950	181,100	164,500	191,300	156,100	172,400	109,000	141,500	852,400	515,400	443,100	1,572,000	614,500	5,103,000
1951	493,700	174,400	184,200	177,700	183,500	143,500	124,400	853,900	1,545,000	837,400	191,800	152,500	5,062,000
1952	113,200	98,770	111,600	163,200	105,700	116,500	180,300	151,300	169,200	166,500	193,100	100,700	1,670,000
1953	147,200	90,230	83,330	92,440	70,410	43,700	104,000	90,790	125,400	154,800	180,300	159,100	1,342,000
1954	135,000	70,560	136,600	123,600	121,900	153,300	161,600	762,400	568,500	283,400	196,000	146,500	2,859,000
1955	68,210	117,200	127,800	20,000	56,400	50,510	69,880	196,900	692,400	219,400	221,300	160,000	2,000,000
1956	907,500	284,000	249,200	223,000	231,000	138,300	64,810	126,500	86,200	97,170	84,890	84,690	2,577,000
1957	4,100	4,740	41,610	130,000	84,020	91,080	190,500	2,142,000	3,982,000	775,300	150,800	289,900	7,886,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	587, 1241	158,000	Oct. 17, 1923	625	7,680	5,572,000	2,890	2,096,000
1925	607, 1241	133,000	Sept. 16, 1925	380	3,320	2,404,000	3,930	2,846,000
1926	627, 1241	39,700	Aug. 17, 1926	315	4,280	3,096,000	6,360	4,607,000
1927	647, 1241	122,000	Oct. 6, 1926	1,000	8,260	5,983,000	6,230	4,507,000
1928	667, 1241	107,000	May 19, 1928	536	5,980	4,333,000	5,440	3,948,000
1929	687, 1241	99,600	May 14, 1929	320	4,710	3,407,000	4,920	3,558,000
1930	702	46,400	May 18, 1930	431	4,190	3,040,000	5,310	3,847,000
1931	717	66,900	Oct. 16, 1930	150	3,810	2,760,000	3,360	2,436,000
1932	732, 1241	81,500	Feb. 16, 1932	150	7,150	5,191,000	6,550	4,752,000
1933	747, 1241	106,000	May 25, 1933	452	4,790	3,467,000	4,509	3,263,000
1934	762	27,300	Mar. 1, 1934	85	2,300	1,665,000	2,445	1,770,000
1935	787, 1241	201,000	May 21, 1935	490	8,127	5,884,000	8,350	6,045,000
1936	807	86,600	Sept. 28, 1936	324	3,829	2,779,000	3,971	2,883,000
1937	827	57,200	June 11, 1937	426	3,541	2,564,000	3,229	2,338,000
1938	857	138,000	Feb. 18, 1938	480	6,757	4,891,000	6,360	4,604,000
1939	877	39,100	June 24, 1939	207	1,475	1,068,000	1,429	1,035,000
1940	897	44,400	July 4, 1940	90	2,705	1,964,000	3,287	2,386,000
1941	927	182,000	June 10, 1941	247	10,780	7,807,000	16,140	11,680,000
1942	957	183,000	Apr. 25, 1942	49	13,450	9,738,000	9,007	6,521,000
1943	977	60,000	May 15, 1943	409	6,558	4,748,000	5,119	3,706,000
1944	1007	5,640	June 22, 1944	12	344	250,100	279	202,500
1945	1037	47,700	May 3, 1945	44	7,261	5,257,000	9,790	7,088,000
1946	1057	40,600	Oct. 8, 1945	73	6,200	4,488,000	5,223	3,782,000
1947	1087	69,200	May 29, 1947	365	7,923	5,736,000	6,792	4,917,000
1948	1117	34,500	July 12, 1948	66	3,528	2,561,000	3,534	2,566,000
1949	1147	32,800	June 14, 1949	100	3,880	2,809,000	4,105	2,972,000
1950	1177	40,100	Aug. 10, 1950	567	7,049	5,103,000	7,471	5,429,000
1951	1211	48,300	May 26, 1951	110	6,992	5,062,000	6,262	4,533,000
1952	1241	10,400	Apr. 22, 1952	226	2,301	1,670,000	2,297	1,667,000
1953	1281	9,650	Aug. 10, 1953	141	1,853	1,342,000	1,883	1,363,000
1954	1341	37,700	May 16, 1954	149	3,950	2,859,000	3,910	2,830,000
1955	1391	42,300	June 23, 1955	63	2,762	2,000,000	4,320	3,127,000
1956	1441	41,400	Oct. 8, 1955	70	3,550	2,577,000	1,635	1,187,000
1957	1511	102,000	June 5, 1957	45	10,890	7,886,000	-	-

26. Red River at Arthur City, Tex.

Location.--Lat 33°53', long 95°30', in NW¼ sec. 11, T. 8 S., R. 17 E., at bridge on U. S. Highway 271 at Arthur City, Lamar County, 10.6 miles downstream from Muddy Boggy River, 26.0 miles upstream from Kiamichi River, and at mile 633.1.

Drainage area.--44,531 sq mi, of which 5,936 sq mi is probably noncontributing.

Supplemental records available.--January to September 1905, gage heights and discharge measurements only. Gage-height records collected at same site since 1891 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 380.07 ft above mean sea level, datum of 1929. During 1905-11, staff gage at St. Louis-San Francisco Railway bridge 200 ft upstream at same datum, and July 1, 1936, to Mar. 24, 1940, wire-weight gage at present site and datum.

Average discharge.--27 years (1905-11, 1936-57), 8,980 cfs (6,501,000 acre-ft per year).

Extremes.--1905-11, 1936-57: Maximum discharge, about 400,000 cfs May 28, 1908 (gage height, 43.2 ft), from rating curve extended above 41,000 cfs on basis of records for later years; minimum, 130 cfs Dec. 11, 12, 1956.
Maximum stage known, that of May 28, 1908.

Remarks.--Some regulation since Oct. 31, 1943, by Lake Texoma, 92.8 miles above station. (See elsewhere in this report.)

Cooperation.--Records collected and computed by Corps of Engineers and reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1906	4,760	6,110	8,840	5,970	6,940	5,350	9,570	23,600	12,000	7,780	22,800	16,300	10,900
1907	6,190	3,030	5,710	7,520	4,420	8,960	3,970	15,800	18,800	11,300	4,230	2,260	7,710
1908	8,630	5,080	7,460	6,550	8,000	9,090	30,200	66,000	93,800	16,000	4,050	3,150	21,500
1909	10,200	4,220	10,600	2,930	2,470	2,510	2,740	3,860	8,600	3,550	1,930	1,420	4,610
1910	1,130	2,830	6,390	2,840	2,530	2,060	5,700	4,640	4,240	4,460	2,840	1,760	3,460
1911	1,400	1,280	1,220	1,190	2,980	2,260	2,870	2,420	3,480	5,720	4,170	6,610	2,960
1912	2,180	1,960	6,240	-	-	-	-	-	-	-	-	-	-
1936	-	-	-	-	-	-	-	-	-	1,218	441	16,670	-
1937	11,910	1,681	2,477	9,902	4,100	5,547	8,546	2,681	13,670	2,276	5,378	4,551	6,065
1938	4,554	3,319	4,048	8,842	46,220	18,210	19,180	16,760	11,660	3,670	2,507	1,132	11,420
1939	580	707	494	1,758	2,359	2,351	9,089	2,160	4,214	3,595	1,949	595	2,476
1940	403	531	341	296	848	474	8,679	17,430	15,010	11,880	4,939	1,823	5,231
1941	534	5,870	7,700	5,449	10,740	4,114	21,600	42,320	61,210	9,716	3,936	5,490	14,830
1942	43,710	32,920	7,427	3,782	5,301	5,636	75,340	26,020	21,380	4,610	3,422	6,977	19,670
1943	8,439	11,370	5,247	4,135	2,741	4,902	14,400	40,290	18,970	2,857	882	903	9,631
1944	1,017	768	816	1,234	6,145	6,983	2,114	9,034	4,778	475	735	345	2,862
1945	896	741	2,371	1,618	15,050	37,860	38,490	26,840	33,580	26,450	9,523	4,818	16,500
1946	35,710	4,138	1,511	8,288	24,200	10,330	8,520	11,400	15,600	5,211	4,245	3,299	10,960
1947	3,324	21,190	26,500	6,927	5,128	5,622	16,350	30,750	31,070	5,684	3,259	2,611	13,220
1948	2,374	1,861	4,785	4,925	9,582	7,603	4,420	12,540	8,537	17,880	2,938	2,310	6,656
1949	1,985	2,353	2,159	9,783	9,282	7,760	5,240	16,700	19,180	3,066	2,554	3,141	6,909
1950	4,831	2,910	3,600	10,990	15,940	3,018	3,052	29,480	10,970	17,350	34,840	19,010	13,020
1951	9,059	3,396	3,475	3,289	9,828	4,166	3,807	13,170	41,740	16,850	3,284	3,080	9,557
1952	2,231	2,879	2,165	2,699	2,327	4,198	17,120	5,426	3,566	2,641	3,183	1,907	4,182
1953	2,281	2,066	1,692	1,704	1,671	3,897	11,420	12,790	2,642	8,135	3,917	3,132	4,634
1954	2,642	1,837	3,216	4,875	3,076	2,607	3,999	27,810	11,380	5,046	3,416	2,438	6,065
1955	7,028	2,267	3,254	1,923	4,774	6,205	3,918	5,354	11,830	4,980	3,712	5,376	5,045
1956	15,530	5,180	4,392	4,036	6,811	2,961	1,344	3,755	2,074	1,586	1,409	1,459	4,216
1957	263	242	894	2,178	3,789	4,598	27,090	63,180	83,820	15,830	2,783	13,760	18,180

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1906	293,000	363,000	543,000	367,000	385,000	329,000	570,000	1,450,000	711,000	478,000	1,400,000	970,000	7,860,000
1907	381,000	180,000	351,000	463,000	246,000	551,000	236,000	969,000	1,120,000	694,000	260,000	135,000	5,590,000
1908	531,000	302,000	459,000	403,000	460,000	559,000	1,800,000	4,060,000	5,580,000	985,000	249,000	186,000	15,570,000
1909	630,000	251,000	650,000	180,000	138,000	154,000	163,000	237,000	512,000	218,000	119,000	84,100	3,340,000
1910	69,500	168,000	393,000	175,000	140,000	126,000	339,000	285,000	252,000	274,000	175,000	105,000	2,500,000
1911	86,100	76,200	75,200	73,200	166,000	139,000	171,000	149,000	207,000	352,000	256,000	393,000	2,140,000
1912	134,000	117,000	384,000	-	-	-	-	-	-	-	-	-	-
1936	-	-	-	-	-	-	-	-	-	74,890	27,120	991,900	-
1937	732,600	100,000	152,300	608,800	227,700	341,100	508,500	164,900	813,500	139,900	330,700	270,800	4,391,000
1938	280,000	197,500	248,900	543,700	2,567,000	1,119,000	1,141,000	1,031,000	693,600	225,700	154,200	67,380	8,269,000
1939	35,650	42,050	30,350	108,100	131,000	144,500	540,800	132,800	250,700	221,000	119,800	35,390	1,792,000
1940	24,800	31,570	20,970	18,200	48,790	29,160	516,400	1,076,000	893,100	730,600	303,700	108,500	3,802,000
1941	32,850	349,300	473,500	335,000	596,600	252,900	1,285,000	2,602,000	3,642,000	597,400	242,000	326,700	10,740,000
1942	2,688,000	1,959,000	456,700	232,600	294,400	346,600	4,483,000	1,600,000	1,272,000	283,500	210,400	415,100	14,240,000
1943	518,900	676,500	322,600	254,300	152,300	301,400	857,000	2,477,000	1,129,000	175,700	542,100	53,720	6,973,000
1944	62,540	45,720	50,190	75,900	353,500	429,300	125,800	555,500	284,300	29,210	45,200	20,510	2,078,000
1945	55,100	44,070	145,800	99,510	835,900	2,328,000	2,290,000	1,650,000	1,998,000	1,626,000	585,500	286,700	11,940,000
1946	2,196,000	246,200	92,920	509,600	1,344,000	635,000	507,000	700,800	928,100	320,400	261,000	196,300	7,937,000
1947	204,400	1,261,000	1,629,000	426,000	284,800	345,700	972,700	1,891,000	1,849,000	349,500	200,400	155,300	9,569,000
1948	146,000	110,800	294,200	302,800	551,200	467,500	263,000	771,000	508,000	1,099,000	180,600	137,500	4,832,000
1949	122,000	140,000	132,700	601,500	515,500	477,100	311,800	1,027,000	1,141,000	188,500	157,100	186,900	5,001,000
1950	297,000	173,100	221,300	675,800	885,000	185,600	181,600	1,812,000	652,600	1,067,000	2,142,000	1,131,000	9,424,000

Monthly and yearly runoff, in acre-feet, of Red River at Arthur City, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	557,000	202,100	213,700	202,300	545,800	256,200	226,500	809,800	2,484,000	1,036,000	201,900	183,300	6,919,000
1952	137,200	171,300	133,100	166,000	133,800	258,100	1,019,000	333,800	212,200	162,400	195,700	113,500	3,036,000
1953	140,300	122,900	104,000	104,800	92,830	239,600	679,300	786,600	157,200	500,200	240,800	186,400	3,355,000
1954	162,400	109,300	197,700	299,800	170,800	160,300	238,000	1,710,000	677,000	310,300	210,000	145,100	4,391,000
1955	432,100	134,900	200,100	118,200	265,200	381,500	233,100	329,200	703,900	306,200	228,200	319,900	3,652,000
1956	955,200	308,300	270,100	248,200	391,800	182,100	79,940	230,900	123,400	97,540	86,630	86,790	3,061,000
1957	16,190	14,400	54,970	133,900	210,400	282,700	1,612,000	3,885,000	4,988,000	973,200	171,100	818,600	13,160,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1906	209	93,800	May 4, 1906	1,640	10,900	7,860,000	10,500	7,570,000
1907	307	68,800	May 29, 1907	1,710	7,710	5,590,000	8,240	5,970,000
1908	307	400,000	May 28, 1908	1,710	21,500	15,570,000	21,800	15,810,000
1909	307	47,000	Dec. 2, 1908	1,070	4,610	3,340,000	3,360	12,440,000
1910	307	35,600	Dec. 3, 1909	1,030	3,460	2,500,000	2,910	2,110,000
1911	307	28,200	July 24, 1911	1,040	2,960	2,140,000	3,510	2,540,000
1936	877	95,200	Sept. 29, 1936	300	-	-	-	-
1937	877	71,800	June 12, 1937	750	6,065	4,391,000	5,708	4,132,000
1938	877	222,000	Feb. 19, 1938	825	11,420	8,269,000	10,570	7,651,000
1939	877	58,100	Apr. 17, 1939	240	2,476	1,792,000	2,433	1,761,000
1940	897	55,200	May 24, 1940	170	5,231	3,802,000	6,303	4,580,000
1941	927	183,000	June 12, 1941	365	14,830	10,740,000	20,700	14,980,000
1942	957	199,000	Apr. 26, 1942	685	19,670	14,240,000	14,720	10,660,000
1943	977	94,400	May 14, 1943	542	9,631	6,973,000	7,753	5,613,000
1944	1007	34,700	May 3, 1944	182	2,862	2,078,000	2,981	2,164,000
1945	1037	91,000	June 13, 1945	170	16,500	11,940,000	19,660	14,230,000
1946	1057	68,000	Oct. 9, 1945	630	10,960	7,937,000	11,740	8,497,000
1947	1087	104,000	Nov. 7, 1946	1,270	13,220	9,569,000	9,704	7,025,000
1948	1117	75,000	May 12, 1948	554	6,656	4,832,000	6,441	4,675,000
1949	1147	55,900	Jan. 25, 1949	828	6,909	5,001,000	7,319	5,298,000
1950	1177	69,400	Feb. 13, 1950	1,530	13,020	9,424,000	13,410	9,705,000
1951	1211	74,500	June 17, 1951	1,300	9,557	6,919,000	8,823	6,387,000
1952	1241	93,400	Apr. 23, 1952	865	4,182	3,036,000	4,080	2,962,000
1953	1281	53,800	Apr. 30, 1953	695	4,634	3,355,000	4,775	3,457,000
1954	1341	57,000	May 17, 1954	700	6,065	4,391,000	6,476	4,688,000
1955	1391	42,200	June 24, 1955	580	5,045	3,652,000	6,104	4,419,000
1956	1441	40,400	Oct. 9, 1955	259	4,216	3,061,000	2,222	1,613,000
1957	1511	136,000	June 6, 1957	134	18,180	13,160,000	-	-

27. Red River at Index, Ark.

Location.--Lat 33°33'05", long 94°02'25", in SW¼ sec. 7, T. 14 S., R. 28 W., at bridge on U. S. Highway 71 at Index, 2¼ miles south of Ogden, 20.6 miles upstream from Little River, and at mile 485.3.

Drainage area.--48,030 sq mi, of which 5,936 sq mi is probably noncontributing.

Supplemental records available.--Gage-height records collected at same site since 1917 contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 246.87 ft above mean sea level, datum of 1929. Prior to Dec. 12, 1939, wire-weight gage at same site and datum.

Average discharge.--21 years (1936-57), 13,150 cfs (9,520,000 acre-ft per year).

Extremes.--1936-57: Maximum discharge, 297,000 cfs Feb. 23, 1938 (gage height, 34.25 ft); minimum, 378 cfs Nov. 28, 1956.

Remarks.--Some regulation by Lake Texoma, 241 miles upstream. (See elsewhere in this report.)

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	-	-	2,085	725	11,600	-
1937	19,790	4,485	5,511	23,850	8,549	11,000	13,250	5,615	14,410	3,217	5,498	4,803	10,020
1938	4,186	5,368	6,767	23,920	67,760	20,360	42,530	19,180	15,830	4,949	3,737	1,627	17,630
1939	965	1,051	894	2,231	8,528	6,025	20,710	5,008	5,729	4,453	2,167	956	4,839
1940	586	618	618	586	1,366	965	11,950	22,450	17,460	17,380	5,086	2,306	6,797
1941	902	7,438	15,100	10,080	16,380	10,850	32,210	48,110	62,340	13,520	4,000	6,787	18,910
1942	41,130	38,410	10,680	6,184	8,062	10,080	78,110	48,640	22,580	7,334	3,926	7,779	23,560
1943	8,902	13,240	8,279	7,269	3,889	7,862	20,580	44,380	22,900	3,414	1,320	1,120	11,970
1944	1,416	1,376	1,558	4,038	12,610	19,520	7,895	22,630	10,700	1,162	1,025	909	7,060
1945	1,178	2,031	5,995	5,509	25,880	67,730	55,370	40,580	50,570	30,820	12,540	6,022	25,310
1946	41,690	6,517	2,341	15,830	38,960	18,560	15,710	22,380	20,480	6,336	4,169	3,902	16,270
1947	3,676	33,980	37,080	10,190	6,726	10,820	21,120	43,570	35,890	7,482	3,310	3,223	18,120
1948	2,655	2,685	9,397	9,807	14,240	16,400	6,480	21,960	9,354	19,050	3,375	2,729	9,870
1949	2,133	2,718	2,870	22,900	20,990	14,810	9,411	22,430	24,630	4,464	3,027	3,652	11,100
1950	7,023	3,856	5,215	22,870	34,990	5,751	3,696	40,050	12,570	24,180	39,230	30,340	19,090

Monthly and yearly mean discharge, in cubic feet per second, of Red River at Index, Ark.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	11,720	4,171	3,555	5,104	21,210	7,922	7,984	12,960	54,380	23,300	3,975	3,930	13,240
1952	2,730	5,926	4,435	5,166	4,223	9,140	34,720	7,722	4,874	2,982	3,227	2,336	7,256
1953	2,115	3,208	4,784	3,333	4,147	10,980	19,510	33,890	3,384	10,830	5,284	3,349	8,787
1954	2,984	2,391	3,889	9,257	6,216	3,360	6,116	36,350	14,220	5,160	3,726	2,574	8,054
1955	11,010	4,091	3,881	5,755	9,072	12,950	7,532	7,445	11,980	5,965	4,275	8,865	7,720
1956	18,020	5,285	4,668	4,162	14,250	4,564	2,096	7,618	3,179	1,730	1,643	1,485	5,708
1957	716	642	1,206	3,368	9,171	10,620	47,810	87,510	94,400	21,600	3,326	17,740	24,800

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	-	-	128,200	44,550	690,100	-
1937	1,217,000	266,900	338,800	1,467,000	474,800	676,600	788,400	345,300	857,300	197,800	338,000	285,800	7,254,000
1938	257,400	319,400	416,100	1,471,000	3,763,000	1,252,000	2,531,000	1,180,000	942,100	304,300	229,800	96,830	12,760,000
1939	59,310	62,530	54,980	137,200	473,600	370,500	1,232,000	307,900	340,900	273,800	133,200	56,860	3,503,000
1940	36,040	36,760	37,970	36,060	78,600	59,350	710,900	1,381,000	1,039,000	1,069,000	312,700	137,200	4,935,000
1941	55,470	442,600	928,600	620,100	909,900	666,900	1,916,000	2,958,000	3,709,000	831,100	246,000	403,900	13,690,000
1942	2,529,000	2,286,000	656,600	380,200	447,800	619,800	4,648,000	2,991,000	1,344,000	451,000	241,400	462,900	17,060,000
1943	547,300	788,100	509,100	447,000	216,000	483,400	1,224,000	2,729,000	1,363,000	209,900	81,180	66,650	8,665,000
1944	87,050	81,900	95,770	248,300	725,600	1,200,000	469,800	1,392,000	637,000	71,480	63,020	54,080	5,126,000
1945	72,420	120,800	368,600	338,700	1,437,000	4,164,000	3,295,000	2,495,000	3,009,000	1,895,000	771,300	358,400	18,330,000
1946	2,564,000	387,800	143,900	973,100	2,164,000	1,141,000	934,600	1,376,000	1,219,000	389,600	256,300	232,200	11,780,000
1947	226,100	2,022,000	2,280,000	626,400	373,500	665,200	1,257,000	2,679,000	2,136,000	460,000	203,500	191,800	13,120,000
1948	163,300	159,800	577,800	603,000	819,400	1,008,000	385,600	1,350,000	556,600	1,171,000	207,600	162,400	7,164,000
1949	131,200	161,800	176,500	1,408,000	1,166,000	910,500	560,000	1,379,000	1,465,000	274,500	186,100	217,300	8,036,000
1950	431,800	229,500	320,600	1,406,000	1,943,000	353,600	219,900	2,463,000	748,100	1,487,000	2,412,000	1,806,000	13,820,000
1951	720,800	248,200	218,600	313,800	1,178,000	487,100	475,100	796,700	3,236,000	1,433,000	244,400	233,900	9,586,000
1952	167,900	352,600	272,700	317,600	242,900	562,000	2,066,000	474,800	290,000	183,400	198,400	139,000	5,267,000
1953	130,000	190,900	294,100	205,000	230,300	675,400	1,161,000	2,084,000	201,400	665,800	324,900	199,300	6,362,000
1954	183,500	142,300	239,100	569,200	345,200	206,600	363,900	2,235,000	846,000	317,300	229,100	153,200	5,830,000
1955	677,100	243,400	238,600	353,900	503,800	796,300	448,200	457,800	712,900	366,800	262,900	527,500	5,589,000
1956	1,108,000	314,500	287,000	255,900	819,900	280,600	124,700	468,400	189,200	106,400	101,000	88,340	4,144,000
1957	44,050	38,220	74,150	207,100	509,400	653,000	2,845,000	5,381,000	5,617,000	1,328,000	204,500	1,056,000	17,960,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1936	877	-	-	-	-	-	-	-
1937	877	88,100	Oct. 1, 1936	1,600	10,020	7,254,000	8,873	6,424,000
1938	877	297,000	Feb. 23, 1938	1,400	17,630	12,760,000	16,500	11,950,000
1939	877	70,600	Apr. 19, 1939	500	4,839	3,503,000	4,748	3,437,000
1940	897	70,100	May 26, 1940	415	6,797	4,935,000	8,609	6,250,000
1941	927	145,000	June 16, 1941	680	18,910	13,690,000	24,490	17,730,000
1942	957	178,000	May 1, 1942	1,600	23,560	17,060,000	18,550	13,430,000
1943	977	112,000	May 16, 1943	821	11,970	8,665,000	9,786	7,085,000
1944	1007	87,800	May 4, 1944	470	7,060	5,126,000	7,470	5,423,000
1945	1037	152,000	Apr. 1, 1945	452	25,310	18,330,000	28,810	20,860,000
1946	1057	76,400	Oct. 11, 1945	1,550	16,270	11,780,000	18,250	13,210,000
1947	1087	110,000	Nov. 9, 1946	2,220	18,120	13,120,000	13,110	9,493,000
1948	1117	84,000	May 13, 1948	1,770	9,870	7,164,000	9,275	6,733,000
1949	1147	112,000	Jan. 29, 1949	1,420	11,100	8,036,000	11,810	8,548,000
1950	1177	108,000	Feb. 15, 1950	2,440	19,090	13,820,000	19,370	14,030,000
1951	1211	102,000	June 18, 1951	2,380	13,240	9,586,000	12,700	9,191,000
1952	1241	112,000	Apr. 25, 1952	1,370	7,256	5,267,000	7,010	5,089,000
1953	1281	91,700	May 2, 1953	1,060	8,787	6,362,000	8,718	6,312,000
1954	1341	76,200	May 13, 1954	1,560	8,054	5,830,000	8,875	6,425,000
1955	1391	56,500	Mar. 23, 1955	1,440	7,720	5,589,000	8,474	6,135,000
1956	1441	41,800	Feb. 20, 1956	564	5,708	4,144,000	3,569	2,591,000
1957	1511	154,000	June 8, 1957	384	24,800	17,960,000	29,510	21,370,000

28. South Sulphur River near Cooper, Tex.

Location.--Lat 33°21', long 95°36', at bridge on State Highway 154, 0.6 mile downstream from Big Creek, 1.0 mile upstream from Brushy Creek, 3.5 miles downstream from Doctors Creek, and 5.7 miles southeast of Cooper, Delta County.

Drainage area.--527 sq mi.

Gage.--Water-stage recorder. Datum of gage is 374.91 ft above mean sea level, datum of 1929. Prior to Nov. 9, 1949, staff gage at same site and datum.

Average discharge.--15 years (1942-57), 377 cfs (272,900 acre-ft per year).

Extremes.--1942-57: Maximum discharge, 23,800 cfs Apr. 29, 1953 (gage height, 23.00 ft); no flow at times.

Remarks.--Small diversions above station.

Monthly and yearly mean discharge, in cubic feet per second, of South Sulphur River near Cooper, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	-	-	-	-	-	656	35.1	48.2	181	-
1943	7.18	137	446	3.16	42.5	753	110	339	660	3.12	0	.01	210
1944	1.43	21.0	77.9	203	668	909	236	1,927	287	18.4	52.9	9.75	368
1945	0	90.5	625	269	1,526	2,062	607	234	1,000	482	1.80	144	580
1946	754	53.6	.66	592	1,433	514	404	1,795	690	8.16	282	4.13	535
1947	3.23	2,089	450	140	7.56	284	372	493	95.0	.40	107	5.96	337
1948	4.13	308	913	640	622	679	290	1,155	51.0	63.9	1.24	0	395
1949	.79	0	35.5	1,667	1,253	710	278	271	183	82.5	23.6	16.7	372
1950	882	4.54	53.3	957	2,890	123	134	1,482	324	146	23.1	1,306	678
1951	2.55	.47	.81	14.0	816	10.5	5.25	71.3	2,052	164	.02	.07	254
1952	12.7	20.5	5.23	64.3	32.9	83.6	1,775	548	100	.02	0	0	218
1953	0	261	363	193	20.8	459	1,751	903	.47	194	8.96	.41	347
1954	2.30	144	479	705	120	2.13	202	716	65.8	0	0	0	205
1955	825	203	9.35	21.5	413	377	303	144	1.09	40.7	53.5	14.2	199
1956	25.3	0	0	.23	376	.54	6.94	387	24.7	0	0	0	67.4
1957	0	42.4	33.4	109	285	827	4,357	3,376	1,171	6.63	69.2	513	897

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1942	-	-	-	-	-	-	-	-	39,020	2,160	2,960	10,760	-
1943	442	8,180	27,410	194	2,360	46,300	6,540	20,870	39,250	192	0	.4	151,700
1944	88	1,250	4,790	12,480	38,430	55,870	14,050	118,500	17,090	1,130	3,250	580	267,500
1945	0	5,380	38,460	16,550	84,730	126,800	36,110	14,370	59,480	29,650	111	8,580	420,200
1946	46,390	3,190	41	36,380	79,590	31,630	24,010	110,300	41,040	502	14,240	246	387,600
1947	199	124,300	27,670	8,610	420	17,490	22,140	30,330	5,650	25	6,570	355	243,800
1948	254	18,350	56,130	39,340	35,760	41,740	17,250	71,000	3,030	3,930	76	0	286,900
1949	49	0	2,180	102,500	69,600	43,680	16,520	16,680	10,910	5,070	1,450	991	269,600
1950	54,210	270	3,280	58,860	160,500	7,550	7,960	91,110	19,310	8,980	1,420	77,690	491,100
1951	157	28	50	861	45,340	645	312	4,380	122,100	10,090	1.2	4	184,000
1952	783	1,220	322	3,950	1,890	5,140	105,600	33,710	5,960	1.2	0	0	158,600
1953	0	15,550	22,330	11,900	1,160	28,200	104,200	55,540	28	11,910	551	24	251,400
1954	142	8,560	29,450	43,330	6,680	131	12,010	44,040	3,910	0	0	0	148,300
1955	50,710	12,090	575	1,320	22,920	23,150	18,000	8,840	65	2,510	3,290	845	144,300
1956	1,560	0	0	14	21,620	33	413	23,790	1,470	0	0	0	48,900
1957	0	2,520	2,050	6,720	15,800	50,850	259,200	207,600	69,690	407	4,260	30,500	649,600

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1943	1177	7,930	June 7, 1943	0	210	0.399	5.40	151,700	168	4.33	121,900
1944	1177	13,000	May 2, 1944	0	368	.698	9.52	267,500	420	10.87	305,200
1945	1177	16,400	Mar. 30, 1945	0	580	1.10	14.97	420,200	588	15.18	426,000
1946	1177	7,930	Feb. 6, 1946	0	535	1.02	13.79	387,600	677	17.44	490,100
1947	1177	14,800	Nov. 4, 1946	0	337	.640	8.66	243,800	230	5.91	166,300
1948	1177	7,930	May 12, 1948	0	395	.750	10.21	286,900	295	7.64	214,400
1949	1177	13,600	Jan. 27, 1949	0	372	.706	9.60	269,600	449	11.58	325,200
1950	1177	18,300	Feb. 13, 1950	.2	678	1.29	17.47	491,100	599	15.42	433,600
1951	1211	10,300	June 13, 1951	0	254	.482	6.55	184,000	257	6.62	186,100
1952	1241	13,300	Apr. 23, 1952	0	218	.414	5.64	158,600	267	6.90	194,100
1953	1281	23,800	Apr. 29, 1953	0	347	.659	8.93	251,400	348	8.95	251,700
1954	1341	6,100	May 13, 1954	0	205	.389	5.28	148,300	240	6.18	173,500
1955	1391	10,000	Oct. 25, 1954	0	199	.378	5.13	144,300	114	2.94	82,500
1956	1441	3,700	May 3, 1956	0	67.4	.128	1.74	48,900	71.5	1.84	51,910
1957	1511	23,200	Apr. 27, 1957	0	897	1.70	23.12	649,600	-	-	-

29. North Sulphur River near Cooper, Tex.

Location.--Lat 33°28', long 95°35', at bridge on State Highway 24, 4.9 miles upstream from Suds Creek, 7.3 miles upstream from Click Creek, and 8.6 miles northeast of Cooper, Delta County.

Drainage area.--276 sq mi.

Gage.--Water-stage recorder. Datum of gage is 381.42 ft above mean sea level, datum of 1929. Prior to Nov. 8, 1949, wire-weight gage at same site and datum.

Average discharge.--8 years (1949-57), 232 cfs (168,000 acre-ft per year).

Extremes.--1949-57: Maximum discharge, 42,800 cfs Apr. 29, 1953 (gage height, 25.86 ft); no flow at times.
Maximum stage known since at least 1915, 26.6 ft May 2, 1944; flood of 1932 reached about same stage, from information by Corps of Engineers and local residents.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second, of North Sulphur River near Cooper, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	110	1.29	56.8	1,172	1,483	23.4	44.0	1,052	64.3	328	35.9	574	406
1951	5.55	1.66	2.63	4.68	564	13.3	40.9	119	1,724	33.1	.56	5.99	204
1952	54.7	9.87	1.15	3.99	4.18	151	1,197	193	61.0	.48	0	0	139
1953	0	173	69.5	54.0	10.4	266	1,123	367	.68	162	23.5	8.93	188
1954	8.48	75.0	202	307	179	4.43	129	852	70.2	0	0	.14	153
1955	564	52.9	8.95	23.8	117	348	285	83.7	11.5	118	29.2	12.0	138
1956	29.3	0	0	5.27	680	10.1	43.9	261	7.74	0	0	0	84.1
1957	.39	36.3	6.08	17.0	45.9	329	2,424	2,381	854	7.92	62.6	323	541

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	6,740	77	3,490	72,070	82,370	1,440	2,620	64,670	3,830	20,150	2,210	34,160	293,800
1951	341	99	162	288	31,320	819	2,430	7,310	102,600	2,030	35	357	147,800
1952	3,360	588	70	245	240	9,280	71,230	11,860	3,630	29	0	0	100,500
1953	0	10,310	4,280	3,320	575	16,370	66,840	22,590	40	9,960	1,440	531	136,300
1954	521	4,460	12,440	18,870	9,950	273	7,670	52,380	4,180	0	0	8.3	110,800
1955	34,670	3,150	550	1,460	6,520	21,410	16,940	5,150	684	7,240	1,800	712	100,300
1956	1,800	0	0	324	39,140	624	2,610	16,060	461	0	0	0	61,020
1957	24	2,160	374	1,040	2,550	20,230	144,200	146,400	50,810	487	3,850	19,200	391,300

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1950	1177	32,000	Feb. 12, 1950	0	406	1.47	19.96	293,800	392	19.29	284,100
1951	1211	33,400	June 12, 1951	0	204	.739	10.05	147,800	209	10.29	151,200
1952	1241	30,800	Apr. 22, 1952	0	139	.504	6.85	100,500	153	7.56	111,100
1953	1281	42,800	Apr. 29, 1953	0	188	.681	9.26	136,300	192	9.46	139,100
1954	1341	28,000	May 12, 1954	0	153	.554	7.53	110,800	182	8.94	131,700
1955	1391	31,000	Mar. 20, 1955	0	138	.500	6.80	100,300	88.0	4.32	63,720
1956	1441	32,300	Feb. 17, 1956	0	84.1	.305	4.14	61,020	85.1	4.20	61,780
1957	1511	41,000	May 23, 1957	0	541	1.96	26.56	391,300	-	-	-

30. Sulphur River near Talco, Tex.

Location.--Lat 33°23'20", long 95°07'50", at bridge on U. S. Highway 271, 2.4 miles northwest of Talco, Titus County, 3.0 miles downstream from Mustang Creek.

Drainage area.--1,365 sq mi.

Gage.--Water-stage recorder. Datum of gage is 290.82 ft above mean sea level, datum of 1929.

Extremes.--1956-57: Maximum discharge, 32,900 cfs Apr. 27 (gage height, 23.63 ft); no flow Oct. 1 to Nov. 2, 1956. Maximum stage known since at least 1908, about 27.5 ft in 1908 and 1914.

Remarks.--During 1957, Texas Power & Light Co. diverted an average of about 2.8 cfs for use by steam-electric plant above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	0	184	55.0	299	877	2,181	10,390	11,690	5,669	13.8	102	930	2,697

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	0	10,970	3,380	18,400	48,700	134,100	618,500	718,500	337,300	848	6,280	55,330	1,952,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1957	1511	32,900	Apr. 27, 1957	0	2,697	1.98	26.82	1,952,000	-	-	-

31. Whiteoak Creek near Talco, Tex.

Location.--Lat 33°19', long 95°05', at bridge on U. S. Highway 271, 2 miles upstream from Ripley Creek, 2.7 miles south of Talco, Titus County, and 2.8 miles downstream from Lick Creek.

Drainage area.--494 sq mi.

Gage.--Water-stage recorder. Datum of gage is 286.45 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Average discharge.--7 years (1950-57), 342 cfs (247,600 acre-ft per year).

Extremes.--1949-57: Maximum discharge, 23,300 cfs Feb. 3, 1950 (gage height, 18.98 ft); no flow Aug. 8 to Sept. 11, 1954, and Aug. 8-16, 27-31, 1956.
Maximum stage known since at least 1870, about 25.3 ft Mar. 31, 1945, from information by local residents.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	176	1,163	3,593	648	152	1,857	181	189	149	1,064	-
1951	11.1	6.24	7.38	102	1,307	47.7	24.5	109	445	189	1.57	19.0	181
1952	19.4	66.9	158	432	174	238	2,817	632	48.3	59.1	1.38	.59	385
1953	.68	469	1,040	389	212	465	1,158	2,002	5.48	313	16.1	97.1	517
1954	13.3	73.2	494	1,032	567	36.7	74.4	804	9.22	.69	.03	.14	259
1955	511	308	32.7	71.8	221	198	597	29.2	5.06	14.4	23.2	23.2	169
1956	29.0	1.08	1.47	3.84	496	11.8	4.97	290	2.78	.35	.24	.41	68.6
1957	.48	222	1.85	131	315	1,052	3,784	2,801	1,118	13.5	18.8	311	812

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	10,840	71,520	199,500	39,870	9,030	114,200	10,790	11,630	9,170	63,320	-
1951	680	371	454	6,260	72,600	2,930	1,460	6,680	26,510	11,620	97	1,130	130,800
1952	1,190	3,980	9,730	26,590	9,980	14,660	167,600	38,840	2,880	3,630	85	35	279,200
1953	42	27,920	63,940	23,940	11,770	28,570	68,930	123,100	326	19,270	990	5,780	374,600
1954	818	4,360	30,350	63,460	31,470	2,260	4,430	49,460	548	43	1.6	8.3	187,200
1955	31,430	18,320	2,010	4,420	12,300	12,190	35,540	1,800	301	887	1,430	1,380	122,000
1956	1,790	64	91	236	28,550	726	296	17,820	165	22	15	24	49,800
1957	29	13,230	114	8,050	17,470	64,660	225,200	172,200	66,510	832	1,160	18,500	588,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1950	1177	a23,300	Feb. 3, 1950	3.7	-	-	-	539,900	733	20.12	530,500
1951	1211	5,250	Feb. 20, 1951	.3	181	.366	4.97	130,800	199	5.48	144,200
1952	1241	19,700	Apr. 23, 1952	.2	385	.779	10.60	279,200	491	13.53	356,200
1953	1281	15,800	Apr. 30, 1953	.3	517	1.05	14.22	374,600	440	12.08	318,200
1954	1341	5,000	Jan. 17, 1954	0	259	.524	7.11	187,200	281	7.73	203,400
1955	1391	4,040	Oct. 27, 1954	.4	169	.342	4.63	122,000	99.7	2.74	72,190
1956	1441	1,660	May 4, 1956	0	68.6	.139	1.89	49,800	84.3	2.32	61,230
1957	1511	15,900	May 15, 1957	0.1	812	1.64	22.30	588,000	-	-	-

a For period Dec. 1, 1949, to Sept. 30, 1950.

32. Whiteoak Creek below Talco, Tex.

Location.--Lat 33°18', long 95°01', at bridge on county road about 4 miles downstream from Ripley Creek, 5 miles upstream from Green Creek, and 6 miles southeast of Talco, Titus County.

Drainage area.--579 sq mi.

Gage.--Wire-weight gage. Datum of gage was 274.34 ft above mean sea level, datum of 1929.

Average discharge.--12 years (1937-49), 777 cfs (562,500 acre-ft per year).

Extremes.--1937-49: Maximum discharge, 83,100 cfs Mar. 31, 1945 (gage height, 24.1 ft); no flow at times.
Maximum stage known since 1870, that of Mar. 31, 1945, from information by local residents.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second, of Whiteoak Creek below Talco, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	9.84	434	2,878	4,414	1,809	879	2,575	18.5	127	60.8	2.66	2.55	1,099
1939	0	31.4	3.93	199	2,003	581	552	10.4	25.2	21.8	.15	0	273
1940	.22	1.34	2.76	4.35	71.6	57.2	1,079	663	545	408	6.34	13.8	237
1941	1.05	791	1,503	421	624	1,531	1,382	2,117	727	254	57.1	19.1	788
1942	14.3	115	285	46.5	135	401	4,708	804	475	39.5	41.0	63.4	590
1943	7.69	45.3	502	182	58.7	552	140	236	1,556	15.1	3.97	12.3	276
1944	61.2	3.88	65.6	227	514	1,545	353	2,978	432	10.8	6.66	50.6	524
1945	8.21	133	578	788	1,882	5,750	2,397	604	3,093	2,101	50.9	56.2	1,450
1946	2,330	290	45.7	2,994	4,818	1,286	692	4,983	2,753	36.1	70.4	92.5	1,682
1947	22.5	2,886	150	60.0	67.4	763	1,356	2,057	58.8	11.8	13.7	43.3	784
1948	13.4	965	2,928	749	1,637	1,657	313	3,587	43.3	52.0	24.6	14.0	1,002
1949	19.3	34.4	26.4	2,373	2,469	960	507	968	99.5	45.8	17.0	39.9	620
1950	4,566	64.2	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	605	25,840	177,000	271,400	100,500	54,030	153,200	1,140	7,540	3,740	163	152	795,300
1939	0	1,870	241	12,240	111,200	35,700	32,820	642	1,500	1,340	9.3	0	197,600
1940	13	80	170	267	4,120	3,520	64,190	40,760	32,400	25,110	390	821	171,800
1941	64	47,090	92,440	25,900	34,670	94,150	82,220	130,200	43,240	15,590	3,510	1,140	570,200
1942	878	6,840	17,540	2,860	7,520	24,660	280,100	49,440	28,240	2,430	2,520	3,770	426,800
1943	473	2,700	30,840	11,170	3,260	33,920	8,330	14,490	92,610	930	244	732	199,700
1944	3,770	231	4,030	13,960	29,560	95,000	21,010	183,100	25,680	663	410	3,010	380,400
1945	505	7,930	35,520	48,460	104,500	353,500	142,600	37,150	184,000	129,200	3,130	3,340	1,050,000
1946	143,300	17,280	2,810	184,100	267,600	79,040	41,160	306,400	163,800	2,220	4,330	5,510	1,218,000
1947	1,380	171,700	92,230	36,890	3,740	46,910	80,720	126,500	3,500	724	839	2,570	567,700
1948	823	57,440	180,000	46,060	94,190	101,900	18,650	220,500	2,580	3,200	1,510	833	727,700
1949	1,190	2,040	1,620	145,900	137,100	59,050	30,200	59,500	5,920	2,810	1,050	2,380	448,800
1950	280,700	3,818	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1938	1177	44,000	Jan. 23, 1938	0	1,099	1.90	25.75	795,300	820	19.23	594,000
1939	1177	9,000	Feb. 28, 1939	0	273	.471	6.40	197,600	270	6.34	195,700
1940	1177	8,580	Apr. 9, 1940	0	237	.409	5.56	171,800	429	10.06	311,200
1941	1177	19,800	May 1, 1941	0	788	1.36	18.45	570,200	630	14.76	455,900
1942	1177	34,000	Apr. 9, 1942	0	590	1.02	13.81	426,800	602	14.10	435,600
1943	1177	17,200	June 8, 1943	1.6	276	.477	6.48	199,700	240	5.62	173,700
1944	1177	26,700	May 3, 1944	2.9	524	.905	12.32	380,400	574	13.49	416,300
1945	1177	83,100	Mar. 31, 1945	4.6	1,450	2.50	34.00	1,050,000	1,615	37.86	1,169,000
1946	1177	26,100	June 1, 1946	8.0	1,682	2.90	39.43	1,218,000	1,823	42.73	1,319,000
1947	1177	23,700	Nov. 7, 1946	6.4	784	1.35	18.37	567,700	747	17.50	540,700
1948	1177	23,700	May 13, 1948	8.2	1,002	1.73	23.56	727,700	681	16.90	494,300
1949	1177	19,800	Jan. 28, 1949	4.0	620	1.07	14.54	448,800	1,021	23.99	739,200
1950	1177	24,900	Oct. 25, 1949	-	-	-	-	-	-	-	-

33. Sulphur River near Darden, Tex.

Location.--Lat 33°15', long 94°37', at bridge on U. S. Highway 67, 0.6 mile upstream from St. Louis Southwestern Railway bridge and 1 mile southwest of Darden, Bowie County.

Drainage area.--2,774 sq mi.

Supplemental records available.--Gage-height records collected in this vicinity since 1909 are contained in reports of U. S. Weather Bureau (published as Sulphur River near Naples).

Records of chemical analyses and water temperatures for the period Oct. 1, 1947 to Jan. 15, 1950 are published in reports of Geological Survey.

Gage.--Wire-weight gage. Datum of gage is 220.61 ft above mean sea level, datum of 1929. Prior to Oct. 26, 1934, staff gage at site 0.6 mile downstream at same datum. Oct. 26, 1934, to Feb. 12, 1942, water-stage recorder at site 780 ft downstream at same datum.

Average discharge.--33 years (1923-56), 2,307 cfs (1,670,000 acre-ft per year).

Extremes.--1923-56: Maximum discharge, 157,000 cfs Apr. 1, 1945 (gage height, 37.56 ft); no flow at times.
Maximum stage since at least 1909, that of Apr. 1, 1945.

Remarks.--Small diversions above station. Records for period October to December 1956 are included in the following tables as final discharge record at this station. Beginning in February 1957, backwater occurs from Texarkana Reservoir dam, about 60 miles downstream.

Cooperation.--For the period November 1954 to December 1956, the results of 18 discharge measurements were furnished by Corps of Engineers and daily gage readings were furnished by U. S. Weather Bureau.

Monthly and yearly mean discharge, in cubic feet per second, of Sulphur River near Darden, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	200	111	9,546	2,406	1,703	4,025	651	970	3,783	16.8	0.80	249	1,982
1925	19.8	5.30	14.7	62.8	115	112	1,412	3,135	792	52.9	99.3	4.27	488
1926	103	894	42.0	2,546	585	2,107	3,185	2,840	741	6,333	2,587	716	1,906
1927	1,896	611	6,491	3,415	3,379	9,981	10,430	1,531	788	1,019	149	108	3,320
1928	1,020	346	1,210	586	820	1,200	5,350	3,630	4,100	2,050	258	3.02	1,710
1929	231	898	8,120	6,530	3,060	4,070	849	6,860	1,150	390	4.86	275	2,720
1930	13.2	522	925	1,970	5,220	1,570	383	18,800	475	67.5	5.05	1.33	2,490
1931	196	244	1,810	44.4	676	2,720	1,150	645	43.6	569	203	172	709
1932	55.9	31.8	3,540	14,700	6,080	2,210	700	587	185	2,020	8.65	2.66	2,520
1933	2.20	.85	430	5,710	625	6,080	969	3,910	1,130	743	277	131	1,690
1934	684	37.8	151	1,343	617	4,560	4,975	630	142	276	.20	1.06	1,097
1935	0	331	562	6,561	1,473	1,637	3,567	13,930	13,720	374	36.1	118	3,533
1936	169	1,065	1,995	70.4	58.1	330	15.9	2,683	85.4	127	1.71	45.8	559
1937	1,011	298	1,925	7,125	1,346	6,306	3,800	434	106	34.2	172	90.0	1,901
1938	84.8	1,837	4,542	16,350	9,115	1,695	11,810	141	2,209	106	63.7	15.8	3,955
1939	.75	87.0	8.21	501	5,084	4,291	7,108	184	285	106	.95	.02	1,437
1940	0	.04	13.8	4.93	186	169	4,770	4,191	4,422	3,844	16.5	64.4	1,471
1941	6.79	3,095	7,199	3,409	2,754	5,631	4,248	12,400	7,993	2,734	248	84.2	4,165
1942	397	1,082	2,377	378	1,088	2,625	16,510	7,554	3,303	150	83.0	373	2,983
1943	23.1	338	991	1,854	320	4,470	2,057	458	4,123	152	9.26	17.8	1,238
1944	125	97.7	400	1,279	3,152	8,768	2,796	12,270	3,603	56.4	35.0	379	2,756
1945	7.39	848	3,389	5,012	8,042	18,630	18,510	1,709	8,684	2,153	112	51.9	5,560
1946	5,801	469	73.4	6,326	12,890	2,569	3,482	11,720	7,647	129	150	318	4,242
1947	34.8	12,500	4,372	1,714	252	2,825	3,577	6,074	288	47.5	47.5	165	2,662
1948	9.25	1,354	6,832	4,180	5,243	5,728	1,239	9,421	425	236	63.7	7.45	2,905
1949	10.5	26.1	67.6	5,898	7,859	6,258	2,538	2,938	985	254	146	92.2	2,225
1950	6,400	1,030	786	7,645	18,170	2,389	345	10,810	1,287	539	1,010	8,099	4,791
1951	214	34.6	24.1	556	7,632	844	362	801	5,832	741	45.1	121	1,381
1952	171	310	636	2,031	925	1,583	13,610	3,600	1,069	150	36.7	.60	1,997
1953	.39	761	4,392	1,841	2,530	2,615	2,934	14,120	77.8	698	87.0	146	2,534
1954	12.7	329	1,662	3,968	2,229	227	997	7,663	535	5.47	.48	0	1,474
1955	1,176	1,986	169	253	1,457	2,561	3,516	579	88.1	573	256	390	1,076
1956	935	10.5	17.9	28.9	4,816	126	70.9	2,024	84.1	30.1	18.8	15.4	666
1957	15.0	319	64.5	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	12,300	6,620	587,000	147,900	97,960	247,500	38,760	59,630	225,100	1,040	49	14,810	1,439,000
1925	1,220	315	902	3,860	6,380	6,870	84,000	192,800	47,120	3,250	6,110	254	353,100
1926	6,300	53,180	2,580	156,600	32,480	129,600	189,500	174,600	44,110	389,400	159,100	42,610	1,380,000
1927	116,600	36,380	399,100	210,000	187,700	613,700	620,600	94,140	46,860	62,650	9,150	6,430	2,403,000
1928	62,700	20,600	74,400	36,000	47,200	73,800	318,000	223,000	244,000	126,000	15,900	180	1,240,000
1929	14,200	53,400	499,000	402,000	170,000	250,000	50,500	422,000	68,400	24,000	299	16,400	1,970,000
1930	812	31,100	56,900	121,000	290,000	96,500	22,800	1,160,000	28,300	4,150	311	79	1,810,000
1931	12,100	14,500	111,000	2,730	37,500	167,000	68,400	39,700	2,590	35,000	12,500	10,200	513,000
1932	3,440	1,890	218,000	904,000	350,000	136,000	41,700	36,100	11,000	124,000	532	158	1,830,000
1933	135	51	26,400	351,000	34,700	374,000	57,700	240,000	67,200	45,700	17,000	7,800	1,220,000
1934	42,050	2,250	9,310	82,580	34,280	280,400	296,100	38,730	8,420	170	12	63	794,400
1935	0	19,680	34,550	403,400	81,790	100,700	212,300	856,200	816,600	23,020	2,220	7,050	2,558,000
1936	10,410	63,390	122,600	4,330	3,340	20,310	948	165,000	5,080	7,820	105	2,730	406,100
1937	62,150	17,710	118,400	438,100	74,760	387,700	226,100	26,670	6,290	2,110	10,560	5,360	1,376,000
1938	5,210	109,300	279,300	1,005,000	506,200	104,300	702,800	8,690	131,400	6,530	3,920	939	2,864,000
1939	46	5,180	505	30,780	282,400	263,800	423,000	11,340	16,960	6,520	58	1.4	1,041,000
1940	0	2.2	846	303	10,720	10,370	283,800	257,700	263,100	236,300	1,010	3,830	1,068,000
1941	418	184,200	442,700	209,600	152,900	346,200	252,800	762,200	475,600	168,100	15,230	5,010	3,015,000
1942	24,400	64,400	146,100	23,240	60,440	161,400	982,400	464,400	196,500	9,220	5,110	22,210	2,160,000
1943	1,420	20,100	60,940	114,000	17,770	274,900	122,400	28,160	245,300	9,370	569	1,060	896,000
1944	7,700	5,810	24,600	78,640	181,300	539,100	166,400	754,700	214,400	3,470	2,150	22,540	2,001,000
1945	455	50,430	208,400	308,200	446,600	1,146,000	1,101,000	105,100	516,700	132,400	6,910	3,090	4,025,000
1946	356,700	27,910	4,510	389,000	715,800	158,000	207,200	720,700	455,000	7,910	9,230	18,910	3,071,000
1947	2,140	744,100	268,800	105,400	13,970	173,700	212,800	373,500	17,110	2,920	2,920	9,850	1,927,000
1948	569	80,570	420,100	257,000	301,600	352,200	73,730	579,300	25,300	14,520	3,920	443	2,109,000
1949	644	1,550	4,160	362,700	436,500	384,800	151,000	180,600	58,640	15,610	9,000	5,490	1,611,000
1950	393,500	61,260	48,330	470,100	1,009,000	146,900	20,510	664,900	76,570	33,120	62,090	481,900	3,468,000
1951	13,150	2,060	1,480	35,160	423,900	51,920	21,560	49,250	347,000	45,580	2,770	7,200	1,000,000
1952	10,520	18,450	39,110	124,900	53,220	97,310	809,700	221,400	63,620	9,210	2,250	36	1,450,000
1953	24	45,300	270,000	113,200	140,500	160,800	174,600	868,400	4,630	42,920	5,350	8,690	1,834,000
1954	784	19,560	102,200	244,000	123,800	13,930	59,350	471,200	31,850	336	30	0	1,067,000
1955	72,330	118,200	10,380	15,550	80,910	157,500	209,200	35,580	5,240	35,240	15,750	23,220	779,100
1956	57,490	625	1,100	1,780	277,000	7,740	4,220	124,500	5,010	1,850	1,160	918	483,400
1957	924	19,010	3,960	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second, of Sulphur River near Darden, Tex.

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1924	957	28,600	Dec. 18, 1923	0.2	1,982	0.715	9.71	1,439,000	1,150	5.63	835,200
1925	957	13,000	May 4, 1925	.4	488	.176	2.39	359,100	570	2.79	412,700
1926	957	17,800	July 19,20, 1926	.4	1,906	.687	9.34	1,380,000	2,583	12.66	1,870,000
1927	957	36,500	Dec. 26, 1926	14	3,320	1.20	16.26	2,403,000	2,770	13.58	2,009,000
1928	667	36,500	June 29, 1928	.9	1,710	.616	8.39	1,240,000	2,270	11.16	1,650,000
1929	687	46,200	Dec. 21, 1928	0	2,720	.981	13.31	1,970,000	2,060	10.08	1,490,000
1930	702	67,200	May 19, 1930	.3	2,490	.898	12.20	1,810,000	2,560	12.53	1,860,000
1931	717	8,100	Mar. 10, 1931	0	709	.256	3.47	513,000	827	4.04	599,000
1932	732	34,700	Jan. 9, 1932	.2	2,520	.908	12.36	1,830,000	2,250	11.04	1,630,000
1933	747	15,500	Mar. 11, 1933	.2	1,690	.609	8.27	1,220,000	1,730	8.45	1,249,000
1934	762	16,300	Apr. 10, 1934	0	1,097	.395	5.37	794,400	1,098	5.37	795,000
1935	787	40,300	Jan. 23, 1935	0	3,533	1.27	17.30	2,558,000	3,729	18.27	2,700,000
1936	807	14,000	May 15, 1936	0	559	.202	2.75	406,100	562	2.76	407,900
1937	827	16,100	Mar. 29, 1937	.9	1,901	.686	9.30	1,376,000	2,171	10.63	1,571,000
1938	857	92,900	Jan. 25, 1938	1.1	3,955	1.43	19.36	2,864,000	3,419	16.73	2,476,000
1939	877	20,300	Apr. 1, 1939	0	1,437	.518	7.03	1,041,000	1,431	7.00	1,036,000
1940	897	19,700	Apr. 11, 1940	0	1,471	.530	7.23	1,068,000	2,334	11.46	1,694,000
1941	927	60,600	May 2, 1941	1.7	4,165	1.50	20.38	3,015,000	3,623	17.73	2,623,000
1942	957	68,900	Apr. 11, 1942	2.8	2,983	1.08	14.60	2,160,000	2,773	13.57	2,007,000
1943	977	23,000	Mar. 17, 1943	1.6	1,238	.446	6.06	896,000	1,176	5.76	851,600
1944	1007	57,900	May 5, 1944	1.6	2,756	.994	13.51	2,001,000	3,061	15.00	2,222,000
1945	1037	157,000	Apr. 1, 1945	3.6	5,560	2.00	27.21	4,025,000	5,739	28.09	4,155,000
1946	1057	40,000	Feb. 9, 1946	4.1	4,242	1.53	20.76	3,071,000	5,106	24.99	3,697,000
1947	1087, 1177	63,200	Nov. 9, 1946	0	2,662	.960	13.03	1,927,000	1,952	9.56	1,413,000
1948	1117	34,400	May 15, 1948	1.4	2,905	1.05	14.27	2,109,000	2,224	10.93	1,614,000
1949	1147	44,000	Jan. 30, 1949	.2	2,225	.802	10.89	1,611,000	2,911	14.25	2,107,000
1950	1177	51,100	Feb. 5, 1950	43	4,791	1.73	23.45	3,468,000	4,119	20.30	2,982,000
1951	1211	21,800	June 19, 1951	5.5	1,381	.499	6.77	1,000,000	1,452	7.11	1,051,000
1952	1241	54,400	Apr. 25, 1952	.1	1,997	.720	9.79	1,450,000	2,338	11.48	1,697,000
1953	1281	47,000	May 2, 1953	.1	2,534	.914	12.42	1,834,000	2,268	11.10	1,642,000
1954	1341	36,000	May 15, 1954	0	1,474	.531	7.22	1,067,000	1,582	7.75	1,145,000
1955	1511	16,000	Mar. 25, 1955	0	1,076	.388	5.28	779,100	880	4.32	637,400
1956	1511	15,600	Feb. 22, 1956	10	666	.240	3.26	483,400	617	3.02	448,100

34. Texarkana Reservoir near Texarkana, Tex.

Location.--Lat 33°19', long 94°10', at Texarkana Dam on Sulphur River, on U. S. Highway 59, 10 miles southwest of Texarkana, Bowie County.

Drainage area.--3,443 sq mi.

Gage.--Automatic water-stage recorder. Datum of gage is at mean sea level, datum of 1941, levels by Corps of Engineers. July 19 to Dec. 31, 1953, staff gage about 125 ft upstream and at datum 200 ft higher.

Extremes.--1953-57: Maximum contents, 1,698,000 acre-ft June 12, 1957 (elevation, 250.34 ft); minimum since first appreciable storage, 2,580 acre-ft Sept. 21-30, 1954.

Remarks.--Reservoir is formed by 18,500 ft earth-fill dam, a 200 ft uncontrolled concrete spillway and a mile-long dike. Flood-control outlet works consist of two 20-ft diameter conduits controlled by four 10- by 20-ft electrically driven broom-type gates, invert elevation, 200.0 ft msl. Flow over spillway is discharged into an outlet channel, and thence to the Sulphur River. Sulphur River was blocked and storage began July 2, 1953; first passage of water through conduits began July 18, 1953; gates closed and impoundment of water began June 27, 1956. Dam completed in December 1957. Reservoir built for flood control and conservation. Storage capacity by monthly allocation is reserved for the cities of Texarkana, Texas and Arkansas, and varies from 200 acre-ft in February to a maximum of 13,400 acre-ft for April. Data regarding dam and reservoir are shown in following table:

	Elevation (feet)	Capacity (acre-ft)
Top of dam	286.0	-
Spillway crest	259.5	2,654,300
Top of conservation pool	220.0	145,300
Streambed	180.0	0

Cooperation.--Records furnished by Corps of Engineers and reviewed by Geological Survey.

Contents, in thousands of acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1953	-	-	-	-	-	-	-	-	-	16.0	3.9	3.0	-
1954	2.8	6.0	6.6	87.10	43.27	9.76	8.51	162.2	3.27	2.82	2.64	2.58	- 0.42
1955	11.37	3.81	4.90	4.45	13.55	78.42	62.75	8.15	3.43	7.73	3.31	8.74	+ 6.16
1956	3.34	3.00	3.15	3.98	83.19	4.55	3.67	3.58	4.76	6.85	6.05	5.20	- 3.54
1957	4.99	28.16	31.66	54.88	155.2	337.8	681.1	1,306	1,213	436.1	209.2	199.1	+193.9

35. Cypress Creek near Pittsburg, Tex.

Location.--Lat 33°01'10", long 94°52'40", at bridge on State Highway 11, 1,800 ft upstream from Louisiana & Arkansas Railway bridge, and 5.2 miles east of Pittsburg, Camp County.

Drainage area.--366 sq mi.

Gage.--Water-stage recorder. Datum of gage is 247.49 ft above mean sea level, datum of 1929. Prior to Nov. 12, 1954, water-stage recorder at site 1,300 ft downstream at same datum.

Average discharge.--14 years (1943-57), 359 cfs (259,900 acre-ft per year).

Extremes.--1943-57: Maximum discharge, 58,500 cfs Mar. 30, 1945 (gage height, 27.32 ft at former site, from floodmark), from rating curve extended above 20,000 cfs by logarithmic plotting; no flow Aug. 20 to Oct. 3, 1954, and July 19 to Nov. 4, 1956.

Maximum stage known since at least 1910, that of Mar. 30, 1945; flood of January 1938 reached a stage of about 24 ft at former site, from information by local resident.

Remarks.--Small diversions above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1943	-	-	-	-	-	-	49.9	102	482	19.6	3.35	2.87	-
1944	32.1	7.02	44.8	179	619	779	621	1,864	156	6.51	3.89	20.2	361
1945	2.64	124	713	619	1,090	4,234	950	340	1,489	266	31.8	18.9	823
1946	456	140	139	1,324	1,209	684	313	2,659	834	47.7	25.4	22.2	653
1947	23.2	1,188	475	536	150	488	628	426	55.9	10.6	4.64	39.7	335
1948	11.1	453	1,127	649	951	769	314	1,315	44.1	220	6.92	9.96	473
1949	9.39	32.2	36.3	866	527	488	371	202	76.4	43.6	14.9	40.6	224
1950	1,694	133	254	1,368	2,466	589	195	1,801	214	97.2	59.5	979	812
1951	54.3	41.0	49.2	270	1,031	212	146	141	91.9	84.5	4.03	20.1	173
1952	15.4	35.7	50.9	249	109	331	1,786	543	145	17.7	3.28	.84	272
1953	1.85	65.5	358	204	303	228	328	1,512	16.7	112	20.6	73.8	270
1954	14.3	43.1	276	564	186	71.7	67.0	570	127	2.30	.35	0	161
1955	22.1	25.8	71.3	64.6	158	338	360	28.3	13.4	1.95	26.9	14.6	93.2
1956	67.6	6.75	23.0	23.1	485	50.9	27.8	140	2.01	.15	0	0	67.3
1957	0	3.35	7.34	13.1	66.0	328	1,587	853	733	16.8	8.29	79.4	307

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1943	-	-	-	-	-	-	2,970	6,280	28,650	1,210	206	171	43,450
1944	1,970	418	2,750	10,980	35,630	47,890	36,940	114,600	9,260	400	239	1,200	262,300
1945	162	7,400	43,820	38,050	60,550	260,300	56,520	20,920	88,620	16,330	1,950	1,120	595,700
1946	28,020	8,310	8,570	81,430	67,120	42,040	18,610	163,500	49,650	2,940	1,560	1,320	473,100
1947	1,430	70,700	29,220	32,940	8,330	30,010	37,370	26,200	3,330	651	285	2,360	242,800
1948	685	26,980	69,290	39,880	54,720	47,310	18,680	80,840	2,620	1,360	425	593	343,400
1949	577	1,920	2,230	53,270	29,250	30,010	22,100	12,410	4,550	2,680	916	2,420	162,300
1950	104,200	7,900	15,610	84,130	136,900	36,210	11,580	110,800	12,720	5,980	3,660	58,250	587,900
1951	3,340	2,440	3,020	16,590	57,250	13,050	8,660	8,640	5,470	5,190	248	1,190	125,100
1952	949	2,120	3,130	15,320	6,280	20,370	106,200	33,360	8,640	1,090	202	50	197,700
1953	114	3,900	21,990	12,560	16,850	13,990	19,540	92,980	992	6,860	1,270	4,390	195,400
1954	880	2,560	16,970	34,650	10,300	4,410	3,990	35,050	7,560	141	21	0	116,500
1955	1,360	1,540	4,380	3,970	8,770	20,790	21,440	1,780	798	120	1,660	867	67,480
1956	4,150	402	1,410	1,420	27,910	3,130	1,650	8,620	119	9.3	0	0	48,820
1957	0	199	451	804	3,670	20,200	94,450	52,470	43,610	1,040	510	4,720	222,100

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1943	1007	-	-	-	-	-	-	-	-	-	-
1944	1007	19,200	May 2, 1944	0.2	361	0.986	13.42	262,300	425	15.79	308,500
1945	1037	58,500	Mar. 30, 1945	2.1	823	2.25	30.53	595,700	814	30.21	589,300
1946	1057	11,900	May 20, 1946	9.4	653	1.78	24.24	473,100	731	27.12	529,500
1947	1087	5,300	Nov. 10, 1946	3.0	335	.915	12.43	242,800	329	12.21	238,400
1948	1117	14,100	May 12, 1948	3.2	473	1.29	17.58	343,400	346	12.85	251,200
1949	1147	9,800	Jan. 27, 1949	3.0	224	.612	8.33	162,300	394	14.63	285,300
1950	1177	16,900	Feb. 13, 1950	9.5	812	2.22	30.10	587,900	648	24.00	469,000
1951	1211	4,280	Feb. 19, 1951	.9	173	.473	6.39	125,100	169	6.27	122,500
1952	1241	16,600	Apr. 23, 1952	.4	272	.743	10.12	197,700	300	11.14	217,500
1953	1281	13,700	May 16, 1953	1.0	270	.738	10.01	195,400	262	9.72	189,800
1954	1341	3,140	Jan. 16, 1954	0	161	.440	5.99	116,500	143	5.31	103,400
1955	1391	2,550	Mar. 22, 1955	0	93.2	.225	3.44	67,480	91.4	3.37	66,160
1956	1441	1,110	Feb. 4, 1956	0	67.3	.184	2.49	48,820	60.1	2.22	43,510
1957	1511	9,220	Apr. 27, 1957	0	307	.839	11.37	222,100	-	-	-

36. Boggy Creek near Daingerfield, Tex.

Location. --Lat 33°02'05", long 94°47'10", at bridge on State Highway 11, a quarter of a mile upstream from Louisiana & Arkansas Railway bridge, 3.8 miles west of Daingerfield, Morris County, and 9 miles upstream from mouth.

Drainage area. --72 sq mi.

Gage. --Water-stage recorder. Datum of gage is 258.41 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1954, at site 1,700 ft downstream at same datum.

Average discharge. --14 years (1943-57), 92.7 cfs (67,110 acre-ft per year).

Extremes. --1943-57: Maximum discharge, 15,900 cfs Mar. 30, 1945 (gage height, 14.08 ft, former site); no flow at times. Maximum stage known since at least 1900, about 16 ft in January 1938, from information by local residents.

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1943	-	-	-	-	-	-	14.3	39.1	60.2	3.32	0	0	-
1944	0.79	0	7.31	32.1	222	283	193	682	27.4	2.79	1.93	6.02	122
1945	0	11.9	253	183	383	1,195	355	104	264	30.0	1.86	.50	231
1946	10.8	14.2	21.7	220	241	84.5	55.8	576	167	8.97	11.1	6.50	118
1947	3.67	394	87.6	110	55.1	127	114	64.7	6.65	.39	0	2.64	80.2
1948	1.55	108	273	158	309	264	113	363	12.5	6.27	.03	0	134
1949	0	1.30	4.18	217	109	91.9	81.3	33.0	12.7	10.3	2.75	10.4	47.6
1950	576	37.5	65.0	380	739	134	42.3	648	38.6	8.58	3.09	453	258
1951	18.0	12.2	13.5	50.9	288	60.7	38.2	27.7	15.4	11.0	.01	2.33	43.1
1952	.45	5.09	10.4	28.7	24.1	66.1	421	107	15.1	1.09	0	0	56.1
1953	0	11.5	101	61.2	91.9	78.9	105	394	2.31	10.3	.35	1.50	71.8
1954	.006	5.45	35.6	98.2	36.1	15.8	8.99	213	51.5	.12	0	0	38.9
1955	.07	.38	6.77	11.9	35.5	124	107	9.46	1.39	.06	1.09	.53	24.7
1956	.65	0	.21	2.63	87.9	17.0	5.55	14.7	0	0	0	0	10.4
1957	0	0	0	.01	11.0	34.2	381	134	166	7.32	3.23	15.1	62.2

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1943	-	-	-	-	-	-	852	2,410	3,580	204	0	0	-
1944	48	0	450	1,980	12,780	17,400	11,460	41,930	1,630	172	119	358	88,330
1945	0	710	15,530	11,230	21,280	73,510	21,130	6,410	15,720	1,850	115	30	167,500
1946	667	843	1,340	13,540	13,380	5,190	3,320	35,420	9,930	551	682	387	85,250
1947	226	23,460	5,390	6,750	3,060	7,800	6,810	3,980	396	24	0	157	58,050
1948	95	6,120	16,810	9,700	17,800	16,240	6,710	22,330	745	386	2.0	0	96,940
1949	0	78	257	13,360	6,060	5,650	4,840	2,030	758	636	169	616	34,450
1950	35,400	2,230	4,000	23,360	41,030	8,260	2,520	39,810	2,300	528	190	26,980	186,600
1951	1,110	726	829	3,130	16,000	3,730	2,270	1,700	916	674	.4	139	31,220
1952	28	303	638	1,760	1,380	4,060	25,050	6,550	899	67	0	0	40,740
1953	0	683	6,190	3,760	5,100	4,850	6,260	24,210	138	634	21	89	51,940
1954	.4	324	2,190	6,040	2,000	972	535	13,070	3,060	7.1	0	0	28,200
1955	4.4	23	416	730	1,970	7,620	6,360	582	83	4.0	67	32	17,890
1956	40	0	13	162	5,060	1,050	330	902	0	0	0	0	7,560
1957	0	0	0	.4	610	2,100	22,650	8,230	9,900	450	199	901	45,040

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1943	1007	-	-	0	-	-	-	-	-	-	-
1944	1007	9,650	May 2, 1944	0	122	1.69	23.14	88,330	143	27.25	104,100
1945	1037	15,900	Mar. 30, 1945	0	231	3.21	43.68	167,500	213	40.18	154,100
1946	1057	2,860	May 14, 1946	0	118	1.64	22.21	85,250	154	29.05	111,500
1947	1087	1,540	Nov. 7, 1946	0	80.2	1.11	15.13	58,050	71.8	13.55	52,000
1948	1117	3,990	Mar. 12, 1948	0	134	1.86	25.26	96,940	102	19.35	74,250
1949	1147	3,100	Jan. 27, 1949	0	47.6	.661	8.98	34,450	105	19.74	75,750
1950	1177	10,100	Feb. 12, Sept. 17	.4	258	3.58	48.64	186,600	204	35.13	147,600
1951	1211	1,210	Feb. 19, 1951	0	43.1	.599	8.15	31,220	40.8	7.71	29,530
1952	1241	4,610	Apr. 13, 1952	0	56.1	.780	10.63	40,740	64.3	12.16	46,640
1953	1281	4,290	May 16, 1953	0	71.8	.998	13.53	51,940	65.7	12.39	47,580
1954	1341	3,100	May 30, 1954	0	38.9	.541	7.34	28,200	36.1	6.81	26,130
1955	1391	2,540	Mar. 22, 1955	0	24.7	.343	4.66	17,890	24.2	4.55	17,500
1956	1441	350	Feb. 17, 1956	0	10.4	.145	1.96	7,560	10.3	1.95	7,500
1957	1511	2,600	Apr. 27, 1957	0	62.2	.865	11.74	45,040	-	-	-

37. Ellison Creek Reservoir near Daingerfield, Tex.

Location.--Lat 32°55'05", long 94°43'35", 1,700 ft upstream from dam of Lone Star Steel Co. on Ellison Creek, half a mile upstream from Cypress Creek, and 7.6 miles south of Daingerfield, Morris County.

Drainage area.--37 sq mi.

Gage.--Water-stage recorder. Datum of gage is 200.14 ft above mean sea level, datum of 1929. Prior to Sept. 22, 1948, staff gage at same site at datum 200 ft lower.

Extremes.--1943-57: Maximum contents, 28,490 acre-ft Mar. 30, 1945 (gage height, 70.38 ft); minimum, after filling of reservoir in May 1944, 16,640 acre-ft Jan. 3, 1957.

Remarks.--Reservoir is formed by rolled earth-fill dam. Storage began Jan. 14, 1943. Dam completed in April 1943. Capacity of reservoir, 24,700 acre-ft (gage height, 68.0 ft, crest of 300-ft concrete service spillway). Dead storage, 196 acre-ft (gage height, 35.0 ft, top of conduit discharge box). At times water is diverted from Cypress Creek into reservoir by pumping. Capacity of pumps, 40 cfs. Figures given herein represent total contents. Water used by Lone Star Steel Co.'s iron smelter. Contents computed from 12 p.m. gage heights.

Cooperation.--Capacity table furnished by Lone Star Steel Co.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1943	-	-	-	569	1,720	2,900	3,450	4,580	7,050	8,240	7,860	7,640	-
1944	9,270	10,000	12,200	15,300	21,700	25,200	26,200	25,000	24,400	23,600	24,100	24,500	+16,900
1945	23,990	24,910	25,450	24,950	25,460	25,990	24,950	24,810	24,840	24,630	24,260	24,080	- 410
1946	24,840	24,840	25,000	25,310	25,000	25,000	25,620	25,780	24,840	24,540	24,840	24,690	+ 610
1947	24,840	25,160	25,000	25,000	25,000	25,310	25,310	24,840	24,690	23,930	23,180	23,330	- 1,360
1948	23,180	24,080	25,310	25,160	25,160	25,000	24,840	24,840	23,930	23,030	22,150	21,050	- 2,280
1949	20,020	19,650	19,520	23,780	25,000	25,000	25,160	24,080	23,780	23,780	23,180	23,330	+ 2,280
1950	25,000	24,690	25,000	25,000	25,000	24,840	25,310	25,160	24,230	24,380	23,330	24,840	+ 1,510
1951	24,840	24,690	24,540	25,000	25,000	25,000	25,000	24,540	24,540	23,930	22,150	23,780	- 1,060
1952	23,480	24,080	24,540	24,690	24,840	25,160	24,840	25,000	23,630	22,580	21,180	19,900	- 3,880
1953	18,790	20,660	25,000	25,000	24,840	24,840	25,160	24,690	23,330	24,690	24,080	23,180	+ 3,280
1954	22,010	22,290	24,230	24,840	24,690	24,690	24,840	25,160	23,780	21,730	20,150	18,670	- 4,510
1955	19,280	20,020	21,050	22,290	24,840	25,000	24,690	24,540	24,080	24,540	24,230	23,180	+ 4,510
1956	22,290	21,590	21,450	22,730	24,690	24,690	24,840	24,230	22,880	20,920	19,520	18,310	- 4,870
1957	16,990	16,870	16,750	17,470	20,150	23,180	25,290	24,800	24,670	24,690	24,080	24,540	+ 6,230

38. Lake O' the Pines near Jefferson, Tex.

Location.--Lat 32°45', long 94°30', at Lake O' the Pines Dam on Cypress Creek 9 miles west of Jefferson, Marion County, and 80.1 miles upstream from Red River at mile 284.

Drainage area.--880 sq mi.

Gage.--Water-stage recorder. Datum of gage is mean sea level, datum of 1929, supplementary adjustment of 1941.

Extremes.--1957: Maximum contents period August 22 to September 1957, 5,610 acre-ft Sept. 30, 1957.

Remarks.--Reservoir is formed by a rolled earth-fill dam 10,600 ft in length and a concrete spillway 200 ft wide. Cofferdam closure was made Aug. 21, 1957, and water began flowing through conduits Sept. 25, 1957. Total capacity, 842,100 acre-ft (elevation, 249.5 ft) top of spillway. Capacity between elevations 228.5 and 249.5 ft is 587,200 acre-ft and is reserved for flood control. Flood-control outlet works consists of twin 10-ft diameter conduits controlled by two 8.0- by 12.5-ft broom-type gates; elevation of invert, 201.0 ft. Capacity between elevations 201.0 and 228.5 ft is 251,100 acre-ft and is reserved for conservation pool. Low-flow outlet works consists of one 14-in. diameter pipe and valve discharging into flood-control conduit, elevation of invert, 202.5 ft. Capacity below elevation 201.0 ft is 3,800 acre-ft.

Cooperation.--Records of content furnished by Corps of Engineers.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1957	-	-	-	-	-	-	-	-	-	-	150	5,610	-

39. Cypress Creek near Jefferson, Tex.

Location.--Lat 32°45', long 94°29', at bridge on Farm Road 726, 1,500 ft downstream from Lake O' the Pines Dam, 8 miles west of Jefferson, Marion County, and 14 miles upstream from Black Cypress Creek.

Drainage area.--850 sq mi.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Nov. 2, 1933, staff gage, and Nov. 2, 1933 to Dec. 8, 1955, water-stage recorder at site 1,500 ft upstream at datum 183.7 ft higher.

Average discharge.--33 years (1924-57), 660 cfs (477,800 acre-ft per year).

Extremes.--1924-57: Maximum discharge, 57,100 cfs Apr. 1, 1945 (gage height, 28.78 ft, from floodmark in gage well at site and datum then in use), from rating curve extended above 29,000 cfs; no flow at times.

Maximum stage known since at least 1853, that of Apr. 1, 1945; flood of May 20, 1930, reached a stage of 25.37 ft and floods of May 1884 and July 1904 reached stages of about 24 and 25 ft, respectively, at former site and datum, from information by local residents.

Remarks.--Flow slightly regulated by Ellison Creek Reservoir. (See elsewhere in this report.) Up to 40 cfs occasionally is diverted from Cypress Creek into Ellison Creek Reservoir by pumping. Cofferdam, at Lake O' the Pines Dam under construction about 1,500 ft upstream, closed Aug. 21. Water began flowing through conduits Sept. 25.

39. Cypress Creek near Jefferson, Tex.--Continued.

Cooperation.--Gage-height record, 16 discharge measurements, and computations of daily discharge furnished by Corps of Engineers. Records reviewed by Geological Survey.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	-	2.05	8.79	-
1925	7.05	21.4	29.9	197	125	127	580	702	16.5	5.00	4.86	.56	151
1926	45.6	337	258	654	422	1,270	1,180	483	184	1,320	117	31.5	527
1927	266	107	1,150	1,310	1,300	2,090	2,720	412	341	145	52.6	92.6	828
1928	314	187	428	471	401	583	780	1,730	1,310	612	218	12.7	588
1929	194	852	3,020	1,890	1,250	1,540	848	1,300	508	109	7.96	21.1	964
1930	6.86	61.2	105	454	1,130	865	402	6,850	249	27.2	2.05	2.47	851
1931	54.3	92.9	465	236	366	711	513	437	47.7	91.0	73.5	43.4	261
1932	5.60	37.6	1,460	4,150	2,610	1,270	348	324	47.8	82.9	3.43	5.34	860
1933	3.74	22.9	126	1,990	696	1,040	1,020	1,440	68.2	317	170	59.4	581
1934	33.8	38.7	360	778	526	1,869	1,500	822	72.2	9.55	.64	1.24	502
1935	.61	16.8	123	405	769	547	225	3,285	993	70.0	16.7	10.3	539
1936	40.1	365	764	207	207	246	69.5	639	34.4	94.1	4.85	1.21	224
1937	36.0	49.3	192	1,993	859	1,580	1,012	152	96.9	12.5	24.5	27.4	502
1938	15.6	162	1,703	4,970	1,713	656	2,219	184	77.9	51.8	14.8	5.88	979
1939	.80	16.3	52.2	273	1,316	1,389	813	238	66.3	8.50	1.08	.03	341
1940	0	4.32	56.5	61.7	190	137	763	435	509	455	20.2	17.4	220
1941	4.32	318	1,143	1,188	628	1,547	850	1,398	1,177	452	79.7	53.3	739
1942	57.1	207	732	720	487	798	3,066	2,059	320	63.6	208	241	746
1943	43.9	82.8	202	586	253	315	252	153	642	15.0	1.87	1.05	212
1944	38.2	7.71	56.7	427	1,354	2,109	1,680	5,284	827	22.6	6.96	61.5	991
1945	7.96	122	1,059	2,274	1,434	4,524	6,976	727	2,118	414	58.5	25.4	1,639
1946	368	372	449	2,500	2,666	1,383	764	4,155	3,324	147	49.6	55.8	1,344
1947	60.3	1,983	1,476	1,196	631	1,123	1,443	846	168	34.5	11.6	54.2	751
1948	22.9	377	2,312	1,392	2,439	2,658	861	2,481	313	73.5	12.4	12.0	1,080
1949	29.2	77.0	110	615	1,625	1,165	816	542	160	157	48.0	97.1	446
1950	2,372	795	496	3,051	4,906	1,245	502	4,090	612	146	146	2,593	1,727
1951	227	147	157	541	2,094	956	685	587	241	122	13.3	64.5	475
1952	39.4	101	169	398	445	786	3,053	633	776	35.1	14.1	5.51	534
1953	5.58	64.6	664	595	673	826	635	4,228	78.7	219	55.0	127	686
1954	20.6	98.8	447	860	529	224	260	846	537	10.9	6.21	6.28	320
1955	36.3	126	172	217	646	936	1,241	137	44.5	24.1	66.6	24.7	303
1956	103	25.4	67.5	75.6	812	261	135	415	11.6	6.70	5.50	3.04	158
1957	3.97	8.46	5.36	18.0	188	375	3,117	2,477	2,266	186	20.6	5.34	720

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	-	126	523	-
1925	434	1,270	1,840	12,100	6,970	7,790	34,500	43,200	980	307	299	33.3	110,000
1926	2,810	20,100	15,900	40,200	23,400	78,400	70,300	29,700	11,000	81,100	7,160	1,880	382,000
1927	16,400	6,380	71,000	80,300	72,000	128,000	162,000	25,400	20,300	8,890	3,230	5,510	599,000
1928	19,300	11,100	26,300	29,000	23,100	35,800	46,400	106,000	78,000	37,600	13,400	756	427,000
1929	11,900	50,700	185,000	116,000	69,400	94,700	50,500	79,900	30,200	6,700	489	1,260	697,000
1930	422	3,640	6,460	27,900	62,800	53,200	23,900	421,000	14,800	1,670	126	147	616,000
1931	3,340	5,530	28,600	14,500	20,300	43,700	30,500	26,900	2,840	5,600	4,520	2,580	189,000
1932	344	2,240	89,800	255,000	150,000	78,100	20,700	19,900	2,840	5,100	211	318	625,000
1933	230	1,360	7,750	122,000	38,700	64,000	60,700	88,500	4,060	19,500	10,500	3,530	421,000
1934	2,080	2,300	22,160	47,830	29,210	114,900	89,240	50,550	4,300	587	39	74	363,300
1935	38	1,000	7,570	24,920	42,720	33,630	13,390	202,000	59,090	4,300	1,030	613	390,300
1936	2,470	21,740	46,980	12,740	11,890	15,160	4,130	39,310	2,050	5,780	298	72	162,600
1937	2,210	2,930	11,810	122,500	47,690	97,150	60,220	9,360	5,760	771	1,500	1,630	363,500
1938	957	9,630	104,700	305,600	95,130	40,350	132,100	11,340	4,640	3,180	912	350	708,900
1939	49	970	3,210	16,780	73,110	85,440	48,370	14,640	3,950	523	67	1.6	247,100
1940	0	257	3,480	3,790	10,960	8,440	45,400	26,760	30,270	27,960	1,240	1,040	159,600
1941	266	18,940	70,260	73,060	34,900	95,120	50,590	85,940	70,030	27,760	4,900	3,170	534,900
1942	3,510	12,340	44,990	44,260	27,050	49,040	182,500	126,600	19,070	3,910	12,800	14,320	540,400
1943	2,700	4,930	12,400	36,020	14,060	19,390	15,010	9,390	38,210	924	115	63	153,200
1944	2,350	459	3,480	26,230	77,880	129,700	99,940	324,900	49,190	1,390	428	3,660	719,600
1945	489	7,280	65,120	139,800	79,650	278,200	415,100	44,710	126,000	25,440	3,590	1,510	1,187,000
1946	22,600	22,150	27,590	153,700	148,000	85,040	45,440	255,500	197,800	9,040	3,050	3,320	973,200
1947	3,710	118,000	90,760	73,540	35,040	69,030	85,860	51,990	9,980	2,120	716	3,230	544,000
1948	1,410	22,440	142,200	85,610	140,300	163,500	51,250	152,600	18,650	4,520	763	713	784,000
1949	1,790	4,580	6,770	37,820	90,270	71,630	48,570	33,350	9,510	9,630	2,950	5,780	322,600
1950	145,800	47,330	30,490	187,600	272,400	76,550	29,850	251,500	36,400	8,980	9,000	154,300	1,250,000

Monthly and yearly runoff, in acre-feet, of Cypress Creek near Jefferson, Tex.--Continued.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	13,940	8,740	9,670	33,280	116,300	58,780	40,760	36,080	14,350	7,510	820	3,840	344,100
1952	2,420	6,000	10,400	24,480	25,600	48,360	181,700	38,900	46,190	2,160	864	328	387,400
1953	343	3,840	40,810	36,570	37,370	50,790	37,790	260,000	4,680	13,450	3,380	7,540	496,600
1954	1,270	5,880	27,460	52,850	29,380	13,760	15,480	52,000	31,980	670	382	373	231,500
1955	2,230	7,480	10,580	13,300	35,900	57,540	73,820	8,450	2,650	1,480	4,090	1,470	219,000
1956	6,300	1,510	4,150	4,650	46,700	16,050	8,020	25,710	692	412	338	181	114,700
1957	244	504	330	1,100	10,450	23,090	185,500	152,300	134,900	11,420	1,270	318	521,400

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1924	587	-	-	-	-	-	-	-	-	-	-
1925	607	1,820	May 5, 1925	0	151	0.178	2.41	110,000	200	3.18	145,000
1926	627	5,900	July 17, 1926	0	527	.620	8.42	382,000	603	9.63	437,000
1927	647	6,820	Apr. 11, 1927	4.4	828	.974	13.22	599,000	777	12.42	562,000
1928	667	8,060	June 28, 1928	5.1	588	.691	9.57	427,000	852	13.79	618,000
1929	687, 1007	17,000	Dec. 20, 1928	2.6	964	1.13	15.38	697,000	636	10.14	460,000
1930	702, 1007	37,900	May 20, 1930	1.1	851	1.00	13.60	616,000	889	14.19	643,000
1931	717	1,300	Apr. 5, 1931	1.4	261	.307	4.15	189,000	536	5.36	244,000
1932	732	15,600	Jan. 8, 1932	.4	860	1.01	13.76	625,000	746	11.94	542,000
1933	747	3,550	Jan. 5, 1933	2.7	581	.683	9.26	421,000	605	9.65	438,000
1934	762	4,870	Mar. 31, 1934	.1	502	.590	7.99	363,300	477	7.59	345,300
1935	787	13,200	May 8, 1935	.3	539	.634	8.58	390,300	626	9.96	452,900
1936	807	1,790	May 19, 1936	.3	224	.263	3.59	162,600	149	2.39	108,400
1937	827	6,430	Jan. 26, 1937	.2	502	.590	8.02	363,500	638	10.19	461,900
1938	857, 1007	35,200	Jan. 26, 1938	2.2	979	1.15	15.62	708,900	826	13.17	597,800
1939	877	5,250	Mar. 2, 1939	0	341	.401	5.44	247,100	341	5.44	246,600
1940	897	1,320	Apr. 17, July 4	0	220	.259	3.53	159,600	338	5.42	245,300
1941	927	3,720	Jan. 2, 1941	1.7	739	.869	11.79	534,900	699	11.15	506,300
1942	957, 1007	17,000	Apr. 11, 1942	6.6	746	.877	11.92	540,400	697	11.02	504,700
1943	977	1,770	June 15, 1943	.5	212	.249	3.37	153,200	193	3.07	139,500
1944	1007	30,800	May 4, 1944	1.1	991	1.17	15.86	719,600	1,083	17.32	786,200
1945	1037	57,100	Apr. 1, 1945	5.8	1,639	1.93	26.14	1,187,000	1,639	26.14	1,186,000
1946	1057	15,600	June 3, 1946	15	1,344	1.58	21.45	973,200	1,538	24.53	1,113,000
1947	1087	4,400	Nov. 15, 1946	4.2	751	.883	11.99	544,000	687	10.96	497,600
1948	1117	12,000	May 15, 1948	5.2	1,080	1.27	17.27	784,000	869	13.91	631,000
1949	1147	6,120	Feb. 1, 1949	13	446	.524	7.10	322,600	736	11.73	533,100
1950	1177	20,400	Feb. 15, 1950	29	1,727	2.03	27.54	1,250,000	1,463	23.40	1,059,000
1951	1211	5,570	Feb. 24, 1951	7.0	475	.559	7.60	344,100	457	7.30	330,500
1952	1241	9,860	Apr. 27, 1952	4.7	534	.628	8.55	387,400	570	9.12	413,600
1953	1281	17,500	May 19, 1953	4.5	686	.807	10.94	496,600	672	10.72	486,200
1954	1341	2,090	Jan. 24, 1954	4.5	320	.376	5.12	231,500	300	4.79	217,200
1955	1441	2,530	Mar. 28, 1955	7.7	303	.356	4.82	219,000	291	4.64	210,700
1956	1441	1,220	May 4, 1956	.5	158	.186	2.53	114,700	143	2.28	103,600
1957	1511	16,000	Apr. 27, 1957	0	720	.847	11.49	521,400	-	-	-

SABINE RIVER BASIN

40. Sabine River near Emory, Tex.

Location.--Lat 32°46', long 95°48', at bridge on State Highway 19, 3.0 miles upstream from Giladon Creek, 7.5 miles south of Emory, Rains County, 8.0 miles downstream from McBees Creek, and at mile 501.

Drainage area.--965 sq mi.

Supplemental records available.--Records of chemical analyses and water temperatures for the period July 1952 to September 1954 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 350.28 ft above mean sea level, unadjusted (Texas Reclamation Department bench mark).

Average discharge.--5 years (1952-57), 507 cfs (367,100 acre-ft per year).

Extremes.--1952-57: Maximum discharge, 74,000 cfs Apr. 27, 1957 (gage height, 25.06 ft); no flow at times.
Maximum stage known since at least 1900, 25.7 ft in June 1943, from information by local resident and Texas Highway Department.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second, of Sabine River near Emory, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	0.04	0	-
1953	0	344	792	282	22.8	344	1,901	3,053	1.05	85.6	7.21	12.2	575
1954	0	88.5	446	1,213	166	3.35	386	548	104	.003	0	0	248
1955	717	351	6.10	35.2	510	165	472	60.7	21.8	.04	26.9	17.4	196
1956	.69	0	0	1.16	187	1.27	2.38	658	2.31	0	0	0	71.2
1957	0	112	14.7	90.7	295	1,316	7,652	5,943	1,645	19.4	6.44	270	1,446

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	2.4	-	-
1953	0	20,470	48,700	17,360	1,270	21,170	113,100	187,700	62	5,270	443	726	416,300
1954	0	5,260	27,420	74,560	9,230	206	22,950	33,710	6,170	.2	0	0	179,500
1955	44,120	20,910	375	2,160	28,310	10,170	28,090	3,730	1,300	2.6	1,650	1,030	141,800
1956	42	0	0	72	10,740	78	142	40,480	138	0	0	0	51,690
1957	0	6,650	902	5,580	16,400	80,940	455,300	365,400	97,880	1,190	396	16,080	1,047,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1952	1392	-	-	-	-	-	-	-	-	-	-
1953	1392	34,400	Apr. 30, 1953	0	575	0.598	8.11	416,300	525	7.40	379,800
1954	1392	8,800	Jan. 18, 1954	0	248	.258	3.50	179,500	293	4.14	212,200
1955	1392	5,950	Oct. 26, 1954	0	196	.204	2.77	141,800	106	1.49	76,480
1956	1442	8,610	May 4, 1956	0	71.2	.074	1.01	51,690	81.6	1.16	59,200
1957	1512	74,000	Apr. 27, 1957	0	1,446	1.50	20.42	1,047,000	-	-	-

41. Sabine River near Golden, Tex.

Location. --Lat 32°42'50", long 95°37'40", at highway bridge 50 ft downstream from Blair Creek, 3 miles upstream from Grand Saline Creek, and 5½ miles southwest of Golden, Wood County.

Drainage area. --1,200 sq mi, approximately.

Supplemental records available. --October 1925 to May 1926, gage heights and discharge measurements only.

Gage. --Staff gage. Datum of gage is 323.94 ft above mean sea level (State Reclamation Department bench mark).

Extremes. --1924-25: Maximum discharge observed, 7,800 cfs May 12, 1925 (gage height, 18.3 ft); no flow at times.
A stage of 21.3 ft was observed on Apr. 24, 1926. Flood in April 1923 reached a stage of 23.0 ft and flood in 1913 reached a stage of about 24½ ft, according to local residents.

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	0.09	2.45	110	-
1925	2.75	26.4	19.8	26.4	25.2	6.01	179	1,330	73.7	9.20	.05	.51	144

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	5.55	151	6,520	-
1925	169	1,570	1,220	1,620	1,400	370	10,700	82,000	4,380	565	2.8	30.3	104,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1924	588	a809	Sept. 18, 1924	0	-	-	-	-	-	-	-
1925	608	7,800	May 12, 1925	0	144	0.120	1.63	104,000	-	-	-

a Maximum observed during period June to September.

42. Sabine River near Mineola, Tex.

Location.--Lat 32°36'45", long 95°29'10", at bridge on U. S. Highway 69, 3.2 miles south of Mineola, Wood County, 4.5 miles upstream from International-Great Northern Railroad bridge, 16.5 miles upstream from Lake Fork, and at mile 461.

Drainage area.--1,445 sq mi.

Gage.--Water-stage recorder. Datum of gage is 304.16 ft above mean sea level, datum of 1929.

Average discharge.--18 years (1939-57), 1,050 cfs (760,200 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 76,000 cfs Apr. 1, 1945 (gage height, 24.00 ft); maximum gage height, 24.37 ft June 8, 1943 (discharge 64,100 cfs); no flow at times.
Maximum stage known since at least 1915, that of June 8, 1943.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	111	51.2	0.01	0.01	-
1940	0.04	3.01	20.5	10.5	152	164	1,451	1,049	1,354	834	122	309	454
1941	34.5	1,748	3,202	881	1,021	1,782	818	3,158	4,489	501	313	121	1,507
1942	138	327	863	118	625	408	10,450	3,544	1,516	10.0	158	217	1,521
1943	151	333	667	509	115	1,124	563	1,041	8,123	30.1	1.40	3.07	1,050
1944	347	15.8	171	807	1,619	3,174	847	6,650	1,516	64.2	2.94	50.1	1,277
1945	19.8	300	1,527	2,113	3,419	9,086	6,928	290	6,088	2,112	83.6	23.5	2,652
1946	1,030	410	222	2,114	4,412	1,276	794	3,145	4,682	64.9	124	147	1,512
1947	60.3	6,714	1,429	1,134	160	614	1,705	544	511	48.2	51.9	392	1,108
1948	14.3	861	3,245	1,622	1,639	2,380	195	2,743	80.8	99.9	38.5	5.80	1,083
1949	3.82	32.3	50.2	1,185	3,089	1,396	537	912	601	321	157	33.9	678
1950	1,607	247	62.7	2,010	7,238	619	746	3,725	935	333	688	432	1,518
1951	17.1	30.7	20.0	133	1,365	170	63.5	290	2,243	195	3.63	1.77	367
1952	12.1	21.5	31.6	64.7	110	299	3,398	1,875	705	12.8	.27	0	541
1953	.31	150	1,314	464	100	640	806	7,376	9.16	296	14.5	44.4	949
1954	3.54	96.5	525	1,433	406	45.5	447	680	147	.48	0	0	316
1955	860	803	76.7	99.8	782	824	947	83.4	35.7	26.1	56.4	62.0	384
1956	4.12	3.61	13.4	26.3	434	29.3	17.7	923	4.81	0	0	0	121
1957	.14	118	23.0	112	527	1,565	9,469	7,563	2,694	21.4	8.65	249	1,859

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	6,620	3,150	0.4	0.4	-
1940	2.6	179	1,260	644	8,720	10,060	86,360	64,500	80,580	51,310	7,500	18,360	329,500
1941	2,120	104,000	196,900	54,170	56,720	109,600	48,670	194,200	267,100	30,830	19,250	7,220	1,091,000
1942	8,500	19,470	53,050	7,230	34,730	25,090	621,600	217,900	90,190	615	9,720	12,880	1,101,000
1943	9,310	19,810	41,010	31,310	6,380	69,100	33,510	64,020	483,400	1,850	86	182	760,000
1944	21,360	940	10,510	49,590	93,150	195,200	50,390	408,900	90,220	3,950	181	2,980	927,400
1945	1,220	17,820	93,870	129,900	189,900	558,600	412,300	17,830	362,200	129,800	5,140	1,400	1,920,000
1946	63,360	24,390	13,680	130,000	245,000	78,450	47,230	193,400	278,600	3,990	7,620	8,740	1,094,000
1947	3,710	399,500	87,890	69,710	8,890	37,730	101,500	33,470	30,400	2,970	3,190	23,310	802,300
1948	881	51,210	199,500	99,720	94,290	146,300	11,630	168,700	4,810	6,140	2,370	345	785,900
1949	235	1,920	3,080	72,880	171,500	85,830	31,970	56,090	35,770	19,710	9,660	2,020	490,700
1950	98,830	14,700	3,860	123,600	402,000	38,090	44,400	229,000	55,640	20,480	42,320	25,710	1,099,000
1951	1,050	1,830	1,230	8,190	75,830	10,430	3,780	17,810	133,500	11,990	223	106	266,000
1952	747	1,280	1,940	3,980	6,340	18,370	202,200	115,300	41,940	787	17	0	392,900
1953	19	8,910	80,810	28,510	5,570	39,340	48,000	453,500	545	18,210	892	2,640	686,900
1954	218	5,740	32,310	88,110	22,540	2,800	26,590	41,830	8,740	30	0	0	228,900
1955	52,900	47,780	4,710	6,140	43,400	50,660	56,340	5,130	2,120	1,610	3,470	3,690	278,000
1956	253	215	825	1,620	24,940	1,800	1,050	56,770	286	.2	0	0	87,760
1957	8.5	7,010	1,420	6,880	29,270	96,230	563,400	465,000	160,300	1,320	532	14,800	1,346,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1939	878	-	-	0	-	-	-	-	-	-	-
1940	898	10,100	Apr. 11, 1940	0	454	0.314	4.29	329,500	869	8.20	631,100
1941	928	16,900	June 14, 1941	.4	1,507	1.04	14.15	1,091,000	1,200	11.27	868,800
1942	958	45,600	Apr. 11, 1942	0	1,521	1.05	14.30	1,101,000	1,506	14.16	1,090,000
1943	978	64,100	June 8, 1943	.3	1,050	.727	9.85	760,000	998	9.37	722,600
1944	1008	39,700	May 4, 1944	.2	1,277	.884	12.03	927,400	1,388	13.07	1,007,000
1945	1038	76,000	Apr. 1, 1945	4.2	2,652	1.84	24.92	1,920,000	2,636	24.77	1,908,000
1946	1058	37,800	June 2, 1946	4.5	1,512	1.05	14.21	1,094,000	2,050	19.26	1,484,000
1947	1088	39,700	Nov. 7, 1946	1.4	1,108	.767	10.40	802,300	777	7.29	562,800
1948	1118	21,300	May 14, 1948	.7	1,083	.749	10.18	785,900	743	6.99	539,500
1949	1148	21,800	Feb. 27, 1949	1.1	678	.469	6.37	490,700	833	7.82	602,800
1950	1178	29,800	Feb. 5, 1950	4.9	1,518	1.05	14.25	1,099,000	1,361	12.78	985,400

Yearly discharge, in cubic feet per second, of Sabine River near Mineola, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1951	1212	8,960	June 18, 1951	.4	367	.254	3.45	266,000	367	3.46	265,800
1952	1242	16,000	Apr. 26, 1952	0	541	.374	5.10	392,900	659	6.21	478,700
1953	1282	32,300	May 2, 1953	0	949	.657	8.92	686,900	878	8.24	635,500
1954	1342	7,150	Jan. 21, 1954	0	316	.219	2.96	228,900	409	3.84	296,000
1955	1392	4,850	Oct. 29, 1954	.1	384	.266	3.62	278,000	240	2.27	173,900
1956	1442	5,580	May 8, 1956	0	121	.084	1.13	87,760	131	1.22	94,910
1957	1512	52,000	Apr. 29, 1957	0	1,859	1.29	17.47	1,346,000	-	-	-

43. Lake Fork Sabine River near Quitman, Tex.

Location.--Lat 32°46', long 95°28', at bridge on State Highway 37, half a mile downstream from Dry Creek and 2.5 miles south of Quitman, Wood County.

Drainage area.--586 sq mi.

Gage.--Wire-weight gage. Datum of gage is 317.42 ft above mean sea level, datum of 1929. June 27, 1924, to Apr. 30, 1926, staff gage at site 1,000 ft downstream at same datum.

Average discharge.--19 years (1924-25, 1939-57), 438 cfs (317,100 acre-ft per year).

Extremes.--1924-26, 1939-57: Maximum discharge, 75,600 cfs Mar. 30, 1945 (gage height, 29.85 ft, from floodmark), from rating curve extended above 49,000 cfs; no flow at times.

Maximum stage since at least 1895, that of Mar. 30, 1945. Flood of July 1895 reached a stage of about 26 ft, from information by local resident.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	0.34	3.36	48.2	-
1925	0.46	19.6	4.04	23.3	23.8	13.0	149	372	2.27	.88	4.27	8.60	52.1
1926	54.6	392	8.25	539	37.5	660	752	-	-	-	-	-	-
1939	-	-	-	-	-	395	281	15.4	1.84	2.55	0	.09	-
1940	0	.003	.47	.29	8.55	52.8	528	823	388	348	73.8	45.6	190
1941	3.88	577	1,230	270	542	880	572	789	1,046	229	73.4	20.7	519
1942	5.26	67.2	163	81.9	196	251	3,487	1,197	175	3.70	30.9	34.6	472
1943	12.2	36.4	324	143	64.6	299	116	632	2,960	10.1	.02	.57	381
1944	43.4	.64	37.1	218	599	857	467	2,573	465	32.3	4.19	63.6	448
1945	1.17	135	517	857	1,600	6,372	1,927	215	2,019	911	30.2	3.15	1,215
1946	833	224	123	1,646	2,168	950	290	2,549	1,529	19.5	46.2	10.3	859
1947	11.7	2,245	644	646	108	383	1,006	450	130	2.39	21.7	16.8	471
1948	.48	274	1,444	608	1,109	1,161	230	1,602	19.2	70.4	3.49	.04	545
1949	0	8.58	14.1	916	1,023	539	648	356	63.2	91.7	5.35	16.8	302
1950	1,549	51.9	117	1,103	3,255	604	288	1,686	560	657	130	143	832
1951	20.0	9.41	13.9	106	1,086	136	47.5	119	185	30.5	.09	.01	139
1952	.03	6.13	21.5	118	127	267	2,231	906	121	2.34	.02	0	315
1953	0	99.8	588	290	145	288	1,271	2,544	5.56	149	15.6	200	470
1954	1.03	17.6	284	822	445	52.2	164	278	21.8	.003	0	0	173
1955	395	167	32.9	85.9	228	347	495	32.9	11.2	.19	27.0	51.6	155
1956	3.35	0	.74	5.65	269	17.7	16.2	232	3.06	0	0	0	44.9
1957	0	26.3	2.59	64.5	190	616	3,850	2,871	1,212	2.68	4.23	106	744

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	21	207	2,870	-
1925	28	1,170	248	1,430	1,320	799	8,880	22,900	135	54	262	512	37,700
1926	3,350	23,300	507	33,100	2,080	40,600	44,700	-	-	-	-	-	-
1939	-	-	-	-	-	24,310	16,730	948	109	157	0	5.2	-
1940	0	.2	29	18	492	3,250	31,440	50,610	23,090	21,390	4,540	2,710	137,600
1941	238	34,310	75,650	16,590	30,070	54,080	34,020	48,530	62,240	14,100	4,510	1,230	375,600
1942	323	4,000	10,040	5,040	10,900	15,460	207,500	73,620	10,440	228	1,900	2,060	341,500
1943	752	2,170	19,900	8,800	3,590	18,370	6,930	38,890	175,900	619	1.4	34	276,000
1944	2,670	38	2,280	13,430	34,430	52,690	27,770	158,200	27,680	1,980	257	3,790	325,200
1945	72	8,040	31,780	52,670	88,850	391,800	114,700	13,200	120,100	56,040	1,860	187	879,300
1946	51,200	13,320	7,590	101,200	120,400	58,420	17,260	156,700	90,908	1,200	2,840	610	621,700
1947	716	133,600	39,610	39,700	5,980	23,530	59,850	27,670	7,730	147	1,330	998	340,900
1948	30	16,280	88,810	37,390	63,760	71,400	13,710	98,510	1,140	4,330	215	2.6	395,600
1949	0	511	868	56,350	56,820	33,140	38,540	21,880	3,760	5,640	329	1,000	218,800
1950	95,260	3,090	7,170	67,850	180,800	37,140	17,140	103,600	33,320	40,410	8,010	8,520	602,300

Monthly and yearly runoff, in acre-feet, of Lake Fork Sabine River near Quitman, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1,230	560	855	6,520	60,300	8,380	2,830	7,320	10,980	1,880	5.4	0.4	100,900
1952	2.0	365	1,320	7,230	7,310	16,450	132,700	55,710	7,190	144	1.2	0	228,400
1953	0	5,940	36,170	17,840	8,060	17,700	75,640	156,400	331	9,130	960	11,890	340,100
1954	63	1,050	17,490	50,570	24,740	3,210	9,790	17,120	1,300	.2	0	0	125,300
1955	24,260	9,970	2,020	5,280	12,670	21,320	29,440	2,020	667	12	1,660	3,070	112,400
1956	206	0	45	347	15,470	1,090	962	14,280	182	0	0	0	32,580
1957	0	1,570	159	3,970	10,530	37,880	229,100	176,500	72,130	165	260	6,300	538,600

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum	Mean	Per	Runoff		Mean	Runoff	
		Discharge	Date	day		sq mi	Inches	Acre-feet		Inches	Acre-feet
1924	588	-	-	0	-	-	-	-	-	-	-
1925	608	1,920	May 14, 1925	0	52.1	0.089	1.21	37,700	87.6	2.04	63,400
1926	628, 1312	7,160	Apr. 26, 1926	0	-	-	-	-	-	-	-
1939	878	-	-	0	-	-	-	-	-	-	-
1940	898	6,030	May 30, 1940	0	190	.324	4.41	137,600	341	7.94	247,700
1941	928	9,200	Dec. 28, 1940	.2	519	.886	12.01	375,600	386	8.94	279,700
1942	978	28,400	Apr. 9, 1942	0	472	.805	10.93	341,500	483	11.20	350,000
1943	978	51,600	June 7, 1943	0	381	.650	8.82	276,000	356	8.25	258,100
1944	1008	20,700	May 3, 1944	0	448	.764	10.41	325,200	496	11.53	360,100
1945	1038	75,600	Mar. 30, 1945	0	1,215	2.07	28.12	879,300	1,259	29.15	911,500
1946	1058	17,000	May 31, 1946	0	859	1.47	19.89	621,700	999	23.14	723,500
1947	1088	14,600	Nov. 7, 1946	0	471	.804	10.90	340,900	376	8.70	272,100
1948	1118	19,200	May 12, 1948	0	545	.930	12.66	395,600	402	9.35	291,800
1949	1148	10,200	Feb. 26, 1949	0	302	.515	7.00	218,800	446	10.33	323,000
1950	1178	24,500	Feb. 3, 1950	.2	832	1.42	19.28	602,300	690	15.99	499,400
1951	1212	5,810	Feb. 20, 1951	0	139	.237	3.23	100,900	138	3.19	99,900
1952	1242	17,900	Apr. 23, 1952	0	315	.537	7.31	228,400	370	8.61	268,800
1953	1282	20,700	Apr. 30, 1953	0	470	.802	10.88	340,100	437	10.12	316,600
1954	1342	6,100	Jan. 18, 1954	0	173	.295	4.00	125,300	197	4.57	143,000
1955	1392	4,680	Oct. 26, 1954	0	155	.264	3.59	112,400	106	2.44	76,390
1956	1442	2,200	May 5, 1956	0	44.9	.077	1.03	32,580	46.9	1.08	34,060
1957	1512	17,800	Apr. 28, 1957	0	744	1.27	17.24	538,600	-	-	-

44. Big Sandy Creek near Big Sandy, Tex.

Location.--Lat 32°36', long 95°06', at bridge on State Highway 155, 0.8 mile upstream from St. Louis Southwestern Railroad bridge, 1.3 miles northeast of Big Sandy, Upshur County, and 7.1 miles upstream from mouth.

Drainage area.--236 sq mi.

Gage.--Water-stage recorder. Datum of gage is 278.38 ft above mean sea level, datum of 1929, supplementary adjustments of 1942. Prior to Oct. 5, 1940, wire-weight gage, and Oct. 5, 1940, to Nov. 26, 1951, water-stage recorder at site 0.7 mile upstream at datum 3.00 ft higher.

Average discharge.--18 years (1939-57), 202 cfs (146,200 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 38,000 cfs Mar. 31, 1945 (gage height, 24.1 ft, from floodmark), from rating curve extended above 13,000 cfs on basis of rainfall-runoff study for this and adjoining basins; minimum, 5.0 cfs Aug. 15, 1956 (gage height, 2.18 ft).

Maximum stage known since at least 1905, that of Mar. 31, 1945. Maximum stage known during period 1905 to Mar. 30, 1945, 22.1 ft in January 1938 (possible backwater from Sabine River), from information by observer.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	246	190	37.0	22.2	14.8	11.1	8.53	-
1940	10.0	21.7	42.9	36.1	78.0	71.3	129	157	174	108	39.7	49.1	76.1
1941	17.5	276	331	202	206	383	216	142	416	122	33.1	32.5	198
1942	49.5	85.0	210	150	167	173	685	522	123	35.4	101	55.9	196
1943	44.8	58.9	272	246	124	145	131	142	492	35.1	16.5	20.9	144
1944	152	34.9	124	314	514	457	348	860	151	25.4	26.3	35.3	253
1945	21.7	69.9	280	408	461	2,416	1,294	214	899	185	48.4	33.0	527
1946	289	144	222	745	566	476	285	968	881	76.6	68.5	60.1	398
1947	58.2	685	333	361	210	308	397	237	93.3	29.9	26.0	34.8	231
1948	32.6	90.8	540	376	418	519	199	479	72.6	36.6	21.7	19.1	234
1949	24.3	41.7	54.5	236	351	275	264	304	76.5	233	48.6	57.6	163
1950	448	131	131	605	915	213	232	875	199	200	116	104	345
1951	55.4	71.3	73.0	169	477	175	120	153	80.7	31.5	17.2	26.1	118
1952	28.0	50.0	53.2	79.4	136	175	628	218	152	25.5	15.4	13.3	130
1953	15.7	77.5	198	155	137	221	212	977	37.8	115	43.2	69.0	190
1954	27.5	60.5	184	226	157	85.7	80.9	163	76.4	17.7	10.4	9.05	91.3
1955	24.4	52.4	68.4	77.6	140	267	201	60.0	26.8	23.7	33.5	31.1	83.4

Monthly and yearly mean discharge, in cubic feet per second, of Big Sandy Creek near Big Sandy, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	18.9	19.2	32.9	46.1	157	64.5	42.2	74.8	12.9	7.65	6.94	8.51	40.6
1957	8.38	19.4	24.6	32.3	146	168	1,011	575	432	38.3	43.3	54.4	211

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	15,120	11,310	2,270	1,320	908	682	508	-
1940	616	1,290	2,640	2,220	4,490	4,390	7,660	9,650	10,320	6,630	2,440	2,920	55,270
1941	1,080	16,420	20,380	12,410	11,450	23,560	12,830	8,730	24,740	7,520	2,040	1,930	143,100
1942	3,050	5,060	12,900	9,250	9,290	10,660	40,760	32,100	7,330	2,180	6,190	3,330	142,100
1943	2,750	3,510	16,690	15,140	6,880	8,910	7,800	8,740	29,260	2,160	1,020	1,240	104,100
1944	9,330	2,080	7,630	19,300	29,590	28,100	20,700	52,910	8,990	1,560	1,620	2,110	183,900
1945	1,330	4,160	17,230	25,060	25,580	148,600	76,980	13,140	53,480	11,370	2,980	1,970	381,900
1946	17,770	8,590	13,630	45,820	31,440	29,290	16,960	59,530	52,400	4,710	4,210	3,580	287,900
1947	3,580	40,780	20,470	22,190	11,640	18,920	23,650	14,590	5,550	1,840	1,600	2,070	166,900
1948	2,000	5,400	33,200	23,150	24,070	31,910	11,820	29,460	4,320	2,250	1,340	1,130	170,000
1949	1,490	2,480	3,350	14,530	19,480	16,930	15,690	18,720	4,550	14,350	2,990	3,430	118,000
1950	27,520	7,790	8,050	37,200	50,840	13,070	13,830	53,780	11,860	12,280	7,130	6,170	249,500
1951	3,410	4,240	4,490	10,400	26,490	10,760	7,110	9,420	4,800	1,940	1,060	1,550	85,670
1952	1,720	2,980	3,270	4,880	7,830	10,770	37,360	13,420	9,050	1,570	948	789	94,590
1953	964	4,610	12,190	9,550	7,620	13,560	12,630	60,100	2,250	7,040	2,660	4,110	137,300
1954	1,690	3,600	11,290	13,920	8,700	5,270	4,810	10,000	4,540	1,090	642	539	66,090
1955	1,500	3,120	4,200	4,770	7,780	16,400	11,940	3,690	1,590	1,460	2,060	1,850	60,360
1956	1,160	1,140	2,020	2,830	9,030	3,970	2,510	4,600	770	470	427	506	29,430
1957	515	1,150	1,510	1,980	8,080	10,360	60,170	35,330	25,690	2,360	2,660	3,240	153,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1939	878	-	-	-	-	-	-	-	-	-	-
1940	898	1,400	May 31, 1940	7.9	76.1	0.324	4.40	55,270	122	7.07	88,600
1941	928	-	-	13	198	.843	11.41	143,100	174	10.05	126,200
1942	978	4,840	Apr. 10, 1942	18	196	.834	11.32	142,100	199	11.48	144,000
1943	978	4,240	June 8, 1943	14	144	.613	8.30	104,100	138	7.99	100,200
1944	1008	5,540	May 3, 1944	17	253	.108	14.67	183,900	258	14.96	187,600
1945	1038	38,000	Mar. 31, 1945	19	527	2.24	30.47	381,900	551	31.86	399,200
1946	1058	7,120	June 1, 1946	30	398	1.69	22.99	287,900	432	24.96	312,800
1947	1088	2,250	Nov. 9, 1946	21	231	.983	13.32	166,900	197	11.39	142,600
1948	1118	3,340	May 14, 1948	14	234	.996	13.57	170,000	188	10.92	136,800
1949	1148	2,690	May 1, 1949	19	163	.694	9.40	118,000	213	12.27	154,000
1950	1178	5,640	Feb. 14, 1950	27	345	1.47	19.91	249,500	302	17.42	218,300
1951	1212	1,600	Feb. 21, 1951	15	118	.502	6.82	85,670	113	6.49	81,500
1952	1242	4,620	Apr. 24, 1952	12	130	.551	7.53	94,590	144	8.31	104,400
1953	1282	7,270	May 17, 1953	14	190	.805	10.93	137,300	188	10.83	136,100
1954	1342	695	Jan. 20, 1954	7.9	91.3	.387	5.25	66,090	80.6	4.63	58,330
1955	1392	1,590	Mar. 24, 1955	12	83.4	.353	4.80	60,360	77.2	4.44	55,860
1956	1442	281	Feb. 10, 1956	5.4	40.6	.172	2.35	29,430	41.8	2.42	30,310
1957	1512	5,260	Apr. 27, 1957	7.0	211	.894	12.16	153,000	-	-	-

45. Sabine River near Gladewater, Tex.

Location.--Lat 32°32', long 94°57', at bridge on U. S. Highway 271, half a mile downstream from Glade Creek, 1 mile southwest of Gladewater, Gregg County, and at mile 398.

Drainage area.--2,846 sq mi.

Gage.--Water-stage recorder. Datum of gage is 243.85 ft above mean sea level (Texas Reclamation Department bench mark based on Geological Survey datum). Prior to Oct. 13, 1933, chain gage at same site and datum.

Average discharge.--25 years (1932-57), 1,984 cfs (1,436,000 acre-ft per year).

Extremes.--1932-57: Maximum discharge, 138,000 cfs Apr. 2, 1945 (gage height, 44.16 ft), from rating curve extended above 91,000 cfs; minimum, 5.6 cfs Aug. 16, 1939.

Maximum stage since at least 1914, that of Apr. 2, 1945. Flood of May 1914 reached a stage of about 42 ft (discharge, 71,100 cfs), from information by local resident.

Remarks.--Small diversions above station for oilfield operations and municipal supply.

Monthly and yearly mean discharge, in cubic feet per second, of Sabine River near Gladewater, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	80.9	67.0	550	4,700	1,020	3,460	1,840	2,470	1,170	976	147	87.0	1,390
1934	151	101	549	1,510	1,460	4,010	5,770	454	258	29.3	13.2	19.6	1,190
1935	19.0	271	655	2,114	3,733	1,773	1,184	9,290	5,409	818	37.8	116	2,109
1936	378	1,073	1,777	349	387	394	172	1,859	156	232	20.0	12.7	571
1937	1,394	526	811	3,771	1,791	3,599	2,553	253	204	50.1	44.9	66.7	1,255
1938	69.1	621	1,771	12,370	6,510	2,109	10,900	775	242	92.2	110	20.9	2,937
1939	16.7	86.6	167	636	2,060	3,137	2,041	235	209	109	13.2	10.3	717
1940	11.5	42.1	158	146	472	357	2,493	1,425	2,804	1,579	172	618	852
1941	69.3	2,246	6,532	4,212	2,216	4,906	1,817	5,378	7,727	2,015	508	587	3,194
1942	482	816	1,920	769	1,493	1,415	13,530	9,124	2,856	171	1,071	565	2,845
1943	330	600	1,082	2,158	588	1,089	2,176	1,555	14,330	190	42.3	34.6	2,002
1944	979	169	600	2,306	3,710	5,131	2,891	12,160	3,428	201	68.0	186	2,657
1945	72.4	421	2,531	5,134	3,701	12,700	23,390	1,307	9,179	3,888	288	118	5,206
1946	2,583	1,146	1,070	5,748	7,786	3,145	3,098	5,818	12,970	408	206	378	3,655
1947	298	10,880	3,326	3,052	1,165	2,244	4,122	1,865	707	408	64.8	556	2,382
1948	125	1,088	6,632	3,292	4,382	5,252	1,345	6,438	401	228	135	56.5	2,456
1949	58.6	157	243	1,094	4,198	4,743	2,050	2,427	1,048	938	576	203	1,462
1950	2,198	2,514	569	4,981	13,960	2,010	1,574	7,499	2,492	597	1,517	855	3,328
1951	202	270	257	670	2,776	1,702	530	826	2,331	331	39.0	62.7	818
1952	67.6	202	277	469	750	1,300	5,592	3,568	3,020	97.0	25.9	18.1	1,275
1953	22.3	256	2,398	1,395	673	1,947	1,572	13,310	227	1,008	202	411	1,977
1954	67.7	293	1,463	2,485	1,549	487	902	1,742	379	29.9	12.6	11.8	783
1955	404	2,049	450	643	1,750	2,212	2,800	423	171	121	179	345	951
1956	66.5	54.1	137	232	1,224	256	176	1,396	48.9	16.8	8.61	9.38	300
1957	14.5	163	70.6	212	1,143	1,798	10,430	16,200	8,843	133	131	333	3,289

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	4,970	3,990	33,800	289,000	56,600	213,000	109,000	152,000	69,600	60,000	9,040	5,180	1,010,000
1934	9,280	6,010	33,800	92,800	81,100	247,000	343,000	27,900	15,400	1,800	812	1,170	860,000
1935	1,170	16,150	40,260	130,000	207,300	109,000	70,440	571,200	321,900	50,320	2,320	6,880	1,527,000
1936	23,220	63,850	109,300	21,480	22,280	24,210	10,220	114,300	9,250	14,250	1,230	758	414,300
1937	85,690	31,280	49,840	231,800	99,460	221,300	151,900	15,580	12,170	3,080	2,760	3,970	908,800
1938	4,250	36,970	108,900	760,800	361,600	129,700	648,300	47,660	14,410	5,670	6,780	1,240	2,126,000
1939	1,030	5,150	10,260	39,110	114,400	192,900	121,500	14,480	12,440	6,670	809	613	519,400
1940	709	2,510	9,730	8,980	27,170	21,920	148,300	87,600	166,900	97,060	10,580	36,780	618,200
1941	4,260	133,600	401,700	259,000	123,100	301,700	108,100	330,700	459,800	123,900	31,260	34,920	2,312,000
1942	29,650	48,530	118,100	47,290	82,930	87,010	805,200	561,000	170,000	10,540	65,880	33,620	2,060,000
1943	20,310	35,690	66,520	132,700	32,670	66,990	129,500	95,620	853,000	11,680	2,600	2,060	1,449,000
1944	60,200	10,050	36,900	141,800	213,400	315,500	172,000	747,800	204,000	12,350	4,180	11,040	1,929,000
1945	4,450	25,040	155,600	315,700	205,600	780,600	1,392,000	80,370	546,200	239,100	17,700	7,010	3,769,000
1946	158,800	68,170	65,810	353,500	432,400	193,300	184,300	357,700	771,800	25,110	12,690	22,520	2,646,000
1947	18,310	647,400	204,500	187,700	64,710	138,000	245,300	114,700	42,070	25,030	3,980	33,070	1,725,000
1948	7,669	64,710	407,800	202,400	252,100	322,900	80,050	395,900	23,870	14,020	8,310	3,360	1,783,000
1949	3,600	9,330	14,940	67,280	233,100	291,700	122,000	149,300	62,380	57,700	35,400	12,110	1,059,000
1950	135,100	149,600	35,000	306,300	775,600	123,600	93,640	461,100	148,300	36,710	93,280	50,880	2,409,000
1951	12,450	16,070	15,790	41,190	154,200	104,700	31,540	50,760	138,700	20,360	2,400	3,730	591,900
1952	4,160	12,050	17,010	28,850	43,170	79,910	332,700	219,400	179,700	5,970	1,590	1,080	925,600
1953	1,370	15,220	147,500	85,790	37,370	119,700	93,560	818,200	13,530	61,990	12,430	24,440	1,431,000
1954	4,160	17,440	89,960	152,800	86,010	29,920	53,680	107,100	22,570	1,840	776	701	567,000
1955	24,820	121,900	27,700	39,550	97,190	136,000	166,400	25,990	10,180	7,430	11,010	20,510	688,700
1956	4,090	3,220	8,430	14,270	70,410	15,770	10,460	85,850	2,910	1,030	530	558	217,500
1957	889	9,720	4,340	13,050	63,490	110,500	620,700	996,300	526,200	8,190	8,070	19,830	2,381,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1933	748	6,600	Mar. 16, 1933	34	1,390	0.488	6.62	1,010,000	1,400	6.66	1,010,000
1934	763	9,340	Apr. 15, 1934	9.8	1,190	.418	5.64	860,000	1,200	5.71	868,000
1935	788	16,000	June 24, 1935	17	2,109	.741	10.08	1,527,000	2,301	10.98	1,663,000
1936	808	5,090	May 12, 1936	10	571	.201	2.72	414,300	530	2.53	384,800
1937	828	6,770	Mar. 17, 1937	16	1,255	.441	6.00	908,800	1,253	5.89	892,100
1938	858	40,600	Jan. 28, 1938	9.1	2,937	1.03	13.99	2,126,000	2,752	13.11	1,993,000
1939	878	7,860	Mar. 5, 1939	5.6	717	.252	3.42	519,400	713	3.39	515,900
1940	898	6,450	Apr. 18, 1940	6.8	852	.299	4.08	618,200	1,577	7.55	1,145,000
1941	928	21,000	June 19, 1941	34	3,194	1.12	15.25	2,312,000	2,719	12.99	1,969,000
1942	958	46,200	Apr. 13, 1942	45	2,845	1.00	13.58	2,060,000	2,743	13.09	1,985,000
1943	978	66,200	June 11, 1943	22	2,002	.704	9.55	1,449,000	1,981	9.45	1,434,000
1944	1008	42,500	May 7, 1944	34	2,657	.934	12.71	1,929,000	2,765	13.22	2,007,000
1945	1038	138,000	Apr. 2, 1945	43	5,206	1.83	24.84	3,769,000	5,355	25.55	3,877,000
1946	1058	50,900	June 4, 1946	83	3,655	1.28	17.44	2,646,000	4,453	21.25	3,224,000
1947	1088	44,500	Nov. 11, 1946	34	2,382	.837	11.39	1,725,000	1,843	8.82	1,335,000

Yearly discharge, in cubic feet per second, of Sabine River near Gladewater, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1948	1118	23,000	May 18, 1948	23	2,456	0.863	11.75	1,783,000	1,833	8.76	1,331,000
1949	1148	15,100	Mar. 4, 1949	39	1,462	.514	6.96	1,059,000	1,866	8.89	1,351,000
1950	1178	35,000	Feb. 17, 1950	98	3,328	1.17	15.88	2,409,000	2,947	14.06	2,134,000
1951	1212	6,600	Feb. 28, Mar. 1	22	818	.287	3.89	591,900	802	3.82	580,800
1952	1242	20,000	Apr. 29, 1952	14	1,275	.448	6.10	925,600	1,455	6.96	1,056,000
1953	1282	29,300	May 20, 1953	20	1,977	.695	9.44	1,431,000	1,904	9.09	1,379,000
1954	1342	6,200	Jan. 26, 1954	8.8	783	.275	3.74	567,000	870	4.15	629,800
1955	1392	5,900	Mar. 29, 1955	24	951	.334	4.54	688,700	732	3.51	530,000
1956	1442	3,730	May 12, 1956	6.1	300	.105	1.43	217,500	299	1.42	216,700
1957	1512	58,900	May 1, 1957	11	3,289	1.16	15.70	2,381,000	-	-	-

46. Sabine River near Longview, Tex.

Location.--Lat 32°28'00", long 94°46'50", just downstream from the International-Great Northern Railroad bridge, and 3 miles southwest of Longview, Gregg County.

Drainage area.--3,013 sq mi.

Gage.--Staff gage. Datum of gage is 228.673 ft above mean sea level, datum of 1929. Jan. 1, 1904, to Dec. 31, 1906, chain gage on International-Great Northern Railroad bridge at different datum.

Average discharge.--11 years (1904-06, 1923-32), 1,935 cfs (1,401,000 acre-ft per year).

Extremes.--1904-06, 1923-32: Maximum discharge, 21,500 cfs May 22, 23, 1930 (gage height, 31.90 ft), from rating curve extended above 12,000 cfs; minimum, 14 cfs Aug. 29-31, 1925.

Remarks.--A few small diversions above station. Some regulation of low flow by pumping upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	464	613	786	3,820	1,710	1,600	555	166	145	-
1905	46.2	76.1	199	385	1,250	3,130	5,510	16,600	4,470	9,780	1,930	195	3,670
1906	460	1,330	6,390	4,520	4,400	2,540	4,420	2,580	1,490	564	747	480	2,480
1907	837	256	4,370	-	-	-	-	-	-	-	-	-	-
1924	168	107	4,070	2,920	2,290	4,470	1,720	1,550	1,210	47.3	30.5	236	1,570
1925	50.3	128	169	359	265	257	375	1,810	158	32.8	27.9	79.1	311
1926	322	1,840	352	2,010	1,480	3,320	3,570	5,520	1,020	3,510	982	206	2,020
1927	242	391	1,930	3,770	3,160	6,500	8,360	2,130	1,010	1,360	346	85.0	2,430
1928	1,720	257	552	554	988	2,050	2,700	1,510	1,480	796	313	30.9	1,080
1929	147	1,020	5,670	5,750	3,760	3,600	1,970	5,920	5,340	351	40.4	359	2,830
1930	57.2	454	648	1,140	3,740	1,840	676	10,200	1,920	101	27.4	27.6	1,730
1931	422	396	2,130	657	1,340	2,890	1,320	1,080	247	102	171	159	909
1932	72.5	138	2,300	9,870	7,030	4,740	687	1,230	245	511	49.4	129	2,250
1933	79.9	68.1	509	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	28,530	35,260	48,390	227,000	105,000	95,200	34,190	10,210	8,628	-
1905	2,841	4,528	12,240	23,670	69,480	192,700	327,900	1,023,000	266,000	601,200	118,900	11,600	2,650,000
1906	28,350	81,900	392,800	278,000	244,000	156,000	263,000	159,000	88,700	34,700	45,900	28,600	1,800,000
1907	51,500	15,200	269,000	-	-	-	-	-	-	-	-	-	-
1924	10,300	6,390	250,000	180,000	132,000	275,000	102,000	95,400	71,800	2,910	1,880	14,000	1,142,000
1925	3,090	7,590	10,400	22,100	14,700	15,800	22,300	112,000	9,410	2,020	1,720	4,710	226,000
1926	19,800	109,000	21,700	124,000	82,000	204,000	212,000	340,000	60,500	216,000	60,400	12,300	1,460,000
1927	14,900	23,300	119,000	232,000	175,000	400,000	498,000	131,000	60,100	83,600	21,300	5,060	1,763,000
1928	106,000	15,300	33,900	34,100	56,800	126,000	161,000	92,800	88,100	48,900	19,200	1,840	784,000
1929	90,040	60,700	349,000	354,000	209,000	221,000	117,000	364,000	318,000	21,600	2,480	21,400	2,047,000
1930	3,520	27,000	39,800	70,100	208,000	113,000	40,200	627,000	114,000	6,210	1,680	1,640	1,250,000
1931	25,900	23,600	131,000	40,400	74,400	178,000	78,600	66,400	14,700	6,270	10,500	9,460	659,000
1932	4,460	8,210	141,000	607,000	404,000	291,000	40,900	75,600	14,600	31,400	3,040	7,680	1,630,000
1933	4,910	4,050	31,300	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second, of Sabine River near Longview, Tex.

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1904	132	-	-	-	-	-	-	-	844	3.81	612,000
1905	174	a19,500	May 19, 1905	36	3,670	1.22	16.53	2,650,000	4,290	19.51	3,140,000
1906	210	a17,400	Dec. 25, 1905	63	2,480	.823	11.19	1,800,000	2,270	10.16	1,630,000
1907	210	-	-	-	-	-	-	-	-	-	-
1924	588	9,350	Dec. 25, 1923	21	1,570	.52	7.11	1,142,000	1,230	5.58	896,000
1925	608	3,760	May 21, 1925	14	311	.103	1.40	226,000	491	2.20	355,000
1926	628	8,410	May 4, 1926	33	2,020	.670	9.09	1,460,000	2,030	9.13	1,470,000
1927	648	15,200	Mar. 16, 1927	53	2,430	.806	11.04	1,763,000	2,430	10.95	1,761,000
1928	668	5,370	Apr. 23, 1928	17	1,080	.358	4.87	784,000	1,450	6.51	1,047,000
1929	688	17,300	Dec. 26, 1928	15	2,830	.939	12.75	2,047,000	2,350	10.58	1,699,000
1930	703	21,500	May 22, 23, 1930	26	1,730	.574	7.78	1,250,000	1,880	8.46	1,360,000
1931	718	6,590	Mar. 14, 15, 1931	27	909	.302	4.09	659,000	873	3.93	632,000
1932	733	17,300	Jan. 13, 1932	22	2,250	.747	10.16	1,630,000	2,090	9.44	1,520,000

a Maximum observed.

47. Cherokee Bayou near Elderville, Tex.

Location.--Lat 32°20', long 94°42', at bridge on county road, 3.8 miles southeast of Elderville, Gregg County, 4.5 miles upstream from bridge on State Highway 149, and 19.3 miles upstream from mouth.

Drainage area.--116 sq mi.

Gage.--Water-stage recorder. Datum of gage is 266.8 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Average discharge.--9 years (1939-48), 165 cfs (119,500 acre-ft per year).

Extremes.--1939-49: Maximum discharge, 10,200 cfs Nov. 23, 1940 (gage height, 12.61 ft), from rating curve extended above 4,500 cfs by logarithmic plotting; no flow at times.
Maximum stage known, about 14 ft in September 1913, from information by local residents.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	0	-
1940	0	2.38	45.4	29.4	68.0	40.5	41.6	41.7	57.2	20.6	119	11.7	39.8
1941	13.5	666	530	390	250	252	139	203	121	38.0	38.7	74.0	226
1942	166	321	248	188	200	197	298	281	245	33.7	310	119	217
1943	35.0	112	114	141	99.3	102	130	46.3	44.6	2.29	.28	.13	68.6
1944	4.87	9.05	35.7	187	479	381	226	850	55.5	4.07	2.10	26.0	188
1945	8.67	87.8	345	447	255	522	387	78.3	219	377	17.9	6.40	230
1946	237	150	262	443	444	251	126	480	399	36.8	48.6	35.3	242
1947	32.8	326	171	311	190	342	274	298	64.1	14.1	5.79	17.4	170
1948	12.1	50.6	125	199	317	207	103	151	22.9	8.61	.23	.61	99.2
1949	3.02	48.0	52.0	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	0	-
1940	0	141	2,790	1,810	3,910	2,490	2,480	2,570	3,400	1,270	7,330	696	28,890
1941	828	39,610	32,590	23,960	13,880	15,520	8,290	12,460	7,220	2,340	2,380	4,400	163,500
1942	10,180	19,120	15,250	11,580	11,130	12,130	17,760	17,270	14,550	2,070	19,090	7,090	157,200
1943	2,150	6,640	6,980	8,700	5,520	6,280	7,740	2,850	2,650	141	17	7.7	49,680
1944	300	539	2,200	11,500	27,570	23,440	13,460	52,280	3,300	250	129	1,550	136,500
1945	533	5,220	21,210	27,480	14,150	32,070	23,040	4,820	13,030	23,200	1,100	381	166,200
1946	14,590	8,920	16,100	27,210	24,630	15,460	7,500	29,520	23,740	2,260	2,990	2,100	175,000
1947	2,020	19,380	10,490	19,120	10,540	21,000	16,280	18,340	3,820	865	356	1,040	123,300
1948	743	3,010	7,680	12,220	18,210	12,730	6,150	9,300	1,360	529	14	36	71,980
1949	186	2,860	3,200	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second, of Cherokee Bayou near Elderville, Tex.

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1939	878	-	-	0	-	-	-	-	-	-	-
1940	898	1,370	Aug. 28, 1940	0	39.8	0.343	4.64	28,890	136	15.97	98,980
1941	928	10,200	Nov. 23, 1940	.9	226	1.95	26.41	163,500	186	21.80	135,000
1942	958	5,550	Aug. 22, 1942	3.1	217	1.87	25.38	157,200	177	20.74	128,400
1943	978	820	Nov. 7, 1942	0	68.6	.591	8.02	49,680	51.0	5.97	36,940
1944	1008	9,700	May 2, 1944	0	188	1.62	22.06	136,500	221	25.93	160,400
1945	1038	9,450	July 11, 1945	4.3	230	1.98	26.87	166,200	247	28.91	178,900
1946	1058	3,020	May 14, 1946	5.2	242	2.09	28.28	175,000	231	27.03	167,300
1947	1088	3,520	May 17, 1947	3.1	170	1.46	19.34	123,300	142	16.04	102,800
1948	1118	960	May 13, 1948	0	99.2	.855	11.63	71,980	92.0	10.79	66,800

48. Sabine River near Tatum, Tex.

Location.--Lat 32°22', long 94°28', at bridge on State Highway 43, 5 miles upstream from Potter Creek, 5.2 miles northeast of Tatum, Rusk County, 7 miles downstream from Cherokee Bayou, and at mile 339.

Drainage area.--3,586 sq mi.

Supplemental records available.--Records of chemical analysis and water temperature for the period February 1952 to September 1957 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 204.18 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Sept. 21, 1945, wire-weight gage at same site and datum.

Average discharge.--19 years (1938-57), 2,636 cfs (1,908,000 acre-ft per year).

Extremes.--1938-57: Maximum discharge, 123,000 cfs Apr. 4, 1945 (age height, 33.80 ft, from graph based on gage readings); minimum observed, 5.5 cfs Oct. 2, 1957.

Maximum stage since at least 1884, that of Apr. 4, 1945. Flood of May 1884 reached a stage of 32 ft, from information by local residents.

Remarks.--Several small diversions above station for oilfield operations and municipal supply.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	23	157	246	1,161	2,541	3,855	2,181	598	315	151	23.8	13.4	929
1940	12.7	71.3	284	269	739	631	2,517	1,389	2,871	1,868	418	745	980
1941	126	3,725	8,280	6,545	3,191	5,803	2,929	5,795	6,230	3,679	725	707	3,991
1942	912	1,791	2,771	1,366	2,090	2,095	11,350	11,090	4,863	468	2,153	1,283	3,517
1943	429	811	1,102	2,939	958	1,245	2,657	1,539	13,620	301	74.7	69.9	2,132
1944	948	236	739	2,935	5,046	7,014	5,153	16,860	4,750	275	91.8	309	3,701
1945	120	577	3,422	7,540	3,618	16,210	28,510	1,819	8,603	6,116	508	212	6,427
1946	3,046	1,597	1,876	7,277	9,393	5,503	3,865	6,116	15,610	707	342	601	4,614
1947	450	11,870	4,482	4,083	2,431	3,734	5,076	3,481	976	589	116	618	3,149
1948	196	1,123	6,099	5,071	6,073	6,097	2,094	6,612	739	371	189	87.6	2,899
1949	77.3	294	344	1,501	4,718	5,441	3,001	2,959	1,302	1,732	1,015	444	1,886
1950	2,277	3,178	900	6,685	14,650	3,835	1,943	9,084	3,427	772	1,663	1,012	4,051
1951	319	399	380	998	2,776	2,793	1,012	1,199	2,274	448	87.0	131	1,055
1952	96.8	262	455	911	1,944	1,978	3,939	5,382	3,438	158	50.5	21.4	1,547
1953	23.8	226	2,170	1,631	1,008	3,003	1,994	14,980	1,495	1,335	330	529	2,420
1954	93.3	384	1,771	2,519	2,123	845	1,087	2,635	571	36.7	16.8	10.7	1,004
1955	253	2,333	631	1,031	2,652	2,413	3,981	956	319	247	319	550	1,291
1956	130	82.5	205	370	1,950	506	289	2,554	85.4	30.5	16.9	14.4	516
1957	18.7	177	86.4	223	1,168	1,450	8,415	22,400	12,810	310	200	274	3,968

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	1,440	9,340	15,130	71,400	141,100	237,000	129,800	36,790	18,750	9,270	1,460	797	71,420
1940	783	4,240	17,460	16,530	42,520	38,800	149,800	85,400	170,800	114,900	25,680	44,320	711,200
1941	7,770	221,600	509,100	402,400	177,200	356,800	174,300	356,300	370,700	226,200	44,570	42,080	2,889,000
1942	56,090	106,600	170,400	83,980	116,100	128,800	675,400	681,800	289,400	28,750	132,400	76,350	2,546,000
1943	26,370	48,260	67,770	180,700	53,200	76,540	158,100	94,650	810,500	18,530	4,600	4,160	1,543,000
1944	58,280	14,020	45,440	180,500	290,200	431,200	306,600	1,037,000	282,700	16,930	5,640	18,370	2,687,000
1945	7,390	34,340	210,400	463,600	200,900	996,500	1,697,000	111,800	511,900	376,100	31,210	12,600	4,654,000
1946	187,300	95,010	115,300	447,400	521,700	338,400	230,000	376,000	928,900	43,460	21,020	35,770	3,340,000
1947	27,660	706,500	275,600	251,000	135,000	229,600	302,000	214,100	58,090	36,200	7,120	36,800	2,280,000
1948	12,020	66,810	375,000	311,800	349,300	374,900	124,600	406,600	43,980	22,830	11,590	5,210	2,105,000
1949	4,750	17,470	21,170	92,300	262,000	334,600	178,600	181,900	77,470	106,500	62,400	26,420	1,366,000
1950	140,000	189,100	55,320	411,100	813,500	235,800	115,600	558,600	203,900	47,490	102,300	60,200	2,933,000
1951	19,630	23,720	23,390	61,340	154,200	171,700	60,220	73,700	135,300	27,560	5,350	7,770	763,900
1952	5,950	15,610	27,960	56,010	111,800	121,600	234,400	330,900	204,500	9,730	3,100	1,270	1,123,000
1953	1,470	13,450	133,400	100,300	56,010	184,700	118,700	921,300	88,950	82,070	20,280	31,450	1,752,000
1954	5,740	22,860	108,900	154,900	117,900	51,960	64,680	162,000	34,000	2,260	1,030	639	726,900
1955	15,530	138,800	38,820	63,390	147,300	148,400	236,900	58,750	18,970	15,200	19,600	32,710	934,400

Monthly and yearly runoff, in acre-feet, of Sabine River near Tatum, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	8,000	4,910	12,600	22,720	112,200	31,140	17,170	157,000	5,080	1,870	1,040	856	374,600
1957	1,150	10,540	5,310	13,690	64,840	89,160	500,700	1,377,000	762,300	19,080	12,290	16,320	2,872,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1939	878	7,200	Mar. 12, 1939	9.6	929	0.259	35.20	672,600	924	3.50	668,800
1940	898	5,240	Apr. 22, 1940	9.3	980	.273	3.70	711,200	1,966	7.45	1,427,000
1941	928	13,800	Nov. 25, 1940	46	3,991	1.11	15.10	2,889,000	3,431	12.98	2,484,000
1942	958	37,600	Apr. 17, 1942	79	3,517	.981	13.30	2,546,000	3,253	12.30	2,355,000
1943	978	50,500	June 14, 1943	43	2,132	.595	8.06	1,543,000	2,098	7.93	1,519,000
1944	1008	36,900	May 10, 1944	61	3,701	1.03	14.04	2,687,000	3,886	14.75	2,821,000
1945	1038	123,000	Apr. 4, 1945	90	6,427	1.79	24.33	4,654,000	6,628	25.09	4,799,000
1946	1058	41,600	June 7, 1946	136	4,614	1.29	17.48	3,340,000	5,459	20.67	3,952,000
1947	1088	36,600	Nov. 15, 1946	76	3,149	.878	11.91	2,280,000	2,381	9.01	1,724,000
1948	1118	15,300	May 24, 1948	54	2,899	.809	11.01	2,105,000	2,334	8.86	1,694,000
1949	1148	10,600	Mar. 10, 1949	49	1,886	.526	7.14	1,366,000	2,357	8.93	1,707,000
1950	1178	32,300	Feb. 20, 1950	151	4,051	1.13	15.32	2,933,000	3,612	13.65	2,615,000
1951	1212	6,330	Mar. 5, 6, 1951	40	1,055	.294	3.99	763,900	1,031	3.91	746,700
1952	1242	13,400	May 5, 1952	18	1,547	.431	5.88	1,123,000	1,683	6.40	1,222,000
1953	1282	28,500	May 23, 1953	20	2,420	.675	9.17	1,752,000	2,405	9.11	1,741,000
1954	1342	6,460	May 14, 1954	9.8	1,004	.280	3.81	726,900	1,081	4.10	782,500
1955	1392	6,040	Apr. 14, 1955	14	1,291	.360	4.89	934,400	1,059	4.02	766,700
1956	1442	9,940	May 4, 1956	9.7	516	.144	1.97	374,600	504	1.92	366,100
1957	1512	70,500	May 3, 1957	7.0	3,968	1.11	15.04	2,872,000	-	-	-

49. Sabine River at Logansport, La.

Location.--Lat 31°59', long 94°01', at Logansport, De Soto Parish, on left bank 4,600 ft upstream from bridge on U. S. Highway 84, 4,800 ft upstream from Texas & New Orleans Railroad bridge, 4 miles upstream from Bayou Castor, and at mile 268.

Drainage area.--4,858 sq mi.

Gage.--Water-stage recorder used for gage heights below 24.0 ft, and supplementary wire-weight gage, 4,600 ft downstream (used as regular gage Feb. 14, 1941, to Sept. 30, 1956) used for gage heights above 24.0 ft. Datum of gage is 147.72 ft above mean sea level, datum of 1929. July 1, 1903, to Dec. 31, 1906, chain gage at site of supplementary gage at datum 2.0 ft lower. Jan. 1, 1907, to Feb. 13, 1941, chain gage at site of supplementary gage at present datum.

Average discharge.--54 years (1903-57), 3,298 cfs (2,388,000 acre-ft per year).

Extremes.--1903-57: Maximum discharge, 92,000 cfs Apr. 8, 1945 (gage height, 44.07 ft, at site of supplementary gage, from floodmark); minimum observed during periods of daily records, 16 cfs September 26-28, Oct. 3, 4, 1939.

Maximum stage since at least 1884, that of Apr. 8, 1945. Flood in May 1884 reached a stage of 39.4 ft at site of supplementary gage, present datum.

Remarks.--Diversions above station for oilfield operation, municipal and industrial use. Monthly figures of discharge only available prior to October 1923.

Cooperation.--Gage-height record collected in cooperation with U. S. Weather Bureau.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	-	-	-	-	-	-	3,590	1,430	242	-
1904	1,170	558	465	470	893	988	4,570	2,060	1,940	884	345	196	1,210
1905	104	107	2,012	2,770	6,280	7,374	9,650	19,350	10,590	13,270	4,139	441	6,352
1906	610	3,130	6,406	12,650	5,300	4,330	7,978	3,590	3,700	1,130	2,000	955	4,311
1907	1,350	429	3,980	5,710	1,520	3,210	1,980	8,120	7,440	932	161	85.6	2,930
1908	127	4,090	7,050	4,690	7,550	4,000	3,380	14,410	5,327	456	622	763	4,366
1909	527	337	823	827	2,700	2,140	1,120	507	450	111	63.6	45.1	792
1910	105	86.1	1,060	1,020	1,620	2,280	3,400	2,230	505	494	73.3	43.6	1,070
1911	33.9	35.5	97.6	313	348	502	3,350	2,020	132	1,010	187	84.0	675
1912	80.8	83.6	1,430	1,830	1,110	6,780	9,138	2,900	522	447	5,100	680	2,515
1913	97.6	94.5	225	824	1,740	6,760	3,740	1,070	439	3,750	193	2,140	1,760
1914	4,450	668	9,240	3,610	4,880	4,020	8,010	17,470	3,260	240	642	503	4,767
1915	237	300	3,060	6,210	8,501	7,630	4,199	15,950	1,260	2,170	6,250	4,620	5,030
1916	831	1,930	1,660	3,610	7,824	1,130	3,770	7,270	991	702	274	207	2,497
1917	132	390	699	1,190	2,420	2,040	1,340	868	1,120	1,170	427	631	1,030
1918	307	143	230	457	379	356	2,390	4,530	859	175	183	337	865
1919	197	1,150	3,190	6,530	4,990	4,220	3,720	1,790	2,280	4,590	3,630	2,300	3,210
1920	10,680	16,790	7,120	10,370	6,090	6,300	4,990	3,880	3,520	1,130	2,000	1,600	6,200
1921	800	1,200	2,500	6,275	4,057	5,249	10,900	8,663	2,063	3,673	329	252	3,830
1922	124	154	546	1,250	2,520	9,300	17,760	12,340	2,602	1,262	432	192	4,040
1923	96.6	688	539	1,118	6,180	6,193	7,491	3,157	2,575	475	86.7	881	2,421
1924	504	494	5,610	8,780	5,510	8,020	4,490	4,040	4,590	155	122	174	3,540
1925	124	99.6	216	821	521	542	498	1,820	219	78.5	47.3	100	425

Monthly and yearly mean discharge, in cubic feet per second, of Sabine River at Logansport, La.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	386	5,180	734	3,190	2,170	7,360	10,500	7,540	1,680	2,930	1,630	174	3,630
1927	263	510	2,970	4,720	5,310	8,870	11,500	5,970	1,810	1,520	1,260	118	3,720
1928	1,790	354	738	887	1,520	4,480	4,360	3,180	2,310	1,560	699	75.1	1,830
1929	190	1,450	4,670	9,420	5,870	5,440	2,840	4,990	7,470	573	80.0	338	3,600
1930	104	550	996	6,090	6,360	3,470	938	10,300	8,010	219	102	89.9	3,080
1931	500	470	3,060	3,000	2,410	5,040	2,130	3,890	756	363	183	164	1,840
1932	40.6	300	7,540	20,600	19,400	11,500	3,100	1,810	368	503	110	142	5,420
1933	95.2	103	724	7,000	5,280	7,480	6,100	5,060	2,160	5,730	2,260	406	3,530
1934	244	263	628	4,680	3,140	9,570	9,260	1,260	450	92.9	29.2	34.6	2,470
1935	39.8	663	2,693	2,883	6,835	3,009	2,143	17,490	5,364	2,680	205	234	3,678
1936	515	2,143	3,840	1,006	1,084	1,281	465	2,352	421	639	68.0	39.6	1,159
1937	1,044	603	1,344	7,874	4,972	6,632	4,226	648	401	122	103	167	2,334
1938	177	1,287	3,115	10,150	13,140	6,314	11,220	6,044	606	347	547	67.7	4,358
1939	41.0	409	460	3,842	6,500	6,636	2,346	1,297	491	209	38.4	23.3	1,831
1940	19.5	87.4	1,677	800	4,176	935	3,505	2,402	4,226	2,301	453	1,168	1,795
1941	223	7,123	15,890	12,600	5,498	9,297	4,444	8,676	8,316	6,689	736	1,018	6,735
1942	1,767	5,150	4,449	2,754	2,991	4,703	12,250	16,590	7,305	909	1,910	2,467	5,273
1943	498	915	1,185	4,107	1,427	1,558	3,105	1,554	12,490	1,540	131	82.2	2,371
1944	990	347	1,116	6,315	7,066	10,460	9,517	25,470	7,044	379	132	375	5,776
1945	140	570	3,646	14,620	6,049	21,400	34,410	2,829	5,021	9,470	936	308	8,282
1946	4,431	1,958	3,403	12,280	15,620	11,730	5,631	8,673	19,930	1,082	350	885	7,096
1947	572	11,220	6,868	7,758	4,884	7,488	8,176	5,320	1,361	754	142	601	4,585
1948	201	1,154	5,391	6,857	10,090	9,497	3,390	6,816	2,652	424	183	99.8	3,885
1949	91.9	360	548	3,117	6,395	7,143	4,509	3,580	1,714	1,981	1,465	556	2,600
1950	4,276	3,593	1,727	10,680	17,950	7,704	2,229	11,380	6,953	1,601	1,703	1,107	5,836
1951	527	540	495	1,535	4,279	3,848	2,021	1,216	1,930	678	105	193	1,427
1952	94.6	253	843	1,458	5,997	4,331	6,447	6,451	4,000	227	102	40.8	2,500
1953	37.1	119	2,214	2,332	3,816	6,997	2,626	22,310	4,892	1,270	546	496	3,993
1954	97.0	370	2,071	2,771	2,972	1,182	1,476	4,914	852	83.1	34.5	22.3	1,399
1955	142	2,592	1,056	1,860	4,640	3,632	7,193	2,981	679	418	1,948	554	2,284
1956	230	91.9	234	405	3,375	1,316	1,399	5,162	161	55.7	31.3	25.5	1,035
1957	26.3	193	104	218	1,994	2,197	9,248	29,510	14,180	709	267	220	4,918

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	-	-	-	-	-	-	221,000	87,900	14,400	-
1904	71,900	33,200	28,600	28,900	51,400	60,800	272,000	127,000	115,000	54,400	21,200	11,700	876,000
1905	6,400	6,370	123,700	170,000	349,000	453,400	574,000	1,189,000	629,900	816,200	254,500	26,200	4,599,000
1906	37,500	186,000	393,900	778,100	294,000	266,000	474,700	221,000	220,000	69,500	123,000	56,800	3,120,000
1907	83,000	25,500	245,000	351,000	84,400	197,000	118,000	499,000	443,000	57,300	9,900	5,090	2,120,000
1908	7,810	243,000	433,000	288,000	434,000	246,000	201,000	885,900	317,000	28,000	38,200	45,400	3,167,000
1909	32,400	20,100	50,600	50,800	150,000	132,000	66,600	31,200	26,800	6,820	3,910	2,680	574,000
1910	6,460	5,120	65,200	62,700	90,000	140,000	202,000	137,000	30,000	30,400	4,510	2,590	776,000
1911	2,080	2,110	6,000	19,200	19,300	30,900	199,000	124,000	7,860	62,100	11,500	5,000	489,000
1912	4,970	4,970	87,900	113,000	63,800	416,900	543,800	178,000	31,100	27,500	314,000	40,500	1,826,000
1913	6,000	5,620	13,800	50,700	96,600	416,000	223,000	65,800	26,100	231,000	11,900	127,000	1,270,000
1914	274,000	39,700	568,100	222,000	271,000	247,000	477,000	1,074,000	194,000	14,800	39,500	29,900	3,451,000
1915	14,600	17,900	188,000	382,000	472,100	469,000	249,900	981,000	75,000	133,000	384,300	275,000	3,642,000
1916	51,100	115,000	102,000	222,000	450,100	69,500	224,000	447,000	59,000	43,200	16,800	12,300	1,812,000
1917	8,120	23,200	43,000	73,200	134,000	125,000	79,700	53,400	66,600	71,900	26,300	37,500	742,000
1918	18,900	8,510	14,100	28,100	21,000	21,900	142,000	279,000	51,100	10,800	11,300	20,100	627,000
1919	12,100	68,400	196,000	402,000	277,000	259,000	221,000	110,000	136,000	282,000	223,000	137,000	2,320,000
1920	656,600	999,100	438,000	637,500	350,000	387,000	297,000	239,000	209,000	69,500	123,000	95,200	4,501,000
1921	49,200	71,400	153,700	385,800	225,300	322,800	648,500	532,700	122,800	225,800	20,210	15,000	2,773,000
1922	7,620	9,180	33,540	76,870	140,000	572,000	1,057,000	758,600	154,800	77,590	26,580	11,440	2,925,000
1923	5,940	40,950	33,170	68,740	343,200	380,800	445,700	194,100	153,200	29,180	5,330	52,450	1,753,000
1924	31,000	29,400	345,000	540,000	317,000	493,000	267,000	248,000	273,000	9,530	7,490	10,300	2,570,000
1925	7,630	5,930	13,300	50,500	29,000	33,300	29,600	112,000	13,000	4,820	2,910	5,950	308,000
1926	23,700	308,000	45,100	196,000	120,000	453,000	627,000	464,000	100,000	180,000	100,000	10,400	2,630,000
1927	16,200	30,400	182,000	290,000	295,000	545,000	684,000	367,000	107,000	93,200	77,300	7,010	2,690,000
1928	110,000	21,100	45,400	54,500	87,400	275,000	259,000	196,000	137,000	95,900	43,000	4,470	1,330,000
1929	11,700	86,300	287,000	579,000	326,000	334,000	169,000	307,000	444,000	35,200	4,920	20,100	2,600,000
1930	6,400	32,700	61,200	374,000	353,000	213,000	55,800	633,000	477,000	13,500	6,270	5,350	2,230,000
1931	30,700	28,000	188,000	184,000	134,000	310,000	127,000	239,000	45,000	22,300	11,300	9,760	1,330,000
1932	2,500	17,900	464,000	1,270,000	1,120,000	707,000	184,000	111,000	21,900	30,900	6,760	8,450	3,940,000
1933	5,850	6,130	44,500	430,000	293,000	460,000	363,000	311,000	129,000	352,000	139,000	24,200	2,560,000
1934	15,000	15,600	38,600	288,000	174,000	588,000	551,000	77,500	26,800	5,710	1,800	2,060	1,780,000
1935	2,450	39,420	165,600	177,300	379,600	185,000	127,500	1,075,000	319,200	164,800	12,580	13,910	2,662,000
1936	31,670	127,500	236,100	61,840	62,330	78,790	27,690	144,600	25,060	39,290	4,180	2,360	841,400
1937	64,170	35,880	82,630	484,100	276,100	407,800	251,500	39,820	23,830	7,520	6,350	9,960	1,690,000
1938	10,850	76,560	191,600	624,300	729,500	388,200	667,400	371,700	36,050	21,330	33,640	4,030	3,155,000
1939	2,520	24,340	28,300	236,200	361,000	408,000	139,600	79,780	29,210	12,880	2,360	1,390	1,326,000
1940	1,200	5,200	103,100	49,190	240,200	57,490	208,600	147,700	251,500	141,500	27,830	69,480	1,303,000

Monthly and yearly runoff, in acre-feet, of Sabine River at Logansport, La.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	13,730	423,800	976,900	774,900	305,400	571,600	264,400	533,500	494,800	411,300	45,260	60,590	4,876,000
1942	108,600	306,500	273,600	169,300	166,100	289,200	729,100	1,020,000	434,700	55,860	117,400	146,800	3,817,000
1943	30,630	54,420	72,840	252,500	79,260	95,800	184,700	95,560	743,300	94,680	8,040	4,890	1,717,000
1944	60,880	20,640	68,640	388,300	406,500	642,900	566,300	1,566,000	419,200	23,290	8,120	22,300	4,193,000
1945	8,630	33,920	224,200	899,100	335,900	1,316,000	2,048,000	174,000	298,800	582,300	57,540	18,340	5,997,000
1946	272,500	116,500	209,200	754,900	867,600	721,200	335,100	533,300	1,186,000	66,560	21,500	52,640	5,137,000
1947	35,170	667,900	422,300	477,000	271,300	460,400	486,500	327,100	80,990	46,380	8,710	35,770	3,320,000
1948	12,380	68,670	331,500	421,600	580,600	583,900	201,700	419,100	157,800	26,060	11,270	5,940	2,821,000
1949	5,650	21,430	33,700	191,700	355,200	439,200	268,300	220,200	102,000	121,800	90,080	33,070	1,882,000
1950	262,900	213,800	106,200	656,500	997,100	473,700	132,600	699,600	413,700	98,470	104,700	65,860	4,225,000
1951	32,420	32,140	30,420	94,400	237,600	236,600	120,300	74,760	114,900	41,700	6,450	11,470	1,033,000
1952	5,820	15,070	51,860	89,650	344,900	266,300	383,600	396,600	238,000	13,960	6,270	2,430	1,814,000
1953	2,280	7,070	136,100	143,400	211,900	430,200	156,200	1,372,000	291,100	78,070	33,570	29,510	2,891,000
1954	5,960	22,030	127,400	170,400	165,100	72,690	87,840	302,100	50,690	5,110	2,120	1,320	1,013,000
1955	8,760	154,300	64,940	114,400	257,700	223,300	428,000	183,300	40,380	25,700	119,800	32,990	1,654,000
1956	14,170	5,470	14,420	24,900	194,100	80,910	83,250	317,400	9,590	3,430	1,920	1,520	751,100
1957	1,620	11,460	6,390	13,410	110,700	135,100	550,300	1,815,000	843,600	43,580	16,420	13,080	3,561,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1903	850	-	-	-	-	-	-	-	-	-	-
1904	850	6,090	Apr. 13, 1904	-	1,210	0.249	3.37	876,000	1,211	3.37	878,900
1905	850	33,600	May 26, 1905	-	6,352	1.31	17.74	4,599,000	7,017	19.60	5,080,000
1906	850	20,000	Jan. 5, 1906	-	4,311	.887	12.04	3,120,000	3,946	11.07	2,857,000
1907	850	10,800	May 31, 1907	-	2,930	.603	8.18	2,120,000	3,385	9.46	2,448,000
1908	850	30,100	May 18, 1908	-	4,366	.899	12.24	3,167,000	3,564	10.01	2,587,000
1909	850	6,330	Feb. 19, 20, 1909	-	792	.163	2.24	574,000	756	2.12	547,600
1910	850	7,540	May 24, 25, 1910	-	1,070	.220	3.00	776,000	980	2.75	709,400
1911	850	6,980	Apr. 29, May 4, 1911	-	675	.139	1.89	489,000	796	2.22	576,700
1912	850	16,200	Apr. 9, 1912	-	2,515	.518	7.06	1,826,000	2,415	6.77	1,754,000
1913	850	11,900	Mar. 18, 1913	-	1,760	.362	4.89	1,270,000	2,940	8.20	2,130,000
1914	850	36,000	May 10, 1914	-	4,767	.981	13.33	3,451,000	3,854	10.78	2,790,000
1915	850	47,000	May 5, 1915	-	5,030	1.04	14.05	3,642,000	5,096	14.24	3,689,000
1916	850	13,800	Feb. 3, 1916	-	2,497	.514	7.01	1,812,000	2,229	6.25	1,618,000
1917	850	5,100	Mar. 11, 12, 1917	-	1,030	.212	2.85	742,000	981	2.64	709,100
1918	850	8,890	May 11, 1918	-	865	.178	2.41	627,000	1,190	3.33	861,800
1919	850	10,700	Jan. 6, 1919	-	3,210	.661	8.96	2,320,000	5,720	15.97	4,141,000
1920	850	31,600	Jan. 27, 1920	-	6,200	1.28	17.37	4,501,000	3,690	10.35	2,682,000
1921	850	41,600	Apr. 29, 1921	-	3,830	.788	10.71	2,773,000	3,521	9.85	2,549,000
1922	850	32,800	Apr. 2, 1922	-	4,040	.832	11.35	2,925,000	4,080	11.46	2,955,000
1923	850	12,200	Apr. 8, 9, 1923	-	2,421	.498	6.75	1,753,000	2,870	8.00	2,078,000
1924	588	14,000	June 3, 4, 1924	43	3,540	.729	9.91	2,570,000	3,021	8.45	2,192,000
1925	608	3,100	May 25, 1925	-	425	.087	1.17	308,000	909	2.52	657,900
1926	628	23,000	Apr. 25, 1926	33	3,630	.747	10.13	2,630,000	3,425	9.56	2,479,000
1927	648	20,900	Apr. 19, 1927	60	3,720	.766	10.64	2,690,000	3,650	10.44	2,642,000
1928	668	9,860	Apr. 29, 1928	47	1,830	.377	5.12	1,330,000	2,117	5.92	1,537,000
1929	688	25,000	June 1, 1929	47	3,600	.741	10.06	2,600,000	3,206	8.97	2,320,000
1930	703	34,800	May 29, 1930	58	3,080	.634	8.60	2,230,000	3,286	9.16	2,378,000
1931	718	10,800	May 4, 1931	68	1,840	.379	5.13	1,330,000	2,164	6.04	1,567,000
1932	733	41,100	Feb. 23, 1932	34	5,420	1.12	15.17	3,940,000	4,829	13.52	3,516,000
1933	748	-	-	58	3,530	.727	9.86	2,560,000	3,550	9.92	2,570,000
1934	763	17,400	Mar. 8, 1934	23	2,470	.508	6.88	1,780,000	2,657	7.41	1,923,000
1935	788	36,000	May 8, 1935	34	3,678	.757	10.26	2,662,000	3,937	10.98	2,850,000
1936	808	8,400	Dec. 14, 1935	24	1,159	.238	3.25	841,400	866	6.88	628,800
1937	828	11,800	Jan. 29, 1937	24	2,334	.480	6.51	1,690,000	2,467	11.32	1,786,000
1938	858	25,700	Feb. 7, 1938	52	4,358	.897	12.19	3,155,000	4,049	5.32	2,931,000
1939	878	13,600	Mar. 4, 1939	16	1,831	.377	5.10	1,326,000	1,906	10.07	1,380,000
1940	898	8,060	Feb. 7, 1940	16	1,795	.369	5.04	1,303,000	3,592	10.07	2,608,000
1941	928	38,800	Nov. 27, 1940	94	6,735	1.39	18.82	4,876,000	5,733	16.02	4,150,000
1942	958	27,000	Apr. 24, 1942	144	5,273	1.09	14.74	3,817,000	4,540	12.69	3,286,000
1943	978	31,400	June 21, 1943	70	2,371	.488	6.63	1,717,000	2,361	6.59	1,709,000
1944	1008	34,300	May 6, 1944	74	5,776	1.19	16.18	4,193,000	5,937	16.64	4,310,000
1945	1038	92,000	Apr. 8, 1945	118	8,282	1.70	23.14	5,997,000	8,740	24.42	6,328,000
1946	1058	37,000	June 13, 1946	228	7,096	1.46	19.82	5,137,000	7,824	21.86	5,664,000
1947	1088	25,400	Nov. 22, 1946	106	4,585	.944	12.82	3,320,000	3,601	10.06	2,607,000
1948	1118	13,200	Feb. 15, 16, 1948	71	3,885	.800	10.88	2,821,000	3,401	9.52	2,469,000
1949	1148	9,380	Mar. 16, 1949	66	2,600	.535	7.26	1,882,000	3,321	9.28	2,404,000
1950	1178	28,900	Feb. 25, 1950	251	5,836	1.20	16.30	4,225,000	5,162	14.42	3,737,000
1951	1212	7,620	Feb. 22, 1951	59	1,427	.294	3.97	1,033,000	1,396	3.88	1,011,000
1952	1242	13,000	Feb. 17, 1952	36	2,500	.514	7.00	1,814,000	2,601	7.29	1,887,000
1953	1282	40,900	May 19, 1953	36	3,993	.822	11.15	2,891,000	4,007	11.17	2,901,000
1954	1342	11,500	May 18, 1954	18	1,399	.288	3.91	1,013,000	1,499	4.20	1,085,000
1955	1392	12,600	Apr. 18, 1955	28	2,284	.470	6.38	1,654,000	2,016	5.63	1,460,000

Yearly discharge, in cubic feet per second, of Sabine River at Logansport, La.--Continued

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1956	1442	13,800	May 8, 1956	19	1,035	.213	2.89	751,100	1,015	2.83	736,500
1957	1512	61,300	May 7, 1957	18	4,918	1.01	13.73	3,561,000	-	-	-

Note.--Records for July 1903 to December 1906 published in W. S. P. 210 have been found in error and should not be used. For this period only monthly figures were revised in W. S. P. 850; revised daily figures are not available. No daily discharge figures are available for period January 1907 to September 1923; monthly records for that period were computed on basis of gage heights furnished by U. S. Weather Bureau and a rating defined by 4 discharge measurements made during the period and by others before and after.

50. Tenaha Creek near Shelbyville, Tex.

Location.--Lat 31°46', long 94°05', at bridge on State Highway 87, 1 mile northwest of Shelbyville, Shelby County, 4.2 miles downstream from Gulf, Colorado & Santa Fe Railway bridge, and 6.5 miles upstream from Bell Creek.

Drainage area.--87.0 sq mi.

Gage.--Wire-weight gage. Datum of gage is 468.9 ft above mean sea level (Highway Department Bridge plans).

Average discharge.--5 years (1952-57), 71.5 cfs (51,760 acre-ft per year).

Extremes.--1952-57: Maximum discharge, 15,200 cfs Mar. 11, 1953 (gage height, 13.85 ft); no flow at times.

Remarks.--Maximum stage since at least 1884 about 15.1 ft Nov. 23, 1940, from information by local residents. Diversion above station for municipal supply.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	236	71.3	9.06	6.97	1.76	0.35	-
1953	0.34	8.96	43.8	60.6	187	636	414	1,057	19.5	15.9	19.5	1.78	207
1954	1.01	4.13	22.0	39.3	27.7	12.9	22.7	115	1.23	.06	.05	0	20.6
1955	.34	2.42	4.75	20.2	88.1	81.9	202	46.8	2.48	3.12	27.1	.49	39.5
1956	.35	.82	3.32	15.0	101	26.5	102	65.7	1.98	.53	.06	.04	26.0
1957	0	0	.40	3.93	20.5	44.9	339	176	182	5.38	1.93	3.27	64.3

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	7,130	14,060	4,390	539	428	108	21	26,680
1953	21	533	2,690	3,730	10,370	39,110	24,620	64,990	1,160	979	1,200	106	149,500
1954	62	246	1,350	2,420	1,540	795	1,350	7,080	73	3.8	3.4	0	14,920
1955	21	144	292	1,240	4,890	5,040	12,030	2,880	147	192	1,660	29	28,560
1956	22	49	204	923	5,800	1,630	6,080	4,040	118	32	3.6	2.2	18,900
1957	0	0	25	242	1,140	2,760	20,150	10,810	10,800	331	118	195	46,570

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1952	1242	-	-	-	-	-	-	-	-	-	-
1953	1282	15,200	Mar. 11, 1953	0	207	2.38	32.19	149,500	204	31.85	147,900
1954	1342	2,020	May 12, 1954	0	20.6	.237	3.21	14,920	19.0	2.96	13,720
1955	1392	2,340	Apr. 13, 1955	0	39.5	.454	6.14	28,560	39.2	6.10	28,380
1956	1442	1,080	Apr. 6, 1956	0	26.0	.299	4.07	18,900	25.7	4.02	18,650
1957	1512	3,040	May 1, 1957	0	64.3	.739	10.03	46,570	-	-	-

51. Sabine River near Milam, Tex.1/

Location.--Lat 31°28', long 93°45', 104 ft upstream from bridge on State Highway 21, 2.8 miles downstream from Patroon Bayou, 6.5 miles northeast of Milam, Sabine County, 7.2 miles upstream from Palo Gaucho Bayou, and at mile 195.

Drainage area.--6,543 sq mi; 6,750 sq mi at site used 1923-25.

Gage.--Water-stage recorder. Datum of gage is 97.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1941. Oct. 9, 1923, to Aug. 31, 1925, staff gage 7.4 miles downstream at different datum. Jan. 19, 1939, to Dec. 21, 1945, wire-weight gage 104 ft downstream at present datum.

Average discharge.--20 years (1923-25, 1939-57), 5,386 cfs (3,899,000 acre-ft per year).

Extremes.--1923-25, 1939-57: Maximum discharge, 83,400 cfs Apr. 12, 1945 (gage height, 48.87 ft); minimum observed, 25 cfs Oct. 14-19, 1956.

Maximum stage since at least 1884, that of Apr. 12, 1945. Flood of about July 28, 1933, reached a stage of 48 ft, from information by former observer. Flood in 1884 reached a stage about 2 ft lower than that of 1945 at ferry about 10 miles upstream, from information by local resident.

Remarks.--No large diversion above station.

1/ Published as "at Sabinetown", 1923-25.

Monthly and yearly mean discharge, in cubic feet per second, of Sabine River near Milam, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	2,120	2,960	14,600	16,600	10,600	15,400	8,090	8,710	13,000	310	194	221	7,740
1925	241	167	349	2,560	862	1,150	676	2,030	370	142	72.0	75	728
1939	-	-	-	5,957	12,740	10,130	3,395	2,780	967	306	117	61.3	-
1940	167	121	4,919	2,340	11,480	1,709	5,301	4,476	6,378	2,929	1,161	1,517	3,501
1941	265	9,618	27,120	19,790	8,925	13,050	5,363	13,240	13,710	9,772	1,087	1,276	10,310
1942	2,596	12,830	7,350	4,808	5,108	7,891	11,710	18,210	8,875	1,319	1,662	2,819	7,094
1943	536	961	1,110	4,349	1,815	2,113	3,311	1,711	9,431	4,225	213	123	2,487
1944	884	448	945	7,719	8,241	13,780	12,760	32,820	12,460	546	233	947	7,656
1945	182	1,154	6,118	21,490	9,727	19,550	43,450	4,617	3,545	11,300	1,770	451	10,260
1946	5,374	2,509	4,553	18,320	23,230	16,940	9,331	11,840	22,700	2,135	640	1,006	9,782
1947	693	10,200	10,560	16,580	7,211	10,930	11,120	6,238	1,621	900	193	607	6,403
1948	237	1,247	5,817	7,581	14,950	11,430	6,442	6,537	3,479	572	234	126	4,855
1949	110	510	746	6,439	9,699	11,000	6,878	4,020	2,276	1,893	1,922	698	3,815
1950	6,002	4,204	4,421	18,490	20,400	15,000	3,207	15,570	16,080	1,920	1,812	1,141	8,959
1951	705	588	661	2,129	5,106	5,700	3,735	1,925	1,875	952	153	261	1,961
1952	130	276	1,471	1,711	7,507	6,215	8,897	7,498	4,446	451	200	68.2	3,214
1953	54.9	150	1,974	2,879	6,232	14,340	3,670	37,210	9,653	1,431	938	573	6,629
1954	140	351	2,430	3,438	3,685	1,461	2,667	7,194	1,003	125	62.0	36.8	1,877
1955	76.3	2,431	1,036	1,794	4,984	4,400	9,315	3,978	1,063	688	3,232	540	2,771
1956	326	135	297	472	4,647	1,734	3,346	5,838	293	117	50.7	36.6	1,429
1957	32.1	206	122	313	2,797	3,276	10,540	37,800	17,450	1,717	369	241	6,257

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	131,000	176,000	897,000	1,020	613,000	949,000	481,000	536,000	773,000	19,100	11,900	13,100	5,620,000
1925	14,800	9,940	21,400	158,000	47,900	71,000	40,200	125,000	22,000	8,740	4,430	4,460	528,000
1939	-	-	-	366,300	707,500	622,900	202,000	171,000	57,530	18,810	7,180	3,650	-
1940	10,260	7,180	302,500	143,900	660,500	105,100	315,400	275,200	379,500	180,100	71,380	90,290	2,541,000
1941	16,270	572,300	1,668,000	1,217,000	495,600	802,200	319,100	814,200	816,000	600,800	66,820	75,950	7,464,000
1942	159,600	763,700	452,000	295,700	283,700	485,200	697,000	1,120,000	528,100	81,080	102,200	167,700	5,136,000
1943	32,970	57,180	68,250	267,400	100,800	129,900	197,000	105,200	561,200	259,800	13,110	7,340	1,800,000
1944	54,350	26,630	58,120	474,600	474,000	847,500	759,500	2,018,000	741,300	33,600	14,320	56,330	5,558,000
1945	11,170	68,690	376,200	1,321,000	540,200	1,202,000	2,586,000	283,900	211,000	694,700	108,900	26,840	7,431,000
1946	330,400	149,300	279,900	1,126,000	1,290,000	1,041,000	555,200	727,800	1,351,000	131,300	39,330	59,890	7,081,000
1947	42,640	606,800	649,200	1,019,000	400,500	672,300	661,900	383,500	96,430	55,320	11,860	36,110	4,636,000
1948	14,550	74,180	357,700	466,100	859,900	702,600	383,300	402,000	207,000	35,150	14,410	7,530	3,524,000
1949	6,780	30,340	45,880	395,900	538,700	676,600	409,200	247,200	135,400	116,400	118,200	41,560	2,762,000
1950	369,000	250,200	271,800	1,137,000	1,133,000	922,400	190,800	957,400	956,800	118,100	111,400	67,880	6,486,000
1951	43,340	34,960	40,630	130,900	283,600	350,500	222,200	118,400	111,600	58,560	9,380	15,510	1,420,000
1952	8,000	16,450	90,420	105,200	431,800	382,200	529,400	461,100	264,600	27,700	12,280	4,060	2,333,000
1953	3,380	8,950	121,400	177,000	346,100	881,500	218,400	2,288,000	574,400	87,970	57,650	34,070	4,799,000
1954	8,620	20,860	149,400	211,400	204,700	89,830	158,700	442,300	59,690	7,670	3,810	2,190	1,359,000
1955	4,690	144,700	63,680	110,300	276,800	270,600	554,300	244,600	63,260	42,280	198,700	32,160	2,006,000
1956	20,040	8,020	18,270	29,050	267,300	106,600	199,100	359,000	17,420	7,200	3,120	2,180	1,037,000
1957	1,970	12,230	7,530	19,220	155,300	201,500	627,000	2,324,000	1,039,000	105,600	22,710	14,340	4,530,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1924	588	a33,500	June 4, 1924	110	7,740	1.15	15.61	5,620,000	6,145	12.40	4,460,000
1925	608	a7,420	Jan. 17, 1925	-	728	.108	1.46	528,000	-	-	-
1939	878	a17,700	Feb. 20, 1939	-	-	-	-	-	3,421	7.10	2,477,000
1940	898	20,300	Feb. 12, 1940	32	3,501	.535	7.28	2,541,000	6,168	12.83	4,478,000
1941	928	a54,200	Nov. 29, 1940	126	10,310	1.58	21.39	7,464,000	9,093	18.86	6,583,000
1942	958	a25,100	Nov. 5, 1941	251	7,094	1.08	14.71	5,136,000	5,413	11.22	3,919,000
1943	978	21,700	July 1, 1943	107	2,487	.380	5.15	1,800,000	2,460	5.11	1,781,000
1944	1008	a52,700	May 7, 1944	102	7,656	1.17	15.94	5,558,000	8,093	16.84	5,875,000
1945	1038	83,400	Apr. 12, 1945	139	10,260	1.57	21.29	7,431,000	10,680	22.16	7,734,000
1946	1058	36,400	Feb. 12, 1946	312	9,782	1.49	20.30	7,081,000	10,530	21.84	7,620,000
1947	1088	22,300	Jan. 20, 1947	141	6,403	.978	13.29	4,636,000	5,226	10.84	3,783,000
1948	1118	18,800	Feb. 15, 16, 1948	93	4,855	.742	10.08	3,524,000	4,354	9.05	3,161,000
1949	1148	17,400	Mar. 29, 1949	81	3,815	.583	7.91	2,762,000	4,932	10.23	3,570,000
1950	1178	42,400	June 5, 1950	377	8,959	1.37	18.59	6,486,000	7,892	16.37	5,714,000
1951	1212	16,100	Mar. 30, 1951	84	1,961	.300	4.07	1,420,000	1,955	4.06	1,416,000
1952	1242	17,000	Apr. 25, 1952	54	3,214	.491	6.69	2,333,000	3,240	6.75	2,352,000
1953	1282	69,100	May 20, 1953	49	6,629	1.01	13.78	4,799,000	6,691	13.90	4,844,000
1954	1342	13,800	May 17, 1954	27	1,877	.287	3.90	1,359,000	1,925	3.99	1,393,000
1955	1392	13,900	Apr. 18, 1955	34	2,771	.423	5.74	2,006,000	2,541	5.27	1,839,000
1956	1442	13,200	Apr. 10, 1956	26	1,429	.218	2.98	1,037,000	1,395	2.91	1,013,000
1957	1512	59,400	May 11, 12, 1957	25	6,257	.956	13.01	4,530,000	-	-	-

a Maximum observed.

52. Palo Gaucho Bayou near Hemphill, Tex.

Location.--Lat 31°23', long 93°50', at bridge on State Highway 87, 0.2 mile upstream from Boregas Creek, 3.6 miles north of Hemphill, Sabine County, 4.2 miles downstream from Sandy Creek, and about 13 miles upstream from mouth.

Drainage area.--121 sq mi.

Gage.--Wire-weight gage.

Average discharge.--5 years (1952-57), 86.9 cfs (62,910 acre-ft per year).

Extremes.--1952-57: Maximum discharge, 17,000 cfs Apr. 29, 1953 (gage height, 22.50 ft); no flow at times.
Maximum stage known since at least 1907, 26.6 ft in July 1933, from information by local resident. Flood of June 1950 reached a stage of 23.0 ft, from information by State Highway Department.

Remarks.--No known diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	300	170	33.0	45.1	8.85	0.25	-
1953	0.12	12.3	33.0	151	332	300	565	1,250	20.8	22.3	8.92	2.17	225
1954	1.15	10.2	52.0	129	52.7	29.3	152	103	6.94	.51	.27	0	44.7
1955	.12	1.60	4.42	20.9	122	42.4	231	96.9	15.3	6.72	11.8	1.32	45.4
1956	.69	2.68	16.3	21.7	156	53.7	65.1	16.2	1.05	.03	0	0	27.2
1957	0	.08	1.49	12.3	59.3	130	482	332	78.5	9.75	.93	2.55	92.1

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	17,840	10,430	1,960	2,770	544	15	41,670
1953	7.5	734	2,030	9,250	18,420	18,460	33,610	76,890	1,240	1,370	548	129	162,700
1954	71	605	3,200	7,940	2,930	1,800	9,070	6,310	413	32	17	0	32,390
1955	7.1	95	272	1,290	6,780	2,600	13,730	5,960	913	413	725	79	32,860
1956	43	159	1,000	1,340	8,960	3,300	3,880	994	62	2.0	0	0	19,740
1957	0	4.8	92	758	3,290	7,980	28,680	20,420	4,670	600	57	152	66,700

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1952	1242	-	-	-	-	-	-	-	-	-	-
1953	1282	17,000	Apr. 29, 1953	0	225	1.86	25.18	162,700	226	25.36	163,800
1954	1342	1,730	Apr. 17, 1954	0	44.7	.369	5.01	32,390	39.9	4.46	28,890
1955	1392	1,880	Apr. 14, 1955	0	45.4	.375	5.07	32,860	46.5	5.21	33,690
1956	1442	680	Feb. 9, 1956	0	27.2	.225	3.06	19,740	25.7	2.88	18,630
1957	1512	3,920	May 1, 1957	0	92.1	.761	10.32	66,700	-	-	-

53. Sabine River below Toledo Bend, near Burkeville, Tex.

Location.--Lat 31°03'50", long 93°31'10", at bridge on State Highway 63, about 200 ft downstream from Pearl Creek, 10 miles northeast of Burkeville, Newton County, 16 miles downstream from Bayou Toro, 23 miles downstream from proposed Toledo Bend Dam, and at mile 140.

Drainage area.--7,547 sq mi.

Gage.--Wire-weight gage. Datum of gage is 70.59 ft above mean sea level, datum of 1929, supplementary adjustment of 1941.

Extremes.--1955-57: Maximum discharge, 52,900 cfs May 15, 1957 (gage height, 32.43 ft); minimum, 60 cfs Sept. 26-30, 1956.
Maximum stage since about 1860, 35.9 ft in May 1884, from information by local resident. Flood of April 15, 1945, reached a stage of 35.8 ft, and flood of May 23, 1953, reached a stage of 35.3 ft, from floodmarks.

Remarks.--Diversions above Logansport for oilfield operation, municipal and industrial use.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	-	-	-	-	-	-	-	-	-	-	-	743	-
1956	479	245	488	762	6,120	2,219	3,856	6,356	436	210	100	79.1	1,762
1957	72.8	289	347	445	3,523	4,344	11,480	37,300	16,890	2,597	476	385	6,528

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	-	-	-	-	-	-	-	-	-	-	-	44,230	-
1956	29,480	14,570	30,000	46,840	352,000	136,500	229,500	390,800	25,930	12,910	6,160	4,710	1,279,000
1957	4,480	17,170	21,370	27,340	195,700	267,100	683,000	2,293,000	1,005,000	159,700	29,250	22,920	4,726,000

Yearly discharge, in cubic feet per second, of Sabine River below Toledo Bend, near Burkeville, Tex.

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1955	1392	-	-	-	-	-	-	-	-	-	-
1956	1442	14,800	Apr. 12, 1956	60	1,762	0.233	3.17	1,279,000	1,720	3.09	1,248,000
1957	1512	52,900	May 15, 1957	61	6,528	.865	11.75	4,726,000	-	-	-

54. Sabine River near Bon Wier, Tex.

Location.--Lat 30°45'00", long 93°36'30", at bridge on U. S. Highway 190, 0.7 mile upstream from Quicksand Creek, 0.8 mile upstream from Gulf, Colorado & Santa Fe Railway bridge, 2.0 miles east of Bon Wier, Newton County, 2.4 miles upstream from Caney Creek, and at mile 98.

Drainage area.--8,323 sq mi; 8,390 sq mi at site used prior to July 9, 1931.

Supplemental records available.--Gage-height records collected at same site since 1913 are contained in reports of U. S. Weather Bureau.

Gage.--Wire-weight gage. Datum of gage is 46.42 ft above mean sea level, datum of 1929. Prior to July 7, 1931, chain gage at site 0.8 mile downstream at same datum. July 8, 1931, to Jan. 16, 1942, chain gage at present site and datum.

Average discharge.--34 years (1923-57), 7,196 cfs (5,210,000 acre-ft per year).

Extremes.--1923-57: Maximum discharge, 115,000 cfs May 19, 1953 (gage height, 25.70 ft), minimum, 160 cfs Sept. 29, 1956.
Maximum stage known since at least 1833, 30.5 ft Apr. 23 or 24, 1913, from information by Gulf, Colorado & Santa Fe Railway Co. and local residents. Flood in May 1884 reached a stage of about 26 ft and that of May 1935, 23.4 ft.

Remarks.--Diversions above station for oilfield operation, municipal and industrial use.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	2,879	4,960	22,520	21,250	14,040	20,770	10,490	11,470	15,850	1,123	871	686	10,590
1925	660	540	820	4,460	2,290	2,050	1,230	2,290	778	504	249	307	1,350
1926	2,859	15,820	4,185	11,550	6,179	14,280	19,860	13,230	3,803	3,328	3,217	674	8,246
1927	555	1,128	7,132	13,370	11,780	18,950	21,880	14,010	5,017	3,206	1,787	411	8,252
1928	2,280	1,120	2,730	2,300	3,030	9,390	10,500	6,170	5,520	2,870	1,730	459	4,010
1929	564	1,540	4,540	12,000	11,500	16,140	6,810	13,840	16,600	1,940	934	861	7,249
1930	505	5,510	6,300	10,600	15,000	7,960	3,540	8,670	14,200	920	470	601	6,120
1931	2,020	1,720	11,300	12,900	9,740	9,670	4,630	7,220	1,060	584	535	534	5,160
1932	344	747	12,700	33,700	39,900	28,100	7,000	2,780	1,020	843	449	383	10,600
1933	342	407	4,580	10,600	14,600	15,500	14,200	8,420	3,830	10,800	20,000	1,720	8,750
1934	982	925	2,100	17,800	14,000	22,100	18,800	3,990	1,130	645	388	357	6,900
1935	400	2,150	7,567	10,820	11,370	10,650	8,268	29,480	15,260	6,028	1,422	1,393	8,734
1936	1,060	3,293	9,574	2,737	3,701	3,017	1,271	3,326	1,046	3,213	448	402	2,766
1937	1,544	798	3,174	17,220	10,680	10,300	9,080	3,189	1,517	692	629	871	4,949
1938	1,187	1,561	4,671	16,250	17,040	11,300	26,770	12,200	1,930	1,650	1,645	598	7,998
1939	422	1,248	1,339	10,950	16,120	14,470	6,379	3,800	1,945	711	538	271	4,783
1940	501	495	5,669	5,713	15,390	3,182	7,754	7,010	8,497	4,501	6,732	2,323	5,604
1941	696	8,587	37,800	26,950	11,960	18,560	8,755	17,310	18,620	13,890	2,283	2,467	14,050
1942	3,847	16,210	9,501	7,255	8,243	12,040	15,950	20,100	11,750	3,124	1,908	4,304	9,503
1943	1,086	1,497	2,254	6,194	2,989	3,355	4,671	2,343	6,590	5,977	616	481	3,171
1944	1,058	1,060	1,374	9,713	10,180	15,010	16,870	38,730	19,630	1,262	701	2,108	9,805
1945	628	1,568	7,713	26,310	17,290	20,800	48,140	10,450	3,871	13,540	3,429	1,140	12,860
1946	7,280	3,362	6,340	23,440	32,700	22,520	13,420	15,520	26,580	6,029	1,849	1,662	13,250
1947	1,619	12,530	15,740	26,900	10,520	16,030	13,420	8,308	3,310	1,619	571	803	9,290
1948	532	2,581	9,084	10,150	18,080	13,850	10,380	7,343	4,618	985	524	428	6,506
1949	358	3,089	1,767	10,430	14,770	15,160	13,230	7,058	3,986	2,743	2,722	1,155	6,314
1950	7,013	5,085	8,500	24,500	27,540	23,650	5,067	18,630	29,060	3,337	2,487	1,645	12,960
1951	1,299	1,240	1,233	5,965	6,500	7,654	7,244	4,451	2,252	1,794	483	846	3,394
1952	437	556	2,026	2,144	9,878	7,842	13,420	10,480	5,733	2,078	633	344	4,598
1953	272	498	3,006	4,110	8,853	18,640	5,901	60,930	16,210	2,823	2,156	1,110	10,440
1954	546	743	3,751	4,588	4,544	2,292	4,344	10,990	1,917	448	323	226	2,891
1955	263	2,447	1,288	2,384	7,576	4,725	12,250	4,738	2,096	1,612	7,534	1,518	4,001
1956	752	478	943	1,625	7,672	3,445	4,265	5,964	693	365	209	193	2,196
1957	192	519	1,456	1,002	4,139	6,486	12,530	37,600	18,610	4,020	903	758	7,369

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	177,000	295,200	1,384,000	1,307,000	807,800	1,277,000	624,000	705,300	943,400	69,060	53,570	40,810	7,684,000
1925	40,600	32,100	50,400	274,000	127,000	126,000	73,500	141,000	46,300	31,000	15,300	18,200	975,000
1926	175,800	941,100	257,300	710,300	343,200	878,300	1,182,000	813,400	226,300	204,700	197,800	40,120	5,970,000
1927	34,100	67,090	438,500	821,800	654,200	1,165,000	1,302,000	861,300	298,500	197,100	109,900	24,470	5,974,000
1928	140,000	66,600	168,000	141,000	174,000	577,000	625,000	379,000	328,000	176,000	106,000	27,300	2,910,000
1929	34,700	91,600	279,000	738,000	639,000	992,400	405,000	851,200	987,900	119,000	57,400	51,200	4,995,000
1930	31,100	328,000	387,000	652,000	833,000	489,000	211,000	533,000	845,000	56,600	28,900	35,800	4,430,000
1931	124,000	102,000	695,000	793,000	541,000	595,000	276,000	444,000	63,100	35,900	32,900	31,800	3,730,000
1932	21,200	44,400	781,000	2,070,000	2,300,000	1,730,000	417,000	171,000	60,700	51,800	27,600	22,800	7,700,000

Monthly and yearly runoff, in acre-feet, of Sabine River near Bon Wier, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1933	21,000	24,200	282,000	652,000	811,000	953,000	845,000	518,000	228,000	664,000	1,230,000	102,000	6,330,000
1934	60,400	55,000	129,000	1,090,000	778,000	1,360,000	1,120,000	245,000	67,200	39,700	23,900	21,200	4,990,000
1935	24,620	127,900	465,300	665,300	631,400	654,900	492,000	1,813,000	908,000	370,600	87,450	82,870	6,323,000
1936	65,210	195,900	588,700	168,300	212,900	185,500	75,630	204,500	62,230	197,600	27,530	23,900	2,008,000
1937	94,940	47,470	195,200	1,059,000	593,300	633,300	540,300	196,100	90,290	42,560	38,660	51,850	3,583,000
1938	73,010	92,870	287,200	999,300	946,500	695,100	1,593,000	750,100	114,900	101,500	101,100	35,560	5,790,000
1939	25,950	74,290	82,300	673,300	895,300	889,600	379,600	233,700	115,700	43,710	33,070	16,130	3,463,000
1940	30,810	29,480	348,600	351,300	885,500	195,600	461,400	431,000	505,600	276,700	413,900	138,200	4,068,000
1941	42,800	511,000	2,324,000	1,657,000	664,300	1,141,000	521,000	1,064,000	1,108,000	854,000	140,400	146,800	10,170,000
1942	236,600	964,600	584,200	446,100	457,800	740,400	949,300	1,236,000	699,100	192,100	117,300	256,100	6,880,000
1943	66,780	89,080	138,600	380,800	166,000	206,300	277,900	144,100	392,200	367,500	37,880	28,650	2,296,000
1944	65,080	63,070	84,500	597,200	585,400	923,100	1,004,000	2,382,000	1,168,000	77,610	43,130	125,400	7,118,000
1945	38,630	93,320	474,300	1,618,000	960,400	1,279,000	2,864,000	642,800	230,300	832,700	210,800	67,810	9,312,000
1946	447,700	200,100	389,900	1,441,000	1,816,000	1,384,000	798,300	954,600	1,582,000	370,700	113,700	96,520	9,595,000
1947	99,530	745,500	967,900	1,654,000	584,300	985,500	798,600	510,900	197,000	99,560	35,120	47,780	6,726,000
1948	32,720	153,600	558,500	624,100	1,040,000	851,500	617,700	451,500	274,800	60,560	32,250	25,470	4,723,000
1949	22,010	183,800	108,600	641,200	820,400	932,200	787,400	434,000	237,200	168,700	167,300	68,710	4,572,000
1950	431,200	302,600	522,600	1,506,000	1,530,000	1,454,000	301,500	1,146,000	1,729,000	205,200	152,900	97,900	9,379,000
1951	79,850	73,810	75,810	366,800	361,000	470,600	431,000	273,700	134,000	110,300	29,700	50,370	2,457,000
1952	26,850	33,060	124,600	131,800	568,200	482,200	798,600	644,600	341,100	127,800	38,950	20,500	3,338,000
1953	16,700	29,620	184,800	252,700	491,700	1,146,000	351,100	3,747,000	964,400	173,600	132,600	66,060	7,556,000
1954	33,580	44,210	230,600	282,100	252,300	140,900	258,500	676,000	114,000	27,550	19,880	13,450	2,093,000
1955	16,160	145,600	79,210	146,600	420,700	290,500	728,900	291,300	124,700	99,110	463,200	90,310	2,896,000
1956	46,230	28,420	57,990	99,920	441,300	211,800	253,800	366,700	41,250	22,460	12,830	11,460	1,594,000
1957	11,810	30,900	89,530	61,590	229,800	398,800	745,500	2,312,000	1,108,000	247,200	55,550	45,110	5,336,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1924	1442	35,800	Dec. 25, 1923	507	10,590	1.26	17.17	7,684,000	8,197	13.29	5,951,000
1925	608	10,000	Jan. 19, 1925	-	1,350	.161	2.16	975,000	3,076	4.96	2,226,000
1926	-	35,800	Nov. 9, 1925	326	8,246	.983	13.35	5,970,000	7,093	11.48	5,135,000
1927	-	38,900	Apr. 21, 1927	229	8,252	.984	13.36	5,974,000	8,024	12.99	5,809,000
1928	668	18,600	Apr. 7, 1928	390	4,010	.478	6.51	2,910,000	4,050	6.57	2,940,000
1929	688	35,800	Mar. 26, 1929	440	7,249	.864	11.72	4,995,000	7,721	12.48	5,587,000
1930	703	26,100	June 14, 15, 1930	265	6,120	.729	9.88	4,430,000	6,360	10.28	4,610,000
1931	718	24,600	Jan. 16, 17, 18, 1931	335	5,160	.620	8.35	3,730,000	5,060	8.20	3,660,000
1932	733	57,200	Feb. 28, 29, 1932	250	10,600	1.27	17.34	7,700,000	9,880	16.16	7,180,000
1933	748	63,000	Aug. 2, 1933	270	8,750	1.05	14.25	6,330,000	8,640	14.07	6,250,000
1934	763	a35,200	Mar. 30, 31, 1934	270	6,900	.829	11.23	4,990,000	7,412	12.08	5,363,000
1935	-	72,600	May 22, 1935	290	8,734	1.05	14.25	6,323,000	9,054	14.77	6,555,000
1936	-	22,700	Dec. 12, 1935	290	2,766	.332	4.52	2,008,000	2,060	3.36	1,496,000
1937	-	22,700	Jan. 25, 26, 1937	290	4,949	.594	8.08	3,583,000	5,108	8.34	3,698,000
1938	-	46,300	Apr. 9, 1938	410	7,998	.961	13.05	5,790,000	7,624	12.45	5,520,000
1939	1442	26,300	Mar. 3, 1939	220	4,783	.574	7.81	3,463,000	5,095	8.31	3,689,000
1940	898	28,700	Aug. 11, 1940	240	5,604	.673	9.15	4,068,000	9,005	14.72	6,537,000
1941	928	a51,600	Dec. 13, 1940	529	14,050	1.69	22.93	10,170,000	12,540	20.46	9,082,000
1942	958	a27,900	Apr. 13, 1942	760	9,503	1.14	15.48	6,880,000	7,443	12.12	5,389,000
1943	978	a18,500	July 5, 6, 7, 1943	386	3,171	.381	5.16	2,296,000	3,058	4.98	2,214,000
1944	1008	54,500	May 8, 9, 10, 1944	365	9,805	1.18	16.03	7,118,000	10,350	16.92	7,512,000
1945	1038	75,500	Apr. 17, 18, 1945	450	12,860	1.55	20.97	9,312,000	13,460	21.94	9,744,000
1946	1058	44,500	Feb. 20, 1946	975	13,250	1.59	21.63	9,595,000	14,320	23.37	10,370,000
1947	1088	37,500	Jan. 21, 1947	412	9,290	1.12	15.15	6,726,000	7,815	12.75	5,658,000
1948	1118	28,100	Apr. 18, 1948	331	6,506	.782	10.65	4,723,000	5,913	9.67	4,292,000
1949	1148	26,300	Mar. 31, 1949	307	6,314	.759	10.28	4,572,000	7,616	12.41	5,514,000
1950	1178	73,400	June 6, 1950	978	12,960	1.56	21.13	9,379,000	11,537	18.82	8,352,000
1951	1212	23,400	Apr. 1, 1951	260	3,394	.408	5.54	2,457,000	3,332	5.43	2,412,000
1952	1242	33,200	Apr. 25, 1952	300	4,598	.552	7.53	3,338,000	4,663	7.65	3,385,000
1953	1282	115,000	May 19, 1953	234	10,440	1.25	17.03	7,556,000	10,540	17.20	7,634,000
1954	1342	20,000	May 3, 1954	207	2,891	.347	4.72	2,093,000	2,798	4.57	2,026,000
1955	1392	29,700	Aug. 6, 1955	217	4,001	.481	6.52	2,896,000	3,851	6.26	2,788,000
1956	1442	14,700	Feb. 10, 1956	160	2,196	.264	3.59	1,594,000	2,195	3.60	1,594,000
1957	1512	51,800	May 17, 18, 1957	168	7,369	.885	12.03	5,336,000	-	-	-

a Maximum observed.

Note.--Records from Oct. 1, 1934, to Jan. 20, 1939, not previously published; computed on basis of U. S. Weather Bureau gage heights and rating defined by discharge measurements before and after this period. Daily discharges not available, except for period Oct. 1, 1938, to Jan. 20, 1939.

55. Big Cow Creek near Newton, Tex.

Location. --Lat 30°49'10", long 93°47'05", at bridge on State Highway 87, 2.6 miles southwest of Newton, Newton County, 5.0 miles downstream from Mellons Creek, and 8.0 miles upstream from Whiteoak Creek.

Drainage area. --141 sq mi.

Gage. --Wire-weight gage. Datum of gage is 134.69 ft above mean sea level, datum of 1929 (levels by Topographic Division).

Average discharge. --5 years (1952-57), 104 cfs (75,290 acre-ft per year).

Extremes. --1952-57: Maximum discharge, 20,200 cfs Apr. 29, 1953 (gage height, 19.45 ft); minimum observed, 12 cfs Aug. 23-26, 1956. Maximum stage since at least 1907, 27.5 ft in April 1922, from information by local resident.

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	178	61.2	82.9	34.3	25.6	-
1953	26.4	56.4	156	87.5	297	146	533	817	120	154	78.2	52.9	210
1954	48.5	70.7	111	96.1	63.9	59.8	94.2	278	47.1	32.3	31.6	25.4	80.3
1955	40.0	57.9	48.9	94.8	323	57.5	249	47.1	35.4	42.7	115	42.8	94.3
1956	26.5	38.8	43.9	87.5	176	106	72.1	33.6	46.9	20.5	14.5	17.3	56.5
1957	17.4	36.8	79.4	47.4	72.0	231	170	102	77.6	45.8	22.7	36.8	78.2

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	10,920	3,640	5,100	2,110	1,520	30,750
1953	1,620	3,350	9,600	5,380	16,480	8,950	31,710	50,260	7,130	9,500	4,810	3,150	151,900
1954	2,990	4,210	6,850	5,910	3,550	3,680	5,600	17,090	2,800	1,980	1,940	1,510	58,110
1955	2,460	3,450	3,000	5,830	17,960	3,530	14,810	2,900	2,100	2,630	7,080	2,550	68,300
1956	1,630	2,310	2,700	5,380	10,140	6,540	4,290	2,060	2,790	1,260	889	1,030	41,020
1957	1,070	2,190	4,880	2,910	4,000	14,200	10,090	6,290	4,620	2,810	1,390	2,190	56,640

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1952	1242	-	-	-	-	-	-	-	-	-	-
1953	1282	20,200	Apr. 29, 1953	23	210	1.49	20.22	151,900	209	20.14	151,400
1954	1342	2,150	May 3, 1954	23	80.3	.569	7.73	58,110	73.2	7.05	52,970
1955	1392	2,480	Apr. 13, 1955	26	94.3	.669	9.10	68,300	91.2	8.80	66,030
1956	1442	1,480	Feb. 9, 1956	12	56.5	.401	5.47	41,020	58.6	5.66	42,520
1957	1512	1,560	Mar. 22, 1957	15	78.2	.555	7.53	56,640	-	-	-

56. Cypress Creek near Buna, Tex.

Location. --Lat 30°25'45", long 93°54'20", at bridge on Farm Road 253, 1.0 mile downstream from unnamed tributary, 3.2 miles east of Buna, Jasper County, and about 10 miles upstream from Little Cypress Creek.

Drainage area. --63.4 sq mi.

Gage. --Wire-weight gage. Datum of gage is 46 ft above mean sea level (State Highway Department bridge plans).

Average discharge. --5 years (1952-57), 60.8 cfs (44,020 acre-ft per year).

Extremes. --1952-57: Maximum discharge, 3,800 cfs Apr. 23, 1952, and Apr. 13, 1955; maximum gage height, 11.95 ft Apr. 13, 1955, from graph based on gage readings; no flow at times.

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	319	304	3.81	6.90	0.01	0	-
1953	0	0	4.20	11.8	225	33.6	115	422	8.60	1.69	7.27	6.72	68.8
1954	.19	.12	64.2	71.1	9.88	7.91	151	306	.69	.04	.22	0	51.4
1955	0	.63	.51	78.1	375	5.50	314	.50	.07	3.04	108	9.87	72.0
1956	.03	.84	26.9	83.3	260	72.5	7.59	1.64	7.61	0	0	0	37.5
1957	0	.59	76.7	5.08	18.4	288	111	109	139	19.7	.42	122	74.3

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	18,980	18,710	227	424	0.8	0	38,590
1953	0	0	258	727	12,500	2,060	6,850	25,930	512	104	447	400	49,790
1954	12	9.1	3,950	4,370	549	486	8,970	18,840	41	2.6	13	0	37,250
1955	0	38	31	4,800	20,820	338	18,660	31	4.0	187	6,650	587	52,150
1956	2.0	50	1,650	5,120	14,940	4,460	452	101	453	0	0	0	27,230
1957	0	35	4,720	313	1,020	17,690	6,590	6,680	8,250	1,210	26	7,280	53,810

Yearly discharge, in cubic feet per second, of Cypress Creek near Buna, Tex.

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1952	1242	-	-	-	-	-	-	-	-	-	-
1953	1282	3,320	Apr. 30, 1953	0	68.8	1.08	14.74	49,790	73.9	15.84	53,500
1954	1342	2,350	Apr. 15, 1954	0	51.4	.811	11.00	37,250	46.1	9.84	33,340
1955	1392	3,800	Apr. 13, 1955	0	72.0	1.14	15.43	52,150	74.3	15.91	53,780
1956	1442	1,020	Feb. 4, 1956	0	37.5	.591	8.04	27,230	41.7	8.94	30,280
1957	1512	2,350	Sept. 26, 1957	0	74.3	1.17	15.91	53,810	-	-	-

57. Sabine River near Ruliff, Tex.

Location.--Lat 30°18'10", long 93°44'40", at bridge on State Highway 235, 2.4 miles north of Ruliff, Newton County, 4.2 miles upstream from Kansas City Southern Railway bridge, 4.5 miles downstream from Cypress Creek, and at mile 40.

Drainage area.--9,440 sq mi; 9,448 sq mi at site used prior to Mar. 1, 1941.

Supplemental records available.--Records of chemical analyses for the periods October 1945 to September 1946, October 1947 to September 1957, and of water temperatures for the period October 1947 to September 1957 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 4.08 ft above mean sea level, datum of 1929, supplementary adjustment of 1941. Prior to Mar. 1, 1941, staff gage at Kansas City Southern Railway bridge 4.2 miles downstream at datum 2.02 ft lower. Mar. 1, 1941, to Dec. 7, 1948, wire-weight gage at present site and datum.

Average discharge.--33 years (1924-57), 8,804 cfs (6,374,000 acre-ft per year).

Extremes.--1924-57: Maximum discharge, 121,000 cfs May 22, 1953 (gage height, 19.98 ft); minimum, 270 cfs Sept. 27-30, Oct. 1-3, 17-20, 1956.

Maximum stage known since at least 1835, about 22 ft in May or June 1884 (adjusted to present site and datum), from information by local resident.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	971	733	1,110	7,075	2,830	2,060	1,370	2,160	1,100	745	442	518	1,760
1926	3,169	24,630	5,786	13,740	8,109	16,440	27,590	15,540	4,816	3,809	3,953	1,317	10,720
1927	949	1,416	5,431	19,660	13,920	21,230	21,880	17,230	5,373	4,429	2,470	912	9,563
1928	2,208	1,413	3,636	4,329	3,273	10,120	12,470	7,040	5,903	3,508	2,220	740	4,742
1929	611	1,600	4,149	13,160	13,060	17,750	9,304	14,170	20,150	2,406	985	975	8,156
1930	697	6,080	6,340	14,500	18,900	9,850	4,890	7,860	15,000	1,200	718	913	7,160
1931	2,460	2,240	12,800	16,600	11,600	13,600	6,430	8,700	1,520	1,020	825	839	6,550
1932	556	1,000	13,200	38,100	44,500	35,400	7,720	3,530	1,700	1,260	715	492	12,300
1933	475	514	4,950	12,400	18,200	19,700	14,600	8,800	5,050	8,480	27,200	2,120	10,200
1934	1,190	1,010	2,230	19,600	21,000	26,800	22,900	6,170	1,740	983	575	473	8,640
1935	680	2,380	8,446	13,050	14,680	13,300	8,016	32,780	17,850	6,265	1,863	1,744	10,080
1936	1,297	4,115	13,490	4,002	5,323	3,278	1,629	3,530	2,177	3,938	833	705	3,701
1937	1,556	1,209	4,203	19,050	15,610	10,360	12,020	3,524	2,327	979	775	1,362	6,023
1938	2,011	2,034	4,399	19,600	19,660	13,400	30,770	12,990	2,576	2,377	3,042	1,140	9,421
1939	713	1,850	1,994	14,710	16,910	18,200	7,552	4,245	2,612	967	855	414	5,859
1940	557	806	2,816	9,334	17,650	4,220	7,534	9,084	8,834	5,692	13,560	2,988	6,885
1941	1,141	10,500	47,350	32,380	13,740	21,790	10,680	18,770	22,950	18,890	3,476	3,802	17,210
1942	4,380	18,240	10,640	9,570	9,654	15,190	19,250	20,590	14,680	5,439	3,266	6,276	11,410
1943	1,651	2,011	2,815	8,347	4,267	4,665	6,107	2,996	5,791	9,255	1,687	1,065	4,226
1944	1,394	1,662	2,437	13,560	14,060	18,570	21,310	46,430	25,300	2,292	1,317	3,068	12,610
1945	1,262	2,436	10,810	33,860	23,960	22,670	56,530	15,050	4,920	13,920	5,394	1,946	15,990
1946	8,334	5,025	9,929	28,930	40,200	28,720	16,590	16,250	33,010	12,510	2,912	2,413	16,910
1947	2,316	13,210	21,230	35,750	14,480	19,720	15,750	9,610	5,207	2,057	820	1,120	11,780
1948	846	3,031	12,270	13,420	22,010	17,460	13,420	7,250	6,481	1,457	697	567	8,193
1949	457	4,362	2,865	12,150	20,340	19,840	20,220	10,240	4,990	3,786	3,836	1,570	8,636
1950	8,135	6,788	12,190	25,440	33,160	28,500	6,495	21,460	40,170	4,971	3,208	2,214	15,940
1951	1,809	1,737	1,801	7,420	7,453	8,723	10,960	5,674	2,537	2,469	759	1,425	4,374
1952	926	1,003	3,093	2,717	12,790	10,510	16,900	15,840	8,613	3,348	1,208	484	6,415
1953	378	653	3,903	5,563	11,090	21,590	7,666	66,020	20,610	4,264	3,608	1,966	12,340
1954	994	1,162	4,965	6,083	5,756	3,131	6,079	15,660	3,672	790	514	348	4,097
1955	392	2,822	1,672	3,434	12,070	5,708	15,970	6,327	3,660	2,260	10,190	3,124	5,574
1956	1,308	958	1,966	3,039	12,630	5,652	5,746	7,298	1,509	687	364	326	3,421
1957	285	722	3,696	1,637	4,936	11,020	15,020	40,290	23,310	10,680	1,548	2,222	9,645

Monthly and yearly runoff, in acre-feet, of Sabine River near Ruliff, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	59,700	43,600	68,400	435,000	157,000	127,000	81,700	133,000	65,700	45,800	27,200	30,800	1,275,000
1926	194,800	1,466,000	355,800	844,500	450,400	1,011,000	1,642,000	955,400	286,600	234,200	243,000	78,350	7,762,000
1927	58,330	84,280	333,900	1,209,000	772,900	1,305,000	1,302,000	1,060,000	319,700	272,300	151,900	54,280	6,924,000
1928	135,800	84,060	223,600	266,200	188,300	622,300	741,800	432,900	351,200	215,700	136,500	44,050	3,442,000
1929	37,590	95,180	255,100	809,500	725,600	1,091,000	553,600	871,500	1,199,000	148,000	60,590	58,040	5,905,000
1930	42,900	362,000	390,000	892,000	1,050,000	606,000	291,000	483,000	893,000	73,800	44,100	54,300	5,180,000
1931	151,000	133,000	787,000	1,020,000	644,000	836,000	383,000	535,000	90,400	62,700	50,700	49,900	4,740,000
1932	34,200	59,500	812,000	2,340,000	2,560,000	2,180,000	459,000	217,000	101,000	77,500	44,000	29,300	8,910,000
1933	29,200	30,600	304,000	762,000	1,010,000	1,210,000	869,000	541,000	300,000	521,000	1,670,000	126,000	7,370,000
1934	73,200	60,100	137,000	1,210,000	1,170,000	1,650,000	1,360,000	379,000	104,000	60,400	35,400	28,100	6,270,000
1935	41,820	141,600	519,300	802,400	815,300	817,900	477,000	2,016,000	1,062,000	385,200	114,500	103,800	7,297,000
1936	79,740	244,800	829,200	246,100	306,200	201,600	96,950	217,100	129,600	242,100	51,220	41,970	2,687,000
1937	95,680	71,930	258,400	1,171,000	866,800	636,700	715,400	216,700	138,400	60,220	47,680	81,050	4,360,000
1938	123,700	121,000	270,500	1,205,000	1,092,000	824,100	1,831,000	798,600	153,300	146,100	187,100	67,830	6,820,000
1939	43,850	110,100	122,600	904,400	939,000	1,119,000	449,400	261,000	155,400	59,470	52,540	24,620	4,241,000
1940	34,270	47,970	173,200	573,900	1,015,000	259,500	448,300	558,500	525,700	350,000	833,800	177,800	*4,998,000*
1941	70,140	625,000	2,911,000	1,991,000	763,200	1,340,000	635,400	1,154,000	1,366,000	1,162,000	213,800	226,200	12,460,000
1942	269,100	1,085,000	654,200	588,400	536,100	934,000	1,145,000	1,266,000	873,300	334,400	200,800	373,400	8,260,000
1943	101,500	119,700	173,100	513,200	237,000	286,800	363,400	184,200	344,600	569,100	103,700	63,350	3,060,000
1944	85,700	98,880	149,800	833,500	808,500	1,142,000	1,268,000	2,855,000	1,505,000	140,900	80,990	182,600	9,151,000
1945	77,570	145,000	664,700	2,082,000	1,331,000	1,394,000	3,364,000	925,200	292,800	856,000	331,700	115,800	11,580,000
1946	512,400	299,000	610,500	1,779,000	2,233,000	1,766,000	987,000	998,900	1,964,000	769,100	179,100	143,600	12,240,000
1947	142,400	786,100	1,306,000	2,198,000	804,400	1,212,000	937,200	590,900	309,800	126,500	50,430	66,630	8,530,000
1948	52,000	180,400	754,500	824,900	1,266,000	1,074,000	798,600	445,800	385,600	89,610	42,880	33,750	5,948,000
1949	28,110	259,600	176,100	747,300	1,129,000	1,220,000	1,203,000	629,900	296,900	232,800	235,900	93,400	6,252,000
1950	500,200	403,900	749,800	1,564,000	1,841,000	1,752,000	386,500	1,319,000	2,390,000	305,700	197,300	131,700	11,540,000
1951	111,200	103,300	110,700	456,200	413,900	536,400	651,900	348,900	151,000	151,800	46,680	84,790	3,167,000
1952	56,920	59,670	190,200	167,100	735,700	646,400	1,006,000	973,900	512,500	205,900	74,300	28,820	4,657,000
1953	23,250	38,840	240,000	342,000	615,700	1,327,000	456,200	4,060,000	1,226,000	262,200	221,900	117,000	8,930,000
1954	61,130	69,160	305,300	374,000	319,700	192,500	361,700	963,100	218,500	48,590	31,620	20,720	2,966,000
1955	24,080	167,900	102,800	211,100	670,300	351,000	950,200	389,000	217,800	139,000	626,700	185,900	4,036,000
1956	80,430	57,000	120,900	186,900	726,500	347,500	341,900	448,700	89,790	42,260	22,360	19,400	2,484,000
1957	17,510	42,980	227,200	100,700	274,200	677,600	893,600	2,478,000	1,387,000	656,900	95,190	132,200	6,983,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1925	608, 1442	22,000	Jan. 22, 23, 1925	372	1,760	0.186	2.52	1,275,000	4,308	6.18	3,120,000
1926	1442	45,200	Nov. 12, 1925	655	10,720	1.13	15.42	7,762,000	8,594	12.36	6,222,000
1927	1442	48,200	Jan. 4, 1927	700	9,563	1.01	13.73	6,924,000	9,517	13.66	6,891,000
1928	1442	25,000	Apr. 12, 1928	520	4,742	.502	6.83	3,442,000	4,665	6.72	3,387,000
1929	1442	52,500	June 1, 1929	482	8,156	.863	11.72	5,905,000	8,718	12.53	6,312,000
1930	703	23,700	Feb. 9, June 16, 17, 1930	547	7,160	.758	10.29	5,180,000	7,540	10.83	5,460,000
1931	718	29,000	Jan. 16, 17, 1931	575	6,550	.693	9.41	4,740,000	6,320	9.09	4,580,000
1932	733	62,800	Mar. 2, 3, 1932	405	12,300	1.30	17.69	8,910,000	11,500	16.61	8,370,000
1933	748	68,600	Aug. 5, 1933	362	10,200	1.08	14.63	7,370,000	10,100	14.44	7,280,000
1934	763	47,100	Mar. 29, 1934	405	8,640	.914	12.41	6,270,000	9,236	13.27	6,685,000
1935	788	76,600	May 24, 25, 1935	405	10,080	1.07	14.48	7,297,000	10,700	15.39	7,748,000
1936	808	31,600	Dec. 13, 1935	577	3,701	.392	5.34	2,687,000	2,698	3.88	1,959,000
1937	1442	28,800	Jan. 27, 28, 1937	530	6,023	.637	8.63	4,360,000	6,146	8.82	4,449,000
1938	1442	50,900	Apr. 12, 13, 1938	695	9,421	.997	13.52	6,820,000	9,091	13.04	6,582,000
1939	1442	29,400	Jan. 18, 19, Mar. 2-5, 1939	362	5,859	.620	8.41	4,241,000	5,830	8.37	4,220,000
1940	898	52,000	Aug. 12, 1940	338	6,885	.729	9.89	4,998,000	11,500	16.54	8,349,000
1941	928	86,000	Dec. 16, 1940	908	17,210	1.82	24.72	12,460,000	15,000	21.54	10,860,000
1942	958, 1282	38,500	Apr. 12, 1942	1,350	11,410	1.21	16.37	8,260,000	9,180	13.17	6,646,000
1943	1442	20,400	July 9, 10, 1943	748	4,226	.448	6.08	3,060,000	4,144	5.97	3,000,000
1944	1008	61,900	May 7, 8, 1944	730	12,610	1.34	18.18	9,151,000	13,370	19.27	9,704,000
1945	1038	85,300	Apr. 22, 1945	865	15,990	1.69	22.99	11,580,000	16,730	24.05	12,110,000
1946	1058	54,700	Feb. 21, 22, 1946	1,480	16,910	1.79	24.31	12,240,000	18,030	25.92	13,050,000
1947	1088	52,900	Jan. 22, 1947	658	11,780	1.25	16.93	8,530,000	10,060	14.46	7,283,000
1948	1118	28,600	Feb. 26-28, 1948	438	8,193	.868	11.83	5,948,000	7,473	10.80	5,425,000
1949	1148	34,000	Apr. 3, 1949	391	8,636	.915	12.42	6,252,000	10,280	14.77	7,442,000
1950	1178	79,500	June 8, 9, 1950	1,420	15,940	1.69	22.93	11,540,000	14,110	20.30	10,210,000
1951	1212	27,000	Apr. 3, 4, 1951	415	4,374	.463	6.28	3,167,000	4,349	6.24	3,148,000
1952	1242	49,300	Apr. 27, 1952	430	6,415	.679	9.25	4,657,000	6,409	9.25	4,653,000
1953	1282	121,000	May 22, 1953	338	12,340	1.31	17.74	8,930,000	12,520	18.00	9,064,000
1954	1342	28,900	May 7, 1954	312	4,097	.434	5.88	2,966,000	3,903	5.59	2,825,000
1955	1392	34,700	Apr. 16, 1955	325	5,574	.590	8.01	4,036,000	5,524	7.94	3,999,000
1956	1442	23,400	Feb. 13, 1956	270	3,421	.362	4.92	2,484,000	3,462	4.98	2,513,000
1957	1512	53,800	May 20, 21, 1957	270	9,645	1.02	13.85	6,983,000	-	-	-

58. Cow Bayou near Mauriceville, Tex.

Location.--Lat 30°11'05", long 93°54'40", at bridge on State Highway 235, half a mile upstream from Kansas City Southern Railway bridge, and 3 miles southwest of Mauriceville, Orange County.

Drainage area.--127 sq mi.

Supplemental records available.--Records of chemical analyses and water temperature for the period March 1952 to December 1955 are published in reports of Geological Survey.

Gage.--Wire-weight gage. Datum of gage is 4.7 ft above mean sea level (State Highway Department bridge plans).

Average discharge.--5 years (1952-57), 65.4 cfs (47,350 acre-ft per year).

Extremes.--1952-57: Maximum discharge, 3,380 cfs Apr. 24, 1952 (gage height, 15.16 ft, from graph based on gage readings); no flow at times.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	531	124	5.75	91.1	0.33	0.05	-
1953	0.10	0.22	9.72	11.5	194	63.2	100	536	2.57	2.52	5.85	21.9	78.6
1954	.10	.11	36.2	67.7	5.61	3.00	107	163	3.62	.16	.05	0	32.5
1955	.27	1.31	.14	77.0	293	12.1	254	32.1	3.49	.55	27.1	59.1	61.3
1956	.10	0	38.8	63.6	284	40.8	4.80	17.6	.53	0	.02	.04	36.5
1957	0	.11	261	6.27	5.25	373	218	178	101	147	.33	118	118

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	31,590	7,630	342	5,600	20	3.2	45,390
1953	6.2	13	598	704	10,780	3,880	5,980	32,950	153	155	360	1,300	56,880
1954	6.1	6.7	2,230	4,170	312	184	6,360	10,050	215	9.7	3.2	0	23,550
1955	17	78	8.7	4,730	16,260	746	15,120	1,970	208	34	1,660	3,520	44,350
1956	6.1	0	2,390	3,910	16,320	2,510	285	1,080	32	0	1.2	2.2	26,540
1957	0	6.3	16,020	386	292	22,960	12,970	10,940	6,030	9,060	20	7,020	85,700

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1952	1242	-	-	-	-	-	-	-	-	-	-
1953	1282	1,950	May 19, 1953	0.1	78.6	0.618	8.38	56,880	80.8	8.61	58,500
1954	1342	659	Apr. 19, 1954	0	32.5	.256	3.47	23,550	29.6	3.15	21,410
1955	1392	962	Feb. 9, 1955	0	61.3	.483	6.55	44,350	64.4	6.89	46,640
1956	1442	1,050	Feb. 9, 1956	0	36.5	.287	3.92	26,540	55.3	5.93	40,170
1957	1512	1,700	Dec. 24, 1956	0	118	.929	12.64	85,700	-	-	-

NECHES RIVER BASIN

59. Neches River near Reese, Tex.

Location.--Lat 32°01'30", long 95°25'40", at Southern Pacific Railroad bridge (formerly Texas & New Orleans Railroad), 0.5 mile above mouth of Dead Creek, 1.5 miles downstream from Killough Creek, and 2 miles west of Reese, Cherokee County.

Drainage area.--851 sq mi.

Gage.--Inverted staff gage. Datum of gage is 310.88 ft above mean sea level.

Extremes.--1924-27: Maximum discharge observed, 7,490 cfs Apr. 9, 1927 (gage height, -11.6 ft), from rating curve extended above 2,500 cfs; no flow at times.

The river reached a stage of -11.0 ft April 1914.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	806	744	22.8	4.82	90.3	-
1925	10.0	46.4	160	289	181	146	96.3	159	6.61	5.64	4.00	6.37	92.5
1926	41.7	590	98.3	549	361	1,470	1,190	1,980	596	483	211	13.0	635
1927	61.0	109	993	1,470	1,180	998	3,010	504	714	338	73	70	788

Monthly and yearly runoff, in acre-feet, of Neches River near Reese, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	49,600	44,300	1,400	296	5,370	118,000
1925	618	2,760	9,860	17,800	10,000	8,980	5,730	9,800	393	347	246	379	66,900
1926	2,560	35,100	6,040	33,700	20,000	90,500	70,500	122,000	35,500	29,700	13,000	774	459,000
1927	3,750	6,510	61,100	90,200	65,400	61,400	179,000	31,000	42,500	20,800	4,490	4,170	570,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1924	588	6,000	May 30, 1924	-	-	-	-	-	-	-	-
1925	608	a460	May 16, 1925	0	92.5	0.109	1.48	66,900	135	21.50	97,400
1926	628	4,000	May 24, 1926	5.0	635	.746	10.11	459,000	673	10.71	487,000
1927	648	7,490	Apr. 9, 1927	-	788	.926	12.56	570,000	-	-	-

a Maximum daily.

60. Neches River near Neches, Tex.

Location.--Lat 31°54', long 95°26', at bridge on U. S. Highway 79, half a mile downstream from International-Great Northern Railroad bridge, 1 mile downstream from Walnut Creek, 4.4 miles northeast of Neches, Anderson County, and at mile 333.

Drainage area.--1,129 sq mi.

Gage.--Water-stage recorder. Datum of gage is 263.93 ft above mean sea level, datum of 1929. Prior to Oct. 27, 1945, wire-weight gage at same site and datum.

Average discharge.--18 years (1939-57), 769 cfs (556,700 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 45,500 cfs Apr. 2, 1945 (gage height, 22.07 ft); no flow Oct. 3-5, 1939.
Flood of May 1908 reached a stage of 24.3 ft, from information by local resident. Flood of May 1884 was probably higher.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	956	373	364	149	41.1	8.90	2.46	-
1940	2.18	20.1	69.0	110	249	136	371	262	186	289	51.1	64.5	150
1941	28.4	1,644	2,148	1,786	1,026	1,586	1,059	673	2,335	610	75.1	81.4	1,086
1942	341	437	928	660	874	712	3,354	1,605	1,359	140	132	410	908
1943	126	255	376	1,182	411	514	716	1,173	1,667	133	17.2	23	549
1944	630	164	394	1,780	2,383	2,645	876	5,106	817	76.8	35.7	71.7	1,250
1945	38.5	199	1,050	2,431	1,504	4,078	7,249	547	577	1,235	120	104	1,590
1946	990	503	895	2,681	2,448	2,460	1,383	2,826	2,880	323	441	920	1,557
1947	430	3,800	1,751	1,928	1,062	2,052	2,459	904	500	131	41.2	82.1	1,259
1948	62.7	230	1,008	886	2,161	1,834	650	1,571	184	107	18.1	15.5	725
1949	22.9	109	163	572	1,010	1,306	1,539	357	209	72.4	64.0	53.5	452
1950	504	499	332	1,690	3,720	771	940	1,761	1,020	157	72.2	101	945
1951	67.2	141	153	251	652	699	511	374	297	73.4	14.5	28.7	269
1952	28.5	98.6	210	292	740	826	1,600	813	404	38.0	10.5	5.93	419
1953	7.16	68.9	427	648	394	1,561	428	3,529	130	115	42.3	42.9	623
1954	24.1	117	532	444	393	351	406	1,500	89.4	11.2	3.63	1.20	324
1955	143	986	577	615	1,148	1,399	1,400	583	241	88.7	37.2	94.1	604
1956	63.0	38.3	112	200	586	205	126	1,310	31.3	11.4	3.17	3.71	224
1957	4.94	27.2	41.0	74.5	316	392	3,751	3,639	2,545	78.2	53.1	50.3	912

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	58,810	22,210	22,400	8,880	2,530	547	146	-
1940	134	1,190	4,240	6,730	14,320	8,380	22,060	16,110	11,040	17,770	3,140	3,840	109,000
1941	1,750	97,850	132,100	109,800	57,010	97,550	63,030	41,400	139,000	37,540	4,620	4,840	786,500
1942	20,980	26,020	57,050	40,580	48,540	43,800	199,600	98,720	80,890	8,590	8,090	24,410	657,300
1943	7,750	15,150	23,130	72,650	22,840	31,630	42,630	72,110	99,210	8,150	1,060	1,370	397,700
1944	38,740	9,750	24,240	109,500	137,100	162,600	52,100	314,000	48,610	4,720	2,190	4,270	907,800
1945	2,370	11,820	64,570	149,500	83,510	250,800	431,300	33,630	34,360	75,940	7,400	6,160	1,151,000
1946	60,860	29,960	55,030	164,900	135,900	151,300	82,300	173,800	171,400	19,830	27,130	54,720	1,127,000
1947	26,460	226,100	107,700	118,600	58,960	126,200	146,300	55,600	29,760	8,040	2,530	4,890	911,100
1948	3,860	13,660	62,000	54,490	124,300	112,800	38,670	96,620	10,980	6,590	1,110	922	526,000
1949	1,410	6,480	10,000	35,160	56,080	80,320	91,590	21,970	12,440	4,450	3,940	3,180	327,000
1950	31,010	29,720	20,400	103,900	206,600	47,390	55,920	108,300	60,670	9,670	4,440	6,010	684,000
1951	4,130	8,380	9,380	15,430	36,210	42,950	30,430	23,000	17,680	4,510	894	1,710	194,700
1952	1,760	5,870	12,910	17,960	42,550	50,780	95,220	49,970	24,030	2,340	647	353	304,400
1953	440	4,100	26,240	39,840	21,870	96,000	25,480	217,000	7,710	7,070	2,600	2,550	450,900
1954	1,480	6,980	32,700	27,280	21,810	21,550	24,190	92,230	5,320	689	223	71	234,500
1955	8,800	58,660	35,480	37,840	63,750	86,020	83,320	35,840	14,350	5,460	2,290	5,600	437,400

Monthly and yearly runoff, in acre-feet, of Neches River near Neches, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	3,870	2,280	6,880	12,290	33,690	12,630	7,500	80,530	1,860	703	195	221	162,600
1957	304	1,620	2,520	4,580	17,550	24,090	223,200	223,700	151,500	4,810	3,260	2,990	660,100

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date	day			Inches	Acre-feet		Inches	Acre-feet
1939	878	a2,220	Mar. 4, 1939	b0.2	-	-	-	-	-	-	-
1940	898	834	Apr. 13, 1940	0	150	0.133	1.81	109,000	462	5.56	335,100
1941	928	8,400	June 12, 1941	14	1,086	.962	13.06	786,500	910	10.95	658,800
1942	958	14,400	Apr. 12, 1942	25	908	.804	10.91	657,300	828	9.94	599,200
1943	978	4,060	June 12, 1943	5.6	549	.486	6.62	397,700	586	7.06	424,400
1944	1008	23,600	May 4, 1944	20	1,250	1.11	15.08	907,800	1,259	15.19	913,800
1945	1038	45,500	Apr. 2, 1945	31	1,590	1.41	19.11	1,151,000	1,683	20.22	1,218,000
1946	1058	11,500	June 4, 1946	40	1,557	1.38	18.73	1,127,000	1,853	22.30	1,342,000
1947	1088	10,700	Nov. 10, 1946	32	1,259	1.12	15.13	911,100	871	10.46	630,400
1948	1118	6,780	Mar. 7, 1948	12	725	.642	8.72	526,000	640	7.70	464,400
1949	1148	3,800	Apr. 16, 1949	12	452	.400	5.42	327,000	539	6.46	390,300
1950	1178	15,300	Feb. 16, 1950	27	945	.837	11.36	684,000	863	10.39	624,800
1951	1212	1,640	Feb. 28-Mar. 1, 1951	6.2	269	.238	3.23	194,700	267	3.20	193,400
1952	1242	6,700	Apr. 27, 1952	-	419	.371	5.06	304,400	433	5.23	314,600
1953	1282	12,700	May 19, 1953	5.5	623	.552	7.48	450,900	637	7.64	461,300
1954	1342	6,000	May 17, 1954	.5	324	.287	3.88	234,500	409	4.92	296,300
1955	1392	4,300	Mar. 27, 1955	2.9	604	.535	7.27	437,400	480	5.77	347,500
1956	1442	4,800	May 4, 1956	1.2	224	.198	2.69	162,600	212	2.55	154,100
1957	1512	15,800	May 1, 1957	3.5	912	.808	10.98	660,100	-	-	-

a Maximum observed during period Feb. 9 to Sept. 30.
b Minimum observed during period Feb. 9 to Sept. 30.

61. Neches River near Alto, Tex.

Location.--Lat 31°34', long 95°10', at bridge on State Highway 21, 600 ft downstream from Bowles Creek, 7.5 miles southwest of Alto, Cherokee County, and at mile 274.

Drainage area.--1,903 sq mi.

Gage.--Water-stage recorder. Datum of gage is 198.29 ft above mean sea level, datum of 1929, supplementary adjustment of 1937.

Average discharge.--13 years (1944-57), 1,169 cfs (846,300 acre-ft per year).

Extremes.--1944-57: Maximum discharge, 42,800 cfs Apr. 4, 1945 (gage height, 26.85 ft); minimum, 0.1 cfs Sept. 27, 28, 1954. Maximum stage since at least 1861, 28.2 ft in May 1884, from information by local residents (discharge, about 50,000 cfs).

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	-	-	-	2,442	3,445	4,105	2,415	10,160	1,755	207	95.5	190	-
1945	92.0	544	1,779	5,015	2,335	4,886	10,420	1,367	801	2,292	332	223	2,503
1946	1,867	884	1,539	3,765	4,551	3,991	2,672	3,949	3,397	804	211	1,336	2,400
1947	664	4,809	2,910	2,977	1,970	4,166	3,375	2,993	1,356	359	118	143	2,152
1948	116	345	1,160	1,386	2,876	2,355	1,317	1,877	371	207	37.8	33.2	1,002
1949	38.7	172	334	1,023	1,701	1,591	2,287	611	325	143	145	97.3	697
1950	703	750	598	2,240	4,585	1,447	1,228	3,067	1,913	339	141	154	1,409
1951	117	188	245	391	756	1,052	869	493	391	116	20.2	56.9	389
1952	48.5	141	339	397	1,101	1,494	1,917	1,938	795	91.5	25.3	7.54	689
1953	8.29	73.9	462	845	673	2,896	825	6,425	543	146	86.1	73.3	1,099
1954	35.9	150	795	665	665	529	556	1,624	243	27.3	6.42	1.09	442
1955	81.5	876	767	874	1,799	1,245	2,311	858	521	124	95.6	93.2	794
1956	96.0	47.6	142	233	743	374	321	1,591	85.9	18.7	4.55	2.30	305
1957	1.76	28.9	45.4	97.7	380	491	4,007	6,692	3,620	191	223	75.5	1,322

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	-	-	-	150,200	198,200	252,400	143,700	624,600	104,500	12,710	5,870	11,310	-
1945	5,660	32,360	109,400	308,400	129,700	300,500	619,800	84,050	47,640	141,000	20,420	13,290	1,812,000
1946	114,800	52,600	94,620	231,500	252,700	245,400	159,000	242,800	202,200	49,410	12,940	79,480	1,737,000
1947	40,850	286,100	178,900	183,100	109,400	256,200	200,800	184,000	80,710	22,060	7,240	8,480	1,558,000
1948	7,140	20,520	71,330	85,200	165,400	144,800	78,360	115,400	22,100	12,740	2,320	1,980	727,300
1949	2,380	10,250	20,570	62,930	94,490	97,810	136,100	37,590	19,360	8,770	8,920	5,790	505,000
1950	43,200	44,600	36,760	137,800	254,600	88,980	73,060	188,600	113,800	20,860	8,690	9,160	1,020,000
1951	7,220	11,170	15,090	24,060	41,990	64,700	51,700	30,310	23,250	7,160	1,240	3,390	281,300
1952	2,990	8,370	20,860	24,400	63,340	91,850	114,100	119,200	47,310	5,630	1,560	449	500,100
1953	510	4,400	28,390	51,980	37,400	178,100	49,090	395,000	32,310	8,980	5,290	4,360	795,800

Monthly and yearly runoff, in acre-feet, of Neches River near Alto, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	2,210	8,930	48,870	40,890	36,930	32,530	33,080	99,870	14,440	1,680	395	65	319,900
1955	5,010	52,110	47,190	53,730	99,890	76,530	137,500	52,730	31,000	7,650	5,880	5,550	574,800
1956	5,900	2,830	8,760	14,340	42,750	22,980	19,100	97,800	5,110	1,150	279	137	221,100
1957	108	1,720	2,790	6,010	21,130	30,220	238,400	411,500	215,400	11,740	13,720	4,490	957,200

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1944	1008	31,800	May 7, 1944	-	-	-	-	-	2,274	16.28	1,551,000
1945	1038	42,800	Apr. 4, 1945	73	2,503	1.32	17.87	1,812,000	2,661	18.99	1,927,000
1946	1058	8,400	Feb. 10, 1946	107	2,400	1.26	17.12	1,737,000	2,737	19.52	1,981,000
1947	1088	9,480	Nov. 13, 1946	100	2,152	1.13	15.34	1,558,000	1,590	11.33	1,151,000
1948	1118	4,700	May 23, 1948	22	1,002	.527	7.17	727,300	911	6.52	661,500
1949	1148	3,840	Apr. 23, 1949	22	697	.366	4.97	505,000	824	5.88	596,300
1950	1178	11,600	Feb. 19, 1950	54	1,409	.740	10.07	1,020,000	1,283	9.17	929,000
1951	1212	1,600	Mar. 31, 1951	7.2	389	.204	2.77	281,300	387	2.76	280,000
1952	1242	5,280	May 4, 1952	5.5	689	.362	4.92	500,100	690	4.93	501,100
1953	1282	22,900	May 17, 1953	6.6	1,099	.578	7.82	795,800	1,136	8.09	822,500
1954	1342	3,560	May 23, 1954	.2	442	.232	3.14	319,900	503	3.57	364,200
1955	1392	3,340	Apr. 3, 1955	.5	794	.417	5.65	574,800	674	4.81	488,000
1956	1442	3,230	May 11, 1956	.8	305	.160	2.18	221,100	287	2.06	208,300
1957	1512	23,600	May 1, 1957	.3	1,322	.695	9.44	957,200	-	-	-

62. Neches River near Diboll, Tex.

Location.--Lat 31°08', long 94°48', at bridge on U. S. Highway 59, 630 ft downstream from Texas & New Orleans Railroad bridge, 2.9 miles downstream from Alabama Creek, 3.8 miles south of Diboll, Angelina County, and at mile 204.

Drainage area.--2,670 sq mi.

Gage.--Wire-weight gage. Datum of gage is 134.46 ft above mean sea level, datum of 1929. Prior to July 10, 1925, chain gage at site 630 ft upstream, at same datum. July 10 to Aug. 31, 1925, chain gage, and Mar. 30, 1939, to Sept. 24, 1943, wire-weight gage at site 500 ft upstream, at same datum.

Average discharge.--20 years (1923-25, 1939-57), 1,750 cfs (1,267,000 acre-ft per year).

Extremes.--1923-25, 1939-57: Maximum discharge, 49,900 cfs May 4, 1944 (gage height, 18.70 ft); no flow Aug. 15-22, 1925. Maximum stage known since at least 1874, about 21 ft in May 1884, from information by local resident (discharge, about 80,000 cfs).

Remarks.--No large diversion upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	220	301	4,040	4,280	4,150	5,920	3,630	2,140	4,540	250	48.9	73.5	2,461
1925	92.3	88.4	291	617	446	390	276	194	49.9	15.2	6.43	10.0	206
1939	-	-	-	-	-	-	986	570	515	85.4	34.4	14.2	-
1940	5.37	37.5	1,492	411	2,994	526	1,022	1,627	1,581	1,296	121	171	932
1941	61.5	4,351	8,710	5,918	3,993	5,395	2,333	2,433	3,432	2,860	227	310	3,338
1942	841	4,631	2,506	2,161	2,000	1,915	5,047	4,865	2,860	988	270	764	2,397
1943	223	374	582	2,058	1,000	731	1,052	1,008	1,811	332	91.2	35.0	772
1944	283	509	632	3,237	4,590	5,807	3,336	16,950	3,344	253	97.2	413	3,296
1945	116	623	3,255	8,806	3,757	6,123	13,190	2,298	889	2,064	768	220	3,505
1946	1,814	1,087	1,740	5,721	8,622	7,227	4,308	5,666	5,632	1,150	230	1,393	3,682
1947	704	6,270	4,160	5,846	3,210	5,795	3,652	4,005	2,120	532	142	143	3,047
1948	130	327	1,250	1,638	4,391	3,664	2,424	1,896	932	238	48.5	38.1	1,404
1949	36.0	188	335	1,271	2,338	2,580	2,936	1,208	367	159	221	198	976
1950	1,368	1,050	1,414	3,976	7,022	2,811	1,513	4,249	4,315	493	179	170	2,349
1951	139	186	291	452	788	1,316	1,126	516	386	153	29.5	57.4	451
1952	63.5	134	378	442	1,209	2,255	2,454	2,996	1,149	131	43.1	9.29	937
1953	6.78	119	549	958	1,206	3,731	1,966	10,010	1,668	421	148	134	1,756
1954	38.0	145	909	817	831	596	600	2,012	828	28.5	13.2	2.99	568
1955	42.3	716	684	883	2,352	1,639	2,897	1,469	904	142	149	95.8	985
1956	118	46.1	139	236	1,068	405	669	1,706	153	29.6	6.43	3.14	380
1957	2.72	25.1	43.9	94.2	341	538	2,641	10,080	3,957	381	277	90.1	1,548

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	13,500	17,900	248,000	263,000	239,000	364,000	216,000	132,000	270,000	15,400	3,010	4,380	1,786,000
1925	5,680	5,260	17,900	37,900	24,800	24,000	16,400	11,900	2,970	934	396	595	149,000
1939	-	-	-	-	-	-	58,670	35,040	30,650	5,250	2,120	845	-
1940	330	2,230	91,720	25,300	172,200	32,310	60,800	100,000	94,090	79,700	7,460	10,190	676,300

Monthly and yearly runoff, in acre-feet, of Neches River near Diboll, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	3,780	258,900	535,500	363,900	221,800	331,700	138,800	149,600	204,200	175,900	13,970	18,460	2,417,000
1942	51,740	275,600	154,100	132,900	111,100	117,800	300,300	299,100	170,200	60,770	16,610	45,460	1,736,000
1943	13,740	22,280	35,820	126,500	55,520	44,930	62,630	61,960	107,700	20,410	5,610	2,080	559,200
1944	17,390	30,270	38,870	199,000	264,000	357,100	198,500	1,042,000	199,000	15,560	5,970	24,580	2,392,000
1945	7,140	37,090	200,100	541,500	208,700	376,500	785,000	141,300	52,910	126,900	47,210	13,100	2,537,000
1946	111,500	64,680	107,000	351,800	478,800	444,400	256,300	348,400	335,100	70,710	14,140	82,920	2,666,000
1947	43,260	373,100	255,800	359,500	178,300	356,400	217,300	246,300	126,200	32,730	8,750	8,480	2,206,000
1948	7,990	19,460	76,880	100,700	252,600	225,300	144,200	116,600	55,430	14,620	2,980	2,270	1,019,000
1949	2,210	11,170	20,610	78,160	129,800	158,600	174,700	74,290	21,840	9,800	13,560	11,770	706,500
1950	84,090	62,480	86,970	244,500	390,000	172,800	90,050	261,300	256,800	30,320	10,990	10,090	1,700,000
1951	8,550	11,080	17,880	27,800	43,740	80,930	67,000	31,750	22,960	9,420	1,810	3,420	326,300
1952	3,910	7,960	23,260	27,180	69,520	138,700	146,000	184,200	68,360	8,030	2,650	553	680,300
1953	417	7,060	33,730	58,890	66,950	229,400	117,000	615,600	99,260	25,900	9,100	7,980	1,271,000
1954	2,340	8,600	55,870	50,240	46,150	36,640	35,730	123,700	49,290	1,760	809	178	411,300
1955	2,600	42,580	42,050	54,300	130,600	100,800	172,400	90,320	53,780	8,710	9,180	5,700	713,000
1956	7,260	2,740	8,530	14,510	61,440	24,890	39,780	104,900	9,090	1,820	396	187	275,500
1957	167	1,490	2,700	5,790	18,920	33,070	157,200	620,000	235,400	23,430	17,030	5,360	1,121,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date	day			Inches	Acre-feet		Inches	Acre-feet
1924	588	14,800	Dec. 23, 1923	26	2,461	0.922	12.56	1,786,000	2,116	10.81	1,536,000
1925	608	1,100	Jan. 18, 1925	0	206	.077	1.05	149,000	-	-	-
1939	878	-	-	3.8	-	-	-	-	-	-	-
1940	898	12,100	Dec. 22, 1939	.9	932	.349	4.75	676,300	1,901	9.70	1,380,000
1941	928	22,800	Nov. 28, 1940	45	3,338	1.25	16.98	2,417,000	2,900	14.75	2,100,000
1942	958	18,000	Nov. 2, 1941	93	2,397	.898	12.20	1,736,000	1,832	9.33	1,326,000
1943	978	2,850	Dec. 31, 1942	28	772	.289	3.94	559,200	793	4.03	573,900
1944	1008	49,900	May 4, 1944	32	3,296	1.23	16.79	2,392,000	3,513	17.91	2,550,000
1945	1038	40,800	Apr. 8, 1945	68	3,505	1.31	17.81	2,537,000	3,559	18.07	2,576,000
1946	1058	27,000	Feb. 10, 1946	106	3,682	1.38	18.71	2,666,000	4,219	21.45	3,055,000
1947	1088	13,300	Nov. 19, 1946	114	3,047	1.14	15.49	2,206,000	2,263	11.51	1,638,000
1948	1118	7,350	Feb. 12, 1948	28	1,404	.526	7.16	1,019,000	1,307	6.66	948,700
1949	1148	6,850	Mar. 25, 1949	26	976	.366	4.96	706,500	1,252	6.36	906,100
1950	1178	15,100	June 4, 1950	101	2,349	.880	11.93	1,700,000	2,078	10.56	1,504,000
1951	1212	3,000	Mar. 30, 1951	14	451	.169	2.30	326,300	447	2.28	324,000
1952	1242	6,040	Apr. 24, 1952	6.7	937	.351	4.78	680,300	946	4.83	686,400
1953	1282	21,600	May 19, 1953	4.6	1,756	.658	8.92	1,271,000	1,791	9.10	1,297,000
1954	1342	6,400	May 13, 1954	.6	568	.213	2.89	411,300	596	3.04	431,700
1955	1392	5,710	Apr. 11, 1955	.8	985	.369	5.01	713,000	890	4.52	644,300
1956	1442	3,090	May 20-22, 1956	1.0	380	.142	1.92	275,500	360	1.82	261,400
1957	1512	23,100	Apr. 30, 1957	.8	1,548	.580	7.85	1,121,000	-	-	-

63. Neches River near Rockland, Tex.

Location.--Lat 31°01'45", long 94°23'50", 2,100 ft upstream from Texas & New Orleans Railroad bridge, 2,200 ft downstream from bridge on U. S. Highway 69, 1 mile north of Rockland, Tyler County, 3.6 miles downstream from Billams Creek, and at mile 158.

Drainage area.--3,539 sq mi.

Supplemental records available.--Records of chemical analyses for the period September 1945 to September 1947 are published in reports of Geological Survey.

Gage.--Staff gage. Datum of gage is 91.41 ft above mean sea level, datum of 1929. Prior to July 1, 1933, staff gages at various sites in same vicinity at same datum.

Average discharge.--54 years (1903-57), 2,329 cfs (1,686,000 acre-ft per year).

Extremes.--1903-57: Maximum discharge, 49,800 cfs May 6, 1944 (gage height, 31.84 ft); minimum observed during period of daily discharge records, 1923-57, 1.6 cfs Sept. 28-30, Oct. 1, 2, 1956.
Maximum stage known, 34.9 ft in May 1884, from information by local resident (discharge, about 62,000 cfs).

Remarks.--No large diversion upstream. As no discharge measurements to define ratings were made prior to water year 1924, records for those earlier years are less accurate than those for 1924 and later water years, and no daily discharge records are available prior to October 1923.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	-	-	-	-	-	-	859	1,260	167	-
1904	334	169	452	439	1,180	1,180	1,350	3,810	342	361	259	106	834
1905	46.7	27.3	743	1,520	3,290	5,620	7,620	13,800	3,800	6,660	2,440	202	3,830
1906	189	1,870	2,630	6,680	3,280	2,480	2,160	2,120	1,140	1,240	855	402	2,080
1907	1,340	327	1,150	2,960	1,340	1,800	1,090	9,950	5,580	470	212	293	2,220
1908	422	7,550	8,750	4,340	9,030	5,190	4,650	10,300	3,130	427	272	585	4,540
1909	485	382	479	671	1,080	1,060	680	863	1,340	221	74.4	29.0	610

Monthly and yearly mean discharge, in cubic feet per second, of Neches River near Rockland, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1910	144	57.0	541	593	2,750	1,870	2,740	2,030	1,470	266	67.0	47.0	1,030
1911	29.0	12.0	101	300	400	690	4,220	4,140	150	674	376	100	933
1912	60	193	4,020	4,470	1,320	5,030	6,980	3,770	756	530	330	250	2,320
1913	70	50	386	353	1,540	5,060	2,990	914	468	469	264	1,020	1,130
1914	1,490	457	4,170	2,290	1,420	4,310	6,140	10,500	4,990	549	625	474	3,130
1915	251	1,050	3,400	3,310	4,360	3,660	2,760	7,190	509	680	3,590	764	2,630
1916	369	1,090	1,670	3,690	2,520	1,280	1,740	10,000	2,160	776	448	280	2,180
1917	218	428	815	671	1,260	566	938	741	613	342	237	141	575
1918	113	109	455	275	436	362	925	1,270	306	155	184	149	395
1919	137	996	1,150	3,560	4,810	2,930	2,590	3,260	3,680	5,480	646	362	2,450
1920	2,930	6,980	4,250	9,770	6,980	3,760	2,030	1,120	849	223	844	683	3,360
1921	223	933	2,310	4,940	3,240	4,460	9,850	7,560	1,380	6,540	345	200	3,510
1922	97.7	123	362	1,070	3,560	8,240	18,600	14,800	2,270	589	296	94.0	4,170
1923	47.7	440	363	1,190	5,100	6,660	14,100	4,800	713	220	55.1	533	2,820
1924	400	935	9,320	6,730	6,360	9,570	4,760	4,330	7,420	313	65.7	59.1	4,190
1925	89.2	73.8	207	875	542	385	233	201	75.9	28.7	9.84	15.7	227
1926	1,260	8,000	1,180	4,070	1,640	6,070	9,750	4,540	2,610	1,630	816	230	3,480
1927	160	414	2,690	4,840	4,280	8,220	7,810	4,130	1,670	1,640	331	67.0	3,020
1928	287	237	600	665	764	2,920	2,100	996	975	378	234	48.2	851
1929	39.8	341	702	2,230	2,780	3,030	1,990	9,460	9,300	676	95.3	94.7	2,560
1930	46.4	704	879	3,890	5,830	3,200	1,560	2,940	3,490	153	58.5	118	1,880
1931	926	688	3,740	4,220	4,570	4,180	2,430	3,310	376	152	127	65.4	2,060
1932	14.2	177	3,380	11,700	14,000	8,360	2,630	1,370	517	260	98.5	176	3,530
1933	96.2	113	824	2,450	4,710	5,110	4,810	2,480	987	1,160	280	342	1,930
1934	85.8	119	308	3,410	5,530	7,230	7,040	1,920	257	62.0	24.2	29.7	2,140
1935	60.2	433	2,687	2,935	3,133	2,732	2,836	20,170	5,003	799	294	319	3,467
1936	167	1,047	4,503	1,673	1,292	1,180	624	1,765	1,619	2,858	259	131	1,433
1937	84.0	188	862	4,882	3,205	2,820	2,583	395	229	81.2	45.2	135	1,282
1938	217	594	1,607	3,410	3,382	3,055	7,316	2,832	472	225	195	47.8	1,933
1939	23.6	143	277	2,607	4,351	3,835	1,431	703	808	141	53.5	21.5	1,180
1940	16.2	56.2	1,984	1,314	5,292	737	2,224	2,135	2,589	1,544	226	241	1,512
1941	86.7	4,507	14,560	8,308	5,635	7,826	3,543	4,671	5,394	3,539	379	748	4,943
1942	1,797	8,385	3,408	2,771	2,799	3,246	6,359	5,871	3,657	1,344	1,377	900	3,484
1943	307	543	681	3,283	1,354	1,088	1,244	1,073	1,864	653	277	57.5	1,034
1944	266	581	640	3,868	5,936	6,911	4,988	23,930	5,002	378	132	646	4,450
1945	139	677	4,452	11,200	7,059	7,021	18,380	3,567	1,045	1,766	1,080	281	4,698
1946	1,888	1,404	2,205	7,200	14,090	8,651	5,661	6,848	7,712	1,904	420	1,385	4,883
1947	968	9,493	5,606	10,550	4,059	8,398	4,073	6,103	3,569	768	163	144	4,497
1948	138	430	1,493	1,735	5,571	4,311	3,420	2,038	1,310	291	66.8	59.8	1,722
1949	37.6	274	374	1,869	3,566	5,318	4,363	2,279	819	218	269	216	1,620
1950	2,288	1,511	3,384	8,305	9,824	5,205	1,775	5,562	8,359	641	226	189	3,901
1951	187	197	307	484	839	1,539	1,656	623	406	211	41.0	75.7	544
1952	87.5	133	371	477	1,402	2,625	3,347	4,615	1,540	152	57.8	15.5	1,234
1953	9.66	127	762	1,330	2,086	4,317	3,064	17,570	3,239	638	206	164	2,811
1954	50.2	146	1,068	1,268	938	648	938	2,759	1,005	58.5	24.7	8.11	743
1955	18.4	801	802	1,077	3,281	1,948	5,334	1,530	1,127	170	177	96.9	1,343
1956	137	44.9	147	252	1,372	602	1,202	1,491	257	47.1	11.0	5.01	460
1957	3.38	28.4	60.1	105	341	1,090	2,290	14,230	4,031	644	317	129	1,956

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	-	-	-	-	-	-	52,800	77,500	10,000	-
1904	20,500	10,100	27,800	27,000	68,000	72,600	80,300	234,000	20,400	22,200	15,900	6,310	605,000
1905	2,870	1,620	45,700	93,500	183,000	346,000	453,000	848,000	226,000	410,000	150,000	12,000	2,770,000
1906	11,600	111,000	162,000	411,000	182,000	152,000	129,000	130,000	67,800	76,200	52,600	23,900	1,510,000
1907	82,400	19,500	70,700	182,000	74,400	111,000	64,900	612,000	332,000	28,900	13,000	17,400	1,610,000
1908	25,900	449,000	538,000	267,000	519,000	319,000	277,000	633,000	186,000	26,300	16,700	34,800	3,290,000
1909	29,800	22,700	29,500	41,300	60,000	65,200	40,500	53,100	79,700	13,600	4,570	1,730	442,000
1910	8,850	3,390	33,300	36,500	153,000	115,000	163,000	125,000	87,500	16,400	4,120	2,800	749,000
1911	1,780	714	6,210	18,400	22,200	42,400	251,000	254,000	8,930	41,400	23,100	5,950	676,000
1912	3,690	11,500	247,000	275,000	75,900	309,000	415,000	232,000	45,000	32,600	20,300	14,900	1,680,000
1913	4,300	2,980	23,700	21,700	85,500	311,000	178,000	56,200	27,800	28,800	16,200	60,700	817,000
1914	91,600	27,200	256,000	141,000	78,900	265,000	365,000	646,000	297,000	33,800	38,400	28,200	2,270,000
1915	15,400	62,500	209,000	204,000	242,000	225,000	164,000	442,000	30,300	41,800	221,000	45,500	1,900,000
1916	22,700	64,900	103,000	227,000	145,000	78,700	104,000	615,000	129,000	47,700	27,500	16,700	1,580,000
1917	13,400	25,500	50,100	41,300	70,000	34,800	55,800	45,600	36,500	21,000	14,600	8,390	417,000
1918	6,950	6,490	28,000	16,900	24,200	22,300	55,000	78,100	18,200	9,530	11,300	8,870	286,000
1919	8,420	59,300	70,700	219,000	267,000	180,000	154,000	200,000	219,000	337,000	39,700	21,500	1,780,000
1920	180,000	415,000	261,000	601,000	401,000	231,000	121,000	68,900	50,500	13,700	51,900	40,600	2,440,000
1921	13,700	55,500	142,000	304,000	180,000	274,000	586,000	465,000	82,100	402,000	21,200	11,900	2,540,000
1922	6,010	7,320	22,300	65,800	198,000	507,000	1,110,000	910,000	135,000	36,200	18,200	5,590	3,020,000
1923	2,930	26,200	22,300	73,200	283,000	410,000	839,000	295,000	42,400	13,500	3,390	31,700	2,040,000
1924	24,600	55,600	573,000	414,000	366,000	589,000	283,000	266,000	441,000	19,200	4,040	3,520	3,040,000
1925	5,480	4,390	12,700	53,800	30,100	23,700	13,900	12,400	4,520	1,760	605	934	164,000

Monthly and yearly runoff, in acre-feet, of Neches River near Rockland, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1926	77,700	476,000	72,500	250,000	91,200	374,000	580,000	279,000	155,000	100,000	50,100	13,700	2,520,000
1927	9,850	24,600	165,000	297,000	238,000	506,000	464,000	254,000	99,500	101,000	20,400	3,990	2,180,000
1928	17,600	14,100	36,900	40,900	43,900	180,000	125,000	61,200	58,000	23,200	14,400	2,870	618,000
1929	2,450	20,300	43,200	137,000	154,000	186,000	118,000	582,000	553,000	41,600	5,860	5,640	1,850,000
1930	2,850	41,900	54,000	239,000	324,000	197,000	92,800	181,000	208,000	9,410	3,600	7,020	1,360,000
1931	56,900	40,900	230,000	259,000	254,000	257,000	145,000	204,000	22,400	9,350	7,810	3,890	1,490,000
1932	873	10,500	208,000	719,000	805,000	514,000	156,000	84,200	30,800	16,000	6,060	10,500	2,560,000
1933	5,920	6,720	50,700	151,000	262,000	314,000	286,000	152,000	58,700	71,300	17,200	20,400	1,400,000
1934	5,280	7,080	18,900	210,000	307,000	445,000	419,000	118,000	15,300	3,810	1,490	1,770	1,550,000
1935	3,700	25,760	165,200	180,500	174,000	168,000	168,800	1,240,000	297,700	49,150	18,110	18,990	2,510,000
1936	10,250	62,300	276,900	102,900	74,330	72,540	37,130	108,500	96,350	175,700	15,930	7,770	1,041,000
1937	5,160	11,210	53,010	300,200	178,000	173,400	153,700	24,280	13,650	4,990	2,780	8,040	928,400
1938	13,350	35,360	98,810	209,700	187,800	187,900	435,400	174,200	28,110	13,840	11,990	2,840	1,399,000
1939	1,450	8,540	17,030	160,300	241,600	235,800	85,140	43,230	48,060	8,660	3,290	1,280	854,400
1940	998	3,340	122,000	80,780	304,400	45,290	132,300	131,300	154,000	94,920	13,920	14,340	1,098,000
1941	5,330	268,200	895,400	510,900	313,000	481,200	210,800	287,200	320,900	217,600	23,330	44,510	3,578,000
1942	110,500	499,000	209,600	170,400	155,400	199,600	378,400	361,000	217,600	82,660	84,660	53,570	2,522,000
1943	18,860	32,300	41,890	201,900	75,200	66,870	73,990	65,970	110,900	40,170	17,050	3,420	748,500
1944	16,380	34,590	39,370	237,800	341,500	424,900	296,800	1,471,000	297,600	23,260	8,130	38,420	3,230,000
1945	8,570	40,300	273,700	688,400	392,100	431,700	1,093,000	219,300	62,200	108,600	66,420	16,750	3,401,000
1946	116,100	83,570	135,600	442,700	728,800	531,900	336,900	421,100	458,900	117,100	25,800	82,440	3,535,000
1947	59,510	564,900	344,700	648,700	225,400	516,400	242,400	375,300	212,400	47,230	10,040	8,540	3,256,000
1948	8,510	25,560	91,790	106,700	320,400	265,100	203,500	125,300	77,970	17,880	4,110	3,560	1,250,000
1949	2,310	16,300	23,000	114,900	198,000	327,000	259,600	140,200	48,730	13,430	16,540	12,860	1,173,000
1950	140,700	89,900	208,100	510,600	545,600	320,000	105,600	342,000	497,400	39,430	13,870	11,240	2,824,000
1951	11,480	11,700	18,890	29,740	46,600	94,600	98,550	38,330	24,180	12,950	2,520	4,500	394,000
1952	5,380	7,910	22,830	29,350	80,660	161,400	199,200	283,800	91,660	9,330	3,550	920	896,000
1953	594	7,530	46,870	81,800	115,900	265,500	182,300	1,080,000	192,700	39,220	12,640	9,750	2,035,000
1954	3,080	8,690	65,670	77,940	52,090	39,870	55,800	169,600	59,810	3,600	1,520	482	538,200
1955	1,130	47,650	49,340	66,200	182,200	119,800	317,400	94,110	67,030	10,430	10,880	5,770	971,900
1956	8,430	2,670	9,050	15,490	78,890	37,010	71,540	91,670	15,280	2,890	673	298	333,900
1957	208	1,690	3,690	6,460	18,930	67,000	136,300	875,300	239,800	39,570	19,470	7,650	1,416,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1903	850	-	-	-	-	-	-	-	-	-	-
1904	850	7,750	May 9, 10, 1904	61	834	0.236	3.20	605,000	823	3.16	597,000
1905	850	24,600	May 18, 1905	20	3,830	1.08	14.69	2,770,000	4,150	15.93	3,010,000
1906	850	8,450	Jan. 11, 1906	104	2,080	.588	8.00	1,510,000	1,930	7.40	1,400,000
1907	850	17,200	May 12, 1907	135	2,220	.627	8.50	1,610,000	3,380	12.96	2,450,000
1908	850	30,400	Nov. 23, 1907	135	4,540	1.28	17.46	3,290,000	3,260	12.53	2,360,000
1909	850	3,920	June 4, 1909	-	610	.172	2.33	442,000	560	2.14	405,000
1910	850	7,260	Feb. 11, 1910	-	1,030	.291	4.74	749,000	983	3.75	712,000
1911	850	-	-	-	933	.264	3.57	676,000	1,280	4.92	930,000
1912	850	-	-	-	2,320	.656	8.91	1,680,000	2,000	7.69	1,450,000
1913	850	-	-	-	1,130	.319	4.32	817,000	1,600	6.13	1,160,000
1914	850	16,900	May 17, 1914	104	3,130	.884	12.00	2,270,000	3,010	11.54	2,180,000
1915	850	23,600	May 8, 1915	119	2,630	.743	10.07	1,900,000	2,490	9.55	1,810,000
1916	850	25,600	May 6, 1916	135	2,180	.616	8.38	1,580,000	2,040	7.85	1,480,000
1917	850	2,620	Feb. 17, 1917	104	575	.162	2.20	417,000	510	1.95	369,000
1918	850	2,570	May 6, 1918	-	395	.112	1.52	286,000	529	2.03	383,000
1919	850	16,900	July 1, 1919	-	2,450	.692	9.41	1,780,000	3,450	13.22	2,490,000
1920	850	35,800	Jan. 27, 1920	151	3,360	.949	12.89	2,440,000	2,470	9.46	1,790,000
1921	850	14,700	Apr. 16, 1921	91	3,510	.992	13.41	2,540,000	3,260	12.49	2,360,000
1922	850	39,700	Apr. 2, 1922	-	4,170	1.18	15.99	3,020,000	4,190	16.08	3,040,000
1923	850	37,500	Apr. 15, 1923	-	2,820	.797	10.83	2,040,000	3,650	14.01	2,640,000
1924	588	14,200	June 2, 3, 1924	50	4,190	1.18	16.10	3,040,000	3,320	12.76	2,410,000
1925	608	2,520	Jan. 19, 1925	7	227	.064	.87	164,000	1,060	4.06	768,000
1926	628	15,100	Apr. 26, 27, 1926	119	3,480	.983	13.33	2,520,000	2,890	11.08	2,090,000
1927	648	14,100	Apr. 21, 1927	57	3,020	.853	11.57	2,180,000	2,840	10.87	2,050,000
1928	668	4,290	Mar. 18, 19, 1928	30	851	.240	3.27	618,000	847	3.26	615,000
1929	688	34,200	June 1, 1929	21	2,560	.723	9.81	1,850,000	2,600	9.99	1,880,000
1930	703	10,500	May 30, 1930	30	1,880	.531	7.22	1,360,000	2,200	8.43	1,590,000
1931	718	7,800	Jan. 12, 1931	8	2,060	.582	7.89	1,490,000	1,910	7.32	1,380,000
1932	733	33,600	Feb. 24, 1932	3	3,530	.997	13.56	2,560,000	3,310	12.73	2,400,000
1933	748	8,990	Mar. 9, 1933	61	1,930	.545	7.40	1,400,000	1,880	7.23	1,360,000
1934	763	12,400	Mar. 7, 1934	15	2,140	.605	8.23	1,550,000	2,370	9.10	1,716,000
1935	788, 1342	39,700	May 22, 1935	19	3,467	.980	13.31	2,510,000	3,681	14.12	2,665,000
1936	808	11,400	July 5, 1936	53	1,433	.405	5.50	1,041,000	1,048	4.02	760,500
1937	828	7,190	Jan. 24, 1937	24	1,282	.362	4.91	928,400	1,390	5.32	1,007,000
1938	858	15,900	Apr. 12, 1938	24	1,933	.546	7.42	1,399,000	1,766	6.78	1,279,000
1939	878	9,820	Mar. 1, 1939	7.5	1,180	.333	4.52	854,400	1,317	5.05	953,700
1940	898	9,670	Dec. 29, 1939	5.4	1,512	.427	5.82	1,098,000	2,948	11.34	2,140,000

Yearly discharge, in cubic feet per second, of Neches River near Rockland, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1941	928	25,900	Nov. 30, 1940	55	4,943	1.40	18.96	3,578,000	4,459	17.11	3,229,000
1942	958	25,300	Nov. 1, 1941	149	3,484	.985	13.35	2,522,000	2,481	9.50	1,796,000
1943	978	a4,580	Jan. 13, 15, 1943	40	1,034	.292	3.96	748,500	1,030	3.95	745,800
1944	1008	49,800	May 6, 1944	74	4,450	1.26	17.11	3,230,000	4,770	18.34	3,462,000
1945	1038	37,500	Apr. 11, 1945	93	4,698	1.33	18.03	3,401,000	4,716	18.10	3,414,000
1946	1058	32,300	Feb. 12, 13, 1946	190	4,883	1.38	18.74	3,535,000	5,758	22.10	4,169,000
1947	1088	17,700	Mar. 15, 1947	122	4,497	1.27	17.26	3,256,000	3,332	12.79	2,412,000
1948	1118	8,520	Feb. 16, 1948	37	1,722	.487	6.62	1,250,000	1,606	6.17	1,166,000
1949	1148	11,500	Mar. 28, 1949	27	1,620	.458	6.22	1,173,000	2,168	8.33	1,570,000
1950	1178	23,500	June 6, 1950	137	3,901	1.10	14.98	2,824,000	3,354	12.87	2,428,000
1951	1212	4,420	Mar. 31, 1951	13	544	.154	2.08	394,000	536	2.05	388,100
1952	1242	8,120	May 27, 1952	9.5	1,234	.349	4.76	896,000	1,260	4.87	914,900
1953	1282	34,400	May 20, 1953	8.0	2,811	.794	10.78	2,035,000	2,842	10.91	2,057,000
1954	1342	5,340	May 19, 1954	4.6	743	.210	2.87	538,200	772	2.97	558,800
1955	1392	12,700	Apr. 15, 1955	3.3	1,343	.380	5.16	971,900	1,235	4.74	894,000
1956	1442	3,220	Apr. 8, 1956	1.6	460	.130	1.78	333,900	440	1.71	319,300
1957	1512	29,700	May 3, 1957	1.6	1,956	.553	7.50	1,416,000	-	-	-

a Observed at crest.

64. Striker Creek near Summerfield, Tex.

Location.--Lat 32°00'10", long 94°59'35", at bridge on U. S. Highway 79, 3½ miles downstream from Johnson Creek and 6½ miles northeast of Summerfield, Cherokee County.

Drainage area.--148 sq mi.

Gage.--Wire-weight gage. Datum of gage is 287.0 ft above mean sea level, datum of 1929. Prior to Aug. 4, 1945, chain gage at same site and datum.

Average discharge.--9 years (1940-49), 200 cfs (144,800 acre-ft per year).

Extremes.--1940-49: Maximum discharge, 10,800 cfs Nov. 24, 1940 (gage height, 17.23 ft, from floodmark), from rating extended above 5,000 cfs by velocity-area studies; minimum observed, 0.7 cfs Aug. 31, Sept. 1, 1943.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	5.96	834	515	288	273	252	240	152	91.9	92.4	31.3	157	243
1942	331	445	254	129	173	143	365	118	292	41.4	170	174	219
1943	48.4	89.7	166	145	87.3	82.1	91.8	31.7	30.2	21.9	2.93	3.39	66.7
1944	42.0	46.5	103	378	558	378	206	1,036	114	12.2	10.7	46.4	244
1945	14.9	162	419	519	264	554	495	138	263	580	23.2	34.1	290
1946	477	83.9	161	474	548	358	129	621	414	53.9	139	73.1	293
1947	56.4	554	223	361	196	364	374	395	69.6	25.6	10.4	32.8	222
1948	17.9	68.3	224	235	403	222	158	212	25.9	20.2	3.37	4.50	132
1949	7.86	57.7	59.3	212	178	127	208	91.9	48.3	51.4	44.7	31.6	92.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	367	49,650	31,660	17,710	15,150	15,490	14,300	9,320	5,470	5,680	1,930	9,350	176,100
1942	20,340	26,480	15,590	7,950	9,620	8,800	21,720	7,280	17,350	2,540	10,420	10,380	158,500
1943	2,980	5,340	10,220	8,950	4,850	5,050	5,460	1,950	1,800	1,340	180	200	48,320
1944	2,580	2,770	6,300	23,230	32,110	23,250	12,230	63,700	6,810	749	658	2,760	177,100
1945	918	9,630	25,780	31,940	14,660	34,040	29,450	8,490	15,660	35,680	1,420	2,030	209,700
1946	29,320	4,990	9,870	29,170	30,420	22,000	7,650	38,170	24,640	3,320	8,520	4,350	212,400
1947	3,470	32,990	13,730	22,210	10,890	22,400	22,260	24,310	4,140	1,580	637	1,950	160,600
1948	1,100	4,070	13,770	14,480	23,180	13,630	9,420	13,050	1,540	1,240	207	268	95,960
1949	483	3,440	3,650	13,040	9,870	7,800	12,370	5,650	2,870	3,160	2,750	1,880	66,960

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1940	928	-	-	-	-	-	-	-	-	-	-
1941	928	10,800	Nov. 24, 1940	4.7	243	1.64	22.29	176,100	217	19.86	156,800
1942	958	3,390	Oct. 16, 1941	7.6	219	1.48	20.10	158,500	158	14.54	114,300
1943	978	a1,620	Dec. 28, 1942	.7	66.7	.451	6.13	48,320	57.2	5.25	41,430
1944	1008	9,450	May 2, 1944	3.1	244	1.65	22.44	177,100	278	25.57	201,800
1945	1038	7,800	July 12, 1945	11	290	1.96	26.58	209,700	301	27.57	217,600
1946	1058	b4,220	May 14, 1946	8.2	293	1.98	26.92	212,400	302	27.68	218,400
1947	1088	4,910	May 17, 1947	7.1	222	1.50	20.34	160,300	179	16.38	129,300
1948	1118	b1,710	May 13, 1948	1.2	132	.892	12.16	95,960	117	10.72	84,590
1949	1148	1,360	Apr. 11, 1949	1.9	92.5	.625	8.49	66,960	-	-	-

a Observed at crest.
b Maximum observed.

65. Lake Tyler near Whitehouse, Tex.

Location.--Lat 32°14'30", long 95°10'30", at pumphouse 2.0 miles north of Whitehouse Dam on Prairie Creek, 3.2 miles northeast of Whitehouse, Smith County, and 4.3 miles upstream from Mud Creek.

Drainage area.--69 sq mi, approximately.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (city of Tyler bench mark). Prior to May 3, 1949, staff gage at dam at same datum. May 3, 1949, to July 11, 1951, staff gage at pumphouse 660 ft shoreward at same datum.

Extremes.--1949-57: Maximum contents, 47,000 acre-ft Apr. 27, 1957; minimum since first appreciable storage in 1950, 33,400 acre-ft Jan. 16-21, 1957.

Remarks.--Lake is formed by rolled earth-fill dam, 4,708 ft long. Spillway is concrete flume, 200 ft wide, located about 800 ft to left of dam. Storage began Jan. 8, 1949, and dam completed May 13, 1949. Total capacity, 43,400 acre-ft (elevation, 375.5 ft, top of spillway). Usable capacity, 39,000 acre-ft between elevations 375.5 and 350.0 ft (bottom of lowest sluice gates). Dead storage, 4,400 acre-ft. Water used for municipal supply for city of Tyler.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	9,360	11,700	12,940	12,940	13,060	12,700	12,700	-
1950	14,500	14,760	15,800	20,040	26,680	28,600	30,200	36,700	38,460	38,460	38,020	38,460	+25,760
1951	38,020	38,020	38,240	39,340	41,540	43,400	43,160	41,760	41,760	40,660	39,120	39,340	+880
1952	39,120	39,560	40,220	41,760	43,400	43,400	43,400	43,400	41,980	40,880	38,900	36,920	-2,420
1953	35,600	36,480	38,020	38,900	40,000	43,160	43,640	43,160	41,760	41,540	41,100	40,220	+3,300
1954	39,120	40,220	42,200	43,400	43,160	43,160	43,160	43,160	41,760	39,560	37,580	35,600	-4,620
1955	36,260	37,140	38,240	39,560	42,200	43,400	43,160	43,400	41,980	41,320	40,880	40,220	+4,620
1956	38,900	38,020	38,020	38,460	40,440	40,440	40,000	42,200	41,100	39,120	37,580	35,600	-4,620
1957	34,280	34,060	33,840	33,840	34,720	36,040	45,080	43,640	43,160	41,980	40,880	40,440	+4,840

66. Mud Creek near Jacksonville, Tex.

Location.--Lat 31°58'40", long 95°09'40", at bridge on U. S. Highway 79, 0.6 mile downstream from Caney Creek, 3.9 miles downstream from another Caney Creek, 4 miles downstream from International-Great Northern Railroad bridge, and 6.9 miles east of Jacksonville, Cherokee County.

Drainage area.--382 sq mi.

Gage.--Water-stage recorder. Datum of gage is 271.64 ft above mean sea level, datum of 1929.

Average discharge.--18 years (1939-57), 279 cfs (202,000 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 23,400 cfs May 3, 1944 (gage height, 14.09 ft), from rating curve extended above 11,000 cfs by logarithmic plotting; no flow at times.

Maximum stage since May 1884, about 20 ft in May 1908 and December 1913; flood of May 1884 was higher, stage unknown: from information by local residents.

Remarks.--Some regulation by Lake Tyler on Prairie Creek since January 1949. No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	259	56.4	2.97	0	0	-
1940	0	0.21	22.6	39.8	102	49.2	76.4	51.7	62.8	77.0	188	95.7	63.6
1941	7.54	1,584	1,157	553	562	600	398	198	242	137	36.0	86.1	461
1942	234	464	569	330	320	298	949	400	343	41.1	63.7	82.1	340
1943	38.5	112	201	317	174	201	139	96.6	190	12.3	2.02	.31	123
1944	47.8	50.2	142	635	1,059	726	479	2,326	280	22.2	6.02	27.4	483
1945	12.3	107	853	1,146	556	1,387	1,225	206	293	971	50.0	44.3	573
1946	846	266	518	1,155	1,077	788	330	1,085	801	141	142	142	606
1947	129	1,437	551	755	447	839	855	882	358	52.4	17.6	49.2	530
1948	31.2	95.6	420	418	846	526	290	525	51.5	28.0	3.33	8.01	269
1949	11.1	63.7	76.2	242	272	371	383	88.0	80.3	28.1	15.4	6.67	135
1950	144	62.4	109	696	810	198	223	579	460	46.4	15.6	23.3	277
1951	17.5	32.9	37.5	87.7	219	216	187	106	72.8	17.2	1.09	4.73	82.3
1952	4.31	21.4	62.9	106	779	423	597	153	84.6	11.8	.67	0	184
1953	0	17.3	67.4	117	128	697	219	1,449	24.1	58.8	15.2	20.8	237
1954	3.11	39.2	177	149	128	99.1	92.8	648	27.5	.15	0	0	114
1955	33.3	103	147	188	439	471	446	173	46.7	24.5	11.7	15.4	173
1956	7.91	7.65	22.0	40.8	199	69.7	38.2	754	12.7	1.06	0	0	96.4
1957	0	1.27	4.77	13.3	50.9	81.4	1,200	915	956	24.4	9.18	7.45	271

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	15,910	3,360	182	0	0	-
1940	0	13	1,390	2,450	5,850	3,020	4,550	3,180	3,740	4,740	11,560	5,690	46,180
1941	464	94,230	71,120	34,000	31,210	36,900	23,670	12,160	14,420	8,410	2,220	5,120	333,900
1942	14,410	27,630	34,980	20,290	17,770	18,340	56,460	24,590	20,400	2,530	3,920	4,890	246,200
1943	2,370	6,640	12,370	19,520	9,660	12,380	8,290	5,940	11,330	755	124	19	89,400
1944	2,940	2,990	8,760	39,020	60,930	44,610	28,490	143,000	16,680	1,370	370	1,630	350,800

Monthly and yearly runoff, in acre-feet, of Mud Creek near Jacksonville, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	756	6,370	52,430	70,440	30,900	85,270	72,910	12,670	17,440	59,720	3,070	2,640	414,600
1946	52,020	15,820	31,830	71,030	59,830	48,480	19,640	66,710	47,660	8,660	8,750	8,440	438,900
1947	7,960	85,500	33,890	46,420	24,840	51,570	50,860	54,250	21,330	3,220	1,080	2,930	383,800
1948	1,920	5,690	25,800	25,680	48,670	32,360	17,280	32,300	3,060	1,720	205	477	195,200
1949	682	3,790	4,690	14,870	15,080	22,790	22,770	5,410	4,780	1,730	945	397	97,930
1950	8,860	3,710	6,680	42,810	44,990	12,160	13,270	35,580	27,350	2,850	958	1,390	200,600
1951	1,070	1,960	2,300	5,390	12,170	13,290	11,120	6,550	4,330	1,060	67	282	59,590
1952	265	1,270	3,870	6,530	44,780	26,000	35,540	9,420	5,040	728	41	0	133,500
1953	0	1,030	4,150	7,220	7,110	42,880	13,040	89,100	1,430	3,620	935	1,240	171,800
1954	191	2,330	10,880	9,150	7,080	6,100	5,520	39,840	1,630	8.9	0	0	82,730
1955	2,050	6,110	9,030	11,580	24,370	28,980	26,540	10,650	2,780	1,500	722	917	125,200
1956	487	455	1,350	2,510	11,440	4,280	2,280	46,330	756	65	0	0	69,950
1957	0	76	294	819	2,820	5,000	71,400	56,240	56,910	1,500	564	444	196,100

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1939	898	-	-	-	-	-	-	-	-	-	-
1940	898	2,240	Aug. 29, 1940	0	63.6	0.167	2.27	46,180	290	10.34	210,600
1941	928	14,200	Nov. 23, 1940	1.3	461	1.21	16.59	333,900	339	12.04	245,100
1942	958	5,000	Apr. 10, 1942	1.6	340	.890	12.09	246,200	263	9.36	190,600
1943	978	1,220	Dec. 31, 1942	0	123	.322	4.41	89,400	114	4.07	82,710
1944	1008	23,400	May 3, 1944	1.4	483	1.26	17.23	350,800	545	19.43	395,700
1945	1038	8,890	Apr. 2, 1945	8.7	573	1.50	20.36	414,600	628	22.33	454,700
1946	1058	5,680	May 13, 1946	12	606	1.59	21.53	438,900	644	22.89	466,600
1947	1088	7,700	May 17, 1947	6.7	530	1.39	18.84	383,800	400	14.23	289,900
1948	1118	3,510	May 14, 1948	.2	269	.704	9.58	195,200	235	8.39	170,900
1949	1148	1,690	Apr. 11, 1949	.4	135	.353	4.81	97,930	149	5.30	108,000
1950	1178	4,120	Feb. 14, 1950	2.0	277	.725	9.85	200,600	258	9.17	186,700
1951	1212	861	Mar. 28, 1951	0	82.3	.215	2.91	59,590	82.4	2.91	59,660
1952	1242	3,850	Feb. 15, 1952	0	184	.482	6.55	133,500	184	6.54	133,300
1953	1282	6,950	May 17, 1953	0	237	.620	8.40	171,800	249	8.82	180,000
1954	1342	3,940	May 14, 1954	0	114	.298	4.06	82,730	120	4.25	86,520
1955	1392	3,200	Mar. 23, 1955	0	173	.453	6.14	125,200	152	5.41	110,300
1956	1442	7,870	May 2, 1956	0	96.4	.252	3.42	69,950	93.7	3.33	68,030
1957	1512	7,040	May 1, 1957	0	271	.709	9.61	196,100	-	-	-

67. Mud Creek at Ponta, Tex.

Location.--Lat 31°53'25", long 95°05'20", at Texas & New Orleans Railroad bridge, three-quarters of a mile west of Ponta, Cherokee County, and 12 miles upstream from mouth.

Drainage area.--481 sq mi.

Gage.--Inverted staff gage. Datum of gage is 280.68 ft above mean sea level, datum of 1929.

Extremes.--1924-27: Maximum discharge observed, about 4,000 cfs May 30, 1924 (gage height, -12.72 ft), from rating curve extended above 1,800 cfs on basis of velocity-area study; no flow during several periods.

Maximum stage known since about 1887, -9.2 ft May 1908, from information by local residents.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	729	668	21.1	3.95	15.6	-
1925	6.71	20.9	41.8	185	116	80.3	35.9	15.9	1.74	1.81	.97	.55	41.9
1926	38.1	498	146	574	247	927	733	626	153	76.3	5.18	2.26	336
1927	2.65	11.6	296	360	553	808	1,040	261	143	121	15.2	5.03	299

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	44,800	39,800	1,300	243	926	-
1925	413	1,240	2,570	11,400	6,420	4,930	2,140	977	104	111	60	33	30,400
1926	2,340	29,600	8,970	35,300	13,700	57,000	43,600	38,500	9,120	4,690	319	139	243,000
1927	163	691	18,200	22,200	30,700	49,700	61,600	16,000	8,520	7,470	938	300	216,000

Yearly discharge, in cubic feet per second, of Mud Creek at Ponta, Tex.

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1924	588	a4,000	May 30, 1924	-	-	-	-	-	-	-	-
1925	608	b324	Jan. 19-23, 1925	0	41.9	0.087	1.18	30,400	92.6	2.60	67,100
1926	628	2,620	Mar. 22, 1926	.4	336	.698	9.48	243,000	306	8.64	221,000
1927	648	2,900	Apr. 22, 1927	1.0	299	.622	8.76	216,000	-	-	-

a Maximum during May to September.
b Maximum daily.
Note.--No daily discharge available for water year 1927.

68. Angelina River near Alto, Tex.

Location.--Lat 31°40', long 94°58', at bridge on State Highway 21, 3 miles upstream from Bingham Creek and 7 miles east of Alto, Cherokee County.

Drainage area.--1,274 sq mi.

Supplemental records available.--May to August 1940, periodic discharge measurements only.

Gage.--Chain gage. Datum of gage is 204.3 ft above mean sea level, datum of 1929.

Extremes.--1940-49: Maximum gage height observed, 21.52 ft May 5, 1944 (discharge not determined), but may have been higher during period of no gage-height record in November 1940; minimum discharge observed, 11 cfs Aug. 30, 31, Sept. 25-27, 1943.

Remarks.--Daily discharge above 2,300 cfs not computed. No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	33.1	-	-	-	-	-	-	-	879	664	173	212	-
1942	-	-	-	-	975	1,101	-	-	-	279	346	675	-
1943	174	346	391	1,056	633	485	543	228	338	100	28.4	17.5	360
1944	80.4	200	375	-	-	-	-	-	-	110	64.7	237	-
1945	73.3	371	-	-	-	-	-	-	779	-	205	147	-
1946	-	800	-	-	-	-	-	-	-	514	170	668	-
1947	402	-	-	-	-	-	-	-	838	213	83.6	134	-
1948	90.7	291	940	1,029	-	-	1,015	-	197	119	26.9	30.5	-
1949	32.1	206	374	-	-	1,112	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	2,030	-	-	-	-	-	-	-	52,290	40,810	10,630	12,630	-
1942	-	-	-	-	54,160	67,700	-	-	-	17,140	21,300	40,160	-
1943	10,700	20,570	24,040	64,950	35,170	29,820	32,290	13,990	20,110	6,170	1,750	1,040	260,600
1944	4,940	11,930	23,040	-	-	-	-	-	-	6,790	3,980	14,090	-
1945	4,500	22,060	-	-	-	-	-	-	46,350	-	12,600	8,760	-
1946	-	47,600	-	-	-	-	-	-	-	31,600	10,440	39,740	-
1947	24,750	-	-	-	-	-	-	-	49,870	13,080	5,140	7,970	-
1948	5,580	17,310	57,830	63,300	-	-	60,370	-	11,690	7,290	1,650	1,810	-
1949	1,970	12,280	22,990	-	-	68,380	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1940	928	-	-	-	-	-	-	-	-	-	-
1941	928	-	-	15	-	-	-	-	-	-	-
1942	958	-	-	42	-	-	-	-	-	-	-
1943	978	1,930	Jan. 5, 1943	11	360	0.283	3.86	260,600	339	3.64	245,200
1944	1008	-	-	20	-	-	-	-	-	-	-
1945	1038	-	-	53	-	-	-	-	-	-	-
1946	1058	-	-	82	-	-	-	-	-	-	-
1947	1088	-	-	59	-	-	-	-	-	-	-
1948	1118	-	-	15	-	-	-	-	-	-	-
1949	1148	-	-	-	-	-	-	-	-	-	-

69. Angelina River near Lufkin, Tex.

Location.--Lat 31°27'26", long 94°43'34", at bridge on U. S. Highway 59, 200 ft upstream from Procella Creek, 1½ miles downstream from Bayou Loco, 1.5 miles upstream from Southern Pacific Railroad bridge, and 8 miles north of Lufkin, Angelina County.

Drainage area.--1,630 sq mi.

Supplemental records available.--Records of chemical analyses and water temperatures for the period August 1954 to September 1957 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 164.72 ft above mean sea level, datum of 1929. Oct. 29, 1923, to Jan. 17, 1926, chain gage 1.5 miles downstream at datum 1.39 ft lower; Jan. 18, 1926, to Sept. 30, 1934, chain gage 1,400 ft upstream at present datum.

Average discharge.--29 years (1923-34, 1939-57), 1,247 cfs (902,800 acre-ft per year).

69. Angelina River near Lufkin, Tex.--Continued

Extremes.--1923-34, 1939-57: Maximum discharge, 38,200 cfs Feb. 24, 1932; maximum gage height, 18.55 ft May 7, 1944; minimum discharge, 0.8 cfs Oct. 29, 30, 1956.
Maximum stage known, about 26½ ft in May 1884, from information by local residents.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	150	360	3,010	3,770	2,990	4,520	1,910	1,770	4,510	156	45.5	50.5	1,940
1925	43.0	73.2	168	461	374	302	186	98.3	23.8	19.4	21.2	16.8	148
1926	303	8,560	621	1,280	1,190	3,590	4,180	1,820	451	388	98.8	32.2	1,870
1927	42.6	99.3	940	1,240	1,400	3,970	4,450	1,210	749	372	101	28.2	1,220
1928	188	195	400	453	631	1,940	1,160	570	650	236	92.1	17.0	544
1929	28.7	333	1,230	1,990	1,790	1,700	917	1,870	2,530	254	35.1	52.2	*1,050*
1930	21.3	346	818	1,690	3,470	1,780	653	3,290	612	59.8	19.5	22.8	1,050
1931	276	341	2,000	2,460	2,490	2,050	1,200	1,840	171	81.8	76.8	28.4	1,080
1932	21.7	89.3	2,920	9,090	10,400	4,200	1,960	808	186	107	44.7	58.0	2,470
1933	48.1	94.4	315	1,780	1,850	2,980	2,840	2,550	448	522	331	157	1,160
1934	82.0	84.1	280	2,120	1,810	4,130	2,850	571	109	21.0	10.0	10.8	1,000
1939	-	-	-	-	-	-	-	-	-	-	26.3	7.09	-
1940	5.50	40.3	705	591	2,349	651	803	929	1,143	467	269	563	702
1941	57.4	5,104	6,136	4,292	2,558	3,545	1,817	1,464	1,279	988	232	291	2,314
1942	1,433	3,001	2,517	1,700	1,356	1,534	2,791	2,369	2,033	409	271	841	1,685
1943	193	349	503	1,209	746	552	615	247	343	117	43.6	22.0	410
1944	66.0	212	360	2,734	3,466	3,602	2,550	10,360	2,453	180	77.1	316	2,200
1945	94.6	417	2,369	6,841	2,559	4,450	5,833	1,406	771	2,633	277	166	2,322
1946	2,139	1,049	1,515	4,526	5,746	3,731	1,958	3,301	3,062	753	172	657	2,364
1947	424	3,616	2,924	3,648	2,750	4,251	3,514	3,438	1,267	301	102	125	2,193
1948	99.6	280	1,202	1,178	3,989	2,280	1,602	1,449	281	145	32.6	36.3	1,037
1949	31.7	197	413	1,199	1,934	1,628	1,757	642	281	193	196	156	710
1950	840	623	681	3,171	4,512	1,477	1,123	3,034	2,775	489	140	189	1,568
1951	142	205	289	508	918	921	1,270	399	242	70.7	21.4	37.0	414
1952	42.0	86.4	314	335	1,511	2,347	1,886	1,091	414	73.7	22.9	4.69	674
1953	3.63	38.7	266	437	1,045	4,160	1,001	8,496	488	439	164	153	1,404
1954	39.5	136	694	784	769	549	485	1,614	229	23.3	6.63	3.62	444
1955	12.8	253	410	741	1,517	1,136	2,156	1,093	592	204	230	63.5	693
1956	55.8	32.6	111	184	864	417	611	2,546	103	22.9	6.26	4.05	413
1957	1.39	17.1	39.2	70.7	241	420	2,774	6,126	2,769	333	154	86.8	1,089

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	9,240	21,400	185,000	232,000	172,000	278,000	114,000	109,000	268,000	9,590	2,800	3,000	1,400,000
1925	2,640	4,360	10,300	28,300	20,800	18,600	11,100	6,040	1,420	1,190	1,310	1,000	107,000
1926	18,600	509,000	38,200	78,700	66,100	221,000	249,000	112,000	26,800	23,900	6,070	1,920	1,350,000
1927	2,620	5,910	57,800	76,200	77,800	244,000	265,000	74,400	44,600	22,900	6,210	1,680	879,000
1928	11,600	11,600	24,600	27,900	36,300	119,000	69,000	35,000	38,700	14,500	5,660	1,010	395,000
1929	1,760	19,800	75,600	122,000	99,400	105,000	54,600	115,000	151,000	15,600	2,160	3,110	765,000
1930	1,310	20,600	50,300	104,000	193,000	109,000	38,900	202,000	36,400	3,680	1,200	1,360	762,000
1931	17,000	20,300	123,000	151,000	138,000	126,000	71,400	113,000	10,200	5,030	4,720	1,690	781,000
1932	1,330	5,310	180,000	559,000	598,000	258,000	117,000	49,700	11,100	6,580	2,750	3,450	1,790,000
1933	2,960	5,620	19,400	109,000	103,000	183,000	169,000	157,000	26,700	32,100	20,400	9,340	838,000
1934	5,040	5,000	17,200	130,000	101,000	254,000	170,000	35,100	6,490	1,290	615	643	726,000
1939	-	-	-	-	-	-	-	-	-	-	1,620	422	-
1940	338	2,400	43,320	36,350	135,100	40,030	47,790	57,120	68,010	28,710	16,560	33,530	509,300
1941	3,530	303,700	377,300	263,900	142,100	218,000	108,100	90,020	76,130	60,740	14,250	17,310	1,675,000
1942	88,090	178,600	154,800	104,500	75,310	94,330	166,100	145,700	121,000	25,160	16,670	50,030	1,220,000
1943	11,850	20,780	30,920	74,360	41,410	33,930	36,610	15,170	20,440	7,170	2,680	1,310	296,600
1944	4,060	12,600	22,130	168,100	199,400	221,500	151,800	636,900	146,000	11,080	4,740	18,790	1,597,000
1945	5,820	24,820	145,700	420,700	142,100	273,600	347,100	86,450	45,860	161,900	17,050	9,890	1,681,000
1946	131,500	62,420	93,160	278,300	319,100	229,400	116,500	202,900	182,200	46,320	10,590	39,090	1,711,000
1947	26,080	215,200	179,800	224,300	152,700	261,400	209,100	211,400	75,400	18,530	6,240	7,450	1,588,000
1948	6,120	16,640	73,880	72,450	229,400	140,200	95,360	89,080	16,710	8,910	2,000	2,160	752,900
1949	1,950	11,720	25,370	73,750	107,400	100,100	104,600	39,480	16,720	11,850	12,050	9,310	514,300
1950	51,650	37,070	41,880	195,000	250,600	90,830	66,850	186,500	165,100	30,080	8,620	11,250	1,135,000
1951	8,730	12,200	17,740	31,220	51,000	56,650	75,590	24,540	14,400	4,350	1,310	2,200	299,900
1952	2,580	5,140	19,320	20,620	86,930	144,300	112,200	67,080	24,630	4,530	1,410	279	489,000
1953	223	2,300	16,330	26,890	58,030	255,800	59,580	522,400	29,060	26,980	10,100	9,110	1,017,000
1954	2,430	8,060	42,660	48,180	42,700	33,750	28,880	99,240	13,640	1,430	408	215	321,600
1955	784	15,050	25,240	45,540	84,270	69,820	128,300	67,220	35,210	12,540	14,160	3,790	501,900
1956	3,430	1,940	6,800	11,320	49,720	25,670	36,330	156,600	6,110	1,410	385	241	300,000
1957	86	1,020	2,410	4,350	13,380	25,810	165,100	376,700	164,800	20,470	9,450	5,160	788,700

Yearly discharge, in cubic feet per second, of Angelina River near Lufkin, Tex.

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1924	588,718	14,300	June 5, 1924	39	1,940	1.23	16.71	1,400,000	1,660	14.34	1,210,000
1925	608	642	Jan. 23-27, 1925	14	148	.094	1.27	107,000	906	7.80	656,000
1926	718	21,900	Nov. 19-21, 1925	17	1,870	1.19	16.05	1,350,000	1,180	10.11	852,000
1927	648	10,700	Apr. 15, 1927	21	1,220	.775	10.47	879,000	1,190	10.25	861,000
1928	668	3,140	Mar. 25, 1928	11	544	.345	4.70	395,000	612	5.29	444,000
1929	688	8,160	May 31, 1929	10	1,050	.667	9.09	765,000	1,020	8.79	740,000
1930	703	10,300	May 21, 1930	14	1,050	.667	9.06	762,000	1,170	10.10	850,000
1931	718	4,260	May 9, 1931	12	1,080	.686	9.30	781,000	1,120	9.62	808,000
1932	733	38,200	Feb. 24, 1932	7.5	2,470	1.57	21.31	1,790,000	2,250	19.43	1,630,000
1933	748	7,100	Apr. 7, 1933	32	1,160	.736	9.97	838,000	1,160	9.95	837,000
1934	763	11,500	Mar. 8, 1934	4.5	1,000	.635	8.64	726,000	-	-	-
1939	878	-	-	2.9	-	-	-	-	-	-	-
1940	898	3,960	Feb. 19, 1940	2.4	702	.446	6.07	509,300	1,581	13.67	1,148,000
1941	928	31,300	Nov. 28, 1940	37	2,314	1.47	19.94	1,675,000	1,950	16.81	1,412,000
1942	958	11,000	Oct. 31, 1941	82	1,685	1.07	14.53	1,220,000	1,191	10.27	862,400
1943	978	2,200	Jan. 8, 1943	16	410	.260	3.54	296,600	376	3.24	271,900
1944	1008	29,600	May 7, 1944	19	2,200	1.40	19.01	1,597,000	2,389	20.65	1,735,000
1945	1038	17,300	Apr. 7, 1945	62	2,322	1.47	20.02	1,681,000	2,475	21.34	1,792,000
1946	1058	9,760	Feb. 9, 1946	93	2,364	1.50	20.39	1,711,000	2,549	21.98	1,845,000
1947	1088	10,500	May 24, 1947	62	2,193	1.39	18.90	1,588,000	1,745	15.04	1,263,000
1948	1118	5,630	Feb. 22, 1948	20	1,037	.658	8.97	752,900	958	8.28	695,300
1949	1148	3,320	Feb. 3, 1949	21	710	.451	6.11	514,300	837	7.20	605,900
1950	1178	11,000	Feb. 18, 1950	76	1,568	.996	13.51	1,135,000	1,442	12.42	1,044,000
1951	1212	4,040	Apr. 28, 1951	4.7	414	.263	3.57	299,900	398	3.43	288,300
1952	1242	4,270	Apr. 24, 1952	3.5	674	.428	5.82	489,000	662	5.73	480,800
1953	1282	22,000	May 19, 1953	3.1	1,404	.891	12.10	1,017,000	1,452	12.52	1,051,000
1954	1342	4,180	May 23, 1954	2.7	444	.282	3.83	321,600	428	3.56	309,500
1955	1392	3,720	Apr. 23, 1955	3.3	693	.425	5.76	501,900	653	5.63	473,000
1956	1442	10,600	May 9, 1956	1.2	413	.253	3.46	300,000	401	3.36	291,300
1957	1512	19,900	May 2, 1957	.8	1,089	.668	9.08	788,700	-	-	-

70. Arenoso Creek near San Augustine, Tex.

Location.--Lat 31°36', long 94°17', at Camp Worth, half a mile downstream from Nacogdoches & Southeastern Railroad bridge, 4½ miles upstream from Attoyac Bayou, and 11 miles northwest of San Augustine, San Augustine County.

Drainage area.--76 sq mi, approximately.

Gage.--Staff gage.

Extremes.--1938-40: Maximum gage height, 12.12 ft, from floodmark, Dec. 23, 1939 (discharge not determined); minimum discharge observed, 3.3 cfs Sept. 14, 15, 1939.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	-	-	-	-	-	-	-	-	44.8	32.9	18.7	16.6	-
1939	11.0	46.7	46.2	119	262	77.6	61.7	39.7	24.5	9.38	7.97	5.51	57.9
1940	12.9	22.7	160	66.3	234	80.6	136	76.6	47.5	26.9	36.0	17.3	75.8

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1938	-	-	-	-	-	-	-	-	2,660	2,020	1,150	986	-
1939	677	2,780	2,840	7,310	14,570	4,770	3,670	2,440	1,460	577	490	328	41,910
1940	793	1,350	9,830	4,070	13,450	4,960	8,100	4,710	2,830	1,660	2,210	1,030	54,990

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1938	878	-	-	-	-	-	-	-	-	-	-
1939	878	834	Feb. 2, 1939	3.3	57.9	0.762	10.33	41,910	65.7	11.74	47,590
1940	898	-	Dec. 23, 1939	6.3	75.8	.997	13.58	54,990	-	-	-

71. Attoyac Bayou near Chireno, Tex.

Location.--Lat 31°30'15", long 94°18'15", at bridge on State Highway 21, 3 miles northeast of Chireno, Nacogdoches County, and 7 miles downstream from Arenoso Creek.

Drainage area.--502 sq mi.

Gage.--Water-stage recorder. Datum of gage is 169.95 ft above mean sea level, datum of 1929. Jan. 24, 1924, to Aug. 29, 1925, chain gage; July 31, 1939, to Nov. 18, 1954, water-stage recorder, at same site and datum.

Average discharge.--18 years (1924-25, 1939-54, 1955-57), 503 cfs (364,200 acre-ft per year).

Extremes.--1924-25, 1939-54, 1955-57: Maximum discharge, 31,900 cfs Nov. 24, 1940 (gage height, 25.97 ft); minimum, 0.8 cfs Aug. 26, 27, 1956.

Maximum stage known since at least 1902, 29.9 ft in June 1912, from information by local residents.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	1,160	1,270	752	838	1,310	86.0	56.7	59.8	-
1925	51.3	68.4	107	473	236	189	103	110	25.9	55.2	18.8	20	121
1939	-	-	-	-	-	-	-	-	-	-	23.2	12.6	-
1940	26.3	61.8	1,126	416	2,003	406	538	758	492	145	137	153	516
1941	40.0	2,958	2,504	1,120	1,114	1,242	395	1,256	1,483	376	180	251	1,074
1942	678	2,540	932	617	610	812	916	512	822	134	509	319	781
1943	91.6	163	221	372	309	295	156	80.1	55.6	41.6	34.4	42.7	155
1944	53.2	76.3	180	914	924	1,123	781	3,237	491	93.3	92.8	174	680
1945	56.6	294	976	2,340	772	829	1,332	357	158	170	70.2	60.8	618
1946	330	198	461	1,799	1,965	1,197	462	971	516	162	122	125	686
1947	138	779	504	1,543	586	1,346	1,171	534	198	69.6	39.0	38.1	579
1948	43.4	228	352	386	1,470	556	558	424	78.6	65.1	23.2	23.4	346
1949	24.6	93.6	150	626	635	832	608	362	146	119	78.0	65.0	310
1950	777	270	635	1,580	870	768	379	1,164	1,474	254	87.0	107	697
1951	77.4	100	155	241	421	443	361	111	59.3	33.7	17.9	64.5	172
1952	27.7	58.3	284	202	437	477	719	496	154	47.6	20.4	12.0	244
1953	11.8	63.6	136	205	670	2,086	810	3,714	126	171	105	60.9	684
1954	38.9	76.6	211	267	240	142	155	364	35.9	11.3	7.62	8.75	871
1955	29.5	-	-	-	-	-	-	-	-	-	-	-	-
1956	27.4	35.7	65.9	98.5	385	191	518	313	37.8	10.1	6.06	10.3	140
1957	4.27	23.2	34.8	64.6	219	273	1,589	1,456	677	80.5	26.7	48.0	374

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	66,500	78,400	44,800	51,500	77,800	5,290	3,480	3,560	-
1925	3,150	4,070	6,550	29,100	13,100	11,600	6,110	6,760	1,540	3,390	1,160	1,190	87,720
1939	-	-	-	-	-	-	-	-	-	-	1,430	748	-
1940	1,610	3,680	69,220	25,550	115,200	24,970	31,990	46,610	29,300	8,900	8,400	9,110	374,500
1941	2,460	176,000	154,000	68,850	61,890	76,350	23,520	77,230	88,240	23,150	11,060	14,910	777,700
1942	41,710	151,100	57,290	37,930	33,890	49,940	54,530	31,470	48,900	8,270	31,280	18,960	565,300
1943	5,640	9,720	13,600	22,880	17,170	18,150	9,250	4,920	3,310	2,560	2,110	2,540	111,800
1944	3,270	4,540	11,050	56,170	53,160	69,040	46,480	199,000	29,240	5,730	5,710	10,360	493,800
1945	3,480	17,480	60,030	143,900	42,880	50,970	79,240	21,940	9,380	10,430	4,320	3,620	447,700
1946	20,300	11,760	28,360	110,600	109,100	73,610	27,510	59,680	30,730	9,980	7,480	7,460	496,600
1947	8,460	46,360	30,980	94,850	32,570	82,770	69,650	32,860	11,810	4,280	2,400	2,270	419,300
1948	2,670	13,580	21,670	23,710	84,540	34,160	33,200	26,060	4,680	4,000	1,430	1,390	251,100
1949	1,510	5,570	9,210	38,490	35,240	51,150	36,170	22,280	8,670	7,320	4,800	3,870	224,300
1950	47,750	16,090	39,070	97,160	48,300	47,250	22,540	71,560	87,680	15,610	5,350	6,370	504,700
1951	4,760	5,950	9,530	14,830	23,390	27,250	21,460	6,850	3,530	2,070	1,100	3,840	124,600
1952	1,700	3,470	17,440	12,430	25,120	29,340	42,760	30,530	9,170	2,930	1,250	712	176,900
1953	728	3,720	8,380	12,610	37,200	128,300	48,180	228,400	7,500	10,480	6,460	3,620	495,600
1954	2,390	4,560	12,990	16,420	13,320	8,750	9,200	22,380	2,130	692	468	521	93,820
1955	1,810	-	-	-	-	-	-	-	-	-	-	-	-
1956	1,690	2,120	4,050	6,060	22,140	11,750	30,820	19,260	2,250	622	373	613	101,700
1957	263	1,380	2,140	3,970	12,150	16,810	94,540	89,530	40,280	4,950	1,640	2,860	270,500

Yearly discharge, in cubic feet per second, of Attoyac Bayou near Chireno, Tex.

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1924	588	a8,260	June 3, 1924	39	-	-	-	-	-	-	-
1925	608	a926	Jan. 12, 1925	-	121	0.241	3.28	87,720	-	-	-
1939	878	-	-	10	-	-	-	-	-	-	-
1940	898	9,870	Dec. 25, 1939	15	516	1.03	13.96	374,500	871	23.59	632,500
1941	928	31,900	Nov. 24, 1940	34	1,074	2.14	29.03	777,700	960	25.97	695,300
1942	958	26,600	Nov. 1, 1941	56	781	1.56	21.15	565,300	475	12.88	344,100
1943	978	814	Feb. 6, 1943	17	155	.309	4.17	111,800	141	3.79	101,800
1944	1008	17,400	May 2, 1944	25	680	1.35	18.44	493,800	766	20.76	555,900
1945	1038	9,310	Jan. 1, Apr. 3, 1945	42	618	1.23	16.71	447,700	590	15.95	427,100
1946	1058	9,930	Feb. 10, 1946	62	686	1.37	18.56	496,600	721	19.51	522,000
1947	1088	6,750	Apr. 10, 1947	30	579	1.15	15.66	419,300	513	13.87	371,400
1948	1118	3,530	Feb. 12, 1948	16	346	.689	9.38	251,100	316	8.57	229,500
1949	1148	2,910	Mar. 26, 1949	16	310	.618	8.37	224,300	429	11.60	310,900
1950	1178	8,190	June 1, 1950	28	697	1.39	18.83	504,700	583	15.75	422,100
1951	1212	1,990	Mar. 29, 1951	10	172	.343	4.65	124,600	175	4.73	126,900
1952	1242	1,680	Apr. 26, 1952	8.7	244	.486	6.61	176,900	230	6.25	167,100
1953	1282	18,700	Mar. 12, 1953	9.0	684	1.36	18.51	495,600	694	18.78	502,700
1954	1342	885	May 14, 1954	2.6	130	.259	3.51	93,820	-	-	-
1955	1442	-	-	-	-	-	-	-	-	-	-
1956	1442	3,110	Apr. 8, 1956	.8	140	.279	3.79	101,700	135	3.64	97,670
1957	1512	14,300	May 2, 1957	2.1	374	.745	10.09	270,500	-	-	-

a Maximum observed.

72. Angelina River near Zavalla, Tex.

Location.--Lat 31°13', long 94°18', at bridge on State Highway 147, 500 ft downstream from Harvey Creek, about one mile upstream from Harvey Bayou, 3 miles downstream from Attoyac Bayou, and 8½ miles northeast of Zavalla, Angelina County.

Drainage area.--2,880 sq mi.

Gage.--Water-stage recorder. Datum of gage is 104.48 ft above mean sea level, datum of 1929.

Average discharge.--6 years (1951-57), 1,466 cfs (1,061,000 acre-ft per year).

Extremes.--1951-57: Maximum discharge, 37,300 cfs May 18, 1953 (gage height, 27.72 ft); minimum, 22 cfs Sept. 22-24, 1954, and Oct. 5, 6, 1956.

Maximum stage known since about 1883, about 29 ft in June 1902; flood of 1932 was second highest, stage unknown: from information by local residents.

Remarks.--Base flow largely ground water released from Southland Paper Mill near Lufkin. No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	80	152	633	707	2,114	3,798	3,367	3,131	1,045	191	81.1	35.4	1,278
1953	32.4	135	501	930	2,387	7,907	2,233	18,950	1,792	868	427	272	3,063
1954	99.0	237	1,061	1,385	1,348	820	855	2,571	561	87.0	34.1	26.7	756
1955	52.2	382	478	871	2,647	1,755	3,525	1,665	1,286	269	479	134	1,114
1956	134	86.6	218	338	1,710	844	1,671	3,068	251	68.1	37.7	40.3	702
1957	27.3	61.2	87.4	138	635	1,096	3,472	12,120	3,741	690	263	173	1,885

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	4,920	9,060	38,910	43,490	121,600	233,600	200,400	192,500	62,210	11,770	4,980	2,110	925,600
1953	1,990	8,060	30,800	57,180	132,600	486,200	132,900	1,165,000	106,600	53,360	26,250	16,170	2,217,000
1954	6,090	14,100	65,240	85,150	74,840	50,440	50,870	158,100	33,370	5,350	2,100	1,590	547,200
1955	3,210	22,740	29,400	53,570	147,000	107,900	209,800	102,400	76,520	16,560	29,480	7,980	806,600
1956	8,210	5,150	13,380	20,810	98,360	51,920	99,430	188,600	14,940	4,190	2,320	2,400	509,700
1957	1,680	3,640	5,370	8,510	35,270	67,420	206,600	744,900	222,600	42,420	16,140	10,270	1,365,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1952	1242	6,450	Apr. 28-29, 1952	31	1,278	0.456	6.18	925,600	1,258	6.10	913,500
1953	1282	37,300	May 18, 1953	29	3,063	1.09	14.84	2,217,000	3,125	15.14	2,262,000
1954	1342	4,140	May 3, 1954	22	756	.270	3.66	547,200	714	3.36	517,200
1955	1392	5,610	Apr. 13, 1955	26	1,114	.387	5.26	806,600	1,075	5.07	778,000
1956	1442	8,050	May 16, 1956	23	702	.244	3.34	509,700	680	3.23	493,700
1957	1512	32,700	May 3, 1957	22	1,885	.654	8.89	1,365,000	-	-	-

73. Ayish Bayou at San Augustine, Tex.

Location.--Lat 31°31'50", long 94°06'55", at bridge on highway between San Augustine and Nacogdoches, a quarter of a mile west of the courthouse, San Augustine, San Augustine County, and 5 miles upstream from Bernard Creek.

Drainage area.--17.2 sq mi.

Gage.--Staff gage. Datum of gage is 293.36 ft above mean sea level, Gulf, Colorado, & Santa Fe Railway datum.

Extremes.--1924-25: Maximum gage height observed, 6.70 ft Mar. 16, 1925 (discharge not determined); minimum discharge observed, 1.3 cfs Aug. 18-23, 1925.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	-	4.34	5.40	-
1925	-	-	-	-	-	-	6.95	-	2.00	9.5	1.56	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	-	267	321	-
1925	-	-	-	-	-	-	414	-	119	584	96	-	-

Note.--Daily discharge for many days in July 1924 and in most months in 1925 shown above as blank are given in Water Supply Paper 608; daily discharge greater than 50 cfs was not computed because stage-discharge relation was not defined higher.

74. Angelina River at Horger, Tex.

Location.--Lat 31°00', long 94°10', at bridge on State Highway 63, a quarter of a mile east of Horger, Jasper County, 7 miles upstream from Indian Creek, and 20 miles upstream from mouth.

Drainage area.--3,435 sq mi.

Gage.--Wire-weight gage. Datum of gage is 68.57 ft above mean sea level, datum of 1929. Prior to Sept. 5, 1944, chain gage at same site and datum.

Average discharge.--22 years (1928-50), 3,280 cfs (2,375,000 acre-ft per year).

Extremes.--1928-51: Maximum discharge, 49,900 cfs May 6, 1944 (gage height, 36.90 ft); minimum observed, 30 cfs Oct. 15, 1939.
Maximum discharge known, 82,000 cfs in August 1915 (gage height, 39.5 ft, from information by local residents), from rating curve extended above 50,000 cfs.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	3,240	1,060	1,720	549	320	60.8	-
1929	86.4	393	1,410	3,030	3,910	4,720	2,290	9,650	9,800	1,050	162	157	3,050
1930	56.5	1,560	1,950	6,430	7,800	4,070	1,760	2,870	2,390	212	85.6	117	2,410
1931	1,090	973	5,060	5,450	5,450	5,080	2,750	3,860	426	215	184	93.7	2,550
1932	44.8	373	5,420	16,400	19,500	11,300	3,430	1,460	423	245	172	122	4,870
1933	92.2	122	1,070	3,440	5,490	6,730	5,830	3,940	1,790	3,270	2,340	545	2,880
1934	203	179	540	6,430	7,550	10,500	7,130	1,960	444	153	80.1	66.6	2,910
1935	87.3	561	3,416	4,104	3,376	3,241	3,122	18,260	4,330	814	251	206	3,497
1936	155	1,108	5,275	1,534	1,658	1,473	614	1,257	622	2,038	410	121	1,362
1937	96.5	142	958	7,512	4,895	4,228	3,528	663	433	139	95.0	136	1,887
1938	298	358	2,217	4,513	3,699	4,000	12,110	2,691	825	650	636	139	2,662
1939	89.5	341	458	3,805	7,094	4,862	1,694	1,106	1,068	151	94.9	52.2	1,701
1940	64.5	158	3,202	3,147	8,726	2,072	3,339	2,932	2,587	822	545	766	2,336
1941	157	5,483	18,890	10,600	6,381	9,330	3,526	5,749	5,470	2,152	694	699	5,778
1942	2,051	11,840	5,537	4,233	3,534	4,635	6,836	4,833	3,601	1,216	2,223	1,475	4,324
1943	421	628	748	2,651	1,699	1,346	1,090	619	483	271	139	95.8	845
1944	136	302	453	3,965	5,934	6,816	6,695	25,160	6,794	379	213	765	4,808
1945	207	837	5,310	14,300	9,575	7,738	13,730	3,588	1,301	3,054	1,107	327	5,064
1946	2,695	1,428	2,897	11,190	15,940	9,255	5,810	6,035	6,618	1,529	548	998	5,345
1947	734	6,553	5,389	11,870	4,976	8,758	5,396	4,970	3,368	621	222	176	4,421
1948	186	840	2,432	2,259	8,072	5,045	4,506	2,441	769	294	95.9	103	2,230
1949	87.8	552	724	3,292	5,126	5,687	5,211	2,505	1,362	552	458	298	2,133
1950	2,800	1,677	4,475	12,360	11,710	6,064	2,304	7,639	10,570	1,179	394	470	5,097
1951	367	459	612	1,253	1,925	2,607	4,274	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet, of Angelina River at Horger, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	193,000	65,200	102,000	33,800	19,700	3,620	-
1929	5,310	23,400	86,700	186,000	217,000	290,000	136,000	593,000	583,000	64,600	9,960	9,340	2,200,000
1930	3,470	92,800	120,000	395,000	433,000	250,000	105,000	176,000	142,000	13,000	5,260	6,960	1,740,000
1931	67,000	57,900	311,000	335,000	303,000	312,000	164,000	237,000	25,300	13,200	11,300	5,580	1,840,000
1932	2,750	22,200	333,000	1,010,000	1,120,000	695,000	204,000	89,800	25,200	15,100	10,600	7,260	3,530,000
1933	5,670	7,260	65,800	212,000	305,000	414,000	347,000	242,000	107,000	201,000	144,000	32,400	2,080,000
1934	12,500	10,700	33,200	395,000	419,000	646,000	424,000	121,000	26,400	9,410	4,930	3,960	2,110,000
1935	5,370	33,380	210,100	252,300	187,500	199,300	185,800	1,123,000	257,700	50,030	15,440	12,230	2,532,000
1936	9,540	65,930	324,400	94,290	95,370	90,590	36,510	77,300	37,010	125,300	25,220	7,220	988,700
1937	5,940	8,430	58,890	461,900	271,800	260,000	209,900	40,780	25,760	8,550	5,840	8,100	1,366,000
1938	18,310	21,290	136,300	277,500	205,400	246,000	720,700	165,500	49,080	39,980	39,090	8,300	1,927,000
1939	5,500	20,320	28,150	233,900	394,000	299,000	100,800	68,030	63,540	9,300	5,840	3,110	1,231,000
1940	3,970	9,370	196,900	193,500	501,900	127,400	198,700	180,300	153,900	50,520	33,530	45,580	1,696,000
1941	9,650	326,200	1,162,000	651,800	354,400	573,700	209,800	353,500	325,500	132,300	42,670	41,570	4,183,000
1942	126,100	704,600	340,500	260,300	196,300	285,000	406,800	297,200	214,300	74,740	136,700	87,770	3,130,000
1943	25,890	37,340	46,000	163,000	94,370	82,790	64,860	38,070	28,750	16,690	8,530	5,700	612,000
1944	8,380	17,970	27,830	243,800	341,400	419,100	398,400	1,547,000	404,300	23,300	13,080	45,490	3,490,000
1945	12,740	49,800	326,500	879,200	531,800	475,800	816,800	220,600	77,410	187,800	68,070	19,470	3,666,000
1946	165,700	84,990	178,200	688,100	885,500	569,100	345,700	371,100	393,800	94,020	33,690	59,400	3,869,000
1947	45,110	389,900	331,300	729,900	276,400	538,500	321,100	305,600	200,400	38,200	13,660	10,470	3,201,000
1948	11,460	49,960	149,600	138,900	464,300	310,800	268,100	150,100	45,780	18,070	5,900	6,120	1,619,000
1949	5,400	32,850	44,520	202,400	284,700	349,700	310,100	154,000	81,060	33,920	28,140	17,750	1,545,000
1950	172,200	99,770	275,200	759,700	650,200	372,800	137,100	469,700	628,700	72,510	24,200	27,940	3,690,000
1951	22,580	27,290	37,610	77,020	106,900	160,300	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1928	668	6,940	Apr. 11, 1928	49	-	-	-	-	-	-	-
1929	688	33,300	May 30, 1929	48	3,050	0.888	12.02	2,200,000	3,190	12.58	2,310,000
1930	703	9,960	Feb. 8, 1930	36	2,410	.702	9.52	1,740,000	2,710	10.72	1,960,000
1931	718	9,690	Jan. 14, 1931	47	2,550	.742	10.06	1,840,000	2,440	9.63	1,760,000
1932	733,928	48,800	Feb. 24, 1932	35	4,870	1.42	19.31	3,530,000	4,490	17.78	3,260,000
1933	748	14,200	July 31, 1933	61	2,880	.838	11.36	2,080,000	2,840	11.24	2,060,000
1934	763	16,500	Mar. 28, 1934	47	2,910	.847	11.49	2,110,000	3,173	12.54	2,297,000
1935	788	29,100	May 11, 1935	43	3,497	1.02	13.82	2,532,000	3,706	14.64	2,683,000
1936	808	11,600	Dec. 9, 1935	62	1,362	.396	5.38	988,700	912	3.60	662,100
1937	828, 1312	9,840	Jan. 25, 26, 1937	60	1,887	.549	7.45	1,366,000	2,028	8.01	1,469,000
1938	858	24,400	Apr. 11, 1938	50	2,662	.775	10.50	1,927,000	2,494	9.83	1,806,000
1939	878	11,700	Feb. 27, 1939	42	1,701	.495	6.72	1,231,000	1,917	7.57	1,388,000
1940	898	13,800	Feb. 14, 1940	32	2,336	.680	9.25	1,696,000	4,109	16.28	2,983,000
1941	928	36,200	Nov. 30, 1940	99	5,778	1.68	22.83	4,183,000	5,327	21.06	3,856,000
1942	958	31,900	Nov. 5, 1941	225	4,324	1.26	17.10	3,130,000	2,857	11.29	2,068,000
1943	978	4,540	Jan. 14, 1943	66	845	.246	3.34	612,000	769	3.05	556,900
1944	1008	49,900	May 6, 1944	80	4,808	1.40	19.07	3,490,000	5,269	20.89	3,825,000
1945	1038	22,400	Apr. 8, 1945	144	5,064	1.47	20.01	3,666,000	5,119	20.22	3,706,000
1946	1058	27,200	Feb. 14, 1946	215	5,345	1.56	21.12	3,869,000	5,811	22.98	4,207,000
1947	1088	18,100	Jan. 20, 21, 1947	136	4,421	1.29	17.48	3,201,000	3,654	14.44	2,645,000
1948	1118	11,500	Feb. 18, 1948	68	2,230	.649	8.84	1,619,000	2,054	8.14	1,491,000
1949	1148	10,500	Mar. 29, 30, 1949	62	2,133	.621	8.43	1,545,000	2,775	10.96	2,009,000
1950	1178	25,700	June 6, 1950	258	5,097	1.48	20.14	3,690,000	4,462	17.64	3,230,000
1951	1212	-	-	-	-	-	-	-	-	-	-

75. Dam B Reservoir at Town Bluff, Tex.

Location.--Lat 30°47'47", long 94°10'52", near right bank 70 ft upstream from outlet structure of Dam "B" on Neches River, about 0.4 mile north of Town Bluff, Tyler County, and at mile 114.

Drainage area.--7,407 sq mi.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929, Galveston-Houston supplementary adjustment. Prior to Oct. 25, 1954, at site 490 ft upstream at same datum.

Extremes.--1951-57: Maximum contents, 128,400 acre-ft May 22, 1953 (elevation, 85.21 ft); no storage Sept. 18 to Oct. 13, 1954.

Remarks.--Reservoir is formed by earth-fill dam with a concrete section having a total length of dam, 6,698 ft including concrete spillway and non-overflow section. There is a 6,100-ft uncontrolled emergency spillway on left bank with crest at elevation 85.0 ft. There is a 326-ft gated spillway with six 40- by 35-foot taintor gates with sill at elevation 50.0 ft. Capacity of service spillway, 80,000 cfs with pool level at 85.0 ft. Total spillway capacity, 218,300 cfs at elevation 93.0 ft, maximum design level. Dam completed in June 1951 and deliberate impoundment of water began Apr. 16, 1951. Water used for industrial, municipal, and irrigation supplies.

75. Dam B Reservoir at Town Bluff, Tex.--Continued

Data regarding the dam and reservoir are shown in the following table:

	Elevation (feet)	Capacity (acre-ft)
Uncontrolled spillway and top of taintor gates	85.0	124,700
Normal storage	83.0	94,200
Invert of sluice gates	52.0	20
Sill, 6 taintor gates	50.0	0

Cooperation.--Records furnished by Corps of Engineers.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1951	-	-	-	-	-	0	33,368	66,444	38,929	473	13	7,460	-
1952	3,993	11,738	13,572	10,956	11,324	93,155	80,057	68,478	69,785	50,527	4,346	562	-6,898
1953	499	5,260	6,510	3,950	3,530	12,880	90,740	54,850	98,990	93,160	48,960	22,730	+22,170
1954	15,810	30,080	92,340	85,910	90,470	95,760	96,880	94,390	69,900	17,950	1,920	0	-22,730
1955	7,520	70,890	88,750	91,130	86,290	93,560	93,560	91,270	83,130	73,820	54,030	39,760	+39,760
1956	28,890	12,980	27,360	63,840	90,200	90,740	92,480	93,700	75,080	28,890	1,260	1,960	-37,800
1957	914	9,990	30,140	49,480	93,160	93,160	84,000	92,750	89,020	93,560	81,890	87,840	+85,880

76. Neches River at Town Bluff, Tex.

Location.--Lat 30°47'36", long 94°10'28", on left bank about 2,000 ft downstream from Dam B, half a mile northeast of Town Bluff, Tyler County, 2.5 miles upstream from Walnut Creek, about 8 miles downstream from Wolf Creek, and at mile 113.

Drainage area.--7,407 sq mi.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929, Galveston-Houston supplementary adjustment. Mar. 16, 1951, to May 20, 1953, water-stage recorder at present site and datum. May 21, 1953, to Dec. 3, 1954, staff gage at present site and datum.

Average discharge.--6 years (1951-57), 3,649 cfs (2,642,000 acre-ft per year).

Extremes.--1951-57: Maximum discharge, 90,900 cfs May 21-22, 1953 (gage height, 82.85 ft); no flow at times due to regulation by Dam B. Maximum stage known, about 86.8 ft in May 1884 (discharge, about 120,000 cfs), from information by Corps of Engineers.

Remarks.--Flow largely regulated by Dam B Reservoir except during major floods. No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	5,008	1,572	1,363	1,053	288	366	-
1952	353	285	1,185	1,357	4,469	6,095	9,309	10,450	3,289	985	909	246	3,237
1953	123	298	1,776	3,871	6,862	13,930	6,731	48,140	7,269	2,499	1,934	1,085	7,928
1954	386	348	1,685	3,614	2,418	1,480	2,937	7,207	2,444	969	391	185	2,008
1955	88.1	264	1,075	2,456	7,620	3,733	10,860	3,415	2,806	758	1,238	526	2,856
1956	443	439	298	301	3,992	1,789	3,264	4,529	856	872	518	124	1,441
1957	123	32.0	18.6	120	425	3,368	6,552	30,910	8,279	1,464	852	488	4,424

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	298,000	96,680	81,080	64,740	17,690	21,760	-
1952	21,720	16,940	72,850	83,440	257,100	374,800	553,900	642,700	195,700	60,590	55,870	14,650	2,350,000
1953	7,560	17,750	109,200	238,000	381,100	856,300	400,500	2,960,000	432,500	153,600	118,900	64,560	5,740,000
1954	23,700	20,730	103,600	222,200	134,300	91,010	174,800	443,200	145,400	59,580	24,030	11,030	1,454,000
1955	5,420	15,610	66,070	151,000	423,200	229,500	646,100	210,000	167,000	46,640	76,100	31,310	2,068,000
1956	27,260	26,100	18,330	18,510	229,600	110,000	194,200	278,500	50,910	53,630	31,880	7,380	1,046,000
1957	7,560	1,900	1,140	7,360	23,600	207,100	389,900	1,900,000	492,600	90,000	52,390	29,070	3,203,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1951	1212	-	-	-	-	-	-	-	-	-	-
1952	1242	21,400	May 25, 1952	83	3,237	0.437	5.94	2,350,000	3,269	6.01	2,373,000
1953	1282	90,900	May 21-22, 1953	29	7,928	1.07	14.51	5,740,000	7,947	-	5,753,000
1954	1342	12,800	May 7, 1954	32	2,008	-	-	1,454,000	1,924	-	1,393,000
1955	1392	21,000	Apr. 13, 1955	3.5	2,856	-	-	2,068,000	2,835	-	2,053,000
1956	1442	12,200	Feb. 10, 1956	52	1,441	-	-	1,046,000	1,361	-	985,200
1957	1512	62,000	May 6-7, 1957	0	4,424	-	-	3,203,000	-	-	-

77. Neches River at Evadale, Tex.

Location.--Lat 30°21', long 94°05', at bridge on U. S. Highway 96, 200 ft upstream from Gulf, Colorado & Santa Fe Railway bridge at Evadale, Jasper County, 600 ft downstream from Mill Creek, 15 miles upstream from Village Creek, and at mile 55.

Drainage area.--7,908 sq mi.

Supplemental records available.--Records of chemical analyses and temperatures for the period October 1947 to September 1957 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 8.25 ft above mean sea level, datum of 1929, Galveston-Houston supplementary adjustment of 1936. July 1, 1904, to Dec. 31, 1906, reference point on the Gulf, Colorado & Santa Fe Railway bridge at datum 5.5 ft lower. Apr. 1, 1921, to Dec. 7, 1948, staff gage at present site and datum.

Average discharge.--38 years (1904-6, 1921-57), 6,452 cfs (4,671,000 acre-ft per year).

Extremes.--1904-6, 1921-57: Maximum discharge, 92,100 cfs May 11, 1944 (gage height, 23.58 ft, from floodmark); minimum daily, 63 cfs Nov. 26-28, 1956.

Maximum stages known, 26.2 ft in May 1884 (discharge, about 125,000 cfs), and 24.5 ft in August 1915 (discharge, 102,000 cfs). Stages by Gulf, Colorado & Santa Fe Railway Co.

Remarks.--Some regulation by Dam B Reservoir 59 miles upstream. No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	-	1,027	879	463	-
1905	291	209	1,061	5,235	7,655	12,620	18,290	24,730	9,764	12,780	5,350	986	8,262
1906	606	4,177	5,647	12,010	7,670	5,130	5,645	3,871	2,300	1,940	2,600	791	4,350
1907	3,758	1,110	2,687	-	-	-	-	-	-	-	-	-	-
1921	-	-	-	-	-	-	17,300	16,390	4,432	10,080	1,324	853	-
1922	512	617	1,603	3,529	9,428	18,830	41,330	28,870	6,692	2,062	1,482	626	9,604
1923	426	1,650	1,492	3,195	13,320	20,110	40,470	20,070	5,100	1,526	764	2,603	9,158
1924	2,040	3,680	23,000	20,100	16,200	24,600	11,800	11,900	27,500	1,600	565	433	11,930
1925	455	398	774	3,810	2,150	1,450	1,040	810	407	283	180	207	994
1926	2,700	19,400	5,130	10,800	5,480	11,800	21,500	13,200	5,050	3,690	1,800	801	8,440
1927	515	947	4,200	13,600	9,810	18,000	18,000	11,600	4,280	4,520	1,260	418	7,250
1928	876	726	1,690	2,010	2,270	6,760	7,740	2,770	3,660	1,340	951	326	2,590
1929	299	857	2,140	5,960	7,650	9,540	6,370	19,200	34,600	2,650	774	614	7,500
1930	400	2,750	3,680	10,900	17,000	8,810	4,960	4,690	7,710	698	358	424	5,120
1931	2,360	2,010	9,620	11,800	10,600	11,100	6,580	8,450	1,440	722	534	369	5,450
1932	226	643	8,490	28,500	34,400	31,200	7,180	3,720	1,630	800	488	456	9,750
1933	368	381	2,840	6,850	11,700	13,800	10,800	7,420	3,730	2,870	5,320	1,200	5,570
1934	506	475	1,040	9,340	17,400	17,500	16,700	5,470	1,130	415	288	232	5,790
1935	311	1,035	6,621	8,985	8,132	8,119	6,411	38,790	16,330	2,562	1,031	998	8,302
1936	560	2,738	12,180	4,976	4,257	3,438	1,782	3,052	3,994	6,099	923	730	3,740
1937	448	583	2,556	13,320	10,880	7,787	7,865	1,947	1,297	527	328	601	3,971
1938	889	1,325	3,473	9,713	8,854	7,339	21,940	6,714	1,836	1,231	1,449	424	5,393
1939	255	834	1,097	8,556	12,700	12,060	4,484	2,049	2,608	555	338	211	3,758
1940	190	388	2,531	8,071	14,100	4,106	6,021	5,924	6,979	3,687	2,051	1,317	4,572
1941	464	5,241	44,540	23,360	13,010	18,600	9,493	13,090	12,790	7,438	1,775	2,141	12,720
1942	4,230	21,900	10,300	8,872	7,189	9,590	12,820	11,730	8,569	4,076	3,868	3,766	8,892
1943	1,109	1,492	1,808	6,621	3,918	3,014	3,268	2,223	2,577	1,686	925	385	2,412
1944	460	1,167	1,433	8,292	13,310	15,010	13,380	49,850	18,640	1,476	600	1,857	10,460
1945	590	1,489	10,540	25,630	21,510	15,250	33,570	8,741	3,647	4,451	3,697	1,205	10,780
1946	4,869	4,076	6,801	18,920	32,550	20,670	15,280	12,810	17,340	5,566	1,465	2,836	11,790
1947	2,359	15,280	14,100	23,890	12,130	17,540	11,570	10,450	9,459	2,137	688	497	10,000
1948	516	1,520	5,227	4,835	14,950	11,940	9,289	5,255	3,068	864	330	312	4,802
1949	241	1,225	1,370	5,935	11,660	12,490	13,960	7,666	3,269	1,369	1,084	692	5,030
1950	6,509	4,310	10,320	24,810	23,410	18,350	5,026	15,060	24,500	2,876	1,048	1,051	11,370
1951	930	1,012	1,291	2,450	3,128	4,006	6,300	1,780	1,455	1,267	358	670	2,042
1952	526	354	1,370	1,656	5,618	7,002	9,151	11,450	4,829	1,329	1,094	353	3,718
1953	180	288	1,722	4,065	6,772	13,790	7,424	46,790	11,200	2,271	1,954	1,123	8,177
1954	471	428	1,707	3,693	2,633	1,729	3,109	7,172	2,521	1,139	507	245	2,114
1955	169	280	910	2,470	8,966	4,135	12,160	3,300	3,022	863	1,449	740	3,149
1956	548	549	509	636	4,495	2,307	3,371	4,284	1,120	885	551	194	1,608
1957	178	110	143	159	394	3,811	5,681	30,630	9,205	2,726	1,024	735	4,607

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1904	-	-	-	-	-	-	-	-	-	63,160	54,020	27,550	-
1905	17,910	12,460	65,230	321,900	425,100	775,700	1,089,000	1,520,000	581,000	785,700	329,000	58,690	5,982,000
1906	37,260	248,500	347,200	738,500	426,000	315,400	335,900	238,000	136,700	119,200	159,800	47,040	3,150,000
1907	231,100	66,150	165,200	-	-	-	-	-	-	-	-	-	-
1921	-	-	-	-	-	-	1,029,000	1,008,000	263,700	619,700	81,380	50,740	-
1922	31,470	36,730	98,570	217,000	523,600	1,158,000	2,459,000	1,775,000	398,200	126,800	91,150	37,280	6,953,000
1923	26,170	98,180	91,720	196,400	739,800	1,237,000	2,408,000	1,234,000	303,500	93,820	46,990	154,900	6,630,000
1924	125,000	219,000	1,410,000	1,230,000	931,000	1,520,000	702,000	732,000	1,630,000	98,300	34,700	25,800	8,660,000

Monthly and yearly runoff, in acre-feet, of Neches River at Evadale, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	28,000	23,700	47,600	235,000	119,000	89,400	62,000	49,800	24,200	17,400	11,100	12,300	720,000
1926	166,000	1,160,000	316,000	666,000	304,000	725,000	1,280,000	811,000	300,000	227,000	111,000	47,700	6,110,000
1927	31,700	56,300	258,000	834,000	545,000	1,110,000	1,070,000	714,000	255,000	278,000	77,800	24,900	5,250,000
1928	53,900	43,200	104,000	124,000	131,000	416,000	461,000	170,000	218,000	82,400	58,500	19,400	1,880,000
1929	18,400	51,000	132,000	366,000	425,000	587,000	379,000	1,180,000	2,060,000	163,000	47,600	36,500	5,450,000
1930	24,600	164,000	226,000	670,000	944,000	542,000	295,000	288,000	459,000	42,900	22,000	25,200	3,700,000
1931	145,000	120,000	592,000	726,000	589,000	682,000	392,000	520,000	85,700	44,400	32,800	22,000	3,950,000
1932	13,900	38,300	522,000	1,750,000	1,980,000	1,920,000	427,000	229,000	97,000	49,200	30,000	27,100	7,080,000
1933	22,600	22,700	175,000	421,000	650,000	848,000	643,000	456,000	222,000	176,000	327,000	71,400	4,030,000
1934	31,100	28,300	64,000	574,000	966,000	1,080,000	994,000	336,000	67,200	25,500	17,700	13,800	4,200,000
1935	19,120	61,590	407,100	552,500	451,700	499,200	381,500	2,385,000	971,800	157,500	63,380	59,370	6,010,000
1936	34,460	162,900	749,100	306,000	244,900	211,400	106,000	187,700	237,700	375,000	56,740	43,470	2,715,000
1937	27,570	34,700	157,200	819,300	604,000	478,800	468,000	119,700	77,180	32,400	20,140	35,740	2,875,000
1938	54,650	78,870	213,600	597,200	491,700	451,300	1,305,000	412,800	109,200	75,670	89,070	25,250	3,904,000
1939	15,700	49,630	67,430	526,100	705,200	741,300	266,800	126,000	155,200	34,100	20,800	12,550	2,721,000
1940	11,650	23,070	155,600	496,200	811,300	252,500	358,300	364,200	415,300	226,700	126,100	78,380	3,319,000
1941	28,510	311,900	2,739,000	1,436,000	722,300	1,144,000	564,900	805,000	760,900	457,300	109,100	127,400	9,206,000
1942	260,100	1,303,000	633,000	545,500	399,300	589,600	762,600	721,200	509,900	250,600	237,900	224,100	6,437,000
1943	68,200	88,760	111,200	407,100	217,600	185,300	194,500	136,700	153,300	103,700	56,890	22,930	1,746,000
1944	28,260	69,430	88,130	509,900	765,400	923,100	796,400	3,065,000	1,109,000	90,770	36,870	110,500	7,593,000
1945	36,280	88,580	648,100	1,576,000	1,195,000	937,800	1,997,000	537,500	217,000	273,700	227,300	71,700	7,806,000
1946	299,400	242,500	418,200	1,163,000	1,808,000	1,271,000	909,300	787,900	1,032,000	342,300	90,070	168,700	8,532,000
1947	145,100	909,300	867,000	1,469,000	673,400	1,079,000	688,500	642,500	562,800	131,400	42,330	29,570	7,240,000
1948	31,720	90,470	321,400	297,300	860,100	734,400	552,700	323,100	182,500	53,130	20,300	18,550	3,486,000
1949	14,840	72,880	84,270	364,900	647,300	768,200	831,000	471,400	194,500	84,170	66,670	41,180	3,641,000
1950	400,200	256,400	634,600	1,526,000	1,300,000	1,128,000	299,100	926,200	1,458,000	176,800	64,440	62,550	8,232,000
1951	57,170	60,220	79,400	150,600	173,700	246,300	374,900	109,500	86,580	77,930	21,990	39,890	1,478,000
1952	32,350	21,050	84,240	101,800	323,200	430,500	544,500	703,800	287,400	81,720	67,280	20,980	2,699,000
1953	11,060	17,110	105,900	249,900	376,100	847,700	441,700	2,877,000	666,400	139,600	120,100	66,800	5,919,000
1954	28,940	25,470	104,900	227,100	146,200	106,300	185,000	441,000	150,000	70,040	31,150	14,600	1,531,000
1955	10,420	16,660	55,930	151,900	498,000	254,200	723,900	202,900	179,800	53,030	89,130	44,010	2,280,000
1956	33,720	32,650	31,320	39,090	258,600	141,800	200,600	263,400	66,640	54,440	33,890	11,550	1,168,000
1957	10,920	6,520	8,820	9,780	21,890	234,300	338,000	1,883,000	547,800	167,600	62,960	43,730	3,335,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1904	132,174	-	-	-	-	-	-	-	-	-	-
1905	174,1342	a35,400	May 23, 24, 1905	202	8,262	1.04	14.17	5,982,000	9,004	15.45	6,519,000
1906	210,1342	a16,300	Jan. 13, 14, 1906	484	4,350	.550	7.46	3,150,000	4,115	7.06	2,979,000
1907	210	-	-	-	-	-	-	-	-	-	-
1921	1312	b26,800	Apr. 26-28, 1921	-	-	-	-	-	-	-	-
1922	1312	a71,500	Apr. 6, 1922	387	9,604	1.21	16.48	6,953,000	9,672	16.60	7,002,000
1923	1312	a68,500	Apr. 19, 20, 1923	308	9,158	1.16	15.72	6,630,000	11,290	19.38	8,168,000
1924	588,1342	40,700	June 1-7, 1924	387	11,930	1.51	20.54	8,660,000	9,650	16.61	7,000,000
1925	608	9,750	Jan. 21, 1925	148	994	.126	1.72	720,000	3,120	5.36	2,260,000
1926	628	30,800	Apr. 11, 1926	252	8,440	1.07	14.47	6,110,000	6,660	11.41	4,820,000
1927	648	27,800	Mar. 18, 1927	348	7,250	.917	12.44	5,250,000	7,050	12.10	5,110,000
1928	668	11,800	Apr. 15, 1928	267	2,590	.328	4.47	1,880,000	2,590	4.46	1,880,000
1929	688,718	83,800	June 1, 1929	255	7,500	.948	12.91	5,450,000	7,820	13.43	5,660,000
1930	703	20,600	Feb. 13-15, 1930	292	5,120	.647	8.78	3,700,000	5,730	9.81	4,150,000
1931	718	17,900	Jan. 18, 19, 1931	243	5,450	.689	9.35	3,950,000	5,050	8.69	3,668,000
1932	733	73,400	Feb. 29, Mar. 1, 1932	205	9,750	1.23	16.77	7,080,000	9,260	15.92	6,730,000
1933	748	19,900	Mar. 14, 1933	285	5,570	.704	9.56	4,030,000	5,440	9.34	3,940,000
1934	763	24,800	Feb. 11, 1934	217	5,790	.732	9.93	4,200,000	6,293	10.81	4,555,000
1935	788	64,100	May 27, 28, 1935	217	8,302	1.05	14.25	6,010,000	8,935	15.33	6,468,000
1936	808	21,900	Dec. 14, 15, 1935	397	3,740	.473	6.43	2,715,000	2,739	4.70	1,988,000
1937	828	19,300	Jan. 28, 29, 1937	256	3,971	.502	6.81	2,875,000	4,147	7.12	3,002,000
1938	858	39,200	Apr. 18, 1938	243	5,393	.682	9.27	3,904,000	5,097	8.76	3,690,000
1939	878	21,400	Mar. 6, 7, 1939	159	3,758	.475	6.46	2,721,000	3,838	6.59	2,778,000
1940	898	22,600	Feb. 20-23, 1940	159	4,572	.578	7.87	3,319,000	8,552	14.72	6,208,000
1941	928	59,600	Dec. 5, 6, 1940	340	12,720	1.61	21.82	9,206,000	11,500	19.73	8,323,000
1942	958	47,100	Nov. 10, 1941	744	8,892	1.12	15.26	6,437,000	6,228	10.68	4,509,000
1943	978	9,500	Jan. 16, 17, 1943	292	2,412	.305	4.13	1,746,000	2,298	3.94	1,664,000
1944	1008	92,100	May 11, 1944	348	10,460	1.32	18.02	7,593,000	11,270	19.42	8,180,000
1945	1038	53,000	Apr. 15, 16, 1945	420	10,780	1.36	18.51	7,806,000	11,040	18.95	7,993,000
1946	1058	57,000	Feb. 18, 1946	860	11,790	1.49	20.24	8,532,000	13,110	22.52	9,494,000
1947	1088	34,600	Jan. 25, 1947	440	10,000	1.26	17.17	7,240,000	7,959	13.66	5,762,000
1948	1118	22,800	Feb. 24, 25, 1948	260	4,802	.607	8.27	3,486,000	4,427	7.63	3,214,000
1949	1148	24,400	Apr. 4, 1949	224	5,030	.636	8.65	3,641,000	6,576	11.31	4,761,000
1950	1178	46,600	June 11, 1950	701	11,370	1.44	19.54	8,232,000	9,859	16.94	7,138,000

a Maximum daily discharge.
b Maximum daily discharge for period April to September.

Yearly discharge, in cubic feet per second, of Neches River at Evadale, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1951	1212	15,400	Apr. 4, 1951	222	2,042	0.258	3.50	1,478,000	1,960	3.36	1,419,000
1952	1242	19,500	May 29, 30, 1952	172	3,718	.470	6.40	2,699,000	3,713	6.39	2,695,000
1953	1282	80,300	May 24, 1953	128	8,177	1.03	14.04	5,919,000	8,212	-	5,945,000
1954	1342	10,900	May 9, 1954	134	2,114	-	-	1,531,000	2,009	-	1,454,000
1955	1392	23,200	Apr. 16-18, 1955	74	3,149	-	-	2,280,000	3,169	-	2,295,000
1956	1442	10,900	Feb. 13, 1956	140	1,608	-	-	1,168,000	1,510	-	1,096,000
1957	1512	55,300	May 10, 1957	63	4,607	-	-	3,335,000	-	-	-

78. Village Creek near Kountze, Tex.

Location.--Lat 30°23'43", long 94°15'45", at bridge on Farm Road 418, 1.2 miles upstream from Gulf, Colorado & Santa Fe Railway bridge, 3.2 miles northeast of Kountze, Hardin County, and 4½ miles downstream from Beech Creek.

Drainage area.--837 sq mi; at site used 1924-27, 838 sq mi.

Gage.--Water-stage recorder. Datum of gage is 25.12 ft above mean sea level, datum of 1929. Prior to Apr. 30, 1939, inverted chain gage at site 1.2 miles downstream at different datum.

Average discharge.--21 years (1924-27, 1939-57), 865 cfs (626,200 acre-ft per year).

Extremes.--1924-27, 1939-57: Maximum discharge, 67,200 cfs Nov. 26, 1940 (gage height, 27.6 ft, from floodmark), from rating curve extended above 35,000 cfs by logarithmic plotting; minimum, 16 cfs Oct. 1, 2, 1956.

Maximum stages known, about 34 ft in August 1915 and about 32 ft May 27, 1929, present site and datum (stages determined on basis of information by engineers of Gulf, Colorado & Santa Fe Railway for site at railway bridge).

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	2,234	240	176	125	-
1925	109	137	212	852	254	218	155	129	87.1	71.5	46.7	66.5	195
1926	800	3,150	766	3,440	893	1,700	2,840	824	312	265	168	340	1,290
1927	234	300	1,940	1,620	1,660	2,350	2,070	748	768	475	185	148	1,040
1939	-	-	-	-	-	-	-	197	169	73.6	93.0	42.3	-
1940	46.8	90.9	303	271	675	206	627	554	509	1,076	593	104	421
1941	72.6	6,430	5,835	1,608	1,474	1,925	789	1,694	2,551	877	212	573	2,002
1942	752	2,860	682	960	1,010	1,199	3,003	918	768	704	1,329	873	1,250
1943	195	288	489	1,377	504	658	599	806	354	785	624	258	581
1944	171	221	602	2,031	1,477	1,169	470	3,179	467	136	116	258	860
1945	116	307	1,263	2,675	1,927	1,178	3,210	849	536	402	295	373	1,087
1946	525	294	1,686	3,248	3,590	1,889	813	1,679	2,043	1,278	276	220	1,451
1947	466	3,646	1,320	3,683	984	2,429	557	1,147	545	218	146	116	1,274
1948	88.5	233	832	746	1,447	871	519	274	122	160	60.9	63.2	448
1949	49.7	149	147	828	1,577	2,565	2,407	512	462	259	163	193	769
1950	4,140	402	3,114	3,561	2,980	2,199	901	2,074	6,668	574	197	206	2,248
1951	131	151	169	391	400	442	645	210	113	84.6	55.3	412	265
1952	120	111	321	191	442	426	1,681	1,793	341	346	84.0	46.1	492
1953	37.0	94.0	340	744	1,426	1,009	807	6,932	330	502	221	200	1,058
1954	92.8	153	598	700	373	258	549	643	107	63.1	115	46.7	309
1955	82.6	138	115	374	1,523	264	1,675	198	90.0	161	186	138	402
1956	85.9	70.7	139	335	1,280	668	289	109	69.5	38.4	28.8	26.5	258
1957	26.3	61.4	146	113	240	799	928	1,858	634	216	89.5	373	458

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	132,900	14,800	10,800	7,240	-
1925	6,700	8,180	13,100	52,400	14,100	13,400	9,220	7,960	5,180	4,400	2,870	3,960	141,000
1926	49,200	187,000	47,100	211,000	49,600	105,000	169,000	50,700	18,600	16,300	10,300	20,200	934,000
1927	14,400	17,800	119,000	99,700	92,200	145,000	123,000	46,000	45,700	29,200	11,400	8,810	752,000
1939	-	-	-	-	-	-	-	12,090	10,050	4,520	5,720	2,520	-
1940	2,880	5,410	18,610	16,640	38,840	12,690	37,280	34,060	30,300	66,130	36,440	6,160	305,400
1941	4,460	382,600	358,800	98,880	81,860	118,400	46,950	104,200	151,800	53,920	13,040	34,110	1,449,000
1942	46,250	170,200	41,950	59,020	56,120	73,710	178,700	56,420	45,700	43,300	81,700	51,950	905,000
1943	11,990	17,130	30,090	84,660	27,990	40,480	35,670	49,580	21,050	48,290	38,370	15,330	420,600
1944	10,490	13,160	37,000	124,900	84,980	71,860	27,990	195,500	27,810	8,350	7,140	15,330	624,500
1945	7,160	18,260	77,630	164,500	107,000	72,460	191,000	52,200	31,920	24,750	18,170	22,170	787,200
1946	32,300	17,520	103,600	199,700	199,400	116,200	48,350	103,300	121,600	78,600	16,970	13,090	1,051,000
1947	28,680	216,900	81,150	226,500	54,640	149,400	33,120	70,510	32,420	13,420	8,950	6,880	922,600
1948	5,440	13,870	51,190	45,870	83,250	53,530	30,890	16,850	7,240	9,820	3,740	3,760	325,400
1949	3,060	8,870	9,030	50,920	87,570	157,700	143,200	31,490	27,520	15,900	10,000	11,480	556,700
1950	254,500	23,950	191,500	219,000	165,500	135,200	53,600	127,500	396,800	35,290	12,120	12,230	1,627,000

Monthly and yearly runoff, in acre-feet, of Village Creek near Kountze, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	8,030	8,980	10,370	24,050	22,220	27,190	38,390	12,930	6,750	5,200	3,400	24,540	192,000
1952	7,380	6,590	19,750	11,750	25,410	26,200	100,000	110,200	20,280	21,300	5,160	2,740	356,800
1953	2,280	5,590	20,880	45,760	79,180	62,020	48,050	426,300	19,660	30,870	13,610	11,880	766,100
1954	5,710	9,110	36,760	43,040	20,730	15,860	32,650	39,530	6,390	3,880	7,080	2,780	223,500
1955	5,080	8,220	7,090	23,010	84,600	16,240	99,640	12,170	5,360	9,910	11,440	8,200	291,000
1956	5,280	4,210	8,530	20,610	73,640	41,050	17,200	6,720	4,130	2,360	1,770	1,580	187,100
1957	1,610	3,650	8,970	6,940	13,310	49,130	55,240	114,300	37,710	13,250	5,500	22,170	331,800

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1924	588	a14,500	June 2, 1924	-	-	-	-	-	-	-	-
1925	608	b2,800	Jan. 21, 1925	38	195	0.233	3.17	141,000	548	8.89	396,000
1926	628	b12,800	Nov. 7, 1925	-	1,290	1.54	20.89	934,000	1,108	17.94	801,900
1927	648	b11,700	Dec. 29, 1926	-	1,040	1.24	15.88	752,000	-	-	-
1939	878	-	-	33	-	-	-	-	-	-	-
1940	898	4,300	July 4, 1940	38	421	.503	6.83	305,400	1,411	22.94	1,024,000
1941	928	67,200	Nov. 26, 1940	62	2,002	2.39	32.43	1,449,000	1,328	21.52	961,600
1942	958	22,000	Nov. 2, 1941	141	1,250	1.49	20.26	905,000	975	15.79	705,800
1943	978	6,870	July 30, 1943	102	581	.694	9.42	420,600	583	9.45	422,100
1944	1008	10,700	May 6, 1944	87	860	1.03	13.97	624,500	919	14.93	666,900
1945	1038	16,700	Apr. 4, 1945	80	1,087	1.30	17.63	787,200	1,157	18.75	837,600
1946	1058	10,700	Feb. 12, 1946	146	1,451	1.73	23.50	1,051,000	1,690	27.39	1,224,000
1947	1088	20,000	Nov. 13, 1946	95	1,274	1.52	20.65	922,600	920	14.91	666,300
1948	1118	2,500	Feb. 28, 1948	48	448	.535	7.28	325,400	380	6.17	275,900
1949	1148	7,770	Mar. 25, 1949	46	769	.919	12.47	556,700	1,389	22.53	1,006,000
1950	1178	58,000	June 4, 1950	98	2,248	2.69	36.43	1,627,000	1,636	26.51	1,185,000
1951	1212	3,090	Apr. 1, 1951	41	265	.317	4.31	192,000	274	4.46	198,400
1952	1242	8,390	Apr. 25, 1952	40	492	.588	8.00	356,800	485	7.89	351,800
1953	1282	47,700	May 1, 1953	34	1,058	1.26	17.15	766,100	1,090	17.65	788,900
1954	1342	2,550	May 4, 1954	40	309	.369	4.98	223,500	266	4.28	192,300
1955	1392	8,190	Apr. 14, 1955	38	402	.480	6.50	291,000	399	6.45	288,600
1956	1442	2,720	Feb. 12, 1956	18	258	.308	4.19	187,100	253	4.11	183,300
1957	1512	10,700	May 2, 1957	16	458	.547	7.44	331,800	-	-	-

a Maximum for period May to September.
b Maximum observed.

79. North Creek near Jacksboro, Tex.

Location. --Lat 33°17', long 98°18', at bridge on U. S. Highway 281, 1.5 miles upstream from Henderson Creek, 9.3 miles northwest of Jacksboro, Jack County, and 14 miles upstream from mouth.

Drainage area. --21.6 sq mi.

Gage. --Water-stage recorder. Datum of gage is 1,016.33 ft above mean sea level, unadjusted (State Highway Department bench mark).

Extremes. --1956-57: Maximum discharge, 6,960 cfs Apr. 28, 1957 (gage height, 24.45 ft); no flow at times.
Flood of May 3, 1956, reached a stage of 21.58 ft, from floodmarks.

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	-	-	-	-	-	-	0.10	0	-
1957	16.0	9.32	1.65	0	13.3	1.62	162	98.6	13.9	0.74	0	.003	26.3

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	-	-	-	-	-	-	6.3	0	-
1957	984	554	101	0	739	100	9,660	6,060	824	46	0	.2	19,080

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1956	1512	-	-	0	-	-	-	-
1957	1512	6,990	Apr. 28, 1957	0	26.3	19,080	-	-

80. West Fork Trinity River near Jacksboro, Tex.

Location. --Lat 33°17'30", long 98°04'40", at bridge on State Highway 24, 4 miles downstream from North Creek, 7 miles upstream from Carroll Creek, 7 miles northeast of Jacksboro, Jack County, and at mile 660.

Drainage area. --683 sq mi.

Gage. --Water-stage recorder. Datum of gage is 873.98 ft above mean sea level (State Highway Department bridge plans).

Extremes. --1956-57: Maximum discharge, 35,100 cfs Apr. 27, 1957 (gage height, 32.10 ft, from floodmark); no flow at times.
Maximum stage known since about 1900, that of Apr. 27, 1957, from information by local resident.

Remarks. --At the end of 1957 the flow from 28.5 sq mi above this station was partly controlled by 6 floodwater-detention reservoirs (constructed during period Nov.-Dec. 1951) with a total combined capacity of 11,200 acre-ft below the flood spillway crests, of which 9,440 acre-ft is floodwater-detention capacity and 1,760 acre-ft is sediment-storage capacity. The capacity in these reservoirs allocated to sediment storage will be used for conservation storage until eliminated by sedimentation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	-	0	0	123	163	1.82	0.85	0	-
1957	96.6	112	93.4	2.35	288	62.5	3,186	2,390	529	22.7	.02	10.5	564

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	-	0	0	7,540	9,680	112	52	0	-
1957	5,940	6,690	5,740	145	15,970	3,850	189,600	146,800	31,450	1,400	1.4	627	408,200

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1956	1442	-	-	0	-	-	-	-
1957	1512	35,100	Apr. 27, 1957	0	564	408,200	-	-

81. Bridgeport Reservoir above Bridgeport, Tex.

Location. --Lat 33°13'20", long 97°50'10", at Bridgeport Dam on West Fork Trinity River, 2.0 miles west of Bridgeport, Wise County, 5.8 miles upstream from Big Sandy Creek, and at mile 626.

Drainage area. --1,114 sq mi.

Gage. --Staff gage. Datum of gage is 0.06 ft above mean sea level, datum of 1929 (levels by Tarrant County Water Control and Improvement District No. 1). Prior to Jan. 26, 1944, staff gages at various sites in vicinity of present gage at present datum.

Extremes. --1932-57: Maximum contents observed, 407,600 acre-ft Apr. 29, 30, 1942 (gage height, 836.2 ft); minimum observed at monthly intervals since appreciable storage began, 2,200 acre-ft Dec. 31, 1933.

Bridgeport Reservoir above Bridgeport, Tex.--Continued

Remarks.--Reservoir formed by a rolled earth-fill dam, containing a concrete service spillway with three 20-foot bays, two of which are equipped with vertical lift gates and the other left open. There are two emergency spillways of natural earth. Dam completed Dec. 15, 1931, and storage began Apr. 1, 1932. Reservoir used for flood control and municipal supply for city of Fort Worth. Capacity figures beginning Oct. 1, 1951, are based on a redetermination of reservoir capacity during fall of 1952.

Various features of dam and reservoir are as follows:

	Gage height (feet)	Capacity (acre-feet)
Left emergency spillway	859.0	-
Right emergency spillway	853.0	-
Service spillway	826.1	270,400
Bottom of three 48-inch conduits	751.4	0

Figures given herein represent total content.

Cooperation.--Capacity curve used prior to Oct. 1, 1951, and records of daily gage heights furnished by Tarrant County Water Control and Improvement District No. 1. Capacity curve used since Oct. 1, 1951, based on 1952 and former surveys, furnished by Corps of Engineers.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1932	-	-	-	-	-	-	-	25,300	31,600	38,280	37,640	37,320	+ 37,320
1933	37,640	34,300	34,300	34,300	34,300	19,400	12,680	80,000	40,880	37,320	41,220	20,210	- 17,110
1934	23,260	5,600	2,200	9,780	18,440	44,280	52,600	53,800	51,800	25,000	3,160	12,920	- 7,290
1935	12,440	22,680	22,970	20,480	22,970	27,700	28,600	96,200	117,800	93,600	76,500	102,140	+ 89,220
1936	103,760	107,600	118,400	117,800	117,200	116,600	111,800	130,850	116,600	98,360	83,500	116,000	+ 13,860
1937	126,950	105,920	109,400	111,200	111,800	120,800	122,600	115,400	116,000	98,900	88,000	78,000	- 38,000
1938	78,500	71,860	78,000	91,520	97,820	141,500	154,800	171,600	173,000	149,900	133,450	107,600	+ 29,600
1939	84,000	82,500	71,860	78,000	77,500	76,000	77,000	85,000	77,500	73,240	61,800	52,600	- 55,000
1940	51,000	50,600	49,800	49,400	51,000	50,600	59,800	75,080	134,750	146,400	177,000	178,600	+126,000
1941	176,200	236,500	263,000	262,000	277,000	250,000	308,000	314,400	305,000	214,000	197,000	167,400	- 11,200
1942	264,000	238,300	221,200	196,200	163,200	149,200	407,600	358,400	332,000	297,000	276,000	267,000	+ 99,600
1943	282,000	241,900	241,000	240,100	218,500	224,800	213,100	195,400	201,800	184,200	157,600	145,000	-122,000
1944	135,400	129,600	130,200	135,400	156,900	169,500	181,000	193,800	181,800	164,600	147,100	140,100	- 4,900
1945	142,200	144,300	149,900	154,100	166,700	252,000	269,000	241,000	232,900	249,100	217,600	212,200	+ 72,100
1946	197,000	170,900	161,800	159,000	159,700	159,700	169,500	182,600	184,200	161,800	145,000	149,200	- 63,000
1947	134,100	160,400	194,600	188,200	173,800	177,800	195,400	221,200	206,800	182,600	148,500	122,000	- 27,200
1948	126,300	120,800	134,800	136,700	148,500	154,800	154,100	156,900	157,600	146,400	130,200	110,600	- 11,400
1949	103,800	88,000	82,500	78,000	80,500	84,000	86,000	144,300	173,000	164,600	151,300	147,800	+ 37,200
1950	163,200	161,100	159,700	161,800	166,000	164,600	189,800	247,300	262,000	317,700	304,000	297,000	+149,200
1951	235,600	205,900	187,400	180,200	175,400	174,600	171,600	179,400	208,600	197,000	165,300	161,800	-135,200
1952	128,000	116,600	108,300	106,400	105,800	99,710	95,580	100,300	92,690	88,150	67,540	58,900	- 83,800
1953	55,540	57,640	58,060	57,640	56,800	57,220	58,480	71,330	68,470	62,020	53,880	44,040	- 14,860
1954	79,490	80,550	80,550	69,410	68,940	60,220	65,700	77,900	79,490	68,000	49,040	40,740	- 3,300
1955	34,780	29,840	23,490	20,960	20,960	22,360	22,920	34,100	58,480	50,120	34,440	45,560	+ 4,820
1956	39,660	29,840	19,880	19,880	19,880	16,550	15,800	23,490	24,070	10,900	8,670	7,480	- 38,080
1957	10,900	10,510	21,240	17,300	42,540	47,090	295,000	357,100	293,900	282,000	272,500	259,200	+251,700

82. West Fork Trinity River at Bridgeport, Tex. 1/

Location.--Lat 33°12', long 97°47', at pumping plant of the Chicago, Rock Island & Pacific Railway (formerly Chicago, Rock Island & Gulf Railway), a quarter of a mile downstream from Balsora-Bridgeport highway suspension bridge, half a mile southwest of Bridgeport, Wise County, and 1¼ miles downstream from Gentry Creek.

Drainage area.--1,147 sq mi.

Gage.--Staff gage. Datum of gage is 721.0 ft above mean sea level. Prior to July 10, 1924, weight-and-tape gage a quarter of a mile upstream at same datum.

Average discharge.--21 years (1908-29), 210 cfs (152,000 acre-ft per year).

Extremes.--1908-29: Maximum discharge observed, 20,000 cfs June 8, 1915 (gage height, 28.9 ft); no flow at times.

Remarks.--Small amount of water diverted upstream from station for municipal use by city of Bridgeport.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1908	-	-	-	-	-	-	-	-	-	-	-	67.3	-
1909	233	2.70	102	0	0.25	1.29	0.93	10.2	716	21.3	117	.03	100
1910	.10	.07	.03	2.0	2.0	.5	86.0	174	138	145	21.8	18.4	49.3
1911	3.68	1.03	.48	.55	17.8	1.29	10.9	6.29	0	131	1,010	631	152
1912	3.48	.60	227	1.29	.10	63.9	45.5	29.4	429	5.87	479	4.87	108
1913	68.6	31.0	5.35	1.97	.11	8.81	23.3	482	57.4	24.8	.10	186	74.7
1914	209	745	1,020	4.19	8.64	3.55	1,040	1,640	69.1	3.32	1,230	37.9	506
1915	1.89	2.13	129	8.21	1.51	9.98	2,500	508	3,030	28.8	254	66.4	540

1/ Published as Trinity River, 1915, 1916.

Monthly and yearly mean discharge, in cubic feet per second, of West Fork Trinity River at Bridgeport, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	224	5.50	5.56	269	18.4	18.3	1,440	412	7.54	1.81	0.86	24.1	201
1917	186	52.6	5.07	2.24	4.24	3.95	92.1	44.1	13.8	239	194	94.0	78.4
1918	.59	.83	1.94	.95	.40	2.31	834	141	202	16.9	3.69	53.1	104
1919	416	227	483	340	262	169	319	909	105	88.2	62.8	83.2	290
1920	1,060	190	6.50	127	10.6	4.66	47.7	2,390	497	157	576	920	502
1921	542	134	109	54.3	143	115	29.9	16.4	274	321	13.8	11.1	147
1922	3.23	.91	.74	.60	.11	3.80	1,710	678	241	59.9	.23	0	224
1923	0	122	2.88	21.3	188	55.1	2,080	187	849	22.8	18.2	53.7	296
1924	600	936	598	24.1	9.80	335	106	54.9	20.3	.84	19.2	21.8	228
1925	4.57	0	1.48	1.36	.14	.03	195	466	63.0	60.3	.74	106	75.4
1926	52.0	40.5	.13	132	6.67	289	301	189	261	417	329	138	181
1927	255	2.44	539	159	340	657	1,060	24.5	152	121	18.4	83.9	283
1928	255	.20	4.25	30.4	7.85	12.1	9.96	147	754	344	53.5	18.6	136
1929	61.4	117	32.8	100	10.3	31.4	53.4	923	204	10.6	.05	172	144
1930	43.1	21.0	34.7	.14	6.01	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1908	-	-	-	-	-	-	-	-	-	-	-	4,000	-
1909	14,300	161	6,270	0	14	79	55	627	42,600	1,310	7,190	1.8	72,600
1910	6.1	4.2	1.8	123	111	31	5,120	10,700	8,210	8,920	1,340	1,090	35,660
1911	226	61	30	34	989	79	649	387	0	8,060	62,100	37,500	110,000
1912	214	36	14,000	79	5.8	3,930	2,710	1,810	25,500	361	29,500	290	78,400
1913	4,220	1,840	329	121	6.1	542	1,390	29,600	3,420	1,520	6.1	11,000	54,000
1914	12,900	44,300	62,700	258	480	218	61,900	101,000	4,110	204	75,600	2,260	366,000
1915	116	127	7,930	505	84	614	148,800	31,240	180,300	1,770	15,620	3,950	391,100
1916	13,800	327	342	16,500	1,060	1,130	85,700	25,300	449	111	53	1,430	146,000
1917	11,400	3,130	312	138	235	243	5,480	2,710	821	14,700	11,900	5,590	56,700
1918	36	49	119	58	22	142	49,600	8,670	12,000	1,040	227	3,160	75,100
1919	25,600	13,500	29,700	20,900	14,600	10,400	19,000	55,900	6,250	5,420	3,860	4,950	210,000
1920	65,200	11,300	400	7,810	610	287	2,840	147,000	29,600	9,650	35,400	54,700	365,000
1921	33,300	7,970	6,700	3,340	7,940	7,070	1,780	1,010	16,300	19,700	848	660	107,000
1922	199	54	46	37	6.1	234	102,000	41,700	14,300	3,680	14	0	162,000
1923	0	7,260	177	1,310	10,500	3,390	124,000	11,500	50,500	1,400	1,120	3,200	214,000
1924	36,900	55,700	36,800	1,480	564	20,600	6,330	3,380	1,210	52	1,180	1,300	165,000
1925	281	0	91	84	7.9	1.6	11,600	28,700	3,750	3,710	46	6,300	54,600
1926	3,200	2,410	7.7	8,110	371	17,800	17,900	11,600	15,600	25,600	20,200	8,200	131,000
1927	15,700	145	33,100	9,800	18,900	40,400	62,900	1,500	9,040	7,440	1,130	4,990	205,000
1928	15,700	12	261	1,870	452	744	593	9,040	44,900	21,200	3,290	1,110	99,200
1929	3,780	6,960	2,020	6,150	572	1,930	3,180	56,800	12,100	652	3.1	10,200	104,000
1930	2,650	1,250	2,130	8.6	334	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1908	850	-	-	0	-	-	-	-
1909	850	a4,080	Oct. 23, 1908	0	100	72,600	71.7	51,900
1910	850	a2,740	June 7, 1910	0	49.3	35,660	49.7	35,960
1911	850	a8,240	Aug. 29, 1911	0	152	110,000	171	124,000
1912	850	a5,570	June 18, 1912	0	108	78,400	97.2	70,600
1913	850	a3,220	May 8, 1913	0	74.7	54,000	232	168,000
1914	850	a10,800	May 28, 1914	1.0	506	366,000	351	254,200
1915	408,850	20,000	June 8, 1915	.7	540	391,100	549	397,400
1916	438	10,800	Apr. 2, 1916	0	201	146,000	202	146,600
1917	458	3,570	Aug. 20, 1917	0	78.4	56,700	58.1	42,020
1918	478	5,850	Apr. 17, 1918	0	104	75,100	199	143,700
1919	508	7,550	Dec. 23, 1918	0	290	210,000	301	218,200
1920	508	12,200	May 16, 1920	.6	502	365,000	462	335,900
1921	528	9,740	July 11, 1921	.5	147	107,000	81.5	58,950
1922	548	9,800	Apr. 26, 1922	0	224	162,000	234	169,400
1923	568	14,700	Apr. 25, 1923	0	296	214,000	464	336,300
1924	588	10,000	Nov. 14, 1923	0	228	165,000	50.2	36,470
1925	608	2,630	May 9, 1925	0	75.4	54,600	82.6	59,820
1926	628	7,480	Mar. 21, 22, 1926	0	181	131,000	241	174,300
1927	648	b6,820	Mar. 1, 1927	0	283	205,000	238	172,100
1928	668	b3,760	June 27, 1928	0	136	99,200	132	95,960
1929	688	b5,550	May 16, 1929	0	144	104,000	135	97,620
1930	703	c1,410	Dec. 14, 1929	0	-	-	-	-

a Maximum day.

b Peak from graph based on gage readings.

c Maximum for period Oct. 1, 1929, to Mar. 5, 1930.

Note.--No daily discharge available prior to water year 1916; monthly records for that period computed on basis of gage heights furnished by U. S. Weather Bureau and a rating defined by discharge measurements made during and after 1915.

83. Big Sandy Creek near Bridgeport, Tex.

Location.--Lat 33°13', long 97°41', at bridge on State Highway 24, 1.9 miles upstream from Turkey Creek, 4.4 miles upstream from mouth, and 5 miles east of Bridgeport, Wise County.

Drainage area.--332 sq mi.

Gage.--Water-stage recorder. Datum of gage is 727.44 ft above mean sea level, datum of 1929.

Average discharge.--21 years (1936-57), 88.3 cfs (63,930 acre-ft per year).

Extremes.--1936-57: Maximum discharge, 53,000 cfs June 10, 1941 (gage height, 15.69 ft, from floodmark), from rating curve extended above 22,000 cfs by logarithmic plotting; no flow at times each year.

Remarks.--Flow from 103 sq mi since May 1, 1956, affected by storage in Amon Carter Reservoir (capacity, 32,290 acre-ft).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	206	16.8	34.7	41.5	18.5	58.1	25.1	5.84	8.36	13.8	32.3	3.15	39.1
1938	1.78	3.02	183	50.0	53.9	250	75.4	32.1	37.1	.95	0	0	57.6
1939	0	0	0	25.5	0	14.1	14.7	14.6	3.50	1.14	4.63	.01	6.59
1940	7.06	0	0	0	.45	0	31.3	61.4	273	237	169	1.52	65.3
1941	0	388	150	25.5	276	37.4	533	259	1,922	27.6	9.96	4.62	298
1942	1,141	131	65.7	26.3	19.1	33.3	1,569	541	488	9.28	1.35	5.53	336
1943	96.5	9.69	10.6	10.3	9.15	213	64.4	214	314	7.31	0	0	79.4
1944	.97	0	.12	3.56	239	70.9	97.5	123	19.3	.01	10.9	7.85	46.9
1945	21.2	61.1	39.5	23.4	131	887	452	33.7	43.0	395	2.52	76.2	181
1946	265	11.7	10.8	316	292	228	116	294	207	3.81	.61	3.56	145
1947	0	129	223	17.8	12.1	28.3	204	289	21.1	.40	0	1.33	77.5
1948	5.44	.95	97.2	17.9	75.7	24.3	7.41	13.5	63.4	6.10	.02	0	25.8
1949	0	0	0	.09	2.96	23.4	3.40	165	162	5.17	7.23	42.7	34.4
1950	210	15.0	11.4	23.0	86.4	12.7	65.2	291	266	426	116	240	147
1951	14.8	6.97	7.91	7.24	12.8	10.4	7.02	71.7	368	91.3	.07	2.36	49.8
1952	4.20	.72	0	.20	1.08	4.05	13.7	70.5	18.3	.85	0	0	9.52
1953	0	3.05	.95	.01	0	0	7.30	29.9	0	7.04	10.6	.02	4.97
1954	76.5	8.31	4.20	3.87	1.44	.88	2.83	59.0	27.6	.47	0	1.37	15.7
1955	4.37	0	1.13	0	0	.49	1.45	13.5	57.8	.003	0	0	6.53
1956	.02	0	0	0	1.51	0	0	18.0	0	.42	5.19	0	2.12
1957	3.25	3.77	16.0	.13	66.6	15.2	1,175	1,054	399	.03	0	0	227

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	12,640	998	2,130	2,550	1,030	3,570	1,490	359	497	850	1,990	188	28,290
1938	109	180	11,230	3,070	2,990	15,390	4,480	1,980	2,210	59	0	0	41,700
1939	0	0	0	1,570	0	868	877	896	208	70	284	.4	4,770
1940	434	0	0	0	26	0	1,860	3,780	16,240	14,570	10,400	90	47,400
1941	0	23,090	9,210	1,570	15,310	2,300	31,740	15,920	114,400	1,690	612	275	216,100
1942	70,140	7,790	4,040	1,610	1,060	2,040	93,340	33,280	29,020	571	83	329	243,300
1943	5,940	577	650	634	508	13,090	3,830	13,180	18,660	449	0	0	57,520
1944	60	0	7.3	219	13,760	4,360	5,800	7,570	1,150	.6	670	467	34,060
1945	1,300	3,630	2,430	1,440	7,260	54,530	26,890	2,070	2,560	24,290	155	4,530	131,100
1946	16,280	697	666	19,430	16,200	14,040	6,880	18,060	12,340	234	37	212	105,100
1947	0	7,660	13,710	1,090	670	1,740	12,110	17,780	1,250	24	0	79	56,110
1948	335	57	5,980	1,100	4,350	1,490	441	831	3,770	375	1.4	0	18,730
1949	0	0	0	5.8	165	1,440	202	10,130	9,630	318	444	2,540	24,870
1950	12,900	895	704	1,420	4,800	784	3,880	17,880	15,830	26,180	7,120	14,310	106,700
1951	913	415	486	445	711	642	418	4,410	21,880	5,610	4.2	141	36,080
1952	258	43	0	12	62	249	817	4,330	1,090	52	0	0	6,910
1953	0	181	58	.8	0	.2	434	1,840	0	433	652	1.2	3,600
1954	4,710	494	258	238	80	54	169	3,630	1,640	29	0	81	11,380
1955	269	0	69	0	0	30	86	832	3,440	.2	0	0	4,730
1956	1.0	0	0	0	87	0	0	1,110	0	26	319	0	1,540
1957	201	224	985	7.9	3,700	931	69,910	64,790	23,770	1.6	0	0	164,500

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1937	828	2,330	Oct. 26, 1936	0	39.1	28,290	33.2	24,040
1938	858	7,000	Mar. 28, 1938	0	57.6	41,700	41.7	30,180
1939	878	608	Jan. 9, 1939	0	6.59	4,770	7.19	5,210
1940	898	4,340	Aug. 17, 1940	0	65.3	47,400	109	79,270
1941	928	53,000	June 10, 1941	0	298	216,100	367	265,800
1942	958	23,000	Oct. 4, 1941	0	336	243,300	233	168,500
1943	978	4,780	May 10, 1943	0	79.4	57,520	69.6	50,420
1944	1008	3,680	Feb. 28, 1944	0	46.9	34,060	57.0	41,360
1945	1038	12,000	Mar. 15, 1945	0	181	131,100	195	141,400

Yearly discharge, in cubic feet per second, of Big Sandy Creek near Bridgeport, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1058	4,530	Jan. 5, 1946	0	145	105,100	150	108,800
1947	1118	5,300	Dec. 11, 1946	0	77.5	56,110	56.8	41,120
1948	1118	2,660	Dec. 7, 1947	0	25.8	18,730	17.0	12,360
1949	1148	2,120	June 15, 1949	0	34.4	24,870	54.4	39,370
1950	1178	4,840	Oct. 25, 1949	0	147	106,700	130	94,020
1951	1212	4,750	June 4, 1951	0	49.8	36,080	47.7	34,560
1952	1242	675	May 29, 1952	0	9.52	6,910	9.44	6,850
1953	1282	570	May 16, 1953	0	4.97	3,600	12.2	8,820
1954	1342	1,110	Oct. 26, 1953	0	15.7	11,380	8.64	6,260
1955	1392	521	June 20, 1955	0	6.53	4,730	6.06	4,390
1956	1442	296	May 3, 1956	0	2.12	1,540	4.07	2,950
1957	1512	29,300	Apr. 26, 1957	0	227	164,500	-	-

84. West Fork Trinity River near Boyd, Tex.

Location.--Lat 33°05'05", long 97°33'30", at bridge on Farm Road 730, 0.6 mile northeast of Boyd, Wise County, 3.5 miles downstream from Boggy Creek, and at mile 602.

Drainage area.--1,729 sq mi; at site 2.2 miles downstream, 1,739 sq mi.

Gage.--Water-stage recorder. Datum of gage is 660.57 ft above mean sea level, datum of 1929. Prior to December 14, 1954, at site 2.2 miles downstream at datum 5.48 ft lower.

Average discharge.--10 years (1947-57) 230 cfs (166,500 acre-ft per year).

Extremes.--1947-57: Maximum discharge, 24,400 cfs Apr. 27, 1957 (gage height, 21.60 ft); no flow at times.
Flood in April 1942 reached a stage of 20.6 ft, from information by State Highway Department. Flood in 1908 was highest since at least 1880 and reached a stage of about 24 ft, from information by local residents.

Remarks.--Flow largely regulated by Bridgeport Reservoir since 1932 and Amon Carter Reservoir near Bowie since May 1956; combined capacity 292,000 acre-ft. Sustained flow during several periods is release from Bridgeport Reservoir, 21 miles upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	180	239	68.0	282	276	250	310	492	390	-
1948	44.4	96.5	256	137	261	56.6	15.4	32.1	161	225	213	283	148
1949	38.7	203	137	116	7.74	73.0	14.0	332	240	61.3	205	223	138
1950	459	18.8	12.6	25.5	138	14.9	175	719	295	1,330	1,157	1,045	452
1951	1,045	463	354	148	115	17.6	13.9	206	527	325	396	9.83	304
1952	223	190	133	1.87	2.39	110	169	67.8	85.1	36.4	235	126	115
1953	5.30	21.7	2.21	1.66	.10	2.56	10.4	117	2.76	112	251	171	58.6
1954	378	28.2	11.1	231	3.74	129	5.35	377	35.4	146	242	107	143
1955	172	110	118	48.9	.11	.26	.59	93.0	123	206	215	208	109
1956	108	112	183	.75	1.03	36.3	19.0	91.2	80.5	180	9.37	.23	68.9
1957	2.96	120	60.0	65.1	138	36.8	1,549	4,540	2,374	135	33.9	138	768

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	11,090	13,260	4,180	16,780	16,970	14,880	19,080	30,240	23,210	-
1948	2,730	5,740	15,710	8,400	15,020	3,480	917	1,970	9,580	13,860	13,080	16,850	107,300
1949	2,380	12,050	8,450	7,140	430	4,490	831	20,390	14,260	3,770	12,620	13,250	100,100
1950	28,190	1,120	774	1,560	7,660	915	10,400	44,240	17,570	81,760	71,170	62,150	327,500
1951	64,280	27,570	21,740	9,080	6,370	1,080	824	12,650	31,390	20,000	24,380	585	219,900
1952	13,720	11,320	8,190	115	137	6,780	10,080	4,170	5,070	2,240	14,430	7,480	83,730
1953	326	1,290	136	102	5.8	157	622	7,170	164	6,870	15,410	10,190	41,440
1954	23,220	1,680	681	14,180	208	7,960	319	23,170	2,110	9,000	14,890	6,390	103,800
1955	10,590	6,550	7,250	3,010	6.3	16	35	5,720	7,310	12,680	13,190	12,400	78,760
1956	6,660	6,640	11,240	46	59	2,230	1,130	5,610	4,790	11,040	576	14	50,040
1957	182	7,140	3,690	4,000	7,690	2,260	92,180	279,100	141,200	8,330	2,080	8,200	556,100

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1088	a2,480	Apr. 16, 1947	-	-	-	240	173,900
1948	1118	2,900	Feb. 26, 1948	0	148	107,300	146	106,000
1949	1148	2,300	May 17, 1949	0	138	100,100	148	107,300
1950	1178	6,650	July 28, 1950	4.6	452	327,500	568	411,000

a Maximum for period January to September.

Yearly discharge, in cubic feet per second, of West Fork Trinity River near Boyd, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1212	2,150	June 6, 1951	0.2	304	219,900	193	139,600
1952	1242	817	Oct. 28, 1951	0	115	83,730	72.0	52,260
1953	1282	1,390	May 16, 1953	0	58.6	41,440	91.5	66,270
1954	1342	2,000	Oct. 26, 1953	0	143	103,800	142	102,600
1955	1392	1,300	June 20, 1955	0	109	78,760	109	78,910
1956	1442	1,390	May 1, 1956	0	68.9	50,040	50.3	36,510
1957	1512	24,400	Apr. 27, 1957	0	768	556,100	-	-

85. Eagle Mountain Reservoir above Fort Worth, Tex.

Location.--Lat 32°52'35", long 97°28'15", at Eagle Mountain Dam on West Fork Trinity River, 3.0 miles downstream from Ash Creek, 4.1 miles downstream from Walnut Creek, 14.6 miles northwest of Fort Worth, Tarrant County, and at mile 583.

Drainage area.--1,974 sq mi.

Gage.--Staff gage. Datum of gage is at mean sea level, datum of 1929. Prior to February 24, 1943, staff gages at several sites within 1 mile at same datum.

Extremes.--1934-57: Maximum contents observed, 333,500 acre-ft Apr. 26, 1942 (elevation, 659.9 ft); minimum observed at month end since appreciable storage was attained in May 1935, 59,840 acre-ft Oct. 31, 1956.

Remarks.--Reservoir is formed by a composite rolled-fill and hydraulic-fill earth dam, containing a concrete service spillway with four 25-ft bays, three of which are equipped with vertical lift gates. In addition there is an emergency spillway of natural ground at elevation 671.8 ft. Dam completed Oct. 24, 1932, and storage began Feb. 28, 1934. Capacity, 182,700 acre-ft between elevations 599.9 ft (bottom of four 48-inch outlet conduits) and 649.1 ft (top of service spillway). Dead storage is negligible. Reservoir used to maintain level of Lake Worth from which city of Fort Worth derives its municipal supply. Figures given herein represent total contents.

Cooperation.--Capacity curve used prior to Oct. 1, 1951, and records of daily elevations furnished by Tarrant County Water Control and Improvement District No. 1. Capacity curve used since Oct. 1, 1951, based on 1952 and former surveys, furnished by Corps of Engineers.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1934	-	-	-	-	0	16,010	16,010	19,100	9,320	15,550	19,100	21,350	+ 21,350
1935	20,350	28,320	27,200	31,200	33,900	37,700	37,700	173,400	160,000	167,200	155,500	164,000	+142,650
1936	163,200	167,200	177,000	160,800	160,000	160,000	154,800	168,000	163,200	163,200	160,800	191,400	+ 27,400
1937	175,200	168,000	173,400	178,800	170,700	174,300	169,800	168,000	164,800	168,900	175,200	168,900	- 22,500
1938	166,400	168,900	176,100	179,700	175,200	212,100	171,600	168,900	166,400	175,200	166,400	171,600	+ 2,700
1939	179,700	169,800	177,000	169,800	170,700	162,400	176,100	173,400	168,900	162,400	162,400	161,600	- 10,000
1940	151,800	150,200	149,500	148,000	148,800	147,200	150,200	161,600	185,100	182,400	184,200	181,500	+ 19,900
1941	174,300	203,100	174,300	170,700	171,600	185,100	191,400	188,700	267,300	190,500	176,100	169,800	- 11,700
1942	171,600	168,900	176,100	156,200	164,800	164,000	301,400	223,400	195,000	154,800	151,000	120,800	- 49,000
1943	123,350	120,100	121,400	121,400	142,200	169,800	171,600	213,000	209,400	210,300	211,200	212,100	+ 91,350
1944	211,200	210,300	212,100	214,900	219,600	208,500	210,300	208,500	209,400	213,000	215,800	211,200	- 900
1945	210,300	211,200	212,100	213,000	221,600	219,600	209,400	209,400	209,400	211,200	211,200	213,000	+ 1,800
1946	211,200	211,200	208,500	207,600	209,400	213,000	208,500	218,700	209,400	209,400	204,000	194,100	- 18,900
1947	201,300	206,700	207,600	194,100	196,800	198,600	204,000	200,400	205,800	204,000	205,800	207,600	+ 13,500
1948	191,400	195,000	204,900	204,900	225,400	207,600	202,200	201,300	191,400	186,000	177,000	177,900	- 29,700
1949	176,100	177,000	179,700	185,100	187,800	195,000	195,900	228,200	217,800	201,300	200,400	199,500	+ 21,600
1950	220,600	203,100	196,800	198,600	204,900	199,500	204,900	213,000	204,900	220,600	199,500	196,800	- 2,700
1951	207,600	194,100	197,700	199,500	201,300	188,700	186,900	194,100	198,600	202,200	207,600	195,900	- 900
1952	166,100	168,600	169,400	163,700	159,000	157,400	166,900	166,100	152,000	138,600	137,200	135,000	- 31,100
1953	125,200	126,500	123,800	119,100	115,800	111,900	110,700	117,100	105,000	101,400	105,000	101,400	- 33,600
1954	119,800	118,500	114,500	124,500	119,100	123,100	119,100	129,300	124,500	117,800	117,100	110,000	+ 8,600
1955	108,700	106,900	111,900	110,700	108,700	105,000	100,800	106,300	110,000	107,500	107,500	109,400	- 600
1956	107,500	105,700	111,300	108,700	108,700	103,800	99,050	105,000	97,280	92,680	79,600	65,100	- 44,300
1957	59,840	61,580	62,900	61,580	69,230	68,760	172,700	267,700	183,700	181,900	173,500	176,000	+110,900

86. West Fork Trinity River at Lake Worth Dam, above Fort Worth, Tex.

Location.--Lat 32°48', long 97°25', in valve tower just above Lake Worth Dam, 4½ miles northwest of Tarrant County courthouse in Fort Worth.

Drainage area.--2,069 sq mi.

Gage.--Water-stage recorder. Datum of gage is 594.3 ft above mean sea level. Oct. 1, 1923, to June 10, 1924, staff gage half a mile upstream at same datum.

Average discharge.--11 years (1923-34), 313 cfs (226,600 acre-ft per year).

Extremes.--1923-34: Maximum discharge, 7,600 cfs Nov. 18, 1923 (gage height, 2.25 ft); no flow at times.

Remarks.--City of Fort Worth was diverting 6 to 12 mgd for municipal use from Lake Worth in 1924. Flow partly regulated by Bridgeport Reservoir beginning Apr. 1, 1932, and entirely regulated by Eagle Mountain Reservoir since Feb. 28, 1934. (See elsewhere in this report.)

Monthly and yearly mean discharge, in cubic feet per second, of West Fork Trinity River at Lake Worth Dam, above Fort Worth, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	432	1,460	1,410	78.4	41.3	898	398	233	71.1	0	0	0	420
1925	0	0	0	0	0	0	0	752	0	8.91	0	0	64.6
1926	29.6	64.0	0	183	15.8	545	614	371	330	397	645	732	329
1927	251	2.91	590	257	502	1,140	2,060	130	133	159	21.1	58.2	440
1928	339	0	72.1	35.0	56.0	24.2	87.6	395	1,180	718	270	17.8	266
1929	0	135	148	215	79.2	104	158	1,660	641	0	0	5.29	264
1930	0	11.2	37.4	0	0	0	0	1,870	832	7.52	0	0	232
1931	1,410	48.0	718	33.8	542	545	460	110	75.8	65.5	11.6	0	335
1932	746	212	341	1,950	1,700	315	23.6	655	341	1,550	1.84	430	688
1933	.18	0	249	464	32.8	975	420	757	1,130	7.50	.75	389	370
1934	.15	78.6	61.9	41.2	40.0	18.4	37.0	32.3	36.1	70.5	59.3	0	39.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	26,600	86,700	86,600	4,820	2,380	55,200	23,700	14,300	4,230	0	0	0	305,000
1925	0	0	0	0	0	0	0	46,200	0	548	0	0	46,700
1926	1,820	3,810	0	11,300	877	33,500	36,500	22,800	19,600	24,400	39,700	43,600	238,000
1927	15,400	173	36,300	15,800	27,900	70,200	122,000	8,010	7,900	9,760	1,300	3,460	318,000
1928	20,800	0	4,430	2,150	3,220	1,490	5,210	24,300	70,200	44,100	16,600	1,060	194,000
1929	0	8,030	9,100	13,200	4,400	6,400	9,400	102,000	38,100	0	0	315	191,000
1930	0	666	2,300	0	0	0	0	115,000	49,500	462	0	0	168,000
1931	86,700	2,860	44,100	2,080	30,100	33,500	27,400	6,760	4,510	4,030	713	0	243,000
1932	45,900	12,600	21,000	120,000	97,800	19,400	1,400	40,300	20,300	95,300	113	25,600	500,000
1933	11	0	15,300	28,500	1,820	60,000	25,000	46,500	67,200	461	46	23,100	268,000
1934	9.2	4,680	3,810	2,530	2,220	1,130	2,200	1,990	2,150	4,330	3,650	0	28,700

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	7,600	Nov. 18, 1923	0	420	305,000	144	105,000
1925	608	2,960	May 10, 1925	0	64.6	46,700	72.4	52,400
1926	628	4,300	Sept. 6, 1926	0	329	238,000	393	284,000
1927	648	5,900	Apr. 25, 1927	0	440	318,000	403	292,000
1928	668	3,180	July 3, 1928	0	266	194,000	255	185,000
1929	688	7,120	May 17, 1929	0	264	191,000	245	177,000
1930	703	7,120	May 13, 1930	0	232	168,000	412	299,000
1931	718	4,730	Oct. 19, 1930, Feb. 27, 1931	0	335	243,000	260	189,000
1932	733	4,880	Jan. 22, 1932	0	688	500,000	599	436,000
1933	748	3,140	June 1, 1933	0	370	268,000	361	261,000
1934	763	520	May 2, 1934	0	39.6	28,700	-	-

87. Clear Fork Trinity River near Aledo, Tex.

Location. --Lat 32°38'25", long 97°33'50", 3 miles downstream from Turkey Creek, 3½ miles upstream from bridge on U. S. Highway 377, 4 miles southeast of Aledo, Parker County, and 11.8 miles upstream from Benbrook Dam.

Drainage area. --246 sq mi.

Gage. --Water-stage recorder. Datum of gage is 723.33 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Average discharge. --10 years (1947-57), 43.3 cfs (31,350 acre-ft per year).

Extremes. --1947-57: Maximum discharge, 34,000 cfs May 25, 1957 (gage height, 29.00 ft); no flow at times.
Maximum stage known since at least 1858, about 34 ft between Apr. 25 and May 9, 1922, from information by local resident.

Remarks. --At the end of 1957 the flow from 68.8 sq mi above this station was partly controlled by 27 floodwater-detention reservoirs (constructed during period 1955-57) with a total combined capacity of 22,620 acre-ft below the flood-spillway crests, of which 19,260 acre-ft is floodwater-detention capacity and 3,360 acre-ft is sediment-storage capacity. The capacity in these reservoirs allocated to sediment storage will be used for conservation storage until eliminated by sedimentation.
The Weatherford City Reservoir partly controls runoff from 105 sq mi above the gaging station. The reservoir has a capacity of 19,470 acre-ft at elevation 896.0 ft (fixed glory-hole outlet) and 35,180 acre-ft at elevation 906.0 ft (emergency flood spillway).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	-	-	0.09	0.11	-
1948	7.85	4.57	57.3	60.4	231	72.8	21.2	39.6	11.2	5.74	.26	0	42.0
1949	0	.40	1.71	6.73	24.6	131	31.9	532	170	14.0	8.76	16.0	78.8
1950	128	16.9	15.1	37.1	121	38.6	196	262	35.1	101	65.5	215	102

Monthly and yearly mean discharge, in cubic feet per second, of Clear Fork Trinity River near Aledo, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	22.8	18.2	18.9	19.8	27.0	22.1	14.6	37.6	99.1	31.2	0.50	1.13	26.0
1952	1.70	3.86	2.53	3.65	3.69	5.33	36.7	24.6	1.57	0	0	0	6.94
1953	0	14.7	2.05	2.27	2.35	5.07	7.17	45.5	.23	.64	0	0	6.72
1954	37.0	1.86	1.41	2.50	2.18	2.25	5.62	6.36	0	.21	.01	0	5.01
1955	0	0	0	0	0	2.76	1.58	82.8	92.4	10.4	0	6.66	16.4
1956	10.9	0	0	.56	7.27	1.34	9.17	80.5	.91	0	0	0	9.23
1957	1.41	0	2.15	0	17.5	1.63	210	1,128	276	29.7	1.27	.63	140

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	-	-	5.8	6.3	-
1948	483	272	3,520	3,720	13,300	4,480	1,260	2,430	668	353	16	0	30,500
1949	0	24	105	414	1,370	8,030	1,900	32,730	10,100	862	539	954	57,030
1950	7,860	1,000	930	2,280	6,720	2,380	11,650	16,100	2,090	6,200	4,030	12,820	74,060
1951	1,400	1,080	1,160	1,220	1,500	1,360	871	2,310	5,900	1,920	31	67	18,820
1952	104	230	156	224	212	327	2,180	1,510	94	0	0	0	5,040
1953	0	874	126	140	130	312	426	2,800	13	39	0	0	4,860
1954	2,280	111	86	154	121	138	334	391	0	13	.6	0	3,630
1955	0	0	0	0	0	170	94	5,090	5,500	639	0	396	11,890
1956	671	0	0	34	418	82	546	4,900	54	0	0	0	6,700
1957	87	0	132	0	972	100	12,480	69,370	16,450	1,820	78	37	101,500

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1118	-	-	0	-	-	-	-
1948	1118	8,450	Feb. 25, 1948	0	42.0	30,500	36.3	26,360
1949	1148	15,900	May 17, 1949	0	78.8	57,030	92.1	66,690
1950	1178	4,620	Oct. 24, 1949	1.0	102	74,060	93.8	67,910
1951	1212	2,170	June 3, 1951	0	26.0	18,820	21.6	15,670
1952	1242	1,840	Apr. 22, 1952	0	6.94	5,040	7.65	5,550
1953	1282	2,330	May 16, 1953	0	6.72	4,860	8.75	6,340
1954	1342	1,240	Oct. 26, 1953	0	5.01	3,630	1.59	1,150
1955	1392	4,170	May 19, 1955	0	16.4	11,890	17.3	12,560
1956	1442	2,390	May 1, 1956	0	9.23	6,700	8.61	6,250
1957	1512	34,000	May 25, 1957	0	140	101,500	-	-

88. Benbrook Reservoir near Benbrook, Tex.

Location.--Lat 32°39', long 97°27', at Benbrook Dam on Clear Fork Trinity River, 2.5 miles south of Benbrook, Tarrant County, 3.5 miles upstream from Marys Creek, and 15 miles upstream from mouth of Clear Fork.

Drainage area.--433 sq mi.

Gage.--Water-stage recorder. Datum of gage is mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942.

Extremes.--1952-57: Maximum contents, 185,000 acre-ft June 6, 1957 (elevation, 713.35 ft); minimum since first appreciable storage began, 5,010 acre-ft, May 9, 1955 (elevation, 653.70 ft).

Remarks.--Reservoir is formed by a rolled earth-fill dam 9,130 ft long including a 500-foot uncontrolled off-channel concrete gravity spillway having an ogee weir section with crest at elevation 724.0 ft and a 100-ft notch in center with crest at elevation 710.0 ft. Total spillway capacity 172,000 cfs at elevation 741.0 ft, maximum design level. Deliberate impoundment of water began Sept. 29, 1952. From August 1950 to Sept. 29, 1952, reservoir operated as detention basin only. Reservoir built for flood control, navigation, and low-flow regulation. For storage above reservoir see Remarks for Clear Fork Trinity River near Aledo concerning U. S. Soil Conservation Service reservoirs. Data regarding the dam and reservoir are shown in the following table:

	Elevation (feet)	Capacity (acre-feet)
Spillway crest	724.0	258,600
Notch crest	710.0	164,800
Top of conservation storage	694.0	88,250
Inverts at intakes to wet wells	656.0	6,550
Invert of two 6.5- by 13-ft broome-type gates	622.0	12

Figures given herein represent total content.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1952	-	-	-	-	-	-	-	-	-	-	-	28	-
1953	40	936	1,020	1,050	1,060	1,480	2,950	8,880	8,060	7,560	7,050	6,580	+ 6,550
1954	8,360	8,280	8,140	8,320	8,200	7,970	9,360	9,650	8,790	7,850	6,900	6,190	- 390
1955	5,730	5,540	5,380	5,270	5,220	5,280	5,170	10,730	16,540	16,090	15,100	16,040	+ 9,850
1956	15,720	15,040	14,740	14,590	14,820	14,340	14,470	20,030	18,820	17,240	15,770	14,520	- 1,520
1957	15,050	14,680	14,890	14,840	15,770	15,900	64,760	177,100	99,900	87,470	81,800	81,110	+66,590

89. Clear Fork Trinity River near Benbrook, Tex.

Location. --Lat 32°39'54", long 97°26'30", 1½ miles downstream from Benbrook Dam, 1.7 miles southeast of Benbrook, Tarrant County, and 2.9 miles upstream from Marys Creek.

Drainage area. --435 sq mi.

Gage. --Water-stage recorder. Datum of gage is 604.22 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Average discharge. --10 years (1947-57), 72.0 cfs (52,130 acre-ft per year), unadjusted.

Extremes. --1947-57: Maximum discharge, 82,900 cfs May 17, 1949 (gage height, 28.72 ft), from rating curve extended above 11,000 cfs on basis of velocity-area studies and slope-area measurement of peak flow; no flow at times.
Maximum stage since at least 1922, that of May 17, 1949.

Remarks. --Flow regulated by Benbrook Reservoir since August 1950 (capacity, 164,800 acre-ft).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	-	5.93	0.76	8.24	-
1948	15.6	10.2	110	113	425	249	52.7	75.4	32.2	39.9	.67	.14	92.5
1949	0	0	1.60	10.8	90.0	258	108	1,774	271	37.3	13.3	16.4	217
1950	123	21.0	19.4	83.4	368	88.8	331	397	71.1	110	71.7	281	162
1951	36.2	22.6	22.4	20.8	28.4	23.0	19.0	38.5	184	32.4	.46	.72	35.6
1952	1.29	4.24	4.42	3.62	6.29	5.39	49.8	113	7.50	.58	.45	.02	16.4
1953	0	.77	.21	0	0	.13	.88	1.24	0	.03	0	0	.27
1954	7.25	.36	.04	0	0	1.06	.46	1.89	4.29	4.32	4.93	4.27	2.43
1955	3.41	1.20	1.41	1.39	1.07	1.25	1.35	2.42	1.87	3.50	4.54	4.54	2.34
1956	4.17	2.87	.78	1.46	5.05	.87	2.28	2.68	3.21	4.03	4.88	5.94	3.17
1957	3.97	1.17	1.45	.57	.72	1.39	9.45	192	1,804	196	53.5	11.7	188

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	-	365	47	491	-
1948	957	609	6,740	6,920	24,420	15,340	3,140	4,640	1,920	2,460	41	8.5	67,200
1949	0	0	98	667	5,000	15,870	6,430	109,100	16,140	2,290	815	977	157,400
1950	7,540	1,250	1,190	5,130	20,430	5,460	19,670	24,420	4,230	6,770	4,410	16,730	117,200
1951	2,230	1,340	1,380	1,280	1,570	1,420	1,130	2,370	10,970	1,990	28	43	25,750
1952	79	252	272	223	362	332	2,960	6,950	446	36	28	1.2	11,940
1953	0	46	13	0	0	8.1	53	76	0	1.8	0	0	198
1954	446	21	2.6	0	0	65	27	116	255	266	303	254	1,760
1955	210	72	87	85	60	77	81	149	111	215	279	270	1,700
1956	256	171	48	90	291	54	136	165	191	248	300	353	2,300
1957	244	70	89	35	40	85	562	11,810	107,300	12,060	3,290	694	136,300

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1118	-	-	0	-	-	-	-
1948	1118	18,000	Feb. 25, 1948	0	92.5	67,200	81.2	58,990
1949	1148	82,900	May 17, 1949	0	217	157,400	231	167,300
1950	1178	6,250	Feb. 1, 1950	.3	162	117,200	155	112,200
1951	1212	2,150	June 3, 1951	.1	35.6	25,750	29.6	21,400
1952	1242	2,710	May 18, 1952	0	16.4	11,940	15.7	11,400
1953	1282	174	Apr. 29, 1953	0	.27	198	.84	608
1954	1342	154	July 23, 1954	0	2.43	1,760	2.29	1,660
1955	1392	185	Aug. 22, 1955	0	2.34	1,700	2.49	1,800
1956	1442	191	Sept. 4, 1956	0	3.17	2,300	3.07	2,230
1957	1512	4,350	June 26, 1957	0	188	136,300	-	-

90. Clear Fork Trinity River at Fort Worth, Tex.

Location. --Lat 32°44'02", long 97°21'33", at bridge on Vickery Boulevard, Fort Worth, Tarrant County, 100 ft upstream from East-West Expressway bridge, 310 ft downstream from Texas & Pacific Railway bridge, 1,810 ft upstream from dam, 3 miles upstream from mouth, 5 miles downstream from Marys Creek, and 10 miles downstream from Benbrook Dam.

Drainage area. --526 sq mi.

Supplemental records available. --Records of chemical analyses and temperature for the period October 1948 to September 1952 are published in reports of Geological Survey.

Gage. --Water-stage recorder. Datum of gage is 532.91 ft above mean sea level, datum of 1929. Prior to June 23, 1925, staff gage at site 338 ft upstream at datum 8.37 ft higher. June 23, 1925, to Dec. 7, 1938, water-stage recorder at site 88 ft upstream at present datum.

Average discharge. --33 years (1924-57), 105 cfs (76,020 acre-ft per year).

Clear Fork Trinity River at Fort Worth, Tex.--Continued

Extremes.--1924-57: Maximum discharge, 107,000 cfs May 17, 1949 (gage height, 28.20 ft), from rating curve extended above 16,000 cfs on basis of contracted-opening measurement of peak flow; no flow at times.

Flood of Apr. 25, 1922, reached a stage of 27.5 ft, present datum (discharge, 74,300 cfs, by slope-area measurement of peak flow, data furnished by city engineer of Fort Worth).

Maximum stage since at least 1900, that of May 17, 1949.

Remarks.--Texas & Pacific Railway Co. and city of Fort Worth divert small amount of water from pool in which gage is located. Subsequent to Aug. 1, 1950, flow regulated by Benbrook Reservoir (capacity, 164,800 acre-ft) 10 miles upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	418	213	273	97.9	7.0	18.6	0	-
1925	0	0	0	4.57	5.65	6.60	80.8	393	2.44	0	0	0	41.6
1926	42.6	8.68	.20	49.9	5.42	48.7	173	100	28.4	32.3	75.0	104	55.9
1927	6.79	2.45	8.43	5.68	9.18	60.6	48.1	7.78	13.9	.70	.003	2.49	13.8
1928	38.7	.07	4.94	5.81	130	50.0	425	25.1	55	12.0	5.12	.88	61.8
1929	0	3.19	151	63.5	264	182	153	228	86.5	4.91	.28	.03	93.6
1930	0	0	4.51	.58	1.15	5.48	1.33	478	17.6	.12	0	0	43.2
1931	74.7	11.2	79.6	28.6	149	178	113	49.2	24.0	8.33	1.59	.07	59.3
1932	.05	0	1.06	747	684	166	54.2	101	113	150	4.84	263	188
1933	8.19	12.5	79.6	106	119	312	92.7	188	26.1	57.3	30.6	6.25	86.8
1934	.54	0	3.41	11.6	13.3	61.7	59.5	43.1	.34	.02	0	0	16.2
1935	0	2.95	.01	46.7	17.9	27.6	24.9	1,233	245	15.4	.12	23.9	138
1936	11.3	16.4	42.2	14.5	12.6	6.95	2.86	98.8	4.31	0	0	456	55.0
1937	107	51.3	77.3	77.0	37.8	155	46.5	16.2	102	6.15	0	.67	56.7
1938	21.7	16.9	124	454	701	428	289	122	35.0	21.5	1.58	.03	181
1939	0	0	.01	2.57	4.82	4.90	87.1	85.6	24.3	8.72	.79	0	18.2
1940	0	0	.20	0	0	0	12.5	81.6	84.3	154	15.5	.10	29.2
1941	0	199	543	162	842	265	244	359	601	73.2	80.7	7.07	277
1942	60.4	22.3	32.7	24.6	21.0	21.7	2,081	850	321	29.8	25.2	42.6	293
1943	354	83.9	66.2	47.1	35.3	141	131	296	133	4.93	.01	46.8	112
1944	.48	0	4.92	11.0	174	100	79.6	471	59.3	7.40	21.5	14.5	78.6
1945	34.8	18.2	52.0	108	1,073	1,244	1,019	201	76.7	75.5	8.13	5.72	321
1946	34.3	21.8	19.1	66.3	203	125	66.6	232	101	5.41	51.2	14.2	77.6
1947	32.0	431	363	164	92.7	172	181	80.0	150	10.3	1.90	18.9	141
1948	13.1	11.7	124	141	597	320	67.5	93.2	39.1	43.2	0	.01	119
1949	.01	0	.09	10.9	148	351	147	2,303	392	48.8	15.9	15.8	289
1950	160	25.1	21.7	116	518	115	448	535	88.3	127	86.2	376	215
1951	39.4	25.1	28.3	25.0	35.1	25.4	18.6	48.5	219	34.6	.01	.01	41.4
1952	0	.20	3.19	6.18	14.6	10.5	68.1	129	7.41	.10	1.03	.23	20.1
1953	0	13.0	5.91	3.50	2.84	4.72	23.7	33.0	.27	10.1	8.80	1.45	8.98
1954	19.3	6.41	2.32	3.81	3.24	4.03	3.12	9.82	.61	.75	.54	.28	4.55
1955	1.65	.84	2.21	3.22	5.40	11.2	5.11	16.4	22.6	1.74	1.75	4.22	6.35
1956	3.68	1.93	2.06	2.46	7.69	.91	10.8	47.8	10.6	.93	.67	1.03	7.56
1957	9.38	1.07	6.00	2.28	10.6	13.6	451	835	2,115	246	48.2	17.7	312

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	25,700	12,700	16,800	5,820	431	1,140	0	-
1925	0	0	0	281	314	406	4,810	24,100	145	0	0	0	30,100
1926	2,620	516	12	3,070	301	3,000	10,300	6,160	1,690	1,990	4,610	6,200	40,500
1927	418	146	518	349	510	3,730	2,860	479	826	43	.2	148	10,000
1928	2,380	4.2	304	357	7,480	3,070	25,300	1,540	3,270	738	315	52	44,800
1929	0	190	9,280	3,900	14,700	11,200	9,100	14,000	5,150	302	17	1.8	67,800
1930	0	0	277	36	64	337	79	29,400	1,050	7.4	0	0	31,200
1931	4,590	666	4,890	1,760	8,280	10,900	6,720	3,030	1,430	512	98	4.2	42,900
1932	3.1	0	65	45,900	39,300	10,200	3,230	6,210	6,720	9,220	298	15,600	137,000
1933	504	744	4,890	6,460	6,610	19,200	5,520	11,600	1,550	3,520	1,880	372	62,800
1934	33	0	209	713	739	3,790	3,540	2,650	20	1.2	0	0	11,700
1935	0	176	.8	2,870	995	1,690	1,480	75,800	14,570	950	7.3	1,420	99,960
1936	695	977	2,590	893	722	427	170	6,080	256	0	0	27,150	39,960
1937	6,590	3,050	4,750	4,740	2,100	9,540	2,760	994	6,090	378	0	40	41,030
1938	1,330	1,000	7,600	27,900	38,960	26,290	17,220	7,530	2,080	1,320	97	2.0	131,300
1939	0	0	.8	158	268	301	5,180	5,260	1,450	536	49	0	13,200
1940	0	0	12	0	0	0	741	5,020	5,010	9,450	955	6.1	21,190
1941	0	11,580	33,380	9,970	46,780	16,300	14,490	22,040	35,740	4,500	4,960	421	200,400
1942	3,710	1,320	2,010	1,510	1,160	1,330	123,900	52,270	19,090	1,830	1,550	2,540	212,200
1943	21,740	4,990	4,070	2,890	1,960	8,650	7,820	18,200	7,910	303	.8	2,780	81,310
1944	29	0	302	676	10,040	6,150	4,730	28,950	3,530	455	1,320	864	57,050
1945	2,140	1,080	3,200	6,620	59,600	76,470	60,620	12,380	4,560	4,640	500	340	232,200
1946	2,110	1,300	1,180	4,080	11,290	7.670	3,960	14,240	6,030	332	3,150	846	56,190
1947	1,960	25,660	22,300	10,100	5,150	10,550	10,780	4,920	8,950	634	117	1,120	102,200
1948	805	695	7,610	8,640	34,340	19,660	4,020	5,730	2,330	2,660	0	.4	86,490
1949	.6	0	5.4	667	8,200	21,570	8,740	141,600	23,330	3,000	977	940	209,000
1950	9,850	1,490	1,330	7,130	28,780	7,100	26,630	32,910	5,250	7,800	5,300	22,360	155,900

Monthly and yearly runoff, in acre-feet, of Clear Fork Trinity River at Fort Worth, Tex. --Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2,420	1,490	1,740	1,540	1,950	1,560	1,110	2,980	13,030	2,130	0.8	0.4	29,950
1952	0	12	196	380	838	646	4,050	7,940	441	6.0	63	14	14,590
1953	0	775	364	215	158	290	1,410	2,030	16	618	541	86	6,500
1954	1,190	382	142	234	180	248	186	604	36	46	33	16	3,300
1955	101	50	136	198	300	690	304	1,010	1,350	107	108	251	4,600
1956	226	115	127	152	442	56	642	2,940	630	57	41	61	5,490
1957	577	64	369	140	590	837	26,840	51,310	125,900	15,160	2,970	1,050	225,800

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	a5,800	June 2, 1924	0	-	-	-	-
1925	608	9,000	May 10, 1925	0	41.6	30,100	45.9	33,200
1926	628	6,870	May 19, 1926	0	55.9	40,500	53.0	38,400
1927	648	-	-	0	13.8	10,000	16.1	11,600
1928	668	17,400	Apr. 3, 1928	0	61.8	44,800	71.1	51,600
1929	688	11,000	Feb. 25, 1929	0	93.6	67,800	80.9	58,600
1930	703	14,000	May 13, 1930	0	43.2	31,200	56.8	41,100
1931	718	2,650	Mar. 31, 1931	0	59.3	42,900	45.3	32,800
1932	733	18,000	Sept. 5, 1932	0	188	137,000	197	143,000
1933	748	7,320	July 30, 1933	0	86.8	62,800	78.7	57,000
1934	763	3,990	May 2, 1934	0	16.2	11,700	16.1	11,630
1935	788	17,400	May 18, 1935	0	138	99,960	144	104,000
1936	808	12,400	Sept. 27, 1936	0	55.0	39,960	69.0	50,090
1937	828	3,780	June 7, 1937	0	56.7	41,030	50.5	36,570
1938	858	16,700	Feb. 17, 1938	0	181	131,300	168	121,400
1939	878	-	-	0	18.2	13,200	18.3	13,210
1940	898	9,000	July 12, 1940	0	29.2	21,190	91.5	66,410
1941	928	11,800	Feb. 1, 1941	0	277	200,400	224	162,200
1942	958	18,200	May 19, 1942	7.1	293	212,200	326	236,000
1943	978	11,000	Oct. 16, 1942	0	112	81,310	70.2	50,840
1944	1008	6,370	May 29, 1944	0	78.6	57,050	87.0	63,140
1945	1038	27,000	Mar. 30, 1945	0	321	232,200	318	230,300
1946	1058	4,840	May 15, 1946	0	77.6	56,190	140	101,500
1947	1088	14,100	Dec. 11, 1946	0	141	102,200	84.9	61,430
1948	1118	16,800	Feb. 25, 1948	0	119	86,490	107	77,390
1949	1148	107,000	May 17, 1949	0	289	209,000	306	221,700
1950	1178	7,800	May 2, 1950	2.0	215	155,900	206	148,900
1951	1212	2,760	June 3, 1951	0	41.4	29,950	33.8	24,510
1952	1242	3,190	May 18, 1952	0	20.1	14,590	21.4	15,520
1953	1282	2,180	July 17, 1953	0	8.98	6,500	9.77	7,070
1954	1342	1,040	Oct. 26, 1953	0	4.55	3,300	2.58	1,870
1955	1392	1,080	May 19, 1955	0	6.35	4,600	6.60	4,790
1956	1442	2,070	May 1, 1956	0	7.56	5,490	8.29	6,020
1957	1512	14,200	May 25, 1957	0	312	225,800	-	-

a Period March to September 1924.

91. West Fork Trinity River at Fort Worth, Tex.

Location. --Lat 32°45'40", long 97°19'55", 125 ft upstream from Texas Electric Service Co.'s new concrete dam, 980 ft downstream from centerline of Paddock Viaduct (North Main Street) at Fort Worth, Tarrant County, 2,600 ft downstream from Clear Fork Trinity River, and at mile 559.

Drainage area. --2,627 sq mi.

Supplemental records available. --Gage-height records collected in this vicinity since 1910 are contained in reports of U. S. Weather Bureau.

Gage. --Water-stage recorder and concrete dam control. Since Oct. 15, 1955, concrete dam control having angle iron crested notch for flows below 50 cfs. Datum of gage is 519.24 ft above mean sea level, datum of 1929. (Texas Reclamation Department bench mark based on Coast and Geodetic Survey datum). Prior to Aug. 21, 1954, water-stage recorder at site 1,200 ft upstream at same datum. Aug. 22, 1954, to Oct. 15, 1955, at site 2,000 ft upstream at same datum.

Average discharge. --37 years (1920-57), 428 cfs (309,900 acre-ft per year), unadjusted.

Extremes. --1920-57: Maximum discharge, 85,000 cfs Apr. 25, 1922 (gage height at site 1,200 ft upstream, 23.95 ft), by slope-area measurement of peak flow by city engineer of Fort Worth; maximum gage height at site 1,200 ft upstream, 25.91 ft May 17, 1949 (discharge, 64,300 cfs); no flow at times.

Maximum stage since at least 1866, that of May 17, 1949. Maximum stages have been affected by levee construction, levee breaks, and channel rectification.

Remarks. --Flow largely regulated by Bridgeport Reservoir since 1932, Eagle Mountain Reservoir since 1934, Benbrook Reservoir since 1952, and Lake Worth; combined capacity of reservoirs, 786,000 acre-ft. The city of Fort Worth diverts water from Lake Worth for municipal use and returns sewage effluent below station. Several small diversions above station.

Monthly and yearly mean discharge, in cubic feet per second, of West Fork Trinity River at Fort Worth, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	740	310	289	512	812	457	699	135	555	549	13.3	12.0	421
1922	16.2	22.7	13.0	10.8	13.8	23.7	4,380	3,390	520	89.8	11.8	6.97	708
1923	5.26	36.5	15.4	30.0	202	105	1,960	933	2,080	19.1	3.90	9.66	446
1924	443	1,480	1,250	154	131	1,290	628	501	178	11.7	18.3	6.80	508
1925	6.99	9.11	12.9	11.3	13.8	8.28	78.0	1,110	7.10	14.6	.92	2.31	108
1926	83.2	79.0	12.7	241	35.5	609	795	480	365	435	735	848	395
1927	271	24.4	659	288	477	1,100	2,080	159	160	179	25.3	72.9	456
1928	388	10.7	112	49.8	186	78.3	524	423	1,270	733	286	23.7	340
1929	1.45	146	299	308	354	304	305	1,910	707	8.66	.64	3.61	363
1930	2.04	12.5	55.4	6.08	13.6	11.8	7.71	2,240	888	7.07	2.87	0	274
1931	1,440	68.4	807	72.2	653	712	558	200	129	84.6	25.8	2.13	396
1923	705	239	405	2,610	2,410	524	105	748	455	1,590	14.8	748	877
1933	17.3	15.7	320	635	182	1,310	524	905	1,180	73.6	38.5	431	471
1934	5.81	81.6	77.8	76.1	64.4	106	109	84.3	35.8	67.4	55.0	4.97	64.1
1935	1.86	9.05	5.02	52.0	29.8	38.4	35.2	1,903	1,274	843	349	145	394
1936	85.3	21.6	225	286	21.4	22.1	25.4	711	550	95.4	5.89	615	222
1937	1,141	604	93.3	88.0	165	343	147	19.9	251	9.73	53.1	128	254
1938	118	80.5	186	758	1,131	755	1,628	242	91.4	136	137	68.7	438
1939	149	79.9	6.70	232	24.7	112	128	146	73.6	11.5	4.93	10.2	82.2
1940	.12	4.39	6.80	6.71	5.57	4.72	29.6	112	138	792	157	2.04	106
1941	1.94	270	1,661	383	1,683	720	1,021	1,960	5,421	3,030	716	532	1,444
1942	1,477	1,081	474	719	342	327	5,595	4,968	2,446	1,011	345	790	1,633
1943	834	846	103	57.3	43.4	349	653	791	775	11.9	32.8	91.9	383
1944	24.7	10.7	17.4	31.8	395	696	284	1,153	214	83.3	138	200	271
1945	124	100	157	201	2,122	3,103	2,752	828	216	1,031	291	196	918
1946	973	408	270	864	1,066	559	284	565	526	65.4	462	165	515
1947	62.4	852	884	517	277	265	498	378	199	110	277	280	383
1948	268	50.8	217	388	799	769	103	132	141	181	112	92.7	270
1949	44.9	39.2	40.3	70.2	196	394	214	2,951	1,032	163	91.7	182	454
1950	463	278	122	201	732	219	692	1,647	398	1,047	1,447	1,289	712
1951	632	651	156	128	96.8	177	77.8	104	601	146	87.9	62.7	243
1952	58.2	43.6	45.8	48.7	60.3	51.4	138	185	48.0	37.8	30.5	42.5	65.9
1953	39.1	73.3	50.1	44.0	40.6	43.6	73.0	72.7	10.3	41.8	22.0	11.7	43.6
1954	51.4	25.1	13.4	15.5	14.0	15.0	11.8	31.1	5.73	1.77	5.08	7.75	16.5
1955	7.25	7.51	7.87	10.6	19.9	24.7	11.9	54.9	68.9	9.36	3.99	11.1	19.8
1956	8.82	3.64	6.97	8.94	23.0	7.14	24.3	84.7	18.1	1.33	0	0	15.6
1957	27.0	10.1	25.6	12.4	32.2	38.0	566	5,921	6,429	289	94.5	53.5	1,127

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1921	45,500	18,400	17,800	31,500	45,100	28,100	41,600	8,300	33,000	33,800	818	714	305,000
1922	996	1,350	799	664	766	1,460	261,000	208,000	30,900	5,520	726	415	513,000
1923	324	2,170	948	1,840	11,200	6,480	117,000	57,400	124,000	1,180	240	575	323,000
1924	27,200	88,000	76,600	9,470	7,530	79,200	37,400	30,800	10,600	721	1,120	404	369,000
1925	430	542	793	695	766	509	4,640	68,200	422	898	57	137	78,100
1926	5,110	4,700	780	14,800	1,970	37,400	47,300	29,500	21,700	26,700	45,200	50,500	286,000
1927	16,600	1,450	40,500	17,700	26,500	67,700	124,000	9,810	9,510	11,000	1,560	4,340	331,000
1928	23,900	637	6,890	3,060	10,700	4,810	31,200	26,000	75,600	45,100	17,600	1,410	247,000
1929	89	8,690	18,400	18,900	19,700	18,700	18,100	117,000	42,100	532	39	215	262,000
1930	125	744	3,410	374	755	726	459	138,000	52,800	435	176	0	198,000
1931	88,500	4,070	49,600	4,440	36,300	43,800	33,200	12,300	7,680	5,200	1,590	127	287,000
1932	43,300	14,200	24,900	160,000	139,000	32,200	6,250	46,000	27,100	97,800	910	44,500	636,000
1933	1,060	934	19,700	39,000	10,100	80,600	31,200	55,600	70,200	4,530	2,370	25,600	341,000
1934	357	4,860	4,780	4,680	3,580	6,520	6,490	5,180	2,130	4,140	3,380	296	46,400
1935	114	539	309	3,200	1,660	2,360	2,100	117,000	75,800	51,810	21,480	8,620	285,000
1936	5,250	1,290	13,820	17,600	1,230	1,360	1,510	43,740	32,740	5,860	362	36,610	161,400
1937	70,160	35,950	5,730	5,410	9,180	21,070	8,730	1,220	14,930	598	3,260	7,600	183,800
1938	7,240	4,790	11,410	46,630	62,790	46,440	96,880	14,870	5,440	8,350	8,430	4,090	317,400
1939	9,190	4,760	412	14,250	1,370	6,890	7,640	8,990	4,380	705	303	609	59,500
1940	7.3	261	418	412	321	290	1,760	6,880	8,210	48,710	9,650	121	77,040
1941	119	16,080	102,100	23,540	93,490	44,270	60,740	120,500	322,600	186,300	44,040	31,680	1,045,000
1942	90,840	64,310	29,170	44,210	18,970	20,110	332,900	305,500	145,500	62,150	21,210	47,030	1,182,000
1943	51,260	50,360	6,330	3,520	2,410	21,450	38,830	48,630	46,130	732	2,010	5,470	277,100
1944	1,520	637	1,070	1,960	22,710	42,790	16,920	70,870	12,760	5,120	8,460	11,880	196,700
1945	7,630	5,950	9,630	12,350	117,800	190,800	163,800	50,910	12,850	63,420	17,890	11,660	664,700
1946	59,850	24,290	16,590	53,160	59,190	34,400	16,880	34,720	31,300	4,020	28,440	9,840	372,700
1947	3,840	50,710	54,340	31,780	15,380	16,280	29,650	23,260	11,870	6,780	17,060	16,650	277,600
1948	16,450	3,020	13,340	23,830	45,960	47,290	6,140	8,130	8,370	11,160	6,860	5,520	196,100
1949	2,760	2,330	2,480	4,310	10,880	24,230	12,730	181,400	61,400	10,020	5,640	10,810	329,000
1950	28,440	16,570	7,520	12,360	40,640	13,480	41,160	101,300	23,690	64,390	89,000	76,720	515,300

Monthly and yearly runoff, in acre-feet, of West Fork Trinity River at Fort Worth, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	38,890	38,720	9,590	7,900	5,380	10,870	4,630	6,420	35,790	8,950	5,400	3,730	176,300
1952	3,580	2,590	2,810	2,990	3,470	3,160	8,210	11,400	2,860	2,320	1,870	2,530	47,790
1953	2,400	4,360	3,080	2,710	2,250	2,680	4,340	4,470	612	2,570	1,350	697	31,520
1954	3,160	1,490	825	951	780	925	701	1,910	341	109	312	461	11,960
1955	446	447	484	653	1,110	1,520	710	3,380	4,100	576	246	660	14,330
1956	542	217	429	549	1,320	439	1,450	5,210	1,080	82	0	0	11,320
1957	1,660	600	1,580	762	1,790	2,340	33,660	364,000	382,600	17,770	5,810	3,180	815,800

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1921	528	9,480	Apr. 5, 1921	1.9	421	305,000	312	226,000
1922	548	85,000	Apr. 25, 1922	1.4	708	513,000	709	513,000
1923	568	16,300	June 11, 1923	.9	446	323,000	706	512,000
1924	588	6,900	Nov. 18, 1923	0	508	369,000	247	179,000
1925	608	8,000	May 10, 1925	0	108	78,100	120	86,900
1926	628	8,500	Sept. 6, 7, 1926	-	395	286,000	461	334,000
1927	648	4,600	Apr. 26, 1927	-	456	331,000	419	304,000
1928	668	12,800	Apr. 4, 1928	-	340	247,000	334	243,000
1929	688	10,800	Feb. 25, 1929	0	363	262,000	331	240,000
1930	703	13,100	May 13, 1930	0	274	198,000	464	336,000
1931	718	4,390	Oct. 20, 1930	0	396	287,000	314	227,000
1932	733	18,200	Sept. 5, 1932	0	877	636,000	793	575,000
1933	748	5,440	Mar. 5, 1933	.1	471	341,000	455	329,000
1934	763	3,600	May 3, 1934	0	64.1	46,400	51.6	37,360
1935	788	18,700	May 18, 1935	.1	394	285,000	420	304,400
1936	808	11,400	Sept. 27, 1936	0	222	161,400	348	252,900
1937	828	4,000	June 7, 1937	0	254	183,800	132	95,440
1938	858	13,200	Feb. 17, 1938	0	438	317,400	426	308,300
1939	878	3,750	May 16, 1939	0	82.2	59,500	63.3	45,820
1940	898	8,500	July 12, 1940	0	106	77,040	268	194,700
1941	928	10,200	Feb. 1, 1941	.1	1,444	1,045,000	1,535	1,111,000
1942	958	23,700	Apr. 24, 1942	18	1,633	1,182,000	1,527	1,106,000
1943	978	9,870	Oct. 16, 1942	1.5	383	277,100	238	172,400
1944	1008	7,080	May 29, 1944	6.9	271	196,700	298	216,700
1945	1038	31,200	Mar. 30, 1945	15	918	664,700	1,025	742,200
1946	1058	4,690	May 15, 1946	25	515	372,700	526	380,800
1947	1088	13,300	Dec. 11, 1946	35	383	277,600	278	201,500
1948	1118	14,500	Feb. 25, 1948	28	270	196,100	235	170,800
1949	1148	64,300	May 17, 1949	25	454	329,000	517	374,000
1950	1178	7,360	May 2, 1950	69	712	515,300	760	549,900
1951	1212	2,580	June 3, 1951	42	243	176,300	135	98,050
1952	1242	2,830	May 18, 1952	21	65.9	47,790	67.2	48,650
1953	1282	3,420	July 17, 1953	1.9	43.6	31,520	375	27,150
1954	1342	1,450	Oct. 26, 1953	0	16.5	11,960	10.9	7,870
1955	1392	1,360	May 19, 1955	.7	19.8	14,330	19.5	14,140
1956	1442	2,750	May 1, 1956	0	15.6	11,320	19.2	13,970
1957	1512	26,800	May 25, 1957	0	1,127	815,800	-	-

92. Village Creek near Handley, Tex.

Location.--Lat 32°42', long 97°13', at Fort Worth-Webb road crossing 3½ miles south of Handley, Tarrant County, 7 miles southeast of Fort Worth, and 8 miles upstream from mouth.

Drainage area.--126 sq mi.

Gage.--Staff gage. Datum of gage is 504.98 ft above mean sea level (from county bench mark).

Extremes.--1925-30: Maximum discharge, about 16,500 cfs Dec. 17, 1928 (gage height, 17.90 ft), from rating curve extended above 1,700 cfs on basis of slope-area measurements at gage heights 12.57 and 15.73 ft; no flow on many days each year.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	-	-	-	-	-	-	0	0	0.01	1.23	-
1926	10.3	2.31	0.09	31.8	0.70	37.6	169	72.2	46.6	8.42	8.33	6.16	32.8
1927	.20	.65	.64	.73	5.05	14.3	29.1	14.7	3.93	.97	12.9	11.6	7.88
1928	77.0	1.50	3.06	1.04	20.7	2.59	42.2	1.24	73.4	2.27	.35	0	18.7
1929	0	.13	246	16.0	179	38.2	99.9	42.9	10.3	.16	0	20.7	53.7
1930	1.24	.14	1.26	.85	8.51	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet, of Village Creek near Handley, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	-	-	-	-	-	-	0	0	0.4	73	-
1926	634	137	5.4	1,960	39	2,310	10,100	4,440	2,770	518	512	367	23,800
1927	12	39	40	45	281	880	1,730	905	234	60	794	688	5,710
1928	4,730	89	188	64	1,190	159	2,510	76	4,370	140	22	0	13,500
1929	0	7.7	15,100	984	9,940	2,350	5,940	2,640	613	9.8	0	1,230	38,800
1930	76	8.3	77	52	4.7	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1925	628	-	-	0	-	-	-	-
1926	628	4,180	May 19, 1926	0	32.8	23,800	31.9	23,100
1927	648	1,210	Apr. 18, 1927	0	7.88	5,710	14.7	10,600
1928	668	9,400	Oct. 1, 1927	0	18.7	13,500	32.6	23,600
1929	688	16,500	Dec. 17, 1928	0	53.7	38,800	33.0	23,900
1930	703	-	-	0	-	-	-	-

Note.--Only monthly discharge available after 1926.

93. West Fork Trinity River at Grand Prairie, Tex.

Location.--Lat 32°45'40", long 96°59'40", at bridge on Belt Line Road (F. M. 1382), 1.5 miles northeast of Grand Prairie, Dallas County, 2.3 miles upstream from Bear Creek, 6 miles upstream from Mountain Creek, and at mile 515.

Drainage area.--3,070 sq mi.

Gage.--Water-stage recorder. Datum of gage is 410.41 ft above mean sea level, datum of 1929. Prior to Dec. 6, 1933, chain gage at bridge on old channel 2,500 ft to right of present site at datum 2.57 ft higher. Dec. 6, 1933, to May 24, 1956, water-stage recorder at site 440 ft downstream from site of chain gage at datum 2.57 ft higher than present datum. May 25, 1956, to Apr. 18, 1957, staff gage at site 2 miles downstream at different datum. Apr. 19, 1957, to Aug. 13, 1957, reference point on bridge at present site and datum.

Average discharge.--32 years (1925-57), 576 cfs (417,000 acre-ft per year).

Extremes.--1925-57: Maximum discharge, 62,000 cfs May 17, 1949 (gage height, 28.00 ft, site and datum then in use), from rating curve extended above 36,000 cfs by logarithmic plotting; minimum observed, 3.2 cfs June 6, 1925.

Maximum stage since at least 1900, about 30.6 ft (former site and datum) in 1908 (probably May), from information by local resident. Flood in April 1922 reached a stage of 29.0 ft (former site and datum), from floodmarks.

Remarks.--Flow largely regulated by Bridgeport Reservoir since 1932, Eagle Mountain Reservoir since 1934, Benbrook Reservoir since 1952, Lake Worth and Lake Arlington since March 1957; combined capacity of reservoirs, 831,700 acre-ft. Cities of Fort Worth, Arlington, and Grand Prairie discharge sewage effluent between station at Fort Worth and this station. Several diversions above Fort Worth for municipal and other uses. The river channel at the station was relocated in 1956.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	-	-	-	-	119	1,630	17.0	31.7	12.1	20.6	-
1926	167	201	30.0	314	81.2	553	963	531	436	370	678	829	430
1927	284	31.3	566	293	487	1,110	2,030	250	183	168	38.8	94.1	460
1928	589	28.7	146	74.7	208	95.5	734	467	1,560	773	342	38.8	421
1929	31.4	195	742	406	661	462	414	1,840	893	35.4	17.7	49.6	479
1930	20.9	35.5	68.2	21.7	26.8	38.8	91.3	3,020	820	31.3	26.9	16.2	356
1931	1,550	100	954	107	651	924	694	237	166	71.4	53.4	15.6	461
1932	639	291	447	3,550	3,170	741	191	938	513	1,710	53.3	1,240	1,120
1933	53.7	48.4	549	869	344	1,640	730	1,140	1,260	229	141	610	636
1934	35.6	94.7	123	138	93.2	266	195	156	48.2	74.5	69.1	40.5	111
1935	29.2	45.1	28.7	115	82.9	76.4	63.2	2,625	1,703	870	404	163	521
1936	125	48.3	276	277	59.6	43.5	42.6	862	611	110	25.4	690	264
1937	1,224	660	145	159	182	467	202	48.5	437	37.6	62.1	130	313
1938	184	144	403	1,105	1,820	1,106	1,676	324	149	163	138	71.8	598
1939	156	93.8	30.6	241	78.3	149	156	203	136	21.1	37.4	24.2	111
1940	13.6	18.9	25.0	22.1	32.0	22.5	154	378	1,026	1,092	168	20.0	248
1941	16.4	637	2,168	544	2,194	935	1,266	2,227	7,014	3,475	896	583	1,821
1942	1,630	1,193	559	797	383	400	7,245	5,928	2,874	1,152	348	940	1,955
1943	1,273	973	209	121	97.8	523	896	1,031	911	55.2	62.3	221	532
1944	66.7	43.7	66.8	88.5	576	902	379	1,794	360	133	133	270	402
1945	189	162	246	315	2,649	4,521	3,755	1,035	401	1,092	359	244	1,237
1946	976	458	348	912	1,274	643	421	1,414	963	113	486	240	684
1947	103	1,727	1,425	699	390	450	751	454	607	152	308	424	623
1948	295	119	504	552	1,266	1,151	200	260	266	281	138	120	428
1949	76.8	74.0	78.5	186	809	784	359	5,076	1,593	248	124	235	806
1950	693	344	166	475	1,679	385	1,051	2,400	590	1,132	1,478	1,679	1,001

Monthly and yearly mean discharge, in cubic feet per second, of West Fork Trinity River at Grand Prairie, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	664	712	228	209	194	247	132	227	967	206	134	107	335
1952	101	98.9	93.3	97.0	142	110	289	363	109	85.4	73.9	76.6	136
1953	78.3	205	144	102	88.2	121	271	422	53.0	138	70.3	72.9	147
1954	154	88.1	66.2	81.6	71.2	66.6	71.7	150	57.9	50.5	52.6	51.2	80.3
1955	66.9	63.4	57.1	67.2	91.7	108	82.2	325	200	61.0	62.3	70.5	105
1956	60.4	46.2	53.6	61.6	90.4	58.5	77.9	258	106	46.2	44.0	47.7	79.3
1957	68.0	71.4	72.4	54.7	101	71.7	1,954	7,962	7,068	461	177	161	1,522

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	-	-	-	-	7,060	100,000	1,010	1,950	743	1,230	-
1926	10,300	12,000	1,850	19,300	4,510	34,000	57,300	32,700	25,900	22,800	41,700	49,300	312,000
1927	17,400	1,860	34,800	18,000	27,100	68,300	121,000	15,300	10,900	10,300	2,380	5,600	333,000
1928	36,200	1,710	8,980	4,590	12,000	5,870	43,700	28,700	92,800	47,500	21,000	2,310	305,000
1929	1,930	11,600	45,600	25,000	36,700	28,400	24,600	113,000	53,100	2,180	1,090	2,950	346,000
1930	1,290	2,110	4,190	1,330	1,490	2,390	5,430	186,000	48,800	1,920	1,650	964	258,000
1931	95,300	5,960	58,700	6,580	36,200	56,800	41,300	14,600	9,880	4,390	3,280	928	334,000
1932	39,300	17,300	27,500	218,000	182,000	45,600	11,400	57,700	30,500	105,000	3,280	73,800	811,000
1933	3,300	2,880	33,800	53,400	19,100	101,000	43,400	70,100	75,000	14,100	8,670	36,300	461,000
1934	2,190	5,640	7,560	8,480	5,180	16,400	11,600	9,590	2,870	4,580	4,250	2,410	80,800
1935	1,800	2,690	1,760	7,060	4,600	4,700	3,760	161,400	101,400	53,500	24,860	9,690	377,200
1936	7,680	2,880	17,000	17,050	3,430	2,670	2,530	53,020	36,330	6,770	1,560	41,080	192,000
1937	75,240	39,270	8,890	9,770	10,090	28,730	12,000	2,980	25,980	2,310	3,820	7,720	226,800
1938	11,290	8,540	24,760	67,940	101,100	68,030	99,730	19,930	8,850	10,020	8,480	4,270	432,900
1939	9,590	5,580	1,880	14,800	4,350	9,150	9,310	12,500	8,110	1,300	2,300	1,440	80,310
1940	839	1,120	1,540	1,360	1,840	1,380	9,130	23,240	61,030	67,160	10,320	1,190	180,100
1941	1,010	37,930	133,300	33,420	121,800	57,480	75,340	137,000	417,400	213,700	55,120	34,700	1,318,000
1942	100,200	70,960	34,390	49,040	21,270	24,600	431,100	364,500	171,000	70,820	21,430	55,910	1,415,000
1943	78,270	57,910	12,850	7,430	5,430	32,190	53,340	63,380	54,220	3,390	3,830	13,140	385,400
1944	4,100	2,600	4,110	5,440	33,160	55,490	22,540	110,300	21,450	8,200	8,170	16,050	291,600
1945	11,610	9,630	15,140	19,370	147,100	278,000	223,400	63,670	23,850	67,160	22,050	14,530	895,500
1946	60,040	27,240	21,410	56,080	70,750	39,560	25,060	86,920	57,280	6,940	29,850	14,290	495,400
1947	6,330	102,800	87,600	43,010	21,640	27,660	44,670	27,920	36,100	9,340	18,910	25,250	451,200
1948	18,150	7,080	30,980	33,940	72,800	70,790	11,880	15,990	15,810	17,280	8,490	7,150	310,300
1949	4,720	4,400	4,830	11,470	44,910	48,180	21,340	312,100	94,790	15,260	7,630	14,010	583,600
1950	42,600	20,480	10,210	29,230	93,220	23,660	62,540	147,600	35,080	69,580	90,900	99,880	725,000
1951	40,830	42,380	14,030	12,850	10,800	15,190	7,870	13,970	57,540	12,670	8,210	6,370	242,700
1952	6,230	5,890	5,740	5,960	8,160	6,750	17,170	22,330	6,460	5,250	4,550	4,560	99,050
1953	4,810	12,180	8,840	6,250	4,900	7,420	16,100	25,960	3,150	8,510	4,320	4,340	106,800
1954	9,470	5,240	4,070	5,020	3,960	4,100	4,260	9,210	3,440	3,100	3,240	3,050	58,160
1955	4,120	3,770	3,510	4,130	5,090	6,630	4,890	20,010	11,880	3,750	3,830	4,200	75,810
1956	3,720	2,750	3,300	3,790	5,200	3,590	4,640	15,870	6,310	2,840	2,710	2,840	57,560
1957	4,180	4,250	4,450	3,360	5,640	4,410	116,300	489,600	420,600	28,350	10,880	9,600	1,102,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1925	608,628	8,980	May 8, 1925	-	-	-	-	-
1926	628	8,980	Apr. 22, 1926	12	430	312,000	472	342,000
1927	648	5,000	Apr. 27, 1927	8.6	460	333,000	450	326,000
1928	668	7,090	June 28, 1928	16	421	305,000	438	318,000
1929	688	10,000	Dec. 17, 1928	12	479	346,000	408	295,000
1930	703	15,200	May 14, 1930	11	356	258,000	566	410,000
1931	718	5,700	Dec. 5, 1930	8.0	461	334,000	356	258,000
1932	733	15,400	Jan. 23, 1932	8.9	1,120	811,000	1,057	767,000
1933	748	6,910	Mar. 6, 1933	27	636	461,000	602	436,000
1934	763	2,670	May 3, 1934	16	111	80,800	98.8	71,550
1935	788	13,500	May 19, 1935	21	521	377,200	550	398,500
1936	808	7,820	Sept. 28, 1936	17	264	192,000	397	287,800
1937	828	4,910	June 7, 1937	12	313	226,800	204	148,000
1938	858	13,400	Feb. 18, 1938	14	598	432,900	560	405,400
1939	878	2,820	May 17, 1939	10	111	80,310	92.2	66,760
1940	898	6,860	June 10, 1940	9.5	248	180,100	481	348,900
1941	928	11,400	June 11, 23, 1941	11	1,821	1,318,000	1,867	1,352,000
1942	958	27,200	Apr. 25, 1942	59	1,955	1,415,000	1,877	1,359,000
1943	978	10,600	Oct. 18, 1942	32	532	385,400	341	247,200
1944	1008	8,600	May 30, 1944	36	402	291,600	437	317,200
1945	1038	29,500	Mar. 31, 1945	52	1,237	895,500	1,337	967,800
1946	1058	11,300	May 30, 1946	69	684	495,400	806	583,500
1947	1088	12,000	Dec. 12, 1946	74	623	451,200	429	310,700
1948	1118	11,000	Feb. 27, 1948	71	428	310,300	369	268,100
1949	1148	62,000	May 17, 1949	67	806	583,600	888	643,000
1950	1178	9,890	May 3, 1950	101	1,001	725,000	1,034	748,900

Yearly discharge, in cubic feet per second, of West Fork Trinity River at Grand Prairie, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1212	5,300	June 4, 1951	87	335	242,700	226	163,300
1952	1242	3,720	Apr. 23, 1952	62	136	99,050	148	107,000
1953	1282	6,530	May 16, 1953	46	147	106,800	138	99,730
1954	1342	1,550	Oct. 26, 1953	41	80.3	58,160	70.1	50,780
1955	1392	4,660	May 20, 1955	42	105	75,810	102	74,180
1956	1442	4,430	May 2, 1956	29	79.3	57,560	83.6	60,670
1957	1512	59,200	May 26, 1957	41	1,522	1,102,000	-	-

94. Mountain Creek near Grand Prairie, Tex.

Location.--Lat 32°42', long 96°58', at former bridge on highway between Grand Prairie and Duncanville (now submerged by Mountain Creek Reservoir), 3½ miles southeast of Grand Prairie, Dallas County, 5½ miles upstream from mouth, and 10 miles southwest of Dallas, Dallas County.

Drainage area.--273 sq mi.

Gage.--Water-stage recorder. Datum of gage is 430.4 ft above mean sea level (Texas Reclamation Department datum).

Average discharge.--8 years (1924-32), 70.0 cfs (50,680 acre-ft per year).

Extremes.--1924-32: Maximum discharge, 35,900 cfs (includes 2,680 cfs flowing through break in levee half a mile above gage) Dec. 17, 1928 (gage height, 21.41 ft), from rating curve extended above 4,000 cfs on basis of slope-area measurement of peak flow; no flow on many days each year.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	0	0	0	0	0.86	0	8.25	254	0	0	0	12.2	23.4
1926	18.4	71.3	0	103	1.52	8.46	200	47.6	50.5	58.2	.27	.01	46.5
1927	0	0	.23	0	.38	115	117	122	19.6	.19	.53	2.80	31.7
1928	166	.05	1.48	1.20	66.8	25.0	104	.43	323	94.0	.12	0	64.8
1929	0	.04	529	97.8	83.8	106	286	275	28.5	.60	0	19.7	120
1930	19.3	11.6	7.77	1.96	17.7	25.2	65.2	906	28.7	.03	.34	2.09	91.8
1931	38.0	.67	78.8	6.68	96.2	199	39.6	35.5	18.7	3.99	1.82	.17	43.1
1932	2.50	0	2.38	546	422	123	108	254	14.9	62.3	.27	139	139
1933	.11	.14	149	197	133	219	72.4	366	19.1	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	0	0	0	0	48	0	491	15,600	0	0	0	729	16,900
1926	1,130	4,250	0	6,310	84	520	11,900	2,930	3,010	3,580	17	.8	33,700
1927	0	0	14	0	21	7,060	6,980	7,480	1,160	12	33	167	22,900
1928	10,200	3.0	91	74	3,840	1,540	6,190	26	19,200	5,780	7.4	0	47,000
1929	0	2.4	32,500	6,010	4,650	6,520	17,000	16,900	1,700	37	0	1,170	86,500
1930	1,190	690	478	120	983	1,550	3,880	55,700	1,710	1.8	21	124	66,400
1931	2,340	40	4,850	411	5,340	12,200	2,360	2,180	1,110	245	112	10	31,200
1932	154	0	146	33,600	24,300	7,560	6,430	15,600	887	3,830	17	8,270	101,000
1933	6.8	8.3	9,160	12,100	7,390	13,500	4,310	22,500	1,140	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1925	608	3,300	May 9, 1925	0	23.4	16,900	30.8	22,200
1926	628	3,110	Apr. 22, 1926	0	46.5	33,700	39.1	28,400
1927	648	3,030	Mar. 8, 1927	0	31.7	22,900	45.9	33,200
1928	668	5,000	Oct. 2, 1927	0	64.8	47,000	95.3	69,200
1929	688	35,900	Dec. 17, 1928	0	120	86,500	77.8	56,300
1930	703	18,800	May 13, 1930	0	91.8	66,400	98.5	71,300
1931	718	5,700	Mar. 31, 1931	0	43.1	31,200	33.5	24,300
1932	733	6,500	Jan. 23, 1932	0	139	101,000	151	110,000
1933	748	5,700	Mar. 6, 1933	0	-	-	-	-

95. Elm Fork Trinity River subwatershed No. 6-0 near Muenster, Tex.

Location.--Lat 33°37', long 97°24', at earthen dam on unnamed tributary of Elm Fork Trinity River, 1 mile west of Farm Road 373 and 2.6 miles southwest of Muenster, Cooke County.

Drainage area.--0.77 sq mi.

Gage.--Water-stage recorder. Datum of gage is 941.75 ft above mean sea level, datum of 1929 (Soil Conservation Service bench mark).

Elm Fork Trinity River subwatershed No. 6-0 near Muenster, Tex.--Continued

Extremes.--1956-57: Maximum inflow, about 522 cfs Apr. 25, 1957; no inflow most of time; maximum reservoir contents, 193 acre-ft Apr. 29, 1957 (gage height, 29.02 ft).

Remarks.--Records given herein represent inflow into reservoir, computed by algebraic summation of flow over spillway, flow through drop outlet structure, and change in reservoir contents, which is computed from capacity curve in acre-ft and converted to equivalent cfs. No adjustments made for evaporation or seepage losses. Dam completed Aug. 4, 1956, but no appreciable storage before Apr. 25, 1957. Dam is rolled earth-fill, 800 ft long with grass sodded emergency spillway section at gage height 34.2 ft. Outlet structure is $2\frac{1}{2}$-ft square concrete box, gage height of crest, 20.0 ft, connected to a 17-inch concrete outlet pipe at gage height 9.0 ft. There is a controlled water-supply outlet pipe connected to drop outlet at gage height 9.0 ft. Reservoir capacity, 290 acre-ft at spillway crest, 85.3 acre-ft at concrete drop outlet, and 21.6 acre-ft at controlled outlet pipe. Dam built by Soil Conservation Service of U. S. Department of Agriculture for flood control and conservation of stock water. No known diversion from reservoir.

Monthly and yearly mean inflow, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	0	0.01	0.04	0.01	0.09	0.07	5.11	5.35	2.25	0.01	0.02	0.01	1.09

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	0	0.6	2.2	0.8	5.0	4.6	304	329	134	0.8	1.0	6.0	788

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1957	[redacted]	522	Apr. 25, 1957	0	1.09	788	-	-

96. Elm Fork Trinity River near Muenster, Tex.

Location.--Lat 33°37', long 97°23', 80 ft upstream from bridge on Farm Road 373, 2.5 miles south of Muenster, Cooke County, 2.5 miles downstream from Long Branch, and 6.5 miles upstream from Brushy Elm Creek.

Drainage area.--46.0 sq mi, of which 30.97 sq mi is above flood-detention structures.

Supplemental records available.--Records of chemical analyses and water temperatures for the period October 1956 to September 1957 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 890.33 ft above mean sea level, datum of 1929 (Soil Conservation Service bench mark).

Extremes.--1956-57: Maximum discharge, 3,480 cfs Apr. 26, 1957 (gage height, 15.20 ft), from rating curve extended above 1,300 cfs; no flow at times.
Maximum stage known since at least 1900, about 23 ft in May 1935, from information by local resident.

Remarks.--The flow from 30.97 sq mi above this station was partly controlled by 11 floodwater-detention reservoirs (constructed during the period 1954-57) with a total combined capacity of 11,315 acre-ft below the spillway crests, of which 9,834 acre-ft is floodwater-detention capacity and 1,481 is sediment-storage capacity. The capacity in these reservoirs allocated to sediment-storage will be used for conservation storage until eliminated by sedimentation. Station operated as part of the Elm Fork Trinity River basin hydrologic cooperative program to evaluate rainfall-runoff relation, soil-conservation practices, and the effects of floodwater-detention structures.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	0	0	1.90	0	0	0	138	266	129	13.4	0.15	0.45	45.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	0	0	117	0	0	0	8,190	16,380	7,700	825	9.5	27	33,250

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1956	-	-	-	-	-	-	-	-
1957	1512	3,480	Apr. 26, 1957	0	45.9	33,250	-	-

97. Elm Fork Trinity River near Sanger, Tex.

Location.--Lat 33°23'25", long 97°05'10", at bridge on State Farm Highway 455, 4.1 miles downstream from Spring Creek, 5.0 miles upstream from Isle du Bois Creek, and 5.4 miles northeast of Sanger, Denton County.

Drainage area.--379 sq mi.

Gage.--Water-stage recorder. Datum of gage is 553.93 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942 (Corps of Engineers bench mark). Prior to May 7, 1955, water-stage recorder at site 500 ft downstream at same datum.

Average discharge.--8 years (1949-57), 128 cfs (92,670 acre-ft per year).

Elm Fork Trinity River near Sanger, Tex.--Continued

Extremes.--1949-57: Maximum discharge, 20,800 cfs Apr. 26, 1957 (gage height, 27.45 ft); no flow at times.
Maximum stage known since at least 1903, about 31 ft at former site in 1908, from information by local residents. Flood of May 18, 1935, reached a stage of 29.7 ft at former site, from floodmarks.

Remarks.--Flow for period Oct. 1, 1956, to Apr. 20, 1957, was largely water diverted by pumping from Red River by city of Dallas for municipal use. Records furnished by city of Dallas show diversion of water by pumping from Red River into Elm Fork Trinity River was 29,820 acre-ft.
At the end of 1957, the flow from 39.9 sq mi above this station was partly controlled by 16 floodwater-detention reservoirs (constructed during the period 1954-57) with a total combined capacity of 14,090 acre-ft below the flood-spillway crests, of which 12,170 acre-ft is floodwater-detention capacity and 1,920 acre-ft is sediment-pool capacity. The capacity in these reservoirs allocated to sediment storage will be used for conservation storage until eliminated by sedimentation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	249	189	2.43	0.51	154	-
1950	494	21.9	15.8	112	423	31.0	40.9	593	255	208	913	939	337
1951	38.9	20.7	17.6	14.6	29.8	16.5	18.6	22.3	336	80.2	3.10	1.78	49.7
1952	4.05	4.65	2.34	2.75	6.87	29.0	163	52.2	3.02	.07	0	0	22.2
1953	0	2.87	1.10	1.72	1.62	11.1	85.5	72.2	.13	21.6	17.9	17.3	18.1
1954	84.3	72.9	15.0	55.3	38.6	65.4	46.4	158	102	60.1	60.6	63.8	68.8
1955	59.2	4.70	8.57	2.86	4.69	6.95	24.2	470	179	5.00	.38	23.7	66.4
1956	.42	.22	5.52	41.2	54.0	53.5	54.6	53.8	52.1	53.6	60.1	59.0	40.7
1957	82.7	65.6	115	77.0	116	120	1,897	1,966	526	45.5	5.92	35.1	421

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	15,330	11,260	149	32	9,190	-
1950	30,350	1,300	970	6,890	23,490	1,910	2,430	36,490	15,180	12,810	56,120	55,900	243,800
1951	2,390	1,230	1,080	897	1,660	1,010	1,110	1,370	20,000	4,930	190	106	35,970
1952	249	277	144	169	395	1,780	9,700	3,210	180	4.2	0	0	16,110
1953	0	171	68	106	90	683	5,090	4,440	7.5	1,330	110	1,030	13,130
1954	5,180	4,340	923	3,400	2,150	4,020	2,760	9,730	6,060	3,690	3,720	3,800	49,770
1955	3,640	279	527	176	260	427	1,440	28,910	10,670	308	23	1,410	48,070
1956	26	13	340	2,530	3,210	3,290	3,250	3,310	3,100	3,300	3,700	3,510	29,580
1957	5,090	3,900	7,040	4,740	6,460	7,360	112,900	120,900	31,320	2,800	364	2,090	305,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	1178	a6,960	May 17, 1949	0	-	-	-	-
1950	1178	20,100	Sept. 14, 1950	1.1	337	243,800	298	215,900
1951	1212	4,800	June 16, 1951	.7	49.7	35,970	44.1	31,940
1952	1242	2,710	Apr. 22, 1952	0	22.2	16,110	21.6	15,680
1953	1282	1,980	Apr. 6, 1953	0	18.1	13,130	32.2	23,330
1954	1342	3,530	Oct. 26, 1953	0	68.8	49,770	60.5	43,780
1955	1392	11,000	May 20, 1955	0	66.4	48,070	60.8	44,000
1956	1442	424	May 1, 1956	0	40.7	29,580	62.3	45,230
1957	1512	20,800	Apr. 26, 1957	3.0	421	305,000	-	-

a Maximum for period April to September.

98. Isle du Bois Creek near Pilot Point, Tex.

Location.--Lat 33°24'53", long 97°00'00", at bridge on county road, 1.4 miles downstream from Wolf Creek, 2.2 miles downstream from Indian Creek, 2.5 miles northwest of Pilot Point, Denton County, and 7.3 miles upstream from mouth.

Drainage area.--261 sq mi.

Gage.--Water-stage recorder. Datum of gage is 559.70 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942 (Corps of Engineers bench mark).

Average discharge.--8 years (1949-57), 99.9 cfs (72,320 acre-ft per year).

Extremes.--1949-57: Maximum discharge, 22,700 cfs Apr. 26, 1957 (gage height, 27.08 ft), from rating curve extended above 8,000 cfs on basis of measurements at site three-quarters of a mile downstream; no flow at times.
Maximum stage since at least 1900, about 29.3 ft in 1908, from information by local residents.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second, of Isle du Bois Creek near Pilot Point, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	244	82.4	0.86	0.45	12.5	-
1950	119	0.79	1.69	199	445	9.02	24.0	588	125	222	379	630	227
1951	7.49	2.56	3.10	4.66	66.0	10.2	17.3	37.8	425	85.7	.27	1.68	54.4
1952	2.55	1.93	.20	.40	7.07	25.1	246	86.2	5.75	.12	0	0	31.0
1953	0	20.1	31.1	7.32	6.53	36.9	389	262	.83	6.75	.75	1.21	63.6
1954	14.7	61.0	33.1	45.8	.50	.14	2.14	221	122	0	0	0	42.1
1955	60.3	2.50	22.1	16.0	56.6	41.1	59.3	295	89.5	.08	0	2.48	53.8
1956	.97	0	0	0	17.1	.07	2.43	30.4	.84	0	0	0	4.29
1957	0	0	18.4	.45	51.1	99.0	1,747	1,700	188	.48	0	62.8	323

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	14,990	4,900	53	27	742	-
1950	7,310	47	104	12,210	24,720	555	1,430	36,180	7,430	13,620	23,280	37,480	164,400
1951	461	152	191	287	3,660	626	1,030	2,330	25,290	5,270	17	100	39,410
1952	157	115	12	25	407	1,540	14,620	5,300	342	7.5	0	0	22,530
1953	0	1,200	1,910	450	363	2,270	23,120	16,130	49	415	46	72	46,000
1954	902	3,630	2,040	2,820	28	8.7	127	13,620	7,290	0	0	0	30,470
1955	3,710	149	1,360	986	3,140	2,520	3,530	18,110	5,320	4.8	0	148	38,980
1956	60	0	0	0	986	4.6	145	1,870	50	0	0	0	3,120
1957	0	0	1,130	28	2,840	6,080	103,900	104,500	11,170	30	0	3,730	233,400

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	1178	a5,700	May 18, 1949	0	-	-	-	-
1950	1178, 1512	17,200	Sept. 13, 1950	0	227	164,400	218	157,700
1951	1212	3,480	June 13, 1951	0	54.4	39,410	53.6	38,890
1952	1242	3,130	Apr. 23, 1952	0	31.0	22,530	34.9	25,350
1953	1282	3,570	Apr. 29, 1953	0	63.6	46,000	68.4	49,490
1954	1342	3,280	May 13, 1954	0	42.1	30,470	40.2	29,110
1955	1392	4,100	May 21, 1955	0	53.8	38,980	46.7	33,820
1956	1442	754	May 1, 1956	0	4.29	3,120	5.77	4,190
1957	1512	22,700	Apr. 26, 1957	0	323	233,400	-	-

a Maximum for period April to September.

99. Clear Creek near Sanger, Tex.

Location.--Lat 33°20', long 97°11', at bridge on U. S. Highway 77 between Denton and Sanger, 1,350 ft downstream from Duck Creek, 1.1 miles upstream from Gulf, Colorado & Santa Fe Railway bridge, and 1.8 miles south of Sanger, Denton County.

Drainage area.--296 sq mi.

Gage.--Water-stage recorder. Datum of gage is 587.23 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942 (Corps of Engineers bench mark).

Average discharge.--8 years (1949-57), 60.7 cfs (43,940 acre-ft per year).

Extremes.--1949-57: Maximum discharge, 18,200 cfs Sept. 13, 1950 (gage height, 24.80 ft); no flow at times.
Maximum stage since at least 1880, 31.5 ft in 1908, from information by Gulf, Colorado & Santa Fe Railway Co. Flood of May 1935 reached a stage of 29.0 ft, from information by State Highway Department.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	37.6	8.39	160	180	1.36	0	22.1	-
1950	157	5.54	7.83	38.4	229	23.8	46.4	344	118	74.2	64.1	672	147
1951	32.4	19.9	18.1	16.7	25.2	24.3	16.4	29.1	93.6	25.7	.003	.03	25.0
1952	2.47	1.49	.01	0	1.94	6.12	27.4	31.7	18.9	0	0	0	7.49
1953	0	.78	.33	0	0	9.77	38.3	52.3	.07	4.20	0	.91	8.95
1954	63.9	13.0	8.44	17.4	4.71	.84	1.42	29.2	40.2	0	0	0	15.0
1955	0	0	0	0	0	0	2.94	234	191	.28	0	11.3	36.8
1956	0	0	0	0	0	0	0	1.53	0	0	0	0	.13
1957	0	0	3.01	0	6.32	5.91	1,187	1,260	445	5.35	.59	27.7	245

Monthly and yearly runoff, in acre-feet, of Clear Creek near Sanger, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	2,310	499	9,830	10,720	84	0	1,320	-
1950	9,680	330	482	2,360	12,740	1,470	2,760	21,140	7,010	4,560	3,940	39,980	106,500
1951	1,990	1,190	1,110	1,030	1,400	1,490	975	1,790	5,570	1,580	.2	1.8	18,130
1952	152	88	5.8	0	112	376	1,630	1,950	1,120	0	0	0	5,430
1953	0	47	20	0	0	601	2,280	3,220	4.4	258	0	54	6,480
1954	3,930	777	519	1,070	262	52	84	1,790	2,390	0	0	0	10,870
1955	0	0	0	0	0	0	175	14,390	11,390	17	0	670	26,640
1956	0	0	0	0	0	0	0	94	0	0	0	0	94
1957	0	0	185	0	351	364	70,650	77,490	26,470	329	36	1,650	117,500

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	1342	a6,880	May 17, June 13, 1949	0	-	-	-	-
1950	1342, 1512	18,200	Sept. 13, 1950	0	147	106,500	138	100,200
1951	1342	1,950	June 12, 1951	0	25.0	18,130	19.5	14,080
1952	1342	1,710	Apr. 22, 1952	0	7.49	5,430	7.24	5,260
1953	1342	2,510	May 16, 1953	0	8.95	6,480	16.1	11,640
1954	1342	5,250	Oct. 26, 1953	0	15.0	10,870	7.81	5,650
1955	1392	11,000	May 19, 1955	0	36.8	26,640	36.8	26,640
1956	1442	224	May 2, 1956	0	.13	94	.38	279
1957	1512	16,100	May 25, 1957	0	245	177,500	-	-

a Maximum during period March to September.

100. Elm Fork Trinity River near Denton, Tex.

Location.--Lat 33°15', long 97°03', at Texas & Pacific Railway bridge, 1 mile downstream from mouth of Clear Creek, and six miles northeast of Denton, Denton County.

Drainage area.--1,076 sq mi.

Gage.--Chain gage. Datum of gage is 500.62 ft above mean sea level, datum of 1929.

Extremes.--1924-27: Maximum discharge, 8,330 cfs Mar. 20, 1924 (gage height, 29.05 ft); no flow at times. Flood of 1908 reached a stage of 31.53 ft, from information by local residents, discharge about 11,000 cfs.

Remarks.--No diversion above station except that immediately upstream by railway pumping plant (about 100,000 gallons a day). Station discontinued in water year 1927 because of backwater from Garza Dam (Lake Dallas).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	716	126	94.0	1,480	657	288	35.6	17.8	6.96	2.92	-
1925	2.52	0.83	18.4	5.74	5.74	3.53	379	337	4.07	.76	20.3	117	74.5
1926	143	24.8	1.33	220	11.5	101	550	879	498	1,340	409	44.9	355
1927	157	29.9	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	44,000	7,770	5,400	91,200	39,100	17,700	2,120	1,090	428	174	-
1925	155	49	1,130	353	319	217	22,500	20,700	242	47	1,250	6,940	53,900
1926	8,820	1,470	82	13,500	637	6,220	32,700	54,000	29,600	82,400	25,100	2,670	257,000
1927	9,660	1,780	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	8,330	Mar. 20, 1924	0	-	-	229	166,000
1925	608	7,380	Apr. 17, 1925	0	74.5	53,900	87.0	62,900
1926	628	7,620	June 1, 1926	.6	355	257,000	-	-
1927	648	-	-	-	-	-	-	-

101. Lake Dallas near Lake Dallas, Tex.

Location.--Lat 33°07', long 96°59', at Garza Dam on Elm Fork Trinity River, 1.6 miles upstream from Little Elm Creek, 2.0 miles southeast of town of Lake Dallas, Denton County, and 9.4 miles upstream from Garza-Little Elm Dam.

Drainage area.--1,165 sq mi.

Gage.--Water-stage recorder. Datum of gage is 0.08 ft above mean sea level, datum of 1929. Prior to Jan. 6, 1943, staff gages at several sites in vicinity of present gage at same datum.

Lake Dallas near Lake Dallas, Tex.--Continued

Extremes.--1928-57: Maximum contents not determined; maximum gage height, 535.3 ft June 1, 2, 1957 (backwater from Garza-Little Elm Reservoir); minimum contents observed, 19,200 acre-ft Nov. 28, 1952 (gage height, 503.2 ft).

Remarks.--Lake is formed by hydraulic-fill earth dam, consisting of 567 ft of concrete service spillway and two dikes. There are two emergency earthen spillways beyond right end of dam. Dam completed in November 1927 and official storage began Feb. 16, 1928, although there was considerable storage in the reservoir as early as January 1927. Capacity below gage height 525.0 ft (crest of service spillway) was 194,000 acre-ft by table used December 1928 to September 30, 1951, computed on basis of survey in 1924; and 156,600 acre-ft by table used after Oct. 1, 1951, computed on basis of survey in 1952. No adjustment made in records herewith for decrease in capacity due to sedimentation. Water can be withdrawn through one 6-inch gate and one 18-inch gate (gage height of gate sills, 474.0 ft) and four 48-inch outlet gates (gage height of gate sills, 463.0 ft). Dead storage is negligible. Water is used by city of Dallas for municipal supply. Figures herein represent total contents. Since Feb. 1, 1954, the city of Dallas has at times operated six pumps (total capacity, about 120 cfs) to divert water from Red River into Lake Dallas. See records for Elm Fork Trinity River near Sanger.

Garza Dam is within the conservation pool formed by Garza-Little Elm Dam (gates closed Nov. 1, 1954). Contents of each reservoir published as separate pools except for period May 21 to July 17, 1957, when spillway of Garza Dam was submerged by impoundment in Garza-Little Elm Reservoir, for which period the contents of the two pools are combined and published as Garza-Little Elm Reservoir near Lewisville. (See elsewhere in this report.) Garza Dam was breached Oct. 28, 1957, to form one reservoir above Garza-Little Elm Dam.

Cooperation.--Capacity table used prior to Oct. 1, 1951, furnished by city of Dallas. Capacity table used since Oct. 1, 1951, based on 1952 and former surveys, furnished by Corps of Engineers.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1929	-	-	141,200	150,200	151,200	153,200	143,200	196,200	173,200	169,200	158,200	163,200	-
1930	133,600	131,800	107,600	95,800	96,600	101,600	102,400	146,200	147,200	136,500	128,200	122,800	- 40,400
1931	149,200	144,200	137,400	124,600	147,200	118,600	116,000	119,400	114,400	108,400	102,400	90,500	- 32,300
1932	104,200	99,900	112,600	183,000	185,200	128,200	112,600	114,400	129,100	128,200	116,000	105,000	+ 14,500
1933	92,000	76,500	90,500	117,800	110,100	113,500	128,200	172,200	131,800	115,200	104,200	82,800	- 22,200
1934	63,300	51,300	46,700	47,700	55,000	100,800	121,200	132,700	118,600	105,800	94,200	87,700	+ 4,900
1935	79,300	82,800	76,500	82,100	80,000	103,300	107,600	192,900	166,200	156,200	124,600	118,600	+ 30,900
1936	119,400	122,000	131,800	113,500	104,200	101,600	96,600	135,600	124,600	113,500	100,800	212,700	+ 94,100
1937	197,300	140,300	153,200	153,200	145,200	155,200	156,200	145,200	155,200	152,200	130,900	93,500	-119,200
1938	87,700	82,800	103,300	153,200	181,900	238,500	132,700	128,200	126,400	115,200	82,100	67,200	- 26,300
1939	60,200	56,000	52,400	51,300	53,400	90,500	130,000	126,400	129,100	113,500	99,000	85,600	+ 18,400
1940	75,100	62,200	57,000	51,800	48,200	42,500	75,800	126,400	183,000	183,000	173,200	157,200	+ 71,600
1941	146,200	181,900	155,200	126,400	183,000	148,200	188,500	162,200	194,000	175,400	172,200	157,200	0
1942	192,900	173,200	174,300	166,200	160,200	158,200	202,800	173,200	172,200	152,200	130,900	115,200	- 42,000
1943	113,500	115,200	116,000	102,400	86,300	135,600	130,900	171,200	144,200	128,200	107,600	95,000	- 20,200
1944	90,500	82,800	86,300	90,500	189,600	171,200	175,400	191,800	160,200	140,300	124,600	106,700	+ 9,300
1945	97,400	105,800	132,700	143,200	178,600	210,500	178,600	167,200	177,500	169,200	151,200	170,200	+ 63,500
1946	158,200	148,200	134,600	154,200	169,200	157,200	148,200	253,600	166,200	148,200	129,100	112,600	- 57,600
1947	92,000	139,400	151,200	131,800	116,900	112,600	132,700	188,500	191,800	162,200	133,600	107,600	- 5,000
1948	89,100	77,900	146,200	171,200	211,600	154,200	147,200	187,400	172,200	164,200	129,100	93,500	- 14,100
1949	73,000	61,200	52,360	55,480	81,400	99,050	95,800	162,200	186,300	169,200	155,200	156,200	+ 62,700
1950	192,900	166,200	161,200	175,400	177,500	160,200	166,200	184,100	181,900	198,400	211,600	177,500	+ 21,300
1951	156,200	142,200	134,600	132,700	138,400	135,600	130,900	130,000	185,200	166,200	138,400	116,900	- 60,600
1952	73,350	66,270	58,950	53,440	49,800	47,270	80,050	87,750	76,600	60,150	42,000	28,240	- 57,410
1953	20,730	21,770	22,040	21,770	20,220	22,850	68,190	101,800	88,500	78,650	66,910	57,180	+ 28,940
1954	58,950	67,550	68,190	74,650	72,700	69,470	69,470	93,000	97,700	83,550	69,470	60,150	+ 2,970
1955	61,950	58,350	57,750	57,750	61,950	63,150	64,350	106,000	123,200	101,800	81,450	71,400	+ 11,250
1956	59,550	49,280	43,910	42,000	44,870	45,830	47,760	55,020	50,840	40,120	29,600	21,510	- 49,890
1957	20,730	22,310	28,920	34,320	42,470	57,180	198,700	-	-	142,000	84,950	71,400	+ 49,890

Note.--Prior to Jan. 6, 1943, contents determined at 7 a.m. and since that at 12 p.m.

102. Little Elm Creek near Aubrey, Tex.

Location.--Lat 33°17', long 96°54', at bridge on Farm Road 1385, 1 mile upstream from Mustang Creek, 5.5 miles east of Aubrey, Denton County, and 18 miles upstream from Garza-Little Elm Dam.

Drainage area.--75.5 sq mi.

Gage.--Water-stage recorder. Datum of gage is 534.76 ft above mean sea level, State Highway Department bench mark.

Extremes.--1956-57: Maximum discharge, 7,830 cfs Apr. 26, 1957 (gage height, 17.34 ft); no flow at times.
Maximum stage since about 1900, 18.2 ft in May 1941, from information by local residents.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	-	-	-	-	-	0	0	0	-
1957	0	0.16	7.89	0.51	20.1	46.6	655	701	11.0	1.03	0	12.1	122

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	-	-	-	-	-	0	0	0	-
1957	0	9.5	485	31	1,110	2,860	38,960	43,080	657	63	0	717	87,970

Yearly discharge, in cubic feet per second, of Little Elm Creek near Aubrey, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1956	1512	-	-	-	-	-	-	-
1957	1512	7,830	Apr. 26, 1957	0	122	87,970	-	-

103. Garza-Little Elm Reservoir near Lewisville, Tex.

Location. --Lat 33°04', long 96°58', at Lewisville Dam on Elm Fork Trinity River, 2 miles upstream from bridge on State Highway 121, 2.4 miles northeast of Lewisville, Denton County, 9.4 miles downstream from Garza Dam, and 12 miles upstream from Denton Creek.

Drainage area. --1,658 sq mi.

Gage. --Water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Prior to May 17, 1955, staff gage at site 4,000 ft upstream at same datum.

Extremes. --1954-57: Maximum contents, 1,146,000 acre-ft June 3, 1957 (elevation, 535.57 ft); minimum since appreciable storage began, 1,260 acre-ft Sept. 20, 1956 (elevation, 459.60 ft).

Remarks. --Reservoir is formed by a rolled earth-fill dam, 32,888 ft long, including a 560-foot uncontrolled off-channel concrete gravity spillway having an ogee weir section. Spillway capacity, 216,800 cfs at elevation 553.0 ft, maximum design level. Outlet works consist of a 16-foot diameter concrete conduit controlled by three 6.5- by 13-foot broome-type gates and two 60-inch steel pipes controlled by service valves. Deliberate impoundment of water began Nov. 1, 1954, and main dam was completed August 1955.

Elevations of various features of the dam and reservoir are as follows:

	Elevation (feet)	Capacity (acre-feet)
Spillway crest	532.0	1,002,900
Top of conservation storage	515.0	482,000
Inverts of lowest intakes to wet wells	481.0	48,870
Invert of three 6.5- by 13-foot broome-type gates	448.0	238

Figures given herein represent total contents and are for the portion of the pool downstream from Lake Dallas except for the period May 21 to July 17, 1957, when Lake Dallas was submerged by impoundment in Garza-Little Elm Reservoir and the contents of the two pools were combined.

Reservoir built for flood control and water conservation. For diversion from Red River see Elm Fork Trinity River near Sanger, elsewhere in this report.

Cooperation. --Records furnished by Corps of Engineers and reviewed by Geological Survey.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1955	-	770	1,090	1,240	10,140	12,020	13,000	23,050	31,290	30,830	32,200	32,610	+ 32,278
1956	32,200	32,320	31,460	31,370	35,150	28,160	20,610	20,480	8,010	2,170	1,960	1,860	- 30,750
1957	2,700	4,630	6,430	1,520	9,510	16,760	465,500	1,112,000	907,500	507,300	414,700	413,400	+411,540

104. Elm Fork Trinity River near Lewisville, Tex.

Location. --Lat 33°02'45", long 96°57'40", at bridge on State Highway 121, 1.8 miles east of Lewisville, Denton County, 1.9 miles downstream from Garza-Little Elm Reservoir, and 8.3 miles upstream from Denton Creek.

Drainage area. --1,671 sq mi.

Gage. --Water-stage recorder. Datum of gage is 432.39 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark). Prior to Jan. 6, 1950, wire-weight gage, 0.6 mile upstream at datum 3.26 ft lower.

Average discharge. --8 years (1949-57), 447 cfs (323,600 acre-ft per year), unadjusted.

Extremes. --1949-57: Maximum discharge, 21,700 cfs Sept. 15, 1950 (gage height, 30.75 ft); minimum daily, 0.8 cfs Jan. 19, 1955. Maximum stage known since at least 1907, 33.8 ft in 1908, present site and datum, from floodmarks.

Remarks. --Flow largely regulated by Lake Dallas and Garza-Little Elm Reservoir. (See elsewhere in this report.) For diversions from Red River into Trinity River by city of Dallas see "Remarks" paragraph for Elm Fork Trinity River near Sanger.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	266	161	929	379	167	139	171	-
1950	727	409	105	1,182	2,510	383	217	3,084	1,122	502	1,011	3,912	1,252
1951	403	213	130	71.9	105	75.4	105	122	1,079	452	307	266	277
1952	199	102	111	81.2	76.4	92.9	462	224	146	173	229	180	173
1953	106	62.5	58.6	45.5	43.7	60.2	540	439	119	123	143	123	156
1954	122	90.5	76.8	108	66.5	88.5	108	341	179	217	212	182	150
1955	170	37.4	35.0	15.2	23.6	37.7	44.6	96.4	109	209	200	144	94.2
1956	120	106	79.5	82.8	73.1	113	133	156	219	199	187	139	134
1957	78.2	40.7	40.2	47.7	45.6	53.7	211	3,993	5,222	3,751	2,133	367	1,341

Monthly and yearly runoff, in acre-feet, of Elm Fork Trinity River near Lewisville, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-		-	16,380	9,580	57,140	22,540	10,240	8,560	10,180	-
1950	44,680	24,330	6,440	72,680	139,400	23,560	12,920	189,600	66,750	30,870	62,140	232,800	906,200
1951	24,760	12,680	7,970	4,420	5,820	4,640	6,260	7,530	64,210	27,790	18,850	15,850	200,780
1952	12,210	6,070	6,850	4,990	4,400	5,710	27,500	13,750	8,700	10,620	14,080	10,700	125,600
1953	6,540	3,720	3,600	2,800	2,430	3,700	32,130	27,020	7,100	7,560	8,790	7,330	112,700
1954	7,520	5,380	4,720	6,670	3,700	5,440	6,410	20,950	10,650	13,310	13,020	10,830	108,600
1955	10,460	2,220	2,150	937	1,310	2,320	2,650	5,930	6,490	12,850	12,300	8,590	68,210
1956	7,390	6,320	4,890	5,090	4,210	6,930	7,900	9,610	13,060	12,210	11,490	8,280	97,380
1957	4,810	2,420	2,470	2,930	2,530	3,300	12,550	245,500	310,800	230,700	131,200	21,830	971,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	1212	13,200	May 18, 1949	a73	-	-	-	-
1950	1212	21,700	Sept. 15, 1950	100	1,252	906,200	1,210	876,130
1951	1212	6,840	June 13, 1951	70	277	200,780	249	180,500
1952	1242	6,180	Apr. 23, 1952	72	173	125,600	158	114,300
1953	1282	6,880	Apr. 29, 1953	14	156	112,700	161	116,480
1954	1342	4,600	May 13, 1954	8.2	150	108,600	146	105,800
1955	1392	874	Oct. 2, 1954	.8	94.2	68,210	99.4	71,980
1956	1442	595	May 1, 1956	40	134	97,380	122	88,480
1957	1512	11,400	May 27, 1957	20	1,341	971,000	-	-

a Minimum for period March to September.

105. Denton Creek near Justin, Tex.

Location. --Lat 33°07', long 97°18', at bridge on Farm Road 156, 100 ft upstream from Gulf, Colorado & Santa Fe Railway bridge, 2.2 miles north of Justin, Denton County, 3.0 miles upstream from Olivers Creek, 12.9 miles upstream from Harriet Creek, and 32.9 miles upstream from Grapevine Dam.

Drainage area. --409 sq mi.

Gage. --Water-stage recorder. Datum of gage is 606.66 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942.

Average discharge. --8 years (1949-57), 74.9 cfs (54,230 acre-ft per year).

Extremes. --1949-57: Maximum discharge, 29,800 cfs May 24, 1957 (gage height, 17.64 ft); no flow at times.
Maximum stage known, 21.6 ft in May 1908, which was about 1 ft higher than flood in May 1935 at site 1,500 ft upstream, from floodmarks, from information by local residents.

Remarks. --Small diversions above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	136	8.01	6.77	29.4	249	20.1	92.6	495	157	438	53.3	473	179
1951	21.1	12.6	14.8	16.3	28.2	25.2	18.9	36.0	220	65.7	.01	.03	38.0
1952	0	0	0	.97	1.54	5.04	24.5	28.9	17.4	0	0	0	6.52
1953	0	0	0	0	0	0	18.9	60.9	0	16.0	6.34	0	8.63
1954	72.9	21.7	16.3	27.9	5.86	1.71	1.00	45.0	51.2	0	0	0	20.4
1955	0	0	0	0	0	0	0	45.3	57.9	0	0	0	8.61
1956	0	0	0	0	0	0	39.6	26.1	0	.56	1.58	.57	2.77
1957	1.43	.23	11.7	0	16.2	10.7	1,612	1,754	605	7.61	.08	1.95	335

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	8,340	477	416	1,800	13,830	1,240	5,510	30,460	9,330	26,910	3,280	28,160	129,800
1951	1,300	750	910	1,000	1,570	1,550	1,120	2,210	13,080	4,040	.4	1.8	27,530
1952	0	0	0	60	88	310	1,460	1,780	1,040	0	0	0	4,740
1953	0	0	0	0	0	0	1,130	3,750	0	985	390	0	6,260
1954	4,490	1,290	1,000	1,710	325	105	60	2,770	3,050	0	0	0	14,800
1955	0	0	0	0	0	0	0	2,780	3,450	0	0	0	6,230
1956	0	0	0	0	0	0	235	1,600	0	34	97	34	2,000
1957	88	14	719	0	898	657	95,940	107,900	36,000	468	5.2	116	242,800

Yearly discharge, in cubic feet per second, of Denton Creek near Justin, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1950	1212	6,210	May 1, 1950	0	179	129,800	171	123,500
1951	1212	3,140	June 12, 1951	0	38.0	27,530	33.9	24,570
1952	1242	872	Apr. 22, 1952	0	6.52	4,740	6.52	4,740
1953	1282	1,230	May 16, 1953	0	8.63	6,260	18.0	13,040
1954	1342	1,120	Oct. 26, 1953	0	20.4	14,800	11.1	8,020
1955	1392	839	May 20, 1955	0	8.61	6,230	8.61	6,230
1956	1442	2,260	May 1, 1956	0	2.77	2,000	3.89	2,820
1957	1512	29,800	May 24, 1957	0	335	242,800	-	-

106. Denton Creek near Roanoke, Tex.

Location. --Lat 33°02', long 97°12', 1,100 ft downstream from bridge on U. S. Highway 377, 1,200 ft downstream from Texas & Pacific Railway bridge, 2.5 miles northeast of Roanoke, Denton County, and 8.5 miles downstream from Olivers Creek.

Drainage area. --621 sq mi.

Gage. --Water-stage recorder. Datum of gage is 523.55 ft above mean sea level, datum of 1929. Oct. 12, 1923, to Dec. 31, 1927, chain gage at site 340 ft downstream and at same datum.

Average discharge. --20 years (1923-27, 1939-55), 167 cfs (120,900 acre-ft per year).

Extremes. --1923-27, 1939-55: Maximum discharge, 49,700 cfs Apr. 20, 1942 (gage height, 30.20 ft), from rating curve extended above 32,000 cfs on basis of velocity-area studies; no flow at times.
Maximum stage known, 31 ft in May 1908, from floodmarks pointed out by local residents.

Remarks. --Small diversions above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	75.9	185	571	54.5	40.0	519	204	113	22.5	3.93	3.13	0.03	150
1925	0	1.95	.19	.76	2.04	1.92	113	239	1.67	1.28	2.33	0	30.6
1926	32.6	3.26	0	51.5	1.48	150	197	162	245	178	93.9	34.0	96.3
1927	24.8	1.83	123	121	193	406	701	64.8	16.6	44.6	16.8	8.63	143
1928	48.0	.69	85.6	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	47.7	196	27.4	7.14	6.23	0	0	-
1940	0	0	0	0	0	2.84	53.9	155	307	637	102	.08	106
1941	0	365	666	126	524	187	592	219	2,095	58.1	63.9	9.43	404
1942	558	179	144	65.2	55.6	81.8	3,931	1,013	821	32.3	21.9	74.1	578
1943	129	86.6	40.5	26.0	30.8	481	123	579	182	4.89	.01	1.31	142
1944	4.08	.03	5.23	18.0	497	242	315	624	61.1	5.41	14.3	22.0	149
1945	13.2	49.0	95.8	96.1	1,351	1,273	773	100	100	246	6.54	64.4	340
1946	272	30.4	28.5	307	580	215	89.1	482	489	18.6	5.02	27.9	210
1947	1.38	383	485	97.1	47.2	126	279	251	29.6	.97	0	.02	142
1948	.97	3.11	269	206	794	169	41.0	53.6	26.0	32.0	0	0	131
1949	0	0	0	.02	25.9	120	18.9	730	314	13.6	1.38	33.1	106
1950	312	10.8	9.22	85.4	320	39.0	208	1,034	252	728	78.8	503	299
1951	28.4	16.3	19.2	18.3	32.2	30.3	21.3	40.8	314	109	.04	3.39	52.5
1952	.20	.03	.38	.06	1.28	3.88	135	101	44.8	0	0	0	23.8
1953	0	0	.17	.07	0	2.10	106	193	.18	12.5	2.62	.10	26.6
1954	139	45.8	22.7	33.1	12.5	3.79	12.2	57.8	54.4	0	0	0	32.0
1955	0	0	0	0	.04	2.24	.56	88.9	101	.96	0	12.0	171

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	4,670	11,030	35,100	3,350	2,300	31,890	12,140	6,950	1,340	242	192	2.0	109,200
1925	0	116	12	47	113	118	6,720	14,690	100	79	143	0	22,140
1926	2,000	194	0	3,170	82	9,230	11,740	9,970	14,590	10,970	5,770	2,020	69,740
1927	1,530	109	7,590	7,410	10,720	24,970	41,720	3,980	986	2,740	1,030	514	103,300
1928	2,950	41	5,260	-	-	-	-	-	-	-	-	-	-
1939	-	-	-	-	-	2,930	11,690	1,690	425	383	0	0	-
1940	0	0	0	0	0	175	3,210	9,550	18,260	39,170	6,240	5.0	76,610
1941	0	21,750	40,970	7,720	29,080	11,490	35,250	13,490	124,600	3,570	3,930	561	292,400
1942	34,290	10,630	8,840	4,010	3,090	5,030	233,900	62,270	48,840	1,980	1,340	4,410	418,600
1943	7,960	5,150	2,490	1,600	1,710	29,560	7,320	35,580	10,830	301	.8	78	102,600
1944	251	1.6	321	1,110	28,590	14,860	18,770	38,340	3,640	333	881	1,310	108,400
1945	815	2,920	5,890	5,910	75,020	78,270	45,970	6,150	5,950	15,150	402	3,830	246,300
1946	16,720	1,810	1,750	18,890	32,240	13,240	5,300	29,630	29,110	1,140	309	1,660	151,800
1947	85	22,780	29,850	5,970	2,620	7,770	16,610	15,450	1,760	60	0	1.2	103,000
1948	60	185	16,560	12,670	45,700	10,400	2,440	3,290	1,550	1,970	0	0	94,820
1949	0	0	0	1.4	1,440	7,400	1,120	44,870	18,660	838	85	1,970	76,380
1950	19,200	644	567	5,250	17,790	2,400	12,390	63,580	14,980	44,760	4,840	29,950	216,400

Monthly and yearly runoff, in acre-feet, of Denton Creek near Roanoke, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	1,750	972	1,180	1,130	1,790	1,860	1,270	2,510	18,680	6,690	2.6	202	38,040
1952	12	1.8	23	3.6	74	239	8,030	6,230	2,670	0	0	0	17,280
1953	0	0	11	4.2	0	129	6,310	11,860	11	768	161	6.1	19,260
1954	8,560	2,730	1,400	2,030	696	233	729	3,550	3,240	0	0	0	23,170
1955	0	0	0	0	2.4	138	34	5,460	5,990	59	0	716	12,400

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	9,700	Dec. 12, 1923	0	150	109,200	80.6	58,530
1925	608	6,950	May 9, 1925	0	30.6	22,140	33.4	24,200
1926	628	7,650	Mar. 21, 1926	0	96.3	69,740	106	76,770
1927	648	4,980	Apr. 19, 1927	0	143	103,300	141	102,300
1939	898	a8,000	Apr. 16, 1939	0	-	-	-	-
1940	898	10,500	July 3, 1940	0	106	76,610	192	139,300
1941	928	39,300	June 11, 1941	0	404	292,400	392	283,500
1942	958	49,700	Apr. 20, 1942	6.0	578	418,600	526	380,500
1943	978	19,200	May 10, 1943	0	142	102,600	121	87,550
1944	1008	9,300	Feb. 28, 1944	0	149	108,400	162	117,500
1945	1038	23,200	Feb. 21, 1945	0	340	246,300	355	256,900
1946	1058	10,000	Feb. 18, 1946	0	210	151,800	254	184,200
1947	1088	7,800	Nov. 6, Dec. 11, 1946	0	142	103,000	92.6	67,050
1948	1118	16,300	Feb. 25, 1948	0	131	94,820	107	78,020
1949	1148	20,000	May 17, 1949	0	106	76,380	134	96,800
1950	1178	16,600	May 2, 1950	.2	299	216,400	276	199,800
1951	1212	3,920	June 14, 1951	0	52.5	38,040	47.2	34,170
1952	1242	4,060	Apr. 22, 1952	0	23.8	17,280	23.8	17,260
1953	1282	6,830	May 15, 1953	0	26.6	19,260	44.1	31,940
1954	1342	3,570	Oct. 26, 1953	0	32.0	23,170	14.5	10,480
1955	1392	1,600	June 19, 1955	0	17.1	12,400	-	-

a Maximum for period March to September.

107. Grapevine Reservoir near Grapevine, Tex.

Location.--Lat 32°58', long 97°03', at Grapevine Dam on Denton Creek, 2.7 miles northeast of Grapevine, Tarrant County, 4.3 miles upstream from bridge on State Highway 121, and 11.7 miles upstream from mouth of Denton Creek.

Drainage area.--694 sq mi.

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Prior to May 16, 1953, staff gage at site 1,000 ft upstream at present datum.

Extremes.--1952-57: Maximum contents, 445,800 acre-ft June 6, 1957 (elevation, 560.80 ft); minimum since appreciable storage began, 14,120 acre-ft Dec. 18, 1956 (elevation, 494.84 ft).

Remarks.--Reservoir is formed by a rolled earth-fill dam, 12,850 ft long, including a 500-foot uncontrolled off-channel concrete gravity spillway having an ogee weir section. Spillway capacity, 182,500 cfs at elevation 581.0 ft, maximum design level. Dam completed June 1952 and deliberate impoundment of water began July 3, 1952. Figures given herein represent total content. Reservoir built for flood control, navigation, and water conservation.

Various features of the dam and reservoir are as follows:

	Elevation (feet)	Capacity (acre-feet)
Spillway crest	560.0	435,500
Top of conservation storage	535.0	188,600
Inverts of lowest intakes to wet wells	500.5	24,750
Invert of two 6.5- by 13-foot broome-type gates	475.0	832

Cooperation.--Records furnished by Corps of Engineers and reviewed by Geological Survey.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1952	-	-	-	-	-	-	-	-	-	832	832	676	-
1953	573	1,180	1,370	1,320	1,360	1,760	11,820	24,600	22,790	22,230	21,120	20,290	+ 19,610
1954	28,450	30,680	31,250	33,410	33,550	32,980	33,820	37,930	38,560	36,260	34,180	33,190	+ 12,900
1955	32,680	29,830	26,830	23,300	20,980	18,570	15,060	21,620	27,820	26,180	24,860	24,900	- 8,290
1956	23,930	23,190	22,770	22,690	25,770	25,010	25,170	32,360	30,520	25,570	20,840	18,010	- 6,890
1957	15,990	14,810	15,290	15,290	16,420	17,860	180,600	390,700	392,900	291,100	188,400	184,200	+166,190

108. Denton Creek near Grapevine, Tex.

Location. --Lat 32°59'15", long 97°00'45", at bridge on State Highway 121, 1.3 miles downstream from Bakers Branch, 4.3 miles downstream from Grapevine Dam, 5.0 miles northeast of Grapevine, Tarrant County, and 6.1 miles upstream from mouth.

Drainage area. --694 sq mi.

Gage. --Water-stage recorder. Datum of gage is 439.11 ft above mean sea level, datum of 1929.

Average discharge. --10 years (1947-57), 113 cfs (81,810 acre-ft per year).

Extremes. --1947-57: Maximum discharge, 13,900 cfs Feb. 26, 1948 (gage height, 30.38 ft), from rating curve extended above 6,000 cfs by conveyance-slope method; no flow at times.
Maximum stage known occurred in May 1908 and was slightly higher than the flood of April 1942, which reached a stage of 35.9 ft, from floodmarks, from information by local resident.

Remarks. --Flow regulated by Grapevine Reservoir (capacity, 435,500 acre-ft) since July 1951.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	1.48	3.65	242	237	835	199	48.8	60.0	30.1	41.0	0	0	139
1949	0	0	0	9.00	91.2	170	29.1	870	510	12.5	3.19	39.5	145
1950	421	15.8	13.9	171	455	55.4	242	1,143	238	735	80.5	512	340
1951	32.8	19.8	22.9	21.0	36.5	28.9	25.1	48.3	389	111	.56	4.53	61.4
1952	0	0	0	.19	.43	.08	121	42.1	20.7	0	.16	0	15.3
1953	0	4.50	1.38	0	0	1.04	16.1	3.39	0	0	0	0	2.19
1954	0	.02	0	0	0	0	.67	2.14	20.0	0	0	0	1.88
1955	.84	34.6	44.1	54.2	49.6	50.3	50.9	24.2	14.5	.79	.20	0	26.9
1956	0	0	0	0	.40	.18	.29	5.35	.01	44.4	51.3	26.1	10.8
1957	29.8	18.9	12.7	.42	5.69	4.22	83.7	296	955	1,585	1,551	44.7	387

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	91	217	14,880	14,540	48,050	12,230	2,900	3,690	1,790	2,520	0	0	100,900
1949	0	0	0	553	5,070	10,460	1,730	53,510	30,340	766	196	2,350	105,000
1950	25,870	937	855	10,490	25,290	3,410	14,380	70,250	14,180	45,200	4,950	30,440	246,300
1951	2,020	1,180	1,410	1,290	2,030	1,780	1,490	2,970	23,150	6,850	35	270	44,480
1952	0	0	0	12	25	4.8	7,220	2,590	1,230	0	9.9	0	11,090
1953	0	268	85	0	0	64	958	209	0	0	0	0	1,580
1954	0	1.4	0	0	0	0	40	131	1,190	0	0	0	1,360
1955	52	2,060	2,710	3,330	2,760	3,090	3,030	1,490	862	49	12	0	19,440
1956	0	0	0	0	23	11	17	329	.4	2,730	3,160	1,550	7,820
1957	1,830	1,120	780	26	316	259	4,980	18,210	56,820	97,430	95,390	2,660	279,800

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1948	1118	13,900	Feb. 26, 1948	0	139	100,900	118	85,720
1949	1148	11,000	May 17, 1949	0	145	105,000	183	132,600
1950	1178	10,100	May 2, 1950	.4	340	246,300	308	223,200
1951	1212	3,540	June 15, 1951	0	61.4	44,480	55.1	39,860
1952	1242	1,460	Apr. 23, 1952	0	15.3	11,090	15.8	11,440
1953	1282	1,340	Apr. 28, 1953	0	2.19	1,580	1.70	1,230
1954	1342	771	June 15, 1954	0	1.88	1,360	8.54	6,180
1955	1392	606	May 18, 1955	0	26.9	19,440	20.2	14,620
1956	1442	508	May 1, 1956	0	10.8	7,820	15.9	11,550
1957	1512	2,400	May 19, 1957	.3	387	279,800	-	-

109. Elm Fork Trinity River near Carrollton, Tex. 1/

Location. --Lat 32°57'55", long 96°56'40", at bridge on county road, 40 ft upstream from Carrollton Dam, 0.3 mile downstream from Denton Creek, 1 mile upstream from St. Louis Southwestern Railway bridge, and 2.3 miles northwest of Carrollton, Dallas County.

Drainage area. --2,457 sq mi; at site 8.5 miles downstream 2,534 sq mi; at site 15.5 miles downstream 2,577 sq mi.

Supplemental records available. --Records of yearly diversions for period October 1951 to September 1957 by city of Dallas are published in reports of Geological Survey.

Gage. --Water-stage recorder and concrete dam control. Datum of gage is 433.40 ft above mean sea level, datum of 1929. Prior to November 1923, staff gage at site 15.5 miles downstream at different datum. Nov. 1, 1923, to Nov. 13, 1934, staff gage, and Nov. 14, 1934, to July 6, 1938, water-stage recorder at present site and datum. July 7, 1938, to Apr. 14, 1939, staff gage at site 9.3 miles downstream at datum 22.94 ft lower. Apr. 15, 1939, to Sept. 30, 1955, water-stage recorder at site 8.5 miles downstream at datum 22.94 ft lower.

Average discharge. --50 years (1907-57), 805 cfs (582,800 acre-ft per year).

1/ Published as "near Dallas" 1907-28 (1907 to October 1923 used herein).

Elm Fork Trinity River near Carrollton, Tex.--Continued

Extremes.--1907-57: Maximum gage height, about 28 ft May 25, 1908, at site 8.5 miles downstream at datum 22.94 ft lower, from floodmarks, furnished by State Reclamation Department (discharge not determined); maximum discharge subsequent to 1908, 90,700 cfs Apr. 26, 1942 (gage height, 21.05 ft), at site 8.5 miles downstream at datum 22.94 ft lower; no flow at times.

Remarks.--Flow largely regulated by Lake Dallas from February 1928 to November 1954, Garza-Little Elm Reservoir since November 1954, and Grapevine Reservoir since July 1952. (See elsewhere in this report.) The city of Dallas diverts water above station for municipal use.

Cooperation.--Records of yearly diversions for municipal use furnished by city of Dallas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1907	-	-	-	53.2	64.5	111	52.9	2,150	2,270	1,250	19.0	0.02	-
1908	625	666	1,040	145	1,250	688	7,670	10,100	4,030	1,190	98.5	132	2,300
1909	1,280	114	213	7.35	6.85	9.58	11.8	.99	276	15.3	0	0	163
1910	0	9.39	201	8.39	1.74	0	3.61	35.6	37.1	205	0	0	71.8
1911	0	0	0	0	.02	0	0	0	0	101	420	311	69.8
1912	5.40	0	204	0	0	404	1,390	389	459	1.03	888	3.15	312
1913	0	18.6	0	0	0	.03	54.2	325	25.7	252	2.14	50.8	61.4
1914	162	1,450	3,690	128	101	410	1,800	2,840	1,610	0	1,770	395	1,200
1915	110	230	674	367	778	1,400	2,610	2,750	3,750	401	1,330	312	1,220
1916	971	114	107	2,040	1,100	289	5,870	2,410	903	51.0	2.79	156	1,160
1917	.36	10.2	22.1	1.25	12.8	52.7	779	666	312	215	104	54.3	186
1918	.02	0	0	0	0	0	1,710	333	283	18.6	0	338	221
1919	1,290	2,480	1,990	1,980	2,180	503	2,180	1,160	495	1,970	261	108	1,380
1920	3,480	2,710	758	3,370	482	1,230	463	6,610	1,480	229	1,060	3,440	2,130
1921	1,500	651	921	1,960	2,140	953	2,770	231	767	169	26.3	2.70	998
1922	0	0	1.71	8.90	14.4	21.8	5,060	4,370	657	161	0	0	859
1923	0	121	0	81.9	406	228	600	250	3,000	40.0	.10	0	388
1924	476	858	5,070	274	210	2,960	1,220	603	111	39.2	10.7	2.45	995
1925	3.77	.67	21.4	5.62	0	0	670	1,180	11.7	0	9.30	46.2	163
1926	488	93.2	1.05	369	21.8	522	1,010	1,510	1,380	2,790	720	225	771
1927	287	29.7	773	757	1,690	2,870	2,910	1,000	357	588	30.7	29.8	939
1928	499	144	1,120	218	264	57.8	582	709	878	243	54.9	16.4	400
1929	118	131	552	416	366	307	373	4,300	1,040	50.9	42.8	217	664
1930	411	80.9	826	79.4	102	75.7	88.0	2,710	186	70.9	62.2	38.6	400
1931	480	507	1,440	348	911	1,930	797	187	224	144	116	84.3	597
1932	342	104	197	5,570	5,290	1,560	419	732	300	1,460	150	305	1,360
1933	161	202	618	515	385	2,100	327	1,540	725	392	469	388	657
1934	297	163	94.0	200	225	653	742	501	93.2	93.2	76.7	77.5	268
1935	75.1	138	74.6	198	159	197	193	9,881	3,585	338	369	339	1,307
1936	291	486	1,961	445	237	125	95.9	690	148	114	101	1,525	519
1937	2,080	1,108	296	1,317	426	498	226	182	357	118	699	495	653
1938	125	161	448	1,233	4,804	4,720	2,762	255	235	138	369	139	1,258
1939	92.2	54.3	46.5	42.0	49.8	200	917	161	151	160	142	114	177
1940	102	179	63.0	67.1	69.5	93.0	713	883	1,671	1,749	273	152	502
1941	148	1,201	3,237	878	1,133	1,213	2,575	1,449	9,901	458	246	219	1,877
1942	1,131	976	383	279	226	211	16,630	3,624	2,781	354	331	484	2,269
1943	617	264	315	231	364	1,678	794	1,600	1,164	215	196	208	640
1944	146	89.8	103	130	1,036	1,453	987	3,259	651	299	323	317	734
1945	228	266	605	357	5,767	8,494	5,092	530	1,723	1,933	271	521	2,122
1946	1,911	397	295	889	3,165	1,305	840	2,541	5,574	295	290	325	1,468
1947	254	2,770	3,270	686	356	636	791	680	928	388	422	356	964
1948	241	220	1,148	803	3,173	1,992	210	998	537	616	458	439	896
1949	245	140	112	351	840	638	224	2,609	1,620	192	149	227	611
1950	1,312	510	119	1,480	3,296	480	503	4,720	1,392	1,263	1,073	4,631	1,719
1951	458	234	169	103	176	119	132	187	1,508	596	325	288	357
1952	213	92.6	104	85.0	79.8	70.4	570	223	98.2	105	129	109	156
1953	73.8	108	84.9	61.2	49.8	89.3	557	571	63.3	91.4	101	72.2	161
1954	89.5	67.2	37.5	55.1	1.43	0	70.9	415	141	141	131	109	106
1955	140	61.9	6.65	64.5	89.3	51.6	43.5	84.7	105	122	125	68.9	80.2
1956	52.9	38.6	27.4	25.6	48.9	80.8	93.6	137	142	148	158	104	88.2
1957	48.7	4.21	4.73	.80	2.06	3.30	626	4,251	5,900	4,881	3,503	322	1,641

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1907	-	-	-	3,270	3,580	6,820	3,150	132,000	135,000	76,700	1,170	1.0	-
1908	38,500	39,700	64,000	8,900	72,100	42,300	456,000	621,000	244,000	73,100	6,050	7,840	1,670,000
1909	78,900	6,760	13,100	452	380	590	702	61	16,400	940	0	0	119,000
1910	0	559	12,300	516	97	0	21,500	2,190	2,210	12,600	0	0	52,000
1911	0	0	0	0	1.0	0	0	0	0	6,190	25,800	18,500	50,500
1912	332	0	12,500	0	0	24,900	82,900	23,900	27,300	64	54,600	187	227,000
1913	0	1,110	0	0	0	1.9	3,230	19,900	1,530	15,500	132	3,020	44,400
1914	9,970	86,200	227,000	7,840	5,630	25,200	107,000	175,000	95,700	0	109,000	23,500	872,000
1915	6,760	13,700	41,500	22,600	43,200	86,300	155,000	169,000	223,000	24,700	81,800	18,600	886,000

Monthly and yearly runoff, in acre-feet, of Elm Fork Trinity River near Carrollton, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	59,700	6,760	6,570	125,000	63,400	17,700	349,000	148,000	53,700	3,130	171	9,280	842,000
1917	22	610	1,360	77	710	3,240	46,400	41,000	18,500	13,200	6,380	3,230	135,000
1918	1.0	0	0	0	0	0	102,000	20,500	16,800	1,140	0	20,100	161,000
1919	79,500	147,000	123,000	122,000	121,000	30,900	129,000	71,400	29,500	121,000	16,100	6,400	997,000
1920	214,000	161,000	46,600	207,000	27,700	75,500	27,500	407,000	87,900	14,100	65,400	205,000	1,540,000
1921	92,400	38,700	56,600	121,000	119,000	58,600	165,000	14,200	45,600	10,400	1,620	161	723,000
1922	0	0	105	547	800	1,340	301,000	269,000	39,100	9,900	0	0	622,000
1923	0	7,220	0	5,040	22,500	14,000	35,700	15,400	179,000	2,460	6.3	0	281,000
1924	29,300	51,000	312,000	16,900	12,500	182,000	72,300	37,100	6,620	2,410	657	146	723,000
1925	232	40	1,320	345	0	0	39,900	72,400	698	0	572	2,750	118,000
1926	30,000	5,540	64	22,700	1,210	32,100	60,200	92,900	82,400	172,000	44,300	15,200	559,000
1927	17,600	1,770	47,600	46,600	93,800	177,000	173,000	61,600	21,300	36,100	1,890	1,770	680,000
1928	30,700	8,570	68,900	13,400	15,200	3,550	34,600	43,600	52,200	14,900	3,380	976	290,000
1929	7,260	7,800	33,900	25,600	20,300	18,900	22,200	264,000	61,900	3,130	2,630	12,900	481,000
1930	25,300	4,810	50,800	4,880	5,660	4,650	5,240	167,000	11,100	4,360	3,820	2,300	290,000
1931	29,500	30,200	88,500	21,400	50,600	119,000	47,400	11,500	13,300	8,850	7,130	5,020	432,000
1932	21,000	6,190	12,100	342,000	304,000	95,900	24,900	45,000	17,900	89,800	9,220	18,100	986,000
1933	9,900	12,000	38,000	31,700	21,400	129,000	19,500	94,700	43,100	24,100	28,800	23,100	475,000
1934	18,300	9,700	5,780	12,300	12,500	40,200	44,200	30,800	5,550	5,730	4,720	4,610	194,000
1935	4,620	8,190	4,590	12,180	8,810	12,120	11,500	607,600	213,400	20,790	22,690	20,170	946,700
1936	17,910	28,890	120,600	27,360	13,600	7,710	5,710	42,450	8,790	7,010	6,200	90,730	377,000
1937	127,900	65,920	18,180	81,000	23,640	30,640	13,470	11,190	21,240	7,250	43,010	29,440	472,900
1938	7,660	9,600	27,530	75,820	266,800	290,200	164,400	15,660	13,980	8,500	22,700	8,270	911,100
1939	5,670	3,230	2,860	2,580	2,760	12,290	54,550	9,870	8,990	9,830	8,720	6,810	128,200
1940	6,260	10,630	3,880	4,120	4,000	5,720	42,410	54,290	99,410	107,500	16,770	9,030	364,000
1941	9,120	71,470	199,100	54,010	62,930	74,580	153,200	89,090	589,200	28,140	15,150	13,020	1,359,000
1942	69,530	58,080	23,540	17,170	12,540	12,950	989,500	222,800	165,500	21,750	20,360	28,830	1,643,000
1943	37,920	15,710	19,380	14,180	20,210	103,200	47,250	98,360	69,250	13,250	12,050	12,350	463,100
1944	8,970	5,340	6,310	8,000	59,570	89,360	58,760	200,400	38,720	18,400	19,870	18,870	532,600
1945	14,010	15,830	37,170	21,950	320,300	522,300	303,000	32,590	102,500	118,800	16,640	31,020	1,536,000
1946	117,500	23,600	18,130	54,640	175,800	80,260	49,990	156,200	331,600	18,160	17,820	19,320	1,063,000
1947	15,640	164,900	201,100	42,210	19,780	39,110	47,060	41,820	55,230	23,850	25,960	21,170	697,800
1948	14,810	13,070	70,600	49,350	182,500	122,500	12,530	61,380	31,940	37,860	28,150	26,120	650,800
1949	15,080	8,300	6,870	21,560	46,660	39,240	13,350	160,400	96,380	11,810	9,180	13,490	442,300
1950	80,650	30,340	7,300	91,030	183,100	29,540	29,950	290,200	82,860	77,640	65,980	275,600	1,244,000
1951	28,150	13,940	10,390	6,360	9,800	7,290	7,830	11,520	89,710	36,630	19,970	17,160	258,800
1952	13,120	5,510	6,370	5,220	4,590	4,330	33,940	13,700	5,850	6,430	7,910	6,500	113,500
1953	4,540	6,450	5,220	3,760	2,760	5,490	33,160	35,090	3,770	5,620	6,220	4,290	116,400
1954	5,500	4,000	2,310	3,390	79	0	4,220	25,500	8,390	8,690	8,060	6,520	76,660
1955	8,600	3,680	409	3,970	4,960	3,170	2,590	5,210	6,240	7,500	7,670	4,100	58,100
1956	3,250	2,300	1,680	1,570	2,810	4,970	5,570	8,410	8,470	9,100	9,720	6,160	64,010
1957	2,990	250	291	49	115	203	37,270	261,400	351,100	300,100	215,400	19,180	1,188,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1907	850	-	-	0	-	-	697	504,000
1908	850	-	-	5.0	2,300	1,670,000	2,240	1,630,000
1909	850	-	-	0	163	119,000	44.8	32,900
1910	850	-	-	0	71.8	52,000	54.0	39,100
1910	850	-	-	0	69.8	50,500	87.5	63,300
1912	850	-	-	0	312	227,000	296	215,000
1913	850	-	-	0	61.4	44,400	506	366,000
1914	850	-	-	0	1,200	872,000	844	611,000
1915	850	-	-	0	1,220	886,000	1,240	897,000
1916	850	-	-	0	1,160	842,000	1,060	771,000
1917	850	-	-	0	186	135,000	183	133,000
1918	850	-	-	0	221	161,000	704	510,000
1919	850	-	-	5.0	1,380	997,000	1,480	1,070,000
1920	850	-	-	18	2,130	1,540,000	1,800	1,304,000
1921	850	-	-	0	998	723,000	738	536,000
1922	548	-	-	0	859	622,000	869	629,000
1923	568	-	-	0	388	281,000	919	666,000
1924	588,788	a76,000	Dec. 14, 1923	-	995	723,000	458	332,000
1925	608	a12,200	May 10, 1925	0	163	118,000	210	152,000
1926	628	a8,660	July 29, 1926	0	771	559,000	812	590,000
1927	648	15,200	July 15, 1927	0	939	680,000	996	721,000
1928	668	6,190	Apr. 6, 1928	-	400	290,000	318	231,000
1929	688	a19,000	May 15, 1929	-	664	481,000	708	512,000
1930	703	a10,100	May 14, 1930	-	400	290,000	493	357,000

a Maximum observed.

Yearly discharge, in cubic feet per second, of Elm Fork Trinity River near Carrollton, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1931	718	a8,100	Dec. 5, 1930	17	597	432,000	446	323,000
1932	733	a30,600	Jan. 23, 1932	19	1,360	986,000	1,387	1,010,000
1933	748	a10,900	Mar. 6, 1933	85	657	475,000	621	449,000
1934	763	7,460	Mar. 1, 1934	64	268	194,000	246	177,900
1935	788	82,100	May 19, 1935	50	1,307	946,700	1,515	1,097,000
1936	808	16,000	Sept. 29, 1936	67	519	377,000	581	421,600
1937	828	10,500	Oct. 26, 1936	93	653	472,900	422	305,700
1938	858	56,700	Feb. 18, 1938	64	1,258	911,100	1,213	878,100
1939	898	10,700	Apr. 18, 1939	36	177	128,200	189	137,200
1940	898	8,980	June 17, 1940	50	502	364,000	858	622,900
1941	928	76,400	June 12, 1941	59	1,877	1,359,000	1,700	1,230,000
1942	958	90,700	Apr. 26, 1942	75	2,269	1,643,000	2,161	1,564,000
1943	978	18,600	Mar. 26, 1943	36	640	463,100	567	410,700
1944	1008	13,600	May 3, 1944	38	734	532,600	797	579,000
1945	1038	37,800	Feb. 22, 1945	34	2,122	1,536,000	2,249	1,628,000
1946	1058	42,800	June 2, 1946	-	1,468	1,063,000	1,776	1,285,000
1947	1088	23,000	Dec. 13, 1946	240	964	697,800	573	414,700
1948	1118	27,600	Feb. 27, 1948	165	896	650,800	803	582,600
1949	1148	23,600	May 18, 1949	67	611	442,300	733	530,400
1950	1178	22,300	May 4, 1950	87	1,719	1,244,000	1,628	1,178,000
1951	1212	6,030	June 13, 1951	80	357	258,800	319	231,300
1952	1242	5,740	Apr. 24, 1952	22	156	113,500	144	104,700
1953	1282	6,130	Apr. 30, 1953	0	161	116,400	155	113,000
1954	1342	4,370	May 14, 1954	0	106	76,660	107	77,540
1955	1392	1,180	Mar. 20, 1955	0	80.2	58,100	72.7	52,640
1956	1442	2,740	May 1, 1956	.2	88.2	64,010	83.1	60,310
1957	1512	13,700	June 5, 1957	0	1,641	1,188,000	-	-

a Maximum observed.

Note.--Only monthly and yearly means prior to October 1920 are published in W.S.P. 850 and are of doubtful accuracy; they were computed on basis of gage heights furnished by city of Dallas, and a rating defined by discharge measurements made after water year 1920.

110. Turtle Creek at Dallas, Tex.

Location.--Lat 32°48', long 96°48', on left bank, 68 ft upstream from Hall Street Dam, 210 ft upstream from Hall Street at Dallas, Dallas County, and 2.0 miles north of Dallas County Courthouse.

Drainage area.--7.98 sq mi.

Supplemental records available.--Gage-height record collected at this site April 1948 to September 1951.

Gage.--Water-stage recorder. Datum of gage is 428.15 ft above mean sea level, unadjusted (city of Dallas reference mark). Prior to Dec. 17, 1951, water-stage recorder on right bank at site 52 ft upstream at same datum.

Average discharge.--6 years (1951-57), 5.77 cfs (4,180 acre-ft per year).

Extremes.--1948-57: Maximum discharge, 3,850 cfs Apr. 26, 1957 (gage height, 7.30 ft), from rating curve extended above 1,200 cfs on basis of weir formula Q = 3.3L(H)3/2; no flow at times.

Maximum stage known since at least 1903, that of Apr. 26, 1957. Flood of Aug. 27, 1947, reached a stage of 6.8 ft, from floodmarks.

Remarks.--No large diversion upstream from station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	4.00	0.78	0.83	1.93	2.76	4.18	14.3	13.0	1.32	3.47	0.42	0.89	3.99
1953	.96	12.2	7.39	3.42	3.35	7.84	10.6	8.61	.89	.32	1.51	5.66	5.21
1954	5.41	8.02	5.37	6.96	2.75	1.81	18.2	14.3	3.77	1.09	1.85	3.47	6.09
1955	5.55	2.83	1.89	2.64	4.42	6.86	6.56	8.12	8.31	1.13	3.88	5.24	4.78
1956	.51	1.62	.44	1.72	4.31	1.98	7.22	12.1	.68	.07	.98	0	2.63
1957	1.41	3.82	2.58	2.28	1.51	11.2	57.6	51.9	4.63	.90	1.09	3.26	11.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	246	47	51	119	158	257	852	798	78	214	26	53	2,900
1953	59	724	454	210	186	482	629	529	53	19	93	337	3,780
1954	332	477	330	428	153	111	1,090	877	224	67	114	206	4,410
1955	341	169	116	162	246	422	390	499	495	69	239	312	3,460
1956	31	96	27	106	248	122	429	742	41	4.6	60	0	1,910
1957	86	227	159	140	84	688	3,430	3,190	275	56	67	194	8,600

Yearly discharge, in cubic feet per second, of Turtle Creek at Dallas, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1952	1392	2,220	May 17, 1952	0	3.99	2,900	5.22	3,790
1953	1392	910	Apr. 23, 1953	0	5.21	3,780	5.08	3,680
1954	1392	2,980	Apr. 12, 1954	0	6.09	4,410	5.38	3,900
1955	1392	852	June 18, 1955	0	4.78	3,460	4.13	2,990
1956	1442	1,740	May 1, 1956	0	2.63	1,910	3.07	2,220
1957	1512	3,850	Apr. 26, 1957	0	11.9	8,600	-	-

111. Trinity River at Dallas, Tex.

Location. --Lat 32°47', long 96°48', at Commerce Street viaduct in Dallas, Dallas County, 5¼ miles downstream from confluence of West and Elm Forks, and at mile 500.

Drainage area. --6,120 sq mi; at site 6 miles downstream, 6,160 sq mi.

Supplemental records available. --Gage heights and discharge measurements only for the period Oct. 1, 1898, to Dec. 31, 1899, are contained in reports of Geological Survey. Gage-height records collected in this vicinity since 1903 are contained in reports of United States Weather Bureau. Records of diversions for municipal supply and releases of sewage effluent by city of Dallas for the period October 1947 to September 1957 are published in reports of Geological Survey.

Gage. --Water-stage recorder. Datum of gage is 368.02 ft above mean sea level, datum of 1929, supplementary adjustment of 1954. Oct. 1, 1898, to Dec. 31, 1899, sliding pointer at site 2 miles upstream at different datum. July 1, 1903, to July 20, 1930, chain gage at present site and datum. July 21, 1930, to Sept. 30, 1932, chain gage at site 6 miles downstream at datum 3.08 ft lower.

Average discharge. --54 years (1903-57), 1,513 cfs (1,095,000 acre-ft per year).

Extremes. --1903-57: Maximum discharge 184,000 cfs May 25, 1908 (gage height, 52.6 ft), from rating curve extended above 109,000 cfs; minimum observed for periods 1903-6, 1920-57, 1.2 cfs July 4, 1953.
Maximum stage since at least 1840, that of May 25, 1908. Flood in 1866 reached about same stage.

Remarks. --Flow largely regulated by Bridgeport Reservoir since 1932, Eagle Mountain Reservoir since 1934, Benbrook and Grapevine Reservoirs since 1952, Lake Dallas from 1928 to 1954, Garza-Little Elm Reservoir since 1954, and several smaller reservoirs, all of which have a combined capacity of 2,323,000 acre-ft. Sewage effluent from the cities of Fort Worth, Arlington, and Grand Prairie enters the river above this station. Diversions above station for municipal and other uses.

Cooperation. --Records of diversions above station for municipal supply, and return of sewage effluent below station furnished by city of Dallas.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	-	-	-	-	-	-	1,820	71.6	16.0	-
1904	1,270	106	13.2	55.8	57.0	1,250	811	974	1,600	95.8	177	154	549
1905	136	41.9	19.4	81.7	148	832	3,290	6,470	873	4,710	272	141	1,430
1906	469	1,190	1,710	512	1,740	763	1,110	6,370	3,190	1,910	2,160	1,760	1,910
1907	204	183	265	245	202	363	237	2,750	3,310	1,870	82.2	21.2	814
1908	1,230	1,040	1,530	256	1,570	882	13,600	20,700	5,360	2,220	395	360	4,100
1909	1,360	281	480	169	123	118	180	94.9	968	515	539	41.1	409
1910	56.7	86.5	796	81.5	90.7	33.7	861	797	535	761	37.5	50.3	351
1911	110	68	36	21	85.4	44.9	50.1	19.0	10.5	449	534	1,320	229
1912	35.9	16.2	578	31.0	17.4	449	1,920	436	947	41.8	1,470	30.5	497
1913	29.8	47.8	32.5	35.5	33.0	34.5	298	882	134	312	29.5	323	184
1914	909	2,080	8,660	297	214	323	4,130	6,010	2,990	80.8	2,660	1,320	2,490
1915	73.2	70.9	2,050	920	1,160	2,120	5,610	5,290	7,930	732	2,200	777	2,410
1916	1,580	209	187	3,510	1,820	539	11,300	3,960	1,420	140	65.8	262	2,070
1917	276	69.3	351	116	64.4	153	1,230	1,060	444	396	269	214	388
1918	18.3	19.0	21.6	35.1	24.1	28	2,880	868	1,230	382	40	587	508
1919	1,800	6,300	3,440	3,750	3,360	859	3,950	3,040	1,290	4,040	652	399	2,730
1920	6,800	5,160	1,680	4,990	1,260	2,480	1,140	16,300	3,150	596	1,350	4,840	4,170
1921	2,250	1,260	1,640	2,930	3,100	1,850	3,540	612	1,640	651	85.0	29.4	1,620
1922	41.7	41.2	28.5	42.6	54.2	55.3	10,900	9,490	1,550	272	33.1	23.9	1,880
1923	25.1	162	27.0	176	656	348	2,180	1,810	5,550	120	33.7	38.8	917
1924	1,070	2,320	6,010	422	462	4,990	2,010	1,660	451	54.9	43.1	26.5	1,640
1925	18.7	26.5	32.5	32.0	33.0	30.1	944	3,250	50.1	33.1	15.7	42.0	380
1926	692	211	26.7	935	82.4	1,250	2,660	2,170	2,070	3,320	1,820	1,430	1,400
1927	609	68.1	1,310	1,050	2,190	4,610	5,790	1,840	627	870	73.4	126	1,590
1928	1,520	174	1,250	316	684	181	1,850	1,230	2,520	1,150	398	37.2	941
1929	103	321	3,060	1,210	1,430	1,150	1,380	7,090	2,700	70.4	61.6	298	1,580
1930	471	93.8	906	109	160	136	263	8,500	1,110	57.3	54.5	61.4	1,010
1931	1,990	480	2,650	517	1,550	3,090	1,780	484	442	202	168	103	1,120
1932	942	432	646	10,500	9,060	2,730	791	2,160	907	3,210	194	1,920	2,780
1933	204	243	1,460	1,630	811	4,130	1,310	3,140	2,030	569	968	1,000	1,470
1934	299	253	243	432	349	1,260	1,380	672	91.3	97.4	79.3	111	440
1935	68.2	178	85.0	347	297	285	264	13,130	6,124	1,241	789	501	1,958
1936	441	570	2,284	735	282	141	99.6	1,589	692	182	56.6	2,384	789
1937	3,677	1,774	461	1,734	634	1,287	428	213	788	100	708	647	1,042
1938	336	404	1,327	3,839	8,396	5,404	5,958	701	372	281	471	148	2,260
1939	186	101	53.0	268	126	316	1,108	364	322	142	145	95.5	269
1940	87.6	163	62.7	62.4	76.9	79.5	926	1,542	3,368	3,496	374	140	866

Monthly and yearly mean discharge, in cubic feet per second, of Trinity River at Dallas, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	138	2,132	6,081	1,839	4,159	2,349	4,475	4,127	17,390	4,204	1,269	711	4,054
1942	2,829	2,383	942	1,029	578	633	27,050	10,880	6,439	1,573	662	1,365	4,680
1943	2,328	1,223	589	336	483	2,532	1,797	2,747	2,395	221	176	402	1,273
1944	178	96.2	133	203	1,484	2,681	1,348	6,532	1,115	387	360	560	1,260
1945	369	392	1,020	827	9,220	14,910	10,100	1,651	2,465	3,427	542	682	3,760
1946	2,971	863	586	1,879	5,130	2,226	1,397	4,856	6,836	329	722	498	2,334
1947	307	5,259	5,022	1,403	704	1,036	1,767	1,047	2,214	425	1,168	800	1,763
1948	490	319	2,224	1,508	4,951	3,445	359	1,326	966	960	457	432	1,444
1949	238	135	142	1,095	2,718	1,593	634	8,666	3,439	293	166	362	1,620
1950	2,123	783	233	1,994	6,377	905	1,812	8,031	1,743	2,231	2,413	5,952	2,858
1951	1,112	918	330	248	299	293	182	363	2,701	611	283	295	635
1952	235	134	131	116	154	129	852	706	141	121	88.3	99.2	241
1953	82.6	292	191	151	110	188	867	1,679	68.0	157	84.1	93.2	332
1954	208	130	105	157	90.8	79.5	207	641	148	62.0	86.6	103	169
1955	165	83.3	74.1	84.6	109	145	91.5	412	320	82.3	86.1	97.8	146
1956	77.5	58.2	70.0	79.9	116	68.2	103	524	124	51.9	50.2	52.4	115
1957	82.2	129	116	78.4	123	171	6,062	15,100	14,090	5,612	3,633	415	3,816

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	-	-	-	-	-	-	112,000	4,400	950	-
1904	77,800	6,340	811	3,430	3,280	76,900	48,300	59,900	95,500	5,890	10,900	9,140	398,000
1905	8,350	2,500	1,190	5,020	8,240	51,100	195,000	398,000	51,900	290,000	16,700	8,410	1,040,000
1906	28,800	70,600	105,000	31,500	96,900	46,900	65,800	392,000	190,000	117,000	133,000	105,000	1,380,000
1907	12,500	10,900	16,300	15,100	11,200	22,300	14,100	169,000	197,000	115,000	5,050	1,260	590,000
1908	75,600	62,000	94,000	15,700	90,200	54,200	811,000	1,270,000	319,000	136,000	24,300	21,400	2,970,000
1909	83,900	16,800	29,500	10,400	6,840	7,280	10,700	5,840	57,600	31,700	33,100	2,440	296,000
1910	3,480	5,150	48,900	5,010	5,040	2,070	51,200	49,000	31,800	46,800	2,310	3,000	254,000
1911	6,740	4,080	2,200	1,290	4,740	2,760	2,980	1,170	627	27,600	32,800	78,700	166,000
1912	2,210	964	35,500	1,910	1,000	27,600	114,000	26,800	56,400	2,570	90,100	1,810	361,000
1913	1,830	2,850	2,000	2,180	1,830	2,120	17,700	54,200	7,990	19,200	1,810	19,200	133,000
1914	55,900	124,000	532,000	18,300	11,900	19,900	246,000	369,000	178,000	4,970	163,000	78,600	1,800,000
1915	4,500	4,220	126,000	56,600	64,600	130,000	334,000	325,000	472,000	45,000	135,000	46,200	1,740,000
1916	97,200	12,400	11,500	216,000	105,000	33,100	674,000	244,000	84,600	8,640	4,050	15,600	1,510,000
1917	16,900	4,120	21,600	7,150	3,580	9,380	73,400	65,100	26,400	24,400	16,500	12,800	281,000
1918	1,120	1,130	1,330	2,160	1,340	1,730	171,000	53,400	73,100	23,500	2,460	34,900	367,000
1919	111,000	375,000	212,000	230,000	186,000	52,800	235,000	187,000	76,900	248,000	40,100	23,700	1,980,000
1920	418,000	307,000	104,000	307,000	72,300	153,000	67,900	1,000,000	188,000	36,700	83,000	288,000	3,020,000
1921	138,000	75,000	101,000	180,000	172,000	114,000	211,000	37,600	97,600	40,000	5,230	1,750	1,170,000
1922	2,560	2,450	1,750	2,620	3,010	3,400	649,000	584,000	92,200	16,700	2,040	1,420	1,360,000
1923	1,540	9,620	1,660	10,800	36,500	21,400	130,000	111,000	330,000	7,370	2,070	2,310	664,000
1924	66,000	138,000	369,000	25,900	26,600	307,000	119,000	102,000	26,800	3,380	2,650	1,580	1,190,000
1925	1,150	1,580	2,000	1,970	1,830	1,850	56,200	200,000	2,980	2,030	964	2,500	275,000
1926	42,600	12,600	1,640	57,500	4,570	76,700	158,000	134,000	123,000	204,000	112,000	84,900	1,010,000
1927	37,400	4,050	80,600	64,800	121,000	283,000	344,000	113,000	37,300	53,500	4,510	7,480	1,150,000
1928	93,500	10,400	76,900	19,400	39,300	11,100	110,000	75,600	150,000	70,700	24,500	2,210	684,000
1929	6,330	19,100	188,000	74,400	79,400	70,700	82,100	436,000	161,000	4,330	3,790	17,700	1,140,000
1930	29,000	5,580	55,700	6,700	8,890	8,360	15,600	523,000	66,000	3,520	3,350	3,650	729,000
1931	122,000	28,600	163,000	31,800	86,100	190,000	106,000	29,800	26,300	12,400	10,300	6,130	812,000
1932	57,900	25,700	39,700	646,000	521,000	168,000	47,100	133,000	54,000	197,000	11,900	114,000	2,020,000
1933	12,500	14,500	89,800	100,000	45,000	254,000	78,000	193,000	121,000	35,000	59,500	59,500	1,060,000
1934	18,400	15,100	14,900	26,600	19,400	77,500	82,100	41,300	5,430	5,990	4,880	6,600	318,000
1935	4,190	10,590	5,220	21,340	16,520	17,510	15,720	807,300	364,400	76,280	48,530	29,820	1,417,000
1936	27,120	33,950	140,500	45,190	16,200	8,660	5,920	97,680	41,190	11,180	3,480	141,900	573,000
1937	226,100	105,500	28,360	106,600	35,220	79,100	25,470	13,090	46,900	6,150	43,520	38,470	754,500
1938	20,690	24,010	81,610	236,100	466,300	332,300	354,500	43,090	22,140	17,270	28,980	8,790	1,636,000
1939	11,470	6,010	3,260	16,500	6,970	19,450	65,910	22,400	19,160	8,700	8,910	5,680	194,400
1940	5,390	9,720	3,860	3,840	4,430	4,890	55,090	94,820	200,400	214,900	23,000	8,340	628,700
1941	8,490	126,800	373,900	113,100	231,000	144,400	266,300	253,700	1,035,000	258,500	78,040	45,870	2,935,000
1942	174,000	141,800	57,910	63,240	32,070	38,890	1,610,000	669,000	383,200	96,710	40,720	81,230	3,389,000
1943	143,200	72,760	36,200	20,660	26,830	155,700	106,900	168,900	142,500	13,600	10,820	23,900	922,000
1944	10,950	5,720	8,180	12,460	85,370	164,800	80,200	401,700	66,340	23,780	22,120	33,320	914,900
1945	22,670	23,350	62,710	50,850	512,100	916,900	600,800	101,500	146,700	210,700	33,300	40,560	2,722,000
1946	182,700	51,340	36,050	115,500	284,900	136,900	83,100	298,600	406,800	20,220	44,390	29,640	1,690,000
1947	18,870	313,000	308,800	86,290	39,090	63,710	105,200	64,390	131,700	26,120	71,820	47,600	1,277,000
1948	30,110	18,970	136,800	92,710	284,800	211,800	21,340	81,550	57,490	59,040	28,080	25,700	1,048,000
1949	14,660	8,010	8,760	67,340	151,000	97,940	37,730	532,800	204,700	18,010	10,200	21,550	1,173,000
1950	130,600	46,570	14,320	122,600	354,100	55,640	107,800	493,800	103,700	137,200	148,400	354,200	2,069,000

Monthly and yearly runoff, in acre-feet, of Trinity River at Dallas, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	68,380	54,630	20,300	15,250	16,620	17,990	10,830	22,330	160,700	37,560	17,400	17,540	459,500
1952	14,430	7,960	8,050	7,110	8,840	7,940	50,680	43,380	8,380	7,450	5,430	5,900	175,600
1953	5,080	17,400	11,720	9,300	6,090	11,580	51,580	103,300	4,050	9,640	5,170	5,550	240,500
1954	12,790	7,760	6,440	9,660	5,040	4,890	12,310	39,430	8,830	3,810	5,320	6,140	122,400
1955	10,170	4,950	4,560	5,200	6,050	8,900	5,450	25,360	19,020	5,060	5,290	5,820	105,800
1956	4,770	3,460	4,300	4,910	6,700	4,200	6,150	32,220	7,370	3,190	3,090	3,120	83,480
1957	5,050	7,680	7,120	4,820	6,850	10,530	360,700	928,400	838,200	345,000	223,400	24,700	2,762,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1903	850	-	-	-	-	-	-	-
1904	850	7,630	Mar. 27, 1904	9	549	398,000	448	325,000
1905	850	22,600	May 23, 1905	13	1,430	1,040,000	1,700	1,230,000
1906	850	21,400	May 18, 1906	50	1,910	1,380,000	1,680	1,220,000
1907	850	10,200	June 8, 1907	15	814	590,000	1,080	782,000
1908	850	184,000	May 25, 1908	15	4,100	2,970,000	3,960	2,870,000
1909	850	8,220	Oct. 26, 1908	24	409	296,100	309	223,000
1910	850	5,800	Apr. 10, 1910	24	351	254,000	289	209,000
1911	850	8,600	Aug. 30, 1911	9	229	166,000	264	191,000
1912	850	8,680	Apr. 4, 1912	13	497	361,000	453	329,000
1913	850	5,300	May 7, 1913	15	184	133,000	1,160	838,000
1914	850	44,500	Dec. 6, 1913	30	2,490	1,800,000	1,690	1,220,000
1915	850	39,600	June 12, 1915	-	2,410	1,740,000	2,390	1,730,000
1916	850	54,700	Apr. 3, 1916	22	2,070	1,510,000	1,960	1,430,000
1917	850	8,600	May 29, 1917	10	388	281,000	335	242,000
1918	850	9,710	Apr. 20, 1918	-	508	367,000	1,470	1,060,000
1919	850	50,300	Nov. 9, 1918	-	2,730	1,980,000	2,910	2,110,000
1920	850	54,000	May 12, 1920	113	4,170	3,020,000	3,460	2,510,000
1921	528	18,200	Apr. 7, 8, 1921	20	1,620	1,170,000	1,200	866,000
1922	548	75,100	Apr. 27, 1922	20	1,880	1,360,000	1,880	1,370,000
1923	568	37,900	June 12, 1923	10	917	664,000	1,690	1,220,000
1924	588	43,100	Dec. 15, 1923	9.2	1,640	1,190,000	854	620,000
1925	608	17,700	May 11, 1925	8.2	380	275,000	452	327,000
1926	628	11,500	Apr. 23, 1926	15	1,400	1,010,000	1,490	1,080,000
1927	648	14,000	Apr. 21, 1927	23	1,590	1,150,000	1,670	1,209,000
1928	668	11,200	Apr. 6, 1928	17	941	684,000	987	716,000
1929	688	34,800	Dec. 18, 1928	17	1,580	1,140,000	1,410	1,020,000
1930	703	34,200	May 14, 1930	17	1,010	729,000	1,320	953,000
1931	718	9,210	Dec. 6, 1930	57	1,120	812,000	859	622,000
1932	733	44,000	Jan. 24, 1932	71	2,780	2,020,000	2,770	2,010,000
1933	748	17,500	Mar. 7, 1933	125	1,470	1,060,000	1,370	993,000
1934	763	10,000	Mar. 2, 1934	22	440	318,000	401	290,200
1935	788	76,700	May 20, 1935	16	1,958	1,417,000	2,209	1,599,000
1936	808	25,900	Sept. 28, 1936	25	789	573,000	1,008	731,400
1937	828	17,000	Oct. 1, 1936	56	1,042	754,500	719	520,800
1938	858	67,500	Feb. 19, 1938	54	2,260	1,636,000	2,114	1,530,000
1939	878	10,800	Apr. 19, 1939	18	269	194,400	266	192,600
1940	898	18,100	June 16, 1940	38	866	628,700	1,541	1,119,000
1941	928	77,000	June 12, 1941	111	4,054	2,935,000	3,867	2,800,000
1941	958	111,000	Apr. 26, 1942	215	4,680	3,389,000	4,512	3,267,000
1943	978	21,300	Mar. 26, 1943	72	1,273	922,000	960	694,700
1944	1008	22,700	May 2, 1944	58	1,260	914,900	1,376	998,800
1945	1038	52,900	Mar. 31, 1945	69	3,760	2,722,000	3,983	2,884,000
1946	1058	38,900	June 2, 1946	214	2,334	1,690,000	2,846	2,061,000
1947	1088	34,000	Dec. 13, 1946	252	1,763	1,277,000	1,135	821,800
1948	1118	46,300	Feb. 27, 1948	170	1,444	1,048,000	1,231	893,900
1949	1148	82,500	May 18, 1949	86	1,620	1,173,000	1,841	1,333,000
1950	1178	28,800	May 4, 1950	162	2,858	2,069,000	2,790	2,021,000
1951	1212	9,350	June 17, 1951	123	635	459,500	479	346,700
1952	1242	7,570	Apr. 23, 1952	66	241	175,600	248	179,400
1953	1282	16,600	May 16, 1953	31	332	240,500	322	233,200
1954	1342	4,640	May 12, 1954	10	169	122,400	159	115,100
1955	1392	6,010	May 20, 1955	45	146	105,800	136	98,680
1956	1442	7,320	May 2, 1956	24	115	83,480	125	90,800
1957	1512	75,300	May 26, 1957	36	3,816	2,762,000	-	-

Note.--Records for July 1903 to December 1906 published in W.S.P. 210 have been found in error and should not be used. For this period only monthly figures were revised in W.S.P. 850; revised daily figures are not available.

No daily discharge figures are available for period January 1907 to October 1920; monthly records for that period were computed on basis of gage heights furnished by the U. S. Weather Bureau and ratings defined by discharge measurements made by the Army Engineers in 1903, T. U. Taylor and R. J. Williams in 1906, Army Engineers and city of Dallas in 1917 and discharge measurements by the Geological Survey during 1920-22.

112. Honey Creek subwatershed No. 11 near McKinney, Tex.

Location. --Lat 33°18'10", long 96°41'30", at dam on unnamed tributary of Honey Creek, 1.5 miles west of Farm Road 543, and 8.4 miles northwest of McKinney, Collin County.

Drainage area. --2.14 sq mi.

Gage. --Water-stage recorder. Datum of gage is 629.00 ft above mean sea level, datum of 1929 (levels by Soil Conservation Service).

Average inflow. --5 years (1952-57), 0.99 cfs (716 acre-ft per year).

Extremes. --1952-57: Maximum inflow, 1,720 cfs May 21, 1957; no inflow at times; maximum reservoir contents, 1,380 acre-ft May 26, 1957 (gage height, 28.77 ft).

Remarks. --Records given herein represent flow into reservoir, computed by algebraic summation of flow over spillway, flow through outlet structure, and change in reservoir contents, which is computed from capacity curve in acre-ft and converted to equivalent cfs. No adjustments made for evaporation or seepage losses. Dam completed Feb. 9, 1952, but no appreciable storage before April 1952. Dam is rolled earth-fill, 1,303 ft long, with earthen-spillway section at gage height 27.0 ft. Outlet structure is 2½-ft square concrete drop inlet, gage height of crest 14.8 ft, connected to a 12-inch concrete outlet pipe at gage height 4.8 ft. There is also an 8-inch controlled emergency outlet pipe connected to drop outlet at gage height 4.8 ft. Reservoir capacity, 1,210 acre-ft at spillway crest, 450 acre-ft at top of drop-outlet structure, and 150 acre-ft at controlled outlet pipe. Dam built by Soil Conservation Service of U. S. Department of Agriculture for flood control, conservation of stock water, and recreation.

Monthly and yearly mean inflow, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	0	0.24	0.21	0.07	0.11	0.47	1.34	1.74	0	0.15	0.08	0.14	0.38
1954	.10	.14	.04	.28	.08	.04	.83	1.93	.73	.05	0	.32	.38
1955	.39	.03	.05	.12	.92	.72	.34	.55	.08	.03	0	.42	.30
1956	.03	.02	.01	.04	1.80	.01	.11	.54	.04	.03	.01	.01	.21
1957	.05	.22	.07	.07	.13	1.40	15.7	25.1	.74	.13	.01	.22	3.68

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	0	14	13	4.2	6.3	29	80	107	0	8.9	5.2	8.5	276
1954	6.0	8.5	2.4	17	4.6	2.4	49	119	43	2.8	0	19	274
1955	24	2.0	3.4	7.1	51	44	20	34	4.8	1.6	0	25	217
1956	1.8	1.4	.4	2.6	104	.6	6.7	33	2.2	1.6	.8	.6	156
1957	3.2	13	4.2	4.4	7.3	86	935	1,540	44	8.1	.8	13	2,660

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1952	-	-	-	0	-	-	-	-
1953	-	268	May 15, 1953	0	0.38	276	0.37	266
1954	-	235	June 8, 1954	0	.38	274	.40	286
1955	-	47	Feb. 19, 1955	0	.30	217	.26	191
1956	-	266	May 1, 1956	0	.21	156	.24	172
1957	-	1,720	May 21, 1957	0	3.68	2,660	-	-

113. Honey Creek subwatershed No. 12 near McKinney, Tex.

Location. --Lat 33°18'20", long 96°40'15", near center of dam on unnamed tributary of Honey Creek, 0.5 mile west of Farm Road 543, and 7.8 miles northwest of McKinney, Collin County.

Drainage area. --1.26 sq mi.

Gage. --Water-stage recorder. Datum of gage is 623.00 ft above mean sea level, datum of 1929 (levels by Soil Conservation Service).

Average inflow. --5 years (1952-57), 0.73 cfs (528 acre-ft per year).

Extremes. --1952-57: Maximum inflow, 1,560 cfs May 21, 1957; no inflow at times; maximum reservoir contents, 731 acre-ft May 26, 1957 (gage height, 29.23 ft).

Remarks. --Records given herein represent flow into reservoir, computed by algebraic summation of flow over spillway, flow through outlet structure and change in reservoir contents, which is computed from capacity curve in acre-ft and converted to equivalent cfs. No adjustments made for evaporation or seepage losses. Dam completed Jan. 11, 1952, but no appreciable storage before April 1952. Dam is rolled earth-fill, 1,253 ft long, with earthen-spillway section at gage height 27.0 ft. Outlet structure is 2½-ft square concrete drop outlet, gage height of crest, 15.0 ft, connected to a 12-inch concrete outlet pipe at gage height 5.0 ft. There is also an 8-inch controlled emergency outlet to drop outlet at gage height 5.0 ft. Reservoir capacity, 608 acre-ft at spillway crest, 134 acre-ft at drop-outlet structure, and 36.5 acre-ft at controlled outlet pipe. Dam built by Soil Conservation Service of U. S. Department of Agriculture for flood control and conservation of water.

Monthly and yearly mean inflow, in cubic feet per second, of Honey Creek subwatershed No. 12 near McKinney, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	0	0.23	0.32	0.02	0.05	0.13	1.59	1.21	0.01	0.06	0.03	0.05	0.31
1954	.05	.09	.07	.16	.05	.05	.59	1.50	.79	.02	.14	.45	.33
1955	1.07	.08	.08	.26	1.19	.85	.59	.45	.10	.02	0	.08	.39
1956	.01	.02	.003	.05	1.46	.003	.14	.66	.01	0	0	0	.19
1957	.04	.11	.07	.05	.10	.44	11.7	16.5	.07	0	0	.10	2.44

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	-	-	-	-	-	-	-	-	-	-	-	-	-
1953	0	14	20	1.0	2.8	7.9	94	74	0.6	4.0	1.8	3.2	223
1954	3.4	5.2	4.6	9.7	3.0	2.8	35	92	47	1.4	8.7	27	240
1955	66	5.0	4.8	16	66	52	35	27	6.0	1.0	0	5.0	284
1956	.8	1.4	.2	3.4	84	.2	8.5	41	.6	0	0	0	140
1957	2.4	6.5	4.2	3.2	5.4	27	699	1,010	4.2	0	0	6.0	1,770

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1952	-	-	-	0	-	-	-	-
1953	-	423	Apr. 28, 1953	0	0.31	223	0.28	202
1954	-	214	June 15, 1954	0	.33	240	.42	302
1955	-	123	Oct. 23, 1954	0	.39	284	.29	210
1956	-	295	Feb. 17, 1956	0	.19	140	.21	151
1957	-	1,560	May 21, 1957	0	2.44	1,770	-	-

114. Honey Creek near McKinney, Tex.

Location. --Lat 33°17', long 96°39', at bridge on county road, 4.5 miles downstream from Haw Branch, 5.6 miles upstream from mouth, and 6.0 miles northwest of McKinney, Collin County.

Drainage area. --39.0 sq mi, of which 20.9 sq mi is above flood-detention structures.

Gage. --Water-stage recorder and wire-weight gage. Datum of gage is 563.68 ft above mean sea level, datum of 1929 (Soil Conservation Service reference mark).

Average discharge. --6 years (1951-57), 15.1 cfs (10,930 acre-ft per year).

Extremes. --1951-57: Maximum discharge, 7,920 cfs May 26, 1957 (gage height, 20.29 ft); no flow at times.
Maximum stage known since at least 1930, 23.0 ft in spring of 1950, from information by local resident.

Remarks. --Station operated as part of the Honey Creek basin hydrologic-cooperative program of the Geological Survey and U. S. Soil Conservation Service to evaluate rainfall-runoff relation, soil conservation practices, and the effects of flood-detention structures. On September 30, 1957, the flow from 20.9 sq mi above this station was partly controlled by 12 floodwater-detention reservoirs (constructed during the period 1951-57) with total permanent pool capacity of 2,243 acre-ft and total floodwater-detention capacity of 6,214 acre-ft. Diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	0.12	0	-
1952	0	0.02	0.07	0.09	0.51	0.99	52.5	21.6	6.6	0.84	0	0	6.82
1953	0	1.33	2.28	1.30	1.25	4.71	43.9	46.3	.85	.04	0	0	8.52
1954	1.58	1.87	.28	6.15	1.23	.28	17.4	33.0	17.5	0	.01	1.67	6.76
1955	6.56	.41	.87	3.03	22.9	10.7	7.68	7.66	2.90	.05	0	0	5.11
1956	0	0	0	0	12.1	.02	.80	10.0	0	0	0	0	1.87
1957	0	.94	.01	0	.20	9.25	223	434	57.8	6.42	.03	.47	61.4

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	-	-	-	-	-	-	-	7.5	0	-
1952	0	1.4	4.4	5.6	30	61	3,120	1,330	394	5.2	0	0	4,950
1953	0	79	140	80	70	289	2,610	2,850	51	2.2	0	0	6,170
1954	97	111	17	378	68	17	1,040	2,030	1,040	0	.6	99	4,900
1955	403	24	54	186	1,270	658	457	471	173	3.4	0	0	3,700
1956	0	0	0	0	695	1.4	48	615	0	0	0	0	1,360
1957	0	56	.8	0	11	569	13,250	26,680	3,440	395	1.8	28	44,430

Yearly discharge, in cubic feet per second, of Honey Creek near McKinney, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1282	-	-	0	-	-	-	-
1952	1282	2,500	Apr. 22, 1952	0	6.82	4,950	7.12	5,160
1953	1282	2,540	May 15, 1953	0	8.52	6,170	8.53	6,180
1954	1342	2,510	May 12, 1954	0	6.76	4,900	7.11	5,150
1955	1392	2,050	Feb. 19, 1955	0	5.11	3,700	4.45	3,220
1956	1442	1,410	May 1, 1956	0	1.87	1,360	1.95	1,420
1957	1512	7,920	May 26, 1957	0	61.4	44,430	-	-

115. East Fork Trinity River near McKinney, Tex.

Location. --Lat 33°12'15", long 96°35'41", at bridge on State Highway 24, 1.2 miles northeast of McKinney, Collin County, 2.8 miles downstream from Honey Creek, 7.2 miles upstream from Wilson Creek, 22.4 miles upstream from Lavon Dam.

Drainage area. --188 sq mi.

Gage. --Water-stage recorder and concrete control. Datum of gage is 511.69 ft above mean sea level, datum of 1929.

Average discharge. --8 years (1949-57), 92.6 cfs (67,040 acre-ft per year).

Extremes. --1949-57: Maximum stage, 17.23 ft June 11, 1950 (discharge not determined); maximum discharge measured, 23,900 cfs May 26, 1957; no flow at times.
Maximum stage known since at least 1913, about 21 ft in April 1942, from information by local residents.

Remarks. --Low flow maintained by sewage effluent from U. S. Government Hospital. Small diversions for irrigation above station. At the end of 1957, the flow from 25.0 sq mi above this station was partly controlled by 15 floodwater-detention reservoirs (constructed during period 1951-57) with a total combined capacity of 10,350 acre-ft below the flood spillway crests, of which 7,530 acre-ft is floodwater-detention capacity and 2,820 acre-ft is sediment-storage capacity. The capacity in these reservoirs allocated to sediment storage will be used for conservation storage until eliminated by sedimentation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	-	-	1.49	-
1950	32.3	3.90	2.73	247	559	72.6	124	512	374	43.8	140	278	196
1951	20.5	9.28	8.03	8.17	58.0	22.7	16.8	50.4	707	33.5	1.85	1.32	77.2
1952	1.09	.93	1.02	1.50	1.57	5.34	171	71.0	18.0	.66	.52	.18	22.6
1953	.23	10.3	12.0	7.79	7.63	30.4	306	243	5.26	.64	.35	.68	52.1
1954	10.4	28.5	15.5	49.7	18.1	9.63	79.1	216	76.8	.65	.19	1.55	42.4
1955	39.9	2.46	3.23	11.8	72.7	69.1	78.7	56.9	29.2	4.90	.25	1.96	30.6
1956	1.72	.14	.19	.26	52.6	2.19	13.1	83.6	.75	.23	.21	.15	12.8
1957	.47	.34	1.44	.31	.94	61.2	1,673	1,700	213	11.3	.83	8.93	307

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	-	-	88	-
1950	1,990	232	168	15,190	31,060	4,460	7,370	31,470	22,270	2,690	8,600	16,560	142,100
1951	1,260	552	493	502	3,220	1,390	1,000	3,100	42,090	2,060	113	79	55,860
1952	67	56	63	92	90	328	10,160	4,370	1,070	40	32	11	16,380
1953	14	613	739	479	424	1,870	18,210	14,950	313	39	22	41	37,710
1954	637	1,690	951	3,060	1,010	592	4,710	13,310	4,570	40	12	92	30,670
1955	2,450	146	199	729	4,040	4,250	4,680	3,500	1,740	301	15	116	22,170
1956	106	8.5	12	16	3,020	135	780	5,140	44	14	13	9.1	9,300
1957	29	20	89	19	52	3,770	99,560	104,500	12,660	698	51	532	222,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	1178	-	-	-	-	-	-	-
1950	1178, 1512	(a)	June 11, 1950	1.1	196	142,100	196	142,000
1951	1212	(a)	June 3, 1951	1.0	77.2	55,860	74.2	53,740
1952	1242	3,660	Apr. 23, 1952	0	22.6	16,380	24.2	17,560
1953	1282	5,350	Apr. 29, 1953	0	52.1	37,710	54.7	39,630
1954	1342	4,000	May 12, 1954	0	42.4	30,670	41.7	30,190
1955	1392	1,010	Feb. 20, 1955	0	30.6	22,170	26.9	19,500
1956	1442	2,340	May 2, 1956	.1	12.8	9,300	12.8	9,310
1957	1512	-	Apr. 26, 1957	0	307	222,000	-	-

a Previously published figures in W. S. P. 1178 and 1212, respectively, have been found in error and should not be used.

116. East Fork Trinity River above Pilot Grove Creek, near Lavon, Tex.

Location. --Lat 33°01'23", long 96°28'32", at bridge on State Highway 78, 150 ft downstream from St. Louis Southwestern Railway bridge, 2.5 miles west of Lavon, Collin County, and at mile 54.9.

Drainage area. --324 sq mi.

Gage. --Water-stage recorder. Datum of gage is 429.58 ft above mean sea level, datum of 1929.

Extremes. --1949-53: Maximum gage height, 16.17 ft May 2, 1950 (discharge not determined); no flow at times.
Maximum stage since at least 1894, 22.3 ft in 1913 and in April 1942, from information by St. Louis Southwestern Railway Co., and local residents.

Remarks. --No diversion above station prior to September 1953. Discharge not published above bank-full stages (about 1,600 cfs).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	304	201	246	109	0.81	0	0	-
1950	-	21.8	19.0	-	-	191	247	-	-	-	-	-	-
1951	61.9	26.6	26.3	29.5	-	98.4	90.2	199	-	-	2.50	.71	-
1952	0	.59	.91	.53	1.80	9.25	-	-	54.3	.27	0	0	-
1953	0	43.0	72.5	43.9	21.2	196	-	-	30.8	0	0	0	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	18,710	11,970	15,120	6,490	50	0	0	-
1950	-	1,290	1,170	-	-	11,740	14,690	-	-	-	-	-	-
1951	3,810	1,580	1,620	1,810	-	6,050	5,360	12,230	-	-	154	42	-
1952	0	35	56	33	103	569	-	-	3,230	17	0	0	-
1953	0	2,560	4,460	2,700	1,180	12,050	-	-	1,830	0	0	0	-

117. Sister Grove Creek near Princeton, Tex.

Location. --Lat 33°12', long 96°29', at bridge on Farm Road 1377, 1.4 miles northeast of Princeton, Collin County, 2.3 miles downstream from Stiff Creek, 5 miles upstream from mouth, and 15 miles upstream from Lavon Dam.

Drainage area. --115 sq mi.

Gage. --Water-stage recorder. Datum of gage is 487.52 ft above mean sea level, unadjusted (Corps of Engineers' bench mark).

Average discharge. --8 years (1949-57), 55.4 cfs (40,110 acre-ft per year).

Extremes. --1949-57: Maximum discharge, 9,080 cfs April 26, 1957 (gage height, 16.28 ft), from rating curve extended above 3,800 cfs by logarithmic plotting; no flow at times.
Maximum stage since at least 1865, about 22 ft in July 1913, from information by local residents.

Remarks. --At the end of 1957, the flow from 13.0 sq mi above this station was partly controlled by 5 floodwater-detention reservoirs (all completed during 1953 water year) with a total combined capacity of 4,680 acre-ft below the flood-spillway crsts, of which 3,780 acre-ft is floodwater-detention capacity and 900 acre-ft is sediment-pool capacity. The capacity in these reservoirs allocated to sediment storage will be used for conservation storage until eliminated by sedimentation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	-	-	0	-
1950	35.1	8.98	5.78	163	347	54.9	119	381	93.1	59.3	77.6	176	125
1951	24.9	10.2	8.32	7.26	45.0	22.1	13.3	35.5	458	30.4	1.54	0	54.1
1952	0	0	0	0	1.20	3.99	108	49.0	8.96	0	0	0	14.2
1953	0	4.18	6.17	6.66	6.52	27.0	245	201	16.7	2.56	0	.67	43.1
1954	2.42	17.4	15.4	37.1	29.6	12.2	48.0	132	35.2	.78	0	0	27.5
1955	16.4	3.40	2.41	5.34	30.3	46.0	42.2	21.9	4.93	12.2	0	0	15.3
1956	2.05	0	0	0	36.2	6.95	12.0	59.8	.14	0	0	0	9.68
1957	0	.33	0	0	0	29.0	620	939	233	8.75	.23	5.98	154

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	-	-	0	-
1950	2,160	534	355	10,000	19,260	3,370	7,070	23,340	5,540	3,650	4,770	10,450	90,600
1951	1,530	607	512	446	2,500	1,360	791	2,180	27,270	1,870	94	0	39,160
1952	0	0	0	0	69	245	6,420	3,010	533	0	0	0	10,280
1953	0	249	379	409	362	1,660	14,580	12,380	995	158	0	40	31,210
1954	149	1,040	946	2,280	1,650	748	2,860	8,110	2,090	48	0	0	19,920
1955	1,010	202	148	328	1,680	2,830	2,510	1,340	293	748	0	0	11,090
1956	126	0	0	0	2,080	427	714	3,670	8.3	0	0	0	7,030
1957	0	20	0	0	0	1,790	36,890	57,720	13,870	538	14	356	111,200

Yearly discharge, in cubic feet per second, of Sister Grove Creek near Princeton, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	1178	-	-	0	-	-	-	-
1950	1178	5,700	May 2, 1950	0	125	90,600	125	40,200
1951	1212	3,230	June 3, 1951	0	54.1	39,160	50.4	36,510
1952	1242	1,440	Apr. 23, 1952	0	14.2	10,280	15.0	10,900
1953	1282	4,440	Apr. 29, 1953	0	43.1	31,210	45.2	32,720
1954	1342	1,140	May 13, 1954	0	27.5	19,920	26.4	19,150
1955	1392	564	Mar. 21, 1955	0	15.3	11,090	13.6	9,860
1956	1442	1,130	May 2, 1956	0	9.68	7,030	9.54	6,920
1957	1512	9,080	Apr. 26, 1957	0	154	111,200	-	-

118. Lavon Reservoir near Lavon, Tex.

Location. --Lat 33°02', long 96°29', Lavon Dam on East Fork Trinity River, three-quarters of a mile upstream from St. Louis Southwestern Railway bridge, 1 mile upstream from bridge on State Highway 78, and 2.5 miles west of Lavon, Collin County.

Drainage area. --777 sq mi.

Gage. --Water-stage recorder. Datum of gage is at mean sea level, datum of 1929. Prior to Jan. 20, 1954, staff gage in the approach channel at same datum.

Extremes. --1953-57: Maximum contents, 462,800 acre-ft May 26, 1957 (elevation, 491.90 ft); minimum, since first appreciable storage began, 91,960 acre-ft Sept. 28, 1954 (elevation, 466.74 ft).

Remarks. --Reservoir is formed by a rolled earth-fill dam, 9,499 ft long, including a 568-foot gated spillway having twelve 40- by 28-foot taintor gates. The low-flow outlets consist of five 36-inch diameter gate-controlled sluices with inverts at elevation 453.0 ft. Discharge capacity, 347,500 cfs at elevation 496.0 ft, maximum design level. Deliberate impoundment of water began Sept. 14, 1953, and dam was completed in October 1953. Water for municipal supply can be withdrawn to elevation 453 ft.

Elevations of various features of the dam and reservoir are as follows:

	Elevation (feet)	Capacity (acre-feet)
Top of taintor gates	490.0	423,400
Top of conservation storage	472.0	143,600
Spillway crest	462.0	56,290
Invert at lowest intake	453.0	14,330

Figures given herein represent total contents. The reservoir is designed for flood control and water conservation. For storage of Soil Conservation detention reservoirs above reservoir, see "Remarks" on East Fork Trinity River near McKinney and Sister Grove Creek near Princeton, Tex.

Cooperation. --Records furnished by Corps of Engineers and reviewed by Geological Survey.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	1,540	5,570	9,380	30,060	35,250	35,950	56,430	117,000	121,700	102,300	96,680	93,410	+93,050
1955	100,500	100,900	99,910	101,500	111,800	129,000	137,900	140,900	140,200	135,800	129,600	129,100	+35,690
1956	124,800	121,700	120,100	119,900	131,200	128,500	128,900	140,900	133,300	125,000	117,800	111,400	-17,700
1957	108,200	108,400	106,400	105,200	104,100	113,300	380,700	281,500	291,700	210,900	143,600	140,700	-

119. East Fork Trinity River near Lavon, Tex.

Location. --Lat 33°01'23", long 96°28'32", at bridge on State Highway 78, 150 ft downstream from St. Louis Southwestern Railway bridge, 3,500 ft downstream from Lavon Dam, 2.5 miles west of Lavon, Collin County, and at mile 54.9.

Drainage area. --779 sq mi.

Gage. --Water-stage recorder. Datum of gage is 429.58 ft above mean sea level, datum of 1929.

Extremes. --1953-57: Maximum discharge, 39,000 cfs May 26, 27, 1957 from records of released flow from Lavon Reservoir furnished by Corps of Engineers; maximum gage height, 17.34 ft May 26; no flow at times.

Maximum stage since at least 1894, 22.3 ft in 1913 and in April 1942, from information by St. Louis Southwestern Railway Co. and local residents.

Remarks. --Flow regulated by Lavon Reservoir (capacity 423,400 acre-ft).

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	0	0	0	0	0	0	0.003	0.02	11.6	180	0.03	0	16.2
1955	0	0	0	0	8.12	5.85	9.67	41.8	10.6	5.50	8.87	3.56	7.85
1956	2.41	5.18	.77	9.21	9.91	4.47	5.82	208	9.65	8.97	8.37	1.49	23.1
1957	5.17	3.68	.29	3.54	8.24	7.03	162	7,735	654	1,099	968	16.4	903

Monthly and yearly runoff, in acre-feet, of East Fork Trinity River near Lavon, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	0	0	0	0	0	0	0.2	1.4	690	11,060	1.6	0	11,750
1955	0	0	0	0	451	359	575	2,570	629	338	546	212	5,680
1956	148	308	47	566	570	275	346	12,800	574	552	515	89	16,790
1957	318	219	18	217	458	432	9,620	475,600	38,920	67,560	59,530	974	653,900

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1954	1342	556	July 25, 1954	0	16.2	11,750	16.2	11,750
1955	1392	264	May 21, 1955	0	7.85	5,680	8.54	6,180
1956	1442	1,390	May 5, 1956	0	23.1	16,790	23.2	16,840
1957	1512	39,000	May 26, 27, 1957	0	903	653,900	-	-

120. East Fork Trinity River near Rockwall, Tex.

Location. --Lat 32°55'25", long 96°30'20", at bridge on Farm Road 7 (formerly U. S. Highway 67), 3 miles southwest of Rockwall, Rockwall County, and 8 miles upstream from Muddy Creek.

Drainage area. --840 sq mi.

Gage. --Chain gage. Datum of gage is 404.32 ft above mean sea level, datum of 1929.

Average discharge. --31 years (1923-54), 477 cfs (345,300 acre-ft per year).

Extremes. --1923-54: Maximum discharge, 64,800 cfs June 16, 1935 (gage height, 23.39 ft), from rating curve extended above 30,000 cfs on basis of slope-area measurement of peak flow; maximum gage height, 24.82 ft Apr. 20, 1942, while levees were breaking; no flow at times. A stage of 24.6 ft was reached in April 1922. Levees broke during this flood.

Remarks. --Flow regulated since September 1953 by Lavon Reservoir (capacity, 423,400 acre-ft), about 8 miles upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	69	30	980	218	197	1,210	542	672	160	16.3	0	0	344
1925	0	0	0	1.15	23.2	.96	134	537	23.9	1.49	0	0	60.7
1926	19.6	10.8	.07	98.4	10.2	183	682	793	1,150	3,220	183	56.6	539
1927	185	163	864	626	649	1,440	2,100	525	425	1,400	32.3	16.1	702
1928	343	34.3	273	137	671	186	2,130	431	452	166	15.0	.48	399
1929	.68	52.8	1,180	908	763	589	461	2,830	477	40.9	.47	1.57	612
1930	6.68	28.7	21.4	13.2	62.8	31.8	191	1,850	46.0	21.5	0	0	192
1931	8.14	9.62	255	22.0	195	554	298	233	269	1.86	8.12	2.67	154
1932	23.1	.08	43.0	4,120	2,240	309	95.4	317	114	980	236	108	715
1933	34.4	5.78	733	919	299	1,260	355	913	222	7.4	36.0	37.2	405
1934	4.29	42.0	25.0	188	303	809	738	467	44.1	.15	0	.16	218
1935	0	28.4	.99	238	116	111	337	3,030	3,466	58.4	1.53	83.5	623
1936	129	431	634	125	96.1	60.8	21.8	105	30.1	2.50	0	195	153
1937	495	188	322	1,241	222	560	288	75.8	35.2	.48	170	19.4	304
1938	58.2	106	640	2,154	3,526	1,736	1,378	113	304	4.25	.21	0	817
1939	0	0	0	0	46.1	195	2,096	80.8	282	8.42	.55	0	223
1940	5.49	.01	.71	1.59	26.8	14.1	1,695	1,340	890	869	29.5	4.27	406
1941	0	302	1,748	546	762	557	1,474	1,404	3,596	336	153	15.2	904
1942	68.5	144	305	87.5	92.5	125	6,503	1,165	1,275	52.9	11.6	97.9	820
1943	115	275	305	156	136	1,364	794	1,018	1,160	31.5	.09	0	448
1944	4.40	.54	2.66	10.8	212	831	321	2,080	147	6.79	0	12.5	305
1945	1.15	37.9	362	380	3,676	3,717	1,595	246	2,209	865	16.8	64.2	1,078
1946	937	189	68.0	465	2,041	816	297	2,992	1,976	30.7	31.6	24.4	814
1947	8.35	4,705	2,351	511	146	493	544	780	469	16.0	153	28.8	850
1948	17.7	82.7	1,134	707	1,471	839	125	1,403	140	161	1.68	0	506
1949	0	0	.21	1,692	1,537	943	435	920	486	10.4	.79	0	497
1950	401	38.4	27.9	1,198	3,291	303	365	2,684	719	699	227	1,350	926
1951	71.1	27.4	26.4	27.8	427	104	96.1	235	3,218	223	2.11	.14	366
1952	0	0	.29	.64	3.13	8.06	766	512	79.6	.06	0	0	114
1953	0	28.8	75.6	41.7	22.0	210	1,243	1,616	25.4	0	0	0	273
1954	0	2.21	3.89	49.7	1.82	.40	93.4	57.9	9.81	169	1.92	0	32.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	4,240	1,790	60,300	13,400	11,300	74,600	32,300	41,300	9,550	1,000	0	0	250,000
1925	0	0	0	71	1,290	59	7,950	33,000	1,420	92	0	0	43,900
1926	1,200	640	4.4	6,050	569	11,300	40,600	48,800	68,700	198,000	11,200	3,370	390,000
1927	11,400	9,690	53,100	38,500	36,000	88,500	125,000	32,300	25,300	85,900	1,980	957	509,000
1928	21,100	2,040	16,800	8,420	38,600	11,400	127,000	26,500	26,900	10,200	922	29	290,000
1929	42	3,140	72,600	55,800	42,400	36,200	27,500	174,000	28,400	2,520	29	93	443,000
1930	411	1,710	1,320	812	3,490	1,960	11,400	114,000	2,740	1,320	0	0	139,000

Monthly and yearly runoff, in acre-feet, of East Fork Trinity River near Rockwall, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	501	572	15,700	1,350	10,800	34,100	17,700	14,300	16,000	114	499	159	112,000
1932	1,420	4.8	2,640	253,000	129,000	19,000	5,680	19,500	6,780	60,300	14,500	6,430	518,000
1933	2,120	344	45,100	56,500	16,600	77,500	21,100	56,100	13,200	455	2,210	2,210	293,000
1934	264	2,500	1,540	11,600	16,800	49,700	43,900	28,700	2,620	9.2	0	9.5	158,000
1935	0	1,690	61	14,610	6,440	6,840	20,040	186,300	206,200	3,590	94	4,970	450,800
1936	7,910	25,620	38,970	7,710	5,530	3,740	1,300	6,480	1,790	154	0	11,580	110,800
1937	30,470	11,190	19,780	76,300	12,350	34,460	17,160	4,660	2,090	30	10,450	1,160	220,100
1938	3,580	6,280	39,360	132,400	195,800	106,800	81,990	6,920	18,090	261	13	0	591,500
1939	0	0	0	0	2,560	11,960	124,700	4,970	16,770	517	34	0	161,500
1940	338	.4	44	98	1,540	865	100,900	82,390	52,940	53,440	1,810	254	294,600
1941	0	18,000	107,500	33,590	42,290	34,250	87,690	86,310	214,000	20,660	9,390	903	654,600
1942	4,210	8,560	18,730	5,380	5,140	7,710	386,900	71,640	75,880	3,250	712	5,820	593,900
1943	7,100	16,340	18,730	9,590	7,540	83,860	47,260	62,620	69,050	1,940	5.4	0	324,000
1944	271	32	164	666	12,170	51,080	19.100	127,900	8,760	418	0	742	221,300
1945	70	2,260	22,270	23,350	204,200	228,600	94,900	15,140	131,500	53,200	1,030	3,820	780,300
1946	57,630	11,250	4,180	28,580	113,400	50,140	17,650	184,000	117,600	1,890	1,940	1,450	589,700
1947	514	279,900	144,500	31,390	8,130	30,310	32,360	47,970	27,920	982	9,410	1,710	615,100
1948	1,090	4,920	69,710	43,460	84,600	51,560	7,430	86,290	8,300	9,900	103	0	367,400
1949	0	0	13	104,000	85,350	58,000	25,870	56,580	28,940	637	49	0	359,400
1950	24,660	2,280	1,710	73,680	182,800	18,640	21,710	165,000	42,810	42,970	13,970	80,310	670,500
1951	4,370	1,630	1,620	1,710	23,730	6,380	5,720	14,470	191,500	13,740	130	8.1	265,000
1952	0	0	18	39	180	496	45,600	31,470	4,740	4.0	0	0	82,550
1953	0	1,710	4,650	2,560	1,220	12,900	73,950	99,370	1,510	0	0	0	197,900
1954	0	132	239	3,050	101	25	5,550	3,560	584	10,420	118	0	23,780

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588,850	7,390	(a)	0	344	250,000	253	183,000
1925	608	b2,970	May 12, 1925	0	60.7	43,900	63.2	45,700
1926	628	b23,000	July 14, 1926	0	539	390,000	639	463,000
1927	648	14,900	July 15, 1927	.2	702	509,000	655	474,000
1928	668	b15,800	Apr. 6, 1928	0	399	290,000	448	326,000
1929	688	23,000	May 14, 1929	0	612	443,000	512	370,000
1930	703	b6,030	May 20, 1930	0	192	139,000	210	152,000
1931	718	b3,590	Mar. 2, 1931	0	154	112,000	137	99,100
1932	733	b42,300	Jan. 23, 1932	0	715	518,000	774	562,000
1933	748	b12,700	Mar. 7, 1933	0	405	293,000	345	250,000
1934	763	b8,000	Mar. 4, 1934	0	218	158,000	214	155,100
1935	788	64,800	June 16, 1935	0	623	450,800	720	521,600
1936	808	6,300	Dec. 9, 1935	0	153	110,800	137	99,720
1937	828	8,100	Jan. 16, 1937	0	304	220,100	287	207,900
1938	858	57,600	Feb. 18, 1938	0	817	591,500	749	542,300
1939	878	b26,000	Apr. 17, 1939	0	223	161,500	224	161,900
1940	898	31,800	Apr. 7, 1940	0	406	294,600	578	419,700
1941	928	43,200	June 11, 1941	0	904	654,600	774	560,600
1942	958	c46,000	Apr. 20, 1942	0	820	593,900	835	604,600
1943	978	d17,500	Mar. 26, 1943	0	448	324,000	390	282,300
1944	1008	28,500	May 3, 1944	0	305	221,300	338	245,400
1945	1038	42,800	Feb. 22, 1945	0	1,078	780,300	1,145	828,800
1946	1058	43,600	May 31, 1946	0	814	589,700	1,301	941,600
1947	1088	35,300	Dec. 12, 1946	0	850	615,100	367	265,900
1948	1118	20,400	May 12, 1948	0	506	367,400	402	291,700
1949	1148	20,400	Feb. 25, 1949	0	497	359,400	536	388,100
1950	1178	34,500	May 3, 1950	0	926	670,500	897	649,500
1951	1212	16,500	June 5, 1951	0	366	265,000	356	257,400
1952	1242	7,050	Apr. 24, 1952	0	114	82,550	122	88,890
1953	1282	24,200	Apr. 30, 1953	0	273	197,900	265	191,900
1954	1342	2,560	Apr. 12, 1954	0	32.9	23,780	-	-

a Dec. 15, 1923, and May 31, 1924.
b Maximum observed.
c Maximum day.
d Observed at crest.

121. East Fork Trinity River near Crandall, Tex.

Location.--Lat 32°38', long 96°29', at bridge on U. S. Highway 175, 4,500 ft downstream from Mustang Creek, 1.8 miles northwest of Crandall, Kaufman County, 2.9 miles upstream from Little Buffalo Creek, and at mile 13.8.

Drainage area.--1,257 sq mi.

Gage.--Water-stage recorder. Datum of gage is 343.69 ft above mean sea level, datum of 1929.

Average discharge.--8 years (1949-57), 520 cfs (376,500 acre-ft per year).

Extremes.--1949-57: Maximum discharge, 33,000 cfs May 28, 1957 (gage height, 22.81 ft); no flow at times.

East Fork Trinity River near Crandall, Tex.--Continued

Remarks.--Flow largely regulated by Lavon Reservoir since September 1953 (capacity 423,400 acre-ft). At the end of 1957, the flow from 45.1 sq mi above this station and below the station near Lavon was partly controlled by 17 floodwater-detention reservoirs with a total combined capacity of 15,340 acre-ft below the flood-spillway crests, of which 12,820 acre-ft is floodwater-detention capacity and 2,520 acre-ft sediment-storage capacity. The capacity in these reservoirs allocated to sediment storage will be used for conservation storage until eliminated by sedimentation. The first floodwater-detention reservoir in this basin was completed in February 1955.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	43.2	7.76	0.50	-
1950	741	58.7	36.3	1,427	5,200	677	788	4,670	1,175	890	539	2,209	1,509
1951	105	39.2	38.8	42.0	870	168	140	313	4,200	247	4.65	6.78	505
1952	.80	1.22	1.93	2.91	22.3	18.9	853	1,118	281	1.70	0	0	192
1953	0	98.0	159	90.9	51.4	337	724	3,232	42.3	1.59	6.97	2.64	400
1954	3.39	26.9	22.2	143	33.7	11.9	211	426	17.8	154	17.0	0	89.7
1955	23.2	14.8	3.57	9.37	66.4	33.9	73.4	99.7	99.5	8.72	10.8	22.1	38.4
1956	25.6	3.78	4.88	14.0	57.1	10.6	7.47	570	18.0	3.84	0	0	60.2
1957	1.58	10.0	4.57	7.77	23.1	64.7	2,581	9,586	1,964	1,026	932	74.1	1,369

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	-	2,650	477	30	-
1950	45,590	3,490	2,230	87,720	288,800	41,640	46,890	287,200	69,900	54,750	33,150	131,500	1,093,000
1951	6,480	2,330	2,380	2,580	48,300	10,330	8,330	19,280	249,900	15,220	286	403	365,800
1952	49	73	119	179	1,280	1,170	50,770	68,720	16,310	105	0	0	138,800
1953	0	5,830	9,750	5,590	2,850	20,710	43,100	198,800	2,520	98	429	157	289,800
1954	209	1,600	1,360	8,810	1,870	733	12,540	26,190	1,060	9,480	1,050	0	64,900
1955	1,430	878	220	576	3,690	2,080	4,370	6,130	5,920	536	666	1,310	27,810
1956	1,570	225	300	860	3,290	652	444	35,070	1,070	236	0	0	43,720
1957	97	595	281	478	1,280	3,980	153,600	589,400	116,900	63,070	57,320	4,410	991,400

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	1178	a20,800	June 15, 1949	0	-	-	-	-
1950	1178	24,000	May 4, 1950	0	1,509	1,093,000	1,454	1,053,000
1951	1212	12,900	June 16, 1951	0	505	365,800	490	354,900
1952	1242	4,800	Apr. 26, 1952	0	191	138,800	212	154,100
1953	1282	16,400	May 2, 1953	0	400	289,800	383	277,400
1954	1342	4,600	May 14, 1954	0	89.7	64,900	88.8	64,260
1955	1392	688	June 19, 1955	0	38.4	27,810	37.8	27,370
1956	1442	6,340	May 3, 1956	0	60.2	43,720	58.7	42,600
1957	1512	33,000	May 28, 1957	0	1,369	991,400	-	-

a Maximum for period June to September.

122. Trinity River near Rosser, Tex.

Location.--Lat 32°25'40", long 96°27'50", at bridge on State Highway 34, 2.5 miles south of Rosser, Kaufman County, 8.5 miles downstream from East Fork Trinity River, and at mile 451.

Drainage area.--8,162 sq mi.

Supplemental Records available.--Records of chemical analyses and water temperatures for the period September 1954 to September 1957 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 302.65 ft above mean sea level, datum of 1929. July 25, 1924, to Sept. 30, 1925, staff gage at abandoned lock and dam No. 7, 1.7 miles upstream at datum 6.94 ft higher.

Average discharge.--20 years (1924-25, 1938-57), 2,584 cfs (1,871,000 acre-ft per year).

Extremes.--1924-25, 1938-57: Maximum discharge not determined, occurred Apr. 23 or 24, 1942, following numerous breaks in levee system on both banks; maximum gage height, 41.55 ft Apr. 22, 1942, just prior to levee breaks; maximum daily discharge, 133,000 cfs Apr. 23, 1942; minimum, 34 cfs Sept. 8-11, 1924.

Flood in May 1908 reached a stage of about 33 ft, present site and datum, from information by Corps of Engineers (discharge believed to have been about the same as that of Apr. 23 or 24, 1942).

Remarks.--Flow largely regulated by reservoirs above Dallas and after September 1953 by Lavon Reservoir on East Fork Trinity River. (See elsewhere in this report.) At the end of 1957, the flow from 77.2 sq mi above this station and below the stations Trinity River at Dallas and East Fork Trinity River near Lavon was partly controlled by 30 floodwater-detention reservoirs with a total combined capacity of 26,840 acre-ft below the spillway crests, of which 22,330 acre-ft is floodwater-detention capacity and 4,510 acre-ft is sediment-storage capacity. The capacity in these reservoirs allocated to sediment storage will be used for conservation storage until eliminated by sedimentation. The first of these floodwater-detention reservoirs was completed in August 1953. Levee system constructed in 1916. Cities of Fort Worth and Dallas diverted considerable water for municipal supply, of which about 60 percent is returned as sewage. Diversions above station for irrigation and municipal supplies.

Monthly and yearly mean discharge, in cubic feet per second, of Trinity River near Rosser, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	-	64.3	63.2	-
1925	32.8	49.5	50.4	61.0	72.7	54.6	841	4,280	154	62.6	37.1	89.1	488
1939	220	160	92.9	340	552	556	3,329	820	949	262	176	121	626
1940	130	212	105	92.5	173	181	3,173	4,127	5,197	5,214	489	186	1,608
1941	160	2,549	8,891	4,126	4,848	4,615	5,641	7,320	24,600	6,494	1,707	874	5,968
1942	3,146	2,731	1,640	1,385	1,023	1,063	38,610	15,890	9,401	1,773	694	1,778	6,569
1943	2,463	2,044	1,414	860	1,113	4,107	3,782	4,083	6,420	384	207	448	2,277
1944	251	140	204	332	1,636	4,833	1,975	10,880	2,798	498	356	677	2,058
1945	480	661	1,917	2,072	11,770	20,120	16,450	2,203	6,147	5,574	669	662	5,675
1946	3,965	1,309	834	2,691	9,154	3,159	2,102	5,064	15,340	506	771	588	3,734
1947	363	10,560	7,783	2,726	1,179	1,857	3,581	1,965	3,133	566	1,543	1,324	3,046
1948	645	849	5,320	3,525	3,267	8,775	924	3,656	1,277	1,573	518	494	2,583
1949	331	205	224	2,753	6,430	4,467	1,684	9,936	7,021	525	256	417	2,830
1950	2,281	1,153	359	3,690	14,280	1,759	2,587	13,080	2,666	2,704	3,142	7,240	4,511
1951	1,369	1,036	447	381	980	586	452	917	8,283	987	388	398	1,342
1952	314	219	201	187	245	243	2,185	2,737	611	214	158	166	624
1953	141	537	695	390	257	853	1,282	6,696	210	233	177	178	981
1954	284	224	212	483	225	173	514	1,325	237	241	194	135	356
1955	291	199	145	191	314	283	446	768	532	185	197	200	312
1956	170	131	175	182	325	160	213	1,389	243	125	117	119	280
1957	142	226	196	159	245	368	9,109	26,370	20,058	7,025	4,766	674	5,805

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	-	3,950	3,760	-
1925	2,020	2,950	3,100	3,750	4,040	3,360	50,030	263,200	9,170	3,850	2,280	5,300	353,000
1939	13,530	9,500	5,710	20,880	30,650	34,170	198,100	50,390	56,490	16,090	10,800	7,210	453,500
1940	8,000	12,630	6,440	5,690	9,960	11,100	188,800	253,800	309,200	320,600	30,100	11,070	1,167,000
1941	9,820	151,700	546,700	253,700	269,300	283,800	335,700	450,100	1,464,000	399,300	105,000	52,010	4,321,000
1942	193,500	162,500	100,900	85,190	56,820	65,360	2,297,000	977,200	559,400	109,000	42,700	105,800	4,755,000
1943	151,500	121,600	86,950	52,870	61,820	252,500	225,000	251,100	382,000	23,610	12,730	26,640	1,648,000
1944	15,420	8,310	12,570	20,390	94,110	297,200	117,500	668,900	166,500	30,600	21,880	40,310	1,494,000
1945	29,500	39,330	117,900	127,400	653,700	1,237,000	979,100	135,400	365,800	342,700	41,140	39,370	4,108,000
1946	243,800	77,890	51,260	165,400	508,400	194,200	125,100	311,400	912,500	31,120	47,430	34,960	2,703,000
1947	22,290	628,600	478,600	167,600	65,460	114,200	213,100	120,800	186,400	34,810	94,870	78,770	2,206,000
1948	39,660	50,520	327,100	216,700	187,900	539,600	55,000	224,800	75,970	96,730	31,870	29,410	1,875,000
1949	20,330	12,170	13,780	169,300	357,100	274,600	100,200	610,900	417,800	32,250	15,740	24,840	2,049,000
1950	140,200	68,590	22,070	226,900	793,100	108,200	153,900	804,200	158,600	166,200	192,200	430,800	3,266,000
1951	84,150	61,660	27,460	23,430	54,440	36,040	26,900	56,390	492,900	60,700	23,870	23,670	971,600
1952	19,320	13,040	12,360	11,530	14,120	14,940	130,000	168,300	36,360	13,140	9,740	9,880	452,700
1953	8,660	31,960	42,720	24,000	14,270	52,430	76,270	411,700	12,500	14,300	10,890	10,610	710,300
1954	17,480	13,330	13,030	29,700	12,470	10,620	30,570	81,500	14,120	14,840	11,920	8,050	257,600
1955	17,890	11,860	8,940	11,750	17,410	17,410	26,540	47,210	31,650	11,380	12,100	11,910	226,100
1956	10,430	7,820	10,740	11,190	18,710	9,860	12,650	85,420	14,460	7,690	7,170	7,070	203,200
1957	8,700	13,440	12,080	9,760	13,620	22,640	542,000	1,621,000	1,194,000	432,000	293,000	40,090	4,202,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	-	-	a34	-	-	-	-
1925	608	b16,800	May 13, 1925	32	488	353,000	-	-
1939	878	11,500	Apr. 21, 1939	-	626	453,500	624	451,800
1940	898	13,600	July 8, 1940	64	1,608	1,167,000	2,546	1,849,000
1941	928	55,300	June 16, 1941	141	5,968	4,321,000	5,621	4,070,000
1942	958	c133,000	Apr. 23, 1942	374	6,569	4,755,000	6,435	4,659,000
1943	978	22,900	Mar. 29, 1943	125	2,277	1,648,000	1,830	1,325,000
1944	1008	39,000	May 6, 1944	100	2,058	1,494,000	2,265	1,644,000
1945	1038	66,600	Apr. 2, 1945	105	5,675	4,108,000	5,932	4,295,000
1946	1058	54,800	June 4, 1946	266	3,734	2,703,000	4,779	3,460,000
1947	1088	40,900	Nov. 10, 1946	297	3,046	2,206,000	2,063	1,493,000
1948	1118	33,700	Mar. 2, 1948	297	2,583	1,875,000	2,072	1,504,000
1949	1148	51,900	May 21, 1949	139	2,830	2,049,000	3,085	2,234,000
1950	1178	42,300	Feb. 5, 1950	250	4,511	3,266,000	4,432	3,209,000

a Minimum day for period July to September.
b Maximum observed.
c Maximum day. Levees broken.

Yearly discharge, in cubic feet per second, of Trinity River near Rosser, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1212	18,800	June 17, 1951	258	1,342	971,600	1,164	843,100
1952	1242	11,100	May 24, 1952	132	624	452,700	677	491,400
1953	1282	20,800	May 3, 1953	100	981	710,300	927	670,800
1954	1342	7,830	May 15, 1954	96	356	257,600	349	252,500
1955	1392	6,060	May 21, 1955	116	312	226,100	299	216,400
1956	1442	9,620	May 4, 1956	107	280	203,200	287	208,400
1957	1512	56,000	May 29, 1957	103	5,805	4,202,000	-	-

123. Cedar Creek near Mabank, Tex.

Location.--Lat 32°19'45", long 96°10'05", at bridge on Farm Road 85, 2 miles downstream from Lacys Fork and 5½ miles southwest of Mabank, Kaufman County.

Drainage area.--734 sq mi.

Gage.--Water-stage recorder. Datum of gage is 285.50 ft above mean sea level, unadjusted.

Average discharge.--19 years (1938-57), 445 cfs (322,200 acre-ft per year).

Extremes.--1938-57: Maximum discharge, 44,800 cfs Mar. 30, 1945 (gage height, 25.43 ft), from rating curve extended above 16,000 cfs on basis of slope-area measurement at gage height 23.5 ft, at site 12 miles downstream; no flow at times.
Maximum stage since at least 1889, that of Mar. 30, 1945. Flood of Sept. 29, 1936, reached a stage of about 23½ ft and was second highest since at least 1889, from information by local residents.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	0	0	0	54.0	800	163	93.3	366	391	177	0	0	166
1940	0	.20	12.3	1.31	54.8	22.0	823	933	199	349	22.3	2.22	202
1941	.06	1,754	1,310	155	754	808	243	1,089	3,295	300	194	4.03	821
1942	188	130	225	78.9	235	143	5,153	1,449	1,328	5.27	69.4	316	771
1943	118	286	708	215	127	624	449	796	2,063	10.1	.28	25.1	452
1944	209	1.09	143	574	919	561	192	3,217	254	11.3	.17	2.75	509
1945	91	306	1,098	704	1,637	4,036	1,572	44.6	1,594	1,514	15.1	23.6	1,043
1946	266	171	157	923	1,737	304	103	1,573	1,478	1.78	98.7	42.7	563
1947	20.0	2,440	352	633	45.5	353	2,528	88.6	589	3.47	128	100	602
1948	2.06	286	1,741	554	753	904	87.1	1,290	10.0	25.4	7.38	1.89	474
1949	0	27.6	27.5	577	1,230	284	276	321	106	19.4	.13	0	232
1950	113	8.26	5.61	511	2,830	46.9	573	1,343	36.2	208	37.9	14.5	462
1951	.02	26.9	.66	156	611	13.5	15.8	158	842	37.1	0	7.11	151
1952	32.6	5.38	0	19.0	16.4	106	1,817	1,246	98.9	3.50	0	0	278
1953	0	166	772	179	13.9	332	583	3,112	2.03	4.09	15.6	83.2	445
1954	1.38	1.99	223	542	79.0	3.25	137	516	19.7	0	0	0	128
1955	394	289	16.0	43.1	315	342	595	57.7	45.6	2.67	5.79	12.3	175
1956	1.45	0	0	2.13	325	1.24	3.35	401	3.39	0	0	0	60.7
1957	0	257	14.1	142	327	553	6,616	2,517	461	.49	6.5	103	911

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	0	0	0	3,320	44,420	10,040	5,550	22,530	23,240	10,880	0	0	120,000
1940	0	12	756	81	3,150	1,350	48,990	57,350	11,860	21,430	1,370	132	146,500
1941	4.0	104,400	80,540	9,510	41,870	49,680	14,440	66,990	196,100	18,470	11,940	240	594,200
1942	11,550	7,740	13,850	4,850	13,080	8,790	306,600	89,090	79,040	324	4,270	18,810	558,000
1943	7,270	17,040	43,560	13,220	7,060	38,370	26,730	48,920	122,800	621	17	1,490	327,100
1944	12,820	65	8,820	35,280	52,860	34,520	11,450	197,800	15,120	693	10	164	369,600
1945	56	18,220	67,520	43,300	90,910	248,100	93,570	2,750	94,860	93,110	926	1,400	754,700
1946	16,340	10,200	9,640	56,780	96,450	18,700	6,100	96,710	87,950	106	6,070	2,540	407,600
1947	1,230	145,200	21,650	38,900	2,530	21,690	150,500	5,450	35,030	214	7,860	5,970	436,200
1948	127	17,010	107,000	34,080	43,320	55,560	5,180	79,320	597	1,560	454	112	344,300
1949	0	1,640	1,690	35,450	68,320	17,460	16,450	19,730	6,300	1,190	7.9	0	168,200
1950	6,970	492	345	31,440	157,200	2,880	34,090	82,590	2,160	12,800	2,330	863	334,200
1951	1.2	1,600	40	9,600	33,960	828	939	9,690	50,080	2,280	0	423	109,400
1952	2,000	320	0	1,170	946	6,540	108,100	76,590	5,890	215	0	0	201,800
1953	0	9,870	47,490	10,990	770	20,430	34,660	191,400	121	251	961	4,950	321,900
1954	85	118	13,710	33,320	4,390	200	8,130	31,720	1,170	0	0	0	92,840
1955	24,200	17,180	985	2,650	17,510	21,050	35,410	3,550	2,710	164	356	732	126,500
1956	89	0	0	131	18,710	76	200	24,670	202	0	0	0	44,080
1957	0	15,310	869	8,740	18,160	33,980	393,600	154,800	27,420	30	397	6,110	659,400

Yearly discharge, in cubic feet per second, of Cedar Creek near Mabank, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	898	3,720	Feb. 27, 1939	0	166	120,000	167	120,700
1940	898	9,000	Apr. 8, 1940	0	202	146,500	455	330,700
1941	928	16,800	June 17, 1941	0	821	594,200	611	442,400
1942	958	29,400	Apr. 9, 1942	0	771	558,000	819	592,700
1943	978	27,600	June 7, 1943	0	452	327,100	388	280,900
1944	1008	28,000	May 3, 1944	0	509	369,600	597	433,700
1945	1038	44,800	Mar. 30, 1945	0	1,043	754,700	974	705,100
1946	1058	23,500	May 31, 1946	0	563	407,600	745	539,500
1947	1088	20,900	Apr. 10, 1947	0	602	436,200	542	392,300
1948	1118	16,100	Dec. 9, 1947	0	474	344,300	308	223,500
1949	1148	19,300	Feb. 25, 1949	0	232	168,200	239	172,700
1950	1178	25,800	Feb. 13, 1950	0	462	334,200	453	328,000
1951	1212	5,120	June 5, 1951	0	151	109,400	152	110,100
1952	1242	18,600	Apr. 23, 1952	0	278	201,800	355	256,800
1953	1282	24,000	May 16, 1953	0	445	321,900	385	278,400
1954	1342	8,000	May 13, 1954	0	128	92,840	168	121,300
1955	1392	4,720	Mar. 22, 1955	0	175	126,500	116	84,230
1956	1442	6,170	May 4, 1956	0	60.7	44,080	82.9	60,170
1957	1512	26,300	Apr. 28, 1957	0	911	659,400	-	-

124. Pin Oak Creek near Hubbard, Tex.

Location. --Lat 31°48', long 96°43', on right bank 85 ft downstream from bridge on State Highway 171, 5.8 miles southeast of Hubbard, Hill County, and 9 miles upstream from Elm Creek.

Drainage area. --17.6 sq mi.

Supplemental records available. --Records of chemical analyses and water temperatures from October 1956 to September 1957 are published in reports of Geological Survey.

Gage. --Water-stage recorder. Datum of gage is 463.08 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942.

Extremes. --1956-57: Maximum discharge, 3,530 cfs Apr. 20, 1957 (gage height, 13.80 ft); no flow at times.
Maximum stage since at least 1900, about 17 ft in August 1919, from information by local resident.

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	-	-	-	-	-	-	-	0	-
1957	0	29.2	0.21	0.74	7.11	12.7	166	57.9	23.2	0	0	.19	24.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1956	-	-	-	-	-	-	-	-	-	-	-	0	-
1957	0	1,740	13	46	395	779	9,850	3,560	1,380	0	0	11	17,770

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1956	1512	-	-	0	-	-	-	-
1957	1512	4,200	Apr. 20, 1957	0	24.6	17,700	-	-

125. Richland Creek near Richland, Tex.

Location. --Lat 31°57', long 96°25', at bridge on U. S. Highway 75, 750 ft downstream from Texas & New Orleans Railroad bridge, 1 mile north of Richland, Navarro County, and 3.5 miles downstream from Pin Oak Creek.

Drainage area. --737 sq mi.

Supplemental records available. --Records of gage heights and discharge measurements from December 1924 to February 1925 are contained in reports of Geological Survey.

Gage. --Water-stage recorder. Datum of gage is 299.12 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942. Dec. 11, 1924, to Feb. 11, 1925, chain gage at site 750 ft upstream at same datum. Since June 8, 1955, supplementary water-stage recorder 3,900 ft to right of regular gage used for flood flows.

Average discharge. --18 years (1939-57), 389 cfs (281,600 acre-ft per year).

Extremes. --1939-57: Maximum discharge, 58,900 cfs May 12, 1948 (gage height, 24.16 ft); no flow at times.
Maximum stage since at least 1899, 25.5 ft in December 1913 (discharge, about 85,000 cfs) from information by Texas & New Orleans Railroad.

Richland Creek near Richland, Tex.--Continued

Remarks.--At the end of 1957, the flow from 11.4 sq mi above this station was partly controlled by 6 floodwater-detention reservoirs with a total combined capacity of 4,769 acre-ft below the flood-spillway crests, of which 3,863 acre-ft is floodwater-detention capacity and 906 acre-ft is sediment-storage capacity. The capacity in these reservoirs allocated to sediment storage will be used for conservation storage until eliminated by sedimentation. The first floodwater-detention reservoir in this basin was completed in October 1956.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	47.5	195	1,649	35.2	0.01	0	-
1940	0	0	0	0	30.3	1.47	715	78.7	164	516	1.76	0	125
1941	0	2,954	1,205	410	1,934	1,155	609	1,157	1,570	1,432	38.1	7.72	1,029
1942	121	18.3	50.7	23.6	35.8	44.5	4,054	351	334	19.2	26.5	1,204	518
1943	247	341	468	127	36.4	329	433	2,089	352	9.62	.75	13.2	374
1944	577	2.30	58.5	721	1,522	483	269	4,088	341	15.5	.36	0	674
1945	.30	60.3	537	1,091	1,568	3,626	2,057	91.8	617	1,103	123	59.1	908
1946	826	154	414	552	1,240	522	245	3,129	332	18.9	27.9	3.84	622
1947	5.86	430	228	1,868	192	1,184	916	247	132	1.56	.09	2.63	437
1948	.01	0	8.66	32.5	113	650	117	2,390	25.9	86.0	.23	0	289
1949	0	0	0	43.1	66.8	163	169	223	91.3	78.3	10.3	0	70.5
1950	90.0	.36	0	67.1	1,314	53.1	630	236	42.6	33.4	.02	7.68	197
1951	.02	0	0	4.02	57.6	3.55	5.15	65.6	366	.56	0	163	54.6
1952	0	0	0	0	67.3	112	781	732	18.6	4.14	0	0	143
1953	0	71.7	391	135	29.0	1,096	231	3,085	12.6	16.9	0	55.1	434
1954	104	19.8	281	162	2.60	1.04	9.16	371	.70	0	.26	0	80.7
1955	5.73	20.8	.52	16.4	193	173	61.1	100	128	9.28	30.1	24.1	62.5
1956	9.01	0	0	25.4	232	.02	.82	1,013	90.3	.34	0	0	115
1957	0	213	15.7	9.33	286	315	6,617	2,397	617	5.89	0	0	867

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-				-		2,830	12,010	98,140	2,170	0.4	0	-
1940	0	0	0	0	1,740	91	42,530	4,840	9,730	31,760	108	0	90,800
1941	0	175,800	74,070	25,240	107,400	71,030	36,240	71,120	93,440	88,020	2,340	460	745,200
1942	7,440	1,090	3,120	1,450	1,990	2,730	241,200	21,590	19,880	1,180	1,630	71,660	375,000
1943	15,180	20,310	28,750	7,820	2,020	20,240	25,790	128,400	20,950	591	46	785	270,900
1944	35,490	137	3,600	44,310	87,550	29,720	16,030	251,400	20,300	954	22	0	489,500
1945	18	3,590	33,020	67,070	87,060	222,900	122,400	5,640	36,740	67,830	7,570	3,510	657,300
1946	50,820	9,190	25,450	33,970	68,840	32,070	14,570	192,400	19,740	1,160	1,720	228	450,200
1947	360	25,580	14,020	114,800	10,650	72,820	54,540	15,180	7,830	96	5.4	156	316,000
1948	.8	0	533	2,000	6,470	39,960	6,950	147,000	1,540	5,290	14	0	209,800
1949	0	0	0	2,650	3,710	10,040	10,050	13,740	5,430	4,810	632	0	51,060
1950	5,540	21	0	4,130	72,960	3,260	37,460	14,530	2,540	2,050	1.2	457	142,900
1951	1.0	0	0	247	3,200	219	306	4,030	21,790	35	0	9,690	39,520
1952	0	0	0	0	3,870	6,900	46,480	45,020	1,100	254	0	0	103,600
1953	0	4,260	24,060	8,330	1,610	67,390	13,750	189,700	747	1,040	0	3,280	314,200
1954	6,400	1,180	17,290	9,930	144	64	545	22,810	41	0	16	0	58,420
1955	352	1,240	32	1,010	10,710	10,640	3,630	6,170	7,620	571	1,850	1,440	45,260
1956	554	0	0	1,560	13,360	1.4	49	62,300	5,380	21	0	0	83,230
1957	0	12,690	968	574	15,860	19,390	393,700	147,400	36,730	362	0	0	627,700

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	878	a33,500	June 20, 1939	0	-	-	-	-
1940	898	10,600	Apr. 7, 1940	0	125	90,800	469	340,700
1941	928	43,000	Nov. 24, 1940	0	1,029	745,200	700	506,900
1942	958	39,600	Apr. 26, 1942	0	518	375,000	591	427,600
1943	978	16,600	May 8, 1943	0	374	270,900	340	245,900
1944	1008	55,000	May 2, 1944	0	674	489,500	671	486,900
1945	1038	55,000	Mar. 31, 1945	0	908	657,300	975	706,200
1946	1058	15,200	May 13, 1946	0	622	450,200	559	404,700
1947	1088	22,400	Jan. 19, 1947	0	437	316,000	382	276,600
1948	1118	58,900	May 12, 1948	0	289	209,800	288	209,200
1949	1148	1,740	May 27, 1949	0	70.5	51,060	78.2	56,620
1950	1178	12,100	Feb. 13, 1950	0	197	142,900	190	137,400
1951	1212	3,000	Sept. 13, 1951	0	54.6	39,520	54.6	39,520
1952	1242	13,500	Apr. 23, 1952	0	143	103,600	182	131,900
1953	1282	29,500	May 13, 1953	0	434	314,200	429	310,700
1954	1342	4,600	May 13, 1954	0	80.7	58,420	48.6	35,170
1955	1392	3,740	Mar. 22, 1955	0	62.5	45,260	61.1	44,200
1956	1442	28,100	May 2, 1956	0	115	83,230	133	96,330
1957	1512	44,600	Apr. 21, 1957	0	867	627,700	-	-

a Maximum for period March to September.

Note.--Records for December 1924 to February 1925 published in W.S.P. 608 have been found in error and should not be used.

126. Chambers Creek near Emhouse, Tex.

Location. --Lat 32°13', long 96°37', at bridge on Ennis-Emhouse highway, 200 ft downstream from Waxahachie Creek and 4 miles north of Emhouse, Navarro County.

Drainage area. --818 sq mi.

Gage. --Chain gage. Datum of gage is 420 ft above mean sea level (approximately, from nearby Geological Survey bench marks).

Extremes. --November 1924 to July 1925: Maximum stage observed, 5.40 ft May 11 (discharge not determined); no flow at times.

Remarks. --Slight regulation at extremely low stages from dam on Waxahachie Creek 10 miles upstream. Small diversions above station from Waxahachie Creek.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	-	2.15	1.18	0.95	-	-	0	0	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	-	-	-	58.1	-	-	0	-	-	-	-

Note. --A fragmentary record of daily discharge for November 1924 to July 1925 is published in W.S.P. 608.

127. Chambers Creek near Corsicana, Tex.

Location. --Lat 32°06'30", long 96°22'15", at bridge on State Highway 31, 500 ft upstream from St. Louis Southwestern Railway bridge, 6,000 ft upstream from city of Corsicana diversion dam, 6 miles east of Corsicana, Navarro County, and 17 miles upstream from Richland Creek.

Drainage area. --971 sq mi.

Supplemental records available. --Records of diversion for municipal use by city of Corsicana are contained in reports of Geological Survey.

Gage. --Water-stage recorder. Datum of gage is 294.26 ft above mean sea level, datum of 1929.

Average discharge. --18 years (1939-57), 443 cfs (320,700 acre-ft per year).

Extremes. --1939-57: Maximum discharge, 48,000 cfs May 3, 1944 (gage height, 27.19 ft); no flow at times.
Maximum stage known, about 27½ ft in December 1913, from information by local residents, discharge, about 54,000 cfs.

Remarks. --Storage began in 1956 in South Prong Reservoir (capacity 13,500 acre-ft) on South Prong Waxahachie Creek above this station. At the end of 1957, the flow from 5.38 sq mi above this station was partly controlled by 3 floodwater-detention reservoirs with a total combined capacity of 2,015 acre-ft below the spillway crests, of which 1,548 acre-ft is floodwater-detention capacity and 467 acre-ft is sediment-storage capacity. The capacity of these reservoirs allocated to sediment storage will be used for conservation storage until eliminated by sedimentation. The first of these floodwater-detention reservoirs was completed in April 1957. Discharge figures do not include diversions by city of Corsicana.

Cooperation. --Records of diversion for municipal use furnished by city of Corsicana.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	107	177	1,412	63.3	1.57	0.03	-
1940	0	0.09	0.06	0.35	83.0	12.7	1,243	586	950	1,409	22.0	2.6	358
1941	.65	2,056	1,577	555	2,399	1,096	777	1,276	1,711	937	201	11.9	1,038
1942	291	86.9	208	67.8	181	199	6,150	1,704	1,033	61.1	344	1,293	962
1943	912	451	584	188	85.9	540	529	1,409	742	36.0	.68	1,159	555
1944	319	6.93	67.7	449	1,436	562	243	4,364	621	88.4	3.61	5.39	681
1945	12.3	115	874	980	2,230	4,152	2,319	186	2,489	769	32.8	7.61	1,171
1946	278	181	30.1	436	1,527	477	242	1,138	840	29.7	175	31.5	441
1947	12.5	762	326	755	153	483	828	130	1,096	16.0	80.8	182	401
1948	11.5	59.2	633	394	507	426	276	1,689	126	222	.15	0	364
1949	0	1.81	3.01	238	1,090	475	391	540	232	19.3	10.9	0	244
1950	32.7	2.45	1.45	51.3	1,771	113	721	952	76.6	67.8	5.01	12.0	306
1951	.11	0	0	10.2	77.4	3.29	5.86	67.9	819	3.95	0	0	81.0
1952	.27	0	0	0	24.3	26.0	1,709	972	31.2	.84	0	0	229
1953	0	207	611	141	26.5	428	179	1,524	6.73	17.6	.84	1.42	266
1954	18.9	10.2	71.7	49.5	6.23	.38	11.7	220	.27	0	0	0	32.9
1955	29.9	48.1	0	.04	69.4	111	123	158	160	0	91.0	152	78.1
1956	2.11	0	0	15.1	161	.52	7.45	254	56.2	0	9.03	2.07	41.9
1957	5.78	194	12.6	22.8	148	87.9	4,279	3,360	553	8.0	2.4	11.8	723

Monthly and yearly runoff, in acre-feet, of Chambers Creek near Corsicana, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	6,360	10,890	84,040	3,890	97	2.0	-
1940	0	5.4	3.6	22	4,780	784	73,930	36,000	56,550	86,640	1,350	15	260,100
1941	40	122,300	96,980	34,150	133,200	67,420	46,220	78,490	101,800	57,630	12,380	710	751,300
1942	17,870	5,170	12,790	4,170	10,050	12,220	365,900	104,800	61,480	3,750	21,150	76,920	696,300
1943	56,080	26,830	35,880	11,540	4,770	33,180	31,470	86,670	44,180	2,210	42	68,990	401,800
1944	19,600	412	4,160	27,580	82,630	34,540	14,450	268,300	36,920	5,440	222	321	494,600
1945	758	6,860	53,720	60,230	123,900	255,300	138,000	11,440	148,100	47,250	2,010	453	848,000
1946	17,070	10,800	1,850	26,810	84,820	29,330	14,400	69,960	49,960	1,830	10,790	1,880	319,500
1947	769	45,330	20,020	46,430	8,470	29,710	49,250	8,020	65,210	981	4,970	10,820	290,000
1948	709	3,520	38,910	24,240	29,150	26,200	16,420	103,800	7,500	13,670	9.1	0	264,100
1949	0	108	185	14,640	60,690	29,210	23,280	33,210	13,800	1,190	671	0	177,000
1950	2,010	146	89	3,150	98,350	6,920	42,870	58,540	4,560	4,170	308	711	221,800
1951	6.5	0	0	628	4,300	202	349	4,170	48,740	243	0	0	58,640
1952	17	0	0	0	1,400	1,600	101,700	59,770	1,850	51	0	0	166,400
1953	0	12,310	37,590	8,660	1,470	26,340	10,670	93,740	400	1,080	52	85	192,400
1954	1,160	609	4,400	3,040	346	23	700	13,500	16	0	0	0	23,790
1955	1,840	2,860	0	2.6	3,850	6,820	7,300	9,720	9,530	0	5,590	9,010	56,520
1956	130	0	0	926	9,260	32	444	15,610	3,340	0	555	123	30,420
1957	355	11,570	776	1,400	8,220	5,400	254,600	206,600	32,920	490	145	702	523,200

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	878	a14,400	June 20, 1939	0	-	-	-	-
1940	898	18,400	Apr. 7, 1940	0	358	260,100	660	479,400
1941	928, 1148	25,400	Nov. 24, 1940	0	1,038	751,300	784	567,800
1942	958	37,400	Apr. 25, 1942	4.5	962	693,300	1,076	779,200
1943	978	16,000	Sept. 6, 1943	0	555	401,800	424	307,200
1944	1008	48,000	May 3, 1944	0	681	494,600	733	531,700
1945	1038	32,900	Mar. 31, 1945	0	1,171	848,000	1,128	816,400
1946	1058	12,000	Feb. 19, 1946	0	441	319,500	492	355,900
1947	1088	18,200	June 22, 1947	0	401	290,000	369	267,000
1948	1118	18,200	May 12, 1948	0	364	264,100	305	221,300
1949	1148	9,140	Feb. 25, 1949	0	244	177,000	247	178,900
1950	1178	11,000	Feb. 13, 1950	0	306	221,800	303	219,600
1951	1212	6,060	June 5, 1951	0	81.0	58,640	81.0	58,650
1952	1242	26,000	Apr. 23, 1952	0	229	166,400	298	216,300
1953	1282	10,200	May 16, 1953	0	266	192,400	205	148,700
1954	1342	3,700	May 13, 1954	0	32.9	23,790	30.8	22,330
1955	1392	2,350	May 21, 1955	0	78.1	56,520	71.8	51,950
1956	1442	2,860	May 4, 1956	0	41.9	30,420	59.2	42,990
1957	1512	23,200	May 24, 1957	0	723	523,200	-	-

a Maximum for period March to September.

128. Trinity River near Oakwood, Tex.

Location. --Lat 31°38'50", long 95°47'20", at bridge on U. S. Highway 79 and 84, 1½ miles upstream from International-Great Northern Railroad bridge, 6 miles northeast of Oakwood, Leon County, and at mile 313.

Drainage area. --12,912 sq mi.

Supplemental records available. --Records of chemical analyses and water temperatures for the period October 1947 to July 1954 are published in reports of Geological Survey. Gage-height records collected at same site since 1904 are contained in reports of the U. S. Weather Bureau.

Gage. --Water-stage recorder. Datum of gage is 175.06 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942. Prior to July 15, 1932, chain gage at site 1½ miles downstream at datum 1.06 ft lower. July 15, 1932, to Oct. 7, 1934, chain gage at present site and datum.

Average discharge. --34 years (1923-57), 4,824 cfs (3,492,000 acre-ft per year).

Extremes. --1923-57: Maximum discharge, 153,000 cfs Apr. 29, 1942 (gage height, 51.64 ft); minimum observed, 28 cfs Aug. 24, 1925. Flood of June 4, 1908, reached a stage of about 52.2 ft, present site and datum, from information by U. S. Weather Bureau (discharge, about 164,000 cfs).

Remarks. --Some regulation by reservoirs above Dallas and by Lavon Reservoir on East Fork Trinity River (since Sept. 14, 1953). At the end of 1957, the flow from 187 sq mi above this station and below the stations Trinity River at Dallas and East Fork Trinity River near Lavon was partly controlled by 61 floodwater-detention reservoirs with a total combined capacity of 71,910 acre-ft below the flood-spillway crests, of which 59,620 acre-ft is floodwater-detention capacity and 12,290 acre-ft is sediment-storage capacity. The capacity in these reservoirs allocated to sediment storage will be used for conservation storage until eliminated by sedimentation. The first of these floodwater-detention reservoirs was completed in August 1953. Diversions above station for municipal supply and other uses.

Monthly and yearly mean discharge, in cubic feet per second, of Trinity River near Oakwood, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	664	1,200	20,900	6,260	4,830	16,000	6,570	5,310	6,300	90.0	77.8	1,610	5,850
1925	85	100	168	246	222	242	278	6,010	151	74.2	62.7	138	657
1926	1,540	3,820	146	5,000	716	7,860	10,100	10,400	4,770	9,040	4,120	3,340	5,100
1927	1,430	932	6,200	5,400	7,140	12,400	14,500	9,660	5,700	2,690	296	243	5,540
1928	4,400	385	1,120	1,380	3,920	3,120	6,880	3,440	6,780	3,280	1,310	125	3,000
1929	105	763	7,590	6,960	3,120	5,810	4,820	13,800	22,700	530	124	643	5,580
1930	597	1,290	4,300	1,120	5,180	1,980	1,200	36,600	5,610	335	74.0	62.8	4,890
1931	3,590	976	8,310	2,260	5,850	7,370	4,600	4,020	1,300	448	207	204	3,260
1932	613	732	1,440	25,000	35,100	19,100	1,600	8,350	4,170	4,400	526	6,200	8,850
1933	385	376	2,160	8,730	1,980	9,780	3,900	6,240	6,560	449	1,380	1,190	3,610
1934	372	257	501	2,770	1,750	7,140	11,800	2,630	572	145	93.6	206	2,350
1935	99.0	896	979	2,980	4,302	2,554	2,909	27,600	20,400	4,603	979	1,480	5,821
1936	1,908	2,113	7,700	1,345	813	597	298	4,850	2,966	1,891	139	666	2,121
1937	13,600	4,447	5,543	10,070	3,124	8,523	2,731	864	1,510	196	600	852	4,370
1938	503	1,120	4,899	15,390	20,820	11,910	29,320	3,631	2,741	818	682	292	7,562
1939	260	221	199	965	2,686	1,909	4,169	2,280	4,679	758	199	132	1,520
1940	123	213	161	166	577	358	6,092	6,795	7,032	10,450	641	287	2,746
1941	189	10,820	18,220	11,890	10,120	12,910	5,966	14,550	28,940	15,240	2,105	1,156	11,010
1942	3,544	3,327	2,786	1,613	2,169	1,921	43,280	40,230	16,560	2,407	1,095	4,481	10,280
1943	3,742	4,219	3,459	3,469	1,530	3,664	10,030	10,040	12,480	632	237	901	4,532
1944	3,335	280	691	4,395	8,354	12,350	3,307	33,470	8,178	731	378	743	6,375
1945	530	1,192	4,213	9,609	9,608	40,450	45,710	4,335	11,410	10,980	1,186	877	11,660
1946	6,686	2,372	2,834	6,684	13,680	9,981	3,836	12,420	22,420	805	1,344	2,136	7,040
1947	759	19,970	9,829	7,242	2,668	6,384	9,595	3,610	4,175	1,588	923	2,501	5,760
1948	678	1,418	8,510	5,802	5,707	13,870	2,278	11,610	1,500	2,439	637	557	4,612
1949	424	314	382	2,286	6,649	11,010	5,047	7,828	10,790	1,174	365	435	3,867
1950	2,625	2,357	566	5,472	26,740	2,995	6,474	17,850	3,672	2,517	3,521	7,248	6,694
1951	1,689	1,174	605	804	2,346	991	855	1,856	10,010	1,198	407	645	1,863
1952	324	336	329	375	691	1,015	5,508	7,308	3,459	271	174	194	1,663
1953	134	962	3,527	2,077	617	5,766	1,513	21,490	449	314	220	362	3,164
1954	408	520	1,707	1,845	608	320	861	3,203	332	213	219	136	871
1955	2,160	1,573	494	855	2,167	2,108	2,236	1,866	1,071	266	322	534	1,297
1956	285	165	235	415	1,659	286	318	4,263	434	126	101	116	700
1957	131	1,187	275	400	1,607	1,895	20,890	42,070	33,550	7,756	6,500	1,052	9,796

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	40,800	71,500	1,290,000	385,000	278,000	985,000	391,000	326,000	375,000	5,530	4,780	95,800	4,250,000
1925	5,230	5,980	10,300	15,100	12,400	14,900	16,600	370,000	9,010	4,560	3,860	8,200	476,000
1926	94,700	228,000	9,010	308,000	39,700	483,000	600,000	639,000	284,000	556,000	253,000	199,000	3,690,000
1927	87,900	55,500	381,000	332,000	396,000	762,000	864,000	594,000	339,000	166,000	18,200	14,500	4,010,000
1928	271,000	22,900	68,900	84,900	225,000	192,000	409,000	212,000	403,000	202,000	80,600	7,440	2,180,000
1929	6,460	45,400	467,000	428,000	173,000	357,000	287,000	848,000	1,350,000	32,600	7,620	38,300	4,040,000
1930	36,700	76,800	264,000	68,900	288,000	122,000	71,400	2,250,000	334,000	20,600	4,550	3,740	3,540,000
1931	221,000	58,100	511,000	139,000	325,000	453,000	274,000	247,000	77,400	27,500	12,700	12,100	2,360,000
1932	37,700	43,600	88,500	1,540,000	2,020,000	1,170,000	95,200	513,000	248,000	271,000	32,300	369,000	6,430,000
1933	23,700	22,400	133,000	537,000	110,000	601,000	232,000	384,000	390,000	27,600	84,800	70,800	2,620,000
1934	22,900	15,300	30,800	170,000	97,200	439,000	702,000	162,000	34,000	8,920	5,750	12,300	1,700,000
1935	6,090	53,320	60,170	183,300	238,900	157,000	173,100	1,697,000	1,214,000	283,100	60,170	88,060	4,214,000
1936	117,300	125,800	473,500	82,680	46,780	36,720	17,740	298,200	176,500	116,300	8,560	39,620	1,540,000
1937	836,400	264,600	340,800	619,400	173,500	524,100	162,500	53,100	89,840	12,040	36,900	50,670	3,164,000
1938	30,940	66,660	301,200	946,200	1,156,000	732,400	1,745,000	223,200	163,100	50,320	41,920	17,380	5,474,000
1939	15,970	13,170	12,260	59,320	149,200	117,400	248,100	140,200	278,400	46,630	12,220	7,860	1,101,000
1940	7,550	12,690	9,880	10,210	33,180	22,000	362,500	417,800	418,400	642,500	39,390	17,080	1,993,000
1941	11,630	664,100	1,121,000	731,000	561,800	793,700	355,000	894,900	1,722,000	937,200	129,400	68,770	7,970,000
1942	217,900	198,000	171,300	99,180	120,500	118,100	2,575,000	2,474,000	985,200	148,000	67,310	266,600	7,441,000
1943	230,100	251,000	212,700	213,300	84,970	225,300	596,700	617,200	742,700	38,840	14,540	53,600	3,281,000
1944	205,100	16,680	42,480	270,200	480,500	759,100	196,800	2,058,000	486,600	44,930	23,220	44,200	4,628,000
1945	32,610	70,920	259,000	590,800	533,600	2,487,000	2,720,000	266,500	678,800	675,100	72,920	52,170	8,439,000
1946	411,100	141,200	174,200	411,000	759,500	613,700	228,200	763,900	1,334,000	49,520	82,660	127,100	5,096,000
1947	46,680	1,189,000	604,300	445,300	148,100	392,500	571,000	222,000	248,400	97,650	56,740	148,800	4,170,000
1948	41,660	84,370	523,300	356,800	328,300	852,600	135,500	713,800	89,260	150,000	39,140	33,140	3,348,000
1949	26,060	18,700	23,460	140,500	369,300	677,100	300,300	481,300	642,100	72,210	22,430	25,870	2,799,000
1950	161,400	140,200	34,790	336,500	1,485,000	184,100	385,200	1,098,000	218,500	154,800	216,500	431,300	4,846,000
1951	103,800	69,850	37,170	49,420	130,300	60,930	50,860	114,200	595,500	73,640	25,040	38,410	1,349,000
1952	19,920	19,970	20,250	23,090	39,770	62,430	327,800	449,400	205,800	16,650	10,680	11,530	1,207,000
1953	8,210	57,240	216,900	127,700	34,270	354,500	90,030	1,321,000	26,690	19,320	13,540	21,550	2,291,000
1954	25,110	30,960	105,000	113,400	33,780	19,700	51,240	196,900	19,730	13,090	13,460	8,100	630,500
1955	132,800	93,590	30,350	52,560	120,400	129,600	133,000	114,700	63,720	16,360	19,790	31,800	938,700
1956	17,520	9,840	14,480	25,510	95,430	17,590	18,920	262,100	25,840	7,770	6,210	6,920	508,100
1957	8,060	70,650	16,880	24,600	89,230	116,500	1,243,000	2,587,000	1,996,000	476,900	399,600	62,620	7,091,000

Yearly discharge, in cubic feet per second, of Trinity River near Oakwood, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	50,800	Dec. 25, 26, 1923	-	5,850	4,250,000	3,950	2,870,000
1925	608	13,000	May 21, 22, 1925	-	657	476,000	1,085	786,300
1926	628	20,500	May 2, 1926	62	5,100	3,690,000	5,370	3,890,000
1927	648	29,200	Apr. 23, 1927	58	5,540	4,010,000	5,320	3,850,000
1928	668	17,000	Apr. 17, 1928	80	3,000	2,180,000	3,220	2,330,000
1929	688	68,000	June 3, 1929	62	5,580	4,040,000	5,390	3,900,000
1930	703	84,400	May 23, 1930	50	4,890	3,540,000	5,460	3,950,000
1931	718	18,800	Dec. 13, 1930	50	3,260	2,360,000	2,400	1,790,000
1932	733	57,600	Feb. 25, 1932	62	8,850	6,430,000	8,860	6,440,000
1933	748	16,900	June 3, 1933	205	3,610	2,620,000	3,460	2,506,000
1934	763	24,200	Apr. 13, 1934	50	2,350	1,700,000	2,418	1,751,000
1935	788	48,400	May 24, 1935	79	5,821	4,214,000	6,646	4,811,000
1936	808	21,500	Dec. 12, 1935	61	2,121	1,540,000	3,120	2,265,000
1937	828	41,400	Oct. 4, 1936	92	4,370	3,164,000	2,930	2,121,000
1938	858	63,200	Feb. 27, 1938	76	7,562	5,474,000	7,068	5,117,000
1939	878	16,700	June 27, 1939	86	1,520	1,101,000	1,505	1,089,000
1940	898	17,900	July 10, 1940	83	2,746	1,993,000	5,151	3,740,000
1941	928	70,800	Nov. 28, 1940, June 22, 1941	149	11,010	7,970,000	9,367	6,781,000
1942	958	153,000	Apr. 29, 1942	423	10,280	7,441,000	10,425	7,548,000
1943	978	29,200	June 15, 1943	163	4,532	3,281,000	3,939	2,851,000
1944	1008	111,000	May 5, 1944	202	6,375	4,628,000	6,510	4,726,000
1945	1038	140,000	Apr. 3, 1945	168	11,660	8,439,000	12,160	8,803,000
1946	1058	54,000	June 10, 1946	340	7,040	5,096,000	8,577	6,210,000
1947	1088	54,000	Nov. 16, 1946	391	5,760	4,170,000	4,116	2,980,000
1948	1118	50,100	May 17, 1948	423	4,612	3,348,000	3,811	2,767,000
1949	1148	33,500	Mar. 5, 1949	196	3,867	2,799,000	4,237	3,068,000
1950	1178	56,600	Feb. 17, 1950	288	6,694	4,846,000	6,521	4,721,000
1951	1212	14,600	June 26, 1951	330	1,863	1,349,000	1,655	1,198,000
1952	1242	25,800	Apr. 30, 1952	133	1,663	1,207,000	1,969	1,430,000
1953	1282	49,700	May 20, 1953	109	3,164	2,291,000	2,997	2,170,000
1954	1342	12,600	May 18, 1954	105	871	630,500	1,003	726,100
1955	1392	11,600	Mar. 25, 1955	128	1,297	938,700	1,000	723,800
1956	1442	15,800	May 9, 1956	91	700	508,100	774	561,900
1957	1512	91,800	Apr. 28, 1957	85	9,796	7,091,000	-	-

Note.--Monthly and yearly records for January 1905 to September 1923 published in W. S. P. 850 and 878 have been found in error on basis of restudy of the original data and comparison with records at nearby stations. These records are not published herein and should not be used.

129. Trinity River near Midway, Tex.

Location.--Lat 31°04'40", long 95°42'00", at bridge on State Highway 21, 5 miles northeast of Midway, Madison County, 8.5 miles downstream from Boggy Creek, and at mile 230.

Drainage area.--14,484 sq mi.

Gage.--Wire-weight gage. Datum of gage is 117.63 ft above mean sea level, datum of 1929.

Average discharge.--18 years (1939-57), 5,949 cfs (4,307,000 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 146,000 cfs May 1, 1942 (gage height, 48.58 ft); minimum observed, 87 cfs July 27, 1956. Maximum stage known prior to construction of levees in 1916, about 45 ft in May 1890 (discharge not determined), from information by local residents. Flood of June 9, 1908, reached a stage of 44.3 ft, from floodmark and from information by local residents. Flood of May 27, 1930, reached a stage of 46.7 ft, from floodmark (flow confined within levees).

Remarks.--Some regulation and diversion above station. (See Remarks for Trinity River near Oakwood, elsewhere in this report.)

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	4,637	2,956	4,827	1,028	234	164	-
1940	158	284	842	347	1,835	481	6,820	7,624	7,437	12,070	716	370	3,251
1941	240	10,780	27,840	16,620	11,590	15,890	5,865	15,530	23,740	22,480	2,377	1,452	12,900
1942	4,460	6,026	3,518	2,184	2,688	2,329	28,330	55,680	21,710	3,669	1,143	4,688	11,400
1943	3,793	4,517	3,214	4,809	1,759	3,121	11,110	9,765	12,810	835	306	976	4,749
1944	3,348	433	1,064	6,692	9,906	14,340	4,245	40,280	9,745	850	517	952	7,728
1945	562	1,985	6,573	14,360	8,539	42,340	54,400	7,577	11,210	12,080	2,059	1,238	13,580
1946	7,384	2,664	3,988	8,839	15,970	14,330	4,937	15,100	24,870	1,260	994	2,713	8,524
1947	868	20,320	10,810	9,650	3,360	9,554	9,891	7,410	4,126	2,529	836	2,787	6,847
1948	819	1,732	8,083	5,722	6,601	14,130	3,187	11,480	1,682	2,488	676	578	4,787
1949	475	424	578	2,100	6,848	12,130	5,324	5,794	11,630	1,584	475	547	3,964
1950	4,233	2,878	1,187	6,345	27,070	5,638	7,435	16,820	5,359	2,575	3,212	6,002	7,257

Monthly and yearly mean discharge, in cubic feet per second, of Trinity River near Midway, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2,009	1,099	726	917	2,360	1,479	1,057	1,907	9,199	1,409	436	787	1,933
1952	369	435	546	613	1,507	1,686	5,160	8,355	4,457	355	210	213	1,989
1953	183	718	3,744	2,420	1,073	7,180	2,190	24,790	1,744	372	289	394	3,808
1954	380	640	2,560	1,977	909	484	1,044	3,619	405	206	242	147	1,058
1955	2,120	1,944	709	1,284	3,532	2,211	3,540	2,090	1,258	316	361	483	1,637
1956	358	202	322	541	2,071	475	810	4,813	510	141	113	145	874
1957	163	1,196	316	464	1,729	2,188	14,030	52,990	39,360	7,897	7,250	1,395	10,790

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	275,900	181,000	287,200	63,240	14,410	9,740	-
1940	9,720	16,900	51,800	21,360	105,500	29,580	405,800	468,800	442,600	742,200	44,050	21,990	2,360
1941	14,770	641,600	1,712,000	1,022,000	643,800	977,000	349,000	954,600	1,412,000	1,382,000	146,100	86,430	9,341,000
1942	274,200	358,600	216,300	134,300	149,300	143,200	1,686,000	3,424,000	1,292,000	225,600	70,290	279,000	8,253,000
1943	233,200	268,800	197,600	295,700	97,690	191,900	661,400	600,400	762,500	51,350	18,830	58,080	3,437,000
1944	205,900	25,790	65,430	411,500	569,800	881,800	252,600	2,477,000	579,800	52,270	31,800	56,650	5,610,000
1945	34,570	118,100	404,200	883,100	474,200	2,604,000	3,237,000	465,900	667,300	742,900	126,600	73,660	9,832,000
1946	454,000	158,500	245,200	543,500	886,800	881,000	293,800	928,400	1,480,000	77,490	61,090	161,400	6,171,000
1947	53,370	1,209,000	664,900	593,400	186,600	587,400	588,600	455,600	245,500	155,500	51,410	165,800	4,957,000
1948	50,380	103,100	497,000	351,800	379,700	868,800	189,600	705,600	100,100	153,000	41,540	34,380	3,475,000
1949	29,220	25,200	35,550	129,100	380,300	745,900	316,800	356,200	692,200	97,380	29,210	32,570	2,870,000
1950	260,300	171,300	72,980	390,100	1,504,000	346,700	442,400	1,034,000	318,900	158,400	197,500	357,100	5,254,000
1951	123,500	65,380	44,660	56,410	131,100	90,940	62,890	117,300	547,400	86,630	26,800	46,860	1,400,000
1952	22,700	25,860	33,600	37,710	86,710	103,700	307,000	513,700	265,200	21,830	12,920	12,700	1,444,000
1953	11,280	42,720	230,200	148,800	59,600	441,500	130,300	1,524,000	103,800	22,890	17,790	23,460	2,756,000
1954	23,370	38,080	157,400	121,500	50,480	29,760	62,090	222,500	24,120	12,680	14,890	8,770	765,600
1955	130,300	115,700	43,590	78,950	196,100	136,000	210,600	128,500	74,840	19,430	22,190	28,750	1,185,000
1956	21,990	12,000	19,800	33,280	119,100	29,200	48,190	296,000	30,350	8,690	6,950	8,660	634,200
1957	10,010	71,160	19,410	28,510	96,030	134,500	834,700	3,258,000	2,342,000	485,600	445,800	83,000	7,809,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	878	a14,600	June 29, 1939	-	-	-	-	-
1940	898	19,000	May 23, 1940	113	3,251	2,360,000	6,405	4,650,000
1941	928	b65,200	June 26, 1941	185	12,900	9,341,000	10,810	7,822,000
1942	958	b146,000	May 1, 1942	454	11,400	8,253,000	11,190	8,103,000
1943	978	c23,000	June 20, 1943	221	4,749	3,437,000	4,192	3,035,000
1944	1008	b108,000	May 8, 1944	295	7,728	5,610,000	8,086	5,870,000
1945	1038	145,000	Apr. 6, 1945	290	13,580	9,832,000	14,000	10,130,000
1946	1058	b44,500	June 16, 1946	460	8,524	6,171,000	10,000	7,241,000
1947	1088	b39,200	Nov. 22, 1946	535	6,847	4,957,000	5,084	3,680,000
1948	1118	29,100	May 22, 1948	445	4,787	3,475,000	4,015	2,914,000
1949	1148	25,600	Mar. 10, 1949	295	3,964	2,870,000	4,536	3,284,000
1950	1178	48,300	Feb. 21, 1950	378	7,257	5,254,000	6,882	4,983,000
1951	1212	13,500	June 27-28, 1951	375	1,933	1,400,000	1,724	1,248,000
1952	1242	20,600	May 4, 1952	156	1,989	1,444,000	2,267	1,646,000
1953	1282	42,800	May 26, 1953	158	3,808	2,756,000	3,718	2,691,000
1954	1342	11,900	May 19, 1954	105	1,058	765,600	1,155	836,400
1955	1392	10,200	Oct. 29, 1954	134	1,637	1,185,000	1,311	949,200
1956	1442	14,800	May 11, 1956	87	874	634,200	938	681,000
1957	1512	103,000	May 1, 1957	90	10,790	7,809,000	-	-

a Maximum for period April to September.
b Observed.
c Observed at crest.

130. Trinity River at Riverside, Tex.

Location.--Lat 30°52', long 95°24', at bridge on State Highway 45, 1,200 ft upstream from International-Great Northern Railroad bridge, 0.5 mile north of Riverside, Walker County, three-quarters of a mile downstream from Harmon Creek, and at mile 182.

Drainage area.--15,619 sq mi.

Supplemental records available.--Gage-height records collected in this vicinity since 1903 are contained in reports of United States Weather Bureau.

Gage.--Wire-weight gage. Datum of gage is 89.86 ft above mean sea level, datum of 1929, Galveston-Houston supplementary adjustment of 1936. Prior to May 6, 1941, chain, staff, or wire-weight gage at railroad bridge 1,200 ft downstream. Prior to July 1, 1903, at datum 7.7 ft lower.

Average discharge.--37 years (1903-6, 1923-57), 6,556 cfs (4,746,000 acre-ft per year).

Trinity River at Riverside, Tex.--Continued

Extremes.--1903-6, 1923-57: Maximum discharge, 121,000 cfs May 5, 1942 (gage height, 52.75 ft from floodmark); minimum observed, 70 cfs Aug. 20-26, Sept. 8-13, 1925, Sept. 29 to Oct. 4, 1931.
Maximum stage since at least 1908, that of May 5, 1942. Flood of June 11, 1908, reached a stage of 50.1 ft, present site and datum (discharge, 100,000 cfs).

Remarks.--Some regulation and diversion above station. (See Remarks for Trinity River near Oakwood, elsewhere in this report.)

Cooperation.--Gage-height records collected in cooperation with the U. S. Weather Bureau.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	7,176	14,690	37,920	11,910	1,489	1,575	8,098	6,594	347	-
1904	4,979	793	1,432	560	2,964	1,506	6,995	10,510	6,036	1,437	738	1,057	3,247
1905	98.9	286	1,227	1,033	4,226	9,260	15,020	40,200	31,270	20,460	7,965	516	11,010
1906	1,964	4,781	9,149	13,180	10,120	6,034	6,454	10,840	15,150	3,739	7,471	3,773	7,704
1907	1,688	500	7,247	-	-	-	-	-	-	-	-	-	-
1924	1,130	3,700	20,500	15,100	10,300	21,000	15,400	7,150	10,400	441	221	1,980	8,950
1925	170	188	274	564	341	435	359	6,190	352	151	100	147	782
1926	4,020	12,900	675	7,260	1,970	14,100	20,300	15,000	6,480	9,080	5,580	3,900	8,460
1927	2,110	1,790	9,840	7,730	9,760	17,400	17,200	12,700	6,760	3,940	643	314	7,500
1928	5,610	1,080	1,700	2,310	4,430	7,490	7,250	3,590	8,300	4,630	1,950	182	4,040
1929	106	762	6,790	9,360	4,460	7,100	6,430	22,600	36,200	2,110	256	729	8,070
1930	600	3,980	2,530	3,400	9,080	5,010	1,480	32,700	14,300	795	173	183	6,180
1931	3,970	1,610	11,400	4,570	11,100	9,840	7,220	6,780	1,630	630	391	238	4,920
1932	599	1,040	4,350	32,700	35,300	28,700	2,920	8,030	5,010	5,010	762	7,130	10,900
1933	475	481	2,110	11,500	4,660	13,200	5,960	7,250	7,750	649	1,550	1,490	4,770
1934	597	558	804	6,010	4,670	13,700	20,400	3,490	1,100	200	135	301	4,310
1935	161	1,535	3,090	4,420	8,769	5,370	4,958	39,310	27,400	10,920	1,357	1,880	9,102
1936	1,914	3,385	12,690	2,302	1,722	1,443	662	7,062	5,034	4,175	278	240	3,430
1937	12,610	6,127	5,637	12,660	5,164	10,910	3,908	1,109	1,944	269	522	1,495	5,216
1938	657	1,630	5,121	12,680	22,340	21,280	31,280	7,844	2,996	1,026	946	340	8,902
1939	280	534	478	2,955	5,840	3,458	5,429	3,398	6,068	1,427	313	173	2,496
1940	179	319	3,444	585	4,295	597	7,475	8,655	9,037	13,610	868	455	4,124
1941	296	12,250	35,390	18,890	13,880	18,100	6,272	16,810	21,590	25,980	2,662	1,909	14,550
1942	5,389	9,712	3,917	2,410	3,020	2,926	25,360	57,120	24,890	4,494	1,353	5,453	12,200
1943	3,956	4,731	3,514	6,441	1,965	3,229	12,140	10,280	14,240	1,273	396	1,053	5,265
1944	3,741	582	1,894	10,360	12,510	16,780	4,863	43,470	11,320	886	605	1,516	9,074
1945	614	3,497	9,785	18,900	10,080	41,360	57,160	9,291	11,410	13,540	3,541	2,114	15,110
1946	8,215	2,989	4,478	11,500	20,180	18,640	6,090	19,820	26,690	1,922	910	3,065	10,300
1947	1,051	22,510	11,550	13,170	3,813	13,190	10,390	10,150	4,384	2,905	877	3,018	8,097
1948	948	2,063	9,869	6,449	8,460	14,570	4,198	12,320	2,125	2,837	705	658	5,452
1949	518	467	667	2,930	8,420	14,020	9,136	6,075	13,060	1,781	538	629	4,814
1950	6,219	3,235	3,151	8,546	26,390	7,352	8,542	17,450	7,625	2,741	3,462	6,115	8,277
1951	2,447	1,301	826	1,028	2,481	1,864	1,192	1,966	9,222	1,639	444	814	2,088
1952	378	466	602	751	1,759	1,949	6,763	9,804	5,334	370	241	223	2,381
1953	184	946	4,935	3,114	2,494	8,037	2,756	27,661	2,787	415	299	476	4,556
1954	690	1,041	3,721	2,231	1,064	555	1,102	5,231	442	203	231	146	1,398
1955	2,333	2,735	807	1,670	5,789	2,551	6,954	2,342	1,389	373	387	492	2,284
1956	408	190	310	524	2,553	558	1,328	5,249	607	148	111	164	1,009
1957	166	1,297	373	507	2,023	3,096	13,940	57,750	41,270	8,975	8,054	1,413	11,620

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	441,300	816,000	2,332,000	708,900	91,540	93,720	497,900	405,400	20,650	-
1904	306,100	47,170	88,030	34,440	170,500	92,630	416,200	646,000	359,200	88,350	45,370	62,910	2,357,000
1905	6,080	16,990	75,440	63,500	234,700	569,400	893,600	2,472,000	1,861,000	1,258,000	489,700	30,720	7,971,000
1906	120,700	284,500	562,600	810,700	562,100	371,000	384,000	666,500	901,400	229,900	459,400	224,500	5,577,000
1907	103,800	29,770	445,600	-	-	-	-	-	-	-	-	-	-
1924	69,300	220,000	1,260,000	928,000	593,000	1,290,000	914,000	439,000	621,000	27,100	13,600	118,000	6,490,000
1925	10,400	11,200	16,800	34,700	18,900	26,800	21,400	381,000	20,900	9,260	6,170	8,780	566,000
1926	247,000	767,000	41,500	446,000	109,000	866,000	1,210,000	922,000	385,000	558,000	343,000	232,000	6,130,000
1927	130,000	106,000	605,000	475,000	542,000	1,070,000	1,020,000	779,000	402,000	242,000	39,600	18,700	5,430,000
1928	345,000	64,300	105,000	142,000	255,000	461,000	431,000	221,000	494,000	285,000	120,000	10,800	2,930,000
1929	6,520	45,300	418,000	576,000	248,000	437,000	383,000	1,390,000	2,150,000	130,000	15,700	43,400	5,840,000
1930	36,900	237,000	156,000	209,000	504,000	308,000	88,100	2,010,000	853,000	48,900	10,600	10,900	4,470,000
1931	244,000	95,800	701,000	281,000	616,000	605,000	430,000	417,000	97,000	38,700	24,000	14,200	3,560,000
1932	36,800	61,900	267,000	2,010,000	2,030,000	1,760,000	174,000	494,000	298,000	308,000	46,900	424,000	7,910,000
1933	29,200	28,600	130,000	707,000	259,000	812,000	355,000	446,000	461,000	39,900	95,300	88,700	3,450,000
1934	36,700	33,200	49,400	370,000	259,000	840,000	1,220,000	215,000	65,500	12,300	8,300	17,900	3,130,000
1935	9,910	91,370	190,000	271,800	487,000	330,200	295,000	2,417,000	1,631,000	671,200	83,460	111,900	6,590,000

Monthly and yearly runoff, in acre-feet, of Trinity River at Riverside, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	117,700	201,400	780,000	141,500	99,070	88,700	39,410	434,200	299,500	256,700	17,110	14,270	2,490,000
1937	775,400	364,600	346,600	778,200	286,800	670,600	232,500	68,190	115,600	16,520	32,110	88,960	3,776,000
1938	40,390	96,970	314,900	780,000	1,241,000	1,308,000	1,861,000	482,300	178,300	63,090	58,160	20,220	6,444,000
1939	17,200	31,760	29,400	181,700	324,400	212,600	323,000	208,900	361,100	87,750	19,260	10,270	1,807,000
1940	11,010	18,980	211,800	35,990	247,100	36,680	444,800	532,200	537,800	836,800	53,400	27,070	2,994,000
1941	18,190	729,000	2,176,000	1,161,000	770,900	1,113,000	373,200	1,033,000	1,284,000	1,598,000	163,700	113,600	10,530,000
1942	331,400	577,900	240,900	148,200	167,700	179,900	1,509,000	3,512,000	1,481,000	276,300	83,210	324,500	8,832,000
1943	243,200	281,500	216,100	396,000	109,200	198,600	722,200	632,300	847,600	78,300	24,370	62,660	3,812,000
1944	230,000	34,630	116,500	636,800	719,600	1,032,000	289,300	2,673,000	673,300	54,510	37,190	90,200	6,587,000
1945	37,780	208,100	601,700	1,162,000	559,800	2,543,000	3,401,000	571,300	679,100	832,600	217,700	125,800	10,940,000
1946	505,200	177,900	275,400	706,900	1,121,000	1,146,000	362,400	1,219,000	1,588,000	118,200	55,970	182,400	7,458,000
1947	64,610	1,339,000	710,400	809,600	211,800	810,900	618,300	624,300	260,800	178,600	53,910	179,600	5,862,000
1948	58,290	122,800	606,800	396,600	486,600	895,700	249,800	757,600	126,500	174,500	43,370	39,170	3,958,000
1949	31,870	27,810	41,040	180,200	467,600	862,300	543,600	373,500	777,100	109,500	33,110	37,430	3,485,000
1950	382,400	192,500	193,800	525,500	1,465,000	452,000	508,300	1,073,000	453,700	168,500	212,900	363,900	5,992,000
1951	150,400	77,430	50,810	63,220	137,800	114,600	70,900	120,900	548,700	100,800	27,290	48,430	1,511,000
1952	23,270	27,710	37,040	46,200	101,200	119,800	402,400	602,800	317,400	22,750	14,850	13,280	1,729,000
1953	11,290	56,290	303,500	191,400	138,500	494,200	164,000	1,701,000	165,800	25,510	18,380	28,310	3,298,000
1954	42,410	61,920	228,800	137,200	59,080	34,160	65,550	321,600	26,310	12,500	14,210	8,700	1,012,000
1955	143,500	162,700	49,650	102,700	321,500	156,800	413,800	144,000	82,630	22,950	23,780	29,290	1,653,000
1956	25,070	11,300	19,050	32,220	146,800	34,280	79,020	322,700	36,100	9,090	6,800	9,730	732,200
1957	10,210	77,190	22,920	31,170	112,400	190,300	829,500	3,551,000	2,456,000	551,900	495,200	84,090	8,412,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1903	-	-	Mar. 10, 1903	-	-	-	8,078	5,849,000
1904	-	-	May 9, 1904	-	3,247	2,357,000	2,774	2,014,000
1905	-	-	May 20, 1905	-	11,010	7,971,000	12,210	8,840,000
1906	-	-	Jan. 5, 6, 1906	-	7,704	5,577,000	7,167	5,189,000
1907	-	-	-	-	-	-	-	-
1924	588	a49,000	Apr. 28, 1924	180	8,950	6,490,000	6,870	4,980,000
1925	608	12,800	May 24, 1925	70	782	566,000	2,190	1,580,000
1926	628	52,200	Apr. 23, 1926	115	8,460	6,130,000	8,170	5,910,000
1927	648	47,900	Apr. 15, 1927	170	7,500	5,430,000	7,050	5,100,000
1928	668	18,600	June 14, 1928	115	4,040	2,930,000	3,980	2,890,000
1929	688	76,100	June 1, 1929	85	8,070	5,840,000	8,010	5,800,000
1930	703	79,000	May 29, 1930	130	6,180	4,470,000	7,030	5,080,000
1931	718	33,200	May 1, 1931	70	4,920	3,560,000	3,990	2,890,000
1932	733	56,300	Feb. 22, 1932	70	10,900	7,910,000	10,700	7,740,000
1933	748	22,800	Mar. 6, 1933	300	4,770	3,450,000	4,670	3,380,000
1934	763	42,700	Mar. 4, 1934	90	4,310	3,130,000	4,550	3,299,000
1935	788	61,200	May 21, 1935	92	9,102	6,590,000	10,220	7,398,000
1936	808	35,300	Dec. 9, 1935	100	3,430	2,490,000	3,963	2,877,000
1937	828	a25,300	Oct. 13, 1936	110	5,216	3,776,000	3,787	2,742,000
1938	858	44,700	Mar. 9, 1938	149	8,902	6,444,000	8,385	6,070,000
1939	878	24,600	Feb. 26, 1939	140	2,496	1,807,000	2,722	1,971,000
1940	898	35,200	Dec. 23, 1939	137	4,124	2,994,000	7,817	5,675,000
1941	928	a52,200	Nov. 26, 1940	245	14,550	10,530,000	12,100	8,761,000
1942	958	121,000	May 5, 1942	755	12,200	8,832,000	11,630	8,423,000
1943	978	23,700	June 21, 22, 1943	275	5,265	3,812,000	4,769	3,452,000
1944	1008	a83,000	May 11, 1944	351	9,074	6,587,000	9,716	7,053,000
1945	1038	116,000	Apr. 9, 1945	340	15,110	10,940,000	15,270	11,050,000
1946	1058	a40,200	June 19, 1946	480	10,300	7,458,000	11,900	8,614,000
1947	1088	a40,000	Mar. 13, 1947	555	8,097	5,862,000	6,265	4,536,000
1948	1118	28,500	May 24, 1948	511	5,452	3,958,000	4,505	3,271,000
1949	1148	25,800	Mar. 11, 1949	292	4,814	3,485,000	5,736	4,153,000
1950	1178	43,000	Feb. 22, 1950	357	8,277	5,992,000	7,600	5,501,000
1951	1212	13,700	June 27, 28, 1951	375	2,088	1,511,000	1,824	1,321,000
1952	1242	21,900	May 5, 1952	188	2,381	1,729,000	2,771	2,012,000
1953	1282	46,900	May 18, 1953	160	4,556	3,298,000	4,503	3,260,000
1954	1342	17,800	May 12, 1954	97	1,398	1,012,000	1,430	1,035,000
1955	1392	26,600	Apr. 10, 1955	170	2,284	1,653,000	1,869	1,353,000
1956	1442	15,800	May 11, 1956	87	1,009	732,200	1,084	787,100
1957	1512	97,700	May 4, 1957	123	11,620	8,412,000	-	-

a Observed.

Note.--Daily records for January 1903 to December 1907 published in Water-Supply Papers 99, 132, 174, and 210 have been found in error and should not be used on the basis of restudy of the original records. For that period, only revised monthly figures as published herein are considered reliable.

131. Trinity River at Romayor, Tex.

Location. --Lat 30°25'30", long 94°51'05", at bridge on State Highway 105, 1.9 miles south of Romayor, Liberty County, 2.0 miles downstream from Gulf, Colorado & Santa Fe Railway bridge, 4.1 miles downstream from Big Creek, and at mile 94.

Drainage area. --17,192 sq mi.

Supplemental records available. --Records of chemical analyses for the periods October 1945 to November 1949 and February 1950 to September 1957 and water temperatures for the period February 1950 to September 1957 are published in reports of Geological Survey.

Gage. --Water-stage recorder. Datum of gage is 35.92 ft above mean sea level, datum of 1929. Prior to September 1943, chain gage at railway bridge 2.0 miles upstream at datum 53.57 ft higher, all readings were negative, giving distance below base of rail.

Average discharge. --33 years, 7,333 cfs (5,309,000 acre-ft per year).

Extremes. --1924-57: Maximum discharge, 111,000 cfs May 9, 1942 (gage height, 35.8 ft, from floodmarks, present site and datum); minimum, 102 cfs Aug. 24, 25, 1956.
Maximum stage since at least 1908, that of May 9, 1942.

Remarks. --Some regulation and diversion above station. (See Remarks for Trinity River near Oakwood, elsewhere in this report.)

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	9,330	14,600	774	383	1,030	-
1925	343	361	457	1,310	594	528	415	5,800	455	226	160	205	913
1926	5,940	17,300	1,370	10,600	2,730	16,000	23,100	16,000	6,570	7,980	5,740	3,800	9,790
1927	1,830	1,810	9,930	8,400	10,400	19,400	18,700	14,300	6,820	4,440	1,080	498	8,130
1928	6,030	1,610	2,500	3,200	4,470	9,470	8,040	3,980	8,130	4,740	2,030	302	4,540
1929	261	918	7,820	10,800	6,420	9,740	7,200	29,700	37,700	2,770	494	949	9,570
1930	757	5,090	2,590	6,300	12,400	6,660	2,270	23,100	20,600	1,390	338	368	6,780
1931	4,470	2,170	13,700	7,890	13,100	11,000	7,230	7,520	1,590	767	517	401	5,840
1932	464	1,580	6,300	33,840	37,720	32,820	3,600	7,550	5,260	4,670	1,300	6,930	11,780
1933	724	592	1,950	11,700	6,650	15,800	6,760	6,590	8,160	1,260	1,740	1,650	5,300
1934	684	574	698	5,650	6,860	15,500	21,600	3,310	1,370	301	247	342	4,730
1935	381	2,115	5,293	5,024	9,438	5,686	5,629	49,110	32,460	13,490	1,629	2,225	11,060
1936	1,768	4,379	16,660	2,805	2,255	1,629	794	7,016	5,245	6,295	572	357	4,174
1937	11,010	6,093	5,971	13,750	6,003	10,920	5,163	1,285	1,764	424	455	1,648	5,388
1938	911	2,010	5,189	13,050	22,190	22,020	29,410	11,800	3,423	1,308	1,259	552	9,328
1939	467	777	699	4,794	7,556	4,610	5,108	3,883	5,606	2,157	388	276	2,991
1940	238	355	3,990	842	5,956	744	7,407	9,237	10,290	13,990	1,054	643	4,553
1941	422	13,300	43,240	22,760	16,400	22,070	6,941	20,730	22,580	28,480	2,849	2,666	16,930
1942	6,032	15,290	4,415	2,882	3,452	3,811	25,680	60,690	26,410	6,012	3,412	5,616	13,680
1943	3,817	5,826	4,478	9,750	2,505	3,239	12,980	9,988	14,240	2,360	963	1,112	5,937
1944	3,801	794	2,141	11,850	15,210	18,680	6,582	48,930	13,330	1,110	781	1,927	10,450
1945	726	3,942	11,150	23,250	12,730	42,110	65,710	10,980	11,010	14,700	2,645	3,453	16,860
1946	8,350	3,392	5,260	13,770	23,660	20,780	6,441	22,240	28,640	3,296	940	3,330	11,590
1947	1,304	27,500	12,940	19,470	5,130	15,520	10,330	11,770	4,217	3,811	960	2,996	9,681
1948	987	1,867	10,060	6,921	10,880	16,260	6,766	13,140	2,678	2,802	817	725	6,167
1949	586	584	688	2,993	10,090	17,070	11,340	5,495	14,550	2,260	802	928	5,566
1950	11,790	4,052	6,848	13,860	30,070	11,470	9,316	19,530	13,460	4,050	3,751	6,166	11,070
1951	3,182	1,339	904	1,173	2,511	2,579	1,600	2,186	9,702	2,188	514	909	2,387
1952	437	556	765	864	2,152	2,607	7,975	10,720	6,320	516	286	237	2,779
1953	223	927	5,258	3,805	3,870	8,590	3,334	33,040	4,794	677	475	590	5,511
1954	597	1,207	4,376	2,617	1,201	724	1,202	6,237	749	501	550	214	1,694
1955	1,974	3,848	1,153	2,305	7,960	2,876	9,735	2,767	1,739	525	462	498	2,935
1956	620	274	407	678	3,229	955	2,032	5,143	774	201	128	165	1,211
1957	181	1,303	476	498	2,173	3,943	14,190	62,000	45,120	9,757	10,140	1,847	12,690

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	573,900	868,000	47,600	23,500	61,600	-
1925	21,100	21,500	28,100	80,400	33,000	32,400	24,700	356,000	27,100	13,900	9,850	12,200	660,000
1926	365,000	1,030,000	84,000	651,000	152,000	983,000	1,380,000	986,000	391,000	491,000	353,000	226,000	7,090,000
1927	113,000	107,000	611,000	517,000	580,000	1,190,000	1,110,000	877,000	406,000	273,000	66,700	29,700	5,880,000
1928	371,000	95,800	154,000	197,000	257,000	582,000	478,000	245,000	484,000	291,000	125,000	18,000	3,300,000
1929	16,000	54,600	481,000	664,000	357,000	599,000	428,000	1,830,000	2,240,000	170,000	30,400	56,500	6,930,000
1930	46,500	303,000	159,000	387,000	689,000	410,000	135,000	1,420,000	1,230,000	85,500	20,800	21,900	4,910,000
1931	275,000	129,000	842,000	485,000	728,000	676,000	430,000	462,000	94,600	47,200	31,800	23,900	4,220,000
1932	28,500	94,000	387,000	2,081,000	2,170,000	2,020,000	214,000	464,000	313,000	287,000	79,900	412,000	8,550,000
1933	44,500	35,200	120,000	719,000	369,000	972,000	402,000	405,000	486,000	77,500	107,000	98,200	3,840,000
1934	42,100	34,200	42,900	347,000	381,000	953,000	1,290,000	204,000	81,500	18,500	15,200	20,400	3,430,000
1935	23,440	125,800	325,500	308,900	524,200	349,600	334,900	3,019,000	1,932,000	829,400	100,200	132,400	8,005,000
1936	108,700	260,500	1,024,000	172,500	129,700	100,100	47,230	431,400	312,100	387,100	35,180	21,240	3,030,000
1937	677,200	362,600	367,200	845,600	333,400	671,600	307,200	79,000	105,000	26,100	27,960	98,060	3,901,000
1938	56,030	119,600	319,100	802,400	1,232,000	1,354,000	1,750,000	725,600	203,700	80,450	77,400	32,880	6,753,000
1939	28,720	46,230	42,960	294,800	419,700	283,500	304,000	238,700	333,600	132,700	23,830	16,410	2,165,000
1940	14,650	21,100	245,300	51,750	342,600	45,770	440,800	568,000	612,200	860,300	64,800	38,290	3,306,000

Monthly and yearly runoff, in acre-feet, of Trinity River at Romayor, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	25,930	791,300	2,658,000	1,399,000	910,600	1,357,000	413,000	1,275,000	1,344,000	1,751,000	175,200	158,600	12,260,000
1942	370,900	909,900	271,400	177,200	191,700	234,300	1,528,000	3,732,000	1,572,000	369,700	209,800	334,200	9,901,000
1943	234,700	346,700	275,300	599,500	139,100	199,200	772,200	614,100	847,100	145,100	59,180	66,190	4,298,000
1944	233,700	47,240	131,600	728,400	874,700	1,148,000	391,700	3,009,000	793,100	68,270	48,020	114,700	7,588,000
1945	44,640	234,600	685,900	1,429,000	707,200	2,589,000	3,910,000	675,100	655,200	904,100	162,600	205,500	12,200,000
1946	513,400	201,900	323,400	846,900	1,314,000	1,278,000	383,200	1,368,000	1,704,000	202,700	57,800	198,200	8,392,000
1947	80,150	1,637,000	795,400	1,197,000	284,900	954,100	614,500	723,600	250,900	234,300	59,030	178,300	7,009,000
1948	60,680	111,100	618,400	425,600	626,100	999,500	402,600	807,800	159,300	172,300	50,230	43,150	4,477,000
1949	36,060	34,750	42,290	184,000	560,400	1,050,000	674,800	337,800	866,000	139,000	49,330	55,240	4,030,000
1950	724,900	241,100	421,100	852,400	1,670,000	705,500	554,300	1,201,000	800,900	249,000	230,700	366,900	8,018,000
1951	195,600	79,660	55,560	72,100	139,400	158,600	95,200	134,400	577,300	134,500	31,580	54,090	1,728,000
1952	26,900	33,050	47,050	53,100	123,800	160,300	474,500	659,400	376,100	31,750	17,590	14,100	2,018,000
1953	13,710	55,160	323,300	234,000	214,900	528,200	198,400	2,031,000	285,300	41,630	29,200	35,080	3,990,000
1954	36,710	71,800	269,100	160,900	66,720	44,530	71,510	383,500	44,540	30,790	33,840	12,740	1,227,000
1955	121,400	229,000	70,880	141,700	422,100	176,900	579,300	170,100	103,500	32,260	28,420	29,660	2,125,000
1956	38,140	16,300	25,050	41,700	185,800	58,700	120,900	316,200	46,080	12,350	7,860	9,830	878,900
1957	11,100	77,520	29,240	30,630	120,700	242,500	844,500	3,812,000	2,685,000	600,000	623,300	109,900	9,186,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	a39,700	June 4, 1924	-	-	-	-	-
1925	608	b11,800	May 24, 25, 1925	132	913	660,000	2,860	2,070,000
1926	628	b46,900	Apr. 26, 27, 1926	200	9,790	7,090,000	8,900	6,440,000
1927	648	b40,900	Apr. 18, 1927	390	8,130	5,880,000	7,840	5,670,000
1928	668	b17,400	June 15, 1928	240	4,540	3,300,000	4,450	3,230,000
1929	688	b81,100	May 31, 1929	-	9,570	6,930,000	9,510	6,880,000
1930	703	b59,400	June 2, 1930	245	6,780	4,910,000	7,800	5,650,000
1931	718	b25,000	Dec. 6, 1930, Feb. 10, 1931	195	5,840	4,220,000	4,820	3,490,000
1932	733	b58,000	Feb. 25, 1932	-	11,780	8,550,000	11,350	8,241,000
1933	748	b31,500	Mar. 7, 8, 1933	525	5,300	3,840,000	5,190	3,750,000
1934	763	b44,400	Mar. 5, 1934	180	4,730	3,430,000	5,219	3,779,000
1935	788	b72,000	May 22, 23, 1935	257	11,060	8,005,000	12,330	8,924,000
1936	808	b47,000	Dec. 9, 1935	295	4,174	3,030,000	4,192	3,044,000
1937	828	b23,000	Oct. 14-17, 1936	245	5,388	3,901,000	4,128	2,989,000
1938	858	b41,300	Mar. 11, 12, 1938	245	9,328	6,753,000	8,808	6,376,000
1939	878	31,200	Feb. 27, 1939	230	2,991	2,165,000	3,216	2,328,000
1940	898	27,400	Dec. 25, 1939	210	4,553	3,306,000	8,954	6,500,000
1941	928	b61,200	Nov. 26, 1940	400	16,930	12,260,000	14,280	10,340,000
1942	958	111,000	May 9, 1942	915	13,680	9,901,000	12,710	9,206,000
1943	978	24,100	Jan. 8, 1943	394	5,937	4,298,000	5,324	3,854,000
1944	1008	69,000	May 15, 1944	540	10,450	7,588,000	11,210	8,141,000
1945	1038	106,000	Apr. 13, 1945	454	16,860	12,200,000	16,960	12,280,000
1946	1058	49,400	Feb. 11, 1946	-	11,590	8,392,000	13,630	9,865,000
1947	1088	48,800	Mar. 15, 1947	700	9,681	7,009,000	7,303	5,287,000
1948	1118	28,500	May 26, 1948	612	6,167	4,477,000	5,234	3,800,000
1949	1148	31,900	Apr. 23, 1949	402	5,566	4,030,000	7,326	5,304,000
1950	1178	49,100	June 4, 1950	578	11,070	8,018,000	9,616	6,962,000
1951	1212	15,100	June 29, 1951	455	2,387	1,728,000	2,078	1,504,000
1952	1242	28,300	Apr. 24, 1952	190	2,779	2,018,000	3,172	2,303,000
1953	1282	51,900	May 19, 1953	192	5,511	3,990,000	5,491	3,975,000
1954	1342	18,800	May 13, 1954	164	1,694	1,227,000	1,755	1,270,000
1955	1392	34,000	Apr. 13, 1955	230	2,935	2,125,000	2,463	1,783,000
1956	1442	14,600	May 12, 1956	104	1,211	878,900	1,264	917,300
1957	1512	93,000	May 10, 1957	139	12,690	9,186,000	-	-

a Maximum observed from May to September.
b Maximum observed.

132. West Fork San Jacinto River near Conroe, Tex. 1/

Location.--Lat 30°15', long 95°28', at bridge on U. S. Highway 75, 285 ft upstream from International-Great Northern Railroad bridge, 3½ miles downstream from Lake Creek, 4¼ miles south of Conroe, Montgomery County, and at mile 79.

Drainage area.--832 sq mi.

Gage.--Water-stage recorder. Datum of gage is 100.06 ft above mean sea level, datum of 1929, supplementary adjustments of 1936 and 1943. May 7, 1924, to Sept. 30, 1927, inverted staff gage (zero at base of rail) at railroad bridge 285 ft downstream at datum 25.10 ft higher.

Average discharge.--21 years (1924-27, 1939-57), 523 cfs (378,600 acre-ft per year).

Extremes.--1924-27, 1939-57: Maximum discharge, 110,000 cfs Nov. 25, 1940 (gage height, 25.85 ft), from rating curve extended above 43,000 cfs on basis of velocity-area studies; minimum, no flow June 14, 1956, result of construction dam upstream.

Maximum stage since at least December 1913, that of Nov. 25, 1940. Flood of December 1913 reached a stage of 25.2 ft, present site and datum, from information by International-Great Northern Railroad (discharge, 101,000 cfs, from rating curve extended as indicated above).

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	2,060	2,030	54.4	27.2	29.0	-
1925	20.3	20.8	41.2	128	79.9	39.9	26.0	18.9	15.4	13.5	20.5	18.2	36.7
1926	1,470	4,120	241	1,920	221	2,270	5,450	1,150	122	109	85.1	50.4	1,430
1927	32.9	30.2	876	204	299	1,690	2,200	327	1,100	199	67.0	36.5	588
1939	-	-	-	-	-	-	-	-	-	-	26.4	15.2	-
1940	12.5	21.4	139	59.5	614	69.5	151	295	1,300	321	21.2	13.9	248
1941	14.7	6,834	3,484	1,012	1,513	1,510	2,158	524	2,028	302	45.5	157	1,620
1942	682	1,659	177	158	200	188	2,226	867	715	268	68.2	149	610
1943	53.6	234	634	1,157	131	266	99.3	345	394	317	164	27.7	322
1944	29.3	37.8	232	1,686	1,431	889	141	1,430	196	30.7	30.7	50.9	515
1945	24.5	518	1,647	1,796	1,818	783	3,575	981	328	110	1,899	799	1,183
1946	95.1	65.6	303	1,819	1,755	2,319	198	1,688	1,023	266	34.5	61.6	800
1947	378	4,610	406	2,122	201	1,723	130	654	74.5	46.7	27.2	26.5	868
1948	22.1	53.9	233	159	610	813	353	143	35.2	27.4	15.3	17.7	206
1949	15.2	26.7	33.4	127	882	1,158	1,066	122	46.6	50.6	39.2	41.3	296
1950	976	83.4	1,002	1,361	1,786	417	603	897	2,930	80.5	26.9	71.5	844
1951	43.0	29.1	34.8	56.9	123	206	117	35.0	23.1	15.3	11.7	21.1	59.2
1952	15.8	20.3	49.0	44.5	292	255	1,348	486	123	29.3	12.6	9.87	222
1953	8.68	21.4	106	208	481	213	388	2,834	57.6	46.0	32.7	92.5	376
1954	29.8	139	909	293	137	62.9	68.8	183	18.4	39.9	41.8	8.70	162
1955	111	217	75.2	243	1,434	80.7	307	65.7	29.0	21.7	44.6	18.3	212
1956	14.0	12.7	21.5	44.2	268	99.6	270	36.5	33.3	12.7	7.95	8.22	67.9
1957	8.14	13.0	33.4	21.9	57.5	311	1,671	1,262	320	25.7	9.91	25.9	313

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	127,000	121,000	3,340	1,670	1,730	-
1925	1,250	1,240	2,530	7,850	4,440	2,450	1,550	1,160	918	827	1,260	1,080	26,600
1926	90,400	245,000	14,800	118,000	12,300	139,000	324,000	70,700	7,280	6,730	5,230	3,000	1,040,000
1927	2,030	1,800	53,900	12,500	16,600	104,000	131,000	20,100	65,300	12,300	4,120	2,170	426,000
1939	-	-	-	-	-	-	-	-	-	-	1,620	902	-
1940	772	1,280	8,530	3,660	35,340	4,280	8,980	18,150	77,340	19,770	1,300	827	180,200
1941	902	406,600	214,200	62,260	84,040	92,860	128,400	32,210	120,700	18,550	2,800	9,320	1,173,000
1942	41,930	98,740	10,870	9,740	11,120	11,550	132,400	53,330	42,550	16,450	4,200	8,880	441,800
1943	3,300	13,900	38,990	71,150	7,270	16,340	5,910	21,230	23,450	19,470	10,110	1,650	232,800
1944	1,800	2,250	14,280	103,700	82,300	54,660	8,370	87,930	11,660	1,890	1,890	3,030	373,800
1945	1,510	30,800	101,300	110,400	101,000	48,120	212,700	60,340	19,520	6,770	116,700	47,560	856,700
1946	5,850	3,910	18,630	111,800	97,460	142,600	11,800	103,800	60,900	16,340	2,120	3,660	578,900
1947	23,230	274,100	24,960	130,500	11,140	105,900	7,730	40,190	4,440	2,870	1,670	1,570	628,300
1948	1,360	3,210	14,340	9,770	35,110	50,020	20,990	8,790	2,100	1,690	942	1,060	149,400
1949	932	1,590	2,050	7,830	49,000	71,220	63,420	7,520	2,770	3,110	2,410	2,460	214,300
1950	60,020	4,960	61,610	83,660	99,180	25,610	35,900	55,140	174,400	4,950	1,650	4,250	611,300
1951	2,650	1,730	2,140	3,500	6,810	12,660	6,950	2,150	1,380	942	718	1,260	42,890
1952	970	1,210	3,010	2,730	16,800	15,680	80,210	29,860	7,330	1,800	776	587	160,900
1953	534	1,270	6,490	12,790	26,710	13,090	23,090	174,200	3,430	2,830	2,010	5,500	271,900
1954	1,830	8,280	55,870	18,030	7,610	3,870	4,100	11,280	1,090	2,460	2,570	517	117,500
1955	6,830	12,910	4,630	14,950	79,640	4,960	18,290	4,040	1,730	1,330	2,740	1,090	153,100
1956	863	754	1,320	2,720	15,420	6,120	16,090	2,240	1,980	781	489	489	49,270
1957	501	776	2,060	1,350	3,190	19,100	99,460	77,590	19,050	1,580	610	1,540	226,800

1/ Published as "San Jacinto River near Conroe" prior to 1939.

Yearly discharge, in cubic feet per second, of West Fork San Jacinto River near Conroe, Tex.

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1924	588	a38,000	May 30, 1924	-	-	-	-	-	-	-	-
1925	608	-	-	11	36.7	0.044	0.61	26,600	513	8.38	371,700
1926	628, 1058	b80,000	Apr. 22, 1926	16	1,430	1.72	23.37	1,040,000	1,030	16.78	744,000
1927	648	32,700	Apr. 17, 1927	24	588	.707	9.58	426,000	-	-	-
1939	878	-	-	-	-	-	-	-	-	-	-
1940	898	13,100	June 12, 1940	10	248	.298	4.07	180,200	1,090	17.84	791,300
1941	928	110,000	Nov. 25, 1940	11	1,620	1.95	26.42	1,173,000	971	15.82	702,700
1942	958	15,600	Apr. 10, 1942	37	610	.733	9.94	441,800	479	7.79	346,400
1943	978	4,480	May 31, 1943	24	322	.387	5.24	232,800	269	4.39	194,900
1944	1008	10,400	Feb. 1, 1944	18	515	.619	8.41	373,800	674	11.00	489,000
1945	1038	41,100	Aug. 30, 1945	21	1,183	1.42	19.29	856,700	1,038	16.93	751,500
1946	1058	25,100	Mar. 14, 1946	23	800	.962	13.05	578,900	1,210	19.67	872,800
1947	1088	27,500	Nov. 6, 1946	21	868	1.04	14.16	628,300	449	7.32	324,900
1948	1118	3,320	Mar. 2, 1948	13	206	.248	3.36	149,400	186	3.05	135,000
1949	1148	11,000	Feb. 28, 1949	15	296	.356	4.84	214,300	465	7.58	336,300
1950	1178	37,000	June 3, 1950	19	844	1.01	13.79	611,300	679	11.09	491,300
1951	1212	1,920	Mar. 28, 1951	7.0	59.2	.071	.98	42,890	57.4	.95	41,550
1952	1242	9,150	Apr. 25, 1952	5.8	222	.267	3.63	160,900	226	3.70	164,100
1953	1282	12,000	May 16, 1953	7.6	376	.452	6.14	271,900	455	7.44	329,600
1954	1342	3,180	Dec. 22, 1953	7.5	162	.195	2.65	117,500	105	1.70	75,900
1955	1392	11,700	Feb. 7, 1955	8.8	212	.255	3.43	153,100	182	2.96	131,700
1956	1442	2,580	Apr. 19, 1956	0	67.9	.082	1.11	49,270	68.4	1.12	49,670
1957	1512	14,000	May 1, 1957	7.5	313	.376	5.11	226,800	-	-	-

a Maximum observed May to September.
b Maximum observed.

133. Spring Creek near Spring, Tex.

Location.--Lat 30°06'35", long 95°26'10", at bridge on U. S. Highway 75, 4,500 ft upstream from International-Great Northern Railroad bridge, 2.4 miles northwest of Spring, Harris County, and 4 miles downstream from Willow Creek.

Drainage area.--400 sq mi.

Gage.--Water-stage recorder. Datum of gage is 78.10 ft above mean sea level, datum of 1929. Prior to Jan. 5, 1946, wire-weight gage at same site and datum.

Average discharge.--18 years (1939-57), 217 cfs (157,100 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 42,700 cfs Nov. 25, 1940 (gage height, 28.60 ft, from graph based on gage readings); minimum, 1.1 cfs Oct. 23, 24, 1956.
Maximum stage since about 1879, 29.3 ft May 30, 1929, from floodmarks identified by local residents (discharge, 48,300 cfs).

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	27.7	29.5	126	62.0	17.6	13.0	-
1940	10.3	13.3	22.2	23.6	99.9	20.5	34.9	28.5	294	98.0	13.9	9.88	55.2
1941	16.2	2,536	1,949	343	549	936	1,943	382	652	142	43.4	378	819
1942	322	547	67.5	59.5	107	104	1,182	66.9	155	188	37.4	90.7	242
1943	33.1	134	148	430	58.2	112	48.0	133	85.0	574	138	26.9	162
1944	21.5	28.7	58.7	561	504	698	76.1	517	98.0	27.7	39.5	31.2	222
1945	21.8	167	685	863	456	118	1,736	617	65.3	37.4	1,208	213	516
1946	91.0	40.2	181	787	1,009	493	92.4	1,188	593	577	38.1	40.3	425
1947	131	2,251	174	1,154	106	152	63.4	529	58.9	32.6	29.3	24.6	392
1948	19.1	31.2	122	67.8	143	158	95.1	50.2	21.8	19.4	13.4	22.3	63.4
1949	13.3	20.9	20.5	63.3	354	480	552	79.9	36.3	44.5	31.6	34.4	142
1950	721	37.7	413	598	714	119	398	260	1,461	90.8	26.2	21.0	402
1951	17.0	17.4	18.8	25.6	30.2	46.9	34.3	22.0	21.8	13.4	9.26	47.2	25.2
1952	13.9	17.7	20.4	22.4	111	33.8	601	205	45.6	27.5	17.5	10.8	92.9
1953	7.64	19.1	53.8	29.4	83.5	24.5	173	1,354	31.2	23.3	26.6	26.9	156
1954	36.6	56.1	255	135	62.1	26.3	28.3	21.0	12.8	43.9	15.1	5.92	58.4
1955	52.2	28.3	35.5	60.7	376	31.0	41.2	22.7	12.0	9.68	12.2	15.7	55.8
1956	6.44	5.87	9.96	24.1	56.3	14.7	16.5	9.10	8.19	5.58	2.84	3.86	13.4
1957	3.06	3.55	8.88	4.52	13.1	75.6	136	398	100	12.3	7.35	21.5	65.7

Monthly and yearly runoff, in acre-feet, of Spring Creek near Spring, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	1,650	1,810	7,530	3,810	1,080	771	-
1940	635	794	1,360	1,450	5,750	1,260	2,080	1,750	17,510	6,020	857	588	40,050
1941	996	150,900	119,800	21,080	30,470	57,580	115,600	23,480	38,830	8,760	2,670	22,460	592,600
1942	19,800	32,550	4,150	3,660	5,920	6,390	70,340	4,110	9,250	11,590	2,300	5,400	175,500
1943	2,040	7,990	9,110	26,430	3,230	6,870	2,860	8,170	5,060	35,310	8,470	1,600	117,100
1944	1,320	1,710	3,610	34,510	28,970	42,940	4,530	31,810	5,830	1,710	2,430	1,860	161,200
1945	1,340	9,930	42,120	53,090	25,340	7,260	103,300	37,960	3,890	2,300	74,300	12,680	373,500
1946	5,590	2,390	11,140	48,370	56,060	30,310	5,500	73,030	35,290	35,460	2,340	2,400	307,900
1947	8,040	134,000	10,710	70,930	5,900	9,350	3,770	32,520	3,510	2,010	1,800	1,460	284,000
1948	1,170	1,860	7,520	4,170	8,250	9,700	5,660	3,090	1,300	1,190	823	1,330	46,060
1949	819	1,250	1,260	3,890	19,650	29,530	32,850	4,910	2,160	2,740	1,940	2,050	103,000
1950	44,300	2,250	25,410	36,790	39,650	7,330	23,690	15,970	86,940	5,580	1,610	1,250	290,800
1951	1,050	1,040	1,160	1,570	1,680	2,880	2,040	1,350	1,300	823	569	2,810	18,270
1952	857	1,050	1,250	1,380	6,380	2,070	35,750	12,600	2,710	1,690	1,080	642	67,480
1953	469	1,140	3,310	1,810	4,640	1,510	10,270	83,270	1,860	1,430	1,640	1,600	112,900
1954	2,250	3,340	15,650	8,290	3,450	1,620	1,680	1,290	764	2,700	926	352	42,310
1955	3,210	1,680	2,180	3,730	20,870	1,910	2,450	1,400	716	595	747	932	40,420
1956	396	349	612	1,480	3,240	902	984	560	488	343	175	230	9,760
1957	188	211	546	278	730	4,650	8,060	24,460	5,950	758	452	1,280	47,560

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1939	898	a838	June 3, 1939	-	-	-	-	-	-	-	-
1940	898	b3,420	June 12, 1940	7.7	55.2	0.138	1.88	40,050	426	14.49	309,000
1941	928	42,700	Nov. 25, 1940	10	819	2.05	27.78	592,600	521	17.69	377,400
1942	958	14,200	Apr. 9, 1942	26	242	.605	8.22	175,500	191	6.47	138,100
1943	978	8,000	July 30, 1943	19	162	.405	5.50	117,100	145	4.91	104,600
1944	1008	b5,260	Mar. 16, 1944	19	222	.555	7.55	161,200	286	9.74	208,000
1945	1038	b31,100	Aug. 30, 1945	19	516	1.29	17.50	373,500	469	15.89	339,200
1946	1058	12,200	May 21, 1946	28	425	1.06	14.42	307,900	610	20.69	441,500
1947	1088	10,000	Nov. 6, 1946	18	392	.980	13.30	284,000	196	6.64	141,800
1948	1118	1,430	Mar. 3, 1948	11	63.4	.158	2.17	46,060	53.5	1.83	38,840
1949	1148	3,850	Apr. 24, 1949	13	142	.355	4.83	103,000	237	8.05	171,700
1950	1178	19,300	June 4, 1950	17	402	1.00	13.64	290,800	307	10.41	222,100
1951	1212	407	Sept. 24, 1951	6.9	25.2	.063	.86	18,270	25.1	.86	18,180
1952	1242	4,130	Apr. 14, 1952	8.4	92.9	.232	3.17	67,460	95.3	3.25	69,220
1953	1282	8,760	May 20, 1953	7.0	156	.390	5.29	112,900	179	6.06	129,300
1954	1342	1,400	Dec. 22, 1953	5.2	58.4	.146	2.00	42,310	38.9	1.33	28,140
1955	1392	3,570	Feb. 8, 1955	4.5	55.8	.140	1.90	40,420	47.9	1.64	34,710
1956	1442	408	Feb. 11, 1956	2.0	13.4	.034	.47	9,760	12.9	.45	9,350
1957	1512	4,600	May 1, 1957	1.1	65.7	.164	2.24	47,560	-	-	-

a Maximum observed May to September.
b Maximum observed.

134. Cypress Creek near Westfield, Tex.

Location.--Lat 30°02'08", long 95°25'43", at bridge on U. S. Highway 75, 0.9 mile upstream from Senger Gully, 1.8 miles northwest of Westfield, Harris County, 2.0 miles upstream from International-Great Northern Railroad bridge, and 11.0 miles upstream from mouth.

Drainage area.--262 sq mi.

Gage.--Water-stage recorder. Datum of gage is 63.89 ft above mean sea level, datum of 1929, Houston supplementary adjustment of 1943. Prior to Mar. 17, 1951, water-stage recorder at upstream side of bridge at datum 12.00 ft higher.

Average discharge.--13 years (1944-57), 142 cfs (102,800 acre-ft per year).

Extremes.--1944-57: Maximum discharge, 22,100 cfs Oct. 8, 1949 (gage height, 33.44 ft, present datum), from rating curve extended above 11,000 cfs by logarithmic plotting; no flow at times.

Maximum stage known since about 1875, 34 ft (present datum) in May 1929, from information by local resident. Flood of November 1940 reached a stage of about 32 ft (present datum), from information by State Highway Department.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	-	-	-	-	-	-	-	-	-	4.95	23.3	65.6	-
1945	12.0	232	579	782	245	33.3	1,069	93.5	20.8	5.37	562	531	347
1946	108	18.5	525	754	745	160	30.7	932	532	275	8.95	32.7	342
1947	168	1,788	129	870	23.1	122	8.48	461	48.7	13.4	30.7	13.2	307
1948	2.99	6.27	124	24.4	45.8	44.2	42.5	20.9	2.34	2.94	.09	2.52	26.6
1949	1.18	3.77	.71	33.5	227	241	463	89.0	3.11	30.1	57.5	22.6	96.3
1950	1,198	8.07	364	200	532	29.1	112	133	926	174	3.20	30.1	308
1951	7.70	.72	.15	.60	1.39	23.9	17.2	7.34	14.9	4.15	1.64	100	14.9

Monthly and yearly mean discharge, in cubic feet per second, of Cypress Creek near Westfield, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1952	7.65	6.52	20.3	5.25	101	13.7	618	216	38.8	9.02	3.03	11.1	86.6
1953	2.92	24.5	104	20.7	91.4	7.61	186	1,260	4.81	8.67	25.8	69.6	152
1954	17.5	82.6	146	94.2	2.70	.40	3.16	5.78	2.15	342	41.8	1.79	62.6
1955	59.1	10.5	37.3	50.6	282	1.50	5.13	4.65	6.07	13.2	27.6	16.3	41.2
1956	2.57	.02	1.37	27.3	40.8	.21	6.76	1.77	5.40	4.42	.14	1.21	7.53
1957	.13	1.14	8.36	1.41	3.78	206	167	176	16.4	.96	.99	30.2	51.3

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	-	-	-	-	-	-	-	-	-	305	1,430	3,900	-
1945	735	13,790	35,600	48,070	13,620	2,050	63,600	5,750	1,240	330	34,590	31,620	251,000
1946	6,660	1,100	32,290	46,350	41,400	9,850	1,830	57,320	31,630	16,890	550	1,950	247,800
1947	10,310	106,400	7,940	53,520	1,280	7,500	505	28,320	2,900	824	1,890	788	222,200
1948	184	373	7,600	1,500	2,640	2,720	2,530	1,280	139	181	5.4	150	19,300
1949	73	224	44	2,060	12,600	14,810	27,550	5,470	185	1,850	3,530	1,340	69,740
1950	73,680	480	22,390	12,320	29,560	1,790	6,680	8,160	55,120	10,720	197	1,790	222,900
1951	473	43	9.1	37	78	1,470	1,020	451	889	255	101	5,970	10,800
1952	470	388	1,250	323	5,800	845	36,780	13,270	2,310	554	186	663	62,840
1953	180	1,460	6,410	1,270	5,080	468	11,090	77,480	286	533	1,590	4,140	110,000
1954	1,080	4,910	8,990	5,790	150	24	188	355	128	21,000	2,570	106	45,290
1955	3,630	623	2,300	3,110	15,670	92	305	286	361	812	1,700	969	29,860
1956	158	1.4	84	1,680	2,350	13	402	109	321	272	8.7	72	5,470
1957	7.7	68	514	86	210	12,670	9,910	10,790	977	59	61	1,800	37,150

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1944	1008	a379	Sept. 2, 1944	-	-	-	-	-	-	-	-
1945	1038	10,700	Aug. 31, 1945	1.3	347	1.32	17.96	251,000	333	17.24	240,900
1946	1058	5,260	May 22, 1946	4.1	342	1.31	17.73	247,800	459	23.79	332,400
1947	1088	6,520	Nov. 6, 1946	.6	307	1.17	15.93	222,200	146	7.58	105,700
1948	1118	424	Dec. 17, 1947	0	26.6	.102	1.37	19,300	15.8	.82	11,490
1949	1148	1,580	Feb. 28, 1949	0	96.3	.368	4.99	69,740	229	11.86	165,900
1950	1178	22,100	Oct. 8, 1949	.4	308	1.18	15.95	222,900	175	9.08	126,900
1951	1212	976	Sept. 24, 1951	.1	14.9	.057	.77	10,800	17.1	.89	12,380
1952	1242	5,270	Apr. 12, 1952	.8	86.6	.331	4.50	62,840	94.8	4.92	68,780
1953	1282	5,700	May 18, 1953	.6	152	.580	7.86	110,000	162	8.36	116,900
1954	1342	10,600	July 30, 1954	0	62.6	.239	3.23	45,290	50.9	2.62	36,860
1955	1392	2,800	Feb. 6, 1955	0	41.2	.157	2.13	29,860	32.5	1.69	23,550
1956	1442	589	Jan. 22, 1956	0	7.53	.029	.39	5,470	8.01	.42	5,820
1957	1512	2,920	Apr. 30, 1957	0	51.3	.196	2.67	37,150	-	-	-

a Maximum for period July to September.

135. West Fork San Jacinto River near Humble, Tex. 1/

Location.--Lat 30°01'35", long 95°15'30", at bridge on U. S. Highway 59, 1,160 ft upstream from Texas & New Orleans Railroad bridge, about half a mile downstream from Spring Creek, and 2½ miles north of Humble, Harris County.

Drainage area.--1,811 sq mi.

Supplemental records available.--Records of chemical analyses for the period October 1945 to September 1946 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 30.53 ft above mean sea level, datum of 1929. Oct. 23, 1928, to July 16, 1933, chain gage at site 3,000 ft downstream at same datum. July 17, 1933, to Mar. 5, 1939, chain gage at present site and same datum.

Average discharge.--26 years (1928-54), 1,097 cfs (794,200 acre-ft per year).

Extremes.--1928-54: Maximum discharge, 187,000 cfs May 31, 1929, Nov. 25, 26, 1940; maximum gage height, 32.7 ft May 31, 1929, Nov. 26, 1940, present site and datum (flood of Nov. 26, 1940, affected by backwater from East Fork, and it is believed flood of May 31, 1929, occurred under similar conditions); minimum discharge, 11 cfs Aug. 31, Sept. 1, 2, 1951.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	40.9	54.8	152	1,060	396	1,660	3,670	10,400	6,540	1,010	102	79.8	2,100
1930	48.0	1,250	527	1,840	2,910	1,310	358	1,220	104	45.0	38.6	44.0	794
1931	212	151	1,950	1,760	2,810	3,070	459	916	83.4	69.7	40.8	30.3	956
1932	27.7	132	973	4,550	3,140	1,680	314	402	112	61.2	66.1	56.5	956
1933	46.4	43.2	159	266	1,420	1,670	394	109	57.4	64.2	67.3	59.1	357
1934	35.7	35.6	50.9	1,250	4,110	3,100	2,910	123	48.7	36.4	31.1	64.2	960

1/ Subsequent to Sept. 30, 1954, maximum and minimum elevations published for this site as "Lake Houston near Sheldon", Upper Gage. Prior to 1938, published as "San Jacinto River near Humble".

Monthly and yearly mean discharge, in cubic feet per second, of West Fork San Jacinto River near Humble, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	131	299	1,481	1,204	1,954	1,248	2,557	11,160	397	164	116	288	1,758
1936	115	650	6,949	406	684	264	155	3,272	686	3,289	128	172	1,412
1937	110	61.6	489	1,931	429	1,389	733	76.3	68.3	53.9	81.4	70.9	461
1938	379	171	896	1,089	1,160	647	747	2,357	271	138	70.7	136	672
1939	33.8	64.4	163	1,564	1,436	879	120	89.0	672	239	63.3	41.0	441
1940	31.4	45.4	203	124	1,005	136	268	403	1,861	570	46.5	40.7	389
1941	43.3	12,060	7,986	2,109	2,390	3,678	5,556	1,800	4,396	910	132	1,666	3,545
1942	1,650	3,486	348	358	505	505	4,241	994	1,144	1,199	199	509	1,256
1943	120	605	1,093	2,357	273	599	255	505	712	1,533	830	73.5	754
1944	74.0	177	444	3,404	3,061	2,934	376	2,993	623	91.2	130	270	1,214
1945	87.0	1,116	3,197	3,670	2,779	931	7,029	2,107	573	197	2,295	2,295	2,179
1946	430	155	1,215	3,578	4,237	2,988	472	4,541	2,566	1,483	109	221	1,824
1947	1,062	9,461	907	5,070	485	1,947	244	2,104	322	127	102	92.1	1,830
1948	63.6	110	708	353	1,026	1,346	592	289	75.1	69.0	37.4	47.7	392
1949	34.5	65.5	60.9	295	1,624	2,624	2,651	418	128	231	159	133	694
1950	4,130	198	2,436	3,083	3,924	792	1,174	1,534	5,137	481	89.4	166	1,915
1951	92.4	66.3	69.9	111	188	334	254	77.3	80.6	41.9	25.5	222	129
1952	55.8	61.9	94.2	80.7	616	358	2,551	945	264	85.0	42.6	37.1	428
1953	23.9	82.5	266	301	692	319	806	6,424	128	86.0	77.1	193	789
1954	91.4	381	1,217	547	203	114	127	225	44.4	636	139	23.7	315

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1929	2,510	3,260	9,350	65,200	22,000	102,000	218,000	639,000	389,000	62,100	6,270	4,750	1,520,000
1930	2,950	74,400	32,400	113,000	162,000	80,600	21,300	75,000	6,190	2,770	2,370	2,620	576,000
1931	13,000	8,980	120,000	108,000	156,000	189,000	27,300	56,300	4,960	4,290	2,510	1,800	692,000
1932	1,700	7,860	59,800	280,000	181,000	103,000	18,700	24,700	6,660	3,760	4,060	3,360	695,000
1933	2,850	2,570	9,780	16,400	78,900	103,000	23,400	6,700	3,420	3,950	4,140	3,520	259,000
1934	2,200	2,120	3,130	76,900	228,000	191,000	173,000	7,560	2,900	2,240	1,910	3,820	695,000
1935	8,030	17,770	91,080	74,040	108,500	76,730	152,100	686,300	23,630	10,080	7,130	17,120	1,273,000
1936	7,050	38,680	427,300	24,930	39,340	16,240	9,220	201,200	40,850	202,200	7,840	10,240	1,025,000
1937	6,790	3,670	30,060	118,700	23,820	85,420	43,600	4,690	4,070	3,320	5,000	4,220	333,400
1938	23,320	10,180	55,100	66,960	64,440	39,780	44,470	144,900	16,150	8,480	4,350	8,110	486,200
1939	2,080	3,830	10,020	96,190	79,780	54,020	7,130	5,470	39,960	14,690	3,890	2,440	319,500
1940	1,930	2,700	12,510	7,620	57,790	8,380	15,930	24,800	110,700	35,040	2,860	2,420	282,700
1941	2,670	717,800	491,000	129,600	132,800	226,100	330,600	110,700	261,600	55,980	8,110	99,130	2,566,000
1942	101,500	207,400	21,380	22,020	28,050	31,060	252,300	61,140	68,090	73,710	12,260	30,270	909,200
1943	7,400	36,000	67,220	144,900	15,180	36,800	15,150	31,060	42,360	94,280	51,040	4,370	545,800
1944	4,550	10,520	27,280	209,300	176,000	180,400	22,400	184,000	37,090	5,610	8,020	16,070	881,200
1945	5,350	66,390	196,600	225,700	154,400	57,220	418,300	129,500	34,100	12,120	141,000	136,600	1,577,000
1946	26,450	9,200	74,690	220,000	235,300	183,700	28,110	279,200	152,700	91,160	6,670	13,150	1,320,000
1947	65,330	563,000	55,790	311,700	26,930	119,700	14,540	129,400	19,140	7,800	6,260	5,480	1,325,000
1948	3,910	6,550	43,550	21,730	59,010	82,780	35,210	17,750	4,470	4,240	2,300	2,840	284,300
1949	2,120	3,900	3,750	18,120	90,220	161,300	157,700	25,700	7,640	14,230	9,770	7,920	502,400
1950	253,900	11,810	149,800	189,600	217,900	48,670	69,840	94,340	305,700	29,590	5,500	9,900	1,387,000
1951	5,680	3,950	4,300	6,790	10,440	20,520	15,140	4,750	4,800	2,580	1,560	13,210	93,720
1952	3,430	3,680	5,790	4,960	35,410	22,030	151,800	58,110	15,730	5,220	2,620	2,210	311,000
1953	1,470	4,910	16,360	18,500	38,440	19,590	47,940	395,000	7,590	5,290	4,740	11,460	571,300
1954	5,620	22,670	74,810	33,650	11,260	7,040	7,560	13,840	2,640	39,120	8,570	1,410	228,200

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1929	688, 1312	187,000	May 31, 1929	39	2,100	1.16	15.77	1,520,000	2,230	16.74	1,620,000
1930	703	11,700	Feb. 5, 1930	25	794	.438	5.93	576,000	839	6.26	608,000
1931	718	9,040	Dec. 8, 1930	14	956	.528	7.14	692,000	856	6.40	619,500
1932	733	17,400	Feb. 23, 1932	18	956	.528	7.18	695,000	882	6.62	640,400
1933	748	8,720	Mar. 9, 1933	30	357	.197	2.67	259,000	346	2.58	250,900
1934	763	24,600	Mar. 4, 1934	21	960	.530	7.17	695,000	1,111	8.32	804,600
1935	788	68,100	May 7, 1935	28	1,758	.970	13.13	1,273,000	2,250	16.82	1,629,000
1936	808	a47,600	Dec. 9, 1935	41	1,412	.779	10.61	1,025,000	816	6.14	592,600
1937	828	a6,480	Mar. 15, 1937	23	461	.254	3.44	333,400	527	3.94	381,400
1938	858, 1312	11,100	May 19, 1938	27	672	.371	5.03	486,200	571	4.27	413,600
1939	878	a9,780	Mar. 1, 1939	18	441	.243	3.29	319,500	443	3.31	320,700
1940	898	15,600	June 13, 1940	27	389	.215	2.93	282,700	2,035	15.28	1,477,000
1941	928	a187,000	Nov. 25, 26, 1940	29	3,545	1.96	26.52	2,566,000	2,327	17.44	1,685,000
1942	958	22,300	Apr. 10, 1942	80	1,256	.694	9.40	909,200	952	7.14	689,500
1943	978	14,900	July 31, 1943	62	754	.416	5.67	545,800	660	4.96	477,500
1944	1008	14,000	Feb. 1, Mar. 20, 1944	58	1,214	.670	9.13	881,200	1,525	11.48	1,107,000
1945	1038	48,700	Aug. 31, 1945	59	2,179	1.20	16.34	1,577,000	1,960	14.69	1,419,000
1946	1058	19,800	May 21, 1946	-	1,824	1.01	13.67	1,320,000	2,616	19.62	1,894,000

a Observed.

Yearly discharge, in cubic feet per second, of West Fork San Jacinto River near Humble, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1947	1088	40,100	Nov. 7, 1946	66	1,830	1.01	13.73	1,325,000	960	7.20	695,000
1948	1118	5,640	Mar. 3, 1948	27	392	.216	2.94	284,300	331	2.48	240,100
1949	1148	14,200	Mar. 1, 1949	30	694	.383	5.20	502,400	1,254	9.40	908,100
1950	1178	40,600	Oct. 8, 1949	59	1,915	1.06	14.36	1,387,000	1,360	10.20	985,000
1951	1212	2,620	Mar. 29, 1951	12	129	.071	.98	93,720	128	.98	92,690
1952	1242	10,000	Apr. 12, 1952	24	428	.236	3.22	311,000	442	3.32	320,800
1953	1282	18,500	May 19, 1953	23	789	.436	5.92	571,300	900	6.74	651,600
1954	1342	15,600	July 30, 1954	22	315	.174	2.36	228,200	-	-	-

136. East Fork San Jacinto River near Cleveland, Tex.

Location.--Lat 30°20', long 95°07', at bridge on State Highway 105, 1,880 ft downstream from Gulf, Colorado & Santa Fe Railway bridge, 1¼ miles west of Cleveland, Liberty County, and 4.3 miles downstream from Winter Creek.

Drainage area.--330 sq mi.

Gage.--Water-stage recorder. Datum of gage is 107.98 ft above mean sea level, datum of 1929, supplementary adjustment of 1936. Prior to Sept. 13, 1955, water-stage recorder at site 1,800 ft upstream at datum 5.0 ft higher.

Average discharge.--18 years (1939-57), 228 cfs (165,100 acre-ft per year).

Extremes.--1939-57: Maximum discharge, 59,000 cfs Nov. 24, 1940 (gage height, 20.37 ft, site and datum then in use), from rating curve extended above 27,000 cfs by logarithmic plotting; minimum daily, 3.0 cfs Aug. 23-24, Sept. 27-28, 1956.

Maximum stage since at least 1900, that of Nov. 24, 1940. Flood of May 5, 1935, reached a stage of 19.9 ft, former site and datum, from information by local residents (discharge, 53,500 cfs, from rating curve mentioned above).

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	34.3	45.5	20.1	14.9	9.71	-
1940	9.95	22.2	55.2	34.4	285	36.7	150	73.1	289	189	15.1	11.2	96.3
1941	14.1	3,101	1,613	384	589	491	785	518	1,081	97.7	35.9	145	733
1942	542	977	125	138	165	209	875	603	411	88.3	114	142	365
1943	39.9	123	466	568	108	191	154	74.0	52.6	183	63.9	24.1	172
1944	20.4	29.9	55.2	401	454	322	84.6	553	70.8	26.4	37.6	48.6	175
1945	16.2	138	533	789	896	341	2,302	95.4	71.1	162	149	147	464
1946	56.7	37.6	185	712	974	549	99.2	756	520	497	35.4	31.5	368
1947	97.7	2,632	202	1,179	128	640	80.0	173	41.0	28.9	27.3	23.3	437
1948	19.2	33.5	73.5	57.9	112	143	220	92.3	26.1	32.1	14.3	15.4	69.7
1949	13.1	22.7	24.2	86.6	666	633	721	70.5	64.7	43.6	20.9	25.3	195
1950	1,031	61.5	656	846	854	257	219	327	910	50.8	24.3	26.6	437
1951	22.6	23.7	28.1	37.8	53.5	108	50.0	26.0	25.4	14.4	8.45	18.7	34.6
1952	13.4	15.7	27.5	33.8	115	72.6	433	252	36.4	16.8	10.8	12.1	86.1
1953	7.98	22.0	77.7	77.4	306	87.3	492	1,253	34.0	23.6	22.2	18.6	202
1954	13.7	22.3	101	120	67.5	30.1	59.4	72.5	12.0	37.6	58.5	8.11	50.3
1955	34.0	53.6	36.3	109	681	43.4	134	42.2	15.1	11.1	12.3	14.3	94.5
1956	11.4	10.4	17.5	40.7	120	63.2	70.6	19.5	21.9	6.50	5.51	4.46	32.2
1957	5.61	9.58	14.6	13.0	24.8	132	282	463	160	25.0	22.9	44.7	100

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	2,110	2,710	1,230	918	578	-
1940	612	1,320	3,400	2,120	16,410	2,260	8,900	4,490	17,190	11,640	926	669	69,940
1941	867	184,500	99,160	23,640	32,720	30,200	46,730	31,870	64,310	6,010	2,210	8,630	530,800
1942	33,310	58,120	7,690	8,460	9,150	12,850	52,040	37,090	24,450	5,430	7,010	8,430	264,000
1943	2,460	7,320	28,620	34,930	6,000	11,720	9,150	4,550	3,130	11,240	3,930	1,430	124,500
1944	1,260	1,780	3,390	24,630	26,130	19,780	5,030	33,980	4,210	1,620	2,310	2,890	127,000
1945	998	8,220	32,770	48,520	49,740	20,960	137,000	5,870	4,230	9,950	9,170	8,770	336,200
1946	3,490	2,240	11,350	43,800	54,070	33,780	5,900	46,460	30,930	30,580	2,180	1,870	266,600
1947	6,010	156,600	12,390	72,470	7,140	39,380	4,760	10,640	2,440	1,780	1,680	1,390	316,700
1948	1,180	1,990	4,520	3,560	6,450	8,810	13,070	5,670	1,560	1,980	881	916	50,590
1949	805	1,350	1,490	5,330	36,960	38,910	42,920	4,340	3,850	2,680	1,290	1,510	141,400
1950	63,410	3,660	40,340	52,000	47,420	15,830	13,010	20,090	54,130	3,130	1,490	1,580	316,100
1951	1,390	1,410	1,730	2,330	2,970	6,610	2,980	1,600	1,510	885	520	1,110	25,040
1952	823	934	1,690	2,080	6,630	4,460	25,780	15,520	2,170	1,040	666	722	62,520
1953	491	1,310	4,780	4,760	17,000	5,370	29,300	77,030	2,020	1,450	1,360	1,110	146,000
1954	843	1,320	6,200	7,370	3,750	1,850	3,530	4,460	714	2,310	3,600	482	36,430
1955	2,090	3,190	2,230	6,720	37,800	2,670	7,950	2,590	896	685	758	853	68,430
1956	703	620	1,080	2,500	6,900	3,890	4,200	1,200	1,300	400	339	265	23,400
1957	345	570	896	801	1,380	8,130	16,760	28,460	9,500	1,540	1,410	2,660	72,450

Yearly discharge, in cubic feet per second, of East Fork San Jacinto River near Cleveland, Tex.

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1939	878	a140	Apr. 29, 1939	-	-	-	-	-	-	-	-
1940	898	3,630	June 12, 1940	8.0	96.3	0.292	3.97	69,940	481	19.84	349,100
1941	928	59,000	Nov. 24, 1940	7.6	733	2.22	30.16	530,800	477	19.63	345,400
1942	958	18,900	Nov. 1, 1941	27	365	1.11	15.01	264,000	281	11.57	203,300
1943	978	7,450	Dec. 28, 1942	19	172	.521	7.08	124,500	128	5.25	92,510
1944	1008	2,240	Feb. 1, 1944	17	175	.530	7.20	127,000	224	9.23	162,600
1945	1038	38,000	Apr. 2, 1945	12	464	1.41	19.11	336,200	430	17.69	311,300
1946	1058	11,000	May 16, 1946	26	368	1.12	15.16	266,600	586	24.13	424,600
1947	1088	28,000	Nov. 6, 1946	19	437	1.32	18.00	316,700	206	8.50	149,400
1948	1118	1,060	Apr. 27, 1948	12	69.7	.211	2.87	50,590	64.1	2.64	46,540
1949	1148	9,660	Feb. 27, 1949	10	195	.591	8.04	141,400	339	13.93	245,200
1950	1178	14,700	June 4, 1950	15	437	1.32	17.95	316,100	294	12.11	213,200
1951	1212	819	Mar. 29, 1951	6.1	34.6	.105	1.43	25,040	33.1	1.37	23,960
1952	1242	2,480	Apr. 25, 1952	6.1	86.1	.261	3.55	62,520	90.4	3.72	65,650
1953	1282	13,400	Apr. 30, 1953	4.2	202	.612	8.30	146,000	204	8.41	147,800
1954	1342	835	July 31, 1954	6.8	50.3	.152	2.07	36,430	49.2	2.02	35,590
1955	1392	6,200	Feb. 7, 1955	5.5	94.5	.286	3.89	68,430	87.5	3.60	63,320
1956	1442	1,070	Feb. 10, 1956	3.0	32.2	.098	1.33	23,400	31.4	1.29	22,800
1957	1512	4,080	Apr. 30, 1957	3.9	100	.303	4.12	72,450	-	-	-

a Maximum during period Apr. 27-Sept. 30.

137. Peach Creek at Splendora, Tex.

Location. --Lat 30°14', long 95°10', at bridge on county road between Splendora and Conroe, about 1,500 ft west of depot at Splendora, Montgomery County, 2.5 miles upstream from Texas & New Orleans Railroad bridge, 2.5 miles upstream from bridge on U. S. Highway 59, and 9.7 miles upstream from Caney Creek.

Drainage area. --120 sq mi.

Gage. --Water-stage recorder. Datum of gage is 86.61 ft above mean sea level, datum of 1929, Galveston-Houston supplementary adjustment of 1936.

Average discharge. --14 years (1943-57), 73.4 cfs (53,140 acre-ft per year).

Extremes. --1943-57: Maximum discharge, 28,500 cfs Oct. 8, 1949 (gage height, 17.73 ft), from rating curve extended above 8,000 cfs on basis of slope-area measurement of peak flow; minimum, 1.1 cfs Sept. 28-30, 1956.

Maximum stage since about 1895, that of Oct. 8, 1949. Flood of November 1940 reached a stage of 17.3 ft, from information by local residents.

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	17.3	27.6	34.2	131	124	178	52.5	243	38.5	19.6	28.7	27.7	77.1
1945	16.4	59.9	159	196	238	82.2	488	68.7	50.7	38.5	129	37.9	129
1946	37.6	29.1	67.2	162	350	162	52.1	173	134	189	26.9	27.9	116
1947	64.1	850	111	401	88.2	131	49.9	118	31.4	22.2	20.0	19.4	159
1948	16.4	26.2	61.9	57.4	91.6	61.6	71.2	38.8	18.7	18.8	11.9	12.3	40.4
1949	12.1	18.6	19.0	35.4	158	337	189	51.1	40.0	58.1	25.4	16.0	79.4
1950	908	38.0	246	399	263	117	94.2	183	187	35.7	20.4	19.6	210
1951	16.8	19.9	22.6	31.3	35.6	44.2	28.0	17.7	20.6	10.8	8.22	14.8	22.5
1952	11.8	14.9	21.1	22.4	45.7	30.0	151	60.6	18.7	14.8	11.1	9.11	34.1
1953	8.35	19.6	35.3	29.8	62.0	36.5	243	319	18.0	13.3	14.4	14.7	67.8
1954	10.3	17.2	36.7	42.1	25.2	18.0	18.6	18.1	8.16	38.5	22.7	5.92	21.9
1955	32.6	16.0	18.1	29.5	129	23.0	35.8	16.9	10.1	8.85	10.2	11.9	27.8
1956	9.59	7.36	13.2	22.6	35.1	22.4	21.5	10.9	13.3	4.34	3.12	2.46	13.7
1957	2.75	5.54	10.6	10.6	17.0	46.8	52.8	61.7	89.3	8.06	6.52	28.8	28.3

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	1,070	1,640	2,100	8,060	7,150	10,970	3,120	14,950	2,290	1,210	1,760	1,650	55,970
1945	1,010	3,560	9,770	12,060	13,190	5,050	29,040	4,220	3,020	2,370	7,900	2,260	93,450
1946	2,310	1,730	4,130	9,970	19,430	9,940	3,100	10,620	7,960	11,600	1,660	1,660	84,110
1947	3,940	50,580	6,840	24,670	4,900	8,070	2,970	7,260	1,870	1,370	1,230	1,150	114,800
1948	1,010	1,560	3,800	3,530	5,270	3,790	4,230	2,380	1,110	1,160	732	730	29,300
1949	744	1,110	1,170	2,180	8,780	20,700	11,230	3,140	2,380	3,570	1,560	954	57,520
1950	55,830	2,260	15,150	24,540	14,590	7,220	5,600	11,280	11,130	2,190	1,250	1,160	152,200
1951	1,040	1,180	1,390	1,920	1,980	2,720	1,670	1,090	1,220	665	505	879	16,260
1952	726	887	1,300	1,380	2,630	1,840	9,010	3,730	1,110	912	684	542	24,750
1953	513	1,170	2,170	1,830	3,450	2,250	14,440	19,630	1,070	817	885	877	49,100
1954	635	1,030	2,260	2,590	1,400	1,110	1,100	1,110	486	2,370	1,390	352	15,830
1955	2,010	954	1,110	1,810	7,180	1,410	2,130	1,040	602	544	628	707	20,120
1956	590	438	809	1,390	2,020	1,380	1,280	671	789	267	192	147	9,970
1957	169	330	654	652	945	2,880	3,140	3,790	5,310	495	401	1,720	20,490

Yearly discharge, in cubic feet per second, of Peach Creek at Splendora, Tex.

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1944	1008	2,890	May 26, 1944	-	77.1	0.642	8.75	55,970	90.3	24.37	65,500
1945	1038	7,980	Apr. 1, 1945	15	129	1.07	14.61	93,450	121	13.63	87,280
1946	1058	2,280	July 3, 1946	20	116	.967	13.14	84,110	190	21.45	137,300
1947	1088	7,540	Nov. 5, 1946	15	159	1.32	17.94	114,800	82.7	9.34	59,860
1948	1118	341	Apr. 27, 1948	9.6	40.4	.337	4.55	29,300	35.7	4.03	25,960
1949	1148	4,280	Mar. 22, 1949	10	79.4	.662	8.97	57,520	176	19.94	127,700
1950	1178	28,500	Oct. 8, 1949	12	210	1.75	23.78	152,200	114	12.91	82,570
1951	1212	216	Mar. 28, 1951	6.1	22.5	.187	2.54	16,260	21.5	2.42	15,560
1952	1242	1,130	Apr. 23, 1952	7.0	34.1	.284	3.86	24,750	36.4	4.01	25,690
1953	1282	7,000	Apr. 30, 1953	7.7	67.8	.565	7.69	49,100	67.9	7.70	49,170
1954	1342	800	July 30, 1954	4.6	21.9	.182	2.47	15,830	22.1	2.49	15,980
1955	1392	940	Feb. 7, 1955	5.3	27.8	.232	3.13	20,120	24.7	2.79	17,890
1956	1442	134	Feb. 9, 1956	1.1	13.7	.114	1.56	9,970	12.8	1.45	9,290
1957	1512	920	June 5, 1957	1.2	28.3	.236	3.20	20,490	-	-	-

138. Caney Creek near Splendora, Tex.

Location.--Lat 30°16', long 95°18', at county road bridge, 4 miles downstream from Gulf, Colorado & Santa Fe Railway bridge, and 8 miles west of Splendora, Montgomery County.

Drainage area.--104 sq mi.

Gage.--Water-stage recorder. Datum of gage is 123.44 ft above mean sea level, datum of 1929, Houston supplementary adjustment of 1943.

Average discharge.--14 years (1943-57), 65.6 cfs (47,490 acre-ft per year).

Extremes.--1943-57: Maximum discharge, 14,900 cfs Apr. 1, 1945 (gage height, 18.19 ft), from rating curve extended above 6,000 cfs by logarithmic plotting; minimum, 4.3 cfs Oct. 26, 1956, caused by construction upstream.

Maximum stage known since about 1885, 22.0 ft in November 1940; flood of May 1935 reached a stage of 19.3 ft: from information by local resident.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	16.3	25.3	30.6	179	131	141	35.4	202	41.6	19.5	23.0	21.2	72.3
1945	14.5	80.3	257	260	263	122	606	54.7	37.3	28.8	94.0	29.1	153
1946	23.6	20.9	73.2	209	243	126	47.6	199	120	185	23.2	26.9	108
1947	50.6	817	83.0	368	60.8	123	37.6	72.6	28.5	22.9	19.8	16.1	141
1948	16.5	22.4	37.0	38.0	78.1	50.9	60.9	30.3	16.7	16.4	12.5	12.7	32.5
1949	11.3	15.4	15.0	45.9	212	198	169	31.7	20.1	22.9	17.7	15.3	63.4
1950	381	29.6	189	249	216	71.6	85.0	165	279	31.2	18.2	24.8	145
1951	17.6	18.2	19.1	22.6	31.6	45.7	23.6	16.6	16.9	11.9	10.5	14.0	20.6
1952	11.5	14.6	19.6	18.6	58.1	31.0	141	89.7	20.0	16.3	10.4	9.44	36.5
1953	9.36	17.8	34.7	19.5	67.9	28.2	144	189	19.6	13.6	12.4	12.2	47.2
1954	10.7	15.3	44.3	38.3	26.0	16.4	22.3	28.0	10.1	32.7	21.3	8.83	22.9
1955	25.1	28.8	21.4	38.7	139	21.0	40.4	20.1	13.0	13.2	9.88	11.8	31.1
1956	10.7	8.93	12.1	22.4	61.8	23.8	21.6	13.8	15.5	8.29	6.69	5.91	17.4
1957	6.57	8.20	10.5	10.7	16.3	32.9	82.8	61.5	56.3	11.7	9.56	23.6	27.5

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	1,000	1,500	1,880	10,990	7,550	8,670	2,100	12,420	2,480	1,200	1,410	1,260	52,460
1945	891	4,780	15,790	15,970	14,590	7,490	36,090	3,360	2,220	1,770	5,780	1,730	110,500
1946	1,450	1,250	4,500	12,860	13,480	7,720	2,830	12,240	7,130	11,380	1,430	1,600	77,870
1947	3,110	48,600	5,110	22,610	3,370	7,540	2,240	4,460	1,700	1,410	1,220	956	102,300
1948	1,010	1,330	2,280	2,330	4,490	3,130	3,630	1,860	994	1,010	772	758	23,590
1949	694	918	924	2,820	11,750	12,190	10,040	1,950	1,200	1,410	1,090	910	45,900
1950	23,450	1,760	11,640	15,290	11,990	4,400	5,060	10,160	16,590	1,920	1,120	1,480	104,900
1951	1,080	1,080	1,170	1,390	1,760	2,810	1,410	1,020	1,010	730	643	832	14,940
1952	706	869	1,200	1,140	3,340	1,910	8,400	5,510	1,190	1,000	638	562	26,480
1953	576	1,060	2,130	1,200	3,770	1,740	8,600	11,640	1,170	835	764	725	34,200
1954	657	912	2,730	2,350	1,440	1,010	1,330	1,720	599	2,010	1,310	525	16,590
1955	1,540	1,710	1,320	2,380	7,720	1,290	2,410	1,240	776	809	608	699	22,500
1956	659	531	744	1,380	3,550	1,460	1,280	847	924	510	412	351	12,650
1957	404	488	643	655	906	2,020	4,930	3,780	3,350	717	588	1,410	19,890

Yearly discharge, in cubic feet per second, of Caney Creek near Splendora, Tex.

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1944	1008	1,380	Feb. 15, 1944	-	72.3	0.695	9.46	52,460	95.8	12.54	69,540
1945	1058	14,900	Apr. 1, 1945	12	153	1.47	19.92	110,500	133	17.34	96,200
1946	1058	5,040	July 3, 1946	-	108	1.04	14.04	77,870	176	22.99	127,500
1947	1088	7,020	Nov. 6, 1946	14	141	1.36	18.44	102,300	69.2	9.03	50,130
1948	1118	852	Apr. 26, 1948	11	32.5	.312	4.25	23,590	29.6	3.89	21,510
1949	1148	5,880	Feb. 26, 1949	11	63.4	.610	8.29	45,900	111	14.47	80,210
1950	1178	6,980	June 3, 1950	13	145	1.39	18.91	104,900	98.5	12.87	71,340
1951	1212	742	Mar. 28, 1951	9.6	20.6	.198	2.70	14,940	19.9	2.60	14,380
1952	1242	1,630	May 25, 1952	8.3	36.5	.351	4.78	26,480	37.8	4.94	27,460
1953	1282	4,600	Apr. 30, 1953	8.3	47.2	.454	6.16	34,200	48.0	6.26	34,740
1954	1342	718	July 31, 1954	7.8	22.9	.220	2.98	16,590	23.3	3.04	16,860
1955	1392	1,720	Feb. 7, 1955	6.4	31.1	.299	4.06	22,500	27.4	3.58	19,870
1956	1442	1,190	Feb. 9, 1956	5.4	17.4	.167	2.27	12,650	16.9	2.20	12,250
1957	1512	1,190	Apr. 30, 1957	5.8	27.5	.264	3.58	19,890	-	-	-

139. San Jacinto River near Huffman, Tex.

Location.--Lat 29°59'40", long 95°08'00", at Beaumont, Sour Lake & Western Railway bridge, 0.4 mile downstream from confluence of East and West Forks, 3.4 miles southwest of Huffman, Harris County, and at mile 38.

Drainage area.--2,791 sq mi.

Supplemental records available.--Records of chemical analyses for the periods October 1945 to July 1948 and December 1948 to September 1950 and of water temperatures for the period January 1949 to September 1950 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1.93 ft above mean sea level, datum of 1929. Prior to July 10, 1941, wire-weight gage at same site and datum.

Average discharge.--17 years (1936-53), 1,958 cfs (1,418,000 acre-ft per year).

Extremes.--1936-53: Maximum discharge observed, 253,000 cfs Nov. 26, 1940 (gage height, 51.2 ft); minimum observed, 49 cfs Sept. 1, 1939, and Sept. 13, 14, 1940.

Maximum stage known since at least 1876, that of Nov. 26, 1940. Flood of May 31, 1929, reached a stage of 50.3 ft, from information by Beaumont, Sour Lake & Western Railway Co. (discharge, 237,000 cfs); flood of April 1876 reached a stage about 1½ ft lower, from information by local resident.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	365	198	1,010	3,292	767	2,687	1,296	190	168	132	158	157	874
1938	590	275	1,367	2,098	1,945	919	977	3,171	484	329	147	204	1,041
1939	90.3	143	266	2,634	2,751	1,877	285	235	890	583	105	66.8	817
1940	66.7	96.3	309	212	1,434	236	629	639	2,288	865	113	84.1	574
1941	79.3	21,910	13,990	2,766	4,209	6,103	9,555	3,403	8,166	1,222	290	3,578	6,240
1942	2,723	7,408	778	779	1,074	1,293	7,822	2,010	2,243	2,047	957	1,483	2,540
1943	265	904	1,762	3,879	577	1,163	628	883	975	2,369	1,495	192	1,270
1944	145	347	779	4,907	4,124	4,169	657	4,712	924	194	220	460	1,804
1945	159	1,483	4,468	6,012	4,822	1,847	12,830	2,767	1,213	600	2,693	3,730	3,528
1946	727	316	2,501	5,924	7,134	4,698	780	6,860	4,380	3,477	253	368	3,103
1947	1,385	19,930	1,960	9,005	839	3,394	564	2,719	483	241	195	161	3,407
1948	131	227	1,173	678	1,994	1,982	1,104	517	151	156	86.5	108	688
1949	81.5	132	130	508	2,811	5,363	4,686	679	326	467	284	214	1,294
1950	11,120	406	5,220	6,466	6,642	1,598	1,822	2,920	7,680	604	174	200	3,727
1951	161	133	151	223	296	654	424	162	166	90.5	66.1	321	237
1952	106	120	194	163	1,085	480	4,344	2,096	460	187	81.4	89.3	777
1953	54.3	149	482	625	1,654	651	1,081	10,660	365	201	167	291	1,372

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1937	22,460	11,770	62,090	202,400	42,590	165,200	77,100	11,670	9,990	8,090	9,720	9,350	632,400
1938	36,300	16,350	84,030	129,000	108,000	56,530	58,160	195,000	28,820	20,250	9,060	12,120	753,600
1939	5,550	8,490	16,340	162,000	152,800	115,400	16,980	14,460	52,980	35,830	6,460	3,970	591,300
1940	4,100	5,730	19,030	13,030	82,500	14,480	37,430	39,280	136,100	53,160	6,920	5,000	416,800
1941	4,880	1,304,000	860,000	170,100	233,800	375,300	568,600	209,300	485,900	75,150	17,810	212,900	4,518,000
1942	167,400	440,800	47,870	47,930	59,630	79,510	465,400	123,600	133,500	125,900	58,850	88,250	1,839,000
1943	16,280	53,810	108,300	238,500	32,050	71,520	37,350	54,320	58,000	145,600	91,900	11,440	919,100
1944	8,910	20,660	47,890	301,700	237,200	256,300	39,080	289,800	54,970	11,910	13,530	27,350	1,309,000
1945	9,770	88,230	274,700	369,600	267,800	113,500	763,700	170,100	72,180	36,900	165,600	221,900	2,554,000
1946	44,690	18,790	153,800	364,200	396,200	288,900	46,440	421,800	260,600	213,800	15,560	21,920	2,247,000
1947	85,160	1,186,000	120,500	553,700	46,600	208,700	33,590	167,200	28,740	14,800	11,980	9,570	2,467,000
1948	8,060	13,500	72,110	41,700	114,700	121,900	65,710	31,780	8,970	9,580	5,320	6,410	499,700
1949	5,010	7,880	8,000	31,250	156,100	329,700	278,800	41,760	19,430	28,740	17,470	12,750	936,900
1950	683,600	24,130	321,000	397,600	368,900	98,250	108,400	179,600	457,000	37,120	10,700	11,880	2,698,000

Monthly and yearly runoff, in acre-feet, of San Jacinto River near Huffman, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	9,870	7,920	9.290	13,710	16,440	40,210	25,210	9,990	9,870	5,570	4,060	19,100	171,200
1952	6,540	7,120	11,950	10,040	62,410	29,540	258,500	128,900	27,360	11,480	5,000	5,320	564,200
1953	3,340	8,880	29,620	38,420	91,860	40,010	64,350	655,200	21,730	12,340	10,290	17,320	993,400

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date	day			Inches	Acre-feet		Inches	Acre-feet
1937	898	15,300	Mar. 15, 1937	76	874	0.313	4.26	632,400	929	4.52	672,800
1938	898	12,600	May 20, 1938	58	1,041	.373	5.04	753,600	894	4.34	647,300
1939	898	16,800	Mar. 1, 1939	51	817	.292	3.97	591,300	815	3.96	589,700
1940	898	18,500	June 14, 1940	50	574	.205	2.80	416,800	3,522	17.14	2,557,000
1941	928	a253,000	Nov. 26, 1940	58	6,240	2.23	30.29	4,518,000	4,150	20.17	3,005,000
1942	958	47,600	Nov. 2, 1941	199	2,540	.910	12.35	1,839,000	1,880	9.15	1,361,000
1943	978	25,100	July 30, 1943	123	1,270	.455	6.18	919,000	1,130	5.50	818,100
1944	1008	21,500	May 27, 1944	108	1,804	.646	8.79	1,309,000	2,210	10.78	1,605,000
1945	1038	92,100	Apr. 3, 1945	123	3,528	1.26	17.15	2,554,000	3,313	16.10	2,399,000
1946	1058	24,800	July 4, 1946	169	3,103	1.11	15.09	2,247,000	4,726	22.98	3,421,000
1947	1088	92,100	Nov. 7, 1946	113	3,407	1.22	16.56	2,467,000	1,614	7.83	1,169,000
1948	1118	5,930	Mar. 4, 1948	68	688	.247	3.34	499,700	588	2.85	427,000
1949	1148	24,000	Mar. 1, 1949	76	1,294	.464	6.29	936,900	2,686	13.07	1,945,000
1950	1178	89,500	Oct. 9, 1949	124	3,727	1.34	18.13	2,698,000	2,343	11.40	1,697,000
1951	1212	4,710	Mar. 29, 1951	52	237	.085	1.16	171,200	235	1.15	169,800
1952	1242	15,100	Apr. 13, 1952	56	777	.278	3.80	564,200	799	3.91	580,400
1953	1282	30,000	May 19, 1953	50	1,372	.492	6.68	993,400	-	-	-

a Observed.

140. Lake Houston near Sheldon, Tex.

Location.--Lat 29°54'55", long 95°08'30", at intake structure on San Jacinto River near right bank 100 ft upstream from Lake Houston Dam, 4.0 miles north of Sheldon, Harris County, 4.6 miles upstream from bridge on U. S. Highway 90, and 18 miles northeast of Houston. Upper gage (prior to October 1954, published as "West Fork San Jacinto River near Humble"), lat 30°01'35", long 95°15'30", at bridge on U. S. Highway 59, about half a mile downstream from Spring Creek, 2½ miles north of Humble, and 16 miles upstream from dam.

Drainage area.--2,811 sq mi at dam; 1,811 sq mi at upper gage.

Gage.--Water-stage recorders. Datum of gage at dam is 0.70 ft below mean sea level, datum of 1929, adjusted in 1957 for ground-surface subsidence. Prior to Aug. 3, 1954, staff gage read once daily. Datum of upper gage is 30.53 ft above mean sea level, datum of 1929.

Extremes.--1954-57: Maximum contents, 184,800 acre-ft May 1, 2, 1957 (gage height, 46.5 ft); minimum since first filling of reservoir in August 1954, 79,880 acre-ft Dec. 10-12, 14-17, 1956 (gage height, 36.8 ft). Maximum gage height at upper gage, 16.7 ft May 2, 1957; minimum since first filling of reservoir, 5.5 ft Dec. 12, 1956.

Remarks.--Lake is formed by compacted earth-fill embankment sections 4,000 and 4,600 ft long. Spillway is a slab-and-buttress (Ambursen type) structure 3,160 ft long, located near center of dam. Dam completed and storage began Apr. 9, 1954. Total capacity, 158,200 acre-ft (elevation, 44.5 ft, top of spillway). Usable capacity about 150,000 acre-ft between elevations 44.5 and 22.0 ft (bottom of 36-inch sluice gate). Water used for municipal supply for city of Houston, for industries in ship-channel area, and for irrigation.

Cooperation.--Record of elevations Apr. 9 to Aug. 3, 1954, and skeleton capacity table furnished by city of Houston.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1954	-	-	-	-	-	-	7,300	23,530	18,700	114,600	149,600	139,100	-
1955	157,000	158,200	157,000	159,500	160,800	152,000	159,500	158,200	147,300	140,200	143,700	141,400	+ 2,300
1956	132,400	124,900	124,900	132,400	157,000	157,000	155,800	146,100	140,200	121,800	106,600	95,400	-46,000
1957	87,400	81,500	86,600	84,000	87,400	160,800	182,000	168,500	160,800	152,000	140,200	162,000	+66,600

141. Buffalo Bayou near Addicks, Tex.

Location.--Lat 29°45'44", long 95°36'21", at bridge on Dairy-Ashford road over rectified channel, 1.8 miles downstream from South Mayde Creek, 2.6 miles southeast of Addicks, Harris County, 3.0 miles downstream from outlet of Addicks Reservoir, and 3.2 miles downstream from outlet works of Barker Reservoir.

Drainage area.--310 sq mi.

Gage.--Water-stage recorder. Datum of gage is 0.31 ft below mean sea level, datum of 1929, Galveston-Houston supplementary adjustment of 1943. Prior to Feb. 2, 1948, water-stage recorder at bridge on natural channel 1,200 ft to right at same datum. Feb. 2 to May 21, 1948, staff gage at present site and same datum.

Average discharge.--12 years (1945-57), 155 cfs (112,200 acre-ft per year).

Extremes.--1945-57: Maximum discharge, 11,200 cfs Aug. 29, 1945 (gage height, 81.23 ft); no flow at times.
Maximum stage known since at least 1896, 85.6 ft in December 1935, from information by local resident.

Remarks.--Flood flow is regulated by two flood-control dams built by Corps of Engineers, Barker Reservoir near Addicks, completed in February 1945 (capacity, 127,900 acre-ft) and Addicks Reservoir near Addicks, completed in December 1948 (capacity, 188,030 acre-ft). Both dams form retention basins for flood waters, and will release a maximum of 8,100 cfs from Barker Reservoir and a maximum of 8,900 cfs from Addicks Reservoir during conditions of the "design storm". Extreme low flow sustained by drainage from irrigated lands.

Monthly and yearly mean discharge, in cubic feet per second, of Buffalo Bayou near Addicks, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	-	-	-	-	-	-	-	-	-	-	-	852	-
1946	315	7.16	812	716	558	160	5.06	1,224	731	181	25.5	126	406
1947	250	1,790	135	813	14.4	131	11.5	516	20.2	26.6	200	47.9	331
1948	12.5	51.8	456	85.1	136	93.7	32.4	53.1	6.23	2.39	1.61	12.1	78.9
1949	5.84	36.3	1.35	73.2	278	237	671	37.8	9.16	114	62.5	151	138
1950	844	7.95	733	166	476	27.6	71.1	81.2	613	59.9	9.74	54.9	261
1951	14.3	1.12	2.69	7.00	3.84	99.5	13.1	4.54	6.57	2.09	5.73	119	23.3
1952	15.4	7.53	9.94	2.16	74.0	13.7	548	81.7	40.0	47.0	16.5	41.1	73.9
1953	14.8	87.5	310	49.4	105	8.66	82.5	1,343	14.5	21.3	142	258	205
1954	18.5	244	301	165	5.73	1.85	109	5.73	4.42	230	402	43.3	129
1955	57.5	54.1	21.1	108	468	2.36	2.63	19.7	18.7	28.5	88.7	97.2	77.3
1956	13.0	.48	3.19	86.1	85.0	.91	63.2	20.7	36.8	1.78	15.8	22.0	28.8
1957	2.05	2.79	18.1	2.00	7.68	567	237	219	69.9	7.32	5.41	86.5	103

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	-	-	-	-	-	-	-	-	-	-	-	50,690	-
1946	19,370	426	49,950	44,050	31,010	9,860	301	75,230	43,490	11,140	1,570	7,470	293,900
1947	15,400	106,500	8,280	49,990	800	8,040	684	31,720	1,200	1,640	12,290	2,850	239,400
1948	770	3,080	28,050	5,230	7,850	5,760	1,930	3,260	371	147	99	720	57,270
1949	359	2,160	83	4,500	15,430	14,570	39,940	2,330	545	7,020	3,850	8,970	99,760
1950	51,900	473	45,080	10,230	26,430	1,700	4,230	5,000	36,480	3,680	599	3,270	189,100
1951	879	66	165	430	213	6,120	779	279	391	128	352	7,100	16,900
1952	944	448	611	133	4,260	842	32,620	5,020	2,380	2,890	1,010	2,450	53,610
1953	908	5,200	19,040	3,040	5,810	533	4,910	82,560	863	1,310	8,750	15,360	148,300
1954	1,140	14,530	18,530	10,170	318	114	6,460	352	263	14,130	24,700	2,570	93,280
1955	3,540	3,220	1,300	6,660	26,020	145	156	1,210	1,110	1,750	5,460	5,780	56,350
1956	802	29	196	5,290	4,890	56	3,760	1,270	2,190	110	971	1,310	20,870
1957	126	166	1,110	123	426	34,850	14,120	13,490	4,160	450	333	5,150	74,500

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1945	1038	a11,200	Aug. 29, 1945	-	-	-	-	-	-	-	-
1946	1058	7,240	May 20, 1946	1.2	406	1.31	17.78	293,900	489	21.43	354,300
1947	1088	4,730	Nov. 6, 1946	.2	331	1.07	14.47	239,400	195	8.54	141,100
1948	1118	2,070	Dec. 16, 1947	0	78.9	.255	3.48	57,270	38.5	1.70	27,970
1949	1148	3,640	Apr. 23, 1949	0	138	.445	6.02	99,760	269	11.76	194,600
1950	1178	4,430	Oct. 9, 1949	2	261	.842	11.45	189,100	128	5.61	92,730
1951	1212	1,130	Mar. 27, 1951	0	23.3	.075	1.02	16,900	24.6	1.09	17,800
1952	1242	2,670	Apr. 13, 1952	.1	73.9	.238	3.24	53,610	106	4.64	76,760
1953	1282	4,050	May 19, 1953	.4	205	.661	8.98	148,300	217	9.52	157,300
1954	1342	4,340	July 31, 1954	.5	129	.416	5.66	93,280	92.7	4.07	67,140
1955	1392	2,550	Feb. 7, 1955	.1	77.3	.249	3.40	56,350	68.1	-	49,320
1956	1442	910	Apr. 10, 1956	0	28.8	-	-	20,870	29.3	-	21,250
1957	1512	3,300	Mar. 18, 1957	0	103	-	-	74,500	-	-	-

a Maximum Aug. 25 to Sept. 30.

142. Buffalo Bayou at Houston, Tex.

Location.--Lat 29°45'42", long 95°23'52", at Waugh Drive Bridge in Houston, Harris County, 0.41 mile upstream from Texas & New Orleans Railroad bridge, and 3.1 miles upstream from Whiteoak Bayou.

Drainage area.--362 sq mi.

Gage.--Water-stage recorder. Datum of gage is 4.08 ft below mean sea level, datum of 1929, unadjusted for ground-surface subsidence resulting from heavy ground-water withdrawals. Prior to June 19, 1936, reference point on upstream side of bridge at same datum.

Average discharge.--21 years (1936-57), 243 cfs (175,900 acre-ft per year).

Extremes.--1936-57: Maximum discharge, 10,900 cfs Aug. 30, 1945 (gage height, 34.23 ft); minimum daily, 1.3 cfs May 24, 1939, Nov. 5, 1950.

Maximum stage known since at least 1835, 54.4 ft Dec. 9, 1935 (discharge, 40,000 cfs, furnished by engineer for Harris County). Flood of May 31, 1929, reached a stage of 48.9 ft (discharge, about 19,000 cfs, based on information furnished by city of Houston).

Remarks.--Flood flow is regulated by two flood-control dams. (See "Remarks" for preceding station for data concerning storage.) Extreme low flow is sustained by drainage from irrigated lands and by industrial waste water.

Monthly and yearly mean discharge, in cubic feet per second, of Buffalo Bayou at Houston, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	-	843	109	14.8	39.7	-
1937	25.1	8.95	84.5	170	37.7	163	130	5.67	14.9	13.3	8.14	12.5	56.5
1938	126	43.6	305	202	308	16.7	102	1,718	130	56.2	31.5	48.7	259
1939	7.22	6.64	16.3	298	86.0	10.4	4.35	5.72	167	466	10.7	15.9	91.6
1940	15.2	9.47	31.8	11.0	163	6.95	24.3	10.1	103	106	4.52	17.4	41.2
1941	54.9	1,018	1,420	463	267	824	795	672	1,634	314	75.8	1,255	732
1942	877	711	66.2	54.9	67.9	81.9	421	39.4	77.6	1,323	140	377	355
1943	22.6	139	176	330	48.4	186	25.7	26.1	40.4	337	352	44.4	146
1944	15.2	822	390	1,332	643	1,378	41.8	891	218	13.6	17.3	158	494
1945	44.2	253	774	1,160	474	25.7	991	49.5	57.0	12.9	1,164	1,283	523
1946	375	17.6	945	949	709	219	25.3	1,522	1,034	220	32.7	187	520
1947	293	2,317	206	1,012	32.2	161	26.9	657	49.1	34.1	212	83.6	425
1948	22.1	78.5	515	107	163	112	39.0	57.3	14.1	13.1	10.7	17.2	96.1
1949	12.3	51.5	8.27	86.5	370	289	766	64.5	17.3	256	103	156	179
1950	1,171	19.8	878	305	614	52.4	126	134	779	80.6	12.8	56.6	352
1951	19.8	8.64	11.7	24.0	14.0	179	31.1	13.1	14.5	9.18	9.26	124	38.3
1952	20.0	15.0	17.2	7.08	137	21.4	666	127	52.4	79.9	22.7	44.6	99.7
1953	19.2	123	398	87.5	183	18.3	87.1	1,483	47.7	33.9	250	311	256
1954	36.8	313	348	232	16.2	9.40	194	17.5	11.7	101	590	55.4	162
1955	61.3	63.3	27.2	153	661	13.3	15.0	29.4	35.7	49.5	115	102	107
1956	32.1	7.00	18.6	119	103	10.6	72.1	46.6	67.9	9.81	20.0	29.6	44.4
1957	10.1	14.7	44.3	11.3	23.8	625	263	288	85.0	21.9	15.1	99.0	126

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	-	50,140	6,690	910	2,360	-
1937	1,540	533	5,200	10,440	2,090	10,030	7,770	349	884	820	500	743	40,900
1938	7,750	2,600	18,780	12,410	17,110	1,030	6,090	105,600	7,720	3,450	1,940	2,900	187,400
1939	444	395	1,000	18,310	4,780	639	259	352	9,930	28,630	660	944	66,340
1940	933	564	1,950	675	9,360	427	1,440	622	6,150	6,490	278	1,030	29,920
1941	3,380	60,560	87,310	28,480	14,820	50,680	47,320	41,350	97,200	19,320	4,660	74,680	529,800
1942	53,930	42,290	4,070	3,380	3,770	5,030	25,080	2,420	4,620	81,380	8,630	22,460	257,100
1943	1,390	8,260	10,850	20,310	2,690	11,460	1,530	1,600	2,400	20,740	21,610	2,640	105,500
1944	932	48,920	23,990	81,890	36,970	84,700	2,490	54,810	12,960	836	1,060	9,380	358,900
1945	2,710	15,080	47,570	71,310	26,310	1,580	58,990	3,040	3,390	792	71,590	76,330	378,700
1946	23,080	1,050	58,110	58,340	39,350	13,450	1,510	93,590	61,520	13,540	2,010	11,130	376,700
1947	18,040	137,900	12,640	62,230	1,790	9,910	1,600	40,400	2,920	2,100	13,030	4,970	307,500
1948	1,360	4,670	31,650	6,580	9,390	6,910	2,320	3,530	842	803	659	1,030	69,740
1949	755	3,070	509	5,320	20,570	17,780	45,580	3,970	1,030	15,740	6,310	9,310	129,900
1950	72,030	1,180	54,010	18,750	34,120	3,220	7,510	8,230	46,350	4,960	790	3,370	254,500
1951	1,220	514	718	1,470	778	11,000	1,850	805	863	565	570	7,390	27,740
1952	1,230	890	1,060	435	7,900	1,320	39,660	7,800	3,120	4,910	1,400	2,650	72,380
1953	1,180	7,300	24,500	5,380	10,190	1,120	5,180	91,480	2,840	2,090	15,370	18,530	185,200
1954	2,260	18,640	21,410	14,280	900	578	11,540	1,080	697	6,190	36,300	3,300	117,200
1955	3,770	3,760	1,670	9,380	36,690	818	893	1,810	2,130	3,050	7,060	6,090	77,120
1956	1,980	416	1,150	7,300	5,950	651	4,290	2,870	4,040	603	1,230	1,760	32,240
1957	622	875	2,730	693	1,320	38,460	15,630	17,700	5,060	1,350	928	5,890	91,260

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1936	828	a9,500	May 27, 1936	-	-	-	-	-	-	-	-
1937	828	792	Apr. 1, 1937	3.6	56.5	0.156	2.13	40,900	86.7	3.25	62,760
1938	858	8,490	May 19, 1938	-	259	.715	9.70	187,400	221	8.29	160,100
1939	878	2,530	July 15, 1939	1.3	91.6	.253	3.42	66,340	93.9	3.51	67,950
1940	898	1,390	June 18, 1940	-	41.2	.114	1.53	29,920	245	9.18	177,700
1941	928	6,220	June 11, 1941	4.1	732	2.02	27.42	529,800	661	24.38	478,800
1942	958	6,220	July 7, 1942	8.8	355	.965	13.09	257,100	245	9.02	177,300
1943	978	3,070	Aug. 1, 1943	5.5	146	.397	5.36	105,500	219	8.08	158,800
1944	1008	6,810	Nov. 2, 1943	4.4	494	1.34	18.27	358,900	483	18.15	350,500
1945	1038	10,900	Aug. 30, 1945	6.8	523	1.44	19.61	378,700	546	20.49	395,600
1946	1058	6,260	May 21, 1946	10	520	1.44	19.52	376,700	639	23.98	463,000
1947	1088	6,400	Nov. 7, 1946	6.6	425	1.17	15.90	307,500	244	9.13	176,600
1948	1118	2,130	Dec. 17, 1947	3.7	96.1	.265	3.60	69,740	50.1	1.88	36,400
1949	1148	3,420	Apr. 24, 1949	3.0	179	.494	6.75	129,900	349	13.11	252,800
1950	1178	6,500	Oct. 8, 1949	3.5	352	.972	13.19	254,500	179	6.73	129,800
1951	1212	1,700	Mar. 28, 1951	1.3	38.3	.106	1.44	27,740	39.3	1.47	28,470
1952	1242	2,380	Apr. 14, 1952	4.6	99.7	.275	3.73	72,380	141	5.28	102,200
1953	1282	4,800	May 18, 1953	4.6	256	.707	9.61	185,200	269	10.10	194,500
1954	1342	4,080	Aug. 2, 1954	6.5	162	.447	6.09	117,200	116	4.37	84,060
1955	1392	2,310	Feb. 8, 1955	5.1	107	.296	4.01	77,120	98.7	-	71,470
1956	1442	820	Jan. 23, 1956	3.7	44.4	-	-	32,240	45.4	-	32,920
1957	1512	2,900	Mar. 19, 1957	3.7	126	-	-	91,260	-	-	-

a Maximum for period May to September.

143. Whiteoak Bayou at Houston, Tex.

Location.--Lat 29°46'31", long 95°23'54", at Yale Street Bridge, in Houston, Harris County, 80 ft downstream from Texas & New Orleans Railroad bridge, 2.5 miles upstream from Little Whiteoak Bayou, and 4.1 miles upstream from mouth.

Drainage area.--92.0 sq mi.

Gage.--Water-stage recorder. Concrete control from July 1948 to June 1951. Datum of gage is 4.08 ft below mean sea level, datum of 1929, unadjusted for ground-surface subsidence resulting from heavy ground-water withdrawals. Prior to June 17, 1936, reference point at same site and datum

Average discharge.--21 years (1936-57), 67.8 cfs (49,090 acre-ft per year).

Extremes.--1936-57: Maximum discharge, 8,600 cfs Nov. 2, 1943 (gage height, 42.45 ft); minimum, 0.1 cfs Aug. 16, Sept. 2, 1951. Maximum stage known, 51.5 ft Dec. 9, 1935 (discharge, 14,750 cfs, furnished by engineer for Harris County). Flood of May 31, 1929, reached a stage of about 47 ft (discharge, about 9,360 cfs, based on information furnished by city of Houston).

Remarks.--Low flow partly sustained by industrial waste. No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	-	41.7	27.6	2.79	10.5	-
1937	6.66	1.31	48.4	56.2	9.98	109	22.7	0.75	5.93	20.5	7.15	2.46	24.5
1938	39.4	4.17	87.2	53.6	124	5.84	3.88	438	9.10	18.2	6.42	4.96	66.4
1939	.94	1.40	4.63	81.6	37.0	5.46	1.35	1.58	18.6	141	.83	16.2	26.0
1940	2.43	.93	12.3	1.70	41.6	1.10	8.31	3.62	53.9	8.02	.61	2.39	11.2
1941	24.6	296	221	105	48.8	242	252	116	408	41.1	708	578	194
1942	204	211	43.4	48.5	34.4	43.7	106	4.31	9.93	439	27.6	70.2	104
1943	5.99	48.8	84.9	130	16.4	89.5	8.75	32.1	40.3	268	57.0	8.26	66.7
1944	3.06	435	138	437	114	357	6.94	295	30.6	2.19	8.31	62.8	158
1945	4.52	104	179	298	94.0	7.36	271	12.5	69.9	2.26	311	36.2	116
1946	33.8	2.00	273	255	185	59.4	7.82	506	312	93.0	4.67	39.8	148
1947	5.49	774	63.8	277	8.52	64.9	5.74	151	8.03	3.02	4.31	2.87	114
1948	13.2	17.9	94.8	39.3	52.5	19.9	38.2	12.1	3.24	2.41	1.35	1.07	24.6
1949	.71	11.5	2.22	18.0	134	52.8	200	32.9	4.67	49.7	31.1	12.9	45.0
1950	478	5.10	283	198	245	16.9	24.0	22.3	183	83.0	4.59	3.39	129
1951	2.12	2.84	4.90	9.15	5.12	48.3	3.33	7.74	4.62	6.38	1.02	34.9	10.9
1952	1.93	3.32	3.36	2.11	64.6	4.30	83.3	22.7	7.06	20.4	3.95	6.61	18.3
1953	2.70	37.8	85.0	20.2	55.6	4.56	8.22	346	9.33	9.25	78.1	24.0	57.1
1954	8.33	45.9	51.3	64.8	5.41	4.44	18.8	4.04	2.93	140	100	9.25	38.5
1955	19.2	5.45	2.43	24.6	155	2.92	4.23	3.76	5.29	19.6	13.3	24.1	22.4
1956	22.4	2.25	7.85	37.3	26.3	2.26	8.44	20.6	12.9	11.2	3.37	1.67	13.1
1957	2.91	5.08	11.3	2.91	9.79	138	150	39.5	20.0	5.12	2.77	52.5	36.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	-	2,480	1,690	171	623	-
1937	409	78	2,980	3,460	554	6,680	1,350	46	353	1,260	440	146	17,760
1938	2,420	248	5,360	3,300	6,880	359	231	26,900	541	1,120	395	295	48,050
1939	58	83	284	5,020	2,050	336	81	97	1,110	8,680	51	965	18,820
1940	149	56	754	105	2,390	67	495	223	3,210	493	37	142	8,120
1941	1,510	17,630	13,610	6,440	2,710	14,850	14,970	7,140	24,260	2,530	435	34,380	140,500
1942	12,550	12,550	2,670	2,980	1,910	2,690	6,280	265	591	26,980	1,700	4,170	75,340
1943	368	2,900	5,220	8,000	911	5,500	521	1,970	2,400	16,490	3,500	492	48,270
1944	188	25,910	8,500	26,850	6,590	21,930	413	18,160	1,820	135	511	3,740	114,700
1945	278	6,220	11,020	18,340	5,220	453	16,100	768	4,160	139	19,100	2,160	83,960
1946	2,080	119	16,790	15,670	10,250	3,650	466	31,140	18,590	5,720	287	2,370	107,100
1947	338	46,080	3,920	17,010	473	3,990	342	9,280	478	186	265	171	82,530
1948	811	1,060	5,830	2,420	3,020	1,220	2,270	743	193	148	83	64	17,860
1949	43	683	136	1,110	7,430	3,250	11,890	2,020	278	3,050	1,910	768	32,570
1950	29,410	303	17,380	12,170	13,620	1,040	1,430	1,370	10,860	5,100	282	202	93,170
1951	130	169	301	562	284	2,970	198	476	275	392	63	2,080	7,900
1952	118	197	207	130	3,720	265	4,960	1,400	420	1,250	243	393	13,300
1953	166	2,250	5,230	1,240	3,090	281	489	21,260	555	569	4,800	1,430	41,350
1954	549	2,730	3,150	3,990	300	273	1,120	248	175	8,640	6,160	551	27,890
1955	1,180	324	149	1,520	8,630	180	252	231	315	1,210	815	1,430	16,240
1956	1,380	134	483	2,300	1,510	139	502	1,270	769	686	207	99	9,480
1957	179	302	697	179	543	8,480	8,910	2,430	1,190	315	170	3,130	26,520

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1936	808	a4,020	May 25, 1936	-	-	-	-	-	-	-	-
1937	828	887	July 23, 1937	0.4	24.5	0.266	3.61	17,760	30.8	4.53	22,320
1938	858	3,570	May 7, 1938	.7	66.4	.722	9.78	48,050	55.9	8.24	40,450
1939	878	1,980	July 13, 1939	.3	26.0	.283	3.85	18,820	26.7	3.95	19,350
1940	898	632	June 11, 1940	.2	11.2	.122	1.65	8,120	55.0	8.13	39,910

a Maximum for period May 25 to September 30.

Yearly discharge, in cubic feet per second, of Whiteoak Bayou at Houston, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1941	928	5,100	Sept. 24, 1941	0.4	194	2.11	28.60	140,500	187	27.59	135,500
1942	958	4,400	July 6, 1942	1.9	104	1.13	15.36	75,340	77.4	11.43	56,050
1943	978	3,660	July 29, 1943	1.8	66.7	.725	9.84	48,270	103	15.21	74,380
1944	1008	8,600	Nov. 2, 1943	.7	158	1.72	23.42	114,700	135	19.90	97,670
1945	1038	4,330	Aug. 28, 1945	.6	116	1.26	17.12	83,960	118	17.40	85,430
1946	1058	3,660	May 20, 1946	1.3	148	1.61	21.82	107,100	191	28.22	138,500
1947	1088	4,120	Nov. 6, 1946	.8	114	1.24	16.82	82,530	55.1	8.14	39,900
1948	1118	534	Dec. 13, 1947	.2	24.6	.267	3.65	17,860	15.2	2.25	11,020
1949	1148	1,920	Apr. 23, 1949	.3	45.0	.489	6.65	32,570	109	16.06	78,800
1950	1178	3,650	Oct. 8, 1949	1.7	129	1.40	18.98	93,170	64.5	9.51	46,670
1951	1212	714	Mar. 27, 1951	.2	10.9	.118	1.61	7,900	10.8	1.59	7,820
1952	1242	835	Feb. 1, 1952	.2	18.3	.199	2.71	13,300	28.1	4.17	20,420
1953	1282	1,920	May 18, 1953	.6	57.1	.621	8.43	41,350	55.5	8.18	40,150
1954	1342	3,890	July 31, 1954	.8	38.5	.418	5.69	27,890	31.9	4.72	23,110
1955	1392	1,690	Feb. 6, 1955	.5	22.4	.243	3.32	16,240	22.9	-	16,580
1956	1442	1,320	July 10, 1956	.8	13.1	-	-	9,480	11.9	-	8,660
1957	1512	3,060	Mar. 17, 1957	.5	36.6	-	-	26,520	-	-	-

144. Brays Bayou at Houston, Tex.

Location.--Lat 29°42'08", long 95°24'08", at Old Main Street Bridge in southwest section of Houston, Harris County, 0.8 mile upstream from Harris Gully, and 10.8 miles upstream from mouth and Buffalo Bayou.

Drainage area.--100 sq mi.

Gage.--Water-stage recorder. Datum of gage is 3.90 ft below mean sea level, datum of 1929, unadjusted for ground-surface subsidence resulting from heavy ground-water withdrawals. Prior to June 20, 1936, reference point on bridge at same site and datum.

Average discharge.--21 years (1936-57), 83.4 cfs (60,380 acre-ft per year).

Extremes.--1936-57: Maximum discharge, 8,120 cfs Nov. 2, 1943; maximum gage height, 51.70 ft Aug. 28, 1945; minimum discharge, 0.1 cfs Oct. 10-13, 1937.

Maximum stage known since at least 1911, 56.0 ft in June 1919, from information by engineer for city of Houston.

Remarks.--Low flow partly sustained by sewage effluent from Houston suburbs. No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	-	80.8	95.7	17.9	25.3	-
1937	5.38	1.35	53.6	134	17.5	72.1	3.71	0.95	3.78	1.72	1.05	2.56	25.1
1938	41.4	4.96	246	122	118	4.03	41.3	350	15.3	19.4	13.4	38.0	84.8
1939	.58	.68	7.74	65.5	11.0	2.95	1.40	12.6	25.2	384	1.25	1.12	43.5
1940	1.76	1.69	15.3	1.90	71.2	1.36	3.67	13.3	53.3	18.7	.74	2.27	15.1
1941	11.4	437	150	68.6	51.6	250	225	164	264	52.6	30.1	817	209
1942	349	222	50.7	31.5	73.1	36.2	57.7	5.47	43.2	519	62.2	131	133
1943	5.39	29.3	104	149	11.1	93.5	10.7	4.47	5.90	449	66.4	6.32	79.2
1944	2.40	719	175	555	97.6	307	4.93	376	14.4	2.59	6.52	19.2	190
1945	6.22	78.6	112	120	81.4	4.78	219	98.1	23.4	4.82	489	50.9	108
1946	118	3.37	258	306	171	65.6	15.3	311	438	99.5	6.86	272	172
1947	27.7	681	98.8	274	9.72	30.1	7.99	285	26.4	7.61	116	8.35	131
1948	8.61	52.5	141	97.9	153	44.5	7.26	30.6	10.4	12.1	8.19	4.87	47.3
1949	5.07	26.7	6.03	61.9	216	53.3	214	9.82	40.7	74.9	99.8	10.7	67.0
1950	698	8.45	298	220	259	10.1	129	90.2	262	41.9	13.5	9.29	170
1951	6.82	5.69	5.98	13.8	12.4	70.7	9.08	11.3	14.7	8.33	8.90	34.6	16.9
1952	6.41	12.6	6.99	5.67	68.6	8.38	97.9	30.4	9.23	16.9	10.3	12.2	23.5
1953	7.54	36.5	106	36.6	82.4	8.63	11.8	299	19.4	15.4	236	73.8	78.2
1954	14.2	146	109	65.7	9.80	9.12	93.9	22.3	9.12	22.5	12.9	8.54	43.6
1955	13.6	13.6	14.9	53.3	220	7.39	12.8	21.2	22.2	26.3	44.7	43.4	39.8
1956	14.1	9.86	15.6	46.6	34.8	12.5	17.1	61.5	27.6	10.3	14.8	15.9	23.4
1957	12.9	19.1	29.0	10.6	18.6	207	146	66.9	27.2	13.7	19.6	36.3	50.7

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	-	-	-	-	-	-	-	-	4,810	5,890	1,100	1,500	-
1937	331	80	3,300	8,250	974	4,440	221	59	225	106	64	153	18,180
1938	2,550	295	15,120	7,500	6,550	248	2,460	21,500	908	1,190	822	2,260	61,400
1939	36	40	476	4,030	609	181	83	773	1,500	23,600	77	67	31,470
1940	108	101	938	117	4,100	84	218	820	3,170	1,150	45	135	10,990
1941	701	25,980	9,240	4,220	2,860	15,380	13,420	10,110	15,720	3,230	1,850	48,640	151,400
1942	21,490	13,230	3,120	1,940	4,060	2,230	3,440	337	2,570	31,940	3,820	7,820	96,000
1943	331	1,740	6,410	9,170	615	5,750	636	275	351	27,610	4,080	376	57,340
1944	147	42,760	10,740	34,110	5,610	18,900	293	23,100	859	159	401	1,140	138,200
1945	382	4,680	6,890	7,380	4,520	294	13,050	6,030	1,390	296	30,100	3,030	78,040
1946	7,240	201	15,860	18,790	9,520	4,030	909	19,140	26,060	6,120	422	16,190	124,500

Monthly and yearly runoff, in acre-feet, of Brays Bayou at Houston, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	1,700	40,540	6,080	16,820	540	1,850	475	17,530	1,570	468	7,120	497	95,190
1948	529	3,120	8,660	6,020	8,780	2,740	432	1,880	617	741	504	290	34,310
1949	312	1,590	371	3,800	12,010	3,280	12,760	604	2,420	4,600	6,130	639	48,520
1950	42,950	503	18,320	13,520	14,410	623	7,660	5,550	15,620	2,580	828	553	123,100
1951	420	338	368	847	687	4,340	540	696	874	512	547	2,060	12,230
1952	394	749	430	349	3,950	515	5,830	1,870	549	1,040	635	724	17,040
1953	463	2,170	6,530	2,250	4,570	530	700	18,390	1,150	948	14,530	4,390	56,640
1954	871	8,660	6,710	4,040	544	561	5,590	1,370	543	1,380	795	508	31,570
1955	837	810	916	3,280	12,200	455	762	1,310	1,320	1,620	2,750	2,580	28,840
1956	867	587	960	2,870	2,000	768	1,020	3,780	1,640	632	911	944	16,980
1957	794	1,140	1,780	653	1,030	12,720	8,680	4,110	1,620	843	1,200	2,160	36,730

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1936	808	a6,600	May 25, 1936	-	-	-	-	-	-	-	-
1937	828	1,270	Dec. 10, 1936	0.2	25.1	0.251	3.41	18,180	44.8	6.09	32,460
1938	858	4,530	May 17, 1938	.1	84.8	.848	11.52	61,400	60.8	8.24	43,990
1939	878	6,800	July 12, 1939	.2	43.5	.435	5.90	31,470	44.3	6.01	32,070
1940	898	1,340	Feb. 17, 1940	.6	15.1	.151	2.07	10,990	63.2	8.58	45,760
1941	928	6,460	Sept. 24, 1941	.4	209	2.09	28.39	151,400	212	28.75	153,300
1942	958	4,590	Oct. 31, 1941	2.9	133	1.33	17.99	96,000	92.0	12.49	66,640
1943	978	6,280	July 29, 1943	1.7	79.2	.792	10.74	57,340	142	19.24	102,500
1944	1008	8,120	Nov. 2, 1943	1.7	190	1.90	25.91	138,200	133	18.09	96,520
1945	1038	5,590	Aug. 28, 1945	1.4	108	1.08	14.64	78,040	123	16.77	89,390
1946	1058	3,880	Sept. 27, 1946	2.6	172	1.72	23.35	124,500	206	28.04	149,500
1947	1088	4,360	Nov. 5, 1946	-	131	1.31	17.84	95,190	81.7	11.09	59,180
1948	1118	1,440	Dec. 13, 1947	3.4	47.3	.473	6.43	34,310	33.4	4.55	24,280
1949	1148	2,340	Feb. 26, 1949	3.1	67.0	.670	9.08	48,520	149	20.22	108,000
1950	1178	5,340	Oct. 8, 1949	4.4	170	1.70	23.08	123,100	86.3	11.72	62,470
1951	1212	786	Mar. 28, 1951	4.0	16.9	.169	2.29	12,230	17.5	2.37	12,680
1952	1242	1,850	Feb. 1, 1952	4.0	23.5	.235	3.19	17,040	33.9	4.62	24,630
1953	1282	3,580	May 18, 1953	4.9	78.2	.782	10.62	56,640	88.0	11.94	63,700
1954	1342	3,680	Nov. 18, 1953	5.4	43.6	.436	5.93	31,570	24.7	3.37	17,890
1955	1392	3,300	Feb. 4, 1955	2.6	39.8	.398	5.40	28,840	39.6	-	28,690
1956	1442	1,180	May 2, 1956	6.6	23.4	-	-	16,980	25.2	-	18,280
1957	1512	4,660	Mar. 17, 1957	7.0	50.7	-	-	36,730	-	-	-

a Maximum for period May 25 to September 30.

145. Sims Bayou at Houston, Tex.

Location.--Lat 29°40'27", long 95°17'21", at bridge on State Highway 35, in southeast section of Houston, Harris County, 5.6 miles upstream from mouth.

Drainage area.--64.0 sq mi.

Gage.--Water-stage recorder. Datum of gage is 0.61 ft below mean sea level, datum of 1929, through the 1957 adjustment.

Average discharge.--5 years (1952-57), 31.8 cfs (23,020 acre-ft per year).

Extremes.--1952-57: Maximum discharge, 4,540 cfs Mar. 17, 1957 (gage height, 22.12 ft); minimum daily, 0.9 cfs Aug. 7, 1955.

Remarks.--Low flow is largely sewage effluent from Houston suburbs and drainage from lands irrigated with ground water. Diversions above station for irrigation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	5.68	24.2	70.7	25.2	76.0	7.82	9.75	135	13.8	8.56	130	63.5	47.5
1954	8.03	83.1	100	24.9	9.69	6.12	13.1	18.0	10.0	17.0	13.4	6.53	25.9
1955	10.4	5.80	5.03	37.7	182	4.56	8.98	10.7	5.41	11.4	12.9	13.1	24.6
1956	5.19	3.43	5.04	14.9	23.0	5.35	9.97	16.6	9.83	4.53	6.38	7.50	9.26
1957	4.87	10.7	15.2	5.77	13.3	284	150	31.5	57.8	8.12	11.2	26.5	51.8

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	349	1,440	4,350	1,550	4,220	481	580	8,290	824	527	8,010	3,780	34,400
1954	494	4,950	6,160	1,530	518	376	782	1,110	597	1,040	822	388	18,770
1955	642	345	309	2,320	10,110	280	534	656	322	703	792	779	17,790
1956	319	204	310	919	1,320	329	593	1,020	585	278	393	446	6,720
1957	300	635	937	355	738	17,470	8,940	1,930	3,440	499	686	1,580	37,510

Yearly discharge, in cubic feet per second, of Sims Bayou at Houston, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1953	1282	2,270	May 18, 1953	1.0	47.5	34,400	55.1	39,870
1954	1342	1,410	Nov. 19, 1953	1.2	25.9	18,770	11.7	8,460
1955	1392	2,730	Feb. 6, 1955	.9	24.6	17,790	23.9	17,330
1956	1442	478	Jan. 31, 1956	1.4	9.26	6,720	10.7	7,760
1957	1512	4,540	Mar. 17, 1957	2.1	51.8	37,510	-	-

146. Greens Bayou near Houston, Tex.

Location.--Lat 29°55'05", long 95°18'24", at bridge on U. S. Highway 59, 10.5 miles northeast of Houston, Harris County, and 12.0 miles upstream from Halls Bayou.

Drainage area.--67.5 sq mi.

Gage.--Water-stage recorder. Datum of gage is 0.66 ft below mean sea level, datum of 1929, through the 1957 adjustment.

Average discharge.--5 years (1952-57), 20.9 cfs (15,130 acre-ft per year).

Extremes.--1952-57: Maximum discharge, 7,000 cfs July 30, 1954 (gage height, 64.75 ft); no flow at times.

Remarks.--No known diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	0	9.50	43.3	8.34	23.8	1.27	9.17	266	1.90	3.52	25.1	8.81	33.7
1954	1.17	18.8	28.2	50.5	1.67	.40	3.78	5.59	.12	273	27.9	3.71	35.2
1955	9.40	.41	0	9.37	107	.05	1.05	1.57	1.39	16.1	12.4	7.01	13.2
1956	16.9	0	1.51	14.9	18.6	.38	.13	.25	1.28	1.43	24.4	1.97	6.82
1957	.11	1.04	2.10	.06	.35	64.9	47.0	20.6	1.61	.45	.81	48.9	15.7

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	0	565	2,670	513	1,320	78	545	16,330	113	216	1,550	524	24,420
1954	72	1,120	1,730	3,110	93	25	225	344	7.3	16,800	1,720	221	25,470
1955	578	25	0	576	5,960	2.8	62	96	83	987	764	417	9,550
1956	1,040	0	93	917	1,070	23	7.9	15	76	88	1,500	117	4,950
1957	6.7	62	129	3.6	19	3,990	2,800	1,270	96	28	50	2,910	11,360

Yearly discharge, in cubic feet per second

Year	W. S. P. no	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1953	1282	3,280	May 18, 1953	0	33.7	0.499	6.78	24,420	33.3	6.69	24,110
1954	1342	7,000	July 30, 1954	0	35.2	.521	7.07	25,470	32.0	6.43	23,150
1955	1392	1,740	Feb. 4, 1955	0	13.2	.195	2.65	9,550	13.9	2.80	10,080
1956	1442	1,400	Aug. 27, 1956	0	6.82	.101	1.37	4,950	5.53	1.11	4,010
1957	1512	1,840	Mar. 17, 1957	0	15.7	.233	3.17	11,360	-	-	-

147. Halls Bayou at Houston, Tex.

Location.--Lat 29°51'42", long 95°20'05", at bridge on Jensen Drive (formerly U. S. Highway 59), in northwest section of Houston, Harris County, 11.0 miles upstream from mouth.

Drainage area.--26.2 sq mi.

Gage.--Water-stage recorder. Datum of gage is 0.66 ft below mean sea level, datum of 1929, through 1957 adjustment.

Average discharge.--5 years (1952-57), 9.44 cfs (6,830 acre-ft per year).

Extremes.--1952-57: Maximum discharge, 2,410 cfs May 18, 1953 (gage height, 59.05 ft), from rating curve extended above 400 cfs by logarithmic plotting; maximum gage height, 60.65 ft July 30, 1954 (channel clogged with weed and debris); no flow at times.

Remarks.--Part of low flow is sewage effluent from Houston suburbs. No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	0	3.99	12.4	4.77	11.5	1.32	1.63	100	1.16	1.30	4.94	1.35	12.2
1954	2.43	15.9	13.3	21.7	1.57	.49	2.93	2.09	.08	74.0	4.91	.65	11.8
1955	5.92	3.05	.67	10.4	76.9	.38	.67	1.19	.85	12.6	23.0	13.1	11.9
1956	4.84	.38	2.15	9.41	11.5	1.31	.95	.99	2.00	.42	1.95	.25	2.99
1957	.95	.62	1.75	.30	1.05	22.0	30.7	8.97	2.32	6.96	.84	23.4	8.32

Monthly and yearly runoff, in acre-feet, of Halls Bayou at Houston, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1953	0	237	763	294	640	81	97	6,180	69	80	304	81	8,820
1954	149	949	817	1,340	87	30	175	129	4.6	4,550	302	39	8,570
1955	364	181	41	641	4,270	23	40	73	50	778	1,410	778	8,650
1956	297	23	132	579	662	80	57	61	119	26	120	15	2,170
1957	59	37	108	19	58	1,350	1,830	551	138	428	51	1,390	6,020

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30							Calendar year		
		Momentary maximum		Minimum day	Mean	Per sq mi	Runoff		Mean	Runoff	
		Discharge	Date				Inches	Acre-feet		Inches	Acre-feet
1953	1282	2,410	May 18, 1953	0	12.2	0.466	6.33	8,820	13.4	6.99	9,740
1954	1342	2,020	July 30, 1954	0	11.8	.451	6.15	8,570	10.0	5.19	7,240
1955	1392	1,530	Feb. 6, 1955	0	11.9	.455	6.21	8,650	11.8	6.11	8,520
1956	1512	357	Jan. 22, 1956	.1	2.99	.114	1.55	2,170	2.65	1.38	1,920
1957	1512	620	Apr. 29, 1957	.2	8.32	.318	4.33	6,020	-	-	-

CLEAR CREEK BASIN

148. Clear Creek near Pearland, Tex.

Location.--Lat 29°35'50", long 95°17'12", at bridge on State Highway 35, 0.7 mile downstream from Gulf, Colorado & Santa Fe Railway bridge, 1.2 miles upstream from Hickory Slough, 2.3 miles north of Pearland, Brazoria County, and about 30 miles upstream from Clear Lake.

Gage.--Water-stage recorder. Datum of gage is 29.29 ft above mean sea level, datum of 1929, through the 1957 adjustment. Prior to June 9, 1948, staff gage, June 9, 1948, to Apr. 22, 1952, water-stage recorder, at same site and to datum 5.80 ft higher.

Extremes.--1944, 1946: Maximum discharge not determined; minimum observed during period of record, 0.1 cfs July 30, 1944.
1947-57: Maximum discharge, 2,170 cfs Mar. 18, 1957 (gage height, 16.80 ft); maximum stage, 18.98 ft Oct. 8, 1949, present site and datum (discharge, 1,840 cfs before channel rectification); no flow at times.
Maximum stage known since at least 1932, that of Oct. 8, 1949.

Remarks.--Large area of rice land above station is irrigated with water from Brazos River. Low flow from April to October is largely drainage from irrigated lands. Diversions for irrigation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	-	-	-	-	-	-	-	-	-	-	3.83	63.2	-
1945	13.8	-	-	-	-	-	-	-	-	-	-	-	-
1946	-	-	-	-	-	18.8	9.03	131	174	49.9	20.6	115	-
1947	34.4	-	-	-	-	-	4.02	57.2	8.43	4.85	76.7	21.4	-
1948	17.8	8.21	30.3	29.2	83.5	26.2	4.01	25.4	4.97	7.89	1.82	15.2	21.0
1949	15.4	53.0	.69	27.0	109	62.9	90.2	10.8	7.05	63.9	49.8	18.4	41.8
1950	485	9.02	161	126	75.0	3.18	22.4	16.2	88.0	29.0	4.35	25.5	87.7
1951	16.4	.23	.48	3.78	3.17	12.4	8.75	8.90	9.10	1.04	1.31	48.3	9.46
1952	8.21	1.03	.53	.76	14.9	1.13	44.6	27.6	29.2	21.1	6.18	35.7	15.8
1953	10.7	15.0	53.5	20.1	53.0	5.26	14.5	68.7	14.3	11.8	81.0	56.5	33.6
1954	2.21	50.5	69.9	18.8	2.54	2.13	7.12	11.7	6.27	6.81	25.5	11.8	18.0
1955	2.92	.44	.03	11.5	104	.28	5.64	30.0	.84	1.85	61.5	23.3	19.7
1956	1.27	0	.01	.81	8.39	.37	5.11	16.3	2.73	2.25	7.90	8.41	4.44
1957	.28	.09	5.41	0	.46	169	109	44.5	70.3	3.86	7.50	28.5	36.7

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	-	-	-	-	-	-	-	-	-	-	235	3,760	-
1945	851	-	-	-	-	-	-	-	-	-	-	-	-
1946	-	-	-	-	-	1,160	537	8,060	10,340	3,070	1,270	6,830	-
1947	2,110	-	-	-	-	-	239	3,520	502	298	4,720	1,270	-
1948	1,100	489	1,860	1,800	4,800	1,610	239	1,560	296	485	112	904	15,260
1949	945	3,150	43	1,660	6,060	3,870	5,360	661	420	3,930	3,060	1,090	30,250
1950	29,820	537	9,880	7,730	4,170	196	1,330	995	5,240	1,780	267	1,520	63,460
1951	1,010	13	30	232	176	764	521	547	542	64	81	2,870	6,850
1952	505	61	33	47	860	69	2,650	1,700	1,740	1,300	380	2,130	11,480
1953	661	893	3,290	1,230	2,950	324	861	4,220	853	723	4,980	3,360	24,350
1954	136	3,000	4,300	1,150	141	131	423	717	373	419	1,570	699	13,060
1955	180	26	1.8	707	5,800	17	336	1,850	50	113	3,780	1,380	14,240
1956	78	0	.8	50	483	23	304	999	162	138	486	501	3,220
1957	17	5.4	333	0	26	10,400	6,490	2,740	4,180	237	461	1,700	26,590

Yearly discharge, in cubic feet per second, of Clear Creek near Pearland, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1944	1008	-	-	-	-	-	-	-
1945	1008	-	-	-	-	-	-	-
1946	1058	-	-	-	-	-	-	-
1947	1088	a710	Aug. 25, 1947	0	-	-	-	-
1948	1118	551	Feb. 24, 1948	0	21.0	15,260	22.0	15,940
1949	1148	759	Nov. 16, 1948	0	41.8	30,250	91.6	66,350
1950	1178	1,840	Oct. 8, 1949	.1	87.7	63,460	33.5	24,280
1951	1212	267	Sept. 14, 1951	0	9.46	6,850	8.84	6,400
1952	1242	673	July 17, 1952	0	15.8	11,480	21.7	15,720
1953	1282	1,130	Aug. 31, 1953	.1	33.6	24,350	37.2	26,940
1954	1342	717	Nov. 18, 1953	.2	18.0	13,060	8.06	5,830
1955	1392	1,350	Feb. 6, 1955	0	19.7	14,240	19.5	14,110
1956	1442	469	May 2, 1956	0	4.44	3,220	4.82	3,500
1957	1512	2,170	Mar. 18, 1957	0	36.7	26,590	-	-

a Maximum during period October, April to September.

149. Hickory Slough near Pearland, Tex.

Location.--Lat 29°34'47", long 95°17'40", at county road bridge, 0.2 mile upstream from Gulf, Colorado & Santa Fe Railway bridge, 1.2 miles north of Pearland, Brazoria County, and 1.9 miles upstream from mouth.

Gage.--Staff gage. Datum of gage is 42.14 ft above mean sea level, datum of 1929, Houston supplementary adjustment of 1943. July to October 1944, March to October 1946, staff gage at datum 3.0 ft higher, and April to October 1947, at datum 2.5 ft higher.

Extremes.--1944, 1946-49: Maximum discharge not determined; no flow at times.

Remarks.--Large area of rice land above station is irrigated with water from Brazos River. Low flow is largely drainage from irrigated lands. Diversions for irrigation above station. Station operated for low-water records only.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	-	-	-	-	-	-	-	-	-	-	5.84	20.2	-
1945	6.22	-	-	-	-	-	-	-	-	-	-	-	-
1946	-	-	-	-	-	2.01	0.77	21.2	-	15.9	15.2	-	-
1947	7.07	-	-	-	-	-	1.23	-	2.83	1.73	-	3.08	-
1948	2.70	-	-	-	-	-	1.84	-	2.87	3.20	-	-	-
1949	4.72	-	0.90	4.65	-	4.70	-	4.04	4.57	-	-	9.05	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	-	-	-	-	-	-	-	-	-	-	359	1,200	-
1945	382	-	-	-	-	-	-	-	-	-	-	-	-
1946	-	-	-	-	-	123	46	1,310	-	979	934	-	-
1947	435	-	-	-	-	-	73	-	168	106	-	183	-
1948	166	-	-	-	-	-	109	-	171	197	-	-	-
1949	290	-	55	286	-	289	-	248	272	-	-	539	-

Note.--For parts of many of the months shown blank in the above tables for 1946-49, daily discharge is published in the Water-Supply Papers for those years.

CHOCOLATE BAYOU BASIN

150. Chocolate Bayou near Alvin, Tex.

Location.--Lat 29°22'19", long 95°19'14", at bridge on Farm Road 1462, 5½ miles southwest of Alvin, Brazoria County, and 6½ miles upstream from State Highway 35.

Gage.--Staff gage. Datum of gage is 13.31 ft above mean sea level, datum of 1929, Houston supplementary adjustment of 1943. Prior to Nov. 26, 1949, staff gage at site 40 ft downstream at same datum. Nov. 26, 1949, to June 11, 1952, staff gage at present site and same datum.

Extremes.--1944, 1946: Maximum discharge not determined; minimum observed during period of record, 1.0 cfs Oct. 31, 1944.

1947-57: Maximum discharge, 7,400 cfs Oct. 8, 1949 (gage height, 18.80 ft, from floodmark), from rating curve extended above 4,000 cfs by logarithmic plotting; no flow at times.

Maximum stage known in recent years, 19.9 ft July 14, 1939, present site and datum, from information by local residents.

Remarks.--Large area of rice land above station is irrigated with water from Brazos River. Low flow April to October is largely drainage from the irrigated lands. Diversions for irrigation above station. Prior to January 1947, low-water records only.

Monthly and yearly mean discharge, in cubic feet per second, of Chocolate Bayou near Alvin, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	-	-	-	-	-	-	-	-	-	-	87.1	-	-
1946	-	-	-	-	-	-	13.5	-	-	-	-	-	-
1947	-	-	-	194	6.64	37.5	7.20	212	93.5	104	235	122	-
1948	44.0	15.3	72.2	67.4	254	72.2	13.4	90.5	58.6	61.7	46.8	129	76.4
1949	44.4	71.6	4.03	41.1	222	68.9	202	34.5	63.9	104	123	114	89.8
1950	1,148	13.0	397	157	185	6.11	38.2	64.0	191	171	126	136	221
1951	22.5	.03	.65	11.2	11.1	47.1	39.5	66.2	94.5	48.8	76.0	204	51.8
1952	16.7	1.65	3.87	.95	81.8	29.8	318	233	84.5	69.0	38.9	93.0	80.4
1953	17.2	31.4	90.6	16.5	83.4	10.1	26.7	252	90.7	133	270	276	108
1954	8.78	291	133	51.3	6.70	15.3	40.9	94.3	57.4	56.8	102	42.3	75.2
1955	10.4	.96	.23	33.6	205	1.63	18.9	51.4	59.3	75.5	72.6	46.1	46.8
1956	.89	3.19	3.01	1.62	18.7	2.97	23.1	35.7	30.7	21.3	38.7	19.5	16.6
1957	4.37	1.08	.92	.16	5.73	379	135	123	244	32.6	38.3	48.3	84.8

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	-	-	-	-	-	-	-	-	-	-	5,360	-	-
1946	-	-	-	-	-	-	806	-	-	-	-	-	-
1947	-	-	-	11,960	369	2,310	428	13,010	5,560	6,380	14,450	7,260	-
1948	2,710	911	4,440	4,140	14,610	4,440	797	5,570	3,480	3,800	2,880	7,700	55,480
1949	2,730	4,260	248	2,520	12,330	4,240	12,030	2,120	3,800	6,370	7,580	6,770	65,000
1950	70,610	774	24,390	9,640	10,300	376	2,270	3,940	11,390	10,530	7,730	8,080	160,000
1951	1,380	2.0	40	691	615	2,900	2,350	4,070	5,620	3,000	4,670	12,150	37,490
1952	1,030	98	238	59	4,700	1,830	18,890	14,330	5,030	4,240	2,390	5,530	58,360
1953	1,060	1,870	5,570	1,020	4,630	618	1,590	15,470	5,400	8,180	16,620	16,420	78,450
1954	540	17,330	8,180	3,150	372	940	2,440	5,800	3,410	3,490	6,300	2,520	54,470
1955	642	57	14	2,060	11,370	100	1,130	3,160	3,530	4,640	4,460	2,740	33,900
1956	55	190	185	100	1,080	183	1,370	2,200	1,830	1,310	2,380	1,160	12,040
1957	269	64	57	9.7	318	23,300	8,050	7,580	14,500	2,010	2,350	2,870	61,380

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1944	1008	-	-	-	-	-	-	-
1945	1008	-	-	-	-	-	-	-
1946	1058	-	-	-	-	-	-	-
1947	1088	-	-	-	-	-	96.4	69,790
1948	1118	1,080	Feb. 25, 1948	1.8	76.4	55,480	75.3	54,660
1949	1148	980	Feb. 27, Apr. 23, 1949	1.4	89.8	65,000	212	153,500
1950	1178	7,400	Oct. 8, 1949	1.3	221	160,000	90.7	65,680
1951	1212	936	Sept. 14, 1951	0	51.8	37,490	51.7	37,430
1952	1242	2,250	Apr. 1, 1952	.3	80.4	58,360	90.2	65,500
1953	1282	2,660	Aug. 31, 1953	.2	108	78,450	133	96,000
1954	1342	3,010	Nov. 19, 1953	1.0	75.2	54,470	40.2	29,140
1955	1392	1,860	Feb. 7, 1955	0	46.8	33,900	46.4	33,620
1956	1442	247	May 2, 1956	0	16.6	12,040	16.5	12,000
1957	1512	4,280	Mar. 18, 1957	0	84.8	61,380	-	-

Note.--W.S.P. 1008, 1058, and 1088 give daily discharges for parts of many months that appear blank in these tables.

BASTROP BAYOU BASIN

151. Austin Bayou near Danbury, Tex.

Location.--Lat 29°14'42", long 95°19'47", at county road bridge, 85 ft downstream from Missouri Pacific Railroad bridge, 1.5 miles northeast of Danbury, Brazoria County, 8 miles upstream from Flores Bayou, and 18 miles upstream from mouth and Bastrop Bayou.

Gage.--Water-stage recorder. Datum of gage is 5.375 ft above mean sea level, datum of 1929, Houston supplementary adjustment of 1943. Prior to Apr. 24, 1947, staff gage at same site and datum.

Extremes.--1944, 1946, 1947: Maximum discharge not determined; no flow Aug. 1, 1947.
Flood of July 12-14, 1939, reached a stage of 18.3 ft, present datum, at Missouri Pacific Railroad bridge, from information by engineering department of Missouri Pacific Railroad.

Remarks.--Large area of rice land above station is irrigated with water from Brazos River. Low flow is largely drainage from irrigated lands. Diversions for irrigation above station. Station operated for low-water records only.

Monthly and yearly mean discharge, in cubic feet per second, of Austin Bayou near Danbury, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	-	-	-	-	-	-	-	-	-	-	44.9	144	-
1945	25.3	-	-	-	-	-	-	-	-	-	-	-	-
1946	-	-	-	-	-	-	5.30	-	-	-	16.4	-	-
1947	46.7	-	-	-	-	-	-	334	23.0	25.8	142	30.0	-
1948	16.7	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1944	-	-	-	-	-	-	-	-	-	-	2,760	8,580	-
1945	1,550	-	-	-	-	-	-	-	-	-	-	-	-
1946	-	-	-	-	-	-	316	-	-	-	1,010	-	-
1947	2,870	-	-	-	-	-	-	20,510	1,370	1,580	8,700	1,780	-
1948	1,030	-	-	-	-	-	-	-	-	-	-	-	-

OYSTER CREEK BASIN

152. Oyster Creek near Angleton, Tex.

Location.--Lat 29°09'25", long 95°28'35", at bridge on State Highway 35, 2¾ miles west of Angleton, Brazoria County, 4.0 miles upstream from Missouri Pacific Railroad bridge, 4½ miles downstream from another Missouri Pacific Railroad bridge, and about 45 miles upstream from Gulf of Mexico.

Gage.--Water-stage recorder. Datum of gage is 1.31 ft below mean sea level, datum of 1929.

Extremes.--1944-57: Maximum discharge, 10,600 cfs May 10, 1957 (gage height, 31.25 ft); minimum, 0.3 cfs at times in 1955 and 1956.
Flood of December 1913 reached a stage of about 32 ft, from information by State Highway Department; flood of Dec. 5, 1940, reached a stage of 30.7 ft, from floodmark. At extreme high stages, the Brazos River overflows into Oyster Creek above this station and there may be some relation between stage of Brazos River at East Columbia and stage at this station.

Remarks.--Diversions above station for irrigation. A large part of the low flow is water released from Harris Reservoir for industrial use below station. Harris Reservoir is supplied with water diverted from the Brazos River during periods of flood flow.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	96.5	34.5	54.1	61.2	50.8	22.6	273	70.6	34.1	38.8	123	142	83.3
1946	43.9	26.9	151	352	206	153	38.6	273	595	357	55.5	119	198
1947	228	956	339	219	56.0	114	33.9	233	78.4	40.1	118	93.8	209
1948	29.7	26.1	56.4	50.5	239	148	58.2	33.6	29.2	33.4	35.5	27.5	63.3
1949	26.4	20.5	21.6	28.1	127	150	337	150	43.6	24.5	57.1	30.6	84.1
1950	1,162	174	413	330	300	122	43.3	77.9	177	49.7	48.0	50.4	247
1951	48.3	46.3	45.3	47.1	44.2	95.4	46.7	66.2	134	80.3	74.2	134	71.9
1952	80.4	91.2	99.4	91.8	146	71.5	340	137	151	82.8	83.2	80.1	120
1953	72.1	78.3	102	71.1	122	132	132	375	132	130	138	229	143
1954	135	481	233	180	141	179	78.3	140	183	99.6	70.3	65.4	165
1955	77.6	76.9	75.1	80.4	173	83.1	39.7	29.4	150	121	72.8	129	91.7
1956	49.6	31.9	25.7	127	134	129	146	153	105	20.6	89.6	109	93.1
1957	109	147	133	146	57.6	199	197	3,767	324	162	131	165	467

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1945	5,930	2,050	3,330	3,760	2,820	1,390	16,260	4,340	2,030	2,390	7,550	8,470	60,320
1946	2,700	1,600	9,310	21,630	11,460	9,410	2,300	16,780	35,390	21,920	3,410	7,080	143,000
1947	14,010	56,870	20,860	13,490	3,110	7,020	2,020	14,330	4,660	2,470	7,230	5,580	151,600
1948	1,820	1,550	3,470	3,110	13,760	9,090	3,460	2,060	1,740	2,050	2,190	1,640	45,940
1949	1,620	1,220	1,330	1,730	7,070	9,210	20,050	9,240	2,600	1,500	3,510	1,820	60,900
1950	71,450	10,350	25,410	20,310	16,680	7,530	2,580	4,790	10,500	3,060	2,950	3,000	178,600
1951	2,970	2,750	2,780	2,900	2,450	5,860	2,780	4,070	8,000	4,930	4,560	7,990	52,040
1952	4,940	5,420	6,110	5,640	8,400	4,400	20,210	8,400	8,970	5,090	5,120	4,770	87,470
1953	4,430	4,660	6,300	4,370	6,760	8,110	7,830	23,070	7,840	7,980	8,500	13,600	103,500
1954	8,310	28,640	14,330	11,070	7,830	10,990	4,660	8,620	10,860	6,120	4,320	3,890	119,600
1955	4,770	4,580	4,620	4,940	9,620	5,110	2,360	1,810	8,950	7,450	4,480	7,680	66,370
1956	3,050	1,900	1,580	7,800	7,680	7,950	8,700	9,410	6,250	1,270	5,510	6,490	67,590
1957	6,720	8,730	8,190	8,970	3,200	12,220	11,720	231,600	19,280	9,930	8,040	9,820	338,400

Yearly discharge, in cubic feet per second, of Oyster Creek near Angleton, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1945	1038	935	Apr. 2, 1945	17	83.3	60,320	86.5	62,620
1946	1058	1,470	June 10, 1946	24	198	143,000	305	221,100
1947	1088, 1392	1,790	Nov. 7, 1946	16	209	151,600	92.2	66,750
1948	1118	643	Feb. 25, 1948	6.6	63.3	45,940	59.6	43,270
1949	1148	992	Apr. 21, 1949	3.9	84.1	60,900	226	163,900
1950	1178	2,320	Oct. 12, 1949	9.9	247	178,600	110	79,900
1951	1212	537	Mar. 27, 1951	18	71.9	52,040	82.9	60,010
1952	1242	753	Apr. 24, 1952	36	120	87,470	119	86,380
1953	1282	1,140	May 19, 1953	54	143	103,500	192	139,300
1954	1342	1,900	Nov. 21, 1953	44	165	119,600	114	82,340
1955	1392	532	Feb. 7, 1955	.3	91.7	66,370	81.4	58,930
1956	1442	173	May 12, 1956	.3	93.1	67,590	117	84,700
1957	1512	10,600	May 10, 1957	2.1	467	338,400	-	-

153. Double Mountain Fork Brazos River at Lubbock, Tex.

Location. --Lat 33°35'05", long 101°49'40", in Mackenzie State Park in Lubbock, Lubbock County, and 1.9 miles downstream from Yellowhouse Creek.

Gage. --Water-stage recorder. Datum of gage is 3,132.7 ft above mean sea level, datum of 1929.

Average discharge. --10 years (1939-49), 1.67 cfs (1,210 acre-ft per year).

Extremes. --1939-49: Maximum discharge, 3,150 cfs May 7, 1949 (gage height, 7.43 ft), from rating curve extended above 120 cfs on basis of slope-area measurements of peak flow at gage heights 6.72 and 7.43 ft; no flow most of time.

Remarks. --Station is located in small pool (capacity, 29.5 acre-ft). Figures of discharge represent inflow into pool computed on basis of outflow and change in contents with no correction for evaporation, transpiration, or seepage. Several dams form small pools above station which affect low flow.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	0	-
1940	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	.14	0	60.6	36.4	4.91	.01	.01	8.57
1942	7.76	.66	.003	0	0	0	.23	0	13.5	.10	0	17.4	3.28
1943	1.82	0	.55	0	0	0	0	0	0	0	0	0	.20
1944	0	0	0	0	0	0	0	3.42	1.14	.24	0	0	.40
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	.11	0	0	0	0	0	0	.07	0	0	0	0	.02
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	48.7	1.09	.003	0	0	4.23

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	-	-	0	-
1940	0	0	0	0	0	0	0	0	0	0	0	0	0
1941	0	0	0	0	0	8.7	0	3,730	2,170	302	.4	.6	6,210
1942	477	39	.2	0	0	0	14	0	803	6.3	0	1,040	2,380
1943	112	0	34	0	0	0	0	0	0	0	0	0	146
1944	0	0	0	0	0	0	0	210	68	15	0	0	293
1945	0	0	0	0	0	0	0	0	0	0	0	0	0
1946	0	0	0	0	0	0	0	0	0	0	0	0	0
1947	6.7	0	0	0	0	0	0	4.6	0	0	0	0	11
1948	0	0	0	0	0	0	0	0	0	0	0	0	0
1949	0	0	0	0	0	0	0	2,990	65	.2	0	0	3,060

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	898	-	-	0	-	-	-	-
1940	898	0	-	0	0	0	0	0
1941	928	892	June 6, 1941	0	8.57	6,210	9.28	6,730
1942	958	427	Sept. 7, 1942	0	3.28	2,380	2.77	2,010
1943	978	39	Oct. 17, 1942	0	.20	146	0	0
1944	1008	285	May 11, 1944	0	.40	293	.40	293
1945	1038	0	-	0	0	0	0	0
1946	1058	0	-	0	0	0	.01	6.7
1947	1088	138	Oct. 7, 1946	0	.02	11	.01	4.6
1948	1118	0	-	0	0	0	0	0
1949	1148	3,150	May 7, 1949	0	4.23	3,060	-	-

154. Double Mountain Fork Brazos River near Rotan, Tex.

Location. --Lat 32°56', long 100°29', at bridge on State Highway 70, 3.1 miles downstream from Red Creek, and 5 miles north of Rotan, Fisher County.

Drainage area. --7,740 sq mi, approximately, of which 6,470 sq mi is probably noncontributing.

Supplemental records available. --Records of chemical analyses and water temperatures for period December 1949 to September 1951 are published in reports of Geological Survey.

Gage. --Moveable wire-weight gage. Datum of gage is 1,771.97 ft above mean sea level, datum of 1929.

Extremes. --December 1949 to September 1951: Maximum discharge, 11,500 cfs Aug. 22, 1951 (gage height, 9.68 ft, from floodmark); no flow at times.

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second, of Double Mountain Fork Brazos River near Rotan, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	0.18	6.08	0	106	521	40.8	167	34.6	483	-
1951	7.84	0	0	0	0	0	0	60.1	114	29.6	172	4.26	32.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	11	337	0	6,300	32,040	2,430	10,290	2,130	28,750	-
1951	482	0	0	0	0	0	0	3,700	6,760	1,820	10,560	254	23,580

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1950	1178	-	-	-	-	-	114	82,770
1951	1212	11,500	Aug. 22, 1951	0	32.6	23,580	-	-

155. Double Mountain Fork Brazos River near Aspermont, Tex.

Location. --Lat 33°00', long 100°11', at bridge on U. S. Highway 83, 8 miles downstream from Mountain Creek, and 10 miles south of Aspermont, Stonewall County.

Drainage area. --7,980 sq mi, approximately, of which 6,470 sq mi is probably noncontributing.

Supplemental records available. --Records of chemical analyses and water temperatures for the periods October 1948 to September 1951 and July 1956 to September 1957, and suspended-sediment loads for the period November 1949 to September 1951 are published in reports of Geological Survey.

Gage. --Water-stage recorder and movable wire-weight gage. Altitude of gage is 1,628 ft (by barometer). Dec. 3, 1923, to Sept. 30, 1934, chain gage at site 90 ft downstream at same datum.

Average discharge. --28 years (1924-34, 1939-57), 179 cfs (129,600 acre-ft per year).

Extremes. --1924-34, 1939-57: Maximum discharge, 91,400 cfs Sept. 26, 1955 (gage height, 27.50 ft); no flow at times. Maximum stage since at least 1899, that of Sept. 26, 1955.

Remarks. --No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	0.57	0.23	0.17	164	73.3	12.3	12.4	0	126	-
1925	40.1	0	0	.35	0	0	672	240	17.5	26.9	450	629	173
1926	96.0	33.2	.74	.49	.45	14.9	247	135	247	284	907	432	201
1927	2,640	72.4	179	28.8	53.7	22.4	67.0	11.2	273	365	135	75.2	331
1928	38.5	.07	.18	1.38	.02	2.57	.15	729	64.5	818	317	3.98	167
1929	3.78	9.16	1.20	.41	1.27	10.8	18.0	385	321	205	.10	921	156
1930	14.6	.87	.07	.03	.05	.07	470	1,580	324	9.10	1.81	100	210
1931	186	23.0	199	7.32	32.1	6.02	12.8	67.2	38.2	53.7	0	.33	52.6
1932	295	166	13.1	65.7	111	7.47	152	242	537	376	428	1,520	324
1933	78.6	15.4	242	29.4	9.03	18.2	.19	307	5.13	86.8	391	105	109
1934	28.7	5.15	9.46	1.35	.22	15.5	325	54.3	96.2	0	0	251	64.9
1939	-	-	-	-	-	-	-	-	-	21.4	260	0	-
1940	50.1	.82	.73	.57	13.6	0	29.6	102	218	3.87	589	242	104
1941	.02	121	4.66	.16	36.9	227	1,190	2,785	847	428	214	416	525
1942	2,071	96.0	34.8	9.28	1.52	.29	138	28.3	140	31.0	292	406	274
1943	532	28.0	62.6	26.0	1.52	22.9	38.3	121	165	123	.06	.05	94.5
1944	.02	.06	1.05	.20	10.9	.43	6.90	141	42.2	243	25.3	23.0	41.5
1945	23.7	16.6	37.8	3.42	.94	21.4	6.69	8.60	150	459	3.27	86.8	68.8
1946	416	2.16	.12	.71	0	.12	.42	42.6	114	13.3	177	199	81.1
1947	549	12.2	94.2	8.91	.01	.25	1.50	1,794	109	41.8	3.82	43.3	225
1948	20.2	6.85	87.3	.33	177	10.8	.13	38.1	404	572	85.5	4.35	119
1949	78.0	162	.21	1.80	3.39	.51	54.4	411	509	10.4	15.8	422	139
1950	47.6	5.36	.34	.25	5.51	.02	141	747	68.7	210	50.0	764	171
1951	13.5	.52	.41	.20	.14	.12	.88	113	377	34.3	207	7.95	63.0
1952	.33	.01	0	0	0	.23	8.93	194	9.83	95.6	14.5	8.35	28.0
1953	0	3.29	.58	.10	.22	7.04	20.8	193	25.5	107	172	2.35	45.1
1954	862	39.0	2.76	.64	.25	0	891	964	78.0	.07	1.18	0	238
1955	2.26	21.5	.14	.23	66.5	259	6.01	1,729	519	923	33.7	2,712	523
1956	1,205	36.1	17.3	10.4	8.66	.85	.56	190	32.3	23.7	23.0	.09	131
1957	13.7	1.44	.76	0	235	3.93	683	1,656	1,319	152	65.6	109	352

Monthly and yearly runoff, in acre-feet, of Double Mountain Fork Brazos River near Aspermont, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	35	13	10	9,770	4,510	732	764	0	7,470	-
1925	2,470	0	0	22	0	0	40,000	14,800	1,040	1,660	27,600	37,400	125,000
1926	5,910	1,980	45	30	25	916	14,700	8,320	14,700	17,400	55,800	25,700	146,000
1927	162,000	4,310	11,000	1,770	2,980	1,380	3,990	688	16,200	22,400	8,310	4,470	289,000
1928	2,370	4.2	11	85	1.2	158	8.9	44,800	3,840	50,300	19,500	237	121,000
1929	232	545	74	25	71	664	1,070	23,700	19,100	12,600	6.1	54,800	113,000
1930	898	52	4.3	1.8	2.8	4.3	28,000	97,200	19,300	554	111	5,950	152,000
1931	11,400	1,370	12,200	450	1,780	370	762	4,130	2,270	3,300	0	20	38,100
1932	18,100	9,880	806	4,040	6,380	459	9,040	14,900	32,000	23,100	26,300	90,400	235,000
1933	4,830	916	14,900	1,810	502	1,120	11	18,900	305	5,340	24,000	6,250	78,900
1934	1,760	306	582	83	12	953	19,300	3,340	5,720	0	0	14,900	47,000
1939	-	-	-	-	-	-	-	-	-	1,320	15,960	0	-
1940	3,080	49	45	35	783	0	1,760	6,270	12,980	238	36,210	14,420	75,870
1941	1.2	7,170	287	10	2,050	13,940	70,830	171,200	50,400	26,320	13,150	24,770	380,100
1942	127,300	5,710	2,140	570	84	18	8,200	1,740	8,360	1,900	17,950	24,150	198,100
1943	32,710	1,660	3,850	1,600	84	1,410	2,280	7,430	9,820	7,590	4.0	3.0	68,440
1944	1.2	3.6	64	12	627	26	411	8,640	2,510	14,930	1,550	1,370	30,140
1945	1,460	987	2,330	210	52	1,310	398	529	8,920	28,240	201	5,170	49,810
1946	25,610	128	7.3	43	0	7.5	25	2,620	6,780	815	10,860	11,830	58,730
1947	33,740	723	5,790	548	.6	16	89	110,300	6,460	2,570	235	2,580	163,100
1948	1,240	408	5,370	20	10,190	661	7.9	3,570	24,050	35,140	5,260	259	86,180
1949	4,790	9,640	13	111	188	32	3,240	25,300	30,310	642	971	25,120	100,400
1950	2,920	319	21	15	306	1.2	8,410	45,910	4,090	12,930	3,070	45,470	123,500
1951	829	31	25	12	7.5	7.1	52	6,940	22,420	2,110	12,710	473	45,620
1952	20	.6	0	0	0	14	532	11,910	585	5,880	892	497	20,330
1953	0	196	36	6.1	12	433	1,240	11,860	1,520	6,600	10,590	140	32,630
1954	52,970	2,320	170	39	14	0	53,040	59,260	4,640	4.2	73	0	172,500
1955	139	1,280	8.7	14	3,690	15,910	358	106,300	30,860	56,740	2,070	161,400	378,800
1956	74,080	2,150	1,060	638	498	52	33	11,690	1,920	1,460	1,420	5.2	95,010
1957	841	85	47	0	13,060	241	40,670	101,400	78,490	9,320	4,030	6,480	255,100

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	-	-	0	-	-	35.6	25,800
1925	608	25,700	Apr. 7, 1925	0	173	125,000	180	130,000
1926	628	33,200	Aug. 22, 1926	0	201	146,000	435	315,000
1927	648	52,000	Oct. 15, 1926	0	331	239,000	89.3	64,600
1928	668	11,600	July 26, 1928	0	167	121,000	165	120,000
1929	688	14,700	May 17, 1929	0	156	113,000	156	113,000
1930	703	37,200	May 13, 1930	0	210	152,000	243	176,000
1931	718	6,820	Dec. 5, 1930	0	52.6	38,100	57.8	41,900
1932	733	26,400	Sept. 6, 1932	0	324	235,000	313	227,000
1933	748	9,860	May 25, 1933	0	109	78,900	84.2	60,900
1934	763	9,120	Sept. 24, 1934	0	64.9	47,000	-	-
1939	898	a17,900	June 20, 1939	0	-	-	-	-
1940	898	16,900	Aug. 16, 1940	0	104	75,870	110	80,150
1941	928	30,500	Apr. 15, 1941	0	525	380,100	701	507,800
1942	958	26,000	Oct. 15, 1941	0	274	198,100	140	101,200
1943	978	17,900	Oct. 17, 1942	0	94.5	68,440	41.8	30,290
1944	1008	11,300	July 22, 1944	0	41.5	30,140	48.0	34,850
1945	1038	13,000	July 10, 1945	0	68.8	49,810	97.8	70,780
1946	1058	18,100	Oct. 7, 1945	0	81.1	58,730	101	73,230
1947	1088	20,400	May 12, 1947	0	225	163,100	179	129,800
1948	1118	22,200	June 24, 1948	0	119	86,180	129	93,600
1949	1148	14,800	Sept. 14, 1949	0	139	100,400	123	89,170
1950	1178	16,100	Sept. 5, 1950	0	171	123,500	167	121,100
1951	1212	9,390	June 11, 1951	0	63.0	45,620	61.8	44,750
1952	1242	7,130	May 28, 1952	0	28.0	20,330	28.3	20,540
1953	1282	7,820	May 12, 1953	0	45.1	32,630	121	87,860
1954	1342	34,900	Apr. 13, 1954	0	238	172,500	164	118,500
1955	1392	91,400	Sept. 26, 1955	0	523	378,800	628	454,600
1956	1442	25,200	Oct. 3, 1955	0	131	95,010	25.7	18,690
1957	1512	27,000	May 12, 1957	0	352	255,100	-	-

a Maximum June to September.

156. White River at Plainview, Tex.

Location. --Lat 34°11', long 101°41', at bridge on Broadway Street in Plainview, Hale County, 0.7 mile upstream from Atchison, Topeka & Santa Fe Railway bridge.

Gage. --Water-stage recorder. Datum of gage is 3,341.1 ft above mean sea level, datum of 1929.

Average discharge. --10 years (1939-49), 4.90 cfs (3,550 acre-ft per year).

Extremes. --1939-49: Maximum discharge, 12,000 cfs June 6, 1941 (gage height, 8.75 ft), from rating curve extended above 800 cfs on basis of slope-area measurement of peak flow; no flow most of time.
Maximum stage known prior to 1941, about 6.5 ft in May 1927 (discharge, about 1,100 cfs), from information by local resident. Flood of May 24, 1937, reached about the same stage as that of May 1927.

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-	-	-	-	-	0	0.19	0	-
1940	0.003	0	0.01	0.01	0.15	0	0.04	0.08	0	0	.003	0	0.02
1941	.04	.34	.02	.02	.02	.14	.10	58.7	353	13.2	3.90	.39	35.6
1942	88.6	3.10	.03	0	0	.01	2.95	0	2.84	.003	.03	.14	8.27
1943	2.62	0	.09	0	0	0	.003	.05	0	.72	0	.007	.30
1944	0	0	.02	.04	0	0	0	.23	.99	.01	0	.003	.11
1945	0	0	.03	0	0	0	.01	0	0	.003	.01	0	.004
1946	.01	0	0	0	0	0	0	0	0	0	.03	.31	.03
1947	17.6	.01	11.1	0	0	0	.003	23.2	.29	.24	0	0	4.46
1948	0	0	0	0	.01	0	.03	.05	.05	0	.30	.05	.04
1949	.01	0	0	.26	.11	.02	.21	.80	.18	.14	.10	.12	.16

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	-	-		-	-	-	0	12	0	-
1940	0.2	0	0.6	0.6	8.5	0	2.6	5.0	0	0	.2	0	18
1941	2.6	20	1.4	1.0	1.2	8.3	6.1	3,610	21,020	813	240	23	25,750
1942	5,450	184	1.6	0	0	.4	175	0	169	.2	1.6	8.5	5,990
1943	161	0	5.8	0	0	0	.2	3.2	0	44	0	.4	215
1944	0	0	1.0	2.6	0	0	0	14	59	.4	0	.2	77
1945	0	0	1.6	0	0	0	.4	0	0	.2	.8	0	3.0
1946	.8	0	0	0	0	0	0	0	0	0	1.6	18	20
1947	1,080	.4	682	0	0	0	.2	1,430	17	15	0	0	3,220
1948	0	0	0	0	.8	0	1.6	3.4	2.8	0	18	2.8	29
1949	.6	0	0	16	6.1	1.4	13	49	11	8.5	6.0	7.3	119

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	898	a334	June 22, 1939	0	-	-	-	-
1940	898	13	Feb. 18, 1940	0	0.02	18	0.06	41
1941	928	12,000	June 6, 1941	0	35.6	25,750	43.3	31,360
1942	958	782	Oct. 5, 1941	0	8.27	5,990	.72	522
1943	978	40	Oct. 19, 1942	0	.30	215	.07	49
1944	1008	86	June 12, 1944	0	.11	77	.11	78
1945	1038	1.8	Dec. 4, 1944	0	.004	3.0	.003	2.2
1946	1058	16	Sept. 13, 1946	0	.03	20	2.47	1,780
1947	1088	970	May 7, 1947	0	4.46	3,220	2.01	1,460
1948	1118	46	Aug. 15, 1948	0	.04	29	.04	30
1949	1148	36	May 7, 1949	0	.16	119	-	-

a Maximum for period June to September.

157. Salt Fork Brazos River near Peacock, Tex.

Location. --Lat 33°10', long 100°26', at bridge on county road from Peacock to Oriana, 1,000 ft upstream from Wichita Valley Railway (Burlington) bridge, 2.4 miles west of Peacock, Stonewall County, 2.9 miles upstream from bridge on U. S. Highway 380, and 9.1 miles upstream from Croton Creek.

Drainage area. --4,260 sq mi, approximately, of which 2,770 sq mi is probably noncontributing.

Supplemental records available. --Records of chemical analyses for the period December 1949 to September 1951 are published in reports of Geological Survey.

Gage. --Movable wire-weight gage. Datum of gage is 1,743.71 ft above mean sea level, datum of 1929.

Extremes. --1949-51: Maximum discharge, 9,900 cfs May 11, 1950 (gage height, 8.23 ft); no flow at times.

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second, of Salt Fork Brazos River near Peacock, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	3.00	1.58	0.27	15.0	488	60.0	217	20.6	456	-
1951	25.4	3.74	4.22	3.01	2.94	2.94	.69	146	67.2	5.20	108	.06	31.2

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	184	87	16	892	30,020	3,570	13,340	1,270	27,140	-
1951	1,560	222	259	185	163	181	41	8,980	4,000	320	6,660	3.8	22,570

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1950	1178	9,900	May 11, 1950	0	-	-	109	78,560
1951	1212	3,950	Aug. 22, 1951	0	31.2	22,570	-	-

158. Dove Creek near Aspermont, Tex.

Location. --Lat 33°24', long 100°25', about 0.1 mile downstream from Hayrick Creek, about 2.2 miles downstream from Salt Flat Creek, about 8 miles upstream from mouth and Salt Fork Brazos River, and about 20 miles northwest of Aspermont, Stonewall County.

Drainage area. --69 sq mi, approximately.

Gage. --Water-stage recorder.

Extremes. --1956-57: Maximum discharge, 5,610 cfs Apr. 28 (gage height, 4.96 ft), from rating curve extended above 240 cfs on basis of slope-area measurement of peak flow; minimum daily discharge, 0.3 cfs July 8, 11-21.
Flood in 1941 reached a stage of about 9 ft, from information by local residents.

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	1.46	1.07	1.53	1.05	1.74	1.56	38.2	42.2	38.3	1.35	0.68	1.10	10.8

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	90	64	94	65	97	96	2,270	2,590	2,280	83	42	65	7,840

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1957	1512	5,610	Apr. 28, 1957	0.3	10.8	7,840	-	-

159. Salt Fork Brazos River near Aspermont, Tex.

Location. --Lat 33°20', long 100°14', at bridge on U. S. Highway 83, 5½ miles downstream from Dove Creek and 13.2 miles northwest of Aspermont, Stonewall County.

Drainage area. --4,830 sq mi, approximately; at site 6.8 miles downstream, 4,990 sq mi; of which 2,770 sq mi is probably noncontributing.

Supplemental records available. --Records of chemical analyses and water temperatures for the period October 1948 to September 1951 and October 1956 to September 1957 are published in reports of Geological Survey.

Gage. --Water-stage recorder and movable wire-weight gage. Datum of gage is 1,588.70 ft above mean sea level, datum of 1929. Dec. 5, 1923, to Aug. 29, 1925, chain gage at site 6.8 miles downstream at different datum.

Average discharge. --18 years (1939-57), 160 cfs (115,800 acre-ft per year).

Extremes. --1923-25, 1939-57: Maximum discharge, 52,200 cfs Sept. 25, 1955 (gage height, 14.92 ft), from rating curve extended above 29,000 cfs by logarithmic plotting; no flow at times.
Maximum stage since at least 1900, that of Sept. 25, 1955. Flood of December 1913 reached a stage of 14.4 ft, and flood of November 1934 reached a stage of 13.7 ft (from information by local residents).

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second, of Salt Fork Brazos River near Aspermont, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	2.60	1.77	11.1	41.1	282	430	22.3	2.55	144	-
1925	20.1	0.12	0.42	3.24	.68	.08	1,010	215	75.7	86.2	367	-	-
1939	-	-	-	-	-	-	-	-	-	9.47	215	.11	-
1940	120	.01	.20	.20	.80	.09	82.4	58.4	164	2.76	727	34.2	100
1941	2.42	179	8.41	.27	19.9	180	828	2,175	1,236	250	65.2	598	463
1942	2,210	156	65.2	25.5	9.40	4.00	103	13.8	73.1	28.6	72.7	382	265
1943	336	23.9	49.0	16.2	3.12	8.60	9.31	31.0	386	110	.18	.18	81.5
1944	.15	.65	2.33	2.95	7.27	3.04	1.39	18.5	37.0	85.2	8.77	204	30.7
1945	4.41	5.05	76.0	11.8	5.67	7.46	5.49	.22	318	642	4.85	159	104
1946	149	.68	.20	.20	.10	.04	18.7	105	514	40.1	698	300	153
1947	340	9.23	55.9	14.3	2.92	6.06	23.6	1,465	85.2	8.46	.18	.10	170
1948	.12	5.84	48.0	.86	86.2	7.01	1.04	21.0	589	321	24.6	.58	91.5
1949	62.9	66.2	1.06	10.0	6.54	5.67	17.6	791	555	93.5	37.6	225	157
1950	60.2	6.65	4.86	8.70	5.97	.58	17.0	762	147	241	47.9	686	166
1951	41.0	8.84	6.58	5.63	8.25	7.31	4.53	303	149	46.3	179	6.99	64.5
1952	.61	.58	.21	.76	.47	.25	30.7	14.5	.39	127	.11	.35	14.8
1953	.08	3.69	1.12	.13	.01	.42	6.18	25.9	.01	181	184	1.85	34.3
1954	1,145	61.9	11.7	6.61	3.89	.68	436	1,618	41.7	.34	.59	.10	281
1955	.39	2.17	1.12	.93	21.0	91.9	19.7	696	261	299	33.5	1,605	252
1956	1,555	25.6	15.2	12.9	15.9	2.10	.48	165	32.5	.41	7.64	2.07	155
1957	6.38	.88	1.43	.33	20.4	8.67	489	1,678	1,283	53.4	25.2	14.9	299

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	160	102	684	2,450	17,300	25,600	1,370	157	8,590	-
1925	1,240	6.9	26	199	37.7	5.2	59,900	13,200	4,510	5,300	22,600	-	-
1939	-	-	-	-	-	-	-	-	-	583	13,250	6.3	-
1940	7,360	.6	12	12	46	5.6	4,910	3,600	9,750	170	44,690	2,040	72,600
1941	149	10,640	517	17	1,100	11,040	49,240	133,700	73,530	15,380	4,010	35,610	334,900
1942	135,900	9,270	4,010	1,560	522	246	6,140	850	4,350	1,760	4,470	22,750	191,800
1943	20,690	1,420	3,010	993	173	529	554	1,910	22,980	6,730	11	11	59,010
1944	9.5	38	143	181	418	187	83	1,140	2,200	5,240	539	12,120	22,300
1945	271	300	4,670	727	315	459	326	13	18,940	39,490	299	9,460	75,270
1946	9,170	40	12	12	5.6	2.6	1,110	6,440	30,600	2,470	42,910	17,820	110,600
1947	20,880	549	3,440	877	162	372	1,400	90,060	5,070	520	11	6.0	123,300
1948	7.5	348	2,950	53	4,960	431	62	1,290	35,080	19,720	1,510	35	66,450
1949	3,870	3,940	65	616	363	349	1,050	48,670	33,000	5,750	2,310	13,420	113,400
1950	3,700	396	299	535	332	36	1,010	46,840	8,770	14,830	2,950	40,830	120,500
1951	2,520	526	405	346	458	449	270	18,630	8,840	2,850	11,010	416	46,720
1952	37	35	13	47	27	15	1,820	892	23	7,820	6.5	21	10,760
1953	5.0	220	69	8.1	.4	26	368	1,590	.8	11,120	11,310	110	24,830
1954	70,400	3,690	718	406	216	42	25,960	99,490	2,480	21	36	6.0	203,500
1955	24	129	69	57	1,170	5,650	1,170	42,770	15,540	18,370	2,060	95,510	182,500
1956	95,600	1,520	932	793	915	129	29	10,140	1,930	25	470	12	112,500
1957	392	53	88	20	1,130	533	29,120	103,200	76,330	3,290	1,550	885	216,600

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	a11,600	June 21, 1924	0	-	-	79.4	57,690
1925	608	b24,000	Apr. 27, 1925	0	-	-	-	-
1939	898	-	-	0	-	-	-	-
1940	898	26,600	Aug. 16, 1940	0	100	72,600	105	76,530
1941	928	24,300	May 3, 1941	0	463	334,900	653	472,800
1942	958	23,600	Oct. 3, 1941	.1	265	191,800	93.6	67,770
1943	978	11,800	Oct. 17, 1942	0	81.5	59,010	47.1	34,080
1944	1008	23,200	Sept. 27, 1944	0	30.7	22,300	37.7	27,350
1945	1038	20,900	July 13, 1945	0	104	75,270	109	79,250
1946	1058	25,500	Aug. 28, 1946	0	153	110,600	174	126,200
1947	1088	27,400	May 16, 1947	0	170	123,300	141	101,800
1948	1118	12,800	June 24, 28, 1948	.1	91.5	66,450	97.8	71,020
1949	1148	11,100	May 17, Sept. 14, 1949	.1	157	113,400	152	109,900
1950	1178	11,100	Sept. 5, 1950	0	166	120,500	165	119,600

a Maximum observed December to September.
b Maximum observed October to August; may have been exceeded in September.

Yearly discharge, in cubic feet per second, of Salt Fork Brazos River near Aspermont, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1212	6,520	June 16, 1951	0	64.5	46,720	59.9	43,350
1952	1242	6,390	July 16, 1952	0	14.8	10,760	15.1	10,970
1953	1282	13,800	Aug. 18, 1953	0	34.3	24,830	137	99,340
1954	1342	35,600	May 24, 1954	0	281	203,500	178	128,900
1955	1392	52,200	Sept. 25, 1955	0	252	182,500	387	280,300
1956	1442	24,200	Oct. 3, 1955	.1	155	112,500	20.7	14,980
1957	1512	32,600	May 18, 1957	.2	299	216,600	-	-

160. Brazos River at Seymour, Tex.

Location.--Lat 33°34', long 99°16', at bridge on U. S. Highways 277 and 283, three-quarters of a mile upstream from Wichita Valley Railway bridge, 1 mile southwest of courthouse in Seymour, Baylor County, and at mile 832.

Drainage area.--14,490 sq mi, approximately, of which 9,240 sq mi is probably noncontributing.

Gage.--Water-stage recorder and movable wire-weight gage. Datum of gage is 1,240.97 ft above mean sea level, datum of 1929, supplementary adjustment of 1942.

Average discharge.--33 years (1924-57), 443 cfs (320,700 acre-ft per year).

Extremes.--1923-57: Maximum discharge, 95,400 cfs Oct. 16, 1926, from rating curve extended above 48,000 cfs on basis of slope-area measurement of peak flow; maximum stage, 21.00 ft Sept. 28, 1955; no flow at times.
Maximum stage known, that of Sept. 28, 1955. A flood in about 1906 reached about the same stage.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	201	20.7	3.68	27.5	908	344	681	8.88	12.0	460	-
1925	108	0.09	0	4.58	3.74	0	2,245	440	115	62.4	1,026	3,729	640
1926	293	66.5	5.02	13.0	.40	112	912	610	883	623	4,343	714	721
1927	4,792	151	159	159	123	31.0	50.6	142	533	567	21.8	69.3	574
1928	20.4	1.35	3.20	6.59	5.10	19.2	0	1,867	188	1,388	559	14.4	344
1929	0	11.9	2.19	0	6.08	38.0	34.7	520	708	480	.50	2,908	390
1930	135	24.3	2.05	3.31	6.20	1.81	2,150	3,040	1,790	13.1	23.7	194	616
1931	2,190	49.2	859	69.5	170	62.2	102	67.3	37.7	156	2.43	0	318
1932	905	668	101	194	205	106	387	455	1,090	1,320	627	4,580	882
1933	159	40.4	560	107	48.9	186	27.1	854	36.5	43.9	1,120	403	303
1934	101	24.2	29.2	45.3	5.32	91.3	382	81.8	30.4	.26	.04	230	84.8
1935	19.8	764	34.5	3.44	11.2	155	360	2,309	3,492	929	70.6	1,638	814
1936	171	165	94.8	18.4	23.0	1.91	212	1,190	250	401	9.58	4,044	545
1937	161	30.0	21.4	22.8	13.4	142	69.1	2.88	553	22.6	1,596	66.1	227
1938	75.0	14.6	4.87	56.4	1,481	118	148	629	1,708	767	47.6	1.64	412
1939	0	14.8	0	209	2.06	27.9	.43	680	1,406	71.3	483	.32	242
1940	90.5	.07	.21	.01	15.2	.04	89.1	138	467	115	1,401	428	230
1941	.10	322	48.8	5.28	44.3	490	2,216	6,746	3,288	862	438	1,003	1,294
1942	5,545	412	206	82.5	41.6	22.0	680	52.7	293	114	467	956	747
1943	1,288	152	147	79.2	18.0	60.0	231	270	694	187	.06	0	263
1944	.89	1.03	15.9	22.9	67.4	46.7	6.11	219	208	351	9.08	102	87.6
1945	74.3	51.3	101	40.2	25.1	158	46.4	7.41	329	996	15.5	181	170
1946	589	17.8	9.14	11.2	14.0	3.13	10.5	114	627	174	824	1,049	288
1947	960	75.8	345	47.0	16.3	16.7	23.7	5,115	231	44.5	4.98	24.0	585
1948	34.7	60.7	239	13.7	174	107	4.60	52.8	1,161	924	80.3	13.4	238
1949	130	199	3.23	36.4	67.7	19.3	47.8	1,323	1,692	75.8	78.5	873	378
1950	178	44.1	20.6	22.7	24.8	5.26	162	1,774	379	722	271	1,860	457
1951	124	29.0	32.2	24.9	51.4	28.2	13.2	551	571	116	367	94.9	168
1952	.13	2.20	2.20	4.10	10.9	7.35	23.9	286	44.7	171	1.79	.60	46.7
1953	0	10.4	13.5	0	25.6	60.6	11.7	109	6.75	652	667	14.6	133
1954	1,997	184	39.9	24.0	12.6	4.20	1,065	3,061	294	7.60	0	0	564
1955	0	22.9	20.2	11.2	69.8	402	16.9	2,443	1,038	747	122	3,865	730
1956	4,004	144	87.5	64.8	55.6	21.8	9.26	340	76.5	.42	20.1	0	408
1957	47.4	3.16	10.2	1.71	205	26.8	1,122	3,896	2,793	189	68.6	96.4	706

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	12,330	1,270	211	1,690	54,010	21,170	40,540	546	737	27,400	-
1925	6,640	5.6	0	282	208	0	133,600	27,030	6,810	3,840	63,100	221,900	463,400
1926	17,900	3,960	309	797	22	6,910	54,240	37,480	52,510	38,300	267,000	42,500	522,000
1927	294,700	8,960	9,760	9,770	6,830	1,910	3,010	8,700	31,710	34,890	1,340	4,120	415,700
1928	1,260	80	197	405	293	1,180	0	114,800	11,170	85,320	34,350	857	249,900
1929	0	708	135	0	338	2,340	2,060	31,990	42,140	29,540	31	173,000	282,300
1930	8,300	1,450	126	204	344	111	128,000	187,000	107,000	806	1,460	11,500	446,000

Monthly and yearly runoff, in acre-feet, of Brazos River at Seymour, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	135,000	2,930	52,800	4,270	9,440	3,820	6,070	4,140	2,240	9,590	149	0	230,000
1932	55,600	39,700	6,210	11,900	11,800	6,520	23,000	28,000	64,900	81,200	38,600	273,000	640,000
1933	9,780	2,400	34,400	6,580	2,720	11,450	1,610	52,500	2,170	2,700	68,900	24,000	219,000
1934	6,210	1,440	1,800	2,790	295	5,610	22,700	5,030	1,810	16	2.6	13,700	61,400
1935	1,220	45,480	2,120	211	622	9,530	21,450	142,000	207,800	57,120	4,340	97,450	589,300
1936	10,540	9,820	5,830	1,130	1,320	117	12,630	73,160	14,880	24,660	589	240,700	395,400
1937	9,870	1,790	1,310	1,400	743	8,760	4,110	177	32,910	1,390	98,120	3,940	164,500
1938	4,610	870	300	3,470	82,250	7,240	8,780	38,690	101,700	47,190	2,930	98	298,100
1939	0	880	0	12,860	115	1,710	26	41,810	83,690	4,380	29,690	19	175,200
1940	5,560	4.0	13	.8	872	2.2	5,300	8,510	27,760	7,090	86,160	25,470	166,700
1941	6.3	19,170	3,000	324	2,460	30,120	131,900	414,800	195,700	53,000	26,940	59,660	937,100
1942	340,900	24,500	12,650	5,080	2,310	1,350	40,470	3,240	17,450	6,990	28,710	56,900	540,600
1943	79,220	9,030	9,060	4,870	998	3,690	13,730	16,620	41,370	11,520	.4	0	190,100
1944	55	61	979	1,410	3,880	2,870	364	13,440	12,370	21,570	558	6,060	63,620
1945	4,570	3,050	6,190	2,470	1,400	9,720	2,760	456	19,600	61,220	954	10,750	123,100
1946	36,240	1,060	562	687	778	193	626	7,030	37,290	10,720	50,650	62,430	208,300
1947	59,020	4,510	21,190	2,890	906	1,030	1,410	314,500	13,730	2,740	306	1,430	423,700
1948	2,130	3,610	14,710	845	10,010	6,570	274	3,240	69,090	56,840	4,940	798	173,100
1949	7,970	11,820	199	2,240	3,760	1,190	2,850	81,350	100,700	4,660	4,830	51,960	273,500
1950	10,940	2,620	1,270	1,390	1,380	324	9,630	109,100	22,560	44,410	16,640	110,700	331,000
1951	7,590	1,730	1,980	1,530	2,860	1,730	785	33,880	33,950	7,150	22,560	5,640	121,400
1952	8.1	131	135	252	626	452	1,420	17,570	2,660	10,490	110	36	33,890
1953	0	621	831	0	1,420	3,730	698	6,700	401	40,120	41,030	868	96,420
1954	122,800	10,920	2,460	1,470	699	258	63,370	188,200	17,500	468	0	0	408,100
1955	0	1,360	1,240	688	3,880	24,690	1,010	150,200	61,780	45,910	7,470	230,000	528,200
1956	246,200	8,560	5,380	3,980	3,200	1,340	551	20,900	4,550	26	1,240	0	295,900
1957	2,920	188	630	105	11,400	1,650	66,770	239,600	166,200	11,600	4,220	5,740	511,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588,808	a21,000	Apr. 25, 1924	0	-	-	213	154,200
1925	608,808	40,200	Apr. 27, 1925	0	640	463,400	662	479,000
1926	628,808	82,600	Aug. 29, 1926	0	721	522,000	1,123	813,200
1927	648,808	95,400	Oct. 16, 1926	0	574	415,700	143	103,800
1928	668,808	23,000	May 18, 1928	0	344	249,900	344	249,200
1929	688,808	54,000	Sept. 9, 1929	0	390	282,300	402	291,000
1930	703	79,600	June 14, 1930	0	616	446,000	865	627,000
1931	718	18,500	Oct. 13, 1930	0	318	230,000	195	141,000
1932	733	61,000	Sept. 7, 1932	0	882	640,000	807	586,000
1933	748	33,100	Aug. 2, 1933	.3	303	219,000	251	182,000
1934	763	5,450	Apr. 19, 1934	0	84.8	61,400	139	100,800
1935	788	63,000	June 2, 1935	0	814	589,300	783	566,800
1936	808	53,300	Sept. 23, 1936	.3	545	395,400	526	382,200
1937	828	34,800	Aug. 22, 1937	0	227	164,500	217	157,300
1938	858	26,300	Feb. 16, 1938	0	412	298,100	405	293,200
1939	878	30,500	June 20, 1939	0	242	175,200	248	179,900
1940	898	32,100	Aug. 17, 1940	0	230	166,700	253	183,300
1941	928	62,200	May 4, 1941	0	1,294	937,100	1,786	1,293,000
1942	958	43,300	Oct. 16, 1941	0	747	540,600	359	259,800
1943	978	18,900	Oct. 17, 1942	0	263	190,100	130	93,890
1944	1008	8,480	July 23, 1944	0	87.6	63,620	105	76,330
1945	1038	9,780	July 12, 14, 1945	0	170	123,100	203	147,200
1946	1058	15,500	Aug. 30, 1946	0	288	208,300	352	255,100
1947	1088	49,700	May 17, 1947	0	585	423,700	496	359,400
1948	1118	13,300	July 6, 1948	0	238	173,100	238	172,600
1949	1148	18,600	June 12, 1949	0	378	273,500	371	268,400
1950	1178	16,700	Sept. 6, 1950	1.0	457	331,000	452	327,400
1951	1212	6,750	Aug. 23, 1951	0	168	121,400	152	110,400
1952	1242	7,180	May 28, 1952	0	46.7	33,890	48.3	35,070
1953	1282	20,000	July 19, 1953	0	133	96,420	319	231,100
1954	1342	22,500	May 13, 1954	0	564	408,100	379	274,600
1955	1392	71,200	Sept. 28, 1955	0	730	528,200	1,085	785,800
1956	1442	50,500	Oct. 4, 1955	0	408	295,900	54.4	39,520
1957	1512	28,000	May 19, 1957	0	706	511,000	-	-

a Maximum for period December to September.

161. Brazos River near Graham, Tex.

Location.--Lat 33°05', long 98°44', at bridge on Graham-Murray road, 6 miles upstream from mouth of Clear Fork and 10 miles west of Graham, Young County.

Drainage area.--15,730 sq mi, approximately, of which about 9,240 sq mi is probably noncontributing.

Gage.--Staff gage. Altitude of gage is 1,035 ft (from river-profile map). Prior to Mar. 21, 1916, chain gage at same site and datum.

Extremes.--1916-20: Maximum stage observed, 15.55 ft Nov. 2, 1919 (discharge not determined); no flow at times.

Remarks.--Several minor diversions above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	22.1	23.0	8.51	1.53	735	346	370	37.7	1.00	249	-
1917	449	21.6	9.86	5.78	4.55	.94	21.0	1.81	11.6	133	71.8	644	115
1918	4.66	1.66	.10	0	0	0	190	67.2	557	.27	0	604	117
1919	1,040	42.9	470	348	162	392	1,310	2,130	825	858	168	-	-
1920	-	755	65	74	67	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	1,360	1,410	490	94	43,700	21,300	22,000	2,320	61	14,800	-
1917	27,600	1,290	606	355	253	58	1,250	111	690	8,180	4,410	38,300	83,100
1918	286	99	6.0	0	0	0	11,300	4,130	33,100	17	0	35,900	84,800
1919	64,000	2,550	28,900	21,400	9,000	24,100	78,000	131,000	49,100	52,800	10,300	-	-
1920	-	44,900	4,000	4,550	3,850	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	438	4,100	Apr. 2, 1916	0	-	-	187	136,000
1917	458	3,600	Oct. 17, 1916	0	115	83,100	74.6	54,900
1918	478	4,100	Sept. 5, 1918	0	117	84,800	249	180,000
1919	508	-	-	0	-	-	-	-
1920	508	-	-	-	-	-	-	-

162. Lake Sweetwater near Sweetwater, Tex.

Location.--Lat 32°26'20", long 100°18'20", on downstream side of intake structure to pump station, near left end of dam on Bitter Creek, 6.5 miles southeast of Sweetwater, Nolan County, and 8.5 miles upstream from mouth.

Drainage area.--104 sq mi.

Supplemental records available.--Records of monthly diversions by city of Sweetwater for the period January 1936 to September 1957 are published in reports of Geological Survey.

Gage.--Staff gage. Datum of gage is 0.53 ft above mean sea level, datum of 1929, supplementary adjustment 1957.

Extremes.--1936-57: Maximum contents observed, 12,360 acre-ft June 1, 1957 (gage height, 116.70 ft); minimum contents observed, 780 acre-ft Aug. 17, 1953 (gage height, 82.54 ft).

Remarks.--Reservoir is formed by a rolled earth-fill dam, 2,600 ft long. Dam completed and storage began in 1930; reservoir first filled to spillway elevation in 1936. Reservoir is property of city of Sweetwater and was built to impound water for municipal use. Emergency spillway is located just to the left of the dam and has a concrete ogee-type crest 607.5 ft long. Maximum controlled capacity, 11,900 acre-ft at gage height 2,116.0 ft, crest of emergency spillway. No appreciable dead storage. Figures of contents not adjusted for sediment.

Cooperation.--Capacity curve furnished by Freese and Nichols, Consulting Engineers. Record of gage heights and diversions furnished by city of Sweetwater.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1936	-	-	-	10,200	10,040	9,880	[illegible],760	9,820	9,350	9,150	8,500	11,900	-
1937	11,660	11,540	11,480	11,360	11,240	11,300	11,000	10,760	10,540	9,930	9,450	9,050	-2,850
1938	8,750	8,600	8,400	8,600	8,550	9,400	9,250	9,100	10,320	11,900	11,420	10,760	+1,710
1939	10,370	10,260	9,930	9,760	9,660	10,260	9,930	10,760	11,780	11,120	10,700	10,200	- 560
1940	9,760	9,550	9,500	9,350	9,350	9,000	8,950	8,700	9,820	9,300	11,900	11,540	+1,340
1941	11,120	11,000	10,880	10,880	10,820	10,700	11,840	11,900	11,900	11,840	11,900	11,720	+ 180
1942	11,900	11,900	11,900	11,900	11,900	11,600	11,360	11,240	11,300	10,880	10,480	11,540	- 180
1943	11,900	11,780	11,540	11,360	11,480	11,480	11,240	11,240	11,420	10,880	10,150	9,660	-1,880
1944	9,350	9,100	9,000	9,000	9,050	9,000	8,500	8,650	8,500	10,880	10,480	10,100	+ 440
1945	9,980	9,820	9,710	9,600	9,500	9,450	9,760	9,350	8,950	11,660	11,180	10,760	+ 660
1946	10,700	10,370	10,260	10,150	10,040	9,880	9,710	9,250	8,500	7,670	7,210	7,960	-2,800
1947	7,810	7,720	7,720	7,480	7,250	7,030	6,810	9,050	8,600	8,000	7,440	6,900	-1,060
1948	7,210	7,070	6,900	6,760	6,680	6,680	6,260	5,450	4,690	5,380	5,270	4,850	-2,050
1949	4,760	4,500	4,280	4,120	3,940	3,660	4,890	5,300	5,130	4,690	4,240	4,560	- 290
1950	4,690	4,400	4,150	3,850	3,940	3,710	3,800	3,770	3,520	3,360	3,060	3,390	-1,170

Contents, in acre-feet, on last day of month, of Lake Sweetwater near Sweetwater, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1951	3,180	2,960	2,750	2,510	2,360	2,200	2,060	4,440	5,090	5,230	4,790	4,370	+ 980
1952	4,090	3,910	3,710	3,550	3,470	3,290	3,290	2,960	2,640	2,400	2,080	2,000	-2,370
1953	1,720	1,560	1,460	1,490	1,390	1,310	1,210	1,560	1,310	960	1,640	1,360	- 640
1954	1,320	1,260	1,210	1,160	1,120	1,040	1,090	2,440	2,510	2,160	1,940	1,760	+ 400
1955	1,640	1,560	1,490	1,460	1,510	1,470	1,370	2,960	3,130	2,890	2,770	2,640	+ 880
1956	2,620	2,490	2,380	2,300	2,220	2,140	4,180	4,090	3,770	3,440	3,160	2,840	+ 200
1957	2,980	2,860	2,940	2,860	3,080	3,160	4,790	11,660	11,660	11,000	10,590	10,420	+7,580

163. Fort Phantom Hill Reservoir near Nugent, Tex.

Location.--Lat 32°37', long 99°40', on outlet gate tower 120 ft above dam on Elm Creek, 4 miles upstream from Clear Fork Brazos River, and 5 miles south of Nugent, Jones County.

Drainage area.--478 sq mi.

Supplemental records available.--Records of diversions by city of Abilene for the water years 1952 to 1957 are published in reports of Geological Survey.

Gage.--Staff gage. Datum of gage is 1,580.78 ft above mean sea level.

Extremes.--1940-57: Maximum contents observed, 89,910 acre-ft May 25, 1957 (gage height, 58.7 ft); minimum observed, 19,040 acre-ft Apr. 23-25, 1953 (gage height, 34.5 ft).

Remarks.--Reservoir is formed by rock-faced earth-fill dam. Dam completed and storage began in October 1938. Capacity, 74,310 acre-ft at gage height 55.1 ft (crest of spillway). Sill of lowest outlet gate is at gage height 1.6 ft. Dead storage is negligible. Water is used for municipal supply for city of Abilene. Figures given herein represent total contents. An undetermined amount of flood flow is diverted by gravity ditch from Deadman Creek into the reservoir. During each year water is pumped into the reservoir from Clear Fork Brazos River. The city of Abilene diverts water from reservoir for municipal use. Beginning October 1952, figures of contents and capacities have been based on capacity table adjusted for sedimentation on basis of sedimentation survey made by the U. S. Department of Agriculture, Soil Conservation Service between July 1, 1953, and Oct. 2, 1953.

Cooperation.--Gage-height record and record of diversions furnished by city of Abilene.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1940	-	-	-	-	-	-	-	-	-	21,700	22,420	21,700	-
1941	24,000	22,800	22,800	22,800	23,000	23,800	30,600	45,700	63,060	64,860	71,140	70,380	+48,680
1942	73,420	68,150	69,260	69,630	67,040	65,580	67,040	67,410	66,300	64,140	63,060	62,700	- 7,680
1943	67,780	67,410	68,150	67,780	67,410	67,040	66,300	63,420	62,350	59,200	55,100	52,700	-10,000
1944	51,700	50,450	50,200	50,450	51,200	50,700	48,700	51,700	50,450	49,950	48,700	47,950	- 4,750
1945	48,200	47,950	47,950	47,950	47,450	47,700	48,200	48,200	50,950	53,600	52,700	50,450	+ 2,500
1946	51,700	50,450	50,450	50,700	50,450	49,700	47,950	49,450	47,700	43,950	42,700	43,200	- 7,250
1947	42,450	41,450	43,200	42,450	41,700	41,200	39,960	44,450	43,700	41,700	39,720	38,040	- 5,160
1948	40,200	38,760	40,700	40,200	40,450	40,200	38,520	38,040	39,480	37,560	35,400	33,240	- 4,800
1949	33,000	31,560	30,600	30,840	30,600	29,800	31,080	37,080	38,280	38,280	36,840	36,360	+ 3,120
1950	37,080	35,880	35,160	34,920	34,200	33,000	32,280	35,880	34,920	39,480	45,200	45,450	+ 9,090
1951	43,950	42,200	41,450	40,700	39,960	38,040	36,600	44,700	50,700	48,450	45,950	43,200	- 2,250
1952	41,950	40,700	38,040	37,320	36,360	34,920	34,680	34,680	32,040	29,800	27,800	25,000	-18,200
1953	22,030	22,550	22,200	21,340	20,500	19,840	19,520	25,830	23,250	37,590	39,870	37,590	+13,980
1954	40,130	39,360	38,080	37,340	36,370	35,170	36,860	51,920	49,120	45,870	42,250	39,620	+ 2,030
1955	38,080	38,590	37,100	36,120	36,120	34,700	33,080	49,120	65,360	63,150	61,350	71,910	+32,290
1956	70,320	68,390	66,860	65,730	65,360	63,150	61,350	62,060	58,540	53,530	50,370	46,750	-25,160
1957	44,460	43,900	43,060	42,250	47,340	46,450	81,860	78,020	74,720	70,720	66,860	67,250	+20,500

164. Clear Fork Brazos River at Nugent, Tex.

Location.--Lat 32°41', long 99°40', on right bank 33 ft downstream from county road bridge in Nugent, Jones County, and 4 miles upstream from Deadman Creek.

Drainage area.--2,220 sq mi.

Supplemental records available.--Records of chemical analyses and water temperatures for the period August 1948 to September 1953 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,531.91 ft above mean sea level, datum of 1929. Prior to Dec. 12, 1933, staff gage at site 575 ft downstream at same datum.

Average discharge.--33 years (1924-57), 138 cfs (99,910 acre-ft per year).

Extremes.--1924-57: Maximum discharge observed, 47,000 cfs Sept. 8, 1932 (gage height, 27.05 ft, site then in use), from rating curve extended above 25,000 cfs; no flow at times.

Maximum stage known, about 30.0 ft in 1876, from information by local residents. Floods in 1900 and May 1923 reached stages of about 24 and 24.5 ft, respectively, from information by local residents.

Remarks.--Flow slightly regulated by reservoirs in Elm Creek basin and Lakes Sweetwater and Trammel in Sweetwater Creek basin, which have a combined capacity of about 114,700 acre-ft. Diversions above station for municipal supply and oilfield operation materially affect low flow.

Monthly and yearly mean discharge, in cubic feet per second, of Clear Fork Brazos River at Nugent, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	23.9	119	446	31.9	9.28	5.45	227	-
1925	23.2	3.49	4.88	4.80	4.16	3.30	118	388	58.6	31.7	59.9	416	93.1
1926	140	29.0	12.0	11.2	8.13	46.4	214	74.7	636	155	15.6	80.4	118
1927	149	11.3	247	7.91	12.5	9.41	517	6.40	15.7	90.6	3.87	240	109
1928	16.8	5.39	6.33	15.4	3.98	3.68	4.39	2,000	343	575	453	18.2	291
1929	9.06	17.5	8.58	7.42	7.95	54.4	20.2	422	16.8	160	3.10	644	114
1930	177	9.68	11.6	10.9	10.4	14.1	38.1	725	306	46.6	34.0	269	139
1931	478	25.4	431	13.7	181	12.8	14.1	8.36	45.5	10.2	0	.39	102
1932	966	159	33.2	53.5	82.7	16.3	332	826	1,450	650	68.2	3,980	713
1933	136	56.6	244	97.9	64.0	58.7	57.4	488	41.9	28.5	82.8	32.6	117
1934	78.2	69.1	49.2	27.4	13.5	58.5	54.4	12.0	12.4	2.71	5.54	3.71	32.3
1935	2.24	157	7.65	6.29	24.0	6.88	54.9	1,239	1,761	118	23.2	528	327
1936	47.0	31.5	22.2	18.3	16.4	14.5	133	295	20.2	44.2	1.22	1,120	146
1937	124	32.0	24.6	19.7	17.4	19.0	12.3	28.1	84.0	11.3	94.4	19.1	40.7
1938	87.1	4.72	8.52	45.8	136	349	138	657	226	1,190	215	13.9	259
1939	12.0	22.1	9.25	20.3	9.15	23.8	6.53	563	474	38.9	56.8	3.13	104
1940	64.7	3.03	4.85	4.90	22.6	14.2	11.3	54.9	238	64.9	496	78.6	88.6
1941	5.30	31.7	6.82	4.53	18.0	59.5	351	784	545	163	285	61.1	194
1942	1,030	172	59.0	25.1	87.2	17.9	116	181	134	9.78	33.3	163	170
1943	438	28.4	37.5	22.2	22.9	56.4	26.9	152	134	20.9	11.8	3.93	80.4
1944	6.64	6.73	7.45	6.37	41.3	16.8	11.9	234	74.8	163	39.8	33.4	53.8
1945	145	11.7	11.3	6.30	8.31	71.8	114	84.8	163	728	95.1	10.6	122
1946	193	22.8	20.2	18.8	15.6	11.3	31.2	27.8	17.6	25.0	9.57	120	42.9
1947	147	31.5	118	9.70	7.58	10.0	6.48	391	123	18.8	2.86	4.75	73.4
1948	288	36.9	40.8	9.49	30.2	38.9	4.33	25.0	71.6	147	28.8	3.60	60.9
1949	204	2.88	2.17	8.79	6.63	3.53	46.2	210	78.5	8.55	4.18	117	58.1
1950	77.4	1.58	2.30	3.39	2.67	1.22	47.7	304	26.7	94.5	39.8	167	64.6
1951	4.51	5.58	5.00	5.70	4.29	25.7	6.92	165	221	66.7	11.5	.43	43.8
1952	3.97	1.99	23.4	2.24	1.63	1.29	10.4	44.0	8.84	.04	.05	31.3	10.8
1953	0	16.4	2.76	.10	.19	2.03	.13	22.7	3.40	53.2	46.6	.36	12.4
1954	33.7	.56	.52	.07	.05	.04	12.2	212	9.36	.43	5.28	.35	23.3
1955	2.97	18.4	.09	.20	5.72	.01	.02	254	181	52.9	11.0	417	78.4
1956	70.5	2.84	.74	1.85	2.87	.35	.09	148	20.1	11.5	0	0	21.9
1957	18.4	5.03	8.08	.03	486	27.1	1,159	4,694	1,385	61.8	34.0	42.9	662

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	1,470	7,100	27,500	1,900	571	335	13,500	-
1925	1,420	208	300	295	231	203	7,040	23,800	3,490	1,950	3,680	24,700	67,300
1926	8,590	1,730	738	687	451	2,850	12,700	4,600	37,800	9,510	959	4,780	85,400
1927	9,140	671	15,200	486	693	579	30,800	393	934	5,570	238	14,300	79,000
1928	1,030	321	389	947	229	226	261	123,000	20,400	35,400	27,900	1,080	211,000
1929	557	1,040	528	456	442	3,340	1,200	25,900	1,000	9,840	191	38,300	82,800
1930	10,900	576	713	670	578	867	2,270	44,600	18,200	2,870	2,090	16,000	100,000
1931	29,400	1,510	26,500	842	10,100	787	839	514	2,710	627	0	23	73,900
1932	59,400	9,460	2,040	3,290	4,760	1,000	19,800	50,800	86,300	40,000	4,190	237,000	518,000
1933	8,360	3,370	15,000	6,020	3,550	3,610	3,420	30,000	2,490	1,750	5,090	1,940	84,600
1934	4,810	4,110	3,030	1,680	750	3,600	3,240	738	738	167	341	221	23,400
1935	137	9,350	470	387	1,330	423	3,270	76,160	104,800	7,230	1,420	31,440	236,400
1936	2,890	1,870	1,370	1,120	946	893	7,900	18,130	1,200	2,720	75	66,670	105,800
1937	7,610	1,900	1,510	1,210	966	1,170	730	1,730	5,000	693	5,800	1,140	29,460
1938	5,350	281	524	2,810	7,570	21,440	8,210	40,400	13,470	73,150	13,230	827	187,300
1939	738	1,310	568	1,250	508	1,460	389	34,620	28,180	2,390	3,490	186	75,090
1940	3,980	180	298	301	1,300	875	671	3,380	14,150	3,990	30,520	4,680	64,320
1941	326	1,890	420	278	997	3,660	20,870	48,180	32,410	10,030	17,530	3,640	140,200
1942	63,350	10,220	3,630	1,540	4,840	1,100	6,930	11,150	7,970	601	2,050	9,700	123,100
1943	26,950	1,690	2,310	1,370	1,270	3,460	1,600	9,330	7,980	1,290	727	234	58,210
1944	408	401	458	392	2,370	1,030	706	14,380	4,450	9,990	2,440	1,990	39,020
1945	8,890	696	696	387	461	4,410	6,800	5,220	9,700	44,740	5,850	629	88,480
1946	11,860	1,360	1,240	1,160	865	698	1,850	1,710	1,050	1,540	588	7,130	31,050
1947	9,040	1,880	7,270	597	421	615	386	24,020	7,290	1,160	176	283	53,140
1948	17,710	2,200	2,510	583	1,740	2,390	258	1,540	4,260	9,050	1,770	214	44,220
1949	12,540	172	133	540	368	217	2,750	12,910	4,670	525	257	6,960	42,040
1950	4,760	94	142	209	148	75	2,840	18,670	1,590	5,810	2,450	9,960	46,750
1951	277	332	308	350	238	1,580	412	10,180	13,180	4,100	705	26	31,690
1952	244	119	1,440	138	94	79	616	2,710	526	2.2	3.4	1,860	7,830
1953	0	974	170	6.3	10	125	7.5	1,390	202	3,270	2,870	20	9,040
1954	2,070	34	32	4.4	2.6	2.6	728	13,050	557	27	324	21	16,850
1955	183	1,090	5.6	12	318	.6	1.0	15,630	10,780	3,250	673	24,800	56,740
1956	4,340	169	45	114	165	21	5.4	9,120	1,190	709	0	0	15,880
1957	1,130	299	497	2.0	26,980	1,670	68,960	288,600	82,390	3,800	2,090	2,550	479,000

Yearly discharge, in cubic feet per second, of Clear Fork Brazos River at Nugent, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	a5,800	May 26, 1924	-	-	-	-	-
1925	608	5,560	May 10, 1925	0.2	93.1	67,300	106	76,400
1926	628	9,620	June 19, 1926	3.8	118	85,400	137	99,300
1927	648	7,520	Apr. 14, 1927	.3	109	79,000	76.9	55,700
1928	668	11,500	May 20, 1928	0	291	211,000	291	212,000
1929	688	5,420	Sept. 11, 1929	0	114	82,800	128	92,900
1930	703	5,980	May 13, 1930	0	139	100,000	201	146,000
1931	718	6,220	Dec. 6, 1930	0	102	73,900	121	87,300
1932	733	b47,000	Sept. 8, 1932	0	713	518,000	652	474,000
1933	748	4,150	May 15, 1933	8.9	117	84,600	96.4	69,800
1934	763	1,330	Nov. 21, 1933	.2	32.3	23,400	29.6	21,430
1935	788	16,100	June 2, 1935	1.1	327	236,400	321	232,600
1936	808	17,600	Sept. 28, 1936	.3	146	105,800	152	110,700
1937	828	3,400	Aug. 19, 1937	0	40.7	29,460	34.0	24,600
1938	858	14,300	May 22, 1938	1.4	259	187,300	254	183,700
1939	878	7,600	June 22, 1939	1.7	104	75,090	106	76,930
1940	898	6,960	Aug. 18, 1940	.7	88.6	64,320	86.1	62,500
1941	928	6,960	May 4, 1941	3.3	194	140,200	297	214,800
1942	958	5,630	Oct. 16, 1941	1.8	170	123,100	106	76,830
1943	978	5,350	Oct. 18, 1942	.4	80.4	58,210	39.4	28,530
1944	1008	2,020	July 25, 1944	1.0	53.8	39,020	66.2	48,030
1945	1038	4,200	July 12, 1945	4.3	122	88,480	128	92,660
1946	1058	1,960	Sept. 15, 1946	0	42.9	31,050	48.0	34,780
1947	1088	3,610	May 23, 1947	.1	73.4	53,140	79.2	57,370
1948	1118	6,720	Oct. 27, 1947	0	60.9	44,220	47.7	34,650
1949	1148	3,120	Oct. 11, 1948	0	58.1	42,040	47.2	34,190
1950	1178	3,400	May 27, 1950	.3	64.6	46,750	58.9	42,670
1951	1212	2,160	June 11, 1951	.1	43.8	31,690	45.0	32,570
1952	1242	920	May 24, 1952	0	10.8	7,830	9.87	7,170
1953	1282	2,150	July 17, 1953	0	12.4	9,040	13.9	10,040
1954	1342	2,100	May 12, 1954	0	23.3	16,850	22.1	16,000
1955	1392	4,740	Sept. 27, 1955	0	78.4	56,740	82.9	60,020
1956	1442	1,850	May 2, 1956	0	21.9	15,880	18.3	13,250
1957	1512	19,500	May 26, 1957	0	662	479,000	-	-

a Maximum during period February to September.
b Maximum observed.

165. Lake Stamford near Haskell, Tex.

Location. --Lat 33°05', long 99°35', at intake structure of West Texas Utilities Company steam-power plant at Lake Stamford on Paint Creek, 1 mile upstream from dam, 1.7 miles upstream from California Creek, and 10 miles southeast of Haskell, Haskell County.

Drainage area. --360 sq mi.

Supplemental records available. --Records of monthly diversions by city of Stamford for the period October 1953 to September 1957 are published in reports of Geological Survey.

Gage. --Wire weight gage. Datum of gage is 2.77 ft above mean sea level, datum of 1929 (levels by Freese and Nichols, Consulting Engineers).

Extremes. --1953-57: Maximum contents observed, 54,500 acre-ft June 5-13, 1957 (gage height, 1,412.9 ft); minimum observed since first appreciable storage, 5,860 acre-ft July 15, 1953 (gage height, 1,393.7 ft).

Remarks. --Lake is formed by rock faced earth-fill dam. Dam completed in March 1953. Storage began in June 1953. Capacity of lake, 60,000 acre-ft (gage height, 1,414.0 ft crest of spillway). Dead storage, 430 acre-ft (gage height, 1,380.0 ft, invert of 24-inch discharge conduit). Figures given herein represent total contents. Water diverted for municipal supply for city of Stamford.

Cooperation. --Data for capacity table furnished by Freese and Nichols, Consulting Engineers, Fort Worth. Gage-height record furnished by West Texas Utilities Company. Record of monthly diversion furnished by city of Stamford.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1953	-	-	-	-	-	-	-	-	-	13,380	13,700	12,580	-
1954	20,660	19,700	18,820	18,380	17,500	16,700	16,700	41,100	39,500	35,750	32,600	29,900	+17,320
1955	28,400	29,000	28,400	28,400	28,400	27,500	26,100	27,800	30,200	27,500	25,260	30,850	+ 950
1956	31,550	29,900	29,300	28,700	28,100	26,660	25,260	25,820	23,140	20,420	18,160	16,500	-14,350
1957	15,500	14,780	14,600	14,060	17,720	17,720	20,420	47,300	51,500	40,550	46,400	43,900	+27,400

166. Paint Creek near Haskell, Tex.

Location. --Lat 33°04', long 99°32', at Scotts crossing 450 ft downstream from California Creek and 12 miles southeast of Haskell, Haskell County.

Drainage area. --879 sq mi.

Paint Creek near Haskell, Tex.--Continued

Supplemental records available.--Records of chemical analyses and water temperatures for the periods October 1949 to September 1950 and April to September 1951 are published in reports of Geological Survey.

Gage.--Staff gage. Altitude of gage is 1,356 ft (by barometer).

Extremes.--1949-51: Maximum discharge, 1,910 cfs June 13, 1951 (gage height, 4.89 ft, from floodmark), from rating curve extended above 500 cfs on basis of slope-area measurement at gage height 3.84 ft; no flow at times.
Floods of 1876, September 1900, and June 13, 1930, reached stages of about 16 ft, from information by local residents.

Remarks.--Diversions above station for municipal supply and industrial use.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	0	0	0	72.4	69.3	7.76	37.7	21.1	99.4	-
1951	0.05	0	0	0	0	0	0	104	236	40.3	6.15	0	32.2

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1950	-	-	-	0	0	0	4,310	4,260	462	2,320	1,300	5,920	-
1951	3.4	0	0	0	0	0	0	6,390	14,050	2,480	378	0	23,300

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1950	1178	-	-	0	-	-	25.6	18,580
1951	1212	1,910	June 13, 1951	0	32.2	23,300	-	-

167. Clear Fork Brazos River at Fort Griffin, Tex.

Location.--Lat 32°56', long 99°13', at bridge on old Fort Griffin-Throckmorton road, half a mile northeast of Fort Griffin, Shackelford County, 5,100 ft upstream from bridge on U. S. Highway 283, and 1.3 miles upstream from Mill Creek.

Drainage area.--3,974 sq mi.

Supplemental records available.--Records of chemical analyses, water temperatures, and sediment loads for the period November 1949 to September 1951 are contained in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 1,174.09 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942. Prior to June 23, 1932, chain gage at same site and datum.

Average discharge.--33 years (1924-57), 262 cfs (189,700 acre-ft per year).

Extremes.--1924-57: Maximum discharge, 33,600 cfs Sept. 10, 1932 (gage height, 35.09 ft); no flow at times.
Maximum stage known, about 38.0 ft in 1900, from information by local residents.

Remarks.--Flow slightly regulated by reservoirs above Nugent. Diversions above station for irrigation, municipal supply, and oilfield operations materially affect low flow.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	71.6	55.0	66.6	304	565	78.2	11.1	10.3	470	-
1925	17.6	8.54	12.6	12.9	6.62	4.58	251	603	100	35.0	142	1,110	191
1926	279	37.1	9.46	5.76	10.1	87.4	436	202	1,630	168	116	131	258
1927	248	7.09	418	10.9	64.5	51.7	548	9.57	60.3	121	14.6	196	146
1928	44.6	9.54	6.33	2.77	.43	0	9.87	2,630	476	761	652	19.8	389
1929	1.91	37.7	9.20	9.97	11.6	48.0	141	1,040	57.9	171	1.00	930	206
1930	171	21.5	4.20	3.40	3.88	6.14	355	1,590	1,250	60.6	12.8	413	325
1931	1,050	25.5	498	16.8	282	17.3	12.9	59.1	47.9	79.0	.18	0	175
1932	1,240	347	68.3	103	169	25.0	244	1,280	1,260	2,280	108	4,670	979
1933	209	110	685	180	87.2	78.6	91.7	920	53.2	43.1	73.8	73.3	220
1934	110	67.6	22.6	72.9	19.0	121	152	13.6	3.00	.19	0	4.58	49.1
1935	0	194	2.75	1.04	31.0	40.4	51.3	2,579	2,992	305	23.1	758	581
1936	48.9	38.0	30.7	19.5	19.4	12.5	117	537	29.8	142	0	1,761	228
1937	338	40.5	34.0	25.0	20.4	32.2	13.8	65.2	178	6.72	209	14.4	82.1
1938	111	1.01	3.84	55.1	584	706	228	1,249	420	1,298	242	8.13	410
1939	2.88	24.3	.98	38.6	3.80	12.5	10.6	1,153	1,106	51.9	57.9	.34	206
1940	194	3.13	.20	.36	64.2	6.09	14.8	471	744	152	1,059	176	241
1941	.98	162	11.9	1.97	69.2	86.9	997	4,081	1,891	336	247	153	673
1942	2,866	426	239	59.1	85.4	29.5	287	255	380	12.6	27.0	234	412
1943	682	52.4	56.7	29.1	32.3	76.1	62.8	159	330	11.9	.05	0	125
1944	0	0	0	.003	31.7	64.9	6.13	335	143	162	8.69	42.6	66.6
1945	291	20.3	18.6	11.3	15.3	306	630	84.6	347	879	73.5	1.17	225

Monthly and yearly mean discharge, in cubic feet per second, of Clear Fork Brazos River at Fort Griffin, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	239	20.9	18.8	17.5	17.9	14.4	18.1	52.9	41.5	7.36	117	509	89.4
1947	422	67.1	295	16.4	7.59	13.0	6.82	1,725	226	24.9	.90	64.9	243
1948	239	68.7	92.0	10.7	17.3	57.7	3.29	140	386	295	27.0	5.32	112
1949	180	4.78	.02	10.6	18.4	4.74	67.5	587	298	.17	7.63	143	111
1950	109	3.58	0	0	0	0	207	513	54.2	206	94.3	325	127
1951	1.93	0	0	0	.03	9.43	.99	285	658	98.6	10.4	.72	88.7
1952	0	0	0	0	0	0	0	49.0	56.5	0	0	0	8.78
1953	0	0	0	0	0	0	0	71.5	143	1,417	125	1.00	149
1954	200	6.82	0	0	0	0	10.3	901	50.0	.003	0	0	99.0
1955	3.03	8.81	.07	49.6	9.06	.63	2.06	370	347	59.9	2.86	1,593	202
1956	370	.45	.10	.08	0	0	.43	141	4.33	0	0	.12	43.7
1957	.50	6.35	6.48	.35	1,222	57.3	3,068	7,308	2,204	126	60.9	53.5	1,174

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	4,410	3,160	4,100	18,100	34,700	4,650	682	630	28,000	-
1925	1,080	508	773	791	368	282	14,900	37,100	5,960	2,150	8,700	65,800	138,000
1926	17,200	2,210	582	354	561	5,380	25,900	12,400	97,000	10,300	7,160	7,800	187,000
1927	15,200	422	25,700	670	3,580	3,180	32,600	588	3,590	7,430	900	11,600	105,000
1928	2,740	568	389	170	25	0	587	162,000	28,300	46,800	40,100	1,180	283,000
1929	117	2,240	566	613	644	2,950	8,390	64,000	3,450	10,500	61	55,300	149,000
1930	10,500	1,280	258	209	215	378	21,100	97,800	74,400	3,730	787	24,600	235,000
1931	64,600	1,520	30,600	1,030	15,700	1,060	768	3,630	2,850	4,860	11	0	127,000
1932	76,200	20,600	4,200	6,330	9,720	1,540	14,500	78,700	75,000	140,000	6,640	278,000	711,000
1933	12,900	6,550	42,100	11,100	4,840	4,830	5,460	56,600	3,160	2,650	4,540	4,360	159,000
1934	6,760	4,020	1,390	4,480	1,060	7,440	9,040	836	179	12	0	273	35,500
1935	0	11,560	169	64	1,720	2,490	3,060	158,500	178,000	18,780	1,420	45,100	421,000
1936	3,010	2,260	1,890	1,200	1,110	771	6,970	33,040	1,770	8,700	0	104,800	165,500
1937	20,760	2,410	2,090	1,540	1,130	1,980	820	4,010	10,620	413	12,830	855	59,460
1938	6,840	60	236	3,390	32,420	43,410	13,570	76,780	25,010	79,800	14,880	484	296,900
1939	177	1,450	60	2,380	211	766	631	70,920	65,780	3,190	3,560	20	149,100
1940	11,910	186	12	22	3,690	375	882	28,930	44,290	9,320	65,140	10,460	175,200
1941	60	9,610	729	121	3,840	5,340	59,310	250,900	112,500	20,690	15,160	9,110	487,400
1942	176,200	25,360	14,670	3,630	4,740	1,810	17,090	15,690	22,640	775	1,660	13,950	298,200
1943	41,920	3,120	3,490	1,790	1,790	4,680	3,740	9,750	19,660	730	3.4	0	90,670
1944	0	0	0	.2	1,820	3,990	365	20,610	8,530	9,990	534	2,540	48,380
1945	17,910	1,210	1,150	693	851	18,830	37,490	5,200	20,670	54,030	4,520	70	162,600
1946	14,700	1,240	1,160	1,080	996	883	1,080	3,250	2,470	452	7,180	30,260	64,750
1947	25,950	3,990	18,130	1,010	421	802	406	106,000	13,420	1,530	55	3,860	175,600
1948	14,720	4,090	5,650	655	996	3,550	196	8,590	22,960	18,110	1,660	317	81,490
1949	11,080	285	1.4	655	1,020	291	4,010	36,070	17,740	11	469	8,490	80,120
1950	6,690	213	0	0	0	0	12,320	31,510	3,230	12,640	5,800	19,330	91,730
1951	119	0	0	0	1.6	580	59	17,530	39,160	6,070	637	43	64,200
1952	0	0	0	0	0	0	0	3,010	3,360	0	0	0	6,370
1953	0	0	0	0	0	0	0	4,400	8,530	87,150	7,690	59	107,800
1954	12,280	406	0	0	0	0	611	55,400	2,970	.2	0	0	71,670
1955	186	524	4.6	3,050	503	39	123	22,740	20,640	3,680	176	94,770	146,400
1956	22,750	27	6.1	4.8	0	0	2.6	8,650	258	0	0	7.1	31,740
1957	31	378	399	21	67,870	3,520	184,400	449,600	131,200	7,720	3,750	3,180	852,100

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	5,100	May 28, 1924	-	-	-	139	101,000
1925	608	6,820	May 11, 1925	0.2	191	138,000	216	156,000
1926	628	12,500	June 21, 1926	.7	258	187,000	288	208,000
1927	648	5,040	Apr. 15, 1927	0	146	105,000	93.8	67,800
1928	668	12,100	May 21, 1928	0	389	283,000	388	282,000
1929	688	5,710	Sept. 13, 1929	0	206	149,000	219	158,000
1930	703	25,700	June 15, 1930	0	325	235,000	442	320,000
1931	718	6,600	Dec. 7, 1930	0	175	127,000	181	131,000
1932	733	33,600	Sept. 10, 1932	0	979	711,000	925	672,000
1933	748	7,140	May 26, 1933	2.2	220	159,000	152	110,000
1934	763	3,410	Oct. 15, 1933	0	49.1	35,500	48.5	35,070
1935	788	18,600	May 20, 1935	0	581	421,000	575	416,300
1936	808	14,400	Sept. 29, 1936	0	228	165,500	253	183,600
1937	828	3,010	Aug. 21, 1937	0	82.1	59,460	57.1	41,330
1938	858	14,400	May 24, 1938	0	410	296,900	403	291,400
1939	878	9,260	June 23, 1939	0	206	149,100	220	159,600
1940	898	8,640	Aug. 19, 1940	0	241	175,200	239	173,500

Yearly discharge, in cubic feet per second, of Clear Fork Brazos River at Fort Griffin, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	928	18,300	May 4, 1941	0	673	487,400	958	693,200
1942	958	15,100	Oct. 17, 1941	.4	412	298,200	180	130,500
1943	978	6,410	Oct. 20, 1942	0	125	90,670	58.2	42,140
1944	1008	3,600	May 30, 1944	0	66.6	48,380	94.6	68,650
1945	1038	5,340	Apr. 12, 1945	0	225	162,600	220	159,500
1946	1058	7,800	Sept. 26, 1946	0	89.4	64,750	132	95,720
1947	1088	8,340	May 13, 1947	0	243	175,600	210	152,000
1948	1118	5,350	Oct. 29, 1947	0	112	81,490	94.2	68,400
1949	1148	4,940	May 9, 1949	0	111	80,120	105	75,660
1950	1178	3,700	May 29, 1950	0	127	91,730	117	84,950
1951	1212	3,020	June 13, 1951	0	88.7	64,200	88.5	64,080
1952	1242	1,300	June 2, 1952	0	8.78	6,370	8.78	6,370
1953	1282	17,200	July 20, 1953	0	149	107,800	166	120,500
1954	1342	6,750	May 11, 1954	0	99.0	71,670	82.5	59,700
1955	1392	17,200	Sept. 25, 1955	0	202	146,400	233	168,500
1956	1442	4,120	May 28, 1956	0	43.7	31,740	13.4	9,730
1957	1512	30,300	Apr. 28, 1957	0	1,177	852,100	-	-

168. Clear Fork Brazos River at Crystal Falls, Tex.

Location.--Lat 32°54', long 98°54', at Walker-Caldwell Water Co.'s pumping plant a quarter of a mile north of Crystal Falls, Stephens County, 1 mile upstream from Hubbard Creek, and 10 miles north of Breckenridge.

Drainage area.--4,323 sq mi.

Gage.--Staff gage. Datum of gage is about 1,082 ft above mean sea level, from plans of Walker-Caldwell Water Co.'s dam. Datum lowered 1.0 ft Aug. 14, 1924.

Extremes.--1921-29: Maximum gage height, 19.25 ft, datum in use 1924-29, Apr. 30, 1922 (discharge not determined); no flow at times.

Remarks.--Most of low flow diverted for municipal use at Breckenridge, or for use in oilfields. Several small dams above station regulate low flows.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	0	0	0	0	-	-	-	-	-	0	-
1923	0	2.80	11.3	30.2	329	33.7	-	549	-	21.0	28.5	59.2	-
1924	2,550	1,020	392	95.6	52.7	60.7	274	555	69.3	1.87	11.7	659	481
1925	24.9	1.93	5.34	9.24	.63	.04	270	903	88.9	25.2	140	1,310	231
1926	394	51.0	11.3	9.38	3.40	96.4	480	295	-	198	125	177	-
1927	271	5.93	632	22.6	62.4	92.3	1,070	8.06	115	407	15.1	208	243
1928	74.9	5.60	2.52	2.66	0	0	0	3,200	566	875	774	25.9	466
1929	5.12	60.6	14.0	4.21	2.57	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1922	-	-	0	0	0	0	-	-	-	-	-	0	-
1923	0	167	692	1,850	18,300	2,070	-	33,700	-	1,290	1,750	3,520	-
1924	157,000	60,700	24,100	5,880	3,030	3,730	16,300	34,100	4,120	115	720	39,200	349,000
1925	1,530	115	328	568	35	2.4	16,100	55,500	5,290	1,550	8,590	78,000	168,000
1926	24,200	3,030	695	577	189	5,930	28,600	18,100	-	12,200	7,680	10,500	-
1927	16,600	353	38,900	1,390	3,460	5,670	63,700	495	6,870	25,000	927	12,400	176,000
1928	4,610	333	155	164	0	0	0	197,000	33,700	53,800	47,600	1,540	339,000
1929	315	3,610	861	259	143	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1922	548	-	-	0	-	-	-	-
1923	568	-	Apr. 26, 1923	0	-	-	-	-
1924	588	12,200	Oct. 18, 1923	0	481	349,000	150	109,000
1925	608	9,400	May 7, 1925	0	231	168,000	267	194,000
1926	628	-	June 19, 1926	0	-	-	-	-
1927	648	14,900	Apr. 13, 1927	0	243	176,000	173	125,000
1928	668	-	July 28, 1928	0	466	339,000	466	339,000
1929	688	-	-	0	-	-	-	-

169. Hubbard Creek near Breckenridge, Tex.

Location. --Lat 32°50'15", long 98°57'00", at bridge on U. S. Highway 183, 2.3 miles downstream from Big Sandy Creek, 6.8 miles northwest of Breckenridge, Stephens County, 7 miles upstream from Gonzales Creek, and 8 miles upstream from mouth and Clear Fork Brazos River.

Drainage area. --1,087 sq mi.

Supplemental records available. --Records of chemical analyses and water temperatures for the period April 1955 to September 1957 are published in reports of Geological Survey.

Gage. --Water-stage recorder. Datum of gage not determined.

Extremes. --1955-57: Maximum discharge, 34,500 cfs May 26, 1957 (gage height, 34.00 ft); no flow at times.
Maximum stage since at least 1925, 34.2 ft July 20, 1953, from information by local resident and State Highway Department.

Remarks. --Lake Cisco (capacity, 31,250 acre-ft), Lake McCarty (capacity, 2,800 acre-ft) and several smaller reservoirs with capacities from 100 to 400 acre-ft are on tributaries above gage. Diversions above station for municipal and industrial uses.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	-	-	-	-	-	-	-	427	290	22.4	147	474	-
1956	38.8	0.01	0	0.49	1.96	0	1.63	178	30.7	0	16.9	.40	22.7
1957	9.74	92.5	47.7	.02	818	5.87	2,068	3,914	554	34.5	17.2	58.9	633

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	-	-	-	-	-	-	-	26,230	17,280	1,380	9,060	28,190	-
1956	2,380	0.4	0	30	113	0	97	10,970	1,830	0	1,040	24	16,480
1957	599	5,500	2,930	1.0	45,410	361	123,100	240,700	32,940	2,120	1,060	3,500	458,200

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1955	1392	-	-	-	-	-	-	-
1956	1442	8,200	May 2, 1956	0	22.7	16,480	31.9	23,130
1957	1512	34,500	May 26, 1957	0	633	458,200	-	-

170. Clear Fork Brazos River near Crystal Falls, Tex. 1/

Location. --Lat 32°54', long 98°50', at Texas Co.'s pumping plant, about 5,000 ft upstream from concrete dam, 2½ miles downstream from Hubbard Creek, and 3¼ miles northeast of Crystal Falls, Stephens County.

Drainage area. --5,658 sq mi; 5,740 sq mi at site used 1916-20, 1924-25.

Gage. --Water-stage recorder. Datum of gage is 1,055.25 ft above mean sea level, datum of 1929. Oct. 22, 1915, to Apr. 30, 1920, and Dec. 7, 1923, to Aug. 31, 1925, chain gage at site 12½ miles downstream and 2½ miles northeast of Eliasville at different datum. July 1, 1928, to Aug. 6, 1932, staff gage at site 2½ miles downstream at different datum.

Average discharge. --26 years (1916-19, 1928-51), 425 cfs (307,700 acre-ft per year).

Extremes. --1916-20, 1924-25, 1928-51: Maximum discharge, 35,800 cfs June 11, 1941 (gage height, 33.45 ft, present site and datum), from rating curve extended above 23,000 cfs; no flow at times in most years.
Maximum stage known, about 34 ft, present site and datum, in 1900, from information by local residents.

Remarks. --Flow slightly regulated by reservoirs above Nugent. Diversions above station for irrigation, municipal supply, and oilfield operation materially affect low flow.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	3.75	2.49	1.40	1.82	472	565	154	73.9	4.14	0	-
1917	156	1.25	.71	0	0	0	0	96.6	40.5	7.16	10.1	40.1	29.7
1918	.42	0	0	0	0	0	726	1,110	835	63.6	.28	436	264
1919	1,570	297	486	284	76.8	666	870	2,310	744	1,280	750	69.1	793
1920	351	152	13.7	52.6	31.6	10.9	41.4	-	-	-	-	-	-
1924	-	-	-	44.0	28.0	348	327	882	137	.07	2.13	1,510	-
1925	22.3	1.60	5.76	6.77	1.68	.30	283	1,360	81.1	52.6	209	-	-
1928	-	-	-	-	-	-	-	-	-	1,900	1,360	81.2	-
1929	6.63	62.9	32.3	21.2	12.3	87.5	193	1,520	98.8	228	1.55	1,150	286
1930	499	29.6	1.44	6.87	9.78	1.78	177	2,920	1,320	78.0	86.0	496	472
1931	2,920	65.4	873	35.7	447	53.6	48.1	249	153	171	.04	0	423
1932	2,840	393	968	142	502	38.7	228	2,070	1,480	2,890	136	5,430	1,430
1933	253	131	827	234	101	117	117	2,030	86.8	107	169	110	362
1934	147	76.3	42.0	92.7	38.1	389	215	16.6	1.76	0	0	33.2	88.1
1935	0	182	3.29	1.37	88.4	52.7	92.5	3,497	3,554	963	47.0	1,158	804

1/ Published as "near Eliasville", 1916-20, 1924-25.

Monthly and yearly mean discharge, in cubic feet per second, of Clear Fork Brazos River near Crystal Falls, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1936	77.7	56.1	35.7	17.7	13.0	12.4	97.6	1,140	54.3	243	0	2,874	383
1937	728	49.5	40.6	26.7	24.1	62.2	18.4	66.8	196	92.0	217	52.8	133
1938	519	1.04	28.6	89.7	582	1,125	536	1,561	597	1,990	314	12.8	617
1939	0	19.0	.45	135	1.58	7.36	58.7	1,679	1,595	70.2	128	.78	309
1940	173	7.83	1.52	0	99.6	1.85	177	1,050	1,898	222	1,501	171	442
1941	.05	540	110	21.0	425	178	1,121	7,657	3,790	504	1,098	313	1,319
1942	3,529	747	272	80.5	94.5	34.8	1,855	842	773	21.8	60.1	995	777
1943	2,014	120	113	56.9	48.3	172	317	138	325	8.60	0	1.42	279
1944	16.7	0	2.15	7.61	157	104	51.9	558	177	194	105	113	124
1945	675	27.0	31.8	11.1	16.9	610	778	197	526	986	104	.03	333
1946	408	30.4	21.7	45.6	14.1	9.70	44.3	249	92.0	4.29	360	1,096	198
1947	417	202	339	17.9	4.59	18.3	3.78	1,808	220	18.2	0	49.7	262
1948	449	66.9	167	13.4	25.3	58.9	43.1	315	715	399	28.3	.11	191
1949	150	4.12	0	15.0	24.8	38.7	99.3	1,559	808	57.0	138	331	270
1950	387	31.7	1.75	2.41	14.4	2.14	378	982	141	1,088	174	483	310
1951	5.38	1.63	1.86	1.02	3.00	2.25	3.45	655	1,167	114	.05	0	163

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1916	-	-	231	153	81	112	28,100	34,700	9,160	4,540	255	0	-
1917	9,590	74	44	0	0	0	0	5,940	2,410	440	621	2,390	21,500
1918	26	0	0	0	0	0	43,200	68,200	49,700	3,910	17	25,900	191,000
1919	96,500	17,700	29,900	17,500	4,270	41,000	51,800	142,000	44,300	78,700	46,100	4,110	574,000
1920	21,600	9,040	842	3,230	1,820	670	2,460	-	-	-	-	-	-
1924	-	-	-	2,700	1,550	21,400	19,500	54,200	8,160	4.4	131	89,900	-
1925	1,370	95	354	417	93	18	16,800	83,700	4,830	3,240	12,900	-	-
1928	-	-	-	-	-	-	-	-	-	117,000	83,600	4,830	-
1929	408	3,740	1,990	1,300	683	5,380	11,500	93,500	5,880	14,000	95	68,400	207,000
1930	30,700	1,760	89	422	543	109	10,500	180,000	78,600	4,800	5,290	29,500	342,000
1931	180,000	3,890	53,700	2,200	24,800	3,300	2,860	15,300	9,100	10,500	2.5	0	306,000
1932	175,000	23,400	59,500	8,730	28,900	2,380	13,600	127,000	88,100	178,000	8,360	323,000	1,040,000
1933	15,600	7,800	50,800	14,400	5,610	7,190	6,960	125,000	5,160	6,580	10,400	6,550	262,000
1934	9,040	4,540	2,580	5,700	2,120	23,900	12,800	1,020	105	0	0	1,980	63,800
1935	0	10,810	202	84	4,910	3,240	5,500	215,000	211,500	59,240	2,890	68,880	582,300
1936	4,780	3,340	2,200	1,090	748	762	5,810	70,080	3,230	14,920	0	171,000	278,000
1937	44,740	2,950	2,500	1,640	1,340	3,820	1,090	4,110	11,670	5,650	13,310	3,140	95,960
1938	31,940	62	1,760	5,510	32,300	69,180	31,890	96,000	35,520	122,300	19,330	759	446,600
1939	0	1,130	27	8,300	88	452	3,500	103,200	94,930	4,310	7,900	46	223,900
1940	10,630	466	94	0	5,730	113	10,510	64,570	112,900	13,660	92,290	10,150	321,100
1941	3.0	32,110	6,770	1,290	23,600	10,940	66,700	470,800	225,500	30,970	67,520	18,640	954,800
1942	217,000	44,420	16,720	4,950	5,250	2,140	110,400	51,760	45,970	1,340	3,690	59,200	562,800
1943	123,800	7,170	6,930	3,500	2,680	10,610	18,850	8,510	19,340	529	0	84	202,000
1944	1,020	0	132	468	9,010	6,400	3,090	34,300	10,510	11,940	6,470	6,750	90,090
1945	41,500	1,610	1,950	682	941	37,480	46,270	12,100	31,320	60,650	6,410	1.8	240,900
1946	25,100	1,810	1,330	2,800	783	596	2,640	15,320	5,470	264	22,160	65,230	143,500
1947	25,630	12,010	20,840	1,100	255	1,130	225	111,200	13,090	1,120	0	2,960	189,600
1948	27,630	3,980	10,300	823	1,450	3,620	2,570	19,380	42,540	24,510	1,740	6.5	138,500
1949	9,250	245	0	922	1,380	2,380	5,910	95,870	48,080	3,510	8,490	19,710	195,700
1950	23,790	1,890	107	148	801	131	22,490	60,410	8,390	66,930	10,720	28,720	224,500
1951	331	97	115	62	166	138	205	40,270	69,420	6,990	3.2	0	117,800

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1916	458	6,630	May 2, 1916	0	-	-	120	86,800
1917	458	2,710	Oct. 18, 1916	0	29.7	21,500	16.3	11,800
1918	478	8,240	May 18, 1918	0	264	191,000	463	335,000
1919	508	12,500	May 27, 1919	1.6	793	574,000	637	461,000
1920	508	2,800	Oct. 21, 1919	-	-	-	-	-
1924	588	a13,600	Sept. 21, 1924	0	-	-	275	199,000
1925	608	b11,600	May 7, 1925	0	-	-	-	-
1928	668	c21,500	July 27, 1928	-	-	-	-	-
1929	688	11,100	May 18, 1929	0	286	207,000	323	233,000
1930	703	17,100	May 14, 1930	0	472	342,000	755	547,000
1931	718	20,500	Oct. 15, 1930	0	423	306,000	450	326,000
1932	733	22,700	Sept. 8, 1932	0	1,430	1,040,000	1,170	852,000
1933	748	13,700	May 15, 1933	3.8	362	262,000	282	204,000
1934	763	4,520	Mar. 26, 1934	0	88.1	63,800	81.0	58,630
1935	788	16,600	May 19, 1935	0	804	582,300	803	581,600

a Maximum January to September.
b Maximum October to August.
c Maximum July to September.

Yearly discharge, in cubic feet per second, of Clear Fork Brazos River near Crystal Falls, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1936	808	20,000	Sept. 29, 1936	0	383	278,000	438	317,800
1937	828	11,200	Oct. 1, 1936	0	133	95,960	110	79,530
1938	858	11,900	Mar. 27, 1938	0	617	446,600	572	413,900
1939	878	11,000	May 17, 1939	0	309	223,900	323	233,900
1940	898	14,100	June 25, 1940	0	442	321,100	480	348,800
1941	928	35,800	June 11, 1941	0	1,319	954,800	1,649	1,194,000
1942	958	18,800	Apr. 9, 1942	.9	777	562,800	584	422,600
1943	978	22,200	Oct. 18, 1942	0	279	202,000	90.1	65,260
1944	1008	5,100	May 2, 1944	0	124	90,090	185	134,000
1945	1038	9,080	Oct. 4, 1944	0	333	240,900	310	224,100
1946	1058	8,000	Aug. 28, 1946	0	198	143,500	240	173,800
1947	1088	6,520	May 14, 1947	0	262	189,600	239	173,000
1948	1118	7,560	Oct. 26, 1947-May 27, 1948	0	191	138,500	146	106,100
1949	1148	10,400	May 18, 1949	0	270	195,700	293	212,000
1950	1178	9,200	May 27, 1950	0	310	224,500	275	199,300
1951	1212	10,000	June 17, 1951	0	163	117,800	-	-

171. Brazos River near South Bend, Tex.

Location.--Lat 33°01'30", long 98°38'50", at bridge on State Highway 67, 0.3 mile upstream from Wichita Falls & Southern Railroad bridge, 1.6 miles downstream from Clear Fork Brazos River, 2.0 miles northeast of South Bend, Young County, and at mile 758.

Drainage area.--21,600 sq mi, approximately, of which 9,240 sq mi is probably noncontributing.

Supplemental records available.--Records of chemical analyses for the period January 1942 to March 1948 are published in reports of Geological Survey.

Gage.--Water-stage recorder and movable wire-weight gage. Datum of gage is 1,002.98 ft above mean sea level, datum of 1929. Prior to Feb. 23, 1939, wire-weight gage at same site and datum.

Average discharge.--19 years (1938-57), 1,023 cfs (740,600 acre-ft per year).

Extremes.--1938-57: Maximum discharge, 87,400 cfs May 4, 1941 (gage height, 27.35 ft); no flow at times.
Maximum stage known, 36.2 ft in 1876, from information by Texas State Highway Department and Corps of Engineers. Flood of Sept. 24, 1900, reached a stage of about 29½ ft and flood of June 16, 1930, reached a stage of about 35½ ft, from information by local residents.

Remarks.--Some regulation by reservoirs (total combined capacity, 221,800 acre-ft) as follows: in Elm Creek basin (combined capacity, 98,230 acre-ft) - Lake Lytle since 1909, Lake Abilene since 1921, Lake Kirby since 1927, Fort Phantom Hill Reservoir since 1938; in Sweetwater Creek basin (combined capacity, 16,450 acre-ft) - Lake Trammel since 1916, Lake Sweetwater since 1930; Lake Penick (capacity, 3,100 acre-ft) on Clear Fork Brazos River, since 1921; Lake Stamford (capacity, 60,000 acre-ft) on Paint Creek since 1953; in Hubbard Creek basin (combined capacity, 44,050 acre-ft) - Lake Cisco since 1923, Lake McCarty since 1942, Lake Daniels since 1948. Many small diversions above station for municipal supply and oilfield operation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	0.48	11.9	0.39	540	7.38	33.8	87.6	2,944	3,376	233	597	1.99	656
1940	341	19.4	1.44	.54	145	.64	243	1,761	3,243	472	3,342	838	869
1941	7.97	981	241	37.6	682	633	3,653	20,130	8,492	1,649	1,616	1,482	3,319
1942	11,620	1,826	729	226	198	91.4	4,976	1,194	1,234	155	453	2,824	2,137
1943	4,463	430	283	135	55.8	316	657	232	1,312	185	1.99	.03	678
1944	12.1	1.13	3.22	25.1	275	215	54.5	791	645	459	189	162	236
1945	834	81.7	128	74.1	66.9	1,084	1,066	214	823	1,931	125	61.5	545
1946	1,076	64.9	32.5	68.9	26.0	20.0	32.7	318	592	323	909	2,563	503
1947	1,479	644	1,081	111	37.5	60.5	61.0	7,950	612	104	2.85	55.1	1,032
1948	506	171	445	61.8	192	250	63.6	442	2,204	1,930	170	17.0	539
1949	244	190	13.2	124	187	88.5	157	3,453	2,405	142	206	1,312	711
1950	671	116	35.8	37.0	52.0	15.6	712	3,045	581	2,653	874	2,534	951
1951	217	37.6	41.0	36.8	52.9	31.3	24.9	1,333	2,132	312	270	200	391
1952	3.94	5.72	.41	1.11	5.14	2.97	47.2	328	164	153	2.33	0	59.9
1953	0	75.1	26.4	2.45	.60	97.2	93.7	994	82.6	3,998	1,219	213	576
1954	3,479	345	103	55.6	24.3	10.7	1,708	5,977	651	45.7	43.9	0	1,049
1955	30.8	236	13.9	86.1	131	352	119	3,328	2,447	837	327	7,201	1,255
1956	4,861	234	149	120	97.6	37.4	21.7	544	144	1.51	2.35	1.29	525
1957	34.8	187	138	6.94	3,127	172	7,910	22,430	5,833	453	212	275	3,399

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	30	710	24	33,210	410	2,080	5,210	181,000	200,900	14,330	36,680	118	474,700
1940	20,970	1,150	88	33	8,360	39	14,480	108,300	193,000	29,000	205,500	49,860	630,800
1941	490	58,400	14,820	2,310	37,900	38,890	217,400	1,238,000	505,300	101,400	99,370	88,200	2,402,000
1942	714,500	108,700	44,800	13,870	10,970	5,620	296,100	73,430	73,430	9,530	27,870	168,000	1,547,000
1943	274,400	25,590	17,380	8,300	3,100	19,420	39,080	14,240	78,060	11,370	122	1.8	491,100
1944	743	67	198	1,540	15,820	13,250	3,240	48,650	38,360	28,230	11,620	9,640	171,400
1945	51,260	4,860	7,870	4,560	3,720	66,650	63,410	13,150	48,960	118,700	7,660	3,660	394,500

Monthly and yearly runoff, in acre-feet, of Brazos River near South Bend, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	66,160	3,860	2,000	4,240	1,440	1,230	1,950	19,540	35,210	19,840	55,920	152,500	363,900
1947	90,930	38,300	66,450	6,850	2,080	3,720	3,630	488,800	36,410	6,410	175	3,280	747,000
1948	31,130	10,190	27,370	3,800	11,060	15,400	3,790	27,160	131,100	118,700	10,440	1,010	391,200
1949	14,980	11,290	811	7,620	10,390	5,440	9,350	212,300	143,100	8,730	12,650	78,060	514,700
1950	41,270	6,880	2,200	2,270	2,890	960	42,380	187,200	34,550	163,100	53,730	150,800	688,200
1951	13,360	2,240	2,520	2,270	2,940	1,920	1,480	81,960	126,900	19,200	16,620	11,930	283,300
1952	242	341	25	68	296	183	2,810	20,190	9,770	9,430	143	0	43,500
1953	0	4,470	1,620	151	34	5,980	5,580	61,140	4,920	245,800	74,930	12,700	417,300
1954	213,900	20,520	6,310	3,420	1,350	658	101,700	367,500	38,730	2,810	2,700	0	759,600
1955	1,890	14,040	856	5,300	7,250	21,610	7,090	204,600	145,600	51,470	20,110	428,500	908,300
1956	298,900	13,910	9,160	7,370	5,620	2,300	1,290	33,430	8,590	93	145	77	380,900
1957	2,140	11,100	8,500	427	173,700	10,550	470,700	1,379,000	347,100	27,870	13,050	16,380	2,461,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	878	30,000	June 21, 1939	0	656	474,700	685	496,100
1940	898	42,400	Aug. 18, 1940	0	869	630,800	940	682,300
1941	928	87,400	May 4, 1941	.7	3,319	2,402,000	4,416	3,197,000
1942	958	50,700	Oct. 17, 1941	8.0	2,137	1,547,000	1,376	996,200
1943	978	38,400	Oct. 18, 1942	0	678	491,100	241	174,700
1944	1008	8,890	June 12, 1944	.6	236	171,400	323	234,300
1945	1038	13,100	Mar. 20, 1945	.2	545	394,500	556	402,500
1946	1058	15,600	Sept. 15, 1946	0	503	363,900	673	487,600
1947	1088	33,800	May 19, 1947	0	1,032	747,000	856	620,000
1948	1118	16,700	June 29, 1948	0	539	391,200	482	349,500
1949	1148	14,300	May 17, June 12, 1949	0	711	514,700	743	538,000
1950	1178	15,500	Sept. 7, 1950	5.7	951	688,200	906	656,000
1951	1212	14,600	June 17, 1951	2.8	391	283,300	367	265,800
1952	1242	3,540	May 30, 1952	0	59.9	43,500	67.5	48,980
1953	1282	29,400	July 20, 1953	0	576	417,300	901	652,000
1954	1342	32,200	May 13, 1954	0	1,049	759,600	740	535,700
1955	1392	50,500	Sept. 26, 1955	0	1,255	908,300	1,676	1,214,000
1956	1442	37,200	Oct. 6, 1955	0	525	380,900	111	80,660
1957	1512	66,000	Apr. 29, 1957	0	3,399	2,461,000	-	-

172. Possum Kingdom Reservoir near Graford, Tex.

Location.--Lat 32°52', long 98°26', in powerhouse at dam on Brazos River, 2.6 miles upstream from Loving Creek, 11.3 miles southwest of Graford, Palo Pinto County, and at mile 687.

Drainage area.--22,550 sq mi, approximately, of which 9,240 sq mi is probably noncontributing.

Supplemental records available.--Records of chemical analyses for the period January 1942 to September 1957 and water temperatures for the period October 1948 to September 1957 are published in reports of Geological Survey.

Gage.--Mercury U-tube gage. Datum of gage is 0.10 ft above mean sea level, datum of 1929 (levels by Brazos River Authority).

Extremes.--1941-57: Maximum contents observed, 743,900 acre-ft Oct. 5, 1941 (gage height, 1,001.0 ft); minimum observed, 273,300 acre-ft Feb. 19 to Mar. 17, 1953 (gage height, 967.0 ft).

Remarks.--Reservoir is formed by reinforced concrete dam of flat slab deck, massive buttress type, with 9 roof-weir gates (modified bear-trap-type), 2 bulkhead sections, and earthen-dike section. Total length of dam is 2,740 ft. The gates are designed to discharge 550,000 cfs. Powerhouse is designed for 3 units having a total output of 37,500 kw. Usable capacity for power development, 698,900 acre-ft. Dam completed and storage began Mar. 21, 1941. Water used for power development, industry and irrigation.

Data regarding the dam and reservoir are shown in the following table:

	Gage height (feet)	Capacity (acre-feet)
Maximum design level (top of roof-weir gates - gates raised)	1,000.00	724,700
Bottom of roof-weir gates (gates lowered)	987.00	504,100
Sill of powerhouse penstock	911.5	25,810
Bottom of 54-inch horizontal cylinder valve (high pressure outlet)	874.8	236

Contents published prior to Oct. 1, 1944, are from capacity table showing maximum design capacity, 730,000 acre-ft, and usable capacity for power development, 705,500 acre-ft.

Figures given herein represent total contents.

Cooperation.--Records of daily gage height and capacity table furnished by Brazos River Authority.

Contents, in acre-feet, on last day of month, of Possum Kingdom Reservoir near Graford, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1941	-	-	-	-	-	35,860	232,000	553,000	545,400	646,800	730,000	730,000	-
1942	684,800	652,100	659,200	645,000	645,000	645,000	715,800	712,300	712,300	694,600	689,300	719,400	- 10,600
1943	710,500	701,700	698,100	669,800	609,600	556,500	531,700	510,400	525,600	471,500	416,300	399,500	-319,900
1944	390,900	384,800	382,400	378,700	390,900	414,900	427,300	466,000	493,700	501,300	480,000	484,600	+ 85,100
1945	512,600	499,900	485,800	469,200	455,800	525,400	588,500	573,600	565,600	656,400	615,000	591,900	+108,900
1946	665,400	654,600	634,800	593,600	586,800	581,700	565,600	567,200	580,000	549,600	543,400	674,400	+ 82,500
1947	615,000	604,200	627,600	578,400	552,800	546,500	532,700	678,000	633,000	583,400	532,700	495,600	-178,800
1948	502,700	497,000	508,300	483,000	467,900	463,800	436,600	447,800	534,200	593,600	535,800	502,700	+ 7,100
1949	499,900	491,400	475,900	463,800	459,800	461,200	465,200	685,200	661,800	613,200	551,200	570,400	+ 67,700
1950	562,400	535,800	519,600	512,600	506,900	485,800	525,400	683,400	645,600	698,200	647,400	665,400	+ 95,000
1951	625,800	600,600	573,600	531,200	511,200	502,700	478,700	564,000	663,600	590,200	531,200	508,300	-157,100
1952	483,000	467,900	453,100	434,700	427,000	421,900	419,400	428,300	394,700	345,700	291,900	285,200	-223,100
1953	278,800	279,700	277,800	275,100	273,300	276,900	275,100	341,500	311,200	519,600	559,200	519,600	+234,400
1954	713,300	681,600	663,600	654,600	643,800	624,000	688,900	717,100	649,200	590,200	540,400	521,100	+ 1,500
1955	509,700	522,600	518,200	508,300	508,300	518,200	522,600	685,200	688,900	690,700	667,200	698,200	+177,100
1956	688,900	676,200	669,000	647,400	613,200	562,400	531,200	515,400	499,900	414,200	366,800	357,200	-341,000
1957	356,200	364,600	369,000	348,800	552,800	551,200	739,900	683,400	665,400	654,600	624,000	616,800	+259,600

173. Brazos River near Palo Pinto, Tex. 1/

Location. --Lat 32°51'45", long 98°18'10", at bridge on Palo Pinto-Graford highway, 300 ft downstream from Dark Valley Creek, 6½ miles north of Palo Pinto, Palo Pinto County, 20 miles downstream from Possum Kingdom Dam, and at mile 667.

Drainage area. --22,760 sq mi, approximately, of which 9,240 sq mi is probably noncontributing; at site used prior to December 1933, 23,100 sq mi, approximately.

Gage. --Water-stage recorder. Datum of gage is 831.23 ft above mean sea level, datum of 1929. Prior to December 1933, chain gage at site 19 miles downstream at datum 38.19 ft lower.

Average discharge. --33 years (1924-57), 1,206 cfs (873,100 acre-ft per year).

Extremes. --1924-57: Maximum discharge, 95,600 cfs June 16, 1930, at site 19 miles downstream near Mineral Wells (gage height, 30 ft, present site and datum); no flow at times.

Maximum stage known occurred in 1876, according to data by Corps of Engineers, and was several feet higher than any flood occurring between 1876 and 1936.

Remarks. --Flow largely regulated since March 1941 by Possum Kingdom Reservoir and several smaller reservoirs in Clear Fork and other basins, having a combined capacity of about 946,500 acre-ft. Many small diversions above station for irrigation, municipal supply, and oilfield operation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	150	81.8	929	973	1,300	841	17.2	1.84	2,050	-
1925	87.8	4.63	1.07	7.50	5.54	.10	2,340	4,870	303	110	837	6,080	1,220
1926	1,120	214	25.4	82.5	20.8	331	1,940	930	3,920	1,690	3,720	1,950	1,330
1927	5,570	344	2,020	292	453	711	2,170	164	1,390	1,070	212	207	1,230
1928	671	22.0	10.1	26.1	14.4	12.0	51.5	6,060	3,190	3,190	2,530	444	1,360
1929	12.7	222	50.0	188	17.7	114	264	3,640	1,090	783	21.3	5,190	966
1930	762	120	56.6	17.2	25.6	13.2	1,020	9,830	6,200	339	111	658	1,600
1931	7,320	316	2,030	173	1,070	451	220	323	303	415	34.3	.38	1,060
1932	4,230	1,120	906	1,210	1,270	265	257	3,560	3,520	6,930	415	11,200	2,910
1933	565	181	1,860	651	194	585	408	4,990	334	148	1,360	1,040	1,040
1934	225	106	72.8	220	147	1,006	941	125	26.8	0	0	231	258
1935	42.4	1,265	95.1	29.1	134	370	602	8,521	8,187	3,651	240	3,239	2,203
1936	388	290	255	65.1	49.5	25.8	76.3	2,341	698	811	2.60	11,140	1,334
1937	2,631	259	165	93.7	63.2	409	102	106	895	127	1,769	306	583
1938	800	30.4	62.8	284	2,274	2,654	1,111	2,567	2,331	2,824	464	14.4	1,281
1939	.05	1.73	2.00	530	39.8	22.1	104	2,802	4,084	379	673	15.4	723
1940	286	57.9	11.3	3.83	177	13.5	276	1,859	4,854	742	3,915	912	1,092
1941	34.3	1,343	810	162	1,378	464	57.5	15,470	10,540	498	400	1,582	2,732
1942	13,140	2,814	534	581	152	121	6,800	2,225	2,404	284	277	2,224	2,639
1943	5,432	612	310	659	1,150	1,240	1,274	570	807	939	691	187	1,161
1944	84.5	43.3	49.2	126	220	106	94.2	174	216	221	430	202	164
1945	336	388	414	428	472	792	543	530	661	822	623	320	528
1946	266	164	261	974	340	152	306	318	372	700	829	1,330	502
1947	2,667	1,194	1,234	986	502	269	342	5,420	1,451	670	625	620	1,343
1948	304	213	416	435	461	322	500	283	590	735	926	453	470
1949	193	196	213	254	292	149	125	1,588	3,209	797	1,092	1,130	769
1950	1,116	483	282	140	206	269	261	692	1,172	2,255	1,775	2,074	898

1/ Published as "near Mineral Wells" prior to December 1933.

Monthly and yearly mean discharge, in cubic feet per second, of Brazos River near Palo Pinto, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	768	278	386	679	419	103	364	329	757	1,361	1,145	622	603
1952	294	202	175	262	84.9	48.2	121	70.9	616	856	730	48.5	294
1953	22.6	34.1	50.8	25.7	13.8	24.5	36.5	113	334	632	590	748	220
1954	850	899	368	233	182	234	663	5,431	1,669	985	826	171	1,052
1955	116	47.7	29.5	217	72.6	64.2	89.2	699	3,376	821	598	7,411	1,120
1956	5,779	384	186	584	620	745	465	836	340	1,118	574	52.9	983
1957	67.3	111	263	299	349	144	8,881	30,210	7,560	603	531	367	4,145

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	9,220	4,710	57,100	57,900	80,100	50,100	1,060	113	122,000	-
1925	5,400	275	66	461	308	6.3	139,000	299,000	18,000	6,780	51,500	362,000	883,000
1926	68,700	12,700	1,560	5,070	1,160	20,400	115,000	57,200	233,000	104,000	229,000	116,000	964,000
1927	343,000	20,500	124,000	18,000	25,200	43,700	129,000	10,100	82,900	66,100	13,100	12,300	888,000
1928	41,300	1,310	621	1,600	828	738	3,060	373,000	190,000	196,000	156,000	26,400	991,000
1929	781	13,200	3,070	11,600	983	7,010	15,700	224,000	64,900	48,100	1,310	309,000	700,000
1930	46,900	7,140	3,480	1,060	1,420	812	60,700	604,000	369,000	20,800	6,820	39,200	1,160,000
1931	450,000	18,800	125,000	10,600	59,400	27,700	13,100	19,900	18,000	25,500	2,110	23	770,000
1932	260,000	66,600	55,700	74,400	73,000	16,300	15,300	219,000	209,000	426,000	25,500	669,000	2,110,000
1933	34,800	10,800	114,000	40,000	10,800	36,000	24,300	307,000	19,900	9,100	83,600	61,900	752,000
1934	13,800	6,310	4,470	13,540	8,140	61,850	55,970	7,660	1,600	0	.2	13,730	187,000
1935	2,610	75,300	5,850	1,790	7,460	22,750	35,820	523,900	487,200	224,500	14,730	192,700	1,595,000
1936	23,840	17,230	15,690	4,000	2,850	1,590	4,540	143,900	41,550	49,880	160	663,100	968,300
1937	161,800	15,380	10,170	5,760	3,510	25,130	6,040	6,500	53,280	7,780	108,700	18,220	422,300
1938	49,200	1,810	3,860	17,450	126,300	163,200	66,090	157,800	138,700	173,600	28,540	855	927,400
1939	3.2	103	123	32,600	2,210	1,360	6,160	172,300	243,000	23,290	41,380	914	523,400
1940	17,560	3,450	692	235	10,150	832	16,430	114,300	288,800	45,640	240,700	54,250	793,000
1941	2,110	79,920	49,830	9,970	76,520	28,500	3,420	951,100	627,100	30,610	24,580	94,120	1,978,000
1942	807,700	167,400	32,820	35,740	8,430	7,440	404,600	136,800	143,000	17,460	17,000	132,300	1,911,000
1943	334,000	36,410	19,050	40,530	63,890	76,260	75,840	35,070	48,040	57,710	42,500	11,110	840,400
1944	5,190	2,570	3,020	7,740	12,670	6,550	5,610	10,700	12,880	13,610	26,460	12,010	119,000
1945	20,670	23,110	25,450	26,330	26,210	48,690	32,290	32,590	39,340	50,550	38,300	19,040	382,600
1946	16,360	9,750	16,050	59,890	18,870	9,330	18,210	19,560	22,120	43,020	51,000	79,160	363,300
1947	164,000	71,080	75,900	60,640	27,870	16,530	20,350	333,300	86,360	41,200	38,430	36,890	972,600
1948	18,720	12,680	25,590	26,780	26,490	19,810	29,770	17,380	35,130	45,190	56,940	26,980	341,500
1949	11,840	11,660	13,080	15,650	16,210	9,160	7,420	97,620	190,900	49,010	67,140	67,250	556,900
1950	68,610	28,730	17,310	8,590	11,440	16,570	15,530	42,520	69,730	138,600	109,200	123,400	650,200
1951	47,230	16,550	23,740	41,740	23,290	6,320	21,660	20,240	45,030	83,670	70,390	37,040	436,900
1952	18,070	12,040	10,760	16,090	4,880	2,960	7,210	4,360	36,630	52,660	44,860	2,890	213,400
1953	1,390	2,030	3,120	1,580	766	1,510	2,170	6,980	19,870	38,840	36,250	44,490	159,000
1954	52,250	53,520	22,600	14,320	10,130	14,410	39,470	333,900	99,290	60,550	50,800	10,160	761,400
1955	7,140	2,840	1,810	13,340	4,030	3,950	5,310	42,960	200,900	50,460	36,760	441,000	810,500
1956	355,400	22,830	11,410	35,900	35,650	45,830	27,670	51,430	20,230	68,750	35,310	3,150	713,600
1957	4,140	6,600	16,170	18,380	19,380	8,860	528,500	1,857,000	449,900	37,100	32,620	21,850	3,000,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588, 1512	a17,100	Sept. 22, 1924	0	-	-	535	388,000
1925	1512	45,200	Sept. 13, 1925	0	1,220	883,000	1,330	960,000
1926	628	40,900	Aug. 31, 1926	5.5	1,330	964,000	1,890	1,370,000
1927	648	55,000	Oct. 18, 1926	14	1,230	888,000	612	444,000
1928	668	28,300	July 29, 1928	5.5	1,360	991,000	1,330	965,000
1929	688, 1512	53,500	Sept. 10, 1929	0	966	700,000	1,020	740,000
1930	703	95,600	June 16, 1930	0	1,600	1,160,000	2,340	1,700,000
1931	718	31,400	Oct. 13, 1930	0	1,060	770,000	772	559,000
1932	733, 1512	59,000	Sept. 9, 1932	0	2,910	2,110,000	2,600	1,890,000
1933	748, 1512	39,100	May 26, 1933	17	1,040	752,000	853	617,000
1934	748, 788	9,320	Apr. 5, 1934	0	258	187,000	340	246,300
1935	788	64,900	May 20, 1935	0	2,203	1,595,000	2,165	1,568,000
1936	808	b44,000	Sept. 28, 1936	0	1,334	968,300	1,514	1,099,000
1937	828	29,200	Aug. 23, 1937	.5	583	422,300	400	289,800
1938	858	40,900	Mar. 28, 1938	1.0	1,281	927,400	1,206	872,800
1939	878	34,300	June 22, 1939	0	723	523,400	753	544,900
1940	898	50,800	Aug. 18, 1940	0	1,092	793,000	1,244	903,200
1941	928	38,500	May 26, 1941	4.1	2,732	1,978,000	3,942	2,854,000
1942	958	51,200	Oct. 5, 1941	109	2,639	1,911,000	1,785	1,292,000
1943	978	46,600	Oct. 17, 1942	28	1,161	840,400	638	461,700
1944	1008	5,710	Sept. 5, 1944	23	164	119,000	244	177,500
1945	1038	10,700	July 10, 1945	48	528	382,600	491	355,500

a Maximum observed for period January to September.
b Estimated maximum daily discharge.

Yearly discharge, in cubic feet per second, of Brazos River near Palo Pinto, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1058	11,700	Sept. 29, 1946	47	502	363,300	873	632,100
1947	1088	21,100	May 19, 1947	64	1,343	972,600	992	718,600
1948	1118	12,800	Dec. 7, 1947	33	470	341,500	442	321,000
1949	1148	11,800	June 14, 1949	3.4	769	556,900	877	635,000
1950	1178	18,800	July 27, 1950	24	898	650,200	861	623,100
1951	1212	3,020	Sept. 8, 1951	23	603	436,900	539	390,200
1952	1242	2,690	June 26, Aug. 8, 1952	14	294	213,400	247	179,100
1953	1282	3,860	May 15, 1953	8.0	220	159,000	388	280,800
1954	1342	25,700	May 14, 1954	10	1,052	761,400	891	644,900
1955	1392	51,800	Sept. 27, 1955	12	1,120	810,500	1,641	1,188,000
1956	1442	40,200	Oct. 1, 1955	11	983	713,600	483	350,800
1957	1512	85,400	Apr. 29, 1957	14	4,145	3,000,000	-	-

174. Palo Pinto Creek near Santo, Tex.

Location.--Lat 32°38', long 98°11', 0.5 mile upstream from Texas & Pacific Railway bridge, 1.4 miles downstream from Big Sunday Creek, 2.6 miles northeast of Santo, Palo Pinto County, 2.8 miles upstream from Wusser Creek, and 7.0 miles upstream from mouth.

Drainage area.--567 sq mi.

Gage.--Water-stage recorder. Datum of gage is 762.63 ft above mean sea level, datum of 1929. Nov. 20, 1924, to Sept. 30, 1925, staff gage at present site and datum.

Average discharge.--7 years (1924-25, 1951-57), 80.3 cfs (58,130 acre-ft per year).

Extremes.--1924-25, 1951-57: Maximum discharge, 45,100 cfs May 26, 1957 (gage height, 31.05 ft, from floodmark), from rating curve extended above 18,000 cfs on basis of slope-area measurement of peak flow; no flow at times.

Maximum stages since at least 1880 occurred May 8, 1922, and May 26, 1957. Flood of May 8, 1922, reached about the same stage as in 1957, from information by the Texas & Pacific Railway Co., but probably was slightly lower according to statements by local residents.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	0	0	0	0	0	0	73.2	232	219	19.0	6.57	0	29.7
1951	-	-	-	-	-	-	4.00	99.1	147	9.99	0	0	-
1952	10.6	.15	0	0	0	0	5.23	207	4.09	0	0	5.99	19.7
1953	0	41.2	4.89	1.03	0	1.85	35.1	128	0	119	28.8	3.75	30.6
1954	353	45.3	6.25	.12	0	0	54.9	109	.01	0	0	0	48.0
1955	15.2	50.8	1.60	2.35	17.5	3.95	20.5	533	131	4.17	0	37.0	68.6
1956	.03	0	0	0	25.3	0	.78	531	4.87	0	7.42	.75	48.2
1957	1.64	26.3	226	.36	93.5	13.5	701	2,595	92.0	17.5	.26	.58	317

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	0	0	0	0	0	0	4,360	14,280	1,300	1,170	404	0	21,510
1951	-	-	-	-	-	-	-	6,090	8,740	614	0	0	-
1952	655	8.7	0	0	0	0	311	12,710	243	0	0	357	14,280
1953	0	2,450	301	63	0	113	2,090	7,860	0	7,290	1,770	223	22,160
1954	21,700	2,690	384	7.1	0	0	3,270	6,710	.6	0	0	0	34,760
1955	935	3,020	98	144	974	243	1,220	32,760	7,800	256	0	2,200	49,650
1956	2.0	0	0	0	1,460	0	47	32,670	290	0	456	44	34,970
1957	101	1,560	13,910	22	5,190	832	41,710	159,600	5,480	1,070	16	35	229,500

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1925	1312	a3,600	May 7, 1925	0	29.7	21,510	-	-
1951	1282	-	-	0	-	-	-	-
1952	1282	7,900	May 18, 1952	0	19.7	14,280	22.6	16,370
1953	1282	5,650	May 16, 1953	0	30.6	22,160	61.0	44,180
1954	1342	7,180	Oct. 23, 1953	0	48.0	34,760	19.4	14,040
1955	1392	17,100	May 19, 1955	0	68.6	49,650	63.0	45,600
1956	1442	17,600	May 1, 1956	0	48.2	34,970	69.6	50,540
1957	1512	45,100	May 26, 1957	0	317	229,500	-	-

a Maximum observed.

175. Brazos River near Glen Rose, Tex.

Location.--Lat 32°15'40", long 97°41'50", 2 miles upstream from Paluxy Creek, 2.4 miles downstream from bridge on U. S. Highway 67, 4 miles northeast of Glen Rose, Sommervell County, and at mile 509.

Drainage area.--24,840 sq mi, approximately, of which 9,240 sq mi is probably noncontributing.

Gage.--Water-stage recorder. Datum of gage is 567.82 ft above mean sea level, datum of 1929. Prior to May 7, 1931, staff gage at site 300 ft downstream at same datum. Since Apr. 27, 1950, supplementary water-stage recorder used as flood gage, 2.4 miles upstream at bridge on U. S. Highway 67.

Average discharge.--34 years (1923-57), 1,590 cfs (1,151,000 acre-ft per year).

Extremes.--1923-57: Maximum discharge, 97,600 cfs May 18, 1935; maximum gage height 30.02 ft, from floodmark, May 27, 1957; no flow at times prior to construction of Possum Kingdom Dam.
Maximum stage known since at least 1900, that of May 27, 1957. Flood of May 8 or 9, 1922, reached a stage of about 30 ft, from information by local residents.

Remarks.--Flow largely regulated since March 1941, except during major floods, by Possum Kingdom Reservoir on Brazos River and several smaller reservoirs in Clear Fork and other basins having a combined capacity of about 946,500 acre-ft. Many small diversions above station for irrigation, municipal supply, and oilfield operations.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	5,970	4,930	3,530	365	223	2,180	1,450	2,500	1,450	27.1	18.1	2,050	2,060
1925	202	51.0	23.5	27.4	22.0	5.98	2,130	6,700	282	126	753	6,000	1,360
1926	1,940	445	67.1	313	48.2	392	2,820	1,840	5,270	2,230	3,890	3,670	1,910
1927	5,750	673	2,330	405	591	1,160	2,940	487	1,720	1,180	401	320	1,510
1928	1,430	56.5	166	60.3	205	55.9	564	5,490	3,890	3,200	3,270	883	1,620
1929	29.1	242	676	595	296	339	745	3,830	1,920	718	76.5	5,500	1,250
1930	1,030	221	115	41.2	42.2	41.5	9.37	10,200	6,040	623	112	1,160	1,640
1931	7,750	530	3,870	258	1,870	735	390	814	1,090	308	84.6	3.52	1,480
1932	4,780	1,280	1,140	2,830	2,500	715	265	3,840	3,760	7,820	529	11,100	3,380
1933	690	277	1,760	954	276	1,090	404	5,120	1,060	175	1,000	1,420	1,200
1934	339	126	125	406	187	1,150	1,230	219	61.8	0	0	208	339
1935	81.0	960	223	497	250	351	707	13,230	8,556	4,212	543	3,438	2,768
1936	406	553	418	114	79.2	50.0	40.9	3,002	1,160	864	12.7	12,670	1,601
1937	4,434	690	370	226	147	703	147	182	1,601	141	1,406	476	884
1938	980	107	474	1,834	2,976	3,421	2,144	3,233	2,467	3,224	921	139	1,824
1939	14.0	19.1	24.8	591	133	44.4	235	2,841	3,807	700	598	78.7	759
1940	10.4	303	35.8	17.5	118	53.2	494	1,953	5,557	1,138	4,550	1,227	1,288
1941	102	3,217	2,284	517	3,487	1,128	704	15,840	13,050	1,032	1,804	1,562	3,719
1942	12,500	3,784	598	678	236	172	13,440	6,378	4,634	406	367	2,918	3,847
1943	7,253	1,069	511	665	1,268	1,688	1,501	838	1,124	873	701	310	1,490
1944	123	52.5	96.8	221	719	577	225	2,200	389	394	597	713	527
1945	341	488	480	721	1,844	2,943	2,498	974	820	2,374	652	403	1,208
1946	1,218	220	338	1,237	1,259	395	450	1,016	744	608	811	1,865	844
1947	2,962	2,858	2,521	1,240	732	933	686	4,654	1,649	685	642	671	1,696
1948	464	281	949	727	1,295	659	442	806	745	785	909	598	721
1949	190	213	211	250	739	897	422	5,985	4,522	996	909	1,171	1,379
1950	1,666	636	340	309	647	355	888	1,230	1,387	3,500	2,192	2,745	1,329
1951	1,070	358	407	603	542	180	190	672	1,447	1,296	1,080	702	714
1952	332	257	218	274	132	64.8	250	891	370	828	771	64.8	374
1953	7.42	202	94.6	61.2	16.7	53.1	117	587	146	720	540	569	261
1954	1,515	1,077	360	239	169	317	737	5,627	2,139	857	935	123	1,185
1955	163	117	44.5	179	127	97.2	117	2,019	3,549	875	701	4,830	1,064
1956	8,591	439	201	454	628	799	556	2,005	394	1,103	605	58.8	1,334
1957	156	150	699	314	789	298	6,811	44,800	9,221	1,078	448	543	5,494

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	367,000	293,000	217,000	22,400	12,800	134,000	86,000	154,000	86,300	1,660	1,110	122,000	1,500,000
1925	12,400	3,040	1,440	1,680	1,220	368	127,000	412,000	16,800	7,780	46,300	357,000	987,000
1926	119,000	26,500	4,130	19,200	2,680	24,100	168,000	113,000	314,000	137,000	239,000	218,000	1,380,000
1927	354,000	40,100	143,000	24,900	32,800	71,300	175,000	30,000	102,000	72,400	24,700	19,000	1,090,000
1928	87,900	3,360	10,200	3,710	11,800	3,440	33,600	338,000	231,000	197,000	201,000	52,500	1,170,000
1929	1,790	14,400	41,600	36,600	16,400	20,800	44,300	236,000	114,000	44,100	4,700	327,000	902,000
1930	63,300	13,200	7,070	2,530	2,340	2,550	558	627,000	359,000	38,300	6,890	69,000	1,190,000
1931	477,000	31,500	238,000	15,900	104,000	45,200	23,200	50,100	64,900	18,900	5,200	209	1,070,000
1932	294,000	76,200	70,100	174,000	144,000	44,000	15,800	236,000	224,000	481,000	32,500	660,000	2,450,000
1933	42,400	16,500	108,000	58,700	15,300	67,000	24,000	315,000	63,100	10,800	61,500	84,500	867,000
1934	20,800	7,500	7,690	25,000	10,400	70,700	73,200	13,500	3,680	0	0	12,400	245,000
1935	4,980	57,120	14,310	30,560	13,910	21,560	42,040	813,600	509,100	259,000	33,400	204,600	2,004,000
1936	24,980	32,930	25,720	6,990	4,560	3,080	2,430	184,600	69,040	53,110	783	754,000	1,162,000
1937	272,600	41,080	22,780	13,870	8,140	43,200	8,740	11,170	95,270	8,680	86,440	28,300	640,300
1938	60,240	6,370	29,130	112,700	165,300	210,400	127,600	198,800	146,800	198,300	56,650	8,300	1,321,000
1939	863	1,140	1,530	36,360	7,400	2,730	13,990	174,700	226,500	43,040	36,780	4,680	549,700
1940	641	18,020	2,200	1,070	6,790	3,270	29,380	120,100	330,700	69,990	279,700	72,980	934,800

Monthly and yearly runoff, in acre-feet, of Brazos River near Glen Rose, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	6,270	191,400	140,400	31,810	193,700	69,340	41,880	973,900	776,300	63,460	110,900	92,970	2,692,000
1942	768,900	225,200	36,780	41,690	13,080	10,580	799,900	392,200	275,700	24,970	22,550	173,600	2,785,000
1943	446,000	63,640	31,400	40,870	70,430	103,800	89,340	51,520	66,870	53,650	43,080	18,470	1,079,000
1944	7,590	3,130	5,950	13,600	41,370	35,490	13,400	135,300	23,140	24,220	36,690	42,430	382,300
1945	20,990	29,030	29,540	44,360	102,400	181,000	148,700	59,880	48,820	146,000	40,070	23,980	874,800
1946	74,890	13,080	20,800	76,070	69,910	24,310	26,770	62,470	44,270	37,400	49,860	111,000	610,800
1947	182,200	170,100	155,000	76,240	40,640	57,400	40,820	286,200	98,130	42,140	39,470	39,950	1,228,000
1948	28,520	16,700	58,340	44,690	74,490	40,510	26,330	49,550	44,320	48,280	55,870	35,560	523,200
1949	11,710	12,650	12,990	15,360	41,070	55,120	25,080	368,000	269,100	61,270	55,910	69,700	998,000
1950	102,400	37,840	20,920	19,000	35,940	21,860	52,870	75,640	82,550	215,200	134,800	163,400	962,400
1951	65,820	21,270	25,030	37,050	30,100	11,050	11,330	41,300	86,080	79,700	66,400	41,770	516,900
1952	20,410	15,270	13,400	16,870	7,580	3,980	14,870	54,760	21,990	50,930	47,420	3,860	271,300
1953	456	12,010	5,820	3,760	928	3,270	6,940	36,100	8,660	44,270	33,210	33,840	189,300
1954	93,140	64,080	22,140	14,680	9,380	19,500	43,860	346,000	127,300	52,680	57,500	7,330	857,600
1955	10,010	6,980	2,740	11,020	7,040	5,980	6,960	124,100	211,200	53,810	43,080	287,400	770,300
1956	528,300	26,100	12,350	27,890	36,120	49,120	33,100	123,300	23,440	67,830	37,200	3,500	968,200
1957	9,620	8,940	43,010	19,290	43,840	18,310	405,300	2,754,000	548,700	66,270	27,570	32,320	3,977,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	37,500	Oct. 17, 1923	0	2,060	1,500,000	877	637,000
1925	608	45,700	May 8, 1925	-	1,360	987,000	1,550	1,120,000
1926	628	38,300	June 21, 1926	10	1,910	1,380,000	2,450	1,770,000
1927	648	41,400	Oct. 19, 1926	41	1,510	1,090,000	904	654,000
1928	668	26,900	July 29, 1928	18	1,620	1,170,000	1,560	1,130,000
1929	688	38,400	Sept. 12, 1929	.8	1,250	902,000	1,280	927,000
1930	703	68,300	June 17, 1930	1.5	1,640	1,190,000	2,560	1,850,000
1931	718	31,700	Oct. 7, 1930	0	1,480	1,070,000	1,060	768,000
1932	733, 1058	49,300	Sept. 10, 1932	0	3,380	2,450,000	3,000	2,180,000
1933	748	36,600	May 27, 1933	25	1,200	867,000	1,020	736,000
1934	763	5,240	Mar. 4, 1934	0	339	245,000	394	285,500
1935	788	97,600	May 18, 1935	.8	2,768	2,004,000	2,778	2,011,000
1936	808	67,300	Sept. 27, 1936	0	1,601	1,162,000	1,949	1,415,000
1937	828	a22,200	June 9, 1937	8.0	884	640,300	552	399,600
1938	858	45,200	Mar. 29, 1938	26	1,824	1,321,000	1,697	1,228,000
1939	878	22,600	June 23, 1939	1.0	759	549,700	783	567,000
1940	898	38,300	Aug. 19, 1940	0	1,288	934,800	1,725	1,252,000
1941	928	44,200	Nov. 25, 1940	21	3,719	2,692,000	4,676	3,385,000
1942	958	66,400	Apr. 26, 1942	131	3,847	2,785,000	3,170	2,295,000
1943	978	54,100	Oct. 18, 1942	59	1,490	1,079,000	766	554,700
1944	1008	24,100	May 2, 1944	33	527	382,300	613	445,200
1945	1038	39,200	Mar. 30, 1945	79	1,208	874,800	1,249	904,000
1946	1058, 1512	11,500	Sept. 27, 1946	118	844	610,800	1,394	1,009,000
1947	1088, 1512	38,900	Dec. 12, 1946	172	1,696	1,228,000	1,139	824,600
1948	1118	12,500	Feb. 25, 1948	100	721	523,200	629	457,000
1949	1148, 1512	74,000	May 17, 1949	89	1,379	998,000	1,550	1,122,000
1950	1178	20,700	July 28, 1950	106	1,329	962,400	1,262	913,400
1951	1212	5,680	June 18, 1951	61	714	516,900	627	453,900
1952	1242	27,900	May 24, 1952	11	374	271,300	331	240,500
1953	1282	5,920	May 17, 1953	.1	261	189,300	484	350,300
1954	1342	25,600	May 15, 1954	18	1,185	857,600	964	698,000
1955	1392	42,300	Sept. 30, 1955	8.5	1,064	770,300	1,820	1,317,000
1956	1442	41,400	Oct. 1, 1955	1.8	1,334	968,200	638	463,100
1957	1512	87,400	May 27, 1957	12	5,494	3,977,000	-	-

a Maximum peak discharge; maximum discharge, 31,100 cfs 12:01 a.m. Oct. 1, stage falling.

176. Paluxy Creek at Glen Rose, Tex.

Location.--Lat 32°13'50", long 97°46'30", at bridge on U. S. Highway 67, 1 mile upstream from Cross Branch, 1.2 miles southwest of Glen Rose, Sommervell County, and 4.7 miles upstream from mouth.

Drainage area.--399 sq mi. At site used 1923-25, 424 sq mi.

Gage.--Water-stage recorder. Datum of gage is 609.66 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942. Oct. 27, 1923, to Sept. 30, 1925, chain gage at bridge 1.8 miles downstream at datum 13.62 ft lower.

Average discharge.--11 years (1924-25, 1947-57), 60.5 cfs (43,800 acre-ft per year).

Extremes.--1923-25, 1947-57: Maximum discharge, 48,500 cfs May 17, 1949 (gage height, 25.1 ft, from floodmark); no flow at times. Maximum stage known, 27.2 ft Apr. 17, 1908, present site and datum. Flood of May 21, 1922, reached a stage of 26.0 ft, present site and datum. Flood of November 1918 reached about same stage as flood of May 21, 1922, from information by local resident.

Remarks.--Small diversions above station.

Monthly and yearly mean discharge, in cubic feet per second, of Paluxy Creek at Glen Rose, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	26.7	37.7	-	-	-	19.4	5.85	8.84	9.27	-
1925	3.45	43.9	8.79	9.97	9.28	8.76	10.6	36.5	8.18	1.05	5.17	6.07	12.6
1947	-	-	-	-	-	-	-	-	46.6	6.10	5.56	25.1	-
1948	19.7	11.6	56.2	33.7	204	79.9	21.3	102	62.0	51.5	5.77	20.8	55.2
1949	4.80	7.93	8.92	17.3	80.6	100	158	1,191	123	25.1	17.9	9.42	147
1950	83.6	13.2	16.2	41.1	95.3	29.6	74.9	64.2	27.8	63.1	9.19	76.0	49.2
1951	10.5	10.6	10.1	8.72	13.1	10.5	11.7	28.4	158	5.74	.97	.27	22.2
1952	.80	3.52	5.64	7.59	7.60	8.33	51.2	471	15.7	4.21	1.35	.29	48.6
1953	.16	32.3	9.30	7.91	6.28	9.36	27.9	67.8	2.35	13.6	25.8	5.27	17.4
1954	23.6	10.4	7.37	7.38	6.12	7.45	71.2	37.4	47.4	3.44	1.95	.08	18.6
1955	20.7	14.6	6.71	5.28	9.52	12.1	28.9	605	38.6	10.4	3.17	335	*91.3*
1956	17.1	4.28	5.86	6.63	12.8	5.84	14.4	370	4.18	.18	20.7	2.56	39.2
1957	7.73	5.76	38.6	6.16	7.55	15.9	648	1,030	165	25.2	5.40	3.66	164

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	1,640	2,170	-	-	-	1,150	360	543	552	-
1925	212	2,610	540	613	515	539	634	2,240	487	64	318	361	9,130
1947	-	-	-	-	-	-	-	-	2,770	375	342	1,500	-
1948	1,210	690	3,460	2,070	11,730	4,910	1,270	6,280	3,690	3,170	355	1,240	40,080
1949	295	472	548	1,060	4,480	6,160	9,380	73,240	7,310	1,540	1,100	561	106,100
1950	5,140	783	996	2,520	5,290	1,820	4,460	3,950	1,650	3,880	565	4,520	35,570
1951	645	632	619	536	728	643	697	1,750	9,390	353	60	16	16,070
1952	49	209	347	467	437	512	3,050	28,950	935	259	83	17	35,320
1953	9.7	1,920	572	486	349	576	1,660	4,170	140	833	1,590	314	12,620
1954	1,450	620	453	454	340	458	4,240	2,300	2,820	212	120	4.8	13,470
1955	1,270	867	413	325	529	741	1,720	37,170	2,300	638	195	19,930	66,100
1956	1,050	254	360	408	734	359	859	22,750	249	11	1,270	152	28,460
1957	475	343	2,370	379	419	977	38,550	63,310	9,810	1,550	332	218	118,700

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	-	Apr. 25, 1924	1.4	-	-	-	-
1925	608	-	Nov. 20, 1924	0	12.6	9,130	-	-
1947	1088	a2,580	Sept. 15, 1947	-	-	-	-	-
1948	1118	11,000	Feb. 25, 1948	1.1	55.2	40,080	49.6	36,030
1949	1148, 1392	48,500	May 17, 1949	1.7	147	106,100	154	111,800
1950	1178	4,570	Oct. 24, 1949	5.0	49.2	35,570	42.2	30,550
1951	1212	4,130	June 3, 1951	0	22.2	16,070	20.4	14,780
1952	1242	36,200	May 23, 1952	0	48.6	35,320	51.3	37,210
1953	1282	3,930	May 15, 1953	0	17.4	12,620	17.5	12,640
1954	1342	5,510	Apr. 12, 1954	0	18.6	13,470	18.6	13,500
1955	1392	37,000	May 19, 1955	0	91.3	66,100	90.1	65,210
1956	1442	17,300	May 1, 1956	0	39.2	28,460	41.3	29,990
1957	1512	44,000	Apr. 26, 1957	0	164	118,700	-	-

a Maximum May to September.

177. Nolands River at Blum, Tex.

Location. --Lat 32°09'02", long 97°24'10", 60 ft upstream from bridge on Farm Road 67, 0.5 mile downstream from Gulf, Colorado & Santa Fe Railway bridge, 0.6 mile northwest of Blum, Hill County, 2.8 miles downstream from Mustang Creek, and 3.2 miles upstream from Rock Creek.

Drainage area. --276 sq mi. At site used prior to May 29, 1949, 275 sq mi.

Gage. --Water-stage recorder. Datum of gage is 551.48 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942. July 29, 1924, to Sept. 30, 1925, and Nov. 14, 1947, to May 28, 1949, staff gage at railway bridge 0.5 mile upstream at datum 5.0 ft higher.

Average discharge. --10 years (1924-25, 1948-57), 53.8 cfs (38,950 acre-ft per year).

Extremes. --1924-25, 1947-57: Maximum discharge, 25,000 cfs May 17, 1949 (gage height, 24.0 ft, from floodmark); no flow at times. Maximum stage since at least 1887, 35.0 ft May 8, 1922, present site and datum, from information by local resident.

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second, of Nolands River at Blum, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	-	0	0.8	-
1925	2.42	9.69	5.98	2.87	2.16	0.89	18.9	154	17.4	1.30	0	2.83	18.4
1948	-	-	263	53.6	230	161	34.5	201	134	189	2.67	10.6	-
1949	1.68	2.42	6.80	49.5	292	148	134	957	139	12.2	2.16	1.16	145
1950	22.3	2.51	4.46	50.0	485	44.6	140	66.3	37.8	11.2	1.53	25.5	71.1
1951	1.05	1.13	1.37	2.23	2.96	1.77	1.30	6.20	426	2.06	.54	3.18	37.0
1952	1.60	1.53	1.47	1.34	5.62	4.09	139	162	5.25	1.87	0	.10	27.0
1953	.19	193	67.4	9.11	5.55	18.6	72.6	247	.96	7.68	19.9	3.12	54.0
1954	9.52	2.52	2.72	2.88	2.25	1.94	17.3	10.4	.32	1.47	.18	.16	4.31
1955	15.9	6.98	1.27	2.06	2.29	1.45	10.1	138	39.7	.17	29.7	87.3	28.1
1956	26.3	.93	1.94	2.97	8.87	1.65	2.45	63.2	.87	0	21.1	34.3	13.8
1957	7.88	12.2	3.58	2.27	4.28	29.1	1,057	439	103	7.50	2.14	3.91	139

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	-	0	48	-
1925	149	577	368	176	120	55	1,120	9,500	1,040	80	0	168	13,400
1948	-	-	16,160	3,300	13,240	9,900	2,050	12,380	7,990	11,650	164	631	-
1949	103	144	418	3,040	16,210	9,070	7,990	58,840	8,250	748	133	69	105,000
1950	1,370	150	274	3,070	26,870	2,740	8,330	4,070	2,250	690	94	1,520	51,430
1951	64	67	84	137	164	109	77	381	25,320	127	33	189	26,750
1952	98	91	90	83	323	251	8,290	9,960	313	115	0	5.8	19,620
1953	12	11,460	4,140	560	308	1,140	4,320	15,210	57	472	1,230	186	39,100
1954	585	150	167	177	125	119	1,030	636	19	90	11	9.5	3,120
1955	981	416	78	127	127	89	599	8,510	2,360	9.9	1,820	5,190	20,310
1956	1,620	56	119	183	510	101	146	3,890	52	0	1,300	2,040	10,020
1957	485	725	220	140	238	1,790	62,870	27,010	6,120	461	131	233	100,400

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	-	-	0	-	-	-	-
1925	608	7,000	May 13, 1925	0	18.4	13,400	-	-
1948	1118	-	-	-	-	-	85.4	61,970
1949	1148	25,000	May 17, 1949	.4	145	105,000	147	106,200
1950	1178	11,900	Feb. 12, 1950	.4	71.1	51,430	68.9	49,850
1951	1212	11,000	June 12, 1951	.1	37.0	26,750	37.0	26,820
1952	1242	7,360	Apr. 21, 1952	0	27.0	19,620	48.2	34,950
1953	1282	11,600	May 16, 1953	0	54.0	39,100	33.7	24,380
1954	1342	1,050	Apr. 12, 1954	0	4.31	3,120	5.10	3,690
1955	1392	8,200	May 19, 1955	0	28.1	20,310	28.5	20,630
1956	1442	9,160	Aug. 31, 1956	0	13.8	10,020	13.3	9,650
1957	1512	15,400	Apr. 24, 1957	0	139	100,400	-	-

178. Whitney Reservoir near Whitney, Tex.

Location. --Lat 31°52', long 97°22', at Whitney Dam on Brazos River, 2.4 miles upstream from Coon Creek, 4.0 miles upstream from Iron Creek, 7.4 miles southwest of Whitney, Hill County, and at mile 442.

Drainage area. --26,170 sq mi, approximately, of which 9,240 sq mi is probably noncontributing.

Gage. --Water-stage recorder. Datum of gage is at mean sea level, datum of 1929 (levels by Corps of Engineers).

Extremes. --1951-57: Maximum contents, 1,980,000 acre-ft May 29, 1957 (elevation, 570.25 ft); minimum daily since power pool elevation first reached in April 1954, 250,200 acre-ft Nov. 1, 1956 (elevation, 509.52 ft).

Remarks. --Reservoir is formed by concrete gravity and rolled earth-fill dam 17,695 ft long including spillway. Main dam completed in April 1951 and deliberate impoundment of water began Dec. 10, 1951. Capacity between gage heights 520.0 and 571.0 is 1,630,500 acre-ft and is reserved for flood-control storage. Total spillway capacity, 661,000 cfs at elevation 573.0 ft, maximum design level. Figures given herein represent total contents. Reservoir used for flood control and power development.

Data regarding the dam and reservoir are shown in following table:

	Elevation (feet)	Capacity (acre-feet)
Top of 17 40-by 38-foot taintor gates	571.0	2,017,500
Spillway crest	533.0	642,200
Top of designated power storage	520.0	387,000
Invert of two 16-foot diameter penstocks	476.0	43,500
Invert of 16 5-by 9-foot flood-control outlet conduits	448.83	5,140

Cooperation. --Records furnished by Corps of Engineers.

Contents, in acre-feet, on last day of month, of Whitney Reservoir near Whitney, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1952	-	-	6,620	11,870	11,390	8,760	50,730	121,200	119,500	113,200	83,360	64,300	-
1953	59,770	95,130	114,200	121,400	122,400	131,400	148,500	214,900	191,700	202,100	211,200	233,600	+169,300
1954	304,200	353,200	367,300	373,500	373,300	377,600	388,100	396,100	392,800	364,700	358,600	342,400	+108,800
1955	340,400	345,100	342,000	349,300	356,500	356,500	363,200	404,700	388,800	374,100	373,500	454,800	+112,400
1956	381,500	376,100	360,500	356,800	363,500	375,500	376,100	382,500	362,600	320,600	304,800	272,900	-181,900
1957	250,300	258,400	301,000	285,200	296,200	281,800	734,600	1,928,000	514,700	387,800	373,500	368,800	+ 95,900

179. Brazos River near Whitney, Tex.

Location. --Lat 31°50'30", long 97°19'30", 3,000 ft upstream from Iron Creek, 1.0 mile downstream from Coon Creek, 3.4 miles downstream from Whitney Dam, 7.5 miles south of Whitney, Hill County, and at mile 439.

Drainage area. --26,190 sq mi, approximately, of which 9,240 sq mi is probably noncontributing; at site used prior to Apr. 2, 1947, 26,090 sq mi, approximately, of which 9,240 sq mi is probably noncontributing.

Supplemental records available. --Records of chemical analyses and water temperatures for the periods October 1947 to May 1948 and October 1948 to September 1957 are published in reports of Geological Survey.

Gage. --Water-stage recorder. Datum of gage is 417.39 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Nov. 29, 1938, chain gage, and Nov. 29, 1938, to Sept. 30, 1948, wire-weight gage, at site 8.3 miles upstream at datum 14.67 ft higher.

Average discharge. --19 years (1938-57), 1,769 cfs (1,281,000 acre-ft per year).

Extremes. --1938-57: Maximum discharge, 71,800 cfs May 18, 1949 (gage height, 31.03 ft); minimum daily, 0.4 cfs May 9, 1953. Maximum stage since at least 1853, about 45 ft May 9, 1922, from information by local resident.

Remarks. --Flow regulated by Whitney Reservoir and Possum Kingdom Reservoir on Brazos River, and several smaller reservoirs in Clear Fork and other basins, having a combined capacity of about 2,964,000 acre-ft. Many small diversions above Whitney Reservoir for irrigation, municipal supply and oilfield operations.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	25.0	31.3	40.9	677	287	91.7	301	3,448	4,762	762	623	135	933
1940	5.87	318	59.7	40.8	117	75.1	687	2,123	5,898	1,634	4,289	1,139	1,365
1941	131	4,471	3,211	955	5,082	2,130	1,773	16,580	12,910	1,775	2,079	1,644	4,380
1942	12,070	4,282	586	820	304	219	14,340	7,104	6,140	572	496	2,870	4,152
1943	7,586	1,179	665	729	1,378	1,828	1,712	1,115	1,234	900	691	418	1,627
1944	125	67.1	129	312	894	1,096	434	4,578	692	416	437	925	845
1945	433	596	701	1,240	3,429	4,736	5,870	1,415	1,411	2,969	805	450	1,992
1946	1,608	304	406	1,542	2,153	1,117	838	1,702	1,346	595	864	2,004	1,200
1947	3,169	3,405	3,101	1,745	972	1,204	1,211	5,560	1,878	744	751	685	2,047
1948	463	347	1,340	845	1,921	1,083	522	1,189	1,135	1,142	862	729	963
1949	242	235	270	313	990	1,167	902	7,235	4,204	1,139	920	1,120	1,566
1950	1,553	723	369	422	1,590	483	1,238	1,324	1,505	3,423	2,604	3,021	1,520
1951	1,162	337	436	626	579	220	213	814	2,546	1,295	1,120	717	840
1952	340	275	212	182	155	114	131	65.2	355	755	1,187	389	349
1953	46.6	41.7	36.9	9.92	21.6	26.7	12.5	34.2	417	497	429	107	141
1954	54.6	122	82.3	72.7	62.4	144	617	5,297	2,062	1,163	863	310	912
1955	329	63.5	34.8	31.7	47.1	62.9	78.3	2,298	3,908	971	671	3,486	997
1956	9,553	411	385	576	637	548	605	2,331	618	1,636	751	609	1,571
1957	639	41.3	31.8	612	661	645	1,472	29,670	35,640	3,510	723	798	6,213

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	1,540	1,860	2,520	41,630	15,960	5,640	17,890	212,000	283,400	46,880	38,340	8,030	675,700
1940	361	18,950	3,670	2,510	6,730	4,620	40,870	130,500	350,900	100,500	263,700	67,800	991,100
1941	8,040	266,100	197,400	58,740	282,200	131,000	105,500	1,019,000	768,000	109,100	127,800	97,840	3,171,000
1942	742,300	254,800	36,040	50,420	16,890	13,440	853,000	436,800	365,400	35,160	30,500	170,800	3,006,000
1943	466,400	70,130	40,870	44,810	76,500	112,400	101,900	68,530	73,420	55,340	42,460	24,850	1,178,000
1944	7,660	3,990	7,950	19,180	51,440	67,360	25,850	281,500	41,170	25,550	26,880	55,050	613,600
1945	26,650	35,440	43,080	76,250	190,400	291,200	349,300	86,990	83,950	182,500	49,470	26,790	1,442,000
1946	98,880	18,090	24,970	94,830	119,600	68,690	49,880	104,600	80,110	36,560	53,150	119,300	868,700
1947	194,800	202,600	190,700	107,300	54,000	74,030	72,090	341,900	111,800	45,740	46,200	40,740	1,482,000
1948	28,450	20,650	82,370	51,970	110,500	66,570	31,060	73,080	67,530	70,240	52,990	43,380	698,800
1949	14,890	13,990	16,630	19,230	54,970	71,780	53,700	444,900	250,200	70,010	56,550	66,630	1,133,000
1950	95,500	43,030	22,690	25,980	88,330	29,720	73,690	81,390	89,570	210,500	160,100	179,700	1,100,000
1951	71,470	20,040	26,790	38,490	32,180	13,540	12,700	50,070	151,500	79,620	68,850	42,650	607,900
1952	20,930	16,390	13,030	11,190	8,930	7,010	7,780	4,010	21,140	46,430	72,980	23,160	253,000
1953	2,870	2,480	2,270	610	1,200	1,640	745	2,100	24,840	30,560	26,350	6,350	102,000
1954	3,360	7,240	5,060	4,470	3,470	8,850	36,710	325,700	122,700	71,520	53,080	18,450	660,600
1955	20,230	3,780	2,140	1,950	2,620	3,870	4,660	141,300	232,500	59,720	41,240	207,400	721,400
1956	587,400	24,430	23,680	35,400	36,640	33,700	36,020	143,400	36,790	100,600	46,200	36,230	1,140,000
1957	39,300	2,460	1,960	37,610	36,700	39,690	87,580	1,824,000	2,121,000	215,800	44,460	47,500	4,498,000

Yearly discharge, in cubic feet per second, of Brazos River near Whitney, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	878	a39,800	June 19, 1939	9.6	933	675,700	957	692,800
1940	898	36,500	Aug. 20, 1940	2.2	1,365	991,100	1,983	1,440,000
1941	928	a50,300	May 5, 1941	44	4,380	3,171,000	5,156	3,732,000
1942	958	a60,100	Apr. 25, 1942	137	4,152	3,006,000	3,522	2,550,000
1943	978	a49,900	Oct. 18, 1942	52	1,627	1,178,000	856	619,800
1944	1008	66,400	May 1, 1944	46	845	613,600	963	699,200
1945	1038	a49,800	Mar. 30, 1945	99	1,992	1,442,000	2,043	1,479,000
1946	1058	13,600	June 1, 1946	177	1,200	868,700	1,816	1,315,000
1947	1088	33,500	Nov. 4, 1946	185	2,047	1,482,000	1,416	1,025,000
1948	1118	28,300	Feb. 25, 1948	143	963	698,800	844	612,800
1949	1148	71,800	May 18, 1949	138	1,566	1,133,000	1,725	1,249,000
1950	1178	15,600	Feb. 12, 1950	14	1,520	1,100,000	1,460	1,057,000
1951	1212	13,300	June 12, 1951	95	840	607,900	746	540,000
1952	1242	4,720	Apr. 21, 1952	36	349	253,000	290	210,200
1953	1282	1,860	June 26, 1953	.4	141	102,000	152	110,100
1954	1342	22,300	May 17, 1954	18	912	660,600	927	671,100
1955	1392	19,200	Sept. 30, 1955	17	997	721,400	1,838	1,331,000
1956	1442	21,600	Oct. 3, 1955	14	1,571	1,140,000	756	548,700
1957	1512	58,200	May 28, 1957	18	6,213	4,498,000	-	-

a Observed.

180. Aquilla Creek near Aquilla, Tex.

Location. --Lat 31°51', long 97°12', at bridge on Abbot-Aquilla county road, three-quarters of a mile upstream from Palls Branch and 1 mile southeast of Aquilla, Hill County.

Drainage area. --309 sq mi.

Gage. --Water-stage recorder. Datum of gage is 451.48 ft above mean sea level (levels by Corps of Engineers).

Average discharge. --18 years (1939-57), 106 cfs (76,740 acre-ft per year).

Extremes. --1939-57: Maximum gage height, 30.84 ft May 2, 1944 (discharge not determined); no flow at times.
Maximum stage known, 34 ft Aug. 31, 1887, from information by local resident. Flood of Sept. 27, 1936, reached a stage of about 33 ft, from floodmark. Peak discharge of this flood as determined about 9 miles downstream from station, 84,500 cfs, by slope-area measurement (drainage area, 370 sq mi).

Remarks. --No known diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	6.92	172	15.1	47.5	199	471	3.60	0.12	0	-
1940	0.08	0.16	0.77	.96	2.93	.80	346	18.7	284	226	.35	0	72.9
1941	0	594	428	135	650	160	672	407	426	250	46.9	2.15	310
1942	85.2	13.9	27.6	18.5	15.6	21.2	1,496	329	242	28.9	54.4	363	223
1943	179	68.5	70.9	33.3	22.0	45.5	166	365	24.4	1.56	.01	31.3	84.6
1944	11.6	.89	5.29	42.7	188	91.6	171	1,351	89.8	2.71	.37	.86	164
1945	3.87	7.57	155	298	634	718	840	45.2	268	599	5.86	2.13	295
1946	4.59	25.4	3.82	74.1	221	285	187	388	112	1.79	.31	6.52	109
1947	1.75	33.1	110	201	53.6	109	332	108	50.6	.74	.78	3.33	83.7
1948	.22	1.37	23.1	12.7	22.7	21.4	32.9	286	31.0	109	.02	0	45.5
1949	0	0	1.25	56.4	55.7	43.7	137	161	82.3	8.76	5.47	0	45.7
1950	0	0	.11	1.40	169	11.8	163	41.4	2.81	17.0	.01	45.6	36.4
1951	.04	.49	.49	.64	2.24	.95	32.7	14.0	491	1.44	0	28.3	47.0
1952	1.29	.41	.31	.31	13.8	6.52	381	324	6.59	1.15	0	0	61.2
1953	0	92.1	374	24.2	9.72	77.9	155	394	1.65	3.87	7.72	32.0	98.7
1954	9.75	6.80	3.19	2.49	1.24	.91	8.54	98.4	.03	.05	0	.17	11.1
1955	80.2	24.2	.05	.32	24.0	25.1	14.1	139	57.2	6.18	14.1	0	32.2
1956	1.42	0	.08	1.63	1.94	.16	16.2	199	0	0	0	0	18.7
1957	15.9	25.3	4.06	1.88	12.8	8.94	1,174	633	114	4.31	0	0	166

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	425	9,540	930	2,830	12,220	28,050	221	7.1	0	-
1940	4.8	9.5	47	59	168	49	20,600	1,150	16,890	13,890	21	0	52,890
1941	0	35,330	26,340	8,320	36,100	9,810	39,960	25,030	25,350	15,370	2,880	128	224,600
1942	5,240	826	1,700	1,130	866	1,310	89,000	20,220	14,390	1,770	3,350	21,590	161,400
1943	11,010	4,070	4,360	2,050	1,220	2,800	9,890	22,460	1,450	96	.8	1,860	61,270
1944	712	53	325	2,620	10,800	5,640	10,160	83,070	5,340	166	23	51	119,000
1945	238	450	9,540	18,330	35,200	44,130	50,000	2,780	15,930	36,820	360	127	213,900

Monthly and yearly runoff, in acre-feet, of Aquilla Creek near Aquilla, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	282	1,510	235	4,560	12,280	17,510	11,150	23,870	6,660	110	19	388	78,570
1947	108	1,970	6,770	12,380	2,980	6,680	19,790	6,610	3,010	46	48	198	60,590
1948	13	81	1,420	782	1,300	1,320	1,960	17,590	1,840	6,700	1.2	0	33,010
1949	0	0	77	3,470	3,090	2,690	8,150	9,870	4,900	539	336	0	33,120
1950	0	0	6.7	86	9,390	724	9,700	2,550	167	1,040	.6	2,710	26,370
1951	2.2	29	30	39	124	58	1,940	861	29,210	88	0	1,690	34,070
1952	79	24	19	19	796	401	22,680	19,920	392	70	0	0	44,400
1953	0	5,480	22,990	1,490	540	4,790	9,200	24,260	98	238	475	1,910	71,470
1954	599	405	196	153	69	56	508	6,050	1.8	3.2	0	9.9	8,050
1955	4,930	1,440	2.8	19	1,330	1,550	837	8,570	3,410	380	866	0	23,330
1956	87	0	5.0	100	112	9.9	967	12,260	0	0	0	0	13,540
1957	979	1,500	250	116	708	550	69,860	38,920	6,800	265	0	0	119,900

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	878	9,860	June 19, 1939	0	-	-	75.0	54,280
1940	898	8,690	Apr. 6, 1940	0	72.9	52,890	158	114,500
1941	928	8,560	Feb. 2, 1941	0	310	224,600	236	170,700
1942	958	16,000	Apr. 25, 1942	.4	223	161,400	239	173,100
1943	978	6,910	Apr. 8, 1943	0	84.6	61,270	59.3	42,920
1944	1038	-	May 2, 1944	0	164	119,000	176	128,100
1945	1038	14,700	July 11, 1945	.1	295	213,900	284	205,700
1946	1058	7,060	Mar. 13, 1946	.2	109	78,570	118	85,400
1947	1088	8,440	Apr. 9, 1947	.1	83.7	60,590	73.6	53,260
1948	1118	8,260	May 11, 1948	0	45.5	33,010	43.5	31,570
1949	1148	3,540	May 27, 1949	0	45.7	33,120	45.6	33,050
1950	1178	3,580	Apr. 17, 1950	0	36.4	26,370	36.5	26,430
1951	1212	8,690	June 12, 1951	0	47.0	34,070	47.1	34,130
1952	1242	12,000	Apr. 22, 1952	0	61.2	44,400	100	72,750
1953	1282	12,900	Dec. 19, 1952	0	98.7	71,470	61.0	44,200
1954	1342	4,660	May 19, 1954	0	11.1	8,050	18.3	13,220
1955	1392	4,850	May 19, 1955	0	32.2	23,330	23.6	17,100
1956	1442	7,550	May 1, 1956	0	18.7	13,540	22.3	16,180
1957	1512	8,550	Apr. 23, 1957	0	166	119,900	-	-

Note.--Records for December 1924 to August 1925 published in W.S.P. 608 have been found in error on the basis of restudy of the original data and comparison with records at nearby stations. Those records are not published herein and should not be used.

181. Green Creek subwatershed No. 1 near Dublin, Tex.

Location.--Lat 32°10'00", long 98°20'30", at dam on main headwater channel of Green Creek, three-quarters of a mile downstream from county road, 1.0 mile east of Farm Road 219, and 4.0 miles north of Dublin, Erath County.

Drainage area.--3.18 sq mi.

Gage.--Water-stage recorder. Datum of gage is 1,408.00 ft above mean sea level, datum of 1929 (levels by Soil Conservation Service).

Extremes.--1955-57: Maximum inflow, 9,910 cfs Apr. 30, 1956; no inflow at times; maximum reservoir contents, 1,335 acre-ft May 1, 1956 (gage height, 23.21 ft).

Remarks.--Records represent flow into reservoir, computed by algebraic summation of flow over spillway, flow through uncontrolled drop-outlet structure, flow through controlled 8-inch valve, and change in reservoir contents, which is computed from capacity curve in acre-ft and converted to equivalent cfs. No adjustments made for evaporation or seepage losses. Rolled earth-fill dam was completed Apr. 25, 1955, and is 3,000 ft long with earthen-spillway section at gage height 21.9 ft. Drop-outlet structure is a 2½-ft square concrete box, elevation of crest 11.0 ft, connected to a 14-inch concrete outlet pipe at elevation 3.0 ft. There is also an 8-inch controlled-outlet pipe connected to drop outlet structure at elevation 3.76 ft. Reservoir capacity, 1,157 acre-ft at spillway crest, 248 acre-ft at top of drop-outlet structure, and 63 acre-ft at controlled-outlet pipe. Dam built by Soil Conservation Service for flood control, conservation of stock water, and recreation.

Monthly and yearly mean inflow, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	-	-	-	-	-	-	-	-	0.96	0.03	0.003	0.67	-
1956	0.31	0.01	0	0.05	0.16	0	17.9	4.05	.40	0	.03	0	1.86
1957	.05	.06	1.03	.02	.02	.15	6.65	11.9	.11	.32	0	.09	1.71

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	-	-	-	-	-	-	-	-	57	1.8	0.2	40	-
1956	19	0.8	0	3.2	9.1	0	1,070	249	2.4	0	1.8	0	1,360
1957	3.0	3.6	63	1.0	1.4	9.1	396	733	6.3	20	0	5.2	1,240

Yearly discharge, in cubic feet per second, of Green Creek subwatershed No. 1 near Dublin, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1955	1392	-	-	0	-	-	-	-
1956	1442	9,910	Apr. 30, 1956	0	1.86	1,360	1.93	1,410
1957	1512	904	Apr. 26, 1957	0	1.71	1,240	-	-

182. North Bosque River near Clifton, Tex.

Location. --Lat 31°47'10", long 97°34'00", at bridge on State Highway 215, 0.5 mile northeast of Clifton, Bosque County, and 2.9 miles downstream from Meridian Creek.

Drainage area. --988 sq mi; at site 1.1 miles upstream, 974 sq mi.

Gage. --Water-stage recorder used to Apr. 22, 1957 (destroyed by flood Apr. 27, 1957). Datum of gage is 605.43 ft above mean sea level, datum of 1929, supplementary adjustment of 1942. Prior to September 30, 1955, and Apr. 23 to Sept. 30, 1957, staff gage at site 1.1 miles upstream at datum 17.02 ft higher. Recording gage rebuilt Mar. 28, 1958.

Average discharge. --34 years (1923-57), 198 cfs (143,300 acre-ft per year).

Extremes. --1923-57: Maximum discharge, 39,000 cfs Apr. 22, 1945 (gage height, 23.2 ft from floodmark, at site 1.1 miles upstream); no flow at times.

Maximum stage since at least 1887, about 25 ft at staff gage site and about 35 ft at recorder site, May 9, 1922, from information by local resident.

Remarks. --At the end of 1957, the flow from 45.4 sq mi above this station was partly controlled by 13 floodwater-detention reservoirs (constructed during period 1954-57) with total combined capacity of 15,150 acre-ft below the flood-spillway crests, of which 13,340 acre-ft is floodwater-detention capacity and 1,810 acre-ft is sediment-storage capacity. The capacity in these reservoirs allocated to sediment storage will be used for conservation storage until eliminated by sedimentation. Small diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	20.0	40.0	328	121	117	700	449	153	32.6	9.26	2.92	4.57	165
1925	2.80	18.7	6.19	6.64	6.33	3.61	1.26	190	13.0	15.5	62.8	37.2	30.6
1926	180	99.7	2.58	35.1	6.56	79.9	471	247	158	103	6.75	30.6	118
1927	14.1	8.38	9.18	3.87	9.77	21.5	85.8	293	263	16.3	12.3	11.6	62.6
1928	151	1.61	28.9	6.49	72.0	9.22	254	212	603	32.9	124	6.90	125
1929	.23	1.43	39.0	13.8	40.2	39.7	459	387	39.8	1.53	0	631	137
1930	1.00	2.83	3.95	3.89	5.55	6.44	56.4	547	3.34	.29	15.4	17.9	56.1
1931	672	35.5	272	313	581	364	162	306	88.3	70.4	49.9	98.6	250
1932	109	9.02	33.9	787	1,432	470	272	677	157	173	11.8	289	365
1933	8.82	8.94	67.3	60.2	34.6	371	90.7	788	43.7	4.97	96.3	111	142
1934	36.8	48.9	121	100	139	289	658	138	10.1	1.41	4.38	13.1	129
1935	.14	26.9	2.22	19.0	117	18.9	65.6	1,907	443	109	15.9	371	259
1936	588	137	92.8	51.1	36.8	26.2	80.6	886	63.5	16.3	2.37	1,484	288
1937	512	173	447	228	143	319	109	140	510	136	14.1	103	237
1938	208	18.6	776	1,442	1,024	419	470	636	192	188	31.2	13.5	450
1939	9.11	9.25	11.5	86.4	124	20.8	28.2	331	356	21.4	4.37	.27	83.0
1940	.63	4.14	3.85	2.54	2.92	1.58	111	24.6	414	15.9	22.1	4.63	50.0
1941	.51	845	709	260	1,493	674	1,331	1,707	1,128	557	835	72.5	795
1942	206	69.1	76.5	50.5	41.7	32.8	1,695	1,130	1,529	114	99.1	1,117	511
1943	1,025	252	215	129	87.1	128	142	263	46.5	17.7	2.51	78.7	200
1944	5.17	1.84	12.6	106	312	194	227	1,167	127	22.8	13.3	26.4	185
1945	42.2	18.9	88.1	338	724	1,180	1,964	377	511	995	55.5	37.5	525
1946	237	57.1	42.0	103	377	574	236	621	213	24.4	12.3	100	216
1947	21.6	270	117	167	109	306	192	141	23.0	5.45	4.54	7.38	114
1948	5.19	7.24	80.2	38.8	656	126	33.7	355	210	126	12.5	53.6	140
1949	3.75	3.96	18.7	20.4	96.1	95.1	366	643	86.0	17.5	2.87	4.27	113
1950	58.6	5.63	20.0	28.3	271	36.9	90.8	46.7	39.8	181	4.36	384	95.4
1951	13.8	8.54	9.87	8.52	14.6	8.99	25.7	71.1	137	1.93	.42	.31	24.9
1952	0	.89	.89	.98	1.16	.91	264	671	30.8	1.70	.01	0	81.6
1953	0	91.5	28.4	18.0	9.14	36.1	34.9	251	3.41	13.7	9.34	14.7	42.9
1954	43.2	3.85	2.96	2.93	3.13	2.18	41.7	18.4	57.7	0	0	0	14.6
1955	38.3	26.8	.95	.50	4.30	4.54	37.2	556	102	5.85	.003	143	77.2
1956	17.6	.03	.05	.28	8.40	.66	16.8	841	4.68	0	0	0	75.2
1957	0	10.2	24.5	.25	2.72	15.0	3,739	2,626	232	47.2	5.45	2.74	559

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	1,230	2,380	20,150	7,470	6,710	43,050	26,730	9,410	1,940	569	179	272	120,100
1925	172	1,110	381	408	352	222	75	11,650	776	952	3,860	2,210	22,170
1926	11,050	5,930	158	2,160	364	4,910	28,040	15,180	9,400	6,350	415	1,820	85,780
1927	865	499	564	238	543	1,320	5,110	18,030	15,670	1,000	759	689	45,290
1928	9,310	96	1,780	399	4,140	567	15,120	13,030	35,880	2,020	7,650	411	90,400
1929	14	85	2,400	848	2,230	2,440	27,290	23,820	2,370	94	0	37,560	99,150
1930	61	168	243	239	308	396	3,360	33,640	199	18	947	1,070	40,650

Monthly and yearly runoff, in acre-feet, of North Bosque River near Clifton, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	41,320	2,110	16,700	19,280	32,260	22,400	9,640	18,800	5,250	4,330	3,070	5,870	181,000
1932	6,690	537	2,080	48,400	82,390	28,880	16,190	41,650	9,340	10,610	726	17,180	264,700
1933	542	532	4,140	3,700	1,920	22,800	5,400	48,440	2,600	306	5,920	6,590	102,900
1934	2,260	2,910	7,440	6,150	7,720	17,800	39,200	8,480	601	87	269	780	93,700
1935	8.5	1,600	137	1,170	6,480	1,160	3,900	117,200	26,350	6,710	976	22,060	187,800
1936	36,130	8,130	5,700	3,140	2,120	1,610	4,800	54,450	3,780	1,000	146	88,320	209,300
1937	31,480	10,270	27,490	14,040	7,930	19,610	6,500	8,630	30,380	8,390	869	6,140	171,700
1938	12,800	1,100	47,700	88,690	56,890	25,760	27,940	39,080	11,400	11,540	1,920	803	325,600
1939	560	550	704	5,310	6,900	1,280	1,680	20,340	21,170	1,320	269	16	60,100
1940	38	246	237	156	168	97	6,580	1,510	24,620	976	1,360	276	36,260
1941	31	50,310	43,620	16,020	82,930	41,470	79,180	105,000	67,100	34,270	51,320	4,310	575,600
1942	12,650	4,110	4,700	3,100	2,320	2,020	100,900	69,500	90,970	7,030	6,090	66,490	369,900
1943	63,030	14,970	13,240	7,940	4,840	7,840	8,460	16,140	2,780	1,080	154	4,680	145,200
1944	318	110	776	6,500	17,930	11,950	13,490	71,780	7,530	1,400	819	1,570	134,200
1945	2,590	1,130	5,420	20,810	40,230	72,530	116,900	23,150	30,430	61,160	3,410	2,230	380,000
1946	14,580	3,400	2,580	6,340	20,960	35,320	14,060	38,180	12,680	1,500	754	5,980	156,300
1947	1,330	16,060	7,190	10,240	6,040	18,820	11,450	8,670	1,370	335	279	439	82,220
1948	319	431	4,930	2,380	37,750	7,740	2,010	21,810	12,470	7,770	766	3,190	101,600
1949	230	236	1,150	1,250	5,340	5,850	21,810	39,510	5,120	1,080	177	254	8,010
1950	3,600	335	1,230	1,740	15,060	2,270	5,400	2,870	2,370	11,100	268	22,830	69,070
1951	849	508	607	524	810	553	1,530	4,370	8,140	119	26	19	18,060
1952	0	53	55	60	67	56	15,720	41,290	1,830	105	.6	0	59,240
1953	0	5,450	1,750	1,110	508	2,220	2,080	15,460	203	844	574	873	31,070
1954	2,650	229	182	180	174	134	2,480	1,130	3,430	0	0	0	10,590
1955	2,360	1,590	58	31	239	279	2,210	34,160	6,100	360	.2	8,480	55,870
1956	1,080	1.6	3.2	17	483	41	1,000	51,700	278	0	0	0	54,600
1957	0	609	1,500	16	151	920	222,500	161,400	13,830	2,900	335	163	404,300

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588,788	14,300	Apr. 26, 1924	-	165	120,100	135	97,990
1925	608,788	7,760	May 10, 1925	0	30.6	22,170	52.0	37,640
1926	628,788	10,400	Apr. 10, 1926	.6	118	85,780	97.2	70,570
1927	648,1512	15,200	May 13, 1927	.2	62.6	45,290	75.3	54,550
1928	668,788	12,700	Apr. 4, 1928	.1	125	90,400	113	81,720
1929	688,1512	26,800	Sept. 8, 1929	0	137	99,150	134	97,120
1930	703,1512	18,300	May 18, 1930	0	56.1	40,650	139	100,300
1931	718,1512	25,900	Oct. 6, 1930	2.7	250	181,000	180	130,200
1932	733,1512	24,300	Feb. 18, 1932	1.7	365	264,700	359	260,600
1933	748,1512	21,400	May 25, 1933	2.6	142	102,900	152	110,300
1934	763,1512	12,000	Apr. 6, 1934	0	129	93,700	114	82,760
1935	788,1512	38,300	May 18, 1935	0	259	187,800	326	236,000
1936	808,1512	32,400	Sept. 27, 1936	.4	288	209,300	315	228,600
1937	828,1512	16,900	Oct. 25, 1936	3.7	237	171,700	227	164,100
1938	858	38,500	Jan. 23, 1938	3.1	450	325,600	367	265,800
1939	878,1512	a24,500	June 19, 1939	.2	83.0	60,100	81.2	58,810
1940	898	4,970	Apr. 7, 1940	0	50.0	36,260	179	129,700
1941	928	a36,400	May 5, 1941	0	795	575,600	695	503,100
1942	958	a27,900	Sept. 7, 1942	15	511	369,900	607	439,660
1943	978	20,100	Oct. 17, 1942	1.8	200	145,200	76.1	55,120
1944	1008	36,000	May 2, 1944	1.7	185	134,200	196	142,100
1945	1038	39,000	Apr. 22, 1945	4.8	525	380,000	541	391,400
1946	1058	12,800	Mar. 13, 1946	7.8	216	156,300	221	160,400
1947	1088	7,270	Nov. 4, 1946	2.1	114	82,220	87.5	63,320
1948	1118	31,900	Feb. 25, 1948	.7	140	101,600	134	97,500
1949	1148	15,200	May 17, 1949	.3	113	82,010	118	85,560
1950	1178	9,750	Sept. 5, 1950	.2	95.4	69,070	91.0	65,870
1951	1212	4,100	June 3, 1951	0	24.9	18,060	22.4	16,200
1952	1242	35,400	May 24, 1952	0	81.6	59,240	91.4	66,330
1953	1282	3,990	Nov. 25, 1952	0	42.9	31,070	37.2	26,930
1954	1342	4,570	June 16, 1954	0	14.6	10,590	15.9	11,540
1955	1392	21,300	May 19, 1955	0	77.2	55,870	73.1	52,940
1956	1442	29,900	May 2, 1956	0	75.2	54,600	76.6	55,630
1957	1512	37,400	Apr. 27, 1957	0	559	404,300	-	-

a Maximum observed.

183. South Bosque River near Speegleville, Tex.

Location. --Lat 31°31', long 97°15', at highway bridge about half a mile downstream from Hog Creek, 2 miles south of Speegleville, McLennan County, about 3 miles upstream from confluence with North Bosque River, and about 6 miles west of Waco.

Drainage area. --388 sq mi.

Gage. --Chain gage. Altitude of gage is 420 ft (from topographic map).

Extremes. --1924-30: Maximum discharge, 54,500 cfs June 14, 1927 (gage height, 29.37 ft), from rating curve extended above 3,000 cfs on the basis of slope-area measurement of peak flow; no flow at times.

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	142	319	63.8	6.48	0.29	1.43	-
1925	1.34	2.07	2.87	2.78	1.66	0.89	.76	4.70	0	0	0	18.1	2.91
1926	111	157	25.1	172	93.6	542	972	337	94.5	153	7.81	5.07	223
1927	11.8	9.61	23.9	25.4	225	194	377	193	1,550	113	7.45	4.97	225
1928	184	18.3	13.8	10.7	162	96.2	104	35.8	345	12.5	3.81	.51	81.4
1929	.07	16	-	-	-	61.0	60.2	189	125	6.50	.30	39.4	-
1930	.70	5.29	4.81	8.89	62.2	55.2	38.3	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	8,470	19,600	3,800	398	18	85	-
1925	82	123	177	171	92	54	45	289	0	0	0	1,070	2,100
1926	6,840	9,360	1,540	10,500	5,200	33,300	57,800	20,700	5,620	9,440	480	302	161,000
1927	726	572	1,470	1,560	12,500	11,900	22,400	11,800	92,100	6,960	458	296	163,000
1928	11,300	1,090	849	658	9,320	5,920	6,190	2,200	20,500	769	234	30	59,100
1929	4.3	952	-	-	-	3,750	3,580	11,600	7,440	400	18	2,340	-
1930	43	315	296	547	3,450	3,390	2,280	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	a15,600	May 26, 1924	0	-	-	-	-
1925	608	1,520	Sept. 12, 1925	0	2.91	2,100	26.9	19,500
1926	628	38,400	Apr. 21, 1926	0	223	161,000	202	146,100
1927	648	54,500	June 14, 1927	1.3	225	163,000	339	173,200
1928	668	20,900	June 4, 1928	0	81.4	59,100	-	-
1929	688	5,480	May 28, 1929	0	-	-	-	-
1930	703	b6,350	May 10, 1930	-	-	-	-	-

a Maximum March to September.
b Maximum October to May.

184. Brazos River at Waco, Tex.

Location. --Lat 31°33'40", long 97°07'45", at Washington Avenue Bridge in Waco, McLennan County, 2½ miles downstream from Bosque River, and at mile 404.

Drainage area. --28,500 sq mi, approximately, of which 9,240 sq mi is probably noncontributing.

Gage. --Water-stage recorder. Datum of gage is 356.80 ft above mean sea level, datum of 1929, supplementary adjustment of 1942. Sept. 14, 1898, to Mar. 28, 1918, and May 6, 1922, to Feb. 12, 1934, staff or chain gages at several sites within about 350 ft of present site and at same datum. Mar. 28, 1918, to May 5, 1922, and Feb. 13, 1925, to Sept. 29, 1934, water-stage recorder at site about 300 ft downstream at same datum.

Average discharge. --59 years (1898-1957), 2,550 cfs (1,846,000 acre-ft per year).

Extremes. --1898-1957: Maximum discharge, 246,000 cfs Sept. 27, 1936 (gage height, 40.90 ft, levee on left bank was overtopped and broken by flood); minimum discharge for periods of daily record, 1898-1911, 1914-57, no flow Aug. 20, 21, 1918, and probably for several days in August 1923.

Maximum stage 1854-97, 34.6 ft May 28, 1885, from floodmark near gage. A stage of 39.7 ft was reached Dec. 3, 1913 (discharge, 211,000 cfs), when levee on left bank was broken by flood; from information by the U. S. Weather Bureau.

Remarks. --Flow regulated by Possum Kingdom and Whitney Reservoirs on Brazos River, several small reservoirs in Clear Fork and other basins (combined capacity, 221,800 acre-ft), and Lake Waco on Bosque River (capacity, 22,000 acre-ft); total combined capacity of all reservoirs, about 2,986,000 acre-ft, of which 1,630,500 acre-ft is flood-control storage in Whitney Reservoir. A siltation survey of Lake Waco by the Soil Conservation Service of the U. S. Department of Agriculture in December 1947 indicates a 44.07 percent capacity loss from siltation since storage began in April 1930. Many small diversions above station for municipal supply, irrigation, and oilfield operation do not appreciably affect flow. The city of Waco discharges sewage effluent into river 2¼ mi below gage.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1899	389	105	166	141	103	42.7	174	1,580	11,500	10,900	597	90.1	2,160
1900	924	5,670	3,000	2,320	885	1,090	11,000	7,300	4,990	3,020	2,140	15,300	4,780

Monthly and yearly mean discharge, in cubic feet per second, of Brazos River at Waco, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1901	4,370	1,942	634	352	408	256	631	2,992	2,711	127	490	752	1,310
1902	257	260	110	48.3	46.7	1,012	1,031	4,329	2,152	15,380	2,349	1,661	2,418
1903	1,214	4,625	1,639	1,083	6,188	6,610	1,140	708	1,620	1,405	745	557	2,266
1904	3,767	450	149	112	259	369	484	2,153	3,409	1,764	1,707	1,100	1,316
1905	1,877	462	195	349	545	1,607	7,317	18,250	3,859	5,710	2,238	1,857	3,718
1906	1,560	718	931	548	733	352	547	3,970	8,610	3,090	4,020	3,020	2,350
1907	1,400	640	1,270	827	580	557	351	3,180	3,700	3,400	858	376	1,440
1908	2,560	2,590	3,440	1,220	1,500	1,310	19,100	22,000	3,120	1,060	777	926	4,970
1909	444	218	367	32.0	22.0	31.8	26.9	354	4,610	359	1,410	113	665
1910	230	437	2,750	114	192	41.7	1,500	3,290	620	170	18.6	616	*836*
1911	270	78.6	56.1	12.3	1,120	240	443	187	33.3	3,100	1,720	5,110	1,030
1912	177	79.2	2,310	263	367	899	732	767	990	262	3,510	431	905
1913	1,000	137	40.3	10.6	90.4	232	536	3,980	1,340	1,050	351	2,690	960
1914	5,150	5,620	24,700	868	327	712	7,290	19,400	7,410	1,430	10,900	3,450	7,340
1915	1,129	1,220	1,871	1,268	924	1,372	14,090	7,892	11,420	3,005	2,304	2,176	4,047
1916	3,220	509	415	1,490	1,500	476	13,800	6,470	2,480	523	172	383	2,610
1917	1,650	281	136	117	85.8	95.3	267	846	1,180	479	391	1,310	572
1918	175	41.7	52.3	44.2	26.4	21.0	3,320	2,730	3,000	228	2.72	2,680	1,020
1919	4,580	11,300	6,230	5,840	3,990	3,490	4,390	9,450	9,470	5,270	4,430	5,360	6,150
1920	12,400	11,800	2,940	6,180	2,640	2,030	1,000	14,800	5,550	1,420	7,810	10,200	6,580
1921	2,340	2,860	1,460	2,270	2,310	2,020	1,480	530	6,080	808	155	606	1,900
1922	173	67.1	90.4	79.1	87.3	291	19,000	23,700	3,860	775	118	143	4,040
1923	114	226	138	146	772	183	6,950	2,980	5,750	241	16.9	885	1,520
1924	4,340	4,140	5,670	992	895	5,730	2,880	3,580	2,190	91.3	74.6	1,930	2,720
1925	303	174	148	146	63.1	33.9	1,330	8,120	311	75.7	702	6,050	1,460
1926	2,690	1,250	153	1,540	352	1,810	6,840	2,990	5,820	3,580	2,700	4,800	2,880
1927	5,400	650	1,660	555	1,230	1,830	4,550	2,040	7,200	1,710	636	331	2,320
1928	2,100	133	207	182	999	407	1,720	4,940	5,340	2,340	3,400	1,030	1,900
1929	83.6	167	750	744	445	849	2,190	5,150	2,930	677	164	5,370	1,630
1930	821	411	260	124	518	269	443	15,000	6,030	668	235	1,060	2,170
1931	10,300	1,180	4,520	1,920	4,570	2,590	1,780	1,860	1,400	475	202	150	2,580
1932	4,480	1,520	1,380	5,550	8,210	3,520	896	6,760	4,280	8,200	691	10,400	4,640
1933	917	357	1,650	1,540	406	2,150	931	6,980	1,530	1,060	1,340	1,700	1,730
1934	415	311	389	1,140	631	2,850	4,800	649	112	16.6	15.6	236	962
1935	118	1,465	393	812	1,346	651	1,902	22,110	11,130	4,361	1,005	5,286	4,230
1936	1,764	1,519	1,614	515	283	155	195	4,678	1,759	1,044	93.2	19,540	2,744
1937	7,063	1,755	3,555	2,156	1,437	2,299	710	515	2,519	406	1,270	843	2,055
1938	1,231	208	2,718	6,719	8,156	4,420	6,028	4,991	4,757	3,715	1,424	244	3,691
1939	71.7	68.3	81.1	891	812	343	476	4,453	5,958	954	560	189	1,237
1940	30.4	254	80.3	63.6	152	107	1,659	1,958	7,527	2,703	4,062	1,205	1,647
1941	196	6,921	6,599	2,160	8,855	4,631	5,431	21,020	14,840	3,357	3,275	1,744	6,560
1942	11,970	4,431	754	1,272	468	357	22,470	10,840	9,574	834	782	5,432	5,757
1943	8,644	1,773	1,186	1,069	1,454	1,935	2,114	1,700	1,206	924	717	600	1,953
1944	275	116	179	637	2,155	1,988	1,470	12,330	1,558	551	434	903	1,891
1945	473	640	1,087	2,971	5,512	9,055	14,410	2,720	2,785	4,695	969	501	3,796
1946	1,883	618	946	2,150	3,327	3,435	1,669	3,919	2,150	594	821	2,037	1,955
1947	3,177	3,474	3,278	2,670	1,624	2,575	2,651	6,365	2,173	849	723	706	2,532
1948	465	352	1,342	892	2,238	1,331	719	1,926	1,198	1,646	795	769	1,138
1949	238	221	260	387	1,308	1,597	1,837	8,133	5,581	1,462	917	1,273	1,936
1950	1,725	866	399	509	2,229	584	1,597	1,587	1,729	3,378	2,637	3,528	1,724
1951	1,292	398	453	624	612	255	267	894	3,167	1,319	1,184	890	947
1952	378	324	227	196	204	140	1,021	1,477	392	752	1,109	427	556
1953	57.7	226	789	216	113	826	517	3,416	422	466	556	199	658
1954	127	89.3	137	95.5	78.3	146	631	6,043	2,529	1,230	846	324	1,032
1955	412	133	40.8	44.6	145	155	160	3,501	4,029	1,031	655	3,135	1,120
1956	9,679	455	444	557	581	528	627	4,014	664	1,532	722	581	1,717
1957	420	132	59.7	585	717	887	10,360	36,340	37,140	3,869	687	595	7,658

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1899	23,900	6,250	10,200	8,640	5,710	2,620	10,400	96,900	682,000	672,000	36,700	5,360	1,560,000
1900	56,800	338,000	184,000	143,000	49,200	67,000	654,000	449,000	297,000	186,000	132,000	908,000	3,460,000
1901	268,700	115,500	38,970	21,630	22,680	15,720	37,560	184,000	161,300	7,800	30,130	44,740	948,700
1902	15,810	15,480	6,770	2,970	2,590	62,230	61,330	266,200	128,000	945,900	144,500	98,840	1,751,000
1903	74,640	275,200	100,800	66,620	343,600	406,400	67,850	43,560	96,370	86,400	45,810	33,160	1,640,000
1904	231,600	26,810	9,150	6,880	14,900	22,700	28,770	132,400	202,900	108,500	105,000	65,470	955,100
1905	115,400	27,460	12,010	21,480	30,280	48,790	435,400	1,122,000	229,600	351,100	137,600	110,500	2,692,000
1906	95,900	42,700	57,200	33,700	40,700	21,600	32,500	244,000	512,000	190,000	247,000	180,000	1,700,000
1907	86,100	38,100	78,100	50,800	32,200	34,200	20,900	196,000	220,000	209,000	52,800	22,400	1,040,000
1908	157,000	154,000	212,000	75,000	86,300	80,600	1,140,000	1,350,000	186,000	65,200	47,800	55,100	3,610,000
1909	27,300	13,000	22,600	1,970	1,220	1,960	1,600	21,800	274,000	22,100	86,700	6,720	481,000
1910	14,100	26,000	169,000	7,010	10,700	2,560	89,200	202,000	36,900	10,500	1,140	36,700	606,000

Monthly and yearly runoff, in acre-feet, of Brazos River at Waco, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1911	16,600	4,680	3,450	756	62,200	14,800	26,400	11,500	1,980	191,000	106,000	304,000	743,000
1912	10,900	4,710	142,000	16,200	21,100	55,300	43,600	47,200	58,900	16,100	216,000	25,700	657,000
1913	61,800	8,170	2,480	655	5,020	14,300	31,900	245,000	79,900	64,700	21,600	160,000	695,000
1914	317,000	334,000	1,520,000	53,400	18,100	43,800	434,000	1,190,000	442,000	88,000	670,000	205,000	5,320,000
1915	69,420	72,610	115,100	77,970	51,340	84,370	838,400	485,300	679,600	184,800	141,700	129,500	2,930,000
1916	198,000	30,300	25,500	91,600	86,300	29,300	821,000	398,000	148,000	32,200	10,600	22,800	1,890,000
1917	101,000	16,700	8,360	7,190	4,770	5,860	15,900	52,000	70,200	29,500	24,000	78,000	413,000
1918	10,800	2,480	3,220	2,720	1,470	1,290	198,000	168,000	179,000	14,000	167	159,000	740,000
1919	282,000	672,000	383,000	359,000	222,000	215,000	261,000	581,000	564,000	324,000	272,000	319,000	4,450,000
1920	762,000	702,000	181,000	380,000	152,000	125,000	59,500	910,000	330,000	87,300	480,000	607,000	4,780,000
1921	144,000	170,000	89,800	140,000	128,000	124,000	88,100	32,600	362,000	49,700	9,530	36,100	1,370,000
1922	10,700	3,990	5,560	4,860	4,850	17,900	1,130,000	1,460,000	230,000	47,700	7,250	8,520	2,930,000
1923	6,980	13,500	8,490	9,000	42,900	11,300	414,000	183,000	342,000	14,800	1,040	52,600	1,100,000
1924	267,000	246,000	348,000	61,000	51,500	352,000	171,000	220,000	130,000	5,610	4,590	115,000	1,970,000
1925	18,600	10,400	9,070	8,980	3,500	2,080	79,300	499,000	18,500	4,660	43,200	360,000	1,060,000
1926	166,000	74,200	9,390	94,800	19,600	111,000	407,000	184,000	346,000	220,000	166,000	286,000	2,080,000
1927	332,000	38,700	102,000	34,100	68,400	112,000	271,000	126,000	428,000	105,000	39,100	19,700	1,680,000
1928	129,000	7,910	12,700	11,200	57,500	25,000	102,000	304,000	318,000	144,000	209,000	61,300	1,380,000
1929	5,140	9,940	46,100	45,700	24,700	52,200	131,000	317,000	174,000	41,600	10,100	319,000	1,180,000
1930	50,500	24,500	16,000	7,620	28,800	16,500	26,400	922,000	359,000	41,100	14,400	63,100	1,570,000
1931	633,000	70,200	278,000	118,000	254,000	159,000	106,000	114,000	83,300	29,200	12,400	8,930	1,870,000
1932	275,000	90,400	84,800	341,000	472,000	216,000	53,300	416,000	255,000	504,000	42,500	619,000	3,370,000
1933	56,400	21,200	101,000	94,700	22,500	132,000	55,400	429,000	91,000	65,200	82,400	101,000	1,250,000
1934	25,500	18,500	23,900	70,100	35,000	175,000	286,000	39,900	6,660	1,020	959	14,000	697,000
1935	7,290	87,190	24,160	49,950	74,740	40,020	113,200	1,359,000	662,000	268,100	61,790	314,600	3,062,000
1936	108,500	90,390	99,220	31,670	16,250	9,550	11,620	287,700	104,600	64,180	5,730	1,162,000	1,991,000
1937	434,300	104,400	218,600	132,600	79,790	141,400	42,280	31,700	149,900	24,960	78,080	50,170	1,488,000
1938	75,690	12,370	167,100	413,100	453,000	271,800	358,700	306,900	283,100	228,400	87,560	14,510	2,672,000
1939	4,410	5,060	4,990	54,820	45,070	21,080	28,330	273,800	354,600	58,640	34,410	11,220	895,400
1940	1,870	15,110	4,930	3,910	8,730	6,570	98,710	120,400	447,900	166,200	249,800	71,700	1,196,000
1941	12,050	411,800	405,800	132,800	491,800	284,700	323,200	1,293,000	882,900	206,400	201,300	103,800	4,750,000
1942	735,700	263,700	46,360	78,190	26,000	21,950	1,337,000	666,200	569,700	51,290	48,110	323,200	4,167,000
1943	531,500	105,500	72,910	65,720	80,730	119,000	125,800	104,500	71,790	56,790	44,100	35,680	1,414,000
1944	16,900	6,880	11,030	39,170	123,900	122,200	87,500	758,200	92,720	33,850	26,680	53,760	1,373,000
1945	29,100	38,080	66,860	182,700	306,100	556,800	857,600	167,300	165,700	288,700	59,570	29,820	2,748,000
1946	115,800	36,780	58,160	132,200	184,800	211,200	99,310	241,000	127,900	36,550	50,500	121,200	1,415,000
1947	195,300	206,700	201,500	164,200	90,170	158,300	157,700	391,400	129,300	52,210	44,490	41,980	1,833,000
1948	28,570	20,930	82,490	54,870	128,700	81,810	42,780	118,400	71,290	101,200	48,900	45,760	825,700
1949	14,640	13,140	15,980	23,800	72,640	98,180	109,300	500,100	332,100	89,890	56,380	75,750	1,402,000
1950	106,100	51,540	24,520	31,270	123,800	35,910	95,050	97,580	102,900	207,700	162,200	210,000	1,249,000
1951	79,460	23,680	27,880	38,400	33,970	15,690	15,870	54,980	188,400	81,130	72,810	52,950	685,200
1952	23,220	19,270	13,990	12,080	11,740	8,580	60,760	90,820	23,340	46,250	68,190	25,390	403,600
1953	3,550	13,440	48,510	13,280	6,260	50,810	30,780	210,100	25,100	28,660	34,180	11,830	476,500
1954	7,790	5,310	8,410	5,870	4,350	8,970	37,530	371,500	150,500	75,620	52,030	19,250	747,100
1955	25,350	7,940	2,510	2,740	8,030	9,540	9,520	215,200	239,700	63,370	40,280	186,600	810,800
1956	595,100	27,100	27,330	34,280	33,430	32,470	37,300	246,800	39,510	94,210	44,380	34,560	1,246,000
1957	25,820	7,830	3,670	35,960	39,800	54,530	616,700	2,234,000	2,210,000	237,900	42,220	35,420	5,544,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1899	850	117,000	June 30, 1899	15	2,160	1,560,000	2,900	2,100,000
1900	850	a69,800	Sept. 28, 1900	28	4,780	3,460,000	4,568	3,310,000
1901	1512	a22,600	May 19, 1901	58	1,310	948,700	779	563,600
1902	1512	a106,000	July 26, 1902	22	2,418	1,751,000	2,988	2,163,000
1903	1512	a43,600	Feb. 27, 1903	76	2,266	1,640,000	2,013	1,457,000
1904	1512	a22,400	Oct. 1, 1903	76	1,316	955,100	1,160	842,400
1905	174, 1512	a85,800	May 14, 1905	143	3,718	2,692,000	3,780	2,730,000
1906	174, 210	a40,900	June 6, 1906	266	2,350	1,700,000	2,350	1,700,000
1907	288	a13,500	July 15, 1907	184	1,440	1,040,000	1,880	1,360,000
1908	288	142,000	May 25, 1908	120	4,970	3,610,000	4,340	3,150,000
1909	288	a23,500	June 18, 1909	8	665	481,000	866	627,000
1910	288, 1512	a29,200	Dec. 2, 1909	8	836	606,000	582	421,000
1911	308	a35,400	July 18, 1911	3	1,030	743,000	1,210	876,000
1912	850	a24,900	Aug. 7, 1912	-	905	657,000	788	573,000
1913	850	a19,000	May 7, 1913	-	960	695,000	3,860	2,790,000
1914	850	211,000	Dec. 3, 1913	150	7,340	5,320,000	4,700	3,400,000
1915	1512	73,300	Apr. 26, 1915	334	4,047	2,930,000	4,043	2,927,000
1916	438	113,000	Apr. 2, 1916	119	2,610	1,890,000	2,430	1,770,000
1917	458	17,600	Oct. 19, 1916	49	572	413,000	419	304,000
1918	478	30,000	Apr. 15, 1918	0	1,020	740,000	2,840	2,060,000
1919	508	125,000	Nov. 9, 1918	75	6,150	4,450,000	6,580	4,760,000
1920	508	78,100	Oct. 23, 1919	475	6,580	4,780,000	4,870	3,530,000

a Maximum observed.

Yearly discharge, in cubic feet per second, of Brazos River at Waco, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1921	528	31,100	June 11, 1921	91	1,900	1,370,000	1,370	990,000
1922	548	122,000	May 10, 1922	50	4,040	2,930,000	4,050	2,940,000
1923	568	a66,900	Apr. 27, 1923	-	1,520	1,100,000	2,670	1,930,000
1924	588	41,900	Dec. 13, 1923	-	2,720	1,970,000	1,580	1,150,000
1925	608	49,300	May 9, 1925	24	1,460	1,060,000	1,750	1,270,000
1926	628	40,500	June 22, 1926	101	2,880	2,080,000	3,190	2,310,000
1927	648, 1512	75,300	June 14, 1927	94	2,320	1,680,000	1,870	1,350,000
1928	668, 1512	24,800	Apr. 4, 1928	46	1,900	1,380,000	1,780	1,290,000
1929	688, 1512	31,300	Sept. 13, 1929	6.1	1,630	1,180,000	1,670	1,210,000
1930	703	74,800	May 18, 1930	28	2,170	1,570,000	3,390	2,460,000
1931	718	93,500	Oct. 7, 1930	14	2,580	1,870,000	1,840	1,340,000
1932	733	62,500	Feb. 19, 1932	12	4,640	3,370,000	4,270	3,100,000
1933	748	41,100	July 30, 1933	52	1,730	1,250,000	1,580	1,140,000
1934	763	45,400	Apr. 6, 1934	8.0	962	697,000	1,032	747,400
1935	788	112,000	May 19, 1935	12	4,230	3,062,000	4,478	3,242,000
1936	808	246,000	Sept. 27, 1936	36	2,744	1,991,000	3,376	2,451,000
1937	828	b26,600	Oct. 26, 1937	54	2,055	1,488,000	1,362	986,000
1938	858	88,400	Jan. 24, 1938	77	3,691	2,672,000	3,357	2,431,000
1939	878	43,500	June 20, 1939	28	1,237	895,400	1,248	903,900
1940	898	38,500	June 29, 1940	15	1,647	1,196,000	2,760	2,004,000
1941	928	68,800	May 5, 1941	51	6,560	4,750,000	6,859	4,966,000
1942	958	126,000	Apr. 25, 1942	238	5,757	4,167,000	5,293	3,832,000
1943	978	67,400	Oct. 18, 1942	76	1,953	1,414,000	1,021	738,900
1944	1008	137,000	May 2, 1944	79	1,891	1,373,000	2,028	1,472,000
1945	1038	144,000	Apr. 22, 1945	115	3,796	2,748,000	3,902	2,825,000
1946	1058	37,600	Mar. 13, 1946	267	1,955	1,415,000	2,498	1,808,000
1947	1088	29,600	Nov. 4, 1946	264	2,532	1,833,000	1,881	1,362,000
1948	1118	36,800	Feb. 26, 1948	148	1,138	825,700	1,016	737,500
1949	1148	71,400	May 18, 1949	98	1,936	1,402,000	2,128	1,540,000
1950	1178	16,700	Feb. 13, 1950	204	1,724	1,249,000	1,654	1,197,000
1951	1212	18,300	June 13, 1951	110	974	685,200	844	610,700
1952	1242	25,500	May 25, 1952	44	556	403,600	568	412,600
1953	1282	61,100	May 12, 1953	31	658	476,500	597	432,500
1954	1342	22,600	May 17, 1954	43	1,032	747,100	1,052	761,400
1955	1392	23,600	May 19, 1955	35	1,120	810,800	1,968	1,425,000
1956	1442	46,100	May 2, 1956	50	1,717	1,246,000	874	634,300
1957	1512	101,000	Apr. 20, 1957	33	7,658	5,544,000	-	-

a Maximum observed.
b Maximum peak discharge; maximum discharge during year 34,200 cfs, 12:01 a.m. Oct. 1, 1936, stage falling.

185. Cow Bayou subwatershed No. 4 near Bruceville, Tex.

Location.--Lat 31°20', long 97°16', at dam on Foster Branch, 1.0 mile upstream from South Fork Cow Bayou, 2.1 miles west of Bruceville, McLennan County, and 2.3 miles northwest of Eddy.

Drainage area.--5.25 sq mi.

Gage.--Water-stage recorder. Datum of gage is 574.46 ft above mean sea level, datum of 1929 (levels by Soil Conservation Service).

Extremes.--1956-57: Maximum inflow, 7,150 cfs May 11, 1957; no inflow most of time; maximum outflow, 2,280 cfs May 11, 1957, by slope-area measurement of peak flow measured below the dam; no outflow at times; maximum reservoir contents, 2,140 acre-ft May 11, 1957 (gage height, 40.16 ft); reservoir was dry prior to March 1957.

Remarks.--Records represent inflow into reservoir, computed by algebraic cummation of flow over spillway, flow through drop-outlet structure, and change in reservoir contents, which is computed from capacity curve in acre-ft and converted to equivalent cfs. No adjustments made for evaporation or seepage losses. Dam completed in August 1956 but no appreciable storage before Mar. 20, 1957. Dam is rolled earth-fill, 1,285 ft long, with grass sodded emergency-spillway section at gage height 38.1 ft prior to May 11, and 37.7 ft after repair of damage by flood of May 1957. Outlet structure is 2.5 ft uncontrolled drop outlet, covered with an anti-vortex baffle with two 8-inch square uncontrolled portholes on downstream face. Gage height of crest of drop outlet is 18.0 ft and bottom of portholes is 14.76 ft. Outlet structure connects to a 17-inch diameter outlet pipe at base of dam. There is also an 8-inch controlled water-supply outlet at gage height 6.07 ft. Reservoir capacity, 1,811 acre-ft at spillway crest, 325 acre-ft at crest of drop outlet, 222 acre-ft at bottom of 8-inch portholes, and 59 acre-ft at controlled outlet pipe. Dam built by Soil Conservation Service for flood control.

Monthly and yearly mean inflow, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	0	0	0	0	0	1.20	38.3	32.5	0.95	0.02	0.01	0.26	6.11

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1957	0	0	0	0	0	74	2,280	2,000	56	1.2	0.8	15	4,430

Yearly discharge, in cubic feet per second, of Cow Bayou subwatershed No. 4 near Bruceville, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1956	-	-	-	-	-	-	-	-
1957	1512	7,150	May 11, 1957	0	6.11	4,430	-	-

186. Cow Bayou at Mooreville, Tex.

Location. --Lat 31°18'45", long 97°08'16", at bridge on farm road, 500 ft downstream from confluence of North Cow Bayou and South Cow Bayou, 0.8 mile north of Mooreville, Falls County, and 5.0 miles northwest of Chilton.

Drainage area. --79.6 sq mi, of which 28.0 sq mi is above floodwater-detention reservoirs.

Gage. --Crest-stage indicator and wire-weight gage. Datum of gage is 399.58 ft above mean sea level, datum of 1929 (levels by Soil Conservation Service). After June 10, 1958, a water-stage recorder at same site and datum.

Extremes. --1954-57: Maximum-stage records withheld at this time.
Maximum stage known since at least 1900, about 31 ft about May 1, 1944, from information by local residents.

Remarks. --Continuous record of daily discharges will be published beginning June 10, 1958.

187. Brazos River near Marlin, Tex.

Location. --Lat 31°17'20", long 96°58'10", at bridge on State Highway 139, 1 mile upstream from Deer Creek, 4.5 miles southwest of Marlin, Falls County, and at mile 368.

Drainage area. --29,150 sq mi, approximately, of which 9,240 sq mi is probably noncontributing.

Gage. --Wire-weight gage. Datum of gage is 312.15 ft above mean sea level, datum of 1929.

Average discharge. --13 years (1938-51), 2,924 cfs (2,117,000 acre-ft per year).

Extremes. --1938-51: Maximum discharge, 132,000 cfs May 3, 1944 (gage height, 33.3 ft, from floodmark); minimum daily, 23 cfs Nov. 1, 1939.
Maximum stage known, 35.8 ft Dec. 3 or 4, 1913; flood of Sept. 28, 1936, reached a stage of 35.2 ft, from information by local residents.

Remarks. --Flow largely regulated by Lake Waco for period of record, by Possum Kingdom Reservoir since March 1941, and by several small reservoirs upstream. Many small diversions above station for irrigation, municipal supply, and oilfield operation do not appreciably affect flow.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	85.2	95.4	89.3	977	1,201	575	532	5,980	7,134	936	722	261	1,547
1940	39.6	354	83.9	74.8	171	142	2,198	1,800	8,119	2,876	4,014	1,296	1,759
1941	260	9,616	7,087	3,184	9,918	5,589	5,759	21,180	16,580	4,292	3,805	1,887	7,398
1942	11,880	4,992	736	1,305	515	438	24,250	11,030	11,160	1,005	956	7,324	6,285
1943	8,541	2,251	1,526	1,182	1,710	2,298	2,581	2,313	1,523	978	759	653	2,202
1944	702	152	208	1,644	4,298	3,512	1,710	17,000	2,148	614	449	1,075	2,801
1945	541	875	1,728	4,436	7,215	11,480	15,910	3,024	3,100	4,682	1,112	534	4,525
1946	1,948	691	1,798	2,378	4,042	3,895	1,903	5,444	2,583	717	826	1,961	2,341
1947	3,649	3,805	3,549	3,392	1,658	3,221	3,164	6,962	2,498	853	802	795	2,876
1948	451	417	1,584	1,053	2,536	1,662	930	2,362	1,323	2,039	824	900	1,338
1949	277	232	274	484	1,427	1,986	1,950	7,714	6,182	1,712	737	1,311	2,025
1950	1,901	994	441	564	2,846	602	1,654	1,663	1,793	3,444	3,133	3,648	1,881
1951	1,490	369	413	736	752	311	248	954	3,660	1,380	1,174	941	1,035

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	5,240	5,670	5,490	60,060	66,720	35,340	31,630	367,700	424,500	57,550	44,390	15,530	1,120,000
1940	2,430	21,070	5,160	4,600	9,830	8,740	130,800	110,700	483,100	176,900	246,800	77,100	1,277,000
1941	15,990	572,200	435,800	195,800	550,800	343,700	342,700	1,302,000	986,600	263,900	234,000	112,300	5,356,000
1942	730,300	297,100	45,250	80,250	28,600	26,910	1,443,000	678,500	664,200	61,780	58,760	435,800	4,550,000
1943	525,200	133,900	93,840	72,660	94,970	141,300	153,600	142,200	90,620	60,130	46,640	38,840	1,594,000
1944	43,150	9,020	12,810	101,100	247,200	215,900	101,800	1,046,000	127,800	37,750	27,610	63,960	2,034,000
1945	33,260	52,060	106,300	272,800	400,700	705,700	946,800	186,000	184,400	287,900	68,350	31,760	3,276,000
1946	119,800	41,110	110,500	146,200	224,500	239,500	113,200	334,700	153,700	44,090	50,820	116,700	1,695,000
1947	224,400	226,400	218,200	208,600	92,090	198,100	188,300	428,100	148,600	52,420	49,330	47,330	2,082,000
1948	27,710	24,790	97,420	64,750	145,900	102,200	55,320	145,200	78,710	125,400	50,680	53,550	971,600
1949	17,030	13,800	16,840	29,760	79,260	122,100	116,100	474,300	367,900	105,300	45,340	78,030	1,466,000
1950	116,900	59,150	27,100	34,680	158,000	37,040	98,440	102,300	106,700	211,800	192,700	217,100	1,362,000
1951	91,590	21,970	25,400	45,280	41,750	19,100	14,760	58,670	217,800	84,850	72,190	56,010	749,400

Yearly discharge, in cubic feet per second, of Brazos River near Marlin, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	878	49,400	May 18, 1939	55	1,547	1,120,000	1,564	1,132,000
1940	898	32,300	Aug. 21, 1940	23	1,759	1,277,000	3,130	2,273,000
1941	928	73,100	May 6, 1941	90	7,398	5,356,000	7,465	5,404,000
1942	958	110,000	Apr. 26, 1942	266	6,285	4,550,000	5,844	4,231,000
1943	978	57,500	Oct. 19, 1942	150	2,202	1,594,000	1,251	905,900
1944	1008	132,000	May 3, 1944	113	2,801	2,034,000	2,976	2,161,000
1945	1038	120,000	Apr. 23, 1945	187	4,525	3,276,000	4,635	3,356,000
1946	1058	38,700	Mar. 14, 1946	314	2,341	1,695,000	2,890	2,092,000
1947	1088	25,200	May 21, 1947	356	2,876	2,082,000	2,159	1,563,000
1948	1118	35,900	Feb. 26, 1948	160	1,338	971,600	1,198	869,400
1949	1148	61,600	May 19, 1949	118	2,025	1,466,000	2,239	1,621,000
1950	1178	19,200	Feb. 13, 1950	262	1,881	1,362,000	1,805	1,307,000
1951	1212	16,800	June 13, 1951	129	1,035	749,400	-	-

188. Deer Creek at Chilton, Tex.

Location. --Lat 31°16', long 97°04', 75 ft downstream from San Antonio & Aransas Pass Railway bridge and 0.8 mile south of Chilton, Falls County.

Drainage area. --81.8 sq mi.

Gage. --Water-stage recorder. Datum of gage is 372.60 ft above mean sea level, datum of 1929.

Extremes. --1934-36: Maximum discharge, 16,000 cfs Dec. 6, 1935 (gage height, 16.46 ft); no flow at times.
Flood of September 1921 reached a stage of about 20½ ft, from information by local residents.

Remarks. --No regulation or diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	-	83.1	3.04	0	0	0	0	-
1935	0	56.4	1.33	0.46	47.3	5.72	19.4	244	196	11.5	.62	38.9	51.6
1936	10.6	13.2	239	15.3	8.62	4.58	21.2	69.6	7.44	56.3	.26	32.5	40.3

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	-	4,940	187	0	0	0	0	-
1935	0	3,360	82	28	2,630	351	1,150	15,030	11,640	704	38	2,320	37,330
1936	653	786	14,680	941	496	282	1,260	4,280	443	3,460	16	1,930	29,230

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1934	763	a4,000	Apr. 6, 1934	0	-	-	-	-
1935	788	14,500	May 18, 1935	0	51.6	37,330	69.1	50,010
1936	808	16,000	Dec. 6, 1935	0	40.3	29,230	-	-

a Maximum March to September.

189. Leon Reservoir near Ranger, Tex.

Location. --Lat 32°21'30", long 98°41'00", at dam on Leon River, 7 miles south of Ranger, Eastland County, and 9 miles southeast of Eastland.

Drainage area. --259 sq mi.

Supplemental records available. --Records of monthly diversions by Eastland County Water Supply District are published in reports of Geological Survey.

Gage. --Staff gage. Datum of gage is at mean sea level, datum of 1929 (levels by Freese and Nichols).

Extremes. --1955-57: Maximum contents observed, 37,950 acre-ft May 26, 1957 (elevation, 1,380.9 ft); minimum observed since first appreciable storage, 15,880 acre-ft Jan. 11-21, Feb. 5-7, and Apr. 29, 30, 1956 (elevation, 1,366.2 ft).

Remarks. --Reservoir is formed by rolled earth-fill dam 3,700 ft long. Storage began April 1954; dam completed June 1954. Dam is property of Eastland County Water Supply District and was built to impound water for municipal use by Ranger, Olden, and Eastland.
Service spillway is uncontrolled circular drop outlet designed to discharge 5,000 cfs through 11-foot diameter concrete conduit. Emergency spillway, 1,200 ft wide, is cut through natural ground near left end of dam. Reservoir capacity at service spillway, 27,290 acre-ft (elevation, 1,375.0 ft); reservoir capacity at emergency spillway, 40,210 acre-ft (elevation, 1,382.0 ft). Dead storage, 869 acre-ft (elevation, 1,335.0 ft). Water can be withdrawn for municipal use down to elevation 1,335.0 ft.

Cooperation. --Capacity curve and table furnished by Freese and Nichols, consulting engineers. Record of lake elevations and diversions for municipal use furnished by Eastland County Water Supply District.

Contents, in acre-feet, on last day of month, of Leon Reservoir near Ranger, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1955	-	-	-	1,060	1,110	1,050	1,000	14,840	19,390	18,910	17,980	17,640	-
1956	16,960	16,310	15,980	15,980	16,740	16,420	15,880	25,440	24,260	22,990	21,640	20,750	+3,110
1957	20,240	20,000	21,260	21,000	21,000	20,750	26,520	28,430	26,980	25,900	24,700	23,980	+3,230

190. Leon River near Hasse, Tex.

Location. --Lat 31°57', long 98°28', at bridge on U. S. Highways 67 and 377, 800 ft upstream from Gulf, Colorado & Santa Fe Railway bridge, 0.4 mile upstream from Walnut Creek, 2.1 miles northeast of Hasse, Comanche County, and 2.2 miles downstream from Copperas Creek.

Drainage area. --1,242 sq mi.

Gage. --Water-stage recorder and concrete control. Datum of gage is 1,115.01 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942.

Average discharge. --18 years (1939-57), 161 cfs (116,600 acre-ft per year).

Extremes. --1939-57: Maximum discharge, 38,500 cfs May 24, 1952 (gage height, 21.49 ft); no flow at times.
Maximum stage since at least 1858, about 27 ft in May 1908, from information by local resident. At location about 2½ miles upstream, flood of May 1908 was 9.1 ft higher than that of May 1952, from information by local residents.

Remarks. --Flow partly regulated by Olden Lake and two other small lakes in the upper part of the watershed, and since June 1954 by Leon Reservoir (capacity, 27,290 acre-ft). Small diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	30.8	16.7	22.1	31.9	239	1,081	17.2	33.0	0.12	-
1940	0	0	0.46	1.48	4.61	3.25	146	41.5	562	46.4	66.7	10.1	72.8
1941	.02	538	328	112	1,461	301	393	2,466	337	89.4	1,047	117	595
1942	221	61.8	63.4	41.5	35.0	24.6	1,962	1,004	493	51.9	17.2	780	394
1943	1,080	107	73.5	49.2	42.7	173	67.7	123	40.1	1.31	0	21.3	150
1944	54.2	3.23	9.64	144	184	172	60.7	682	36.8	184	7.33	63.8	134
1945	29.1	22.9	29.5	61.1	271	652	843	133	122	226	13.0	8.94	200
1946	95.0	14.2	17.0	98.1	224	54.2	36.4	150	119	12.9	39.1	254	91.6
1947	13.6	349	103	87.3	39.4	191	58.8	61.8	27.5	.22	0	0	77.7
1948	56.0	1.49	82.3	34.9	51.4	23.3	11.5	104	57.5	68.2	.20	9.48	41.8
1949	0	0	.35	40.2	198	191	331	1,190	882	17.2	3.71	14.8	239
1950	115	9.92	51.2	21.0	59.6	19.0	120	308	148	284	6.15	7.86	96.5
1951	.01	.11	1.63	2.33	4.97	5.58	5.26	79.1	260	.68	0	.31	29.8
1952	9.53	2.19	.003	.21	.64	.99	23.5	968	8.67	.04	0	5.59	86.2
1953	0	31.3	10.8	2.22	1.32	4.63	62.0	176	.42	66.2	71.2	1.15	36.0
1954	169	19.7	19.1	2.89	2.78	6.62	259	24.3	.89	0	0	1.10	42.1
1955	53.7	63.1	.36	.74	19.5	9.86	139	614	192	33.2	0	54.1	98.8
1956	14.9	0	0	.14	3.90	.32	56.8	1,416	.53	1.80	0	0	126
1957	0	0	43.6	0	0	1.97	723	3,507	195	12.4	0	0	378

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	-	-	-	1,900	925	1,360	1,900	14,720	64,310	1,060	2,030	7.1	-
1940	0	0	28	91	265	200	8,690	2,550	33,470	2,850	4,100	603	52,850
1941	1	32,030	20,170	6,870	81,140	18,500	23,360	151,700	20,050	5,500	64,370	6,940	430,600
1942	13,580	3,680	3,900	2,550	1,940	1,520	116,800	61,700	29,320	3,190	1,060	46,390	285,600
1943	66,620	6,370	4,520	3,020	2,370	10,660	4,030	7,590	2,390	80	0	1,270	108,900
1944	3,330	192	593	8,850	10,600	10,560	3,610	41,910	2,190	11,310	450	3,800	97,400
1945	1,790	1,360	1,810	3,750	15,040	40,090	50,190	8,150	7,230	13,900	802	532	144,600
1946	5,840	847	1,040	6,030	12,440	3,330	2,160	9,220	7,070	794	2,410	15,120	66,300
1947	837	20,800	6,350	5,370	2,190	11,770	3,500	3,800	1,630	14	0	0	56,260
1948	3,440	89	5,060	2,150	2,960	1,430	686	6,370	3,420	4,200	12	564	30,380
1949	0	0	22	2,470	10,970	11,750	19,720	73,150	52,460	1,060	228	883	172,700
1950	7,090	590	3,150	1,290	3,310	1,170	7,170	18,950	8,820	17,470	378	468	69,860
1951	.6	6.7	100	143	276	343	313	4,870	15,490	42	0	18	21,600
1952	586	130	.2	13	37	61	1,400	59,510	516	2.4	0	332	62,590
1953	0	1,860	664	136	73	284	3,690	10,820	25	4,070	4,380	68	26,070
1954	10,400	1,170	1,180	178	154	407	15,380	1,490	53	0	0	65	30,480
1955	3,300	3,750	22	46	1,080	607	8,300	37,730	11,430	2,040	0	3,220	71,520
1956	917	0	0	8.3	225	20	3,380	87,060	32	110	0	0	91,750
1957	0	0	2,680	0	0	121	43,010	215,600	11,600	763	0	0	274,100

Yearly discharge, in cubic feet per second, of Leon River near Hasse, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	898	15,900	June 20, 1939	0	-	-	122	88,240
1940	898	3,500	June 16, 1940	0	72.8	52,850	145	105,000
1941	928	15,400	May 12, 1941	0	595	430,600	552	399,600
1942	958	13,000	Apr. 9, 1942	2.7	394	285,600	472	342,000
1943	978	16,400	Oct. 19, 1942	0	150	108,900	49.1	35,520
1944	1008	12,100	May 2, 1944	.2	134	97,400	135	98,240
1945	1038	16,900	Mar. 30, 1945	.2	200	144,600	204	147,400
1946	1058	2,510	Feb. 18, 1946	0	91.6	66,300	120	86,560
1947	1088	3,640	Nov. 5, 1946	0	77.7	56,260	50.9	36,860
1948	1118	1,160	July 6, 1948	0	41.8	30,380	30.0	21,810
1949	1148	16,700	May 17, 1949	0	239	172,700	254	183,500
1950	1178	2,440	July 15, 1950	0	96.5	69,860	81.7	59,130
1951	1212	1,950	June 4, 1951	0	29.8	21,600	30.7	22,210
1952	1242	38,500	May 24, 1952	0	86.2	62,590	88.7	64,400
1953	1282	1,610	May 16, 1953	0	36.0	26,070	51.9	37,550
1954	1342	4,500	Apr. 13, 1954	0	42.1	30,480	34.3	24,800
1955	1392	13,400	May 19, 1955	0	98.8	71,520	90.3	65,370
1956	1442	30,700	May 1, 1956	0	126	91,750	129	93,520
1957	1512	21,200	Apr. 27, 1957	0	378	274,100	-	-

191. Leon River near Hamilton, Tex.

Location.--Lat 31°47', long 98°06', at St. Louis Southwestern Railway bridge, 300 ft upstream from bridge on Hamilton-Hico road, 3 miles downstream from Bear Creek, 6 miles north of Hamilton, Hamilton County, and 16 miles downstream from South Leon Creek.

Drainage area.--1,861 sq mi.

Gage.--Chain gage. Altitude of gage is about 940 ft (from topographic map).

Average discharge.--6 years (1925-31), 130 cfs (94,120 acre-ft per year).

Extremes.--1925-31: Maximum discharge, 5,680 cfs May 22, 1931 (gage height, 20.00 ft); no flow at times.
Flood of May 1908 reached a stage of 29.8 ft, and flood of September 1911 reached a stage of 28.4 ft, from information by railroad employees.

Remarks.--No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	-	7.25	9.29	4.34	28.1	353	28.4	9.56	17.7	24.2	-
1926	147	120	8.45	50.8	5.42	7.59	849	326	327	262	16.2	54.0	181
1927	26.6	6.30	22.1	8.06	28.1	54.9	116	229	183	41.3	5.23	1.03	60.3
1928	139	2.08	61.1	2.82	40.6	12.1	26.1	522	592	198	202	82.6	157
1929	2.41	7.66	152	199	62.1	97.5	431	358	178	2.81	0	213	142
1930	9.99	1.61	2.59	2.44	3.89	7.17	9.62	464	12.6	.50	.05	93.7	51.3
1931	702	19.0	155	89.6	287	138	51.8	470	277	50.0	1.65	1.12	187

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1925	-	-	-	446	516	267	1,670	21,700	1,690	588	1,090	1,440	-
1926	9,020	7,130	520	3,120	301	467	50,500	20,000	19,500	16,100	998	3,210	131,000
1927	1,640	375	1,360	496	1,560	3,380	6,900	14,100	10,900	2,540	322	61	43,600
1928	8,550	124	3,760	173	2,340	744	1,550	32,100	35,200	12,200	12,400	4,920	114,000
1929	148	456	9,350	12,200	3,450	6,000	25,600	22,000	10,600	173	0	12,700	103,000
1930	614	96	159	150	216	441	572	28,500	750	31	3.1	5,580	37,100
1931	43,200	1,130	9,530	5,510	15,900	8,480	3,080	28,900	16,500	3,070	101	67	135,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1925	608, 703	3,920	May 9, 1925	0	-	-	63.7	46,100
1926	628, 703	4,390	Apr. 12, 1926	0	181	131,000	162	118,000
1927	648	1,720	May 13, 1927	0	60.3	43,600	72.7	52,700
1928	668	3,960	June 15, 1928	0	157	114,000	154	112,000
1929	688	4,480	Sept. 8, 1929	0	142	103,000	129	93,600
1930	703	4,820	May 18, 1930	0	51.3	37,100	124	90,100
1931	718	5,680	May 22, 1931	0	187	135,000	-	-

192. Leon River at Gatesville, Tex.

Location. --Lat 31°26'05", long 97°45'35", at bridge on U. S. Highway 84, in Gatesville, Coryell County, 0.1 mile downstream from Dodds Creek, and 5.3 miles upstream from Cottonwood Creek.

Drainage area. --2,279 sq mi.

Gage. --Water-stage recorder. Datum of gage is 723.85 ft above mean sea level, datum of 1929. Prior to Feb. 8, 1951, wire-weight gage at same site and datum.

Average discharge. --7 years (1950-57), 203 cfs (147,000 acre-ft per year).

Extremes. --1950-57: Maximum discharge, 27,100 cfs May 13, 1957 (gage height, 31.30 ft); no flow at times.
Maximum stage since at least 1854, 35 ft in May 1908; flood of December 1913 (stage unknown) was the second highest, from information by local residents.

Remarks. --Small diversions above station for irrigation, municipal supply, and oilfield operation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2.39	1.29	2.62	5.16	12.5	11.1	16.4	111	350	2.04	0.23	0.09	42.6
1952	.03	.24	.20	.51	.36	.42	160	812	53.6	56.1	.28	.22	91.2
1953	.21	119	53.8	35.5	9.08	119	75.1	801	10.3	93.9	56.2	36.6	119
1954	226	31.2	19.6	7.57	6.10	4.05	199	75.1	1.76	.07	0	0	47.8
1955	61.5	90.2	.30	.50	61.1	18.0	140	863	407	83.2	2.72	302	169
1956	139	2.28	1.22	2.18	10.8	1.75	37.8	1,583	24.2	.66	12.9	.36	154
1957	.20	10.1	65.8	4.94	4.70	72.5	2,030	6,224	922	78.3	18.3	11.2	794

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	147	77	161	318	696	682	974	6,810	20,830	125	14	5.6	30,840
1952	1.8	14	12	32	21	26	9,530	49,930	3,190	3,450	17	13	66,240
1953	13	7,070	3,310	2,180	504	7,330	4,470	49,260	613	5,770	3,450	2,180	86,150
1954	13,890	1,860	1,200	466	339	249	11,840	4,620	105	4.2	0	0	34,570
1955	3,780	5,370	19	31	3,400	1,100	8,340	53,050	24,220	5,120	167	17,950	122,500
1956	8,540	135	75	134	623	107	2,250	97,350	1,440	40	793	21	111,500
1957	12	601	4,050	304	261	4,460	120,800	382,700	54,880	4,810	1,120	664	574,700

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1212	1,740	June 14, 1951	0	42.6	30,840	42.1	30,480
1952	1242	7,230	May 28, 1952	0	91.2	66,240	106	76,600
1953	1282	7,030	May 12, 1953	.2	119	86,150	128	92,710
1954	1342	2,690	Oct. 23, 1953	0	47.8	34,570	37.0	26,790
1955	1392	10,600	May 19, 1955	0	169	122,500	169	122,100
1956	1442	25,300	May 1, 1956	.2	154	111,500	148	107,400
1957	1512	27,100	May 13, 1957	.1	794	574,700	-	-

193. Cowhouse Creek at Pidcoke, Tex.

Location. --Lat 31°17'05", long 97°53'05", 125 ft downstream from bridge on Farm Road 116, 0.1 mile downstream from Beehouse Creek, 0.6 mile northeast of Pidcoke, Coryell County, and 4.9 miles upstream from Table Rock Creek.

Drainage area. --475 sq mi.

Gage. --Water-stage recorder. Datum of gage is 736.7 ft above mean sea level, datum of 1929.

Average discharge. --7 years (1950-57), 61.8 cfs (44,740 acre-ft per year).

Extremes. --1950-57: Maximum discharge, 55,800 cfs May 1, 1956 (gage height, 38.76 ft); no flow at times.
Maximum stage since at least 1882, that of May 1, 1956; a stage of about 37½ ft occurred in 1900 and in 1944, from information by local resident.

Remarks. --No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	0.74	0.19	0.44	0.56	1.36	0.80	4.38	2.95	57.3	0.02	0	0.11	5.67
1952	0	0	0	0	0	.01	82.4	239	6.43	4.86	0	0	28.0
1953	0	59.7	44.3	13.3	7.73	105	62.0	376	2.35	25.3	.74	16.9	60.0
1954	9.30	.75	.56	.65	.18	.01	2.50	16.5	.16	0	0	1.57	2.72
1955	8.67	22.8	.15	.05	34.4	21.3	58.7	313	78.3	8.00	40.9	61.2	54.1
1956	46.3	0	.15	.53	1.52	.05	0	651	.07	0	30.9	0	61.9
1957	.003	12.7	2.96	.27	.58	69.5	1,033	1,395	100	11.2	2.32	1.13	220

Monthly and yearly runoff, in acre-feet, of Cowhouse Creek at Pidcoke, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	45	11	27	35	76	49	261	181	3,410	1.0	0	6.3	4,100
1952	0	0	0	0	0	.6	4,900	14,710	383	299	0	0	20,290
1953	0	3,550	2,720	816	429	6,430	3,690	23,090	140	1,550	45	1,010	43,470
1954	572	44	35	40	9.7	.6	149	1,010	9.7	0	0	93	1,960
1955	533	1,360	9.5	3.2	1,910	1,310	3,490	19,230	4,660	492	2,510	3,640	39,150
1956	2,850	0	9.5	32	88	2.8	0	40,040	4.4	0	1,900	0	44,930
1957	.2	754	182	16	32	4,270	61,440	85,790	5,980	686	142	67	159,400

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1212	2,760	June 12, 1951	0	5.67	4,100	5.55	4,020
1952	1242	9,900	May 18, 1952	0	28.0	20,290	36.6	26,560
1953	1282	19,000	May 12, 1953	0	60.0	43,470	52.3	37,850
1954	1342	1,300	Oct. 23, 1953	0	2.72	1,960	4.44	3,210
1955	1392	23,000	May 19, 1955	0	54.1	39,150	55.4	40,100
1956	1442	55,800	May 1, 1956	0	61.9	44,930	59.2	43,000
1957	1512	49,400	May 13, 1957	0	220	159,400	-	-

194. Cowhouse Creek near Killeen, Tex.

Location. --Lat 31°12', long 97°43', at Potters bridge in Coryell County, 3.8 miles downstream from House Creek and 6.0 miles north of Killeen, Bell County.

Drainage area. --650 sq mi.

Gage. --Water-stage recorder. Altitude of gage is about 600 ft (from topographic map). Prior to Aug. 31, 1925, chain gage at same site and datum.

Extremes. --1924-25, 1939-42: Maximum gage height, 30.5 ft Apr. 30, 1942, from floodmark (discharge not determined); no flow at times. Maximum stage known since about 1890, 34.0 ft in 1900, from information by local resident.

Remarks. --No large diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	-	-	-	-
1925	0.55	1.07	1.82	1.49	1.19	1.05	5.03	57.3	3.70	0	15.7	-	-
1939	-	-	-	-	-	46.8	43.0	349	28.3	6.74	46.8	0.66	-
1940	33.0	.96	1.32	1.30	4.22	1.36	91.2	12.1	542	141	24.5	4.65	70.9
1941	36.2	622	828	343	1,013	775	531	1,020	459	186	35.9	11.2	485
1942	208	59.3	45.8	27.6	26.9	21.5	-	-	417	44.8	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	-	-	-	-	-
1925	34	64	112	91	66	65	299	3,520	220	0	966	-	-
1939	-	-	-	-	-	2,880	2,560	21,480	1,680	415	2,880	39	-
1940	2,030	57	81	80	243	84	5,430	741	32,230	8,690	1,510	277	51,450
1941	2,230	37,010	50,930	21,100	56,250	47,670	31,570	62,750	27,300	11,460	2,210	667	351,100
1942	12,770	3,530	2,820	1,700	1,490	1,320	-	-	24,820	2,760	-	-	-

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	608	-	-	0	-	-	-	-
1925	608	a2,400	May 10, 1925	0	-	-	-	-
1939	958	9,220	May 17, 1939	0	-	-	-	-
1940	958	11,700	June 18, 1940	0	70.9	51,450	192	139,500
1941	958	26,200	Nov. 23, 1940	.5	485	351,100	387	280,100
1942	958	-	Apr. 30, 1942	-	-	-	-	-

a Maximum discharge observed October to August.

195. Belton Reservoir near Belton, Tex.

Location. --Lat 31°07', long 97°28', at Belton Dam on Leon River, 1.4 miles upstream from bridge on State Highway 317, 3.6 miles northwest of Belton, Bell County, 8.2 miles upstream from Nolan Creek, and 16.7 miles upstream from confluence with Lampasas River.

Drainage area. --3,499 sq mi.

Belton Reservoir near Belton, Tex.--Continued

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Feb. 20, 1955, staff gage at same site and datum.

Extremes.--1954-57: Maximum contents, 870,300 acre-ft June 6, 1957 (elevation, 553.06 ft); minimum (since first filling), 113,400 acre-ft, Dec. 16, 1956 (elevation, 553.06 ft).

Remarks.--Reservoir is formed by a rolled earth-fill dam 5,524 ft long including a 1,300 ft uncontrolled broadcrested spillway in saddle on left bank and a 418-ft dike. Flood-control outlet works consists of a 22-foot diameter conduit controlled by three 7.0- by 22.0-foot electrically driven broome-type gates (elevation of invert, 483.0 ft). Low-flow outlet works consist of one 36- by 36-inch gated outlet discharging into flood-control conduit (elevation of invert at intake to wet well, 540.0 ft). Deliberate impoundment of water began Mar. 8, 1954, and main dam was completed in December 1954. Reservoir built for flood control and conservation. Spillway capacity, 472,500 cfs at elevation 656.9 ft (maximum design level). Fort Hood and adjacent military installations have been allocated 12,000 acre-ft of storage in the reservoir. Data regarding the dam and reservoir are shown in the following table:

	Elevation (feet)	Capacity (acre-feet)
Spillway crest	631.0	1,097,600
Top of conservation storage	569.0	210,600
Invert of lowest intake	483.0	278

Cooperation.--Records furnished by Corps of Engineers and reviewed by Geological Survey.

Contents, in acre-feet, on last day of month

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Change during year
1954	-	-	-	-	-	711	7,430	13,760	12,440	10,700	9,090	8,030	-
1955	9,260	14,530	13,890	13,510	21,840	24,500	45,650	118,600	149,700	151,300	152,200	169,400	+161,370
1956	174,500	171,300	169,200	169,600	170,900	168,300	167,600	211,900	205,500	198,100	193,000	186,800	+ 17,400
1957	182,300	132,800	117,500	117,900	119,000	138,500	453,700	838,200	589,700	243,900	206,100	206,900	+ 20,100

196. Leon River near Belton, Tex.

Location.--Lat 31°04'15", long 97°26'30", on left bank 1,400 ft upstream from bridge on Farm Road 817, 2,000 ft upstream from masonry dam, 1 mile upstream from bridge on U. S. Highway 81, 2 miles east of Belton, Bell County, 3.2 miles downstream from Belton Dam, and 5.0 miles upstream from Noland Creek.

Drainage area.--3,513 sq mi.

Gage.--Water-stage recorder. Datum of gage is 476.89 ft above mean sea level, datum of 1929. Prior to May 21, 1931, staff gage at same site and datum.

Average discharge.--34 years (1923-57), 631 cfs (456,800 acre-ft per year).

Extremes.--1923-57: Maximum discharge, 56,500 cfs Apr. 22, 1945 (gage height, 24.41 ft); no flow at times.
Flood of December 1913 reached a stage of 25 ft and flood of September 1921 reached a stage of 21 ft, from information by local residents.

Remarks.--Small diversion above station for irrigation, municipal supply, and oilfield operation. City of Temple diverted an average of about 5 cfs from gage pool for municipal use. Regulation by Belton Reservoir since Mar. 8, 1954.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	170	564	904	176	403	1,310	822	886	516	30.6	7.75	61.1	488
1925	8.95	15.2	28.7	32.5	23.7	10.0	5.18	455	12.0	6.48	18.9	173	66.3
1926	467	841	38.5	325	115	882	3,290	1,080	628	683	66.6	43.2	704
1927	91.4	30.1	74.5	57.6	708	415	942	638	1,640	178	26.5	18.0	396
1928	933	139	140	65.4	331	168	167	412	1,080	75.5	256	68.8	319
1929	7.06	7.15	93.3	183	64.8	231	584	1,200	488	21.5	3.20	568	288
1930	25.7	25.8	15.6	29.1	38.5	50.0	30.4	2,050	120	32.7	47.4	92.6	216
1931	2,000	160	852	808	1,460	877	517	886	652	232	57.6	73.2	712
1932	361	38.9	195	953	2,220	1,270	503	2,770	1,640	389	162	664	925
1933	52.3	34.4	73.6	311	167	343	512	1,420	352	152	32.0	46.3	293
1934	29.9	25.3	12.2	249	124	577	1,760	399	34.5	7.48	0	0	267
1935	0	317	20.9	93.5	390	83.6	223	4,013	2,031	287	89.7	2,213	813
1936	784	675	1,331	319	197	152	254	3,050	1,169	413	64.9	3,307	977
1937	2,853	1,154	2,588	1,529	957	1,254	561	213	1,123	878	75.8	118	1,114
1938	214	54.1	1,173	2,986	2,870	860	2,020	1,745	972	2,501	887	125	1,361
1939	62.5	53.1	65.1	230	203	185	205	1,354	765	166	147	18.8	289
1940	36.5	19.1	20.0	18.1	30.9	18.0	505	115	1,673	781	141	33.4	281
1941	91.6	3,008	3,456	1,392	4,458	3,546	2,215	6,767	2,689	1,366	858	703	2,534
1942	965	314	245	178	174	133	4,867	4,344	3,156	363	452	3,109	1,521
1943	2,392	826	482	366	264	341	530	342	149	57.8	14.8	140	495
1944	128	45.2	77.0	779	2,053	1,765	1,153	8,753	1,813	344	142	178	1,439
1945	156	142	534	1,791	2,010	3,180	6,736	1,326	1,081	584	121	174	1,476

Monthly and yearly mean discharge, in cubic feet per second, of Leon River near Belton, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1946	702	275	642	784	1,498	2,527	739	2,386	814	159	49.6	441	917
1947	114	451	466	1,066	456	1,450	718	930	201	81.3	29.1	20.0	501
1948	11.2	62.5	133	54.5	349	186	128	486	182	279	18.9	135	168
1949	.19	0	.86	33.1	89.3	1,038	1,417	1,215	923	179	29.3	14.5	412
1950	111	66.5	46.5	31.3	211	43.5	223	684	412	393	21.0	523	230
1951	5.77	.08	.15	5.56	14.1	21.7	33.8	262	477	3.54	0	32.6	71.2
1952	.53	0	0	0	0	11.8	469	1,097	172	47.7	0	0	151
1953	0	128	294	96.6	24.8	283	177	2,588	55.4	177	78.6	57.9	335
1954	352	92.6	46.5	28.4	19.1	4.62	1.70	.87	.05	.26	1.86	.25	46.1
1955	3.01	1.07	.67	2.51	8.99	2.56	5.86	8.51	5.74	4.95	7.59	5.48	4.71
1956	4.36	3.82	6.03	8.15	7.32	6.58	4.60	1,312	58.0	13.2	21.2	11.1	123
1957	21.7	897	321	2.68	3.56	4.76	144	3,928	6,002	6,287	669	26.7	1,536

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	10,500	33,600	55,600	10,800	23,200	80,500	48,900	54,500	30,700	1,880	476	3,640	354,000
1925	550	903	1,770	2,000	1,320	616	308	28,000	712	398	1,160	10,300	48,000
1926	28,700	50,000	2,370	20,000	6,400	54,200	196,000	66,400	37,400	42,000	4,100	2,570	510,000
1927	5,620	1,790	4,580	3,540	39,300	25,500	56,000	39,200	97,300	10,900	1,630	1,070	286,000
1928	57,400	8,270	8,610	4,020	19,000	10,300	9,940	25,300	64,300	4,640	15,700	4,090	232,000
1929	434	425	5,740	11,300	3,600	14,200	34,800	73,800	29,000	1,320	197	33,800	209,000
1930	1,580	1,540	959	1,790	2,140	3,070	1,810	126,000	7,140	2,010	2,910	5,510	156,000
1931	123,000	9,520	52,400	49,700	81,100	53,900	30,800	54,500	38,800	14,300	3,540	4,360	516,000
1932	22,200	2,310	12,000	58,600	128,000	78,100	29,900	170,000	97,600	23,900	9,960	39,500	672,000
1933	3,220	2,050	4,530	19,100	9,280	21,100	30,500	87,300	20,900	9,350	1,970	2,760	212,000
1934	1,840	1,510	750	15,300	6,890	35,500	105,000	24,500	2,050	460	0	0	194,000
1935	0	18,870	1,290	5,750	21,670	5,140	13,270	246,700	120,900	17,630	5,520	131,700	588,400
1936	48,200	40,180	81,820	19,590	11,360	9,350	15,130	187,500	69,580	25,390	3,990	196,800	708,900
1937	175,400	68,650	159,100	93,990	53,140	77,100	33,410	13,110	66,840	54,010	4,660	7,030	806,400
1938	13,160	3,220	72,140	183,600	159,400	52,860	120,200	107,300	57,850	153,800	54,530	7,470	985,500
1939	3,850	3,160	4,000	14,110	11,270	11,370	12,220	83,240	45,540	10,180	9,010	1,120	209,100
1940	2,250	1,130	1,230	1,110	1,780	1,110	30,040	7,070	99,530	48,050	8,690	1,990	204,000
1941	5,630	179,000	212,500	85,560	247,600	218,000	131,800	416,100	160,000	83,960	52,770	41,810	1,835,000
1942	59,340	18,670	15,090	10,920	9,650	8,150	289,600	267,100	187,800	22,340	27,790	185,000	1,101,000
1943	147,100	49,130	29,660	22,500	14,640	20,980	31,560	21,020	8,860	3,550	912	8,360	358,300
1944	7,880	2,690	4,730	47,870	118,100	108,500	68,620	538,200	107,900	21,150	8,710	10,600	1,045,000
1945	9,610	8,440	32,820	110,100	111,600	195,500	400,800	81,530	64,300	35,900	7,440	10,380	1,068,000
1946	43,170	16,340	39,470	48,210	83,190	155,400	43,960	146,700	48,430	9,810	3,050	26,230	664,000
1947	7,010	26,860	28,640	65,540	25,340	89,180	42,750	57,210	11,970	5,000	1,790	1,190	362,500
1948	687	3,720	8,200	3,350	20,090	11,420	7,630	29,860	10,810	17,180	1,160	8,000	122,100
1949	12	0	53	2,030	4,960	63,850	84,290	74,740	54,940	11,020	1,800	863	298,600
1950	6,810	3,960	2,860	1,920	11,700	2,680	13,260	42,050	24,530	24,130	1,290	31,110	166,300
1951	355	4.8	9.3	342	785	1,330	2,010	16,120	28,410	218	0	1,940	51,520
1952	32	0	0	0	0	723	27,900	67,460	10,240	2,940	0	0	109,300
1953	0	7,600	18,100	5,940	1,380	17,390	10,560	159,100	3,300	10,900	4,830	3,450	242,600
1954	21,650	5,510	2,860	1,750	1,060	284	101	53	3.2	16	114	15	33,420
1955	185	64	41	154	499	157	348	523	342	304	467	326	3,410
1956	268	228	371	501	421	405	274	80,650	3,450	813	1,300	661	89,340
1957	1,330	53,390	19,760	165	198	293	8,580	241,500	357,100	386,600	41,140	1,590	1,112,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	10,100	May 26, 1924	4.2	488	354,000	355	258,000
1925	608	6,410	May 10, 1925	0	66.3	48,000	174	126,000
1926	628	20,100	Apr. 22, 1926	4.6	704	510,000	609	441,000
1927	648	15,400	June 14, 1927	11	396	286,000	482	349,000
1928	668	27,100	Oct. 2, 1927	7.2	319	232,000	226	164,000
1929	688	11,400	May 29, 1929	0	288	209,000	285	206,000
1930	703	14,900	May 10, 1930	.5	216	156,000	466	337,000
1931	718	26,900	Oct. 6, 1930	4.3	712	516,000	507	368,000
1932	733	20,300	May 9, 1932	2.0	925	672,000	889	645,000
1933	748	14,000	May 25, 1933	6.0	293	212,000	285	206,000
1934	763	15,200	Apr. 6, 1934	0	267	194,000	289	209,500
1935	788	30,800	May 18, 1935	0	813	588,400	1,020	738,500
1936	808, 1442	38,000	Sept. 28, 1936	24	977	708,900	1,298	941,800
1937	828	11,300	Dec. 6, 1936	29	1,114	806,400	679	491,800
1938	858	25,100	July 24, 1938	24	1,361	985,500	1,254	908,000
1939	878	10,200	May 17, 1939	7.0	289	209,100	280	202,700
1940	898	10,200	June 29, 1940	3.5	281	204,000	822	596,500

Yearly discharge, in cubic feet per second, of Leon River near Belton, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1941	928	24,200	Nov. 25, 1940	3.3	2,534	1,835,000	2,114	1,531,000
1942	958	29,600	Apr. 25, 1942	101	1,521	1,101,000	1,705	1,234,000
1943	978	14,000	Oct. 18, 1942	6.0	495	358,300	204	147,700
1944	1008	45,500	May 26, 1944	17	1,439	1,045,000	1,488	1,081,000
1945	1038	56,500	Apr. 22, 1945	42	1,476	1,068,000	1,542	1,117,000
1946	1058	28,300	Mar. 13, 1946	33	917	664,000	867	627,500
1947	1088	14,500	Mar. 19, 1947	3.5	501	362,500	432	312,600
1948	1118	10,600	Feb. 26, 1948	0	168	122,100	151	109,600
1949	1148	36,400	Mar. 21, 1949	0	412	298,600	431	312,100
1950	1178	13,900	Sept. 4, 1950	0	230	166,300	211	153,000
1951	1212	4,220	May 25, 1951	0	71.2	51,520	70.7	51,190
1952	1242	9,290	Apr. 22, 1952	0	151	109,300	186	135,000
1953	1282	14,500	May 13, 1953	0	335	242,600	341	246,900
1954	1342	3,160	Oct. 23, 1953	0	46.1	33,420	5.08	3,690
1955	1392	267	May 11, 1955	0	4.71	3,410	5.51	3,990
1956	1442	9,030	May 7-8, 1956	1.7	123	89,340	224	163,000
1957	1512	8,490	June 18-20, 1957	0	1,536	1,112,000	-	-

197. Lampasas River at Youngsport, Tex.

Location.--Lat 30°57', long 97°43', 500 ft upstream from county road bridge, half a mile southeast of Youngsport, Bell County, and 4.0 miles downstream from Rock Creek.

Drainage area.--1,242 sq mi.

Gage.--Water-stage recorder. Datum of gage is 633.46 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Mar. 14, 1931, staff gage at same site and datum.

Average discharge.--33 years (1924-57), 272 cfs (196,900 acre-ft per year).

Extremes.--1924-57: Maximum discharge, 84,000 cfs May 13, 1957 (gage height, 36.4 ft, from floodmarks), from rating curve extended above 40,000 cfs on basis of maximum discharge measured at highway bridge 22 miles downstream; no flow at times.

Flood of Sept. 8, 1873, reached a stage of 44.2 ft, and flood of Dec. 2, 1913, reached a stage of 33.6 ft, from information by local residents.

Remarks.--Small diversions above station for irrigation and municipal supply.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	371	227	411	157	18.7	7.23	124	-
1925	7.81	8.72	13.2	15.4	12.0	9.94	37.8	177	5.52	.75	5.65	45.9	28.5
1926	392	591	50.1	136	105	523	1,360	607	317	427	22.1	16.3	379
1927	137	29.9	84.3	28.5	601	450	409	166	445	169	12.7	19.1	209
1928	648	28.2	31.9	25.3	162	148	54.8	41.9	140	10.2	5.56	20.4	110
1929	8.75	19.8	26.0	27.3	15.4	58.2	117	266	118	28.2	1.96	514	99.8
1930	10.0	10.8	10.7	13.9	13.7	13.0	7.79	730	31.0	9.30	21.4	62.0	78.9
1931	593	53.6	274	379	738	756	581	200	295	112	32.4	65.9	338
1932	28.4	12.4	20.9	55.2	440	405	231	1,150	178	62.1	104	428	259
1933	24.0	19.6	25.0	72.2	57.4	173	122	500	56.9	48.4	24.7	22.0	96.2
1934	27.1	16.7	9.92	76.3	33.8	110	453	48.6	31.3	6.51	.24	89.0	74.7
1935	1.33	73.9	10.6	22.0	142	40.4	73.3	2,107	813	106	49.1	975	368
1936	184	114	405	140	83.1	60.8	362	2,578	482	224	44.1	2,453	594
1937	762	743	1,164	902	655	807	336	124	225	400	28.5	54.8	517
1938	76.4	118	601	1,447	2,248	539	635	597	362	2,063	282	83.1	747
1939	45.8	35.9	35.7	113	82.9	76.5	135	142	98.6	85.6	28.7	5.93	73.8
1940	85.4	12.2	16.5	15.0	44.1	18.7	139	89.9	630	465	40.5	17.6	131
1941	57.1	1,496	1,701	868	1,723	1,544	1,461	1,819	1,038	397	200	49.9	1,024
1942	165	62.1	56.2	43.9	40.3	35.5	1,291	1,306	1,497	148	86.4	268	416
1943	282	173	136	114	80.7	103	102	87.4	28.2	16.7	6.34	131	105
1944	35.5	21.5	27.7	337	1,099	915	481	4,177	1,394	222	177	132	752
1945	87.0	120	615	1,227	1,482	1,621	1,830	786	548	163	118	301	736
1946	248	208	337	421	666	795	320	300	184	41.7	47.2	62.1	301
1947	41.6	62.2	131	501	252	503	352	256	78.3	33.6	35.6	19.2	189
1948	15.0	21.3	25.0	21.2	221	42.2	99.0	153	13.7	87.6	58.1	11.1	63.5
1949	7.99	11.8	20.1	15.5	15.7	396	606	122	206	32.6	31.4	7.34	123
1950	8.61	12.9	17.4	12.6	79.2	18.7	73.6	99.1	71.1	15.4	1.33	109	42.7
1951	7.75	8.74	9.35	8.95	11.1	9.95	9.68	87.4	57.7	.71	0	22.7	19.5
1952	3.76	8.07	8.24	7.25	6.94	17.1	310	592	87.4	35.7	.60	3.63	90.3
1953	1.75	19.6	257	61.6	40.2	87.8	135	1,281	66.1	29.2	9.05	61.0	173
1954	64.5	15.1	17.7	16.2	10.8	9.13	17.0	84.9	2.40	0	0	6.57	20.5
1955	23.1	301	7.80	38.5	109	35.0	62.2	860	384	161	75.8	132	183
1956	6.90	6.01	9.35	9.43	19.2	5.51	3.24	480	11.4	.12	39.6	4.20	50.2
1957	19.3	107	67.5	14.2	21.8	187	2,596	3,115	588	56.8	18.6	40.2	571

Monthly and yearly runoff, in acre-feet, of Lampasas River at Youngsport, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	22,800	13,500	25,300	9,340	1,150	444	7,350	-
1925	480	519	811	944	666	611	2,250	10,900	329	46	347	2,730	20,600
1926	24,100	35,200	3,080	8,330	5,820	32,200	80,900	37,300	18,800	26,200	1,360	972	274,000
1927	8,430	1,780	5,180	1,750	33,400	27,700	24,400	10,200	26,500	10,400	779	1,140	152,000
1928	39,900	1,680	1,960	1,560	9,320	9,100	3,260	2,580	8,330	627	342	1,210	79,900
1929	538	1,180	1,600	1,680	855	3,580	6,960	16,400	7,020	1,730	120	30,600	72,300
1930	615	643	658	855	761	799	464	44,900	1,840	572	1,320	3,690	57,100
1931	36,500	3,190	16,800	23,300	41,000	46,500	34,600	12,300	17,600	6,890	1,990	3,920	245,000
1932	1,750	738	1,290	3,390	25,300	24,900	13,700	70,700	10,600	3,820	6,400	25,500	188,000
1933	1,480	1,170	1,540	4,440	3,190	10,600	7,260	30,700	3,390	2,980	1,520	1,310	69,600
1934	1,670	994	610	4,690	1,880	6,760	27,000	2,990	1,860	400	15	5,300	54,200
1935	82	4,400	652	1,350	7,890	2,480	4,360	129,500	48,380	6,490	3,020	58,020	266,600
1936	11,320	6,790	24,930	8,610	4,780	3,740	21,560	158,500	28,660	13,780	2,710	146,000	431,400
1937	46,830	44,180	71,560	55,450	36,360	49,640	19,990	7,620	13,360	24,600	1,760	3,260	374,600
1938	4,690	7,040	36,980	88,980	124,900	33,160	37,790	36,730	21,550	126,900	17,340	4,950	541,000
1939	2,820	2,140	2,200	6,950	4,600	4,700	8,050	8,720	5,870	5,270	1,760	353	53,430
1940	5,250	725	1,020	924	2,540	1,150	8,270	5,530	37,470	28,600	2,490	1,050	95,020
1941	3,510	89,010	104,600	53,380	95,690	94,930	86,950	111,800	61,790	24,420	12,300	2,970	741,400
1942	10,150	3,700	3,450	2,700	2,240	2,180	76,800	80,270	89,090	9,070	5,310	15,940	300,900
1943	17,370	10,270	8,380	6,990	4,480	6,330	6,090	5,370	1,680	1,030	390	7,790	76,170
1944	2,180	1,280	1,700	20,710	63,200	56,250	28,600	256,800	82,970	13,650	10,880	7,840	546,100
1945	5,350	7,140	37,830	75,440	82,300	99,700	108,900	48,320	32,620	10,000	7,270	17,900	532,800
1946	15,270	12,350	20,750	25,860	37,010	48,850	19,060	18,440	10,920	2,560	2,900	3,700	217,700
1947	2,560	3,700	8,050	30,800	13,970	30,930	20,980	15,750	4,660	2,070	2,190	1,140	136,800
1948	922	1,270	1,540	1,300	12,730	2,610	5,890	9,430	816	5,390	3,570	659	46,130
1949	491	699	1,240	950	871	24,350	36,080	7,500	12,230	2,000	1,930	437	88,780
1950	529	766	1,070	778	4,400	1,150	4,380	6,090	4,230	949	82	6,480	30,900
1951	477	520	575	550	616	612	576	5,370	3,430	44	0	1,350	14,120
1952	231	480	506	446	399	1,050	18,440	36,380	5,200	2,190	37	216	65,580
1953	107	1,170	15,810	3,790	2,240	5,400	8,010	78,800	3,940	1,800	556	3,630	125,300
1954	3,970	897	1,090	994	599	562	1,010	5,220	143	0	0	391	14,880
1955	1,420	17,890	480	2,370	6,050	2,150	3,700	52,850	22,870	9,870	4,660	7,860	132,200
1956	424	357	575	580	1,110	339	193	29,500	677	7.3	2,440	250	36,450
1957	1,180	6,370	4,150	871	1,210	11,490	154,500	191,500	35,000	3,490	1,150	2,390	413,300

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	a8,420	Sept. 14, 1924	-	-	-	-	-
1925	608	3,020	May 15, 1925	0	28.5	20,600	112	81,200
1926	628, 788	26,100	Nov. 6, 1925	4.8	379	274,000	314	227,000
1927	648	11,500	June 14, 1927	6.2	209	152,000	248	179,800
1928	668, 788	28,700	Oct. 2, 1927	4.0	110	79,900	54.5	39,600
1929	688	15,200	Sept. 7, 1929	.7	99.8	72,300	97.8	70,900
1930	703	14,400	May 18, 1930	.4	78.9	57,100	154	111,700
1931	718, 788	23,800	Oct. 6, 1930	4.6	338	245,000	265	192,000
1932	733	14,800	Sept. 3, 1932	6.1	259	188,000	260	188,000
1933	748	19,400	May 25, 1933	9.2	96.2	69,600	95.0	68,700
1934	763	12,400	Apr. 6, 1934	0	74.7	54,200	77.3	55,980
1935	788	42,000	May 18, 1935	.9	368	266,600	421	304,500
1936	808	53,200	Sept. 28, 1936	25	594	431,400	759	550,900
1937	828	15,900	July 10, 1937	16	517	374,600	360	260,800
1938	858	30,700	July 24, 1938	15	747	541,000	690	499,500
1939	878	5,720	July 1, 1939	3.8	73.8	53,430	73.6	53,270
1940	898	13,000	July 1, 1940	3.0	131	95,020	393	285,100
1941	928	21,400	Nov. 24, 1940	11	1,024	741,400	776	561,500
1942	958	24,000	Apr. 25, 1942	26	416	300,900	441	319,600
1943	978	10,500	Oct. 18, 1942	3.8	105	76,170	62.6	45,310
1944	1008	52,800	May 26, 1944	14	752	546,100	814	591,200
1945	1038	15,000	Apr. 21, 1945	30	736	532,800	733	530,800
1946	1058	5,920	(b)	21	301	217,700	254	183,600
1947	1088	8,250	Mar. 18, 1947	15	189	136,800	174	126,200
1948	1118	12,600	Feb. 25, 1948	3.2	63.5	46,130	61.7	44,820
1949	1148	27,800	Mar. 21, 1949	4.6	123	88,780	123	88,710
1950	1178	10,900	Sept. 4, 1950	0	42.7	30,900	41.6	30,110
1951	1212	2,750	May 25, 1951	0	19.5	14,120	19.0	13,760
1952	1242	19,000	Apr. 22, 1952	0	90.3	65,580	112	81,400
1953	1282	33,600	May 13, 1953	.7	173	125,300	158	114,100
1954	1342	3,430	Oct. 23, 1953	0	20.5	14,880	39.7	28,710
1955	1392	27,000	May 19, 1955	1.4	183	132,200	157	113,700
1956	1442	18,000	May 2, 1956	0	50.2	36,450	64.5	46,800
1957	1512	84,000	May 13, 1957	0	571	413,300	-	-

a Maximum February to September.
b Nov. 10, Dec. 2, 1945, Mar. 13, May 15, 1946

198. Little River near Little River, Tex.

Location. --Lat 30°58', long 97°21', at Missouri-Kansas-Texas Railroad bridge 2 miles south of Little River, 4.5 miles below confluence of the Leon and Lampasas Rivers, and 9 miles south of Temple, Bell County.

Drainage area. --5,253 sq mi.

Gage. --Chain gage. Datum of gage is 400.32 ft above mean sea level.

Average discharge. --5 years (1923-28), 709 cfs (513,300 acre-ft per year).

Extremes. --1923-29: Maximum discharge, 28,400 cfs Oct. 2, 1927 (gage height, 43.3 ft); minimum, 8.9 cfs Aug. 12, 1925. Flood of September 1921 reached a stage of 50.85 ft.

Remarks. --Several small diversions above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	307	693	1,770	618	1,080	2,020	987	1,900	1,140	139	67.4	277	917
1925	65.0	60.8	71.8	65.0	57.5	48.2	84.2	662	37.3	21.3	22.4	278	123
1926	824	1,570	94.6	629	294	1,630	5,100	2,040	933	1,210	186	138	1,220
1927	356	114	183	162	1,790	1,110	1,660	1,060	2,270	454	93.6	65.8	766
1928	1,940	211	239	160	568	440	336	523	1,320	132	273	103	521
1929	28.7	31.1	141	220	112	276	643	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	18,900	41,200	109,000	38,000	62,000	124,000	58,700	117,000	68,000	8,560	4,150	16,500	666,000
1925	4,000	3,620	4,410	4,000	3,200	2,970	5,010	40,700	2,220	1,310	1,380	16,500	89,300
1926	50,700	93,200	5,820	38,700	16,300	99,900	304,000	125,000	55,500	74,700	11,400	8,230	883,000
1927	21,900	6,790	11,300	9,980	99,300	68,500	98,800	65,000	135,000	27,900	5,760	3,910	554,000
1928	119,000	12,600	14,700	9,840	32,700	27,100	20,000	32,200	78,600	8,120	16,800	6,130	378,000
1929	1,760	1,850	8,670	13,500	6,220	17,000	38,300	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	14,700	Dec. 13, 1923	-	917	666,000	701	509,000
1925	608	5,140	Sept. 12, 1925	9.5	123	89,300	314	227,000
1926	628	24,100	Apr. 22, 1926	22	1,220	883,000	1,070	774,000
1927	648	16,300	June 14, 1927	40	766	554,000	913	660,000
1928	668	28,400	Oct. 2, 1927	23	521	378,000	336	244,000
1929	688	-	-	-	-	-	-	-

199. San Gabriel River at Georgetown, Tex.

Location. --Lat 30°39'10", long 97°39'20", 100 ft downstream from Missouri-Kansas-Texas Railroad bridge, 1¼ miles downstream from confluence of North and South Forks, and 1¾ miles northeast of Georgetown, Williamson County.

Drainage area. --415 sq mi.

Gage. --Water-stage recorder and concrete control. Datum of gage is 643.24 ft above mean sea level, datum of 1929. Feb. 27, 1924, to Aug. 31, 1925, staff gage 1 mile upstream at different datum.

Average discharge. --23 years (1934-57), 130 cfs (94,120 acre-ft per year).

Extremes. --1924-25, 1934-57: Maximum discharge, 155,000 cfs Apr. 24, 1957 (gage height, 31.89 ft in gage well, 34.10 ft from floodmarks), from rating curve extended above 24,000 cfs on basis of contracted-opening measurement of peak flow; no flow at times in 1954-57. Maximum stage since at least 1869, 36.1 ft Sept. 10, 1921, present site and datum (discharge, 160,000 cfs, by slope-area measurement).

Remarks. --Several small diversions have some effect on low flow which is also regulated at times by gates in recreation dam 3,000 ft upstream.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	285	272	360	250	61.3	31.8	42.3	-
1925	25.2	13.3	14.5	12.7	9.39	5.70	12.8	113	7.17	4.44	29.8	-	-
1934	-	-	-	-	-	-	-	-	-	-	5.73	26.5	-
1935	4.33	111	6.98	6.82	32.5	9.44	51.7	525	663	85.1	22.4	508	168
1936	114	64.6	440	144	88.8	69.8	36.6	983	247	112	31.0	848	265
1937	254	229	479	425	265	326	142	55.6	32.8	189	15.2	10.5	202
1938	15.2	140	379	751	349	189	430	377	141	76.8	31.6	15.0	241
1939	10.4	11.5	11.8	17.5	13.6	15.0	12.3	11.7	21.2	3.77	3.73	3.40	11.3
1940	70.3	6.05	4.70	4.45	40.6	13.3	120	134	669	442	39.1	18.6	130

Monthly and yearly mean discharge, in cubic feet per second, of San Gabriel River at Georgetown, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	48.6	1,024	905	461	738	613	762	715	529	150	45.3	27.1	499
1942	79.5	28.3	30.1	25.6	23.8	17.4	300	138	382	30.6	16.8	136	100
1943	269	93.6	75.2	69.6	51.6	48.8	42.3	48.6	12.7	13.6	4.47	10.3	61.9
1944	9.91	6.18	3.00	138	346	421	200	767	452	51.1	21.4	94.7	209
1945	19.9	76.0	294	446	464	366	560	243	342	85.4	47.0	50.5	248
1946	44.7	72.2	40.8	91.9	256	252	196	230	96.3	25.0	19.9	130	120
1947	87.9	276	384	472	282	238	196	106	45.4	20.2	19.9	11.7	178
1948	9.63	10.8	12.0	11.5	15.6	13.4	191	214	13.1	16.9	27.7	4.91	45.1
1949	9.95	5.99	5.37	6.77	12.1	41.9	224	55.5	77.2	25.2	7.13	7.01	39.6
1950	6.72	4.60	9.97	8.84	41.9	17.8	41.1	74.9	49.9	12.0	4.16	11.3	23.4
1951	4.55	4.22	4.34	3.92	6.10	8.25	11.2	10.2	6.73	1.36	1.38	32.7	7.87
1952	4.54	3.70	3.55	4.14	9.76	16.1	147	233	40.1	11.0	2.36	2.64	39.9
1953	2.56	2.91	180	51.9	53.5	50.2	233	230	27.2	6.25	14.6	59.9	76.1
1954	260	43.9	38.3	25.7	19.5	12.5	6.08	9.87	1.22	.10	.16	.51	35.2
1955	1.93	1.91	2.06	5.13	19.5	18.1	5.84	151	83.5	43.3	51.7	4.35	32.6
1956	.56	1.05	1.22	2.43	2.78	2.08	1.02	49.1	.04	0	2.12	1.72	5.40
1957	16.1	51.9	37.7	4.36	11.9	29.7	1,499	577	769	62.0	22.2	37.6	258

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	17,500	16,200	22,100	14,900	3,770	1,960	2,520	-
1925	1,550	789	895	785	522	350	764	6,960	427	273	1,830	-	-
1934	-	-	-	-	-	-	-	-	-	-	352	1,580	-
1935	266	6,590	429	419	1,800	580	3,080	32,270	39,430	5,230	1,380	30,230	121,700
1936	7,030	3,840	27,060	8,880	5,110	4,290	2,180	60,440	14,670	6,870	1,900	50,430	192,700
1937	15,610	13,650	29,440	26,160	14,700	20,020	8,440	3,420	1,950	11,630	932	624	146,600
1938	937	8,310	23,300	46,180	19,360	11,610	25,600	23,180	8,360	4,720	1,940	893	174,400
1939	639	683	726	1,080	756	920	734	717	1,260	232	229	202	8,180
1940	4,320	360	289	274	2,330	819	7,110	8,270	39,800	27,180	2,400	1,110	94,260
1941	2,990	60,930	55,660	28,330	40,980	37,690	45,360	43,990	31,500	9,210	2,780	1,610	361,000
1942	4,890	1,680	1,850	1,580	1,320	1,070	17,860	8,470	22,710	1,880	1,030	8,100	72,440
1943	16,520	5,570	4,620	4,280	2,870	3,000	2,520	2,990	754	837	275	614	44,850
1944	609	368	184	8,510	19,900	25,910	11,890	47,140	26,880	3,140	1,320	5,640	151,500
1945	1,220	4,520	18,100	27,430	25,790	22,490	33,300	14,930	20,350	5,250	2,890	3,000	179,300
1946	2,750	4,290	2,510	5,650	14,200	15,470	11,650	14,140	5,730	1,540	1,230	7,710	86,870
1947	5,400	16,420	23,640	29,030	15,680	14,640	11,680	6,510	2,700	1,240	1,220	698	128,900
1948	592	643	740	704	895	821	11,370	13,140	779	1,040	1,700	292	32,720
1949	612	356	330	416	671	2,570	13,300	3,410	4,600	1,550	439	417	28,670
1950	413	274	613	543	2,330	1,100	2,450	4,610	2,970	737	256	670	16,970
1951	280	251	267	241	339	508	669	628	400	84	85	1,950	5,700
1952	279	220	218	254	561	992	8,720	14,330	2,390	675	145	157	28,940
1953	157	173	11,050	3,190	2,970	3,090	13,860	14,150	1,620	385	895	3,570	55,110
1954	16,010	2,610	2,350	1,580	1,080	767	362	607	73	6.0	10	30	25,480
1955	119	114	127	316	1,080	1,110	347	9,310	4,970	2,660	3,180	259	23,590
1956	35	63	75	149	160	128	61	3,020	2.2	0	130	103	3,930
1957	989	3,090	2,320	268	659	1,820	89,180	35,500	45,770	3,810	1,370	2,240	187,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	-	-	-	-	-	-	-
1925	608	a3,000	May 10, 1925	-	-	-	-	-
1934	788	-	-	-	-	-	-	-
1935	788	25,100	May 18, 1935	-	168	121,700	210	152,300
1936	808	32,400	Sept. 16, 1936	19	265	192,700	294	213,500
1937	828	16,300	July 10, 1937	8.3	202	146,600	166	120,400
1938	858	24,800	Jan. 23, 1938	8.3	241	174,400	199	143,900
1939	878	903	June 6, 1939	.3	11.3	8,180	15.3	11,100
1940	898	34,500	June 30, 1940	.3	130	94,260	288	208,900
1941	928	30,000	Nov. 23, 1940	7.2	499	361,000	345	249,900
1942	958	18,600	June 10, 1942	.2	100	72,440	125	90,730
1943	978	7,800	Oct. 14, 18, 1942	.4	61.9	44,850	26.6	19,300
1944	1008	37,500	June 6, 1944	-	209	151,500	240	174,200
1945	1038	10,300	Jan. 18, 1945	14	248	179,300	228	165,000
1946	1058	8,000	Sept. 26, 1946	5.6	120	86,870	170	122,800
1947	1088	21,000	Dec. 11, 1946	8.1	178	128,900	118	85,370
1948	1118	14,000	May 11, 1948	.9	45.1	32,720	44.1	32,040
1949	1148	6,600	Apr. 28, 1949	2.9	39.6	28,670	39.6	28,670
1950	1178	5,080	May 11, 1950	.9	23.4	16,970	22.7	16,470

a Observed.

Yearly discharge, in cubic feet per second, of San Gabriel River at Georgetown, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1212	5,350	Sept. 13, 1951	0.5	7.87	5,700	7.76	5,620
1952	1242	11,000	May 28, 1952	.9	39.9	28,940	54.6	39,600
1953	1282	14,300	Dec. 19, 1952	1.1	76.1	55,110	89.4	64,700
1954	1342	24,200	Oct. 23, 1953	0	35.2	25,480	6.74	4,880
1955	1392	12,400	May 18, 1955	0	32.6	23,590	32.3	23,400
1956	1442	5,660	May 2, 1956	0	5.40	3,930	14.0	10,150
1957	1512	155,000	Apr. 24, 1957	0	258	187,000	-	-

200. San Gabriel River at Circleville, Tex.

Location.--Lat 30°39', long 97°26', at highway bridge half a mile northwest of Circleville, Williamson County, half a mile above Missouri-Kansas-Texas Railroad bridge, and 5½ miles northwest of Taylor.

Drainage area.--602 sq mi.

Gage.--Chain gage. Datum of gage is 505.27 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--10 years (1924-34), 136 cfs (98,460 acre-ft per year).

Extremes.--1924-34: Maximum discharge, 53,400 cfs May 29, 1929 (gage height, 34.20 ft, from floodmarks); no flow Sept. 5, 6, 8, 11, 1924. Maximum stage known, about 40.6 ft in September 1921.

Remarks.--Several small diversions for municipal use above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	344	503	421	651	302	89.1	35.9	34.3	-
1925	17.4	22.7	23.1	24.5	17.4	15.6	25.3	167	4.23	3.59	37.6	71.2	36.0
1926	333	275	46.6	376	194	440	822	809	199	163	48.8	26.6	312
1927	102	34.8	60.2	63.4	509	375	523	156	300	42.7	11.5	9.12	179
1928	705	56.1	34.1	32.6	145	133	64.8	68.1	95.4	21.6	7.71	6.98	115
1929	6.33	10.3	17.0	17.3	16.6	40.1	150	1,310	194	70.4	23.8	12.6	157
1930	12.1	25.6	24.2	24.0	38.5	62.3	34.9	1,530	118	29.9	11.3	15.3	163
1931	340	78.8	109	399	621	386	222	131	55.3	43.6	13.6	10.2	199
1932	7.51	11.5	19.0	63.0	60.8	246	93.2	261	62.2	26.8	46.7	149	87.4
1933	17.0	14.1	20.9	79.1	67.2	87.3	47.4	55.5	8.74	115	13.3	12.6	44.9
1934	9.58	7.92	8.93	50.2	279	122	219	71.2	20.7	8.97	2.60	20.1	66.6

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	19,800	30,900	25,100	40,000	18,000	5,480	2,210	2,040	-
1925	1,070	1,350	1,420	1,510	968	962	1,500	10,300	252	221	2,310	4,240	26,100
1926	20,500	16,400	2,870	23,100	10,800	27,100	48,900	49,700	11,800	10,000	3,000	1,580	226,000
1927	6,270	2,070	3,700	3,900	28,300	23,100	31,100	9,590	17,900	2,630	707	543	130,000
1928	43,300	3,340	2,100	2,000	8,340	8,180	3,860	4,190	5,680	1,330	474	415	83,200
1929	389	613	1,050	1,060	922	2,470	8,930	80,600	11,500	4,330	1,460	750	114,000
1930	744	1,520	1,490	1,480	2,140	3,830	2,080	94,100	7,020	1,840	695	910	118,000
1931	20,900	4,690	6,700	24,500	34,500	23,700	13,200	8,060	3,290	2,680	836	607	144,000
1932	462	684	1,170	3,870	3,500	15,100	5,550	16,000	3,700	1,650	2,870	8,870	63,400
1933	1,050	839	1,290	4,860	3,730	5,370	2,820	3,410	520	7,070	818	750	32,500
1934	589	471	549	3,090	15,500	7,500	13,000	4,380	1,230	552	160	1,200	48,200

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588,668	9,580	May 30, 1924	0	-	-	-	-
1925	608	3,930	Sept. 12, 1925	1.1	36.0	26,100	85.5	62,000
1926	628,668	27,200	Apr. 21, 1926	4.0	312	226,000	274	198,000
1927	648,668	8,260	Feb. 9, 1927	2.4	179	130,000	230	167,000
1928	668	46,400	Oct. 2, 1927	2.4	115	83,200	50.3	36,500
1939	688	53,400	May 29, 1929	4.4	157	114,000	160	116,000
1930	703	48,400	May 10, 1930	4.4	163	118,000	202	146,000
1931	718	13,500	Oct. 6, 1930	6.0	199	144,000	157	114,000
1932	733	5,360	Mar. 5, 1932	4.4	87.4	63,400	88.6	64,300
1933	748	3,850	July 30, 1933	1.9	44.9	32,500	42.7	31,000
1934	763	10,800	Feb. 8, 1934	.7	66.6	48,200	-	-

201. Brushy Creek at Coupland, Tex.

Location. --Lat 30°28', long 97°23', at Missouri-Kansas-Texas Railroad bridge half a mile north of Coupland, Williamson County, and 8 miles south of Taylor.

Drainage area. --198 sq mi.

Gage. --Chain gage. Datum of gage is 501.79 ft above mean sea level, datum of 1929.

Extremes. --1924-26: Maximum stage, 23.2 ft Oct. 13, 1925 (discharge not determined); no flow at times.

Remarks. --No diversion above gage.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	98.7	20.9	6.17	50.4	-
1925	6.68	6.54	6.77	7.15	5.37	4.53	3.72	47.5	12.8	0	0	13.3	9.57
1926	141	121	14.4	96.8	25.8	-	-	78.3	44.6	29.0	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	5,880	1,290	379	3,000	-
1925	411	389	417	440	299	279	222	2,920	760	0	0	791	6,930
1926	8,670	7,190	883	5,950	1,430	-	-	4,810	2,660	1,790	-	-	-

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	-	-	-	-	-	-	-
1925	608	1,220	Sept. 12, 1925	0	9.57	6,930	31.0	22,500
1926	628	-	Oct. 13, 1925	-	-	-	-	-

202. Little River at Cameron, Tex.

Location. --Lat 30°50', long 96°57', at site of old McCowan Bridge, 2,020 ft upstream from bridge on U. S. Highway 77, 1 mile upstream from Gulf, Colorado & Santa Fe Railway bridge, and 2 miles southeast of Cameron, Milam County.

Drainage area. --7,000 sq mi.

Supplemental records available. --Records of yearly diversion by Aluminum Co. of America for 1956 and 1957 are published in reports of Geological Survey.

Gage. --Water-stage recorder. Datum of gage is 281.89 ft above mean sea level (levels by Corps of Engineers). Nov. 2, 1916, to Sept. 30, 1922, staff gage $1\frac{3}{4}$ miles upstream at different datum. Oct. 1, 1922, to Apr. 8, 1926, chain gage at McCowan Bridge 30 ft downstream at present datum. Apr. 9, 1926, to Oct. 9, 1933, chain gage at bridge on U. S. Highway 77 (State Highway 36), 2,020 ft downstream at datum 1.58 ft lower.

Average discharge. --40 years (1917-57), 1,739 cfs (1,259,000 acre-ft per year).

Extremes. --1916-57: Maximum discharge, 647,000 cfs Sept. 10, 1921 (gage height, 53.2 ft, present datum, from floodmark), from rating curve extended above 110,000 cfs on basis of slope-area measurement of peak flow; no flow July 12-27, 1956.
Maximum stage known, that of Sept. 10, 1921; flood of 1852 reached about the same stage. Flood of December 1913 reached a stage of 49.0 ft. Stages based on information by local resident.

Remarks. --Some regulation by Belton Reservoir on Leon River since Mar. 8, 1954. Many small diversions for irrigation and municipal supply affect very low flows. Aluminum Co. of America diverts water from river above gage for use at their Rockdale plant.

Cooperation. --Aluminum Co. of America furnishes records of yearly diversion to Rockdale plant.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	121	94.2	95.2	90.5	83.1	232	432	222	78.5	14.1	592	-
1918	19.7	58.4	30.6	38.1	83.7	37.2	2,750	472	807	41.5	8.32	86.3	366
1919	751	2,990	3,020	3,570	3,410	2,300	2,080	4,180	5,320	4,020	1,660	2,270	2,960
1920	7,060	5,650	3,800	8,130	3,550	1,990	1,260	3,710	2,010	1,120	3,170	2,820	3,700
1921	979	1,710	1,370	1,130	964	1,420	3,090	1,720	2,450	1,300	174	26,300	3,520
1922	587	340	379	328	537	1,750	13,900	16,300	2,120	507	173	160	3,100
1923	127	204	150	126	360	649	4,120	1,600	891	289	43.5	1,060	797
1924	481	1,220	5,160	1,600	3,110	3,530	3,020	2,790	2,210	363	177	461	2,010
1925	138	106	127	136	113	86.7	61.5	874	81.8	29.5	40.7	337	178
1926	2,310	3,070	272	2,010	689	3,560	9,600	4,460	1,620	1,710	349	220	2,490
1927	492	258	460	549	3,110	2,670	3,070	1,480	3,730	641	177	98.4	1,380
1928	2,920	447	355	296	1,490	669	463	685	1,650	209	349	141	804
1929	49.8	40.9	194	287	217	550	2,380	8,710	2,360	428	134	906	1,360
1930	138	492	127	252	458	417	170	9,100	628	189	177	285	1,050

Monthly and yearly mean discharge, in cubic feet per second, of Little River at Cameron, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	3,370	510	2,190	2,480	4,000	3,230	1,640	1,970	1,240	580	156	171	1,790
1932	384	107	217	2,280	3,450	2,630	1,030	4,930	2,250	573	471	3,010	1,770
1933	214	140	235	1,100	617	1,110	836	1,850	814	239	442	204	652
1934	72.9	105	62.1	1,160	1,410	1,970	4,930	646	176	49.7	24.3	115	884
1935	15.7	1,148	156	185	1,330	251	470	10,680	7,900	1,025	347	4,885	2,361
1936	1,634	1,109	4,013	1,050	648	592	776	11,110	3,421	2,995	319	5,928	2,811
1937	5,845	2,973	5,739	4,750	2,835	3,525	1,438	611	1,915	1,412	207	303	2,639
1938	479	798	3,030	7,475	5,832	2,354	5,630	4,371	2,261	4,532	1,724	377	3,228
1939	202	169	183	456	359	442	422	1,920	1,069	303	235	62.5	487
1940	195	50.8	66.7	70.7	378	87.4	1,797	1,934	4,147	6,538	314	137	1,312
1941	73.9	8,506	9,923	5,125	8,199	7,804	6,280	11,820	6,095	4,622	1,030	1,083	5,865
1942	1,483	546	518	386	382	312	7,160	7,002	6,713	812	607	6,104	2,660
1943	3,170	1,766	1,295	935	647	1,030	1,358	982	361	214	86.1	300	1,016
1944	234	125	192	2,198	4,355	4,775	1,750	17,380	5,849	989	410	939	3,273
1945	363	871	2,729	4,837	4,917	5,917	12,220	3,293	3,335	1,265	592	461	3,379
1946	1,771	653	1,485	2,271	3,726	4,651	2,506	4,823	2,190	461	227	1,148	2,152
1947	518	3,290	2,315	4,733	1,873	3,165	2,402	2,502	844	255	162	118	1,850
1948	75.1	148	256	176	537	468	594	1,235	375	561	106	157	391
1949	36.2	26.9	44.3	239	439	1,284	5,515	2,089	1,336	307	98.7	52.6	951
1950	142	135	226	112	1,026	174	1,062	1,097	897	527	53.7	1,037	534
1951	55.9	29.1	37.2	46.4	97.1	290	92.8	550	900	21.4	2.22	157	190
1952	18.7	15.4	22.9	25.2	40.7	75.8	1,117	2,400	680	96.5	5.74	2.06	376
1953	.76	163	794	577	363	489	685	4,997	312	190	103	360	760
1954	2,889	474	2,246	199	130	69.1	27.8	441	15.1	2.15	8.22	17.0	551
1955	17.2	264	23.0	57.2	512	193	481	1,416	1,115	227	355	147	399
1956	21.1	18.4	33.0	34.5	123	22.8	16.5	1,626	126	1.58	35.0	4.40	174
1957	28.8	1,060	485	35.3	50.2	480	10,480	8,813	11,330	6,533	1,142	295	3,396

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1917	-	7,200	5,790	5,850	5,030	5,110	13,800	26,600	13,200	4,830	867	35,200	-
1918	1,210	3,480	1,880	2,340	4,650	2,290	164,000	29,000	48,000	2,550	512	5,140	265,000
1919	46,200	178,000	186,000	220,000	189,000	141,000	124,000	257,000	317,000	247,000	102,000	135,000	2,140,000
1920	434,000	336,000	234,000	500,000	204,000	122,000	75,000	228,000	120,000	68,900	195,000	168,000	2,680,000
1921	60,200	102,000	84,200	69,500	53,500	87,300	184,000	106,000	146,000	79,900	10,700	1,565,000	2,548,000
1922	36,100	20,200	23,300	20,200	29,800	108,000	827,000	1,000,000	126,000	31,200	10,600	9,520	2,240,000
1923	7,780	12,100	9,200	7,760	20,000	39,900	245,000	98,600	53,000	17,800	2,670	62,800	557,000
1924	29,600	72,800	317,000	98,400	179,000	217,000	180,000	172,000	131,000	22,300	10,900	27,500	1,460,000
1925	8,460	6,310	7,790	8,350	6,280	5,330	3,660	53,700	4,870	1,810	2,500	20,100	129,000
1926	142,000	183,000	16,700	123,000	38,300	219,000	571,000	274,000	96,100	105,000	21,500	13,100	1,800,000
1927	30,300	15,400	28,300	33,700	173,000	164,000	183,000	91,300	222,000	39,400	10,900	5,860	997,000
1928	180,000	26,600	21,800	18,200	85,700	41,100	27,600	42,100	98,200	12,900	21,500	8,390	584,000
1929	3,060	2,430	11,900	17,600	12,100	33,800	142,000	535,000	140,000	26,300	8,240	53,900	986,000
1930	8,480	29,300	7,810	15,500	25,400	25,600	10,100	559,000	37,400	11,600	10,900	17,000	758,000
1931	207,000	30,300	135,000	152,000	222,000	199,000	97,600	121,000	73,800	35,700	9,590	10,200	1,290,000
1932	23,600	6,370	13,300	140,000	198,000	162,000	61,300	303,000	134,000	35,200	29,000	179,000	1,280,000
1933	13,200	8,330	14,400	67,600	34,300	68,200	49,700	114,000	48,400	14,700	27,200	12,100	472,000
1934	4,480	6,250	3,820	71,300	78,300	121,000	293,000	39,700	10,500	3,060	1,490	6,840	640,000
1935	968	68,330	9,600	11,380	73,860	15,420	27,990	656,500	470,100	63,000	21,340	290,700	1,709,000
1936	100,400	65,990	246,800	64,560	37,260	36,400	46,170	682,900	203,500	184,100	19,630	352,700	2,040,000
1937	359,400	176,900	352,900	292,100	157,500	216,700	85,580	37,600	114,000	86,800	12,740	18,000	1,910,000
1938	29,480	47,500	186,300	459,600	323,900	144,700	335,000	268,700	134,500	278,700	106,000	22,440	2,337,000
1939	12,400	10,030	11,250	28,010	19,930	27,170	25,120	118,100	63,620	18,640	14,450	3,720	352,400
1940	11,990	3,020	4,100	4,350	21,720	5,370	106,900	118,900	246,800	402,000	19,320	8,140	952,600
1941	4,550	506,100	610,200	315,100	455,400	479,900	373,700	726,500	362,700	284,200	63,310	64,430	4,246,000
1942	91,210	32,520	31,830	23,720	21,230	19,170	426,000	430,500	399,500	49,920	37,310	363,200	1,926,000
1943	194,900	105,100	79,630	57,470	35,940	63,360	80,820	60,410	21,510	13,150	5,290	17,820	735,400
1944	14,410	7,430	11,810	135,100	250,500	293,600	104,100	1,069,000	348,100	60,810	25,200	55,890	2,376,000
1945	22,330	51,850	167,800	297,400	273,100	363,800	727,300	202,500	198,400	77,800	36,380	27,460	2,446,000
1946	108,900	38,880	91,320	139,600	206,900	286,000	149,100	296,500	130,300	28,360	13,950	68,330	1,558,000
1947	31,860	195,800	142,300	291,000	104,000	194,600	142,900	153,800	50,210	15,690	9,960	7,010	1,339,000
1948	4,620	8,800	15,760	10,820	30,910	28,770	35,330	75,960	22,310	34,510	6,530	9,330	283,600
1949	2,230	1,600	2,730	14,720	24,360	78,920	328,200	128,400	79,470	18,890	6,070	3,130	688,700
1950	8,730	8,030	13,890	6,900	56,960	10,680	63,190	67,450	53,360	32,380	3,300	61,680	386,600
1951	3,440	1,730	2,280	2,850	5,390	17,820	5,520	33,840	53,540	1,310	136	9,350	137,200
1952	1,150	914	1,410	1,550	2,340	4,660	66,480	147,500	40,450	5,930	353	122	272,900
1953	47	9,690	48,830	35,500	20,140	30,060	40,770	307,300	18,560	11,660	6,330	21,400	550,300
1954	177,600	28,190	138,100	12,230	7,230	4,250	1,660	27,130	901	132	506	1,010	398,900
1955	1,060	15,690	1,410	3,520	28,440	11,870	28,640	87,040	66,360	13,950	21,800	8,740	288,500
1956	1,290	1,100	2,030	2,120	7,050	1,400	981	99,950	7,520	97	2,150	262	126,000
1957	1,770	63,080	29,840	2,170	2,790	29,490	623,900	541,900	673,900	401,700	70,230	17,550	2,458,000

Yearly discharge, in cubic feet per second, of Little River at Cameron, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1917	458	a5,860	Sept. 7, 1917	7.0	-	-	162	117,000
1918	478, 718	a16,500	Apr. 17, 1918	4.2	366	265,000	923	669,000
1919	508, 718	a15,900	Dec. 26, 1918	24	2,960	2,140,000	3,780	2,740,000
1920	508, 718	a30,000	Jan. 24, 1920	472	3,700	2,680,000	2,660	1,930,000
1921	528, 1512	647,000	Sept. 10, 1921	112	3,520	2,548,000	3,290	2,382,000
1922	548, 718	a92,000	Apr. 5, 1922	122	3,100	2,240,000	3,030	2,190,000
1923	568	21,500	Apr. 13, 1923	29	797	557,000	1,340	967,000
1924	588	34,100	Dec. 14, 1923	120	2,010	1,460,000	1,460	1,060,000
1925	608	4,290	Sept. 14, 1925	11	178	129,000	619	448,000
1926	1512, 628	61,000	Apr. 22, 1926	77	2,490	1,800,000	2,120	1,540,000
1927	648	13,500	Feb. 11, 1927	83	1,380	997,000	1,590	1,150,000
1928	668	18,000	Oct. 5, 1927	46	804	584,000	514	373,000
1929	1512, 688	138,000	May 29, 1929	32	1,360	986,000	1,400	1,010,000
1930	1512, 703	61,000	May 11, 1930	71	1,050	758,000	1,500	1,080,000
1931	718	20,800	Oct. 9, 1930	52	1,790	1,290,000	1,330	964,000
1932	733	19,000	Sept. 4, 1932	48	1,770	1,280,000	1,760	1,280,000
1933	748	8,820	May 28, 1933	55	652	472,000	622	451,000
1934	1512, 763	31,700	Apr. 6, 1934	15	884	640,000	973	704,000
1935	788	82,000	May 20, 1935	13	2,361	1,709,000	2,823	2,043,000
1936	1512, 808	107,000	Sept. 29, 1936	163	2,811	2,040,000	3,467	2,516,000
1937	828	b13,900	Dec. 8, 1936	107	2,639	1,910,000	1,774	1,284,000
1938	858	50,400	Jan. 24, 1938	91	3,228	2,337,000	2,911	2,107,000
1939	878	12,400	May 19, 1939	34	487	352,400	467	337,900
1940	898	67,100	July 1, 1940	29	1,312	952,600	2,830	2,054,000
1941	1512, 928	82,000	Nov. 25, 1940	49	5,865	4,246,000	4,532	3,281,000
1942	958	67,900	Sept. 9, 1942	249	2,660	1,926,000	2,970	2,150,000
1943	978	9,920	Oct. 20, 1942	52	1,016	735,400	538	389,400
1944	1008	81,000	May 27, 1944	92	3,273	2,376,000	3,560	2,584,000
1945	1038	82,000	Apr. 23, 1945	182	3,379	2,446,000	3,375	2,443,000
1946	1058	15,100	Mar. 16, 1946	159	2,152	1,558,000	2,333	1,689,000
1947	1088	24,600	Jan. 19, 1947	85	1,850	1,339,000	1,379	998,400
1948	1118	8,670	May 13, 1948	16	391	283,600	360	261,000
1949	1148	42,400	Apr. 26, 1949	18	951	688,700	985	712,800
1950	1178	15,400	Feb. 13, 1950	20	534	386,600	502	363,400
1951	1212	5,010	June 5, 1951	.9	190	137,200	184	133,200
1952	1242	13,200	Apr. 24, 1952	.9	376	272,900	452	328,000
1953	1282	28,200	May 16, 1953	.3	760	550,300	1,154	835,600
1954	1342	41,700	Oct. 27, 1953	.6	551	398,900	101	73,210
1955	1392	10,200	May 21, 1955	5.0	399	288,500	380	274,800
1956	1442	8,160	May 4, 1956	0	174	126,000	298	216,200
1957	1512	116,000	Apr. 25, 1957	.4	3,396	2,458,000	-	-

a Maximum observed.
b Maximum peak discharge; maximum discharge during year, 34,200 cfs at 12:01 a.m. Oct. 1, 1936, stage falling.

203. Big Elm Creek near Temple, Tex.

Location.--Lat 31°03', long 97°15', 350 ft downstream from mouth of Cottonwood Creek, about 0.6 mile upstream from Little Elm Creek and 6 miles east of Temple, Bell County.

Drainage area.--68.5 sq mi.

Gage.--Water-stage recorder. Datum of gage not known. Prior to May 11, 1934, staff gage at site 60 ft downstream at datum 0.35 ft lower.

Extremes.--1934-36: Maximum discharge, 15,700 cfs June 15, 1935 (gage height, 18.05 ft); no flow at times.
Flood of September 1921 reached a stage of about 21 ft, from information by local residents.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	-	113	5.47	0.06	0	0	0	-
1935	0	107	0.73	0.71	35.0	4.70	17.1	195	267	11.1	1.09	73.7	59.0
1936	14.1	21.2	199	19.0	10.3	5.45	31.8	95.7	9.38	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	-	6,720	336	3.6	0	0	0	-
1935	0	6,350	45	44	1,940	289	1,020	11,970	15,910	683	67	4,380	42,700
1936	868	1,260	12,200	1,170	592	335	1,890	5,890	558	-	-	-	-

Yearly discharge, in cubic feet per second, of Big Elm Creek near Temple, Tex.

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1934	763	a6,130	Apr. 6, 1934	0	-	-	-	-
1935	788	15,700	June 15, 1935	0	59.0	42,700	70.0	50,630
1936	808	b14,200	Dec. 6, 1935	-	-	-	-	-

a Maximum during period April to September.
b Maximum during period October to June.

204. Big Elm Creek near Buckholts, Tex.

Location.--Lat 30°57', long 97°06', at Buckholts-Yarrellton highway bridge, 3.8 miles upstream from South Elm Creek and 5.5 miles northeast of Buckholts, Milam County.

Drainage area.--166 sq mi.

Gage.--Water-stage recorder. Datum of gage not known. Prior to May 20, 1934, staff gage at site 210 ft downstream at datum 1.39 ft lower.

Extremes.--1934-36: Maximum discharge, about 27,600 cfs Dec. 6, 1935 (gage height, 15.90 ft); no flow at times.
Flood of September 1921 reached a stage of about 16 ft, from information by local residents.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	-	221	6.98	0.07	0	0	0	-
1935	0	103	2.74	1.72	74.8	9.00	33.6	393	422	19.1	1.70	115	97.3
1936	20.6	27.6	544	31.7	17.3	9.73	73.6	308	16.8	182	.52	46.1	108

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1934	-	-	-	-	-	-	13,200	429	4.2	0	0	0	-
1935	0	6,100	168	106	4,150	554	2,000	24,150	25,090	1,170	105	6,860	70,450
1936	1,270	1,640	33,460	1,950	994	598	4,380	18,930	1,000	11,170	32	2,740	78,160

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1934	763	a7,500	Apr. 6, 1934	0	-	-	-	-
1935	788	15,400	June 16, 1935	0	97.3	70,450	139	100,600
1936	808	b27,600	Dec. 6, 1935	0	108	78,160	-	-

a Maximum during period April to September.
b About.

205. North Elm Creek near Ben Arnold, Tex.

Location.--Lat 30°57', long 97°03', at bridge on county road between Ben Arnold and Yarrellton, 3½ miles west of Ben Arnold, Milam County, and 8 miles upstream from mouth.

Drainage area.--30.3 sq mi.

Gage.--Water-stage recorder. Datum of gage not determined.

Extremes.--1934-36: Maximum discharge, 3,540 cfs Dec. 6, 1935 (gage height, 8.90 ft), from rating curve extended above 800 cfs on basis of slope-area measurement of peak flow; no flow at times.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	0	1.27	1.55	0.24	27.8	1.40	0	106	48.3	0	0	5.31	15.9
1936	0	0	49.7	.29	.13	.13	12.1	65.9	.096	59.9	0	0	15.9

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1935	0	75	96	15	1,540	86	0	6,490	2,880	0	0	316	11,500
1936	0	0	3,060	18	7.5	7.7	722	4,050	5.7	3,690	0	0	11,560

Yearly discharge, in cubic feet per second, of North Elm Creek near Ben Arnold, Tex.

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1935	788	2,040	June 15, 1935	0	15.9	11,500	19.9	14,390
1936	808	3,540	Dec. 6, 1935	0	15.9	11,560	-	-

206. Brazos River near Bryan, Tex. 1/

Location. --Lat 30°37', long 96°29', 2.4 miles downstream from Little Brazos River, 5 miles downstream from Texas & New Orleans Railroad bridge, 9 miles southwest of Bryan, Brazos County, and at mile 285.

Drainage area. --38,400 sq mi, approximately, of which 9,240 sq mi is probably noncontributing.

Supplemental records available. --Records of suspended-sediment loads for the period August 1899 to December 1902 are published in reports of the U. S. Department of Agriculture, Office of Experimental Stations Bulletins.

Gage. --Water-stage recorder. Datum of gage is 192.33 ft above mean sea level, datum of 1929. Aug. 1, 1899, to Dec. 31, 1902, and Feb. 23, 1918, to Sept. 17, 1925, staff or chain gage at site 7½ miles downstream at different datum. Sept. 11, 1925, to Oct. 24, 1932, chain gage at site 3,000 ft upstream at present datum.

Average discharge. --41 years (1899-1902, 1918-25, 1926-57), 5,444 cfs (3,941,000 acre-ft per year).

Extremes. --1899-1902, 1918-57: Maximum gage height, 46.1 ft May 20, 1930 (discharge not determined), present site and datum; minimum, 87 cfs Aug. 24, 1934.

Maximum stage since at least 1899, about 54 ft in September 1921, present site and datum. Flood of Dec. 5, 1913, reached a stage of about 50 ft, present site and datum, from information by Texas & New Orleans Railroad Co. at their bridge 5 miles upstream, and from comparison of maximum stages reached by floods of 1913 and 1921 at gage near College Station 7½ miles downstream.

Remarks. --Some regulation of flow by reservoirs above Waco (see Remarks for Brazos River at Waco), and after Mar. 8, 1954, by Belton Reservoir on Leon River. (See elsewhere in this report.) Many small diversions above station for irrigation, industrial and municipal supply, and oilfield operation.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1899	-	-	-	-	-	-	-	-	-	-	1,763	509	-
1900	1,917	7,812	7,219	8,629	2,086	5,234	43,720	33,240	12,620	2,811	2,720	19,680	12,300
1901	8,100	4,306	1,260	857	1,026	785	1,313	4,577	4,639	457	620	781	2,401
1902	402	456	301	235	233	1,134	2,368	5,443	2,925	12,450	10,380	2,633	3,285
1903	2,371	10,650	4,493	-	-	-	-	-	-	-	-	-	-
1918	-	-	-	-	-	165	6,720	3,190	3,540	435	133	2,390	-
1919	4,510	13,900	10,700	11,200	9,760	5,200	8,770	16,700	15,100	13,000	8,290	8,570	10,500
1920	29,400	23,600	11,300	23,200	8,620	4,940	2,850	18,800	7,720	2,790	10,400	12,800	13,100
1921	4,090	5,760	3,810	3,680	3,890	4,430	9,010	4,200	10,200	4,240	540	22,180	6,297
1922	1,500	945	539	506	877	3,760	39,300	58,800	7,040	2,430	955	463	9,810
1923	375	683	667	451	1,530	2,010	12,800	6,580	5,150	802	187	2,180	2,770
1924	4,060	6,900	17,000	5,810	7,370	11,000	5,870	6,720	6,290	868	450	2,220	6,220
1925	953	362	293	292	247	266	325	9,660	808	306	724	5,690	1,670
1926	6,310	7,140	701	-	-	-	-	-	-	5,810	3,450	5,220	-
1927	5,960	1,320	3,020	2,290	6,360	6,190	8,800	4,040	10,500	2,730	1,020	635	4,380
1928	6,920	908	777	677	3,840	1,760	2,790	6,110	8,390	2,740	3,780	1,330	3,340
1929	206	456	1,840	1,620	783	2,070	5,480	17,400	12,600	1,460	452	6,290	4,230
1930	1,330	2,180	419	378	1,620	1,280	510	37,600	7,140	1,480	400	1,200	4,670
1931	14,400	2,470	10,400	5,570	11,400	6,940	5,350	4,390	3,560	1,310	614	420	5,550
1932	3,920	1,910	2,050	11,700	13,500	8,210	2,600	14,300	7,120	8,880	1,580	15,200	7,560
1933	1,670	697	1,990	3,580	1,840	3,970	2,640	9,090	3,230	631	2,850	2,210	2,880
1934	634	586	335	2,840	2,380	6,770	14,000	2,010	498	186	113	326	2,540
1935	236	2,460	1,177	1,074	4,108	1,187	2,360	36,680	17,640	5,281	1,779	9,394	6,961
1936	3,968	2,675	10,010	2,191	1,254	1,058	1,079	15,720	6,578	7,683	580	14,600	5,634
1937	19,630	6,232	11,610	9,697	5,146	6,803	2,651	1,354	4,834	1,912	1,318	1,564	6,094
1938	1,882	1,906	6,545	16,250	16,230	7,461	15,360	12,000	7,661	6,944	4,056	787	8,041
1939	438	358	354	1,706	1,482	1,235	1,048	8,700	7,886	2,061	812	523	2,220
1940	352	433	285	202	728	327	3,880	4,363	10,820	11,220	4,186	1,594	3,202
1941	508	21,820	21,780	11,570	20,480	14,920	11,790	34,700	25,380	10,340	4,952	3,650	15,110
1942	13,500	6,251	1,467	1,545	1,066	839	29,850	24,340	16,980	1,864	1,626	13,230	9,369
1943	11,610	5,239	3,839	2,588	2,547	3,922	4,930	3,828	2,465	1,341	1,013	982	3,705
1944	1,128	362	483	5,463	10,450	11,340	4,136	38,950	10,610	1,824	965	2,872	7,396
1945	1,006	2,426	5,659	10,690	12,730	18,060	33,650	7,519	7,584	6,650	2,051	1,345	9,061
1946	5,384	1,438	5,242	6,187	9,089	11,730	5,635	16,450	6,819	1,540	1,185	2,992	6,137
1947	4,252	9,587	6,860	10,100	3,714	7,745	5,592	10,560	4,006	1,300	1,738	1,038	5,561
1948	543	696	1,910	1,345	3,019	2,499	1,810	4,103	1,587	2,640	828	1,056	1,836
1949	386	309	376	930	1,862	4,055	8,292	10,260	6,951	2,424	1,025	1,354	3,185
1950	2,282	1,240	1,114	1,234	6,729	1,022	3,737	3,418	3,567	3,293	3,349	4,368	2,912
1951	1,584	495	445	718	914	797	408	1,609	4,331	1,283	1,223	1,305	1,258
1952	474	409	319	308	393	461	2,927	4,619	1,374	903	1,028	620	1,155
1953	111	555	2,084	1,971	705	2,501	1,383	14,610	939	968	774	894	2,319
1954	3,599	870	4,887	621	375	271	660	7,135	2,452	1,159	940	349	1,965

1/ Published as "near College Station" prior to Sept. 18, 1925 (records to Sept. 10, 1925, used herein).

Monthly and yearly mean discharge, in cubic feet per second, of Brazos River near Bryan, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1955	443	623	171	212	1,212	603	2,768	5,346	5,813	1,509	1,308	2,078	1,835
1956	1,039	673	545	775	1,098	665	656	6,116	899	1,311	687	583	2,053
1957	629	1,307	692	557	710	1,869	27,850	52,650	50,410	11,860	2,334	1,148	12,680

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1899	-	-	-	-	-	-	-	-	-	-	108,400	30,290	-
1900	117,900	464,800	443,900	530,300	115,900	321,800	2,601,000	2,044,000	751,100	172,800	167,200	1,171,000	8,902,000
1901	498,100	256,200	77,450	52,700	57,000	48,250	78,110	281,400	276,100	28,120	38,100	46,450	1,738,000
1902	24,720	27,150	18,490	14,450	12,940	69,700	140,900	334,700	174,100	765,500	638,400	156,700	2,378,000
1903	145,800	633,600	276,300	-	-	-	-	-	-	-	-	-	-
1918	-	-	-	-	-	10,100	400,000	196,000	211,000	26,700	8,180	142,000	-
1919	277,000	827,000	658,000	689,000	542,000	320,000	522,000	1,030,000	898,000	799,000	510,000	510,000	7,580,000
1920	1,810,000	1,400,000	695,000	1,430,000	496,000	304,000	170,000	1,160,000	459,000	172,000	640,000	762,000	9,500,000
1921	251,000	343,000	234,000	226,000	216,000	272,000	536,000	258,000	607,000	261,000	33,200	1,320,000	4,557,000
1922	92,200	56,300	33,200	31,100	48,700	231,000	2,340,000	3,620,000	419,000	150,000	58,700	27,600	7,100,000
1923	23,100	40,700	41,000	27,700	84,700	124,000	760,000	405,000	306,000	49,300	11,500	130,000	2,000,000
1924	250,000	410,000	1,050,000	357,000	424,000	675,000	350,000	413,000	374,000	53,400	27,700	132,000	4,520,000
1925	58,600	21,600	18,000	17,900	13,700	16,400	19,300	594,000	48,100	18,800	44,500	339,000	1,210,000
1926	388,000	425,000	43,100	-	-	-	-	-	-	357,000	212,000	310,000	-
1927	367,000	78,500	186,000	141,000	353,000	381,000	523,000	248,000	627,000	168,000	62,900	37,800	3,170,000
1928	425,000	54,000	47,800	41,600	221,000	108,000	166,000	376,000	499,000	168,000	232,000	79,100	2,420,000
1929	12,700	27,100	113,000	99,600	43,500	127,000	326,000	1,070,000	750,000	89,800	27,800	374,000	3,060,000
1930	81,800	130,000	25,800	23,200	90,000	78,700	30,300	2,310,000	425,000	91,000	24,600	71,400	3,380,000
1931	885,000	147,000	640,000	342,000	633,000	427,000	318,000	270,000	212,000	80,600	37,800	25,000	4,020,000
1932	241,000	114,000	126,000	719,000	776,000	505,000	155,000	879,000	424,000	546,000	97,200	904,000	5,490,000
1933	103,000	41,500	122,000	220,000	102,000	244,000	157,000	559,000	192,000	38,800	175,000	132,000	2,090,000
1934	39,000	34,900	20,600	175,000	132,000	416,000	833,000	124,000	29,600	11,400	6,950	19,400	1,840,000
1935	14,510	146,400	72,340	66,020	228,200	72,990	140,400	2,256,000	1,050,000	324,700	109,400	559,000	5,040,000
1936	244,000	159,200	615,700	134,700	72,160	65,040	64,180	966,900	391,400	472,400	35,680	868,800	4,090,000
1937	1,207,000	370,800	713,800	596,200	285,800	418,300	157,700	83,260	287,600	117,600	81,050	93,040	4,412,000
1938	115,700	113,400	402,400	999,200	901,300	458,800	914,000	737,600	455,900	427,000	249,400	46,810	5,822,000
1939	26,940	21,320	21,760	104,900	82,280	75,960	62,330	535,000	469,200	126,700	49,950	31,140	1,607,000
1940	21,630	25,790	17,550	12,420	41,900	20,110	230,900	268,300	644,100	689,800	257,400	94,850	2,325,000
1941	31,260	1,299,000	1,339,000	711,200	1,137,000	917,500	701,400	2,134,000	1,510,000	635,800	304,500	217,200	10,940,000
1942	829,900	372,000	90,200	95,010	59,220	51,600	1,776,000	1,496,000	1,010,000	114,600	99,980	787,300	6,782,000
1943	714,000	311,800	236,000	159,100	141,400	241,200	293,400	235,400	146,700	82,430	62,270	58,410	2,682,000
1944	69,360	21,510	29,690	335,900	601,200	697,000	246,100	2,395,000	631,200	112,100	59,350	170,900	5,369,000
1945	61,880	144,300	348,000	657,500	707,000	1,111,000	2,002,000	462,300	451,300	408,900	126,100	80,020	6,560,000
1946	331,100	85,600	322,300	380,400	504,800	721,400	335,300	1,011,000	405,700	94,670	72,860	178,000	4,443,000
1947	261,400	570,400	421,800	620,900	206,200	476,300	332,800	649,100	238,400	79,950	106,800	61,770	4,026,000
1948	33,390	41,390	117,400	82,680	173,600	153,600	107,700	252,300	94,410	162,300	50,920	62,820	1,333,000
1949	23,740	18,400	23,120	57,180	103,400	249,400	493,400	630,700	413,600	149,000	63,000	80,560	2,306,000
1950	140,300	73,760	68,480	75,850	373,700	62,820	222,400	210,100	212,300	202,500	205,900	259,900	2,108,000
1951	97,380	29,450	27,340	44,140	50,740	49,030	24,280	98,960	257,700	78,880	75,200	77,630	910,700
1952	29,130	24,330	19,620	18,970	22,620	28,340	174,200	284,000	81,770	55,520	63,220	36,920	838,600
1953	6,830	33,020	128,100	121,200	39,140	153,800	82,290	898,500	55,850	59,530	47,620	53,180	1,679,000
1954	221,300	51,750	300,500	38,180	20,800	16,670	39,290	438,700	145,900	71,250	57,790	20,740	1,423,000
1955	27,230	37,080	10,490	13,050	67,310	37,090	164,700	328,700	345,900	92,790	80,400	123,700	1,328,000
1956	638,600	40,060	33,500	47,630	63,140	40,910	39,040	376,100	53,500	80,590	42,230	34,720	1,490,000
1957	38,650	77,770	42,530	34,230	39,440	114,900	1,657,000	3,237,000	2,999,000	729,400	143,500	68,330	9,182,000

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1899	(a)	-	-	-	-	-	-	-
1900	(a)	b135,000	Apr. 11, 1900	300	12,300	8,902,000	12,030	8,707,000
1901	(a)	b59,000	Oct. 1, 1900	323	2,401	1,738,000	1,349	976,600
1902	(a)	b65,900	Aug. 1, 1902	213	3,285	2,378,000	4,646	3,363,000
1903	(a)	-	-	-	-	-	-	-
1918	478	-	-	-	-	-	-	-
1919	508	69,300	Nov. 11, 1918	272	10,500	7,580,000	13,400	9,720,000
1920	508	70,500	Oct. 25, 1919	1,080	13,100	9,500,000	8,830	6,420,000
1921	528,850	-	Sept. 12, 1921	215	6,297	4,557,000	5,400	3,910,000
1922	548	121,000	Apr. 6, 7, 1922	-	9,810	7,100,000	9,700	7,030,000
1923	568	56,300	Apr. 13, 1923	112	2,770	2,000,000	4,980	3,610,000
1924	588	70,700	Dec. 14, 1923	-	6,220	4,520,000	4,000	2,900,000
1925	608,628	58,000	May 10, 1925	160	1,670	1,210,000	2,720	1,970,000

a U. S. Department of Agriculture, Office of Experimental Stations Bulletins: for 1899-1900, Bull. 104; for 1901, Bull. 104, 119; for 1902, Bull. 119, 133; for 1903, Bull. 133. Published figures are in acre-ft. Monthly and yearly figures are usable, but daily figures cannot be evaluated.

b Maximum day.

Yearly discharge, in cubic feet per second, of Brazos River near Bryan, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1926	628	c35,600	Nov. 7, 1925	-	-	-	-	-
1927	648	-	-	328	4,380	3,170,000	4,240	3,070,000
1928	668	38,700	Oct. 4, 1927	197	3,340	2,420,000	2,820	2,040,000
1929	688	-	May 30, 1929	113	4,230	3,060,000	4,350	3,150,000
1930	703	-	May 20, 1930	101	4,670	3,380,000	6,650	4,820,000
1931	718	-	-	145	5,550	4,020,000	3,910	2,830,000
1932	733	75,100	Feb. 21, 1932	134	7,560	5,490,000	7,270	5,270,000
1933	748	40,900	May 29, 1933	346	2,880	2,090,000	2,640	1,910,000
1934	763	79,600	Apr. 7, 1934	89	2,540	1,840,000	2,732	1,978,000
1935	788	139,000	May 22, 1935	113	6,961	5,040,000	8,046	5,826,000
1936	808	d75,000	May 29, 1936	336	5,634	4,090,000	7,387	5,363,000
1937	828	133,000	Oct. 1, 1936	400	6,094	4,412,000	3,801	2,752,000
1938	858	103,000	Jan. 26, 1938	373	8,041	5,822,000	7,265	5,260,000
1939	878	54,200	May 19, 1939	170	2,220	1,607,000	2,213	1,602,000
1940	898	57,900	July 2, 1940	-	3,202	2,325,000	6,789	4,929,000
1941	928	150,000	Nov. 27, 1940	247	15,110	10,940,000	13,210	9,561,000
1942	958	103,000	Apr. 28, 1942	603	9,369	6,782,000	9,327	6,752,000
1943	978	53,800	Oct. 20, 1942	465	3,705	2,682,000	2,128	1,541,000
1944	1008	172,000	May 4, 1944	283	7,396	5,369,000	7,993	5,803,000
1945	1038	139,000	Apr. 24, 1945	485	9,061	6,560,000	9,317	6,745,000
1946	1058	57,400	May 17, 1946	717	6,137	4,443,000	6,848	4,958,000
1947	1088	46,400	Jan. 19, 1947	585	5,561	4,026,000	4,095	2,964,000
1948	1118	30,000	May 13, 1948	341	1,836	1,333,000	1,661	1,206,000
1949	1148	53,200	May 20, 1949	227	3,185	2,306,000	3,485	2,523,000
1950	1178	43,800	Feb. 14, 1950	580	2,912	2,108,000	2,734	1,980,000
1951	1212	15,600	June 14, 1951	242	1,258	910,700	1,146	829,600
1952	1242	33,500	May 26, 1952	134	1,155	838,600	1,286	933,500
1953	1282	65,200	May 14, 1953	90	2,319	1,679,000	2,879	2,085,000
1954	1342	34,000	Dec. 4, 1953	162	1,965	1,423,000	1,277	924,100
1955	1392	30,700	May 21, 1955	135	1,835	1,328,000	2,715	1,966,000
1956	1442	33,100	May 4, 1956	223	2,053	1,490,000	1,290	936,800
1957	1512	137,000	Apr. 26, 1957	155	12,680	9,182,000	-	-

c Maximum for period October to December and June to September.
d Maximum peak discharge; maximum discharge during the year, 119,000 cfs at 12 p. m. Sept. 30, stage rising.

207. Yegua Creek near Somerville, Tex.

Location.--Lat 30°19', long 96°30', at bridge on State Highway 36, 760 ft downstream from Gulf, Colorado & Santa Fe Railway bridge, 2 miles south of Somerville, Burleson County, and 5 miles upstream from Davidson Creek.

Drainage area.--990 sq mi.

Gage.--Water-stage recorder. Datum of gage is 199.21 ft above mean sea level, datum of 1929. Prior to Jan. 30, 1934, inverted chain gage at railway bridge 760 ft upstream, at datum 34.30 ft higher.

Average discharge.--33 years (1924-57), 274 cfs (198,400 acre-ft per year).

Extremes.--1924-57: Maximum discharge, 56,800 cfs July 1, 1940 (gage height, 19.27 ft); no flow at times.
Maximum stage known, about 22 ft Dec. 5, 1913, present site and datum, from information by Gulf, Colorado & Santa Fe Railway Co.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	339	2.86	0.14	0.01	-
1925	0	0.03	0.22	0.50	0.56	0.53	0.53	0.35	0	2.57	0	.20	0.46
1926	3,140	1,090	12.7	455	26.3	1,760	2,900	781	22.1	9.53	2.44	1.10	855
1927	73.8	201	828	63.9	322	489	1,020	25.4	137	242	2.5	.40	282
1928	4.23	2.58	4.15	13.0	303	41.7	29.4	3.72	14.3	.59	0	0	33.5
1929	0	6.91	354	31.6	4.88	57.4	844	2,650	1,100	144	1.56	0	437
1930	0	531	8.24	183	363	203	39.5	1,050	20.2	.35	0	10.8	200
1931	238	154	592	1,400	860	852	109	316	3.38	9.13	4.09	0	378
1932	4.78	.02	67.7	3,000	2,060	816	49.7	135	91.7	.85	.27	543	561
1933	47.8	.72	23.8	396	734	480	66.2	92.8	18.4	19.8	33.1	16.9	158
1934	.95	0	0	738	1,120	1,210	1,240	16.7	7.12	.53	.27	0	355
1935	0	62.8	381	183	351	32.4	152	2,332	126	9.90	1.24	497	346
1936	31.8	30.2	431	32.4	44.4	35.8	25.0	2,818	209	1,954	10.2	33.9	478
1937	69.6	15.4	84.5	361	59.2	168	46.9	3.47	9.62	.03	0	0	68.8
1938	205	313	305	963	116	156	1,714	806	87.2	4.80	3.08	0	390
1939	0	5.72	.39	91.9	256	21.1	.81	171	35.9	.04	12.8	.05	48.3
1940	.66	0	15.5	.58	66.1	.39	35.1	224	966	3,364	1.26	4.86	393

Monthly and yearly mean discharge, in cubic feet per second, of Yegua Creek near Somerville, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1941	13.4	1,424	2,160	397	450	1,036	463	988	1,605	2,535	20.6	3.53	929
1942	18.4	146	22.9	14.1	15.6	12.8	889	39.0	32.7	53.4	1.32	53.1	107
1943	6.97	48.3	51.5	162	20.7	142	27.5	110	64.7	1.56	.08	11.9	54.3
1944	11.6	.87	11.7	668	663	534	53.5	608	69.2	10.0	40.8	179	237
1945	.20	883	1,083	1,331	407	201	1,117	96.6	363	30.7	695	138	529
1946	391	27.1	84.0	605	565	1,409	136	427	240	7.27	.03	55.1	329
1947	68.8	1,024	138	596	46.8	923	183	430	28.1	31.5	1,622	7.71	429
1948	.12	.05	27.4	5.40	119	17.5	5.17	90.4	4.27	13.1	0	0	23.3
1949	0	0	0	17.4	482	276	1,795	227	85.7	3.89	.003	11.1	237
1950	560	10.2	196	106	964	45.9	881	354	1,084	34.8	.22	313	364
1951	1.34	.01	.05	.23	3.56	74.9	44.9	9.99	28.1	0	0	2.01	13.8
1952	.02	1.61	.003	.01	15.5	8.04	92.4	287	33.0	308	.20	.19	62.8
1953	0	50.8	299	264	77.5	30.4	106	1,140	3.12	99.9	9.72	65.0	181
1954	304	125	199	37.6	18.2	5.57	13.5	107	.98	1.77	39.9	0	71.9
1955	0	.86	1.37	4.86	315	1.79	63.4	3.42	75.3	.07	9.00	3.34	37.6
1956	2.81	0	.44	5.01	227	50.7	108	29.9	6.57	0	0	0	34.9
1957	0	0	10.4	.06	6.38	225	2,265	1,189	1,060	4.25	.04	261	417

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	-	-	20,200	176	8.5	0.6	-
1925	0	1.8	14	30	31	32	31	21	0	158	0	12	332
1926	193,000	64,900	783	28,000	1,460	108,000	172,000	48,000	1,320	586	150	66	618,000
1927	4,540	12,000	50,900	3,930	17,900	30,100	60,400	1,560	8,130	14,900	154	24	205,000
1928	260	154	255	799	17,400	2,560	1,750	229	851	36	0	0	24,000
1929	0	411	21,800	1,940	271	3,530	50,200	163,000	65,500	8,850	96	0	316,000
1930	0	31,600	507	11,300	20,200	12,500	2,350	64,600	1,200	22	0	643	145,000
1931	14,600	9,160	36,400	86,100	47,800	52,400	6,490	19,400	201	561	251	0	273,000
1932	294	1.2	4,160	184,000	118,000	50,200	2,960	8,300	5,460	52	17	32,300	406,000
1933	2,940	43	1,460	24,300	40,800	29,500	3,940	5,710	1,090	1,220	2,040	1,010	114,000
1934	58	0	0	45,400	62,200	74,400	73,800	1,030	424	33	17	0	257,000
1935	0	3,740	23,450	11,270	19,510	1,990	9,070	143,400	7,490	609	76	29,560	250,200
1936	1,950	1,790	26,520	1,990	2,550	2,200	1,480	173,300	12,430	120,200	629	2,020	347,100
1937	4,280	919	5,190	22,210	3,290	10,340	2,790	213	572	1.8	0	0	49,810
1938	12,600	18,650	18,760	59,200	6,440	9,570	102,000	49,590	5,190	295	190	0	282,500
1939	0	340	24	5,650	14,230	1,300	48	10,480	2,130	2.4	785	3.0	34,990
1940	41	0	952	36	3,800	24	2,090	13,800	57,480	206,800	78	289	285,400
1941	822	84,760	132,800	24,430	24,990	63,670	27,540	60,760	95,490	155,900	1,270	210	672,600
1942	1,130	8,680	1,410	867	869	787	52,920	2,400	1,950	3,290	81	3,160	77,540
1943	429	2,870	3,170	9,940	1,150	8,720	1,640	6,740	3,850	96	4.8	708	39,320
1944	714	52	722	41,080	38,130	32,850	3,180	37,400	4,120	618	2,510	10,680	172,100
1945	12	52,560	66,610	81,870	22,590	12,380	66,460	5,940	21,630	1,890	42,740	8,230	382,900
1946	24,010	1,610	5,160	37,210	31,370	86,650	8,120	26,230	14,250	447	1.6	3,280	238,300
1947	4,230	60,910	8,480	36,640	2,600	56,750	10,900	26,410	1,670	1,940	99,750	459	310,700
1948	7.3	3.2	1,690	332	6,870	1,080	307	5,560	254	805	0	0	16,910
1949	0	0	0	1,070	26,750	16,970	106,800	13,970	5,100	239	.2	662	171,600
1950	34,460	610	12,020	6,520	53,510	2,820	52,410	21,760	64,480	2,140	13	12,690	263,400
1951	82	.6	3.4	14	198	4,610	2,670	615	1,670	0	0	120	9,980
1952	1.2	96	.2	.8	891	494	5,500	17,620	1,960	18,960	12	11	45,550
1953	0	3,020	18,370	16,250	4,310	1,870	6,330	70,110	186	6,140	598	3,870	131,100
1954	18,710	7,430	12,240	2,310	1,010	343	803	6,570	59	109	2,450	0	52,030
1955	0	51	84	299	17,500	110	3,770	210	4,480	4.6	553	199	27,260
1956	173	0	27	308	13,060	3,120	6,410	1,840	391	0	0	0	25,330
1957	0	0	639	3.6	354	13,850	134,800	73,110	63,050	261	2.6	15,560	301,600

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588	a11,600	May 30, 1924	0	-	-	-	-
1925	608	30	July 7, 1925	0	0.46	332	358	259,000
1926	628	34,600	Apr. 22, 1926	.2	855	618,000	591	427,000
1927	648	11,600	Apr. 13, 1927	-	282	205,000	190	138,000
1928	668	2,440	Feb. 24, 1928	0	33.5	24,000	63.1	45,800
1929	688	41,200	May 30, 1929	0	437	316,000	450	326,000
1930	703	6,450	May 19, 1930	0	200	145,000	239	173,000
1931	718	6,700	Jan. 13, 1931	0	378	273,000	301	218,000
1932	733	15,500	Jan. 7, 1932	0	561	406,000	561	406,000
1933	748	4,400	Jan. 31, 1933	0	158	114,000	151	110,000
1934	763	11,900	Mar. 3, 1934	0	355	257,000	393	284,500
1935	788	8,000	May 8, 1935	0	346	250,200	350	253,200

a Maximum during period May to September.

Yearly discharge, in cubic feet per second, of Yegua Creek near Somerville, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1936	808	23,500	May 25, 1936	2.0	478	347,100	451	327,200
1937	828	1,330	Jan. 13, 1937	0	68.8	49,810	124	89,430
1938	858	15,600	Apr. 27, 1938	0	390	282,500	322	232,800
1939	878	1,330	Feb. 27, 1939	0	48.3	34,990	49.2	35,620
1940	898	56,800	July 1, 1940	0	393	285,400	693	502,800
1941	928	16,100	July 13, 1941	0	929	672,600	643	465,500
1942	958	7,900	Apr. 9, 1942	0	107	77,540	101	72,790
1943	978	1,050	May 31, 1943	0	54.3	39,320	47.4	34,340
1944	1008	5,410	Jan. 30, 1944	0	237	172,100	399	289,800
1945	1038	11,600	Aug. 30, 1945	0	529	382,900	407	294,500
1946	1058	13,600	Mar. 13, 1946	0	329	238,300	388	281,200
1947	1088	29,600	Aug. 26, 1947	0	429	310,700	330	238,800
1948	1118	898	Feb. 9, 1948	0	23.3	16,910	20.9	15,210
1949	1148	16,100	Apr. 28, 1949	0	237	171,600	302	218,700
1950	1178	5,620	Apr. 18, 1950	0	364	263,400	299	216,400
1951	1212	764	Mar. 29, 1951	0	13.8	9,980	13.8	9,990
1952	1242	5,410	July 19, 1952	0	62.8	45,550	92.1	66,840
1953	1282	5,000	May 16, 1953	0	181	131,100	204	148,000
1954	1342	2,770	Oct. 27, 1953	0	71.9	52,030	19.0	13,790
1955	1392	2,380	Feb. 6, 1955	0	37.6	27,260	37.7	27,330
1956	1442	1,580	Feb. 10, 1956	0	34.9	25,330	35.5	25,770
1957	1512	17,300	Apr. 27, 1957	0	417	301,600	-	-

208. Navasota River near Easterly, Tex.

Location.--Lat 31°10'10", long 96°17'55", at bridge on U. S. Highway 79, 1 mile upstream from Missouri-Pacific Railroad bridge, and 6 miles northeast of Easterly, Robertson County.

Drainage area.--949 sq mi.

Supplemental records available.--Records of chemical analyses for period January to December 1942 are published in reports of Geological Survey.

Gage.--Water-stage recorder. Datum of gage is 276.42 ft above mean sea level, datum of 1929. Prior to June 11, 1932, inverted staff gage at railroad bridge 1 mile downstream at datum 24.86 ft higher.

Average discharge.--33 years (1924-57), 403 cfs (291,800 acre-ft per year).

Extremes.--1924-57: Maximum discharge, 60,300 cfs May 2, 1944 (gage height, 22.13 ft); no flow at times.
Maximum stage since about 1867, about 24 ft in 1900, from information by local residents (discharge, about 71,000 cfs).

Remarks.--Diversions for irrigation, municipal supply, and oilfield operation above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	189	250	916	6.13	0	53.4	-
1925	4.00	28.7	5.00	9.42	10.0	10.4	9.43	0	0	12.8	3.19	202	24.3
1926	430	1,670	22.8	461	55.6	1,420	1,860	528	686	227	19.7	3.27	615
1927	140	128	655	1,530	850	484	564	354	840	32.6	2.74	2.71	463
1928	1,590	25.6	59.1	34.1	892	121	184	41.3	874	142	15.7	2.51	329
1929	4.31	46.0	956	415	170	240	473	5,050	2,360	53.0	6.04	1.25	821
1930	12.8	438	30.6	123	222	294	59.2	4,800	28.2	4.07	.58	2.32	507
1931	255	69.1	1,040	534	1,700	313	278	592	12.6	14.8	5.65	.30	394
1932	.31	2.37	146	4,050	2,610	547	69	475	171	6.23	.57	3,410	948
1933	9.32	9.50	111	519	138	406	394	505	42.4	2.83	2.75	9.71	180
1934	3.15	3.35	8.00	225	127	1,240	1,470	287	2.72	.55	.21	1.34	281
1935	.58	146	194	98.9	1,296	213	1,304	3,524	512	40.0	12.0	208	625
1936	706	214	3,445	65.9	48.8	88.2	34.5	529	82.6	2,099	7.02	10.8	620
1937	268	96.1	808	1,282	261	1,314	106	25.1	121	3.32	.78	90.7	368
1938	3.65	275	203	1,414	357	118	854	85.8	423	39.5	10.8	1.09	314
1939	.95	4.23	4.64	90.2	72.3	97.2	27.0	351	228	3.97	.30	20.0	75.1
1940	.46	.70	2.09	4.45	31.0	4.90	135	469	136	282	3.95	4.22	90.1
1941	3.73	3,685	1,687	1,216	1,576	670	267	343	1,014	228	42.5	16.2	886
1942	6.34	15.8	26.6	12.4	26.2	16.5	1,011	1,439	446	8.41	8.57	341	280
1943	27.7	186	420	164	25.8	139	140	104	183	7.40	.70	.45	117
1944	63.3	14.4	15.7	962	2,224	1,038	100	5,046	307	6.76	4.79	15.9	816
1945	1.59	323	890	1,302	705	1,894	2,510	200	268	189	502	442	768
1946	932	87.0	1,831	859	1,250	1,175	269	2,864	859	26.9	7.64	51.8	854
1947	11.9	1,502	245	1,278	102	1,321	223	2,134	400	12.0	18.8	6.21	609
1948	3.24	5.35	54.2	113	495	210	214	498	13.7	42.6	1.45	1.72	137
1949	1.53	3.15	13.9	462	119	683	215	40.7	161	30.5	4.21	12.2	146
1950	744	15.7	37.0	482	2,080	58.9	640	127	172	32.9	3.68	2.52	354

Monthly and yearly mean discharge, in cubic feet per second, of Navasota River near Easterly, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2.39	7.79	4.51	6.16	13.3	26.3	20.8	76.6	53.4	0.95	0.09	68.6	23.3
1952	2.15	2.75	9.36	10.4	143	160	406	692	18.8	2.16	.52	.32	121
1953	.38	63.6	371	381	45.6	1,168	71.1	3,363	10.3	10.8	7.32	9.62	466
1954	60.7	107	1,305	207	28.7	15.0	20.7	454	3.72	.40	.34	.24	187
1955	3.16	19.3	27.6	32.5	266	159	408	158	88.8	11.1	12.8	.63	97.1
1956	4.75	.42	2.20	9.95	141	9.37	4.98	631	35.6	.55	.29	1.26	70.3
1957	.18	38.7	2.36	2.36	95.7	464	3,966	3,279	736	3.94	.55	3.41	716

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1924	-	-	-	-	-	-	11,200	15,300	54,500	377	0	3,180	-
1925	246	1,710	307	579	555	641	561	0	0	789	196	12,000	17,600
1926	26,400	99,100	1,400	28,400	3,090	87,200	111,000	32,500	40,800	14,000	1,210	194	445,000
1927	8,600	7,590	40,300	93,900	47,200	29,800	33,600	21,800	50,000	2,010	168	161	335,000
1928	97,500	1,520	3,630	2,100	51,300	7,440	10,900	2,540	52,000	8,730	965	149	239,000
1929	265	2,740	58,800	25,500	9,440	14,800	28,100	310,000	141,000	3,260	371	74	594,000
1930	787	26,100	1,880	7,560	12,300	18,100	3,520	295,000	1,680	250	36	138	367,000
1931	15,700	4,110	64,000	32,800	94,400	19,200	16,500	36,400	750	910	347	18	285,000
1932	19	141	8,980	249,000	150,000	33,600	4,110	29,200	10,200	383	35	203,000	689,000
1933	573	565	6,820	31,900	7,660	25,000	23,400	31,100	2,520	174	169	578	130,000
1934	194	199	492	13,800	7,050	76,200	87,500	17,600	162	34	17	80	203,000
1935	36	8,720	11,900	6,080	71,980	13,120	77,620	216,700	30,500	2,460	737	12,380	452,200
1936	43,420	12,730	211,800	4,050	2,810	5,420	2,050	32,500	4,920	129,000	432	642	449,800
1937	16,480	5,720	49,700	78,820	14,500	80,810	6,280	1,540	7,180	204	48	5,400	266,700
1938	225	16,380	12,470	86,940	19,800	7,270	50,820	5,280	25,180	2,430	664	65	227,500
1939	59	252	285	5,540	4,020	5,980	1,610	21,580	13,570	244	19	1,190	54,350
1940	28	41	128	274	1,780	301	8,060	28,860	8,070	17,350	243	251	65,390
1941	229	219,200	103,700	74,770	87,500	41,170	15,900	21,110	60,340	14,000	2,610	961	641,500
1942	390	938	1,640	763	1,460	1,010	60,180	88,460	26,560	517	527	20,270	202,700
1943	1,700	11,060	25,830	10,110	1,430	8,540	8,330	6,420	10,870	455	43	27	84,820
1944	3,890	855	966	59,150	127,900	63,820	5,950	310,200	18,280	416	294	945	592,700
1945	98	19,220	54,710	80,080	39,140	116,500	149,400	12,280	15,960	11,600	30,840	26,290	556,100
1946	57,330	5,180	112,600	52,800	69,420	72,230	16,030	176,100	51,090	1,650	469	3,080	618,000
1947	731	89,370	15,070	78,560	5,680	81,250	13,260	131,200	23,800	737	1,160	370	441,200
1948	199	318	3,340	6,920	28,450	12,930	12,720	30,650	816	2,620	89	102	99,150
1949	94	187	857	28,430	6,600	42,020	12,800	2,500	9,580	1,880	259	729	105,900
1950	45,750	935	2,280	29,610	115,300	3,620	38,060	7,810	10,240	2,020	227	150	256,000
1951	147	464	277	379	740	1,620	1,240	4,710	3,180	58	5.8	4,080	16,900
1952	132	164	575	642	8,200	9,850	24,160	42,580	1,120	133	32	19	87,610
1953	23	3,780	22,840	23,410	2,530	71,820	4,230	206,800	612	665	450	572	337,700
1954	3,730	6,390	80,270	12,720	1,590	920	1,230	27,920	221	24	21	14	135,000
1955	194	1,150	1,700	2,000	14,800	9,750	24,260	9,690	5,280	685	787	37	70,330
1956	292	25	135	612	8,080	576	296	38,810	2,120	34	18	75	51,070
1957	11	2,300	145	145	5,320	28,540	236,000	201,600	43,800	242	34	203	518,300

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1924	588,898	a9,500	June 2, 1924	0	-	-	-	-
1925	608	2,540	Sept. 16, 1925	0	24.3	17,600	197	142,000
1926	628,898	b17,600	Nov. 7, 1925, Apr. 23, 1926	2.0	615	445,000	517	375,000
1927	648,898	15,200	Jan. 22, 1927	.7	463	335,000	527	381,000
1928	668	b16,800	Oct. 4, 1927	2.0	329	239,000	273	198,000
1929	688,898	49,400	May 30, 1929	.3	821	594,000	776	561,000
1930	703,898	30,100	May 12, 1930	.1	507	367,000	583	422,000
1931	718	8,100	Jan. 21, 1931	.3	394	285,000	291	210,000
1932	733	58,100	Sept. 5, 1932	.3	948	689,000	947	687,000
1933	748	5,110	Apr. 1, 1933	1.4	180	130,000	170	123,000
1934	763	16,600	Apr. 7, 1934	.2	281	203,000	308	223,300
1935	788	18,000	Apr. 27, 1935	.4	625	452,200	966	699,500
1936	808,1512	41,700	Dec. 7, 1935	2.0	620	449,800	350	253,800
1937	828	7,290	Mar. 7, 1937	.3	368	266,700	309	223,900
1938	858	13,100	Jan. 25, 1938	.7	314	227,500	275	199,000
1939	878	1,620	May 20, 1939	.2	75.1	54,350	74.5	53,950
1940	898	1,880	May 25, July 1, 1940	.3	90.1	65,390	535	388,300
1941	928	34,300	Nov. 24, 1940	2.1	886	641,500	444	321,300
1942	958	18,800	May 19, 1942	.6	280	202,700	329	238,300
1943	978	4,900	Dec. 30, 1942	.2	117	84,820	71.7	51,940
1944	1008	60,300	May 2, 1944	.7	816	592,700	911	661,000
1945	1038	15,600	Mar. 5, Apr. 2, 1945	1.4	768	556,100	908	657,200

a Maximum during period April to September.
b Observed.

Yearly discharge, in cubic feet per second, of Navasota River near Easterly, Tex.--Continued

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1058	23,200	May 14, 1946	2.5	854	618,000	757	548,000
1947	1088	8,800	May 20, 1947	3.1	609	441,200	469	339,900
1948	1118	4,010	May 14, 1948	1.0	137	99,150	133	96,440
1949	1148	5,350	Mar. 22, 1949	1.2	146	105,900	212	153,800
1950	1178	19,000	Feb. 13, 1950	1.2	354	256,000	287	207,900
1951	1212	710	Sept. 17, 1951	0	23.3	16,900	23.3	16,880
1952	1242	6,800	May 27, 1952	.2	121	87,610	156	113,400
1953	1282	25,700	May 17, 1953	.3	466	337,700	555	401,500
1954	1342	8,300	Dec. 3, 1953	.2	187	135,000	65.9	47,700
1955	1392	1,930	Apr. 10, 1955	.2	97.1	70,330	93.6	67,740
1956	1442	4,820	May 4, 1956	.2	70.3	51,070	73.1	53,080
1957	1512	37,700	Apr. 25, 1957	.1	716	518,300	-	-

209. Navasota River near Bryan, Tex.

Location.--Lat 30°52'10", long 96°11'25", at bridge on U. S. Highway 190, 2.5 miles upstream from Shepherd Creek and 17 miles northeast of Bryan, Brazos County.

Drainage area.--1,439 sq mi.

Gage.--Water-stage recorder. Datum of gage is 227.4 ft above mean sea level (State Highway Department Survey).

Average discharge.--6 years (1951-57), 352 cfs (254,800 acre-ft per year).

Extremes.--1951-57: Maximum discharge, 35,800 cfs Apr. 26, 1957 (gage height, 16.36 ft); no flow at times.

Remarks.--Diversion for irrigation, oilfield operation and municipal supply above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	23.7	57.6	116	63.4	124	67.9	3.99	0.46	50.2	-
1952	4.40	7.19	23.9	24.4	156	203	495	494	265	5.52	.57	0	139
1953	0	47.4	392	568	111	1,126	260	4,087	22.8	20.0	13.1	30.6	565
1954	266	159	1,872	248	69.5	42.0	48.1	701	12.9	.84	.04	0	289
1955	13.6	42.2	45.2	68.1	547	200	1,119	182	110	12.7	12.6	2.28	192
1956	4.82	7.46	8.71	32.9	494	47.5	45.9	426	29.9	.54	0	.09	90.0
1957	0	29.5	5.82	6.60	79.9	316	4,570	3,993	998	12.2	3.94	2.68	835

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	-	-	-	1,460	3,200	7,120	3,770	7,630	4,040	245	28	2,990	-
1952	270	428	1,470	1,500	8,960	12,470	29,460	30,360	15,770	340	35	0	101,100
1953	0	2,820	24,100	34,910	6,150	69,230	15,480	251,300	1,360	1,230	806	1,820	409,200
1954	16,370	9,450	115,100	15,260	3,860	2,580	2,860	43,100	765	52	2.2	0	209,400
1955	834	2,510	2,780	4,190	30,400	12,300	66,580	11,170	6,510	780	776	135	139,000
1956	296	444	536	2,020	28,410	2,920	2,730	26,180	1,780	33	0	5.2	65,350
1957	0	1,760	358	406	4,440	19,420	271,900	245,500	59,390	753	242	159	604,300

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1212	-	-	0	-	-	45.1	32,650
1952	1242	3,900	May 31, 1952	0	139	101,100	173	125,800
1953	1282	28,100	May 18, 1953	0	565	409,200	723	523,200
1954	1342	8,020	Dec. 5, 1953	0	289	209,400	103	74,600
1955	1392	7,320	Apr. 13, 1955	0	192	139,000	185	134,100
1956	1442	3,060	May 8, 1956	0	90.0	65,350	91.2	66,200
1957	1512	35,800	Apr. 26, 1957	0	835	604,300	-	-

210. Brazos River near Hempstead, Tex.

Location.--Lat 30°07'25", long 96°11'00", at bridge on U. S. Highway 290, 4,500 ft upstream from Texas & New Orleans Railroad bridge, 6.5 miles northwest of Hempstead, Waller County, 8 miles upstream from Caney Creek, and at mile 196.

Drainage area.--42,640 sq mi, approximately, of which 9,240 sq mi is probably noncontributing.

Gage.--Wire-weight gage. Datum of gage is 117.90 ft above mean sea level, datum of 1929. Prior to Nov. 1, 1940, chain gage at railroad bridge 4,500 ft downstream at datum 5.97 ft lower.

Average discharge.--19 years (1938-57), 6,586 cfs (4,768,000 acre-ft per year).

Brazos River near Hempstead, Tex.--Continued

Extremes.--1938-57: Maximum discharge, 143,000 cfs May 2, 1957 (gage height, 44.21 ft); minimum daily, 137 cfs Nov. 6, 1952. Maximum stage since at least 1899, 56.1 ft Dec. 8, 1913; flood of July 4, 1899, reached a stage of 53.6 ft: present site and datum, from information by Texas & New Orleans Railroad Co.

Remarks.--Some regulation by reservoirs above Bryan. (See Remarks for Brazos River near Bryan.) Many small diversions above station for irrigation, industrial and municipal supply, and oilfield operations.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	504	467	483	2,790	3,300	2,372	1,110	9,859	8,321	2,539	791	612	2,759
1940	404	494	987	386	2,614	474	3,279	5,926	11,160	19,000	4,327	1,772	4,244
1941	821	26,560	41,590	15,940	22,690	22,440	13,480	36,760	31,450	16,130	4,991	3,516	19,680
1942	11,950	8,496	2,156	2,118	1,584	1,232	35,640	30,050	20,240	3,402	1,744	13,830	11,020
1943	11,870	6,588	4,187	4,894	2,887	4,078	5,218	4,255	3,642	1,901	1,418	1,240	4,362
1944	1,382	631	989	9,894	15,980	15,740	4,538	46,130	16,260	2,395	1,259	4,349	9,968
1945	1,152	6,290	11,900	20,990	15,790	21,740	42,860	12,260	10,090	7,130	4,186	5,115	13,240
1946	7,736	2,069	6,961	11,230	15,170	19,070	7,886	25,790	12,970	2,532	1,352	2,808	9,621
1947	4,936	16,000	9,107	16,410	5,347	13,080	7,432	14,120	6,000	1,921	5,319	1,814	8,489
1948	702	1,214	2,447	1,787	4,294	4,022	2,862	4,894	2,482	3,167	782	1,206	2,484
1949	477	399	485	1,397	4,772	7,663	13,100	12,930	9,122	3,256	1,233	1,682	4,694
1950	5,041	3,084	3,715	3,639	14,020	2,350	8,479	6,198	9,200	3,436	4,036	4,857	5,595
1951	2,177	696	613	822	1,120	1,003	990	1,689	4,676	1,375	1,228	1,397	1,480
1952	588	499	472	410	753	1,174	4,557	5,904	3,288	1,294	1,119	770	1,735
1953	181	620	3,218	4,110	2,169	4,070	1,844	26,130	1,848	1,229	847	1,313	4,007
1954	3,793	2,221	8,276	1,632	708	426	922	7,784	2,975	1,348	1,136	454	2,666
1955	508	746	299	429	3,824	875	4,776	4,999	5,885	1,739	1,351	1,317	2,205
1956	11,010	851	636	865	2,111	1,018	1,053	6,053	1,027	1,299	838	619	2,298
1957	656	1,353	904	601	859	2,585	28,140	69,860	51,960	13,420	2,700	1,338	14,580

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1939	31,010	27,760	29,710	171,500	183,300	145,900	66,050	606,200	495,100	156,100	48,660	36,410	1,998,000
1940	24,850	29,380	60,690	23,750	150,400	29,140	195,100	364,400	663,900	1,168,000	266,100	105,500	3,081,000
1941	50,470	1,581,000	2,557,000	980,000	1,260,000	1,380,000	802,000	2,261,000	1,871,000	992,100	306,900	209,200	14,250,000
1942	735,100	505,600	132,600	132,200	87,970	75,740	2,121,000	1,848,000	1,204,000	209,200	107,200	822,900	7,980,000
1943	729,600	392,000	257,500	300,900	160,300	250,800	310,500	261,600	216,700	116,900	87,190	73,760	3,158,000
1944	84,990	37,530	60,780	608,300	919,000	967,700	270,000	2,837,000	967,600	147,300	77,400	258,800	7,236,000
1945	70,830	374,300	731,400	1,291,000	877,100	1,337,000	2,550,000	753,700	600,100	438,400	257,400	304,300	9,586,000
1946	475,700	123,100	428,000	690,200	842,600	1,173,000	469,300	1,586,000	771,600	155,700	83,120	167,100	6,965,000
1947	303,500	951,800	560,000	1,009,000	296,900	804,000	422,300	868,500	357,000	118,100	327,000	107,900	6,146,000
1948	43,140	72,260	150,400	109,900	247,000	247,300	170,300	300,900	147,700	194,700	48,110	71,760	1,803,000
1949	29,350	23,770	29,810	85,870	265,100	471,200	779,700	794,900	542,800	200,200	75,790	100,100	3,399,000
1950	310,000	183,500	228,400	223,700	778,700	144,500	504,600	381,100	547,400	211,300	248,200	289,000	4,050,000
1951	133,800	41,410	37,680	50,560	62,220	61,700	58,900	103,900	278,300	84,560	75,490	83,150	1,072,000
1952	36,160	29,700	28,990	25,210	43,320	72,160	271,200	363,000	195,600	79,570	68,780	45,830	1,260,000
1953	11,110	36,870	197,900	252,700	120,500	250,200	109,700	1,607,000	110,000	75,540	52,110	78,110	2,902,000
1954	233,200	132,200	508,900	100,300	39,320	26,190	54,880	478,600	177,000	82,880	69,870	27,000	1,930,000
1955	31,260	44,390	18,410	26,350	212,300	53,830	284,200	307,400	350,200	107,000	83,050	78,390	1,597,000
1956	676,800	50,630	39,090	53,190	121,400	62,600	62,660	372,200	61,100	79,860	51,530	36,850	1,668,000
1957	40,340	80,520	55,580	36,960	47,730	159,000	1,675,000	4,296,000	3,092,000	824,900	166,000	79,600	10,550,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1939	878	58,000	May 19, 1939	310	2,759	1,998,000	2,796	2,024,000
1940	898	83,100	July 3, 1940	260	4,244	3,081,000	9,856	7,155,000
1941	1512	a116,000	Nov. 30, 1940	455	19,680	14,250,000	15,800	11,440,000
1942	958	90,500	Apr. 29, 1942	830	11,020	7,980,000	11,030	7,985,000
1943	978	47,100	Oct. 21, 1942	750	4,362	3,158,000	2,710	1,962,000
1944	1008	108,000	May 7, 1944	394	9,968	7,236,000	11,340	8,230,000
1945	1038	106,000	Apr. 26, 1945	621	13,240	9,586,000	13,030	9,436,000
1946	1058	85,300	May 20, 1946	955	9,621	6,965,000	10,710	7,754,000
1947	1088	57,000	Jan. 20, 1947	742	8,489	6,146,000	6,349	4,596,000
1948	1118	24,000	May 14, 1948	430	2,484	1,803,000	2,232	1,621,000
1949	1148	52,000	Apr. 29, 1949	335	4,694	3,399,000	5,577	4,038,000
1950	1178	49,400	Feb. 14, 1950	770	5,595	4,050,000	4,892	3,541,000

a Maximum observed.

Yearly discharge, in cubic feet per second, of Brazos River near Hempstead, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1951	1212	13,800	June 15, 1951	398	1,480	1,072,000	1,317	953,600
1952	1242	32,200	May 27, 1952	255	1,735	1,260,000	1,943	1,411,000
1953	1282	79,200	May 18, 1953	137	4,007	2,902,000	4,875	3,530,000
1954	1342	31,800	Dec. 5, 1953	229	2,666	1,930,000	1,589	1,150,000
1955	1392	23,200	May 22, 1955	234	2,205	1,597,000	3,134	2,269,000
1956	1442	24,800	May 5, 1956	344	2,298	1,668,000	1,485	1,078,000
1957	1512	143,000	May 2, 1957	248	14,580	10,550,000	-	-

211. American Canal Co.'s canal near Fulshear, Tex.1/

Location.--Lat 29°39', long 95°54', at bridge 1 mile downstream from point of diversion, 3 miles south of Fulshear, Fort Bend County, and 13 miles northwest of Richmond.

Gage.--Water-stage recorder.

Average discharge.--24 years (1930-54), 90.1 cfs (65,230 acre ft per year).

Extremes.--1930-54: Maximum daily discharge, 466 cfs May 22, 23, Aug. 1, 1954; no flow for several months each year.

Remarks.--Station is located upstream from all diversions from canal. Flow controlled by pumping plant located on left bank of Brazos River 18 miles upstream from Richmond. Pumping began in 1931. Figures of discharge represent water pumped from the Brazos River for irrigation in the vicinity of Sugarland. Station reestablished Oct. 1, 1957.

Cooperation.--Total diversion in acre-feet during 1931, furnished by American Canal Company.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	-	-	-	34.2
1932	0	0	0	0	0	0	51.0	102	168	224	127	29.3	58.8
1933	0	0	0	0	0	0	14.3	62.3	125	83.2	93.1	3.57	32.0
1934	0	0	0	0	0	0	0	49.4	195	137	109	24.7	43.1
1935	0	0	0	0	0	0	0	4.5	69.5	74.4	89.9	36.1	23.0
1936	0	0	0	0	0	0	26.2	52.6	118	63.2	89.6	14.6	30.4
1937	0	0	0	0	0	0	0	113	113	158	140	73.4	50.3
1938	0	0	0	0	0	0	25.3	114	214	218	208	49.4	69.6
1939	0	0	0	0	0	0	164	219	212	164	197	95.1	87.9
1940	0	0	0	0	0	0	82.4	135	127	159	174	102	65.2
1941	0	0	0	0	0	0	0	140	137	197	232	79.3	66.1
1942	0	0	0	0	0	0	19.0	164	272	215	249	170	91.2
1943	0	0	0	0	0	0	93.2	221	291	222	240	175	104
1944	0	0	0	0	0	0	58.1	39.7	273	289	266	229	96.3
1945	0	0	0	0	0	33.7	60.2	239	282	304	242	156	111
1946	0	0	0	0	0	0	57.9	63.8	113	262	263	138	75.4
1947	0	0	0	0	0	0	109	166	306	256	192	249	107
1948	81.4	0	0	0	0	0	193	293	265	271	251	207	130
1949	29.8	0	0	0	0	0	19.7	210	342	334	311	321	131
1950	19.6	0	0	0	0	24.0	106	303	309	364	396	277	151
1951	65.4	0	0	0	0	31.6	189	344	423	402	382	164	168
1952	20.3	0	0	0	0	0	12.6	231	390	351	389	281	140
1953	85.5	0	0	0	0	23.7	260	189	379	371	271	103	141
1954	7.70	0	0	0	0	119	260	357	396	380	237	95.0	155

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1931	-	-	-	-	-	-	-	-	-	-	-	-	24,760
1932	0	0	0	0	0	0	3,030	6,270	10,000	13,800	7,810	1,740	42,600
1933	0	0	0	0	0	0	851	3,830	7,440	5,120	5,720	212	23,200
1934	0	0	0	0	0	0	0	3,040	11,600	8,420	6,700	1,470	31,200
1935	0	0	0	0	0	0	0	276	4,140	4,580	5,530	2,150	16,680
1936	0	0	0	0	0	0	1,560	3,240	7,020	3,890	5,510	871	22,090
1937	0	0	0	0	0	0	0	6,950	6,750	9,710	8,600	4,370	36,380
1938	0	0	0	0	0	0	1,510	7,000	12,730	13,410	12,790	2,940	50,380
1939	0	0	0	0	0	0	9,780	13,450	12,590	10,090	12,090	5,660	63,660
1940	0	0	0	0	0	0	4,910	8,310	7,570	9,760	10,700	6,060	47,310
1941	0	0	0	0	0	0	0	8,610	8,160	12,110	14,270	4,720	47,870
1942	0	0	0	0	0	0	1,130	10,060	16,170	13,240	15,290	10,120	66,010
1943	0	0	0	0	0	0	5,550	13,560	17,330	13,640	14,760	10,430	75,270
1944	0	0	0	0	0	0	3,460	2,440	16,220	17,760	16,380	13,630	69,890
1945	0	0	0	0	0	2,070	3,580	14,710	16,800	18,670	14,860	9,310	80,000
1946	0	0	0	0	0	0	3,440	3,920	6,730	16,080	16,180	8,220	54,570
1947	0	0	0	0	0	0	6,500	10,200	18,230	15,770	11,790	14,810	77,300
1948	5,010	0	0	0	0	0	11,500	17,990	15,780	16,640	15,410	12,300	94,630
1949	1,830	0	0	0	0	0	1,170	12,910	20,330	20,520	19,150	19,080	94,990
1950	1,210	0	0	0	0	1,480	6,310	18,600	18,370	22,370	24,360	16,480	109,200

1/ Published as Brazos Valley Irrigation Co.'s canal prior to 1945.

Monthly and yearly runoff, in acre-feet, of American Canal Co.'s canal near Fulshear, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	4,020	0	0	0	0	1,940	11,230	21,150	25,170	24,690	23,480	9,770	121,400
1952	1,250	0	0	0	0	0	749	14,230	23,220	21,570	23,930	16,690	101,600
1953	5,260	0	0	0	0	1,460	15,470	11,650	22,550	22,780	16,680	6,120	102,000
1954	474	0	0	0	0	7,350	15,470	21,940	23,590	23,360	14,540	5,650	112,400

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum daily		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1931	-	-	-	0	34.2	24,760	-	-
1932	733	278	July 11, 12, 1932	0	58.8	42,600	58.8	42,600
1933	748	249	May 21, 1933	0	32.0	23,200	32.0	23,200
1934	763	245	June 1, 13, 17, 18, 1934	0	43.1	31,200	43.1	31,200
1935	788	168	June 21, 1935	0	23.0	16,680	23.0	16,680
1936	808	272	June 21, 1936	0	30.4	22,090	30.4	22,090
1937	828	208	(a)	0	50.3	36,380	50.3	36,380
1938	858	259	July 29, 1938	0	69.6	50,380	69.6	50,380
1939	878	339	May 21, 1939	0	87.9	63,660	87.9	63,660
1940	898	275	July 11-13, 15, 16, 1940	0	65.2	47,310	65.2	47,310
1941	928	329	Aug. 27, 1941	0	66.1	47,870	66.1	47,870
1942	958	363	May 17, 1942	0	91.2	66,010	91.2	66,010
1943	978	345	June 3, 1943	0	104	75,270	104	75,270
1944	1008	355	June 8, 1944	0	96.3	69,890	96.3	69,890
1945	1038	346	July 16, 1945	0	111	80,000	111	80,000
1946	1058	314	July 2, 1946	0	75.4	54,570	75.4	54,570
1947	1088	349	June 1-3, 1947	0	107	77,300	114	82,310
1948	1118	349	May 15, 1948	0	130	94,630	126	91,450
1949	1148	438	June 22, 1949	0	131	94,990	130	94,370
1950	1178	438	Aug. 3, 1950	0	151	109,200	155	112,000
1951	1212	460	June 9, 22, 1951	0	168	121,400	164	118,700
1952	1242	454	June 8, 13, 1952	0	140	101,600	146	105,600
1953	1282	430	May 30, June 1-3, 1953	0	141	102,000	134	97,180
1954	1342	466	May 22-23, Aug. 1, 1954	0	155	112,400	-	-

a May 20-22, 26-29, June 2, 14-19, 26-30, July 1-8, 1937.

212. Richmond Irrigation Co.'s canal near Richmond, Tex.

Location.--Lat 29°34', long 95°47', 600 ft downstream from crossing of U. S. Highway 59, 1½ miles downstream from point of diversion, and 1½ miles west of Richmond, Fort Bend County.

Gage.--Water-stage recorder.

Average discharge.--28 years (1927-54, 1956-57) 39.6 cfs (28,670 acre-ft per year).

Extremes.--1931-54, 1956-57: Maximum daily discharge, 234 cfs June 5, 6, 1938, July 24, 1957; no flow for several months each year.

Remarks.--Water for irrigation is diverted by pumping from right bank of Brazos River 6 miles upstream from Richmond. Figures of discharge represent water pumped from the river. Pumping began in 1928.

Cooperation.--Yearly diversion, in acre-ft, for the period 1928-31, furnished by Richmond Irrigation Co.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	-	-	27.4
1929	-	-	-	-	-	-	-	-	-	-	-	-	30.4
1930	-	-	-	-	-	-	-	-	-	-	-	-	41.4
1931	-	-	-	-	-	-	-	-	-	-	-	-	38.7
1932	7.46	0	0	0	0	0	0	61.2	205	183	124	37.4	51.7
1933	0	0	0	0	0	0	0	62.6	153	101	112	25.9	38.1
1934	0	0	0	0	0	0	0	54.6	90.7	66.9	69.6	15.9	25.0
1935	0	0	0	0	0	0	24.4	17.4	85.4	88.6	84.9	0	25.2
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	5.3	62.7	111	99.7	84.5	19.4	32.1
1938	0	0	0	0	0	0	26.2	73.3	139	111	106	6.25	38.7
1939	0	0	0	0	0	0	46.6	69.5	81.5	82.3	100	30.4	34.5
1940	0	0	0	0	0	0	35.0	66.7	78.6	77.2	101	44.2	33.6
1941	0	0	0	0	0	0	0	14.2	36.7	55.5	95.1	42.1	20.5
1942	0	0	0	0	0	0	0	93.0	117	106	105	75.1	41.6
1943	0	0	0	0	0	.28	.32	97.6	106	102	98.7	75.4	40.3
1944	.10	0	0	0	0	0	0	31.0	106	135	130	50.4	38.0
1945	0	0	0	0	0	2.29	32.5	95.0	120	144	116	28.0	45.1
1946	0	0	0	0	0	0	8.37	80.1	68.5	130	141	24.8	38.1
1947	0	0	0	0	0	1.42	60.9	77.1	149	172	132	77.5	56.1
1948	14.1	0	0	0	0	.07	85.7	121	156	149	151	68.2	62.2
1949	.07	.12	0	0	0	0	6.28	61.3	134	137	164	146	54.3
1950	7.68	0	0	0	0	5.74	30.9	103	111	125	166	77.5	52.5

Monthly and yearly mean discharge, in cubic feet per second, of Richmond Irrigation Co.'s canal near Richmond, Tex.--Continued

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1951	2.26	3.35	0	0	0	23.3	47.6	106	114	163	133	50.5	54.0
1952	2.23	0	0	0	0	3.42	23.5	85.4	124	138	147	69.7	49.7
1953	13.2	0	0	0	0	24.7	82.4	71.4	158	152	78.5	16.3	50.0
1954	0	0	0	0	0	21.0	94.7	96.3	140	140	119	43.6	54.9
1956	-	-	-	-	-	15.6	57.9	86.0	73.6	107	55.9	20.6	-
1957	0	0	0	0	0	0	0	60.0	80.3	92.9	116	52.9	33.8

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1928	-	-	-	-	-	-	-	-	-	-	-	-	20,000
1929	-	-	-	-	-	-	-	-	-	-	-	-	22,000
1930	-	-	-	-	-	-	-	-	-	-	-	-	30,000
1931	-	-	-	-	-	-	-	-	-	-	-	-	28,000
1932	459	0	0	0	0	0	0	3,760	12,200	11,300	7,640	2,220	37,600
1933	0	0	0	0	0	0	0	3,850	9,100	6,210	6,890	1,540	27,600
1934	0	0	0	0	0	0	0	3,360	5,400	4,110	4,280	946	18,100
1935	0	0	0	0	0	0	1,450	1,070	5,080	5,450	5,220	0	18,270
1936	0	0	0	0	0	0	0	0	0	0	0	0	0
1937	0	0	0	0	0	0	317	3,860	6,600	6,130	5,190	1,160	23,260
1938	0	0	0	0	0	0	1,560	4,500	8,260	6,810	6,510	372	28,010
1939	0	0	0	0	0	0	2,770	4,280	4,850	5,060	6,170	1,810	24,940
1940	0	0	0	0	0	0	2,090	4,100	4,680	4,750	6,190	2,630	24,440
1941	0	0	0	0	0	0	0	875	2,180	3,410	5,850	2,510	14,820
1942	0	0	0	0	0	0	0	5,720	6,970	6,530	6,470	4,470	30,160
1943	0	0	0	0	0	17	19	6,000	6,290	6,270	6,070	4,490	29,160
1944	6.0	0	0	0	0	0	0	1,910	6,290	8,310	8,020	3,000	27,540
1945	0	0	0	0	0	141	1,930	5,840	7,170	8,830	7,110	1,670	32,690
1946	0	0	0	0	0	0	498	4,930	4,080	7,970	8,670	1,480	27,630
1947	0	0	0	0	0	87	3,620	4,740	8,840	10,580	8,120	4,610	40,600
1948	868	0	0	0	0	4.4	5,100	7,430	9,290	9,150	9,260	4,060	45,160
1949	4.2	7.3	0	0	0	0	374	3,770	7,950	8,420	10,090	8,660	39,280
1950	472	0	0	0	0	353	1,840	6,320	6,580	7,690	10,180	4,610	38,040
1951	139	200	0	0	0	1,430	2,830	6,530	6,750	10,040	8,190	3,010	39,120
1952	137	0	0	0	0	210	1,400	5,250	7,380	8,510	9,070	4,150	36,110
1953	814	0	0	0	0	1,520	4,900	4,390	9,410	9,350	4,820	972	36,180
1954	0	0	0	0	0	1,290	5,630	5,920	8,350	8,630	7,340	2,590	39,750
1956	-	-	-	-	-	962	3,450	5,290	4,380	6,600	3,440	1,230	25,350
1957	0	0	0	0	0	0	0	3,690	4,780	5,710	7,130	3,150	24,460

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Maximum daily		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1928	-	-	-	-	27.5	20,000	-	-
1929	-	-	-	-	30.4	22,000	-	-
1930	-	-	-	-	41.4	30,000	-	-
1931	-	-	-	-	38.7	28,000	-	-
1932	733	226	(a)	0	51.7	37,600	51.1	37,100
1933	748	202	Aug. 13, 1933	0	38.1	27,600	38.1	27,600
1934	763	119	May 20-22, 1934	0	25.0	18,100	25.0	18,100
1935	788	-	-	0	25.2	18,270	25.2	18,270
1936	808	0	-	0	0	0	0	0
1937	828	198	May 30 to June 3, 1937	0	32.1	23,260	32.1	23,260
1938	858	234	June 5, 6, 1938	0	38.7	28,010	38.7	28,010
1939	878	210	Aug. 24, 1939	0	34.5	24,940	34.5	24,940
1940	898	126	July 8, 1940	0	33.6	24,440	65.2	47,310
1941	928	130	July 16, 1941	0	20.5	14,820	20.5	14,820
1942	958	140	May 14, 1942	0	41.6	30,160	41.6	30,160
1943	978	120	May 29, June 3, 1943	0	40.3	29,160	40.3	29,170
1944	1008	213	Aug. 6, 1944	0	38.0	27,540	37.9	27,530
1945	1038	190	June 2, 3, 5, 6, 1945	0	45.1	32,690	45.1	32,690
1946	1058	205	Aug. 7, 8, 13, 16, 1946	0	38.1	27,630	38.1	27,630
1947	1088	200	June 6, 1947	0	56.1	40,600	57.3	41,460
1948	1118	230	May 22, 1948	0	62.2	45,160	61.0	44,310
1949	1148	203	June 7, 1949	0	54.3	39,280	54.9	39,740
1950	1178	192	May 12, 1950	0	52.5	38,040	52.4	37,910
1951	1212	203	July 15, 1951	0	54.0	39,120	53.8	38,920
1952	1242	181	July 11-15, 1952	0	49.7	36,110	50.7	36,780
1953	1282	224	May 29, 1953	0	50.0	36,180	48.8	35,360
1954	1342	210	Aug. 29 to June 11, 1954	0	54.9	39,750	-	-
1956	1442	-	-	0	-	-	-	-
1957	1512	234	July 24, 1957	0	33.8	24,460	-	-

a May 28-30, June 1, 3-6, July 6, 12, 1932.

213. Brazos River at Richmond, Tex. 1/

Location. --Lat 29°35', long 95°45', at bridge on U. S. Highway 59 in Richmond, Fort Bend County, 925 ft downstream from Texas & New Orleans Railroad bridge and at mile 93.

Drainage area. --44,020 sq mi, approximately, of which 9,240 sq mi is probably noncontributing.

Supplemental records available. --Records of chemical analyses and water temperatures for the period October 1945 to September 1957 are published in reports of Geological Survey.

Gage-height records collected in this vicinity since July 1914 are contained in reports of the U. S. Weather Bureau.

Gage. --Water-stage recorder. Datum of gage is 40.94 ft above mean sea level, datum of 1929, Houston supplementary adjustment of 1943. June to November 1901, June to September 1902, and January 1903 to June 1906, various types of non-recording gages at railroad bridge 925 ft upstream, at different datums. Oct. 1, 1922, to Sept. 30, 1931, chain gage at Rosenberg, 7.6 miles upstream, at datum about 4 ft higher. Records comparable except for diversions by Richmond Irrigation Co. during summer months 1928-31. See records for Richmond Irrigation Co.'s canal near Richmond, Tex.

Average discharge. --37 years (1903-5, 1922-57), 7,258 cfs (5,255,000 acre-ft per year).

Extremes. --1903-6, 1922-57: Maximum discharge, 123,000 cfs June 6, 1929 (gage height, 40.6 ft, from floodmark), present site and datum; minimum daily discharge, 35 cfs Aug. 23, 1934.

Maximum stage known since at least 1884, 48.2 ft Dec. 10, 1913, present datum, at point on right bank 1,000 ft upstream from gage, from information by local residents. From information by Southern Pacific Railroad Co., other floods at railroad bridge, present datum, are as follows: May 1884, stage 43.7 ft; June 13, 1885, stage 44.7 ft; July 1899, stage 45.6 ft; May 2, 1915, stage 43.3 ft; May 9, 1922, stage 40.9 ft.

Remarks. --Some regulation of flow by reservoirs above Bryan. (See Remarks for Brazos River near Bryan.) Considerable water is diverted above station for irrigation and municipal supply. See records for American Canal Co.'s canal near Fulshear which diverts 18 miles upstream from Richland, and for Richmond Irrigation Co.'s canal near Richmond which diverts 6 miles upstream from Richmond and 1.6 miles downstream from former gage site at Rosenberg.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	7,343	17,910	35,690	6,974	4,365	3,834	4,816	11,680	1,308	-
1904	6,465	1,390	1,440	1,017	1,914	1,024	2,399	15,040	5,056	4,052	2,645	1,891	3,715
1905	1,932	2,424	1,135	2,594	6,742	13,380	17,680	55,690	17,070	18,680	5,290	3,169	12,220
1906	2,665	2,498	4,465	3,780	4,120	1,950	2,260	4,810	10,900	-	-	-	-
1923	888	1,920	1,030	1,290	3,970	7,080	23,600	10,000	6,830	1,610	740	3,200	5,150
1924	4,810	10,600	30,400	11,800	15,500	22,500	12,900	10,300	15,300	1,440	750	1,820	11,500
1925	1,360	689	733	718	619	503	454	8,360	885	519	690	4,880	1,710
1926	16,100	18,900	1,560	8,760	3,360	15,500	36,700	20,100	7,770	6,040	4,420	5,720	12,100
1927	6,240	3,410	11,400	4,750	9,790	11,000	16,200	6,850	14,100	6,150	1,680	984	7,680
1928	9,740	1,370	1,340	1,390	5,530	4,850	3,600	4,800	13,700	2,620	4,290	1,770	4,580
1929	612	686	3,750	5,340	1,730	4,810	11,900	18,400	39,700	5,240	935	6,600	8,290
1930	1,400	9,320	1,590	3,480	7,340	3,870	2,260	42,300	9,780	2,080	944	1,990	7,210
1931	14,900	3,560	15,200	11,600	14,100	14,100	6,350	6,770	3,670	1,570	967	757	7,800
1932	2,850	2,550	2,930	28,400	25,500	15,800	2,770	15,100	7,150	8,940	2,020	19,300	11,100
1933	2,650	1,150	1,720	4,590	4,870	7,060	3,690	6,230	5,550	646	2,490	1,920	3,540
1934	930	814	555	5,360	9,250	12,800	22,300	2,980	603	222	141	517	4,660
1935	610	2,604	3,738	3,376	7,986	3,209	3,508	53,820	23,790	6,756	2,488	9,436	10,130
1936	5,350	4,791	19,720	3,275	2,512	1,925	1,337	19,460	13,990	17,670	1,483	7,627	8,308
1937	23,470	7,834	12,760	13,830	6,855	9,477	3,995	1,760	4,456	1,881	839	2,019	7,467
1938	2,765	2,984	7,005	18,540	18,850	8,279	19,960	18,830	10,170	5,627	5,783	1,289	9,950
1939	781	644	650	2,687	2,792	2,743	1,198	8,825	7,609	3,283	618	744	2,716
1940	534	584	940	712	2,610	693	3,231	4,982	10,790	21,260	3,977	1,805	4,355
1941	1,076	23,630	52,860	19,310	24,430	25,810	17,710	40,770	35,110	16,930	4,468	5,101	22,270
1942	12,780	11,170	2,575	2,392	1,854	1,452	34,980	31,820	21,640	5,427	1,573	13,780	11,770
1943	11,810	6,895	4,009	5,713	3,021	4,329	5,333	3,626	3,801	2,471	1,740	1,034	4,496
1944	1,449	944	1,487	11,020	16,600	18,410	5,684	45,600	17,300	2,195	1,082	4,238	10,510
1945	1,359	5,644	12,870	21,580	16,700	20,890	41,900	12,320	9,438	7,057	7,247	6,093	13,540
1946	7,789	2,217	7,978	11,310	15,760	21,340	8,592	26,040	14,200	3,473	1,133	2,945	10,220
1947	5,174	17,550	9,203	16,700	5,829	13,210	7,284	13,890	6,011	1,655	5,918	2,417	8,765
1948	942	1,542	3,479	1,954	4,473	5,693	2,781	4,588	2,078	3,006	569	1,151	2,687
1949	641	579	604	1,262	4,355	7,905	12,900	13,620	8,245	3,501	1,010	1,224	4,645
1950	4,516	3,644	4,509	4,643	13,650	2,950	8,106	6,545	11,140	2,754	3,413	4,423	5,783
1951	2,424	909	860	916	1,205	996	1,254	1,201	4,168	964	844	1,317	1,418
1952	791	589	613	543	953	1,288	5,620	5,784	3,579	913	601	609	1,820
1953	203	416	3,741	4,487	2,188	3,998	1,261	26,770	1,913	994	801	1,949	4,105
1954	3,448	3,353	8,995	2,252	955	445	829	7,075	2,887	866	926	414	2,727
1955	597	866	480	582	4,318	959	4,504	4,334	5,880	1,701	1,212	899	2,168
1956	10,900	1,120	784	962	2,078	1,054	894	5,189	786	717	636	602	2,158
1957	643	1,284	1,021	683	915	3,630	18,070	77,200	58,350	15,920	3,282	1,656	15,290

1/ Published as "at Rosenberg" October 1922 to September 1931, and as "at Richmond" June 1931 to date (October 1931 to date used herein).

Monthly and yearly runoff, in acre-feet, of Brazos River at Richmond, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1903	-	-	-	451,500	994,700	2,194,000	415,000	268,400	228,100	296,100	718,200	77,830	-
1904	397,500	82,710	88,540	62,530	110,100	62,960	142,800	924,800	300,900	249,100	162,600	112,500	2,697,000
1905	118,800	144,200	69,790	159,500	374,400	822,700	1,052,000	3,424,000	1,016,000	1,149,000	325,300	188,600	8,844,000
1906	163,900	148,600	274,500	232,000	229,000	120,000	134,000	296,000	649,000	-	-	-	-
1923	54,600	114,000	63,500	79,600	221,000	435,000	1,400,000	616,000	406,000	99,100	45,500	190,000	3,720,000
1924	296,000	632,000	1,870,000	727,000	894,000	1,380,000	765,000	632,000	909,000	88,800	46,100	108,000	8,350,000
1925	83,800	41,000	45,100	44,100	34,400	30,900	27,000	514,000	52,700	31,900	42,400	290,000	1,240,000
1926	991,000	1,120,000	95,800	539,000	186,000	955,000	2,190,000	1,240,000	462,000	372,000	272,000	340,000	8,760,000
1927	383,000	203,000	701,000	292,000	544,000	679,000	961,000	421,000	838,000	378,000	104,000	58,600	5,560,000
1928	599,000	81,500	82,400	85,500	318,000	298,000	214,000	295,000	815,000	161,000	264,000	105,000	3,320,000
1929	37,600	40,800	231,000	328,000	96,100	296,000	708,000	1,130,000	2,360,000	322,000	57,500	393,000	6,000,000
1930	86,100	555,000	97,800	214,000	408,000	238,000	134,000	2,600,000	582,000	128,000	58,000	118,000	5,220,000
1931	916,000	212,000	935,000	713,000	783,000	867,000	378,000	416,000	218,000	96,500	59,500	45,000	5,640,000
1932	175,000	152,000	180,000	1,750,000	1,470,000	972,000	165,000	928,000	425,000	550,000	124,000	1,150,000	8,040,000
1933	163,000	68,400	106,000	282,000	270,000	434,000	220,000	383,000	330,000	39,700	153,000	114,000	2,560,000
1934	57,200	48,400	34,100	330,000	514,000	787,000	1,330,000	183,000	35,900	13,600	8,670	30,800	3,370,000
1935	37,480	155,000	229,900	207,600	443,500	197,300	208,800	3,309,000	1,416,000	415,400	153,000	561,500	7,334,000
1936	329,000	285,100	1,213,000	201,400	144,500	118,400	79,580	1,196,000	832,500	1,087,000	91,160	453,900	6,032,000
1937	1,443,000	466,200	784,600	850,100	380,700	582,700	237,700	108,200	265,200	115,700	51,590	120,100	5,406,000
1938	170,000	177,500	430,700	1,140,000	1,047,000	509,100	1,188,000	1,158,000	605,000	346,000	355,600	76,700	7,204,000
1939	48,050	38,300	40,000	165,200	155,100	168,600	71,260	542,700	452,800	201,800	38,010	44,290	1,966,000
1940	32,820	34,770	57,790	43,750	150,100	42,590	192,200	306,300	641,900	1,307,000	244,500	107,400	3,161,000
1941	66,170	1,406,000	3,251,000	1,188,000	1,357,000	1,587,000	1,054,000	2,507,000	2,089,000	1,041,000	274,700	303,500	16,120,000
1942	786,100	664,900	158,300	147,100	103,000	89,300	2,081,000	1,956,000	1,287,000	333,700	96,710	819,800	8,523,000
1943	726,300	410,300	246,500	351,300	167,800	266,200	317,300	223,000	226,200	151,900	107,000	61,510	3,255,000
1944	89,100	56,190	91,460	677,800	955,000	1,132,000	338,200	2,804,000	1,029,000	135,000	66,550	252,200	7,627,000
1945	83,530	335,800	791,400	1,327,000	927,500	1,285,000	2,493,000	757,800	561,600	433,900	445,600	362,600	9,805,000
1946	478,900	131,900	490,600	695,400	875,200	1,312,000	511,200	1,601,000	844,900	213,500	69,690	175,300	7,400,000
1947	318,100	1,045,000	565,800	1,027,000	323,700	812,400	433,400	853,900	357,700	101,800	363,900	143,800	6,346,000
1948	57,940	91,760	213,900	120,100	257,300	350,000	165,500	282,100	123,700	184,800	34,960	68,470	1,951,000
1949	39,400	34,430	37,140	77,590	241,900	486,100	767,800	837,700	490,600	215,300	62,080	72,840	3,363,000
1950	277,700	216,900	277,200	285,500	758,000	181,400	482,300	402,400	662,700	169,300	209,900	263,200	4,186,000
1951	149,100	54,070	52,900	56,340	66,900	61,220	74,640	73,860	248,000	59,300	51,910	78,360	1,027,000
1952	48,610	35,070	37,700	33,380	54,840	79,170	334,400	355,700	212,900	56,160	36,930	36,260	1,321,000
1953	12,470	24,780	230,000	275,900	121,500	245,800	75,020	1,646,000	113,800	61,120	49,240	116,000	2,972,000
1954	212,000	199,500	553,100	138,500	53,020	27,390	49,330	435,000	171,800	53,270	56,940	24,650	1,974,000
1955	36,700	51,550	29,510	35,790	239,800	58,940	268,000	266,500	349,900	104,600	74,530	53,520	1,569,000
1956	670,200	66,630	48,180	59,130	119,500	64,780	53,170	318,900	46,790	44,080	39,130	35,840	1,566,000
1957	39,530	76,390	62,780	42,000	50,790	223,200	1,075,000	4,747,000	3,472,000	979,000	201,800	98,530	11,070,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1903	99	a66,600	Mar. 6, 1903	-	-	-	8,601	6,213,000
1904	132	a47,600	May 10, 11, 1904	820	3,715	2,697,000	3,377	2,461,000
1905	174	a65,600	May 6, 1905	820	12,220	8,844,000	12,490	9,098,000
1906	210	a37,300	June 9, 1906	-	-	-	-	-
1923	568	54,900	Apr. 15, 1923	530	5,150	3,720,000	8,690	6,290,000
1924	588	73,000	Dec. 16, 1923	605	11,500	8,350,000	7,880	5,720,000
1925	608	24,200	May 12, 1925	306	1,710	1,240,000	4,530	3,270,000
1926	628	86,900	Apr. 26, 1926	1,160	12,100	8,760,000	10,800	7,840,000
1927	648	42,500	June 25, 1927	725	7,680	5,560,000	6,960	5,040,000
1928	668	36,800	Oct. 5, 1927	-	4,580	3,320,000	3,950	2,860,000
1929	688	123,000	June 6, 1929	250	8,290	6,000,000	8,880	6,430,000
1930	703	78,800	May 23, 1930	707	7,210	5,220,000	9,040	6,540,000
1931	718	52,100	Oct. 10, 1930	-	7,800	5,640,000	5,650	4,080,000
1932	733	80,500	Feb. 24, 1932	392	11,100	8,040,000	10,800	7,870,000
1933	748	34,000	May 31, 1933	384	3,540	2,560,000	3,270	2,370,000
1934	763	71,400	Apr. 10, 1934	35	4,660	3,370,000	5,046	3,653,000
1935	788	90,900	May 27, 1935	311	10,130	7,334,000	12,070	8,739,000
1936	808	74,700	Dec. 9, 1935, May 31, 1936	835	8,308	6,032,000	9,503	6,898,000
1937	828	77,100	Oct. 5, 1936	483	7,467	5,406,000	4,821	3,490,000
1938	858	68,600	Jan. 28, 1938	510	9,950	7,204,000	9,049	6,552,000
1939	878	41,900	May 21, 1939	375	2,716	1,966,000	2,714	1,965,000
1940	898	82,100	July 5, 1940	370	4,355	3,161,000	10,690	7,759,000
1941	928	117,000	Nov. 28, 1940	585	22,270	16,120,000	17,970	13,010,000
1942	958	79,400	May 1, 1942	910	11,770	8,523,000	11,460	8,297,000
1943	978	45,500	Oct. 22, 1942	505	4,496	3,255,000	2,913	2,109,000
1944	1008	93,800	May 8, 1944	560	10,510	7,627,000	11,850	8,600,000
1945	1038	85,000	Apr. 27, 1945	880	13,540	9,805,000	13,390	9,695,000

a Maximum day.

Yearly discharge, in cubic feet per second, of Brazos River at Richmond, Tex.--Continued

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1946	1058	82,500	May 20, 1946	852	10,220	7,400,000	11,360	8,227,000
1947	1088	51,000	Aug. 28, 1947	685	8,765	6,346,000	6,604	4,781,000
1948	1118	22,100	May 15, 1948	210	2,687	1,951,000	2,339	1,698,000
1949	1148	56,000	Apr. 30, 1949	491	4,645	3,363,000	5,558	4,024,000
1950	1178	44,500	Feb. 15, 1950	790	5,783	4,186,000	5,070	3,671,000
1951	1212	11,100	June 17, 1951	117	1,418	1,027,000	1,232	891,900
1952	1242	34,400	May 28, 1952	176	1,820	1,321,000	2,021	1,467,000
1953	1282	83,100	May 19, 1953	115	4,105	2,972,000	5,068	3,669,000
1954	1342	32,400	Oct. 30, 1953	98	2,727	1,974,000	1,558	1,128,000
1955	1392	19,300	May 23, 1955	281	2,168	1,569,000	3,089	2,237,000
1956	1442	17,900	Oct. 14, 1955, May 6, 1956	55	2,158	1,566,000	1,322	960,000
1957	1512	119,000	May 5, 1957	374	15,290	11,070,000	-	-

214. Brazos River near Juliff, Tex.

Location.--Lat 29°26', long 95°32', just downstream from South Texas Water Co.'s pumping plant, 3½ miles west of Juliff, Fort Bend County, 5½ miles downstream from Gulf, Colorado & Santa Fe Railway bridge, and at mile 67.

Drainage area.--44,100 sq mi, approximately, of which 9,240 sq mi is probably noncontributing.

Gage.--Two water-stage recorders. Datum of gage is at mean sea level, datum of 1929, Houston supplementary adjustment of 1943.

Average discharge.--8 years (1949-57), 4,139 cfs (2,997,000 acre-ft per year).

Extremes.--1949-57: Maximum stage, 59.17 ft May 6, 7, 1957 (discharge not determined); no flow at times due to pumping.
Maximum stage known since at least 1884, 64.0 ft about Dec. 11, 1913, at site 4 miles to left of gage, from information by local resident. From same source and at same site, other floods as follows: about May 10, 1922, stage 61 ft; about June 7, 1929, stage 61 ft; about Nov. 29, 1940, stage about 61½ ft. Flood of July 1899 was probably exceeded only by the flood of 1913.

Remarks.--Some regulation of flow by reservoirs above Bryan. (See Remarks for Brazos River near Bryan.) Considerable water diverted above station for irrigation, industrial and municipal supply. (See Remarks for Brazos River at Richmond.) The Briscoe Irrigation Company and the South Texas Water Company have permits to divert a maximum of 600 and 400 cfs, respectively, between station at Richmond and this station for irrigation, industrial and municipal supply.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	6,601	2,850	369	569	-
1950	5,095	3,912	5,097	4,748	13,960	3,118	8,189	5,839	11,330	2,055	2,600	3,577	5,716
1951	2,423	969	809	913	1,265	916	1,054	455	3,230	252	156	1,060	1,119
1952	766	572	600	502	989	1,319	5,158	4,961	3,139	316	.90	38.4	1,525
1953	61.2	357	3,755	4,557	2,172	4,027	877	27,220	1,282	261	455	1,816	3,949
1954	3,024	3,820	8,348	2,352	928	283	289	6,352	2,149	171	289	176	2,368
1955	544	816	425	539	4,681	914	4,183	3,707	4,914	1,059	883	663	1,914
1956	10,510	978	639	899	2,492	919	540	4,740	246	109	138	429	1,870
1957	586	1,170	966	576	826	3,890	17,870	77,210	53,580	14,110	2,814	1,393	14,650

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1949	-	-	-	-	-	-	-	-	392,800	175,200	22,710	33,880	-
1950	313,300	232,800	313,400	291,900	775,400	191,700	487,300	359,000	674,100	126,400	159,800	212,900	4,138,000
1951	149,000	57,670	49,720	56,160	70,230	56,300	62,710	27,990	192,200	15,520	9,620	63,080	810,200
1952	47,120	34,010	36,920	30,890	56,860	81,090	306,900	305,000	186,800	19,400	56	2,280	1,107,000
1953	3,760	21,240	230,900	280,200	120,700	247,600	52,190	1,674,000	76,280	16,050	27,950	108,100	2,859,000
1954	185,900	227,300	513,300	144,600	51,540	17,390	17,170	390,600	127,900	10,510	17,790	10,490	1,714,000
1955	33,440	48,530	26,150	33,160	260,000	56,200	248,900	227,900	292,400	65,150	54,310	39,460	1,386,000
1956	646,100	58,170	39,310	55,260	143,300	56,520	32,120	291,400	14,670	6,710	8,460	25,530	1,378,000
1957	36,020	69,600	59,410	35,440	45,900	239,200	1,063,000	4,747,000	3,188,000	867,500	173,000	82,870	10,610,000

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1949	1148	a41,100	May 22, 1949	0	-	-	-	-
1950	1178	48,500	Feb. 15, 1950	175	5,716	4,138,000	4,883	3,535,000
1951	1212	10,300	June 17, 1951	0	1,119	810,200	928	671,900
1952	1242	32,100	May 28, 1952	0	1,525	1,107,000	1,715	1,245,000
1953	1282	76,300	May 19, 1953	0	3,949	2,859,000	4,875	3,530,000
1954	1342	28,700	Oct. 30, 1953	0	2,368	1,714,000	1,238	896,100
1955	1392	19,100	May 24, 1955	0	1,914	1,386,000	2,792	2,021,000
1956	1442	17,800	May 6, 1956	0	1,870	1,378,000	1,101	799,000
1957	1512	-	-	166	14,650	10,610,000	-	-

a Maximum during period May to September.

215. Big Creek near Needville, Tex.

Location.--Lat 29°28'35", long 95°48'45", at bridge on State Highway 36, 1.5 miles downstream from Kunz Creek, 5½ miles north of Needville, Fort Bend County, and 10½ miles upstream from Fairchild Creek.

Drainage area.--37.6 sq mi.

Gage.--Water-stage recorder. Concrete low-water control after June 16, 1956. Datum of gage is 69.39 ft above mean sea level, datum of 1929, Houston supplementary adjustment of 1943. May 1947 to June 1950, wire-weight gage at same site and datum.

Average discharge.--6 years (1947-49, 1952-56) 16.7 cfs (12,090 acre-ft per year).

Extremes.--1947-50, 1952-56: Maximum discharge, 2,660 cfs Oct. 8, 1949 (gage height, 12.99 ft); no flow at times.
Maximum stage since about 1913, 14.4 ft in August 1945, from information by local resident.

Remarks.--No diversion above station. Records for 1957 withheld.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	1.40	3.50	7.63	0.02	-
1948	0	17.1	55.9	18.0	31.6	22.3	1.36	19.8	.02	.08	0	0	13.9
1949	0	1.93	0	.87	60.5	9.35	89.1	1.35	2.21	24.0	59.5	2.91	20.6
1950	202	.80	135	32.9	67.0	.18	21.1	3.08	40.5	-	-	-	-
1952	-	-	-	-	-	-	125	59.7	7.31	3.48	1.05	.70	-
1953	.41	17.0	27.6	1.83	12.1	.82	.27	146	.16	.48	145	106	38.4
1954	1.73	27.7	86.9	13.1	.40	0	0	8.57	.06	.90	1.11	.19	11.9
1955	.23	.01	0	10.6	85.0	0	.70	26.1	1.05	12.4	3.53	7.84	11.8
1956	.24	0	0	19.3	12.6	0	1.26	5.28	3.39	.02	.11	.60	3.54

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	84	215	469	1.4	-
1948	0	1,020	3,440	1,100	1,820	1,370	81	1,220	1.4	5.0	0	0	10,060
1949	0	115	0	54	3,360	575	5,300	83	131	1,470	3,660	173	14,920
1950	12,440	48	8,330	2,030	3,720	11	1,250	189	2,410	-	-	-	-
1952	-	-	-	-	-	-	7,420	3,670	435	214	65	41	11,870
1953	25	1,010	1,700	112	671	51	16	8,980	9.3	30	8,900	6,290	27,790
1954	106	1,650	5,340	808	22	0	0	527	3.8	56	68	12	8,590
1955	14	.8	0	652	4,720	0	42	1,600	63	765	217	467	8,540
1956	15	0	0	1,180	724	0	75	325	202	1.2	6.7	36	2,560

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1088,1148	a2,250	May 25, 1947	0	-	-	-	-
1948	1118	582	Dec. 13, 1947	0	13.9	10,060	7.87	5,710
1949	1148	664	Apr. 22, 1949	0	20.6	14,920	49.2	35,620
1950	1178	2,660	Oct. 8, 1949	0	-	-	-	-
1952	1242	-	-	0	-	-	-	-
1953	1282	1,670	Aug. 30, 1953	0	38.4	27,790	44.4	32,160
1954	1342	1,180	Dec. 20, 1953	0	11.9	8,590	2.09	1,510
1955	1392	1,030	Feb. 6, 1955	0	11.8	8,540	11.8	8,540
1956	1442	900	Jan. 22, 1956	0	3.54	2,560	-	-

a Maximum during period May to September.

216. Fairchild Creek near Needville, Tex.

Location.--Lat 29°26'45", long 95°45'40", at county road bridge, 3.0 miles upstream from mouth and 5½ miles northeast of Needville, Fort Bend County.

Drainage area.--24.9 sq mi.

Gage.--Staff gage and crest-stage indicator. Datum of gage is 60.42 ft above mean sea level, datum of 1929, Houston supplementary adjustment of 1943.

Average discharge.--7 years (1947-54), 14.9 cfs (10,790 acre-ft per year).

Extremes.--1947-54: Maximum discharge, 2,560 cfs May 18, 1953 (gage height, 12.0 ft); no flow at times.
Maximum stage since about 1910, 12.5 ft in August 1945, from floodmark 195 ft downstream and 520 ft to left of gage, from information by local resident.

Remarks.--No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second, of Fairchild Creek near Needville, Tex.

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	0.34	0	0.26	0.28	-
1948	0	1.56	16.3	12.6	19.8	10.4	0	0.97	0	0	0	0	5.10
1949	0	3.30	0	2.78	49.4	13.1	66.5	.68	.24	7.84	37.3	2.74	15.0
1950	194	1.07	97.2	23.0	62.0	.16	3.40	1.60	10.5	0	0	.08	32.8
1951	0	0	0	.24	.08	18.6	19.5	6.49	2.75	0	0	36.5	6.99
1952	10.6	.36	.01	0	46.1	.50	62.5	37.4	.58	6.30	0	0	13.5
1953	0	8.70	8.95	1.23	9.42	.86	0	92.8	0	0	103	43.8	22.6
1954	7.29	42.0	34.6	11.3	.16	0	0	.77	0	0	6.00	.24	8.58
1955	.03	-	-	-	-	-	-	-	-	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	20	0	16	17	-
1948	0	93	1,000	772	1,140	637	0	60	0	0	0	0	3,700
1949	0	197	0	171	2,740	803	3,950	42	14	482	2,290	163	10,850
1950	11,940	64	5,980	1,420	3,450	10	202	98	622	0	0	4.6	23,790
1951	0	0	0	15	4.4	1,150	1,160	399	164	0	0	2,170	5,060
1952	652	21	.4	0	2,650	31	3,720	2,300	35	387	0	0	9,800
1953	0	518	551	76	523	53	0	5,710	0	0	6,340	2,610	16,380
1954	448	2,500	2,130	698	8.7	0	0	47	0	0	369	14	6,210
1955	2.0	-	-	-	-	-	-	-	-	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1088	a792	May 21, 1947	0	-	-	-	-
1948	1118	b312	Dec. 13, 1947	0	5.10	3,700	3.86	2,810
1949	1148	880	Feb. 26, 1949	0	15.0	10,850	39.6	28,640
1950	1178	1,800	Oct. 8, 1949	0	32.8	23,790	8.01	5,810
1951	1212	788	Apr. 10, 1951	0	6.99	5,060	7.92	5,740
1952	1242	1,160	May 28, 1952	0	13.5	9,800	14.0	10,190
1953	1282	2,560	May 18, 1953	0	22.6	16,380	28.2	20,390
1954	1342	1,030	Nov. 19, 1953	0	8.58	6,210	-	-

a Maximum during period May to September.
b Observed.

217. Big Creek near Guy, Tex.

Location. --Lat 29°24'25", long 95°42'35", at county road bridge 0.2 mile upstream from Gulf, Colorado & Santa Fe Railway bridge, 0.3 mile downstream from Deer Creek, 1.0 mile downstream from Fairchild Creek, 6 miles northeast of Guy, Fort Bend County, and 19 miles upstream from mouth.

Drainage area. --112 sq mi.

Gage. --Staff gage. Datum of gage is 46.57 ft above mean sea level, datum of 1929, Houston supplementary adjustment of 1943.

Extremes. --1947-50: Maximum discharge, 7,860 cfs Oct. 9, 1949 (gage height, 15.33 ft, from floodmarks); no flow Nov. 8, 1947, and Oct. 20 to Nov. 2, 1948.

Flood of August 1945, highest of recent years and caused by tropical storm, reached a stage of 18.5 ft (adjusted to present site and datum), from information by local resident.

Remarks. --No diversion above station. Low flow is affected by drainage from irrigated lands.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	-	27.7	54.7	19.7	-
1948	2.37	21.9	110	49.6	98.2	52.8	13.0	41.4	19.9	28.5	29.2	25.5	40.9
1949	1.83	13.1	.51	19.9	244	68.3	337	21.7	22.9	79.9	219	54.3	88.6
1950	949	11.1	538	124	301	2.46	44.1	21.3	136	-	-	-	-

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	-	1,710	3,360	1,170	-
1948	146	1,300	6,760	3,050	5,650	3,240	772	2,550	1,190	1,750	1,800	1,520	29,730
1949	112	778	32	1,220	13,520	4,200	20,030	1,340	1,360	4,910	13,440	3,230	64,170
1950	58,330	659	33,060	7,600	16,740	152	2,620	1,310	8,070	-	-	-	-

Yearly discharge, in cubic feet per second

Year	W. S. P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1088	a180	Aug. 27, 1947	-	-	-	-	-
1948	1118	945	Dec. 15, 1947	0.1	40.9	29,730	30.9	22,440
1949	1148	1,690	Apr. 22, Aug. 9, 1949	0	88.6	64,170	215	155,300
1950	1178	7,860	Oct. 9, 1949	-	-	-	-	-

a Maximum during period June to September.

218. Dry Creek near Richmond, Tex.

Location. --Lat 29°30'19", long 95°42'39", at bridge on county road, 2.0 miles upstream from Farm Road 762, 2.3 miles south of Gulf, Colorado & Santa Fe Railway bridge at Crabb, about 6 miles upstream from Lake Don George spillway, and 6.0 miles southeast of Richmond, Fort Bend County.

Drainage area. --10.3 sq mi.

Gage. --Water-stage recorder and concrete control. Datum of gage is 64.5 ft above mean sea level, datum of 1929, Houston supplementary adjustment of 1943. Prior to June 30, 1950, staff gage at same site, at datum 1.5 ft higher.

Extremes. --1947-50, 1956-57: Maximum discharge, 1,200 cfs Mar. 17, 1957 (gage height, 8.40 ft); no flow at times.
Floods of August 1945 and May 1953, reached a stage of 15.1 ft, present datum, from information by local residents. Channel rectified in March 1952.

Remarks. --Low flow affected by drainage from areas irrigated with diversions from Brazos River. No diversion above station.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	0.47	1.71	3.42	0.18	-
1948	0.05	1.51	8.14	6.16	7.77	3.80	0.01	3.99	.27	1.05	1.43	1.80	2.99
1949	.05	1.82	.02	.69	21.9	3.77	28.8	5.55	10.8	14.1	16.7	18.3	10.1
1950	74.2	.31	36.3	10.9	18.8	.32	3.49	.20	8.04	-	-	-	-
1957	0	0	.10	0	.17	33.1	28.8	5.02	12.8	3.31	3.24	.62	7.28

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1947	-	-	-	-	-	-	-	-	28	105	210	11	-
1948	3.0	90	500	379	447	233	0.6	246	16	65	88	107	2,170
1949	2.8	108	1.2	42	1,220	232	1,710	341	642	870	1,030	1,090	7,290
1950	4,560	19	2,230	668	1,040	20	208	12	479	-	-	-	-
1957	0	0	6.3	0	9.5	2,040	1,710	309	760	204	199	37	5,270

Yearly discharge, in cubic feet per second

Year	W.S.P. no.	Water year ending Sept. 30					Calendar year	
		Momentary maximum		Minimum day	Mean	Runoff in acre-feet	Mean	Runoff in acre-feet
		Discharge	Date					
1947	1118	a382	May 25, 1947	0	-	-	-	-
1948	1118	173	Dec. 13, 1947	0	2.99	2,170	2.33	1,690
1949	1148	457	Apr. 22, 1949	0	10.1	7,290	19.3	13,990
1950	1178	720	Oct. 8, 1949	0	-	-	-	-
1957	1512	1,200	Mar. 17, 1957	0	7.28	5,270	-	-

a Maximum observed during period May to September.

SAN BERNARD RIVER BASIN

219. San Bernard River near Boling, Tex.

Location. --Lat 29°18'45", long 95°53'35", at bridge on Farm Road 442, 2½ miles downstream from Snake Creek and 4½ miles northeast of Boling, Wharton County.

Drainage area. --720 sq mi, approximately.

Gage. --Water-stage recorder. Datum of gage is 30.7 ft above mean sea level (State Highway Department bridge plans).

Extremes. --1954-57: Maximum discharge, 9,260 cfs Mar. 21, 1957 (gage height, 30.45 ft); minimum daily, 2.4 cfs Nov. 27-30, 1956.
Maximum stage since about 1900, about 43½ ft in 1913 (probably December); flood of September 1938 reached a stage of 43.3 ft at site 4,000 ft to right of gage, from information by local resident.

Remarks. --Part of low flow is drainage from areas irrigated with diversions from Colorado River. Diversions above station for irrigation and other uses.

Monthly and yearly mean discharge, in cubic feet per second

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	114	24.6	34.5	118	88.5	-
1955	17.4	10.5	62.4	182	983	12.9	26.0	416	89.1	58.1	81.2	150	169
1956	15.0	5.23	7.17	147	135	5.97	37.1	22.8	10.4	10.7	26.8	35.2	37.9
1957	3.27	7.90	28.4	6.57	17.0	2,142	969	1,133	390	28.9	67.3	136	414

Monthly and yearly runoff, in acre-feet

Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1954	-	-	-	-	-	-	-	7,040	1,460	2,120	7,240	5,260	-
1955	1,070	624	3,830	11,190	54,590	791	1,550	25,600	5,300	3,570	4,990	8,930	122,000
1956	920	311	441	9,050	7,770	367	2,210	1,400	616	660	1,650	2,090	27,480
1957	201	470	1,750	404	945	131,700	57,640	69,670	23,220	1,780	4,140	8,100	300,000