Surface Water Supply of the United States 1947

Part 8. Western Gulf of Mexico Basins

Prepared under the direction of C. G. PAULSEN, *Chief Hydraulic Engineer*

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1088

Prepared in cooperation with the States of Colorado, Louisiana, New Mexico, and Texas and other agencies

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1950

UNITED STATES DEPARTMENT OF THE INTERIOR

Oscar L. Chapman, *Secretary*

GEOLOGICAL SURVEY

W. E. Wrather, *Director*

For sale by the Superintendent of Documents, U. S. Government Printing Office
Washington 25, D. C. - Price 65 cents (paper cover)

PREFACE

This report was prepared by the Geological Survey in cooperation with the States of Colorado, Louisiana, New Mexico, and Texas and other agencies, by personnel of the Water Resources Division under the direction of:

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ILLUSTRATION

SCOPE OF WORK

This volume is one of a series of 14 reports presenting results of measurements of stage and flow made on streams, lakes, and reservoirs in the United States during the water year ending September 30, 1947. The work was begun in 1888 in connection with special studies relating to irrigation. Measurements of the flow of streams and of the stage and contents of lakes and reservoirs have been made at about 11,100 gaging stations in the 48 States and also at many in the Territories of Alaska and Hawaii. In July 1947, 5,810 gaging stations, including those in Hawaii, were being maintained by the Geological Survey and cooperating organizations. Miscellaneous discharge measurements were made during the water year at many other points.

In the execution of the work many State and private organizations have cooperated, either by furnishing data or by assisting in collecting data. Cooperation of the first kind is acknowledged in connection with the description of each station affected; cooperation of the second kind is acknowledged, under the heading "Cooperation," in the introductory matter that precedes the gaging-station records in each volume. In the present volume, the section on cooperation of the second kind appears on page 13.

DEFINITION OF TERMS

The units in which stream-flow data are presented in this report and other terms used herein are defined as follows:

"Second-feet" is an abbreviation for "cubic feet per second." A second-foot 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.

"Second-feet per square mile" is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the runoff is distributed uniformly both as regards 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. It is used for comparing runoff with rainfall, which is usually expressed in inches.

An "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 connection with storage for irrigation.

"Second-foot-day" is the volume of water represented by a flow of 1 second-foot for 24 hours. It is equivalent to 86,400 cubic feet, 1.98347l acre-feet, or 646,317 gallons and represents a runoff of 0.0372 inch from 1 square mile.

"Stage-discharge relation" is an abbreviation for the term "relation between gage height and discharge."

"Control" is a term used to designate a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural section, a reach of the channel, or an artificial structure.

"Contents" is a term applied to the volume of water in a reservoir. It is computed on the basis of a level pool and does not include bank storage unless otherwise indicated.

EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage, measurements of discharge, and general information used to supplement the records of stage and discharge measurements in determining the daily flow. The records of stage are obtained either from direct readings on a nonrecording gage or from a water-stage recorder that gives a continuous record of the fluctuations. Measurements of discharge are made with a current meter by the general methods outlined in standard textbooks on the measurement of river discharge. Typical structures in use at gaging stations are shown in figure 1.

Rating tables giving the discharge for any stage are prepared from the discharge measurements. The application of the daily mean gage height to those rating tables gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the "shifting-control method," in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. At times the stage-discharge relation for a station may be temporarily changed by the presence of aquatic growth or debris on the control. For such times the daily mean discharge is computed by what is essentially the "shifting-control" method, described above.

At some gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources, which necessitates the use of the "slope method," in which the slope or fall in a reach of the stream is a factor in the determination of discharge. Information requisite for determining the slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage, and for them the rate of change of stage is used as a factor in the determination of discharge.

At most gaging stations in the northern part of the United States and at some in the mountainous regions of other parts the stage-discharge relation is affected by ice during the winter, which makes it impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and engineers, and comparable records of discharge for stations in the same or nearby basins. For those stations at which the stage-discharge relation is affected by ice, the days included in the periods of ice effect either are indicated in the table by symbols referring to a footnote that states this fact or are given in a general note following the table. The days on which discharge measurements were made during or between periods of ice effect, shortly before the first period, or shortly after the last period are similarly indicated by a footnote.

For most of the gaging stations on streams in the area covered by this report the data presented comprise a description of the station, a table showing the daily discharge of

A. SABINE RIVER NEAR GLADEWATER, TEX.

B. PECOS RIVER AT RED BLUFF, N. MEX.

C. COLORADO RIVER NEAR SAN SABA, TEX.

FIGURE 1.—GAGING-STATION STRUCTURES.

the stream, and a table of monthly and yearly discharge and runoff. Skeleton rating tables are published for all stations except those at which the daily discharge for the greater part of the year was determined by the shifting-control method, the slope method, or other special methods.

The description of the station gives the type of gage, its latitude and longitude as determined from the best available maps, and information in regard to diversions that decrease the flow at the gage, artificial regulation from pondage or storage, and the accuracy of the records. Under "Average discharge" is given the average discharge for the number of years indicated. It is given only for stations for which there are 10 or more complete years of record. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height (unless it is of no importance). Unless otherwise qualified, the maximum discharge corresponds to the crest stage, obtained by use of a water-stage recorder or a nonrecording gage read at the time of the crest. Likewise the minimum discharge represents the lowest stage, unless otherwise qualified. Selected peak discharges with the times of their occurrence are given, below the table of monthly discharge, for some stations. This supplementary information is generally omitted for a station at which the drainage area of the stream is less than 10 or more than 10,000 square miles or at which, on most days, the peak discharge exceeds the mean discharge by less than 10 percent

For stations equipped with water-stage recorders, except those on streams subject to sudden or rapid fluctuation, the table gives the discharge corresponding to the daily mean gage height. For stations subject to such fluctuation the daily mean gage height may not indicate the true daily mean discharge, which must be obtained by averaging the discharge for parts of the day or by using the discharge integrator, an instrument for obtaining the daily mean discharge from a continuous gage-height graph and containing as an essential element a curve representing the stage-discharge relation at the station. For stations equipped with nonrecording gages, the table of daily discharge gives the discharge corresponding to either once-daily readings of the gage, the mean of twice-daily readings, or the mean gage height determined from gage-height graphs based on gage readings. For periods of rapidly changing stage, the daily mean discharge is determined from gage-height graphs based on gage readings, the frequency of which is stated in the station description.

In the table of monthly discharge the column headed "Second-foot-days" gives the sum for each month of the figures given in the table of daily discharge. The column headed "Maximum" gives the maximum daily discharge, not the momentary discharge when the water surface was at crest stage. Likewise, in the column headed "Minimum" the quantity given is the minimum daily discharge. The column headed "Mean" gives the average flow in cubic feet per second during the month.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents is given. A skeleton table of capacity at given stages is usually given in the first report in which data for a station are published but is omitted from succeeding reports.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of stream-flow data depends primarily on (1) the permanency of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements and (2) the accuracy of observations of stage, measurements of flow, and interpretation of records.

The station description gives a statement in regard to the general accuracy of the records. "Excellent" indicates that, in general, the error in the daily records is believed to be less than 5 percent; "good," less than 10 percent; "fair," less than 15 percent; and "poor," probably more than 15 percent. The records of monthly and yearly mean discharge and runoff are, in general, more accurate than the daily records.

Yield at some stations as indicated by monthly means may vary widely from natural yield, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or other factors. For such stations figures of "second-feet per square mile" and "runoff in inches" are not published unless storage or diversion records are included indicating the extent of the regulation or diversion or unless satisfactory adjustments can be made for changes in contents or reservoirs or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless its inclusion is indicated. Even at those stations where adjustments are made, in some instances large errors in computed yields may occur when relatively large negative adjustments are applied or when evaporation is large in comparison with the observed discharge. Figures of second-feet per square mile and runoff in inches are also omitted if the drainage area includes large noncontributing areas or if the average annual rainfall over the drainage area is less than 20 inches.

Many gaging stations on streams in the irrigated areas of the United States are situated above most of the diversions from those streams, and therefore the discharge recorded does not show the water supply available for further development, as prior appropriations below the station must first be satisfied.

The table of monthly discharge presents in summary the distribution of the flow past the station. The table of daily discharge affords opportunity for more detailed studies of the variation in flow. As further observations in each succeeding year may be expected to throw new light on data previously published, it should be borne in mind that such data are subject to revision in succeeding water-supply papers.

PUBLICATIONS

The results of stream-flow measurements are now published annually in 14 parts, each part covering an area whose boundaries coincide with natural drainage features as indicated below:

Part 1. North Atlantic slope basins (St. John River to York River).
2. South Atlantic slope and eastern Gulf of Mexico basins (James River to Mississippi River).
3. Ohio River Basin.
4. St. Lawrence River Basin.
5. Hudson Bay and upper Mississippi River Basins.
6. Missouri River Basin.
7. Lower Mississippi River Basin.
8. Western Gulf of Mexico basins.
9. Colorado River Basin.
10. The Great Basin.
11. Pacific slope basins in California.
12. Pacific slope basins in Washington and upper Columbia River Basin.
13. Snake River Basin.
14. Pacific slope basins in Oregon and lower Columbia River Basin.

Water-supply papers and other publications of the Geological Survey containing data on the water resources of the United States may be obtained or consulted as explained below.

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

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

3. Sets are available for consultation in the offices of the water-resources division of the Geological Survey as follows:

East of the Mississippi River:
Albany, N. Y., 526 Federal Building.
Asheville, N. C., 220 Post Office Building.
Atlanta, Ga., 411 Grand Theater Building.
Augusta, Maine, 420 Statehouse.
Baton Rouge, La., 538 Florida Street.
Boston, Mass., 939 Post Office Building.
Champaign, Ill., 605 South Neil Street.
Charleston, W. Va., 408 Union Building.
Charlottesville, Va., Cabell Hall, University of Virginia.
Chattanooga, Tenn., 442 Post Office Building.
College Park, Md., 105 Engineering Building, University of Maryland.
Columbia, S. C., 207 Creason Building.
Columbus, Ohio, 404 Engineering Experiment Station, Ohio State University.
Harrisburg, Pa., 490 Education Building.
Hartford, Conn., 203 Federal Building.
Indianapolis, Ind., 205 Underwriters Building.
Jackson, Miss., 208 Millsaps Building.
Knoxville, Tenn., 337 Post Office Building.
Louisville, Ky., 531 Federal Building.
Madison, Wis., 666 State Office Building.
Montgomery, Ala., 507 Post Office Building.
Morgantown, W. Va., 407 Mineral Industries Building.
New Philadelphia, Ohio, Muskingum Watershed Conservancy District Building.
Ocala, Fla., 302 Post Office Building.
Pittsburgh, Pa., 515 Plaza Building.
Raleigh, N. C., 244 Educational Building.
St. Paul, Minn., 1427 New Post Office Building.
Trenton, N. J., 228 Federal Building.
Washington, D. C., General Services Building.
Williamsburg, Ky., State Highway Building.

West of the Mississippi River:
Albuquerque, N. Mex., 723 North Second Street.
Austin, Tex., 302 West Fifteenth Street.
Bismarck, N. Dak., 7 Eltinge Building.
Boise, Idaho, 429 Federal Building.
Denver, Colo., 126 New Customhouse.
Fort Smith, Ark., 6 Post Office Building.
Helena, Mont., 408 Federal Building.
Honolulu, Hawaii, 225 Federal Building.
Idaho Falls, Idaho, 204 Federal Building.
Iowa City, Iowa, 508 Hydraulic Laboratory, University of Iowa.
Lincoln, Nebr., 510 Rudge-Guenzel Building.
Los Angeles, Calif., 429-F United States Post Office and Courthouse.
Oklahoma City, Okla., 203 Council Building.
Pierre, S. Dak., 301 Federal Building.
Portland, Oreg., 606 Post Office Building.
Rolla, Mo., 211 Ramsey Building.
St. Louis, Mo., 1004 New Federal Building.
Salt Lake City, Utah, 303 Federal Building.
San Francisco, Calif., 702 Appraisers Building.
Santa Fe, N. Mex., 204 United States Courthouse.
Tacoma, Wash., 207 Federal Building.
Topeka, Kans., 305 Federal Building.
Tucson, Ariz., 210 Post Office Building.

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

Prior to publication, records of discharge in provisional form for individual stations may usually be obtained from the district offices listed above.

Early records of the flow of streams in the United States are published in the reports listed below. In many of these reports records for years earlier than those indicated have been included for some streams.

Stream-flow data for the years 1884-1901, in reports of the Geological Survey

(A = Annual Report; B = Bulletin; W = Water-Supply Paper)

Report	Character of data	Year
10th A, pt. 2	Descriptive information only.	
11th A, pt. 2	Monthly discharge and descriptive information	1884 to September 1890.
12th A, pt. 2	....do	1884 to June 30, 1891.
13th A, pt. 3	....do	1884-92.
14th A, pt. 2	Monthly discharge	1888-93.
B 131	Descriptions, measurements, gage heights, and ratings	1893-94.
16th A, pt. 2	Descriptive information only.	
B 140	Descriptions, measurements, gage heights, ratings, and monthly discharge.	1895.
W 11	Gage heights	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge	1895-96.
W 15	Descriptions, measurements, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries above Kansas River.	1897.
W 16	Descriptions, measurements, and gage heights of stream west of the Mississippi River, except Missouri River and tributaries above Kansas River.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge.	1897.
W 27	Measurements, ratings, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries.	1898.
W 28	Measurements, ratings, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries.	1898.
20th A, pt. 4	Monthly discharge	1898.
W 35 to 39	Descriptions, measurements, gage heights, and ratings	1899.
21st A, pt. 4	Monthly discharge	1899.
W 47 to 52	Descriptions, measurements, gage heights, and ratings	1900.
22d A, pt. 4.	Monthly discharge	1900.
W 65, 66	Descriptions, measurements, gage heights, and ratings	1901.
W 75	Monthly discharge	1901.

Papers on surface water supply containing records from 1899 to date, grouped by years and drainage basins, are listed by number on page 8. The data for any particular gaging station will, in general, be found in the reports covering the years during which the station was maintained. For example, the data for 1910 to 1920 for any station in the area covered by part 3 are published in Water-Supply Papers 283, 303, 323, 353, 403, 433, 453, 473, and 503, which contain records for the Ohio River Basin for those years.

The records at most of the stations discussed in these reports extend over a series of years. Miscellaneous measurements at many points other than regular gaging stations have been made each year and are published under "Miscellaneous discharge measurements" at the end of each report, the streams and points of measurement listed appearing in the same relative order as the streams and gaging stations in the body of the report. An index of the records obtained prior to 1904 has been published in Water-Supply Paper 119.

Each of the reports on surface water supply for the year 1939, issued as Water-Supply Papers 871 to 884 (see table on p. 8), contains, for the area covered by that report, a summary of yearly discharge at gaging stations at which 10 or more complete years of record have been collected. These summaries are available also as separate reprints.

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Numbers of water-supply papers containing results of stream measurements, 1899-1947 (for basins included see p. 5).

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1899 a...	35	b35, 36	36	36	36	c36, 37	37	37	d37, 38	38, e39	38, f39	38	38	38
1900 g...	47, h48	48	48, 149	49	49	49, j50	50	50	50	51	51	51	51	51
1901.....	65, 75	65, 75	65, 75	65, 75	k65, 66, 75	66, 75	k65, 66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75
1902.....	82	b82, 83	83	m82, 83	k83, 85	84	k83, 84	84	85	85	85	85	85	85
1903.....	97	b97, 98	98	97	k98, 99, n100	99	k98, 99	99	100	100	100	100	100	100
1904.....	o124, p125, q126	q126, 127	128	129	k128, 130	130, r131	k128, 131	132	133	133, s134	134	135	135	135
1905.....	o165, p166, q167	q167, 168	169	170	171	172	k169, 173	174	175, t177	176, s177	177	178	178	u177, 178
1906.....	o201, p202, q203	q203, 204	205	206	207	208	k205, 209	210	211, t213	212, s213	213	214	214	214
1907-8...	241	242	243	244	245	246	247	248	249	250, s251	251	252	252	252
1909.....	261	262	263	264	265	266	267	268	269	270, s271	271	272	272	272
1910.....	281	282	283	284	285	286	287	288	289	290	291	292	292	292
1911.....	301	302	303	304	305	306	307	308	309	310	311	312	312	312
1912.....	321	322	323	324	325	326	327	328	329	330	331	332-A	332-B	332-C
1913.....	351	352	353	354	355	356	357	358	359	360	361	362-A	362-B	362-C
1914.....	381	382	383	384	385	386	387	388	389	390	391	392	393	394
1915.....	401	402	403	404	405	406	407	408	409	410	411	412	413	414
1916.....	431	432	433	434	435	436	437	438	439	440	441	442	443	444
1917.....	451	452	453	454	455	456	457	458	459	460	461	462	463	464
1918.....	471	472	473	474	475	476	477	478	479	480	481	482	483	484
1919-20...	501	502	503	504	505	506	507	508	509	510	511	512	513	514
1921.....	521	522	523	524	525	526	527	528	529	530	531	532	533	534
1922.....	541	542	543	544	545	546	547	548	549	550	551	552	553	554
1923.....	561	562	563	564	565	566	567	568	569	570	571	572	573	574
1924.....	581	582	583	584	585	586	587	588	589	590	591	592	593	594
1925.....	601	602	603	604	605	606	607	608	609	610	611	612	613	614
1926.....	621	622	623	624	625	626	627	628	629	630	631	632	633	634
1927.....	641	642	643	644	645	646	647	648	649	650	651	652	653	654
1928.....	661	662	663	664	665	666	667	668	669	670	671	672	673	674
1929.....	681	682	683	684	685	686	687	688	689	690	691	692	693	694
1930.....	696	697	698	699	700	701	702	703	704	705	706	707	708	709
1931.....	711	712	713	714	715	716	717	718	719	720	721	722	723	724
1932.....	726	727	728	729	730	731	732	733	734	735	736	737	738	739
1933.....	741	742	743	744	745	746	747	748	749	750	751	752	753	754
1934.....	756	757	758	759	760	761	762	763	764	765	766	767	768	769
1935.....	781	782	783	784	785	786	787	788	789	790	791	792	793	794
1936.....	801	802	803	804	805	806	807	808	809	810	811	812	813	814
1937.....	821	822	823	824	825	826	827	828	829	830	831	832	833	834
1938.....	851	852	853	854	855	856	857	858	859	860	861	862	863	864
1939.....	871	872	873	874	875	876	877	878	879	880	881	882	883	884
1940.....	891	892	893	894	895	896	897	898	899	900	901	902	903	904
1941.....	921	922	923	924	925	926	927	928	929	930	931	932	933	934
1942.....	951	952	953	954	955	956	957	958	959	960	961	962	963	964
1943.....	971	972	973	974	975	976	977	978	979	980	981	982	983	984
1944.....	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014
1945.....	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044
1946.....	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064
1947.....	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094

a Rating tables and index to Water-Supply Papers 35-39 contained in Water-Supply Paper 39. Monthly discharge for 1899 in 21st Annual Report, part 4.
b James River only.
c Gallatin River.
d Green and Gunnison Rivers and Colorado River above Gunnison River.
e Mojave River only.
f Kings and Kern Rivers and south Pacific slope basins.
g Rating tables and index to Water-Supply Papers 47-52 contained in Water-Supply Paper 52. Monthly discharge for 1900 in 22d Annual Report, part 4.
h Wissahickon and Schuylkill Rivers to James River.
i Scioto River.
j Loup, Platte, and Elkhorn Rivers and tributaries below Platte River.
k Tributaries of Mississippi River from east.
m Lake Ontario and tributaries to St. Lawrence River proper.
n Hudson Bay only.
o New England rivers only.
p Hudson River to Delaware River, inclusive.
q Susquehanna River to Yadkin River.
r Platte and Kansas Rivers.
s The Great Basin in California, except Truckee and Carson River Basins.
t Below mouth of Gila River.
u Rogue, Umpqua, and Siletz Rivers only.

Reports have been published that are compilations of records for various areas, usually a single State or drainage basin. These reports contain records previously published (some of which have been revised), as well as some records not contained in the annual series of water-supply papers. The following table gives the numbers and titles of these reports, arranged alphabetically, some by States and some by drainage basins.

Reports containing compilations of records of discharge by States and drainage basins

Report	Period	Water-Supply Paper
STATE		
Alabama, Water powers of, with an appendix on stream measurements in Mississippi.	1895-1903	107
California, Water resources of, part 1, Stream measurements in Sacramento River Basin.	1887-1912	298
California, Water resources of, part 2, Stream measurements in San Joaquin River Basin.	1878-1912	299
California, Water resources of, part 3, Stream measurements in the Great Basin and Pacific Coast river basins.	1891-1912	300
California, southern, Surface water supply of Pacific slope of	1890-1918	447
California, Surface water supply of Sacramento River Basin	1895-1927	597-E
California, Surface water supply of San Joaquin River Basin	1895-1927	636-D
California, southern, Surface water supply of Pacific slope basins in	1894-1927	636-E
California, Surface water supply of minor San Francisco Bay, northern Pacific, and Great basins in.	1895-1927	637-A
Colorado, Water resources of	1884-1900	74
Georgia, Water resources of	1895-1905	197
Massachusetts, Surface waters of	1845-1915	415
Nebraska, Surface water supply of	1894-1906	230
Oregon, Surface water supply of	1878-1910	370
Texas, Summary of records of surface waters of	1898-1937	850
Vermont, Surface waters of	1875-1916	424
Washington, Summary of hydrometric data in	1878-1919	492
Washington, Summary of records of surface waters of	1919-35	870
Wisconsin, northern, Water power of	1895-1905	156
Wyoming, Surface waters of, and their utilization	1894-1921	469
DRAINAGE BASIN		
Colorado River (Ariz., Colo., N. Mex., Utah, Wyo.) and its utilization	1888-1914	395
Colorado River, upper (Colo., Utah), and its utilization	1897-1927	617
Colorado River Basin (Ariz., Calif., Colo., Utah, Wyo.), Surface waters at base stations in.	1891-1938	918
Colorado River Basin (Ariz., Calif., Nev., N. Mex., Utah), Surface waters at stations on tributaries in lower.	1888-1938	1049
Columbia River Basin, upper (Mont., Idaho), Surface waters of	1898-1938	916
Great Salt Lake Basin, Water powers of	1889-1920	517
Green River (Colo., Utah, Wyo.) and its utilization	1894-1926	618
Kennebec River Basin (Maine), Water resources of	1890-1906	198
Milk River. See St. Mary and Milk Rivers		
Missouri and St. Mary River Basins (Mont.), Surface waters of	1881-1938	917
New-Kanawha River Basin (N. C., Va., W. Va.), Surface water supply of	1895-1920	536
Penobscot River Basin (Maine), Water resources of	1904-9	279
Potomac River Basin (D. C., Md., W. Va.)	1895-1906	192
Rio Grande Basin (Colo., N. Mex., Tex.), Water resources of	1888-1913	358
St. Mary and Milk Rivers (Mont., Canada), Water supply of	1898-1917	491
St. Mary River. See St. Mary and Milk Rivers; Missouri and St. Mary River Basin.		
Sevier Lake Basin (Utah), Utilization of surface water resources of	1889-1937	920
Susquehanna River Basin (Pa., Md.) Hydrography of	1890-1904	109

Records of discharge have been published also in State reports. Some of these are not contained in the publications of the Geological Survey or are revisions of records previously published in its water-supply papers. The following table contains a list of these reports.

State reports containing compilations of records of discharge

State	Period	Report	Issued by
Alabama	1895-1915	Bull. 17, Water powers of Alabama	Geological Survey of Alabama.
Arkansas	1857-1928	Stream-gaging Rept. 1	Arkansas Geological Survey.
Colorado	1881-1935	Water resources of Colorado, Appendix 2, Data on stream-gaging stations of Colorado.[1]	State Planning Commission, Water Conservation Board, State engineer.
Do	1881-1938	Water resources of Colorado, Appendix 3, vols. 1 and 2, Stream-flow data of Colorado.	Do.
Connecticut	1900-1927	Bull. 44, Water resources of Connecticut	State Geological and Natural History Survey.
Do	1912-33	5th biennial report	State Water Commission.
Florida	1898-1946	Bull. 31, Springs of Florida	Florida Geological Survey.
Georgia	1895-1906	Bull. 16, Water powers of Georgia	Geological Survey of Georgia.
Do	1907-19	Bull. 38, Water powers of Georgia	Do.
Illinois	1908-11	Water resources of Illinois	Rivers and Lakes Commission.
Do	1900-1934	Stream-flow data of Illinois	Division of Waterways.
Indiana	1923-27	Pub. 72, Surface water supply of Indiana	Department of Conservation.
Do	1927-30	Pub. 112, Surface water supply of Indiana	Do.
Iowa	1873-1932	Stream-flow records of Iowa	State Planning Board.
Do	1873-1940	Water-Supply Bull. 1, Summaries of yearly and flood flow relating to Iowa streams	Iowa Geological Survey.
Do	1941-42	Water-Supply Bull. 2, Surface water resources of Iowa.	Do.

[1] Contains records of yearly discharge only.

State reports containing compilations of records of discharge--Continued

State	Period	Report	Issued by
Kansas	1895-1919	Surface waters of Kansas	Kansas Water Commission.
Do	1919-24	...do	Do.
Do	1924-28	Report of Division of Water Resources	State Board of Agriculture.
Do	1928-35	Stream-flow data of Kansas	Do.
Do	1935-39	...do	Do.
Kentucky	1910-20	Surface waters of Kentucky	Kentucky Geological Survey.
Louisiana	1903-38	Geol. Bull. 16, Surface water supply of Louisiana.	Department of Conservation.
Maine	1887-1920	1st annual report	Maine Water Power Commission.
Maryland	1929-37	Flow data and draft storage curves for major streams in Maryland.	State Planning Commission and Water Resources Commission.
Do	1892-1943	Bull. 1, Summary of records of surface waters of Maryland and the Potomac River Basin.	Department of Geology, Mines, and Water Resources.
Minnesota	1909-12	Water-resources investigation of Minnesota.	State Drainage Commission.
Missouri	1857-1926	Vol. 20, 2d series, Water resources of Missouri.	Missouri Bureau of Geology and Mines.
Do	1927-39	Vol. 26, 2d series, Surface waters of Missouri.	Missouri Geological Survey and Water Resources.
Montana	1889-1911	5th biennial report	Office of the State Engineer.
Do	1881-1938	Special Rept. 10, vols. 1-4, Water resources of Montana.	Montana Agricultural Experiment Station.
Nebraska	1894-1914	1st hydrographic report	Bureau of Water Power, Irrigation, and Drainage.
Do	1914-28	2d hydrographic report	Do.
New Hampshire	1889-1922	Annual and statistical report, vol. 12	Public Service Commission.
New Jersey	1892-1928	Bull. 33, Surface water supply of New Jersey.	Department of Conservation and Development.
Do	1928-34	Special Rept. 5, Surface water supply of New Jersey.	State Water Policy Commission.
Do	1934-40	Special Rept. 9, Surface water supply of New Jersey.	Do.
New Mexico	1888-1925	Surface water supply of New Mexico	Office of the State Engineer.
North Carolina	1889-1923	Bull. 34, Discharge records of North Carolina streams.	Department of Conservation and Development.
Do	1889-1936	Bull. 39, Discharge records of North Carolina streams.[2]	Do.
Do	1866-1945	Hydrologic Data on the Neuse River Basin.	Do.
Do	1820-1945	Hydrologic Data on the Cape Fear River Basin.	Do.
Do	1866-1945	Hydrologic Data on the Yadkin-Pee Dee River Basin.	Do.
North Dakota	1919-21	Report to Governor of North Dakota on flood control.	State chief engineer.
Do	1882-1938	Surface water in North Dakota	State Planning Board.
Do	1882-1944	Supplement B, 4th biennial report	State Water Conservation Commission.
Ohio	1898-1921	Bull. 73, Ohio stream flow, Part 1	Engineering Experiment Station, Ohio State University.
Do	1898-1944	Bull. 127, Ohio stream flow, Part 2	Do.
Do	1902-39	Bull. 200, Compilation of stream-flow records of Ohio.	Department of Agriculture, Division of Conservation and Natural Resources.
Do	1898-1939	Bull. 111, Ohio stream-drainage areas and flow-duration tables.	Engineering Experiment Station, Ohio State University.
Oregon	1878-1914	Bull. 4, Water resources of the State of Oregon.	Office of the State Engineer.
Do	1914-24	Bull. 7, Water resources of the State of Oregon.	Do.
Do	1924-30	Bull. 8, Water resources of the State of Oregon.	Do.
Do	1930-36	Bull. 9, Water resources of the State of Oregon.	Do.
Pennsylvania	1890-1911	Report of the Water Supply Commission of Pennsylvania.	Water Supply Commission of Pennsylvania.
Do	1928-32	Stream-flow records of Pennsylvania	Department of Forests and Waters.
Rhode Island	1929-41	7th annual report	Department of Public Works.
South Carolina	1884-1946	Bull. 17, Summary of records of surface water supply of South Carolina.	South Carolina Research, Planning and Development Board.
Tennessee	1874-1924	Bull. 34, Water resources of Tennessee[3]	Department of Education.
Do	1920-30	Bull. 40, Surface waters of Tennessee	Do.
Utah	1889-1905	5th biennial report	Office of the State Engineer.
Do	1906-10	7th biennial report	Do.
Do	1911-16	10th biennial report	Do.
Virginia	1895-1927	Bull. 31, Water resources of Virginia	Virginia Geological Survey.
Do	1927-42	Bull. 4, Surface water supply of Virginia (Potomac, Rappahannock, and York River Basins).	Virginia Conservation Commission.
Do	1927-42	Bull. 5, Surface water supply of Virginia (James River Basin).	Do.
Do	1927-42	Bull. 6, Surface water supply of Virginia (Roanoke and Chowan River Basins).	Do.
Do	1927-42	Bull. 7, Surface water supply of Virginia (New, Tennessee, and Big Sandy River Basins).	Do.
Washington	1878-1933	Bull. 5, Monthly and yearly summaries of hydrometric data.	Department of Conservation and Development.
Wisconsin	1888-1914	1st report of Railroad Commission of Wisconsin to Legislature on water powers.	Railroad Commission of Wisconsin.
Do	1914-23	2d report of Railroad Commission of Wisconsin to Legislature on water powers.	Do.

2 Contains records of maximum and minimum daily, weekly, and monthly discharge and yearly mean discharge.

3 Includes records of discharge for all stations in North Carolina in the Tennessee River Basin.

Note.- In addition to the records contained in the reports listed above, the following States have issued annual or biennial reports in which are contained records of discharge: California, Colorado, Connecticut, Idaho, Indiana, Kansas, Maine, Missouri, Montana, Nebraska, Nevada, New Mexico, New York (also New York City Board of Water Supply and city of Rochester), North Dakota, Oregon, Pennsylvania, Rhode Island, Washington, and Wyoming.

The reports listed in the foregoing tables contain the customary records of discharge collected during the systematic operation of gaging stations. Detailed information on the stage and discharge of many streams during major floods has been included in special reports on these floods published by the Geological Survey. The more recent of these special reports also contain other pertinent hydrologic information and analyses and compilations of data relating to earlier noteworthy floods. The following list gives the numbers and titles of these reports:

Water-Supply Paper	Title
88	The Passaic flood of 1902.
92	The Passaic flood of 1903.
96	Destructive floods in the United States in 1903.
147	Destructive floods in the United States in 1904.
162	Destructive floods in the United States in 1905.
334	The Ohio Valley flood of March-April 1913.
426	Southern California floods of January 1916.
487	The Arkansas River flood of June 3-5, 1921.
488	The floods in central Texas in September 1921.
520-G	Some floods in the Rocky Mountain region.
636-C	The New England flood of November 1927.
771	Floods in the United States, magnitude and frequency.
773-E	The New York State flood of July 1935.
796-B	Flood on Republican and Kansas Rivers, May and June 1935.
796-C	Flood in La Canada Valley, Calif., January 1, 1934.
796-G	Major Texas floods of 1935.
798	The floods of March 1936, part 1, New England rivers.
799	The floods of March 1936, part 2, Hudson River to Susquehanna River region.
800	The floods of March 1936, part 3, Potomac, James, and upper Ohio Rivers.
816	Major Texas floods of 1936.
836-A	Stages and flood discharges of the Connecticut River at Hartford, Conn.
838	Floods of Ohio and Mississippi Rivers, January-February, 1937.
842	Floods in Canadian and Pecos River Basins of New Mexico, May and June 1937.
843	Floods of December 1937 in northern California.
844	Floods of March 1938 in southern California.
847	Maximum discharges at stream-measurement stations through September 1938.
867	Hurricane floods of September 1938.
869	Flood of August 1935 in Muskingum River Basin, Ohio.
914	Texas floods of 1938 and 1939.
966	Minor floods of 1938 in North Atlantic States.
967-A	Floods of September 1939 in Colorado River Basin below Boulder (Hoover) Dam.
967-B	Flood of July 5, 1939, in eastern Kentucky.
967-C	Flood of August 21, 1939, in town of Baldwin, Maine.
994	Cloudburst floods in Utah, 1850 to 1938.
997	Floods in Colorado.
1046	Texas floods of 1940.
1066	Floods of 1940 in southeastern States.
1080	Floods of May-June 1948 in Columbia River Basin.

RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The following table contains a list of gaging stations for the area covered by this report at which records of discharge were collected during the water year October 1946 to September 1947 by agencies other than the Geological Survey. The records for these stations are not contained in publications of the Geological Survey.

Records of discharge collected by agencies other than the Geological Survey

Stream	Location	Period	Collected by	Remarks
Alamito Creek.....	Near Presidio, Tex.....	1932-47	International Boundary & Water Commission.	Published in bulletins of International Boundary & Water Commission.
Arrey Canal.....	Near Arrey, N. Mex.....	1918, 1920-47	Bureau of Reclamation.	Unpublished.
Bonita ditch.....	Below Caballo Dam, N. Mex.	1938-47	....do.....	Do.
Carlsbad project main canal.	Near Carlsbad, N. Mex..	1941-47	....do.....	Do.
Devils River.....	Near Del Rio, Tex.....	1931-47†	International Boundary & Water Commission.	Published in bulletins of International Boundary & Water Commission.
El Paso sewage outfall.	Near El Paso, Tex.....	1936-47	....do.....	Do.
East Side Canal.....	At Mesilla Dam, near Mesilla Park, N. Mex.	1916-18, 1920-47	Bureau of Reclamation.	Unpublished.

† Records for earlier years published in Geological Survey water-supply papers.

Records of discharge collected by agencies other than the Geological Survey--Continued

Stream	Location	Period	Collected by	Remarks
Goodenough Springs.	Near Comstock, Tex.....	1931-47†	International Boundary & Water Commission.	Published in bulletins of International Boundary & Water Commission.
Hagerman Canal...	Near Roswell, N. Mex....	1942-47	Hagerman Irrigation Co.	Unpublished.
Las Vacas Arroyo.	Near Villa Acuna, Coahuila, Mexico.	1938-47	International Boundary & Water Commission.	Published in bulletins of International Boundary & Water Commission.
Leasburg Canal...	At head, near Fort Selden, N. Mex.	1917-18, 1920-47	Bureau of Reclamation.	Unpublished.
Pecos River.....	Near Comstock, Tex.....	1931-47†	International Boundary & Water Commission.	Published in bulletins of International Boundary & Water Commission.
Pinto Creek.....	Near Del Rio, Tex.....	1931-47†	....do.....	Do.
Rio Alamo.....	Mier, Tamaulipas, Mexico.	1924-47	....do.....	Do.
Rio Conchas.....	Cuchillo Parado, Chihuahua, Mexico.	1945-47	....do.....	Do.
Rio Escondido....	At Villa de Fuente, Coahuila, Mexico.	1922-47	....do.....	Records for 1923-24 and 1928 published in H. Doc. 359, 71st Cong., 2d sess., as Rio San Antonio above Fuente; records for 1932-47 published in bulletins of International Boundary & Water Commission.
Rio Grande.....	Below American Dam, near El Paso, Tex.	1938-47	....do.....	Published in bulletins of International Boundary & Water Commission.
Do.....	Below Brownsville, Tex.	1934-47	....do.....	Do.
Do.....	County-line station near El Paso, Tex.	1938-47	....do.....	Do.
Do.....	Del Rio, Tex.....	1931-47†	....do.....	Do.
Do.....	Eagle Pass, Tex.....	1931-47†	....do.....	Do.
Do.....	Near El Paso, Tex.....	1931-47†	....do.....	Do.
Do.....	Below old Fort Quitman, Tex.	1931-47†	....do.....	Do.
Do.....	Hildalgo, Tex.....	1931-47†	....do.....	Do.
Do.....	At island station, near El Paso, Tex.	1938-47	....do.....	Do.
Do.....	At Johnson Ranch, Tex...	1936-47	....do.....	Do.
Do.....	Cuidad Juarez, Chihauhau, Mexico.	1938-47	....do.....	Do.
Do.....	Langtry, Tex.....	1931-47†	....do.....	Do.
Do.....	Laredo, Tex.....	1924-47†	....do.....	Do.
Do.....	Las Palmas, Tamaulipas, Mexico.	1945-47	....do.....	Do.
Do.....	Leasburg Dam, at Fort Selden, N. Mex.	1919-47	Bureau of Reclamation.	Unpublished.
Do.....	Matamoras, Tamaulipas, Mexico.	1926-47‡	International Boundary & Water Commission.	Published in bulletins of International Boundary & Water Commission.
Do.....	Above Presidio, Tex.....	1926-47†	....do.....	Do.
Do.....	Below Presidio, Tex.....	1926-47†	....do.....	Do.
Do.....	Rio Grande City, Tex....	1932-47	....do.....	Do.
Do.....	Roma, Tex.....	1925-28†, 1931-47	....do.....	Do.
Do.....	Zapata, Tex.....	1932-47	....do.....	Do.
Rio Salado.....	Near Guerrero, Tamaulipas, Mexico.	1924-47†	....do.....	Do.
Rio San Diego....	Jimenez, Coahuila, Mexico.	1924-47	....do.....	Records for 1924-1928 published in report of International Water Commission, United States and Mexico, U. S. Section; records for 1932-47 published in bulletins of International Boundary & Water Commission.
Rio San Juan.....	Santa Rosalia, Tamaulipas, Mexico.	1924-47†	....do.....	Published in bulletins of International Boundary & Water Commission.
Do.....	Above Rio Grande City, Tex.	1946-47	....do.....	Do.
Do.....	Below Rio Grande City, Tex.	1946-47	....do.....	Do.
Rio San Rodrigo..	Near El Moral, Coahuila, Mexico.	1922-47	....do.....	Records for 1923-24 and 1927-28 published in H. Doc. 359, 71st Cong., 2d sess.; records for 1932-47 published in bulletins of International Boundary & Water Commission.
San Felipe Creek.	Near Del Rio, Tex.....	1931-47	....do.....	Published in bulletins of International Boundary & Water Commission.

† Records for earlier years published in Geological Survey water-supply papers.
‡ Records for earlier years published in Geological Survey water-supply papers as Rio Grande near Brownsville, Tex.

Records of discharge collected by agencies other than the Geological Survey--Continued

Stream	Location	Period	Collected by	Remarks
Terlingua Creek...	Near Terlingua, Tex....	1932-47	International Boundary & Water Commission.	Published in bulletins of International Boundary & Water Commission.
West Side Canal...	At Mesilla Dam, near Mesilla Park, N. Mex.	1916-18, 1920-47	Bureau of Reclamation.	Unpublished.

Note.- In addition to the gaging stations listed above, the International Boundary & Water Commission collects and publishes records of discharge in floodways in the lower Rio Grande Valley and records of diversions from the Rio Grande for irrigation and municipal use.

The Soil Conservation Service of the United States Department of Agriculture has been collecting records of runoff from selected areas in Texas, from 3 areas of less than 200 acres each near Waco and 5 areas of less than 30 acres each near Garland, beginning in 1938. These records are in the files of the Soil Conservation Service.

COOPERATION

The work in the several States was done under cooperative agreements with the organizations listed below:

Colorado: Office of the State Engineer, M. C. Hinderlider, and Colorado Water Conservation Board, C. H. Stone, director.

Louisiana: State Department of Public Works, D. L. Pyburn, director.

New Mexico: Office of the State Engineer, J. H. Bliss; Interstate Stream Commission, J. H. Bliss, secretary; New Mexico State Highway Department, B. G. Dwyre, State highway engineer.

Texas: State Board of Water Engineers, consisting of E. V. Spence, chairman, J. W. Pritchett, and H. A. Beckwith; Red Bluff Water Power Control District.

Financial assistance was furnished by the Corps of Engineers in the operation of 74 gaging stations, of which 4 were in Louisiana, 7 in New Mexico, and 63 in Texas.

Financial assistance was also furnished by the Office of Indian Affairs of the United States Department of the Interior in the operation of gaging stations on the Indian Pueblo lands in New Mexico.

Acknowledgments are due the Bureau of Reclamation of the United States Department of the Interior and the Weather Bureau of the United States Department of Commerce for assistance in collecting the records published herein.

Assistance in collecting records was rendered also by the following organizations:

New Mexico: Alamogordo Community ditch, town of Alamogordo, Middle Rio Grande Conservancy District, and Public Service Company of New Mexico.

Texas: Dallas County; the cities of Abilene, Amarillo, Corpus Christi, Dallas, Houston, Longview, and San Angelo; Comal Power Plant; Tarrant County Water Control and Improvement District No. 1; West Texas Utilities Co.; Lower Colorado River Authority; Brazos River Conservation and Reclamation District; Pecos County Water Improvement District No. 1; Reeves County Water Improvement District No. 1; Dow Chemical Co.; Texas Highway Department; San Jacinto River Authority; Lower Neches Valley Authority; Texas Electric Service Co.; Bexar, Medina, Atascosa Counties Water Control and Improvement District No. 1.

DIVISION OF WORK

The stream-gaging work was conducted by the water-resources division of the Geological Survey -- Carl G. Paulsen, chief hydraulic engineer and Joseph V. B. Wells, chief of the surface-water branch. The data for the stations in the several States were collected and prepared for publication under the supervision of district engineers as follows: In

Colorado, Robert Follansbee, the work being done in collaboration with M. C. Hinderlider, State engineer, and L. T. Burgess, State chief hydrographer; in Louisiana (except for Sabine River at Logansport), E. B. Rice prior to July 28, 1947, and W. R. Eaton thereafter; in New Mexico (except for Delaware River near Red Bluff and Pecos River at Red Bluff), Berkeley Johnson; in Texas and for Sabine River at Logansport, La., Delaware River near Red Bluff, N. Mex., and Pecos River at Red Bluff, N. Mex., C. E. Ellsworth.

The records were reviewed and the manuscript prepared for publication under the direction of B. J. Peterson, chief, annual reports section.

MERMENTAU RIVER BASIN

Bayou Nezpique near Basile, La.

Location.- Water-stage recorder, lat. 30°28'50", long. 92°37'55", in NE¼NW¼ sec. 1, T. 7 S., R. 3 W., at bridge on U. S. Highway 190, a quarter of a mile downstream from New Orleans, Texas & Mexico Railway bridge and 2 miles west of Basile. Datum of gage is 3.39 feet above mean sea level, datum of 1929, supplementary adjustment of 1941. Prior to July 17, 1947, wire-weight gage at same site and datum. Auxiliary staff gage 7½ miles downstream. Datum of auxiliary is 1.03 feet below mean sea level (Louisiana Geodetic Survey bench mark; levels by Corps of Engineers).

Records available.- October 1938 to September 1947.

Extremes.- Maximum discharge during year, 8,580 second-feet June 24; maximum gage height, 23.65 feet June 25, from graph based on gage readings; minimum discharge, 0.6 second-foot Aug. 5, 6 (gage height, 1.30 feet).
1938-47: Maximum discharge, 22,900 second-feet Aug. 11, 1940 (gage height, 31.08 feet); minimum, 0.1 second-foot June 7-13, 1943; minimum gage height, 1.16 feet June 6, 1940.

Remarks.- Records good except those below 10 second-feet, which are fair. Wire-weight gage read twice daily. Discharge above about 60 second-feet computed by using fall as determined by twice-daily readings of auxiliary staff gage as a factor. Diversions above and below station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,060	74	2,180	488	963	35	2,270	28	662	2,760	1.9	58
2	531	47	2,040	1,330	404	35	2,890	22	358	2,060	1.2	75
3	285	36	1,850	1,980	182	31	3,150	16	175	1,130	.9	110
4	161	28	1,430	2,500	115	30	3,460	12	124	376	.8	160
5	88	23	796	2,640	81	35	3,450	9.7	204	102	.7	148
6	58	22	333	2,580	66	68	3,260	8.3	280	43	.7	107
7	49	26	154	2,340	55	346	2,920	7.5	217	33	.8	87
8	38	44	85	2,130	50	1,190	2,620	6.5	133	31	1.1	69
9	31	51	57	1,900	42	1,700	2,160	5.5	75	25	13	62
10	35	86	44	1,620	35	2,060	1,620	5.2	40	18	6.1	52
11	91	775	38	1,200	30	2,070	1,390	4.7	24	14	4.5	56
12	232	1,520	42	1,010	28	1,970	2,080	4.2	13	12	4.7	64
13	315	2,050	297	1,880	28	2,990	2,980	3.9	9.7	17	3.3	57
14	334	2,330	410	2,560	25	5,670	3,670	3.7	5.5	12	2.2	53
15	242	2,410	287	3,460	22	7,950	3,770	3.4	3.2	12	6.1	53
16	164	2,240	209	4,020	21	8,260	3,620	3.2	2.0	7.5	16	48
17	106	2,150	119	4,040	18	7,050	3,300	27	2.0	4.7	19	39
18	63	2,150	83	3,970	17	5,650	2,940	292	1.6	4.2	18	34
19	47	2,060	213	4,780	17	4,660	2,580	632	3.2	3.3	22	37
20	33	1,870	464	6,340	18	3,750	2,070	1,380	17	3.3	35	41
21	25	1,430	760	7,450	20	3,610	1,560	3,060	418	3.7	35	49
22	20	992	961	7,720	35	3,130	1,190	4,360	2,710	4.2	37	82
23	17	672	a980	6,900	54	2,510	946	4,190	6,230	4.5	37	111
24	15	440	a700	5,780	76	1,790	659	3,490	8,420	3.2	38	110
25	20	282	a360	4,870	64	1,150	420	3,300	8,060	1.7	40	95
26	177	437	a200	4,140	46	690	227	3,140	6,730	1.1	42	75
27	626	1,130	121	3,700	36	374	115	2,960	5,410	.9	56	55
28	626	1,640	81	3,200	33	218	65	2,670	4,970	.8	74	45
29	424	2,090	62	2,760	-	161	50	2,250	3,860	.7	83	35
30	216	2,290	51	2,230	-	820	36	1,810	3,290	1.0	59	28
31	100	-	96	1,660	-	1,480	-	1,120	-	1.8	53	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	6,229	1,060	15	201	12,360
November	31,395	2,410	22	1,046	62,270
December	15,503	2,180	38	500	30,750
Calendar year 1946	430,313.6	7,530	.7	1,179	853,400
January	103,178	7,720	488	3,328	204,700
February	2,581	963	17	92.2	5,120
March	71,483	8,260	30	2,306	141,800
April	61,468	3,770	36	2,049	121,900
May	34,825.1	4,360	3.2	1,123	69,070
June	52,447.2	8,420	1.6	1,748	104,000
July	6,691.6	2,760	.7	216	13,270
August	712.0	83	.7	23.0	1,410
September	2,095	160	28	69.8	4,160
Water year 1946-47	388,607.9	8,420	.7	1,065	770,800

a No gage-height record at auxiliary gage; discharge computed on basis of records for Bayou des Cannes and gage-height record for base gage.

Bayou des Cannes near Eunice, La.

Location.- Water-stage recorder, lat. 30°29'00", long. 92°29'25", in SW¼SE¼ sec. 32, T. 6 S., R. 1 W. Louisiana meridian, at bridge on U. S. Highway 190, 3 miles downstream from New Orleans, Texas & Mexico Railway bridge and 4 miles west of Eunice. Datum of gage is 14.84 feet above mean sea level, datum of 1929 (Louisiana Geodetic Survey bench mark; levels by Corps of Engineers). Auxiliary staff gage, 1.8 miles downstream.

Records available.- October 1938 to September 1947.

Extremes.- Maximum discharge during year, 4,510 second-feet Jan. 15 (gage height, 17.90 feet); minimum, 0.1 second-foot July 28 (gage height, 1.29 feet).
1938-47: Maximum discharge, 10,000 second-feet July 7, 1946 (gage height, 21.15 feet); no flow May 7, 10-18, July 10, 1939.

Remarks.- Records good except those below 10 second-feet, which are fair. Discharge above about 150 second-feet computed by using fall as determined by twice-daily readings of auxiliary staff gage as a factor. Diversions above station for irrigation. Some regulation May to October by small irrigation diversion dams.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	646	9.0	431	340	33	5.4	933	5.0	89	92	1.5	37
2	364	6.4	172	687	28	6.4	1,140	4.8	66	50	.4	47
3	120	5.5	68	873	18	6.4	950	4.0	81	42	2.0	45
4	49	5.2	32	1,010	11	7.2	856	3.6	107	32	3.0	44
5	27	4.9	18	988	8.1	9.4	278	3.3	98	20	2.8	38
6	21	4.6	12	717	6.7	27	83	3.9	92	12	2.9	32
7	12	9.7	9.9	292	6.2	381	26	5.4	78	12	2.9	25
8	7.0	7.4	9.2	95	5.4	690	12	6.2	74	13	2.6	28
9	4.6	4.1	8.8	84	4.8	821	9.7	6.0	62	10	2.7	32
10	4.1	195	17	153	3.9	916	7.0	6.0	44	9.0	2.0	31
11	9.2	948	154	210	3.6	721	256	5.1	30	12	4.4	29
12	19	1,210	143	226	3.9	289	698	5.4	18	9.9	6.9	31
13	14	1,940	171	1,520	4.4	1,070	1,680	5.1	11	14	10	45
14	10	1,680	160	3,070	4.4	1,410	2,070	5.0	13	3.4	13	52
15	11	1,250	104	4,060	4.4	2,140	1,390	4.9	9.5	2.5	15	43
16	10	903	58	2,600	4.1	1,500	900	3.9	6.3	2.1	23	36
17	8.1	730	30	1,650	4.2	1,030	257	15	7.4	2.9	46	28
18	4.9	695	17	1,310	3.9	458	56	646	12	2.5	47	18
19	3.1	709	15	1,420	3.8	457	18	676	12	1.9	49	16
20	2.2	647	303	2,320	4.1	530	147	1,170	48	1.8	38	22
21	1.5	441	510	2,660	3.9	499	260	1,710	741	1.6	30	36
22	1.2	270	592	1,840	3.8	231	151	1,540	2,240	1.8	22	86
23	1.2	188	536	1,280	3.6	76	55	1,330	4,200	1.1	14	104
24	1.2	119	262	800	3.6	32	23	1,080	2,640	.2	15	76
25	63	60	86	385	3.7	21	13	918	1,820	.4	15	54
26	248	149	35	545	3.9	12	8.6	886	1,580	1.1	46	37
27	316	426	20	641	3.9	9.2	7.1	929	1,380	.2	58	27
28	199	612	14	405	4.1	7.4	5.6	825	1,130	.2	42	20
29	101	679	13	109	-	7.4	5.3	406	671	1.4	39	13
30	36	652	10	61	-	279	5.1	114	240	.5	41	8.4
31	15	-	30	37	-	634	-	101	-	.3	39	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,329.3	646	1.2	75.1	4,620
November	14,559.8	1,940	4.1	485	28,880
December	4,070.9	592	8.8	131	8,070
Calendar year 1946	153,352.2	9,440	.3	420	304,200
January	32,388	4,060	37	1,045	64,240
February	196.4	33	3.6	7.01	390
March	14,282.8	2,140	5.4	461	28,330
April	12,130.4	2,070	5.1	404	24,060
May	12,423.6	1,710	3.3	401	24,640
June	17,600.2	4,200	6.3	587	34,910
July	353.8	92	.2	11.4	702
August	636.1	58	.4	20.5	1,260
September	1,140.4	104	8.4	38.0	2,260
Water year 1946-47	112,111.7	4,200	.2	307	222,400

Bayou Plaquemine Brule near Crowley, La.

Location.- Wire-weight gage, lat. 30°14'05", long. 92°23'44", in NW¼SW¼ sec. 29, T. 9 S., R. 1 E. Louisiana meridian, at bridge on State Highway 370, 1½ miles upstream from New Orleans, Texas & Mexico Railroad bridge, 1 mile downstream from bridge on State Highway 26, and 1¼ miles northwest of Crowley. Datum of gage is 2.17 feet below mean sea level (Louisiana Geodetic Survey bench mark).

Records available.- October 1942 to September 1947.

Extremes.- Maximum discharge during year, 10,200 second-feet Jan. 14; maximum gage height, 19.30 feet Jan. 15; minimum discharge not determined.
1942-47: Maximum discharge, 12,400 second-feet July 7, 1946; maximum gage height, 20.89 feet July 8, 1942, no flow at times in most years.
Maximum stage known, 26.57 feet, in August 1940, from floodmarks indicated by local resident, result of hurricane flood accompanied by high tides.

Remarks.- Records fair above 300 second-feet and poor below. Gage read twice daily. Discharge above about 200 second-feet computed by using rate of change in stage as a factor. Large diversions below station for irrigation by pumping affect stage-discharge relation. Records include waste water from rice fields above station that were irrigated from ground-water supplies.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,560		1,060	256	138		515					
2	1,090		774	848	108		421					
3	630		459	1,280	96		302	e55	e70	e90	e55	e90
4	281	e20	203	1,710	90	e8	184					
5	138		90	1,800	66		171					
6				1,530			102					
7		211		1,130		277	84					
8	e65	268	e45	637	e40	940	84	e55	e85	e60	e40	e85
9		184		309		1,210	80					
10		138		152		1,240	84					
11		714		108		1,020	584				69	90
12		1,210		114		703	1,440				143	114
13	e70	1,500	e35	2,780	e13	3,580	2,160	e65	e55	e50	225	151
14		1,520		9,280		7,860	2,020				300	225
15		1,330		9,860		7,050	1,670				361	205
16		1,020		7,810		4,270	1,160				324	128
17		844	e60	5,470		2,520	680				205	96
18	e20	765		3,740	e8	1,600	266	e80	e50	e45	159	84
19		672	284	3,140		1,250	132				114	79
20		543	585	3,530		1,200	126	244			102	108
21		442	922	3,240		1,030	188	2,880	168		96	114
22		322	1,150	2,530		902	345	5,000	467		108	102
23	e10	207	1,210	1,880		665	507	3,820	1,250	a25	168	96
24		138	1,110	1,360		412	536	2,860	2,440		159	90
25		84	783	846	e7	263	275	2,410	2,110		143	90
26	73	84	422	503		184		2,000	1,720		143	
27	158	219		359				1,620	1,270		225	
28	211	639		293		e50	e35	1,260	792		278	e75
29	184	1,050	e35	239	-			856	399	a20	195	
30	158	1,210		211	-	114		464	205		135	
31	90	-		158	-	251	-	270	-		121	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	5,398	1,560	-	174	10,710
November	15,434	1,520	-	514	30,610
December	9,807	1,210	-	316	19,450
Calendar year 1946	283,684.2	12,200	-	777	562,700
January	67,103	9,860	108	2,165	133,100
February	859	138	-	30.7	1,700
March	38,739	7,860	-	1,250	76,840
April	14,291	2,160	-	476	28,350
May	24,879	5,000	-	803	49,350
June	12,121	2,440	-	404	24,040
July	1,470	-	-	47.4	2,920
August	4,248	361	-	137	8,430
September	3,022	225	-	101	5,990
Water year 1946-47	197,371	9,860	-	541	391,500

a No gage-height record; discharge computed on basis of records for nearby stations.
e Stage-discharge relation indefinite; discharge computed on basis of occasional measurements, gage heights, and records for nearby stations.

Calcasieu River near Glenmora, La.

Location.- Wire-weight gage, lat. 30°59'40", long. 92°40'25", in SE¼SE¼ sec. 4, T. 1 S., R. 3 W. Louisiana meridian, at bridge on State Highway 113, 1.0 mile upstream from Prairie Branch and 4.6 miles northwest of Glenmora. Datum of gage is 110.77 feet above mean sea level (Louisiana Geodetic Survey bench mark).
Drainage area.- 499 square miles.
Records available.- August 1943 to September 1947.
Extremes.- Maximum discharge during year, 23,600 second-feet Jan. 19 (gage height, 16.68 feet), from rating curve extended above 11,000 second-feet on basis of records for nearby stations and rainfall-runoff studies; minimum, 26 second-feet Sept. 10 (gage height, 4.46 feet).
1943-47: Maximum discharge, 33,600 second-feet Apr. 4, 1945 (gage height, 18.0 feet, from graph based on gage readings), from rating curve extended above 11,000 second-feet on basis of records for nearby stations and rainfall-runoff studies; minimum, 24 second-feet Sept. 16, 1943 (gage height, 4.28 feet).
Remarks.- Records good except those above 15,000 second-feet, which are fair. Gage read twice daily.

Rating tables, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Apr. 29 to May 21, May 29 to June 25)

Oct. 1 to Jan. 19

5.4	86	10.5	662	14.0	5,100
6.0	123	11.0	815	14.3	6,490
7.0	191	11.5	1,020	14.6	8,280
8.0	265	12.0	1,330	15.0	11,000
8.5	314	12.5	1,800	15.5	14,500
9.0	375	13.0	2,550	16.0	18,200
9.5	453	13.4	3,350	16.5	22,100
10.0	546	13.7	4,080		

Jan. 20 to Sept. 30

4.4	24	7.0	174	10.0	540
4.6	32	8.0	245	10.5	655
5.0	51	8.5	292	11.0	815
5.5	77	9.0	360		
6.0	107	9.5	440		

Note.- Same as preceding table above 11.0 feet.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sept.
1	890	212	1,410	750	1,590	304	630	195	140	146	32	32
2	588	156	1,690	970	1,190	281	850	181	133	113	30	30
3	265	136	1,800	1,330	930	281	850	167	126	89	30	30
4	191	123	1,690	1,690	715	304	745	146	126	77	30	30
5	143	130	1,260	2,200	560	304	605	140	119	69	30	30
6	116	177	1,130	3,810	440	331	515	126	113	61	30	28
7	104	234	470	3,570	375	390	420	119	101	58	30	28
8	92	293	337	3,140	331	580	345	113	95	56	30	27
9	92	274	293	2,940	304	715	271	107	89	51	30	27
10	86	404	283	2,550	281	815	331	107	83	48	28	27
11	92	690	314	2,740	271	930	1,070	107	77	48	28	27
12	110	720	404	3,350	253	970	3,350	107	72	44	28	27
13	149	750	662	3,350	262	1,590	5,100	101	72	41	28	27
14	274	1,190	970	2,940	262	2,200	4,080	95	69	44	28	27
15	636	2,740	1,330	2,550	455	1,800	3,570	89	66	48	34	27
16	815	3,570	2,550	2,370	540	1,920	2,940	89	64	48	37	27
17	507	2,940	2,940	5,980	630	3,140	2,200	83	64	44	34	27
18	283	2,370	2,550	12,400	685	2,940	1,690	107	61	41	32	27
19	177	1,800	2,050	22,100	715	2,550	1,260	160	61	41	32	30
20	156	1,500	1,590	21,300	495	1,920	745	188	64	39	30	41
21	149	1,330	1,330	16,700	455	1,500	715	281	69	39	28	46
22	130	1,330	1,130	9,600	420	1,070	850	375	72	37	28	61
23	104	1,330	1,070	4,720	420	930	970	475	362	37	28	64
24	130	1,260	1,260	3,570	455	890	1,070	685	331	34	28	54
25	156	970	1,690	2,940	475	930	1,130	890	317	34	30	46
26	170	1,070	1,920	2,370	455	970	1,070	1,020	420	34	37	41
27	249	970	1,800	2,050	405	970	850	850	580	34	37	37
28	349	930	1,500	1,800	360	890	515	440	655	34	32	34
29	349	970	930	1,920	-	685	292	253	515	32	30	32
30	303	1,130	662	1,920	-	495	216	195	237	34	30	32
31	249	-	662	1,800	-	495	-	160	-	32	32	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	8,104	890	86	261	0.523	0.60	16,070
November	31,699	3,570	123	1,057	2.12	2.36	62,870
December	39,677	2,940	283	1,280	2.57	2.96	78,700
Calendar year 1946	475,570	17,500	58	1,303	2.61	35.44	943,300
January	151,420	22,100	750	4,885	9.79	11.29	300,300
February	14,729	1,590	253	526	1.05	1.10	29,210
March	34,090	3,140	281	1,100	2.20	2.54	67,620
April	39,245	5,100	216	1,308	2.62	2.92	77,840
May	8,151	1,020	83	263	.527	.61	16,170
June	5,353	655	61	178	.357	.40	10,620
July	1,587	146	32	51.2	.103	.12	3,150
August	951	37	28	30.7	.062	.07	1,890
September	1,023	64	27	34.1	.068	.08	2,030
Water year 1946-47	336,029	22,100	27	921	1.85	25.05	666,500

Calcasieu River near Oberlin, La.

Location.- Water-stage recorder, lat. 30°38'25", long. 92°48'50", in NW¼NE¼ sec. 7, T. 5 S., R. 4 W., at bridge on State Highway 52, 3 miles northwest of Oberlin and 15 miles upstream from Whiskey Chitto Creek. Datum of gage is 39.43 feet above mean sea level, datum of 1929 (Louisiana Geodetic Survey bench mark).
Drainage area.- 753 square miles.
Records available.- August 1922 to January 1925, September 1938 to September 1947.
Average discharge.- 11 years (1922-24, 1938-47), 1,337 second-feet.
Extremes.- Maximum discharge during year, 22,100 second-feet Jan. 21 (gage height, 19.90 feet); minimum, 54 second-feet Sept. 19 (gage height, 3.61 feet).
1922-25, 1938-47: Maximum discharge 34,700 second-feet Apr. 7, 1923 (gage height, 18.48 feet, datum then in use, or about 21 feet, present datum), from rating curve extended above 14,000 second-feet; minimum, 42 second-feet Aug. 16, 1924.
Flood of 1886 reached a stage about 1 foot higher than that of Apr. 7, 1923.
Remarks.- Records good except those for periods of no gage-height record, which are fair. Paper mill at Elizabeth pumps about 5 second-feet from wells which is later discharged into Mill Creek, 20 miles above station. This discharge is continuous and fairly constant.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-21, Apr. 30 to Sept. 30)

3.6	53	6.5	522	13.0	3,130	17.0	9,300
4.0	92	7.0	660	14.0	3,790	18.0	13,500
4.5	147	8.0	972	15.0	4,640	19.0	17,900
5.0	215	9.0	1,310	15.5	5,230	19.8	21,600
5.5	301	11.0	2,100	16.0	6,060		
6.0	403	12.0	2,580	16.5	7,460		

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	547	360	1,720	1,970	2,530	630	3,440	812	438	720	69	62
2	675	310	1,380	2,190	2,480	587	2,380	510	292	560	64	61
3	812	256	1,310	2,780	2,380	534	1,760	387	256	330	64	60
4	844	215	1,340	2,890	2,190	485	1,520	320	239	251	62	60
5	a600	193	1,490	2,680	1,930	473	1,450	282	215	186	59	59
6	a300	178	1,600	2,380	1,600	772	1,340	256	193	164	58	59
7	a220	176	1,680	2,190	1,340	1,600	1,170	239	178	151	58	58
8	a190	215	1,560	2,530	1,100	1,880	1,000	223	167	137	57	58
9	171	264	1,280	3,580	940	2,950	844	208	154	126	58	57
10	159	546	908	4,350	812	2,950	720	193	145	118	57	57
11	193	a2,400	645	4,350	735	2,240	1,980	183	134	109	56	57
12	247	a3,400	522	4,010	675	1,520	5,380	175	126	102	57	58
13	a190	a3,400	497	4,260	630	4,950	7,800	169	118	99	57	57
14	a220	a2,600	522	4,980	601	6,060	6,290	164	112	97	58	56
15	a280	a1,500	616	5,370	573	4,980	5,680	159	106	95	59	56
16	a340	a1,100	735	5,100	547	4,350	5,370	152	101	89	58	56
17	a550	a1,400	908	4,860	573	3,310	4,750	148	96	90	58	55
18	a650	a2,800	1,100	5,520	660	2,630	4,090	149	94	89	59	56
19	a700	a3,400	1,450	9,700	735	2,840	3,510	154	93	87	63	57
20	a550	a3,600	1,970	17,900	844	3,790	3,310	266	97	82	63	62
21	a340	3,070	2,630	21,600	908	3,860	3,580	908	3,580	80	63	67
22	a240	2,580	2,890	19,700	940	3,310	3,580	426	4,750	78	59	70
23	200	2,150	2,680	13,900	876	2,780	2,730	320	2,630	73	59	66
24	183	1,800	2,190	9,300	781	2,380	1,640	740	1,640	72	58	65
25	215	1,600	1,680	6,820	690	2,100	1,340	1,560	1,800	70	58	72
26	a500	2,000	1,420	5,860	630	1,840	1,340	1,310	2,060	70	57	76
27	a800	2,840	1,380	5,100	630	a1,700	1,380	1,100	2,100	71	57	74
28	a550	3,010	1,600	4,260	630	a1,500	1,380	1,100	1,340	69	58	72
29	a340	2,580	1,840	3,580	-	1,340	1,340	1,140	766	65	60	67
30	340	2,190	1,970	3,070	-	3,230	1,200	1,070	720	72	63	63
31	380	-	1,880	2,680	-	4,260	-	812	-	69	63	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	12,526	844	159	404	24,840
November	52,133	3,600	176	1,738	103,400
December	45,393	2,890	497	1,464	90,040
Calendar year 1946	688,722	17,700	83	1,887	1,366,000
January	189,460	21,600	1,970	6,112	375,800
February	29,960	2,530	547	1,070	59,420
March	77,881	6,060	473	2,511	154,400
April	83,294	7,800	720	2,776	165,200
May	15,635	1,560	148	504	31,010
June	24,740	4,750	93	825	49,070
July	4,451	720	65	144	8,830
August	1,849	69	56	59.6	3,670
September	1,853	76	55	61.8	3,680
Water year 1946-47	539,125	21,600	55	1,477	1,069,000

a No gage-height record; discharge computed on basis of recorded range in stage, occasional gage readings, and records for nearby stations.

Calcasieu River near Kinder, La.

Location.- Water-stage recorder, lat. 30°30'10", long. 92°54'55", in NW¼SE¼ sec. 30, T. 6 S., R. 5 W., at bridge on U. S. Highway 190, 0.5 mile downstream from Whiskey Chitto Creek and 4 miles west of Kinder. Datum of gage is 12.02 feet above mean sea level, datum of 1929 (Louisiana Geodetic Survey bench mark).

Drainage area.- 1,700 square miles.

Records available.- August 1922 to January 1925, October 1938 to September 1947.

Average discharge.- 11 years (1922-24, 1938-47), 3,024 second-feet.

Extremes.- Maximum discharge during year, 37,300 second-feet Jan. 21; maximum gage height, 20.64 feet Jan. 22; minimum discharge, 247 second-feet Aug. 11 (gage height, 2.42 feet), 1922-25, 1938-47: Maximum discharge, 68,000 second-feet Jan. 23, 1924 (gage height, 21.69 feet, datum then in use, or about 23.5 feet, present datum), from rating curve extended above 40,000 second-feet; maximum gage height, 24.7 feet Aug. 11, 1940 (discharge, 64,400 second-feet; minimum discharge, 200 second-feet Aug. 9, 10, 1924 (gage height, 0.81 foot, datum then in use).

Remarks.- Records good. Discharge above about 2,000 second-feet computed by using rate of change of stage as a factor. Paper mill at Elizabeth pumps about 5 second-feet from wells which is later discharged into Mill Creek, 36 miles above station. This discharge is continuous and fairly constant. Water is diverted during period April to September at points just above station and 5 miles above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,380	1,030	4,150	3,350	4,210	1,430	8,140	1,790	1,590	1,430	293	365
2	1,350	962	3,060	4,400	3,780	1,390	6,020	1,470	1,120	1,280	287	358
3	1,350	894	2,500	6,150	3,540	1,390	4,720	1,240	1,090	1,060	274	349
4	1,380	843	2,200	6,710	3,430	1,350	3,670	1,160	1,090	880	271	387
5	1,310	860	2,150	6,570	3,130	1,280	3,090	1,060	915	709	265	368
6	1,060	1,270	2,200	6,150	2,800	1,430	2,740	985	811	610	268	352
7	843	1,650	2,250	5,670	2,450	2,420	2,500	915	743	577	324	371
8	742	1,690	2,250	4,660	2,100	4,640	2,200	880	660	560	318	327
9	676	1,350	2,050	5,050	1,870	5,610	1,920	862	610	512	278	290
10	642	1,460	1,750	6,080	1,750	5,490	1,710	811	577	496	333	343
11	826	3,880	1,750	7,110	1,630	4,610	3,510	794	544	480	281	387
12	1,030	5,280	2,250	7,730	1,550	3,690	9,490	777	512	464	365	397
13	962	5,760	2,800	8,900	1,510	9,340	18,500	760	496	480	333	384
14	1,100	5,750	3,380	9,260	1,670	15,500	19,900	726	480	512	327	381
15	1,240	4,940	3,520	8,990	1,960	16,300	15,900	676	464	480	362	378
16	1,030	3,380	3,610	8,480	1,960	13,600	11,800	660	448	432	464	374
17	996	2,800	3,090	8,900	1,710	12,100	8,540	626	432	416	400	365
18	1,100	3,460	2,350	11,600	1,590	9,890	6,430	676	384	410	394	362
19	1,170	4,360	2,250	16,900	1,550	7,050	5,460	1,150	448	381	464	378
20	1,170	5,230	2,830	23,600	1,630	5,770	5,580	3,300	544	381	432	410
21	1,030	5,070	4,030	34,300	1,710	5,750	6,060	4,960	6,090	362	410	400
22	862	4,370	4,640	35,600	1,830	5,690	5,290	3,760	26,000	333	403	394
23	725	3,770	4,720	29,700	1,870	5,100	4,890	2,790	16,000	324	400	416
24	676	3,210	4,130	22,400	1,750	4,540	3,870	3,570	7,330	315	362	462
25	708	2,750	3,320	17,100	1,590	4,550	2,740	5,000	5,500	302	355	448
26	1,290	3,130	2,700	12,700	1,510	4,420	2,300	3,820	4,610	296	321	416
27	2,330	5,170	2,350	9,890	1,470	3,950	2,100	2,740	4,140	299	321	406
28	2,370	5,860	2,300	7,990	1,430	3,140	2,100	2,150	3,650	296	324	394
29	2,060	5,750	2,400	6,430	-	2,670	2,050	2,010	2,620	287	330	381
30	1,420	5,200	2,600	5,370	-	4,750	1,960	2,600	1,790	293	352	371
31	1,130	-	2,800	4,870	-	8,270	-	2,250	-	293	406	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	35,922	2,370	642	1,159	71,250
November	101,129	5,860	843	3,371	200,600
December	88,380	4,720	1,750	2,851	175,300
Calendar year 1946	1,533,948	28,500	468	4,203	3,043,000
January	352,410	35,600	3,350	11,370	699,000
February	58,980	4,210	1,430	2,106	117,000
March	177,110	16,300	1,280	5,713	351,300
April	175,160	19,900	1,710	5,839	347,400
May	56,968	5,000	626	1,838	113,000
June	91,688	26,000	384	3,056	181,900
July	15,950	1,430	287	515	31,640
August	10,717	464	265	346	21,260
September	11,416	464	290	381	22,640
Water year 1946-47	1,175,830	35,600	265	3,221	2,332,000

Whiskey Chitto Creek near Oberlin, La.

Location.- Water-stage recorder, lat. 30°41'55", long. 92°53'35", in NE¼NE¼ sec. 20, T. 4 S., R. 5 W., at bridge on State Highway 52, 1 mile downstream from Tenmile Creek, 8 miles upstream from Bundick Creek, and 10 miles northwest of Oberlin. Datum of gage is 46.24 feet above mean sea level (Louisiana Geodetic Survey bench mark).

Drainage area.- 510 square miles.

Records available.- January 1939 to September 1947.

Extremes.- Maximum discharge during year, 10,400 second-feet Jan. 20 (gage height, 19.62 feet); minimum, 168 second-feet Sept. 19 (gage height, 4.21 feet).
1939-47: Maximum discharge, 35,000 second-feet Aug. 9, 1940 (gage height, 23.42 feet); minimum observed, 102 second-feet Sept. 19, 1939 (gage height, 3.72 feet).
Maximum stage known, 25.7 feet in June 1886, from floodmarks preserved by local residents.

Remarks.- Records fair.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	509	368	956	956	972	496	1,000	437	369	398	214	202
2	432	358	762	1,800	837	535	1,220	428	359	359	214	199
3	358	348	668	2,740	759	555	1,120	418	408	330	212	189
4	308	328	600	2,700	709	535	972	398	379	321	212	184
5	280	465	548	2,620	685	506	811	388	398	302	211	181
6	270	811	509	2,410	662	575	709	369	369	293	207	178
7	261	972	496	1,580	639	709	662	359	340	293	202	176
8	252	759	470	1,550	617	1,410	662	359	321	293	200	170
9	252	586	470	1,960	596	1,590	639	350	312	293	197	169
10	243	564	458	2,360	575	1,420	709	350	302	284	197	174
11	270	1,250	762	2,490	575	972	2,350	340	293	275	194	176
12	280	1,630	1,230	2,410	555	759	7,740	340	284	266	197	176
13	509	1,660	1,620	2,080	575	2,800	8,000	330	284	266	197	176
14	709	1,560	1,820	1,960	785	4,020	5,710	321	275	257	197	178
15	509	1,250	1,820	1,850	811	4,090	3,840	321	266	248	202	178
16	358	785	1,330	1,890	685	3,840	2,040	312	266	248	214	176
17	308	1,000	872	2,240	596	3,400	1,150	302	257	248	222	176
18	289	1,380	735	3,500	575	1,980	837	312	257	248	211	172
19	280	1,450	681	4,760	555	1,220	734	330	266	248	202	176
20	270	1,220	789	8,840	555	1,220	1,030	555	275	240	197	187
21	261	872	1,170	8,800	575	1,220	1,000	734	2,510	240	197	192
22	261	844	1,360	6,950	639	1,000	890	759	2,050	231	195	199
23	252	816	1,200	5,260	617	863	890	1,150	575	231	194	266
24	252	708	844	4,020	555	1,150	662	1,480	1,350	231	194	240
25	395	600	735	3,000	555	1,520	575	1,030	1,480	222	192	206
26	1,230	856	668	2,080	555	1,480	535	685	1,350	231	191	191
27	1,280	1,680	627	1,660	535	1,120	496	575	1,350	231	191	181
28	1,220	1,720	600	1,420	506	785	478	486	1,090	222	191	176
29	785	1,720	587	1,180	-	659	466	437	639	222	194	174
30	487	1,490	587	1,030	-	1,660	457	457	466	231	197	172
31	410	-	654	1,000	-	1,680	-	388	-	222	194	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	13,780	1,280	243	445	0.873	1.00	27,330
November	30,050	1,720	328	1,002	1.96	2.19	59,600
December	26,628	1,820	458	859	1.68	1.94	52,820
Calendar year 1946	470,634	9,300	234	1,289	2.53	34.30	933,400
January	89,096	8,840	956	2,874	5.64	6.50	176,700
February	17,855	972	506	638	1.25	1.30	35,410
March	45,769	4,090	496	1,476	2.89	3.34	90,780
April	48,382	8,000	457	1,613	3.16	3.53	95,960
May	15,500	1,480	302	500	.980	1.13	30,740
June	19,140	2,510	257	638	1.25	1.40	37,960
July	8,224	398	222	265	.520	.60	16,310
August	6,229	222	191	201	.394	.45	12,360
September	5,590	266	169	186	.365	.41	11,090
Water year 1946-47	326.243	8,840	169	894	1.75	23.79	647,100

Bundick Creek near Dry Creek, La.

Location.- Water-stage recorder, lat. 30°40'55", long 93°02'15", on line between NE¼ and NW¼ sec. 25, T. 4 S., R. 7 W., at bridge on State Highway 251, 1 mile northeast of town of Dry Creek and 8 miles upstream from mouth. Datum of gage is 56.92 feet above mean sea level (Louisiana Geodetic Survey bench mark).

Drainage area.- 238 square miles.

Records available.- January 1939 to September 1947.

Extremes.- Maximum discharge during year, 6,610 second-feet June 21 (gage height, 15.97 feet); minimum, 72 second-feet Sept. 9; minimum gage height, 3.05 feet Sept. 18, 19. 1939-47: Maximum discharge, 22,000 second-feet Aug. 10, 1940 (gage height, 19.12 feet, present datum, from floodmark), from rating curve extended above 10,000 second-feet by velocity-area method; minimum, 49 second-feet on many days in September and October 1939; minimum gage height, 2.53 feet, present datum, Sept. 24, 25, 1939.

Remarks.- Records good except those for periods of no gage-height record, which are fair.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-19, Apr. 16 to May 22, July 15 to Sept. 30)

3.1	68	5.0	257	11.0	1,200	14.0	2,510
3.5	99	6.0	389	12.0	1,420	14.5	3,160
4.0	141	7.0	533	13.0	1,780	15.0	4,100
4.5	195	9.0	846	13.5	2,060	15.5	5,200

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a150	123	389	403	431	213	473	151	123	128	80	79
2	a140	123	290	973	361	225	473	146	123	119	79	75
3	a130	128	244	1,120	316	238	389	141	146	115	79	74
4	a110	164	219	1,080	290	225	322	136	128	111	79	74
5	a100	459	201	1,140	276	207	296	132	123	111	78	74
6	a95	623	189	1,180	264	219	270	128	141	107	77	73
7	a95	638	178	798	257	472	250	123	128	103	76	74
8	a90	403	172	766	244	994	231	123	115	100	75	73
9	a90	283	172	943	231	782	207	123	107	97	75	73
10	a90	296	296	1,050	225	593	225	123	a100	101	74	76
11	a100	563	766	1,100	213	431	2,650	123	a100	100	74	76
12	g111	638	977	1,100	219	353	2,860	119	a95	101	79	75
13	g161	766	1,120	1,060	340	1,910	2,060	115	a95	99	78	75
14	g302	878	1,200	894	608	2,060	1,610	115	a95	97	79	74
15	g231	638	1,220	846	623	2,740	1,050	111	a90	106	80	75
16	g132	296	1,050	894	473	2,410	431	111	a90	115	80	74
17	g111	488	473	1,220	316	1,780	335	111	a90	102	78	75
18	g101	702	335	1,780	270	973	283	115	a90	94	79	74
19	g98	846	296	2,510	250	593	244	119	a95	93	79	77
20	g95	798	468	4,950	257	654	283	189	111	91	78	78
21	g94	417	563	3,900	309	593	302	283	3,390	88	79	79
22	g93	335	593	2,620	335	503	296	459	1,480	87	78	82
23	93	328	503	1,990	309	417	270	654	467	85	77	84
24	93	283	361	1,580	250	654	225	750	862	85	77	89
25	132	231	283	1,280	238	718	189	417	593	84	78	83
26	276	482	257	887	238	608	172	270	403	82	78	77
27	417	750	244	654	219	445	166	225	264	83	81	75
28	548	814	231	563	207	309	161	178	231	81	81	75
29	389	846	231	473	-	336	156	151	178	81	81	74
30	166	693	225	459	-	1,370	151	231	141	85	77	73
31	132	-	264	503	-	926	-	132	-	82	77	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	4,965	548	90	160	0.672	0.78	9,850
November	15,032	878	123	501	2.11	2.35	29,820
December	14,010	1,220	172	452	1.90	2.19	27,790
Calendar year 1946	226,450	7,120	90	620	2.61	35.37	449,200
January	40,716	4,950	403	1,313	5.52	6.36	80,760
February	8,569	623	207	306	1.29	1.34	17,000
March	24,951	2,740	207	805	3.38	3.90	49,490
April	17,030	2,860	151	568	2.39	2.66	33,780
May	6,304	750	111	203	.853	.99	12,500
June	10,194	3,390	90	340	1.43	1.59	20,220
July	3,013	128	81	97.2	.408	.47	5,980
August	2,420	81	74	78.1	.328	.38	4,800
September	2,289	89	73	76.3	.321	.36	4,540
Water year 1946-47	149,493	4,950	73	410	1.72	23.37	296,500

Peak discharge.- Jan. 20 (11 a.m.) 5,200 sec.-ft.; Mar. 13 (1 p.m.) 2,060 sec.-ft.; Mar. 15 (5 p.m.) 3,000 sec.-ft.; Mar. 30 (11 a.m.) 1,500 sec.-ft.; Apr. 11 (11 a.m.) 3,000 sec.-ft.; June 21 (10 a.m.) 6,610 sec.-ft.

a No gage-height record; discharge computed on basis of records for other stations in basin.
g From graph based on gage readings.

Beckwith Creek near De Quincy, La.

Location.- Wire-weight gage, lat. 30°28'10", long. 93°21'50", in NW¼ sec. 11, T. 7 S., R. 10 W., at bridge on State Highway 7, a quarter of a mile upstream from New Orleans, Texas & Mexico Railway bridge, 2½ miles upstream from unnamed tributary, and 4 miles northeast of De Quincy.

Drainage area.- 148 square miles.

Records available.- August 1945 to September 1947.

Extremes.- Maximum discharge during year, 4,340 second-feet June 21 (gage height, 20.35 feet), from rating curve extended above 2,800 second-feet by logarithmic plotting; minimum, 1.1 second-feet Sept. 27 (gage height, 1.48 feet).

1945-47: Maximum discharge, 4,800 second-feet June 1, 1946 (gage height, 20.8 feet, from graph based on gage readings), from rating curve extended above 2,800 second-feet by logarithmic plotting; minimum, that of Sept. 27, 1947.

Remarks.- Records good except those above 3,000 second-feet and below 2 second-feet, which are fair, and those for periods of doubtful or no gage-height record, which are poor. Gage read twice daily.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used July 26 to Sept. 30)

1.5	1.0	2.4	12	4.0	67	10.0	614	17.5	1,950
1.6	1.7	2.6	16	5.0	126	12.0	864	18.0	2,250
1.8	3.6	2.8	21	6.0	200	14.0	1,150	18.5	2,600
2.0	5.9	3.0	27	7.0	288	16.0	1,500	19.0	3,000
2.2	8.6	3.5	45	8.0	388	17.0	1,750	20.0	3,930

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1	32	9.2	200	161	112	28	785	20	67	30	11	5.5
2	a20	8.9	82	822	88	30	556	19	30	28	8.5	5.1
3	13	8.9	57	850	72	32	176	16	23	65	6.0	3.9
4	11	9.2	45	614	62	30	106	16	88	62	5.4	3.0
5	9.6	9.9	35	650	53	28	88	14	57	33	4.9	2.6
6	8.6	24	28	662	51	77	140	13	26	19	4.4	2.8
7	7.8	53	26	722	47	366	88	12	19	14	4.2	2.8
8	7.2	77	24	638	43	785	53	12	16	12	3.9	3.3
9	6.9	51	27	488	41	431	45	11	13	11	3.7	2.9
10	6.9	a80	626	522	39	242	37	11	11	11	3.6	2.3
11	37	a160	890	533	35	168	1,200	13	9.4	12	3.5	3.1
12	45	a300	944	591	57	171	2,670	13	8.6	27	3.7	4.0
13	27	a260	890	877	72	1,930	2,670	11	8.0	14	3.4	4.9
14	21	a190	811	710	82	1,590	1,780	9.9	7.9	12	3.4	4.3
15	16	133	686	488	67	1,310	1,210	9.2	7.3	13	3.7	3.8
16	13	147	662	476	57	1,480	614	8.6	6.9	a15	4.2	3.6
17	9.2	224	545	1,080	49	1,240	133	8.3	6.4	a11	4.2	3.4
18	8.3	192	204	1,670	43	785	77	16	6.2	8.9	3.6	2.8
19	8.6	200	72	2,120	39	710	57	238	7.2	8.0	3.4	2.2
20	7.8	298	a200	2,520	51	398	248	931	21	7.5	4.0	3.2
21	6.7	a240	288	2,670	57	242	135	1,090	3,000	6.9	4.3	3.1
22	6.9	a130	a240	1,900	57	184	88	314	3,180	6.6	3.8	2.7
23	6.9	a80	168	1,340	51	154	82	176	1,750	6.2	3.6	2.3
24	6.6	57	126	1,020	41	398	53	426	1,250	5.8	4.8	2.2
25	30	46	77	1,150	35	279	37	506	539	5.7	6.6	1.9
26	49	532	62	710	32	200	30	216	409	6.0	11	2.8
27	53	686	57	388	28	154	27	112	269	5.5	6.4	1.7
28	39	367	51	307	28	88	24	62	77	5.1	5.8	1.5
29	30	336	32	200	-	63	21	88	49	4.6	6.0	1.4
30	17	326	30	216	-	902	21	154	47	5.8	5.5	1.4
31	12	-	100	176	-	837	-	119	-	16	5.1	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	573	53	6.6	18.5	0.125	0.14	1,140
November	5,232.1	686	6.9	174	1.18	1.31	10,380
December	8,285	944	24	267	1.80	2.08	16,430
Calendar year 1946	111,580.1	3,910	4.9	306	2.07	28.02	221,300
January	27,271	2,670	161	880	5.95	6.85	54,090
February	1,489	112	28	53.2	.359	.37	2,950
March	15,332	1,930	28	495	3.34	3.85	30,410
April	13,251	2,670	21	442	2.99	3.33	26,280
May	4,665	1,090	8.3	150	1.01	1.17	9,250
June	11,008.9	3,180	6.2	367	2.48	2.77	21,840
July	487.6	65	4.6	15.7	.106	.12	967
August	155.6	11	3.4	5.02	.034	.04	309
September	90.5	5.5	1.4	3.02	.020	.02	180
Water year 1946-47	87,840.7	3,180	1.4	241	1.63	22.05	174,200

a Doubtful or no gage-height record; discharge computed on basis of records for Hickory Branch at Kernan.

Hickory Branch at Kernan, La.

Location.- Wire-weight gage, lat. 30°30'05", long. 93°16'45", in NW¼ sec. 34, T. 6 S., R. 9 W., at bridge on State Highway 7, 120 feet upstream from New Orleans, Texas & Mexico Railway bridge, 0.7 mile southwest of Kernan, 3 miles upstream from Cowpen Creek, and 10 miles northeast of De Quincy.

Drainage area.- 82.2 square miles.

Records available.- August 1945 to September 1947.

Extremes.- Maximum discharge during year, 5,950 second-feet June 21 (gage height, 26.0 feet, from graph based on gage readings); minimum, 0.1 second-foot Aug. 23, 24, Sept. 29, 30: minimum gage height, 2.47 feet Sept. 29, 30.
1945-47: Maximum discharge, that of June 21, 1947; minimum, 0.1 second-foot at times during August and September 1946, 1947; minimum gage height, 2.39 feet Sept. 17-21, 1946.

Remarks.- Records good except those below 5 second-feet, which are fair. Gage read twice daily.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 9, Apr. 22 to June 20, Sept. 1-20)

2.5	0.2	3.0	14	6.0	279	13.0	1,340
2.6	.5	3.6	47	8.0	511	15.0	1,820
2.7	1.9	4.0	74	10.0	789	17	2,370
2.8	4.8	4.5	115	11.0	949	19	3,010
2.9	9.1	5.0	168	12.0	1,130	22	4,140

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	2.7	35	258	56	9.1	301	4.1	19	9.1	9.1	.3
2	8.2	2.1	25	886	36	12	135	3.2	16	8.7	8.7	2.7
3	5.2	2.1	19	759	27	10	44	2.4	11	17	3.8	1.9
4	3.8	3.5	15	392	20	8.2	56	1.9	107	12	3.0	1.4
5	3.0	3.0	13	102	18	9.1	47	1.5	283	6.8	1.9	.8
6	2.1	6.0	11	135	17	223	36	1.4	19	4.8	.9	.5
7	1.9	5.6	10	638	15	587	27	1.2	14	3.5	.7	.3
8	1.5	5.2	8.2	538	13	743	20	1.2	7.7	3.0	.5	.4
9	1.5	4.8	14	439	12	279	18	1.0	5.6	2.4	.4	2.4
10	4.1	84	728	369	11	93	9.1	1.0	4.1	2.4	a.3	1.4
11	110	551	970	234	12	47	1,410	.9	3.0	1.9	a.4	1.9
12	130	122	1,360	212	17	290	2,360	1.2	2.1	1.5	a5	2.1
13	32	30	783	499	29	3,280	890	2.4	1.7	3.5	7.2	3.2
14	a13	16	324	369	28	1,730	383	1.7	1.4	4.4	3.5	1.7
15	a8	6.4	110	234	23	726	102	1.2	1.0	3.5	1.7	1.0
16	5.6	17	56	447	19	135	50	.9	.7	2.4	1.2	.8
17	4.4	290	42	1,160	15	56	34	.8	.4	1.5	.7	.5
18	3.8	a100	32	2,260	13	47	23	6.0	.4	1.0	.4	.4
19	2.7	36	25	2,310	13	475	131	350	.8	.9	.3	.3
20	2.1	135	301	1,670	18	234	857	816	1.5	.7	.2	1.9
21	1.7	120	179	677	27	106	192	831	3,450	.7	.2	1.5
22	1.4	60	130	234	21	60	44	335	3,860	.5	.2	1.0
23	1.4	33	60	93	17	60	33	237	803	.5	.1	.5
24	1.0	4.8	a45	78	12	358	20	1,050	279	.4	.1	.4
25	18	24	a35	234	10	115	12	564	312	.4	.3	.3
26	19	690	27	381	9.1	67	9.1	50	157	.5	1.5	.3
27	15	433	24	168	8.7	39	7.7	a25	47	.4	.8	.2
28	11	168	23	85	8.2	27	6.4	a10	27	.3	.4	.2
29	7.7	89	22	56	-	25	6.0	a20	17	.3	.3	.1
30	5.2	56	44	157	-	1,230	4.8	a40	12	2.4	.2	.1
31	3.8	-	348	110	-	1,030	-	29	-	12	.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	440.1	130	1.0	14.2	0.173	0.20	873
November	3,100.2	690	2.1	103	1.25	1.40	6,150
December	5,818.2	1,360	8.2	188	2.29	2.63	11,540
Calendar year 1946	68,417.4	2,780	.1	187	2.27	30.95	135,700
January	16,184	2,310	56	522	6.35	7.32	32,100
February	525.0	56	8.2	18.8	.229	.24	1,040
March	12,110.4	3,280	8.2	391	4.76	5.48	24,020
April	7,268.1	2,360	4.8	242	2.94	3.29	14,420
May	4,391.0	1,050	.8	142	1.73	1.99	8,710
June	9,463.4	3,860	.4	315	3.83	4.28	18,770
July	109.4	17	.3	3.53	.043	.05	217
August	54.2	9.1	.1	1.75	.021	.02	108
September	30.5	3.2	.1	1.02	.012	.01	60
Water year 1946-47	59,494.5	3,860	.1	163	1.98	26.91	118,000

a No gage-height record; discharge computed on basis of records for Beckwith Creek near De Quincy.

Sabine River near Mineola, Tex.

Location.- Water-stage recorder, 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, and 16.5 miles upstream from Lake Fork. Datum of gage is 304.2 feet above mean sea level, datum of 1929.

Drainage area.- 1,445 square miles.

Records available.- May 1939 to September 1947.

Extremes.- Maximum discharge during year, 39,700 second-feet Nov. 7 (gage height, 20.75 feet); minimum, 1.4 second-feet Aug. 11.

1939-47: Maximum discharge, 76,000 second-feet Apr. 1, 1945 (gage height, 24.00 feet); maximum gage height, 24.37 feet June 8, 1943; no flow at times.

Maximum stage from about 1919 to 1939, 20.6 feet Jan. 25, 1938, from information by local resident.

Remarks.- Records good. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	486	22	416	356	161	108	392	970	60	951	2.5	1,240
2	328	35	225	514	141	108	278	910	51	238	2.1	1,840
3	100	496	158	870	126	102	210	838	49	61	1.8	2,170
4	48	2,180	132	950	120	98	168	870	50	37	1.7	1,530
5	37	4,500	117	870	120	95	154	760	45	28	1.6	520
6	32	25,200	108	870	117	95	147	397	53	23	1.7	84
7	30	38,800	102	g822	108	300	129	164	57	19	1.6	31
8	26	35,900	100	g598	102	996	114	114	41	16	1.6	21
9	22	30,200	102	g404	95	1,120	123	150	31	13	1.6	15
10	20	21,200	205	g302	90	995	150	466	25	11	1.6	12
11	20	12,400	953	g266	88	822	343	790	21	9.6	1.6	10
12	18	8,160	1,650	272	100	640	1,020	1,020	18	8.8	8.3	12
13	17	5,700	2,400	290	111	930	2,860	1,180	16	7.8	52	12
14	16	3,720	2,620	296	111	1,330	8,000	818	14	7.1	54	257
15	17	2,160	5,270	284	108	1,580	9,760	278	12	6.6	20	655
16	26	1,150	10,200	272	105	1,660	7,520	108	11	5.9	11	870
17	29	640	7,060	704	102	1,400	4,950	416	11	5.6	8.8	1,040
18	49	356	4,790	1,890	100	969	3,300	790	10	4.8	8.0	751
19	95	290	3,100	2,620	130	535	2,470	670	12	4.2	19	232
20	57	584	1,730	3,250	383	320	2,170	685	20	3.7	19	82
21	39	775	772	3,520	528	255	2,020	670	66	3.2	14	54
22	32	570	312	3,600	392	292	1,480	700	292	3.1	11	44
23	35	272	184	3,500	302	556	800	730	780	3.0	8.8	38
24	68	161	154	2,860	235	598	472	730	1,180	3.0	7.5	42
25	56	175	111	2,060	164	472	344	598	1,440	3.0	6.2	44
26	40	890	129	1,200	126	344	260	344	1,820	3.2	5.9	45
27	32	1,470	126	626	111	458	215	250	2,220	3.2	7.6	35
28	27	1,540	126	368	105	528	184	184	2,540	3.2	12	26
29	24	1,100	222	284	-	332	249	123	2,470	3.2	54	21
30	22	760	344	235	-	430	868	85	1,910	3.1	456	18
31	21	-	392	192	-	556	-	68	-	2.8	806	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	1,869	486	16	60.3	0.042	0.05	3,710
November	201,406	38,800	22	6,714	4.65	5.18	399,500
December	44,310	10,200	100	1,429	.989	1.14	87,890
Calendar year 1946	748,273.1	38,800	4.6	2,050	1.42	19.26	1,484,000
January	35,145	3,600	192	1,134	.785	.90	69,710
February	4,481	528	88	160	.111	.12	8,890
March	19,024	1,660	95	614	.425	.49	37,730
April	51,150	9,760	114	1,705	1.18	1.32	101,500
May	16,878	1,180	68	544	.376	.43	33,470
June	15,325	2,540	10	511	.354	.39	30,400
July	1,495.1	951	2.8	48.2	.033	.04	2,970
August	1,608.5	806	1.6	51.9	.036	.04	3,190
September	11,751	2,170	10	392	.271	.30	23,310
Water year 1946-47	404,440.6	38,800	1.6	1,108	.767	10.40	802,300

g: Computed from graph based on once-daily readings furnished by U. S. Weather Bureau.

Sabine River near Gladewater, Tex.

Location.- Water-stage recorder and wire-weight gage, lat. 32°32', long. 94°57', at bridge on U. S. Highway 271, half a mile downstream from Glade Creek and 1 mile southwest of Gladewater, Gregg County. Datum of gage is 243.85 feet above mean sea level (Texas Reclamation Department bench mark based on Geological Survey datum).

Drainage area.- 2,846 square miles.

Records available.- October 1932 to September 1947.

Average discharge.- 15 years, 2,197 second-feet.

Extremes.- Maximum discharge during year, 44,500 second-feet Nov. 11 (gage height, 38.52 feet); minimum, 30 second-feet Aug. 10 (gage height, 4.52 feet).

1932-47: Maximum discharge, 138,000 second-feet Apr. 2, 1945 (gage height, 44.16 feet, from floodmark), from rating curve extended above 91,000 second-feet; minimum, 5.6 second-feet Aug. 16, 1939.

Maximum stage known prior to 1945, 41.7 feet in May 1914, discharge, 71,100 second-feet, from information by local resident.

Remarks.- Records good except those for Nov. 18-25, which are fair. Small diversions above station for oil-field operations and municipal supply.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sept.
1	392	226	3,530	1,270	1,990	944	2,320	1,270	769	2,600	58	258
2	496	238	3,230	1,590	1,340	900	2,180	1,630	748	2,620	54	685
3	601	638	2,820	1,910	1,080	856	1,910	1,940	622	2,340	50	1,010
4	601	1,890	2,070	2,100	966	812	1,680	1,960	528	1,480	47	1,250
5	454	2,910	1,490	2,210	878	790	1,520	1,860	517	595	44	1,470
6	322	3,770	1,160	2,260	834	790	1,360	1,730	559	276	44	1,610
7	247	4,480	1,050	2,400	790	1,050	1,190	1,660	538	215	42	1,340
8	208	5,200	966	2,570	769	1,890	1,050	1,380	475	189	37	630
9	189	13,700	1,010	2,600	748	2,480	1,030	1,030	392	172	37	217
10	204	39,700	1,140	2,460	706	2,740	1,100	900	322	156	34	126
11	267	44,500	1,190	2,100	685	2,760	1,380	966	276	143	35	100
12	258	38,800	1,660	1,680	790	2,820	1,430	1,230	245	133	45	93
13	235	31,600	2,320	1,450	922	3,350	2,720	1,560	218	126	46	87
14	215	25,300	2,820	1,360	988	3,590	4,040	1,890	199	122	71	92
15	209	20,100	3,260	1,320	966	3,560	4,790	2,070	184	116	69	301
16	209	16,400	3,740	1,320	922	3,380	5,280	2,210	173	112	62	464
17	209	13,700	4,260	1,660	856	3,230	6,000	2,740	170	105	128	538
18	227	e11,000	4,930	2,460	834	3,230	7,180	2,430	168	101	189	812
19	267	e9,140	5,900	3,080	922	3,410	8,750	2,040	160	96	130	966
20	312	e7,580	7,050	3,590	1,630	3,530	10,100	2,100	158	93	93	1,100
21	372	e5,670	7,790	3,890	2,180	3,320	9,940	2,340	409	88	76	1,010
22	362	e4,010	8,020	4,230	2,260	2,680	9,140	2,650	856	85	65	706
23	303	e2,940	7,650	4,620	2,070	2,020	7,440	2,910	812	80	61	422
24	276	e1,910	6,740	5,040	1,710	1,990	7,310	3,050	790	79	61	294
25	285	e1,760	5,540	5,440	1,450	1,990	6,400	3,050	1,050	79	57	235
26	276	3,470	4,160	5,720	1,250	1,960	5,490	2,790	1,410	77	53	201
27	276	4,260	2,710	5,800	1,100	1,780	4,390	2,260	1,730	76	53	182
28	258	4,100	1,540	5,720	988	1,610	3,140	1,520	1,990	71	56	172
29	242	3,800	1,100	5,280	-	1,590	2,020	1,050	2,260	68	64	158
30	231	3,590	1,080	4,350	-	2,180	1,380	834	2,480	65	71	143
31	226	-	1,190	3,140	-	2,320	-	769	-	61	77	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	9,229	601	189	298	0.105	0.12	18,310
November	326,382	44,500	226	10,880	3.82	4.27	647,400
December	103,116	8,020	966	3,326	1.17	1.35	204,500
Calendar year 1946	1,625,268	49,800	83	4,453	1.56	21.25	3,224,000
January	94,620	5,800	1,270	3,052	1.07	1.24	187,700
February	32,624	2,260	685	1,165	.409	.43	64,710
March	69,552	3,590	790	2,244	.789	.91	138,000
April	123,660	10,100	1,030	4,122	1.45	1.62	245,300
May	57,819	3,050	769	1,865	.655	.76	114,700
June	21,208	2,480	158	707	.248	.28	42,070
July	12,619	2,620	61	408	.143	.16	25,030
August	2,009	189	34	64.8	.023	.03	3,980
September	16,672	1,610	87	556	.195	.22	33,070
Water year 1946-47	869,510	44,500	34	2,382	.837	11.39	1,725,000

e Backwater from return of overbank flow; discharge computed on basis of backwater or loop curves.

Sabine River near Tatum, Tex.

Location.- Water-stage recorder, 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, and 7 miles downstream from Cherokee Bayou. Datum of gage is 204.2 feet above mean sea level, datum of 1929 (levels by Corps of Engineers).

Drainage area.- 3,586 square miles.

Records available.- January 1939 to September 1947.

Extremes.- Maximum discharge during year, 36,600 second-feet Nov. 15 (gage height, 27.77 feet); minimum, 74 second-feet Aug. 14 (gage height, 2.88 feet).

1939-47: Maximum discharge, 123,000 second-feet Apr. 4, 1945 (gage height, 33.80 feet, from graph based on gage readings), from rating curve based on extension of ratings for main channels above 40,000 second-feet and measured overflow at gage height 31.5 feet; minimum observed, 9.1 second-feet Oct. 9, 1939.

Maximum stage known prior to 1945, 32 feet in May 1884, from information by local residents.

Remarks.- Records good except those for period of no gage-height record, which are fair. Several small diversions above station for oil-field operations and municipal supply.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-5)

2.8	64	7.0	950	24.0	12,000
3.0	91	9.0	1,660	25.0	14,500
3.5	171	11.0	2,520	26.0	19,000
4.0	262	14.0	4,070	27.0	27,600
5.0	462	18.0	6,390	28.0	39,000
6.0	676	22.0	9,300		

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sept.
1	340	370	6,520	2,200	5,850	1,820	4,730	5,430	2,060	2,160	124	123
2	400	370	5,910	2,600	5,190	1,740	4,620	3,450	1,860	2,290	118	126
3	514	430	5,430	3,300	3,900	1,620	4,120	2,380	1,740	2,380	113	279
4	610	1,120	5,010	3,460	2,470	1,500	3,520	2,340	1,500	2,380	108	692
5	676	2,540	4,460	3,300	1,820	1,470	3,000	2,340	1,220	1,980	102	980
6	676	3,580	3,580	3,250	1,580	1,440	2,600	2,290	1,020	1,260	98	1,220
7	588	4,400	2,600	3,300	1,500	1,700	2,290	2,200	950	716	94	1,400
8	472	4,900	2,020	3,520	1,440	2,800	2,110	2,240	920	472	88	1,360
9	390	5,250	1,860	3,740	1,360	3,460	2,200	2,340	860	370	85	1,020
10	340	5,670	2,200	3,800	1,330	3,680	2,340	2,160	775	320	84	610
11	320	6,460	2,420	3,740	1,300	3,740	2,520	1,820	676	281	81	360
12	330	8,140	2,470	3,520	1,330	3,850	2,560	1,620	610	262	80	230
13	400	12,100	2,850	3,150	1,500	5,130	3,250	1,580	546	241	77	173
14	390	29,200	3,250	2,800	1,700	5,610	4,340	1,780	514	226	76	146
15	360	35,400	3,460	2,520	1,700	5,610	4,950	1,980	472	213	85	159
16	330	33,100	3,630	2,340	1,660	5,010	5,310	2,340	441	204	95	432
17	320	28,700	3,850	a2,420	1,580	5,250	5,490	5,330	410	195	110	700
18	330	24,500	4,120	a2,950	1,500	4,840	5,550	7,110	400	190	121	700
19	340	20,900	4,400	a3,800	1,580	4,620	5,610	8,260	380	193	183	725
20	420	18,500	4,780	a4,780	2,950	4,560	5,790	7,950	380	190	252	890
21	546	17,000	5,190	a5,490	3,850	4,510	6,150	6,650	420	193	219	1,120
22	588	14,900	5,610	5,850	3,960	4,460	6,520	5,250	525	180	168	1,190
23	567	16,600	6,030	5,670	3,800	4,460	7,040	4,180	800	168	137	1,020
24	546	11,600	6,390	5,430	3,520	5,010	7,600	3,880	1,050	166	116	750
25	504	10,200	6,720	5,370	3,050	5,070	8,020	3,580	1,050	164	105	567
26	504	9,220	7,040	5,370	2,560	4,560	8,420	3,680	1,120	156	101	430
27	494	8,500	7,110	5,490	2,160	3,900	8,500	3,680	1,330	151	108	350
28	452	7,880	6,840	5,670	1,940	3,300	8,340	3,360	1,540	146	115	300
29	420	7,530	6,030	5,790	-	2,850	7,880	2,700	1,780	140	113	262
30	400	7,110	4,410	5,970	-	3,680	6,910	2,160	1,940	134	115	237
31	380	-	2,750	5,970	-	4,510	-	2,060	-	129	119	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	13,947	676	320	450	0.126	0.14	27,660
November	356,170	35,400	370	11,870	3.31	3.69	706,500
Decomber	138,940	7,110	1,860	4,482	1.25	1.44	275,600
Calendar year 1946	1,992,611	41,600	136	5,459	1.52	20.67	3,952,000
January	126,560	5,970	2,200	4,083	1.14	1.31	251,000
February	68,080	5,850	1,300	2,431	.678	.71	135,000
March	115,760	5,610	1,440	3,734	1.04	1.20	229,600
April	152,280	8,500	2,110	5,076	1.42	1.58	302,000
May	107,920	8,260	1,580	3,481	.971	1.12	214,100
June	29,289	2,060	380	976	.272	.30	58,090
July	18,250	2,380	129	589	.164	.19	36,200
August	3,590	252	76	116	.032	.04	7,120
September	18,551	1,400	123	618	.172	.19	36,800
Water year 1946-47	1,149,337	35,400	76	3,149	.878	11.91	2,280,000

a No gage-height record; discharge computed on basis of recorded range in stage and records for stations near Gladewater, Tex., and at Logansport, La.

Sabine River at Logansport, La.

Location.- Wire-weight gage, lat. 31°58', long. 94°00', at bridge on U. S. Highway 84, 200 feet upstream from Texas & New Orleans Railroad bridge in Logansport, De Soto Parish, and 3 miles upstream from Bayou Castor. Datum of gage is 147.72 feet above mean sea level, datum of 1929.

Drainage area.- 4,858 square miles.

Records available.- July 1903 to September 1947. (January 1907 to September 1923, monthly records only in Water-Supply Paper 850.) U. S. Weather Bureau has collected gage-height records in this vicinity since 1903.

Average discharge.- 41 years (1903-19, 1922-47), 3,272 second-feet.

Extremes.- Maximum discharge during year, 25,400 second-feet Nov. 22 (gage height, 32.17 feet, from graph based on gage readings); minimum observed, 106 second-feet Aug. 16.
1903-47: Maximum discharge, 92,000 second-feet Apr. 8, 1945 (gage height, 44.07 feet, from floodmark); minimum observed during periods of daily records, 16 second-feet Sept. 26-28, Oct. 3, 4, 1939.
Maximum stage known prior to 1945, 39.4 feet in May 1884, present datum.

Remarks.- Records good except those for periods of backwater or no gage-height record, which are fair. Gage read twice daily. Small diversions above station.

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

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	650	516	14,000	7,340	a6,620	4,240	5,710	8,660	a2,780	1,810	182	136
2	626	722	13,200	7,200	a6,620	3,450	6,070	8,740	2,600	1,990	172	140
3	558	920	12,300	7,270	6,370	3,100	6,430	8,580	2,570	2,140	a163	145
4	496	1,180	11,500	7,600	6,130	2,850	6,620	7,600	2,570	a2,240	158	154
5	558	1,900	10,500	7,740	5,530	2,640	6,490	5,630	2,370	2,300	150	163
6	674	2,990	9,460	7,740	4,290	2,500	5,890	c3,610	2,050	a2,170	140	347
7	722	3,890	8,100	7,740	3,070	2,990	c6,010	c2,920	1,690	1,870	136	770
8	722	4,570	a6,560	7,810	2,500	4,240	c6,560	c2,710	a1,520	1,390	132	1,080
9	650	5,080	4,730	7,810	2,210	6,010	c7,740	2,640	1,390	998	128	1,280
10	558	c5,710	3,290	7,670	2,080	7,270	c8,740	2,670	1,310	698	a124	1,280
11	476	c6,310	3,100	7,400	1,960	7,400	c9,620	2,670	1,230	536	120	1,100
12	446	c6,940	3,850	7,080	2,050	c7,530	10,300	2,500	1,150	446	116	794
13	a391	c7,670	4,670	6,750	2,780	c8,500	10,900	2,240	1,050	a400	113	536
14	366	c8,340	4,870	6,310	3,610	c9,620	11,100	2,050	946	350	113	a382
15	382	c9,060	4,970	5,830	3,930	c10,700	10,800	1,990	a842	318	110	297
16	409	9,620	4,970	5,240	3,690	c11,800	10,300	2,080	794	304	106	242
17	400	a10,400	4,920	c6,490	3,260	12,600	9,940	2,300	746	290	a110	218
18	374	11,800	4,820	c8,260	2,890	12,900	9,540	a3,290	698	262	113	248
19	366	15,900	4,720	c8,660	2,640	12,600	9,060	4,520	674	262	120	c350
20	ac391	21,400	4,920	c8,980	4,280	11,800	a8,740	5,650	650	255	124	c506
21	c427	24,700	5,410	9,060	6,250	10,800	8,260	6,680	650	242	140	c698
22	c466	25,000	5,830	9,380	7,400	9,860	7,880	7,810	674	230	172	894
23	c536	24,100	6,130	9,540	8,020	8,900	7,600	8,820	722	230	207	1,080
24	c650	a22,600	6,430	9,540	8,580	8,180	7,460	9,620	868	230	a218	1,180
25	c818	20,700	a6,680	9,460	8,740	7,740	7,460	9,940	1,150	218	182	1,080
26	1,020	19,200	6,820	9,060	8,340	7,530	7,600	7,600	1,310	207	163	868
27	946	18,000	7,010	8,580	7,270	7,460	7,740	8,500	1,340	a207	145	698
28	770	16,800	7,140	7,950	5,650	7,400	7,950	7,140	1,360	202	136	a558
29	698	15,700	a7,270	7,400	-	7,140	8,260	5,770	1,470	197	132	446
30	626	15,000	7,340	8,940	-	6,560	8,500	4,570	1,660	197	132	366
31	558	-	7,400	a6,680	-	5,830	-	3,490	-	192	a132	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	17,730	1,020	366	527	0.118	0.14	35,170
November	336,718	25,000	516	11,220	2.31	2.58	667,900
December	212,910	14,000	3,100	6,868	1.41	1.63	422,300
Calendar year 1946	2,855,653	36,600	228	7,824	1.61	21.86	5,664,000
January	240,510	9,540	5,240	7,758	1.60	1.84	477,000
February	136,760	8,740	1,960	4,884	1.01	1.05	271,300
March	232,140	12,900	2,500	7,488	1.54	1.78	460,400
April	245,270	11,100	5,710	8,176	1.68	1.88	486,500
May	164,930	9,940	1,990	5,320	1.09	1.26	327,100
June	40,834	2,780	650	1,361	.280	.31	80,990
July	23,381	2,300	192	754	.155	.18	46,380
August	4,389	218	106	142	.029	.03	8,710
September	18,036	1,280	136	601	.124	.14	35,770
Water year 1946-47	1,673,608	25,000	106	4,585	.944	12.82	3,320,000

a No gage-height record; discharge computed on basis of estimated gage heights.
c Backwater from Bayou Castor.

Sabine River near Milam, Tex.

Location.- Water-stage recorder and wire-weight gage, lat. 31°28', long. 93°45', at bridge on State Highway 21, 2.8 miles downstream from Patroon Bayou, 6.5 miles northeast of Milam, Sabine County, and 7.2 miles upstream from Palo Gaucho Bayou. Datum of gage is 97.96 feet above mean sea level, datum of 1929, Alluvial Valley supplementary adjustment of 1941.

Drainage area.- 6,543 square miles.

Records available.- January 1939 to September 1947. October 1923 to August 1925 at Sabinetown, 7.4 miles downstream, records equivalent except those for periods of extreme low flow and high runoff from Palo Gaucho Bayou.

Extremes.- Maximum discharge during year, 22,300 second-feet Jan. 20 (gage height, 36.78 feet); minimum, 141 second-feet Aug. 17 (gage height, 6.33 feet).
1939-47: Maximum discharge, 83,400 second-feet Apr. 12, 1945 (gage height, 48.87 feet); minimum observed, 32 second-feet Oct. 15, 22, 1939.
Maximum stage known prior to 1945, 48 feet about July 28, 1933, from information by observer.

Remarks.- Records good. No large diversions above station.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 10, June 27 to Sept. 30)

6.4	122	11.0	1,730	24.0	10,500
7.0	282	13.0	2,740	28.0	13,900
8.0	598	16.0	4,480	32.0	17,500
9.5	1,120	20.0	7,250	37.0	22,500

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	714	783	19,700	9,480	11,200	9,230	7,250	8,110	5,200	1,460	254	159
2	780	680	19,500	12,200	9,740	7,480	6,650	8,190	3,800	1,640	248	156
3	812	664	19,000	14,200	8,670	5,800	6,500	8,350	3,070	1,820	240	159
4	780	899	18,500	14,800	8,110	4,740	6,720	8,350	2,850	2,020	226	159
5	714	1,680	17,900	14,800	7,710	4,160	6,950	8,270	2,740	2,170	215	164
6	648	2,220	17,100	14,300	7,320	3,800	7,020	7,480	2,630	2,320	206	169
7	648	3,620	16,200	14,200	6,500	4,540	7,710	5,730	2,370	2,320	195	175
8	714	4,540	15,200	15,700	5,060	8,110	10,200	4,160	1,970	2,170	190	282
9	763	5,200	13,700	16,800	3,740	9,740	13,000	3,510	1,640	1,820	185	714
10	780	7,250	11,500	17,500	3,120	9,990	15,300	3,290	1,420	1,380	177	1,040
11	780	11,000	8,350	17,400	2,800	10,200	16,300	3,120	1,300	1,000	172	1,230
12	680	11,400	7,100	16,700	2,740	10,700	17,200	3,020	1,230	780	164	1,190
13	598	11,000	7,630	16,100	3,510	13,600	17,700	2,850	1,150	648	162	1,000
14	532	10,800	7,630	15,300	4,870	15,100	17,700	2,580	1,080	565	159	812
15	484	10,900	7,400	14,300	5,660	15,800	17,200	2,270	969	500	156	614
16	452	11,500	7,250	13,500	6,080	15,500	16,600	2,120	882	468	146	484
17	468	12,900	7,020	16,600	6,010	15,300	15,700	2,580	812	430	141	401
18	500	13,100	6,800	19,400	5,390	15,200	14,600	3,460	746	401	175	336
19	484	12,900	6,500	21,600	4,740	15,300	13,600	4,280	714	385	167	300
20	468	12,600	7,400	22,200	6,800	15,300	12,500	5,200	730	366	164	345
21	484	12,700	8,350	22,000	9,230	15,200	11,400	7,180	1,040	348	159	532
22	548	13,000	8,030	21,300	9,900	15,000	10,400	8,190	899	327	162	697
23	548	13,600	7,630	20,600	10,100	14,500	9,480	8,270	864	315	169	780
24	565	14,400	7,630	19,800	10,600	14,100	8,750	8,830	1,230	306	193	899
25	714	15,200	7,630	19,100	10,800	13,300	8,190	9,740	1,150	297	246	1,040
26	846	16,300	7,630	18,200	10,800	12,100	7,870	10,100	1,120	291	268	1,120
27	1,040	17,500	7,630	17,300	10,500	10,800	7,710	10,100	1,190	285	251	1,040
28	1,080	18,600	7,710	16,400	10,200	9,480	7,710	9,820	1,260	276	229	882
29	1,040	19,300	7,790	15,300	-	8,750	7,870	9,230	1,260	268	209	730
30	969	19,700	7,790	14,100	-	8,270	7,950	8,190	1,300	257	185	598
31	864	-	8,110	12,700	-	7,870	-	6,800	-	257	167	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	21,497	1,080	452	693	0.106	0.12	42,640
November	305,916	19,700	664	10,200	1.56	1.74	606,800
December	327,310	19,700	6,500	10,560	1.61	1.86	649,200
Calendar year 1946	3,842,062	35,700	312	10,530	1.61	21.84	7,620,000
January	513,880	22,200	9,480	16,580	2.53	2.92	1,019,000
February	201,900	11,200	2,740	7,211	1.10	1.15	400,500
March	338,960	15,800	3,800	10,930	1.67	1.93	672,300
April	333,730	17,700	6,500	11,120	1.70	1.90	661,900
May	193,370	10,100	2,120	6,238	.953	1.10	383,500
June	48,616	5,200	714	1,621	.248	.28	96,430
July	27,890	2,320	257	900	.138	.16	55,320
August	5,980	268	141	193	.029	.03	11,860
September	18,207	1,230	156	607	.093	.10	36,110
Water year 1946-47	2,337,256	22,200	141	6,403	.978	13.29	4,636,000

Sabine River near Bon Wier, Tex.

Location.- Wire-weight gage, lat. 30°44', long. 93°37', at bridge on U. S. Highway 190, 1¼ miles east of Bon Wier, Newton County, and 2.4 miles upstream from Caney Creek. Datum of gage is 46.4 feet above mean sea level, datum of 1929.

Drainage area.- 8,323 square miles.

Records available.- October 1923 to September 1934, January 1939 to September 1947. U. S. Weather Bureau has collected gage-height records in this vicinity since 1913.

Average discharge.- 19 years (1923-34, 1939-47), 8,196 second-feet.

Extremes.- Maximum discharge during year, 37,500 second-feet Jan. 21 (gage height, 21.45 feet); minimum observed, 401 second-feet Sept. 7.

1923-34, 1939-47: Maximum discharge, 75,500 second-feet Apr. 17, 18, 1945; maximum gage height, 23.10 feet Apr. 18, 1945; minimum observed, 185 second-feet Sept. 11, 22, 24, 1925.

Maximum stage known, 26 feet in May 1884, present site and datum, from information by local resident.

Remarks.- Records good. Gage read twice daily, oftener during high stages. No large diversions above station.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 22, June 23 to Sept. 14)

1.3	394	4.0	1,840	14.0	14,000
1.5	468	5.0	2,650	16.0	17,800
2.0	670	7.0	4,550	18.0	23,000
2.5	900	9.0	6,800	20.0	30,000
3.0	1,170	11.0	9,500	21.5	38,500

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,290	1,480	20,500	13,400	20,200	12,600	11,400	9,220	10,300	2,140	805	540
2	1,260	1,380	20,700	17,400	17,600	12,200	10,300	9,360	8,660	2,140	782	508
3	1,260	1,350	21,000	20,700	15,300	11,200	9,500	9,360	6,560	2,220	760	472
4	1,260	1,420	21,000	22,400	13,200	9,500	8,940	9,500	5,210	2,300	692	449
5	1,290	1,720	21,000	23,600	11,800	7,710	8,800	9,500	4,450	2,470	692	438
6	1,260	2,060	21,000	24,300	10,900	6,680	8,660	9,500	4,050	2,560	649	419
7	1,230	3,010	20,700	23,300	10,300	6,320	8,520	9,360	3,850	2,830	608	412
8	1,140	3,650	19,900	22,400	9,500	7,840	8,940	8,380	3,750	2,920	588	438
9	1,120	4,550	19,200	23,600	8,520	11,400	10,300	6,800	3,370	2,920	568	434
10	1,120	6,330	18,700	24,900	7,060	13,000	12,100	5,320	3,100	2,740	568	457
11	1,890	16,200	19,700	26,000	5,870	13,200	14,500	4,880	2,740	2,380	540	548
12	4,550	20,500	21,300	26,700	5,540	12,700	17,200	4,550	2,560	2,140	516	955
13	3,850	21,000	20,500	26,700	5,870	19,200	18,900	4,350	2,380	1,910	476	1,230
14	2,560	20,700	18,500	26,300	7,580	27,000	19,700	4,150	2,220	1,660	500	1,320
15	1,690	18,900	17,000	25,600	8,660	26,300	19,700	3,950	2,140	1,450	500	1,260
16	1,380	15,800	14,900	24,900	9,080	26,000	19,700	3,650	1,980	1,290	484	1,120
17	1,230	15,800	12,000	26,700	8,940	26,000	19,700	3,550	1,910	1,200	496	950
18	1,140	17,000	10,300	29,600	8,380	23,600	19,200	4,250	1,760	1,140	540	828
19	1,120	17,800	9,600	31,600	7,970	21,600	18,500	7,190	1,720	1,060	532	760
20	1,090	17,000	10,200	34,800	7,450	20,700	17,600	8,940	1,690	1,030	544	738
21	1,060	15,600	13,500	37,500	8,660	19,700	16,800	9,500	1,690	1,030	544	760
22	1,030	15,100	15,400	36,700	10,500	19,200	16,000	10,800	1,760	978	544	760
23	1,000	14,500	15,100	35,400	12,400	18,900	14,500	11,500	2,060	950	520	782
24	1,000	14,500	13,400	34,200	12,600	18,700	13,100	11,200	2,830	875	500	875
25	1,380	14,900	11,500	32,100	12,600	18,000	11,600	10,800	3,460	875	468	978
26	2,740	15,800	10,200	30,800	12,700	17,600	10,600	11,000	3,190	850	492	1,030
27	2,300	18,000	10,200	29,600	12,700	16,800	9,920	11,600	2,830	850	548	1,140
28	1,980	19,400	10,100	28,500	12,700	15,300	9,500	11,800	2,560	850	588	1,200
29	1,720	20,200	10,300	26,700	-	13,700	9,220	11,500	2,300	828	608	1,170
30	1,660	20,200	10,300	24,900	-	12,400	9,220	11,200	2,220	805	544	1,120
31	1,580	-	10,300	22,700	-	11,800	-	10,900	-	805	508	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	50,180	4,550	1,000	1,619	0.195	0.22	99,530
November	375,850	21,000	1,350	12,530	1.51	1.68	745,500
December	488,000	21,300	9,600	15,740	1.89	2.18	967,900
Calendar year 1946	5,228,265	43,600	975	14,320	1.72	23.37	10,370,000
January	834,000	37,500	13,400	26,900	3.23	3.73	1,654,000
February	294,580	20,200	5,540	10,520	1.26	1.32	584,300
March	496,850	27,000	6,320	16,030	1.93	2.22	985,500
April	402,620	19,700	8,520	13,420	1.61	1.80	798,600
May	257,560	11,800	3,550	8,308	.998	1.15	510,900
June	99,300	10,300	1,690	3,310	.398	.44	197,000
July	50,196	2,920	805	1,619	.195	.22	99,560
August	17,704	805	468	571	.069	.08	35,120
September	24,091	1,320	412	803	.096	.11	47,780
Water year 1946-47	3,390,931	37,500	412	9,290	1.12	15.15	6,726,000

Sabine River near Ruliff, Tex.

Location.- Wire-weight gage, 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, and 4.5 miles downstream from Cypress Creek. Datum of gage is 4.08 feet above mean sea level, datum of 1929.

Drainage area.- 9,440 square miles.

Records available.- October 1924 to September 1947.

Average discharge.- 23 years, 9,121 second-feet.

Extremes.- Maximum discharge during year, 52,900 second-feet Jan. 22 (gage height, 15.80 feet); minimum observed, 645 second-feet Sept. 9, 10 (gage height, 3.07 feet).
1924-47: Maximum discharge, 85,300 second-feet Apr. 22, 1945; maximum gage height, 17.9 feet May 24, 25, 1935, present site and datum; minimum discharge observed, 338 second-feet Sept. 25-27, Oct. 2, 3, 22-24, 1939.
Higher stages are known to have occurred in the past.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Gage read twice daily, oftener during high stages. No large diversion above station.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used July 12 to Sept. 30)

2.6	645	9.0	3,700	13.0	12,700
2.9	730	10.0	4,570	13.5	15,800
3.3	865	11.0	5,850	14.0	21,000
4.0	1,110	11.5	6,840	15.0	38,500
5.0	1,520	12.0	8,350	16.0	56,500
7.0	2,530	12.5	10,400		

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,420	2,420	23,400	13,800	30,400	14,500	18,500	11,300	12,700	2,920	882	865
2	2,200	2,310	23,400	14,200	27,700	14,500	17,000	11,000	12,500	2,800	882	812
3	2,090	2,200	23,400	16,600	25,900	14,800	15,400	10,600	12,200	2,750	882	795
4	1,990	2,480	23,400	18,500	a22,500	14,500	14,200	10,800	11,300	2,750	865	760
5	1,940	3,330	23,400	23,400	19,700	14,500	13,300	10,600	10,400	2,800	848	730
6	a1,940	4,570	24,200	27,700	19,100	13,800	12,200	10,600	8,000	2,920	830	715
7	1,890	5,420	24,200	30,400	16,600	13,000	11,500	10,600	6,170	2,970	812	685
8	1,840	5,560	24,200	30,400	15,400	11,500	11,000	10,800	5,290	3,090	778	670
9	1,790	5,700	24,200	30,400	14,500	10,600	10,800	10,600	4,680	3,150	760	658
10	1,740	6,000	25,000	30,400	13,600	10,200	10,600	10,200	a4,270	3,210	760	658
11	1,890	7,100	25,900	31,300	12,500	11,500	12,500	9,320	3,840	3,210	745	658
12	2,200	8,540	26,800	a33,100	11,300	13,000	15,800	7,680	3,510	3,150	745	658
13	3,460	11,300	27,700	34,000	9,940	15,800	16,600	6,370	3,270	2,750	745	830
14	4,370	14,200	28,600	34,000	8,720	18,500	16,600	5,560	3,030	2,580	745	a1,190
15	4,180	17,500	29,500	34,000	8,720	21,800	18,000	5,160	2,860	2,310	745	1,610
16	3,330	21,800	27,700	34,900	9,110	36,700	18,500	4,910	2,750	2,090	745	1,740
17	2,580	22,500	25,900	35,800	9,940	37,600	19,100	4,470	2,580	1,890	795	1,740
18	2,200	21,800	22,500	39,400	10,600	33,100	19,700	a4,270	2,530	1,660	795	1,520
19	1,940	21,000	19,700	43,900	10,800	31,300	20,400	4,370	a2,530	1,520	865	1,430
20	1,840	20,400	18,000	49,300	10,800	29,500	a21,000	5,850	2,480	1,390	830	1,310
21	1,740	20,400	15,800	52,900	10,600	26,800	19,700	7,840	3,510	1,310	a830	1,230
22	1,700	19,700	14,500	52,900	a10,800	24,200	19,100	9,520	5,290	1,270	830	1,150
23	1,660	19,100	14,500	52,900	a11,000	23,400	18,000	10,800	4,680	1,230	812	1,190
24	1,610	18,000	15,400	51,100	11,500	21,800	17,500	12,700	3,920	1,150	812	1,190
25	1,700	17,500	16,200	51,100	12,500	20,400	16,600	13,600	3,450	1,080	812	1,190
26	1,790	18,000	17,000	47,500	13,300	a19,700	15,800	13,600	3,840	1,040	865	1,350
27	2,580	18,000	16,600	44,800	13,800	19,700	14,800	13,300	4,000	a1,000	865	1,430
28	3,090	18,000	15,400	41,200	14,200	19,100	13,600	13,000	3,840	970	865	1,520
29	2,920	19,700	14,500	39,400	-	18,500	12,700	13,000	3,570	935	900	1,610
30	2,640	21,800	13,600	35,800	-	18,500	12,000	12,700	3,210	970	a900	1,700
31	2,530	-	13,600	33,100	-	18,500	-	13,000	-	900	a882	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	71,790	4,370	1,610	2,316	0.245	0.28	142,400
November	396,330	22,500	2,200	13,210	1.40	1.56	786,100
December	658,200	29,500	13,600	21,230	2.25	2.59	1,306,000
Calendar year 1946	6,581,100	54,700	1,480	18,030	1.91	25.92	13,050,000
January	1,108,200	52,900	13,800	35,750	3.79	4.36	2,198,000
February	405,530	30,400	8,720	14,480	1.53	1.60	804,400
March	611,300	37,600	10,200	19,720	2.09	2.41	1,212,000
April	472,500	21,000	10,600	15,750	1.67	1.86	937,200
May	297,920	13,600	4,270	9,610	1.02	1.17	590,900
June	156,200	12,700	2,480	5,207	.551	.62	309,800
July	63,765	3,210	900	2,057	.218	.25	126,500
August	25,427	900	745	820	.087	.10	50,430
September	33,594	1,740	658	1,120	.119	.13	66,630
Water year 1946-47	4,300,756	52,900	658	11,780	1.25	16.93	8,530,000

a No gage-height record; discharge interpolated or computed on basis of estimated gage heights.

Lake Fork Sabine River near Quitman, Tex.

Location.- Wire-weight gage, 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. Datum of gage is 317.42 feet above mean sea level, datum of 1929.

Drainage area.- 586 square miles.

Records available.- June 1924 to April 1926, February 1939 to September 1947.

Extremes.- Maximum discharge during year, 14,600 second-feet Nov. 7 (gage height, 19.98 feet); no flow Aug. 1-17.

1924-26, 1939-47: Maximum discharge, 75,600 second-feet Mar. 30, 1945 (gage height, 29.85 feet, from floodmark), from rating curve extended above 49,000 second-feet; no flow at times.

Flood of June 7, 1943, reached a gage height of 25.9 feet (discharge, 51,600 second-feet); flood of July 1895 reached about same stage, from information by local residents.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Gage read twice daily, oftener during high stages. No diversion.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1	36	2.9	314	442	135	81	402	335	78	18	0	98
2	81	36	236	402	111	81	362	442	138	8.9	0	22
3	28	310	177	566	99	81	244	402	228	7.0	0	16
4	18	1,060	138	680	90	78	191	260	121	6.2	0	10
5	12	5,130	111	700	87	76	163	106	68	5.3	0	5.3
6	7.5	9,540	102	620	84	76	149	68	41	4.8	0	3.7
7	5.5	13,400	93	347	81	134	135	64	30	4.3	0	2.8
8	3.9	9,800	87	260	78	500	132	113	25	3.4	0	2.3
9	3.2	4,790	135	236	76	602	66	467	22	2.4	0	1.8
10	2.8	5,140	355	220	73	532	142	740	20	1.9	0	1.7
11	2.9	6,340	784	205	70	363	362	932	18	1.7	0	1.5
12	2.3	4,220	1,440	220	81	294	836	604	17	1.5	0	1.4
13	2.0	1,550	3,270	252	96	484	4,780	185	15	1.1	0	6.8
14	1.9	859	4,790	252	108	888	7,140	87	14	1.0	0	42
15	1.8	380	2,870	236	105	1,320	4,670	67	13	1.0	0	142
16	2.4	228	1,560	400	99	1,340	2,700	102	12	.8	0	63
17	3.5	184	830	742	96	840	1,800	554	12	.7	0	19
18	7.5	149	402	1,420	90	333	1,370	973	11	.6	.1	10
19	16	128	236	2,490	96	228	1,100	2,520	10	.5	.2	6.0
20	25	118	174	3,100	170	228	740	1,970	12	.4	.2	4.4
21	22	114	142	1,980	184	236	532	1,190	42	.4	.2	4.8
22	16	102	132	1,080	198	276	532	532	137	.4	.1	4.4
23	12	90	124	980	191	284	451	236	304	.3	.1	3.0
24	11	81	111	560	138	314	244	149	470	.3	.1	2.4
25	9.7	112	108	390	118	402	163	184	700	.3	.1	2.8
26	7.5	789	105	294	96	442	149	191	700	.2	.1	5.3
27	6.0	1,030	105	228	84	390	160	138	431	.2	.1	7.8
28	4.8	700	114	205	81	182	170	105	112	.2	.4	6.5
29	3.7	548	201	184	-	163	138	78	62	.1	58	3.7
30	2.9	428	334	170	-	261	152	73	35	.1	268	3.0
31	2.4	-	390	156	-	354	-	84	-	.1	344	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	361.2	81	1.8	11.7	0.020	0.02	716
November	67,358.9	13,400	2.9	2,245	3.83	4.27	133,600
December	19,970	4,790	87	644	1.10	1.27	39,610
Calendar year 1946	364,811.2	15,400	0	999	1.70	23.14	723,500
January	20,017	3,100	156	646	1.10	1.27	39,700
February	3,015	198	70	108	.184	.19	5,980
March	11,863	1,340	76	383	.653	.75	23,530
April	30,175	7,140	66	1,006	1.72	1.91	59,850
May	13,951	2,520	64	450	.768	.89	27,670
June	3,898	700	10	130	.222	.25	7,730
July	74.1	18	.1	2.39	.0041	.005	147
August	671.7	344	0	21.7	.037	.04	1,330
September	503.4	142	1.4	16.8	.029	.03	998
Water year 1946-47	171,858.3	13,400	0	471	.804	10.90	340,900

Note.- No gage-height record Oct. 19, Nov. 11, 12, Feb. 25, July 25 to Aug. 18, Aug. 20-23; discharge computed on basis of 1 discharge measurement, observer's notes, and estimated gage heights.

Big Sandy Creek near Big Sandy, Tex.

Location.- Water-stage recorder, lat. 32°37', long. 95°06', at county highway bridge, 2.2 miles northeast of Big Sandy, Upshur County, and 7.8 miles upstream from mouth. Datum of gage is 281.6 feet above mean sea level, unadjusted.

Drainage area.- 235 square miles.

Records available.- February 1939 to September 1947.

Extremes.- Maximum discharge during year, 2,250 second-feet Nov. 9 (gage height, 15.54 feet); minimum, 21 second-feet Sept. 9-11.

1939-47: Maximum discharge, 38,000 second-feet Mar. 31, 1945 (gage height, 22.4 feet, from floodmark), from rating curve extended above 3,000 second-feet; minimum observed, 7.7 second-feet Sept. 30, 1939.

Maximum stage known prior to 1945, 20.4 feet (probably backwater from Sabine River) in January 1938, from information by observer.

Remarks.- Records good. No large diversions above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	53	630	228	212	200	279	243	104	42	25	26
2	65	57	485	279	196	188	270	392	121	39	24	26
3	81	122	403	339	192	180	289	339	124	37	24	31
4	90	244	329	329	184	176	309	261	124	36	24	28
5	84	394	270	319	172	180	299	220	150	35	24	26
6	63	628	244	339	165	180	261	184	204	34	24	25
7	50	1,380	220	392	161	252	228	165	220	32	24	23
8	44	1,870	204	392	154	359	212	161	158	31	23	22
9	41	1,990	212	339	150	339	236	172	104	30	23	21
10	46	1,830	228	299	150	370	236	176	77	29	23	21
11	56	1,100	236	270	150	403	244	188	63	28	23	21
12	58	1,280	319	261	180	449	236	204	57	28	26	25
13	53	1,410	349	252	188	530	568	212	52	28	32	35
14	52	955	514	244	188	485	735	212	48	28	32	35
15	57	655	812	244	184	449	975	184	46	28	28	76
16	58	515	735	244	184	403	1,160	158	44	28	26	53
17	60	437	590	329	192	392	955	200	42	27	31	41
18	62	349	461	425	196	381	680	204	41	27	28	34
19	60	289	381	437	218	359	530	196	40	28	28	31
20	60	261	319	590	349	309	437	283	41	30	27	40
21	60	244	270	848	319	270	359	582	130	29	26	61
22	58	228	244	735	289	244	289	570	132	27	25	64
23	57	212	220	570	270	244	252	425	110	26	24	54
24	56	192	204	473	261	279	261	319	104	29	24	42
25	56	341	196	403	261	261	319	244	107	30	24	37
26	55	865	192	339	279	244	339	200	98	29	24	34
27	53	530	188	289	220	244	289	169	84	28	26	32
28	51	515	188	261	204	252	244	146	70	27	28	28
29	51	768	220	244	-	261	220	124	57	26	30	26
30	52	848	228	244	-	339	212	118	48	26	29	26
31	52	-	228	228	-	319	-	107	-	25	27	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	1,803	90	41	58.2	0.248	0.29	3,580
November	20,562	1,990	53	685	2.91	3.25	40,780
December	10,319	812	188	333	1.42	1.63	20,470
Calendar year 1946	157,692	6,100	30	432	1.84	24.96	312,800
January	11,185	848	228	361	1.54	1.77	22,190
February	5,868	349	150	210	.894	.93	11,640
March	9,541	530	176	308	1.31	1.51	18,920
April	11,923	1,160	212	397	1.69	1.89	23,650
May	7,358	582	107	237	1.01	1.16	14,590
June	2,800	220	40	93.3	.397	.44	5,550
July	927	42	25	29.9	.127	.15	1,840
August	806	32	23	26.0	.111	.13	1,600
September	1,044	76	21	34.8	.148	.17	2,070
Water year 1946-47	84,136	1,990	21	231	.983	13.32	166,900

Cherokee Bayou near Elderville, Tex.

Location.- Water-stage recorder, lat. 32°20', long. 94°42', at bridge on county highway, 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. Datum of gage is 266.8 feet above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Drainage area.- 116 square miles (revised).

Records available.- August 1939 to September 1947.

Extremes.- Maximum discharge during year, 3,520 second-feet May 17 (gage height, 8.88 feet); minimum, 2.7 second-feet Aug. 15 (gage height, 2.43 feet).

1939-47: Maximum discharge, 10,200 second-feet Nov. 23, 1940 (gage height, 12.81 feet), from rating curve extended above 4,500 second-feet by logarithmic plotting; no flow at times.

Maximum stage known, about 14.0 feet in September 1913, from information by local residents.

Remarks.- Records good. No diversions above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	49	31	176	166	157	166	516	136	272	22	6.8	10
2	34	42	151	250	144	168	322	120	146	21	6.1	8.9
3	29	122	134	340	136	164	263	104	110	19	5.4	8.0
4	27	349	122	404	132	155	237	92	92	17	5.2	7.1
5	24	362	115	401	126	151	219	84	79	16	4.6	6.2
6	23	518	111	347	130	151	200	79	69	14	4.5	5.4
7	22	562	108	214	128	250	188	94	62	14	4.3	5.1
8	22	546	108	219	122	398	190	145	57	14	4.1	5.0
9	21	394	142	248	120	514	207	302	53	11	4.0	4.2
10	24	550	202	258	117	343	305	240	46	11	3.4	3.9
11	24	510	272	263	117	250	378	164	41	10	3.1	4.4
12	21	502	305	245	146	283	294	111	39	10	3.2	3.9
13	22	308	263	222	162	612	522	92	36	10	3.3	3.5
14	22	185	280	209	183	1,080	635	82	31	10	3.1	3.3
15	22	132	240	200	173	498	521	75	30	10	3.2	15
16	26	207	190	192	153	319	346	172	28	9.3	4.2	24
17	31	322	159	232	140	253	286	2,400	27	8.9	4.0	30
18	38	476	138	294	134	232	235	1,710	27	9.2	4.5	40
19	56	331	130	731	196	253	195	626	27	25	4.1	30
20	80	207	168	1,160	404	280	183	328	41	18	4.4	51
21	68	153	180	740	574	302	180	245	77	24	4.6	47
22	44	150	230	394	440	250	214	192	96	24	4.4	49
23	32	119	204	283	277	274	185	176	110	20	4.0	47
24	29	111	162	245	214	368	148	155	82	16	3.7	30
25	31	117	142	230	192	432	178	185	60	12	3.4	20
26	28	438	138	217	173	325	219	151	51	11	5.0	16
27	31	938	136	207	162	237	274	130	43	11	10	13
28	37	570	134	195	164	200	240	110	36	12	11	11
29	36	319	155	188	-	211	178	130	30	9.8	18	10
30	32	219	142	180	-	651	151	286	26	8.9	17	10
31	31	-	151	166	-	818	-	328	-	7.8	13	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	1,016	80	21	32.8	0.298	0.34	2,020
November	9,770	938	31	326	2.96	3.30	19,380
December	5,288	305	108	171	1.55	1.79	10,490
Calendar year 1946	84,342.7	2,580	5.2	231	2.10	28.52	167,300
January	9,640	1,160	166	311	2.83	3.26	19,120
February	5,316	574	117	190	1.73	1.80	10,540
March	10,588	1,080	151	342	3.11	3.58	21,000
April	8,209	635	148	274	2.49	2.78	16,280
May	9,244	2,400	75	298	2.71	3.13	18,340
June	1,924	272	26	64.1	.583	.65	3,820
July	435.9	25	7.8	14.1	.128	.15	865
August	179.6	18	3.1	5.79	.053	.06	356
September	521.9	51	3.3	17.4	.158	.18	1,040
Water year 1946-47	62,132.4	2,400	3.1	170	1.55	21.02	123,300

Neches River near Neches, Tex.

Location.- Water-stage recorder, 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, and 4.4 miles northeast of Neches, Anderson County. Datum of gage is 263.9 feet above mean sea level, datum of 1929.

Drainage area.- 1,129 square miles.

Records available.- February 1939 to September 1947.

Extremes.- Maximum discharge during year, 10,700 second-feet Nov. 10 (gage height, 16.82 feet); minimum, 32 second-feet Aug. 16 (gage height, 2.86 feet).

1939-47: Maximum discharge, 45,500 second-feet Apr. 2, 1945 (gage height, 22.07 feet); no flow Oct. 3-5, 1939.

Flood of May 1908 reached a stage of 24.3 feet, from information by local resident. Flood of May 1884 was probably higher.

Remarks.- Records good. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	532	404	2,920	940	1,350	1,560	1,380	1,130	660	332	56	50
2	508	426	2,920	1,030	1,260	1,380	1,350	1,090	743	304	53	58
3	496	508	2,650	1,170	1,170	1,260	1,380	1,000	840	268	51	66
4	496	706	2,470	1,210	1,090	1,130	1,440	915	865	236	48	63
5	508	1,100	2,240	1,260	1,030	1,060	1,560	840	840	205	47	61
6	496	2,220	1,970	1,300	970	1,000	1,560	762	781	184	45	57
7	448	4,420	1,680	1,300	915	1,030	1,440	690	690	166	41	51
8	382	7,870	1,480	1,380	890	1,300	1,380	645	606	160	39	46
9	342	9,600	1,410	1,480	820	1,520	1,300	645	520	151	38	55
10	322	10,700	1,380	1,560	781	1,680	1,300	645	426	136	36	56
11	313	9,860	1,350	1,680	743	1,870	1,440	606	362	127	35	52
12	313	8,830	1,480	1,780	724	2,380	1,730	568	313	121	35	50
13	286	8,100	1,600	1,820	724	3,610	2,300	544	277	112	35	68
14	268	6,590	1,730	1,780	724	3,530	3,720	532	252	108	33	80
15	268	5,130	1,780	1,680	724	3,370	4,900	520	236	105	32	75
16	286	4,350	1,820	1,600	724	3,060	5,250	544	220	100	32	82
17	313	3,530	1,820	1,640	743	2,990	6,780	826	205	95	35	88
18	332	2,990	1,920	1,920	743	3,060	6,590	1,000	198	90	38	80
19	352	2,710	2,130	2,300	781	3,210	5,250	1,090	191	92	42	78
20	362	2,350	2,300	2,650	1,030	2,920	3,970	1,200	316	110	44	108
21	393	2,080	2,240	2,850	1,260	2,590	3,060	1,560	568	105	44	151
22	437	1,820	1,970	3,130	1,350	2,180	2,530	1,870	632	90	42	142
23	484	1,640	1,730	3,290	1,350	1,970	2,130	1,820	580	80	40	121
24	532	1,520	1,520	3,370	1,350	2,130	1,730	1,440	606	80	39	110
25	580	1,600	1,350	3,210	1,480	2,080	1,560	1,170	645	82	37	118
26	619	2,650	1,210	2,850	1,640	1,970	1,520	970	619	78	37	121
27	606	2,590	1,130	2,470	1,680	1,780	1,410	800	556	72	42	110
28	580	2,590	1,060	2,130	1,680	1,600	1,350	690	472	70	46	98
29	544	2,470	1,030	1,870	-	1,520	1,260	632	415	68	46	88
30	496	2,650	1,030	1,640	-	1,440	1,210	645	372	66	45	80
31	448	-	970	1,480	-	1,440	-	645	-	61	45	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	13,342	619	268	430	0.381	0.44	26,460
November	114,004	10,700	404	3,800	3.37	3.76	226,100
December	54,290	2,920	970	1,751	1.55	1.79	107,700
Calendar year 1946	676,321	11,200	40	1,853	1.64	22.30	1,342,000
January	59,770	3,370	940	1,928	1.71	1.97	118,600
February	29,726	1,680	724	1,062	.941	.98	58,960
March	63,620	3,610	1,000	2,052	1.82	2.10	126,200
April	73,780	6,780	1,210	2,459	2.18	2.43	146,300
May	28,034	1,870	520	904	.801	.92	55,600
June	15,006	865	191	500	.443	.49	29,760
July	4,054	332	61	131	.116	.13	8,040
August	1,278	56	32	41.2	.036	.04	2,530
September	2,463	151	46	82.1	.073	.08	4,890
Water year 1946-47	459,367	10,700	32	1,259	1.12	15.13	911,100

Neches River near Alto, Tex.

Location.- Water-stage recorder, lat. 31°34', long. 95°10', at bridge on State Highway 21, 600 feet downstream from Bowles Creek and 7½ miles southwest of Alto, Cherokee County. Datum of gage is 198.29 feet above mean sea level, datum of 1929, supplementary adjustment of 1937.

Drainage area.- 1,903 square miles.

Records available.- January 1944 to September 1947.

Extremes.- Maximum discharge during year, 9,480 second-feet Nov. 13 (gage height, 18.79 feet); minimum, 99 second-feet Aug. 17; minimum gage height, 2.83 feet Sept. 10.
1944-47: Maximum discharge, 42,800 second-feet Apr. 4, 1945 (gage height, 26.85 feet); minimum observed, 59 second-feet Aug. 10, 1944 (gage height, 2.35 feet).
Maximum stage known, about 28.2 feet in May 1884, from information by local residents.

Remarks.- Records good. No large diversions above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	912	838	3,930	2,150	3,230	2,060	2,920	2,460	3,350	880	190	121
2	880	978	3,620	2,240	2,920	2,100	2,750	2,290	2,750	768	154	113
3	824	996	3,350	2,460	2,750	2,150	2,670	2,200	2,240	698	137	107
4	768	1,100	3,230	2,530	2,600	2,150	2,530	2,060	1,910	631	133	104
5	740	1,740	3,120	2,400	2,400	2,200	2,460	1,880	1,700	579	125	104
6	712	2,460	3,120	2,340	2,240	2,200	2,400	1,740	1,510	542	121	107
7	684	2,760	3,120	2,290	2,150	2,240	2,290	1,600	1,460	496	113	108
8	657	3,950	3,120	2,240	2,020	2,400	2,290	1,630	1,410	455	108	106
9	644	4,940	3,120	2,340	1,910	2,460	2,290	1,800	1,360	425	103	103
10	631	5,700	3,120	2,460	1,800	2,400	2,340	1,700	1,280	395	101	100
11	618	7,440	3,120	2,530	1,700	2,340	2,340	1,540	1,150	365	104	108
12	592	8,760	3,020	2,460	1,630	2,340	2,290	1,410	1,010	345	108	133
13	542	9,480	3,020	2,480	1,600	3,680	2,240	1,280	880	335	110	125
14	496	9,120	2,920	2,460	1,540	6,800	2,240	1,170	782	315	109	117
15	485	8,400	2,750	2,460	1,480	7,440	2,240	1,050	684	305	106	111
16	465	8,400	2,670	2,460	1,430	7,440	2,240	978	631	295	103	113
17	465	8,400	2,530	2,670	1,380	6,520	2,460	1,920	579	275	102	129
18	485	8,080	2,460	3,120	1,330	5,960	2,940	5,390	542	255	113	145
19	554	7,120	2,460	3,350	1,330	5,960	4,440	7,440	507	250	111	137
20	579	5,960	2,670	3,480	1,630	6,240	6,800	7,120	548	245	108	150
21	566	5,180	2,920	3,480	1,940	5,960	7,760	7,760	1,290	245	112	172
22	542	4,480	2,920	3,620	2,020	5,700	7,120	6,240	1,700	230	117	208
23	530	3,930	2,920	3,620	1,980	5,440	6,240	4,480	1,630	226	117	212
24	554	3,620	2,920	3,770	2,020	5,700	5,180	3,770	1,630	226	113	212
25	670	3,230	2,830	3,770	2,020	5,960	4,280	3,350	1,740	212	108	217
26	796	3,230	2,830	3,930	2,020	5,440	3,770	3,120	1,600	199	107	204
27	838	3,230	2,750	3,930	2,020	4,280	3,350	2,920	1,410	194	117	186
28	824	3,350	2,600	4,100	2,060	3,770	3,020	2,750	1,280	186	125	176
29	838	3,620	2,460	3,930	-	3,480	2,750	2,750	1,130	186	125	176
30	852	3,770	2,340	3,770	-	3,230	2,600	3,350	996	176	125	172
31	852	-	2,240	3,480	-	3,120	-	3,620	-	186	125	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	20,595	912	465	664	0.349	0.40	40,850
November	144,262	9,480	838	4,809	2.53	2.82	286,100
December	90,200	3,930	2,240	2,910	1.53	1.76	178,900
Calendar year 1946	998,926	9,480	107	2,737	1.44	19.52	1,981,000
January	92,300	4,100	2,150	2,977	1.56	1.80	183,100
February	55,150	3,230	1,330	1,970	1.04	1.08	109,400
March	129,160	7,440	2,060	4,166	2.19	2.52	256,200
April	101,240	7,760	2,240	3,375	1.77	1.98	200,800
May	92,768	7,760	978	2,993	1.57	1.81	184,000
June	40,689	3,350	507	1,356	.713	.80	80,710
July	11,120	880	176	359	.189	.22	22,060
August	3,650	190	101	118	.062	.07	7,240
September	4,276	217	100	143	.075	.08	8,480
Water year 1946-47	785,410	9,480	100	2,152	1.13	15.34	1,558,000

Neches River near Diboll, Tex.

Location.- Wire-weight gage, lat. 31°08', long. 94°48', at bridge on U. S. Highway 59, 630 feet downstream from Texas & New Orleans Railroad bridge, 2.9 miles downstream from Alabama Creek, and 3.8 miles south of Diboll, Angelina County. Datum of gage is 134.46 feet above mean sea level, datum of 1929.

Drainage area.- 2,670 square miles.

Records available.- November 1923 to August 1925, March 1939 to September 1947.

Extremes.- Maximum discharge during year, 13,300 second-feet Nov. 19 (gage height, 15.30 feet); minimum observed, 114 second-feet Sept. 9, 13.
1923-25, 1939-47: Maximum discharge, 49,900 second-feet May 4, 1944 (gage height, 18.70 feet); no flow Aug. 15-22, 1925.
Maximum stage known, about 21.0 feet in May 1884, present site, from information by local residents.

Remarks.- Records good. Gage read once or twice daily. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	748	728	4,790	4,250	4,400	2,370	5,150	4,400	5,710	1,540	296	134
2	810	810	4,400	4,400	4,400	2,370	4,580	4,120	4,900	1,440	189	136
3	876	968	4,120	4,680	4,400	2,370	4,250	3,860	4,400	1,360	189	138
4	898	1,550	3,990	5,280	4,250	2,370	3,990	3,480	3,990	1,220	189	134
5	944	2,200	3,860	5,710	4,250	2,370	3,730	3,120	3,730	1,120	182	133
6	944	3,430	3,860	5,150	4,120	2,560	3,600	2,770	3,480	1,020	170	127
7	944	4,580	3,860	4,900	3,990	3,120	3,480	2,560	3,360	898	157	122
8	898	4,490	3,990	5,860	3,600	3,480	3,240	2,460	3,120	788	147	117
9	854	4,250	4,120	6,910	3,480	3,730	3,240	2,460	2,660	628	144	114
10	810	4,400	4,250	6,720	3,360	3,730	3,120	2,460	2,370	550	139	115
11	788	4,580	4,250	5,560	3,120	3,730	3,000	2,280	2,000	496	135	117
12	768	4,900	4,400	5,020	3,000	3,990	2,880	1,940	1,750	433	129	117
13	748	5,020	4,680	4,680	2,880	7,510	2,770	1,790	1,600	384	126	115
14	708	5,710	4,900	4,400	2,770	9,300	2,770	1,750	1,470	368	124	117
15	668	6,720	4,900	4,120	2,560	9,300	2,660	1,710	1,360	a344	124	124
16	648	9,070	4,900	4,120	2,370	8,160	2,560	1,640	1,270	a320	124	128
17	588	11,200	4,580	7,260	2,280	6,720	2,560	2,330	992	a296	126	130
18	550	12,600	4,400	10,300	2,130	6,720	2,460	3,830	920	a282	126	127
19	532	13,300	4,250	10,000	2,060	7,100	2,460	4,580	854	a275	124	126
20	532	12,600	4,250	9,070	2,460	7,940	2,460	4,680	768	a268	123	129
21	532	11,200	4,120	8,840	3,000	9,540	2,460	4,900	728	254	124	140
22	550	10,300	4,120	8,160	3,480	9,300	2,460	5,150	748	a248	133	150
23	550	9,070	3,990	7,100	3,480	8,380	2,770	5,560	992	a241	134	151
24	568	7,940	3,860	6,190	3,240	7,720	3,360	6,540	1,300	234	130	157
25	588	7,300	3,860	5,420	3,000	7,300	4,790	7,720	1,360	228	130	170
26	568	6,720	3,730	5,150	2,770	6,910	6,540	7,940	1,470	222	133	189
27	568	6,190	3,730	4,680	2,560	6,910	6,190	6,720	1,540	222	134	202
28	608	5,710	3,730	4,400	2,460	6,720	5,710	5,420	1,570	215	134	208
29	648	5,420	3,600	4,400	-	6,380	5,420	4,490	a1,600	208	132	208
30	668	5,150	3,600	4,250	-	6,020	4,900	5,150	1,600	202	130	202
31	708	-	3,860	4,250	-	5,560	-	6,360	-	196	132	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	21,812	944	532	704	0.264	0.30	43,260
November	188,106	13,300	728	6,270	2.35	2.62	373,100
December	128,950	4,900	3,600	4,160	1.56	1.80	255,800
Calendar year 1946	1,540,108	24,200	106	4,219	1.58	21.45	3,055,000
January	181,230	10,300	4,120	5,846	2.19	2.52	359,500
February	89,870	4,400	2,060	3,210	1.20	1.25	178,300
March	179,660	9,540	2,370	5,795	2.17	2.50	356,400
April	109,560	6,540	2,460	3,652	1.37	1.53	217,300
May	124,170	7,940	1,640	4,005	1.50	1.73	246,300
June	63,612	5,710	728	2,120	.794	.89	126,200
July	16,500	1,540	196	532	.199	.23	32,730
August	4,409	196	123	142	.053	.06	8,750
September	4,277	208	114	143	.054	.06	8,480
Water year 1946-47	1,112,156	13,300	114	3,047	1.14	15.49	2,206,000

a No gage-height record; discharge computed on basis of estimated gage heights.

Neches River near Rockland, Tex.

Location.- Staff gage, lat. 31°01'45", long. 94°23'50", 2,200 feet downstream from bridge on U. S. Highway 69, 2,100 feet upstream from Texas & New Orleans Railroad bridge, 1 mile north of Rockland, Tyler County, and 3.6 miles downstream from Billams Creek. Datum of gage is 91.4 feet above mean sea level, datum of 1929.

Drainage area.- 3,539 square miles.

Records available.- July 1903 to September 1947 (July 1903 to September 1923, monthly records only, in Water-Supply Paper 850), U. S. Weather Bureau has collected gage-height records in this vicinity since 1903.

Average discharge.- 41 years (1903-10, 1913-47), 2,565 second-feet.

Extremes.- Maximum discharge during year, 17,700 second-feet Mar. 15 (gage height, 22.92 feet); minimum observed, 122 second-feet Sept. 9-17.
1903-47: Maximum discharge, 49,800 second-feet May 6, 1944 (gage height, 31.84 feet); minimum observed during period of daily records, 3.0 second-feet Oct. 15, 1931. Maximum stage known, 34.9 feet in May 1884, from information by local resident.

Remarks.- Records good. Gage read twice daily. No large diversion above station. Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	775	796	8,090	5,280	6,060	3,600	7,300	5,820	9,280	1,750	248	144
2	796	838	7,360	6,260	5,520	3,360	7,100	5,940	8,750	1,750	228	144
3	796	1,270	6,710	6,840	5,220	3,080	6,840	5,700	8,160	1,900	222	144
4	838	3,730	6,260	7,100	4,980	2,920	6,450	5,400	7,820	1,750	215	144
5	882	4,680	5,820	7,620	4,860	2,800	6,060	4,980	7,230	1,600	211	148
6	904	6,900	5,460	7,880	4,860	2,750	5,580	4,560	6,640	1,500	206	146
7	926	8,160	5,100	8,450	4,800	3,080	5,220	4,140	6,000	1,300	202	144
8	948	8,300	4,740	9,500	4,740	3,540	4,800	3,840	5,460	1,130	194	137
9	926	8,160	4,440	10,600	4,680	3,900	4,500	3,480	5,100	993	174	128
10	926	11,600	4,320	11,800	4,560	4,200	4,200	3,300	4,680	860	170	122
11	1,680	14,900	4,560	12,400	4,380	4,320	3,960	3,140	4,080	775	162	122
12	1,220	15,100	5,340	12,500	4,320	4,800	3,720	2,970	3,540	714	154	122
13	970	14,400	5,520	11,900	4,200	11,100	3,480	2,800	3,020	654	148	122
14	882	12,800	5,820	11,200	3,960	13,600	3,360	2,640	2,580	594	138	122
15	817	11,300	6,060	10,100	3,720	17,000	3,240	2,480	2,150	556	135	122
16	775	9,960	6,060	9,420	3,540	17,000	3,190	2,310	1,900	518	131	122
17	754	9,350	6,000	11,400	3,300	15,600	3,020	3,600	1,700	482	131	124
18	714	9,120	5,820	12,600	3,140	14,400	2,920	5,640	1,500	451	129	128
19	694	9,800	5,820	14,200	2,920	13,600	2,800	7,160	1,350	441	138	133
20	948	10,900	6,580	15,300	2,920	12,300	2,750	6,380	1,250	537	142	150
21	796	11,600	6,580	15,300	3,140	11,100	2,700	6,900	1,250	465	135	150
22	654	12,300	6,380	15,100	3,240	10,200	2,640	7,420	1,080	376	129	137
23	634	12,500	6,060	14,000	3,240	9,800	2,580	8,450	970	364	128	137
24	735	12,300	5,760	13,300	3,240	10,000	2,580	9,350	1,130	352	129	146
25	2,070	11,800	5,400	12,400	3,300	10,000	2,580	9,960	1,550	330	150	152
26	1,650	11,500	5,040	11,500	3,540	9,800	2,640	10,100	1,700	316	154	156
27	1,300	11,200	4,800	10,600	3,600	9,420	2,970	10,200	1,800	288	164	164
28	1,150	10,600	4,620	9,500	3,660	8,980	3,480	10,400	1,800	278	152	190
29	1,080	9,880	4,440	8,520	-	8,450	4,320	10,300	1,800	273	152	200
30	948	9,050	4,260	7,620	-	8,020	5,220	9,960	1,800	263	148	206
31	817	-	4,560	6,840	-	7,620	-	9,880	-	253	144	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	30,005	2,070	634	968	0.274	0.32	59,510
November	284,794	15,100	796	9,493	2.68	2.99	564,900
December	173,780	8,090	4,260	5,606	1.58	1.83	344,700
Calendar year 1946	2,101,688	32,100	190	5,758	1.63	22.10	4,169,000
January	327,030	15,300	5,280	10,550	2.98	3.44	648,700
February	113,640	6,060	2,920	4,059	1.15	1.19	225,400
March	260,340	17,000	2,750	8,398	2.37	2.74	516,400
April	122,200	7,300	2,580	4,073	1.15	1.28	242,400
May	189,200	10,400	2,310	6,103	1.72	1.99	375,300
June	107,070	9,280	970	3,569	1.01	1.13	212,400
July	23,813	1,900	253	768	.217	.25	47,230
August	5,063	248	128	163	.046	.05	10,040
September	4,306	206	122	144	.041	.05	8,540
Water year 1946-47	1,641,241	17,000	122	4,497	1.27	17.26	3,256,000

Neches River at Evadale, Tex.

Location.- Staff gage, lat. 30°21', long. 94°05', at bridge on U. S. Highway 96 (renumbered), 200 feet upstream from Gulf, Colorado & Santa Fe Railway bridge at Evadale, Jasper County, and 15 miles upstream from Village Creek. Datum of gage is 8.3 feet above mean sea level, datum of 1929.

Drainage area.- 7,908 square miles.

Records available.- July 1904 to December 1906, October 1923 to September 1947.

Average discharge.- 26 years (1904-6, 1923-47), 6,832 second-feet.

Extremes.- Maximum discharge during year, 34,600 second-feet Jan. 25 (gage height, 17.88 feet, from graph based on gage readings); minimum observed, 440 second-feet Sept. 26, 27.

1904-6, 1923-47: Maximum discharge, 92,100 second-feet May 11, 1944 (gage height, 23.58 feet, from floodmark); minimum observed, about 148 second-feet Sept. 10, 1925.

Maximum stages known, 26.2 feet in 1884 (discharge, about 175,000 second-feet, from rating curve extended above 72,000 second-feet by logarithmic plotting), and 24.5 feet in August 1915 (discharge not determined), from records of Gulf, Colorado & Santa Fe Railway Co.

Remarks.- Records good. Gage read twice daily. No large diversions above station.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used July 11 to Sept. 30)

1.0	440	6.0	2,300	14.0	11,900
2.0	700	8.0	3,400	15.0	15,500
2.5	860	10.0	5,000	16.0	21,000
3.0	1,030	11.0	6,150	17.0	27,600
4.0	1,420	12.5	8,460	18.0	35,400

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,080	2,400	21,600	10,900	26,100	8,660	21,000	9,280	17,500	4,260	855	578
2	2,120	2,210	21,000	11,700	24,200	8,660	19,800	9,730	17,500	4,100	855	552
3	2,160	2,120	21,000	13,200	22,800	8,660	19,200	10,200	17,500	3,960	855	552
4	2,210	4,670	20,400	14,300	21,000	8,460	18,000	10,400	17,500	3,890	820	552
5	2,160	5,220	19,200	15,100	18,600	8,460	17,000	10,400	18,000	3,820	820	540
6	2,160	6,280	17,500	16,000	17,000	8,100	16,000	10,400	18,000	3,750	760	528
7	2,120	7,600	16,000	17,000	15,100	8,100	14,700	9,960	17,500	3,540	745	515
8	2,030	8,460	14,300	17,500	13,500	8,100	13,500	9,280	17,000	3,280	715	502
9	2,030	9,500	12,800	18,000	12,500	8,280	12,200	8,460	16,000	2,980	715	502
10	2,080	10,700	11,900	18,600	11,900	8,660	11,400	7,920	14,300	2,650	715	502
11	2,920	11,700	11,400	19,200	11,400	9,730	11,400	7,440	12,500	2,350	715	490
12	3,400	12,800	11,400	19,800	10,900	10,700	10,900	6,820	10,400	2,210	700	502
13	3,960	15,500	11,100	21,000	10,400	11,900	9,960	6,150	8,460	2,030	700	502
14	3,960	18,000	11,400	22,200	9,960	14,700	9,280	5,910	7,280	1,940	685	490
15	3,280	20,400	12,200	22,800	9,730	18,000	9,060	5,670	6,410	1,800	685	490
16	2,500	22,800	12,500	24,800	9,280	20,400	9,060	5,330	5,790	1,720	685	478
17	2,120	24,800	12,800	26,100	8,860	22,200	9,280	5,000	5,110	1,580	640	465
18	1,980	24,200	12,500	26,800	8,280	24,200	9,500	4,900	4,800	1,500	628	452
19	1,850	23,500	12,500	28,400	7,760	25,400	9,500	5,440	4,800	1,380	640	452
20	1,760	22,200	12,500	29,100	7,280	26,800	9,500	7,760	4,430	1,340	640	452
21	1,720	21,600	12,500	29,100	6,960	27,600	9,280	11,100	5,440	1,300	640	452
22	1,900	21,000	12,800	30,600	6,960	27,600	9,060	13,500	4,430	1,340	615	465
23	1,940	19,200	13,500	32,200	7,280	28,400	8,860	15,100	3,820	1,380	602	502
24	1,760	18,600	14,300	33,800	7,920	27,600	8,660	17,000	3,540	1,220	578	515
25	1,800	18,600	14,700	34,600	8,280	26,100	8,460	16,500	3,540	1,060	602	478
26	1,850	19,800	14,300	33,800	8,460	25,400	8,280	15,500	3,960	1,030	590	452
27	2,300	20,400	13,200	33,000	8,460	24,200	8,280	15,100	4,520	1,030	590	440
28	2,920	21,000	12,500	32,200	8,660	22,800	8,460	15,100	4,700	1,030	628	478
29	2,860	21,600	11,700	31,400	-	22,200	8,660	15,100	4,610	960	655	502
30	2,700	21,600	10,900	29,800	-	22,200	8,860	16,000	4,430	925	655	528
31	2,500	-	10,700	27,600	-	21,600	-	17,500	-	890	615	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	73,130	3,960	1,720	2,359	0.298	0.34	145,100
November	458,460	24,800	2,120	15,280	1.93	2.16	909,300
December	437,100	21,600	10,700	14,100	1.78	2.06	867,000
Calendar year 1946	4,786,390	56,000	860	13,110	1.66	22.52	9,494,000
January	740,600	34,600	10,900	23,890	3.02	3.48	1,469,000
February	339,530	26,100	6,960	12,130	1.53	1.60	673,400
March	543,870	28,400	8,100	17,540	2.22	2.56	1,079,000
April	347,100	21,000	8,280	11,570	1.46	1.63	688,500
May	323,950	17,500	4,900	10,450	1.32	1.52	642,500
June	283,770	18,000	3,540	9,459	1.20	1.34	562,800
July	66,245	4,260	890	2,137	.270	.31	131,400
August	21,343	855	578	688	.087	.10	42,330
September	14,908	578	440	497	.063	.07	29,570
Water year 1946-47	3,650,006	34,600	440	10,000	1.26	17.17	7,240,000

Mud Creek near Jacksonville, Tex.

Location.- Water-stage recorder, 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. Datum of gage is 271.6 feet above mean sea level, datum of 1929.

Drainage area.- 382 square miles.

Records available.- May 1939 to September 1947.

Extremes.- Maximum discharge during year, 7,700 second-feet May 17 (gage height, 10.14 feet); minimum, 6.3 second-feet Sept. 9 (gage height, 1.72 feet).
1939-47: Maximum discharge, 23,400 second-feet May 3, 1944 (gage height, 14.09 feet); no flow at times.
Maximum stage known occurred in May 1884, from information by local residents.

Remarks.- Records good except those for period of no gage-height record, which are fair. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	184	91	945	384	410	348	652	480	1,320	88	24	24
2	180	184	724	637	387	324	774	360	1,670	83	23	19
3	170	232	627	714	372	312	867	292	1,060	78	22	16
4	142	525	540	627	348	324	774	247	754	74	21	13
5	123	1,310	480	627	312	312	644	214	635	71	19	10
6	102	4,370	440	644	292	302	528	194	540	68	17	9.1
7	80	4,980	402	635	284	447	486	184	384	64	16	7.7
8	68	3,290	378	596	270	855	378	177	230	66	14	7.5
9	64	2,500	430	610	264	806	1,210	184	188	62	13	6.7
10	88	2,400	516	627	258	974	1,030	210	170	58	12	9.4
11	123	1,770	534	618	252	904	843	232	152	54	11	7.7
12	146	1,220	724	644	264	945	843	218	138	52	11	8.3
13	156	1,050	774	644	292	3,080	1,120	194	129	50	21	9.6
14	146	916	734	627	302	1,780	1,260	170	120	50	23	12
15	123	744	764	582	324	1,330	1,920	156	111	48	28	20
16	105	1,180	764	534	348	1,120	2,060	567	105	46	24	68
17	83	1,240	714	635	348	945	1,420	5,730	100	44	21	132
18	78	744	610	784	312	818	1,030	4,580	100	43	18	149
19	108	714	528	1,180	360	831	867	3,310	102	83	17	135
20	163	774	627	2,080	974	774	774	2,040	193	69	16	105
21	210	744	596	1,860	892	660	724	2,640	324	47	17	94
22	232	644	522	1,330	806	644	677	1,280	324	45	16	111
23	218	540	492	1,000	855	734	652	794	360	39	14	126
24	180	445	480	831	855	945	582	635	498	36	13	105
25	138	421	455	744	734	831	568	516	339	33	12	65
26	120	2,240	418	652	589	855	603	375	214	32	12	50
27	111	1,930	381	582	445	904	547	302	166	31	13	43
28	102	2,500	360	540	372	831	596	284	132	30	16	40
29	94	2,020	381	516	-	694	618	264	114	28	18	37
30	88	1,390	384	480	-	694	596	247	100	27	21	36
31	88	-	363	440	-	677	-	274	-	26	23	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	4,013	232	64	129	0.338	0.39	7,960
November	43,108	4,980	91	1,437	3.76	4.20	85,500
December	17,087	945	360	551	1.44	1.66	33,890
Calendar year 1946	235,222	4,980	12	644	1.69	22.89	466,600
January	23,404	2,080	384	755	1.98	2.28	46,420
February	12,521	974	252	447	1.17	1.22	24,840
March	26,000	3,080	302	839	2.20	2.53	51,570
April	25,643	2,060	378	855	2.24	2.50	50,860
May	27,350	5,730	156	882	2.31	2.66	54,250
June	10,752	1,670	100	358	.937	1.05	21,330
July	1,625	88	26	52.4	.137	.16	3,220
August	546	28	11	17.6	.046	.05	1,080
September	1,476.0	149	6.7	49.2	.129	.14	2,930
Water year 1946-47	193,525.0	5,730	6.7	530	1.39	18.84	383,800

Note.- No gage-height record Oct. 1-27; discharge computed on basis of recorded range in stage, weather records, and records for nearby stations.

Angelina River near Alto, Tex.

Location.- Chain gage, 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. Datum of gage is 204.3 feet above mean sea level, datum of 1929.

Drainage area.- 1,274 square miles (revised).

Records available.- May to August 1940 (discharge measurements only). September 1940 to September 1947 (fragmentary for 1941, 1942, 1944-47).

Extremes.- Maximum gage height observed during year, 19.16 feet May 21 (discharge not determined); minimum discharge observed, 64 second-feet Aug. 14, 15.
1940-47: Maximum gage height observed, 21.52 feet May 5, 1944, but may have been higher during period of no gage-height record in November 1940; minimum discharge observed, 11 second-feet Aug. 30, 31, Sept. 25-27, 1943.

Remarks.- Records good. Discharge above 2,300 second-feet not computed. Gage read twice daily. No large diversion above station.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used July 26 to Sept. 30)

3.1	60	7.0	466
3.5	90	9.0	766
4.0	132	11.0	1,140
5.0	234	13.0	1,560
6.0	344	15.1	2,300

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	622	404	-	1,430	1,960	2,240	-	1,410	1,340	480	114	101
2	670	750	-	1,540	1,710	1,920	-	1,360	1,140	392	118	97
3	670	670	-	1,630	1,540	1,680	2,180	1,320	998	344	118	92
4	592	766	-	1,660	1,430	1,490	2,030	1,240	1,020	300	108	88
5	522	978	-	1,770	1,320	1,360	1,960	1,160	1,280	289	102	83
6	466	1,340	-	1,960	1,240	1,260	1,920	1,040	1,450	262	96	79
7	404	1,580	-	2,300	1,160	1,300	1,920	906	1,430	240	91	76
8	344	1,960	2,120	-	1,100	1,430	2,240	816	1,320	234	84	74
9	289	-	1,860	-	1,040	1,430	2,120	750	1,160	218	78	72
10	256	-	1,740	-	998	1,520	2,300	702	978	228	75	69
11	272	-	1,890	-	960	1,680	-	686	816	220	73	64
12	272	-	1,830	-	942	1,990	-	686	654	218	68	61
13	256	-	1,770	-	942	-	-	670	550	186	67	59
14	256	-	1,860	-	960	-	-	670	466	176	65	62
15	250	-	2,030	-	978	-	-	654	416	171	65	68
16	245	-	-	-	1,020	-	-	638	380	166	68	82
17	245	-	-	-	1,040	-	-	1,020	356	161	72	110
18	262	-	-	-	1,060	-	-	2,030	333	156	80	136
19	300	-	-	-	1,060	-	-	-	333	166	77	166
20	322	-	-	-	1,320	-	-	-	392	181	77	191
21	344	-	-	-	1,360	-	-	-	522	171	77	201
22	368	-	-	-	1,470	-	-	-	564	218	85	223
23	380	-	-	-	1,680	-	-	-	798	218	77	267
24	380	-	2,240	-	2,030	-	-	-	978	191	73	272
25	440	-	2,180	-	-	-	2,300	-	998	171	72	245
26	480	-	2,120	-	-	-	1,960	-	1,020	166	72	228
27	522	-	2,030	-	-	-	1,770	-	1,020	151	71	223
28	550	2,240	1,890	-	-	-	1,630	-	960	141	74	201
29	550	-	1,740	-	-	-	1,540	-	834	132	88	171
30	508	-	1,610	-	-	-	1,470	1,920	638	123	104	156
31	440	-	1,470	2,240	-	-	-	1,580	-	118	103	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	12,477	670	245	402	0.319	0.37	24,750
November	-	-	-	-	-	-	-
December	-	-	-	-	-	-	-
Calendar year	-	-	-	-	-	-	-
January	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-
April	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-
June	25,144	1,450	333	838	.665	.74	49,870
July	6,596	480	118	213	.169	.19	13,080
August	2,592	118	65	83.6	.066	.08	5,140
September	4,017	272	59	134	.106	.12	7,970
Water year	-	-	-	-	-	-	-

Note.- No gage-height record Nov. 25, Mar. 29, Sept. 1-17; discharge for Sept. 1-17 computed on basis of records for station near Lufkin.

Angelina River near Lufkin, Tex.

Location.- Water-stage recorder, lat. 31°27'40", long. 94°43'35", at bridge on U. S. Highway 59, 400 feet upstream from Procella Creek, half a mile downstream from Little Loco Bayou, 1.5 miles upstream from Texas & New Orleans Railroad bridge, and 8 miles north of Lufkin, Angelina County. Datum of gage is 164.72 feet above mean sea level, datum of 1929.

Drainage area.- 1,575 square miles.

Records available.- October 1923 to September 1934, July 1939 to September 1947.

Average discharge.- 19 years, 1,459 second-feet.

Extremes.- Maximum discharge during year, 10,500 second-feet May 24 (gage height, 13.07 feet); minimum, 62 second-feet Sept. 14.

1923-34, 1939-47: Maximum discharge, 38,200 second-feet Feb. 24, 1932; maximum gage height, 18.55 feet May 7, 1944; minimum discharge, 2.3 second-feet Oct. 12, 1939. Maximum stage known, about 26.5 feet in May 1884, from information by local residents.

Remarks.- Records good except those for period of no gage-height record, which are poor. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	497	570	2,960	2,560			3,260	2,200	3,350	930	149	108
2	519	772	2,700	2,890			3,260	2,020	2,820	772	142	114
3	585	860	2,600	3,100			3,100	1,880	2,360	600	149	111
4	632	1,180	2,650	3,100			2,960	1,750	1,960	508	170	105
5	632	1,910	2,890	2,960		a2,900	2,890	1,690	1,570	442	170	96
6	600	2,280	3,180	2,820			2,700	1,600	1,360	388	142	90
7	542	2,240	3,440	2,650			2,600	1,510	1,360	351	123	84
8	497	2,060	3,540	2,650			2,700	1,880	1,480	324	111	81
9	442	1,920	3,440	2,890			2,760	1,750	1,570	292	102	81
10	388	2,320	3,440	3,030		2,440	2,890	1,450	1,540	276	96	78
11	342	2,650	3,440	3,260		2,280	3,100	1,210	1,450	256	90	72
12	308	3,180	3,440	3,350		2,320	2,820	1,010	1,260	262	90	70
13	300	3,980	3,350	3,260		5,000	2,760	930	1,060	262	84	64
14	292	5,490	3,100	3,180		6,000	2,890	878	842	245	78	62
15	276	6,340	2,890		a2,750	5,320	3,180	860	702	230	75	62
16	276	7,190	2,650			4,240	3,540	860	585	220	72	64
17	269	7,700	2,480			4,100	3,750	1,260	530	210	72	66
18	276	7,020	2,360			5,660	3,860	1,780	486	206	81	75
19	276	6,170	2,400			8,040	4,100	3,930	453	194	87	93
20	300	5,320	2,600			8,380	5,000	3,860	486	202	90	126
21	324	4,530	2,890			7,700	5,830	3,860	685	215	90	160
22	333	4,100	3,100	a4,200		6,680	5,830	4,100	755	220	87	182
23	360	3,750	3,260			6,000	5,490	7,870	860	206	96	190
24	388	3,640	3,180			5,320	4,840	10,100	1,180	215	90	202
25	442	3,440	2,960			4,680	4,240	9,760	1,390	220	87	225
26	464	3,640	2,820			4,240	3,750	8,720	1,390	210	84	235
27	475	3,750	2,700			3,860	3,260	7,530	1,240	198	84	230
28	497	3,750	2,650			3,540	2,960	6,340	1,140	190	90	220
29	519	3,540	2,560		-	3,350	2,650	5,320	1,110	174	87	210
30	542	3,180	2,480		-	3,260	2,440	4,680	1,040	166	87	198
31	555	-	2,480		-	3,260	-	3,980	-	156	93	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	13,148	632	269	424	0.269	0.31	26,080
November	108,472	7,700	570	3,616	2.30	2.56	215,200
December	90,630	3,540	2,360	2,924	1.86	2.14	179,800
Calendar year 1946	930,430	9,400	93	2,549	1.62	21.98	1,845,000
January	113,100	-	-	3,648	2.32	2.67	224,300
February	77,000	-	-	2,750	1.75	1.82	152,700
March	131,770	8,380	-	4,251	2.70	3.11	261,400
April	105,410	5,830	2,440	3,514	2.23	2.49	209,100
May	106,568	10,100	860	3,438	2.18	2.52	211,400
June	38,014	3,350	453	1,267	.804	.90	75,400
July	9,340	930	156	301	.191	.22	18,530
August	3,148	170	72	102	.065	.07	6,240
September	3,754	255	62	125	.079	.09	7,450
Water year 1946-47	800,354	10,100	62	2,193	1.39	18.90	1,588,000

a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and records for station at Horger.

Angelina River at Horger, Tex.

Location.- Wire-weight gage, 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. Datum of gage is 68.6 feet above mean sea level, datum of 1929 (levels by Corps of Engineers).

Drainage area.- 3,435 square miles.

Records available.- March 1928 to September 1947.

Average discharge.- 19 years, 3,300 second-feet.

Extremes.- Maximum discharge during year, 18,100 second-feet Jan. 20, 21 (gage height, 26.20 feet); minimum observed, 134 second-feet Sept. 19 (gage height, 1.35 feet).
1928-47: Maximum discharge, 49,900 second-feet May 6, 1944 (gage height, 36.90 feet); minimum observed, 13 second-feet Sept. 22, 1937.
Maximum discharge known, 82,000 second-feet in August 1915 (gage height, 39.5 feet, from information by local residents), from rating curve extended above 50,000 second-feet.

Remarks.- Records good. Gage read twice daily, oftener during high stages. Occasional backwater from Neches River. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	913	677	7,260	6,170	8,500	4,560	7,870	5,430	9,250	1,590	323	183
2	1,040	677	6,740	7,800	7,730	4,380	7,260	5,120	9,330	1,390	309	187
3	1,040	693	6,170	8,360	7,260	4,260	6,680	4,740	9,100	1,340	294	185
4	955	1,140	5,800	8,950	6,870	4,200	6,110	4,260	8,650	1,190	281	179
5	854	1,800	5,430	8,580	6,610	4,080	5,610	3,780	7,940	1,120	276	179
6	798	2,790	5,120	7,940	6,360	4,020	5,240	3,340	7,060	955	269	181
7	798	3,900	4,740	7,940	6,110	4,320	4,930	2,960	5,980	816	263	175
8	798	4,320	4,380	9,100	5,740	5,610	4,740	2,790	4,810	727	267	171
9	798	4,680	4,020	10,300	5,360	6,230	4,560	2,460	3,780	645	267	171
10	780	8,330	3,840	11,100	4,930	6,110	4,440	2,240	2,960	598	258	171
11	1,040	9,180	4,080	11,600	4,560	6,170	4,260	2,130	2,300	553	245	171
12	816	9,650	5,180	11,600	4,320	a8,900	4,200	2,130	1,960	509	232	165
13	710	9,250	5,920	11,500	4,140	10,600	4,560	2,130	1,860	509	226	162
14	661	8,290	5,860	11,300	3,840	11,600	5,240	2,020	1,800	480	207	156
15	629	7,320	5,800	11,000	3,560	12,600	5,670	1,800	1,740	466	207	152
16	583	7,520	5,740	10,600	3,340	12,700	5,800	1,540	1,590	452	189	150
17	553	7,660	5,550	12,200	3,180	12,600	5,610	1,790	1,390	438	189	145
18	524	7,730	5,430	14,500	3,010	12,400	5,490	a5,010	1,220	425	185	139
19	509	7,520	5,240	17,200	2,960	12,500	5,360	7,660	1,040	412	177	136
20	568	7,660	6,540	18,100	3,120	12,400	5,240	7,260	955	538	179	158
21	538	7,940	7,200	18,100	4,320	12,100	5,120	7,130	913	466	173	158
22	509	8,220	7,000	17,300	4,620	11,500	4,990	7,000	913	386	173	150
23	524	8,580	6,170	16,400	4,810	10,800	4,990	6,360	999	373	177	147
24	524	8,880	5,490	15,300	4,990	10,400	4,990	6,230	1,590	386	183	158
25	630	8,950	4,990	14,600	4,930	10,100	5,180	7,000	2,180	373	189	181
26	598	9,100	4,680	14,000	4,810	10,100	5,360	7,940	2,240	373	197	215
27	725	9,020	4,500	13,200	4,740	10,000	5,490	8,080	2,020	360	197	226
28	913	8,800	4,560	12,300	4,620	9,740	5,610	8,150	1,910	348	195	226
29	835	8,500	4,500	11,300	-	9,410	5,670	8,150	1,860	348	191	241
30	816	7,800	4,400	10,300	-	8,950	5,610	8,500	1,690	343	187	263
31	762	-	4,680	9,330	-	8,360	-	8,950	-	348	183	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	22,741	1,040	509	734	0.214	0.25	45,110
November	196,577	9,650	677	6,553	1.91	2.13	389,900
December	167,050	7,260	3,840	5,389	1.57	1.81	331,300
Calendar year 1946	2,120,906	27,200	215	5,811	1.69	22.98	4,207,000
January	367,970	18,100	6,170	11,870	3.46	3.99	729,900
February	139,340	8,500	2,960	4,976	1.45	1.51	276,400
March	271,500	12,700	4,020	8,758	2.55	2.94	538,500
April	161,880	7,870	4,200	5,396	1.57	1.75	321,100
May	154,080	8,950	1,540	4,970	1.45	1.67	305,600
June	101,030	9,330	913	3,368	.980	1.09	200,400
July	19,257	1,590	343	621	.181	.21	38,200
August	6,888	323	173	222	.065	.07	13,660
September	5,281	263	136	176	.051	.06	10,470
Water year 1946-47	1,613,594	18,100	136	4,421	1.29	17.48	3,201,000

a No gage-height record; discharge computed on basis of estimated gage-height record.

Striker Creek near Summerfield, Tex.

Location.- Wire-weight gage, 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. Datum of gage is 287.0 feet above mean sea level, datum of 1929.

Drainage area.- 148 square miles (revised).

Records available.- May to August 1940 (discharge measurements only). September 1940 to September 1947.

Extremes.- Maximum discharge during year, 4,910 second-feet May 17 (gage height, 12.85 feet, from graph based on gage readings); minimum observed, 7.1 second-feet Aug. 14-16, Sept. 13, 14.

1940-47: Maximum discharge, 10,800 second-feet Nov. 24, 1940 (gage height, 17.23 feet, from floodmark), from rating curve extended above 5,000 second-feet by velocity-area studies; minimum observed, 0.7 second-foot Aug. 31, Sept. 1, 1943.

Remarks.- Records good. Gage read twice daily, oftener during high stages. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	145	46	244	159	140	134	457	135	172	32	14	15
2	105	56	188	258	128	137	312	122	135	29	13	14
3	72	100	158	476	121	135	222	110	112	28	12	13
4	50	253	135	595	116	127	179	98	98	26	12	12
5	41	666	128	418	112	123	162	89	88	25	11	11
6	36	967	123	278	110	123	148	83	78	24	10	10
7	34	1,340	119	222	109	184	148	80	71	23	9.7	9.3
8	31	1,320	117	214	107	470	246	80	63	21	9.3	8.8
9	30	782	145	256	106	764	523	90	57	21	8.8	8.3
10	32	552	256	309	102	476	544	165	52	21	8.3	8.0
11	33	714	404	336	100	289	495	167	49	21	8.0	7.5
12	34	764	457	303	114	268	384	121	44	21	7.6	7.3
13	35	465	511	263	138	1,080	710	98	42	22	7.5	7.3
14	33	278	503	235	162	1,560	1,200	86	38	28	7.1	7.3
15	30	188	361	212	158	854	1,020	77	35	26	7.1	12
16	31	289	258	194	140	387	814	98	33	24	7.1	27
17	33	839	198	230	126	258	495	2,830	32	21	8.0	62
18	50	967	166	348	119	206	292	3,360	30	19	9.3	92
19	71	544	146	658	126	248	208	1,400	31	27	9.7	91
20	101	321	190	1,290	424	318	210	646	38	41	11	76
21	99	218	278	1,290	915	330	286	468	88	56	11	63
22	80	166	324	694	641	258	336	414	83	51	11	83
23	58	140	268	377	358	263	246	295	90	35	11	92
24	49	126	202	270	230	404	162	188	98	26	10	75
25	51	120	166	230	176	480	148	183	116	22	9.7	50
26	62	346	148	214	148	348	232	169	101	20	10	34
27	81	1,710	140	200	132	244	390	142	78	19	11	26
28	78	1,320	137	185	130	179	300	120	55	18	12	22
29	63	674	140	172	-	153	200	106	44	17	14	20
30	52	361	153	162	-	169	153	108	37	16	15	19
31	48	-	158	150	-	342	-	129	-	15	16	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	1,748	145	30	56.4	0.381	0.44	3,470
November	16,632	1,710	46	554	3.74	4.18	32,990
December	6,921	511	117	223	1.51	1.74	13,730
Calendar year 1946	110,121.7	3,780	8.2	302	2.04	†27.68	218,400
January	11,198	1,290	150	361	2.44	2.81	22,210
February	5,488	915	100	196	1.32	1.38	10,890
March	11,291	1,560	123	364	2.46	2.84	22,400
April	11,222	1,200	148	374	2.53	2.82	22,260
May	12,257	3,360	77	395	2.67	3.08	24,310
June	2,088	172	30	69.6	.470	.52	4,140
July	795	56	15	25.6	.173	.20	1,580
August	321.2	16	7.1	10.4	.070	.08	637
September	982.8	92	7.3	32.8	.222	.25	1,950
Water year 1946-47	80,944.0	3,360	7.1	222	1.50	20.54	160,600

† Based on revised drainage area.

Attoyac Bayou near Chireno, Tex.

Location.- Water-stage recorder, 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. Datum of gage is 169.9 feet above mean sea level, datum of 1929.

Drainage area.- 502 square miles.

Records available.- January 1924 to August 1925, July 1939 to September 1947.

Extremes.- Maximum discharge during year, 6,750 second-feet Apr. 10 (gage height, 18.96 feet); minimum, 30 second-feet Sept. 15, 16 (gage height, 3.27 feet).
1924-25, 1939-47: Maximum discharge, 31,900 second-feet Nov. 24, 1940 (gage height, 25.97 feet); minimum observed, 7.0 second-feet Aug. 27, 1925.
Maximum stage known, 29.9 feet in June 1912 (result of local storm), from information by local residents.

Remarks.- Records good. No large diversion above station.

Rating tables, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Jan. 1-20, May 17 to Sept. 30)

Oct. 1 to Jan. 20				Jan. 21 to Sept. 30					
4.5	83	14.0	860	3.2	28	9.0	410	16.5	2,090
5.0	109	15.0	1,060	3.5	39	12.0	695	17.0	2,690
6.0	170	16.0	1,450	4.0	60	13.0	815	17.5	3,410
7.0	238	16.5	1,780	4.5	83	14.0	965	18.0	4,350
9.0	380	17.0	2,240	5.0	109	15.0	1,205	18.5	5,600
12.0	620	17.5	2,920	6.0	170	15.5	1,400		
13.0	720	18.0	3,870	7.0	248	16.0	1,680		

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	280	120	629	460	645	665	500	336	352	106	49	43
2	210	126	612	647	595	555	518	312	320	106	51	42
3	150	262	572	798	518	509	527	288	288	106	49	37
4	129	396	460	860	464	482	509	264	256	98	46	34
5	114	476	343	878	437	455	473	240	248	90	44	33
6	98	564	308	914	410	525	446	224	232	83	42	32
7	93	596	294	1,280	401	868	428	216	200	80	40	31
8	88	604	280	1,860	392	1,050	482	216	184	80	37	30
9	86	620	280	1,950	376	1,120	2,570	224	170	76	36	31
10	88	720	280	1,740	360	1,100	5,480	224	164	76	34	32
11	104	844	343	1,580	352	1,050	2,910	240	154	76	34	32
12	114	914	540	1,390	368	1,290	2,040	240	144	73	33	32
13	101	1,380	604	1,280	401	2,370	1,780	224	135	69	32	32
14	93	1,480	620	1,200	437	3,550	2,430	200	129	69	33	30
15	88	1,340	612	1,110	464	5,480	1,990	177	120	66	33	30
16	86	1,480	629	1,060	464	3,480	1,610	170	117	64	33	30
17	88	1,420	629	1,660	437	2,370	1,360	260	114	62	33	32
18	93	1,280	620	1,740	401	1,860	1,200	561	112	59	37	33
19	98	1,110	596	2,190	401	1,680	1,070	803	117	60	42	32
20	101	994	580	3,660	754	1,500	1,000	933	135	71	42	37
21	123	914	564	3,660	865	1,320	1,000	965	184	69	41	62
22	120	844	572	3,180	965	1,180	965	1,000	200	62	40	60
23	123	756	572	2,500	949	1,070	787	1,070	250	57	38	52
24	126	667	588	1,990	933	1,000	585	1,240	312	54	38	53
25	196	508	604	1,720	933	965	464	1,280	344	53	36	50
26	280	524	604	1,500	933	885	428	1,200	296	51	37	46
27	308	588	596	1,320	917	803	419	1,050	240	50	37	42
28	224	604	532	1,150	829	731	401	873	177	51	38	39
29	176	612	428	983	-	675	384	662	141	49	40	38
30	157	629	364	843	-	605	360	473	120	47	41	37
31	132	-	364	719	-	536	-	401	-	46	43	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	4,267	308	86	138	0.275	0.32	8,460
November	23,372	1,480	120	779	1.55	1.73	46,360
December	15,619	629	280	504	1.00	1.16	30,980
Calendar year 1946	263,183	9,310	62	721	1.44	19.51	522,000
January	47,822	3,660	460	1,543	3.07	3.54	94,850
February	16,421	965	352	586	1.17	1.22	32,570
March	41,729	5,480	455	1,346	2.68	3.09	82,770
April	35,116	5,480	360	1,171	2.33	2.60	69,650
May	16,566	1,280	170	534	1.06	1.23	32,860
June	5,955	352	112	198	.394	.44	11,810
July	2,159	106	46	69.6	.139	.16	4,280
August	1,209	51	32	39.0	.078	.09	2,400
September	1,144	62	30	38.1	.076	.08	2,270
Water year 1946-47	211,379	5,480	30	579	1.15	15.66	419,300

Village Creek near Kountze, Tex.

Location.- Water-stage recorder, lat. 30°24', long. 94°16', at bridge on Kountze-Silsbee county highway, 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. Datum of gage is 25.1 feet above mean sea level, datum of 1929.

Drainage area.- 837 square miles.

Records available.- May 1924 to November 1929, April 1939 to September 1947. October 1927 to November 1929 (discharge measurements only).

Average discharge.- 11 years (1924-27, 1939-47), 1,041 second-feet.

Extremes.- Maximum discharge during year, 20,000 second-feet Nov. 13 (gage height, 20.88 feet); minimum, 94 second-feet Sept. 30.

1924-27, 1939-47: Maximum discharge, 67,200 second-feet Nov. 26, 1940 (gage height, 27.6 feet, from floodmark), from rating curve extended above 35,000 second-feet by logarithmic plotting; minimum, 32 second-feet Sept. 28, 1939.

Maximum stage known, 34 feet in August 1915, present site and datum. Flood of May 27, 1929, reached a stage of about 32 feet, present site and datum. Above stages were determined on basis of information by engineers of Gulf, Colorado & Santa Fe Railway for site 1.2 miles downstream.

Remarks.- Records good except those for period of no gage-height record, which are fair. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr	May	June	July	Aug.	Sept.
1	482	317	1,480	1,680	1,400	706	948	330	1,510	250	150	150
2	351	304	1,200	2,640	1,250	728	904	317	1,570	222	146	136
3	298	298	970	3,600	1,130	728	838	304	1,510	233	141	128
4	250	1,260	838	3,820	1,060	706	794	285	1,040	304	141	141
5	222	2,520	750	3,710	1,010	646	794	273	904	304	136	136
6	206	3,400	686	3,400	970	626	772	261	750	250	141	128
7	195	4,190	646	3,040	948	706	750	250	532	216	132	118
8	185	4,190	626	2,820	926	1,060	666	250	434	195	128	111
9	180	3,710	606	2,820	882	1,300	626	261	386	185	120	106
10	180	3,500	666	3,220	860	1,400	586	298	358	175	119	103
11	678	5,100	1,060	3,600	816	1,250	666	291	324	170	116	a103
12	882	13,900	1,670	4,060	838	1,180	646	279	304	193	116	a103
13	970	18,200	2,410	4,470	992	3,160	606	261	285	418	128	a103
14	1,130	10,100	2,750	4,060	1,180	5,490	568	244	267	434	132	a103
15	948	5,230	2,690	3,220	1,250	11,600	532	233	255	324	128	a111
16	482	3,940	2,410	2,630	1,130	10,800	532	228	244	244	128	a120
17	365	3,600	1,860	2,750	992	6,450	498	228	228	211	122	110
18	330	3,400	1,390	3,500	882	4,190	466	260	228	190	120	114
19	310	3,220	1,060	5,060	816	3,220	434	819	250	175	119	113
20	298	3,040	948	7,770	794	2,750	418	1,550	250	165	128	113
21	285	2,750	1,150	8,820	882	2,460	418	3,420	317	175	150	108
22	285	2,100	1,480	7,000	926	2,300	418	4,760	324	211	150	110
23	304	1,480	1,780	5,570	926	2,010	402	4,190	324	206	150	128
24	273	1,180	1,930	4,330	970	1,670	379	3,820	344	180	150	141
25	384	1,010	1,700	3,400	1,250	1,450	358	3,300	540	165	150	128
26	706	1,100	1,320	2,890	926	1,350	344	2,520	970	155	146	112
27	948	1,350	1,040	2,630	816	1,250	337	2,010	750	160	170	103
28	926	1,540	926	2,360	728	1,100	337	1,450	482	155	238	99
29	639	1,700	904	2,050	-	970	330	929	372	165	233	95
30	418	1,740	926	1,740	-	1,040	330	728	291	175	211	95
31	351	-	1,040	1,510	-	1,010	-	1,200	-	160	175	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	14,461	1,130	180	466	0.557	0.64	28,680
November	109,369	18,200	298	3,646	4.36	4.86	216,900
December	40,912	2,750	606	1,320	1.58	1.82	81,150
Calendar year 1946	616,987	18,200	146	1,690	2.02	27.39	1,224,000
January	114,170	8,820	1,510	3,683	4.40	5.07	226,500
February	27,550	1,400	728	984	1.18	1.22	54,640
March	75,306	11,600	626	2,429	2.90	3.34	149,400
April	16,697	948	330	557	.666	.74	33,120
May	35,549	4,760	228	1,147	1.37	1.58	70,510
June	16,343	1,570	228	545	.651	.73	32,420
July	6,765	434	155	218	.261	.30	13,420
August	4,514	238	116	146	.174	.20	8,950
September	3,469	150	95	116	.139	.15	6,880
Water year 1946-47	465,105	18,200	95	1,274	1.52	20.65	922,600

a No gage-height record; discharge computed on basis of weather records.

Bridgeport Reservoir above Bridgeport, Tex.

Location.- Staff gage, lat. 33°13'20", long. 97°50'10", at Bridgeport Dam on West Fork Trinity River, 2.0 miles west of Bridgeport, Wise County, and 5.8 miles upstream from Big Sandy Creek. Datum of gage is 0.06 foot above mean sea level, datum of 1929 (levels by engineers of Tarrant County Water Control and Improvement District No. 1).

Drainage area.- 978 square miles.

Records available.- April 1932 to September 1947.

Extremes.- Maximum contents observed during year, 221,200 acre-feet May 21 to June 1 (gage height, 818.8 feet); minimum observed, 122,000 acre-feet Sept. 20-30 (gage height, 805.5 feet).

1932-47: Maximum contents observed, 407,600 acre-feet Apr. 29, 30, 1942 (gage height, 836.2 feet); minimum observed at monthly intervals since appreciable storage began, 2,200 acre-feet Dec. 31, 1933.

Remarks.- Reservoir formed by a rolled-fill earthen-type 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, and two emergency spillways of natural ground. Dam completed Dec. 15, 1931; storage began Apr. 1, 1932. Capacity, 291,000 acre-feet between gage heights 751.4 feet (bottom of three 48-inch outlet conduits) and 826.1 feet (top of service spillway). Dead storage is negligible. Reservoir used for flood control and municipal supply for city of Fort Worth. Figures given herein represent total contents.

Cooperation.- Capacity curve and records of daily gage heights furnished by Tarrant County Water Control and Improvement District No. 1.

Monthly gage height and contents, water year October 1946 to September 1947

Date	Gage height (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	809.6	149,200	-
Oct. 31	807.4	134,100	-15,100
Nov. 30	811.2	160,400	+26,300
Dec. 31	815.7	194,600	+34,200
Calendar year 1946	-	-	+32,800
Jan. 31	814.9	188,200	-6,400
Feb. 28	813.1	173,800	-14,400
Mar. 31	813.6	177,800	+4,000
Apr. 30	815.8	195,400	+17,600
May 31	818.8	221,200	+25,800
June 30	817.2	206,800	-14,400
July 31	814.2	182,600	-24,200
Aug. 31	809.5	148,500	-34,100
Sept.30	805.5	122,000	-26,500
Water year 1946-47	-	-	-27,200

† Gage height at 7 a.m.

West Fork Trinity River near Boyd, Tex.

Location.- Water-stage recorder, lat. 33°04'30", long. 97°32'20", at bridge on State Highway 114, 0.8 mile downstream from Deep Creek, 1.2 miles east of Boyd, Wise County, 1.5 miles upstream from Little Blue Creek, and 2.1 miles upstream from Chicago, Rock Island & Pacific Railway bridge. Datum of gage is 655.1 feet above mean sea level, datum of 1929.

Drainage area.- 1,603 square miles.

Records available.- January to September 1947.

Extremes.- Maximum discharge during period, 2,140 second-feet Apr. 16 (gage height, 15.53 feet); minimum, 3.9 second-feet Sept. 30.
Maximum stage known, about 21.7 feet occurred sometime during period Apr. 20-30, 1942, from information by local resident.

Remarks.- Records good: Flow regulated by Bridgeport Reservoir, 23 miles above station. No diversion above station.

Rating table, Jan. 11 to Sept. 30, 1947 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Aug. 22 to Sept. 30)

1.7	3.6	2.6	31	7.0	453
1.8	4.7	3.0	48	8.0	608
1.9	6.3	3.5	75	10.0	964
2.0	8.8	4.0	112	12.0	1,360
2.1	12	5.0	202	14	1,800
2.3	19	6.0	318	15.4	2,120

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				-	318	25	33	261	52	300	657	264
2				-	318	24	32	690	44	300	691	264
3				-	318	24	31	252	39	300	691	264
4				-	318	23	30	109	33	300	691	264
5				-	330	23	34	76	28	300	708	270
6				-	330	25	51	62	24	300	708	513
7				-	330	33	36	54	21	300	708	674
8				-	330	43	29	82	19	300	708	674
9				-	330	45	28	256	16	294	691	674
10				-	330	39	28	264	14	294	691	674
11				51	330	36	29	243	12	294	657	674
12				49	330	34	29	106	173	294	691	674
13				47	330	38	83	149	288	294	708	674
14				45	330	45	402	826	300	294	691	674
15				45	330	34	1,600	830	306	294	691	674
16				44	330	28	2,100	273	306	294	691	657
17				203	330	26	1,860	132	306	288	691	674
18				330	330	35	688	102	306	288	691	657
19				330	330	325	234	77	485	288	691	657
20				343	207	450	150	138	674	288	691	657
21				330	49	183	116	405	708	288	378	398
22				330	37	80	97	815	760	288	43	45
23				330	33	70	85	731	814	288	16	16
24				330	31	100	78	237	432	288	9.1	8.6
25				330	28	97	110	172	159	288	6.0	6.1
26				330	26	50	152	535	85	288	5.2	5.3
27				330	26	40	92	327	185	288	5.8	4.7
28				330	25	36	74	116	306	282	158	4.5
29				330	-	33	73	76	306	282	258	4.2
30				330	-	32	74	84	300	496	264	4.0
31				330	-	32	-	74	-	640	264	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October					
November					
December					
Calendar year					
January 11-31	5,117	343	44	244	10,150
February	6,684	330	25	239	13,260
March	2,108	450	23	68.0	4,180
April	8,458	2,100	28	282	16,780
May	8,554	830	54	276	16,970
June	7,501	814	12	250	14,880
July	9,620	640	282	310	19,080
August	15,244.1	708	5.2	492	30,240
September	11,703.4	674	4.0	390	23,210
The period	-	-	-	-	148,800

Note.- No gage-height record Sept. 6-15; discharge computed on basis of recorded range in stage, weather records, and study of valve openings at dam upstream.

Eagle Mountain Reservoir above Fort Worth, Tex.

Location.- Staff gage, 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, and 14.6 miles northwest of Fort Worth, Tarrant County. Datum of gage is at mean sea level, datum of 1929.

Drainage area.- 1,821 square miles.

Records available.- February 1934 to September 1947.

Extremes.- Maximum contents observed during year, 222,500 acre-feet Dec. 15 (elevation, 650.0 feet); minimum observed, 194,100 acre-feet Oct. 1-5, Jan. 28 to Feb. 2 (elevation, 646.9 feet).

1934-47: Maximum contents observed, 333,500 acre-feet Apr. 26, 1942 (elevation, 659.9 feet); minimum observed at monthly intervals since appreciable storage began, 9,320 acre-feet June 30, 1934.

Remarks.- Reservoir is formed by a composite rolled-fill and hydraulic-fill earthen-type dam, containing a concrete service spillway with four 25-foot bays, three of which are equipped with vertical lift gates. In addition there is an emergency spillway of natural ground. Dam completed Oct. 24, 1932, and storage began Feb. 28, 1934. Capacity, 214,000 acre-feet, between elevations 599.9 feet (bottom of four 48-inch outlet conduits) and 649.1 feet (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 and records of daily elevations furnished by Tarrant County Water Control and Improvement District No. 1.

Monthly elevation and contents, water year October 1946 to September 1947

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	646.9	194,100	-
Oct. 31	647.7	201,300	+7,200
Nov. 30	648.3	206,700	+5,400
Dec. 31	648.4	207,600	+900
Calendar year 1946	-	-	-900
Jan. 31	646.9	194,100	-13,500
Feb. 28	647.2	196,800	+2,700
Mar. 31	647.4	198,600	+1,800
Apr. 30	648.0	204,000	+5,400
May 31	647.6	200,400	-3,600
June 30	648.2	205,800	+5,400
July 31	648.0	204,000	-1,800
Aug. 31	648.2	205,800	+1,800
Sept.30	648.4	207,600	+1,800
Water year 1946-47	-	-	+13,500

† Elevation at 8 a.m.

West Fork Trinity River at Fort Worth, Tex.

Location.- Water-stage recorder above Texas Electric Service Co.'s concrete dam, lat. 32°46', long. 97°20', in old pump house of Texas Electric Service Co.'s plant in Fort Worth, Tarrant County, 150 feet upstream from Paddock viaduct and a quarter of a mile downstream from Clear Fork. Datum of gage is 519.2 feet above mean sea level (Texas Reclamation Department bench mark based on U. S. Coast & Geodetic Survey datum).

Drainage area.- 2,501 square miles.

Records available.- October 1920 to September 1947. U. S. Weather Bureau has collected gage-height records in this vicinity since 1910.

Average discharge.- 27 years, 477 second-feet.

Extremes.- Maximum discharge during year, 13,300 second-feet Dec. 11 (gage height, 12.85 feet); minimum, 23 second-feet Sept. 28 (gage height, 1.12 feet).
1920-47: Maximum discharge, 85,000 second-feet Apr. 25, 1922 (gage height, 23.95 feet), by slope-area method, data furnished by city engineer of Fort Worth; no flow at times.

Remarks.- Records good. Flow partly regulated by Bridgeport, Eagle Mountain, and Lake Worth Reservoirs (combined capacity, 527,000 acre-feet). Considerable diversion above station for municipal supply of city of Fort Worth. Several small diversions above Fort Worth.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used July 29-31, Sept. 28-30)

1.1	16	2.0	356	4.0	2,160
1.2	37	2.3	552	4.5	2,830
1.4	98	2.6	780	5.0	3,570
1.6	166	3.0	1,100	6.0	5,170
1.8	250	3.5	1,550		

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	69	101	152	328	131	186	186	101	146	59	166
2	48	1,600	98	214	290	118	178	374	88	218	228	156
3	40	3,810	98	193	306	108	170	531	76	170	386	152
4	37	3,030	98	145	350	108	170	504	66	159	476	142
5	40	1,180	98	142	280	108	193	295	57	159	504	131
6	42	4,630	95	159	300	105	159	193	57	156	511	124
7	40	1,270	95	186	334	246	142	152	54	159	430	124
8	37	1,360	95	189	295	275	412	251	51	124	290	124
9	109	1,400	98	182	285	255	142	426	48	69	228	121
10	246	1,360	345	178	270	189	189	197	51	48	201	114
11	89	988	4,880	197	275	174	178	189	42	90	201	166
12	57	836	2,910	210	317	182	156	174	42	87	182	1,100
13	48	764	753	411	317	197	162	162	42	54	178	280
14	42	702	1,510	611	317	162	366	114	42	45	174	285
15	63	470	2,160	687	317	142	1,310	105	42	42	174	504
16	69	362	2,420	788	311	134	820	206	40	40	166	518
17	68	193	2,220	1,080	306	131	1,060	306	37	37	170	531
18	76	156	2,030	924	311	206	1,220	536	35	40	193	567
19	57	142	1,960	868	328	919	1,360	611	226	37	193	567
20	57	131	1,960	860	399	431	1,400	702	834	40	189	702
21	51	128	1,060	780	345	280	1,320	664	2,240	42	290	596
22	51	118	489	757	290	255	1,140	626	180	148	437	518
23	51	111	311	772	214	344	876	641	229	300	356	290
24	54	111	250	804	166	733	545	687	565	417	241	138
25	66	111	205	796	138	649	386	641	357	265	182	79
26	57	111	189	764	124	457	228	619	118	114	274	54
27	51	101	186	764	121	345	182	619	82	63	690	40
28	57	108	178	741	118	232	218	419	63	42	368	35
29	57	105	215	626	-	201	186	297	60	37	255	35
30	60	108	145	518	-	201	166	182	57	35	197	35
31	66	-	142	322	-	189	-	118	-	35	178	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,934	246	37	62.4	3,840
November	25,565	4,630	69	852	50,710
December	27,394	4,880	95	884	54,340
Calendar year 1946	191,996	4,880	25	526	380,800
January	16,020	1,080	142	517	31,780
February	7,752	399	118	277	15,380
March	8,207	919	105	265	16,280
April	14,950	1,400	142	498	29,650
May	11,727	702	105	378	23,260
June	5,982	2,240	35	199	11,870
July	3,418	417	35	110	6,780
August	8,601	690	59	277	17,060
September	8,394	1,100	35	280	16,650
Water year 1946-47	139,944	4,880	35	383	277,600

Peak discharge.- Nov. 3 (8 p.m.) 9,300 sec.-ft.; Nov. 6 (9 a.m.) 10,300 sec.-ft.; Dec. 11 (9:30 p.m.) 13,300 sec.-ft.

West Fork Trinity River at Grand Prairie, Tex.

Location.- Water-stage recorder, lat. 32°46', long. 96°59', 440 feet downstream from bridge on Grand Prairie-Sowers-Irving highway, 1 mile northeast of Grand Prairie, Dallas County, and 6 miles upstream from Mountain Creek. Datum of gage is 412.98 feet above mean sea level, datum of 1929.

Drainage area.- 2,956 square miles.

Records available.- March 1926 to September 1947.

Average discharge.- 22 years, 626 second-feet.

Extremes.- Maximum discharge during year, 12,000 second-feet Dec. 12 (gage height, 23.22 feet); minimum, 71 second-feet July 21, 22, Aug. 1, 2, Sept. 30.
1925-47: Maximum discharge, 29,500 second-feet Mar. 31, 1945 (gage height, 26.05 feet), from rating curve extended above 17,000 second-feet; minimum observed, 3.2 second-feet June 6, 1925.
Maximum stage known, 29 feet in April 1922.

Remarks.- Records good. Flow partly regulated by Bridgeport, Eagle Mountain, and Lake Worth Reservoirs (combined capacity, 527,000 acre-feet). City of Fort Worth diverts considerable water for municipal supply. Several small diversions above Fort Worth.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Apr. 27 to Sept. 30)

1.9	73	6.0	1,090	17.0	5,500
2.0	83	8.0	1,680	19.0	6,650
2.2	108	10.0	2,320	20.0	7,360
2.5	162	11.0	2,680	22.0	9,200
3.0	276	13.0	3,480	22.5	10,000
4.0	535	15.0	4,420		

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	93	101	197	283	454	216	312	288	182	123	75	214
2	86	2,170	189	312	428	216	305	278	143	166	77	197
3	86	7,280	182	415	402	214	298	435	138	278	204	195
4	82	8,800	184	376	402	200	290	602	127	238	389	189
5	79	5,470	189	305	441	200	298	562	116	204	481	176
6	77	5,470	186	286	389	202	308	389	108	197	508	166
7	76	7,150	184	315	389	221	276	281	105	191	508	152
8	76	2,080	182	350	428	562	247	235	100	206	441	143
9	76	1,680	178	363	402	576	245	465	92	186	320	151
10	93	1,680	503	338	376	481	622	508	92	127	257	152
11	321	1,560	2,140	342	376	389	918	302	94	102	233	151
12	145	1,180	9,560	363	363	348	388	230	93	102	223	1,880
13	97	1,010	7,940	363	402	376	300	216	90	152	209	1,480
14	84	924	1,620	508	415	376	332	206	87	97	202	396
15	82	868	2,040	728	415	330	1,480	193	86	91	197	1,100
16	112	672	2,500	840	415	288	1,920	182	82	90	195	665
17	141	548	2,540	1,260	402	257	1,120	272	80	87	186	548
18	122	363	2,390	1,710	402	252	1,290	472	85	83	178	562
19	138	295	2,190	1,240	402	717	1,740	700	91	83	209	576
20	98	278	2,160	1,120	454	1,380	1,710	686	1,840	81	216	700
21	91	266	2,060	1,060	535	714	1,680	756	6,700	74	214	756
22	91	254	1,210	980	481	508	1,500	714	3,920	77	295	602
23	93	240	672	924	415	454	1,290	672	570	126	428	520
24	94	223	508	924	332	604	1,010	686	589	310	363	362
25	94	218	428	952	283	924	700	728	1,190	428	262	207
26	102	223	376	952	252	812	548	672	649	308	216	136
27	95	221	350	896	233	602	376	658	276	164	649	107
28	87	206	345	896	221	481	315	630	193	98	791	93
29	91	195	332	868	-	389	376	468	152	84	456	82
30	95	197	340	756	-	335	328	350	130	79	305	74
31	95	-	293	658	-	320	-	242	-	77	247	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,192	321	76	103	6,330
November	51,822	8,800	101	1,727	102,800
December	44,168	9,560	178	1,425	87,600
Calendar year 1946	294,160	10,700	89	806	583,500
January	21,683	1,710	283	699	43,010
February	10,909	535	221	390	21,640
March	13,944	1,380	200	450	27,660
April	22,522	1,920	245	751	44,670
May	14,078	756	182	454	27,920
June	18,200	6,700	80	607	36,100
July	4,709	428	74	152	9,340
August	9,534	791	75	308	18,910
September	12,732	1,880	74	424	25,250
Water year 1946-47	227,493	9,560	74	623	451,200

Peak discharge.- Nov. 3 (8 p.m.) 9,200 sec.-ft.; Nov. 7 (7 a.m.) 8,400 sec.-ft.; Dec. 12 (10 p.m.) 12,000 sec.-ft.; June 21 (9:30 p.m.) 7,600 sec.-ft.

Trinity River at Dallas, Tex.

Location.- Water-stage recorder, lat. 32°47', long. 96°48', at Commerce Street viaduct in Dallas, Dallas County, 5¼ miles downstream from confluence of West and Elm Forks. Datum of gage is 368.14 feet above mean sea level, datum of 1929.

Drainage area.- 6,001 square miles.

Records available.- July 1903 to July 1930, October 1932 to September 1947 (January 1907 to September 1920, monthly records only, in Water-Supply Paper 850). October 1898 to December 1899 (gage heights only) at site 2 miles upstream. July 1930 to September 1932 at site 6 miles downstream. U. S. Weather Bureau has collected gage-height records in this vicinity since 1903.

Average discharge.- 44 years (1903-47), 1,580 second-feet.

Extremes.- Maximum discharge during year, 34,000 second-feet Dec. 13 (gage height, 38.57 feet); minimum, 204 second-feet June 19 (gage height, 12.54 feet).
1903-47: Maximum discharge, 184,000 second-feet May 25, 1908 (gage height, 52.6 feet), from rating curve extended above 109,000 second-feet; minimum observed for periods 1903-6, 1920-47, 6.8 second-feet Sept. 11, 1924.

Remarks.- Records good except those affected by backwater from return of overbank storage, which are fair. Flow partly regulated by Bridgeport, Eagle Mountain, Lake Worth, Mountain Creek, and Lake Dallas Reservoirs (combined capacity, 757,000 acre-feet). Cities of Fort Worth and Dallas divert considerable water for municipal supply. Several small diversions on West Fork above Fort Worth.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	297	345	535	1,760	845	500	800	935	535	450	345	622
2	282	2,970	518	1,860	800	500	760	1,360	482	450	351	552
3	278	11,800	500	2,010	780	500	740	1,410	426	535	414	500
4	272	18,400	500	1,960	740	482	740	1,120	396	552	570	482
5	270	19,100	500	1,760	780	482	822	1,050	366	518	660	465
6	272	18,700	482	1,410	760	482	760	822	342	482	700	465
7	268	20,000	465	780	760	921	740	680	327	465	700	435
8	252	c20,300	465	760	740	958	680	777	336	465	680	435
9	268	c14,400	482	890	740	1,000	660	1,760	330	465	588	423
10	302	c6,330	1,700	912	700	890	2,370	1,560	318	435	518	426
11	462	c4,110	6,990	890	680	720	c4,280	1,020	312	396	482	465
12	363	c2,050	17,700	890	680	680	980	822	303	378	518	2,120
13	318	c1,460	31,600	890	700	800	980	660	294	405	518	3,570
14	300	1,260	22,400	935	720	760	1,000	622	294	402	482	720
15	295	1,240	c14,600	1,120	720	640	3,410	1,140	309	363	465	1,080
16	306	1,160	c8,600	1,710	700	588	c7,130	912	291	357	450	995
17	373	1,120	c6,160	2,710	700	552	c4,060	660	270	351	465	980
18	336	822	c5,840	c2,760	700	674	c2,760	760	252	342	482	740
19	345	1,310	c5,780	c1,710	700	1,680	c2,010	1,090	317	342	482	760
20	315	1,610	c5,240	c1,510	760	c3,920	2,600	1,140	2,440	351	482	1,410
21	297	1,560	c5,000	1,460	800	1,810	2,980	1,070	17,100	348	465	1,240
22	294	1,510	c4,220	1,360	760	1,070	2,160	1,360	c18,500	333	518	958
23	291	1,160	c3,370	1,360	700	980	1,760	1,510	c6,710	372	622	845
24	303	912	c1,710	1,360	622	1,760	1,910	1,610	c4,340	482	640	700
25	294	890	800	1,360	570	2,380	1,160	1,180	c3,330	605	552	552
26	312	845	680	1,360	535	1,660	1,140	1,020	c3,020	588	623	465
27	315	780	1,510	1,260	518	1,260	1,000	958	c1,610	465	11,100	423
28	306	552	1,910	1,310	500	980	912	980	c1,560	405	c5,750	405
29	318	552	1,860	1,310	-	890	868	980	800	369	c3,160	393
30	306	535	1,810	1,120	-	800	845	890	500	351	c1,560	372
31	306	-	1,760	1,020	-	800	-	605	-	345	868	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	9,516	462	252	307	18,870
November	157,783	20,300	345	5,259	313,000
December	155,687	31,600	465	5,022	308,800
Calendar year 1946	1,038,894	35,600	214	2,846	2,061,000
January	43,507	2,760	760	1,403	86,290
February	19,710	845	500	704	39,090
March	32,119	3,920	482	1,036	63,710
April	53,017	7,130	660	1,767	105,200
May	32,463	1,760	605	1,047	64,390
June	66,410	18,500	252	2,214	131,700
July	13,167	605	333	425	26,120
August	36,210	11,100	345	1,168	71,820
September	23,998	3,570	372	800	47,600
Water year 1946-47	643,587	31,600	252	1,763	1,277,000

Peak discharge.- Nov. 4 (11:45 p.m.) 19,700 sec.-ft.; Nov. 8 (12:30 a.m.) 21,300 sec.-ft.; Dec. 13 (4 p.m.) 34,000 sec.-ft.; June 22 (2:30 a.m.) 24,300 sec.-ft.
c Backwater from return of overbank storage; discharge computed on basis of loop curves.

Trinity River near Rosser, Tex.

Location.- Water-stage recorder, lat. 32°25'40", long. 96°27'50", at bridge on State Highway 34, 1.4 miles downstream from Texas & New Orleans Railroad bridge, 1.9 miles downstream from East Fork, and 2.5 miles south of Rosser, Kaufman County. Datum of gage is 302.6 feet above mean sea level, datum of 1929.

Drainage area.- 8,057 square miles.

Records available.- November 1938 to September 1947. July 1924 to September 1925 (October 1924 to September 1925, gage heights only) at site 1.7 miles upstream.

Extremes.- Maximum discharge during year, 40,900 second-feet Nov. 10 (gage height, 36.42 feet); minimum, 289 second-feet Oct. 10 (gage height, 5.72 feet).

1924, 1938-47: Maximum discharge not determined, occurred Apr. 23 or 24, 1942, following numerous breaks in levee system on both banks; maximum gage height, 41.55 feet Apr. 22, 1942, just prior to levee breaks; minimum discharge, 34 second-feet Sept. 8-11, 1924.

Flood of May 1908 reached a stage of about 33.0 feet, present site and datum, from information by Corps of Engineers (discharge believed to have been approximately the same as that of Apr. 23 or 24, 1942).

Remarks.- Records good. Flow partly regulated by reservoirs above Dallas. Levee system constructed in 1916. Cities of Fort Worth and Dallas divert considerable water for municipal supply. Several small diversions on West Fork above Fort Worth.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)

5.7	289	14.0	2,450	29.0	12,600
6.0	337	17.0	3,650	30.0	15,100
7.0	500	20.0	5,100	32.0	32,300
8.0	700	23.0	6,920	34.0	30,300
10.0	1,200	26.0	9,260	36.2	40,000
12.0	1,770	28.0	11,200		

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	401	353	1,070	2,600	1,680	842	1,440	1,620	992	1,470	369	2,940
2	353	410	1,020	2,750	1,470	842	1,390	1,620	794	794	369	2,170
3	377	3,050	966	2,860	1,360	842	1,310	2,070	700	700	369	1,970
4	377	8,200	890	2,820	1,280	818	1,230	2,240	614	746	401	1,800
5	353	9,810	866	2,780	1,250	794	1,200	2,100	574	746	594	1,470
6	329	12,900	842	2,710	1,230	794	1,250	2,100	536	656	723	1,070
7	321	24,200	842	2,380	1,200	966	1,170	2,240	483	635	770	746
8	313	35,000	818	1,710	1,200	1,710	1,260	1,840	449	635	770	536
9	297	40,000	794	1,620	1,200	1,840	3,660	1,440	433	614	746	500
10	313	40,000	866	1,710	1,150	1,800	1,770	2,420	417	594	635	483
11	369	35,500	2,560	1,800	1,120	1,740	4,110	2,560	417	536	555	483
12	466	27,800	8,180	1,800	1,070	1,590	5,630	2,340	401	483	536	992
13	417	19,700	9,810	1,800	1,100	1,740	9,180	2,560	385	466	555	3,520
14	345	12,800	13,000	1,770	1,120	1,740	7,280	2,980	377	500	555	3,650
15	345	8,350	27,300	1,800	1,150	1,710	6,400	3,220	369	483	518	1,460
16	377	5,550	34,200	1,940	1,150	1,590	7,060	3,220	369	449	483	1,310
17	401	4,150	30,300	4,240	1,120	1,530	7,790	2,030	361	433	466	1,340
18	433	3,140	23,900	6,150	1,100	1,340	6,660	1,420	337	417	466	992
19	369	2,340	19,000	5,490	1,100	1,390	5,000	1,390	329	417	500	940
20	393	2,670	14,800	4,440	1,230	2,420	4,150	1,620	754	401	500	1,070
21	361	3,060	11,700	3,830	1,250	4,060	4,390	1,900	7,280	401	500	2,030
22	345	3,480	9,090	3,520	1,280	3,060	4,530	1,740	g10,400	417	500	1,770
23	353	3,060	6,790	3,310	1,230	2,280	3,740	1,840	g10,600	393	536	1,420
24	361	2,560	5,000	3,100	1,170	2,380	3,100	2,000	g11,400	417	635	1,170
25	361	1,900	2,980	2,670	1,070	3,100	2,710	2,100	g12,600	555	656	966
26	345	1,680	1,770	2,420	966	3,440	2,420	1,620	11,000	723	594	746
27	353	1,590	1,620	2,280	890	2,780	2,170	1,390	8,220	700	1,410	614
28	353	1,420	2,310	2,170	866	2,340	1,940	1,280	5,440	536	8,230	555
29	353	1,150	2,710	2,140	-	2,240	1,770	1,280	4,150	449	8,750	518
30	353	1,100	2,640	2,030	-	2,170	1,710	1,340	2,820	401	8,920	483
31	353	-	2,640	1,870	-	1,680	-	1,390	-	385	6,220	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	11,240	466	297	363	22,290
November	316,923	40,000	353	10,560	628,600
December	241,274	34,200	794	7,783	478,600
Calendar year 1946	1,744,421	54,800	266	4,779	3,460,000
January	84,510	6,150	1,620	2,726	167,600
February	33,002	1,680	866	1,179	65,460
March	57,568	4,060	794	1,857	114,200
April	107,420	9,180	1,170	3,581	213,100
May	60,910	3,220	1,280	1,965	120,800
June	94,001	12,600	329	3,133	186,400
July	17,552	1,470	385	566	34,810
August	47,831	8,920	369	1,543	94,870
September	39,714	3,650	483	1,324	78,770
Water year 1946-47	1,111,945	40,000	297	3,046	2,206,000

g Computed from graph based on gage readings.

Trinity River near Oakwood, Tex.

Location.- Water-stage recorder, lat. 31°39', long. 95°47', at bridge on U. S. Highways 79 and 84, 1½ miles upstream from International-Great Northern Railroad bridge and 6 miles northeast of Oakwood, Leon County. Datum of gage is 175.03 feet above mean sea level, datum of 1929.

Drainage area.- 12,840 square miles.

Records available.- July 1932 to September 1947. January 1905 to July 1932 at site 1½ miles downstream (January 1905 to September 1923, monthly and yearly records only, in Water-Supply Papers 850 and 878). U. S. Weather Bureau has collected gage-height records in this vicinity since 1904.

Average discharge.- 24 years (1923-47), 5,395 second-feet.

Extremes.- Maximum discharge during year, 54,000 second-feet Nov. 16 (gage height, 44.10 feet); minimum, 383 second-feet Aug. 5, 6.

1923-47: Maximum discharge, 153,000 second-feet Apr. 29, 1942 (gage height, 51.64 feet); minimum observed for period 1924-47, 22 second-feet Aug. 18, 1934.

Flood of June 4, 1908, reached a stage of about 52.2 feet, present site and datum, from information by U. S. Weather Bureau (discharge, about 164,000 second-feet).

Remarks.- Records good. Flow partly regulated by reservoirs above Dallas.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-13, July 1 to Sept. 30)

6.0	375	13.0	2,090	28.0	9,270	40.0	21,700
7.0	545	16.0	3,120	32.0	12,200	41.0	26,000
8.0	750	20.0	4,820	36.0	15,500	42.0	34,000
10.0	1,230	24.0	6,870	39.0	19,600	44.0	53,000

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,200	605	3,360	3,690	3,160	1,850	3,240	3,360	2,860	13,000	625	8,080
2	1,730	645	2,480	4,160	2,970	1,760	2,970	4,550	2,970	9,590	527	8,500
3	1,530	666	2,150	4,550	2,750	1,670	2,650	4,960	2,610	f4,960	473	7,310
4	1,150	1,010	1,970	4,960	2,510	1,610	2,440	3,940	2,510	f2,490	439	f4,580
5	884	4,500	1,790	5,300	2,310	1,610	2,350	3,040	2,150	1,390	391	f2,860
6	750	9,340	1,670	5,060	2,150	1,610	2,220	2,860	1,670	1,100	391	2,220
7	687	12,000	1,560	4,550	2,060	2,090	2,120	2,790	1,340	1,030	423	1,940
8	625	13,500	1,500	4,280	2,000	5,300	2,090	2,750	1,150	980	509	1,560
9	625	14,800	1,500	4,240	1,970	8,680	2,090	3,560	1,000	932	666	1,200
10	605	16,800	1,500	3,940	1,910	10,600	2,570	3,980	884	884	772	932
11	545	21,900	1,670	3,730	1,880	10,900	6,360	4,550	816	838	794	708
12	509	35,800	3,080	3,690	1,880	9,900	9,410	4,550	772	816	794	645
13	509	46,000	5,830	3,770	1,880	11,200	10,900	3,860	729	794	750	645
14	565	52,000	9,140	3,690	1,820	10,600	12,300	3,280	687	708	708	962
15	687	53,000	11,200	3,400	1,820	11,300	13,600	3,080	666	845	645	3,270
16	729	53,000	12,500	3,160	1,820	11,800	14,600	3,440	605	625	645	5,010
17	645	48,000	13,300	4,080	1,820	11,200	16,000	4,730	565	625	645	f4,370
18	625	42,100	13,500	7,240	1,820	8,880	18,300	4,820	545	645	625	f3,010
19	666	36,700	13,700	11,300	1,880	7,420	21,500	4,420	527	605	565	2,060
20	772	30,800	14,400	13,500	2,650	5,900	24,700	4,280	545	565	545	1,580
21	838	24,200	15,300	14,900	4,780	6,260	23,800	4,640	585	509	545	1,310
22	956	19,000	17,000	16,200	6,380	6,760	21,300	3,980	1,760	473	545	1,200
23	838	13,300	19,600	17,600	6,160	6,980	18,000	3,690	5,960	473	565	1,450
24	729	8,500	23,000	18,400	4,460	7,900	14,100	3,480	9,140	491	565	2,000
25	666	5,650	25,300	17,200	3,120	6,760	10,100	3,200	11,200	491	565	1,880
26	625	6,820	24,200	13,300	2,510	5,800	7,310	2,890	12,900	491	645	1,580
27	605	8,200	21,700	8,380	2,220	5,110	6,430	2,860	14,100	473	772	1,340
28	565	8,380	18,300	5,250	2,000	4,780	5,950	2,680	14,800	527	794	1,130
29	527	6,980	12,100	4,030	-	4,370	4,730	2,550	14,900	645	866	932
30	565	5,010	6,360	3,600	-	3,860	3,730	2,550	14,300	729	3,830	772
31	585	-	4,030	3,360	-	3,440	-	2,580	-	708	6,980	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	23,537	1,730	509	759	46,680
November	599,206	53,000	605	19,970	1,189,000
December	304,690	25,300	1,500	9,829	604,300
Calendar year 1946	3,130,578	53,000	340	8,577	6,210,000
January	224,510	18,400	3,160	7,242	445,300
February	74,690	6,380	1,820	2,668	148,100
March	197,900	11,800	1,610	6,384	392,500
April	287,860	24,700	2,090	9,595	571,000
May	111,900	4,960	2,550	3,610	222,000
June	125,246	14,900	527	4,175	248,400
July	49,232	13,000	473	1,588	97,650
August	28,604	6,980	391	923	56,740
September	75,036	8,500	645	2,501	148,800
Water year 1946-47	2,102,411	53,000	391	5,760	4,170,000

f Computed on basis of partly estimated gage-height record.

Trinity River near Midway, Tex.

Location.- Wire-weight gage, lat. 31°04'40", long. 95°42'00", at bridge on State Highway 21, 5 miles northeast of Midway, Madison County, and 8 miles downstream from Boggy Creek. Datum of gage is 117.6 feet above mean sea level, datum of 1929.

Drainage area.- 14,390 square miles.

Records available.- April 1939 to September 1947.

Extremes.- Maximum discharge during year, 39,200 second-feet Nov. 22 (gage height, 41.91 feet); minimum observed, 520 second-feet Aug. 7, 8.

1939-47: Maximum discharge, 146,000 second-feet May 1, 1942 (gage height, 48.58 feet); minimum observed, 100 second-feet Oct. 4, 1939.

Maximum discharge known occurred in May 1890 (gage height, about 45.0 feet, discharge not determined), from information by local residents. Flood of May 27, 1930, reached a stage of 46.7 feet, from floodmark (flow confined within levee system constructed in 1916). Flood of June 9, 1908, reached a stage of 44.3 feet, from floodmarks and from information by local residents.

Remarks.- Records good. Gage read twice daily, oftener during high stages. Flow partly regulated by reservoirs above Dallas.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	985	725	8,050	a14,300	4,260	2,600	4,520	4,920	5,640	14,200	865	5,500
2	1,140	1,140	6,130	7,110	4,020	2,380	3,660	4,200	5,710	13,800	805	7,110
3	1,500	a2,800	4,480	7,110	3,780	2,210	4,020	4,720	5,300	11,900	688	7,750
4	1,690	4,780	3,840	7,320	3,540	2,100	3,600	5,300	4,260	7,820	635	7,460
5	1,500	5,110	3,120	6,970	3,240	2,040	3,360	4,780	3,660	4,200	582	5,500
6	1,100	6,800	2,820	6,480	3,000	2,040	3,180	3,840	3,180	2,940	550	3,480
7	885	12,400	2,600	6,410	2,820	2,650	3,000	3,480	2,650	2,040	535	2,480
8	805	13,700	2,430	6,060	2,700	3,600	2,880	3,360	1,940	1,460	535	2,160
9	765	14,100	2,940	7,040	2,600	5,440	2,760	4,080	1,640	1,370	550	1,890
10	725	17,400	2,480	7,110	2,430	8,200	2,700	5,110	1,500	1,280	652	1,550
11	765	18,800	3,000	6,970	2,320	9,900	2,880	5,780	1,370	1,190	825	1,320
12	670	19,000	4,850	6,340	2,320	11,300	4,720	7,680	1,280	1,190	885	1,140
13	652	19,900	5,920	5,500	2,320	17,900	7,740	7,600	1,190	1,240	885	865
14	600	21,500	6,690	5,300	2,320	21,500	9,900	8,060	1,100	1,100	965	965
15	618	23,200	8,800	5,180	2,260	21,500	11,300	4,850	1,060	1,000	785	1,320
16	670	26,200	10,400	5,110	2,210	19,200	12,700	4,690	1,000	925	725	2,160
17	725	29,700	12,200	5,990	2,210	16,400	13,600	13,300	965	865	745	4,140
18	805	31,600	12,900	8,420	2,160	15,200	14,600	18,400	925	805	765	4,590
19	845	34,100	13,000	10,200	2,210	18,000	15,700	21,200	925	865	725	3,060
20	785	36,800	14,800	12,600	3,120	16,800	17,300	18,200	865	825	688	2,600
21	785	38,700	15,200	14,300	3,780	13,200	18,700	15,900	1,240	805	652	1,890
22	845	39,200	15,800	15,500	5,240	10,200	20,300	12,200	1,370	745	652	1,600
23	885	38,400	16,300	16,700	6,410	9,580	21,300	8,720	1,770	670	688	1,460
24	925	36,800	17,200	17,300	6,760	9,820	21,700	7,180	4,670	618	688	1,500
25	885	32,500	18,100	18,000	5,780	9,900	20,400	6,200	7,680	582	705	1,940
26	845	28,300	19,400	18,400	4,260	9,340	17,600	5,110	9,900	582	985	2,040
27	805	20,200	20,400	17,700	3,240	8,200	11,600	4,200	11,400	618	1,140	1,840
28	725	14,400	21,700	14,300	2,760	7,530	8,120	3,660	11,900	618	1,460	1,640
29	688	11,600	22,400	8,880	-	6,550	6,900	3,480	13,500	618	1,240	1,460
30	670	9,740	20,300	5,780	-	5,780	5,990	5,110	14,200	705	1,140	1,190
31	618	-	17,000	4,780	-	5,110	-	6,410	-	825	2,280	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	26,906	1,690	600	868	53,370
November	609,595	39,200	725	20,320	1,209,000
December	335,230	22,400	2,430	10,810	664,900
Calendar year 1946	3,650,450	44,000	460	10,000	7,241,000
January	299,160	18,400	4,780	9,650	593,400
February	94,070	6,760	2,160	3,360	186,600
March	296,170	21,500	2,040	9,554	587,400
April	296,730	21,700	2,700	9,891	588,600
May	229,720	21,200	3,360	7,410	455,600
June	123,790	14,200	865	4,126	245,500
July	78,401	14,200	582	2,529	155,500
August	25,920	2,280	535	836	51,410
September	83,600	7,750	865	2,787	165,800
Water year 1946-47	2,499,292	39,200	535	6,847	4,957,000

a No gage-height record; discharge computed on basis of estimated gage heights.

Trinity River at Riverside, Tex.

Location.- Wire-weight gage, lat. 30°52', long. 95°24', at bridge on State Highway 45, 1,200 feet upstream from International-Great Northern Railroad bridge, 0.5 mile north of Riverside, Walker County, and three-quarters of a mile downstream from Harmon Creek. Datum of gage is 89.86 feet above mean sea level, datum of 1929.

Drainage area.- 15,510 square miles.

Records available.- January 1903 to December 1906, October 1923 to September 1947. U. S. Weather Bureau has collected gage-height records in this vicinity since 1903.

Average discharge.- 27 years (1903-6, 1923-47), 7,341 second-feet.

Extremes.- Maximum discharge during year, 40,000 second-feet Mar. 13 (gage height, 33.26 feet); minimum observed, 555 second-feet Aug. 8, 9.
1903-6, 1923-47: Maximum discharge, 121,000 second-feet May 5, 1942 (gage height, 52.75 feet, from floodmark); minimum observed, 70 second-feet Aug. 20-26, Sept. 8-13, 1925, Sept. 29 to Oct. 4, 1931.
Flood of June 11, 1908, reached a stage of 50.1 feet, present site and datum (discharge, 100,000 second-feet).

Remarks.- Records good. Gage read twice daily. Flow partly regulated by reservoirs above Dallas.

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

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	960	792	10,600	16,000	5,040	3,070	5,490	5,850	6,660	14,400	900	3,060
2	1,020	1,200	8,300	14,100	4,590	2,750	4,950	4,680	6,390	14,000	930	6,120
3	1,240	2,030	6,030	13,500	4,230	2,590	4,590	4,140	6,480	13,600	840	7,200
4	1,750	11,300	4,500	11,900	3,960	2,430	4,320	4,860	5,850	11,100	732	7,800
5	1,830	11,900	3,600	10,000	3,600	2,190	3,870	5,310	4,680	7,110	654	7,200
6	1,590	21,400	2,750	8,200	3,330	2,190	3,600	4,500	3,960	3,690	616	5,580
7	1,170	19,200	2,910	7,400	3,070	3,240	3,330	3,600	3,150	2,110	582	3,600
8	990	17,500	2,670	9,100	2,910	4,410	3,150	3,240	2,510	1,590	555	2,670
9	930	16,800	2,510	11,300	2,750	5,940	2,990	3,330	1,990	1,400	555	2,350
10	840	22,400	2,430	11,700	2,590	7,800	2,910	4,410	1,630	1,300	588	1,990
11	990	24,100	2,910	10,900	2,510	9,800	2,910	5,670	1,440	1,270	732	1,590
12	870	23,600	5,670	9,600	2,590	17,300	3,150	6,480	1,270	1,270	900	1,270
13	792	23,400	7,200	7,800	2,910	38,300	6,120	8,000	1,140	1,200	930	1,050
14	750	22,800	8,200	6,390	2,430	35,200	9,100	7,200	1,110	1,240	930	900
15	698	22,400	9,200	5,850	2,430	32,300	10,800	5,850	1,050	1,300	870	870
16	704	26,200	10,600	7,070	2,430	27,600	12,200	4,590	1,050	1,110	816	1,300
17	762	28,800	11,700	16,500	2,350	22,800	13,500	13,100	1,020	990	804	2,860
18	900	30,200	12,800	17,100	2,350	18,600	14,400	30,000	1,020	930	768	4,590
19	900	31,400	13,800	19,800	2,350	20,600	15,600	34,600	960	960	804	4,500
20	900	31,800	15,500	19,200	3,600	22,400	16,800	32,600	1,050	930	792	3,510
21	870	32,600	16,800	17,900	4,680	21,300	18,200	30,200	1,400	930	750	2,750
22	930	33,400	17,500	17,400	5,400	17,000	19,600	23,500	1,750	900	692	2,190
23	990	33,900	17,500	17,200	6,570	12,600	21,000	16,800	2,110	840	692	1,830
24	1,110	33,900	17,500	17,800	7,400	11,400	21,900	11,500	3,640	768	692	1,670
25	2,110	33,800	18,100	18,500	7,110	12,000	22,200	8,800	7,100	714	738	1,710
26	1,200	34,100	19,300	19,100	5,850	12,200	21,000	6,750	9,600	709	756	2,350
27	1,170	30,600	20,500	19,300	4,320	10,500	17,200	6,210	11,300	732	1,110	2,430
28	1,020	23,800	21,400	18,100	3,420	9,000	11,600	4,860	12,500	732	1,710	2,190
29	930	16,700	22,200	14,500	-	8,000	8,300	3,870	13,500	714	1,790	1,830
30	840	13,200	22,300	8,930	-	7,020	6,930	4,050	14,200	726	1,550	1,590
31	816	-	21,200	6,030	-	6,300	-	6,210	-	798	1,400	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	32,572	2,110	698	1,051	64,610
November	675,222	34,100	792	22,510	1,339,000
December	358,180	22,300	2,430	11,550	710,400
Calendar year 1946	4,342,767	40,200	480	11,900	8,614,000
January	408,170	19,800	5,850	13,170	809,600
February	106,770	7,400	2,350	3,813	211,800
March	408,830	38,300	2,190	13,190	810,900
April	311,710	22,200	2,910	10,390	618,300
May	314,760	34,600	3,240	10,150	624,300
June	131,510	14,200	960	4,384	260,800
July	90,063	14,400	709	2,905	178,600
August	27,178	1,790	555	877	53,910
September	90,550	7,800	870	3,018	179,600
Water year 1946-47	2,955,515	38,300	555	8,097	5,862,000

Trinity River at Romayor, Tex.

Location.- Water-stage recorder, lat. 30°25'30", long. 94°51'05", at county highway bridge, 1.9 miles south of Romayor, Liberty County, 2.0 miles downstream from Gulf, Colorado & Santa Fe Railway bridge, and 4½ miles downstream from Big Creek. Datum of gage is 35.92 feet above mean sea level, datum of 1929.

Drainage area.- 17,200 square miles.

Records available.- October 1943 to September 1947. May 1924 to September 1943 at site 2.0 miles upstream.

Average discharge.- 23 years (1924-47), 8,228 second-feet.

Extremes.- Maximum discharge during year, 48,800 second-feet Mar. 15 (gage height, 27.55 feet); minimum, 700 second-feet Aug. 10, 11.
1924-47: Maximum discharge, 111,000 second-feet May 9, 1942 (gage height, 35.8 feet, from floodmarks, present site and datum); minimum observed, 132 second-feet Aug. 21, 22, 1925.

Remarks.- Records good. Flow partly regulated by reservoirs above Dallas. Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,040	930	15,900	23,600	8,430	4,600	6,440	6,930	5,870	13,700	878	1,510
2	1,150	880	12,900	23,000	6,800	4,100	5,760	5,870	7,060	14,400	925	1,540
3	1,180	1,720	10,400	24,200	6,090	3,740	5,210	4,900	6,680	14,700	975	4,270
4	1,200	12,800	8,150	21,500	5,650	3,490	4,800	4,300	6,320	14,200	1,020	6,560
5	1,510	29,300	6,440	17,500	5,320	3,330	4,700	4,300	5,870	12,200	975	7,450
6	1,670	46,600	5,650	14,200	5,000	3,180	4,300	4,700	5,000	8,740	900	7,450
7	1,570	44,600	5,100	11,900	4,700	3,570	4,010	4,400	4,300	5,170	832	6,090
8	1,410	33,500	4,800	17,400	4,500	5,430	3,920	3,830	3,740	3,330	788	4,400
9	1,290	25,400	4,400	18,300	4,200	6,440	3,740	3,490	3,330	2,580	742	3,330
10	1,180	28,300	4,700	20,800	4,010	6,800	3,650	3,330	2,880	2,130	720	2,720
11	1,380	37,600	4,900	19,300	3,920	7,730	3,570	3,650	2,580	1,920	700	2,350
12	1,380	35,800	6,360	17,200	3,920	9,600	3,570	4,500	2,280	1,860	742	2,060
13	1,230	29,800	10,000	14,700	3,920	31,000	3,570	5,210	2,060	1,920	810	1,790
14	1,090	26,200	10,500	11,700	3,830	46,600	5,150	6,440	1,790	1,860	925	1,510
15	982	24,200	10,400	9,450	3,740	47,700	8,150	6,680	1,630	1,660	1,000	1,340
16	905	24,800	10,400	8,800	3,650	43,200	10,200	5,760	1,540	1,570	1,020	1,230
17	855	28,600	11,300	21,400	3,490	35,400	11,700	6,570	1,450	1,450	1,000	1,200
18	855	28,800	12,200	30,500	3,410	27,700	13,000	20,200	1,390	1,310	1,000	1,660
19	880	30,500	13,500	29,300	3,330	22,200	14,200	33,500	1,340	1,200	950	3,540
20	955	31,000	15,600	29,100	3,330	21,900	15,400	37,600	1,310	1,260	950	4,500
21	955	31,000	17,900	26,400	4,100	22,800	16,500	37,600	1,260	1,260	950	4,010
22	930	31,200	18,800	23,000	6,090	21,300	17,900	36,500	1,480	1,120	925	3,250
23	930	31,500	18,800	20,800	6,930	17,500	19,200	30,200	1,720	1,080	900	2,580
24	1,020	32,000	18,400	19,900	7,450	13,500	20,400	23,100	1,990	1,050	878	2,130
25	2,690	32,300	18,300	19,900	7,870	11,400	21,000	16,600	3,020	1,000	925	1,860
26	3,080	32,900	18,800	20,200	7,730	11,400	21,300	12,200	5,320	950	975	1,660
27	2,220	33,800	19,700	20,400	6,800	11,300	20,200	9,000	8,290	950	1,000	1,790
28	1,510	31,700	20,600	20,600	5,430	10,200	17,000	7,450	10,400	925	975	2,060
29	1,260	26,800	21,500	19,700	-	8,850	12,400	6,200	11,700	900	1,150	2,130
30	1,120	20,600	22,000	16,600	-	8,010	8,850	5,100	12,900	878	1,570	1,920
31	982	-	22,800	12,100	-	7,060	-	4,700	-	878	1,660	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	40,409	3,080	855	1,304	80,150
November	825,130	46,600	880	27,500	1,637,000
December	401,000	22,800	4,400	12,940	795,400
Calendar year 1946	4,973,391	48,800	-	13,630	9,865,000
January	603,450	30,500	8,800	19,470	1,197,000
February	143,640	8,430	3,530	5,130	284,900
March	481,030	47,700	3,180	15,520	954,100
April	309,790	21,300	3,570	10,330	614,500
May	364,810	37,600	3,330	11,770	723,600
June	126,500	12,900	1,260	4,217	250,900
July	118,151	14,700	878	3,811	234,300
August	29,760	1,660	700	960	59,030
September	89,890	7,450	1,200	2,996	178,300
Water year 1946-47	3,533,560	47,700	700	9,681	7,009,000

Note.- No gage-height record Oct. 2-8, June 12-24, July 9; discharge computed on basis of recorded range in stage and records for stations at Riverside and at Liberty.

Trinity River at Liberty, Tex.

Location.- Wire-weight gage, lat. 30°03'25", long. 94°49'05", at bridge on U. S. Highway 90 in Liberty, Liberty County, 450 feet downstream from Texas & New Orleans Railroad bridge. Datum of gage is 2.22 feet below mean sea level, datum of 1929.

Drainage area.- 17,500 square miles.

Records available.- October 1938 to September 1940 (gage heights, discharge measurements, and some records of daily discharge), October 1940 to September 1947. U. S. Weather Bureau has collected gage-height records in this vicinity since 1903.

Extremes.- Maximum discharge during year, 42,300 second-feet Mar. 17 (gage height, 27.39 feet); minimum not determined (affected by tides); minimum gage height observed, 5.1 feet Aug. 12, 13.

1938-47: Maximum discharge, 114,000 second-feet May 12, 1942 (gage height, 29.38 feet); minimum discharge not determined (affected by tides); minimum gage height observed, 2.5 feet Nov. 4, 1939.

A stage 28.6 feet was reached May 8-11, 1922, from observation by U. S. Weather Bureau at chain gage on railroad bridge upstream.

Remarks.- Records good. Gage read once daily. Discharge not computed below 10-foot gage height because tides affect stage-discharge relation.

Cooperation.- Gage readings furnished by U. S. Weather Bureau.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	25,600	22,200	14,900	6,110	9,130	11,800	6,380	13,600		-
2	-	-	20,400	23,400	11,300	5,160	8,030	10,700	7,010	14,700		-
3	-	-	17,200	23,400	9,020	4,600	7,100	9,350	8,140	15,100		-
4	-	5,010	14,000	23,400	7,300	4,200	6,470	6,560	7,920	15,200		-
5	-	15,800	11,100	21,800	6,290	3,850	5,930	4,920	7,300	15,100		5,710
6	-	23,200	8,470	19,500	5,660	3,640	5,480	4,680	6,650	13,400		6,920
7	-	28,200	6,380	17,500	5,320	3,500	5,160	5,660	5,930	10,300		6,830
8	-	33,700	5,240	16,400	4,840	4,200	4,680	5,480	5,000	6,740		5,840
9	-	38,300	4,760	17,500	4,440	6,020	4,360	4,920	4,440	3,990		4,280
10	-	38,300	4,760	18,400	4,130	6,920	4,200	4,280	3,780	-		-
11	-	33,700	5,570	18,300	3,990	7,500	4,130	4,130	-	-		-
12	-	36,600	6,560	18,900	3,920	8,470	3,850	4,440	-	-		-
13	-	40,200	8,800	18,100	3,920	13,000	3,850	5,320	-	-		-
14	-	38,300	11,100	16,500	3,920	22,300	3,990	6,200	-	-		-
15	-	33,700	11,300	14,300	3,920	27,400	5,840	7,100	-	-		-
16	-	31,200	11,200	12,300	3,850	35,100	8,690	7,700	-	-		-
17	-	29,100	11,500	13,500	3,710	40,200	10,900	7,300	-	-		-
18	-	29,100	11,900	19,700	3,640	40,200	12,200	10,800	-	-		-
19	-	31,200	12,800	24,600	3,500	36,600	13,300	19,300	-	-		-
20	-	32,400	13,800	26,700	3,500	30,100	14,300	25,600	-	-		-
21	-	33,700	15,300	29,100	3,500	27,400	14,900	31,200	-	-		3,990
22	-	35,100	16,700	29,100	4,570	25,600	15,800	36,600	-	-		3,710
23	-	35,100	17,400	26,100	6,380	24,200	16,800	40,200	-	-		-
24	-	35,100	17,600	24,200	7,200	21,200	18,000	38,300	-	-		-
25	-	35,100	17,800	22,200	7,810	18,300	18,900	32,400	-	-		-
26	3,640	36,600	18,000	21,200	8,250	16,500	19,500	24,600	3,500	-		-
27	3,850	36,600	18,000	20,900	8,140	15,200	19,900	19,100	5,930	-		-
28	-	38,300	18,800	20,600	7,200	14,300	19,700	15,600	9,020	-		-
29	-	36,600	19,300	20,400	-	12,900	18,300	12,800	10,700	-		-
30	-	32,400	20,100	19,700	-	11,600	16,100	10,000	12,200	-		-
31	-	-	21,200	17,800	-	10,300	-	7,600	-	-		-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	-	-	-	-	-
November 4-30	872,610	40,200	5,010	32,320	1,731,000
December	422,640	25,600	4,760	13,630	838,300
Calendar year	-	-	-	-	-
January	638,700	29,100	12,300	20,600	1,267,000
February	164,120	14,900	3,500	5,861	325,500
March	506,570	40,200	3,500	16,340	1,005,000
April	319,490	19,900	3,850	10,650	633,700
May	434,640	40,200	4,130	14,020	862,100
June	-	-	-	-	-
July 1-9	108,130	15,200	3,990	12,010	214,500
August	-	-	-	-	-
September	-	-	-	-	-
Water year	-	-	-	-	-

Clear Fork Trinity River at Fort Worth, Tex.

Location.- Water-stage recorder and concrete control, lat. 32°44', long. 97°21', at bridge on Stove Foundry road, 388 feet downstream from Texas & Pacific Railway bridge at Fort Worth, Tarrant County, and 3 miles upstream from mouth. Datum of gage is 532.91 feet above mean sea level, datum of 1929.

Drainage area.- 522 square miles.

Records available.- March 1924 to September 1947.

Average discharge.- 23 years, 108 second-feet.

Extremes.- Maximum discharge during year, 14,100 second-feet Dec. 11 (gage height, 17.37 feet); no flow at times.
1924-47: Maximum discharge, 27,000 second-feet Mar. 30, 1945 (gage height, 22.10 feet), from rating curve extended above 17,000 second-feet; no flow at times.
Maximum discharge known, 74,300 second-feet Apr. 25, 1922 (gage height, 27.5 feet, present datum), by slope-area method, data furnished by city engineer of Fort Worth.

Remarks.- Records good except those for period of no gage-height record, which are poor. Texas & Pacific Railway Co. diverts small amount of water from pool in which gage is located.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.4	5.9	64	118	111	73	139	93	43	17	0	0
2	7.1	1,090	58	158	107	67	132	80	38	17	0	0
3	4.8	3,340	58	143	114	67	125	76	32	14	0	0
4	4.8	2,280	61	125	111	67	125	73	25	14	0	0
5	3.8	422	61	118	107	70	125	67	23	13	0	0
6	4.8	3,060	61	129	111	73	114	64	19	13	0	0
7	4.8	384	61	154	104	174	100	64	17	13	0	0
8	4.8	227	64	158	97	222	100	137	16	9.7	0	0
9	73	193	64	151	97	197	100	336	14	9.7	0	0
10	192	158	210	147	93	143	118	121	13	8.4	0	0
11	58	143	4,540	166	97	136	129	90	11	48	0	14
12	43	125	2,400	151	100	139	97	83	13	54	0	472
13	40	114	527	139	97	129	104	76	9.7	19	0	16
14	38	111	332	129	90	118	276	67	8.4	13	0	5.9
15	55	111	278	121	86	104	1,290	61	8.4	9.7	0	34
16	107	125	247	146	83	100	416	67	7.1	8.4	0	8.4
17	49	93	202	478	80	97	206	90	8.4	8.4	0	2.8
18	43	86	173	272	80	169	170	88	9.7	8.4	0	2.0
19	40	86	170	227	83	932	170	83	71	4.8	0	.6
20	35	86	170	210	132	296	166	64	663	4.8	0	4.9
21	32	80	162	177	97	181	136	73	2,220	2.8	0	2.8
22	28	73	151	166	83	185	125	67	115	2.8	0	2.0
23	25	70	143	170	80	206	118	55	146	1.3	0	.7
24	19	73	136	166	73	290	114	52	508	.7	0	.2
25	17	73	132	158	70	189	132	49	286	1.3	0	.6
26	16	70	132	154	70	170	125	43	67	1.3	34	0
27	11	67	132	147	70	154	114	43	43	1.3	19	0
28	8.4	64	129	136	73	143	136	38	32	.7	3.8	0
29	7.1	64	114	136	-	143	125	46	23	.2	2.0	0
30	5.9	64	104	125	-	143	107	83	21	0	0	0
31	4.8	-	107	118	-	143	-	52	-	0	0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	990.5	192	3.8	32.0	1,960
November	12,937.9	3,340	5.9	431	25,660
December	11,243	4,540	58	383	22,300
Calendar year 1946	51,182.3	4,540	0	140	101,500
January	5,093	478	118	164	10,100
February	2,596	132	70	92.7	5,150
March	5,320	932	67	172	10,550
April	5,434	1,290	97	181	10,780
May	2,481	336	38	80.0	4,920
June	4,510.7	2,220	7.1	150	8,950
July	319.7	54	0	10.3	634
August	58.8	34	0	1.90	117
September	566.9	472	0	18.9	1,120
Water year 1946-47	51,551.5	4,540	0	141	102,200

Peak discharge.- Nov. 3 (7:20 p.m.) 8,600 sec.-ft.; Nov. 6 (7 a.m.) 8,680 sec.-ft.; Dec. 11 (8:40 p.m.) 14,100 sec.-ft.; June 21 (2:40 a.m.) 7,290 sec.-ft.

Note.- No gage-height record Oct. 8-30; discharge computed on basis of recorded range in stage, weather records, and records for West Fork Trinity River at Fort Worth.

Lake Dallas near Lake Dallas, Tex.

Location.- Water-stage recorder, lat. 33°07', long. 96°59', in gatehouse 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. Datum of gage is 0.08 foot above mean sea level, datum of 1929.

Drainage area.- 1,160 square miles.

Records available.- December 1928 to September 1947.

Extremes.- Maximum contents during year, 211,600 acre-feet Dec. 13 (gage height, 526.59 feet); minimum, 90,500 acre-feet Nov. 2 (gage height, 514.04 feet).
1928-47: Maximum contents not determined; maximum gage height, 534.0 feet Apr. 25, 1942, from floodmark; all gates were open during passing of crest through lake; minimum contents observed, 42,500 acre-feet Apr. 1, 1940 (gage height, 505.8 feet).

Remarks.- Reservoir is formed by earthen hydraulic-fill dam, consisting of 567 feet of concrete service spillway and two dikes. There are two emergency earthen spillways beyond right end of dam. Dam completed in November 1927 and storage began Feb. 16, 1928. Capacity, 194,000 acre-feet (gage height, 525.0 feet, top of service spillway). Water can be withdrawn through one 18-inch outlet gate (gage height of bottom of gate, 474.0 feet), four 48-inch outlet gates (gage height of bottom of gate, 463.0 feet), and one 6-inch gate (gage height of bottom of gate, 474.0 feet). Dead storage is negligible. Water is used by city of Dallas for municipal supply. Figures given herein represent total contents.

Cooperation.- Capacity table furnished by city of Dallas.

Monthly gage height and contents, water year October 1946 to September 1947

Date	Gage height (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	516.7	112,600	-
Oct. 31	514.2	92,000	-20,600
Nov. 30	519.7	139,400	+47,400
Dec. 31	520.9	151,200	+11,800
Calendar year 1946	-	-	+16,600
Jan. 31	518.9	131,800	-19,400
Feb. 28	517.2	116,900	-14,900
Mar. 31	516.7	112,600	-4,300
Apr. 30	519.0	132,700	+20,100
May 31	524.5	188,500	+55,800
June 30	524.8	191,800	+3,300
July 31	522.0	162,200	-29,600
Aug. 31	519.1	133,600	-28,600
Sept.30	516.1	107,600	-26,000
Water year 1946-47	-	-	-5,000

† Gage height at 12 p.m.

Elm Fork Trinity River near Carrollton, Tex.

Location.- Water-stage recorder above spillway of California concrete dam, lat. 32°52'25", long. 96°55'50", at bridge on State Highway 114, 100 feet downstream from Hackberry Creek and 5.5 miles southwest of Carrollton, Dallas County. Datum of gage is 410.46 feet above mean sea level, datum of 1929.
Drainage area.- 2,542 square miles.
Records available.- July 1938 to September 1947. January 1907 to December 1928 at site near Dallas, 7 miles downstream (January 1907 to September 1920, monthly records only, in Water-Supply Paper 850). November 1923 to July 1938 at site 8.5 miles upstream, at Carrollton Dam. Records equivalent except following intense local rains and during periods of low flows affected by municipal pumping between present site and former site near Dallas.
Average discharge.- 39 years (1907-22, 1923-47), 873 second-feet.
Extremes.- Maximum discharge during year, 23,000 second-feet Dec. 13 (gage height, 14.95 feet); minimum, 230 second-feet June 18, 19 (gage height, 1.68 feet).
1907-47: Maximum gage height, about 28 feet May 25, 1908, present site and datum, from floodmarks, furnished by State Reclamation Department (discharge not determined); maximum discharge subsequent to 1908, 90,700 second-feet Apr. 26, 1942 (gage height, 21.05 feet); no flow at times.
Remarks.- Records good except those for periods of backwater from return of overbank flow, which are fair. Flow regulated by Lake Dallas (see preceding page). No diversion above station.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Nov. 9, Dec. 15, 16)

1.7	240	5.0	2,900	11.8	7,700
2.0	400	6.0	3,700	12.3	9,100
2.8	900	8.0	4,880	12.8	11,300
3.4	1,360	10.0	6,080	14.0	17,500
4.0	1,900	11.0	6,840	15.0	23,000

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	245	270	312	1,580	367	356	442	833	389	430	378	372
2	245	1,610	306	1,620	356	350	436	1,230	389	424	378	367
3	245	4,280	301	1,710	356	350	430	956	350	412	378	362
4	250	7,970	301	1,660	350	356	430	562	340	406	378	356
5	250	10,400	296	1,620	350	356	436	460	334	394	378	356
6	250	10,800	301	844	356	356	436	412	328	394	384	350
7	250	14,300	301	466	356	400	436	394	318	389	384	350
8	250	13,800	301	496	356	538	424	879	318	389	384	350
9	250	c3,710	306	604	350	544	412	1,480	323	389	384	350
10	255	851	1,540	592	350	490	514	1,040	323	389	384	350
11	240	772	5,530	562	345	448	520	732	323	389	384	350
12	240	574	14,800	574	350	466	466	616	323	389	389	372
13	245	514	21,400	556	356	586	556	490	318	389	384	356
14	245	466	14,300	520	350	466	622	586	318	389	384	350
15	250	454	c7,090	490	356	412	1,900	1,150	318	384	384	350
16	260	592	c2,770	484	350	394	3,660	664	318	384	384	350
17	260	628	2,050	634	356	384	2,460	502	312	384	384	345
18	260	568	3,480	568	350	389	1,340	472	265	384	384	345
19	255	1,440	3,400	526	356	1,620	758	436	389	384	384	345
20	250	1,530	3,320	508	367	2,100	1,000	424	2,780	378	384	384
21	250	1,530	3,320	490	367	986	858	610	6,820	378	384	384
22	250	1,440	3,240	460	367	664	628	752	1,780	378	372	372
23	260	858	3,010	436	367	757	532	1,120	1,100	372	362	356
24	265	758	787	430	362	1,520	484	847	1,700	378	362	350
25	265	758	312	430	362	1,360	490	544	1,670	378	362	350
26	265	758	341	424	356	704	746	448	1,740	378	362	350
27	265	562	1,530	418	356	538	670	472	1,530	378	486	350
28	265	318	1,620	406	350	484	556	466	1,460	378	850	350
29	265	312	1,620	406	-	460	532	598	529	378	1,080	350
30	270	312	1,620	389	-	442	550	526	442	378	424	350
31	270	-	1,580	378	-	442	-	384	-	378	389	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	7,885	270	240	254	15,640
November	83,115	14,300	270	2,770	164,900
December	101,385	21,400	296	3,270	201,100
Calendar year 1946	648,085	40,500	-	1,776	1,285,000
January	21,281	1,710	378	686	42,210
February	9,970	367	345	356	19,780
March	19,718	2,100	350	636	39,110
April	23,724	3,660	412	791	47,060
May	21,085	1,480	384	680	41,820
June	27,847	6,820	265	928	55,230
July	12,022	430	372	388	23,850
August	13,088	1,080	362	422	25,960
September	10,672	384	345	356	21,170
Water year 1946-47	351,792	21,400	240	964	697,800

Peak discharge.- Nov. 8 (1 a.m.) 15,800 sec.-ft.; Dec. 13 (6 a.m.) 23,000 sec.-ft.
c Backwater from return of overbank flow; discharge computed on basis of backwater curve.

Denton Creek near Roanoke, Tex.

Location.- Water-stage recorder, lat. 33°02', long. 97°12', 340 feet upstream from bridge on U. S. Highway 377, a quarter of a mile downstream from Texas & Pacific Railway bridge, and 2.2 miles northeast of Roanoke, Denton County. Datum of gage is 523.6 feet above mean sea level, datum of 1929.

Drainage area.- 634 square miles.

Records available.- October 1923 to December 1927, March 1939 to September 1947.

Average discharge.- 11 years (1924-27, 1939-47), 215 second-feet.

Extremes.- Maximum discharge during year, 7,800 second-feet Nov. 6, Dec. 11; maximum gage height, 19.02 feet Nov. 6; no flow at times.
1923-27, 1939-47: Maximum discharge, 49,700 second-feet Apr. 20, 1942 (gage height, 30.20 feet), from rating curve extended above 32,000 second-feet on basis of velocity-area studies; no flow at times.
Maximum stage known, 31 feet in May 1908, from information by local residents.

Remarks.- Records good except those for Oct. 1 to Nov. 2 and those below 1.0 second-foot, which are fair. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.7	0	20	69	52	43	76	193	80	5.7		0
2	4.4	321	19	100	49	42	72	632	54	4.3		0
3	3.7	2,150	19	109	48	40	69	241	42	3.4		0
4	2.3	2,030	18	70	48	39	69	132	37	2.5		0
5	.9	1,400	17	68	47	40	74	94	31	2.3		0
6	.1	3,890	17	82	46	41	82	76	26	2.0		0
7	0	595	19	107	47	63	72	67	22	1.8		0
8	0	249	20	184	47	120	59	212	18	1.7		0
9	0	136	21	167	45	107	56	614	16	1.6		0
10	0	100	188	145	43	82	57	387	15	1.4		0
11	0	80	3,280	165	43	81	63	305	12	1.0		0
12	0	69	5,360	142	47	80	57	179	10	.8		0
13	0	47	3,020	126	48	69	95	156	8.3	.6		0
14	0	39	803	114	48	67	230	841	6.7	.4		0
15	0	35	351	100	48	58	2,260	415	6.0	.3		0
16	0	36	259	95	48	52	1,580	177	5.3	.2		0
17	0	34	200	98	47	49	1,070	142	5.0	.1		0
18	0	19	149	94	48	90	348	122	4.0	0		0
19	0	24	134	94	47	636	253	105	5.6	0		0
20	0	23	132	100	48	365	250	142	14	0		0
21	1.8	23	122	90	56	224	167	315	14	0		0
22	8.8	22	109	76	52	162	136	679	17	0		0
23	7.5	20	102	75	49	356	120	635	47	0		0
24	5.8	19	97	75	48	270	111	210	96	0		.2
25	4.0	20	92	76	45	177	215	136	137	0		.3
26	2.0	21	89	72	43	132	218	147	70	0		.1
27	.7	21	89	69	42	107	156	156	39	0		0
28	.1	21	89	67	43	89	128	90	27	0		0
29	0	21	81	65	-	80	120	65	15	0		0
30	0	20	68	62	-	80	113	52	8.3	0		0
31	0	-	65	55	-	76	-	70	-	0		-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	42.8	8.8	0	1.38	85
November	11,485	3,890	0	383	22,780
December	15,049	5,360	17	485	29,850
Calendar year 1946	92,883.8	6,340	0	254	184,200
January	3,011	184	55	97.1	5,970
February	1,322	56	42	47.2	2,620
March	3,917	836	39	126	7,770
April	8,376	2,260	56	279	16,610
May	7,787	841	52	251	15,450
June	888.2	137	4.0	29.6	1,760
July	30.1	5.7	0	.97	60
August	0	0	0	0	0
September	.6	.3	0	.02	1.2
Water year 1946-47	51,908.7	5,360	0	142	103,000

East Fork Trinity River near Rockwall, Tex.

Location.- Chain gage, lat. 32°55'25", long. 96°30'20", at bridge on U. S. Highway 67, 3 miles southwest of Rockwall, Rockwall County, and 8 miles upstream from Muddy Creek. Datum of gage is 404.3 feet above mean sea level, datum of 1929.

Drainage area.- 831 square miles.

Records available.- November 1923 to September 1947.

Average discharge.- 24 years, 503 second-feet.

Extremes.- Maximum discharge during year, 35,300 second-feet Dec. 12 (gage height, 19.90 feet); no flow Aug. 8-15.

1923-47: Maximum discharge determined, 64,800 second-feet June 16, 1935 (gage height, 23.39 feet), by slope-area method; maximum gage height, 24.82 feet Apr. 20, 1942, while levees were breaking; no flow at times.

A stage of 24.6 feet was reached in April 1922. Levees also broke during this flood.

Remarks.- Records good. Gage read twice daily. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66	1.8	232	266	237	104	308	1,100	88	51	1.5	90
2	38	607	215	404	188	104	284	1,840	84	43	1.2	40
3	17	4,750	198	659	171	101	266	2,540	83	40	.8	29
4	11	19,800	188	659	166	97	248	744	76	37	.5	23
5	8.1	25,000	188	428	171	94	237	332	62	34	.3	19
6	6.5	21,400	188	332	160	92	380	260	56	47	.2	16
7	5.0	30,300	182	380	149	127	584	242	50	36	.1	13
8	3.8	14,700	176	440	160	334	298	1,410	45	29	0	12
9	2.9	6,610	171	476	149	476	296	5,970	43	24	0	9.5
10	2.1	2,720	534	464	136	332	272	4,160	38	22	0	7.9
11	1.5	1,930	2,870	452	132	188	524	1,160	31	18	0	6.5
12	1.0	1,430	23,800	512	144	226	548	459	36	16	0	318
13	.9	689	23,200	476	160	572	416	332	31	14	0	55
14	.7	500	8,380	416	154	737	548	296	30	13	0	41
15	.6	440	3,600	368	149	560	948	248	29	11	.6	23
16	1.0	1,240	1,590	368	138	242	1,520	220	25	9.3	12	14
17	1.0	1,750	912	912	133	188	2,020	237	32	8.1	6.5	10
18	.8	2,020	698	1,590	129	166	1,250	290	30	6.8	4.2	8.1
19	.7	1,310	560	1,450	123	409	548	248	28	6.2	3.5	6.7
20	39	584	512	886	149	1,280	572	198	386	5.0	2.5	11
21	20	476	500	672	160	1,670	737	260	1,990	4.2	1.5	12
22	8.9	428	476	440	154	733	598	404	2,410	3.5	1.2	19
23	6.5	368	428	356	136	500	368	226	2,110	3.0	.9	21
24	4.8	320	392	332	120	770	320	160	1,670	2.4	.7	14
25	3.1	308	380	344	116	1,750	356	138	1,930	2.1	.5	12
26	2.1	320	356	320	108	1,510	332	130	1,450	1.8	.3	8.7
27	1.4	320	344	284	104	532	344	120	883	1.2	26	6.7
28	1.2	302	344	260	104	404	290	106	188	1.9	750	6.0
29	1.1	266	488	254	-	332	392	154	91	1.7	1,260	5.6
30	1.0	248	464	332	-	332	512	106	69	1.2	1,930	5.1
31	1.2	-	308	296	-	320	-	97	-	1.5	738	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	258.9	66	0.6	8.35	514
November	141,137.8	30,300	1.8	4,705	279,900
December	72,874	23,800	171	2,351	144,500
Calendar year 1946	474,723.8	32,000	0	1,301	941,600
January	15,828	1,590	254	511	31,390
February	4,100	237	104	146	8,130
March	15,282	1,750	92	493	30,310
April	16,316	2,020	237	544	32,360
May	24,187	5,970	97	780	47,970
June	14,074	2,410	25	469	27,920
July	494.9	51	1.2	16.0	982
August	4,743.0	1,930	0	153	9,410
September	862.8	318	5.1	28.8	1,710
Water year 1946-47	310,158.4	30,300	0	850	615,100

Cedar Creek near Mabank, Tex.

Location.- Water-stage recorder, lat. 32°19'45", long. 96°10'05", at bridge on State Farm Highway 85, 2 miles downstream from Lacys Fork and 5½ miles southwest of Mabank, Kaufman County. Datum of gage is 285.39 feet above mean sea level (Texas Reclamation Department bench mark based on Geological Survey datum, unadjusted).

Drainage area.- 741 square miles.

Records available.- December 1938 to September 1947.

Extremes.- Maximum discharge during year, 20,900 second-feet about Apr. 10 (gage height, 20.18 feet, from floodmark), from rating curve extended above 4,800 second-feet on basis of slope-area determination at gage height 23.5 feet, at location 12 miles downstream; no flow at times.

1938-47: Maximum discharge, 44,800 second-feet Mar. 30, 1945 (gage height, 25.43 feet), from rating curve extended above 4,800 second-feet on basis of slope-area determination at gage height 23.5 feet, at location 12 miles downstream; no flow at times.

Maximum stage known prior to establishment of station, about 23.5 feet Sept. 29, 1936, from information by local residents; peak discharge of this flood at site about 12 miles below station (drainage area, 910 square miles), 35,400 second-feet, by slope-area method.

Remarks.- Records good except those above 6,000 second-feet and those for periods of no gage-height record, which are poor. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	122	1.5	22	46	38	18		941	20	17	0	40
2	25	19	17	125	32	18		263	56	12	0	14
3	12	1,090	15	500	26	18		71	87	9.6	0	7.7
4	7.5	3,000	14	529	19	16		41	38	8.1	0	4.8
5	5.0	7,920	13	198	15	16	100	26	15	7.0	0	2.9
6	3.6	16,400	13	112	14	16		19	9.3	6.6	0	2.0
7	2.6	18,900	12	68	13	384		15	6.4	6.0	0	1.4
8	2.0	11,000	12	51	13	1,010		14	4.9	5.7	0	.9
9	1.6	5,490	14	47	12	899		18	4.2	5.4	0	.6
10	1.4	2,980	58	50	12	347		58	3.6	5.0	0	.5
11	15	2,760	276	66	12	136		35	3.0	4.8	0	.3
12	2.6	1,810	1,390	80	14	337	3,000	20	2.8	4.0	0	f2.9
13	1.8	387	2,310	78	14	2,340		14	2.3	2.8	0	f348
14	1.2	108	3,050	72	14	2,550		11	2.0	2.1	0	1,030
15	2.0	62	2,660	58	15	1,700		9.4	1.9	1.4	0	1,290
16	22	44	419	50	15	334		9.4	1.7	1.0	0	174
17	16	34	116	1,490	15	128		15	2.3	.8	.2	19
18	107	51	72	4,020	17	84		75	2.5	.6	1.6	9.6
19	144	42	48	4,620	38			61	2.6	.5	1.0	6.2
20	66	27	35	4,050	367		240	92	217	.5	.5	6.3
21	21	22	28	2,020	259			60	1,110	3.1	0	6.2
22	11	18	23	532	108		144	432	2,640	1.6	0	7.7
23	6.6	17	20	180	59		84	209	4,410	.9	0	8.6
24	4.7	16	18	116	41		55	81	4,380	.6	0	8.6
25	3.2	29	17	94	31	45	43	56	2,080	.3	0	5.7
26	2.6	276	16	82	23		36	23	973	.2	0	3.4
27	2.5	438	17	71	20		38	16	1,100	.1	33	2.2
28	2.5	170	17	62	18		39	14	398	0	609	1.7
29	2.3	60	29	54	-		53	9.9	56	0	1,220	1.2
30	2.0	34	80	48	-		1,360	15	29	0	1,530	1.0
31	1.8	-	82	43	-		-	22	-	0	568	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	620.5	144	1.2	20.0	1,230
November	732,205.5	18,900	1.5	2,440	145,200
December	10,913	3,050	12	352	21,650
Calendar year 1946	271,993.8	19,100	0	745	539,500
January	19,612	4,620	43	633	38,900
February	1,274	367	12	45.5	2,530
March	10,936	2,550	16	353	21,690
April	75,852	-	-	2,528	150,500
May	2,745.7	941	9.4	88.6	5,450
June	17,658.5	4,410	1.7	589	35,030
July	107.7	17	0	3.47	214
August	3,963.3	1,530	0	128	7,860
September	3,007.4	1,290	.3	100	5,970
Water year 1946-47	219,895.6	-	0	602	436,200

f Computed on basis of partly estimated gage-height record.

Note.- No gage-height record Jan. 27 to Feb. 10, Mar. 19 to Apr. 21; discharge computed on basis of recorded range in stage, information by observer, weather records, and records for Chambers Creek near Corsicana and Richland Creek near Richland.

Chambers Creek near Corsicana, Tex.

Location.- Water-stage recorder, lat. 32°06'30", long. 96°22'15", at bridge on State Highway 31, 500 feet upstream from St. Louis Southwestern Railway bridge, 6 miles east of Corsicana, Navarro County, and 17 miles upstream from Richland Creek. Datum of gage is 294.26 feet above mean sea level, datum of 1929.

Drainage area.- 958 square miles.

Records available.- March 1939 to September 1947.

Extremes.- Maximum discharge during year, 18,200 second-feet June 22 (gage height, 24.17 feet); no flow Aug. 9-11, 17-26.

1939-47: Maximum discharge, 48,000 second-feet May 3, 1944 (gage height, 27.19 feet); no flow at times.

Maximum stage known, about 27½ feet in December 1913, from information by local residents.

Remarks.- Records good except those for periods of no gage-height record, which are poor. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	2.9	38	30	166	96	173	745	80	44	1.1	38
2	24	3.5	37	38	152	94	166	200	85	40	.9	25
3	16	595	36	80	142	86	159	120	116	39	.6	19
4	12	3,410	35	188	142	81	152	76	54	40	.4	14
5	9.6	5,540	34	220	135	84	152	61	36	36	.4	11
6	7.6	5,810	35	85	120	81	142	54	30	33	.4	8.9
7	6.5	3,460	36	52	126	646	126	50	25	30	.2	7.2
8	6.3	1,070	36	75	120	1,710	123	47	22	27	.1	5.7
9	5.6	322	37	110	111	839	135	69	19	24	0	4.8
10	6.7	1,120	71	157	105	427	888	81	17	22	0	4.0
11	7.1	397	156	215	105	265	1,220	54	15	19	.1	3.3
12	5.2	138	3,070	251	111	598	674	44	13	17	47	669
13	3.7	91	3,460	182	117	2,870	4,560	41	12	15	7.9	2,020
14	2.9	72	1,650	136	117	1,060	4,750	38	9.9	14	1.2	1,640
15	4.4	66	442	107	111	307	2,220	35	9.1	12	.2	303
16	16	63	236	132	108	214	2,010	32	8.8	11	.1	68
17	46	61	137	2,390	102	176	1,490	54	8.3	9.9	0	44
18	33	58	84	7,920	105	170	589	91	8.0	8.9	0	35
19	26	52	59	4,830	154	610	424	230	7.6	8.0	.1	31
20	19	49	44	2,180	624	1,040	755	514	35	7.0	0	42
21	13	49	40	948	421	778	542	225	2,830	6.2	0	145
22	9.6	46	38	542	207	380	349	268	13,300	5.4	0	96
23	7.3	44	36	432	156	307	236	105	10,400	4.8	0	61
24	5.6	41	34	380	126	519	206	76	3,640	4.4	0	38
25	4.4	53	33	342	108	367	194	91	1,140	4.0	0	26
26	4.2	66	32	296	96	250	267	64	556	3.3	.1	22
27	3.5	47	31	255	91	210	290	54	163	2.7	.1	20
28	3.3	46	30	232	94	187	187	46	120	2.3	589	19
29	3.3	41	30	214	-	173	180	40	64	1.9	1,480	18
30	3.2	40	29	206	-	176	1,470	127	52	1.6	302	17
31	2.7	-	29	184	-	176	-	309	-	1.3	74	-

Month	Second-foot-days	Maximus	Minimum	Mean	Runoff in acre-feet
October	387.7	70	2.7	12.5	769
November	22,853.4	5,810	2.9	762	45,330
December	10,095	3,460	29	326	20,020
Calendar year 1946	179,428.4	9,940	0	492	355,900
January	23,409	7,920	30	755	46,430
February	4,272	824	91	153	8,470
March	14,977	2,870	81	483	29,710
April	24,829	4,750	123	828	49,250
May	4,041	745	32	130	8,020
June	32,875.7	13,300	7.6	1,096	65,210
July	494.7	44	1.3	16.0	981
August	2,505.9	1,480	0	80.8	4,970
September	5,454.9	2,020	3.3	182	10,820
Water year 1946-47	146,195.3	13,300	0	401	290,000

Note.- No gage-height record Nov. 30 to Dec. 4, Dec. 17 to Jan. 15, May 3-19, 23-30, June 1-3, July 2-23, Sept. 18, 19, 25-30; discharge computed on basis of weather records and records for Richland Creek near Richland and Cedar Creek near Mabank.

Richland Creek near Richland, Tex.

Location.- Water-stage recorder, lat. 31°57', long. 96°25', at bridge on U. S. Highway 75, 700 feet downstream from Texas & New Orleans Railroad bridge, 1 mile north of Richland, Navarro County, and 3½ miles downstream from Pinoak Creek. Datum of gage is 299.0 feet above mean sea level, datum of 1929.

Drainage area.- 760 square miles.

Records available.- December 1924 to February 1925 (discharge measurements only), March 1939 to September 1947.

Extremes.- Maximum discharge during year, 22,400 second-feet Jan. 19 (gage height, 21.36 feet); no flow at times.
1939-47: Maximum discharge, 55,000 second-feet May 2, 1944, Mar. 31, 1945 (gage height, 23.40 feet); no flow at times.
Maximum stage known, 25.5 feet in December 1913, from information by engineers of Texas & New Orleans Railroad.

Remarks.- Records fair. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	82	0.1	12	22	83	58	92	438	67	6.2	0.1	0.2
2	22	.1	10	23	78	61	87	129	398	5.8	.1	.1
3	9.3	12	10	127	71	54	82	80	278	5.0	.1	.2
4	5.3	921	11	171	67	48	78	68	68	4.0	.1	.2
5	3.7	2,250	10	77	67	48	76	61	37	3.4	.1	.1
6	2.5	3,830	9.9	54	62	48	72	57	25	3.1	.1	0
7	1.7	1,940	9.3	39	60	1,600	66	52	19	3.1	0	0
8	1.2	300	8.9	45	62	11,200	59	50	16	2.8	0	0
9	.8	80	9.7	50	59	2,630	61	1,390	13	2.2	0	0
10	.4	1,040	32	84	54	300	789	829	11	1.9	0	0
11	.3	896	575	186	54	176	489	148	9.7	1.7	0	0
12	.4	158	2,650	208	53	621	435	71	9.5	1.4	0	0
13	.2	49	2,610	142	55	7,900	4,550	51	8.1	1.2	0	0
14	.2	26	448	92	55	3,880	9,590	44	6.9	.9	0	40
15	.6	18	121	73	52	1,050	2,990	37	6.2	.8	0	19
16	1.7	17	77	64	51	196	1,310	36	5.6	.6	0	5.6
17	14	57	58	3,190	49	144	364	70	5.3	.5	0	2.2
18	7.0	25	47	16,900	48	144	216	470	5.3	.5	0	1.2
19	5.3	15	38	20,800	88	2,310	186	1,270	5.3	.4	0	.8
20	4.0	12	32	12,900	2,010	2,160	1,280	227	30	.4	0	1.9
21	5.1	9.1	32	950	1,480	405	688	262	1,290	.3	0	1.5
22	3.8	8.7	32	319	247	232	200	161	820	.3	0	1.5
23	2.8	8.7	29	232	126	188	137	69	172	.2	0	1.1
24	1.8	8.5	26	208	92	410	116	52	63	.2	0	.8
25	1.2	15	26	184	71	222	655	260	268	.2	0	.6
26	.6	781	26	164	60	137	1,930	143	216	.2	0	.4
27	.3	342	25	144	60	112	433	52	52	.2	0	.5
28	.2	42	25	130	56	102	172	33	22	.2	0	.4
29	.1	21	25	116	-	95	137	32	13	.2	0	.3
30	.1	15	24	109	-	92	155	792	7.9	.2	0	.2
31	.1	-	22	98	-	92	-	220	-	.2	2.1	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	181.7	82	0.1	5.86	360
November	12,897.2	3,830	.1	430	25,580
December	7,070.8	2,650	8.9	228	14,020
Calendar year 1946	204,007.8	14,200	0	559	404,700
January	57,901	20,800	22	1,868	114,800
February	5,370	2,010	48	192	10,650
March	36,715	11,200	48	1,184	72,820
April	27,495	9,590	59	916	54,540
May	7,654	1,390	32	247	15,180
June	3,974.8	1,290	5.3	132	7,830
July	48.3	6.2	.2	1.56	96
August	2.7	2.1	0	.09	5.4
September	78.8	40	0	2.63	156
Water year 1946-47	159,362.3	20,800	0	437	316,000

Peak discharge.- Jan. 19 (2 a.m.) 22,400 sec.-ft.; Mar. 8 (5:30 p.m.) 13,200 sec.-ft.; Mar. 13 (4 p.m.) 10,000 sec.-ft.; Apr. 14 (9 a.m.) 12,100 sec.-ft.

West Fork San Jacinto River near Conroe, Tex.

Location.- Water-stage recorder, lat. 30°15', long. 95°28', at bridge on U. S. Highway 75, 285 feet upstream from International-Great Northern Railroad bridge, 3½ miles downstream from Lake Creek, and 4¼ miles south of Conroe, Montgomery County. Datum of gage is 100.1 feet above mean sea level, datum of 1929, Galveston-Houston supplementary adjustment of 1936, and the Houston supplementary adjustment of 1943.

Drainage area.- 832 square miles.

Records available.- May 1924 to September 1927, July 1939 to September 1947.

Average discharge.- 11 years (1924-27, 1939-47), 747 second-feet.

Extremes.- Maximum discharge during year, 27,500 second-feet Nov. 6 (gage height, 17.96 feet); minimum, 20 second-feet Sept. 30.

1924-27, 1939-47: Maximum discharge, 110,000 second-feet Nov. 25, 1940 (gage height, 25.85 feet), from rating curve extended above 43,000 second-feet on basis of velocity-area studies; minimum, 9.3 second-feet Oct. 1, 2, 1939.

Maximum stage prior to 1940, 25.2 feet in December 1913, present site and datum, at railroad bridge 285 feet downstream, from information by engineers of International-Great Northern Railroad (discharge, 101,000 second-feet, from rating curve extended above 43,000 second-feet on basis of velocity-area studies).

Remarks.- Records good except those for period of doubtful gage-height record, which are fair. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	156	196	686	707	255	164	155	83	163	56	27	29
2	109	174	400	1,430	228	175	160	79	140	52	27	36
3	86	380	302	2,200	211	182	161	75	125	54	27	28
4	75	3,990	255	2,520	201	179	156	69	109	46	27	27
5	64	15,500	228	3,040	187	174	161	67	91	116	29	26
6	56	25,900	213	2,880	179	200	155	64	83	118	28	26
7	49	19,700	211	2,280	171	292	148	62	79	74	26	25
8	45	11,900	209	2,820	167	446	139	82	71	54	25	23
9	42	5,020	226	2,570	152	586	131	71	68	46	24	22
10	52	7,570	264	2,930	146	477	135	66	65	40	25	26
11	276	6,140	302	3,100	148	353	138	65	62	38	26	26
12	114	3,690	547	3,040	226	264	136	70	59	38	25	31
13	121	2,880	770	2,570	312	858	145	68	56	48	23	32
14	160	1,930	895	1,630	342	13,600	143	64	51	46	22	31
15	115	955	1,040	900	292	18,600	140	59	48	41	22	39
16	91	2,470	930	702	239	5,910	135	57	47	43	22	32
17	77	4,850	628	2,500	211	2,510	128	56	44	67	23	32
18	69	5,330	436	3,260	194	1,060	121	600	45	54	23	30
19	66	4,960	353	4,180	186	1,180	117	930	44	45	28	27
20	61	3,290	364	5,450	182	1,220	136	1,510	51	40	27	25
21	58	1,640	388	4,900	182	1,180	135	4,540	50	36	27	24
22	54	663	388	3,610	194	1,000	129	3,940	51	33	26	23
23	50	425	388	2,300	199	684	122	2,030	48	32	26	23
24	49	342	400	1,230	182	503	110	1,500	49	30	25	22
25	392	302	302	684	169	376	103	982	84	29	37	22
26	728	1,130	255	530	158	282	98	698	113	28	44	22
27	1,840	1,740	235	464	150	237	95	712	98	29	37	22
28	3,150	2,100	232	400	154	206	91	530	95	29	31	21
29	2,380	1,920	230	353	-	177	88	572	82	28	29	21
30	864	1,320	220	322	-	167	86	352	65	28	28	21
31	264	-	283	282	-	156	-	208	-	31	27	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	11,713	3,150	42	378	0.454	0.52	23,230
November	138,207	25,900	174	4,610	5.54	6.18	274,100
December	12,582	1,040	209	406	.488	.56	24,960
Calendar year 1946	440,048	25,900	23	1,210	1.45	19.67	872,800
January	65,784	5,450	282	2,122	2.55	2.94	130,500
February	5,615	342	146	201	.242	.25	11,140
March	53,398	18,600	156	1,723	2.07	2.39	105,900
April	3,897	161	86	130	.156	.17	7,730
May	20,261	4,540	56	654	.786	.91	40,190
June	2,236	163	44	74.5	.090	.10	4,440
July	1,448	118	28	46.7	.056	.06	2,870
August	843	44	22	27.2	.033	.04	1,670
September	794	39	21	26.5	.032	.04	1,570
Water year 1946-47	316,778	25,900	21	868	1.04	14.16	628,300

Peak discharge.- Nov. 6 (10 a.m.) 27,500 sec.-ft.; Nov. 10 (5 p.m.) 10,400 sec.-ft.; Nov. 18 (10 p.m.) 5,580 sec.-ft.; Jan. 20 (5 p.m.) 5,580 sec.-ft.; Mar. 14 (12 p.m.) 25,900 sec.-ft.; May 21 (5:30 p.m.) 5,450 sec.-ft.

Note.- Doubtful gage-height record Apr. 5, 10, 20, 23-29, Aug. 13, 25, 26, Sept. 1-16; discharge computed on basis of weather records, rate of change in stage, and records for station near Humble.

West Fork San Jacinto River near Humble, Tex.

Location.- Water-stage recorder, lat. 30°01'35", long. 95°15'30", at bridge on U. S. Highway 59, 1,160 feet upstream from Texas & New Orleans Railroad bridge, about half a mile downstream from Spring Creek, and 2½ miles north of Humble, Harris County. Datum of gage is 30.53 feet above mean sea level, datum of 1929.

Drainage area.- 1,811 square miles.

Records available.- October 1928 to September 1947.

Average discharge.- 19 years, 1,244 second-feet.

Extremes.- Maximum discharge during year, 40,100 second-feet Nov. 7 (gage height, 21.21 feet); minimum, 64 second-feet Aug. 1.

1928-47: Maximum discharge, 187,000 second-feet May 31, 1929, Nov. 25, 26, 1940; maximum gage height, 32.7 feet, present site and datum, May 31, 1929, Nov. 26, 1940 (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 observed, 14 second-feet Sept. 8-10, 1931.

Remarks.- Records good except those for periods of no gage-height record, which are fair. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	942	605	a1,540	2,100	840	290	345	171	1,220	142	67	142
2	569	515		3,220	728	305	340	160	988	128	78	149
3	398	1,170		4,540	650	320	330	146	709	178	74	134
4	295	9,470	988	5,000	587	330	325	139	497	136	76	109
5	207	20,200	861	5,640	533	310	325	131	392	125	74	96
6	156	34,000	683	5,320	491	295	305	120	335	242	72	89
7	153	35,600	563	4,120	479	451	295	114	290	225	70	83
8	225	21,400	497	5,320	449	657	290	117	265	178	69	82
9	207	12,400	581	6,280	425	882	280	178	235	149	70	83
10	153	13,000	716	7,520	398	912	265	128	199	107	72	83
11	3,260	20,300	728	7,340	381	696	275	107	186	96	72	85
12	3,510	14,900	1,880	6,980	392	662	255	102	164	93	70	85
13	2,100	9,600	1,660	6,120	545	3,200	245	109	149	119	72	82
14	1,300	5,800	1,700	4,680	664	4,390	240	107	134	182	70	82
15	1,030	3,580	1,660	3,220	690	12,400	235	102	125	146	69	105
16	868	6,960	1,610	3,100	618	10,400	225	98	117	212	67	184
17	599	13,000	1,220	6,860	521	4,690	212	109	117	235	72	150
18	420	14,400	784	9,600	437	2,300	195	1,880	117	203	78	98
19	376	11,900	593	9,400	408	2,860	186	4,540	402	131	80	83
20	335	8,240	683	10,400	455	2,620	216	5,800	414	102	85	74
21	280	4,840	826	10,200	449	2,350	255	7,160	390	87	89	72
22	220	2,920	805	8,420	425	1,950	245	8,420	240	80	80	70
23	178	2,150	722	5,800	420	1,560	207	7,160	229	74	74	69
24	153	1,700	702	3,980	376	1,260	191	6,440	335	72	74	67
25	995	1,480	618	2,920	345	1,010	171	5,480	178	70	96	69
26	1,460	a2,740	473	2,300	310	812	164	4,260	240	72	122	66
27	1,700		398	1,900	280	657	178	3,460	330	70	120	67
28	3,340		360	1,560	280	545	182	2,800	260	70	245	67
29	4,120		340	1,300	-	467	182	2,250	220	70	330	69
30	2,400		315	1,080	-	408	174	1,950	171	69	270	70
31	988	-	543	950	-	370	-	1,480	-	67	199	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	32,937	4,120	153	1,062	0.586	0.68	65,330
November	283,830	35,600	515	9,461	5.22	5.83	563,000
December	28,129	-	315	907	.501	.58	55,790
Calendar year 1946	954,990	35,600	-	2,616	1.44	19.62	1,894,000
January	157,170	10,400	950	5,070	2.80	3.23	311,700
February	13,576	840	280	485	.268	.28	26,930
March	60,359	12,400	290	1,947	1.08	1.24	119,700
April	7,333	345	164	244	.135	.15	14,540
May	65,218	8,420	98	2,104	1.16	1.34	129,400
June	9,648	1,220	117	322	.178	.20	19,140
July	3,930	242	67	127	.070	.08	7,800
August	3,156	330	67	102	.056	.06	6,260
September	2,764	184	66	92.1	.051	.06	5,480
Water year 1946-47	668,050	35,600	66	1,830	1.01	13.73	1,325,000

Peak discharge.- Nov. 7 (3:30 a.m.) 40,100 sec.-ft.; Nov. 11 (10:30 a.m.) 21,700 sec.-ft.; Nov. 18 (1 p.m.) 14,400 sec.-ft.; Jan. 20 (3 p.m.) 10,400 sec.-ft.; Mar. 15 (6 p.m.) 14,400 sec.-ft.

a No gage-height record; discharge computed on basis of weather records, recorded range in stage, and records for nearby stations.

San Jacinto River near Huffman, Tex.

Location.- Water-stage recorder, 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 and 3.4 miles southwest of Huffman, Harris County. Datum of gage is 1.93 feet above mean sea level, datum of 1929.

Drainage area.- 2,791 square miles.

Records available.- October 1936 to September 1947.

Average discharge.- 11 years, 2,291 second-feet.

Extremes.- Maximum discharge during year, 92,100 second-feet Nov. 7 (gage height, 38.92 feet); minimum, 111 second-feet Sept. 29.
1936-47: Maximum discharge observed, 253,000 second-feet Nov. 26, 1940 (gage height, 51.2 feet); minimum observed, 49 second-feet Sept. 1, 1939, Sept. 13, 14, 1940.
Flood of May 31, 1929, reached a stage of 50.3 feet, from information by Beaumont, Sour Lake & Western Railway (discharge, 237,000 second-feet). Flood of April 1876 reached a stage about 1½ feet lower, from information by local resident.

Remarks.- Records good. No large diversion above station. Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,290	865	3,520	3,880	1,290	578	865	332	1,360	270	160	260
2	760	756	a2,520	6,320	1,160	598	835	318	1,160	247	167	238
3	553	1,010	1,930	8,870	1,040	598	806	304	925	270	169	235
4	446	14,100	1,680	9,570	955	598	778	290	701	263	167	194
5	371	33,000	1,520	9,430	865	583	778	276	578	235	162	174
6	321	79,800	1,290	9,010	835	573	740	263	508	260	160	162
7	297	89,400	1,140	7,130	806	699	718	257	459	307	151	153
8	329	64,200	1,040	7,260	750	1,040	684	251	419	247	147	149
9	321	35,800	1,100	9,870	706	1,390	652	302	383	263	147	142
10	293	23,600	1,760	12,500	657	1,490	630	286	359	226	147	147
11	2,650	41,400	2,070	13,800	635	1,260	624	257	336	199	153	142
12	5,000	38,400	3,960	13,000	646	1,020	593	244	314	284	144	140
13	2,740	24,200	4,500	11,200	942	5,800	578	241	297	267	147	140
14	1,650	14,900	4,000	8,730	1,230	7,650	558	238	276	310	144	138
15	1,160	8,980	3,600	5,600	1,160	16,100	558	226	263	296	140	158
16	985	10,100	3,200	4,630	1,080	19,900	538	218	254	387	140	238
17	772	20,500	2,520	10,900	925	10,600	500	224	247	367	142	319
18	588	22,800	1,680	17,700	835	4,430	477	3,530	247	321	158	194
19	513	19,000	1,360	18,800	772	4,500	464	7,390	398	280	167	160
20	482	13,800	1,460	20,000	806	4,590	490	7,520	527	232	176	144
21	432	8,220	1,930	19,500	806	3,920	504	9,290	567	207	194	136
22	391	4,560	1,930	15,200	778	3,280	495	10,000	646	194	172	127
23	363	3,040	1,760	10,300	745	2,600	454	8,870	383	181	158	125
24	339	a2,370	1,580	6,520	696	2,300	428	7,390	505	176	151	123
25	1,010	a2,070	1,390	4,930	646	1,930	407	7,260	454	172	227	119
26	3,440	a2,070	1,160	3,760	598	1,620	383	5,300	428	169	251	115
27	2,900	3,840	1,040	3,040	568	1,390	a363	4,080	454	169	260	113
28	3,760	4,840	985	2,520	563	1,200	347	3,120	403	167	327	113
29	4,340	5,400	955	2,000	-	1,080	343	2,370	339	172	459	113
30	3,020	4,930	895	1,680	-	985	343	2,000	300	164	415	115
31	1,420	-	1,270	1,490	-	925	-	1,650	-	160	336	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	42,936	5,000	293	1,385	0.496	0.57	85,160
November	597,951	89,400	756	19,930	7.14	7.97	1,186,000
December	60,745	4,500	895	1,960	.702	.81	120,500
Calendar year 1946	1,724,808	89,400	169	4,726	1.69	22.98	3,421,000
January	279,140	20,000	1,490	9,005	3.23	3.72	553,700
February	23,495	1,290	563	839	.301	.31	46,600
March	105,227	19,900	573	3,394	1.22	1.40	208,700
April	16,933	865	343	564	.202	.23	33,590
May	84,297	10,000	218	2,719	.974	1.12	167,200
June	14,490	1,360	247	483	.173	.19	28,740
July	7,462	387	160	241	.086	.10	14,800
August	6,038	459	140	195	.070	.08	11,980
September	4,826	319	113	161	.058	.06	9,570
Water year 1946-47	1,243,540	89,400	113	3,407	1.22	16.56	2,467,000

Peak discharge.- Nov. 7 (10:30 a.m.) 92,100 sec.-ft.; Nov. 11 (8 p.m.) 46,500 sec.-ft.; Nov. 18 (11:30 a.m.) 23,000 sec.-ft.; Mar. 16 (3:30 a.m.) 22,500 sec.-ft.
a No gage-height record; discharge computed on basis of engineer's notes and weather records.

Spring Creek near Spring, Tex.

Location.- Water-stage recorder, lat. 30°06'35", long. 95°26'10", at bridge on U. S. Highway 75, 4,500 feet upstream from International-Great Northern Railroad bridge, 2.4 miles northwest of Spring, Harris County, and 4 miles downstream from Willow Creek. Datum of gage is 78.16 feet above mean sea level, unadjusted.

Drainage area.- 400 square miles.

Records available.- April 1939 to September 1947.

Extremes.- Maximum discharge during year, 10,000 second-feet Nov. 6 (gage height, 21.77 feet); minimum, 18 second-feet Sept. 25-27.

1939-47: Maximum discharge, 42,700 second-feet Nov. 25, 1940 (gage height, 28.6 feet, from graph based on gage readings); minimum observed, 7.7 second-feet Sept. 13, 1940.

Maximum stage known, 29.3 feet May 30, 1929, from floodmarks identified by local resident (discharge, 48,300 second-feet).

Remarks.- Records good. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	113	47	270	474	148	84	76	50	94	39	24	32
2	82	45	206	830	132	86	74	49	87	41	26	29
3	54	147	174	1,300	120	86	73	47	79	42	32	26
4	44	1,770	148	1,970	116	82	73	45	73	38	28	26
5	41	4,710	132	1,700	113	81	73	45	68	36	24	25
6	39	8,800	124	730	109	84	72	44	64	35	24	24
7	40	6,380	116	382	105	113	69	43	61	34	23	23
8	37	2,430	113	1,020	102	132	67	43	58	34	22	23
9	35	942	120	2,290	98	144	66	45	55	33	22	24
10	35	2,720	136	2,410	93	124	65	45	53	33	24	25
11	864	8,240	178	2,140	93	98	64	43	51	32	29	26
12	1,080	4,830	255	1,770	98	171	64	42	50	35	28	24
13	504	1,870	382	1,070	113	170	64	41	48	40	28	24
14	128	724	466	648	140	165	64	41	47	39	28	24
15	79	396	235	466	124	235	63	41	45	39	26	39
16	65	1,620	170	452	109	128	62	40	44	47	27	59
17	63	6,280	148	1,410	102	93	58	40	44	37	27	29
18	63	6,690	132	2,650	98	136	56	805	44	33	26	24
19	57	2,610	120	2,870	98	396	55	2,220	73	32	29	22
20	48	993	169	2,820	116	480	68	2,960	91	30	28	21
21	44	494	276	2,370	124	416	80	1,800	55	28	26	20
22	41	342	255	1,360	113	201	69	1,710	51	28	26	20
23	39	265	165	652	98	148	63	1,660	47	27	27	19
24	37	220	132	382	89	152	57	1,170	46	26	26	19
25	53	196	116	318	84	148	54	1,190	60	25	31	18
26	67	220	109	288	80	132	52	884	63	25	35	18
27	105	689	102	245	79	102	50	536	75	26	49	18
28	66	1,240	102	210	80	88	50	305	55	25	58	19
29	48	1,040	102	192	-	82	50	174	46	24	41	19
30	42	593	94	178	-	79	50	128	41	24	34	19
31	40	-	152	165	-	77	-	109	-	24	30	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	4,053	1,080	35	131	0.328	0.38	8,040
November	67,543	8,800	45	2,251	5.63	6.28	134,000
December	5,399	466	94	174	.435	.50	10,710
Calendar year 1946	222,579	10,700	28	610	1.52	20.69	441,500
January	35,762	2,870	165	1,154	2.88	3.32	70,930
February	2,974	148	79	106	.265	.28	5,900
March	4,713	480	77	152	.380	.44	9,350
April	1,901	80	50	63.4	.158	.18	3,770
May	16,395	2,960	40	529	1.32	1.52	32,520
June	1,768	94	41	58.9	.147	.16	3,510
July	1,011	47	24	32.6	.082	.09	2,010
August	908	58	22	29.3	.073	.08	1,800
September	738	59	18	24.6	.062	.07	1,460
Water year 1946-47	143,165	8,800	18	392	.980	13.30	284,000

Peak discharge.- Nov. 6 (8:30 p.m.) 10,000 sec.-ft.; Nov. 11 (4 a.m.) 9,400 sec.-ft.; Nov. 18 (2 a.m.) 7,970 sec.-ft.

Cypress Creek near Westfield, Tex.

Location.- Water-stage recorder, 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. Datum of gage is 75.9 feet above mean sea level, datum of 1929, Houston supplementary adjustment of 1943.

Drainage area.- 262 square miles.

Records available.- July 1944 to September 1947.

Extremes.- Maximum discharge during year, 6,520 second-feet Nov. 6 (gage height, 17.12 feet); minimum, 0.6 second-foot Aug. 9-15.

1944-47: Maximum discharge, 10,700 second-feet Aug. 31, 1945 (gage height, 19.03 feet); minimum, that of Aug. 9-15, 1947.

Maximum stage known, about 22 feet in May 1929, from information by local resident. Flood of November 1940 reached a stage of about 20.2 feet, from information by State Highway Department.

Remarks.- Records good. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	134	26	310	387	76	12	12	5.9	518	3.6	1.0	61
2	101	45	330	588	60	12	11	5.6	351	4.6	1.3	60
3	98	218	341	704	46	12	11	5.2	143	5.7	1.3	21
4	74	2,000	320	749	36	12	11	5.0	63	3.8	1.1	13
5	49	2,570	228	844	29	11	10	4.9	39	3.2	1.0	8.6
6	44	5,170	110	764	25	12	10	4.7	28	2.9	.9	6.8
7	107	3,350	69	602	23	18	9.4	4.5	21	2.6	.8	6.6
8	122	2,120	52	630	20	25	9.1	4.4	17	2.4	.7	7.4
9	90	1,660	47	812	17	20	8.7	4.3	14	2.3	.6	6.8
10	63	2,460	45	1,130	16	16	8.4	4.1	12	2.4	.6	6.2
11	830	3,240	70	1,260	15	14	8.9	4.1	10	2.5	.6	5.9
12	532	3,900	219	1,210	15	184	8.4	3.8	10	5.7	.6	5.6
13	490	2,900	175	1,190	15	887	8.7	3.7	9.6	42	.6	7.1
14	450	1,950	207	1,030	15	265	9.1	3.6	8.7	27	.6	9.6
15	411	1,470	203	892	14	87	8.6	3.6	8.2	62	1.3	36
16	320	2,550	171	892	15	39	8.2	3.5	7.1	101	5.2	55
17	170	3,000	125	1,520	15	23	7.7	3.5	7.2	74	5.3	11
18	119	3,120	88	1,540	14	123	7.6	235	7.4	29	5.3	7.1
19	119	2,600	71	1,620	14	560	7.2	734	34	11	6.2	7.1
20	104	1,900	90	1,580	23	463	8.6	630	56	6.2	8.9	7.6
21	79	1,580	71	1,320	21	310	8.6	990	12	4.4	5.3	5.6
22	58	1,290	98	1,100	25	195	7.9	1,100	12	3.4	3.8	4.5
23	43	1,040	113	924	20	141	7.9	1,440	15	2.5	4.9	4.7
24	32	860	96	876	20	116	7.4	1,580	9.1	1.8	4.1	4.1
25	194	689	68	844	18	76	7.1	1,350	8.7	1.5	4.4	3.5
26	94	574	49	689	15	47	6.6	1,470	16	1.4	4.8	3.1
27	49	399	38	532	13	34	6.8	1,350	9.6	1.5	79	3.9
28	76	320	31	345	12	25	6.5	1,040	6.8	1.3	246	6.2
29	70	330	26	187	-	18	6.2	876	4.9	1.3	264	6.6
30	46	310	22	125	-	14	5.9	764	3.9	1.2	187	5.7
31	32	-	121	96	-	12	-	644	-	1.1	104	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	5,200	830	32	168	0.641	0.74	10,310
November	53,641	5,170	26	1,788	6.82	7.62	106,400
December	4,004	341	22	129	.492	.57	7,940
Calendar year 1946	167,586.3	5,170	4.1	459	1.75	23.79	332,400
January	26,982	1,620	96	870	3.32	3.83	53,520
February	647	76	12	23.1	.088	.09	1,280
March	3,783	887	11	122	.466	.54	7,500
April	254.5	12	5.9	8.48	.032	.04	505
May	14,277.4	1,580	3.5	461	1.76	2.03	28,320
June	1,462.2	518	3.9	48.7	.186	.21	2,900
July	415.3	101	1.1	13.4	.051	.06	824
August	951.2	264	.6	30.7	.117	.14	1,890
September	397.3	61	3.1	13.2	.050	.06	788
Water year 1946-47	112,014.9	5,170	.6	307	1.17	15.93	222,200

Peak discharge.- Nov. 4 (1 p.m.) 2,260 sec.-ft.; Nov. 6 (1 p.m.) 6,520 sec.-ft.; Nov. 12 (10 a.m.) 4,040 sec.-ft.; Nov. 16 (8:30 p.m.) 3,620 sec.-ft.

East Fork San Jacinto River near Cleveland, Tex.

Location.- Water-stage recorder, lat. 30 20', long. 95°07', at bridge on State Highway 105, 83 feet downstream from Gulf, Colorado & Santa Fe Railway bridge, 1¼ miles west of Cleveland, Liberty County, and 4 miles downstream from Nebblets Creek. Datum of gage is 113.0 feet above mean sea level, datum of 1929.

Drainage area.- 330 square miles.

Records available.- April 1939 to September 1947.

Extremes.- Maximum discharge during year, 28,000 second-feet Nov. 6 (gage height, 17.29 feet); minimum, 19 second-feet Aug. 11, 12, Sept. 24-28.

1939-47: Maximum discharge, 77,500 second-feet Nov. 24, 1940 (gage height, 20.37 feet), from rating curve extended above 14,000 second-feet by logarithmic plotting; minimum, 7.2 second-feet Sept. 6, 1939.

Maximum stage known prior to 1940, 19.9 feet May 5, 1935, from information by local resident (discharge, 69,500 second-feet, from rating curve extended above 14,000 second-feet by logarithmic plotting).

Remarks.- Records good except those for periods of no gage height record, which are fair. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	45	180	560	158	110	105	53	72	23	23	27
2	31	45	152	890	144	108	104	51	66	23	24	26
3	30	87	134	1,110	134	107	102	46	62	22	23	25
4	30	844	123		131	104	102	45	58	24	23	25
5	30	6,000	115		123	100	104	45	55	22	22	23
6	30	24,200	110	a1,030	121	99	98	44	51	20	23	23
7	29	14,000	107		121	154	92	44	46	20	22	23
8	28	6,880	105		115	292	90	44	44	21	21	23
9	26	2,860	134	2,010	108	386	88	48	42	21	21	23
10	27	2,690	262	2,720	105	310	86	45	40	21	20	23
11	57	5,830	253	2,600	105	171	84	43	38	21	19	23
12	67	2,960	504	1,950	201	200	81	42	35	23	19	23
13	42	2,210	548	1,230	213	706	80	40	31	25	20	22
14	32	1,040	504	637	181	6,620	80	40	30	87	23	22
15	31	333	322	428	158	4,570	83	38	28	70	23	38
16	32	747	190	705	139	1,790	83	37	27	40	30	30
17	33	1,310	153	1,540	126	582	80	37	28	43	35	29
18	33	1,620	134	2,040	121	272	76	102	27	32	28	24
19	33	1,390	126	3,860	116	386	74	448	27	28	29	22
20	32	481	249	2,930	121	493	76	438	28	30	27	20
21	30	253	354	1,950	121	526	76	548	30	28	26	24
22	30	210	272	1,280	118	364	72	548	30	29	28	25
23	29	183	192	706	116	239	67	537	30	28	28	21
24	30	163	147	396	108	224	63	683	39	25	27	20
25	252	155	128	386	100	185	65	460	78	25	32	19
26	683	262	120	333	98	160	62	302	59	24	50	19
27	706	471	116	292	96	139	59	190	41	29	51	19
28	360	729	115	240	100	123	d56	120	34	26	41	19
29	106	683	113	214	-	113	55	92	29	23	31	20
30	62	270	107	202	-	112	55	79	26	22	29	20
31	51	-	180	176	-	108	-	74	-	22	28	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	3,028	706	26	97.7	0.296	0.34	6,010
November	78,951	24,200	45	2,632	7.97	8.90	156,600
December	6,249	548	105	202	.612	.70	12,390
Calendar year 1946	214,055	24,200	26	586	1.78	24.13	424,600
January	36,535	3,860	176	1,179	3.57	4.12	72,470
February	3,598	213	96	128	.388	.41	7,140
March	19,853	6,620	99	640	1.94	2.24	39,380
April	2,401	105	55	80.0	.242	.27	4,760
May	5,363	683	37	173	.524	.60	10,640
June	1,231	78	26	41.0	.124	.14	2,440
July	897	87	20	28.9	.088	.10	1,780
August	846	51	19	27.3	.083	.10	1,680
September	700	38	19	23.3	.071	.08	1,390
Water year 1946-47	159,652	24,200	19	437	1.32	18.00	316,700

Peak discharge.- Nov. 6 (9:30 a.m.) 28,000 sec.-ft.; Nov. 11 (9 a.m.) 6,800 sec.-ft.; Jan. 19 (4 p.m.) 4,110 sec.-ft.; Mar. 14 (2:30 p.m.) 11,800 sec.-ft.

a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and records for nearby stations.

d Doubtful gage-height record; discharge computed on basis of estimated change in stage.

Peach Creek at Splendora, Tex.

Location.- Water-stage recorder, lat. 30°14', long. 95°10', at county road bridge between Splendora and Conroe, about 1,500 feet 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. Datum of gage is 86.61 feet above mean sea level, datum of 1929, Galveston-Houston supplementary adjustment of 1936.

Drainage area.- 120 square miles.

Records available.- December 1943 to September 1947.

Extremes.- Maximum discharge during year, 7,540 second-feet Nov. 5 (gage height, 13.70 feet); minimum, 15 second-feet Sept. 7-11.
1943-47: Maximum discharge, 7,980 second-feet Apr. 1, 1945 (gage height, 13.85 feet); minimum, 15 second-feet Sept. 25, 26, Oct. 19 to Nov. 2, 1944, Sept. 7-11, 1947.
Maximum stage known since about 1895, 17.0 feet in November 1940, from floodmarks (adjusted to present site and datum), from information by local resident.

Remarks.- Records good. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33	38	97	310	100	77	65	38	48	22	20	17
2	28	38	92	454	92	77	63	36	47	21	19	17
3	25	128	87	597	87	70	63	33	42	21	19	16
4	24	1,400	82	394	87	65	63	31	38	24	18	16
5	24	3,150	80	229	84	65	65	30	35	24	18	16
6	24	6,040	77	141	82	67	63	30	33	21	17	16
7	23	2,120	77	127	82	80	56	30	31	20	17	15
8	23	632	80	329	82	100	54	30	30	20	16	15
9	22	300	88	636	77	97	54	32	29	21	16	15
10	22	2,480	130	685	74	77	54	35	28	21	16	15
11	206	3,900	141	557	74	67	52	32	27	20	17	15
12	102	742	290	394	101	187	49	30	26	20	16	16
13	61	328	308	262	189	804	48	29	26	20	16	16
14	31	198	160	212	148	388	52	29	25	29	17	16
15	27	156	111	172	108	194	57	28	24	52	17	63
16	27	636	100	364	92	114	51	28	23	37	17	54
17	27	915	94	1,660	87	87	46	27	23	24	18	22
18	28	576	90	1,440	82	89	43	311	24	22	21	21
19	28	255	82	901	80	194	42	364	24	21	21	19
20	27	164	136	617	84	180	47	538	25	20	37	18
21	26	134	168	387	87	134	51	446	28	20	22	17
22	25	120	120	242	80	97	45	237	33	20	19	17
23	25	111	94	168	74	97	42	122	31	19	19	17
24	25	105	84	176	70	134	40	291	41	18	19	17
25	392	100	82	202	67	108	39	338	56	18	19	16
26	311	135	80	180	65	82	38	174	42	18	22	16
27	158	189	80	141	65	72	38	90	29	20	35	16
28	63	176	80	124	70	67	38	65	27	21	31	16
29	57	127	80	117	-	67	39	56	24	19	23	16
30	50	108	74	114	-	65	39	50	23	18	20	16
31	42	-	107	108	-	65	-	48	-	18	18	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	1,986	392	22	64.1	0.534	0.62	3,940
November	25,501	6,040	38	850	7.08	7.90	50,580
December	3,451	308	74	111	.925	1.07	6,840
Calendar year 1946	69,225	6,040	20	190	1.58	21.45	137,300
January	12,440	1,660	108	401	3.34	3.86	24,670
February	2,470	189	65	88.2	.735	.77	4,900
March	4,067	804	65	131	1.09	1.26	8,070
April	1,496	65	38	49.9	.416	.46	2,970
May	3,658	538	27	118	.983	1.13	7,260
June	942	56	23	31.4	.262	.29	1,870
July	689	52	18	22.2	.185	.21	1,370
August	620	37	16	20.0	.167	.19	1,230
September	582	63	15	19.4	.162	.18	1,150
Water year 1946-47	57,902	6,040	15	159	1.32	17.94	114,800

Peak discharge.- Nov. 4 (8:30 a.m.) 1,840 sec.-ft.; Nov. 5 (12 p.m.) 7,540 sec.-ft.; Nov. 11 (1 a.m.) 6,880 sec.-ft.; Jan. 17 (10 p.m.) 1,880 sec.-ft.

Caney Creek near Splendora, Tex.

Location.- Water-stage recorder, 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. Datum of gage is 123.44 feet above mean sea level, datum of 1929, Houston supplementary adjustment of 1943.
Drainage area.- 104 square miles.
Records available.- January 1944 to September 1947.
Extremes.- Maximum discharge during year, 7,020 second-feet Nov. 6 (gage height, 15.41 feet), from rating curve extended above 6,000 second-feet by logarithmic plotting; minimum, 14 second-feet Sept. 28-30.

1944-47: Maximum discharge, 14,900 second-feet Apr. 1, 1945 (gage height, 18.19 feet), from rating curve extended above 6,000 second-feet by logarithmic plotting; minimum, 12 second-feet Oct. 24-27, 1944.

Maximum stage known since about 1885, 22.0 feet, present site and datum, in November 1940, from information by local resident. Flood of May 1935 reached a stage of 19.3 feet, present site and datum, from information by local resident.

Remarks.- Records good except those for periods of no gage-height record, which are fair. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	30	80	354	70	57	46	31	37	21	19	18
2	22	29	73	547	66	52	46	29	35	23	19	18
3	21	135	68	928	65	48	45	28	33	32	19	18
4	21	1,640	64	293	66	48	45	27	31	28	19	17
5	21	3,380	63	122	62	49	46	27	30	24	18	17
6	21	5,790	62	101	61	52	42	27	29	22	18	17
7	21	2,900	62	207	63	115	40	27	29	22	17	16
8	20	339	60	1,130	59	156	40	42	28	34	17	16
9	20	152	82	745	57	83	40	36	27	27	17	16
10	23	1,950	108	773	57	62	39	30	27	22	18	18
11	86	2,680	99	336	57	56	39	28	26	21	16	17
12	41	344	245	212	90	78	37	27	26	21	17	17
13	25	152	214	152	88	673	38	27	25	29	17	17
14	23	114	88	129	72	919	42	26	25	41	17	16
15	22	101	74	114	64	110	37	26	24	29	17	18
16	23	631	70	189	61	82	36	25	24	24	18	17
17	24	2,030	67	976	59	70	34	28	25	22	19	18
18	24	252	62	1,810	58	77	33	284	25	21	20	17
19	24	138	62	536	57	200	33	256	25	20	27	15
20	23	111	108	551	59	155	36	154	26	20	22	15
21	22	98	105	214	57	86	35	249	27	19	20	15
22	22	92	75	129	54	70	35	105	26	19	19	15
23	22	82	64	111	52	69	35	66	32	19	19	14
24	22	79	60	114	50	74	34	228	51	18	18	14
25	369	79	58	114	48	61	34	149	35	18	26	14
26	386	390	57	101	48	54	33	67	29	19	35	14
27	58	539	57	92	48	52	33	48	27	19	27	14
28	40	152	58	95	53	50	33	42	25	19	22	15
29	35	104	57	86	-	47	32	38	24	19	20	15
30	33	88	54	82	-	48	31	36	22	18	19	14
31	31	-	118	75	-	47	-	37	-	20	18	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	1,570	386	20	50.6	0.487	0.56	3,110
November	24,501	5,790	29	817	7.86	8.76	48,600
December	2,574	245	54	83.0	.798	.92	5,110
Calendar year 1946	64,278	5,790	18	176	1.69	22.99	127,500
January	11,398	1,810	75	368	3.54	4.08	22,610
February	1,701	90	48	60.8	.585	.61	3,370
March	3,800	919	47	123	1.18	1.36	7,540
April	1,129	46	31	37.6	.362	.40	2,240
May	2,250	284	25	72.6	.698	.80	4,460
June	855	51	22	28.5	.274	.31	1,700
July	710	41	18	22.9	.220	.25	1,410
August	614	35	16	19.8	.190	.22	1,220
September	482	18	14	16.1	.155	.17	956
Water year 1946-47	51,584	5,790	14	141	1.36	18.44	102,300

Peak Discharge.- Nov. 6 (5 a.m.) 7,020 sec.-ft.; Nov. 10 (9:30 p.m.) 3,700 sec.-ft.; Nov. 17 (10 a.m.) 2,900 sec.-ft.

Note.- No gage-height record Apr. 17-19, 23-30; discharge computed on basis of weather records, engineers' notes, and records for nearby stations.

Barker Reservoir near Addicks, Tex.

Location.- Water-stage recorder, lat. 29°46'05", long. 95°38'45", at dam on Buffalo Bayou, 45 feet upstream from reservoir outlet works, 1,160 feet upstream from Addicks-Howell county road, 1.1 miles south of Addicks, Harris County, and 1.2 miles upstream from South Mayde Creek. Auxiliary water-stage recorder, lat. 29°43'10", long. 95°44'00", on Buffalo Bayou, 2.8 miles west of Clodine, Fort Bend County, 4.8 miles (2.7 miles by reservoir) upstream from Mason Creek, 9.0 miles (6.4 miles by reservoir) upstream from reservoir outlet works. Datum of both gages is 0.3 foot below mean sea level, datum of 1929, Galveston-Houston supplementary adjustment and Houston supplementary adjustment of 1943.

Drainage area.- 150 square miles at outlet works; 105 square miles at upper gage.

Records available.- August 1945 to September 1947.

Extremes.- Maximum gage height at dam during year, 81.57 feet Nov. 12, 13 (contents, 105 acre-feet); maximum at upper gage, 97.0 feet Nov. 11.

1945-47: Maximum gage height at dam, 90.4 feet Aug. 30, 1945 (contents, 11,240 acre-feet); maximum at upper gage, 98.6 feet Aug. 28, 1945.

Maximum stage known near site of upper gage prior to construction of reservoir, 98.1 feet in December 1935, from floodmark about 1,100 feet to right of and 1,100 feet downstream from upper gage.

Remarks.- Reservoir is formed by rolled-earth dam 72,844 feet long. Dam completed Feb. 3, 1946, but was first used for flood control in spring of 1945. Reservoir is operated for flood protection of city of Houston. It is a detention reservoir with no provision for permanent storage. Outlet works consist of five concrete conduits, four of which are uncontrolled. The middle conduit is controlled by two vertical-lift steel gates and remains closed except during recession of large floods or during emergencies. Capacity, 127,900 acre-feet between gage heights 75.0 feet (bottom of conduits) and 101.9 feet (top of design flood pool). No constructed emergency spillways; runoff considerably in excess of designed capacity will be discharged around ends of dam. Gage heights and contents not published for floods that do not produce a gage height of 82.0 feet or higher at dam.

Cooperation.- Capacity table furnished by Corps of Engineers.

Buffalo Bayou near Addicks, Tex.

Location.- Water-stage recorder, lat. 29°45'30", long. 95°36'25", at Dairy-Ashford road bridge, 2 miles downstream from South Mayde Creek, 8.8 miles southeast of Addicks, Harris County, and 3.2 miles downstream from outlet works of Barker Reservoir. Datum of gage is 0.30 foot below mean sea level, datum of 1929, Galveston-Houston supplementary adjustment and Houston supplementary adjustment of 1943.
Drainage area.- 310 square miles.
Records available.- August 1945 to September 1947.
Extremes.- Maximum discharge during year, 4,730 second-feet Nov. 6 (gage height, 78.42 feet); minimum, 0.2 second-foot Aug. 10.
1945-47: Maximum discharge, 11,200 second-feet Aug. 29, 1945 (gage height, 81.23 feet); minimum, that of Aug. 10, 1947.
Maximum stage known since about 1896, 85.6 feet, present site and datum, in December 1935 (adjusted to present site from floodmark half a mile downstream, on basis of slope of flood of Aug. 29, 1945), from information by local resident.
Remarks.- Records good except those for periods of doubtful or no gage-height record and those for periods of unstable stage-discharge relation, which are fair. Flood flow partly regulated by Barker Reservoir (see preceding page).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	478	48	284	682	d43	8.9	12	4.9	173	1.9	0.6	336
2	438	44	201	1,000	36	7.4	11	4.0	96	1.6	.8	170
3	378	193	156	1,100	28	6.4	10	3.5	59	1.4	.8	94
4	342	2,100	118	957	22	6.6	10	3.2	43	1.6	1.5	77
5	548	3,140	88	719	18	7.0	9.9	3.6	26	2.4	.8	56
6	674	4,460	66	565	15	7.2	8.5	3.6	17	1.8	.8	42
7	646	4,000	53	415	14	18	8.1	3.6	16	1.5	.5	34
8	548	3,030	42	467	12	17	8.0	3.2	11	1.7	.4	22
9	384	2,230	47	565	10	11	7.4	2.8	8.6	2.1	.3	20
10	240	2,310	88	865	10	6.8	7.4	3.3	8.1	1.6	.2	21
11	202	3,450	164	1,070	10	5.6	12	4.1	8.6	6.0	.4	23
12	300	3,580	510	1,040	13	24	12	5.8	6.0	13	1.4	48
13	290	3,290	579	895	11	162	33	6.9	5.3	72	.8	54
14	243	2,600	454	790	10	139	54	5.7	5.6	105	.8	41
15	173	1,990	313	635	9.9	51	21	4.6	4.4	197	.8	37
16	125	2,180	217	618	9.5	22	12	3.4	4.1	189	.8	30
17	154	2,730	162	1,340	9.5	13	7.8	4.7	4.4	142	1.7	20
18	190	2,540	114	1,800	9.1	a196	6.4	404	3.8	38	24	26
19	170	2,100	74	1,960	9.9	a980	6.0	1,230	7.7	14	60	33
20	121	1,710	60	1,910	13	a1,000	12	1,300	22	6.3	97	32
21	86	1,370	58	1,620	14	a450	11	1,240	23	3.3	72	35
22	57	1,080	48	1,220	17	a181	17	1,340	12	2.3	49	40
23	39	820	36	895	14	a201	8.8	989	6.2	4.7	41	29
24	28	579	29	649	11	a201	6.0	1,330	7.5	4.2	39	24
25	93	379	22	495	9.1	163	4.7	1,910	5.3	2.6	700	30
26	226	284	18	319	8.3	64	5.5	1,870	8.6	2.4	1,050	22
27	218	303	16	209	8.3	36	5.9	1,450	7.6	1.6	1,070	12
28	158	391	21	149	8.9	23	5.7	1,080	3.3	1.1	989	9.1
29	98	391	13	110	-	17	6.4	835	2.2	1.0	835	11
30	66	367	11	d82	-	14	5.2	600	2.0	1.3	649	7.8
31	51	-	113	d64	-	13	-	341	-	1.4	509	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	7,764	674	28	250	0.806	0.93	15,400
November	53,689	4,460	44	1,790	5.77	6.44	106,500
December	4,175	579	11	135	.436	.50	8,280
Calendar year 1946	178,621.5	6,620	1.2	489	1.58	21.43	354,300
January	25,205	1,960	64	813	2.62	3.02	49,990
February	403.5	43	8.3	14.4	.046	.05	800
March	4,051.9	1,000	5.6	131	.423	.49	8,040
April	344.7	54	4.7	11.5	.037	.04	684
May	15,989.9	1,910	2.8	516	1.66	1.92	31,720
June	607.3	173	2.0	20.2	.065	.07	1,200
July	825.8	197	1.0	26.6	.086	.10	1,640
August	6,197.4	1,070	.2	200	.645	.74	12,290
September	1,435.9	336	7.8	47.9	.155	.17	2,850
Water year 1946-47	120,689.4	4,460	.2	331	1.07	14.47	239,400

Peak discharge.- Nov. 6 (5:30 p.m.) 4,730 sec.-ft.; Nov. 11 (7 p.m.) 3,730 sec.-ft.; Nov. 17 (8 p.m.) 3,820 sec.-ft.; Jan. 19 (3:30 p.m.) 1,980 sec.-ft.; May 25 (7 p.m.) 2,030 sec.-ft.
a No gage-height record; discharge computed on basis of known peak stage, weather records, and records for Barker Reservoir near Addicks and Buffalo Bayou at Houston.
d Doubtful gage-height record; discharge computed on basis of weather records.
Note.- Stage-discharge relation unstable Aug. 11-24, Sept. 16-30; discharge computed on basis of weather records and records for Buffalo Bayou at Houston.

Buffalo Bayou at Houston, Tex.

Location.- Water-stage recorder, lat. 29°45'42", long. 95°23'52", at Waugh Drive Bridge in Houston, Harris County, half a mile upstream from Texas & New Orleans Railroad bridge and 3½ miles upstream from Whiteoak Bayou. Datum of gage is 4.08 feet below mean sea level, datum of 1929.

Drainage area.- 362 square miles.

Records available.- May 1936 to September 1947.

Average discharge.- 11 years, 331 second-feet.

Extremes.- Maximum discharge during year, 6,400 second-feet Nov. 7 (gage height, 27.57 feet); minimum, 5.9 second-feet Aug. 5.

1936-47: Maximum discharge, 10,900 second-feet Aug. 30, 1945 (gage height, 34.23 feet); minimum not determined.

Maximum stage known, 54.4 feet Dec. 9, 1935, present site and datum (discharge, 40,000 second-feet, furnished by M. J. McCall, engineer for Harris County. Flood of May 31, 1929, reached a stage of 48.9 feet, present site and datum (discharge, 19,000 second-feet at bridge on Capitol Avenue, 2 miles downstream, from rating curve extended above 15,300 second-feet, stage-discharge relation materially affected by interference of bridge; furnished by W. E. White, assistant engineer, city of Houston).

Remarks.- Records good except those for periods of no gage-height record, which are fair. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	532	84	405	319	90	20	29	17	307	11	8.8	514
2	514	82	333	879	72	19	28	16	164	11	20	355
3	466	236	253	1,130	58	19	27	15	106	10	9.2	188
4	420	1,290	190	1,180	44	19	26	13	80	8.8	7.0	110
5	405	3,740	148	1,020	41	19	24	13	66	8.5	6.6	93
6	590	5,670	119	762	37	22	23	13	51	8.8	6.8	76
7	718	6,130	103	590	34	46	23	21	42	8.5	7.0	61
8	674	4,980	90	466	30	26	22	16	35	9.0	8.5	56
9	570	3,760	197	590	27	32	20	13	31	11	10	47
10	409	3,190	190	850	26	27	21	12	24	8.8	11	47
11	272	3,590	266	1,100	25	23	26	11	21	8.2	12	42
12	227	3,930	630	1,210	27	28	23	11	20	8.2	12	42
13	312	4,010	674	1,160	24	33	45	12	20	13	12	53
14	312	3,680	610	970	26	128	34	13	19	49	12	77
15	266	2,990	466	850	24	112	62	14	19	102	13	74
16	202	2,870	354	696	23	58	47	13	17	158	13	67
17	152	2,990	253	1,320	23	38	34	11	16	172	16	53
18	172	3,110	184	2,130	23	145	29	346	26	144	11	42
19	202	2,910	127	2,710	27	530	24	605	43	79	36	43
20	178	2,340	96	2,640	27	996	26	1,920	39	50	109	49
21	140	1,860	79	2,270	24	996	23	2,270	27	37	72	53
22	109	1,450	74	1,890	27	625	27	1,450	38	24	59	52
23	89	1,100	69	1,390	27	334	29	1,420	35	18	65	58
24	75	828	62	996	28	190	29	2,050	116	14	65	56
25	117	590	54	696	25	172	23	2,130	38	14	385	41
26	112	420	48	498	22	109	19	2,030	18	17	874	47
27	234	368	45	361	21	72	17	1,960	16	14	1,070	45
28	234	420	42	260	21	52	17	1,540	15	13	1,070	30
29	178	450	40	184	-	41	16	1,090	13	11	996	20
30	120	435	41	143	-	35	15	784	12	8.8	874	16
31	95	-	129	112	-	32	-	540	-	8.0	696	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	9,096	718	75	293	0.809	0.93	18,040
November	69,503	6,130	82	2,317	6.40	7.14	137,900
December	6,371	674	40	206	.569	.65	12,640
Calendar year 1946	233,415	6,130	13	639	1.77	23.98	463,000
January	31,372	2,710	112	1,012	2.80	3.22	62,230
February	903	90	21	32.2	.089	.09	1,790
March	4,998	996	19	161	.445	.51	9,910
April	808	82	15	26.9	.074	.08	1,600
May	20,369	2,270	11	657	1.81	2.09	40,400
June	1,474	307	12	49.1	.136	.15	2,920
July	1,056.6	172	7.8	34.1	.094	.11	2,100
August	6,566.9	1,070	6.6	212	.586	.67	13,030
September	2,507	514	16	83.6	.231	.26	4,970
Water year 1946-47	155,024.5	6,130	6.6	425	1.17	15.90	307,500

Peak discharge.- Nov. 7 (1:30 a.m.) 6,400 sec.-ft.; Nov. 13 (3 a.m.) 4,060 sec.-ft.; Nov. 16 (7 a.m.) 3,270 sec.-ft.; Nov. 18 (4 p.m.) 3,150 sec.-ft.; May 20 (7 p.m.) 3,590 sec.-ft.

Note.- No gage-height record June 11-17, June 26 to July 3; discharge computed on basis of weather records and records for nearby stations.

Whiteoak Bayou at Houston, Tex.

Location.- Water-stage recorder, lat. 29°46'31", long. 95°23'54", at Yale Street Bridge, in Houston, Harris County, just downstream from Texas & New Orleans Railroad bridge and 2 miles upstream from Little Whiteoak Bayou. Datum of gage is 4.08 feet below mean sea level, datum of 1929.

Drainage area.- 92.0 square miles.

Records available.- May 1936 to September 1947.

Average discharge.- 11 years, 93.5 second-feet.

Extremes.- Maximum discharge during year, 4,120 second-feet Nov. 6 (gage height, 37.33 feet); minimum, 0.7 second-foot Aug. 10-11.

1936-47: Maximum discharge, 8,600 second-feet Nov. 2, 1943 (gage height, 42.45 feet); minimum, 0.2 second-foot Aug. 7, 8, 1940.

Maximum stage known, 51.5 feet Dec. 9, 1935, present datum (discharge, 14,750 second-feet, furnished by M. J. McCall, engineer for Harris County). Discharge for flood of May 31, 1929, 9,360 second-feet (gage height, 47.0 ± 0.5 feet, present site and datum), computed on basis of current-meter measurement at stage 1 foot below crest, made at bridge 1 block downstream from gage; furnished by W. E. White, assistant engineer, city of Houston.

Remarks.- Records good except those for periods of no gage-height record, which are fair. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	2.5	35	306	21	5.8	8.1	4.0	16	3.6	1.0	4.1
2	14	2.7	27	366	17	5.5	7.5	3.8	12	2.9	1.0	8.7
3	12	104	22	330	14	5.2	6.9	3.6	9.0	a2.2	1.1	4.0
4	8.4	820	18	205	12	5.0	6.9	3.1	7.8	a2.1	1.1	2.9
5	5.8	2,560	16	117	10	5.5	6.9	2.9	6.4	a2.0	1.0	2.7
6	4.4	3,630	14	84	9.0	6.1	5.8	3.1	5.0	a1.9	1.0	2.5
7	3.4	3,460	12	70	8.7	14	5.5	8.6	4.4	a1.8	1.0	2.3
8	3.1	1,790	11	110	8.1	12	5.2	4.7	3.8	a1.6	1.0	2.2
9	2.7	899	85	157	7.2	11	5.0	2.7	3.6	12	1.0	2.3
10	3.6	1,000	123	299	6.9	8.4	5.0	2.5	3.6	2.9	.8	3.2
11	3.4	2,220	143	342	8.1	6.9	8.8	2.5	3.1	a1.9	.8	4.2
12	2.3	1,420	462	247	8.4	10	5.2	2.5	3.4	a3.5	.9	2.3
13	2.2	764	349	164	8.4	69	15	2.7	3.1	13	1.0	2.7
14	3.8	403	146	124	7.5	140	7.8	2.5	2.5	10	.9	2.2
15	4.0	199	89	98	7.5	127	6.4	2.5	2.2	6.1	.9	2.1
16	4.2	628	64	81	6.9	36	5.0	2.5	2.5	3.6	.8	2.5
17	3.4	1,030	48	657	6.6	22	4.4	2.7	2.7	a2.3	2.9	8.4
18	3.1	758	35	1,320	6.6	91	4.2	164	4.1	2.2	3.1	5.5
19	3.4	442	26	1,240	7.2	418	3.8	442	31	2.2	1.8	4.4
20	2.9	330	21	880	7.5	416	4.7	450	19	1.8	11	3.1
21	2.7	154	25	494	7.5	216	5.2	744	16	1.6	8.1	2.1
22	2.5	115	25	231	7.5	102	6.1	457	7.2	1.9	3.6	1.6
23	2.3	88	21	139	6.4	60	4.7	194	4.2	1.5	2.3	1.5
24	2.2	66	17	106	6.1	63	4.0	847	4.0	1.4	2.4	1.6
25	16	52	15	104	5.8	58	3.6	681	4.0	1.4	33	1.4
26	13	46	13	94	5.2	31	4.4	374	15	1.2	13	1.3
27	7.8	63	12	65	5.5	21	4.2	128	26	1.0	14	1.2
28	4.2	78	11	50	6.1	16	3.8	62	9.6	1.0	8.4	1.2
29	3.4	62	10	39	-	12	4.0	36	5.5	1.0	6.4	.9
30	3.4	46	9.6	32	-	9.9	4.2	23	4.2	1.0	4.7	.9
31	2.7	-	72	27	-	9.0	-	21	-	1.0	3.6	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	170.3	20	2.2	5.49	0.060	0.07	338
November	23,232.2	3,630	2.5	774	8.41	9.39	46,080
December	1,976.6	462	9.6	63.8	.694	.80	3,920
Calendar year 1946	69,818.7	3,630	2.0	191	2.08	28.22	138,500
January	8,578	1,320	27	277	3.01	3.47	17,010
February	238.7	21	5.2	8.52	.093	.10	473
March	2,012.3	418	5.0	64.9	.705	.81	3,990
April	172.3	15	3.6	5.74	.062	.07	342
May	4,679.9	847	2.5	151	1.64	1.89	9,280
June	240.9	31	2.2	8.03	.087	.10	478
July	93.6	13	1.0	3.02	.033	.04	186
August	133.6	33	.8	4.31	.047	.05	265
September	86.0	8.7	.9	2.87	.031	.03	171
Water year 1946-47	41,614.4	3,630	.8	114	1.24	16.82	82,530

Peak discharge.- Nov. 6 (11:30 p.m.) 4,120 sec.-ft.; Nov. 11 (11:30 a.m.) 2,520 sec.-ft.; Nov. 17 (12 m.) 1,100 sec.-ft.; Jan. 18 (3 p.m.) 1,430 sec.-ft.; May 24 (10:30 p.m.) 1,180 sec.-ft.

a No gage-height record; discharge computed on basis of weather records and records for nearby stations.

Brays Bayou at Houston, Tex.

Location.- Water-stage recorder, lat. 29°42'06", long. 95°24'06", at Old Main Street Bridge in southwest section of Houston, Harris County, three-quarters of a mile upstream from Harris Gully and about 15 miles upstream from Buffalo Bayou. Datum of gage is 3.90 feet below mean sea level, datum of 1929.

Drainage area.- 100 square miles.

Records available.- May 1936 to September 1947.

Average discharge.- 11 years, 108 second-feet.

Extremes.- Maximum discharge during year, 4,360 second-feet Nov. 5 (gage height, 46.25 feet); minimum, 2.4 second-feet Sept. 23.

1936-47: Maximum discharge, 8,120 second-feet Nov. 2, 1943; maximum gage height, 51.70 feet Aug. 28, 1945; minimum discharge, 0.1 second-foot Oct. 10-13, 1937.

Maximum discharge known, 11,095 second-feet May 31, 1929 (gage height, 50.4 feet, present site and datum), from current-meter measurement at Lawndale Avenue Bridge, about 12 miles below gage; furnished by W. E. White, assistant engineer, city of Houston.

Remarks.- Records good except those for Nov. 21 to Jan. 18 and Aug. 5-11, which are fair. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	270	7.7	51	283	13	7.1	9.2	5.1	16	6.6	4.0	18
2	124	6.9	42	341	11	6.9	10	5.9	11	6.1	5.2	13
3	72	61	33	296	10	6.8	8.4	5.4	9.4	6.1	5.1	9.2
4	52	1,110	24	146	9.4	6.8	11	4.8	8.4	5.8	4.5	7.7
5	40	3,320	16	65	9.4	6.9	12	4.5	7.7	5.3		7.3
6	30	3,730	14	43	9.6	7.3	11	4.5	7.7	5.8		6.1
7	23	2,360	11	37	9.4	24	11	11	6.6	5.0		6.6
8	16	1,280	11	50	9.0	14	11	21	6.1	5.0	a4.5	6.0
9	13	560	161	171	9.4	9.4	7.1	7.1	6.1	5.0		5.9
10	16	974	242	497	8.2	7.8	7.1	5.6	5.3	5.0		13
11	16	1,360	240	377	8.4	7.3	9.0	4.6	5.4	5.1		15
12	11	664	978	191	12	11	7.4	4.5	5.6	5.6	5.6	8.0
13	9.0	314	491	122	9.0	13	22	4.8	4.5	30	5.6	7.5
14	8.0	155	222	87	8.6	11	9.0	4.6	4.5	44	5.4	6.2
15	7.7	93	127	65	8.0	9.2	7.7	4.6	4.6	20	5.1	12
16	13	1,230	83	75	8.2	7.8	6.6	4.8	5.3	8.8	5.6	26
17	10	1,410	63	893	9.8	7.7	6.1	5.3	5.1	6.4	9.0	13
18	9.4	636	49	1,170	10	80	6.1	114	37	5.8	8.6	8.6
19	8.0	314	32	1,620	11	366	6.1	116	32	5.1	6.8	6.1
20	6.6	160	24	874	12	113	7.8	979	54	4.4	47	5.4
21	6.1	97	20	415	12	53	6.1	2,350	19	4.6	117	4.8
22	5.8	70	17	205	13	32	5.8	652	9.6	4.5	54	4.2
23	5.4	52	15	112	12	27	5.4	425	7.5	4.2	22	4.7
24	5.4	38	14	91	11	25	5.4	1,460	199	4.2	13	8.2
25	22	32	13	78	8.2	18	5.3	1,500	192	3.9	1,060	6.2
26	17	38	12	54	6.8	12	5.0	693	69	3.9	1,020	4.8
27	12	70	11	37	6.6	10	5.4	241	26	4.0	661	4.4
28	8.2	140	11	27	7.3	8.4	4.8	95	12	4.0	304	4.2
29	7.3	90	10	23	-	8.4	5.6	52	8.4	4.0	115	4.5
30	6.2	66	9.2	20	-	8.2	5.3	33	7.3	3.8	47	4.0
31	7.1	-	17	15	-	7.7	-	21	-	3.9	26	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	857.2	270	5.4	27.7	0.277	0.32	1,700
November	20,438.6	3,730	6.9	681	6.81	7.60	40,540
December	3,063.2	978	9.2	98.8	.988	1.14	6,080
Calendar year 1946	75,372.2	3,730	3.6	206	2.06	28.04	149,500
January	8,480	1,620	15	274	2.74	3.15	16,820
February	272.3	13	6.6	9.72	.097	.10	540
March	932.7	366	6.8	30.1	.301	.35	1,850
April	239.7	22	4.8	7.99	.080	.09	475
May	8,839.1	2,350	4.5	285	2.85	3.29	17,530
June	792.1	199	4.5	26.4	.264	.29	1,570
July	235.9	44	3.8	7.61	.076	.09	468
August	3,588.0	1,060	-	116	1.16	1.33	7,120
September	250.6	26	4.0	8.35	.084	.09	497
Water year 1946-47	47,989.4	3,730	-	131	1.31	17.84	95,190

Peak discharge.- Nov. 5 (6 p.m.) 4,360 sec.-ft.; Nov. 16 (7 p.m.) 2,260 sec.-ft. May 20 (11 p.m.) 3,850 sec.-ft.; May 24 (4:30 p.m.) 2,000 sec.-ft.

a No gage-height record; discharge computed on basis of weather records and records for nearby stations.

Clear Creek near Pearland, Tex.

Location.- Staff gage, lat. 29°35'50", long. 95°17'12", at bridge on State Highway 35, 0.8 mile downstream from Gulf, Colorado & Santa Fe Railway bridge, about 1 mile above Hickory slough, and 2.3 miles north of Pearland, Brazoria County.

Records available.- July to October 1944, March to October 1946, April to September 1947.

Extremes.- Maximum discharge during period, 833 second-feet Aug. 25 (gage height, 10.10 feet); no flow Aug. 8-14.
1944, 1946, 1947: Maximum discharge not determined; no flow Aug. 8-14, 1947.

Remarks.- Records good. Large area of rice land above station is irrigated with water from Brazos River. Low flow is largely drainage from irrigated lands. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	290						-	2.0	4.4	5.0	3.6	28
2	192						-	1.7	3.8	6.0	5.1	25
3	127						1.1	1.0	3.4	6.1	5.8	20
4	96						1.1	3.2	5.4	1.7	4.5	12
5	69						1.0	5.2	4.7	2.5	3.3	13
6	47						.6	7.0	1.7	1.7	3.1	17
7	31						.5	7.3	.2	.3	1.0	11
8	22						.5	32	.1	1.0	.1	10
9	14						.4	18	2.0	2.9	0	13
10	17						.6	9.3	1.9	1.7	0	24
11	24						3.4	7.4	.5	2.0	0	20
12	24						1.7	6.3	1.8	5.6	0	16
13	16						4.0	18	.6	20	.1	a26
14	10						4.2	7.8	1.4	20	.7	22
15	6.9						14	7.3	.6	12	.9	28
16	6.4						8.9	9.6	2.2	7.3	1.4	43
17	7.5						9.0	5.9	2.7	8.0	3.6	37
18	6.4						4.7	39	1.5	5.7	9.6	31
19	4.7						2.0	80	8.2	5.0	12	26
20	4.4						1.6	122	28	5.8	54	24
21	3.4						5.4	318	39	6.0	85	26
22	2.4						8.3	118	23	.2	72	24
23	1.7						9.6	97	15	2.3	50	22
24	1.7						7.3	292	20	1.2	11	15
25	9.2						3.6	270	16	2.6	689	18
26	13						3.8	142	21	3.6	528	22
27	7.3						5.3	71	20	1.6	338	20
28	4.2						12	37	9.9	.8	220	19
29	2.9						3.7	20	5.7	5.2	140	16
30	2.6						.2	12	8.3	4.5	86	14
31	1.8						-	6.4	-	2.0	50	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,065.5	290	1.7	34.4	2,110
November	-	-	-	-	-
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April 3-30	118.5	14	.2	4.23	235
May	1,773.4	318	1.0	57.2	3,520
June	253.0	39	.1	8.43	502
July	150.3	20	.2	4.85	298
August	2,377.8	689	0	76.7	4,720
September	642	43	10	21.4	1,270
Water year	-	-	-	-	-

a No gage-height record; discharge computed on basis of estimated gage height.

Hickory slough near Pearland, Tex.

Location.- Staff gage, lat. 29°34'50", long. 95°17'45", at county road bridge, 0.2 mile upstream from Gulf, Colorado & Santa Fe Railway bridge, 1.3 miles north of Pearland, Brazoria County, and about 2 miles upstream from mouth. Prior to Apr. 3, 1947, at datum 0.50 foot higher

Records available.- July to October 1944, March to October 1946, April to September 1947 (discontinued).

Extremes.- Maximum discharge during period October 1946, April to September 1947 not determined; no flow at times.
1944, 1946, 1947: Maximum discharge not determined; no flow at times.

Remarks.- Records good below 10 second-feet, fair above. Large area of rice land above station is irrigated with water from Brazos River. Low flow is largely drainage from irrigated lands. Gage read twice daily. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48						-	4.7	2.4	0.1	0	3.5
2	36						-	4.3	2.3	2.6	0	3.4
3	28						-	3.5	2.0	3.5	0	3.7
4	24						-	2.6	1.8	2.0	0	3.2
5	14						-	2.0	1.6	.1	0	3.2
6	13						-	.9	1.8	0	0	1.5
7	9.7						0.2	.7	1.6	0	0	9.2
8	6.4						.2	2.8	1.6	2.5	0	7.5
9	4.6						.1	.9	1.8	3.5	0	2.0
10	4.6						.2	.6	1.8	.2	1.4	2.0
11	4.6						.8	.8	2.0	2.7	1.8	5.8
12	3.1						.2	.6	2.4	4.5	.9	5.1
13	2.5						.8	.4	1.3	6.1	1.1	2.8
14	1.5						.5	.6	1.2	5.2	1.1	2.6
15	1.1						.4	2.9	1.3	3.5	.7	3.7
16	1.5						.2	4.3	.9	3.7	2.6	4.3
17	1.2						.2	2.9	.2	3.9	7.0	4.7
18	a1.2						.2	12	.2	2.3	7.2	4.3
19	1.2						.2	5.5	1.4	1.2	7.0	5.3
20	1.0						.4	7.0	4.1	1.0	9.6	4.3
21	.7						.2	(e)	6.0	1.9	14	3.9
22	.5						.5	15	7.8	1.6	9.7	2.8
23	.6						1.7	16	8.3	.7	6.2	1.9
24	.5						4.8	(e)	7.2	.8	(e)	.5
25	2.8						3.9	19	5.8	0	(e)	.2
26	2.8						3.4	9.4	5.8	0	(e)	0
27	1.5						4.3	5.3	5.5	0	(e)	0
28	1.0						2.6	3.5	3.4	0	18	0
29	.6						3.9	3.0	3.4	0	9.4	.6
30	.5						5.1	1.9	.1	0	7.5	.4
31	.4						-	.9	-	0	a6.0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	219.1	48	0.4	7.07	435
November	-	-	-	-	-
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April 7-30	35.0	5.1	.1	1.46	69
May	-	-	-	-	-
June	84.8	8.3	.1	2.83	168
July	53.6	6.1	0	1.73	106
August	-	-	-	-	-
September	92.4	9.2	0	3.08	183
Water year	-	-	-	-	-

a No gage-height record; discharge interpolated, or computed from estimated gage height.
e Stage above limits of rating; discharge not computed.

Chocolate Bayou near Alvin, Tex.

Location.- Staff gage, lat. 29°22'19", long. 95°19'14", at Rosharon-Alvin county road bridge, 5½ miles southwest of Alvin, Brazoria County, and 6½ miles upstream from State Highway 35. Prior to Jan. 14, 1947, no record obtained from a stage of 10.1 feet.

Records available.- August to October 1944, March 1946 to September 1947.

Extremes.- Maximum discharge during water year not determined; minimum observed, 2.1 second-feet Apr. 23.
1944, 1946-47: Maximum discharge not determined; minimum observed, 1.0 second-foot Oct. 31, 1944.

Remarks.- Records good. Large area of rice land above station is irrigated with water from Brazos River. Low flow is largely drainage from irrigated lands. Diversions above station for irrigation. Gage read once or twice daily. Subsequent to Jan. 15, 1947, complete record of discharge obtained.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	(e)	11	(e)	214	18	2.5	5.9	12	40	65	83	100
2	438	8.0	(e)	304	16	2.4	5.3	13	42	95	92	102
3	220	6.4	140	296	14	2.2	5.0	22	65	105	102	100
4	213		95	168	12	2.2	4.9	43	65	88	90	92
5	213		63	a84	10	2.6	4.7	64	57	83	74	86
6	167		45	55	10	4.0	4.7	98	46	86	63	79
7	137		37	49	10	7.3	4.6	81	69	86	54	72
8	131	(e)	a35	65	8.0	22	3.6	65	88	90	53	86
9	131		36	169	6.4	17	3.3	79	98	115	54	115
10	a143		149	389	5.7	6.6	3.3	68	81	118	58	137
11	149		280	452	5.3	7.5	3.0	51	88	100	a58	192
12	100		371	452	5.9	54	4.7	42	76	128	a58	179
13	79	466	389	296	6.4	50	5.4	50	a74	a161	a57	143
14	58	258	254	170	5.6	27	6.0	43	70	220	a63	134
15	39	119	a146	108	4.6	17	4.7	54	72	206	90	155
16	43	297	98	135	4.3	9.8	3.5	48	79	173	92	248
17	40	(e)	72	321	4.6	6.8	2.8	45	83	128	a160	184
18	37	(e)	50	434	4.2	78	2.6	a253	90	105	213	128
19	24	479	34	425	4.7	371	2.4	600	134	95	192	122
20	18	344	27	380	4.6	195	2.4	542	234	88	216	110
21	14	180	a21	292	4.3	87	2.4	670	241	88	344	120
22	11	90	20	149	3.5	55	2.4	720	220	95	296	120
23	8.4	68	17	95	3.2	35	2.1	640	199	98	206	118
24	114	54	16	120	3.2	36	4.3	710	100	86	132	118
25	206	58	15	115	3.2	21	10	750	70	76	358	120
26	179		14	90	3.0	11	10	445	72	76	1,120	122
27	149		13	63	2.7	7.8	33	138	63	79	1,110	118
28	79	(e)	13	48	2.5	6.6	33	79	58	74	832	102
29	36		12	37	-	5.9	22	53	68	68	527	86
30	23		11	30	-	6.0	14	42	63	63	294	70
31	18	-	55	24	-	6.4	-	41	-	81	146	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October 2-31	3,217.4	438	8.4	107	6,380
November	-	-	-	-	-
December 3-31	2,528	389	11	87.2	5,010
Calendar year	-	-	-	-	-
January	6,029	452	24	194	11,960
February	185.9	18	2.5	6.64	369
March	1,162.6	371	2.2	37.5	2,310
April	216.0	33	2.1	7.20	428
May	6,561	750	12	212	13,010
June	2,805	241	40	93.5	5,560
July	3,219	220	63	104	6,380
August	7,287	1,120	53	235	14,450
September	3,658	248	70	122	7,260
Water year	-	-	-	-	-

a No gage-height record; discharge computed on basis of estimated gage heights.
e Stage above limits of gage and rating; discharge not computed.

Austin Bayou near Danbury, Tex.

Location.- Water-stage recorder, lat. 29°14'42", long. 95°19'47", at county road bridge, 85 feet downstream from Missouri Pacific Railroad bridge, 1½ miles northeast of Danbury, Brazoria County, and 8 miles upstream from Flores Bayou. Prior to Apr. 25, 1947, staff gage at same site and datum.

Records available.- August to October 1944, March to October 1946, April to November 1947 (discontinued).

Extremes.- Maximum discharge during period October 1946, April to November 1947, 1,670 second-feet May 21 (gage height, 15.59 feet); no flow Aug. 1.

1944, 1946-47: *Maximum discharge not determined; no flow Aug. 1, 1947.*

Flood of July 12-14, 1939, reached a stage of 18.3 feet, gage datum, at Missouri Pacific Railroad bridge, from information by Missouri Pacific Railroad Engineering Department.

Remarks.- Records poor. Large area of rice land above station is irrigated with water from Brazos River. Low flow is largely drainage from irrigated lands. Staff gage read twice daily Oct. 1-31, 1946. Diversions above station for irrigation.

Discharge, in second-feet, 1946-47

1946-47

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	262						-	4.4	4.5		0.8	22
2	188						-	2.5	1.3		4.4	23
3	94						-	1.8	1.0		9.3	22
4	62						-	1.4	1.0		7.0	14
5	109						-	1.3	1.2		5.1	12
6	102						-	4.5	4.9		.7	14
7	33						-	1.5	21		1.3	10
8	15						-	3.4	36	40	1.8	6.9
9	16						-	1.0	15		1.9	7.9
10	17						-	3.0	15		4.2	13
11	22						-	2.8	8.9		3.2	15
12	34						-	7.6	28		7.7	20
13	28						-	20	25		6.6	31
14	20						-	26	14		5.6	34
15	22						-	27	3.5	137	8.8	48
16	20						-	17	7.1	35	4.2	102
17	22						-	11	.4	9.8	16	81
18	19						-	193	5.9	2.8	23	50
19	12						-	978	30	2.4	28	34
20	11						-	1,400	93	1.2	48	34
21	8.2						-	1,580	117	.6	176	33
22	7.2						-	1,320	90	8.3	268	29
23	6.4						-	1,060	45	1.3	128	40
24	11						-	1,140	22	1.0	75	41
25	32						9.2	1,030	23	3.8	520	26
26	86						14	850		12	656	20
27	92						45	520		11	770	18
28	56						40	76	15	3.9	750	37
29	24						21	27		5.8	572	34
30	11						8.7	18		2.1	228	28
31	6.0						-	11	-	.9	56	-

Note.- No gage-height record June 26 to July 14; discharge computed on basis of weather records and records for Chocolate Bayou near Alvin.

1947

Day	Oct.	Nov.	Day	Oct.	Nov.	Day	Oct.	Nov.	Day	Oct.	Nov.	Day	Oct.	Nov.	Day	Oct.	Nov.
1	23	1.9	6	12	-	11	20	-	16	15	-	21	34	-	26	7.4	-
2	19	1.5	7	12	-	12	19	-	17	16	-	22	37	-	27	7.8	-
3	17	1.8	8	12	-	13	20	-	18	15	-	23	36	-	28	11	-
4	16	1.6	9	14	-	14	19	-	19	14	-	24	24	-	29	7.8	-
5	14	1.3	10	17	-	15	16	-	20	22	-	25	12	-	30	4.8	-
															31	3.0	-

Monthly discharge, in second-feet, 1946-47

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October 1946	1,447.8	262	6.0	46.7	2,870
November	-	-	-	-	-
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April 25-30, 1947	137.9	45	8.7	23.0	274
May	10,339.2	1,580	1.0	334	20,510
June	688.7	117	.4	23.0	1,370
July	798.9	-	.6	25.8	1,580
August	4,386.6	770	.7	142	8,700
September	899.8	102	6.9	30.0	1,780
Water year	-	-	-	-	-
October 1947	516.8	37	3.0	16.7	1,030
November 1-5	8.1	1.9	1.3	1.62	16

Oyster Creek near Angleton, Tex.

Location.- Water-stage recorder, lat. 29°09'25", long. 95°28'35", at bridge on State Highway 35 $2\frac{3}{4}$ miles west of Angleton, Brazoria County, 4.0 miles upstream from Missouri Pacific Railroad bridge, $4\frac{1}{2}$ miles downstream from another Missouri Pacific Railroad bridge, and about 45 miles upstream from mouth at Gulf of Mexico. Datum of gage is 1.31 feet below mean sea level, datum of 1929.

Records available.- October 1944 to September 1947.

Extremes.- Maximum discharge during year, 2,230 second-feet Nov. 7 (gage height, 26.25 feet); minimum, 16 second-feet May 6, 7.

1944-47: Maximum discharge, that of Nov. 7, 1946; minimum, 16 second-feet May 12, 13, 1945, May 6, 7, 1947.

Flood of December 1913 reached a stage of about 32 feet, from information by State Highway Department; flood of Dec. 5, 1940, reached a stage of 30.7 feet, from levels to floodmark on bridge to which gage is attached. At extreme high stages 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.- Records good. Diversions above station for irrigation. A large part of low flow at this station is water diverted from Brazos River for industrial use below station.

Cooperation.- Nine discharge measurements furnished by Dow Chemical Co.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	378	53	1,280	137	112	41	44	31	181	25	31	318
2	325	50	1,060	200	97	41	42	29	131	23	33	285
3	279	47	853	213	88	41	40	25	97	22	37	266
4	358	371	670	194	79	41	38	22	75	21	32	246
5	468	1,060	548	162	69	41	38	19	60	19	29	233
6	484	1,950	454	146	63	46	36	17	50	19	29	220
7	468	2,200	385	131	59	72	35	16	44	19	27	150
8	433	1,780	332	125	57	100	35	18	40	21	26	85
9	385	1,630	292	146	54	67	34	21	37	27	25	70
10	351	1,610	318	239	52	54	33	27	35	24	25	74
11	372	1,650	365	305	51	49	31	30	32	25	26	63
12	365	1,450	399	305	52	47	31	29	31	33	27	55
13	305	1,180	399	305	51	49	34	35	31	97	30	47
14	246	892	372	279	49	57	34	37	31	150	30	48
15	220	710	338	246	49	57	34	35	30	162	29	45
16	194	774	305	220	48	53	34	36	29	97	29	54
17	194	1,050	279	239	48	50	34	35	28	54	29	46
18	175	1,060	252	292	47	110	33	49	36	41	31	41
19	146	965	226	325	47	510	32	196	59	37	36	37
20	112	840	200	351	47	508	32	207	150	32	41	38
21	85	720	175	332	46	392	31	318	285	28	112	40
22	69	625	156	292	46	285	31	272	246	25	175	43
23	59	548	140	246	45	200	29	406	146	24	146	41
24	52	476	125	207	44	156	28	1,080	112	24	91	39
25	57	419	109	207	43	116	26	1,140	116	23	177	42
26	100	385	97	200	42	85	28	892	74	25	433	41
27	106	419	88	181	42	67	36	680	49	29	447	40
28	85	1,050	80	162	41	57	36	532	42	29	406	38
29	69	1,430	73	150	-	51	34	419	40	29	358	36
30	63	1,430	66	137	-	49	33	325	34	29	351	34
31	58	-	82	125	-	48	-	246	-	30	345	-

Month	Second-feet-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	7,061	484	52	228	14,010
November	28,824	2,200	47	961	57,170
December	10,518	1,280	66	339	20,860
Calendar year 1946	111,638	2,200	30	306	221,400
January	6,799	351	125	219	13,490
February	1,568	112	41	56.0	3,110
March	3,540	510	41	114	7,020
April	1,016	44	26	33.9	2,020
May	7,224	1,140	16	233	14,330
June	2,351	285	28	78.4	4,660
July	1,243	162	19	40.1	2,470
August	3,643	447	25	118	7,230
September	2,815	318	34	93.8	5,580
Water year 1946-47	76,602	2,200	16	210	152,000

Double Mountain Fork Brazos River at Lubbock, Tex.

Location.- Water-stage recorder and masonry control, lat. 33°35'05", long. 101°49'40", in Mackenzie State Park in Lubbock, Lubbock County, 1.9 miles downstream from Yellowhouse Creek. Datum of gage is 3,132.7 feet above mean sea level, datum of 1929.

Records available.- September 1939 to September 1947.

Extremes.- Maximum discharge during year, 138 second-feet Oct. 7; maximum gage height, 0.84 foot May 24; no flow most of time.
1939-47: Maximum discharge, 892 second-feet June 6, 1941 (gage height, 6.73 feet), from rating curve extended above 120 second-feet on basis of slope-area determination at gage height 6.72 feet; no flow most of time.

Remarks.- Records poor. Station is located in small pool (capacity, 29.5 acre-feet). Figures of daily 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.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0							0				
2	0							0				
3	0							0				
4	0							0				
5	0							0				
6	0							0				
7	e3.4							0				
8	0							0				
9	0							0				
10	0							0				
11	0							0				
12	0							0				
13	0							0				
14	0							0				
15	0							0				
16	0							0				
17	0							0				
18	0							0				
19	0							0				
20	0							0				
21	0							0				
22	0							0				
23	0							0				
24	0							e2.3				
25	0							0				
26	0							0				
27	0							0				
28	0							0				
29	0							0				
30	0							0				
31	0							0				

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3.4	3.4	0	0.11	6.7
November	0	0	0	0	0
December	0	0	0	0	0
Calendar year 1946	3.4	3.4	0	.01	6.7
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	0	0	0	0	0
May	2.3	2.3	0	.07	4.6
June	0	0	0	0	0
July	0	0	0	0	0
August	0	0	0	0	0
September	0	0	0	0	0
Water year 1946-47	5.7	3.4	0	.02	11

e Discharge computed on basis of change in reservoir contents.

Double Mountain Fork Brazos River near Aspermont, Tex.

Location.- Water-stage recorder, 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.- 7,979 square miles, of which 6,470 square miles is probably noncontributing.

Records available.- December 1923 to September 1934, June 1939 to September 1947.

Average discharge.- 18 years (1924-34, 1939-47), 178 second-feet.

Extremes.- Maximum discharge during year, 20,400 second-feet May 12 (gage height, 10.08 feet); no flow at times.
1924-34, 1939-47: Maximum discharge, 52,000 second-feet Oct. 15, 1926 (gage height, 18.14 feet, from floodmark), by slope-area method; no flow at times.

Remarks.- Records poor. Daily discharge published only to show distribution of runoff. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	166	8.0	4.5	20	0.2	0	0	0	54	5.0	5.8	0
2	77	23	3.5	18	.1	0	0	0	39	4.0	5.1	0
3	40	53	3.0	18	0	0	37	0	27	2.8	4.4	0
4	24	24	2.7	17	0	0	5.4	0	15	2.7	3.7	0
5	18	15	2.2	16	0	0	.8	0	6.9	2.2	2.9	0
6	78	12	2.0	16	0	0	.2	0	2.8	1.8	2.1	0
7	1,030	9.0	1.8	17	0	0	.1	0	1.4	1.3	1.4	0
8	4,190	7.6	1.8	15	0	0	0	0	.6	1.0	.7	0
9	5,900	6.2	516	13	0	0	0	3.4	.2	.9	0	0
10	3,440	5.8	548	12	0	.3	0	2,670	0	f92	0	0
11	820	5.0	369	11	0	.8	0	14,800	0	301	0	38
12	f315	4.5	325	11	0	1.2	0	14,000	0	220	13	880
13	f196	4.2	305	9.4	0	1.3	0	1,790	0	158	45	236
14	142	4.0	183	8.6	0	1.2	.2	483	0	80	17	69
15	98	3.8	126	8.0	0	.7	.6	312	.3	45	8.9	32
16	80	2.8	88	7.2	0	.4	.4	10,600	83	25	2.2	20
17	64	2.8	60	6.6	0	.2	.2	5,130	40	14	.1	11
18	56	2.7	44	6.2	0	.1	0	777	18	8.3	0	6.6
19	47	2.7	35	8.0	0	.3	0	2,240	1,300	5.2	0	2.1
20	36	2.4	31	7.2	0	.4	0	f585	349	3.8	0	1.2
21	31	2.0	28	6.6	0	.4	0	f282	222	2.8	0	.9
22	28	1.8	28	5.2	0	.3	0	272	542	2.2	0	.6
23	26	1.8	26	4.5	0	.2	0	256	234	1.8	0	.4
24	22	1.8	26	3.8	0	.1	0	374	129	1.4	5.5	.4
25	16	85	26	3.0	0	0	0	207	75	57	.6	.3
26	15	43	25	2.4	0	0	0	221	46	98	0	.2
27	14	12	25	2.0	0	0	0	190	30	63	0	.2
28	13	7.2	24	1.5	0	0	0	150	20	56	0	.1
29	12	6.2	22	1.1	-	0	0	112	13	23	0	.1
30	9.0	5.2	22	.5	-	0	0	88	8.3	8.3	0	.1
31	8.0	-	20	.4	-	0	-	70	-	6.9	0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	17,009.0	5,900	8.0	549	33,740
November	364.5	85	1.8	12.2	723
December	2,921.3	548	1.6	94.2	5,790
Calendar year 1946	36,927.5	5,900	0	101	73,230
January	276.2	20	.4	8.91	548
February	.3	.2	0	.01	.6
March	7.9	1.3	0	.25	16
April	44.9	37	0	1.50	89
May	55,612.4	14,800	0	1,794	110,300
June	3,256.5	1,300	0	109	6,460
July	1,294.4	301	.9	41.8	2,570
August	118.4	45	0	3.82	235
September	1,299.2	880	0	43.3	2,580
Water year 1946-47	82,205.0	14,800	0	225	163,100

Peak discharge.- Oct. 9 (2:30 a.m.) 15,100 sec.-ft.; May 12 (12:30 p.m.) 20,400 sec.-ft.; May 16 (1:30 p.m.) 16,800 sec.-ft.

f Computed on basis of partly estimated gage-height record.

Note.- No gage-height record Dec. 9-11, Dec. 29 to Jan. 17, Aug. 2-11, Aug. 15 to Sept. 2, Sept. 15-30; discharge computed on basis of records for Salt Fork Brazos River near Aspermont and Brazos River at Seymour.

Brazos River at Seymour, Tex.

Location.- Water-stage recorder, 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 and 1 mile southwest of courthouse in Seymour, Baylor County. Datum of gage is 1,258.7 feet above mean sea level (Texas State Highway bench mark).

Drainage area.- 14,490 square miles, of which 9,240 square miles is probably noncontributing.

Records available.- November 1923 to September 1947.

Average discharge.- 23 years (1924-47), 469 second-feet.

Extremes.- Maximum discharge during year, 49,700 second-feet May 17 (gage height, 12.66 feet); no flow at times.
1923-47: Maximum discharge, 95,400 second-feet Oct. 16, 1926 (gage height, 15.16 feet, from floodmarks), by slope-area method; no flow at times.
Maximum stage known, about 21.0 feet, sometime prior to 1916.

Remarks.- Records fair. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	937	60	37	g64	21	13	6.6	12	365	73	24	0
2	618	171	32	g52	21	13	6.2	10	311	61	20	0
3	404	197	29	g56	19	13	7.2	8.6	260	61	13	0
4	261	189	26	g50	18	13	8.0	8.3	227	49	7.8	0
5	198	284	24	a52	18	12	15	7.6	190	42	4.6	0
6	f177	250	24	a54	17	12	8.3	7.4	151	40	3.4	0
7	g118	132	22	a60	16	16	6.9	21	128	56	2.2	0
8	f3,510	109	22	g82	16	17	30	2,170	107	41	1.4	0
9	5,780	83	41	g111	16	17	40	831	99	36	.9	0
10	6,300	64	363	g83	16	20	34	208	83	47	.8	0
11	4,480	56	3,290	f56	16	24	24	5,890	75	50	.5	7.5
12	1,800	48	2,000	60	16	26	18	24,500	68	28	.5	3.0
13	1,210	42	1,230	60	16	25	15	23,500	122	23	7.5	239
14	800	39	836	53	15	22	21	3,820	65	113	40	56
15	605	37	695	48	15	25	55	1,780	58	120	18	156
16	488	33	437	40	15	24	78	13,000	58	103	6.4	99
17	372	29	280	36	15	22	52	43,700	65	75	2.2	63
18	290	27	202	35	15	22	40	14,300	78	52	.7	42
19	230	26	161	37	16	31	32	3,030	63	44	.3	25
20	198	25	135	36	17	23	29	3,970	63	36	.1	16
21	170	23	116	35	16	19	26	1,790	526	25	0	7.8
22	151	22	100	35	16	18	22	1,080	480	18	0	3.4
23	138	21	87	34	16	16	19	5,340	656	11	0	1.8
24	120	21	78	33	16	12	19	2,510	807	16	0	.7
25	111	28	70	33	15	12	18	1,730	608	24	0	.3
26	100	66	67	32	15	10	17	1,470	440	36	0	0
27	91	44	64	29	15	9.0	16	1,210	306	57	0	0
28	85	35	56	28	14	8.3	17	936	206	21	0	0
29	78	65	48	27	-	7.6	17	716	151	9.2	0	0
30	70	48	43	23	-	7.6	15	550	107	4.6	0	0
31	65	-	g70	23	-	7.6	-	461	-	9.1	0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	29,755	6,300	65	960	59,020
November	2,274	284	21	75.8	4,510
December	10,685	3,290	22	345	21,190
Calendar year 1946	128,620.5	13,500	0	352	255,100
January	1,457	111	23	47.0	2,890
February	457	21	14	16.3	906
March	517.1	31	7.6	16.7	1,030
April	712.2	78	6.2	23.7	1,410
May	158,566.9	43,700	7.4	5,115	314,500
June	6,923	807	58	231	13,730
July	1,380.9	120	4.6	44.5	2,740
August	154.3	40	0	4.98	306
September	720.5	239	0	24.0	1,430
Water year 1946-47	213,602.9	43,700	0	585	423,700

Peak discharge.- Oct. 10 (5:30 a.m.) 9,330 sec.-ft.; May 13 (2:30 p.m.) 31,400 sec.-ft.; May 17 (2:30 p.m.) 49,700 sec.-ft.; May 20 (6:30 a.m.) 5,200 sec.-ft.; May 23 (4 p.m.) 12,300 sec.-ft.

a No gage-height record; discharge computed on basis of estimated gage-height record.
f Computed on basis of partly estimated gage-height record.
g Computed from graph based on gage readings.

Brazos River near South Bend, Tex.

Location.- Water-stage recorder and wire-weight gage, 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, and 2.0 miles northeast of South Bend, Young County. Datum of gage is 1,003.0 feet above mean sea level, datum of 1929.

Drainage area.- 21,600 square miles, of which 9,240 square miles is probably noncontributing.

Records available.- September 1938 to September 1947.

Extremes.- Maximum discharge during year, 33,800 second-feet May 19 (gage height, 17.60 feet); no flow at times.
1938-47: Maximum discharge, 87,400 second-feet May 4, 1941 (gage height, 27.35 feet); no flow at times.
Maximum stage known, 36.2 feet in 1876, from information by Texas State Highway Department and Corps of Engineers.

Remarks.- Records fair. Wire-weight gage read twice daily and readings used for major portion of year when water-stage recorder record was not available. Flow partly regulated by reservoirs in Elm Creek Basin (see p. 106) and Lakes Sweetwater and Trammel in Sweetwater Creek Basin, which have a combined capacity of about 106,000 acre-feet. Many small diversions above station for municipal supply and oil-field operations. Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	610	79	92	127	53	30	46	34	765	358	28	0
2	1,180	872	103	152	49	30	42	34	645	274	17	0
3	820	4,140	94	166	47	30	43	32	575	217	11	0
4	666	6,190	85	117	44	30	36	29	545	166	8.6	0
5	590	2,180	79	117	42	30	43	28	460	135	5.6	0
6	478	1,240	70	112	40	30	35	24	428	117	5.6	0
7	392	848	85	127	37	44	34	28	384	100	3.0	0
8	350	605	81	132	36	44	37	179	370	85	2.1	0
9	2,600	442	74	135	35	44	40	5,630	350	83	1.3	0
10	6,340	366	66	140	35	52	34	2,940	311	105	.7	0
11	8,370	292	3,280	146	43	58	25	4,620	307	87	.4	0
12	7,510	230	9,240	157	35	58	29	10,700	278	70	.7	0
13	4,840	182	5,080	163	37	56	50	24,700	237	64	3.4	0
14	3,690	157	4,580	138	32	56	70	26,800	254	72	.4	212
15	2,120	135	3,300	130	34	58	94	13,900	284	68	.2	670
16	1,210	110	1,290	124	32	52	106	6,990	765	149	0	244
17	765	98	990	114	32	50	146	15,300	545	121	0	112
18	590	94	792	110	32	56	120	28,200	415	154	0	103
19	474	85	620	112	32	89	105	23,600	380	126	0	80
20	392	77	530	100	36	117	81	8,820	770	94	0	60
21	315	76	460	92	40	112	63	9,990	565	83	.2	49
22	268	70	424	87	42	96	56	4,840	820	64	0	37
23	230	66	334	89	39	79	50	5,240	765	55	0	24
24	207	60	296	83	35	64	46	14,100	902	50	0	17
25	172	61	264	81	34	68	49	18,000	902	56	0	13
26	149	89	247	77	34	64	86	11,200	1,420	61	0	10
27	127	122	240	72	32	76	103	4,820	1,730	58	0	8.6
28	112	112	197	70	31	103	65	2,140	1,110	46	0	5.6
29	103	127	169	68	-	70	53	1,420	600	34	0	4.6
30	89	107	166	61	-	64	42	1,180	474	35	0	4.2
31	83	-	172	56	-	64	-	930	-	43	0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	45,842	8,370	83	1,479	90,930
November	19,312	6,190	60	644	38,300
December	33,500	9,240	66	1,081	66,450
Calendar year 1946	245,793	13,600	0	673	487,600
January	3,455	166	56	111	6,850
February	1,050	53	31	37.5	2,080
March	1,874	117	30	60.5	3,720
April	1,829	146	25	61.0	3,630
May	246,448	28,200	24	7,950	488,800
June	18,356	1,730	237	612	36,410
July	3,230	358	34	104	6,410
August	88.2	28	0	2.85	175
September	1,654.0	670	0	55.1	3,280
Water year 1946-47	376,638.2	28,200	0	1,032	747,000

Peak discharge.- Dec. 12 (8 a.m.) 11,200 sec.-ft.; May 14 (2:30 p.m.) 27,600 sec.-ft.; May 19 (4:30 a.m.) 33,800 sec.-ft.; May 21 (5:30 a.m.) 12,000 sec.-ft.; May 25 (2:30 a.m.) 24,200 sec.-ft.
Note.- Discharge, except for Oct. 1-5, 9-15, 17-20, Nov. 2-5, Dec. 11-17, May 9-27, June 4-14, 28, Sept. 15, computed from graph based on once or twice-daily wire-weight gage readings.

Possum Kingdom Reservoir near Graford, Tex.

Location.- Mercury U-tube gage, lat. 32°52', long. 98°26', in powerhouse at dam on Brazos River, 2.6 miles upstream from Loving Creek and 11.3 miles southwest of Graford, Palo Pinto County. Datum of gage is 0.10 foot above mean sea level, datum of 1929 (levels by Brazos River Conservation and Reclamation District).

Drainage area.- 22,550 square miles, of which 9,240 square miles is probably noncontributing.

Records available.- March 1941 to September 1947.

Extremes.- Maximum contents observed during year, 709,500 acre-feet May 19 (gage height, 999.2 feet); minimum observed, 495,600 acre-feet Sept. 30 (gage height, 986.4 feet).
1941-47: Maximum contents observed, 743,700 acre-feet Oct. 5, 1941 (gage height, 1,001.0 feet); minimum observed, 378,900 acre-feet Feb. 18-27, 1944 (gage height, 977.3 feet).

Remarks.- Reservoir is formed by reinforced concrete dam of flat slab deck, massive buttress type, with nine roof-weir (modified bear-trap) type gates, two bulkhead sections, and earthen dike section. Dam completed and storage began Mar. 21, 1941. Total capacity, 724,700 acre-feet (gage height, 1,000.0 feet, top of closed roof-weir gates). Usable capacity for power development, 698,900 acre-feet between gage heights 911.5 feet (sill of powerhouse penstock) and 1,000.0 feet (top of closed roof-weir gates). Water below gage height 911.5 feet can be withdrawn through high-pressure outlet down to gage height 874.8 feet. Figures given herein represent total contents. Water used for power development, industry, and irrigation. Records of water analysis for water year 1947 are given in Water-Supply Paper 1102. Water samples are collected immediately below dam.

Cooperation.- Records of daily gage height and capacity table furnished by Brazos River Conservation and Reclamation District.

Monthly gage height and contents, water year October 1946 to September 1947

Date	Gage height (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	997.3	674,400	-
Oct. 31	994.0	615,000	-59,400
Nov. 30	993.4	604,200	-10,800
Dec. 31	994.7	627,600	+23,400
Calendar year 1946	-	-	-7,200
Jan. 31	991.9	578,400	-49,200
Feb. 28	990.3	552,800	-25,600
Mar. 31	989.9	546,500	-6,300
Apr. 30	989.0	532,700	-13,800
May 31	997.5	678,000	+145,300
June 30	995.0	633,000	-45,000
July 31	992.2	583,400	-49,600
Aug. 31	989.0	532,700	-50,700
Sept.30	986.4	495,600	-37,100
Water year 1946-47	-	-	-178,800

† Gage height at 12 p.m.

Brazos River near Palo Pinto, Tex.

Location.- Water-stage recorder, lat. 32°51'45", long. 98°18'10", at bridge on Palo Pinto-Graford highway, 300 feet downstream from Dark Valley Creek, 6½ miles north of Palo Pinto, Palo Pinto County, and 20 miles downstream from Possum Kingdom Dam. Datum of gage is 831.23 feet above mean sea level, datum of 1929.

Drainage area.- 22,760 square miles, of which 9,240 square miles is probably noncontributing.

Records available.- November 1933 to September 1947. January 1924 to November 1933 at site near Mineral Wells.

Average discharge.- 13 years (1934-47), 1,253 second-feet.

Extremes (regulated).- Maximum discharge during year, 21,100 second-feet May 19 (gage height, 10.45 feet); minimum not determined, probably occurred during period of no gage-height record.

1933-47: Maximum discharge, 64,900 second-feet May 20, 1935, from rating curve extended above 32,000 second-feet; maximum gage height, 17.42 feet Oct. 17, 1942; no flow at times.

Maximum stage known was reached by flood of 1876, according to data of Corps of Engineers, and was several feet higher than any subsequent flood. A stage of about 24.0 feet was reached in June 1930, from information by local residents.

Remarks.- Records fair except those for period of no gage-height record, which are poor. Flow largely regulated by Possum Kingdom Reservoir (see p. 89) and several smaller reservoirs above Nugent in Clear Fork Basin, having a combined capacity of 831,000 acre-feet. Many small diversions above station for irrigation, municipal supply, and oil-field operation. Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,500	1,340	582	859	641	335	356	586	1,450			
2	3,500	1,920	203	686	618	103	351	276	1,500			a1,100
3	1,970	1,300	866	746	230	79	423	374	1,500			
4	2,070	1,360	944	747	612	356	583	168	1,450			
5	1,910	3,320	1,050	1,000	601	377	478	218	1,500			1,200
6	1,130	3,080	1,270	745	584	363	391	668	1,450			864
7	1,470	1,260	864	1,550	615	435	97	571	1,450			463
8	2,020	1,370	571	1,850	457	330	234	2,060	1,500			704
9	1,910	1,410	894	1,560	311	379	516	409	1,580			1,060
10	1,750	847	2,000	1,660	333	138	536	277	1,930			1,090
11	4,120	303	8,000	973	596	380	476	332	1,980			964
12	3,970	1,050	2,310	558	775	358	160	252	2,140			834
13	2,500	1,510	1,900	600	651	340	296	524	1,980			178
14	2,770	1,390	1,100	1,390	440	204	275	674	f1,540			73
15	6,560	1,620	856	1,640	397	115	600	1,500	f1,540	a670	a625	111
16	9,460	983	899	1,770	241	86	182	4,200	f1,580			250
17	3,410	389	1,660	1,530	175	64	144	12,000	f1,090			899
18	3,320	268	1,630	984	527	353	68	18,500	f980			1,200
19	3,160	1,040	1,870	523	639	868	141	20,300	f1,100			1,030
20	3,080	1,310	1,600	211	418	332	427	20,300				701
21	3,160	1,420	904	725	559	252	103	16,800				241
22	3,080	1,350	518	823	628	258	104	6,920				130
23	1,580	867	395	1,140	534	180	496	1,680				149
24	1,800	412	616	921	108	230	551	2,640				156
25	1,660	919	175	608	412	115	572	19,600	a1,300			304
26	1,360	1,070	147	507	590	120	380	18,500				383
27	804	970	925	585	635	147	526	11,500				425
28	1,010	761	1,060	1,070	722	350	104	1,580				92
29	1,720	181	610	955	-	371	264	1,540				141
30	1,360	814	776	858	-	201	424	1,540				556
31	1,560	-	1,070	800	-	116	-	1,540	-			-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	82,674	9,460	804	2,667	164,000
November	35,834	3,320	181	1,194	71,080
December	38,265	8,000	147	1,234	75,900
Calendar year 1946	318,693	9,460	49	873	632,100
January	30,574	1,850	211	986	60,640
February	14,049	775	108	502	27,870
March	8,335	868	64	269	16,530
April	10,258	600	68	342	20,350
May	168,029	20,300	168	5,420	333,300
June	43,540	2,140	-	1,451	86,380
July	20,770	-	-	670	41,200
August	19,375	-	-	625	38,430
September	18,598	-	73	620	36,890
Water year 1946-47	490,301	20,300	-	1,343	972,600

a No gage-height record; discharge computed on basis of change in contents of Possum Kingdom Reservoir, records of water released from reservoir, and records for stations near South Bend and near Glen Rose.

f Computed on basis of partly estimated gage-height record.

Brazos River near Glen Rose, Tex.

Location.- Water-stage recorder, lat. 32°15'40", long. 97°41'50", a quarter of a mile upstream from bridge on U. S. Highway 67, 2 miles upstream from Paluxy Creek, and 4 miles northeast of Glen Rose, Somervell County. Datum of gage is 567.82 feet above mean sea level, datum of 1929.

Drainage area.- 24,840 square miles, of which 9,240 square miles is probably noncontributing.

Records available.- October 1923 to September 1947.

Average discharge.- 24 years, 1,677 second-feet.

Extremes.- Maximum discharge during year, 49,000 second-feet Dec. 12 (gage height, 16.89 feet); minimum, 160 second-feet (regulated) Sept. 20 (gage height, 0.88 foot).
1923-47: Maximum discharge, 97,600 second-feet May 18, 1935 (gage height, 23.68 feet), from rating curve extended above 68,000 second-feet; no flow at times.
Maximum stage known, about 30.0 feet May 8 or 9, 1922, from information by local residents.

Remarks.- Records good. Flow partly regulated by Possum Kingdom Reservoir on Brazos River (see p. 89) and several smaller reservoirs in Clear Fork Basin. Many small diversions above station for irrigation, municipal supply, and oil-field operation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,980	1,620	1,070	1,180	1,200	441	660	547	1,860	1,070	428	960
2	5,130	1,900	649	890	1,130	745	708	363	1,740	481	932	1,140
3	3,400	11,700	592	1,310	1,040	770	614	284	1,670	310	1,100	603
4	3,250	17,600	758	1,240	946	770	514	423	1,580	530	1,190	421
5	3,020	7,250	614	932	890	580	603	514	1,560	1,360	918	293
6	2,020	6,670	536	988	672	411	638	372	1,480	1,320	536	686
7	2,250	4,260	890	1,180	569	441	732	337	1,430	1,060	319	1,370
8	2,050	4,260	1,100	1,190	862	580	820	328	1,460	525	231	1,300
9	1,440	3,320	1,100	1,090	795	808	732	333	1,460	310	492	1,140
10	2,080	2,020	1,260	1,500	834	876	660	1,700	1,460	223	660	708
11	3,320	1,870	2,040	1,030	745	808	481	2,770	1,460	426	732	525
12	2,720	1,750	30,500	1,790	649	732	478	1,360	1,530	988	808	974
13	2,030	1,430	13,600	1,700	558	732	684	1,120	1,890	708	638	1,090
14	4,330	974	4,800	1,460	558	603	832	988	2,070	638	470	1,120
15	3,320	1,100	3,180	1,060	848	614	946	649	2,270	580	395	1,130
16	2,680	1,620	2,430	918	862	672	1,260	569	2,020	460	603	684
17	4,590	1,610	1,720	1,660	720	660	1,260	770	1,670	363	708	431
18	6,590	1,670	1,400	1,860	660	626	1,450	2,240	1,590	648	782	284
19	4,120	1,450	1,190	1,960	603	992	918	12,700	1,620	1,070	795	202
20	3,400	876	1,660	1,800	525	2,450	684	16,600	1,530	1,240	536	172
21	3,320	720	1,740	1,460	431	3,180	503	20,500	3,510	1,300	310	818
22	3,250	904	1,840	1,130	626	2,250	411	15,500	2,720	1,090	238	1,070
23	3,180	1,320	1,720	848	758	1,430	346	8,830	2,120	481	739	918
24	3,250	1,450	1,370	820	603	1,200	481	5,960	1,700	293	932	580
25	3,100	1,430	1,030	1,180	695	1,250	392	3,020	1,120	448	848	382
26	1,860	1,240	834	1,220	758	974	337	6,090	660	649	820	284
27	1,890	745	960	1,280	569	820	511	15,900	862	525	660	208
28	1,750	718	795	1,040	382	758	672	12,300	1,060	614	492	178
29	1,500	1,200	614	890	-	638	649	5,920	1,120	603	346	184
30	1,180	1,060	580	834	-	580	603	3,180	1,250	503	580	284
31	834	-	1,190	1,000	-	547	-	2,120	-	431	660	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	91,834	6,590	834	2,962	182,200
November	85,737	17,600	718	2,858	170,100
December	83,762	30,500	536	2,702	166,100
Calendar year 1946	524,673	30,500	118	1,437	1,041,000
January	38,440	1,960	820	1,240	76,240
February	20,488	1,200	382	732	40,640
March	28,938	3,180	411	933	57,400
April	20,579	1,450	337	686	40,820
May	144,287	20,500	284	4,654	286,200
June	49,472	3,510	660	1,649	98,130
July	21,247	1,360	223	685	42,140
August	19,898	1,190	231	642	39,470
September	20,139	1,370	172	671	39,950
Water year 1946-47	624,821	30,500	172	1,712	1,239,000

Peak discharge.- Nov. 3 (11:30 p.m.) 33,600 sec.-ft.; Dec. 12 (3 p.m.) 49,000 sec.-ft.; May 21 (5:30 p.m.) 21,400 sec.-ft.; May 27 (10 a.m.) 16,200 sec.-ft.

Brazos River near Whitney, Tex.

Location.- Wire-weight gage, lat. 31°54'10", long. 97°23'05", at bridge on State Highway 22, 1.8 miles upstream from Towash Creek and 5 miles southwest of Whitney, Hill County. Datum of gage is 432.06 feet above mean sea level, datum of 1929 (Brazos River Conservation and Reclamation District bench mark).

Drainage area.- 26,090 square miles, of which 9,240 square miles is probably noncontributing.

Records available.- October 1938 to September 1947.

Extremes.- Maximum discharge during year, 33,500 second-feet Nov. 4 (gage height, 19.60 feet, from graph based on gage readings); minimum observed, 185 second-feet Sept. 30. 1938-47: Maximum discharge, 66,400 second-feet May 1, 1944 (gage height, 29.3 feet, from floodmark); minimum observed, 2.0 second-feet Oct. 31, Nov. 1, 1939. Maximum stage known, 46 feet May 9, 1922, from information by local residents.

Remarks.- Records good. Gage read twice daily, oftener during high stages. Flow partly regulated by Possum Kingdom Reservoir on Brazos River and several smaller reservoirs in Clear Fork Basin. Many small diversions above station for irrigation, municipal supply, and oil-field operations.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,860	791	1,130	1,440	1,240	530	680	800	2,130	1,290	496	665
2	6,760	1,640	1,240	1,490	1,440	489	718	718	1,910	1,140	368	774
3	4,180	5,170	791	1,240	1,440	791	757	598	1,800	680	825	1,050
4	4,100	24,600	605	1,540	1,240	850	732	502	1,690	437	1,000	665
5	3,550	11,400	834	1,340	1,240	876	658	496	1,590	363	1,110	444
6	3,110	10,800	766	1,150	1,160	725	642	672	1,540	1,290	876	341
7	1,960	5,990	568	1,240	910	620	702	568	1,540	1,290	635	298
8	2,240	5,160	948	1,390	732	876	766	496	1,490	1,060	398	1,180
9	1,960	4,940	1,240	1,440	902	834	1,440	702	1,440	620	298	1,140
10	1,490	3,480	1,340	1,290	986	1,000	1,240	515	1,440	424	330	1,000
11	2,080	2,240	7,910	1,860	1,060	986	1,490	1,760	1,440	346	582	680
12	3,620	2,130	19,000	2,180	967	929	808	3,250	1,390	385	695	816
13	2,590	1,910	19,500	2,130	884	808	3,210	1,690	1,490	1,040	774	1,200
14	2,180	1,590	7,110	2,020	791	791	1,240	1,240	1,800	774	665	1,060
15	4,540	1,050	4,540	1,740	725	665	3,240	1,240	1,910	680	530	1,040
16	3,250	1,130	3,550	1,340	1,070	575	1,960	893	2,130	620	374	1,590
17	2,780	1,740	3,040	2,970	1,080	635	1,860	862	1,910	545	508	825
18	8,490	1,690	2,080	3,700	929	755	1,740	2,830	1,540	437	910	530
19	5,410	1,800	1,860	2,970	893	2,590	2,020	8,400	1,490	522	1,010	363
20	3,550	1,540	1,590	2,710	958	2,300	1,390	17,600	1,540	1,120	766	272
21	3,320	929	2,300	2,350	816	3,300	2,130	20,500	6,790	1,240	628	219
22	3,250	791	2,180	1,910	688	3,780	834	20,500	4,840	1,290	404	489
23	3,040	859	2,300	1,590	766	2,530	725	14,700	2,470	1,130	304	967
24	2,970	1,340	2,080	1,340	948	1,740	642	9,300	2,300	605	470	859
25	3,110	1,540	1,590	1,200	782	1,440	748	5,440	1,800	398	920	635
26	2,840	1,540	1,290	1,490	859	1,390	732	3,040	1,240	319	1,100	437
27	1,740	1,390	1,030	1,640	929	1,150	628	16,900	766	665	2,860	336
28	1,740	850	1,150	1,640	791	967	725	17,300	774	590	1,860	267
29	1,690	732	1,100	1,440	-	893	958	11,000	1,080	582	658	211
30	1,540	1,390	766	1,200	-	791	929	4,940	1,080	628	476	185
31	1,290	-	702	1,100	-	718	-	2,900	-	552	463	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	98,230	8,490	1,290	3,169	194,800
November	102,152	24,600	732	3,405	202,600
December	96,130	19,500	568	3,101	190,700
Calendar year 1946	662,876	24,600	177	1,816	1,315,000
January	54,080	3,700	1,100	1,745	107,300
February	27,226	1,440	688	972	54,000
March	37,324	3,780	489	1,204	74,030
April	36,344	3,240	628	1,211	72,090
May	172,352	20,500	496	5,560	341,900
June	56,350	6,790	766	1,878	111,800
July	23,062	1,290	319	744	45,740
August	23,293	2,860	298	751	46,200
September	20,538	1,590	185	685	40,740
Water year 1946-47	747,081	24,600	185	2,047	1,482,000

Brazos River at Waco, Tex.

Location.- Water-stage recorder, lat. 31°33'40", long. 97°07'45", at Washington Avenue Bridge in Waco, McLennan County, 2½ miles downstream from Bosque River. Datum of gage is 356.80 feet above mean sea level, datum of 1929, supplementary adjustment of 1942.

Drainage area.- 28,500 square miles, of which 9,240 square miles is probably noncontributing.

Records available.- September 1898 to September 1947. (January 1912 to September 1914, monthly records only, in Water-Supply Paper 850.) U. S. Weather Bureau has collected gage-height records in this vicinity since 1900.

Average discharge.- 49 years, 2,729 second-feet.

Extremes.- Maximum discharge during year, 29,600 second-feet Nov. 4 (gage height, 17.78 feet, from floodmark); minimum, 244 second-feet Sept. 23.

1898-1947: Maximum discharge, 246,000 second-feet Sept. 27, 1936 (gage height, 40.90 feet, levee on left bank was overtopped and broken by flood); minimum discharge for periods of daily record, 1898-1911, 1914-47, no flow Aug. 20, 21, 1918, and probably for several days in August 1923.

A stage of 39.7 feet was reached Dec. 3, 1913, when levee on left bank was broken by flood, from information by U. S. Weather Bureau.

Remarks.- Records fair. Flow partly regulated by Possum Kingdom Reservoir on Brazos River, several smaller reservoirs in Clear Fork Basin, and Lake Waco (capacity, 39,000 acre-feet) on Bosque River near Waco. Many small diversions above station for municipal supply, irrigation, and oil-field operation which do not appreciably affect flow.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,940	1,370	1,300	1,150	1,450	1,190	2,570	1,340	3,000	1,240	578	470
2	4,560	1,110	1,220	1,650	1,570	988	1,220	1,220	2,700	1,380	525	620
3	5,840	1,940	1,220	1,650	2,890	896	1,190	2,130	2,500	1,240	440	771
4	3,570	21,400	917	1,410	1,700	2,050	2,410	981	2,350	799	731	964
5	3,330	15,900	782	1,700	1,570	1,260	1,220	849	2,200	578	956	701
6	3,220	9,470	938	1,370	1,490	1,260	1,080	917	1,850	520	650	500
7	2,740	8,620	862	1,040	1,450	2,450	2,040	1,220	1,750	1,240	844	406
8	2,130	4,400	724	1,150	1,810	1,880	1,150	1,150	1,700	1,330	638	352
9	2,290	4,560	1,000	1,490	1,190	1,650	1,920	1,150	1,700	1,130	445	1,010
10	2,080	4,100	2,310	1,150	1,370	2,680	6,360	2,080	1,650	757	342	1,070
11	1,650	2,920	2,120	1,150	1,560	1,610	5,710	959	1,600	572	308	964
12	2,350	2,180	f19,400	2,460	2,360	3,330	3,290	2,930	1,560	465	525	785
13	3,220	2,130	f21,600	3,570	1,370	2,370	6,650	3,220	1,560	490	644	892
14	2,570	1,930	9,970	2,180	1,260	1,450	2,980	3,010	1,600	948	701	1,230
15	3,090	1,620	5,440	2,130	1,150	1,340	1,980	1,700	1,850	828	662	1,040
16	4,060	1,260	3,100	1,790	1,080	1,190	4,560	1,650	2,000	736	545	996
17	2,860	1,370	3,570	5,510	2,440	2,190	2,630	2,120	2,150	674	430	1,420
18	4,640	1,790	2,920	10,600	1,410	3,690	2,400	10,900	1,950	743	470	876
19	7,590	1,790	2,130	5,200	2,050	7,500	3,550	7,140	2,940	1,460	602	602
20	4,300	1,830	1,930	5,470	1,980	5,900	4,620	18,300	2,570	535	701	450
21	3,330	1,530	1,740	3,450	1,530	4,120	2,130	19,400	3,580	1,090	722	360
22	3,220	1,110	2,080	4,340	2,120	5,040	1,610	20,100	5,520	1,200	650	292
23	3,100	966	2,180	2,400	1,150	4,690	1,950	17,100	3,740	1,240	470	365
24	2,980	1,040	2,240	3,360	1,190	3,840	1,220	9,940	2,350	1,080	356	924
25	2,920	1,410	2,180	1,830	1,340	2,240	5,550	7,300	2,350	694	343	868
26	2,980	1,530	1,830	1,740	2,310	3,530	1,570	4,400	1,800	495	956	701
27	2,630	1,570	1,490	3,110	1,300	1,930	1,300	9,840	1,420	401	1,600	510
28	1,930	1,410	1,260	2,030	1,370	1,700	1,190	18,300	1,030	620	2,800	415
29	1,880	1,000	1,150	1,930	-	2,970	1,220	14,900	988	620	1,520	347
30	1,830	952	1,000	3,150	-	1,530	2,250	6,890	1,230	578	708	264
31	1,650	-	1,000	1,610	-	1,370	-	4,180	-	638	566	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	98,480	7,590	1,650	3,177	195,300
November	104,208	21,400	952	3,474	206,700
December	101,603	21,600	724	3,278	201,500
Calendar year 1946	911,644	24,200	267	2,498	1,808,000
January	82,770	10,600	1,040	2,670	164,200
February	45,460	2,890	1,080	1,624	90,170
March	79,834	7,500	896	2,575	158,300
April	79,520	6,650	1,080	2,651	157,700
May	197,316	20,100	849	6,365	391,400
June	65,188	5,520	988	2,173	129,300
July	26,321	1,460	401	849	52,210
August	22,428	2,800	308	723	44,490
September	21,165	1,420	264	706	41,980
Water year 1946-47	924,293	21,600	264	2,532	1,833,000

Peak discharge.- Nov. 4 (3 p.m.) 29,600 sec.-ft.; Dec. 13 (10 a.m.) 26,800 sec.-ft.; May 18 (8:30 a.m.) 17,100 sec.-ft.; May 21 (12:30 a.m.) 23,200 sec.-ft.; May 28 (4 a.m.) 19,700 sec.-ft.

f Computed on basis of partly estimated gage-height record.

Note.- No recorder record Nov. 4, 5, Dec. 14 to Jan. 13, Apr. 14-22; discharge computed from graph based on once-daily readings of outside gage by U. S. Weather Bureau.

Brazos River near Marlin, Tex.

Location.- Wire-weight gage, lat. 31°17'20", long. 96°58'10", at bridge on State Highway 139, 1 mile upstream from Deer Creek and 4.5 miles southwest of Marlin, Falls County. Datum of gage is 312.15 feet above mean sea level, datum of 1929.

Drainage area.- 29,150 square miles, of which 9,240 square miles is probably noncontributing.

Records available.- October 1938 to September 1947.

Extremes.- Maximum discharge during year, 25,200 second-feet May 21 (gage height, 14.40 feet, from graph based on gage readings); minimum observed, 320 second-feet (regulated) Sept. 24.

1938-47: Maximum discharge, 132,000 second-feet May 3, 1944 (gage height, 33.3 feet, from floodmark); minimum not determined.

Maximum stage known, 35.8 feet Dec. 3 or 4, 1913, from information by local residents. Flood of Sept. 28, 1936, reached a stage of 35.2 feet.

Remarks.- Records good. Gage read twice daily, oftener during high stages. Flow partly regulated by reservoirs above Waco. Many small diversions above station for irrigation, municipal supply, and oil-field operation do not appreciably affect flow.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,600	1,750	1,040	1,060	1,650	1,290	1,830	2,340	4,820	a1,020	680	626
2	4,780	1,520	1,420	1,110	1,750	1,100	2,200	1,520	3,620	a1,160	626	565
3	5,360	2,340	1,380	1,600	2,150	968	1,200	1,380	3,200	1,200	543	712
4	5,600	14,300	1,340	1,800	2,600	960	1,410	1,380	2,880	1,060	480	871
5	3,940	17,300	1,010	a1,700	1,750	1,650	2,220	1,120	2,640	745	711	1,050
6	3,620	11,200	850	1,650	1,650	1,240	1,340	952	2,420	565	968	794
7	3,480	10,600	1,030	1,470	1,560	1,730	1,240	1,040	2,050	532	1,050	582
8	2,820	5,600	945	1,340	1,520	3,620	1,740	1,290	1,950	1,240	900	500
9	2,420	4,820	822	1,600	1,750	2,640	1,160	1,470	1,950	1,200	693	440
10	2,320	a5,400	1,240	1,800	1,240	2,420	4,110	2,060	1,850	1,060	510	1,050
11	2,100	4,640	3,820	1,800	1,380	2,530	4,530	a1,710	1,800	752	406	1,200
12	1,700	3,130	14,000	a2,100	2,120	2,360	2,700	1,160	1,750	582	356	1,160
13	2,760	2,590	21,000	2,940	1,910	5,400	a8,580	3,500	1,700	480	554	908
14	3,410	2,480	13,000	2,940	1,340	3,480	6,690	4,100	1,750	475	620	1,040
15	2,700	2,260	6,920	2,480	1,200	2,000	3,340	3,100	1,800	885	738	1,290
16	4,220	1,900	5,200	2,370	1,380	1,560	4,600	2,050	2,050	815	738	1,120
17	4,370	1,470	4,190	5,060	1,990	1,510	4,170	2,000	2,150	719	604	1,120
18	3,130	1,700	3,550	17,100	1,240	5,860	2,640	9,920	2,320	662	480	1,470
19	7,830	2,100	3,000	11,300	1,520	11,500	3,120	12,500	2,000	829	455	1,020
20	6,590	2,100	2,420	7,160	2,080	7,420	5,400	14,000	3,910	1,330	620	680
21	4,460	2,150	2,100	4,880	1,380	5,340	4,100	21,300	2,630	766	745	510
22	3,780	1,700	a2,100	4,820	1,800	4,820	2,590	20,000	5,530	1,200	752	420
23	3,620	1,200	2,590	3,890	2,090	5,600	3,340	18,200	5,400	1,240	680	360
24	3,480	1,060	2,590	3,270	1,200	5,000	2,010	12,300	3,550	1,240	510	387
25	3,340	1,200	2,590	2,890	1,200	4,100	4,930	9,290	2,320	1,110	401	945
26	3,340	1,600	2,320	2,100	1,580	2,880	6,230	7,160	2,260	752	726	915
27	3,340	1,750	1,850	2,800	2,060	3,130	2,540	5,660	1,650	538	1,060	745
28	2,700	1,750	1,600	2,670	1,340	2,000	1,750	16,500	1,240	445	1,850	565
29	2,260	1,470	a1,470	2,200	-	1,950	1,520	17,300	815	592	2,880	445
30	2,100	1,080	1,380	2,600	-	2,200	1,700	12,600	922	644	1,650	374
31	1,950	-	a1,240	2,650	-	1,600	-	6,920	-	592	885	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	113,120	7,830	1,700	3,649	224,400
November	114,160	17,300	1,060	3,805	226,400
December	110,007	21,000	822	3,549	218,200
Calendar year 1946	1,054,965	30,900	370	2,890	2,092,000
January	105,150	17,100	1,060	3,392	208,600
February	46,430	2,600	1,200	1,658	92,090
March	99,858	11,500	960	3,221	198,100
April	94,930	8,580	1,160	3,164	188,300
May	215,822	21,300	952	6,962	428,100
June	74,927	5,530	815	2,498	148,600
July	26,430	1,330	445	853	52,420
August	24,871	2,880	356	802	49,330
September	23,864	1,470	360	795	47,330
Water year 1946-47	1,049,569	21,300	356	2,876	2,082,000

a No gage-height record; discharge computed on basis of estimated gage-height record.

Brazos River near Bryan, Tex.

Location.- Water-stage recorder, lat. 30°37', long. 96°29', 2.4 miles downstream from Little Brazos River and 9 miles southwest of Bryan, Brazos County. Datum of gage is 192.3 feet above mean sea level, datum of 1929.

Drainage area.- 38,430 square miles, of which 9,240 square miles is probably noncontributing.

Records available.- September 1925 to September 1947. February 1918 to September 1925 at site near College Station, 7½ miles downstream. August 1899 to December 1902 at site near College Station, 7½ miles downstream, daily records published in U. S. Department of Agriculture, Office of Experiment Stations, Bulletins Nos. 104, 119, and 133.

Average discharge.- 28 years (1918-25, 1926-47), 6,215 second-feet.

Extremes.- Maximum discharge during year, 46,400 second-feet Jan. 19 (gage height, 22.35 feet); minimum, 540 second-feet Sept. 26.
1925-47: Maximum gage height, 46.1 feet, present site and datum, May 20, 1930 (discharge not determined); minimum discharge, 87 second-feet Aug. 24, 1934.
Maximum stage known, about 54.0 feet, present datum, Dec. 5, 1913.

Remarks.- Records fair except those for periods of no gage-height record, which are poor. Flow partly regulated by reservoirs above Waco. Many small diversions above station for irrigation, municipal supply, and oil-field operation do not appreciably affect flow.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,640	2,260	2,710	2,540	5,360	2,890	4,140	3,730	8,640	1,660	870	1,700
2	6,410	2,200	2,260	2,480	4,280	2,650	4,000	4,140	6,790	1,700	834	1,280
3	5,200	2,240	2,260	2,590	4,000	2,650	4,880	3,600	d8,860	1,850	858	1,040
4	5,870	7,640	2,320	4,810	4,140	2,420	4,000	3,080	d6,790	1,900	816	954
5	6,230	29,000	2,260	4,140	4,720	2,260	3,860	3,470	5,200	1,850	768	996
6	4,570	35,400	2,050	3,600	4,140	2,650	4,420	2,830	4,720	1,570	714	1,120
7	4,570	25,400	1,800	3,340	3,860	2,770	3,860	2,370	4,880	1,280	868	1,200
8	4,140	17,500	1,700	3,210	3,860	3,020	3,470	2,200	3,860	1,120	1,080	982
9	3,730	10,700	1,750	3,140	3,730	5,700	3,860	2,650	3,140	1,160	1,160	840
10	3,140	9,740	1,700	3,140	3,860	5,700	3,470	10,300	2,950	1,570	1,040	756
11	3,140	11,600	3,100	6,790	3,470	4,720	5,030	11,600	2,830	1,620	884	765
12	3,020	9,520	10,800	7,790	3,280	5,790	6,410	7,180	2,770	1,400	732	1,200
13	2,830	6,790	36,000	5,700	3,470	7,580	8,000	5,200	2,590	1,160	650	1,320
14	2,710	4,880	40,400	5,040	4,140	10,200	14,700	5,360	2,480	1,040	590	1,320
15	3,860	4,000	21,600	5,360	3,470	8,210	10,000	5,870	2,420	940	690	1,080
16	3,600	6,190	12,600	4,570	3,210	5,200	6,050	5,730	2,370	954	846	1,240
17	3,600	16,200	8,860	8,700	3,020	3,730	6,790	8,210	2,540	1,240	933	1,360
18	4,720	22,200	6,790	32,400	2,890	3,730	6,410	7,790	2,710	1,160	898	1,240
19	3,860	16,400	5,870	44,700	3,730	16,700	4,880	16,900	2,770	1,120	786	1,320
20	6,410	6,400	5,530	39,700	3,470	26,400	4,720	17,400	3,140	1,040	690	1,480
21	6,790	4,570	5,040	29,100	3,600	24,300	8,960	f27,200	4,570	1,360	665	1,120
22	4,720	3,860	4,280	19,200	4,280	17,200	7,320	29,700	4,720	1,360	774	852
23	4,000	3,470	3,860	14,700	3,860	13,400	4,420	26,100	4,720	1,080	852	732
24	3,730	2,950	4,000	10,900	3,730	12,400	3,730	d22,200	5,700	1,400	877	645
25	3,730	2,710	3,860	8,860	3,340	10,400	3,600	d15,500	4,280	1,480	1,090	585
26	3,600	3,980	3,860	7,790	2,830	8,860	5,940	11,600	3,340	1,480	16,400	588
27	3,470	7,180	3,730	6,230	2,770	7,180	7,180	8,640	3,210	1,320	6,980	926
28	3,470	4,880	3,340	6,050	3,470	6,600	5,530	7,510	2,770	1,010	2,040	961
29	3,140	4,140	3,020	6,050	-	5,040	4,280	d18,000	2,420	858	1,780	840
30	2,540	3,600	2,770	5,200	-	4,720	3,860	d18,300	2,000	768	3,050	702
31	2,370	-	2,540	5,200	-	5,040	-	d12,900	-	858	2,650	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	131,810	8,640	2,370	4,252	261,400
November	287,600	35,400	2,200	9,587	570,400
December	212,660	40,400	1,700	6,860	421,800
Calendar year 1946	2,499,684	55,000	717	6,848	4,958,000
January	313,020	44,700	2,480	10,100	620,900
February	103,980	5,360	2,770	3,714	206,200
March	240,110	26,400	2,260	7,745	476,300
April	167,770	14,700	3,470	5,592	332,800
May	327,260	29,700	2,200	10,560	649,100
June	120,180	8,860	2,000	4,006	238,400
July	40,308	1,900	768	1,300	79,950
August	53,865	16,400	590	1,738	106,800
September	31,144	1,700	585	1,038	61,770
Water year 1946-47	2,029,707	44,700	585	5,561	4,026,000

d Doubtful gage-height record; discharge computed on basis of records for stations near Marlin and near Hempstead.
f Computed on basis of partly estimated gage-height record.
Note.- No gage-height record Jan. 1-13, June 5-11; discharge computed on basis of recorded range in stage, weather records, U. S. Weather Bureau gage-height record for Brazos River near Valley Junction, and records for stations near Marlin and near Hempstead.

Brazos River near Hempstead, Tex.

Location.- Wire-weight gage, lat. 30°07'25", long. 96°11'00", at bridge on U. S. Highway 290, 4,500 feet upstream from Texas & New Orleans Railroad bridge, 6.5 miles northwest of Hempstead, Waller County, and 8 miles upstream from Caney Creek. Datum of gage is 118.07 feet above mean sea level, datum of 1929.

Drainage area.- 42,670 square miles, of which 9,240 square miles is probably noncontributing.

Records available.- October 1938 to September 1947. U. S. Weather Bureau has collected gage-height records in this vicinity at intermittent periods since 1903.

Extremes.- Maximum discharge during year, 57,000 second-feet Jan. 20; maximum gage height, 26.73 feet Jan. 20; minimum discharge observed, 720 second-feet Sept. 28.

1938-47: Maximum discharge, 116,000 second-feet Nov. 30, 1940 (gage height, 44.04 feet); minimum, 254 second-feet Nov. 8, 1939.

Maximum stage known, 56.1 feet Dec. 8, 1913, from data by engineers of Texas & New Orleans Railroad, obtained at bridge 4,500 feet downstream.

Remarks.- Records fair. Gage read twice daily, oftener during high stages. Flow partly regulated by reservoirs above Waco. Many small diversions above station for irrigation, municipal supply, and oil-field operation do not appreciably affect flow.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10,500	2,720	7,250	a4,110	9,610	4,000	9,780	4,680	18,100	2,880	1,200	8,950
2	9,610	2,640	6,090	5,950	9,440	4,000	8,790	4,220	13,800	2,580	1,260	5,820
3	7,400	4,330	5,300	8,000	7,850	3,560	7,850	4,330	11,400	2,340	1,240	4,000
4	6,090	15,600	4,920	8,000	6,510	3,460	7,400	4,220	11,600	2,340	1,180	2,480
5	5,820	17,500	5,170	9,950	5,820	3,160	6,230	4,000	9,950	2,340	1,200	1,760
6	7,100	32,800	5,170	9,610	6,230	3,160	5,300	3,780	7,250	2,340	1,180	1,450
7	5,690	33,300	5,040	8,000	5,690	3,260	5,300	3,890	6,370	2,180	1,060	1,360
8	4,680	23,800	4,560	7,250	5,170	3,780	5,040	3,060	6,090	2,040	1,040	1,480
9	4,440	18,300	3,890	7,400	5,040	3,460	4,440	2,720	5,950	1,760	1,180	1,480
10	4,110	15,200	3,560	10,300	4,920	5,300	4,220	2,640	5,950	1,620	1,360	1,360
11	3,670	15,000	3,360	14,400	4,920	7,100	4,440	10,200	5,690	1,660	1,480	1,180
12	3,560	16,200	5,560	a14,800	5,040	6,650	4,440	14,000	5,040	2,110	1,320	1,010
13	3,460	15,400	20,000	14,200	4,800	19,100	a6,230	9,780	4,220	2,110	1,150	982
14	3,360	13,400	35,400	12,000	4,680	23,300	9,700	6,650	3,560	1,970	1,010	1,390
15	3,160	12,400	33,000	10,600	5,170	24,300	16,200	6,230	a3,360	1,760	930	1,550
16	3,460	19,000	21,500	11,400	4,920	21,500	12,200	8,150	3,060	1,550	855	1,480
17	4,110	25,900	15,200	15,600	4,440	15,600	8,000	10,100	2,880	1,450	930	1,390
18	3,780	28,300	11,800	26,100	4,220	11,800	7,850	17,500	2,880	1,520	1,090	1,480
19	4,220	30,100	9,610	47,500	4,110	14,600	7,850	22,800	3,060	1,760	1,180	1,550
20	4,330	24,000	8,950	55,900	4,560	27,800	5,950	29,500	3,360	1,830	1,150	1,480
21	4,680	17,000	8,790	47,800	4,680	33,300	5,300	29,200	3,360	a1,830	1,040	1,520
22	7,250	14,600	8,310	33,300	4,440	28,900	10,300	36,000	3,780	1,830	930	1,620
23	5,690	12,400	7,550	21,300	4,920	a23,300	10,300	32,400	5,820	2,110	905	1,260
24	4,440	10,600	6,650	17,700	5,170	18,800	7,400	29,800	5,300	1,830	1,010	1,060
25	4,220	8,790	6,230	15,000	4,800	17,000	5,820	25,600	6,800	1,660	1,900	905
26	4,560	9,780	5,690	13,800	4,560	15,200	5,430	19,400	6,090	1,900	11,600	832
27	4,680	9,780	5,560	13,200	4,110	14,200	6,370	16,400	4,680	1,970	37,800	765
28	4,330	12,400	5,300	12,000	3,890	13,000	10,300	14,200	3,890	1,900	31,800	742
29	3,890	10,300	4,800	11,600	-	12,200	8,310	15,600	3,560	1,660	24,000	982
30	3,560	8,310	4,110	11,600	-	10,800	6,230	23,800	3,160	1,420	17,500	1,090
31	3,160	-	a4,000	10,300	-	9,780	-	23,000	-	1,320	13,400	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	153,010	10,500	3,160	4,936	303,500
November	479,850	33,300	2,640	16,000	951,800
December	282,320	35,400	3,360	9,107	560,000
Calendar year 1946	3,909,145	76,800	955	10,710	7,754,000
January	508,670	55,900	4,110	16,410	1,009,000
February	149,710	9,810	3,890	5,347	296,900
March	405,370	33,300	3,160	13,080	804,000
April	222,970	16,200	4,220	7,432	442,300
May	437,850	36,000	2,640	14,120	868,500
June	180,010	18,100	2,880	6,000	357,000
July	59,550	2,880	1,320	1,921	118,100
August	164,880	37,800	855	5,319	327,000
September	54,408	8,950	742	1,814	107,900
Water year 1946-47	3,098,598	55,900	742	8,489	6,146,000

a No gage-height record; discharge computed on basis of weather records.

Brazos River near San Felipe, Tex.

Location.- Water-stage recorder, lat. 29°46'20", long. 96°02'10", at bridge on U. S. Highway 90, 200 feet downstream from Missouri-Kansas-Texas Railroad bridge, 1.3 miles downstream from Irons Creek, and 5.0 miles southeast of San Felipe post office, Austin County. Datum of gage is 79.32 feet above mean sea level, datum of 1929.

Drainage area.- 43,690 square miles, of which 9,240 square miles is probably noncontributing.

Records available.- December 1938 to September 1947 (October 1945 to September 1947, gage heights only).

Extremes.- Maximum gage height during year, 24.47 feet Aug. 28; minimum, 8.20 feet Aug. 24, 25.
1938-47: Maximum gage height, 41.10 feet Nov. 25, 1940 (discharge, 152,000 second-feet); minimum, 6.57 feet Oct. 9, 1939.
Maximum stage known, 49.0 feet Dec. 9, 1913, from information by local resident.

Remarks.- Discharge not computed. Flow partly regulated by reservoirs above Waco. Many small diversions above station for irrigation, municipal supply, and oil-field operation do not appreciably affect flow.

Gage height, in feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	g11.21	10.31	12.87	11.34	14.11	10.76	13.81	11.68	17.42	10.20	8.55	14.62
2	g13.60	10.07	12.39	12.14	13.84	10.86	13.64	11.23	15.78	10.01	8.47	13.07
3	13.07	10.05	11.91	13.65	13.50	10.84	13.11	11.00	14.61	9.78	8.41	11.98
4	12.46	14.74	11.56	13.35	12.80	10.67	12.74	11.05	13.99	9.60	8.35	11.08
5	11.87	17.60	11.43	13.52	12.24	10.61	12.50	11.05	14.04	9.57	8.32	10.34
6	11.79	19.12	11.47	13.42	11.96	10.53	11.98	10.81	13.11	9.55	8.32	9.80
7	12.09	21.18	11.48	12.74	11.96	10.51	11.60	10.78	12.20	9.55	8.30	9.48
8	11.59	20.08	11.41	12.23	11.68	10.71	11.62	10.72	11.84	9.47	8.30	9.34
9	11.22	17.98	11.19	12.42	11.52	10.83	11.51	10.37	11.71	9.32	8.31	9.34
10	11.14	16.70	10.86	13.89	11.46	10.79	11.25	10.13	11.67	9.13	8.42	9.32
11	11.12	16.11	10.69	14.61	11.37	11.67	11.22	10.36	11.67	8.99	8.60	9.24
12	10.95	15.81	11.14	15.44	11.37	12.20	11.19	13.77	11.56	9.04	8.69	9.08
13	10.62	15.82	13.19	15.18	11.40	13.67	11.51	14.07	11.27	9.36	8.62	8.93
14	10.52	15.25	19.31	14.32	11.22	17.04	12.43	12.80	10.86	9.37	8.55	8.87
15	10.49	14.48	21.54	13.80	11.19	17.91	14.61	12.00	10.57	9.24	8.46	9.03
16	10.53	16.04	19.30	13.96	11.36	18.02	15.32	11.88	10.39	9.06	8.36	9.20
17	10.74	20.54	16.30	15.16	11.23	16.83	13.80	12.14	10.27	8.89	8.30	9.20
18	10.85	20.06	14.82	17.20	11.04	15.52	12.74	13.98	10.19	8.79	8.35	9.06
19	10.70	20.28	13.85	21.90	10.92	15.72	12.84	16.43	10.14	8.78	8.46	9.05
20	10.91	19.50	13.35	23.64	11.10	17.94	12.69	18.51	10.23	8.92	8.54	9.11
21	10.88	17.22	13.21	23.76	11.24	20.40	12.05	19.58	10.34	9.08	8.54	9.06
22	11.31	15.67	13.04	22.28	11.17	20.28	12.03	20.38	10.37	9.13	8.42	9.07
23	12.06	14.80	12.81	19.66	11.05	19.07	13.55	21.68	10.83	9.03	8.30	9.11
24	11.52	14.12	12.56	17.79	11.28	17.84	13.11	21.05	11.50	9.16	8.21	8.94
25	11.14	13.54	12.33	16.74	11.33	17.32	11.99	20.30	11.58	9.10	9.81	8.77
26	11.03	14.03	12.14	15.87	11.22	16.73	11.35	18.86	12.10	8.86	13.04	8.63
27	11.15	14.39	11.97	15.67	11.08	16.09	11.12	17.37	11.66	8.99	22.40	8.52
28	11.14	14.30	11.82	15.33	10.85	15.44	11.98	16.38	10.98	9.07	23.87	8.43
29	10.91	14.25	11.67	14.98	-	15.09	12.83	15.51	10.60	9.04	20.80	8.38
30	10.70	13.49	11.54	14.89	-	14.67	12.34	17.25	10.43	8.89	17.92	8.55
31	10.58	-	11.43	14.59	-	14.08	-	18.53	-	8.69	16.02	-

Peak gage height.- Nov. 7 (9 a.m.) 21.40 ft.; Dec. 15 (1 p.m.) 21.82 ft.; Jan. 21 (1 a.m.) 23.99 ft.; May 23 (6 a.m.) 21.79 ft.; Aug. 28 (1:30 a.m.) 24.47 ft.

g Gage height from graph based on gage readings.

Note.- No gage-height record Dec. 25 to Jan. 20, Feb. 5-11, Aug. 1-20; daily gage heights computed on basis of gage-height records for stations near Hempstead and at Richmond.

Brazos River at Richmond, Tex.

Location.- Water-stage recorder and wire-weight gage, lat. 29°35', long. 95°45', at bridge on U. S. Highway 59 in Richmond, Fort Bend County, 925 feet downstream from Texas & New Orleans Railroad bridge. Datum of gage is 40.8 feet above mean sea level, datum of 1929.

Drainage area.- 44,050 square miles, of which 9,240 square miles is probably noncontributing.

Records available.- January 1903 to June 1906 and June 1931 to September 1947. October 1922 to September 1931 at site at Rosenberg, 7.6 miles upstream; records equivalent except for diversion by Richmond Irrigation Co.'s canal. June to November 1901 at Texas & New Orleans Railroad bridge, 925 feet upstream, daily records published in U. S. Department of Agriculture, Office of Experiment Stations, Bulletin No. 119. U. S. Weather Bureau has collected gage-height records in this vicinity since 1914.

Average discharge.- 27 years (1903-5, 1922-47), 8,360 second-feet.

Extremes.- Maximum discharge during year, 51,000 second-feet Aug. 28; maximum gage height, 22.06 feet Jan. 21; minimum discharge, 670 second-feet Aug. 19.
1903-6, 1931-47: Maximum discharge, 117,000 second-feet Nov. 28, 1940 (gage height, 38.40 feet); minimum, 33 second-feet Aug. 23, 24, 1934.
Flood of June 6, 1929, reached a stage of 40.6 feet, present datum, from floodmarks (discharge, 120,000 second-feet). Flood of Dec. 10, 1913, reached a stage of 48.2 feet, present datum, from floodmarks on right bank 1,000 feet upstream from gage.

Remarks.- Records fair. Flow partly regulated by reservoirs above Waco. Considerable water diverted above station for irrigation and municipal supply. See records of American Canal Co.'s canal near Fulshear (p. 117) and Richmond Irrigation Co.'s canal near Richmond (p. 117). Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,340	3,800	8,630	4,670	11,200	4,160	10,000	6,730	20,700	2,920	1,080	13,000
2	6,490	3,450	7,390	4,800	10,200	4,040	9,600	5,360	16,000	2,630	990	10,000
3	9,200	3,150	6,570	7,220	9,800	4,160	8,820	4,670	12,800	2,450	935	7,220
4	8,260	6,110	5,650	9,200	8,820	4,160	7,900	4,280	10,600	2,140	880	5,360
5	7,050	19,800	5,080	8,820	7,560	3,920	7,220	4,410	9,800	1,930	852	3,800
6	6,250	23,800	4,940	8,630	6,410	3,800	6,570	4,410	9,400	1,890	800	2,630
7	6,250	34,400	4,940	9,010	6,250	3,800	5,650	4,160	7,390	1,850	800	1,970
8	6,570	33,800	4,940	9,010	6,100	3,680	5,080	4,040	5,950	1,850	775	1,600
9	5,650	25,500	4,670	8,630	5,650	4,040	5,080	3,920	5,360	1,780	725	1,460
10	5,080	21,000	4,280	9,600	5,360	4,160	4,800	3,340	5,080	1,630	715	1,420
11	4,940	19,300	3,920	11,900	5,220	4,280	4,540	2,920	4,940	1,460	750	1,420
12	4,800	16,800	3,920	14,200	5,080	5,800	4,540	4,370	4,940	1,390	962	1,360
13	4,540	16,300	4,820	15,000	5,080	6,410	4,540	11,000	4,670	1,460	1,080	1,200
14	4,040	15,500	17,900	13,200	4,940	14,500	5,500	10,000	4,160	1,700	1,080	1,080
15	3,800	13,200	35,300	11,700	4,670	19,900	8,260	7,220	3,680	1,850	962	990
16	3,920	13,700	32,000	10,200	4,670	23,000	13,700	5,950	3,230	1,780	880	1,160
17	3,920	29,900	20,400	11,000	4,940	21,000	12,800	6,100	3,020	1,520	725	1,360
18	4,280	32,300	14,400	16,800	4,670	17,400	9,010	7,220	2,820	1,360	695	1,420
19	4,410	33,200	11,500	32,000	4,410	15,700	7,560	13,700	2,720	1,260	685	1,390
20	4,160	32,000	9,600	47,800	4,410	17,600	7,730	20,400	2,720	1,230	825	1,300
21	4,540	23,800	9,010	48,500	4,670	28,900	7,050	28,000	2,920	1,330	990	1,330
22	4,410	16,800	8,630	41,000	4,800	33,500	5,950	30,900	3,020	1,420	1,140	1,330
23	5,360	13,500	8,080	33,200	4,670	29,500	7,050	38,600	3,120	1,490	1,040	1,260
24	6,250	11,700	7,360	24,900	4,540	24,400	9,800	38,900	3,920	1,390	962	1,300
25	5,500	10,000	890	20,700	4,800	21,300	8,080	35,700	4,800	1,490	1,940	1,230
26	4,800	9,400	6,410	17,400	4,940	19,000	6,100	29,500	5,080	1,460	4,480	1,100
27	4,670	11,500	6,100	15,500	4,800	16,500	5,220	23,200	5,650	1,260	26,600	1,020
28	4,800	11,500	5,800	14,400	4,540	14,700	5,080	19,000	4,800	1,330	49,800	1,020
29	4,670	11,200	5,650	13,500	-	13,200	7,220	15,700	3,800	1,420	37,800	908
30	4,410	10,200	5,220	12,800	-	12,100	8,080	15,500	3,230	1,390	24,100	880
31	4,040	-	5,080	12,300	-	11,000	-	21,300	-	1,260	17,400	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	160,400	9,200	3,340	5,174	318,100
November	526,610	34,400	3,150	17,550	1,045,000
December	285,280	35,300	3,920	9,203	565,800
Calendar year 1946	4,148,014	76,400	852	11,360	8,227,000
January	517,590	48,500	4,670	16,700	1,027,000
February	163,200	11,200	4,410	5,829	323,700
March	409,610	33,500	3,680	13,210	812,400
April	218,530	13,700	4,540	7,284	433,400
May	430,500	38,900	2,920	13,890	853,900
June	180,320	20,700	2,720	6,011	357,700
July	51,320	2,920	1,230	1,655	101,800
August	183,448	49,800	685	5,918	363,900
September	72,518	15,000	880	2,417	143,800
Water year 1946-47	3,199,326	49,800	685	8,765	6,346,000

Brazos River at East Columbia, Tex.

Location.- Wire-weight gage, lat. 29°09', long. 95°37', at bridge on State Highway 35 at East Columbia, Brazoria County, 1 mile downstream from Yarners Creek. Datum of gage is 2.9 feet below mean sea level, datum of 1929, Houston supplementary adjustment of 1943.

Drainage area.- 44,540 square miles, of which 9,240 square miles is probably noncontributing.

Records available.- October 1938 to September 1939 (gage heights only), October 1939 to September 1940 and February 1942 to September 1947 (gage heights, discharge measurements, and daily discharge above 8,000 second-feet), October 1940 to September 1941 (discharge measurements only).

Extremes.- Maximum discharge during year, 56,000 second-feet Jan. 21; maximum gage height, 24.72 feet Jan. 21, from graph based on gage readings; minimum observed, 2.37 feet Aug. 10 (affected by tides).

1938-47: Maximum gage height observed, 34.12 feet Dec. 5, 1940 (discharge not determined); minimum, 1.54 feet Aug. 22, 1939 (affected by tides).

Maximum stage known, 35.3 feet Dec. 11 or 12, 1913. Flood of 1899 reached a stage of 35.0 feet. Stages from information by local residents.

Remarks.- Records fair and are for main channel only. Discharge for periods below 8,000 second-feet not published because of effect from tides. Gage read twice daily, oftener during high stages. Flow partly regulated by reservoirs above Waco. Considerable water diverted above station for irrigation and municipal supply.

Gage height, in feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.57	5.61	11.57	6.17	10.59	5.23	9.79	7.15	16.33	4.41	4.42	12.90
2	6.13	5.86	10.07	5.50	9.91	4.89	9.11	6.12	15.20	4.11	5.12	10.70
3	7.79	5.74	8.97	5.05	9.28	5.17	8.89	5.84	12.80	4.75	5.39	8.73
4	9.73	7.18	7.79	6.19	8.69	5.64	8.66	5.00	10.77	4.42	4.66	7.08
5	10.18	11.11	6.94	8.75	7.93	5.45	8.28	4.81	9.22	4.59	4.08	5.75
6	8.85	17.30	6.43	8.42	7.38	5.01	7.40	4.51	8.73	4.47	3.54	5.12
7	7.97	19.75	6.09	8.68	6.57	4.96	6.99	4.56	8.22	3.93	3.44	4.14
8	7.58	21.58	6.37	8.60	6.05	4.31	6.41	4.51	6.76	3.49	3.36	4.02
9	7.31	20.10	6.57	8.61	6.11	4.61	6.09	4.75	5.94	3.78	3.42	3.87
10	6.78	17.60	6.67	9.39	5.93	5.24	6.22	4.79	5.55	3.53	2.86	3.94
11	6.21	17.02	6.51	9.68	6.09	5.28	5.86	4.81	5.35	3.54	3.43	4.39
12	5.99	15.68	6.74	10.77	5.68	5.82	5.67	4.69	5.75	3.63	3.58	4.34
13	6.21	14.53	6.57	12.03	5.64	6.03	5.17	5.16	5.23	3.37	4.07	4.34
14	6.34	14.05	7.36	12.37	5.77	7.18	5.61	8.15	5.05	3.29	4.54	4.52
15	5.68	13.21	16.34	10.97	5.38	12.00	6.30	8.06	4.87	3.61	4.61	4.45
16	5.41	12.67	19.92	9.86	5.27	15.00	8.00	6.98	4.93	3.87	4.50	4.33
17	5.51	15.41	17.65	9.60	5.29	15.38	10.65	6.41	6.09	3.76	4.50	4.43
18	5.55	19.63	14.08	10.30	5.85	14.10	9.92	6.54	5.43	3.36	4.70	4.27
19	5.84	19.55	11.98	15.68	5.52	13.05	8.42	8.20	6.06	3.07	4.26	3.91
20	5.68	19.73	10.28	21.18	4.97	12.55	7.70	11.80	5.92	3.22	4.27	2.98
21	5.75	18.67	8.66	24.30	4.85	15.20	7.60	16.02	5.45	3.11	4.84	4.71
22	5.84	15.71	8.32	24.40	5.22	18.40	7.20	17.95	5.37	3.17	4.54	4.14
23	5.86	13.39	8.12	22.30	5.51	18.55	6.62	19.41	4.53	3.53	4.84	4.55
24	6.21	11.71	7.77	19.00	5.25	16.95	7.09	22.15	4.24	2.99	5.26	4.28
25	6.49	10.51	7.38	16.25	5.31	15.12	8.05	22.72	4.64	3.35	4.54	4.24
26	6.03	9.20	7.11	14.39	5.51	14.30	8.15	21.48	5.15	3.70	5.18	4.10
27	5.37	11.15	6.93	13.07	5.87	13.66	6.13	19.18	5.31	3.58	7.40	4.30
28	5.77	13.69	6.74	12.33	5.99	12.67	5.48	16.79	6.52	3.84	19.92	5.26
29	5.85	13.61	5.59	11.85	-	11.85	5.53	14.95	5.32	4.00	22.53	5.38
30	5.88	13.07	5.95	11.03	-	11.10	6.73	13.45	4.74	4.10	19.32	4.88
31	6.01	-	6.09	10.81	-	10.64	-	14.40	-	4.28	15.70	-

Discharge measurements, water year October 1946 to September 1947

Date	Width (feet)	Area (square feet)	Mean velocity (feet per second)	Gage height (feet)	Discharge (second-feet)
Oct. 16.....	282	3,530	1.46	5.53	5,140
Nov. 19.....	369	7,980	4.29	19.48	34,200
Dec. 17.....	368	7,900	3.58	18.12	28,300
Jan. 15.....	337	5,320	2.56	10.97	13,600
Feb. 15.....	282	3,200	1.52	5.46	4,850
Mar. 27.....	356	5,930	2.83	13.64	16,800
May 26.....	379	8,580	4.39	21.21	37,700
Aug. 28.....	379	8,720	5.00	20.44	44,100
29.....	391	10,100	4.48	22.80	45,200
Sept. 2.....	353	4,900	2.80	10.78	13,700

Discharge, in second-feet, of Brazos River at East Columbia, Tex., water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	-	15,000	-	12,800	-	11,900	8,110	26,600		-	17,100
2	-	-	12,400	-	11,800	-	10,800	-	20,300		-	13,400
3	8,920	-	10,600	-	11,100	-	10,500	-	15,400		-	10,200
4	11,800	8,110	8,920	-	10,200	-	10,200	-	12,600		-	-
5	12,600	15,600	-	10,400	9,060	-	9,620	-	11,000		-	-
6	10,400	32,000	-	9,760	8,370	-	8,370	-	10,200		-	-
7	9,200	39,600	-	10,200	-	-	-	-	9,480		-	-
8	8,640	42,900	-	10,000	-	-	-	-	-		-	-
9	8,240	33,800	-	10,000	-	-	-	-	-		-	-
10	-	26,400	-	11,300	-	-	-	-	-		-	-
11	-	25,000	-	11,800	-	-	-	-	-		-	-
12	-	22,500	-	14,000	-	-	-	-	-		-	-
13	-	19,900	-	16,500	-	-	-	-	-		-	-
14	-	18,900	8,360	16,500	-	-	-	9,480	-		-	-
15	-	17,600	29,100	13,800	-	16,300	-	9,340	-		-	-
16	-	17,100	35,800	11,800	-	24,500	9,200	-	-		-	-
17	-	25,400	27,300	11,300	-	25,900	13,300	-	-		-	-
18	-	35,000	17,800	12,800	-	19,900	12,100	-	-		-	-
19	-	34,500	14,000	26,800	-	16,100	9,760	9,480	-		-	-
20	-	35,200	11,800	46,500	-	16,100	8,780	15,800	-		-	-
21	-	30,300	9,620	55,700	-	24,100	8,640	28,000	-		-	-
22	-	22,500	9,340	51,500	-	32,300	8,110	34,500	-		-	-
23	-	18,000	9,340	41,500	-	32,000	-	39,900	-		-	-
24	-	15,200	8,920	30,600	-	25,000	-	47,400	-		-	-
25	-	13,100	8,370	23,200	-	20,100	9,200	44,800	-		-	-
26	-	11,000	-	18,600	-	18,200	9,480	38,300	-		-	-
27	-	14,300	-	15,900	-	16,900	-	31,000	-		-	-
28	-	19,100	-	14,500	-	15,000	-	24,800	-		42,500	-
29	-	18,900	-	14,000	-	14,000	-	20,100	-		44,500	-
30	-	17,800	-	12,900	-	13,100	-	16,500	-		31,300	-
31	-	-	-	13,100	-	12,800	-	20,500	-		22,500	-

Salt Fork Brazos River near Aspermont, Tex.

Location.- Water-stage recorder and wire-weight gage, 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. Datum of gage is 1,588.7 feet above mean sea level, datum of 1929.

Drainage area.- 4,834 square miles, of which 2,770 square miles is probably noncontributing.

Records available.- December 1923 to August 1925, June 1939 to September 1947.

Extremes.- Maximum discharge during year, 27,400 second-feet May 16 (gage height, 11.35 feet); no flow May 5.
1923-25, 1939-47: Maximum discharge, that of May 16, 1947; no flow at times.
Maximum stage known, 14.4 feet in December 1913. Flood of November 1934 reached a stage of 13.7 feet. Stages from information by local residents.

Remarks.- Records poor. Daily discharge published only to show distribution of runoff. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	310	16	3.8	16	4.2	3.0	0.9	1.8	90	0.7	0.1	0.1
2	142	14	2.6	17	3.4	3.8	1.0	.6	70	f29	.1	.1
3	87	16	2.6	5.0	3.4	2.6	f52	.4	63	162	.1	.1
4	62	30	2.6	1.8	3.4	2.6	f71	.1	58	16	.1	.1
5	55	16	2.6	3.2	3.4	2.6	f96	0	42	6.8	.1	.1
6	326	18	2.2	8.3	3.0	2.6	73	.1	34	4.3	.1	.1
7	3,150	20	1.8	24	3.0	5.0	44	40	30	3.0	.1	.1
8	2,410	16	2.2	26	3.0	8.6	30	13	21	2.2	.1	.1
9	1,410	13	48	27	.9	11	23	12	17	1.8	.1	.1
10	956	9.8	177	22	.8	20	21	2,940	15	6.7	.1	.1
11	376	8.0	220	21	.8	20	16	7,830	14	4.3	.1	.1
12	250	6.8	233	18	.8	17	10	3,430	13	7.9	.5	.1
13	164	6.2	189	21	.8	7.4	9.2	1,020	14	10	.8	.1
14	134	6.2	131	20	.8	5.6	12	718	12	3.8	.2	.1
15	105	5.6	100	18	1.0	6.2	35	2,020	13	.7	.2	.1
16	86	4.6	86	15	2.6	4.6	55	11,200	29	.4	.2	.1
17	71	4.2	73	14	2.2	4.6	39	4,050	23	.2	.2	.1
18	57	4.2	64	14	2.6	5.6	28	1,320	28	.4	.2	.1
19	52	4.2	57	21	3.0	9.2	18	2,180	46	.2	.2	.1
20	46	3.8	52	24	3.8	9.2	14	954	45	.2	.2	.1
21	41	3.4	40	18	4.6	7.4	10	423	796	.2	.2	.1
22	38	3.0	35	12	5.6	6.2	8.6	2,940	643	.2	.2	.1
23	32	3.0	31	11	5.6	5.0	8.0	1,010	215	.2	.2	.1
24	29	3.0	28	10	5.0	3.8	6.2	647	104	.2	.2	.1
25	26	4.6	26	9.8	4.2	3.0	5.6	921	54	.2	.2	.1
26	24	9.8	24	9.2	3.4	2.6	4.6	874	31	.2	.2	.1
27	21	9.8	27	9.2	3.4	3.0	4.2	304	18	.2	.1	.1
28	19	7.4	23	8.6	3.0	1.8	4.2	214	10	.1	.1	.1
29	18	5.6	18	8.0	-	1.4	3.8	138	5.9	.1	.1	.1
30	16	4.6	16	5.6	-	1.4	3.4	108	2.2	.1	.1	.1
31	16	-	14	4.6	-	1.0	-	95	-	.1	.1	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	10,529	3,150	16	340	20,880
November	276.8	30	3.0	9.23	549
December	1,732.4	233	1.8	55.9	3,440
Calendar year 1946	63,645.0	10,400	0	174	126,200
January	442.3	27	1.8	14.3	877
February	81.7	5.6	.8	2.92	162
March	187.8	20	1.0	6.06	372
April	706.7	96	.9	23.6	1,400
May	45,404.0	11,200	0	1,465	90,060
June	2,556.1	796	2.2	85.2	5,070
July	262.4	162	.1	8.46	520
August	5.5	.8	.1	.18	11
September	3.0	.1	.1	.10	6.0
Water year 1946-47	62,187.7	11,200	0	170	123,300

Peak discharge.- May 10 (9 p.m.) 14,800 sec.-ft.; May 16 (3:30 a.m.) 27,400 sec.-ft.
f Computed on basis of partly estimated gage-height record.
Note.- No recorder record Oct. 11, 12, Jan. 3-10, Jan. 31 to Mar. 10, Apr. 14-17, 19, May 2-6, 13, 14, 18-20, May 25 to June 20, June 22, 23; discharge computed on basis of graph based on twice-daily readings of wire-weight gage.

White River at Plainview, Tex.

Location.- Water-stage recorder, 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. Datum of gage is 3,341.1 feet above mean sea level, datum of 1929.

Records available.- June 1939 to September 1947.

Extremes.- Maximum discharge during year, 970 second-feet May 7 (gage height, 6.30 feet); no flow most of time.

1939-47: Maximum discharge, 12,000 second-feet June 6, 1941 (gage height, 8.75 feet), by slope-area method; no flow most of time.

Maximum stage known prior to 1941, about 6.50 feet in May 1927 (discharge, about 1,100 second-feet), from information by local resident. Flood of May 24, 1937, reached about same stage as that of May 1927.

Remarks.- Records good except those above 60 second-feet, which are poor. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	0				0	0	0	7.4		
2	0	0	0				0	0	0	0		
3	0	0	0				0	0	0	0		
4	0	0	0				0	0	0	0		
5	.7	0	0				0	0	0	0		
6	2.7	.2	0				0	16	0	0		
7	114	0	0				0	379	0	0		
8	47	0	0				0	5.9	0	0		
9	243	0	0				0	0	0	0		
10	75	0	0				0	10	0	0		
11	57	0	64				0	231	0	0		
12	7.4	0	274				0	69	0	0		
13	.2	0	5.8				0	4.9	0	0		
14	0	0	.2				.1	0	0	0		
15	0	0	0				0	0	0	0		
16	0	0	0				0	0	0	0		
17	0	0	0				0	1.8	0	0		
18	0	0	0				0	.1	0	0		
19	0	0	0				0	0	0	0		
20	0	0	0				0	0	0	0		
21	0	0	0				0	0	0	0		
22	0	0	0				0	0	0	0		
23	0	0	0				0	0	0	0		
24	0	0	0				0	1.0	0	0		
25	0	0	0				0	0	0	0		
26	0	0	0				0	0	0	0		
27	0	0	0				0	0	0	0		
28	0	0	0				0	0	0	0		
29	0	0	0				0	0	0	0		
30	0	0	0				0	0	8.8	0		
31	0	-	0				-	0	-	0		

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	547.0	243	0	17.6	1,080
November	.2	.2	0	.01	.4
December	344.0	274	0	11.1	682
Calendar year 1946	901.3	274	0	2.47	1,780
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	.1	.1	0	.003	.2
May	718.7	379	0	23.2	1,430
June	8.8	8.8	0	.29	17
July	7.4	7.4	0	.24	15
August	0	0	0	0	0
September	0	0	0	0	0
Water year 1946-47	1,626.2	379	0	4.46	3,220

Peak discharge.- Oct. 7 (11:30 a.m.) 206 sec.-ft.; Oct. 9 (7 a.m.) 310 sec.-ft.; Dec. 12 (1 p.m.) 830 sec.-ft.; May 7 (4:30 a.m.) 970 sec.-ft.; May 11 (5 a.m.) 560 sec.-ft.

Clear Fork Brazos River at Nugent, Tex.

Location.- Water-stage recorder, lat. 32°41', long. 99°40', at county highway bridge in Nugent, Jones County, 4 miles upstream from Deadman Creek.

Drainage area.- 2,220 square miles.

Records available.- February 1924 to September 1947.

Average discharge.- 23 years, 153 second-feet.

Extremes.- Maximum discharge during year, 3,610 second-feet May 23 (gage height, 9.42 feet); minimum daily, 0.1 second-foot Sept. 10, 17, 18, 25-30.

1924-47: Maximum discharge observed, 47,000 second-feet Sept. 8, 1932 (gage height, 27.05 feet, site then in use), from rating curve extended above 25,000 second-feet; no flow at times.

Maximum stage known, about 30.0 feet in 1876, from information by local residents.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Flow partly regulated by reservoirs in Elm Creek Basin (see p.106) and Lakes Sweetwater and Trammel in Sweetwater Creek Basin, which have a combined capacity of about 106,000 acre-feet. Diversions above station for municipal supply and oil-field operation materially affect low flow

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	9.5	9.0	12	7.3	7.9	7.3	5.9	21	13	2.8	3.2
2	16	74	7.3	12	7.3	7.9	7.3	5.5	19	12	2.8	2.3
3	6.8	235	6.8	12	7.3	7.9	7.3	5.5	19	12	2.3	1.5
4	4.2	125	6.4	10	7.3	7.9	8.2	5.5	17	12	1.8	1.1
5	3.2	84	5.9	11	7.3	7.9	8.9	4.6	13	12	3.2	.8
6	2.5	88	5.9	11	6.8	12	6.8	4.2	13	12	3.9	.5
7	2.3	37	6.4	11	6.4	11	6.8	4.6	13	11	2.8	.4
8	23	18	6.4	11	6.8	10	6.4	5.5	12	11	2.3	.4
9	155	15	6.4	11	6.8	10	6.8	5.9	12	11	2.0	.2
10	610	12	65	11	6.8	9.5	6.4	71	12	13	2.0	.1
11	958	12	804	11	6.8	9.0	5.5	596	11	104	2.3	89
12	1,420	10	1,520	10	6.8	8.4	5.5	1,490	31	90	1.8	21
13	945	10	879	10	6.8	12	5.9	970	109	19	1.5	9.0
14	85	10	85	10	7.3	11	6.8	1,480	240	15	1.0	2.8
15	37	9.5	37	10	7.3	11	7.3	1,600	80	12	.6	1.8
16	28	8.4	25	9.5	7.9	11	6.4	352	23	9.5	.6	2.0
17	23	8.4	19	9.5	7.9	11	6.4	800	43	8.4	.5	.1
18	19	8.4	16	9.5	7.9	11	5.9	688	34	7.3	.4	.1
19	16	8.4	15	9.5	7.9	11	5.9	690	151	6.8	.4	2.4
20	14	8.4	14	9.5	8.4	10	5.9	156	552	5.9	7.8	1.8
21	13	9.0	13	8.4	8.4	10	6.4	83	132	5.0	6.8	.5
22	12	9.5	12	8.4	8.4	10	5.9	133	39	4.2	3.2	.4
23	11	9.5	12	8.4	8.4	10	4.6	2,330	18	4.2	2.5	.3
24	10	9.0	12	8.4	8.4	12	5.5	348	626	3.9	6.8	.2
25	12	9.5	12	8.4	8.4	13	6.4	67	1,210	63	4.6	.1
26	11	10	12	8.4	8.4	12	6.4	52	100	75	2.3	.1
27	10	9.5	11	8.4	8.4	11	6.4	43	52	10	2.0	.1
28	10	46	11	9.0	8.4	10	6.8	36	34	10	1.8	.1
29	10	30	10	7.9	-	9.0	6.4	28	23	5.0	1.3	.1
30	10	13	10	7.3	-	8.4	5.9	25	17	3.9	9.1	.1
31	10	-	12	7.3	-	7.3	-	25	-	2.8	5.5	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	4,559.0	1,420	2.3	147	9,040
November	946.0	235	8.4	31.5	1,880
December	3,664.5	1,520	5.9	118	7,270
Calendar year 1946	17,533.8	1,520	0	48.0	34,780
January	300.8	12	7.3	9.70	597
February	212.3	8.4	6.4	7.58	421
March	310.1	13	7.3	10.0	615
April	194.4	8.9	4.6	6.48	386
May	12,110.2	2,330	4.2	391	24,020
June	3,676	1,210	11	123	7,290
July	583.9	104	2.8	18.8	1,160
August	88.7	9.1	.4	2.86	176
September	142.5	89	.1	4.75	283
Water year 1946-47	26,788.4	2,330	.1	73.4	53,140

Note.- No gage-height record Feb. 27 to Mar. 30 July 13-22, Sept. 25-30, discharge computed on basis of recorded range in stage, weather records recession curves, and records for stations at Fort Griffin and near Crystal Falls.

Clear Fork Brazos River at Fort Griffin, Tex.

Location.- Water-stage recorder, lat. 32°56', long. 99°13', at bridge on Fort Griffin-Throckmorton highway, half a mile east of Fort Griffin, Shackelford County, and 1.3 miles upstream from Mill Creek. Datum of gage is 1,174.53 feet above mean sea level, datum of 1929.

Drainage area.- 3,974 square miles.

Records available.- December 1923 to September 1947.

Average discharge.- 23 years (1924-47), 283 second-feet.

Extremes.- Maximum discharge during year, 8,340 second-feet May 13 (gage height, 20.64 feet); no flow at times.
1923-47: Maximum discharge, 33,600 second-feet Sept. 10, 1932 (gage height, 35.09 feet); no flow at times.
Maximum stage known, about 38.0 feet in 1900, from information by local residents.

Remarks.- Records good. Flow partly regulated by reservoirs above Nugent. Diversions above station for irrigation, municipal supply, and oil-field operations materially affect low flow.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26	8.0	18	18	9.9	8.0	7.6	3.7	66	40	10	0
2	18	80	14	21	9.9	7.6	6.2	3.4	52	30	6.2	0
3	39	224	36	20	9.9	7.1	5.4	3.2	48	23	4.4	0
4	74	542	29	a19	9.4	6.7	7.6	2.9	46	17	2.9	0
5	51	372	22	a19	10	6.2	7.6	2.6	36	12	1.8	0
6	38	159	18	a18	9.4	6.7	7.1	2.4	28	9.4	1.2	0
7	29	108	15	a18	8.0	8.5	9.4	2.0	24	7.1	a.8	0
8	310	119	15	a18	6.7	9.0	11	296	22	8.0	a.4	0
9	1,120	88	13	a18	5.8	9.0	9.9	1,190	19	7.6	a.2	0
10	1,670	54	23	a18	5.1	9.9	18	1,570	17	5.8	a0	0
11	3,520	36	771	a18	5.8	10	14	2,290	14	3.7	a0	0
12	2,040	28	2,450	a18	6.7	11	9.9	5,560	11	2.9	0	72
13	1,850	23	2,800	a18	6.2	10	8.0	7,920	9.0	99	0	1,000
14	1,140	20	1,880	a18	5.8	12	7.1	4,440	243	119	0	674
15	483	17	373	a18	5.4	12	7.1	2,040	645	274	0	116
16	166	14	170	18	5.1	10	5.8	2,320	246	33	0	38
17	106	12	106	18	5.1	9.9	6.2	3,520	144	20	0	20
18	75	11	71	18	5.1	10	5.4	2,680	84	13	0	11
19	58	9.9	55	18	6.2	12	5.1	1,850	92	8.0	0	6.2
20	48	9.0	42	16	8.0	11	3.7	1,600	284	5.1	0	3.7
21	38	7.0	34	15	8.0	9.9	2.6	1,110	679	3.4	0	2.4
22	30	6.2	31	14	9.0	9.0	2.2	695	424	2.4	0	1.3
23	27	6.7	27	13	9.0	9.0	2.0	2,080	192	1.8	0	.8
24	23	7.1	24	14	9.4	8.5	2.6	4,490	183	1.3	0	.6
25	21	11	21	15	8.5	72	2.6	5,920	713	1.3	0	.4
26	19	12	20	14	8.5	42	4.4	1,080	1,490	1.5	0	a.3
27	16	8.5	19	12	8.5	23	9.9	308	626	1.6	0	a.1
28	14	5.8	18	12	8.0	15	7.1	186	175	1.2	0	a0
29	13	5.4	15	12	-	11	5.1	120	85	.9	0	a0
30	11	8.3	15	11	-	9.4	4.0	95	59	2.6	0	a0
31	9.9	-	16	9.9	-	9.0	-	80	-	16	0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	13,082.9	3,520	9.9	422	25,950
November	2,011.9	542	5.4	67.1	3,990
December	9,141	2,800	13	295	18,130
Calendar year 1946	48,257.7	3,520	0	132	95,720
January	506.9	21	9.9	16.4	1,010
February	212.4	10	5.1	7.59	421
March	404.4	72	6.2	13.0	802
April	204.6	18	2.0	6.82	406
May	53,460.2	7,920	2.0	1,725	106,000
June	6,766.0	1,490	9.0	226	13,420
July	771.6	274	.9	24.9	1,530
August	27.9	10	0	.90	55
September	1,946.8	1,000	0	64.9	3,860
Water year 1946-47	88,536.6	7,920	0	243	175,600

Peak discharge.- May 13 (10 a.m.) 8,340 sec.-ft.; May 25 (5:30 a.m.) 7,240 sec.-ft.
a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and records for stations at Nugent and near Crystal Falls.

Clear Fork Brazos River near Crystal Falls, Tex.

Location.- Water-stage recorder above concrete dam, lat. 32°54', long. 98°50', at Texas Co.'s pumping plant, 2½ miles downstream from Hubbard Creek and 3¼ miles northeast of Crystal Falls, Stephens County. Datum of gage is 1,055.25 feet above mean sea level, datum of 1929.

Drainage area.- 5,658 square miles.

Records available.- July 1928 to September 1947.

Average discharge.- 19 years, 476 second-feet.

Extremes.- Maximum discharge during year, 6,520 second-feet May 14 (gage height, 11.26 feet); no flow at times.
1928-47: Maximum discharge, 35,800 second-feet June 11, 1941 (gage height, 33.45 feet), from rating curve extended above 23,000 second-feet; no flow at times.
Maximum stage known, about 34.0 feet, present site and datum, in 1900, from information by local residents.

Remarks.- Records good. Flow partly regulated by reservoirs above Nugent. Diversions above station for irrigation, municipal supply, and oil-field operation materially affect low flow.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	85	11	6.9	16	6.9	4.7	11	0	86	52		0
2	44	1,720	5.5	20	6.9	4.7	8.3	0	72	42		0
3	26	1,590	3.9	20	6.9	3.1	8.3	.3	58	31		0
4	18	1,000	4.7	20	5.5	3.1	5.5	.6	47	29		0
5	51	532	24	20	5.5	3.9	4.7	.6	42	22		0
6	52	350	29	20	5.5	3.9	3.9	.3	40	18		0
7	37	176	26	22	5.5	5.5	3.1	.3	33	12		0
8	31	117	22	24	5.5	6.9	3.1	523	24	9.7		0
9	700	124	16	26	5.5	14	2.3	1,190	18	5.5		0
10	1,460	99	14	26	5.5	16	1.5	1,140	16	5.5		0
11	2,020	64	895	24	4.7	16	1.5	3,690	14	4.7		0
12	2,910	44	1,860	24	4.7	16	2.3	3,040	12	4.7		0
13	1,850	33	2,510	24	4.7	16	5.5	5,720	11	3.9		0
14	1,600	26	2,660	24	3.1	11	8.3	6,330	8.3	33		862
15	962	22	1,340	20	3.1	9.7	12	4,420	258	117		412
16	344	18	323	18	3.1	8.3	9.7	2,190	488	66		106
17	172	14	184	18	3.1	5.5	5.5	2,680	190	40		46
18	117	11	124	16	3.1	9.7	3.9	3,420	124	24		26
19	82	9.7	86	16	3.1	37	3.1	2,480	234	16		18
20	61	8.3	64	16	3.1	47	2.3	2,100	144	9.7		11
21	50	6.9	52	18	3.1	33	1.5	1,560	334	5.5		5.5
22	42	6.9	42	16	3.1	20	.9	1,100	593	3.9		2.3
23	37	6.9	37	14	3.9	18	.9	1,670	380	2.3		1.2
24	33	5.5	33	14	4.7	26	.6	2,580	310	1.2		.3
25	26	5.5	29	14	4.7	22	.6	4,000	281	2.3		0
26	24	8.3	24	12	4.7	23	.6	4,710	958	1.5		0
27	22	11	22	12	4.7	75	.6	802	1,280	.9		0
28	22	12	22	12	4.7	44	.6	294	330	0		0
29	20	12	18	12	-	31	.9	189	135	0		0
30	14	9.7	16	9.7	-	20	.3	131	79	0		0
31	12	-	16	8.3	-	14	-	99	-	0		-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	12,924	2,910	12	417	25,630
November	6,053.7	1,720	5.5	202	12,010
December	10,509.0	2,660	3.9	339	20,840
Calendar year 1946	87,601.1	6,530	0	240	173,800
January	556.0	26	8.3	17.9	1,100
February	128.6	6.9	3.1	4.59	255
March	568.0	75	3.1	18.3	1,130
April	113.3	12	.3	3.78	225
May	56,060.1	6,330	0	1,808	111,200
June	6,599.3	1,280	8.3	220	13,090
July	563.3	117	0	18.2	1,120
August	0	0	0	0	0
September	1,490.3	862	0	49.7	2,960
Water year 1946-47	95,565.6	6,330	0	262	189,600

Peak discharge.- Nov. 2 (9 p.m.) 4,410 sec.-ft.; May 11 (5:30 p.m.) 4,800 sec.-ft.; May 14 (8 p.m.) 6,520 sec.-ft.; May 26 (9:30 a.m.) 5,540 sec.-ft.

Fort Phantom Hill Reservoir near Nugent, Tex.

Location.- Staff gage, lat. 32°37', long. 99°40', on outlet tower at dam on Elm Creek, 4 miles upstream from Clear Fork Brazos River and 5 miles south of Nugent, Jones County. Datum of gage is 1,580.0 feet above mean sea level.

Drainage area.- 478 square miles.

Records available.- July 1940 to September 1947.

Extremes.- Maximum contents observed during year, 44,700 acre-feet May 24-28 (gage height, 45.8 feet); minimum observed, 38,040 acre-feet Sept. 27-30 (gage height, 43.1 feet).
1940-47: Maximum contents observed, 80,900 acre-feet Oct. 17, 1941 (gage height, 56.8 feet); minimum observed, 20,290 acre-feet Aug. 12, 13, 1940 (gage height, 34.7 feet).

Remarks.- Reservoir is formed by earth-fill dam with rock riprap face; dam completed and storage began in October 1938. Capacity, 69,550 acre-feet between gage heights 1.6 feet (sill of lowest outlet gate) and 54.0 feet (crest of spillway). Dead storage, 450 acre-feet. Records given herein represent total contents. Water is used for municipal supply. Gage read once daily at 8 a.m. Lake Abilene on Elm Creek, Lake Kirby on Cedar Creek, and Lytle Lake on Lytle Creek (combined capacity, 19,300 acre-feet) are smaller reservoirs above station in Elm Creek Basin.

Cooperation.- Gage-height record and capacity table furnished by city of Abilene.

Monthly gage height and contents, water year October 1946 to September 1947

	Gage height (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	45.2	43,200	-
Oct. 31	44.9	42,450	-750
Nov. 30	44.5	41,450	-1,000
Dec. 31	45.2	43,200	+1,750
Calendar year 1939	-	-	-7,250
Jan. 31	44.9	42,450	-750
Feb. 28	44.6	41,700	-750
Mar. 31	44.4	41,200	-500
Apr. 30	43.9	39,960	-1,240
May 31	45.7	44,450	+4,490
June 30	45.4	43,700	-750
July 31	44.6	41,700	-2,000
Aug. 31	43.8	39,720	-1,980
Sept.30	43.1	38,040	-1,680
Water year 1946-47	-	-	-5,160

† Gage height at 8 a.m.

Paluxy Creek at Glen Rose, Tex.

Location.- Water-stage recorder, 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, Somerville County, and 4.7 miles upstream from mouth. Datum of gage is 609.7 feet above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942. Former gage at site 1.8 miles downstream at datum 13.62 feet lower.

Drainage area.- 399 square miles.

Records available.- May to September 1947. October 1923 to September 1925 at site 1.8 miles downstream; records equivalent except for inflow from local runoff.

Extremes.- Maximum discharge during period, 2,580 second-feet Sept. 15 (gage height, 7.16 feet); minimum, 0.9 second-foot Sept. 11.

1924-25, 1947: Maximum discharge not determined but probably occurred Apr. 25, 1924, at gage height, 7.10 feet, site and datum then in use.

Maximum stage known, 27.2 feet Apr. 17, 1908, present site and datum. Flood of May 21, 1922, reached a stage of 26.0 feet, present site and datum. Flood of November 1918 reached about same stage as flood of May 21, 1922, from information by local resident.

Remarks.- Records good. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								-	19	10	2.0	5.0
2								-	18	10	1.7	4.4
3								-	15	9.1	1.4	3.3
4								-	14	8.3	1.3	2.4
5								-	12	11	1.3	2.0
6								-	11	9.1	1.3	1.4
7								-	11	8.3	1.2	1.2
8								-	11	7.5	1.2	1.2
9								-	10	7.5	1.2	1.1
10								-	10	7.5	1.2	1.1
11								-	9.1	6.8	1.2	1.2
12								-	9.1	6.8	1.7	12
13								-	8.3	9.1	2.4	13
14								-	8.3	7.5	1.4	6.8
15								-	8.3	6.1	1.2	520
16								31	8.3	6.1	1.1	68
17								53	8.3	5.5	1.1	22
18								47	7.5	5.5	1.1	14
19								43	7.5	5.0	1.1	10
20								33	231	4.4	1.1	8.3
21								33	687	3.8	1.1	7.5
22								29	87	3.8	1.2	6.8
23								26	61	3.8	1.4	6.1
24								24	31	3.8	1.3	5.5
25								22	24	3.8	1.2	5.5
26								21	19	3.8	3.6	5.0
27								21	16	3.8	15	5.0
28								18	14	3.3	88	5.0
29								19	11	3.3	18	5.0
30								21	11	2.4	8.3	4.4
31								21	-	2.4	6.1	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October					
November					
December					
Calendar year					
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May 16-31	462	53	18	28.9	916
June	1,397.7	687	7.5	46.6	2,770
July	189.1	11	2.4	6.10	375
August	172.4	88	1.1	5.56	342
September	754.2	520	1.1	25.1	1,500
The period	-	-	-	-	5,900

Peak discharge.- June 21 (12 p.m.) 2,290 sec.-ft.; Sept. 15 (7:30 a.m.) 2,580 sec.-ft.

Aquilla Creek near Aquilla, Tex.

Location.- Water-stage recorder, 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 square miles.

Records available.- December 1924 to August 1925, December 1938 to September 1947.

Extremes.- Maximum discharge during year, 8,440 second-feet Apr. 9 (gage height, 26.81 feet); minimum, 0.1 second-foot Aug. 7-26, Sept. 5, 8-12.

1924-25, 1938-47: Maximum gage height, 30.84 feet May 2, 1944 (discharge not determined); no flow at times.

Maximum stage known, 34 feet Aug. 31, 1887, from information by local resident. Flood of Sept. 27, 1936, reached a stage of about 33 feet, from floodmark. Peak discharge of this flood as determined about 9 miles below station, 84,500 second-feet by slope-area method (drainage area, 370 square miles).

Remarks.- Records good except those for periods of no gage-height record, which are fair. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.2	1.5	3.3	13	40	37	48	42	20	2.5	0.2	0.4
2	3.1	2.0	3.1	34	37	32	45	32	18	2.0	.2	.2
3	3.0	126	2.9	48	37	29	43	27	18	2.0	.2	.2
4	2.9	251	2.7	25	37	30	43	25	13	2.0	.1	.2
5	2.8	128	3.1	22	33	30	42	24	10	1.5	.2	.1
6	2.7	263	3.1	22	34	31	35	22	8.8	1.3	.2	.2
7	2.6	84	3.1	27	34	315	31	21	7.5	1.0	.1	.2
8	2.5	18	3.3	29	31	356	33	21	6.4	.9	.1	.1
9	2.4	21	3.4	32	29	131	4,620	89	5.5	.8	.1	.1
10	2.3	19	4.8	38	29	80	737	60	4.6	.7	.1	.1
11	2.2	9.4	713	41	30	70	509	30	4.2	.7	.1	.1
12	2.1	5.5	2,080	41	33	114	166	24	3.8	.6	.1	.4
13	2.0	4.4	170	37	32	114	936	23	3.4	.6	.1	81
14	1.9	4.0	59	33	32	71	171	21	2.9	.7	.1	7.1
15	1.8	3.6	43	30	31	56	1,190	18	2.9	.7	.1	2.8
16	1.7	3.6	36	31	30	48	309	22	2.9	.6	.1	1.5
17	1.6	4.0	31	2,420	29	46	118	67	2.9	.5	.1	.9
18	1.5	3.6	24	1,620	29	210	92	1,790	2.7	.5	.1	.6
19	1.4	3.4	21	531	250	638	81	424	5.8	.5	.1	.5
20	1.3	3.4	21	286	291	191	81	65	131	.4	.1	.4
21	1.2	3.8	21	148	92	110	71	44	733	.4	.1	.4
22	1.1	3.4	19	110	55	88	56	32	310	.3	.1	.4
23	1.0	3.4	18	97	47	89	51	43	27	.2	.1	.4
24	.9	3.3	18	94	39	96	47	39	96	.2	.1	.3
25	.8	3.8	17	82	35	66	85	30	32	.2	.1	.2
26	.7	3.6	16	71	34	55	119	21	17	.2	.9	.2
27	.6	4.0	17	65	33	50	54	18	11	.2	8.1	.2
28	.7	3.6	18	58	37	45	54	16	8.8	.2	3.5	.2
29	.7	3.4	16	57	-	44	59	140	6.2	.2	5.5	.2
30	.8	3.3	13	54	-	48	49	79	4.0	.2	2.4	.2
31	.9	-	11	44	-	48	-	25	-	.2	.7	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	54.4	3.2	0.6	1.75	108
November	994.0	263	1.5	33.1	1,970
December	3,414.8	2,080	2.7	110	6,770
Calendar year 1946	43,048.6	4,510	.2	118	85,400
January	6,240	2,420	13	201	12,380
February	1,500	291	29	53.6	2,980
March	3,368	638	29	109	6,680
April	9,975	4,620	31	332	19,790
May	3,334	1,790	16	108	6,610
June	1,519.3	733	2.7	50.6	3,010
July	23.0	2.5	.2	.74	46
August	24.1	8.1	.1	.78	48
September	99.8	81	.1	3.33	198
Water year 1946-47	30,546.4	4,620	.1	83.7	60,590

Note.- No gage-height record Oct. 1-23, June 26-30; discharge computed by interpolation, or on basis of weather records and records for North Bosque River near Clifton.

North Bosque River near Clifton, Tex.

Location.- Staff gage above spillway of masonry dam, lat. 31°48', long. 97°35', 730 feet upstream from Gulf, Colorado & Santa Fe Railway bridge and 1.4 miles northwest of Clifton, Bosque County. Datum of gage is 622.7 feet above mean sea level, datum of 1929.

Drainage area.- 974 square miles.

Records available.- November 1923 to September 1947.

Average discharge.- 24 years, 231 second-feet.

Extremes.- Maximum discharge during year, 7,270 second-feet Nov. 4 (gage height, 5.75 feet, from floodmark); minimum not determined; minimum daily, 2.1 second-feet Aug. 21-26.

1923-47: Maximum discharge, 39,000 second-feet Apr. 22, 1945 (gage height, 23.2 feet, from floodmark); no flow at times.

Flood of May 9, 1922, reached a stage of 25 feet, from information by local resident.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Railway company pumps about 100,000 gallons a day (0.15 second-foot) from pool formed by control dam a third of a mile below gage. Gage read twice daily, oftener during high stages.

(Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet) (Shifting-control method used June 1 to Sept. 30)

0.40	1.2	0.90	69	1.4	285	3.0	2,000
.50	4.8	1.0	99	1.6	423	3.5	2,750
.60	14	1.1	129	1.8	590	4.0	3,810
.70	27	1.2	166	2.0	780	4.5	4,570
.80	45	1.3	218	2.5	1,340		

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	15	24	36	105	90	166	117	50	9.8	3.5	17
2	32	16	23	b36	99	87	162	108	47	8.8	3.5	11
3	27	570	21	b36	93	87	159	99	47	8.8	3.5	6.0
4	24	4,560	21	b36	93	87	159	87	43	7.8	3.5	4.3
5	21	1,090	21	b36	90	87	151	75	41	8.9	3.5	4.3
6	18	542	21	b42	87	87	136	69	38	6.9	3.1	3.5
7	27	356	20	b48	87	123	129	67	32	6.0	3.1	3.5
8	23	117	18	55	84	272	129	276	29	6.0	3.1	3.1
9	21	81	18	75	81	238	129	166	24	6.0	2.7	2.7
10	20	69	36	87	78	202	266	183	23	6.0	2.7	2.7
11	27	59	1,410	93	81	176	216	496	20	6.0	2.7	3.1
12	40	50	860	96	84	159	136	562	18	6.0	2.7	21
13	34	43	238	87	84	148	136	303	17	6.0	2.7	11
14	27	41	117	81	84	133	204	148	16	6.0	2.7	8.8
15	23	41	69	75	84	120	409	111	15	6.0	2.7	7.8
16	21	41	64	111	81	111	368	111	14	6.0	2.4	7.8
17	21	38	59	782	81	105	299	166	14	4.8	2.4	6.9
18	20	34	52	907	84	539	191	187	14	4.3	2.4	16
19	18	32	50	459	376	3,080	182	140	13	4.3	2.4	14
20	18	31	45	306	222	730	658	117	13	4.3	2.4	9.8
21	16	29	45	238	159	438	253	99	12	4.3	2.1	6.9
22	16	29	41	197	129	375	148	87	12	4.3	2.1	6.9
23	16	29	40	176	117	347	126	87	14	4.3	2.1	6.9
24	15	27	40	159	105	299	117	81	31	3.9	2.1	6.0
25	15	27	40	151	99	245	126	75	23	3.9	2.1	6.0
26	15	27	40	144	93	213	136	69	18	3.9	2.1	5.3
27	15	27	40	136	93	197	129	64	16	3.5	2.7	4.8
28	15	26	38	129	90	187	133	59	14	3.5	20	4.8
29	15	26	38	123	-	176	129	55	11	3.5	7.8	4.8
30	15	25	38	117	-	176	123	55	11	3.5	16	4.8
31	15	-	38	111	-	176	-	52	-	3.5	24	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	670	40	15	21.6	1,330
November	8,098	4,560	15	270	16,060
December	3,625	1,410	18	117	7,190
Calendar year 1946	80,844.2	6,450	7.8	221	160,400
January	5,165	907	36	167	10,240
February	3,043	376	78	109	6,040
March	9,490	3,080	87	306	18,820
April	5,775	658	117	192	11,450
May	4,371	562	52	141	8,670
June	690	50	11	23.0	1,370
July	168.8	9.8	3.5	5.45	335
August	140.8	24	2.1	4.54	279
September	221.5	21	2.7	7.38	439
Water year 1946-47	41,458.1	4,560	2.1	114	82,220

b Stage-discharge relation affected by ice (no gage-height record Jan. 2-5).

Note.- No gage-height record Nov. 28 to Dec. 1, Aug. 17-31; discharge computed on basis of weather records and records for Aquilla Creek near Aquilla.

Leon River near Hasse, Tex.

Location.- Water-stage recorder and concrete control, lat. 31°57', long. 98°28', at bridge on U. S. Highway 67, 1,000 feet upstream from Gulf, Colorado & Santa Fe Railway bridge, 0.4 mile upstream from Walnut Creek, and 2.1 miles northeast of Hasse, Comanche County. Datum of gage is 1,115.1 feet above mean sea level, datum of 1929.

Drainage area.- 1,276 square miles.

Records available.- January 1939 to September 1947.

Extremes.- Maximum discharge during year, 3,640 second-feet Nov. 5 (gage height, 13.66 feet); no flow at times.
1939-47: Maximum discharge, 16,900 second-feet Mar. 30, 1945; maximum gage height, 17.72 feet Oct. 19, 1942; no flow at times.
Maximum stage known, about 25.0 feet in May 1908, from information by Texas State Highway Department.

Remarks.- Records good. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33	7.3	32	38	46	36	64	38	16	2.4		
2	28	200	31	44	46	33	61	33	13	1.7		
3	21	1,390	30	41	42	31	112	29	12	1.2		
4	17	2,540	30	d23	38	32	207	27	11	.8		
5	18	2,900	30	d15	40	32	88	26	9.8	.4		
6	18	1,580	30	d27	38	34	64	26	8.8	.3		
7	17	623	30	d54	41	52	56	24	7.8	.1		
8	15	206	30	56	38	102	59	24	6.4	0		
9	16	105	31	70	37	108	54	50	5.6	0		
10	18	94	33	94	37	91	50	121	4.9	0		
11	18	82	73	105	36	73	50	146	4.3	0		
12	15	68	468	94	37	66	46	258	3.7	0		
13	20	57	829	80	40	64	44	285	2.8	0		
14	13	50	523	70	38	54	49	111	2.6	0		
15	12	46	162	64	40	46	64	73	2.6	0		
16	12	44	111	61	40	42	77	61	2.6	0		
17	12	42	91	185	40	40	68	73	2.8	0		
18	12	40	70	307	40	248	57	56	2.6	0		
19	11	38	59	199	41	1,340	49	61	7.0	0		
20	9.8	37	54	194	47	1,240	46	46	8.3	0		
21	9.3	37	49	174	47	765	42	44	19	0		
22	8.3	36	46	121	44	393	37	50	46	0		
23	7.8	33	42	91	40	218	36	49	47	0		
24	8.3	33	42	77	37	168	37	38	344	0		
25	9.3	34	41	73	34	141	38	32	137	0		
26	7.8	34	41	66	33	118	38	30	53	0		
27	7.3	33	41	64	33	94	38	26	22	0		
28	7.3	32	41	59	34	73	42	24	11	0		
29	7.3	31	40	56	-	66	46	21	6.4	0		
30	6.8	32	36	54	-	68	46	18	3.7	0		
31	6.8	-	33	49	-	64	-	17	-	0		

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	422.1	33	6.8	13.6	837
November	10,484.3	2,900	7.3	349	20,800
December	3,199	829	30	103	6,350
Calendar year 1946	43,637.6	2,900	0	120	86,560
January	2,705	307	15	87.3	5,370
February	1,104	47	33	39.4	2,190
March	5,932	1,340	31	191	11,770
April	1,765	207	36	58.8	3,500
May	1,917	285	17	61.8	3,800
June	823.7	344	2.6	27.5	1,630
July	6.9	2.4	0	.22	14
August	0	0	0	0	0
September	0	0	0	0	0
Water year 1946-47	28,359.0	2,900	0	77.7	56,260

d Doubtful gage-height record; discharge computed on basis of discharge measurement made Jan. 8 and weather records.

Leon River near Belton, Tex.

Location.- Water-stage recorder above spillway of concrete dam, lat. 31°04'15", long. 97°26'30", 1,400 feet upstream from bridge on U. S. Highway 81 and 2 miles east of Belton, Bell County. Datum of gage is 476.9 feet above mean sea level, datum of 1929.

Drainage area.- 3,547 square miles.

Records available.- October 1923 to September 1947.

Average discharge.- 24 years, 768 second-feet.

Extremes.- Maximum discharge during year, 14,500 second-feet Mar. 19 (gage height, 10.52 feet); minimum, 3.5 second-feet Sept. 29, 30 (gage height, 2.41 feet).
1923-47: Maximum discharge, 70,600 second-feet Apr. 22, 1945 (gage height, 24.41 feet), from rating curve extended above 45,000 second-feet; no flow at times.
Maximum stage known, 25 feet in December 1913, from information by local residents.

Remarks.- Records good except those for period of no gage-height record, which are fair. Several small pumping plants divert water above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	262	80	121	187	591	395	860	550	380	182	23	21
2	187	92	126	212	542	388	820	494	395	141	23	23
3	176	177	126	269	518	380	774	463	502	116	21	26
4	176	548	126	249	502	380	746	448	323	102	21	23
5	141	153	121	224	470	373	718	417	289	84	21	21
6	121	193	121	218	455	366	650	388	269	76	19	19
7	116	745	116	212	448	709	616	388	243	68	17	15
8	187	1,510	107	212	417	755	641	373	224	64	17	15
9	141	2,080	102	289	402	684	710	2,550	205	60	15	15
10	116	2,200	122	366	402	667	641	1,530	193	56	15	13
11	102	1,630	912	440	395	675	608	1,570	176	56	23	13
12	97	712	2,310	463	395	650	608	1,540	164	56	23	17
13	88	425	2,010	448	395	710	764	1,190	147	80	33	19
14	84	323	1,680	448	402	633	840	1,140	141	68	26	49
15	88	282	621	425	402	600	764	942	136	52	21	36
16	92	282	417	425	402	566	701	870	136	48	19	33
17	92	212	740	a3,510	395	534	633	1,260	147	45	17	60
18	92	187	910	a4,690	395	2,170	633	2,800	136	42	17	45
19	92	176	608	a4,360	395	3,180	608	1,450	147	138	15	33
20	102	170	417	a3,020	455	4,110	568	1,220	158	289	15	23
21	107	158	337	a2,200	502	3,550	542	1,150	153	170	17	21
22	107	153	296	1,690	633	2,800	526	1,100	136	102	19	13
23	92	141	269	1,410	675	2,530	502	910	126	72	19	10
24	88	136	243	1,230	510	2,660	494	693	141	60	19	7.7
25	88	131	237	1,110	455	2,340	1,550	624	136	60	21	6.5
26	88	131	224	986	425	1,750	1,280	558	141	52	124	6.5
27	84	131	218	880	402	1,350	783	494	141	52	99	4.8
28	84	131	212	763	395	1,130	675	463	126	42	84	4.0
29	84	126	212	736	-	1,020	693	448	182	39	42	3.6
30	80	126	193	710	-	986	608	425	243	26	30	3.5
31	80	-	187	641	-	920	-	395	-	23	28	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,534	262	80	114	7,010
November	13,541	2,200	80	451	26,860
December	14,441	2,310	102	466	28,640
Calendar year 1946	316,360	13,100	33	867	627,500
January	33,043	4,690	187	1,066	65,540
February	12,775	675	395	456	25,340
March	44,961	8,180	366	1,450	89,180
April	21,554	1,550	494	718	42,750
May	28,843	2,800	373	930	57,210
June	6,036	502	126	201	11,970
July	2,521	289	23	81.3	5,000
August	903	124	15	29.1	1,790
September	599.6	60	3.5	20.0	1,190
Water year 1946-47	182,751.6	8,180	3.5	501	362,500

a No gage-height record; discharge computed on basis of recorded range in stage and estimated gage-height record.

Little River at Cameron, Tex.

Location.- Water-stage recorder, lat. 30°50', long. 96°57', at site of old McCowan bridge, 2,020 feet (revised) upstream from bridge on U. S. Highway 77 and 2 miles southeast of Cameron, Milam County. Datum of gage is 281.9 feet above mean sea level, datum of 1929.
Drainage area.- 7,034 square miles.
Records available.- November 1916 to September 1947.
Average discharge.- 30 years (1917-47), 2,054 second-feet.
Extremes.- Maximum discharge during year, 24,600 second-feet Jan. 19 (gage height, 33.68 feet); minimum, 85 second-feet Sept. 30 (gage height, 3.43 feet).
1916-47: Maximum discharge, 647,000 second-feet Sept. 10, 1921 (gage height, 53.2 feet, present datum, from floodmark), by slope-area method; minimum, 2.6 second-feet Sept. 3, 5, 7, 1918.
Flood of 1852 reached about same stage as that of Sept. 10, 1921. Flood of December 1913 reached a stage of 49.0 feet. Stages based on information by local residents.
Remarks.- Records good. Many small diversions for irrigation and municipal supply affect very low flows. Slight regulation caused by pumping above station.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used June 21 to Sept. 3)

3.3	74	4.7	389	11.0	2,750	30.0	12,600
3.5	99	5.3	596	14.0	4,080	32.0	14,500
3.7	129	6.0	848	18.0	6,040	32.5	15,800
4.0	189	7.0	1,210	22.0	8,100	33.0	18,400
4.3	267	9.0	1,960	26.0	10,200	33.5	22,600

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,140	321	740	920	2,590	1,400	2,420	1,960	1,430	415	147	185
2	884	373	704	1,180	2,420	1,360	2,340	1,770	2,630	441	142	161
3	686	1,480	686	2,790	2,300	1,280	2,260	1,580	3,720	389	136	145
4	596	6,790	668	2,300	2,260	1,250	2,150	1,540	1,360	348	134	129
5	614	10,300	650	1,320	2,190	1,250	2,110	1,510	1,060	321	138	121
6	992	9,460	650	1,140	2,110	1,250	2,040	1,470	992	297	133	118
7	668	3,620	632	1,140	2,070	1,360	1,920	1,470	920	279	129	113
8	578	1,170	632	1,250	2,040	2,150	1,810	1,470	866	264	124	110
9	525	1,960	632	2,720	1,960	2,500	1,810	5,310	812	267	121	107
10	560	4,690	865	5,140	1,880	2,040	1,850	8,730	740	247	127	107
11	632	3,630	4,170	4,220	1,850	1,850	1,810	4,550	668	223	116	115
12	740	2,540	9,750	g2,790	1,810	1,880	2,000	2,880	596	226	115	119
13	542	1,580	14,600	g2,300	1,810	2,670	6,160	2,880	542	231	119	112
14	448	1,030	9,000	2,110	1,810	2,380	4,700	2,420	508	231	142	105
15	428	884	3,990	2,000	1,730	1,810	2,590	2,110	472	282	208	106
16	421	3,970	2,670	1,920	1,730	1,660	2,300	2,000	466	256	174	115
17	438	15,600	1,920	7,400	1,660	1,470	2,110	2,790	455	218	143	149
18	445	12,300	1,770	16,000	1,620	2,010	1,920	2,930	452	208	133	153
19	431	2,630	2,000	22,000	1,620	7,870	1,810	4,080	548	213	121	151
20	411	1,210	2,000	15,400	1,730	11,100	3,810	3,320	1,290	194	123	143
21	395	1,100	1,770	10,400	1,880	9,050	3,700	3,760	668	226	119	126
22	383	992	1,430	6,650	1,810	6,190	1,810	2,710	486	339	116	112
23	373	920	1,280	5,140	1,770	5,140	1,580	2,040	435	324	115	103
24	367	866	1,210	4,600	1,880	4,650	1,510	1,920	445	253	115	96
25	354	884	1,170	4,270	1,690	4,460	1,510	1,620	452	218	161	94
26	348	3,820	1,100	3,900	1,470	4,130	1,900	1,510	472	180	185	90
27	342	2,140	1,060	3,540	1,400	3,320	3,450	1,470	428	176	149	89
28	339	902	1,060	3,320	1,360	3,010	2,460	1,470	578	178	374	87
29	333	794	1,030	3,100	-	2,670	2,110	1,430	445	159	432	86
30	330	758	992	2,970	-	2,500	2,110	1,430	379	153	306	85
31	321	-	920	2,790	-	2,460	-	1,430	-	153	226	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	16,064	1,140	321	518	31,860
November	98,714	15,600	321	3,290	195,800
December	71,751	14,600	632	2,315	142,300
Calendar year 1946	851,599	15,600	159	2,333	1,689,000
January	146,720	22,000	920	4,733	291,000
February	52,450	2,590	1,360	1,873	104,000
March	98,120	11,100	1,250	3,165	194,600
April	72,060	6,160	1,510	2,402	142,900
May	77,560	8,730	1,430	2,502	153,800
June	25,315	3,720	379	844	50,210
July	7,909	441	153	255	15,690
August	5,023	432	115	162	9,960
September	3,532	185	85	118	7,010
Water year 1946-47	375,218	22,000	85	1,850	1,339,000

Peak discharge.- Nov. 17 (5:30 p.m.) 20,800 sec.-ft.; Dec. 13 (9 a.m.) 17,200 sec.-ft.; Jan. 19 (4 a.m.) 24,600 sec.-ft.
g Computed from graph based on gage readings.
Note.- No gage-height record Apr. 24, 25, May 4-8, May 26 to June 1, June 4-11; discharge computed on basis weather records and records for Leon River near Belton, Lampasas River at Youngsport, and San Gabriel River at Georgetown.

Lampasas River at Youngsport, Tex.

Location.- Water-stage recorder, lat. 30°57', long. 97°43', 300 feet upstream from bridge on county highway and half a mile southeast of Youngsport, Bell County.

Drainage area.- 1,242 square miles.

Records available.- February 1924 to September 1947.

Average discharge.- 23 years, 332 second-feet.

Extremes.- Maximum discharge during year, 8,250 second-feet Mar. 18 (gage height, 9.12 feet); minimum, 14 second-feet Sept. 12 (gage height, 2.84 feet).

1924-47: Maximum discharge, 53,200 second-feet Sept. 28, 1936 (gage height, 33.5 feet, from floodmarks), from rating curve extended above 40,000 second-feet; no flow July 17 to Aug. 18, 1925, July 22, 23, Aug. 9 to Sept. 8, 1934.

Flood of September 1873 reached a stage of 44.2 feet and that of Dec. 2, 1913, reached a stage of 33.6 feet, present datum, from information by local residents.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Small diversions above station for municipal use.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	56	32	45	73	348	193	428	315	131	42	20	20
2	56	35	45	114	332	189	405	286	131	40	20	19
3	56	90	45	113	332	178	387	272	153	37	20	17
4	53	89	45	109	321	176	381	258	108	35	20	17
5	53	181	45	102	300	176	370	244	92	35	20	16
6	50	216	45	99	300	176	337	231	89	32	20	16
7	50	116	42	99	300	417	315	222	80	32	19	15
8	48	99	42	99	267	393	315	214	73	30	19	15
9	48	76	45	142	253	315	321	283	70	28	17	15
10	45	62	88	180	249	262	315	621	64	28	19	15
11	45	56	573	205	249	249	310	321	59	30	81	15
12	42	48	1,010	201	253	258	305	532	56	30	113	17
13	42	45	262	189	249	240	341	321	53	30	53	28
14	42	35	180	184	240	222	434	249	50	30	30	48
15	40	36	138	176	236	210	393	214	48	28	25	35
16	37	103	124	180	231	201	370	240	50	26	23	26
17	37	40	113	1,230	222	197	310	315	48	25	23	21
18	35	35	99	2,490	218	951	286	315	48	25	21	21
19	35	35	96	2,180	218	3,620	276	286	45	26	20	19
20	35	35	92	1,140	249	975	267	240	48	119	21	17
21	35	37	89	854	249	773	249	227	62	67	20	17
22	35	37	86	735	227	676	236	214	56	42	20	16
23	35	37	86	690	214	655	222	193	48	35	30	16
24	35	40	83	655	205	627	218	184	42	28	28	16
25	35	40	83	592	197	530	645	172	176	26	25	16
26	35	42	80	524	193	497	584	161	224	26	131	16
27	35	42	80	484	193	484	410	149	92	25	109	16
28	35	42	76	453	197	447	399	142	64	23	64	16
29	35	42	76	441	-	434	387	191	50	21	30	17
30	35	42	73	416	-	441	359	184	42	21	23	17
31	35	-	73	381	-	434	-	146	-	21	21	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,290	56	35	41.6	2,560
November	1,865	216	32	62.2	3,700
December	4,059	1,010	42	131	8,050
Calendar year 1946	92,569	4,330	21	254	183,600
January	15,530	2,490	73	501	30,800
February	7,042	348	193	252	13,970
March	15,594	3,620	176	503	30,930
April	10,575	645	218	352	20,980
May	7,942	621	142	256	15,750
June	2,350	224	42	78.3	4,660
July	1,043	119	21	33.6	2,070
August	1,105	131	17	35.6	2,190
September	575	48	15	19.2	1,140
Water year 1946-47	68,970	3,620	15	189	136,800

Note.- No gage-height record Oct. 1 to Nov. 14, Dec. 23 to Jan. 7; discharge computed on basis of recorded range in stage, discharge measurement, weather records, and records for nearby stations.

San Gabriel River at Georgetown, Tex.

Location.- Water-stage recorder and concrete control, lat. 30°39'10", long. 97°39'20", 100 feet 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. Datum of gage is 643.71 feet above mean sea level, datum of 1929.

Drainage area.- 415 square miles.

Records available.- July 1934 to September 1947. February 1924 to August 1925 at site 1 mile upstream; records equivalent except those for extremely low flow.

Average discharge.- 13 years, 187 second-feet.

Extremes.- Maximum discharge during year, 21,000 second-feet Dec. 11 (gage height, 13.80 feet); minimum, 0.6 second-foot (regulated) Aug. 9 (gage height, 0.80 foot).

1924-25, 1934-47: Maximum discharge, 37,500 second-feet June 6, 1944 (gage height, 19.49 feet), from rating curve extended above 24,000 second-feet; minimum, 0.2 second-foot (regulated) July 31, Aug. 1, 29, 30, 1942.

Maximum stage known, 39.36 feet, present site and datum, in September 1921 (discharge, 160,000 second-feet, by slope-area method), from information by Missouri-Kansas-Texas Railroad Co.

Remarks.- Records good except those for period of no gage-height record, which are poor. Several small diversions have some effect on low flow which is also regulated at times by gates in recreation dam 3,000 feet above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	102	58	125	195	414	192	205	136	71	25	15	15
2	85	96	120	217	395	176	195	135	66	25	18	13
3	82	1,540	116	235	390	172	190	129	62	24	21	13
4	197	358	113	225	371	172	190	124	58	23	17	13
5	223	188	110	217	348	168	181	118	55	23	17	13
6	108	253	107	211	348	166	168	113	52	22	16	13
7	92	161	106	205	331	313	164	108	50	34	15	12
8	86	132	103	197	314	269	168	104	47	12	20	12
9	84	128	104	197	306	200	166	117	46	13	9.6	12
10	107	180	586	261	298	186	163	121	57	20	14	11
11	144	139	4,110	276	294	176	164	132	43	20	17	12
12	96	124	946	268	287	188	334	135	31	19	20	13
13	83	118	472	261	276	188	685	113	30	22	19	13
14	79	115	400	251	268	161	208	103	36	41	16	13
15	79	118	366	247	257	157	190	96	37	22	15	14
16	82	2,110	340	235	251	153	168	110	38	19	14	13
17	82	287	319	639	241	152	155	193	37	18	14	12
18	78	235	290	1,290	238	782	150	118	37	19	14	11
19	75	214	287	1,460	250	588	147	103	82	28	13	11
20	72	197	287	1,020	323	314	159	97	68	22	15	11
21	70	186	268	816	247	279	135	94	47	20	16	11
22	68	170	254	736	231	254	131	89	39	24	29	11
23	66	164	247	704	219	254	125	88	35	15	35	10
24	64	161	238	673	208	244	122	85	40	8.9	22	10
25	63	157	231	603	203	222	209	83	45	30	19	10
26	62	147	222	570	200	217	270	76	35	8.9	35	10
27	61	141	219	538	195	214	190	73	32	8.1	65	10
28	60	136	217	501	200	205	203	71	31	15	24	10
29	58	132	211	501	-	205	188	74	29	15	19	10
30	58	131	205	461	-	208	166	72	27	15	17	10
31	58	-	197	424	-	205	-	72	-	15	16	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,724	223	58	87.9	5,400
November	8,276	2,110	58	276	16,420
December	11,916	4,110	103	384	23,640
Calendar year 1946	61,896.7	4,110	5.6	170	122,800
January	14,634	1,460	195	472	29,030
February	7,903	414	195	282	15,680
March	7,380	782	152	238	14,640
April	5,889	685	122	196	11,680
May	3,280	193	71	106	6,510
June	1,363	82	27	45.4	2,700
July	625.9	41	8.1	20.2	1,240
August	616.6	65	9.6	19.9	1,220
September	352	15	10	11.7	698
Water year 1946-47	64,959.5	4,110	8.1	178	128,900

Peak discharge.- Nov. 3 (5 p.m.) 9,420 sec.-ft.; Nov. 18 (4:30 a.m.) 10,700 sec.-ft.; Dec. 11 (6:30 p.m.) 21,000 sec.-ft.

Note.- No gage-height record Dec. 28 to Jan. 20; discharge computed on basis of weather records and records for Lampasas River at Youngsport.

Yegua Creek near Somerville, Tex.

Location.- Water-stage recorder, lat. 30°19', long. 96°30', at bridge on State Highway 36, 760 feet downstream from Gulf, Colorado & Santa Fe Railway bridge, 2 miles south of Somerville, Burleson County, and 5 miles upstream from Davidson Creek. Datum of gage is 199.29 feet above mean sea level, datum of 1929.

Drainage area.- 990 square miles.

Records available.- May 1924 to September 1947.

Average discharge.- 23 years, 331 second-feet.

Extremes.- Maximum discharge during year, 29,600 second-feet Aug. 26 (gage height, 15.62 feet); no flow Aug. 11-21.
1924-47: Maximum discharge, 56,800 second-feet July 1, 1940 (gage height, 19.27 feet); no flow at times.
Maximum stage known, about 22.0 feet, present site and datum, Dec. 5, 1913, from information by chief engineer, Gulf, Colorado & Santa Fe Railway Co.

Remarks.- Records good except those for periods of no gage-height record, which are fair. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	214	3.7	184	47	77	38	85	41	27	14	0.9	56
2	116	2.7	123	328	70	36	81	39	24	9.1	.8	34
3	66	25	76	650	64	38	79	36	22	6.4	1.5	24
4	39	531	53	674	59	40	76	32	21	4.8	.9	18
5	24	794	43	515	53	40	74	28	18	3.6	.6	13
6	15	821	37	333	51	39	68	24	16	2.5	.3	10
7	10	788	34	280	49	44	65	22	14	1.8	.2	8.5
8	9.6	788	31	264	47	47	61	20	12	1.4	.2	7.1
9	8.1	989	29	274	44	47	58	21	11	1.0	.1	6.0
10	8.0	1,130	26	632	42	49	60	21	9.6	.8	.1	6.2
11	135	870	58	975	42	71	56	62	8.5	.6	.1	5.7
12	316	716	533	877	45	309	56	231	7.5	.8	0	5.2
13	343	555	656	770	44	3,530	47	402	6.9	12	0	4.6
14	78	485	404	716	44	5,530	104	520	6.2	21	0	3.9
15	30	540	225	674	44	3,240	448	272	5.9	15	0	3.8
16	119	1,130	231	575	44	1,940	710	76	5.5	11	0	4.2
17	87	1,840	225	742	44	1,250	716	374	5.7	8.7	0	4.1
18	46	2,290	186	1,210	42	794	467	822	5.9	9.4	0	3.7
19	24	4,520	108	1,380	43	1,090	190	2,160	5.9	87	0	3.0
20	18	4,520	181	1,250	44	1,860	100	2,770	18	270	0	2.2
21	13	3,050	210	1,010	42	2,380	199	2,010	66	291	4.1	1.9
22	9.6	1,880	112	968	43	1,840	448	1,340	118	143	24	1.4
23	7.1	956	82	1,050	43	1,300	452	749	60	25	7.3	1.0
24	5.9	386	75	877	43	961	326	300	34	13	3.1	.8
25	54	156	65	546	40	668	152	384	57	8.3	46	.7
26	230	288	58	274	36	416	93	313	82	4.9	20,000	.6
27	61	222	52	164	34	356	71	82	65	4.1	19,700	.4
28	21	118	47	128	37	302	55	57	56	2.6	7,030	.4
29	12	125	46	110	-	159	44	43	34	1.9	2,520	.4
30	7.5	188	42	94	-	107	42	35	21	1.5	777	.4
31	4.9	-	42	84	-	91	-	30	-	1.0	174	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,131.7	343	4.9	68.8	4,230
November	30,707.4	4,520	2.7	1,024	60,910
December	4,274	656	26	138	8,480
Calendar year 1946	141,755.5	9,440	0	388	281,200
January	18,471	1,380	47	596	36,640
February	1,310	77	34	46.8	2,600
March	28,612	5,530	36	923	56,750
April	5,493	716	42	183	10,900
May	13,316	2,770	20	430	26,410
June	843.6	118	5.5	28.1	1,670
July	977.2	291	.6	31.5	1,940
August	50,291.2	20,000	0	1,622	99,750
September	231.2	56	.4	7.71	459
Water year 1946-47	156,658.3	20,000	0	429	310,700

Note.- No gage-height record Jan. 4-15, Apr. 25-28; discharge computed on basis recorded range in stage and weather records.

Navasota River near Easterly, Tex.

Location.- Water-stage recorder, 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. Datum of gage is 276.42 feet above mean sea level, datum of 1929.
Drainage area.- 949 square miles.
Records available.- March 1924 to September 1947.
Average discharge.- 23 years, 476 second-feet.
Extremes.- Maximum discharge during year, 8,800 second-feet May 20 (gage height, 16.20 feet); minimum daily, 3.1 second-feet Aug. 24, 25.
1924-47: Maximum discharge, 60,300 second-feet May 2, 1944 (gage height, 22.13 feet); no flow at times.
Maximum stage known, about 24.0 feet in 1900, from information by local residents (discharge, about 71,000 second-feet).
Remarks.- Records good except those for period of no gage-height record, which are fair. No diversion above station.

Rating tables, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used June 28 to Sept. 30)

Oct. 1 to Nov. 6

1.4	7.8	4.0	118	14.0	2,820
1.6	11	5.0	205	14.5	3,450
1.8	16	6.0	330	15.0	4,300
2.0	20	7.5	574	15.5	5,500
2.2	26	9.0	864	16.0	7,800
2.5	36	11.0	1,330	16.5	10,400
3.0	58	12.5	1,810		
3.5	86	13.3	2,230		

Nov. 7 to Sept. 30

1.0	3.0	3.0	71	7.5	640
1.2	5.8	3.5	106	9.0	960
1.5	11	4.0	148	11.0	1,430
1.8	18	5.0	242	12.5	1,860
2.1	28	5.5	298	13.3	2,230
2.5	44	6.0	372		

Note.- Same as preceding table above 13.3 feet.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	49	8.1	184	68	130	96	157	175	3,840	25	6.0	9.7
2	26	210	139	343	118	93	152	130	3,760	22	5.5	7.4
3	18	445	106	784	102	84	144	102	2,080	20	5.5	7.1
4	15	2,100	93	828	98	81	139	82	395	18	5.4	6.9
5	13	4,980	78	516	91	80	134	66	180	17	5.4	6.9
6	11	4,200	69	251	84	79	122	56	139	16	5.2	6.9
7	9.9	4,400	64	188	85	158	106	48	114	15	5.0	6.8
8	8.8	3,760	61	222	83	524	106	44	92	15	5.0	6.6
9	8.0	2,310	59	594	74	660	106	917	76	14	4.8	6.4
10	8.5	1,460	61	1,210	69	1,140	114	6,490	63	13	4.4	6.4
11	8.5	671	84	1,140	70	1,700	110	8,050	55	12	4.1	6.3
12	7.8	1,360	401	671	73	2,010	99	5,700	48	12	4.1	9.6
13	7.6	1,190	784	436	77	5,080	139	3,420	41	12	3.8	9.9
14	7.6	351	982	326	77	3,540	139	1,550	36	12	3.8	8.5
15	8.1	180	1,210	257	76	2,100	152	265	30	11	3.8	5.8
16	11	1,270	1,200	212	75	1,450	411	413	28	11	3.8	4.8
17	12	4,290	302	898	74	553	356	1,210	26	11	3.8	5.0
18	12	3,420	157	2,420	74	794	202	1,880	25	10	3.8	4.7
19	10	1,300	142	5,100	81	2,550	148	4,400	23	9.9	3.7	4.4
20	9.0	297	298	7,550	154	3,450	126	8,550	24	9.6	3.7	4.1
21	8.8	180	261	6,550	180	3,760	204	5,970	34	9.0	3.6	4.4
22	8.6	134	162	4,360	148	3,380	232	4,600	46	8.5	3.6	5.4
23	9.0	106	114	2,340	157	2,260	280	3,840	93	8.5	3.3	6.9
24	9.6	89	94	785	162	1,670	207	2,860	71	8.3	3.1	6.1
25	20	239	82	333	139	1,460	148	1,490	254	7.9	3.1	6.0
26	10	1,340	74	274	118	988	139	372	221	7.9	78	5.2
27	10	1,820	73	232	99	440	309	348	86	8.1	166	4.7
28	8.6	1,380	75	207	95	247	640	232	52	7.6	114	4.4
29	7.8	1,140	70	184	-	193	894	184	37	7.1	64	4.4
30	7.8	426	63	175	-	180	469	588	30	6.9	36	4.7
31	7.6	-	58	152	-	166	-	2,120	-	6.4	18	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	368.6	49	7.6	11.9	731
November	45,056.1	4,980	8.1	1,502	89,370
December	7,600	1,210	58	245	15,070
Calendar year 1946	276,320.0	20,000	2.5	757	548,000
January	39,606	7,550	68	1,278	78,560
February	2,863	180	69	102	5,680
March	40,966	5,080	79	1,321	81,250
April	6,684	894	99	223	13,260
May	66,152	8,550	44	2,134	131,200
June	11,999	3,840	23	400	23,800
July	371.7	25	6.4	12.0	737
August	583.3	166	3.1	18.8	1,160
September	186.4	9.9	4.1	6.21	370
Water year 1946-47	222,436.1	8,550	3.1	609	441,200

Peak discharge.- Nov. 5 (2 p.m.) 5,500 sec.-ft.; Nov. 17 (5:30 p.m.) 5,350 sec.-ft.; Jan. 20 (1:30 p.m.) 8,050 sec.-ft.; Mar. 13 (4:30 a.m.) 5,900 sec.-ft.; May 10 (3:30 p.m.) 8,550 sec.-ft.; May 20 (9 a.m.) 8,800 sec.-ft.
Note.- No gage-height record Aug. 15 to Sept. 15; discharge computed on basis of recorded range in stage, weather records, and records for Yegua Creek near Somerville and Richland Creek near Richland.

American Canal Co.'s canal near Fulshear, Tex.

Location.- Water-stage recorder, lat. 29°39', long. 95°54', 1 mile downstream from point of diversion and 3 miles south of Fulshear, Fort Bend County.

Records available.- October 1931 to September 1947.

Average discharge.- 16 years, 69.5 second-feet.

Extremes.- Maximum daily discharge during year, 349 second-feet June 1-3; no flow at times.
1931-47: Maximum daily discharge, 363 second-feet May 17, 1942; no flow several months each year.

Remarks.- Records good. Station above all diversions from canal. Flow controlled by pumping plant located on left bank of Brazos River 18 miles above Richmond. Figures of discharge represent water actually pumped from river for irrigation in vicinity of Sugarland.

Monthly discharge, in second-feet, water year October 1946 to September 1947

Month	Maximum	Minimum	Mean	Runoff in acre-feet
October	0	0	0	0
November	0	0	0	0
December	0	0	0	0
Calendar year 1946	314	0	75.4	54,570
January	0	0	0	0
February	0	0	0	0
March	0	0	0	0
April	340	0	109	6,500
May	314	0	166	10,200
June	349	258	306	18,230
July	290	175	256	15,770
August	258	0	192	11,790
September	323	156	249	14,810
Water year 1946-47	349	0	107	77,300

Note.- Gage-height record Aug. 25-28 affected by inflow from surface runoff; discharge computed on basis of pump operation furnished by canal company.

Richmond Irrigation Co.'s canal near Richmond, Tex.

Location.- Water-stage recorder, lat. 29°34', long. 95°47', 600 feet downstream from crossing of U. S. Highway 59, 1½ miles downstream from point of diversion, and 1½ miles west of Richmond, Fort Bend County.

Records available.- October 1931 to September 1947.

Average discharge.- 16 years, 34.9 second-feet.

Extremes.- Maximum daily discharge during year, 200 second-feet June 6; no flow at times.
1931-47: Maximum daily discharge, 234 second-feet June 5, 6, 1938; no flow for several months each year.

Remarks.- Records good. Canal diverts water by pumping from right bank of Brazos River 6 miles upstream from Richmond for irrigation. Figures of discharge represent water pumped from river except for a diversion upstream from station which is used to irrigate 80 acres.

Monthly discharge, in second-feet, water year October 1946 to September 1947

Month	Maximum	Minimum	Mean	Runoff in acre-feet
October	0	0	0	0
November	0	0	0	0
December	0	0	0	0
Calendar year 1946	205	0	38.1	27,630
January	0	0	0	0
February	0	0	0	0
March	22	0	1.42	87
April	99	12	60.9	3,620
May	173	0	77.1	4,740
June	200	99	149	8,840
July	193	100	172	10,580
August	193	.7	132	8,120
September	116	0	77.5	4,610
Water year 1946-47	200	0	56.1	40,600

Note.- No gage-height record June 30 to July 21; discharge computed on basis of record of pump operation furnished by canal company.

Big Creek near Needville, Tex.

Location.- Wire-weight gage, lat. 29°28'35", long. 95°48'45" (coordinates, Texas Coordinate System, South Central Zone, N - 611,300, E - 3,013,950), at bridge on State Highway 36, 1.5 miles downstream from Coon Creek, 5½ miles north of Needville, Fort Bend County, and 10½ miles upstream from Fairchild Creek. Datum of gage is 69.4 feet above mean sea level, datum of 1929, Houston supplementary adjustment of 1943.

Drainage area.- 37.6 square miles.

Records available.- May to September 1947.

Extremes.- Maximum discharge during period, 1,120 second-feet May 25 (gage height, 12.70 feet, from floodmark); no flow at times.
Flood of August 1945 reached a stage of 14.4 feet, from information by local resident.

Remarks.- Records fair. Gage read twice daily. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								-	15	0	0	0.4
2								-	9.8	0	0	.2
3								-	6.5	0	0	.1
4								-	4.3	0	0	0
5								-	2.5	0	0	0
6								-	1.7	0	0	0
7								-	1.0	0	0	0
8								-	.6	0	0	0
9								-	.3	0	0	0
10								-	.2	0	0	0
11								-	.1	0	0	0
12								-	.1	8.0	0	0
13								-	0	87	0	0
14								-	0	8.6	0	0
15								-	0	3.0	0	0
16								-	0	1.0	0	0
17								-	0	.5	0	0
18								-	0	.2	0	0
19								-	0	.1	0	0
20								564	0	0	0	0
21								564	0	0	0	0
22								290	0	0	0	0
23								299	0	0	0	0
24								640	0	0	0	0
25								970	0	0	76	0
26								680	0	0	80	0
27								474	0	0	56	0
28								272	0	0	15	0
29								132	0	0	5.4	0
30								66	0	0	2.8	0
31								29	-	0	1.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October					
November					
December					
Calendar year					
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May 20-31	4,980	970	29	415	9,880
June	42.1	15	0	1.40	84
July	108.4	87	0	3.50	215
August	236.4	80	0	7.63	469
September	.7	.4	0	.02	1.4
The period	-	-	-	-	10,650

Big Creek near Guy, Tex.

Location.- Staff gage, lat. 29°24'45", long. 95°42'35" (coordinates, Texas Coordinate System, South Central Zone, N - 588,950, E - 3,047,300) 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. Datum of gage is 46.57 feet above mean sea level, datum of 1929, Houston supplementary adjustment of 1943.
Drainage area.- 112 square miles.
Records available.- June to September 1947.
Extremes.- Maximum discharge during period, 180 second-feet Aug. 27 (gage height, 5.34 feet, from graph based on gage readings); minimum observed, 4.2 second-feet Sept. 25.
Flood of August 1945, the highest of recent years and caused by tropical storm, reached a stage of 18.1 feet, gage datum, at railroad bridge 0.2 mile downstream, from information by observer, local resident.
Remarks.- Records fair. Gage read once or twice daily. Low flow is affected by drainage from irrigated lands. No diversion above station.

Discharge, in second-feet, June to September 1947

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	-	24	30	22	11	-	16	54	24	21	-	19	67	12
2	-	28	33	24	12	-	16	74	26	22	-	19	88	9.3
3	-	31	36	28	13	-	34	64	33	23	-	19	76	6.4
4	-	32	37	25	14	-	86	49	32	24	-	19	58	6.0
5	-	32	36	22	15	-	63	36	26	25	56	21	77	5.1
6	-	26	32	20	16	-	34	32	23	26	51	25	139	16
7	-	24	31	17	17	-	22	30	22	27	42	29	168	a24
8	-	24	30	18	18	-	17	28	22	28	31	32	120	a24
9	-	24	29	20	19	-	18	37	20	29	24	30	56	17
10	-	19	32	23	20	-	19	44	17	30	23	29	46	6.5
										31	-	29	27	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
June 25-30	227	56	23	37.8	450
July	860	86	16	27.7	1,710
August	1,696	168	27	54.7	3,360
September	590.3	33	5.1	19.7	1,170

a No gage-height record; discharge computed on basis of weather records.

Fairchild Creek near Needville, Tex.

Location.- Staff gage, lat. 29°26'45", long. 95°45'40" (coordinates, Texas Coordinate System, South Central Zone, N - 600,700, E - 3,030,550), at county road bridge 3.0 miles upstream from mouth and 5½ miles northeast of Needville, Fort Bend County. Datum of gage is 60.4 feet above mean sea level, datum of 1929, Houston supplementary adjustment of 1943.
Drainage area.- 24.9 square miles.
Records available.- May to September 1947.
Extremes.- Maximum discharge during period, 792 second-feet May 21 (gage height, 8.36 feet, from floodmark); no flow at times.
Maximum stage since about 1910, 12.5 feet in August 1945, from floodmark 195 feet downstream and 520 feet to left of gage, from information by local resident.
Remarks.- Records good. Gage read twice daily. No diversion above station.

Discharge, in second-feet, May to September 1947

Day	May	June	Aug.	Sept.	Day	May	June	Aug.	Sept.	Day	May	June	Aug.	Sept.
1	-	2.0	0	0.1	11	-	0.2	0	0	21	552	0.1	0.2	0.1
2	-	1.6	0	.1	12	0.1	.1	0	0	22	98	.1	0	0
3	-	1.2	0	.1	13	0	.1	0	2.4	23	320	0	0	0
4	-	1.0	0	.1	14	.1	.1	0	2.0	24	539	0	0	0
5	-	.8	0	.1	15	.1	.1	0	1.2	25	298	0	2.5	0
6	-	.7	0	.1	16	0	0	0	.9	26	66	0	1.3	0
7	-	.5	0	.1	17	.3	0	0	.5	27	22	0	1.7	0
8	-	.4	0	.1	18	171	0	0	.2	28	12	0	1.1	0
9	-	.4	0	.1	19	146	.2	0	.1	29	6.0	0	.6	0
10	-	.2	0	.1	20	124	.3	0	.1	30	3.5	0	.4	0
										31	2.5	-	.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
May 12-31	2,360.6	552	0	118	4,680
June	10.1	2.0	0	.34	20
July	0	0	0	0	0
August	8.0	2.5	0	.26	16
September	8.5	2.4	0	.28	17
The period	-	-	-	-	4,730

Colorado River at Colorado City, Tex.

Location.- Water-stage recorder and concrete control, lat. 32°24', long. 100°51', at Colorado City, Mitchell County, 3,517 feet upstream from bridge on U. S. Highway 80, 4,100 feet upstream from Texas & Pacific Railway bridge, and 1.6 miles upstream from Lone Wolf Creek. Datum of gage is 2,030.2 feet above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942.

Drainage area.- 4,274 square miles, of which 2,440 square miles is probably noncontributing.

Records available.- November 1923 to August 1925, May 1946 to September 1947.

Extremes.- Maximum discharge during year 24,000 second-feet May 13 (gage height, 22.03 feet); no flow at times.

1924-25, 1946-47: Maximum discharge, that of May 13, 1947; no flow at times.

Maximum stage known, 35.9 feet June 20, 1939, present site and datum, based on floodmarks, 1,000 feet upstream and 3,740 feet downstream from gage (discharge, 66,000 second-feet, by slope-area method at site 2.5 miles upstream from gage).

Remarks.- Records good. No diversions. Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.0	2.0	3.2	5.6	2.3	2.0	1.3	0.2	9.9	2.6	2.0	0
2	1.5	2.0	2.9	6.9	2.0	1.7	25	0	8.3	2.6	1.1	0
3	1.3	6.2	2.9	5.6	2.3	2.0	33	0	6.9	2.0	.7	0
4	1.1	2.3	2.6	5.0	1.7	1.7	5.0	0	5.6	.9	.4	0
5	4.8	2.0	2.3	5.0	1.5	2.0	2.3	.2	4.5	.6	.1	0
6	14	2.0	2.3	6.2	2.3	2.3	1.5	.3	4.0	.3	0	0
7	68	2.0	2.6	5.6	1.5	4.5	.9	.1	3.6	.1	0	0
8	679	1.7	2.6	5.6	1.7	4.0	1.3	0	2.9	0	0	0
9	972	1.5	16	5.6	1.7	3.6	.9	1.3	2.3	0	0	0
10	2,080	1.5	312	5.0	1.5	3.6	.9	1,450	2.3	.1	0	184
11	1,740	1.3	203	5.0	1.7	3.6	.6	10,700	1.3	23	0	212
12	312	1.5	68	4.5	1.5	4.5	1.1	11,700	1.5	24	0	134
13	102	1.5	34	4.0	1.7	2.9	.9	11,200	1.3	12	0	117
14	51	1.5	25	3.6	2.0	2.6	.4	906	1.3	6.2	0	26
15	26	1.3	18	3.2	2.0	2.3	1.1	262	1.3	3.2	0	9.9
16	18	1.5	12	3.6	2.3	2.0	1.3	3,540	1.5	2.0	0	6.2
17	13	1.3	9.9	3.2	2.3	2.0	.9	2,320	1.3	1.3	0	3.6
18	11	1.3	7.6	3.6	2.3	4.0	.7	766	1.3	.9	0	2.6
19	9.1	1.5	5.6	4.0	2.6	8.3	.7	233	18	.6	0	2.3
20	6.2	1.5	5.0	4.5	3.2	6.2	.4	119	30	.3	0	1.7
21	5.0	1.3	4.5	4.0	3.2	7.6	.2	73	9.9	.2	0	1.3
22	5.0	1.3	4.0	3.6	3.2	6.2	0	51	6.9	0	0	.9
23	4.5	1.3	4.0	3.6	2.6	11	.1	523	76	0	0	.7
24	4.5	1.3	4.0	3.6	2.6	4.5	.1	237	468	0	0	.6
25	3.2	7.8	4.0	4.0	2.6	2.9	.4	152	107	0	0	.4
26	3.2	14	3.6	3.2	2.3	2.0	.1	53	39	76	0	.3
27	2.9	12	3.6	3.2	2.0	2.3	.3	26	16	31	0	.2
28	2.9	6.9	3.2	2.9	2.3	1.3	.6	18	9.9	13	0	0
29	2.3	4.5	3.2	3.2	-	2.0	.6	13	5.6	8.3	0	0
30	2.0	4.0	2.9	2.3	-	1.3	.3	12	3.6	5.0	0	0
31	2.0	-	2.3	2.0	-	1.3	-	9.9	-	3.2	0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	6,149.5	2,080	1.1	198	12,200
November	91.8	14	1.3	3.06	182
December	776.8	312	2.3	25.1	1,540
Calendar year	-	-	-	-	-
January	130.9	6.9	2.0	4.22	260
February	60.9	3.2	1.5	2.18	121
March	108.2	11	1.3	3.49	215
April	82.9	33	0	2.76	164
May	44,366.0	11,700	0	1,431	88,000
June	851.0	468	1.3	28.4	1,690
July	219.4	76	0	7.08	435
August	4.3	2.0	0	.14	8.5
September	703.7	212	0	23.5	1,400
Water year 1946-47	53,545.4	11,700	0	147	106,200

Colorado River at Robert Lee, Tex.

Location.- Water-stage recorder, lat. 31°53'05", long. 100°28'45", at bridge on State Highway 208 in Robert Lee, Coke County, half a mile upstream from Mountain Creek. Datum of gage is 1,771.7 feet above mean sea level, datum of 1929 (levels by Bureau of Reclamation).

Drainage area.- 15,770 square miles, of which 11,500 square miles is probably noncontributing.

Records available.- April 1939 to September 1947. September 1915 to September 1920 (October 1918 to October 1920, gage heights only) at site near Bronte, 16 miles downstream. October 1923 to December 1927 at site near Robert Lee, 9 miles downstream. Records equivalent except during periods of local runoff between sites.

Average discharge.- 14 years (1915-18, 1924-27, 1939-47), 204 second-feet.

Extremes.- Maximum discharge during year, 23,700 second-feet May 11 (gage height, 19.40 feet); no flow Aug. 18-24.
1939-47: Maximum discharge, 31,700 second-feet June 22, 1939 (gage height, 21.70 feet, from graph based on gage readings), by slope-area method; no flow at times.

Remarks.- Records good. About 2,200 acres irrigated above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	14	1.7	12	7.3	2.6	7.3	3.7	66	30	15	15
2	25	14	1.4	14	6.7	2.9	89	3.2	60	24	11	13
3	19	14	1.4		6.1	2.9	3,040	2.9	54	20	8.5	8.5
4	16	16	4.1	b12	6.1	2.3	695	2.6	46	16	6.1	7.3
5	13	67	4.1		5.0	2.6	233	2.3	43	12	4.6	4.6
6	22	49	3.7	12	5.0	2.9	99	2.0	40	11	3.2	2.6
7	74	32	3.2	13	5.0	4.6	53	2.0	37	9.2	2.9	1.4
8	48	23	2.9	13	4.1	5.0	35	2.0	32	8.5	2.3	.9
9	255	16	2.9	*14	4.6	5.0	26	2.3	30	7.9	2.0	.7
10	6,180	13	301	15	4.1	5.0	19	2,230	27	7.9	1.7	.5
11	4,370	11	1,300	16	3.7	6.1	16	f20,500	26	144	1.2	.3
12	1,510	9.2	309	16	3.7	7.3	13	14,100	23	180	1.1	1,530
13	575	8.5	293	15	3.2	8.5	12	f12,300	562	482	.8	688
14	303	6.1	132	15	3.7	9.2	11	8,850	108	164	.6	258
15	177	5.5	81	14	3.7	7.3	9.9	a1,580	81	81	.4	200
16	123	5.0	54	13	3.2	5.5	9.9	2,240	48	51	.2	97
17	94	4.6	43	13	3.2	7.3	8.5	5,290	37	39	.1	54
18	72	4.1	35	14	3.2	13	7.9	4,710	31	30	0	36
19	58	3.7	28	14	3.2	19	6.7	1,050	157	35	0	26
20	49	3.7	24	13	3.2	23	6.1	540	164	24	0	16
21	40	2.6	21	13	3.2	18	5.5	338	74	16	0	14
22	36	2.3	18	11	2.9	19	5.0	262	49	14	0	9.9
23	32	2.3	16	11	2.9	16	4.6	206	43	a11	0	7.9
24	28	2.0	15	11	3.2	15	5.0	177	44	a9.2	0	5.5
25	26	2.3	13	11	3.2	12	5.0	476	95	a8.5	153	4.1
26	24	2.0	12	11	3.2	24	4.6	262	244	a7.9	247	3.7
27	22	2.0	11	9.9	2.9	22	4.6	212	132	a6.7	62	2.6
28	19	1.7	11	9.9	2.6	16	4.6	144	81	a5.5	35	1.7
29	16	1.7	11	7.9	-	12	4.1	107	75	a5.0	31	1.4
30	16	1.7	11	7.3	-	11	3.7	88	42	a5.0	20	1.1
31	14	-	11	7.3	-	8.5	-	74	-	a6.1	11	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	14,292	6,180	13	461	28,350
November	340.0	67	1.7	11.3	674
December	2,775.4	1,300	1.4	89.5	5,500
Calendar year 1946	39,498.6	6,180	0	108	78,340
January	382.3	16	7.3	12.3	758
February	112.1	7.3	2.6	4.00	222
March	315.5	24	2.3	10.2	626
April	4,440.0	3,040	3.7	148	8,810
May	75,759.0	20,500	2.0	2,444	150,300
June	2,551	562	23	85.0	5,060
July	1,471.4	482	5.0	47.5	2,920
August	620.7	247	0	20.0	1,230
September	3,011.7	1,530	.3	100	5,970
Water year 1946-47	106,075.1	20,500	0	291	210,400

Peak discharge.- Oct. 10 (4 p.m.) 9,940 sec.-ft.; Dec. 11 (1 a.m.) 6,490 sec.-ft.; May 11 (9:30 p.m.) 23,700 sec.-ft.; May 14 (5 a.m.) 18,100 sec.-ft.; May 17 (9:30 a.m.) 8,250 sec.-ft.; May 18 (2:30 p.m.) 8,010 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of normal recession following floods or on basis of gradually falling stage.

b Stage-discharge relation affected by ice.

f Computed on basis of partly estimated gage-height record.

Note.- No gage-height record Aug. 3-24, Sept. 5-11, 20-30; discharge computed from graph based on once-daily gage readings.

Colorado River at Ballinger, Tex.

Location.- Water-stage recorder, lat. 31°43'50", long. 99°56'25", at bridge on U. S. Highway 83 in Ballinger, Runnels County, 2,000 feet upstream from Elk Creek. Datum of gage is 1,593.7 feet above mean sea level, datum of 1929.

Drainage area.- 16,840 square miles, of which 11,500 square miles is probably noncontributing.

Records available.- June 1907 to September 1947. (June 1907 to November 1915, monthly records only, in Water-Supply Paper 850.) U. S. Weather Bureau collected gage-height records in this vicinity from 1903 to 1929.

Average discharge.- 40 years, 405 second-feet.

Extremes.- Maximum discharge during year, 21,200 second-feet May 12 (gage height, 17.92 feet); minimum, 1.7 second-feet May 8, Aug. 14, 15.

1907-47: Maximum discharge, 75,400 second-feet Sept. 18, 1936 (gage height, 28.6 feet); no flow at times.

Maximum stage known, about 36.0 feet sometime in 1884, present site and datum, from information by local residents. A stage of about 32.0 feet occurred Aug. 6, 1906, present site and datum, from floodmarks (backwater from Elm Creek).

Remarks.- Records good. Small diversions above station for irrigation affect low flow.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	63	14	9.0	19	12	6.6	14	5.6	114	82	5.6	19
2	40	964	9.0	19	11	6.6	13	4.4	98	60	4.4	15
3	40	190	9.0	19	11	6.6	1,550	3.7	87	48	4.0	11
4	34	49	9.0	19	9.9	6.6	2,110	4.0	79	38	4.8	8.4
5	28	24	9.0	21	9.9	6.6	588	2.9	71	32	3.4	8.4
6	26	21	9.0	21	9.9	7.2	273	2.4	63	26	3.2	7.2
7	88	63	9.0	19	9.0	9.0	160	2.2	58	22	5.2	6.6
8	45	g60	9.0	19	9.0	9.0	101	348	50	21	4.8	5.6
9	68	g48	9.9	21	9.0	9.0	73	397	45	19	4.4	4.4
10	2,270	g36	14	24	9.0	9.0	50	474	40	17	4.0	4.0
11	5,750	g28	7,390	22	8.4	9.0	38	13,900	38	16	4.4	3.7
12	2,930	g21	812	21	8.4	9.0	28	20,200	53	48	3.2	3.7
13	1,070	g17	408	21	8.4	7.2	22	13,300	4,490	207	2.4	1,650
14	517	g17	348	21	8.4	7.2	21	13,900	968	220	2.1	552
15	316	g16	210	21	8.4	7.2	17	2,800	226	210	2.1	294
16	210	g15	144	24	8.4	6.0	16	3,360	144	120	2.2	239
17	152	g15	104	30	8.4	7.2	14	4,960	93	79	2.1	137
18	111	g14	79	38	7.8	30	13	8,820	68	58	2.1	87
19	84	12	66	53	7.8	26	12	3,380	1,550	43	2.2	60
20	68	12	55	34	7.8	19	9.0	1,170	381	32	3.6	43
21	55	12	48	26	7.8	16	8.4	704	262	34	3.2	30
22	45	11	40	24	7.8	17	8.4	502	134	26	2.4	21
23	38	11	34	19	7.8	16	7.2	591	107	21	4.5	17
24	34	11	30	19	7.2	14	7.8	1,660	184	14	3.4	13
25	28	11	28	18	6.6	13	7.8	337	95	12	3.4	11
26	22	9.9	26	17	6.6	13	8.4	493	68	9.0	40	7.2
27	19	9.9	24	16	6.6	12	8.4	333	270	8.4	249	7.8
28	18	9.9	24	16	6.6	11	8.4	285	174	8.4	111	6.6
29	16	9.9	19	15	-	13	7.8	214	120	6.0	60	5.6
30	15	9.0	18	14	-	17	6.6	167	98	7.2	34	4.4
31	14	-	19	13	-	16	-	141	-	7.2	24	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	14,214	5,750	14	459	28,190
November	1,740.6	964	9.0	58.0	3,450
December	10,021.9	7,390	9.0	323	19,880
Calendar year 1946	71,030.6	7,390	0	195	140,900
January	683	53	13	22.0	1,350
February	238.9	12	6.6	8.53	474
March	362.0	30	6.0	11.7	718
April	5,201.2	2,110	6.6	173	10,320
May	92,461.2	20,200	2.2	2,983	183,400
June	10,228	4,490	38	341	20,290
July	1,551.2	220	6.0	50.0	3,080
August	605.1	249	2.1	19.5	1,200
September	3,282.6	1,650	3.7	109	6,510
Water year 1946-47	140,589.7	20,200	2.1	385	278,900

Peak discharge.- Oct. 11 (4 p.m.) 8,320 sec.-ft.; Dec. 11 (1:30 p.m.) 12,700 sec.-ft.; May 12 (11:30 p.m.) 21,200 sec.-ft.; May 14 (7:30 p.m.) 15,600 sec.-ft.; May 18 (4:30 a.m.) 11,600 sec.-ft.; June 13 (8:30 a.m.) 8,060 sec.-ft.

g Computed from graph based on twice-daily gage readings.

Colorado River at Winchell, Tex.

Location.- Water-stage recorder, lat. 31°28'05", long. 99°09'45", at bridge on U. S. Highway 283 (revised), 0.3 mile south of Winchell, Brown County, and 6.2 miles downstream from Home Creek. Datum of gage is 1,264.86 feet above mean sea level, datum of 1929.

Drainage area.- 24,580 square miles, of which 11,800 square miles is probably noncontributing.

Records available.- January 1939 to September 1947. November 1923 to September 1934 at site near Milburn, 4.2 miles downstream.

Average discharge.- 18 years (1924-34, 1939-47), 745 second-feet.

Extremes.- Maximum discharge during year, 22,400 second-feet May 12 (gage height, 26.85 feet); no flow Aug. 15-23.

1923-34, 1939-47: Maximum discharge, 76,100 second-feet Oct. 15, 1930, at site then in use (gage height, 51.8 feet, present site and datum); no flow during short periods in 1929, 1934, 1943, 1946, 1947.

Maximum stage known, 62.2 feet Sept. 19, 1936, present site and datum, from information obtained by engineers of Gulf, Colorado & Santa Fe Railway at railway bridge 1,000 feet above present gage.

Remarks.- Records good. Diversions above station for irrigation and municipal supply. Flow partly regulated by reservoirs on Concho River.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	704	100	38	89	86	40	46	30	243	308	11	76
2	396	172	38	98	79	39	48	28	206	198	10	57
3	248	3,210	38	100	77	36	48	26	177	147	8.0	42
4	181	1,610	39	100	74	33	1,250	26	154	129	3.7	30
5	141	602	39	98	72	32	2,400	22	133	98	4.8	22
6	117	a311	39	95	70	32	1,010	20	121	77	2.8	17
7	108	a177	39	93	67	44	538	18	108	59	2.1	15
8	102	a125	38	93	67	54	329	20	98	48	1.0	12
9	97	a104	36	95	64	56	233	26	89	42	1.6	10
10	126	a98	38	104	64	44	175	168	79	36	1.2	8.0
11	2,820	a98	39	106	65	40	139	4,420	72	32	1.8	6.3
12	6,680	a98	9,140	106	64	39	108	18,100	65	27	.7	40
13	3,410	a98	2,120	104	64	34	89	20,500	59	27	.4	67
14	1,620	97	888	102	62	33	86	13,800	5,040	26	.2	395
15	937	91	792	100	64	32	74	12,600	1,710	21	0	827
16	584	82	607	100	64	33	64	3,100	578	267	0	451
17	419	70	426	137	64	33	57	4,240	308	219	0	275
18	a311	64	275	166	62	103	54	13,600	200	152	0	226
19	a250	61	208	158	65	294	50	11,000	156	112	0	168
20	a204	57	175	156	69	119	45	3,750	982	88	0	119
21	172	54	154	177	67	150	42	1,800	1,190	67	0	89
22	152	51	141	200	64	131	42	1,150	506	53	0	67
23	133	48	129	170	61	100	40	763	351	44	17	54
24	121	46	117	149	57	93	38	6,740	444	34	1.4	45
25	110	45	113	133	54	76	34	5,110	453	30	.6	36
26	100	44	106	242	50	65	32	1,240	371	26	.5	28
27	89	42	100	294	45	59	33	952	256	22	.5	24
28	81	40	95	250	44	57	32	792	149	21	.6	20
29	76	39	91	166	-	54	30	607	139	18	.7	17
30	67	39	88	117	-	51	30	444	311	16	1.0	15
31	62	-	88	95	-	48	-	308	-	13	17	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	20,618	6,680	62	665	40,900
November	7,773	3,210	39	259	15,420
December	16,274	9,140	36	525	32,280
Calendar year 1946	151,475.8	16,400	0	415	300,400
January	4,193	294	89	135	8,320
February	1,805	86	44	64.5	3,580
March	2,054	294	32	66.3	4,070
April	7,196	2,400	30	240	14,270
May	125,400	20,500	18	4,045	248,700
June	14,728	5,040	59	491	29,210
July	2,457	308	13	79.3	4,870
August	88.6	17	0	2.86	176
September	3,258.3	827	6.3	109	6,460
Water year 1946-47	205,844.9	20,500	0	564	408,300

Peak discharge.- Oct. 12 (1:30 a.m.) 9,740 sec.-ft.; Dec. 12 (2:30 p.m.) 15,300 sec.-ft.; May 12 (8 p.m.) 22,400 sec.-ft.; May 15 (2 p.m.) 14,000 sec.-ft.; May 18 (8:30 p.m.) 18,300 sec.-ft.; May 25 (10 p.m.) 13,800 sec.-ft.

a No gage-height record; discharge computed on basis of recorded range in stage and weather records.

Colorado River near San Saba, Tex.

Location.- Water-stage recorder, lat. 31°13'05", long. 98°33'50", at bridge on U. S. Highway 190 (revised), 5.2 miles downstream from San Saba River and 9.2 miles east of San Saba, San Saba County. Datum of gage is 1,096.22 feet above mean sea level, datum of 1929.

Drainage area.- 30,600 square miles, of which 11,800 square miles is probably noncontributing.

Records available.- August 1930 to September 1947. October 1915 to October 1922 at site near Chadwick, 1.2 miles upstream. October 1923 to December 1934 at station near Tow, 44 miles downstream.

Average discharge.- 22 years (1916-19, 1920-22, 1930-47), 1,731 second-feet.

Extremes.- Maximum discharge during year, 19,400 second-feet May 15 (gage height, 16.48 feet); minimum, 34 second-feet Aug. 10, 11 (gage height, 1.73 feet).
1915-22, 1930-47: Maximum discharge, 224,000 second-feet July 23, 1938 (gage height, 63.2 feet, present site, based on floodmarks at site then in use); minimum observed, 1.5 second-feet Aug. 22, 23, 1918.
Maximum stage known prior to 1938, 58.4 feet Sept. 25, 1900 (discharge, 184,000 second-feet), present site, based on floodmarks at former site.

Remarks.- Records good. Diversions above station for irrigation and municipal use. Flow partly regulated by reservoirs on Pecan Bayou and Concho River, having a combined capacity of 151,000 acre-feet.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	f1,140	171	120	175	410	175	218	152	565	198	54	48
2	1,060	175	117	186	378	171	210	139	a460	373	50	43
3	732	335	115	194	360	163	210	136	a391	350	46	44
4	651	3,040	115	202	350	160	210	130	a342	262	46	44
5	a510	2,070	115	198	342	156	613	126	g290	214	44	43
6	a319	911	115	202	332	156	2,420	117	g274	190	41	41
7	a230	622	117	198	332	182	1,250	112	250	163	39	41
8	a270	440	117	202	332	202	850	106	222	139	35	54
9	460	350	117	214	328	210	628	106	210	120	35	56
10	726	294	120	226	328	234	480	109	186	106	35	54
11	368	250	146	238	337	222	396	139	171	98	35	46
12	2,510	226	142	246	337	218	324	3,590	160	96	44	210
13	6,330	230	7,380	246	337	202	278	f12,800	142	93	65	123
14	3,250	226	3,050	234	337	179	266	18,300	133	83	63	79
15	1,770	218	1,090	226	337	167	242	17,800	3,960	76	52	117
16	1,140	210	910	252	337	160	230	13,400	1,870	71	44	646
17	820	186	820	572	337	156	230	4,370	833	69	41	655
18	660	182	660	868	337	1,400	214	4,630	530	102	41	435
19	535	175	490	880	342	2,260	198	12,100	378	1,620	39	310
20	430	167	368	672	350	1,510	179	14,600	290	341	37	274
21	364	160	306	500	346	784	175	4,640	503	387	44	222
22	319	160	274	415	342	525	167	2,260	1,380	222	46	175
23	286	156	242	386	332	455	152	1,570	754	160	44	142
24	258	146	230	400	254	425	142	1,140	575	126	43	115
25	238	142	218	480	210	350	210	5,830	495	104	43	98
26	226	136	206	475	186	310	282	6,030	520	88	71	86
27	214	126	198	450	179	286	282	1,490	600	76	76	79
28	206	120	194	580	179	258	282	1,070	430	71	58	71
29	198	120	179	628	-	238	214	972	310	67	58	65
30	182	123	175	565	-	226	175	820	242	63	56	63
31	171	-	167	475	-	226	-	710	-	61	52	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	26,573	6,330	171	857	52,710
November	11,867	3,040	120	396	23,540
December	18,613	7,380	115	600	36,920
Calendar year 1946	228,173	15,400	34	625	452,600
January	11,785	880	175	380	23,380
February	8,908	410	179	318	17,670
March	12,366	2,260	156	399	24,530
April	11,727	2,420	142	391	23,260
May	129,494	18,300	106	4,177	256,800
June	17,466	3,960	133	582	34,640
July	6,189	1,620	61	200	12,280
August	1,477	76	35	47.6	2,930
September	4,479	655	41	149	8,880
Water year 1946-47	260,944	18,300	35	715	517,500

a No gage-height record; discharge computed on basis of recorded range in stage and weather records.
f Computed on basis of partly estimated gage-height record.
g Computed from graph based on gage readings.

Buchanan Reservoir near Burnet, Tex.

Location.- Selsyn indicator, lat. 30°45'05", long. 98°25'00", at Buchanan Dam on Colorado River, 1 mile upstream from bridge on State Highway 29 and 10 miles west of Burnet, Burnet County. Datum of gage is 0.48 foot above mean sea level, datum of 1929 (levels by Lower Colorado River Authority).

Drainage area.- 31,250 square miles, of which 11,800 square miles is probably noncontributing.

Records available.- May 1937 to September 1947.

Extremes.- Maximum contents observed during year, 897,600 acre-feet June 1 (gage height, 1,015.8 feet); minimum observed, 606,800 acre-feet Dec. 10, 12 (gage height, 1,001.1 feet).

1937-47: Maximum contents, 1,004,000 acre-feet July 27, 1938 (gage height, 1,020.5 feet; several taintor gates were open); minimum after filling of reservoir in July 1938, 576,800 acre-feet Aug. 28-31, Sept. 5, 1946 (gage height, 999.4 feet).

Remarks.- Reservoir is formed by two reinforced concrete multiple-arch sections, three banks of taintor gates, and a 1,088-foot reinforced concrete spillway section. Dam completed and storage began May 20, 1937. Total capacity, 992,000 acre-feet (gage height, 1,020.0 feet, top of spillway section). Usable capacity, 955,000 acre-feet between gage heights 937.0 feet (sill of powerhouse penstock) and 1,020.0 feet (top of spillway section). Water below gage height 937.0 feet can be withdrawn through two 5-foot Bunger gates (emergency) down to gage height of 890.0 feet. Figures given herein represent total contents. Water used for power development and irrigation of rice on several districts below Columbus.

Cooperation.- Records of daily gage height and capacity table furnished by Lower Colorado River Authority.

Monthly gage height and contents, water year October 1946 to September 1947

Date	Gage height (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	1,005.1	679,900	-
Oct. 31	1,005.2	681,800	+1,900
Nov. 30	1,002.6	633,800	-48,000
Dec. 31	1,001.8	619,400	-14,400
Calendar year 1946	-	-	-240,800
Jan. 31	1,003.7	653,600	+34,200
Feb. 28	1,004.2	662,800	+9,200
Mar. 31	1,003.9	657,200	-5,600
Apr. 30	1,004.0	659,000	+1,800
May 31	1,015.6	893,200	+234,200
June 30	1,015.2	884,400	-8,800
July 31	1,012.6	828,600	-55,800
Aug. 31	1,009.9	773,000	-55,600
Sept.30	1,007.0	716,000	-57,000
Water year 1946-47	-	-	+36,100

† Average of 11 p.m. and 1 a.m. readings.

Marshall Ford Reservoir near Austin, Tex.

Location.- Bailey indicator gage, lat. 30°23'20", long. 97°54'35", in powerhouse at dam on Colorado River, 7.3 miles downstream from Sandy Creek and 12 miles northwest of Austin, Travis County. Datum of gage is 0.12 foot above mean sea level, datum of 1929 (levels by Bureau of Reclamation).

Drainage area.- 37,900 square miles, of which 11,800 square miles is probably noncontributing.

Records available.- September 1940 to September 1947.

Extremes.- Maximum contents observed during year, 921,100 acre-feet Jan. 26-28 (gage height, 666.4 feet); minimum observed, 562,900 acre-feet Sept. 26-28 (gage height, 639.1 feet).

1940-47: Maximum contents observed, 1,377,000 acre-feet Oct. 23, 1942 (gage height, 691.2 feet); minimum observed, that of Sept. 26-28, 1947.

Remarks.- Reservoir is formed by concrete gravity-type dam. Storage began Sept. 9, 1940; dam completed early in 1942. Total capacity, 1,950,000 acre-feet (gage height, 714.0 feet, top of spillway). Capacity between gage heights 680.0 and 714.0 feet, 798,000 acre-feet, is reserved for flood control. Usable capacity, 1,124,000 acre-feet between gage heights 535.8 feet (bottom of 24 8½-foot diameter Paradox gates) and 680.0 feet (maximum power pool). Bottom of penstocks, gage height 552.0 feet. Figures given herein represent total contents. Water used for power development and for irrigation of rice in several districts below Columbus.

Cooperation.- Records of daily gage heights and capacity curve furnished by Lower Colorado River Authority.

Monthly gage height and contents, water year October 1946 to September 1947

Date	Gage height (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	660.8	836,700	-
Oct. 31	656.6	776,100	-60,600
Nov. 30	660.9	838,200	+62,100
Dec. 31	662.0	854,700	+16,500
Calendar year 1946	-	-	-37,500
Jan. 31	666.2	918,000	+63,300
Feb. 28	662.8	866,700	-51,300
Mar. 31	662.3	859,200	-7,500
Apr. 30	662.2	857,700	-1,500
May 31	658.9	808,600	-49,100
June 30	653.8	738,900	-69,700
July 31	647.7	663,600	-75,300
Aug. 31	642.8	605,700	-57,900
Sept.30	639.2	564,000	41,700
Water year 1946-47	-	-	-272,700

† Average of 11 p.m. and 1 a.m. readings.

Colorado River at Austin, Tex.

Location.- Water-stage recorder, lat. 30°14'40", long. 97°41'20", at southeast edge of Austin, Travis County, at Montopolis Bridge on U. S. Highway 290, 2.8 miles upstream from Walnut Creek, 3.8 miles downstream from Waller Creek, and 5 miles downstream from Barton Creek. Datum of gage is 407.3 feet above mean sea level, datum of 1929.

Drainage area.- 38,160 square miles, of which 11,800 square miles is probably noncontributing.

Records available.- February 1898 to September 1947. U. S. Weather Bureau has collected gage-height records in this vicinity since 1903.

Average discharge.- 49 years, 2,693 second-feet.

Extremes (regulated).- Maximum discharge during year, 16,700 second-feet Nov. 3 (gage height, 10.52 feet); minimum daily, 620 second-feet Sept. 24, 29.

1898-1947: Maximum discharge, 481,000 second-feet June 15, 1935 (gage height, 45.0 feet, present site and datum, from floodmark); minimum, 13 second-feet Aug. 18, 1918.

Maximum stage known, 46.0 feet, present site and datum, July 7, 1869 (adjusted to present site on basis of record for flood of June 15, 1935), determined from information concerning stage at former site furnished by Prof. T. U. Taylor.

Remarks.- Records good. Flow partly regulated by Buchanan and Marshall Ford Reservoirs (see preceding page), and other smaller reservoirs, having a combined capacity of 3,130,000 acre-feet. About 36,000 acres irrigated above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,310	2,520	1,820	2,670	2,250	1,780	1,580	1,430	1,470	1,960	2,650	1,220
2	2,210	2,860	1,880	3,180	1,700	1,640	1,920	1,300	2,330	2,220	1,920	2,260
3	2,380	6,270	1,880	2,720	2,570	2,270	1,890	917	2,280	2,090	1,760	3,380
4	2,340	6,500	1,760	2,440	2,630	2,060	2,060	1,050	2,740	1,550	1,970	3,410
5	2,730	3,790	1,820	2,130	2,330	2,050	1,660	1,690	2,650	2,020	2,060	3,080
6	1,870	3,660	1,820	2,800	2,500	1,750	1,410	2,150	2,440	1,960	2,200	1,710
7	2,530	3,550	1,820	2,920	2,120	2,270	1,980	1,750	2,240	2,190	2,180	880
8	2,740	3,020	1,820	2,790	2,030	1,680	2,130	1,540	1,790	2,190	2,150	1,660
9	2,880	2,060	1,820	3,020	1,310	1,640	1,760	1,600	2,640	1,930	2,030	2,340
10	2,720	2,080	2,180	2,970	1,800	1,690	1,850	1,290	2,640	1,970	1,460	2,510
11	2,700	1,450	3,340	3,060	2,560	1,610	1,220	853	2,640	1,960	2,130	2,600
12	2,330	1,900	3,340	2,180	2,130	2,300	1,330	1,070	2,220	2,020	2,200	2,160
13	1,730	2,520	2,580	3,140	2,490	1,810	1,180	1,910	2,310	1,840	2,200	f775
14	2,360	1,740	2,320	2,290	2,430	2,230	971	2,260	1,840	1,900	2,580	f700
15	2,580	3,000	2,130	2,480	2,090	1,870	1,370	2,210	2,030	1,950	2,770	700
16	2,380	3,260	2,060	3,200	1,670	1,200	1,300	2,290	1,900	2,300	2,170	1,380
17	2,820	2,200	2,000	3,740	1,950	2,240	1,270	2,240	2,070	2,190	1,530	2,460
18	2,940	2,080	2,200	3,300	2,560	2,670	f1,120	1,530	2,140	2,350	1,980	2,510
19	2,650	1,970	3,060	2,910	2,410	2,280	1,020	2,000	1,900	2,040	2,170	2,590
20	1,660	1,650	2,990	3,040	2,530	2,150	1,080	1,920	2,000	1,180	2,120	1,330
21	2,570	2,880	3,090	3,390	2,400	1,760	1,000	2,010	1,860	2,000	1,890	f750
22	2,690	2,110	2,440	3,220	2,040	1,910	1,460	1,870	1,420	1,760	1,950	f660
23	2,680	2,260	2,820	2,980	2,090	1,330	1,370	2,320	2,180	1,950	1,920	f640
24	2,710	2,130	2,650	3,210	2,050	1,690	1,990	1,970	1,760	1,970	1,680	f620
25	2,720	2,920	2,130	2,720	2,300	2,000	1,660	1,360	1,830	1,720	1,760	f725
26	1,920	2,620	2,420	2,260	2,490	1,650	1,340	1,540	1,870	1,670	1,320	f680
27	1,330	1,980	2,860	2,860	2,370	1,960	1,000	1,620	1,980	1,810	1,320	f680
28	2,480	2,190	2,830	2,780	2,360	1,040	883	1,780	1,930	2,120	1,810	f660
29	2,810	2,790	2,470	2,820	-	1,640	1,320	2,130	1,760	2,480	1,850	f620
30	2,660	2,080	2,430	2,610	-	980	1,630	1,750	1,890	2,740	1,120	f660
31	2,180	-	2,860	2,630	-	2,130	-	1,560	-	2,890	1,180	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	75,610	2,940	1,330	2,439	150,000
November	82,040	6,500	1,450	2,735	162,700
December	73,640	3,340	1,760	2,375	146,100
Calendar year 1946	828,869	6,500	762	2,271	1,644,000
January	88,460	3,740	2,130	2,854	175,500
February	62,160	2,630	1,310	2,220	123,300
March	57,280	2,670	980	1,848	113,600
April	43,754	2,130	883	1,458	86,780
May	52,910	2,320	853	1,707	104,900
June	62,750	2,740	1,420	2,092	124,500
July	62,920	2,890	1,180	2,030	124,800
August	60,010	2,770	1,120	1,936	119,000
September	46,350	3,410	620	1,545	91,930
Water year 1946-47	767,904	6,500	620	2,104	1,523,000

f Computed on basis of partly estimated gage-height record.

Colorado River at Smithville, Tex.

Location.- Water-stage recorder, lat. 30°01', long. 97°10', 1,200 feet upstream from bridge on State Highway 71 at Smithville, Bastrop County, and 3.7 miles downstream from Alum Creek. Datum of gage is 270.14 feet above mean sea level, datum of 1929.

Drainage area.- 39,650 square miles, of which 11,800 square miles is probably noncontributing.

Records available.- July 1930 to September 1947. U. S. Weather Bureau has collected gage-height records in this vicinity since 1920.

Average discharge.- 17 years, 3,365 second-feet.

Extremes.- Maximum discharge during year, 40,000 second-feet Nov. 4 (gage height, 18.03 feet), from rating extended above 18,000 second-feet by logarithmic plotting; minimum, 785 second-feet (regulated) Sept. 26 (gage height, 2.63 feet).

1930-47: Maximum discharge, 305,000 second-feet June 16, 1935 (gage height, 42.5 feet, from floodmarks), by slope-area method; minimum, 76 second-feet Nov. 2, 1934.

Maximum stage known, about 47.4 feet Dec. 4, 1913, from information by local residents.

Remarks.- Records good. Many diversions above station for irrigation and municipal supply. Regulation same as that for Colorado River at Austin.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,030	2,090	2,460	2,720	3,110	2,780	2,090	1,470	1,850	1,910	2,850	1,270
2	2,590	2,400	1,970	2,850	2,850	2,460	2,150	1,680	1,740	2,090	2,850	1,360
3	2,090	3,420	1,970	4,180	2,460	2,090	2,210	1,580	1,850	2,270	2,400	1,420
4	2,520	23,100	1,910	3,460	2,720	2,330	2,210	1,330	2,270	2,520	2,030	2,920
5	2,330	18,200	1,910	2,660	3,040	2,590	2,520	1,170	2,520	1,970	1,910	3,250
6	2,720	9,660	1,910	2,330	2,920	2,330	2,150	1,330	2,720	1,850	2,090	3,040
7	2,330	4,350	1,910	2,590	2,980	2,270	1,850	2,030	2,460	2,270	2,210	2,590
8	2,090	3,690	1,850	2,920	2,660	2,720	2,090	2,090	2,460	2,090	2,210	1,630
9	2,660	3,320	1,910	3,500	2,660	2,330	2,400	1,800	2,090	2,520	2,150	1,080
10	2,780	3,630	1,910	6,180	2,210	2,090	2,270	1,680	2,210	2,090	2,330	2,030
11	2,840	5,430	3,020	4,690	2,150	2,090	1,970	1,850	2,590	2,210	1,970	2,460
12	2,950	2,330	11,900	3,620	2,850	2,460	2,150	1,580	2,660	2,150	1,680	2,590
13	2,520	2,150	9,280	2,720	2,720	3,640	5,580	1,140	2,330	2,150	2,270	2,520
14	2,270	2,720	3,460	2,970	2,850	2,590	5,050	1,680	2,210	2,270	2,270	1,800
15	1,970	2,150	2,920	2,790	2,850	2,460	1,580	2,210	2,270	1,970	2,330	1,010
16	2,460	5,130	2,660	2,780	2,660	2,330	1,580	2,480	1,970	2,150	2,720	924
17	2,590	17,800	2,460	9,400	2,330	1,850	1,580	3,930	1,910	2,330	2,460	916
18	2,590	3,830	2,330	15,300	2,210	2,980	1,580	2,990	2,150	2,400	2,030	1,880
19	2,780	2,720	2,330	5,970	2,720	7,970	1,340	2,210	2,270	2,920	1,630	2,520
20	2,720	2,660	2,920	5,610	2,780	3,970	1,300	2,010	2,210	2,780	2,030	2,660
21	2,210	2,090	3,110	4,180	2,850	2,920	1,270	2,660	2,210	1,970	2,150	2,400
22	1,910	2,660	3,110	4,100	2,780	2,660	1,130	2,330	2,210	1,850	2,090	1,380
23	2,520	2,520	2,720	3,930	2,590	2,460	1,270	2,090	1,970	2,150	1,850	985
24	2,590	2,330	2,720	3,690	2,400	2,330	1,580	2,330	1,910	2,090	2,030	860
25	2,590	2,330	2,850	3,850	2,400	2,090	1,740	2,330	2,150	2,270	2,030	815
26	2,590	3,300	2,330	3,460	2,720	2,270	1,850	2,030	2,030	2,030	4,480	822
27	2,400	3,110	2,330	2,980	2,850	2,270	1,580	1,470	2,030	2,030	5,370	884
28	1,800	2,400	2,720	3,250	2,850	2,400	1,360	1,850	2,090	1,970	1,840	876
29	1,660	2,330	2,850	3,320	-	1,970	1,080	1,800	2,210	1,970	1,580	838
30	2,590	2,400	2,520	3,320	-	1,850	1,210	2,090	2,030	2,270	1,970	830
31	2,920	-	2,460	3,180	-	1,850	-	1,970	-	2,660	1,910	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	75,610	2,950	1,660	2,439	150,000
November	146,250	23,100	2,090	4,875	290,100
December	92,710	11,900	1,850	2,991	183,900
Calendar year 1946	1,070,490	23,100	1,080	2,933	2,123,000
January	128,500	15,300	2,330	4,145	254,900
February	75,170	3,110	2,150	2,685	149,100
March	81,400	7,970	1,850	2,626	161,500
April	59,720	5,580	1,080	1,991	118,500
May	61,190	3,930	1,140	1,974	121,400
June	65,580	2,720	1,740	2,186	130,100
July	68,170	2,920	1,850	2,199	135,200
August	71,720	5,370	1,580	2,314	142,300
September	50,560	3,250	815	1,685	100,300
Water year 1946-47	976,580	23,100	815	2,676	1,937,000

Peak discharge.- Nov. 4 (8 p.m.) 40,000 sec.-ft.; Nov. 17 (6 a.m.) 24,500 sec.-ft.; Dec. 12 (8 p.m.) 20,800 sec.-ft.; Jan. 18 (3 a.m.) 19,000 sec.-ft.

Colorado River at La Grange, Tex.

Location.- Wire-weight gage, lat. 29°53'45", long. 96°52'15", at bridge on U. S. Highway 77 in La Grange, Fayette County, 1.2 miles downstream from Buckner Creek. Datum of gage is 211.23 feet above mean sea level, datum of 1929.

Drainage area.- 40,200 square miles, of which 11,800 square miles is probably noncontributing.

Records available.- July and August 1938 (flood discharge measurements only). November 1938 to September 1947.

Extremes.- Maximum discharge during year, 36,100 second-feet Nov. 5 (gage height, 15.70 feet, from graph based on gage readings); minimum, 840 second-feet (regulated) Sept. 27, from graph based on gage readings.

1938-47: Maximum discharge observed, 182,000 second-feet June 30, 1940 (gage height height, 40.18 feet); minimum observed, 430 second-feet (regulated) Mar. 7, 1940.

Maximum stage known, about 56.7 feet probably July 9, 1869 (from marble high-water marker in La Grange). Data on other floods as follows: Dec. 5, 1913, stage 56.4 feet, from floodmarks; June 17, 1935, stage 50.84 feet, from floodmarks (discharge, 255,000 second-feet, from rating curve extended as a straight line above 200,000 second-feet); July 27, 1938, stage 42.95 feet, observed (discharge, 200,000 second-feet).

Remarks.- Records fair. Gage read twice daily. Diversions above station for irrigation and municipal supply. Regulation same as that for Colorado River at Austin.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,360	2,690	2,930	2,750	3,290	2,930	1,830	1,350	1,880	1,880	2,750	1,780
2	2,470	2,250	2,360	3,530	3,290	2,810	1,980	1,630	1,830	1,930	2,930	1,440
3	2,520	3,220	2,080	4,130	2,990	2,300	2,250	1,580	1,730	2,200	2,690	1,480
4	2,200	9,070	2,030	4,770	2,990	2,250	2,470	1,530	2,250	2,250	2,200	2,010
5	2,520	27,000	2,080	3,410	3,170	2,750	2,420	1,310	2,360	2,300	1,980	3,290
6	2,580	11,300	2,080	2,690	3,290	2,640	2,580	1,270	2,810	1,830	1,930	3,410
7	2,810	7,700	2,080	2,470	2,990	2,470	2,080	1,660	2,750	2,200	2,080	3,170
8	2,250	4,900	2,080	2,930	3,050	2,360	1,980	2,200	2,810	2,140	2,140	2,360
9	2,250	4,130	2,080	3,410	2,990	2,930	2,200	1,930	2,420	2,300	2,030	1,580
10	2,870	3,770	2,080	5,500	2,870	2,360	2,360	1,730	2,030	2,250	2,030	1,150
11	3,050	4,670	2,400	6,650	2,300	2,140	2,140	1,780	2,580	2,140	2,250	2,020
12	3,170	4,210	4,730	4,900	2,520	2,360	2,300	1,780	2,930	2,140	1,930	2,520
13	2,810	2,580	13,200	3,770	3,170	5,670	4,640	1,480	2,690	2,200	1,930	2,640
14	2,470	2,420	5,790	3,050	2,870	3,900	8,500	1,230	2,200	2,200	2,250	2,420
15	2,080	2,580	3,770	3,650	3,050	2,690	3,170	1,980	2,140	2,140	2,200	1,580
16	2,200	4,940	3,170	3,170	3,170	2,990	1,880	2,300	2,080	2,030	2,470	1,110
17	2,690	18,200	2,810	5,400	2,690	2,520	1,830	3,310	2,030	2,140	2,690	995
18	2,520	10,200	2,580	15,400	2,300	2,610	1,680	4,250	2,030	2,420	2,360	1,030
19	2,810	3,770	2,580	9,500	2,520	8,780	1,730	2,640	2,250	2,580	1,930	2,100
20	2,870	3,290	2,810	6,500	3,050	8,150	2,140	2,250	2,200	3,170	1,780	2,420
21	2,470	2,750	3,170	5,420	3,050	3,710	1,580	2,810	2,200	2,580	2,140	2,580
22	2,140	2,470	3,410	4,640	2,990	3,050	1,400	2,470	2,080	1,830	2,140	1,930
23	2,140	3,050	3,170	4,380	2,930	2,870	1,270	2,360	2,030	2,080	2,030	1,270
24	2,470	2,640	2,750	4,130	2,420	2,810	1,480	2,300	1,980	2,030	1,830	960
25	2,690	2,580	3,170	4,010	2,360	2,360	1,630	2,420	1,980	2,140	2,030	895
26	2,930	2,690	2,810	4,130	2,580	2,470	1,930	2,360	1,980	2,250	13,500	840
27	2,810	3,890	2,520	3,530	2,870	2,580	1,780	1,830	2,030	1,980	11,700	895
28	2,300	3,170	2,690	3,290	2,990	2,420	1,580	1,730	2,080	1,980	4,500	895
29	1,780	2,420	3,170	3,650	-	2,470	1,350	1,930	2,080	2,140	2,080	895
30	2,140	2,420	2,750	3,650	-	1,980	1,230	1,930	2,140	2,030	2,030	868
31	2,470	-	2,520	3,410	-	2,200	-	2,200	-	2,420	2,140	-

Month	Seoond-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	77,840	3,170	1,780	2,511	154,400
November	160,970	27,000	2,250	5,366	319,300
December	97,850	13,200	2,030	3,156	194,100
Calendar year 1946	1,217,790	27,000	1,230	3,336	2,416,000
January	141,820	15,400	2,470	4,575	281,300
February	80,750	3,290	2,300	2,884	160,200
March	96,530	8,780	1,980	3,114	191,500
April	67,390	8,500	1,230	2,246	133,700
May	63,530	4,250	1,230	2,049	126,000
June	66,580	2,930	1,730	2,219	132,100
July	67,900	3,170	1,830	2,190	134,700
August	90,670	13,500	1,780	2,925	179,800
September	52,533	3,410	840	1,751	104,200
Water year 1946-47	1,064,363	27,000	840	2,916	2,111,000

Colorado River at Columbus, Tex.

Location.- Water-stage recorder, lat. 29°42'20", long. 96°32'05", at bridge on U. S. Highway 90 at eastern edge of Columbus, Colorado County, 340 feet downstream from Texas & New Orleans Railroad bridge and 2.6 miles downstream from Cummins Creek. Datum of gage is 155.52 feet above mean sea level, datum of 1929.

Drainage area.- 40,840 square miles, of which 11,800 square miles is probably noncontributing.

Records available.- January to December 1903 (gage heights and discharge measurements only), January 1904 to December 1911, May 1916 to November 1930, May 1939 to September 1947. September 1930 to June 1939 at site near Eagle Lake, 23 miles downstream. U. S. Weather Bureau has collected gage-height records in this vicinity since 1903.

Average discharge.- 29 years (1904-11, 1916-30, 1939-47), 3,327 second-feet.

Extremes.- Maximum discharge during year, 31,300 second-feet Nov. 5 (gage height, 15.92 feet); minimum, 852 second-feet (regulated) Sept. 28, 30.

1903-11, 1916-30, 1939-47: Maximum discharge, 152,000 second-feet July 1, 1940 (gage height, 36.2 feet); minimum observed, about 80 second-feet Sept. 9, 10, 1910.

Maximum stage known, 41.6 feet, present datum, in July 1869 and on Dec. 6, 1913, from information by local resident. River divided each time and left Columbus on an island. Data on other floods as follows: June 18, 1935, observed gage, 38.5 feet, present datum, furnished by U. S. Weather Bureau (discharge, 190,000 second-feet, computed on basis of records for station near Eagle Lake, 23 miles downstream); July 29, 1938, observed stage, 38.4 feet, present datum, furnished by U. S. Weather Bureau (discharge, 175,000 second-feet, computed on basis of records for station near Eagle Lake).

Remarks.- Records good. Diversions above station for irrigation and municipal supply. Regulation same as that for Colorado River at Austin.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,230	2,940	2,550	2,770	3,590	2,990	2,220	1,290	2,110	2,110	2,500	2,770
2	2,440	2,550	2,940	3,950	3,470	2,880	1,900	1,460	1,950	2,000	2,820	2,330
3	2,720	2,560	2,330	4,690	3,350	2,770	2,440	1,700	1,800	2,060	2,940	1,950
4	2,500	18,200	2,220	4,560	3,050	2,330	2,280	1,600	1,700	2,220	2,660	1,950
5	2,880	26,100	2,160	4,310	2,820	2,330	2,380	1,510	2,280	2,500	2,220	2,820
6	2,600	17,000	2,160	3,230	3,350	2,820	2,440	1,290	2,440	2,220	2,000	3,710
7	2,660	10,800	2,110	2,940	3,350	2,550	2,380	1,290	2,770	1,900	2,060	3,590
8	2,720	6,070	2,110	2,820	3,110	2,500	2,110	1,700	2,660	2,160	2,110	3,350
9	2,220	4,820	2,160	3,830	3,050	2,600	1,950	2,160	2,600	2,110	2,220	2,500
10	2,720	4,690	2,160	5,400	2,940	2,720	2,380	1,950	2,330	2,380	2,220	1,800
11	4,500	4,560	2,220	7,300	2,820	2,380	2,440	1,800	2,060	2,220	2,280	1,800
12	3,470	6,200	5,660	6,150	2,440	2,220	2,060	1,850	2,600	2,220	2,220	2,600
13	3,230	3,710	10,500	4,560	2,940	4,570	2,440	1,750	2,770	2,280	1,850	2,820
14	2,940	2,820	10,500	3,710	3,110	5,460	6,200	1,420	2,600	2,220	2,060	2,880
15	2,550	3,110	4,760	2,770	2,990	3,530	6,460	1,420	2,280	2,330	2,330	2,440
16	2,220	5,910	3,710	3,600	3,110	2,770	2,580	2,060	2,380	2,110	2,280	1,700
17	2,550	10,100	3,230	6,300	3,050	2,720	1,950	2,440	2,060	2,110	2,600	1,290
18	2,770	16,000	2,940	13,800	2,770	3,260	1,900	3,830	2,060	2,280	2,720	1,160
19	2,600	5,740	2,770	14,600	2,550	7,230	1,800	3,950	2,110	2,500	2,330	1,290
20	2,880	3,590	2,940	7,580	2,940	8,970	2,110	2,880	2,280	2,660	1,850	2,380
21	2,880	3,110	3,350	6,660	3,050	5,850	2,380	2,380	2,380	3,110	1,900	2,660
22	2,660	2,660	3,590	5,340	3,050	3,590	1,700	3,050	2,220	2,440	2,160	2,720
23	2,060	2,720	3,590	4,820	3,050	3,230	1,510	2,820	2,220	1,800	2,160	1,800
24	2,500	3,110	3,350	4,690	2,940	2,820	1,420	2,600	2,110	2,110	2,000	1,330
25	2,770	2,720	2,940	4,560	2,550	2,820	1,650	2,380	2,000	2,110	3,110	1,050
26	2,880	4,180	3,230	4,430	2,600	2,330	1,750	2,600	2,380	2,220	8,000	936
27	2,820	3,470	2,880	4,190	2,720	2,440	2,000	2,330	2,110	2,220	18,400	875
28	2,720	3,830	2,600	3,710	2,990	2,550	1,800	1,750	2,110	2,060	7,540	890
29	2,160	3,050	2,880	3,590	-	2,380	1,600	1,800	2,110	2,000	3,750	905
30	1,800	2,660	3,050	3,830	-	2,440	1,380	1,800	2,160	2,000	2,550	868
31	2,440	-	2,940	3,830	-	1,900	-	2,000	-	2,160	2,660	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	84,090	4,500	1,800	2,713	166,800
November	188,980	26,100	2,550	6,299	374,800
December	105,530	10,500	2,110	3,436	211,300
Calendar year 1946	1,382,690	37,500	1,200	3,788	2,742,000
January	158,520	14,600	2,770	5,114	314,400
February	83,750	3,590	2,440	2,991	166,100
March	101,950	8,970	1,900	3,289	202,200
April	69,610	6,460	1,380	2,320	138,100
May	64,860	3,950	1,290	2,092	128,600
June	67,640	2,770	1,700	2,255	134,200
July	68,820	3,110	1,800	2,220	136,500
August	100,500	18,400	1,850	3,242	199,300
September	61,164	3,710	868	2,039	121,300
Water year 1946-47	1,156,414	26,100	868	3,168	2,294,000

Peak discharge.- Nov. 4 (9:30 a.m.) 23,400 sec.-ft.; Nov. 5 (3 p.m.) 31,300 sec.-ft.; Nov. 18 (5 a.m.) 19,000 sec.-ft.; Dec. 13 (10:30 p.m.) 15,900 sec.-ft.; Jan. 18 (11:30 p.m.) 18,700 sec.-ft.; Aug. 27 (3:30 a.m.) 24,400 sec.-ft.

Colorado River at Wharton, Tex.

Location.- Wire-weight gage, lat. 29°18'30", long. 96°06'15", at bridge on U. S. Highway 59 in Wharton, Wharton County, 1,000 feet downstream from Texas & New Orleans Railroad bridge and 12 miles upstream from Jones Creek. Datum of gage is 65.42 feet above mean sea level, datum of 1929.

Drainage area.- 41,150 square miles, of which 11,800 square miles is probably noncontributing.

Records available.- July 1916 to September 1925, July and August 1938 (flood discharge measurements only), October 1938 to September 1947. June to November 1901, daily records published in U. S. Department of Agriculture, Office of Experiment Stations, Bulletin No. 119. U. S. Weather Bureau has collected gage-height records in this vicinity since 1935.

Average discharge.- 14 years (1919-21, 1922-25, 1938-47), 3,562 second-feet.

Extremes.- Maximum discharge during year, 27,300 second-feet Nov. 6 (gage height, 16.98 feet, from graph based on gage readings); minimum observed, 725 second-feet (regulated) May 9.

1919-25, 1938-47: Maximum discharge observed, 100,000 second-feet July 3, 1940 (gage height, 35.99 feet); no flow Aug. 6, 1925 (result of pumping).

Maximum stage known, 38.9 feet, present datum, Dec. 8, 1913, from information by local residents; below Wharton floodwater combined with floodwater of Brazos River. Flood of about July 12, 1869, reached about same height. Flood of June 20, 1935, reached a stage of 38.2 feet, present datum (discharge, 159,000 second-feet, from rating curve extended above 145,000 second-feet), furnished by U. S. Weather Bureau. Flood of July 30, 1938, reached a stage of 37.4 feet, present datum observed by Geological Survey engineers (discharge, 145,000 second-feet).

Remarks.- Records good. Gage read twice daily. Diversions above station for irrigation and municipal supply. Regulation same as that for Colorado River at Austin. Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

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

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,290	2,280	3,140	3,340	4,000	3,340	2,200	1,500	1,620	1,320	1,180	1,980
2	3,670	2,840	2,940	3,340	4,000	3,340	2,370	1,280	1,580	1,320	1,540	1,860
3	2,740	2,740	3,240	4,920	3,780	3,340	2,110	1,180	1,180	1,180	1,940	1,460
4	2,840	7,450	2,740	5,290	3,670	3,240	2,550	1,210	975	1,100	1,940	975
5	2,740	17,300	2,550	5,040	3,340	2,740	2,370	1,280	885	1,140	1,780	885
6	2,940	24,200	2,460	4,680	3,040	2,640	2,550	1,040	1,100	1,320	1,430	1,070
7	2,740	13,600	2,460	3,780	3,670	3,140	2,550	855	1,320	1,320	1,140	2,200
8	2,640	9,650	2,460	3,670	3,670	2,940	2,550	750	1,580	1,010	1,140	2,550
9	2,940	6,080	2,370	3,560	3,450	2,940	2,280	750	1,620	1,070	1,140	2,460
10	3,040	5,940	2,370	5,160	3,340	2,840	2,070	1,180	1,500	1,140	1,180	1,900
11	2,940	7,280	2,460	6,960	3,240	3,140	2,460	1,240	1,350	1,180	1,280	1,390
12	4,680	5,420	2,740	7,950	3,140	2,740	2,550	1,240	1,100	1,350	1,320	1,140
13	3,780	6,360	6,080	6,500	2,740	2,740	2,370	1,390	1,390	1,350	1,280	1,740
14	3,040	4,110	11,800	5,160	3,140	4,070	2,550	1,350	1,580	1,580	1,070	2,110
15	3,040	3,140	8,220	4,330	3,450	5,550	5,820	1,100	1,540	1,540	975	2,200
16	2,940	3,450	5,160	3,890	3,340	4,000	6,060	828	1,280	1,580	1,320	2,370
17	2,640	7,440	4,220	4,680	3,450	3,140	2,940	1,240	1,320	1,540	a1,430	1,780
18	2,740	12,500	3,670	8,340	3,340	3,140	2,110	1,780	1,180	1,430	a1,620	1,350
19	2,840	12,500	3,340	17,700	3,140	4,410	1,980	3,520	1,180	1,460	a1,740	1,180
20	2,640	5,940	3,140	13,800	2,840	7,950	1,900	4,110	1,430	1,580	a1,620	1,070
21	2,840	4,330	3,240	7,780	3,240	8,870	2,150	3,560	1,740	1,580	a1,390	1,820
22	2,940	3,890	3,560	6,800	3,450	5,900	2,550	2,740	1,860	2,020	a1,280	2,280
23	2,740	3,340	3,890	5,550	3,340	4,000	1,820	3,560	1,700	1,660	a1,580	2,280
24	2,200	3,140	3,890	5,160	3,340	3,560	1,620	4,000	1,700	1,070	a1,820	1,900
25	2,550	3,560	3,780	5,040	3,240	3,140	1,460	3,890	1,500	1,070	1,780	1,350
26	2,740	3,450	3,240	4,800	2,940	3,040	1,580	3,140	1,280	1,100	1,940	1,100
27	2,940	5,160	3,560	4,680	2,940	2,550	1,780	2,940	1,500	1,140	11,000	1,040
28	2,940	4,680	3,240	4,440	2,940	2,640	1,980	2,460	1,390	1,210	12,700	1,010
29	2,840	4,680	2,940	4,000	-	2,280	1,900	1,940	1,320	1,070	4,220	1,010
30	2,370	3,670	3,140	3,890	-	2,550	1,700	1,660	1,280	1,040	3,840	1,010
31	1,980	-	3,450	4,110	-	2,640	-	1,620	-	1,100	2,200	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	91,940	5,290	1,980	2,966	182,400
November	200,120	24,200	2,280	6,671	396,900
December	115,490	11,800	2,370	3,725	229,100
Calendar year 1946	1,466,800	31,600	1,100	4,019	2,909,000
January	178,340	17,700	3,340	5,753	353,700
February	93,210	4,000	2,740	3,329	184,900
March	112,550	8,870	2,280	3,631	223,200
April	72,880	6,060	1,460	2,429	144,600
May	60,333	4,110	750	1,946	119,700
June	41,980	1,860	885	1,399	83,270
July	40,570	2,020	1,010	1,309	80,470
August	71,815	12,700	975	2,317	142,400
September	48,470	2,550	885	1,616	96,140
Water year 1946-47	1,127,698	24,200	750	3,090	2,237,000

a No gage-height record; discharge computed on basis of 1 discharge measurement, weather records, and records for Colorado River at Columbus.

Elm Creek at Ballinger, Tex.

Location.- Water-stage recorder upstream from spillway of masonry dam, lat. 31°45'00", long. 99°56'50", in Ballinger, Runnels County, and 1¼ miles upstream from mouth. Datum of gage is 1,617.72 feet above mean sea level, datum of 1929.

Drainage area.- 458 square miles.

Records available.- April 1932 to September 1947.

Average discharge.- 15 years, 54.4 second-feet.

Extremes.- Maximum discharge during year, 1,580 second-feet June 13 (gage height, 5.07 feet); no flow during most of year.
1932-47: Maximum discharge, 29,200 second-feet May 14, 1946 (gage height, 10.84 feet); no flow at times.

Remarks.- Records good except those below 25 second-feet, which are fair. Stage-discharge relation during period of low flow affected by wind action and occasional accumulation of drift on dam. Low flow affected by diversion of Ballinger city pumping plant.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0	0		0		0	0			
2		476	0	0		0		0	0			
3		31	0	0		0		0	0			
4		7.0	0	0		0		0	0			
5		1.5	0	0		0		0	0			
6		.2	0	0		0		0	0			
7		.2	0	0		0		0	0			
8		1.5	0	0		0		0	0			
9		.1	0	0		0		0	0			
10		0	0	0		0		85	0			
11		0	0	0		0		366	0			
12		0	10	0		0		49	0			
13		0	7.0	0		0		20	978			
14		0	4.5	0		0		7.0	184			
15		0	4.5	0		0		2.5	37			
16		0	2.5	0		0		406	15			
17		0	.1	0		0		285	11			
18		0	0	.2		0		169	4.5			
19		0	0	1.5		1.2		31	1.5			
20		0	0	.6		1.5		4.5	2.5			
21		0	0	1.0		1.5		2.5	11			
22		0	0	1.0		.6		2.5	4.5			
23		0	0	.6		.2		1.5	4.5			
24		0	0	.4		0		.6	4.5			
25		0	0	.1		0		0	4.5			
26		0	0	0		0		0	1.5			
27		0	0	0		0		0	.1			
28		0	0	0		0		0	0			
29		0	0	0		0		0	0			
30		0	0	0		0		0	0			
31		-	0	0		0		0	-			

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	0	0	0	0	0
November	517.5	476	0	17.2	1,030
December	28.6	10	0	.92	57
Calendar year 1946	16,499.6	5,720	0	45.2	32,720
January	5.4	1.5	0	.17	11
February	0	0	0	0	0
March	5.0	1.5	0	.16	9.9
April	0	0	0	0	0
May	1,432.1	406	0	46.2	2,840
June	1,264.1	978	0	42.1	2,510
July	0	0	0	0	0
August	0	0	0	0	0
Septsmber	0	0	0	0	0
Water year 1946-47	3,252.7	978	0	8.91	6,460

South Concho River at Christoval, Tex.

Location.- Water-stage recorder and concrete control, lat. 31°13', long. 100°30', at Panhandle & Santa Fe Railway bridge at Christoval, Tom Green County. Datum of gage is 2,010.22 feet above mean sea level, datum of 1929.

Drainage area.- 434 square miles.

Records available.- February 1930 to September 1947.

Average discharge.- 17 years, 46.3 second-feet.

Extremes.- Maximum discharge during year, 1,720 second-feet June 18 (gage height, 4.77 feet); minimum, 3.7 second-feet Sept. 29, 30 (gage height, 1.83 feet).

1930-47: Maximum discharge, 100,000 second-feet July 23, 1938 (gage height, 21.95 feet, from floodmarks), from rating curve extended above 9,000 second-feet on basis of slope-area determination at gage height 20.5 feet; minimum, 2.1 second-feet July 17-19, 26-29, Aug. 28 to Sept. 5, 1934.

Flood of Aug. 6, 1906, reached a stage about 1.1 feet higher than flood of July 23, 1938, at a point 0.5 mile downstream from gage, from information by local residents.

Remarks.- Records excellent except those above 60 second-feet, which are good and those for periods of no gage-height record, which are fair. Low flow materially affected by diversion 600 feet above station to South Concho Irrigation Co.'s canal (see p. 137).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	48	16	18	23	14	13	12	12	14	9.5	4.9
2	11	25	14	18	25	14	13	12	12	14	8.5	4.9
3	11	104	14	18	25	14	14	12	12	14	8.5	4.9
4	12	20	14	18	21	16	16	12	11	13	9.5	4.9
5	12	20	13	18	14	16	14	11	11	13	9.5	4.9
6	16	20	14	20	13	16	14	8.5	9.5	13	8.5	4.9
7	13	20	14	20	13	17	13	11	9.5	12	8.5	4.9
8	12	20	14	20	13	17	13	9.5	9.5	12	8.5	4.9
9	12	20	16	21	14	16	13	9.5	8.5	12	8.5	4.9
10	14	20	16	21	14	16	13	12	6.5	11	7.5	4.9
11	12	20	23	23	14	13	13	9.5	6.5	11	7.5	4.9
12	12	20	18	21	14	13	13	7.5	6.5	9.5	6.5	6.5
13	11	20	18	21	14	13	13	7.5	6.5	9.5	6.5	4.9
14	11	20	20	21	16	13	14	7.5	6.5	9.5	6.5	4.3
15	12	20	20	21	18	13	14	7.5	6.5	12	6.5	4.3
16	12	18	20	21	18	13	14	16	6.5	11	6.5	4.3
17	12	18	20	23	17	13	14	12	5.7	9.5	6.5	4.3
18	12	18	20	23	17	17	14	13	253	40	6.5	4.3
19	12	18	20	25	17	16	16	12	327	24	6.5	4.3
20	12	18	20	25	16	14	14	12	30	9.5	6.5	4.3
21	12	18	20	25	14	12	16	12	14	11	6.5	4.3
22	13	18	20	25	14	12	16	12	14	11	6.5	4.3
23	12	18	20	25	14	12	16	13	16	9.5	5.7	4.3
24	13	18	20	25	14	12	16	13	16	9.5	5.7	4.3
25	13	18	18	23	14	12	14	12	17	9.5	5.7	4.3
26	13	18	18	23	14	12	16	12	17	9.5	5.7	4.3
27	13	18	18	23	16	12	18	12	16	9.5	5.7	4.3
28	13	18	18	25	16	12	17	12	16	9.5	5.7	4.3
29	12	17	18	25	-	12	16	12	14	9.5	4.9	3.7
30	11	17	18	25	-	12	13	12	14	9.5	4.9	3.7
31	11	-	18	25	-	13	-	12	-	9.5	4.9	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	378	16	11	12.2	750
November	685	104	17	22.8	1,360
December	550	23	13	17.7	1,090
Calendar year 1946	6,431.2	1,480	3.8	17.6	12,760
January	685	25	18	22.1	1,360
February	452	25	13	16.1	897
March	427	17	12	13.8	847
April	433	18	13	14.4	859
May	348.0	16	7.5	11.2	690
June	910.2	327	5.7	30.3	1,810
July	381.0	40	9.5	12.3	756
August	214.9	9.5	4.9	6.93	426
September	137.2	6.5	3.7	4.57	272
Water year 1946-47	5,601.3	327	3.7	15.3	11,120

Peak discharge.- Nov. 3 (9 a.m.) 742 sec.-ft.; June 18 (9:30 p.m.) 1,720 sec.-ft.

Note.- No gage-height record Nov. 1, 2, 4-24, Sept. 1-24; discharge computed on basis of recorded range in stage, weather records, and records for nearby stations.

Lake Nasworthy near San Angelo, Tex.

Location.- Water-stage recorder, lat. 31°23'15", long. 100°28'40", 250 feet upstream from Nasworthy Dam on South Concho River, half a mile downstream from Middle Concho River, and 6 miles southwest of San Angelo, Tom Green County. Datum of gage is 1,840.0 feet above mean sea level, datum of 1929.

Drainage area.- 2,659 square miles, of which 152 square miles is probably noncontributing.

Records available.- March 1930 to September 1947.

Extremes.- Maximum contents during year, 10,740 acre-feet Dec. 11 (gage height, 30.15 feet); minimum, 3,550 acre-feet Sept. 30 (gage height, 22.73 feet).
1930-47: Maximum contents, 26,900 acre-feet Sept. 15, 1936 (gage height, 38.36 feet); minimum contents since lake filled, 594 acre-feet Oct. 14, 1936 (gage height, 12.6 feet).

Remarks.- Lake is formed by 4,900-foot earthen dam (contains 2 emergency spillways, 300 and 800 feet in length) and 438-foot concrete service spillway, with a bank of 15 taintor gates. Dam completed and storage began Mar. 28, 1930. Total capacity, 10,740 acre-feet (gage height, 30.2 feet top of taintor gates). Usable capacity, 10,740 acre-feet between gage heights -4.0 feet (revised) (bottom of two 36-inch gates) and 30.2 feet (top of taintor gates). Figures of contents shown herein represent total contents of lake, and are unadjusted for siltation. A siltation survey made by the Soil Conservation Service of the U. S. Department of Agriculture indicates a 10 percent capacity loss from siltation in 8.2 years (1930-39). Water used for San Angelo municipal supply.

Monthly gage height and contents, water year October 1946 to September 1947

Date	Gage height (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	28.0	8,200	-
Oct. 31	28.0	8,200	0
Nov. 30	28.0	8,200	0
Dec. 31	-	a7,980	-220
Calendar year 1946	-	-	+110
Jan. 31	26.9	6,990	-990
Feb. 28	27.0	7,100	+110
Mar. 31	28.1	8,310	+1,210
Apr. 30	27.7	7,870	-440
May 31	28.5	8,750	+880
June 30	29.1	9,420	+670
July 31	27.0	7,100	-2,320
Aug. 31	24.8	4,940	-2,160
Sept.30	22.7	3,550	-1,390
Water year 1946-47	-	-	-4,650

† Gage height at 12 p.m.
a No gage-height record, contents estimated.

South Concho River at San Angelo, Tex.

Location (revised).- Water-stage recorder above spillway of San Angelo waterworks concrete dam, lat. 31°26'45", long. 100°25'30", at Lone Wolf Bridge on county road, half a mile south of San Angelo, Tom Green County, 1 mile upstream from confluence with North Concho River, and 7,470 feet downstream from bridge on U. S. Highway 87 and 277 (relocated). Datum of gage is 1,802.94 feet above mean sea level, datum of 1929.

Drainage area.- 2,687 square miles, of which 152 square miles is probably noncontributing.

Records available.- October 1931 to September 1947.

Average discharge.- 16 years, 139 second-feet.

Extremes.- Maximum discharge during year, 13,100 second-feet Dec. 11 (gage height, 6.21 feet); no flow at times.
1931-47: Maximum discharge, 111,000 second-feet Sept. 17, 1936 (gage height, 23.4 feet, of which about 2.4 feet was caused by backwater from North Concho River), by slope-area method; no flow at times.
Maximum stage known, 29.7 feet Aug. 6, 1906 (not affected by backwater), from information by local residents.

Remarks.- Records good. Diversions above station for irrigation, municipal supply, and power. Flow partly regulated by reservoirs above station (combined capacity, about 11,200 acre-feet), the largest of which is Lake Nasworthy (capacity, 10,740 acre-feet), 6.5 miles above station (see preceding page).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	44	9.0		39	0.8	13	6.9	14	7.3	0	0.5
2	37	57	6.0		43	.9	12	4.6	9.9	7.0	0	.1
3	37	73	7.9	b43	40	.9	20	3.1	6.9	5.8	3.6	1.2
4	40	73	10		39	.9	21	3.1	6.5	4.6	2.8	0
5	40	65	11		40	1.4	17	2.1	4.4	5.0	1.0	0
6	54	65	10	48	37	1.8	13	.5	3.3	4.5	.9	0
7	37	54	6.9	45	37	5.3	13	0	2.6	2.7	.1	2.4
8	40	48	6.9	54	37	4.6	12	0	1.9	0	0	1.3
9	40	45	6.9	57	35	4.0	12	0	1.8	2.4	3.1	.1
10	1,920	43	9.0	51	33	4.0	7.8	8.8	.3	4.4	4.6	0
11	285	25	2,500	54	33	4.6	6.9	54	0	5.1	1.2	0
12	188	23	285	48	35	3.5	7.8	177	0	3.7	0	.2
13	57	19	297	43	37	3.1	15	25	3.8	2.8	a.3	3.1
14	45	17	233	43	35	3.1	15	21	8.8	1.7	a.2	2.1
15	45	17	57	65	33	3.5	17	116	9.0	0	a0	.4
16	45	16	61	*57	28	4.6	15	30	4.0	0	a0	0
17	45	16	57	61	28	3.1	13	23	2.0	.7	a.4	0
18	43	16	57	65	25	22	10	223	28	.1	.2	0
19	34	16	48	69	15	21	6.4	122	744	.4	a0	0
20	32	16	43	54	5.3	18	3.1	17	23	3.4	a5.3	0
21	27	13	43	54	3.1	18	4.6	15	21	2.7	a7.8	0
22	23	14	43	130	1.8	20	2.4	13	20	.6	6.1	0
23	16	16	*40	285	1.2	18	1.7	22	12	1.0	a5.3	0
24	14	17	40	274	1.4	17	.8	243	12	.8	a4.0	0
25	13	16	40	154	1.4	25	4.6	253	9.5	.2	a3.1	0
26	16	14	40	40	.8	26	5.3	218	71	0	2.4	.1
27	5.2	13	39	39	.6	13	15	26	253	2.5	2.1	2.2
28	3.4	13	39	43	1.0	20	13	12	153	1.3	1.6	0
29	1.7	13		40	-	20	9.0	14	51	1.0	.5	0
30	2.4	13	b41	40	-	23	6.9	18	32	3.0	.2	0
31	3.4	-		43	-	23	-	16	-	.1	1.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,229.1	1,920	1.7	104	6,400
November	890	73	13	29.7	1,770
December	4,168.6	2,500	6.0	134	8,270
Calendar year 1946	29,363.0	15,400	0	80.4	58,240
January	2,171	285	39	70.0	4,310
February	665.6	43	.6	23.8	1,320
March	334.1	26	.8	10.8	663
April	313.3	21	.8	10.4	621
May	1,687.1	253	0	54.4	3,350
June	1,508.7	744	0	50.3	2,990
July	74.8	7.3	0	2.41	148
August	58.6	7.8	0	1.89	116
September	13.7	3.1	0	.46	27
Water year 1946-47	15,114.6	2,500	0	41.4	29,980

Peak discharge.- Oct. 10 (6:30 a.m.) 9,060 sec.-ft.; Dec. 11 (8 a.m.) 13,100 sec.-ft.; June 19 (5:30 p.m.) 5,200 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and records for Concho River near San Angelo.

b Stage-discharge relation affected by ice.

Concho River near San Angelo, Tex.

Location.- Water-stage recorder, lat. 31°27'10", long. 100°24'40", half a mile downstream from confluence of North Concho and South Concho Rivers and 1½ miles southeast of San Angelo, Tom Green County. Datum of gage is 1,776.8 feet above mean sea level, datum of 1929.

Drainage area.- 4,492 square miles, of which 275 square miles is probably noncontributing.

Records available.- September 1915 to September 1947.

Average discharge.- 32 years, 181 second-feet.

Extremes.- Maximum discharge during year, 15,000 second-feet May 11 (gage height, 15.59 feet); minimum, 1.1 second-feet Sept. 2-7, 9-12, 17-21, 23, 25.
1915-47: Maximum discharge, 230,000 second-feet Sept. 17, 1936 (gage height, 46.6 feet, from floodmarks), by slope-area method; no flow Nov. 29, 1921.
Maximum stage known, 47.5 feet Aug. 6, 1906 (discharge, about 246,000 second-feet), from information by local residents.

Remarks.- Records good. Many diversions above station for irrigation and municipal supply. Flow partly regulated by reservoirs above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	45	15	45	38	4.9	17	9.2	22	13	1.4	1.5
2	43	66	12	45	41	4.9	20	8.7	19	8.7	1.3	1.2
3	42	111	9.8	a46	40	5.3	31	6.1	15	7.6	4.0	1.3
4	41	86	9.8	a48	38	4.9	25	4.1	14	5.7	6.5	1.3
5	37	70	10	a50	42	6.1	23	4.5	11	5.7	2.3	1.2
6	60	65	12	a57	40	7.0	17	4.1	9.2	4.5	1.9	1.1
7	40	61	13	48	40	16	18	2.9	7.6	3.3	1.5	1.5
8	38	61	12	49	40	14	17	2.4	5.7	1.8	1.3	1.8
9	38	58	11	53	41	11	16	2.3	5.7	2.4	1.5	1.3
10	2,040	51	13	52	42	17	13	56	4.1	6.1	6.5	1.2
11	361	30	4,170	54	42	16	8.2	6,290	3.3	5.7	2.3	1.1
12	206	30	389	52	42	15	9.2	674	2.9	18	1.5	1.1
13	78	25	330	55	43	13	14	156	4.1	19	1.4	2.4
14	60	25	260	55	41	13	17	92	10	9.2	1.3	2.3
15	53	24	70	68	41	12	16	173	8.9	5.3	1.3	1.7
16	52	22	65	66	34	13	14	690	5.3	3.7	1.2	1.3
17	49	22	60	75	32	11	12	466	2.3	2.0	1.2	1.2
18	44	23	58	79	29	42	11	376	37	2.1	1.4	1.2
19	44	22	50	73	21	24	8.7	218	840	1.9	1.3	1.2
20	43	20	48	66	11	22	3.3	60	25	4.8	6.2	1.2
21	32	20	46	63	8.2	22	5.3	46	22	5.3	10	1.1
22	30	20	45	123	7.0	24	3.7	38	19	2.4	8.7	1.4
23	20	22	43	289	5.3	23	2.5	443	11	2.3	7.0	1.2
24	20	23	45	280	5.3	20	2.3	552	11	2.0	7.6	1.3
25	19	22	43	175	5.3	27	4.1	305	10	1.8	7.0	1.2
26	19	23	44	44	4.9	28	8.7	276	58	1.3	a2.3	1.3
27	11	22	42	43	4.5	24	17	53	315	3.2	a1.8	2.2
28	7.0	22	41	43	5.7	24	16	25	210	4.3	a1.8	1.8
29	4.9	22	41	42	-	23	13	22	68	1.7	a1.8	1.4
30	4.9	20	41	38	-	24	11	25	48	4.5	a1.8	1.4
31	5.7	-	44	40	-	24	-	25	-	1.7	a1.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,590.5	2,040	4.9	116	7,120
November	1,133	111	20	37.8	2,250
December	6,092.6	4,170	9.8	197	12,080
Calendar year 1946	32,949.5	14,900	.9	90.3	65,360
January	2,316	289	38	74.7	4,590
February	784.2	43	4.5	28.0	1,560
March	535.1	42	4.9	17.3	1,060
April	394.0	31	2.3	13.1	781
May	11,105.3	6,290	2.3	358	22,030
June	1,824.1	840	2.3	60.8	3,620
July	161.0	19	1.3	5.19	319
August	98.9	10	1.2	3.19	196
September	42.4	2.4	1.1	1.41	84
Water year 1946-47	28,077.1	6,290	1.1	76.9	55,690

Peak discharge.- Dec. 11 (9 a.m.) 14,800 sec.-ft.; May 11 (11:30 a.m.) 15,000 sec.-ft.
a No gage-height record; discharge computed on basis of recorded range in stage and weather records.

Concho River near Paint Rock, Tex.

Location.- Water-stage recorder above spillway of masonry dam, lat. 31°31', long. 99°55', at bridge on U. S. Highway 83, a quarter of a mile north of Paint Rock, Concho County. Datum of gage is 1,574.43 feet above mean sea level, datum of 1929.

Drainage area.- 5,538 square miles, of which 275 square miles is probably noncontributing.

Records available.- September 1915 to September 1947.

Average discharge.- 32 years, 238 second-feet.

Extremes.- Maximum discharge during year, 16,900 second-feet May 24 (gage height, 19.99 feet); no flow Sept. 17-30.
1915-47: Maximum discharge, 301,000 second-feet Sept. 17, 1936 (gage height, 43.4 feet, from floodmarks), by slope-area method; no flow at times.

Remarks.- Records good. Many diversions above station for irrigation and municipal supply. Flow partly regulated by reservoirs above San Angelo.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	104	46	30	59	55	15	33	5.0	42	62	1.0	0.8
2	79	35	30	68	55	14	28	4.6	42	44	.9	.7
3	65	299	30	62	55	14	852	4.6	35	23	.8	.6
4	59	168	28	55	55	13	145	4.2	30	14	.7	.6
5	55	116	23	55	55	13	59	3.8	28	10	.7	.5
6	55	90	21	55	52	14	35	4.6	23	8.7	.6	.4
7	72	72	20	55	52	18	35	5.6	21	7.4	.4	.4
8	72	68	17	55	52	17	33	22	18	6.8	.1	.2
9	55	65	17	62	52	17	24	12	15	5.6	.1	.2
10	1,080	62	21	76	49	24	23	12	13	5.0	.1	.3
11	1,190	59	3,390	68	52	24	18	5,150	10	4.6	.1	.3
12	332	52	1,000	65	52	23	18	1,880	9.4	4.2	.1	.5
13	219	37	394	62	52	21	18	424	34	3.4	.1	.6
14	104	35	360	59	49	24	17	206	11	3.0	.1	.5
15	90	33	311	59	52	21	15	136	9.4	2.6	.1	.3
16	72	28	145	65	49	21	17	216	12	3.0	.1	.2
17	65	26	108	86	49	20	23	1,720	11	4.6	.1	0
18	62	26	86	86	47	94	21	2,330	10	6.2	.1	0
19	55	26	82	96	42	47	18	413	508	5.0	.1	0
20	52	28	79	82	42	52	17	256	294	3.8	.1	0
21	49	28	59	68	35	47	15	116	82	3.4	.1	0
22	49	28	59	65	28	37	13	86	44	2.6	.1	0
23	42	28	55	79	24	35	13	1,030	293	2.2	.1	0
24	37	26	55	256	20	30	11	5,920	235	2.2	.1	0
25	30	26	55	262	17	33	8.0	494	49	2.2	14	0
26	26	24	59	194	15	28	7.4	326	26	2.2	1.6	0
27	24	28	55	82	15	28	8.0	294	20	2.2	.8	0
28	23	30	59	62	15	30	8.0	140	220	2.0	.6	0
29	23	33	52	62	-	33	15	76	198	1.8	.6	0
30	21	33	52	59	-	30	8.7	49	79	1.6	.7	0
31	17	-	59	59	-	33	-	42	-	1.2	.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	4,278	1,190	17	138	8,490
November	1,655	299	24	55.2	3,280
December	6,811	3,390	17	220	13,510
Calendar year 1946	38,967.8	14,200	0	107	77,290
January	2,578	262	55	83.2	5,110
February	1,187	55	15	42.4	2,350
March	870	94	13	28.1	1,730
April	1,556.1	852	7.4	51.9	3,090
May	21,382.4	5,920	3.8	690	42,410
June	2,421.8	508	9.4	80.7	4,800
July	250.5	62	1.2	8.08	497
August	25.9	14	.1	.84	51
September	7.1	.8	0	.24	14
Water year 1946-47	43,022.8	5,920	0	118	85,330

Peak discharge.- Dec. 11 (6 p.m.) 10,700 sec.-ft.; May 11 (8 p.m.) 14,300 sec.-ft.; May 18 (2 a.m.) 9,160 sec.-ft.; May 24 (3 a.m.) 16,900 sec.-ft.

Note.- No gage-height record Jan. 6-13, Apr. 29 to May 6, May 9, 10; discharge computed on basis of recorded range in stage and weather records. Water surface below crest of control dam Aug. 8-24; discharge represents leakage through dam.

South Concho Irrigation Co.'s canal at Christoval, Tex.

Location.- Water-stage recorder, lat. 31°13', long. 100°30', at Christoval, Tom Green County, 85 feet downstream from point of diversion and 100 feet downstream from bridge on U. S. Highway 277. Datum of gage is 2,017.0 feet above mean sea level, datum of 1929.

Records available.- November 1939 to September 1947. (November 1921, February 1930 to September 1939, miscellaneous discharge measurements only.)

Extremes.- Maximum daily diversion for irrigation (excluding flood flow) during year, 15 second-feet Oct. 1-5; minimum daily, 4.2 second-feet Jan. 18, 19, Jan. 26 to Feb. 2. 1939-47: Maximum daily diversion for irrigation (excluding flood flow), 21 second-feet June 27, 28, 1941, Sept. 18, 21, 1942; minimum daily, 2.7 second-feet Dec. 12, 1941.

Remarks.- Records fair. No diversion above station. Canal diverts water for irrigation from right bank of South Concho River 600 feet above station at Christoval. Water Service Report to the State Board of Water Engineers indicates 1,200 acres irrigated during current year.

Monthly discharge, in second-feet, water year October 1946 to September 1947

Month	Maximum	Minimum	Mean	Runoff in acre-feet
October	15	12	13.3	819
November	12	6.6	9.21	548
December	6.3	4.7	5.50	338
Calendar year 1946	15	4.7	11.5	8,290
January	4.9	4.2	4.45	274
February	12	4.2	9.34	518
March	8.8	6.0	7.15	439
April	8.8	5.6	7.54	449
May	11	7.6	8.89	547
June	12	9.2	10.8	642
July	12	11	11.6	716
August	12	9.9	11.2	689
September	11	9.2	10.2	608
Water year 1946-47	15	4.2	9.10	6,590

Note.- No gage-height record Dec. 30 to Jan. 3; discharge interpolated; gage height affected by flood runoff Nov. 1, 3, June 18-20, July 18, 19; discharge diverted for irrigation interpolated.

Middle Concho River near Tankersly, Tex.

Location.- Water-stage recorder and masonry control, lat. 31°22'35", long. 100°36'50", at Twelvemile Bridge, 3 miles northeast of Tankersly, Tom Green County, and 9½ miles upstream from Spring Creek. Datum of gage is 1,919.5 feet above mean sea level, datum of 1929.

Drainage area.- 1,280 square miles, of which 152 square miles is probably noncontributing.

Records available.- February 1930 to September 1947.

Average discharge.- 17 years, 42.9 second-feet.

Extremes.- Maximum discharge during year, 6,870 second-feet Dec. 11 (gage height, 16.09 feet); no flow at times.

1930-47: Maximum discharge, 35,900 second-feet Sept. 26, 1946 (gage height, 24.30 feet, from floodmark), from rating curve extended above 11,000 second-feet on basis of computed flow over Nasworthy Dam, 12 miles downstream, corrected for inflow and storage for flood of Sept. 26, 1936; no flow at times.

Maximum stage known, about 27.2 feet in April 1922, from information by State Highway Department.

Remarks.- Records good. Small diversions for irrigation above station affect low flow.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.3	0.3	0	3.5	1.8	1.7	0.9	0.3	5.1	9.0	0	
2	3.6	209	0	4.2	1.8	1.5	.9	.1	3.6	4.3	0	
3	2.7	36	0	3.9	1.8	1.3	.9	0	3.2	2.7	0	
4	2.0	11	0	3.5	1.9	1.3	1.1	0	2.7	1.0	0	
5	1.5	6.3	0	3.5	1.8	1.2	1.4	0	1.7	.2	0	
6	3.4	4.5	0	3.5	1.6	1.2	1.0	0	1.4	.5	0	
7	3.5	3.1	0	3.5	1.6	1.6	.6	0	1.0	.1	0	
8	2.2	2.7	0	3.2	1.6	1.9	.2	0	.7	0	0	
9	418	2.2	0	3.3	1.5	1.8	0	0	.3	0	0	
10	1,800	1.4	4.8	3.3	1.4	1.9	0	10	0	0	0	
11	135	1.2	2,070	3.3	1.5	2.2	.1	487	0	15	0	
12	34	1.1	129	3.2	1.5	2.2	.1	131	0	12	0	
13	18	1.0	40	3.2	1.5	1.9	0	40	0	2.9	0	
14	10	1.2	22	3.1	1.6	1.4	.1	21	0	.8	0	
15	6.9	.9	15	2.9	1.5	1.1	.1	13	0	0	0	
16	5.4	.5	11	3.4	1.6	1.2	0	26	0	0	0	
17	4.3	.4	8.0	4.5	1.5	1.1	.2	43	0	0	0	
18	2.8	.3	6.5	4.8	1.6	1.7	.2	21	0	0	0	
19	2.4	.2	6.3	4.9	1.6	2.8	.1	45	110	0	0	
20	1.9	0	6.0	4.0	1.6	2.2	0	29	53	0	0	
21	1.7	0	5.3	3.8	1.6	2.4	0	15	17	0	0	
22	1.4	0	4.8	3.6	1.6	2.6	0	9.8	7.4	0	0	
23	1.1	0	4.3	3.5	1.7	2.2	0	162	3.8	0	0	
24	1.0	0	3.8	3.3	1.4	1.7	0	473	2.3	0	46	
25	.6	0	3.9	2.9	1.3	1.5	0	108	1.4	0	2.3	
26	.3	0	3.8	2.6	1.4	1.3	0	44	1,050	0	0	
27	.1	0	3.5	2.6	1.5	1.2	0	24	172	0	0	
28	0	0	3.1	2.6	1.8	1.1	.2	16	64	0	0	
29	.1	0	2.8	2.3	-	1.0	.7	10	30	0	0	
30	0	0	2.7	2.2	-	1.0	.6	7.4	17	0	0	
31	0	-	2.8	1.8	-	.9	-	6.3	-	0	0	

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,468.2	1,800	0	79.6	4,900
November	283.3	209	0	9.44	562
December	2,359.4	2,070	0	76.1	4,680
Calendar year 1946	16,420.4	9,870	0	45.0	32,580
January	103.9	4.9	1.8	3.35	206
February	44.6	1.9	1.3	1.59	88
March	50.1	2.8	.9	1.62	99
April	9.4	1.4	0	.31	19
May	1,741.9	487	0	56.2	3,460
June	1,547.6	1,050	0	51.6	3,070
July	48.5	15	0	1.56	96
August	48.3	46	0	1.56	96
September	0	0	0	0	0
Water year 1946-47	8,705.2	2,070	0	23.8	17,280

Peak discharge.- Oct. 10 (12:30 a.m.) 6,520 sec.-ft.; Dec. 11 (3:30 a.m.) 6,870 sec.-ft.; May 23 (11 p.m.) 1,680 sec.-ft.; June 26 (9:30 a.m.) 2,490 sec.-ft.

Spring Creek near Tankersly, Tex.

Location.- Water-stage recorder and concrete control, lat. 31°21'30", long. 100°32'05", 2¾ miles upstream from mouth and 6½ miles east of Tankersly, Tom Green County. Datum of gage is 1,874.6 feet above mean sea level, datum of 1929.

Drainage area.- 734 square miles.

Records available.- February 1930 to September 1947.

Average discharge.- 17 years, 38.2 second-feet.

Extremes.- Maximum discharge during year, 2,560 second-feet Dec. 11 (gage height, 8.22 feet); no flow July 16 to Sept. 30.
1930-47: Maximum discharge, 26,900 second-feet Aug. 23, 1942 (gage height, 21.37 feet), from rating curve extended above 18,000 second-feet; no flow at times.
Maximum stage known, about 26.0 feet in 1882, from information by local residents.

Remarks.- Records good. Several small diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	1.0	2.1	15	20	1.1	d2.1	0.7	12	0.3		
2	24	.9	2.3	18	20	1.2	1.8	.9	5.3	.3		
3	23	.9	3.1	18	22	1.2	1.6	.8	3.2	.3		
4	23	.8	3.9	14	21	1.2	1.6	1.0	2.8	.2		
5	22	.8	4.8	12	21	1.3	1.6	1.2	2.5	.2		
6	31	.8	3.2	12	18	1.1	1.4	1.7	2.1	.1		
7	22	.9	3.4	12	6.5	1.4	1.4	2.9	2.0	.1		
8	18	.9	3.5	12	14	1.3	1.3	3.2	1.7	.1		
9	18	.9	3.4	12	16	1.2	1.3	3.1	1.6	.2		
10	22	.9	3.7	14	14	1.4	1.2	2.9	1.5	.1		
11	18	1.0	654	12	5.9	2.3	1.1	29	1.4	.2		
12	14	1.0	94	11	3.7	2.3	1.0	17	1.3	.3		
13	14	1.0	39	9.8	3.4	2.1	.9	5.7	1.1	.2		
14	13	1.1	26	9.1	3.2	2.9	.9	3.1	1.1	.1		
15	14	1.2	19	8.1	3.9	3.5	.9	2.6	1.0	.1		
16	14	1.3	15	8.3	3.4	4.4	.9	3.5	1.0	0		
17	14	1.3	13	15	2.6	5.5	.8	11	1.0	0		
18	10	1.3	12	17	2.3	7.6	.7	18	1.1	0		
19	9.8	1.4	13	16	2.1	9.8	.6	10	1.4	0		
20	4.4	1.5	15	12	2.1	8.6	.6	8.3	1.0	0		
21	2.6	1.5	14	9.5	2.0	8.3	.6	8.1	.8	0		
22	2.1	1.6	13	8.3	1.6	8.1	.6	12	.7	0		
23	2.0	1.4	13	9.9	1.5	8.1	.6	15	.7	0		
24	1.7	1.4	12	24	1.4	6.7	.7	56	.6	0		
25	1.5	1.5	12	23	1.4	5.1	.6	22	.6	0		
26	1.3	1.5	13	22	1.3	5.1	.8	18	.5	0		
27	1.2	1.5	13	22	1.3	5.1	.9	18	.4	0		
28	1.2	1.4	12	22	1.3	3.9	.8	16	.4	0		
29	1.0	1.4	11	21	-	2.6	.7	14	.4	0		
30	.9	1.6	9.8	19	-	2.3	.6	13	.3	0		
31	.8	-	12	20	-	2.2	-	13	-	0		

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	371.5	31	0.8	12.0	737
November	35.7	1.6	.8	1.19	71
December	1,068.2	654	2.1	34.5	2,120
Calendar year 1946	8,138.3	4,770	0	22.3	16,150
January	458	24	8.1	14.8	908
February	216.9	22	1.3	7.75	430
March	118.9	9.8	1.1	3.84	236
April	30.6	2.1	.6	1.02	61
May	331.7	56	.7	10.7	658
June	51.5	12	.3	1.72	102
July	2.8	.3	0	.09	5.6
August	0	0	0	0	0
September	0	0	0	0	0
Water year 1946-47	2,685.8	654	0	7.36	5,330

d Doubtful gage-height record; discharge computed on basis of engineers' notes.

Dove Creek near Knickerbocker, Tex.

Location.- Water-stage recorder, lat. 31°12', long. 100°41', in Irion County, upstream from Knickerbocker-Rawls ranch road crossing, a quarter of a mile downstream from Stilson diversion dam, three-quarters of a mile upstream from Kepler Creek, 2 miles downstream from Dove Creek Spring, and about 7 miles southwest of Knickerbocker, Tom Green County.

Records available.- November 1944 to September 1947.

Extremes.- Maximum gage height during year not determined; no flow at times.
1945-47: Maximum gage height, 7.08 feet July 6, 1945 (discharge not determined); no flow at times.

Remarks.- Records fair except those for periods of no gage-height record, which are poor. As the primary purpose of this station is to measure low or spring flow, discharge will not be computed for flows greater than about 15 second-feet. Diversions for irrigation above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.5	1.1	0.6	1.7	1.7	2.0	3.6	7.8	a9.0	0.3	5.7	0.5
2	1.7	1.1	.7	1.7	1.6	2.0	3.4	8.1	a9.0	.4	5.5	.5
3	.8	2.2	.7	1.5	1.8	2.0	3.6	8.1	9.3	.6	5.3	.6
4	.4	.8	.7	1.4	1.7	1.7	4.3	8.3	3.6	.6	5.3	.6
5	.1	.8	.7	1.4	1.7	1.6	4.8	8.3	.2	.6	5.5	.5
6	.2	.8	.7	1.4	1.7	1.6	5.0	8.5	.1	.8	5.5	.5
7	.7	.8	.7	1.3	1.6	1.8	5.0	8.5	.1	.9	5.5	.5
8	1.2	.6	.7	1.3	1.6	1.6	5.3	8.8	.1	1.1	5.7	.5
9	1.1	.6	.7	1.3	1.5	1.5	5.5	7.4	.1	1.2	5.7	.5
10	2.4	.6	1.2	1.2	1.5	1.4	6.0	2.6	0	1.3	5.7	.6
11	1.2	.6	14	1.2	1.5	1.4	4.0	0	0	1.3	5.5	.6
12	1.1	.6	.4	1.2	1.5	1.3	1.1	0	0	1.4	5.7	.6
13	.8	.7	.4	1.2	1.5	1.4	.8	0	0	1.4	5.7	a.7
14	.6	.7	.4	1.1	1.5	1.3	.8	0	0	1.5	6.2	a.8
15	.7	.7	.7	1.1	1.5	1.3	.8	0	0	1.7	6.2	a.8
16	.6	.7	.6	1.2	1.5	1.4	.7	0	0	1.7	6.2	a.9
17	.3	.6	.6	1.4	1.6	1.4	.7	0	0	1.7	6.2	.9
18	.1	.7	.8	1.4	1.7	2.0	.8	0	0	1.7	6.2	.9
19	.4	.7	.7	1.3	1.7	1.6	.8	0	0	1.8	6.0	1.2
20	1.2	.7	.6	1.3	1.7	1.5	.7	0	0	1.8	.7	1.2
21	.9	.7	.6	1.2	1.7	1.6	.7	0	0	1.8	.6	1.2
22	.8	.8	.4	1.4	1.8	2.0	.8	a0	0	1.7	.6	1.2
23	1.0	.6	.2	1.4	1.8	2.1	.8	a5.0	0	1.5	.6	1.2
24	1.2	.6	.2	1.4	1.8	2.5	.9		0	1.5	.6	1.2
25	1.2	.6	1.2	1.4	1.7	2.5	.8		0	2.9	.6	1.2
26	1.1	.6	2.0	1.5	1.7	2.7	1.0		0	5.5	.6	1.2
27	1.0	.6	1.8	1.7	1.8	2.7	1.0	a9.0	0	5.7	.6	1.2
28	1.2	.6	1.8	1.8	1.8	2.7	1.0		0	5.5	.6	1.2
29	1.1	.6	1.7	1.8	-	3.0	.9		0	5.5	.6	1.2
30	1.0	.5	1.7	1.8	-	3.4	1.6		.2	5.7	.5	1.2
31	1.0	-	1.7	1.8	-	3.2	-		-	5.5	.5	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	29.6	2.5	0.1	0.95	59
November	22.3	2.2	.5	.74	44
December	39.9	14	.2	1.29	79
Calendar year	-	-	-	-	-
January	43.8	1.8	1.1	1.41	87
February	46.2	1.8	1.5	1.65	92
March	60.2	3.4	1.3	1.94	119
April	67.2	6.0	.7	2.24	133
May	153.4	-	0	4.95	304
June	31.7	9.3	0	1.06	63
July	66.6	5.7	.3	2.15	132
August	116.4	6.2	.5	3.75	231
September	25.9	1.2	.5	.86	51
Water year 1946-47	703.2	-	0	1.93	1,390

a No gage-height record; discharge computed on basis of weather records and records for Spring Creek near Tankersly.

Dove Creek Spring near Knickerbocker, Tex.

Location.- Staff gage, lat. 31°11', long. 100°44', at W. G. Rawls ranch house, 200 feet downstream from spring, 300 feet upstream from confluence with Dove Creek, 1¾ miles upstream from Stilson Dam, and about 8½ miles southwest of Knickerbocker, Tom Green County.

Records available.- April 1944 to September 1947 (discharge measurements only).

Extremes.- Maximum discharge measured during year, 10.0 second-feet Oct. 2, Jan. 31; minimum measured, 7.01 second-feet Sept. 17.
1944-47: Maximum discharge measured, 17.2 second-feet Aug. 23, 1944; minimum measured, that of Sept. 17, 1947.

Remarks.- Discharge measurements represent total flow of springs. Flow emerges from limestone outcrop at left bank of draw that extends upstream from about 1 mile, and responds to rainfall on Edwards Plateau. Water used for irrigation below station.

Discharge measurements, in second-feet, of Dove Creek Spring near Knickerbocker, Tex., 1946-47

Date	Discharge	Date	Discharge	Date	Discharge
1946		1947		1947	
Oct. 2	10.0	Jan. 31	10.0	June 26	7.91
29	9.70	Mar. 4	8.39	July 22	7.25
Nov. 26	9.49	Apr. 1	8.33	Aug. 14	7.55
1947		May 1	8.06	Sept.17	7.01
Jan. 13	8.50	June 3	8.10		

North Concho River at Sterling City, Tex.

Location.- Water-stage recorder and concrete control, lat. 31°50', long. 100°59', at county highway bridge, 0.3 mile south of Sterling City, Sterling County, and 4 miles upstream from Sterling Creek. Datum of gage is 2,242.4 feet above mean sea level, datum of 1929.
Drainage area.- 690 square miles, of which 75 square miles is probably noncontributing.
Records available.- September 1939 to September 1947.
Extremes.- Maximum discharge during year, 2,300 second-feet May 11 (gage height, 15.68 feet), from rating curve extended above 1,100 second-feet on basis of slope-area determination at gage height 23.52 feet; no flow during several months.
1939-47: Maximum discharge, 25,000 second-feet July 8, 1945 (gage height, 23.52 feet), by slope-area method; no flow at times.
Maximum stage known prior to 1945, 22.4 feet May 6, 1891, from information by local residents.
Remarks.- Records good. Small diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0			0	0	0.3	0	0	0.8			
2	0			0	0	.1	.2	0	.8			
3	0			0	0	0	.2	0	.7			
4	0			0	0	0	.1	0	.3			
5	0			0	0	0	0	0	.1			
6	0			0	0	0	0	.4	0			
7	0			0	0	.3	0	2.3	0			
8	0			0	0	.7	0	.4	0			
9	0			0	0	.6	.1	23	0			
10	136			0	0	.5	.1	458	0			
11	73			0	.1	.5	0	655	0			
12	10			0	.2	.4	0	37	0			
13	2.8			0	.1	.4	0	12	0			
14	.6			0	.1	.3	0	6.7	0			
15	.1			0	.1	.1	0	4.0	0			
16	0			0	.1	0	0	129	0			
17	0			0	.2	0	0	40	0			
18	0			.1	.2	1.0	0	15	0			
19	0			.3	.3	2.0	0	7.4	0			
20	0			.4	.2	.8	0	4.0	0			
21	0			.3	.2	.5	.2	2.9	0			
22	0			.1	.2	.5	0	2.8	0			
23	0			.1	.1	1.4	0	2.6	0			
24	0			.1	.3	2.2	0	2.4	0			
25	0			.1	.1	.4	0	3.1	0			
26	0			.1	.1	0	0	2.6	0			
27	0			0	.2	0	0	2.3	0			
28	0			0	.3	0	0	1.8	5.9			
29	0			0	-	0	0	1.5	1.8			
30	0			0	-	0	0	1.3	0			
31	0			0	-	0	-	.9	-			

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	222.5	136	0	7.18	441
November	0	0	0	0	0
December	0	0	0	0	0
Calendar year 1946	470.9	136	0	1.29	934
January	1.6	.4	0	.05	3.2
February	3.1	.5	0	.11	6.1
March	13.0	2.2	0	.42	26
April	.9	.2	0	.03	1.8
May	1,418.4	655	0	45.8	2,810
June	10.4	5.9	0	.35	21
July	0	0	0	0	0
August	0	0	0	0	0
September	0	0	0	0	0
Water year 1946-47	1,669.9	655	0	4.58	3,310

Peak discharge.- Oct. 10 (10 p.m.) 446 sec.-ft.; May 11 (2:30 a.m.) 2,300 sec.-ft.; May 16 (10 a.m.) 297 sec.-ft.

North Concho River near Carlsbad, Tex.

Location.- Water-stage recorder above spillway of State Sanatorium Dam, lat. 31°36', long. 100°40', 2 miles upstream from Carlsbad, Tom Green County. Datum of gage is 2,000.8 feet above mean sea level, datum of 1929.

Drainage area.- 1,529 square miles, of which 123 square miles is probably noncontributing.

Records available.- March 1924 to September 1947.

Average discharge.- 23 years, 49.7 second-feet.

Extremes.- Maximum discharge during year, 23,600 second-feet May 11 (gage height, 12.60 feet), from rating curve extended above 5,000 second-feet on basis of slope-area determinations at gage heights 11.5, 14.45, and 16.0 feet; minimum, 0.1 second-foot at times.
1924-47: Maximum discharge, 94,600 second-feet Sept. 26, 1936 (gage height, 16.0 feet, from highest floodmarks known), by slope-area method; no flow at times.

Remarks.- Records good. Diversions by pumping above station affect low flow (combined capacity of pumps, 40 second-feet); low flow also partly regulated by small reservoir above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.5	1.2	2.1	3.2	3.0	5.0	2.3	5.4	0.6	0.1	0.1
2	.1	.5	1.2	2.4	2.9	3.0	4.4	1.7	5.4	.4	.1	.1
3	.1	.5	1.5	2.1	2.9	3.0	4.4	1.0	4.8	.3	.1	.1
4	.1	.5	1.8	2.1	2.9	3.0	4.0	1.4	4.3	.2	.1	.1
5	.1	.5	1.5	2.1	2.9	3.0	2.8	1.7	3.9	.2	.1	.1
6	.1	.5	1.5	1.7	3.6	3.0	3.6	1.1	3.3	.1	.1	.1
7	.1	.5	1.5	1.7	3.6	3.5	3.8	.9	3.3	.1	.1	.1
8	.1	.5	1.7	1.7	4.2	3.5	3.8	.8	3.3	.1	.1	.1
9	.1	.6	1.8	1.7	4.2	3.5	3.8	1.2	3.0	.1	.1	.1
10	.5	.7	85	1.7	4.2	3.1	3.2	1,120	3.0	.1	.1	.1
11	33	.7	201	1.6	5.0	3.1	3.2	6,960	2.5	98	.1	.1
12	32	.7	6.4	1.6	5.0	2.9	3.2	175	2.3	14	.1	.1
13	9.2	.7	5.0	1.6	4.4	2.6	2.7	61	2.3	3.8	.1	.1
14	6.4	.8	4.4	1.6	3.8	2.9	3.0	32	2.2	1.7	.1	.1
15	4.0	.8	4.4	1.6	3.8	2.9	3.4	20	2.3	1.0	.1	.1
16	2.9	.9	4.4	1.5	3.8	3.3	3.6	808	2.3	.6	.1	.1
17	2.1	.9	3.8	2.1	3.8	3.3	3.6	153	1.8	.4	.1	.1
18	1.7	.7	3.3	2.1	2.9	4.6	3.2	57	1.7	.3	.1	.1
19	1.1	.7	3.3	1.8	2.9	5.8	3.4	34	2.1	.2	.1	.1
20	1.0	.7	3.8	1.8	2.7	6.5	3.4	20	2.1	.1	.1	.1
21	.9	.8	4.4	1.7	2.7	6.5	3.0	15	1.8	.1	.1	.1
22	.8	.7	5.0	1.4	2.4	5.3	2.9	12	1.7	.1	.1	.1
23	.8	.6	4.4	1.4	2.7	4.8	2.9	10	1.7	.1	1.1	.1
24	.8	.7	5.0	1.7	2.7	4.8	3.3	9.4	19	.1	6.2	.1
25	.7	.9	5.7	1.7	2.6	4.8	2.9	8.6	7.4	.1	.3	.1
26	.7	.9	5.7	1.7	2.6	5.3	2.4	7.8	3.5	.1	.1	.1
27	.7	.8	5.0	1.7	2.6	4.8	2.8	7.2	2.4	.1	.1	.1
28	.6	.9	4.4	1.3	2.6	4.8	3.2	6.5	1.6	.1	.1	.1
29	.6	.9	3.3	2.3	-	4.8	2.8	5.8	1.3	.1	.1	.1
30	.6	1.1	2.9	2.7	-	5.4	2.1	5.8	.9	.1	.1	.1
31	.6	-	2.2	3.2	-	4.8	-	5.4	-	.1	.1	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	102.7	33	0.1	3.31	204
November	21.2	1.1	.5	.71	42
December	386.5	201	1.2	12.5	767
Calendar year 1946	1,156.6	201	0	3.17	2,290
January	57.4	3.2	1.3	1.85	114
February	93.6	5.0	2.4	3.34	186
March	125.6	6.5	2.6	4.05	249
April	99.8	5.0	2.1	3.33	198
May	9,545.6	6,960	.8	308	18,930
June	102.6	19	.9	3.42	204
July	123.4	98	.1	3.98	245
August	10.4	6.2	.1	.34	21
September	3.0	.1	.1	.10	6.0
Water year 1946-47	10,671.8	6,960	.1	29.2	21,170

Peak discharge.- Dec. 11 (1 a.m.) 1,430 sec.-ft.; May 11 (3:30 a.m.) 23,600 sec.-ft.; May 16 (11:30 a.m.) 2,890 sec.-ft.

Note.- Water below crest of control Oct. 2-9, Oct. 29 to Nov. 7, July 7-9, July 20 to Aug. 22, Aug. 27 to Sept. 30; discharge is estimated seepage under dam.

Pecan Bayou at Brownwood, Tex.

Location.- Water-stage recorder above spillway of city dam, lat. 31°44'10", long. 98°58'30", at Gulf, Colorado & Santa Fe Railway bridge, 1 mile north of Brownwood, Brown County, 6 miles downstream from Salt Creek, and 10 miles downstream from Brownwood Reservoir. Datum of gage is 1,318.58 feet above mean sea level, datum of 1929.

Drainage area.- 1,614 square miles.

Records available.- May 1917 to June 1918, October 1923 to September 1947.

Average discharge.- 22 years (1924-28, 1929-47), 199 second-feet.

Extremes.- Maximum discharge during year, 790 second-feet Nov. 3 (gage height, 2.28 feet); no flow at times.

1917-18, 1923-47: Maximum discharge, 52,700 second-feet Oct. 14, 1930 (gage height, 16.92 feet), from rating curve extended above 38,000 second-feet; no flow at times.

Maximum stage known, 21.7 feet in September 1900, from information by Gulf, Colorado & Santa Fe Railway Co. Flood of July 3, 1932, probably the greatest known, reached a discharge of about 235,000 second-feet as it entered Brownwood Reservoir (computed from rate of change of contents in reservoir; data furnished by engineers of Brown County Water Improvement District No. 1).

Remarks.- Records good except those below 10 second-feet, which are fair. Stage-discharge relation for low flows affected by occasional accumulation of drift on dam. Flow regulated by Brownwood Reservoir (capacity, 158,000 acre-feet, revised). Water is diverted at Brownwood Reservoir, 10 miles upstream, for irrigation and for municipal supply of city of Brownwood. Acreage irrigated during current year not known. Irrigation canal completed Apr. 9, 1939.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.9	0.5	1.3	143	1.9	3.7	1.9	0.1		0	
2	0	91	.5	1.9	143	1.9	2.8	1.3	.1		0	
3	0	294	.6	.9	147	1.9	3.7	2.8	.1		0	
4	.4	25	.6	.9	152	1.9	3.7	2.8	0		0	
5	3.7	.4	.6	.9	152	1.9	2.8	1.9	0		0	
6	.6	.2	.6	.9	158	2.8	2.8	1.9	0		0	
7	.2	.2	.6	.9	163	6.0	2.8	2.8	0		0	
8	.6	.4	.6	1.9	158	6.0	3.7	2.8	0		38	
9	1.9	.2	.9	3.7	158	3.7	3.7	2.8	0		.9	
10	.9	.4	3.7	4.7	158	3.7	2.8	4.7	.2		0	
11	.6	0	2.8	4.7	158	2.8	2.8	11	.2		0	
12	0	.1	1.3	2.8	158	3.7	2.8	6.0	.4		0	
13	0	.4	1.3	.9	158	3.7	1.9	3.7	.1		0	
14	0	.4	1.3	.9	163	2.8	6.0	1.9	0		0	
15	.2	.6	1.3	1.3	163	1.9	1.9	1.3	0		0	
16	.2	.9	1.3	1.9	163	1.3	1.3	1.9	0		0	
17	.2	.4	1.3	18	163	1.9	.9	4.5	0		0	
18	.2	.4	.4	12	168	187	.9	17	0		0	
19	.1	.4	.4	3.7	168	73	1.3	3.7	0		0	
20	0	.4	.9	1.9	168	8.9	.9	2.8	0		0	
21	0	.4	.9	.9	127	3.7	.6	1.3	0		0	
22	0	.4	.9	5.1	8.4	2.8	27	1.3	0		0	
23	0	.5	.9	129	2.8	2.8	147	1.9	1.6		0	
24	0	.5	.9	134	1.9	1.9	152	2.8	24		0	
25	0	.5	.9	134	1.9	1.3	152	1.9	.6		0	
26	0	.5	.9	134	1.9	1.9	126	1.3	0		0	
27	0	.5	.9	134	1.9	2.8	7.4	.9	0		0	
28	.1	.5	.9	134	2.8	1.9	2.8	1.3	0		0	
29	.1	.5	.6	134	-	2.8	2.8	1.3	0		0	
30	0	.5	.4	143	-	2.8	1.9	.4	0		0	
31	.1	-	1.3	143	-	2.8	-	.2	-		0	

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	10.1	3.7	0	0.33	20
November	421.5	294	0	14.0	836
December	31.0	3.7	.4	1.00	61
Calendar year 1946	8,420.1	579	0	23.1	16,700
January	1,291.1	143	.9	41.6	2,560
February	3,310.6	168	1.9	118	6,570
March	346.2	187	1.3	11.2	687
April	672.7	152	.6	22.4	1,330
May	94.1	17	.2	3.04	187
June	27.4	24	0	.91	54
July	0	0	0	0	0
August	38.9	38	0	1.25	77
September	0	0	0	0	0
Water year 1946-47	6,243.6	294	0	17.1	12,380

Note.- No gage-height record Nov. 19 to Dec. 5; discharge interpolated.

San Saba River at Menard, Tex.

Location.- Water-stage recorder, lat. 30°55', long. 99°47', at bridge on U. S. Highway 83 in Menard, Menard County, 0.7 mile downstream from Las Moras Creek. Datum of gage is 1,863.05 feet above mean sea level, datum of 1929.

Drainage area.- 1,151 square miles.

Records available.- September 1915 to September 1947.

Average discharge.- 32 years, 72.8 second-feet.

Extremes.- Maximum discharge during year, 4,150 second-feet May 18 (gage height, 9.88 feet); minimum, 3.0 second-feet (regulated) July 18.

1915-47: Maximum discharge, 117,000 second-feet July 23, 1938 (gage height, 22.2 feet, present site and datum, from floodmark), from rating curve extended above 60,000 second-feet on basis of slope-area determinations at gage heights 21.0 and 22.2 feet; no flow at times caused by diversions to Noyes Canal.

Maximum stage known, 23.3 feet, present site and datum, June 5 or 6, 1899, from information by local residents.

Remarks.- Records good. Low flow during irrigation season regulated by diversions to Noyes Canal, 4 miles above Menard. About 4,300 acres above and 7,700 acres below gage have been declared irrigated (see records of Noyes Canal at Menard).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	d40	38	15	19	17	20	36	17	28	5.5	5.2	5.0
2	d41	44	15	22	18	20	35	15	24	5.2	5.2	5.0
3	44	58	15	20	17	17	35	15	23	5.2	6.8	5.0
4	44	43	15	18	17	17	37	16	22	5.0	6.8	5.0
5	44	40	15	18	17	16	31	15	21	4.5	7.0	5.0
6	43	38	16	18	17	18	12	13	20	4.0	7.2	5.0
7	43	e37	16	19	18	30	9.8	14	20	4.2	6.5	5.0
8	46	e36	17	19	18	23	10	15	23	4.2	6.5	5.5
9	51	e34	17	21	16	17	10	17	30	3.8	6.5	5.2
10	50	33	18	24	17	15	9.6	29	30	3.8	6.5	4.8
11	48	34	22	22	17	14	9.1	96	29	3.8	11	4.5
12	44	33	24	19	16	13	8.5	47	28	3.5	16	16
13	43	33	20	18	17	13	8.8	42	25	3.5	19	13
14	43	32	18	18	17	12	9.8	76	14	3.5	17	9.8
15	43	31	18	17	18	11	10	42	9.6	3.5	14	8.3
16	41	35	17	18	17	9.4	9.6	34	8.8	3.8	5.8	7.8
17	41	29	17	34	18	36	9.8	277	8.8	3.8	4.5	7.5
18	37	14	17	40	19	44	11	1,280	9.4	3.2	4.2	7.8
19	37	13	17	37	18	47	11	176	12	22	4.8	e7.0
20	36	13	17	40	17	42	11	72	15	14	6.8	e7.0
21	37	13	17	31	18	39	12	45	9.6	7.8	7.2	7.0
22	37	13	17	26	18	37	14	41	8.3	6.2	6.8	6.2
23	35	13	17	20	18	37	13	37	9.6	6.2	8.5	6.8
24	35	13	17	18	18	36	14	35	12	5.8	6.8	7.2
25	35	14	16	17	18	36	14	33	9.6	6.0	6.8	7.2
26	35	14	16	17	18	37	14	32	8.5	6.0	6.2	8.3
27	35	14	17	17	19	37	16	29	7.8	6.0	6.5	8.8
28	35	14	17	16	20	37	17	29	7.2	6.2	6.2	8.8
29	35	14	17	18	-	36	17	28	6.8	6.5	5.5	8.8
30	35	14	16	17	-	36	17	28	6.2	6.0	5.2	8.8
31	35	-	17	17	-	36	-	29	-	5.5	5.5	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,248	51	35	40.3	2,480
November	804	58	13	26.8	1,590
December	530	24	15	17.1	1,050
Calendar year 1946	21,423.8	12,900	2.6	58.7	42,480
January	675	40	16	21.8	1,340
February	493	20	16	17.6	978
March	838.4	47	9.4	27.0	1,660
April	472.0	37	8.5	15.7	936
May	2,674	1,280	13	86.3	5,300
June	486.2	30	6.2	16.2	964
July	178.2	22	3.2	5.75	353
August	237.5	19	4.2	7.66	471
September	217.1	16	4.5	7.24	431
Water year 1946-47	8,853.4	1,280	3.2	24.3	17,550

d Doubtful gage-height record; discharge computed on basis of dicharge measurement on Oct. 3 and weather records.

e Stage-discharge relation indefinite; discharge interpolated, or computed on basis of engineer's field estimate.

San Saba River at San Saba, Tex.

Location.- Water-stage recorder, lat. 31°12'10", long. 98°42'15", at bridge on San Saba-Chadwick Mill highway, three-quarters of a mile northeast of San Saba, San Saba County, and 15 miles upstream from mouth. Datum of gage is 1,153.3 feet above mean sea level, datum of 1929.
Drainage area.- 3,046 square miles.
Records available.- August 1930 to September 1947. December 1904 to December 1906 and September 1915 to August 1930 at site 4½ miles upstream.
Average discharge.- 32 years (1915-47), 275 second-feet.
Extremes.- Maximum discharge during year, 2,490 second-feet May 19 (gage height, 13.68 feet); minimum, 20 second-feet Sept. 12 (gage height, 3.08 feet).
1904-6, 1915-47: Maximum discharge, 203,000 second-feet July 23, 1938 (gage height, 45.18 feet, from floodmarks at highest stage known), by slope-area method; no flow Aug. 9, 10, 1918.
Maximum stage known prior to 1938, 42.6 feet June 6, 1899, from information by local resident.
Remarks.- Records good. Diversions above station for irrigation and municipal uses affect low flow.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	228	74	59	77	99	87	111	68	93	41	26	28
2	176	77	58	86	95	84	107	67	87	39	23	26
3	145	72	58	98	95	84	105	67	84	38	24	26
4	127	72	58	93	93	84	105	66	80	37	24	25
5	129	72	57	91	91	85	104	65	76	37	23	24
6	118	73	57	89	88	85	100	63	70	34	23	23
7	105	76	57	93	91	107	97	59	64	32	23	23
8	99	79	57	93	91	120	97	58	60	30	23	23
9	100	75	56	97	91	120	99	58	56	29	23	22
10	129	72	57	103	91	107	98	63	52	29	23	22
11	112	68	65	118	91	101	88	89	52	30	28	22
12	98	72	72	116	91	103	80	111	48	30	33	85
13	95	74	73	103	89	98	75	184	45	29	32	42
14	92	73	70	99	85	93	77	146	43	28	28	65
15	94	73	70	98	85	88	83	127	45	25	26	51
16	94	73	74	100	85	87	83	101	50	25	25	37
17	95	72	77	180	85	87	80	97	49	23	26	34
18	98	73	75	357	85	565	78	133	45	34	26	31
19	92	73	73	393	86	559	76	1,550	45	51	26	35
20	86	73	74	321	88	305	75	1,040	43	211	25	34
21	83	75	73	228	88	220	74	463	38	162	28	32
22	83	79	70	184	88	191	70	308	51	82	30	30
23	80	73	72	153	87	171	64	220	45	55	30	30
24	80	73	72	147	85	153	60	177	39	42	30	28
25	79	67	73	137	83	140	60	153	36	35	50	27
26	79	61	74	129	83	129	62	136	52	32	56	27
27	78	60	76	123	84	125	63	124	50	31	39	26
28	77	60	77	116	87	119	65	114	45	30	37	26
29	77	61	75	112	-	116	72	112	43	30	33	25
30	76	61	75	107	-	115	74	100	45	32	30	25
31	74	-	75	104	-	119	-	95	-	30	28	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,178	228	74	103	6,300
November	2,136	79	60	71.2	4,240
December	2,109	77	56	68.0	4,180
Calendar year 1946	45,883	5,550	23	126	91,010
January	4,345	393	77	140	8,620
February	2,480	99	83	88.6	4,920
March	4,647	565	84	150	9,220
April	2,482	111	60	82.7	4,920
May	6,214	1,550	58	200	12,330
June	1,631	93	36	54.4	3,240
July	1,393	211	23	44.9	2,760
August	901	56	23	29.1	1,790
September	954	85	22	31.8	1,890
Water year 1946-47	32,470	1,550	22	89.0	64,410

Noyes Canal at Menard, Tex.

Location.- Water-stage recorder, lat. 30°55', long. 99°47', at intersection of Canal and Day Streets in Menard, Menard County, 4½ miles downstream from head gates. Datum of gage is 1,878.1 feet above mean sea level, datum of 1929.
Records available.- March 1924 to September 1947.
Average discharge.- 23 years (1924-47), 14.9 second-feet.
Extremes.- Maximum daily discharge during year, 28 second-feet June 20; maximum gage height, 3.94 feet May 17 (affected by local runoff); no flow at times.
1924-47: Maximum daily discharge (exclusive of times canal submerged by waters of San Saba River), 50 second-feet Apr. 15, 1925 (probably affected by local runoff between point of diversion and station); no flow at times.
Remarks.- Records fair. Discharge represents flow diverted from San Saba River not including local runoff between point of diversion and station. Canal diverts water from right bank of San Saba River 4 miles above Menard for irrigation near Menard; 10 acres irrigated from canal above station.

Monthly discharge, in second-feet, of Noyes Canal at Menard, Tex., water year October 1946 to September 1947

Month	Maximum	Minimum	Mean	Runoff in acre-feet
October	0	0	0	0
November	19	0	7.17	427
December	23	20	21.3	1,310
Calendar year 1946	23	0	12.2	8,820
January	22	17	20.3	1,250
February	22	17	19.2	1,070
March	23	0	10.6	653
April	22	0	16.1	958
May	23	13	17.7	1,090
June	28	0	16.9	1,010
July	20	11	15.9	976
August	20	0	11.7	717
September	15	12	13.1	778
Water year 1946-47	28	0	14.1	10,240

Brady Creek at Brady, Tex.

Location.- Water-stage recorder, lat. 31°08'15", long. 99°19'55", just upstream from bridge on North Bridge Street in Brady, McCulloch County, and 0.4 mile downstream from Live Oak Creek. Datum of gage is 1,646.50 feet above mean sea level, datum of 1929.

Drainage area.- 575 square miles.

Records available.- May 1939 to September 1947.

Extremes.- 1945-46: Maximum discharge during water year, 3,280 second-feet May 31 (gage height, 10.98 feet); no flow at times.
1946-47: Maximum discharge during water year, 2,820 second-feet May 18, July 19; maximum gage height, 10.67 feet July 19; no flow at times.
1939-47: Maximum discharge, 13,900 second-feet Apr. 27, 1941 (gage height, 16.81 feet), from rating curve extended above 8,000 second-feet; no flow at times.
Maximum stage known, 29.1 feet July 23, 1938, present site and datum (discharge at site 5 miles downstream, 86,000 second-feet by slope-area method).

Remarks.- Records good above 30 second-feet, poor below. No diversion above station.

Discharge, in second-feet, 1945-47

1945-46

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0		0	0	0		0	93	173	0.2	0.1	0.1
2	0		.1	0	0		0	10	13	.2	.1	9.5
3	0		.9	0	0		0	5.0	3.5	.1	.1	5.8
4	0		.4	.1	0		0	4.0	1.6	1.9	.1	.6
5	.5		.2	.4	0		0	2.1	.7	.8	.1	.2
6	.1		.1	.4	0		0	1.2	.3	.4	0	.1
7	0		0	.3	0		0	1.0	.2	.3	0	.1
8	0		0	.4	0		0	.9	.2	.2	0	0
9	.1		0	.4	0		0	.8	.2	.2	0	0
10	.2		0	.6	0		.1	300	.2	.2	0	0
11	0		0	.7	0		.2	20	.2	.1	0	0
12	0		0	.4	0		.1	5.4	.1	.2	0	0
13	0		.1	.4	0		.1	2.7	.1	.2	0	0
14	0		.1	3.2	0		.2	1.4	.1	.4	0	1.3
15	0		.1	1.0	0		.1	1.2	.1	.2	0	.3
16	0		.1	.4	0		.1	46	.1	.2	0	.1
17	0		.1	.2	0		0	4.5	.1	.2	0	.2
18	0		.1	.1	3.0		0	4.2	0	.2	0	.1
19	0		.1	.1	.6		0	72	0	.3	0	.1
20	0		.1	.1	.2		0	52	.1	.3	0	.1
21	0		0	.1	0		0	16	6.5	.3	0	0
22	0		0	.3	0		0	7.0	7.8	.2	0	0
23	0		0	.3	0		0	3.3	321	.2	0	0
24	0		0	.2	0		0	1.8	96	.3	0	0
25	0		0	.2	0		0	1.9	23	.2	0	0
26	0		0	.2	0		0	1.1	7.9	.2	0	1.0
27	0		0	.1	0		0	.6	3.7	.3	0	.3
28	0		0	.1	0		0	.3	2.1	.4	0	.1
29	0		0	.4	-		0	.1	1.2	.3	.1	.1
30	0		0	.1	-		307	.1	.5	.2	.2	.1
31	0		0	0	-		-	449	-	.2	.1	-

Peak discharge.- Apr. 30 (8:15 p.m.) 2,420 sec.-ft.; May 31 (8:15 p.m.) 3,280 sec.-ft.

Discharge, in second-feet, of Brady Creek at Brady, Tex., 1945-47--Continued

1946-47

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0	0	0
2	0	.1	.1	.1	.1	.1	.1	.1	.2	0	0	0
3	0	.1	.1	.1	.1	.1	.1	0	.1	0	0	0
4	0	.1	.1	.1	.1	.1	.1	0	.1	0	0	0
5	0	.1	0	.1	.1	.1	.1	0	.1	0	0	0
6	0	.1	0	.1	.1	.2	.1	0	.1	0	0	0
7	0	.1	0	.2	.1	.6	.1	0	.1	0	0	0
8	0	.1	.1	.3	0	.3	0	0	.1	0	0	0
9	0	0	.1	.4	0	.2	.1	.1	.1	0	0	0
10	.1	0	.1	.3	0	.1	.1	2.1	0	0	0	0
11	.1	0	.1	.2	0	.1	0	15	0	0	0	0
12	.1	0	.1	.1	0	.1	0	1.4	0	0	0	.1
13	0	0	.1	.1	0	.1	0	.5	0	0	0	.1
14	0	0	.1	.1	0	.1	.1	.2	4.7	0	0	0
15	0	0	.1	.1	0	.1	.1	.1	4.7	0	0	0
16	0	0	.1	.4	0	.1	.1	1.4	1.6	0	0	0
17	0	0	0	2.5	.1	.1	.1	4.2	.4	0	0	0
18	0	0	0	.3	.1	2.2	.1	715	.2	0	0	0
19	0	0	0	.2	.1	.5	.1	128	.2	375	0	0
20	0	0	0	.1	.2	.2	.1	37	.2	5.7	0	0
21	0	0	0	.1	.1	.1	0	32	.1	1.7	0	0
22	0	0	0	.1	.1	.1	0	16	.1	.5	0	0
23	0	0	.1	.1	.1	.1	0	8.6	.1	.2	0	0
24	0	.1	.1	.1	.1	.1	0	15	.2	.2	.1	0
25	0	.1	.1	.1	.1	.1	.1	6.5	.1	.2	.1	0
26	0	.1	0	.1	.1	.1	.1	3.0	.1	.1	.1	0
27	0	.1	0	.1	.1	.1	.1	1.6	.1	.1	0	0
28	0	.1	0	.1	.1	.1	.1	1.0	.1	.1	0	0
29	0	.1	0	.1	-	.1	.1	.8	0	0	0	0
30	0	.1	0	.1	-	.1	.1	.4	0	0	0	0
31	0	-	.1	.1	-	.1	-	.2	-	0	0	-

Monthly discharge, in second-feet, 1945-47

Month	Second-feet-days	Maximum	Minimum	Mean	Runoff in acre-feet
October 1945	0.9	0.5	0	0.03	1.8
November	0	0	0	0	0
December	2.5	.9	0	.08	5.0
Calendar year 1945	1,649.3	97	0	4.52	3,270
January 1946	11.2	3.2	0	.36	22
February	3.8	3.0	0	.14	7.5
March	0	0	0	0	0
April	307.9	307	0	10.3	611
May	1,108.6	449	.1	35.8	2,200
June	663.5	321	0	22.1	1,320
July	9.6	1.9	.1	.31	19
August	.9	.2	0	.03	1.8
September	20.2	9.5	0	.67	40
Water year 1945-46	2,129.1	449	0	5.83	4,230
October 1946	.4	.1	0	.01	.8
November	1.4	.1	0	.05	2.8
December	1.7	.1	0	.05	3.4
Calendar year 1946	2,129.2	449	0	5.83	4,230
January 1947	7.0	2.5	.1	.23	14
February	2.0	.2	0	.07	4.0
March	6.6	2.2	.1	.21	13
April	2.2	.1	0	.07	4.4
May	990.3	715	0	31.9	1,960
June	14.0	4.7	0	.47	28
July	383.8	375	0	12.4	761
August	.3	.1	0	.01	.6
September	.2	.1	0	.01	.4
Water year 1946-47	1,409.9	715	0	3.86	2,790

North Llano River near Junction, Tex.

Location.- Water-stage recorder, lat. 30°30', long. 99°47', about 1,000 feet upstream from remains of old Wilson Dam, 3 miles northwest of Junction, Kimble County, and 4 miles upstream from confluence with South Llano River. Datum of gage is 1,699.9 feet above mean sea level, datum of 1929.

Drainage area.- 914 square miles.

Records available.- September 1915 to September 1947.

Average discharge.- 32 years, 71.1 second-feet.

Extremes.- Maximum discharge during year, 7,440 second-feet May 18 (gage height, 7.20 feet); minimum, 2.0 second-feet Sept. 9, 10 (gage height, 1.30 feet).
1915-47: Maximum discharge, 94,800 second-feet Sept. 16, 1936 (gage height, 29.2 feet, present site, based on gage-height relation curve), by slope-area method; no flow at times.

Remarks.- Records good except those above 1,500 second-feet, which are fair. Diversions for irrigation materially reduce low flow.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.4	14	12	16	29	19	16	14	41	52	5.4	3.5
2	4.5	14	12	17	29	19	16	13	39	46	4.6	3.0
3	4.8	14	12	16	29	19	16	12	36	44	4.6	2.8
4	5.1	13	12	15	27	18	15	12	31	39	4.6	2.8
5	5.7	14	12	15	27	18	14	11	28	34	4.6	2.8
6	6.4	14	12	15	27	22	14	11	27	31	4.2	3.0
7	7.4	14	12	16	26	24	14	10	26	28	4.2	2.8
8	15	14	12	17	26	23	14	10	24	27	3.8	2.8
9	23	14	12	19	25	23	13	11	23	24	3.5	2.1
10	30	13	13	21	25	23	13	15	21	22	3.3	2.1
11	23	13	14	19	25	22	13	466	20	22	11	2.3
12	23	13	13	18	23	22	13	124	18	21	11	32
13	21	13	13	18	23	20	13	82	18	20	6.8	7.7
14	20	13	13	18	23	20	13	66	17	18	5.8	3.8
15	20	13	12	18	23	19	14	55	17	18	5.0	3.0
16	20	13	12	19	23	19	13	53	16	17	4.6	3.3
17	20	13	12	29	22	18	13	217	15	16	3.8	3.8
18	20	13	12	30	22	22	14	1,210	14	16	3.5	3.3
19	20	13	12	30	23	21	13	212	270	18	3.0	3.5
20	19	13	11	30	23	21	13	122	114	14	3.0	3.5
21	17	13	11	29	23	21	12	94	66	13	3.3	3.3
22	16	13	11	29	23	20	12	80	54	12	3.3	3.3
23	16	13	12	29	22	20	12	73	56	10	3.8	3.0
24	16	13	12	30	21	18	12	69	83	9.5	4.2	3.0
25	15	13	12	30	21	18	13	62	195	9.5	3.8	3.0
26	15	13	12	30	20	18	15	58	94	8.2	3.8	3.0
27	15	12	12	30	20	18	16	56	73	7.7	3.8	2.8
28	14	12	12	32	21	17	16	52	64	7.2	4.2	2.8
29	14	12	11	30	-	17	16	48	60	6.8	4.2	2.5
30	14	12	11	30	-	16	15	48	58	6.3	3.8	2.3
31	14	-	14	30	-	16	-	44	-	5.8	3.5	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	479.3	30	4.5	15.5	951
November	394	14	12	13.1	781
December	375	14	11	12.1	744
Calendar year 1946	3,940.7	318	0	10.8	7,820
January	725	32	15	23.4	1,440
February	671	29	20	24.0	1,330
March	611	24	16	19.7	1,210
April	416	16	12	13.9	825
May	3,410	1,210	10	110	6,760
June	1,618	270	14	53.9	3,210
July	623.0	52	5.8	20.1	1,240
August	142.0	11	3.0	4.58	282
September	122.9	32	2.1	4.10	244
Water year 1946-47	9,587.2	1,210	2.1	26.3	19,020

Peak discharge.- May 11 (5 a.m.) 2,060 sec.-ft.; May 18 (12:30 a.m.) 7,440 sec.-ft.; June 19 (9 a.m.) 1,090 sec.-ft.; June 25 (2:30 a.m.) 360 sec.-ft.

Llano River near Junction, Tex.

Location.- Water-stage recorder, lat. 30°30', long. 99°44', 250 feet north of old Kerrville-Junction road, about half a mile downstream from point where slough diverts floodwater from main channel, 3 miles east of Junction, Kimble County, 4 miles downstream from confluence of North Llano and South Llano Rivers, and 4¾ miles upstream from Johnson Fork. Datum of gage is 1,630.32 feet above mean sea level, datum of 1929.

Drainage area.- 1,762 square miles.

Records available.- September 1915 to September 1947.

Average discharge.- 32 years, 210 second-feet.

Extremes.- Maximum discharge during year, 4,540 second-feet May 18 (gage height, 5.29 feet); minimum, 34 second-feet July 25, 26, Aug. 17-19.
. 1915-47: Maximum discharge, 319,000 second-feet June 14, 1935 (gage height, 43.3 feet, present site and datum, from floodmarks), by slope-area method; minimum, 13 second-feet Aug. 23-28, 1918.

Remarks.- Records excellent except those above 200 second-feet, which are good. Small diversions above station for irrigation.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)

1.1	29	1.5	100	2.4	580
1.2	38	1.7	174	2.7	810
1.3	51	1.9	275	2.9	1,000
1.4	72	2.1	390		

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	60	56	67	103	80	67	67	85	82	38	41
2	42	60	56	72	100	77	67	62	80	77	39	39
3	42	60	58	70	100	77	67	60	75	72	41	38
4	42	60	58	65	97	77	67	60	72	70	41	38
5	41	60	58	65	94	77	65	58	67	65	39	38
6	41	58	58	62	94	80	65	58	65	60	39	37
7	41	58	58	65	91	88	65	56	60	58	38	37
8	53	56	58	65	91	85	65	56	58	56	37	37
9	748	56	58	70	91	82	65	58	55	55	36	37
10	336	56	60	75	91	82	65	65	55	53	36	36
11	184	56	62	75	91	80	62	389	51	51	39	35
12	144	56	62	75	88	77	62	168	50	51	41	41
13	125	56	60	70	88	75	62	117	46	50	39	43
14	114	56	58	70	85	75	65	97	44	48	39	43
15	100	56	58	67	85	72	65	88	47	51	38	42
16	97	58	58	72	85	72	65	85	47	58	36	41
17	94	58	58	94	82	72	65	88	48	55	35	39
18	88	58	56	114	82	82	65	996	47	51	35	38
19	82	58	56	117	82	85	65	321	226	51	34	38
20	77	58	58	217	82	82	62	188	179	50	36	37
21	75	58	58	159	82	77	60	155	117	50	39	37
22	72	58	58	151	82	77	62	128	94	48	42	36
23	70	58	58	144	82	75	62	121	190	44	56	36
24	70	58	60	136	80	72	62	117	258	42	50	36
25	67	58	60	132	80	70	62	110	239	38	47	36
26	65	58	58	125	80	70	67	100	159	36	47	36
27	65	58	58	121	80	67	72	100	121	38	46	36
28	65	56	58	117	80	67	72	94	103	39	46	36
29	62	56	58	114	-	67	70	88	94	39	44	36
30	62	56	58	107	-	67	67	88	85	39	43	36
31	60	-	62	103	-	67	-	85	-	38	42	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,267	748	41	105	6,480
November	1,728	60	56	57.6	3,430
December	1,810	62	56	58.4	3,590
Calendar year 1946	20,805	748	23	57.0	41,270
January	3,056	217	62	98.6	6,060
February	2,448	103	80	87.4	4,860
March	2,353	88	67	75.9	4,670
April	1,952	72	60	65.1	3,870
May	4,323	996	56	139	8,570
June	2,917	258	44	97.2	5,790
July	1,615	82	36	52.1	3,200
August	1,258	53	34	40.6	2,500
September	1,136	43	35	37.9	2,250
Water year 1946-47	27,863	996	34	76.3	55,270

Llano River at Llano, Tex.

Location.- Water-stage recorder, lat. 30°45', long. 98°40', in Llano, Llano County, 0.4 mile downstream from bridge on State Highway 16 (renumbered) and 7 miles upstream from Little Llano River. Datum of gage is 970.0 feet above mean sea level, datum of 1929.

Drainage area.- 4,000 square miles.

Records available.- September 1939 to September 1947.

Extremes.- Maximum discharge during year, 8,500 second-feet Jan. 18 (gage height, 7.55 feet); minimum daily, 14 second-feet (regulated) Aug. 22, Sept. 25.
1939-47: Maximum discharge, 50,600 second-feet June 5, 1943 (gage height, 16.92 feet), from rating curve extended above 17,000 second-feet; minimum daily, 3.0 second-feet (regulated) Aug. 21-29, 1946.
Maximum stage known, 41.5 feet June 14, 1935, from information by local resident.

Remarks.- Records good except those for Aug. 20 to Sept. 30, which are poor. Low flow regulated by power plant half a mile above station. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	208	75	72	95	261	149	155	195	95	138	20	30
2	141	75	72	117	242	144	155	155	90	120	18	36
3	110	120	72	133	233	141	152	135	88	105	16	27
4	103	274	72	138	229	141	152	117	79	95	16	28
5	147	198	70	125	216	138	144	105	74	84	16	25
6	103	254	70	122	204	162	135	97	68	77	18	30
7	79	149	70	127	204	349	127	88	61	72	17	26
8	86	120	72	147	191	362	122	80	57	65	16	25
9	522	103	72	315	162	275	125	77	51	61	16	18
10	741	99	82	375	180	233	125	80	47	58	16	16
11	740	97	128	326	180	212	122	155	44	55	22	17
12	519	88	196	261	184	204	127	286	40	54	25	38
13	343	84	130	216	184	180	155	350	39	98	24	36
14	256	84	115	187	180	166	155	387	34	112	21	28
15	225	88	105	166	177	147	152	261	33	77	18	43
16	238	92	99	169	169	141	138	242	32	61	18	47
17	199	88	97	2,860	166	138	130	261	33	49	18	54
18	169	86	86	5,410	162	1,340	120	208	33	45	17	34
19	147	84	82	3,170	169	1,430	110	858	32	41	17	32
20	133	86	82	1,280	195	666	105	907	32	38	25	26
21	120	88	82	806	199	463	101	512	32	38	25	27
22	113	88	82	722	177	368	95	356	33	39	14	24
23	105	86	82	618	166	337	88	261	117	36	25	25
24	99	84	82	547	155	297	88	208	2,950	33	26	27
25	92	84	84	491	149	242	228	180	1,230	31	172	14
26	80	82	84	435	147	212	414	173	679	29	116	36
27	80	80	86	387	144	195	540	147	421	28	118	18
28	77	75	88	356	149	177	381	135	320	26	88	16
29	75	74	86	343	-	166	297	117	225	25	65	25
30	75	72	82	314	-	159	238	108	169	24	41	17
31	74	-	84	280	-	159	-	99	-	21	30	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	6,199	741	74	200	12,300
November	3,157	274	72	105	6,260
December	2,786	196	70	89.2	5,490
Calendar year 1946	75,297.5	6,690	3.0	206	149,400
January	21,038	5,410	95	679	41,730
February	5,174	261	144	185	10,260
March	9,493	1,430	138	306	18,830
April	5,176	540	88	173	10,270
May	7,340	907	77	237	14,560
June	7,238	2,950	32	241	14,360
July	1,835	138	21	59.2	3,640
August	1,094	172	14	35.3	2,170
September	845	54	14	28.2	1,680
Water year 1946-47	71,355	5,410	14	195	141,600

Peak discharge.- Jan. 18 (4 p.m.) 8,500 sec.-ft.; June 24 (7 a.m.) 7,460 sec.-ft.
Note.- Water below lowest intake for major portion of each day June 14-23, July 19 to Sept. 30; discharge computed from graph based on partial recorder record and once-daily staff-gage readings.

Pedernales River near Johnson City, Tex.

Location.- Water-stage recorder, lat. 30°18', long. 98°24', at bridge on U. S. Highway 281, 1.5 miles north of Johnson City, Blanco County, and 1.9 miles downstream from Buffalo Creek. Datum of gage is 1,096.6 feet above mean sea level, unadjusted.
Drainage area.- 947 square miles.
Records available.- May 1939 to September 1947.
Extremes.- Maximum discharge during year, 10,200 second-feet Dec. 11 (gage height, 9.57 feet); minimum, 7.7 second-feet Sept. 24-26 (gage height, 2.31 feet).
1939-47: Maximum discharge, 104,000 second-feet Aug. 30, 1944 (gage height, 26.10 feet, from recorder at upstream side of right bridge pier, affected by draw-down; maximum gage height, 27.6 feet, from floodmark on staff gage 50 feet upstream and 300 feet to right of recorder), from rating curve extended above 42,000 second-feet by logarithmic plotting; minimum discharge, 1.2 second-feet Oct. 1-3, 1939.
Maximum stage known, about 33 feet in July 1869, from information by local residents.
Remarks.- Records excellent. No diversion above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47	36	62	113	275	182	159	194	76	55	12	13
2	38	411	59	156	262	167	159	167	73	48	12	12
3	33	289	57	163	262	163	156	148	66	45	12	12
4	35	2,480	57	b149	257	163	159	141	62	a41	12	12
5	43	1,300	57	b134	240	159	156	134	55	a37	13	11
6	43	525	57	120	248	159	141	123	50	a33	12	11
7	33	231	57	*163	240	223	137	117	47	30	12	10
8	32	167	55	178	227	218	141	113	43	29	12	10
9	1,990	144	55	406	223	182	148	106	42	28	12	9.8
10	309	134	943	572	218	170	144	159	40	25	11	9.4
11	259	130	3,010	394	223	167	141	267	38	30	14	9.4
12	137	110	678	294	227	167	134	266	35	29	15	10
13	94	100	285	257	214	156	123	182	33	25	418	9.8
14	76	91	210	236	210	144	130	148	32	30	99	10
15	68	88	178	218	206	137	141	130	33	33	42	9.8
16	110	1,100	163	223	202	137	134	177	36	25	25	9.8
17	85	213	144	3,010	198	137	127	178	38	20	18	9.4
18	68	123	127	1,850	194	411	123	144	38	19	15	9.4
19	62	103	120	2,430	194	562	120	127	36	19	14	8.4
20	55	94	120	876	202	285	117	120	35	19	14	8.4
21	59	91	117	600	198	227	113	220	33	18	15	8.4
22	48	82	110	517	190	206	110	178	29	18	77	8.0
23	38	79	106	484	182	182	106	120	29	16	129	8.0
24	45	76	103	453	174	194	103	110	1,740	15	164	7.7
25	43	71	100	401	170	174	184	100	555	15	33	7.7
26	42	68	100	368	170	167	972	94	207	15	25	7.7
27	42	68	100	347	170	159	352	88	130	14	25	8.0
28	38	64	100	332	190	156	298	82	100	13	23	8.4
29	38	62	91	332	-	156	248	76	79	12	20	8.4
30	38	62	85	303	-	159	218	76	66	12	17	8.4
31	36	-	91	285	-	159	-	79	-	12	15	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	4,084	1,990	32	132	8,100
November	8,592	2,480	36	286	17,040
December	7,597	3,010	55	245	15,070
Calendar year 1946	57,273.3	3,010	8.9	157	113,600
January	16,364	3,010	113	528	32,460
February	5,966	275	170	213	11,830
March	6,028	562	137	194	11,960
April	5,494	972	103	183	10,900
May	4,364	267	76	141	8,660
June	3,876	1,740	29	129	7,690
July	780	55	12	25.2	1,550
August	1,337	418	11	43.1	2,650
September	285.3	13	7.7	9.51	566
Water year 1946-47	64,767.3	3,010	7.7	177	128,500

Peak discharge.- Dec. 11 (3:30 p.m.) 10,200 sec.-ft.; Jan. 17 (12:30 p.m.) 4,620 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
b Stage-discharge relation affected by ice.

Barton Springs at Austin, Tex.

Location.- Lat. 30°16', long. 97°46'. Springs issue from channel and along banks of Barton Creek for a distance of 1,000 feet in Zilker Park at Austin, Travis County. The main spring is near right bank of creek 500 feet upstream from concrete dam forming swimming pool, 1,800 feet upstream from bridge on Austin-Bee Cave highway, and 0.6 mile upstream from mouth of Barton Creek.
Records available.- October 1918 to September 1926, October 1940 to September 1947. November 1894 to September 1918, October 1926 to September 1940, discharge published as miscellaneous measurements. Daily discharge record of Barton Creek at Austin published for period April 1917 to September 1918, closely represents flow of Barton Springs. Summary of all discharge measurements prior to October 1937 is contained in Water-Supply Paper 850.
Extremes.- Maximum discharge measured during year, 93.3 second-feet Apr. 6; minimum measured, 35.3 second-feet Aug. 15.
1894-1947: Maximum discharge measured, 166 second-feet May 10, 1941; minimum measured, 12.1 second-feet Feb. 26, 1918.
Remarks.- Discharge measurements represent total flow of springs including Old Mill Spring which is on right bank and about 1,000 feet downstream from main spring. Springs emerge from Edwards limestone in Balcones fault zone and respond to rainfall on Edwards Plateau. Water used for recreational purposes.

Discharge measurements, in second-feet, of Barton Creek and determination of discharge of Barton Springs, water year October 1946 to September 1947

Date	Barton Creek below springs	Barton Creek above springs	Barton Springs	Date	Barton Creek below springs	Barton Creek above springs	Barton Springs
Oct. 20	62.0	0.5	61.5	May 7	85.8	2.70	83.1
Dec. 8	120	43.8	76.2	26	93.5	13.2	80.3
Jan. 12	-	167	-	July 3	62.8	0	62.8
Feb. 9	171	87.6	83.4	25	52.6	0	52.6
Mar. 9	109	18.9	90.1	Aug. 15	35.3	0	35.3
Apr. 6	102	8.71	93.3	Sept.19	37.2	0	37.2

Dry Creek at Buescher Lake, near Smithville, Tex.

Location.- Water-stage recorder above concrete spillway of dam, lat. 30°03', long. 97°09', in Bastrop-Buescher State Park, 1.9 miles upstream from mouth and 2.2 miles north of Smithville, Bastrop County. Datum of gage is 327.9 feet above mean sea level, datum of 1929.

Drainage area.- 1.48 square miles (area above dam).

Records available.- October 1939 to September 1947.

Extremes.- Maximum 30-minute inflow during year, 667 second-feet Aug. 26; maximum gage height, 20.63 feet Aug. 27; no flow most of time.

1939-47: Maximum inflow, 1,870 second-feet June 30, 1940; maximum gage height, 24.96 feet June 30, 1940 (outflow, 1,670 second-feet); no flow most of time.

Remarks.- Records good. Records given herein represent flow into Buescher Lake. No runoff except during and immediately following precipitation. Discharge below gage height 22.27 feet (spillway crest) determined from change in contents of lake; that above gage height 22.27 feet determined by algebraic summation of flow over spillway (computed from spillway curve) and change in contents of lake (computed from capacity curve and reduced to equivalent second-feet). There was no flow over spillway during year. No adjustments made for evaporation or seepage losses. Capacity of lake, 255 acre-feet. No diversions above station or from lake.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	0	0.4	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	0	.2	
3	0	6.2	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	0	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	0	0	0	
6	0	1.2	0	0	0	0	0	0	0	0	0	
7	0	0	0	0	0	0	0	0	0	0	0	
8	0	0	0	.2	0	0	0	0	0	0	0	
9	0	0	0	1.4	0	0	0	0	0	0	0	
10	.5	0	0	.8	0	0	0	0	0	0	0	
11	0	0	.5	.3	0	0	0	0	0	0	.6	
12	0	0	0	.1	0	12	2.6	0	0	.2	0	
13	0	0	0	0	0	.7	.8	0	0	.3	0	
14	0	0	0	0	0	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	0	0	
16	0	1.3	0.	4.9	0	0	.0	2.2	0	0	0	
17	0	0	0	6.9	0	0	0	0	0	0	0	
18	0	0	0	1.6	0	21	0	0	0	0	0	
19	0	0	.2	.7	0	2.4	0	0	.2	0	0	
20	0	0	0	.2	0	.4	0	0	0	0	0	
21	0	0	0	0	0	.2	0	0	0	0	0	
22	0	0	0	0	0	0	0	0	0	0	0	
23	0	0	0	0	0	0	0	0	.3	0	0	
24	0	0	0	0	0	0	0	0	.2	0	0	
25	0	0	0	0	0	0	0	0	0	0	.5	
26	0	0	0	0	0	0	0	0	0	.6	65	
27	0	0	0	0	.2	0	0	0	0	0	.2	
28	0	0	0	0	0	0	0	0	0	0	0	
29	0	0	0	0	-	0	0	0	0	0	0	
30	0	0	0	0	-	0	0	0	0	0	0	
31	0	-	.2	0	-	0	-	0	-	0	0	

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	0.5	0.5	0	0.02	1.0
November	8.7	6.2	0	.29	17
December	.9	.5	0	.03	1.8
Calendar year 1946	240.2	78	0	.66	477
January	17.5	6.9	0	.56	35
February	.2	.2	0	.01	.4
March	36.7	21	0	1.18	73
April	3.4	2.6	0	.11	6.7
May	2.2	2.2	0	.07	4.4
June	.7	.3	0	.02	1.4
July	1.1	.6	0	.04	2.2
August	66.5	65	0	2.15	132
September	0	0	0	0	0
Water year 1946-47	138.4	65	0	.38	275

Lavaca River at Hallettsville, Tex.

Location.- Wire-weight gage for low stages and water-stage recorder for high stages, lat. 29°26', long. 96°57', at bridge on U. S. Highway 77 in Hallettsville, Lavaca County, and 0.4 mile upstream from Texas & New Orleans Railroad bridge. Datum of gage is 186.7 feet above mean sea level, datum of 1929.

Drainage area.- 101 square miles.

Records available.- July 1939 to September 1947.

Extremes.- Maximum discharge during year, 5,460 second-feet Mar. 18 (gage height, 21.02 feet); minimum, 1.0 second-foot Sept. 20.

1939-47: Maximum discharge, 93,100 second-feet June 30, 1940 (gage height, 40.60 feet, from floodmarks of highest flood known), by slope-area method; minimum, 0.4 second-foot Sept. 29, 1939.

Maximum stage known prior to 1940, 32.8 feet July 16, 1936, from information by local resident.

Remarks.- Records good except those above 3,000 second-feet, which are fair. Wire-weight gage read twice daily, oftener during floods, and used for computing discharge below about 100 second-feet. No known diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	14	18	16	23	15	20	10	7.7	3.6	1.2	1.8
2	14	12	17	68	23	15	19	9.8	6.9	3.8	1.4	1.6
3	14	177	16	53	22	15	19	9.2	6.6	5.0	2.0	1.6
4	219	1,460	16	25	22	15	19	8.9	6.4	4.2	1.9	1.8
5	123	149	17	24	21	15	17	8.9	6.0	3.6	1.6	1.8
6	42	48	17	23	21	16	16	9.2	5.7	3.0	1.6	1.6
7	24	32	17	23	21	17	15	8.9	5.3	2.8	1.4	1.6
8	14	28	17	23	21	17	16	9.2	5.3	2.8	1.3	1.8
9	30	27	17	85	20	16	16	9.2	5.3	2.8	1.2	1.6
10	139	268	18	236	19	15	15	9.2	4.8	2.8	1.8	1.8
11	264	49	765	a59	20	15	19	12	4.6	2.8	1.6	1.9
12	26	26	220	a33	21	15	31	10	4.6	2.8	2.5	2.0
13	16	23	25	30	19	16	1,340	9.5	4.6	14	1.8	1.9
14	14	22	20	28	19	15	57	8.3	4.4	17	1.8	1.9
15	14	21	19	26	19	14	28	7.4	4.4	5.0	1.3	1.8
16	235	125	20	30	19	14	21	6.9	4.4	3.0	1.3	1.6
17	76	37	20	624	18	14	17	8.0	4.4	2.4	1.4	1.4
18	26	22	20	354	18	1,220	16	17	4.6	2.2	1.4	1.3
19	19	19	19	294	19	263	15	19	4.8	2.0	1.8	1.1
20	16	19	19	72	19	51	16	15	5.3	2.0	2.0	1.1
21	81	19	19	38	19	40	15	13	5.0	2.0	2.4	1.1
22	44	19	18	33	18	34	13	12	4.8	1.9	2.2	1.2
23	19	16	18	34	16	33	12	181	4.6	1.8	2.2	1.2
24	16	17	18	36	15	31	11	830	4.8	1.4	2.0	1.1
26	146	17	18	34	15	30	10	312	4.4	1.4	2.0	1.1
26	38	91	18	33	15	27	11	25	4.2	1.3	3.8	1.1
27	24	28	18	31	15	24	14	15	4.0	1.2	5.5	1.1
28	17	22	17	31	15	22	14	10	4.0	1.2	3.0	1.1
29	14	19	16	30	-	21	14	9.5	3.8	1.2	2.6	1.1
30	14	19	16	28	-	20	12	8.6	3.8	1.2	2.2	1.1
31	15	-	16	24	-	20	-	8.3	-	1.3	1.9	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,771	264	14	57.1	3,510
November	2,845	1,460	12	94.8	5,640
December	1,509	765	16	48.7	2,990
Calendar year 1946	21,149.2	1,940	1.4	57.9	41,940
January	2,478	624	16	79.9	4,920
February	532	23	15	19.0	1,060
March	2,095	1,220	14	67.6	4,160
April	1,858	1,340	10	61.9	3,690
May	1,630.0	830	6.9	52.6	3,230
June	149.1	7.7	3.6	4.97	296
July	103.5	17	1.2	3.34	205
August	62.1	5.5	1.2	2.00	123
September	44.2	2.0	1.1	1.47	88
Water year 1946-47	15,076.9	1,460	1.1	41.3	29,910

Peak discharge.- Nov. 4 (3:30 a.m.) 4,850 sec.-ft.; Mar. 18 (8:15 p.m.) 5,460 sec.-ft.; Apr. 13 (5 a.m.) 3,900 sec.-ft.; May 24 (8 p.m.) 3,980 sec.-ft.

a No gage-height record; discharge computed on basis of estimated gage heights.

Lavaca River near Edna, Tex.

Location.- Wire-weight gage, lat. 28°58', long. 96°42', at bridge on U. S. Highway 59, 550 feet upstream from Texas & New Orleans Railroad bridge and 2.8 miles southwest of Edna, Jackson County. Datum of gage is 13.88 feet above mean sea level, datum of 1929 (levels by Corps of Engineers).

Drainage area.- 887 square miles.

Records available.- August 1938 to September 1947.

Extremes.- Maximum discharge during year, 19,600 second-feet Oct. 18 (gage height, 25.34 feet, from graph based on gage readings); minimum observed, 11 second-feet Sept. 26, 27.

1938-47: Maximum discharge, 73,000 second-feet July 1, 1940 (gage height, 32.51 feet); minimum observed, 5.2 second-feet July 10, 1939.

Maximum stage known, 33.8 feet May 25, 1936 (discharge, 83,400 second-feet), from information by local resident.

Remarks.- Records good. Gage read twice daily, oftener during high stages. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	586	170	185	114	162	107	110	86	134	39	23	22
2	324	162	172	274	149	107	108	80	124	36	27	21
3	256	157	159	391	144	104	102	74	114	35	27	20
4	221	194	152	278	141	102	105	69	106	34	26	20
5	221	1,590	146	179	136	104	102	67	96	35	26	19
6	390	527	144	148	132	105	98	65	90	34	24	17
7	221	331	146	132	104	104	94	62	86	32	23	16
8	178	228	146	308	128	100	89	57	80	31	24	17
9	216	194	157	276	123	104	89	55	76	32	24	18
10	1,510	539	152	2,020	117	100	89	66	72	31	22	19
11	3,060	3,650	146	3,020	119	98	87	167	67	30	21	17
12	3,000	949	342	755	124	100	86	150	65	32	23	20
13	456	391	738	439	126	104	129	88	63	39	25	21
14	316	301	361	354	124	106	1,780	71	59	51	29	18
15	256	256	194	301	119	107	382	61	57	67	24	18
16	1,760	264	171	271	118	96	194	58	56	66	24	18
17	11,000	4,070	159	361	116	91	149	57	54	38	22	16
18	13,700	2,010	146	1,530	116	140	129	92	54	35	22	15
19	c1,670	455	136	2,900	116	1,210	119	267	62	29	21	15
20	c586	331	131	2,380	129	1,500	114	1,150	71	28	20	15
21	c439	278	131	692	116	308	114	633	65	26	23	16
22	471	249	139	423	117	214	108	244	56	25	23	14
23	439	221	129	316	110	188	98	1,280	51	24	22	14
24	301	201	125	294	106	185	92	3,840	48	23	21	16
25	301	194	123	271	101	168	88	3,460	46	23	23	16
26	734	483	123	249	99	142	87	4,290	46	23	34	12
27	376	697	124	221	97	129	96	706	46	22	39	13
28	235	316	124	208	100	119	94	294	41	23	58	14
29	201	242	122	194	-	114	96	214	45	23	41	12
30	187	208	114	187	-	112	91	170	38	23	26	12
31	178	-	114	174	-	110	-	149	-	23	23	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	43,789	13,700	178	1,413	86,850
November	19,858	4,070	157	662	39,390
December	5,451	738	114	176	10,810
Calendar year 1946	200,454	15,400	20	549	397,600
January	19,693	3,020	114	635	39,060
February	3,417	162	97	122	6,780
March	6,378	1,500	91	206	12,650
April	5,119	1,780	86	171	10,150
May	18,122	4,290	55	585	35,940
June	2,068	134	38	68.9	4,100
July	1,012	67	22	32.6	2,010
August	810	58	20	26.1	1,610
September	501	22	12	16.7	994
Water year 1946-47	126,218	13,700	12	346	250,300

c Backwater from return of overbank storage; discharge computed from backwater curve.

Navidad River near Ganado, Tex.

Location.- Wire-weight gage, lat. 29°02', long. 96°33', at bridge on U. S. Highway 59, 100 feet upstream from Texas & New Orleans Railroad bridge, a quarter of a mile downstream from Sandy Creek, and 2¼ miles southwest of Ganado, Jackson County. Datum of gage is 13.62 feet above mean sea level, datum of 1929 (levels by Corps of Engineers).

Drainage area.- 1,116 square miles.

Records available.- May 1939 to September 1947.

Extremes.- Maximum discharge during year, 6,790 second-feet Oct. 17 (gage height, 25.01 feet); minimum observed, 17 second-feet Aug. 10.

1939-47: Maximum discharge, 64,500 second-feet July 2, Nov. 26, 1940; maximum gage height, 36.54 feet July 2, 1940, from floodmark; minimum discharge observed, 4.0 second-feet Nov. 1, 1939.

Maximum stage known, 39.8 feet May 27, 1936, from information by engineers of Texas & New Orleans Railroad (discharge, 94,000 second-feet, from rating curve extended above 60,000 second-feet).

Remarks.- Records fair. Gage read twice daily, oftener during high stages. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,140	99	353	189	160	86	99	82	102	64	21	172
2	622	88	246	898	144	82	102	74	95	54	22	124
3	389	83	184	1,550	135	86	94	66	88	40	43	81
4	246	335	160	925	125	82	84	54	84	57	56	69
5	210	1,280	136	550	118	81	78	48	61	190	64	64
6	290	2,540	130	317	117	81	74	45	51	210	44	72
7	223	2,720	120	326	112	84	69	43	46	160	40	68
8	148	446	108	680	111	80	64	39	44	62	30	81
9	382	230	106	1,060	104	88	71	68	40	58	25	122
10	2,040	432	134	2,510	99	84	66	317	37	51	18	153
11	2,840	3,720	166	4,300	96	80	68	353	34	64	22	172
12	1,840	3,740	454	2,660	108	76	69	272	32	64	29	210
13	744	2,610	1,450	1,400	118	75	75	203	30	75	44	308
14	326	1,290	836	840	126	75	581	166	29	96	60	216
15	279	622	398	640	117	83	918	116	26	178	44	196
16	2,170	589	263	461	111	78	201	81	25	299	29	172
17	6,300	3,220	210	964	102	70	134	70	25	246	26	153
18	4,950	3,620	166	2,320	100	182	106	614	26	172	34	190
19	2,140	2,030	146	4,820	101	1,810	92	1,860	38	134	74	184
20	962	1,070	130	5,400	100	2,900	90	962	166	110	106	136
21	514	780	116	2,760	124	1,480	897	1,700	146	102	153	114
22	371	353	130	1,040	146	443	347	1,210	130	85	272	81
23	246	230	130	604	119	272	149	2,550	110	69	317	57
24	190	190	113	478	93	223	106	4,720	91	57	317	39
25	281	178	101	434	91	216	86	3,910	104	48	246	48
26	335	1,180	98	371	84	154	83	3,390	154	39	216	72
27	335	1,940	92	299	82	128	203	1,860	112	31	281	69
28	210	1,480	86	238	82	104	142	915	102	27	362	42
29	146	820	92	210	-	98	116	371	95	24	461	25
30	122	514	85	203	-	93	95	178	71	47	514	21
31	107	-	88	178	-	93	-	129	-	31	317	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	31,098	6,300	107	1,003	61,680
November	38,429	3,740	83	1,281	76,220
December	7,027	1,450	85	227	13,940
Calendar year 1946	308,836	9,120	20	846	612,600
January	39,625	5,400	178	1,278	78,600
February	3,125	160	82	112	6,200
March	9,567	2,900	70	309	18,980
April	5,359	918	64	179	10,630
May	26,466	4,720	39	854	52,490
June	2,194	166	25	73.1	4,350
July	2,944	299	24	95.0	5,840
August	4,287	514	18	138	8,500
September	3,511	308	21	117	6,960
Water year 1946-47	173,632	6,300	18	476	344,400

Guadalupe River at Hunt, Tex.

Location.- Water-stage recorder and concrete control, lat. 30°03', long. 99°19', at bridge on State Highway 39, half a mile downstream from confluence of North and South Forks, 0.6 mile east of Hunt, Kerr County. Datum of gage is 1,722.7 feet above mean sea level, datum of 1929.

Drainage area.- About 370 square miles.

Records available.- October 1941 to September 1947.

Extremes.- Maximum gage height during year, 14.50 feet Nov.3, from floodmark (discharge not determined); minimum discharge, 27 second-feet Sept. 22, 23.
1941-47: Maximum gage height and discharge not determined; minimum discharge, 11 second-feet Aug. 14-19, 1946.
Maximum stage known, 36.6 feet July 2, 1932, from information by local resident.

Remarks.- Records excellent except those for periods of no gage-height record, which are fair. Discharge not computed above 600 second-feet. About 60 acres above station are irrigated.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	37	42	43	66	49	52	92	45	74	38	32
2	31	43	42	46	64	47	46	82	45	61	42	32
3	29	(e)	f42	44	64	48	46	76	45	64	45	32
4	29	(e)	f42	38	60	47	47	71	44	60	43	30
5	30	166	40	38	59	48	46	62	44	58	42	30
6	30	122	40	40	59	53	44	62	43	56	41	32
7	29	99	41	41	59	56	43	60	43	54	40	30
8	(e)	91	41	42	56	51	45	58	42	52	37	31
9	(e)	79	40	52	55	50	46	55	41	52	37	35
10	182	72	42	59	54	49	45	58	40	52	37	30
11	124	66	50	53	54	50	43	74	38	51	37	29
12	98	61	44	49	54	50	43	62	37	49	40	30
13	83	59	41	47	53	49	44	58	37	48	39	34
14	76	56	40	46	53	48	45	54	38	49	38	32
15	70	55	40	44	54	46	44	52	40	48	37	32
16	67	53	40	45	65	46	42	49	41	47	36	31
17	61	51	40	67	56	46	41	47	41	44	36	30
18	55	49	38	(e)	53	60	38	45	40	44	36	29
19	53	47	38	(e)	53	68	38	45	39	53	38	28
20	53	45	39	166	56	54	38	52	38	51	32	28
21	47	45	38	130	52	52	38	53	36	46	47	28
22	46	45	37	114	51	53	37	51	34	45	45	27
23	44	44	37	106	50	51	37	49	(e)	42	36	27
24	43	44	37	86	49	49	37	48	(e)	40	33	28
25	43	44	37	78	49	48	(e)	46	f322	40	39	28
26	40	43	37	94	48	46	(e)	47	168	43	40	28
27	40	43	38	82	49	39	196	47	126	42	39	28
28	41	43	38	78	52	45	153	47	110	40	35	29
29	39	42	38	68	-	46	123	46	92	39	33	29
30	38	42	36	72	-	47	105	46	83	39	32	29
31	37	-	40	68	-	51	-	46	-		32	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	-	-	29	-	-
November	-	-	37	-	-
December	1,235	50	36	39.8	2,450
Calendar year 1946	-	-	11	-	-
January	-	-	38	-	-
February	1,547	66	48	55.2	3,070
March	1,540	68	39	49.7	3,050
April	-	-	37	-	-
May	1,740	92	45	56.1	3,450
June	-	-	34	-	-
July	1,483	74	39	47.8	2,940
August	1,182	47	32	38.1	2,340
September	898	35	27	29.9	1,780
Water year 1946-47	-	-	27	-	-

e Discharge above 600 second-feet for a considerable part of day; daily discharge not computed.
f Computed on basis of partly estimated gage-height record.
Note.- No gage-height record Nov. 16 to Dec. 2, Dec. 5-16, May 15 to June 24; discharge computed on basis of recorded range in stage, weather records, and records for nearby stations.

Guadalupe River at Comfort, Tex.

Location.- Water-stage recorder, lat. 29°58', long. 98°54', at bridge on U. S. Highway 87, a quarter of a mile downstream from Cypress Creek and half a mile east of Comfort, Kendall County. Datum of gage is 1,372.0 feet above mean sea level, datum of 1929.

Drainage area.- About 990 square miles.

Records available.- May 1939 to September 1947. December 1917 to August 1924 at site 5 miles upstream, and August 1924 to September 1932 at site 4 miles upstream. Records published as Guadalupe River near Comfort (records equivalent during flood runoff originating above upper site and during extremely low flow, at which times Cypress Creek contributes no appreciable flow).

Extremes.- Maximum discharge during year, 14,400 second-feet June 24 (gage height, 18.20 feet); minimum, 36 second-feet Sept. 24.
1917-32, 1939-47: Maximum discharge, 182,000 second-feet July 1, 1932 (gage height, 38.4 feet, present site and datum, from floodmarks, from data furnished by Texas Highway Department), by slope-area method (flood originated above Cypress Creek drainage); minimum observed, 0.4 second-foot Aug. 2, 1918, at site then in use.
Flood of July 16, 1900, reached about same stage as that of July 1, 1932.

Remarks.- Records good. Several small diversions above station for irrigation. Slight regulation at low flow by power plants above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	91	139	174	340	220	194	272	119	197	78	50
2	66	993	139	197	334	213	200	245	114	172	d83	48
3	60	1,110	139	184	334	213	192	231	110	153	d100	45
4	59	3,960	136	165	316	210	200	218	95	141	d93	45
5	61	918	139	158	310	207	192	207	90	136	82	46
6	59	480	136	158	307	205	182	180	88	134	75	45
7	57	373	136	165	298	239	177	192	83	130	70	45
8	575	319	136	167	290	228	180	184	79	125	62	47
9	3,500	295	139	220	281	213	184	192	75	132	61	47
10	644	267	326	287	278	205	180	218	70	106	59	45
11	364	245	577	290	278	202	184	496	67	110	67	47
12	267	231	331	275	275	202	170	267	64	121	64	46
13	218	220	253	261	264	194	167	231	61	117	68	48
14	192	210	228	250	261	190	182	210	62	112	65	47
15	182	202	213	242	253	184	172	200	65	108	64	49
16	180	646	205	258	250	180	170	200	72	104	61	49
17	174	213	192	482	256	180	165	202	73	99	57	45
18	170	190	182	600	253	379	162	194	70	102	54	45
19	150	182	180	1,890	245	307	160	184	66	117	53	43
20	139	174	177	949	242	264	158	187	67	136	54	43
21	127	167	170	670	239	234	148	234	65	127	61	42
22	119	160	167	582	236	220	150	180	62	112	62	40
23	112	158	162	531	226	218	146	167	58	99	78	37
24	110	158	160	497	223	207	146	165	7,750	91	80	37
25	104	158	158	450	220	200	280	160	1,020	88	72	38
26	99	150	158	424	220	197	1,090	150	531	86	65	39
27	95	148	160	417	226	194	514	143	408	83	72	39
28	99	143	158	395	245	192	392	139	325	83	66	40
29	97	141	150	392	-	187	337	132	267	83	60	42
30	97	139	148	361	-	192	301	127	226	82	56	43
31	86	-	160	352	-	192	-	125	-	80	53	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	8,337	3,500	57	269	16,540
November	12,841	3,960	91	428	25,470
December	5,854	577	136	189	11,610
Calendar year 1946	57,813	3,960	14	158	114,700
January	12,443	1,890	158	401	24,680
February	7,500	340	220	268	14,880
March	6,668	379	180	215	13,230
April	7,075	1,090	146	236	14,030
May	6,232	496	125	201	12,360
June	12,302	7,750	58	410	24,400
July	3,566	197	80	115	7,070
August	2,095	100	53	67.6	4,160
September	1,322	50	37	44.1	2,620
Water year 1946-47	86,235	7,750	37	236	171,000

Peak discharge.- Oct. 9 (7:15 a.m.) 9,390 sec.-ft.; Nov. 4 (1 a.m.) 13,700 sec.-ft.; June 24 (9:15 a.m.) 14,400 sec.-ft.
d Doubtful gage-height record; discharge computed on basis of estimated gage heights.

Guadalupe River near Spring Branch, Tex.

Location.- Water-stage recorder, lat. 29°51'40", long. 98°23'00", at bridge on county highway, 4 miles southeast of Spring Branch, Comal County, and 6 miles downstream from Curry Creek. Datum of gage is 948.13 feet above mean sea level, datum of 1929.

Drainage area.- 1,432 square miles.

Records available.- June 1922 to September 1947.

Average discharge.- 25 years, 297 second-feet.

Extremes.- Maximum discharge during year, 10,100 second-feet June 25 (gage height, 14.37 feet); minimum, 48 second-feet Sept. 26-28 (gage height, 2.18 feet).

1922-47: Maximum discharge, 121,000 second-feet July 3, 1932 (gage height, 42.10 feet), from rating curve extended above 70,000 second-feet; minimum, 2.2 second-feet July 11, 1939, from rating curve extended below 15 second-feet.

Maximum stage known, between 45 and 50 feet in 1900, from information by local residents.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Small diversions above station for irrigation. Slight regulation at low flow by power plants above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	205	194	313	350	852	482	400	496	227	298	107	71
2	183	895	302	392	790	436	400	445	220	272	107	68
3	166	2,820	298	454	a790	422	400	409	214	254	107	68
4	164	3,380	290	414	a760	422	396	383	211	230	117	65
5	183	2,240	286	375	727	409	396	366	200	214	113	64
6	164	1,270	286	366	727	400	379	350	188	200	109	62
7	159	732	286	375	716	409	370	317	185	197	105	62
8	151	605	282	388	678	427	370	317	177	191	103	62
9	1,310	580	279	432	650	422	375	306	174	185	101	61
10	2,920	610	469	600	635	405	375	321	172	185	97	61
11	844	516	1,020	a688	630	392	366	405	164	177	97	61
12	545	450	1,650	g688	630	392	358	645	161	164	93	61
13	432	445	760	a656	610	383	350	427	156	174	91	59
14	370	400	605	g600	595	362	346	370	151	169	90	61
15	341	392	535	a560	580	354	354	337	149	164	91	61
16	341	1,380	496	a540	565	346	350	329	151	151	88	61
17	325	857	473	a561	555	341	333	333	159	147	86	61
18	306	506	436	1,930	555	370	325	325	161	139	86	61
19	286	454	418	2,320	545	780	325	309	159	177	82	59
20	264	432	418	2,760	535	585	317	298	154	149	84	58
21	254	414	400	1,910	511	526	306	286	151	164	93	56
22	243	392	383	a1,680	501	496	298	337	149	156	84	54
23	237	375	375	a1,550	496	473	294	290	147	144	84	54
24	227	370	370	a1,410	473	463	290	425	851	135	88	52
25	220	366	358	a1,340	463	436	286	354	5,660	130	91	51
26	214	354	354	g1,260	454	422	554	282	1,040	124	95	51
27	211	337	354	a1,220	450	422	1,220	261	620	119	88	48
28	205	329	354	a1,140	473	414	744	250	468	117	81	48
29	202	325	346	1,060	-	405	615	240	383	113	84	49
30	200	321	325	990	-	400	550	237	329	111	77	49
31	197	-	329	885	-	400	-	230	-	111	74	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	12,069	2,920	151	389	23,940
November	22,741	3,380	194	758	45,110
December	13,850	1,650	279	447	27,470
Calendar year 1946	115,174	3,390	37	316	228,500
January	29,894	2,760	350	964	59,290
February	16,946	852	450	605	33,610
March	13,396	780	341	432	26,570
April	12,442	1,220	286	415	24,680
May	10,680	645	230	345	21,180
June	13,331	5,660	147	444	26,440
July	5,261	298	111	170	10,440
August	2,893	117	74	93.3	5,740
September	1,759	71	48	58.6	3,490
Water year 1946-47	155,262	5,660	48	425	308,000

Peak discharge.- Oct. 10 (3:30 a.m.) 5,760 sec.-ft.; Nov. 3 (6:30 p.m.) 5,850 sec.-ft.; Nov. 4 (10:15 p.m.) 7,990 sec.-ft.; Jan. 19 (11:15 p.m.) 3,420 sec.-ft.; June 25 (7:30 a.m.) 10,100 sec.-ft.

a No gage-height record; discharge computed on basis of recorded range in stage and records for stations at Comfort and above Comal River, at New Braunfels.

g Computed from graph based on gage readings.

Guadalupe River above Comal River, at New Braunfels, Tex.

Location.- Water-stage recorder and concrete control, lat. 29°42'55", long. 98°06'40", at New Braunfels, Comal County, 1.1 miles upstream from Comal River. Datum of gage is 586.6 feet above mean sea level, datum of 1929.
Drainage area.- 1,666 square miles.
Records available.- December 1927 to September 1947. March 1898 to December 1899 and January 1915 to December 1927 at site 1 mile downstream from Comal River.
Average discharge.- 19 years (1928-47), 430 second-feet.
Extremes.- Maximum discharge during year, 10,200 second-feet June 25 (gage height, 9.43 feet, from floodmark); minimum, 74 second-feet Sept. 28-30 (gage height, 1.43 feet).
1927-47: Maximum discharge, 101,000 second-feet June 15, 1935 (gage height, 32.95 feet); minimum, 9.6 second-feet July 9-11, 1939.
Maximum stage known, 38 feet sometime in 1869 and in December 1913, from information by local residents.
Remarks.- Records excellent except those for periods of backwater from Comal River or no gage-height record, which are fair. Small diversions above station for irrigation. Some regulation at low flow by small power plants above station.

Rating table, water year 1946-47, except for period of backwater from Comal River (gage height, in feet, and discharge, in second-feet)

1.4	70	2.4	415	4.0	2,420
1.6	95	2.8	773	5.0	3,860
1.8	128	3.0	995	5.5	4,590
2.0	186	3.5	1,690		
2.2	280				

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	713	386	572	626	1,190	693	554	626	337	379	123	124
2	617	386	546	654	1,150	673	554	572	330	f337	123	117
3	554	c3,380	529	713	1,100	645	546	529	318	f312	121	110
4	546	3,160	520	743	1,080	636	546	487	305	286	119	106
5	645	4,540	520	693	1,060	626	538	463	293	270	121	104
6	608	1,850	512	654	1,020	608	529	439	270	a254	133	100
7	546	1,320	512	654	1,020	608	512	423	254	a244	133	98
8	512	1,040	504	664	960	617	504	393	249	a228	126	98
9	504	926	495	723	926	636	504	415	244	220	121	96
10	3,090	1,880	565	848	914	617	504	408	238	215	115	94
11	1,600	1,250	1,650	1,040	892	599	495	454	228	215	117	91
12	984	1,030	2,340	1,080	880	589	487	536	224	211	186	91
13	794	926	1,700	1,070	869	580	471	636	215	207	166	91
14	693	869	1,260	1,030	848	572	471	487	211	211	119	87
15	645	837	1,110	984	837	554	463	439	203	a199	115	94
16	664	1,040	1,030	972	826	538	471	455	207	a190	110	96
17	626	1,800	960	1,040	816	538	455	447	211	a179	108	88
18	599	1,030	892	1,790	805	580	455	423	207	173	107	88
19	572	880	848	2,270	794	683	447	408	211	242	106	87
20	546	826	826	3,070	773	926	455	393	211	a238	102	87
21	520	794	805	2,420	753	733	439	393	207	a215	123	86
22	495	753	763	2,050	743	683	431	365	199	a203	186	81
23	479	713	743	1,880	723	654	415	415	194	186	156	80
24	463	703	723	1,790	713	626	408	528	a190	179	130	77
25	455	693	703	1,700	693	608	401	702	g4,030	166	130	76
26	431	664	683	1,590	673	589	401	479	f2,390	156	1,390	76
27	423	645	664	1,500	673	572	837	393	903	148	228	76
28	415	617	654	1,460	683	563	1,030	372	626	143	186	75
29	408	608	636	1,400	-	563	784	365	512	136	156	74
30	401	589	608	1,340	-	554	683	337	423	130	143	75
31	393	-	608	1,270	-	554	-	337	-	124	138	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	20,941	3,090	393	676	41,540
November	36,135	4,540	386	1,204	71,670
December	25,481	2,340	495	822	50,540
Calendar year 1946	190,680	4,540	82	522	378,200
January	39,708	3,070	626	1,281	78,760
February	24,414	1,190	673	872	48,420
March	19,217	926	538	620	38,120
April	15,790	1,030	401	526	31,320
May	14,119	702	337	455	28,000
June	14,640	4,030	190	488	29,040
July	6,596	379	124	213	13,080
August	5,437	1,390	102	175	10,780
September	2,723	124	.74	90.8	5,400
Water year 1946-47	225,201	4,540	74	617	446,700

Peak discharge.- Oct. 10 (2 p.m.) 5,750 sec.-ft.; Nov. 3 (10 p.m.) 8,500 sec.-ft.; Nov. 5 (9 a.m.) 8,380 sec.-ft.; June 25 (7 p.m.) 10,200 sec.-ft.; Aug. 26 (10 a.m.) 9,380 sec.-ft.
a No gage-height record; discharge computed on basis of recorded range in stage and weather records.
c Backwater from Comal River.
f Computed on basis of partly estimated gage-height record.
g Computed from graph based on gage readings.

Guadalupe River at Victoria, Tex.

Location.- Water-stage recorder, lat. 28°47', long. 97°01', at bridge on U. S. Highway 59 in Victoria, Victoria County, 1,300 feet upstream from Texas & New Orleans Railroad bridge and 10 miles upstream from Coleto Creek. Datum of gage is 29.23 feet above mean sea level, datum of 1929.

Drainage area.- 5,311 square miles (revised).

Records available.- November 1934 to September 1947. Gage-height records collected in this vicinity since 1904 are contained in reports of U. S. Weather Bureau.

Average discharge.- 12 years (1935-47), 1,985 second-feet.

Extremes.- Maximum discharge during year, 46,000 second-feet Oct. 17 (gage height, 29.55 feet); minimum, 452 second-feet Sept. 30; minimum daily, 516 second-feet Sept. 30.
1934-47: Maximum discharge, 179,000 second-feet July 3, 1936 (gage height, 31.22 feet); minimum daily, 308 second-feet Sept. 5, 1939.

Remarks.- Records good. Many small diversions above station do not materially affect flow. Low flow partly regulated by power plants above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9,180	1,400	1,850	1,730	2,820	1,730	1,540	1,620	1,400	1,540	664	1,290
2	3,990	1,430	1,770	1,770	2,740	1,730	1,510	1,660	1,320	1,250	763	1,040
3	2,490	1,510	1,770	1,810	2,620	1,730	1,470	1,540	1,320	830	780	796
4	2,090	2,490	1,730	2,050	2,530	1,730	1,470	1,510	1,290	1,110	714	813
5	2,090	2,570	1,660	2,490	2,450	1,700	1,540	1,400	1,250	1,000	714	847
6	2,130	5,900	1,700	2,410	2,370	1,700	1,430	1,400	1,250	969	830	746
7	2,530	8,760	1,580	2,010	2,410	1,700	1,470	1,320	1,110	969	582	763
8	2,450	10,000	1,580	1,890	2,330	1,700	1,470	1,290	1,140	934	697	763
9	2,010	9,260	1,620	1,970	2,250	1,620	1,510	1,250	1,110	899	680	763
10	2,620	4,600	1,580	2,490	2,210	1,660	1,510	1,250	1,110	899	714	746
11	3,480	3,920	1,620	3,310	2,210	1,620	1,510	1,360	969	882	631	664
12	2,330	3,360	1,770	4,010	2,170	1,580	1,400	1,360	1,040	830	730	648
13	3,020	4,250	1,930	3,700	2,090	1,700	1,400	1,400	1,000	899	763	730
14	2,620	3,360	4,290	2,820	2,050	1,660	3,630	1,730	969	899	763	614
15	2,210	2,780	6,380	2,490	2,050	1,770	7,920	1,730	969	1,040	730	664
16	11,100	2,940	4,380	2,450	2,050	1,730	9,410	1,470	1,000	969	830	648
17	26,000	5,300	2,940	2,450	2,010	1,700	5,360	1,320	969	934	746	631
18	11,100	4,010	2,620	3,470	2,010	1,850	2,170	1,430	899	864	582	631
19	7,640	4,710	2,490	7,780	2,010	2,170	1,850	2,370	1,000	864	730	614
20	5,930	4,100	2,410	9,940	1,970	5,100	1,620	5,370	934	796	714	664
21	3,190	3,020	2,250	9,480	1,970	7,150	1,540	2,660	969	813	714	648
22	2,170	2,660	2,130	6,520	1,890	5,320	1,400	2,010	882	830	746	565
23	1,890	2,370	2,130	5,120	1,850	2,490	1,580	3,460	864	899	648	582
24	1,770	2,290	2,050	4,150	1,890	2,130	1,730	4,080	864	847	864	548
25	1,930	2,210	2,010	3,700	1,770	2,010	1,360	4,120	969	813	847	548
26	1,810	2,410	1,930	3,570	1,810	1,810	1,320	2,570	864	763	904	614
27	1,770	2,210	1,850	3,360	1,730	1,730	1,360	4,750	1,070	763	1,430	598
28	2,010	2,010	1,930	3,270	1,700	1,730	1,360	4,200	2,210	730	2,320	548
29	1,700	2,130	1,850	3,110	-	1,540	1,320	2,210	2,410	648	6,730	548
30	1,540	2,010	1,850	3,020	-	1,580	1,400	1,660	1,850	830	8,340	516
31	1,470	-	1,810	2,900	-	1,660	-	1,470	-	813	3,980	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	128,260	26,000	1,470	4,137	254,400
November	109,970	10,000	1,400	3,666	218,100
December	69,460	6,380	1,580	2,241	137,800
Calendar year 1946	877,440	26,000	490	2,404	1,740,000
January	111,240	9,940	1,730	3,588	220,600
February	59,960	2,820	1,700	2,141	118,900
March	67,030	7,150	1,540	2,162	133,000
April	65,560	9,410	1,320	2,185	130,000
May	66,970	5,370	1,250	2,160	132,800
June	35,001	2,410	864	1,167	69,420
July	28,126	1,540	648	907	55,790
August	41,880	8,340	582	1,351	83,070
September	20,790	1,290	516	693	41,240
Water year 1946-47	804,247	26,000	516	2,203	1,595,000

Johnson Creek near Ingram, Tex.

Location.- Water-stage recorder, lat. 30°05', long. 99°16', 1.3 miles upstream from Henderson Branch, 3 miles northwest of Ingram, Kerr County, 4.5 miles upstream from mouth, and 9.5 miles northwest of Kerrville. Datum of gage is 1,721.3 feet above mean sea level, datum of 1929.
Drainage area.- About 150 square miles.
Records available.- September 1941 to September 1947.
Extremes.- Maximum discharge during year, 16,200 second-feet June 23 (gage height, 11.76 feet), from rating curve extended above 310 second-feet on basis of slope-area determinations at gage heights 9.67 and 11.76 feet; minimum, 4.2 second-feet Sept. 20.
1941-47: Maximum discharge, that of June 23, 1947; minimum, 2.6 second-feet Aug. 19, 20, 1946.
Maximum stage known since 1852, about 35 feet July 2, 1932, from information by local resident; discharge, 138,000 second-feet by slope-area method at point half a mile downstream from State Fish Hatchery and about 6 or 7 miles upstream from gage. Flood of June 14, 1935, reached a stage of about 31 or 32 feet, from information by local resident.
Remarks.- Records good except those for period of no gage-height record, which are fair. Small diversions above station for irrigation.

Rating tables, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Feb. 11 to Apr. 16 and Sept. 29, 30)

Oct. 1 to June 23

1.4	4.0	1.9	37	3.2	397
1.5	8.2	2.0	49	3.5	530
1.6	14	2.3	98	4.0	830
1.7	20	2.6	173	4.5	1,200
1.8	28	2.9	276	5.0	1,680

June 24 to Sept. 30

1.7	4.8	2.1	36	2.8	219
1.8	8.7	2.2	52	3.1	345
1.9	14	2.4	93	3.5	530
2.0	23	2.6	150		

Note.- Same as preceding table above 3.5 feet.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.4	8.7	12	12	22	17	15	28	17	21	12	11
2	6.9	9.3	13	14	22	17	15	26	17	21	12	10
3	6.9	916	14	12	22	17	15	25	17	21	15	11
4	6.9	89	14	11	22	17	15	24	16	20	13	11
5	6.9	41	12	11	22	17	15	24	16	19	12	11
6	6.9	30	12	12	21	21	14	23	16	18	11	11
7	6.9	24	14	13	21	20	14	22	15	18	11	10
8	90	21	14	14	21	19	15	22	15	17	10	10
9	41	20	13	17	21	18	15	22	15	16	10	10
10	21	19	14	17	21	17	14	24	15	16	10	10
11	14	19	15	15	21	17	13	28	15	17	11	9.2
12	12	18	14	15	19	17	14	24	15	17	11	10
13	11	17	12	14	19	17	14	23	15	16	11	11
14	11	16	12	12	18	17	14	22	15	16	11	10
15	12	16	11	12	18	17	14	22	16	15	9.7	10
16	11	15	11	12	19	17	14	23	16	15	9.7	9.7
17	10	14	12	15	18	17	12	21	15	14	10	9.2
18	10	14	11	437	19	23	13	21	14	14	10	14
19	9.3	14	11	823	17	21	13	21	15	15	9.7	7.8
20	9.3	14	11	154	17	18	12	21	15	15	11	5.1
21	9.3	14	10	55	17	18	12	20	15	13	12	7.4
22	8.7	14	10	35	16	17	12	19	15	13	16	8.2
23	8.7	14	11	28	16	17	12	19	530	13	14	8.2
24	8.7	14	11	24	17	15	12	19	1,410	13	13	8.7
25	8.7	14	11	23	16	16	282	18	73	12	16	8.2
26	8.2	13	11	23	16	17	76	17	47	12	13	8.2
27	8.2	12	11	23	17	16	53	17	36	12	12	8.2
28	8.2	12	11	23	17	16	43	17	30	12	12	8.7
29	8.7	12	12	23	-	16	37	17	25	12	12	8.7
30	8.2	12	12	23	-	14	33	17	23	12	11	9.2
31	8.7	-	12	23	-	14	-	17	-	12	11	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	404.7	90	6.9	13.1	803
November	1,466.0	916	8.7	48.9	2,910
December	374	15	10	12.1	742
Calendar year 1946	4,406.8	916	2.6	12.1	8,740
January	1,945	823	11	62.7	3,860
February	532	22	16	19.0	1,060
March	537	23	14	17.3	1,070
April	852	282	12	28.4	1,690
May	663	28	17	21.4	1,320
June	2,514	1,410	14	83.8	4,990
July	477	21	12	15.4	946
August	362.1	16	9.7	11.7	718
September	284.7	14	5.1	9.49	565
Water year 1946-47	10,411.5	1,410	5.1	28.5	20,670

Peak discharge.- Nov. 3 (1 p.m.) 9,180 sec.-ft.; Jan. 18 (11 p.m.) 3,260 sec.-ft.; June 23 (11:30 p.m.) 16,200 sec.-ft.
Note.- No gage-height record Jan. 14 to Feb. 10; discharge computed on basis of recorded range in stage, weather records, and records for Guadalupe River at Hunt.

Comal River at New Braunfels, Tex.

Location.- Water-stage recorder, lat. 29°42'05", long. 98°07'10", 200 feet upstream from San Antonio Street viaduct in New Braunfels, Comal County, and 1.1 miles upstream from mouth. Datum of gage is 582.80 feet above mean sea level, datum of 1929.
Drainage area.- 94 square miles. Ordinary flow of river comes from springs; drainage area of stream not applicable.
Records available.- December 1927 to September 1947. 1882 to November 1927 (discharge measurements only).
Average discharge.- 15 years (1932-47), 344 second-feet.
Extremes.- Maximum discharge during year, 4,540 second-feet Nov. 3 (gage height, 11.43 feet); minimum daily, 313 second-feet (regulated) Sept. 8.
1927-47: Maximum gage height, 30.71 feet June 15, 1935, from floodmarks (affected by backwater from Guadalupe River; discharge not determined); minimum discharge, about 142 second-feet (regulated) Dec. 11, 1928 (gage height, 2.12 feet); minimum daily, 245 second-feet July 17, 20, 1939.
Maximum stage known, 35.4 feet December 1913, from floodmarks (probably some backwater from Guadalupe River).
Remarks.- Records good except those for periods of backwater, which are fair. Flow partly regulated by steam power plant half a mile above station. Entire flow of river from Comal Springs, about 1 mile above station, except during periods of local rain. Springs emerge from Edwards limestone in Balcones fault zone.

Rating tables, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Nov. 4 to Dec. 31)

Oct. 1 to Nov. 3				Nov. 4 to Sept. 30			
2.8	311	4.0	704	2.7	291	4.0	712
3.0	370	4.5	893	3.0	380	4.5	892
3.5	531	5.1	1,130	3.5	542	5.1	1,130

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	382	401	399	402	411	405	405	389	352	334	325	322
2	382	395	399	427	411	402	405	402	346	331	322	328
3	382	c1,120	399	417	411	399	399	396	343	331	325	319
4	417	c531	396	399	408	402	396	399	343	328	322	325
5	398	c427	396	396	402	399	396	389	340	331	322	325
6	392	414	396	396	408	402	399	389	343	328	325	319
7	389	402	399	392	408	405	392	389	337	331	325	322
8	389	405	396	396	405	402	396	383	340	331	322	313
9	389	402	396	417	405	402	396	545	337	331	319	319
10	c401	c414	399	433	405	405	396	432	340	328	322	319
11	401	405	c460	411	402	402	392	823	337	331	319	316
12	392	399	c421	405	402	405	399	361	343	331	322	316
13	392	402	c411	405	405	402	392	358	349	346	322	319
14	392	399	405	402	408	402	399	355	349	334	322	322
15	395	399	402	402	408	399	392	352	349	331	319	325
16	407	399	399	469	408	402	396	358	346	331	319	325
17	401	408	402	609	411	402	396	352	349	328	325	322
18	398	399	399	c437	408	443	396	358	349	331	322	322
19	395	399	399	c434	411	411	392	361	349	331	325	322
20	398	396	396	c432	408	408	392	352	349	331	325	316
21	398	399	399	c429	408	414	389	374	343	328	325	316
22	395	402	399	c427	411	411	392	361	349	328	325	319
23	392	402	399	c425	408	411	389	358	346	325	325	319
24	395	402	396	c422	405	408	386	535	349	325	328	316
25	404	399	396	c420	405	411	389	399	c358	328	322	319
26	395	402	396	417	402	408	386	361	c358	319	c457	319
27	395	399	396	414	408	411	389	355	346	322	322	316
28	392	399	396	417	405	411	389	355	340	322	322	316
29	398	399	392	414	-	411	386	352	340	322	325	316
30	395	399	392	417	-	408	386	355	343	325	322	319
31	398	-	396	414	-	408	-	349	-	325	322	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	12,249	417	382	395	24,300
November	12,918	1,120	395	431	25,620
December	12,426	460	392	401	24,650
Calendar year 1946	139,306	1,590	301	382	276,300
January	13,097	609	392	422	25,980
February	11,397	411	402	407	22,610
March	12,611	443	399	407	25,010
April	11,807	405	386	394	23,420
May	12,297	823	349	397	24,390
June	10,362	358	337	345	20,550
July	10,198	346	319	329	20,230
August	10,144	457	319	327	20,120
September	9,591	328	313	320	19,020
Water year 1946-47	139,097	1,120	313	381	275,900

Peak discharge.- Nov. 3 (7:30 p.m.) 4,540 sec.-ft.; May 9 (7:30 p.m.) 1,640 sec.-ft.; May 11 (2:30 a.m.) 2,460 sec.-ft.; May 24 (5:30 p.m.) 1,130 sec.-ft.
c Backwater from Guadalupe River.

San Marcos River at Luling, Tex.

Location.- Water-stage recorder, lat. 29°39'55", long. 97°39'05", 390 feet downstream from bridge on State Highway 80, 1 mile south of Luling, Caldwell County, and 8 miles upstream from Plum Creek. Datum of gage is 322.0 feet above mean sea level, datum of 1929.

Drainage area.- 833 square miles.

Records available.- April 1939 to September 1947.

Extremes.- Maximum discharge during year, 8,140 second-feet Nov. 4 (gage height, 28.46 feet); minimum, 43 second-feet (regulated) Sept. 23; minimum daily, 141 second-feet Sept. 21.

1939-47: Maximum discharge, 29,500 second-feet July 5, 1942 (gage height, 32.93 feet); minimum, 7.7 second-feet (regulated) May 21, 1943; minimum daily, 55 second-feet Oct. 15, 1939.

Maximum stage known, 40.4 feet in 1869 and 1870, from information by engineers of State Highway Department.

Remarks.- Records good except those for periods of rapidly changing stage, which are fair. Flow regulated by power plant 800 feet above station. Discharge is mostly from large springs near San Marcos. No large diversion above station.

Discharge, in second-feet, water ysar October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	321	258	500	516	677	470	358	293	251	209	169	183
2	307	258	485	564	668	455	358	230	251	196	169	183
3	293	369	470	847	644	440	350	286	251	202	167	176
4	300	5,060	470	564	644	440	350	279	237	202	169	169
5	532	3,350	455	516	628	440	350	279	244	183	167	176
6	425	1,050	455	500	612	440	335	265	244	202	162	167
7	358	779	455	516	612	425	335	272	237	196	164	152
8	335	644	440	516	596	440	335	272	244	190	165	170
9	328	580	440	796	580	440	335	307	237	190	164	165
10	328	1,000	470	1,170	564	425	328	286	237	190	149	167
11	342	1,220	849	830	564	455	335	358	237	190	176	167
12	321	813	3,500	694	564	440	556	321	230	190	170	170
13	300	711	1,340	668	564	455	3,910	272	223	190	170	167
14	293	644	966	628	548	425	425	265	223	237	169	162
15	300	612	864	628	532	410	358	258	223	196	176	169
16	380	612	796	762	532	395	328	293	230	196	170	176
17	321	1,810	779	2,800	516	395	314	874	230	190	167	170
18	307	949	728	1,720	516	731	307	410	244	183	165	165
19	293	796	694	1,390	516	1,320	307	470	273	223	170	161
20	286	745	677	1,320	500	470	314	293	230	223	160	153
21	279	694	668	1,120	500	440	300	602	230	196	164	141
22	272	668	628	1,000	485	410	293	307	223	196	170	160
23	272	612	612	949	485	395	293	272	216	190	170	152
24	272	596	564	949	470	380	286	286	216	183	170	143
25	425	580	548	915	470	372	286	1,660	244	176	161	153
26	307	564	532	864	455	365	286	358	237	176	4,770	149
27	265	548	532	830	455	358	286	286	223	170	3,680	152
28	265	532	532	779	470	350	293	272	216	176	286	144
29	258	516	516	762	-	350	300	265	209	176	223	152
30	258	516	500	745	-	350	293	251	209	170	202	151
31	258	-	485	711	-	358	-	251	-	160	183	-

Month	Second-feet-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	9,801	532	258	316	19,440
November	28,086	5,060	258	936	55,710
December	21,950	3,500	440	708	43,540
Calendar year 1946	166,179	5,060	153	455	329,600
January	27,569	2,800	500	889	54,680
February	15,367	677	455	549	30,480
March	14,039	1,320	350	453	27,850
April	13,504	3,910	286	450	26,780
May	11,393	1,660	230	368	22,600
June	6,983	251	209	232	13,810
July	5,947	237	160	192	11,800
August	13,517	4,770	149	436	26,810
September	4,865	183	141	162	9,650
Water year 1946-47	173,001	5,080	141	474	343,200

Peak discharge.- Nov. 4 (9 p.m.) 8,140 sec.-ft.; Dec. 12 (3:45 p.m.) 4,720 sec.-ft.; Apr. 13 (7:30 a.m.) 6,280 sec.-ft.; Aug. 26 (5 p.m.) 7,180 sec.-ft.

Blanco River at Wimberley, Tex.

Location.- Water-stage recorder, lat. 29°59', long 98°04', 800 feet downstream from Cypress Creek, 1,200 feet upstream from bridge on State Highway 12, and a quarter of a mile south of Wimberley, Hays County. Datum of gage is 802.2 feet above mean sea level, datum of 1929.

Drainage area.- 378 square miles.

Records available.- August 1924 to September 1926, June 1928 to September 1947.

Average discharge.- 21 years, 117 second-feet.

Extremes.- Maximum discharge during year, 13,700 second-feet Nov. 3 (gage height, 11.80 feet); minimum, 19 second-feet Sept. 22-30 (gage height, 0.44 foot).
1924-26, 1928-47: Maximum discharge, 113,000 second-feet May 28, 1929 (gage height, 31.10 feet, from floodmarks), by slope-area method; minimum, 2.9 second-feet Oct. 5, 6, 1940.

Remarks.- Records good except those for period of no gage-height record, which are fair. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	87	53	185	202	351	178	136	98	74	39	26	27
2	79	74	178	202	333	165	139	89	71	37	27	27
3	74	5,790	175	202	329	162	136	87	71	35	27	26
4	124	1,220	168	196	320	162	133	82	66	37	26	24
5	126	398	165	196	302	159	130	79	66	37	26	24
6	112	307	162	196	302	152	126	79	64	35	24	24
7	103	266	155	192	294	168	126	76	64	35	24	24
8	100	239	152	192	278	165	126	76	62	35	24	24
9	98	611	146	243	270	155	126	76	62	35	24	24
10	95	861	352	333	258	149	126	79	57	35	32	22
11	87	428	1,720	324	258	146	123	79	57	35	31	22
12	82	351	791	316	254	149	120	76	55	39	53	22
13	79	307	546	316	243	142	117	76	55	39	31	22
14	74	278	473	307	235	136	117	76	51	37	27	22
15	74	262	433	298	228	133	117	74	53	35	26	24
16	76	1,730	398	298	220	133	114	109	60	33	24	24
17	74	530	360	483	216	130	112	89	55	31	24	22
18	71	428	329	825	213	185	109	92	53	33	26	22
19	69	379	324	852	210	213	109	89	53	54	26	21
20	66	338	316	745	206	182	106	89	55	33	26	21
21	64	311	290	641	199	162	106	79	53	31	27	21
22	62	282	274	595	196	155	103	76	51	29	27	21
23	62	266	266	573	188	155	100	87	47	29	27	19
24	62	254	258	546	185	152	98	99	47	29	27	19
25	60	243	250	498	178	146	95	84	44	27	27	19
26	57	228	243	468	175	139	95	87	44	27	31	19
27	57	224	235	443	175	139	98	82	43	27	31	19
28	55	213	220	423	182	139	100	79	43	27	31	19
29	55	202	213	413	-	139	100	76	39	27	31	19
30	53	196	210	393	-	139	98	76	39	27	31	19
31	53	-	210	365	-	139	-	76	-	26	29	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,390	126	53	77.1	4,740
November	15,269	3,790	53	509	30,290
December	10,197	1,720	146	329	20,230
Calendar year 1946	59,607	3,790	29	163	118,200
January	12,276	852	192	396	24,350
February	6,798	351	175	243	13,480
March	4,748	213	130	153	9,420
April	3,441	139	95	115	6,830
May	2,571	109	74	82.9	5,100
June	1,654	74	39	55.1	3,280
July	1,035	54	26	33.4	2,050
August	873	53	24	28.2	1,730
September	662	27	19	22.1	1,310
Water year 1946-47	61,914	3,790	19	170	122,800

Peak discharge.- Nov. 3 (9:30 p.m.) 13,700 sec.-ft.; Nov. 9 (9:45 p.m.) 3,890 sec.-ft.; Nov. 16 (7 a.m.) 5,060 sec.-ft.; Dec. 11 (3:15 p.m.) 5,060 sec.-ft.

Note.- No gage-height record Dec. 25 to Jan. 12; discharge computed on basis of recorded range in stage and records for nearby stations.

Plum Creek near Luling, Tex.

Location.- Water-stage recorder, lat. 29°42', long. 97°37', at county highway bridge, 1 mile downstream from West Fork Plum Creek, 2 miles upstream from Texas & New Orleans Railroad bridge, and 3 miles northeast of Luling, Caldwell County. Datum of gage is 326.6 feet above mean sea level, datum of 1929.

Drainage area.- 356 square miles.

Records available.- March 1930 to September 1947.

Average discharge.- 17 years, 107 second-feet.

Extremes.- Maximum discharge during year, 20,000 second-feet Aug. 26 (gage height, 19.50 feet); minimum, 5.0 second-feet Aug. 5.

1930-47: Maximum discharge, 78,500 second-feet July 1, 1936 (gage height, 25.7 feet, from floodmarks), from rating curve extended above 54,000 second-feet; minimum, 0.7 second-foot Oct. 24, 1939.

Flood in December 1913 reached about same stage as that of July 1, 1936, from information by local residents.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Low flow slightly regulated by oil-field operations above station. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	21	35	a71	56	34	29	34	19	7.5	5.7	15
2	23	22	32	a471	55	32	29	34	19	7.2	5.5	15
3	22	269	31	a556	53	31	29	33	18	7.2	6.3	14
4	37	6,430	31	a181	50	29	29	31	16	7.2	6.0	13
5	253	2,750	30	a68	50	31	29	31	14	7.2	5.7	12
6	60	1,080	30	a58	49	30	27	29	14	6.9	5.7	11
7	38	189	30	a53	47	31	28	28	14	6.9	5.7	10
8	32	77	31	a57	46	30	28	29	14	6.6	5.8	11
9	32	56	55	601	45	30	29	28	13	6.3	5.5	12
10	31	649	53	925	43	30	27	27	12	6.3	5.2	12
11	36	547	1,240	410	41	30	28	26	11	6.3	6.0	12
12	a100	69	2,280	133	42	32	69	25	11	6.3	6.3	13
13	a45	58	189	87	41	337	2,550	23	11	8.4	6.9	11
14	a26	56	82	77	41	52	920	22	11	23	6.9	11
15	a27	54	64	70	40	35	87	21	11	16	6.0	10
16	220	239	58	f594	40	31	49	26	11	7.2	5.5	9.4
17	79	1,040	56	f2,430	39	29	40	530	11	6.3	5.5	9.4
18	41	97	51	f2,420	39	299	35	118	9.8	6.3	5.7	9.8
19	34	57	50	f469	39	1,510	34	55	9.8	11	5.8	9.4
20	29	54	57	419	39	220	32	35	10	12	5.7	9.4
21	27	46	49	125	38	58	32	300	10	14	13	9.0
22	20	39	46	87	37	44	28	98	9.4	7.5	11	8.4
23	16	37	44	78	37	42	28	36	9.4	6.3	8.4	8.1
24	17	36	43	81	36	42	28	34	9.8	6.9	6.9	7.8
25	217	41	42	83	35	38	26	36	9.4	6.9	6.6	8.1
26	38	288	42	72	34	34	28	28	9.4	6.6	10,600	8.1
27	22	81	44	64	34	31	32	25	8.7	6.9	5,630	8.1
28	20	46	38	62	34	29	34	22	8.7	7.2	226	8.4
29	19	37	a36	60	-	29	34	20	8.7	7.2	32	8.4
30	18	37	a36	59	-	29	34	19	8.4	6.6	22	8.1
31	20	-	a37	58	-	29	-	19	-	6.0	19	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,626	253	16	52.5	3,230
November	14,502	6,430	21	483	28,760
December	4,942	2,280	30	159	9,800
Calendar year 1946	73,749.3	8,430	4.6	202	146,300
January	10,979	2,430	53	354	21,780
February	1,180	56	34	42.1	2,340
March	3,288	1,510	29	106	6,520
April	4,432	2,550	26	148	8,790
May	1,822	530	19	58.8	3,610
June	351.5	19	8.4	11.7	697
July	254.2	23	6.0	8.20	504
August	16,692.3	10,600	5.2	538	33,110
September	311.9	15	7.8	10.4	619
Water year 1946-47	60,380.9	10,600	5.2	165	119,800

Peak discharge.- Nov. 4 (1:30 p.m.) 12,900 sec.-ft.; Dec. 12 (10 a.m.) 3,170 sec.-ft.; Jan. 18 (3 a.m.) 3,170 sec.-ft.; Apr. 13 (8:30 a.m.) 2,950 sec.-ft.; Aug. 26 (6:30 p.m.) 20,000 sec.-ft.

a No gage-height record; discharge computed on basis of recorded range in stage and records for San Marcos River at Luling.

f Computed on basis of partly estimated gage-height record.

Coleto Creek near Victoria, Tex.

Location.- Water-stage recorder, lat. 28°43', long. 97°08', at bridge on U. S. Highway 59, 100 feet upstream from Texas & New Orleans Railroad bridge, 1.1 miles downstream from Perdido Creek, and 9.4 miles southwest of Victoria, Victoria County. Datum of gage is 49.2 feet above mean sea level, datum of 1929.

Drainage area.- 514 square miles.

Records available.- June 1939 to September 1947.

Extremes.- Maximum discharge during year, 89,000 second-feet Oct. 16 (gage height, 31.64 feet, from floodmark, by slope-area method); minimum, 1.6 second-feet Sept. 22, 23.
1939-47: Maximum discharge, that of Oct. 16, 1946; no flow at times.
Maximum stage known prior to October 1946, 27.2 feet July 1, 1936, at railroad bridge 100 feet below gage, from information by railroad company.

Remarks.- Records good. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	80	46	33	39	26	24	24	52	11	7.1	4.7
2	24	77	44	40	37	26	24	22	45	10	13	4.5
3	19	146	43	36	38	25	24	21	41	9.7	12	4.7
4	32	1,040	42	32	36	25	24	20	38	9.4	12	5.0
5	62	280	42	31	35	26	22	20	36	9.1	11	4.5
6	35	174	41	32	35	24	22	20	33	8.6	8.6	4.0
7	22	122	41	64	34	24	21	19	30	8.4	7.8	3.7
8	18	102	40	46	32	24	22	18	28	8.1	7.6	3.5
9	43	96	40	87	32	24	22	18	26	8.1	6.5	4.2
10	1,230	517	39	328	32	24	22	18	25	8.1	6.5	6.3
11	2,590	555	40	330	32	24	30	28	24	7.8	6.8	5.5
12	239	168	49	136	34	26	24	30	22	8.4	7.1	5.0
13	115	102	53	86	34	27	26	24	21	12	6.5	7.8
14	90	86	44	71	32	25	66	22	20	14	9.4	7.1
15	83	80	41	62	31	24	54	20	20	11	14	6.5
16	40,800	77	39	56	31	23	39	20	89	8.9	11	6.8
17	g12,500	208	37	59	30	23	32	18	33	7.6	9.1	6.5
18	1,000	110	34	95	31	30	30	25	22	6.8	9.1	5.0
19	546	88	35	214	30	43	28	34	30	6.5	15	3.5
20	381	72	37	218	29	37	26	99	21	6.3	9.7	3.2
21	310	64	36	101	30	34	25	100	20	6.3	8.4	2.8
22	246	60	34	72	30	30	24	45	18	6.3	8.1	2.0
23	207	56	33	61	28	29	23	4,880	16	5.8	7.1	1.8
24	176	55	32	56	27	26	23	5,340	15	5.5	6.3	2.0
25	168	54	32	52	26	24	22	1,820	16	5.5	13	2.0
26	156	116	32	48	26	24	29	299	16	7.4	15	2.0
27	129	103	32	46	26	23	35	110	14	7.3	9.4	2.3
28	111	62	32	45	27	22	34	109	13	6.3	7.6	2.3
29	99	53	29	45	-	23	31	82	12	5.8	6.5	2.3
30	95	49	28	40	-	23	27	66	11	5.5	5.8	2.3
31	87	-	30	39	-	23	-	59	-	5.5	5.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	61,645	40,800	18	1,989	122,300
November	4,852	1,040	49	162	9,620
December	1,177	53	28	38.0	2,330
Calendar year 1946	90,565.3	40,800	.7	248	179,700
January	2,661	330	31	85.8	5,280
February	884	39	26	31.6	1,750
March	811	43	22	26.2	1,610
April	855	66	21	28.5	1,700
May	13,430	5,340	18	433	26,640
June	807	89	11	26.9	1,600
July	247.0	14	5.5	7.97	490
August	282.2	15	5.2	9.10	560
September	123.8	7.8	1.8	4.13	246
Water year 1946-47	87,775.0	40,800	1.8	240	174,100

Peak discharge.- Oct. 11 (2 a.m.) 7,620 sec.-ft.; Oct. 16 (about 7 p.m.) 89,000 sec.-ft.; May 23 (12 m.) 18,600 sec.-ft.; May 24 (8:30 p.m.) 19,900 sec.-ft.
g Computed from graph based on gage readings.

San Antonio River at San Antonio, Tex.

Location.- Water-stage recorder, lat. 29°24'35", long. 98°29'40", at South Alamo Street Bridge in San Antonio, Bexar County, 2.1 miles upstream from San Pedro Creek. Datum of gage is 612.3 feet above mean sea level, datum of 1929.

Drainage area.- 42 square miles. Normal flow of river comes from springs; drainage area of stream not applicable.

Records available.- January 1915 to November 1929, February 1939 to September 1947. Estimated monthly ground-water discharge contained in Water-Supply Paper 773-B.

Average discharge.- 22 years (1915-29, 1939-47), 73.1 second-feet.

Extremes.- Maximum discharge during year, 984 second-feet Nov. 10 (gage height, 5.85 feet); minimum, 6.2 second-feet (regulated) Aug. 23; minimum daily, 23 second-feet Sept. 30. 1915-29, 1939-47: Maximum discharge, 15,300 second-feet Sept. 10, 1921 (gage height, 20.14 feet, from floodmark), by slope-area method; no flow at times because of regulation.

Flood of July 5, 1819, equalled or exceeded that of Sept. 10, 1921.

Remarks.- Records good. Flood flow regulated by Olmos flood-control reservoir (capacity, 15,500 acre-feet) about 8½ miles above station. Normal flow of river comes from springs located about 8 miles above station. Springs emerge from Edwards limestone formation in Balcones fault zone. Diurnal fluctuation caused by industrial pumping from wells (depleting underground reservoir) above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	155	123	119	147	133	120	103	119	67	33	34	33
2	154	126	119	138	136	120	102	113	67	32	42	34
3	154	136	110	131	136	120	102	111	61	31	35	31
4	163	127	117	127	131	120	102	106	56	33	33	30
5	147	118	112	124	131	119	100	103	52	32	34	31
6	147	126	107	122	133	117	99	94	49	32	33	33
7	148	122	113	127	131	119	100	89	47	33	33	31
8	172	120	115	135	130	123	100	85	46	35	31	33
9	146	115	115	149	131	129	99	86	46	33	30	31
10	144	559	115	140	131	129	98	104	42	34	71	29
11	140	137	168	129	131	129	93	82	42	34	118	29
12	141	130	146	133	130	133	87	72	40	34	51	28
13	140	124	126	134	130	129	87	69	39	32	29	26
14	138	124	126	134	126	127	89	65	39	34	30	25
15	141	124	129	133	126	127	90	64	39	34	30	27
16	146	123	129	143	127	129	87	85	47	33	29	28
17	134	127	126	166	129	126	87	72	40	32	29	25
18	133	127	124	141	127	162	89	79	36	31	30	25
19	131	123	124	143	124	107	91	70	38	33	29	25
20	130	119	126	136	124	107	90	70	43	33	30	26
21	130	122	126	136	124	106	95	69	36	33	34	28
22	130	122	126	136	124	107	104	66	39	32	58	27
23	130	120	127	140	123	108	106	72	40	31	37	26
24	129	126	127	134	122	107	113	78	38	31	44	25
25	127	126	126	136	122	106	120	66	37	29	52	25
26	127	120	129	137	120	106	127	69	35	29	73	25
27	126	113	131	138	124	107	130	66	34	30	38	26
28	127	120	129	138	120	106	130	66	34	30	38	25
29	126	123	129	138	-	107	123	64	33	30	37	24
30	124	111	129	137	-	106	120	66	34	30	36	23
31	123	-	136	136	-	104	-	69	-	29	33	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	4,303	172	123	139	8,530
November	4,133	559	111	138	8,200
December	3,881	168	107	125	7,700
Calendar year 1946	30,146	2,690	19	82.6	59,790
January	4,238	166	122	137	8,410
February	3,576	136	120	128	7,090
March	3,662	162	104	118	7,260
April	3,063	130	87	102	6,080
May	2,489	119	64	80.3	4,940
June	1,298	67	33	43.3	2,570
July	992	35	29	32.0	1,970
August	1,261	118	29	40.7	2,500
September	834	34	23	27.8	1,650
Water year 1946-47	33,730	559	23	92.4	66,900

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San Antonio River near Falls City, Tex.

Location.- Water-stage recorder, lat. 28°57'05", long. 98°03'55", at county road bridge, 0.9 mile upstream from Scared Dog Creek and 3.6 miles southwest of Falls City, Karnes County. Datum of gage is 285.5 feet above mean sea level, datum of 1929.

Drainage area.- 2,071 square miles.

Records available.- April 1925 to September 1947.

Average discharge.- 22 years, 333 second-feet.

Extremes.- Maximum discharge during year, 11,900 second-feet Oct. 1 (gage height, 15.00 feet, stage falling, peak occurred Sept. 29, 1946); minimum, 166 second-feet Sept. 28 1925-47: Maximum discharge, 47,400 second-feet Sept. 29, 1946 (gage height, 33.80 feet, from floodmark); minimum, 36 second-feet May 11, 12, 1928 (gage height, 0.97 foot).

Maximum stage known prior to September 1946, 28.36 feet October 1913, from information by local residents.

Remarks.- Records good except those for period of no gage-height record, which are poor. Flow partly regulated by Medina Lake and Olmos flood-control reservoir (combined capacity, 269,500 acre-feet). Water diverted above station from Medina River for irrigation in vicinity of Devine and Lytle, and some water diverted for irrigation near San Antonio. Water used industrially in San Antonio.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,340	491	419	424	448	401	335	288	278	221	200	253
2	1,380	478	401	478	442	407	351	283	298	217	192	243
3	1,040	466	395	552	442	407	351	288	304	209	192	234
4	925	466	395	571	430	395	340	278	288	204	217	221
5	842	552	390	527	430	395	335	278	288	204	248	213
6	820	552	407	466	430	390	335	278	288	209	234	213
7	790	491	419	448	424	390	324	283	283	209	209	213
8	754	484	413	436	424	384	304	278	268	213	192	213
9	1,000	472	407	442	424	384	298	268	263	213	196	213
10	1,400	466	395	503	419	368	314	258	263	204	189	213
11	1,300	760	413	621	413	362	319	356	263	200	192	209
12	900	2,410	484	608	407	362	340	362	258	200	209	204
13	800	1,140	740	534	407	368	509	330	248	200	419	200
14	770	602	733	491	413	373	373	298	225	200	390	200
15	750	540	540	472	407	362	362	283	221	192	253	196
16	740	621	472	460	407	356	356	319	234	196	204	200
17	2,310	740	448	540	401	351	348	540	248	204	181	200
18	1,560	660	436	895	395	368	324	384	263	204	185	204
19	1,030	534	430	902	395	906	319	356	263	196	189	204
20	840	515	424	712	395	1,100	314	340	258	192	181	200
21	700	497	407	634	395	602	309	324	253	192	181	189
22	600	484	401	558	390	448	304	324	273	204	181	185
23	570	472	395	521	390	413	304	481	248	213	225	189
24	550	454	395	497	390	390	298	390	248	193	248	192
25	540	448	395	484	384	378	293	491	253	193	298	181
26	534	442	395	478	390	368	293	390	258	200	288	174
27	527	448	395	472	390	356	319	335	258	196	1,070	174
28	503	442	424	472	390	340	330	298	243	185	1,800	170
29	503	430	430	466	-	346	335	288	230	192	576	174
30	503	424	419	466	-	340	309	278	221	192	304	174
31	497	-	407	460	-	330	-	273	-	200	268	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	31,318	5,340	497	1,010	62,120
November	17,981	2,410	424	599	35,660
December	13,624	740	390	439	27,020
Calendar year 1946	293,990	42,200	152	805	583,100
January	16,590	902	424	535	32,910
February	11,472	448	384	410	22,750
March	13,140	1,100	330	424	26,060
April	9,943	509	293	331	19,720
May	10,220	540	258	330	20,270
June	7,787	304	221	260	15,450
July	6,253	221	185	202	12,400
August	9,911	1,800	181	320	19,660
September	6,048	253	170	202	12,000
Water year 1946-47	154,287	5,340	170	423	306,000

Note.- No gage-height record Oct. 9-24; discharge computed on basis of recorded range in stage, weather records, and records for San Antonio River at San Antonio and Medina River near San Antonio.

San Antonio River at Goliad, Tex.

Location.- Water-stage recorder, lat. 28°39', long. 97°23', at bridge on State Highway 29, 1.3 miles southeast of courthouse in Goliad, Goliad County, and 10 miles upstream from Manahuilla Creek. Datum of gage is 91.1 feet above mean sea level, datum of 1929, Houston supplementary adjustment of 1943.

Drainage area.- 3,918 square miles.

Records available.- June 1924 to March 1929, February 1939 to September 1947.

Average discharge.- 12 years (1924-28, 1939-47), 611 second-feet.

Extremes.- Maximum discharge during year, 29,400 second-feet Oct. 2 (gage height, 42.67 feet); minimum, 204 second-feet Sept. 29, 30 (gage height, 3.42 feet).
1924-29, 1939-47: Maximum discharge, 33,800 second-feet July 9, 1942 (gage height, 44.9 feet); minimum observed, 44 second-feet for several periods in 1927.
Floods of October 1913 and June 15, 1935, reached about the same stage as that of July 9, 1942.

Remarks.- Records good except those for period when loop curve was used and those for periods of no gage-height record, which are fair. Diversions and regulation above station (see "Remarks" for San Antonio River near Falls City).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17,000	820	596	488	578	488	425	398	434	290	252	542
2	27,800	801	560	488	578	488	425	398	416	281	254	416
3	25,500	820	560	488	560	488	425	389	398	272	254	362
4	12,500	914	542	524	560	488	445	362	389	272	254	335
5	2,510	1,490	524	596	542	506	434	353	398	263	263	308
6	1,590	1,090	524	725	542	488	416	353	398	254	272	299
7	1,460	1,050	524	650	542	488	416	344	389	254	299	290
8	1,400	881	542	578	524	488	416	344	380	254	272	281
9	1,520	820	542	542	524	488	407	335	371	263	263	272
10	2,350	820	542	560	524	470	389	371	371	263	249	272
11	3,690	763	524	614	524	470	398	371	353	263	247	272
12	2,550	744	542	782	524	470	416	371	344	254	247	272
13	1,950	1,570	542	944	524	470	977	353	344	254	245	263
14	1,540	2,260	687	801	506	452	782	578	335	254	245	254
15	1,250	1,370	965	668	506	452	725	488	326	250	380	249
16	5,560	881	881	596	506	452	506	407	308	250	362	247
17	14,900	881	687	614	506	452	452	380	299	250	263	247
18	19,000	1,320	614	1,070	506	452	445	371	308	249	247	247
19	13,200	1,010	578	2,120	506	470	425	1,340	317	249	250	247
20	3,310	881	560	2,370	488	787	407	1,420	326	247	254	249
21	1,350	744	542	1,400	488	1,670	398	725	326	247	263	254
22	1,180	706	524	1,070	488	1,120	389	542	326	247	254	243
23	1,090	687	506	860	488	706	389	2,110	317	247	254	229
24	1,030	668	488	744	488	560	380	3,470	326	254	254	222
25	986	668	470	668	488	524	371	3,550	317	272	304	225
26	944	650	470	632	470	488	398	2,610	308	263	290	227
27	902	632	470	632	470	470	407	2,840	308	247	326	214
28	881	632	470	614	488	470	380	1,700	308	247	335	205
29	860	632	452	614	-	452	380	668	308	247	820	205
30	839	614	488	596	-	445	389	524	299	249	1,400	204
31	820	-	488	596	-	434	-	470	-	250	902	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	171,462	27,800	820	5,531	340,100
November	27,819	2,260	614	927	55,180
December	17,404	965	452	561	34,520
Calendar year 1946	221,624	27,800	177	1,429	1,035,000
January	24,644	2,370	488	795	48,880
February	14,438	578	470	516	28,640
March	17,146	1,670	434	553	34,010
April	13,612	977	371	454	27,000
May	28,935	3,550	335	933	57,390
June	10,347	434	299	345	20,520
July	7,956	290	247	257	15,780
August	10,774	1,400	245	348	21,370
September	8,152	542	204	272	16,170
Water year 1946-47	352,689	27,800	204	966	699,600

Peak discharge.- Oct. 2 (10 p.m.) 29,400 sec.-ft.; Oct. 18 (2 p.m.) 19,700 sec.-ft.; May 24 (9 p.m.) 4,710 sec.-ft.

Note.- No gage-height record Nov. 11, 12, July 12 to Aug. 20, Aug. 29 to Sept. 23; discharge computed on basis of recorded range in stage, weather records, and records for San Antonio River and Cibolo Creek near Falls City. Discharge obtained from loop curve Oct. 1-20.

Medina River near San Antonio, Tex.

Location.- Water-stage recorder, lat. 29°15', long. 98°28', at bridge on U. S. Highway 281, 5.2 miles upstream from mouth and 9 miles south of San Antonio, Bexar County.

Drainage area.- 1,225 square miles (587 square miles is above dam forming Medina Lake).

Records available.- July 1939 to September 1947. October 1929 to December 1930, records below about 50 second-feet, at Losoya, 1.5 miles downstream, in connection with seepage investigation.

Extremes.- Maximum discharge during year, 1,470 second-feet Oct. 9 (gage height, 12.57 feet); minimum, 75 second-feet July 27.

1939-47: Maximum discharge, 31,800 second-feet Aug. 29, 1946; maximum gage height, 41.57 feet Sept. 27, 1946 (affected by backwater from San Antonio River); minimum discharge, 21 second-feet Aug. 9, 13, 1940.

Maximum stage known, about 55 feet in 1912 (prior to construction of Medina Dam, 60 miles upstream), from information by State Highway Department.

Remarks.- Records good. Flow partly regulated by Medina Lake (capacity, 254,000 acre-feet) and diversion dam reservoir (capacity, 4,500 acre-feet). About 5,000 acres are irrigated by water released from Medina Lake above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	321	160	128	143	123	123	101	93	93	81	81	76
2	268	154	128	160	118	113	101	89	93	81	85	76
3	236	160	128	166	118	113	97	89	93	81	101	78
4	228	160	143	148	123	113	101	85	93	81	93	78
5	236	148	148	143	118	118	101	85	89	78	81	78
6	228	148	148	138	123	118	97	85	89	78	81	78
7	213	143	143	138	123	113	93	89	89	81	81	78
8	249	143	138	138	118	109	93	89	89	81	81	78
9	956	143	143	154	118	105	97	89	89	85	81	78
10	767	226	143	138	113	105	93	89	85	85	78	78
11	324	204	154	133	118	105	93	116	85	85	76	78
12	245	148	213	148	118	105	93	105	85	85	89	78
13	220	143	172	143	113	109	93	97	85	85	85	78
14	206	143	148	143	113	105	97	93	85	85	78	78
15	206	143	143	138	113	105	93	93	85	85	78	78
16	213	205	138	143	109	101	93	97	89	85	78	78
17	206	166	138	156	109	105	93	101	89	81	76	81
18	199	154	138	166	109	145	93	101	89	81	76	81
19	185	154	128	160	113	172	93	97	93	81	78	81
20	178	154	123	160	109	118	93	93	93	85	78	78
21	166	148	123	148	109	109	93	93	93	85	81	76
22	166	148	118	138	109	105	93	93	89	81	97	78
23	160	148	118	138	109	101	93	93	85	81	89	78
24	160	143	123	138	113	97	93	103	93	78	81	78
25	166	148	118	133	113	93	93	109	97	78	85	76
26	160	143	138	128	113	93	93	97	93	76	85	78
27	160	143	143	128	113	93	93	93	85	75	97	78
28	154	138	138	128	118	101	97	89	81	76	85	78
29	154	133	138	128	-	97	93	89	81	78	78	78
30	154	133	133	128	-	97	93	93	78	78	76	78
31	154	-	133	123	-	101	-	93	-	81	76	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	7,638	956	154	246	15,150
November	4,624	226	133	154	9,170
December	4,308	213	118	139	8,540
Calendar year 1946	93,928	15,900	66	257	186,300
January	4,414	166	123	142	8,760
February	3,216	123	109	115	6,380
March	3,387	172	93	109	6,720
April	2,842	101	93	94.7	5,640
May	2,920	116	85	94.2	5,790
June	2,655	97	78	88.5	5,270
July	2,517	85	75	81.2	4,990
August	2,565	101	76	82.7	5,090
September	2,341	81	76	78.0	4,640
Water year 1946-47	43,427	956	75	119	86,140

Cibolo Creek near Bulverde, Tex.

Location.- Water-stage recorder, lat. 29°43'35", long. 98°25'40" at William Classen ranch house, 1.8 miles downstream from bridge on U. S. Highway 281, 2 miles southeast of Bulverde, Comal County, and 4.7 miles upstream from Dripping Springs Creek.

Drainage area.- 198 square miles.

Records available.- April 1946 to September 1947.

Extremes.- Maximum discharge during year, 6,280 second-feet Nov. 9 (gage height, 9.92 feet, from floodmark), from rating curve extended above 4,400 second-feet; no flow during most of year.

1946-47: Maximum gage height, 12.50 feet, from floodmark, Sept. 27, 1946 (discharge not determined); no flow during most of time.

Remarks.- Records good except those above 200 second-feet, which are fair. The purpose of the station is to determine stream-flow losses during periods of medium and low flow. There are no surface diversions, but much of surface flow enters sink holes and caverns in Glen Rose limestone above station.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)

1.4	0	1.9	4.6	2.4	22	3.2	108
1.5	.2	2.0	7.2	2.5	27	3.6	178
1.6	.5	2.1	10	2.6	34	4.0	260
1.7	1.0	2.2	14	2.8	53	4.4	370
1.8	2.4	2.3	18	3.0	78	5.0	590

Discharge, in second-feet, water year Octcber 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	0	0	0	0.4							
2	2.0	0	0	0	.1							
3	0	1.7	0	0	0							
4	0	0	0	0	0							
5	0	0	0	0	0							
6	0	0	0	0	0							
7	0	0	0	0	0							
8	0	0	0	0	0							
9	42	544	0	0	0							
10	91	330	0	0	0							
11	85	18	62	0	0							
12	43	8.4	84	0	0							
13	29	5.1	26	0	0							
14	20	2.9	6.8	0	0							
15	10	1.3	2.0	0	0							
16	12	.6	1.0	0	0							
17	13	.1	.6	0	0							
18	3.1	0	.3	0	0							
19	.3	0	.1	64	0							
20	0	0	0	91	0							
21	0	0	0	70	0							
22	0	0	0	57	0							
23	0	0	0	53	0							
24	0	0	0	49	0							
25	0	0	0	39	0							
26	0	0	0	28	0							
27	0	0	0	23	0							
28	0	0	0	18	0							
29	0	0	0	12	-							
30	0	0	0	6.7	-							
31	0	-	0	2.3	-							

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	362.4	91	0	11.7	719
November	912.1	544	0	30.4	1,810
December	182.8	84	0	5.90	363
Calendar year	-	-	-	-	-
January	513.0	91	0	16.5	1,020
February	.5	.4	0	.02	1.0
March	0	0	0	0	0
April	0	0	0	0	0
May	0	0	0	0	0
June	0	0	0	0	0
July	0	0	0	0	0
August	0	0	0	0	0
September	0	0	0	0	0
Water year 1946-47	1,970.8	544	0	5.40	3,910

Cibolo Creek above Bracken, Tex.

Location.- Water-stage recorder, lat. 29°40'30", long. 98°23'00", 0.1 mile downstream from West Fork Creek and 5.8 miles northwest of Bracken, Comal County.

Drainage area.- 251 square miles.

Records available.- March 1946 to September 1947.

Extremes.- Maximum gage height during year, 9.56 feet, from floodmark, probably Nov. 10 (discharge not determined); no flow during most of year.
1946-47: Maximum gage height, 11.04 feet, from floodmark, Sept. 27, 1946 (discharge not determined); no flow during most of time.

Remarks.- Records good. Discharge not computed above 500 second-feet. The purpose of the station is to determine stream-flow losses during periods of medium and low flow. There are no surface diversions, but much of surface flow enters sink holes and caverns in Glen Rose limestone above station.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)

1.9	0	2.4	6.3	2.9	46
2.0	.2	2.5	10	3.0	60
2.1	.6	2.6	16	3.2	94
2.2	1.8	2.7	24	3.4	136
2.3	3.6	2.8	34		

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47	0	0	1.0	6.0							
2	27	0	0	1.2	4.6							
3	16	1.3	0	.6	4.0							
4	15	1.0	0	.3	3.6							
5	13	.5	0	0	3.0							
6	9.2	.1	0	0	3.0							
7	7.7	0	0	0	2.4							
8	7.0	0	0	0	2.0							
9	6.6	(a)	0	0	1.4							
10	5.4	(a)	0	.4	1.0							
11	54	(a)	14	.6	.6							
12	49	(a)	134	.8	.4							
13	23	(a)	81	1.5	0							
14	14	40	42	1.6	0							
15	8.0	26	27	1.2	0							
16	5.1	20	20	1.0	0							
17	1.8	14	16	3.0	0							
18	.5	9.6	13	6.3	0							
19	0	7.0	11	7.0	0							
20	0	5.7	9.6	8.0	0							
21	0	4.8	7.4	53	0							
22	0	3.8	6.0	63	0							
23	0	3.4	5.1	57	0							
24	0	3.4	4.8	57	0							
25	0	2.8	4.3	50	0							
26	0	2.0	3.8	39	0							
27	0	1.0	3.2	29	0							
28	0	.5	2.2	22	0							
29	0	.1	1.4	18	-							
30	0	0	.6	12	-							
31	0	-	.6	8.0	-							

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	309.3	54	0	9.98	613
November	-	-	0	-	-
December	407.0	134	0	13.1	807
Calendar year	-	-	-	-	-
January	442.5	63	0	14.3	878
February	32.0	6.0	0	1.14	63
March	0	0	0	0	0
April	0	0	0	0	0
May	0	0	0	0	0
June	0	0	0	0	0
July	0	0	0	0	0
August	0	0	0	0	0
September	0	0	0	0	0
Water year 1946-47	-	-	0	-	-

a No gage-height record; discharge not determined.

Cibolo Creek at Selma, Tex.

Location.- Water-stage recorder, lat. 29°35',35", long. 98°18'40", 0.6 mile downstream from Missouri-Kansas-Texas Railroad bridge and 0.8 mile upstream from bridge on U. S. Highway 81 at Selma, Bexar County. Datum of gage is 728.34 feet above mean sea level, datum of 1929.

Drainage area.- 280 square miles.

Records available.- March 1946 to September 1947.

Extremes.- Maximum discharge during year, 4,900 second-feet Nov. 10 (gage height, 9.00 feet); no flow during most of year.
1946-47: Maximum discharge, 7,240 second-feet Sept. 27, 1946 (gage height, 10.48 feet); no flow during most of time.
Maximum stage known, about 26 feet in 1889, from information by local resident. Flood of 1913 was probably about 2 feet lower than that of 1889.

Remarks.- Records good. There are no surface diversions, but part of flow of Cibolo Creek enters Edwards limestone in Balcones fault zone which crosses basin between this station and station above Bracken.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)

2.0	0	2.6	1.0	3.3	30	4.7	405
2.1	.01	2.7	1.5	3.5	52	5.0	580
2.2	.03	2.8	2.7	3.7	82	5.5	940
2.3	.12	2.9	4.4	3.9	124	5.8	1,190
2.4	.3	3.0	7.6	4.1	180		
2.5	.6	3.1	14	4.4	279		

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	0	0	0								
2	8.0	0	0	0								
3	2.4	0	0	0								
4	1.3	0	0	0								
5	.8	-	0	0								
6	.4	0	0	0								
7	.2	0	0	0								
8	.2	0	0	0								
9	.2	0	0	0								
10	.1	1,120	0	0								
11	0	118	5.2	0								
12	0	47	22	0								
13	0	27	64	0								
14	0	15	29	0								
15	0	6.2	8.4	0								
16	0	2.7	2.4	0								
17	0	1.1	.8	0								
18	0	.7	.5	0								
19	0	.6	.5	0								
20	0	.5	.4	0								
21	0	.4	.3	0								
22	0	.3	.2	0								
23	0	.3	.2	0								
24	0	.2	.2	0								
25	0	.2	.1	1.6								
26	0	.1	.1	2.4								
27	0	.1	.1	.4								
28	0	.1	.1	.1								
29	0	0	0	0								
30	0	0	0	0								
31	0	-	0	0								

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	38.6	25	0	1.25	77
November	1,340.5	1,120	0	44.7	2,660
December	134.5	64	0	4.34	267
Calendar year	-	-	-	-	-
January	4.5	2.4	0	.15	8.9
February	0	0	0	0	0
March	0	0	0	0	0
April	0	0	0	0	0
May	0	0	0	0	0
June	0	0	0	0	0
July	0	0	0	0	0
August	0	0	0	0	0
September	0	0	0	0	0
Water year 1946-47	1,518.1	1,120	0	4.16	3,010

Cibolo Creek near Falls City, Tex.

Location.- Water-stage recorder, lat. 29°01', long. 97°56', at bridge on State Highway 123, 5.5 miles northeast of Falls City, Karnes County, and 9 miles upstream from mouth. Datum of gage is 264.3 feet above mean sea level, datum of 1929, Houston supplementary adjustment of 1943.

Drainage area.- 831 square miles.

Records available.- November 1930 to September 1947.

Average discharge.- 16 years (1931-47), 136 second-feet.

Extremes.- Maximum discharge during year, 6,000 second-feet May 25 (gage height, 18.05 feet, from floodmark); minimum, 14 second-feet Sept. 29, 30 (gage height, 1.08 feet).
1930-47: Maximum discharge, 33,600 second-feet July 6, 1942 (gage height, 34.45 feet); minimum, 4.9 second-feet Aug. 27, 28, Oct. 23, 1940.
Flood in October 1913 reached a stage about half a foot higher than that of July 6, 1942.

Remarks.- Records good except those for periods of no gage-height record, which are fair. There are no surface diversions, but much of the surface flow of Cibolo Creek enters sink holes and caverns in Glen Rose limestone and in Edwards limestone in Balcones fault zone.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	282	48	40	45	43	41	34	32	59	27	22	25
2	187	48	38	49	40	39	34	31	55	27	24	24
3	145	48	38	55	39	41	33	29	47	26	25	22
4	124	174	38	169	38	41	33	29	43	24	27	20
5	117	423	38	104	38	42	32	29	39	24	24	19
6	162	131	39	67	38	42	32	27	39	26	24	17
7	116	98	39	56	39	41	32	26	38	25	23	18
8	137	105	39	52	38	40	32	24	38	25	24	19
9	497	70	39	57	38	38	31	22	38	24	22	19
10	463	59	40	130	38	38	31	23	37	24	22	19
11	108	509	41	315	38	38	30	24	37	24	34	20
12	80	380	97	180	40	38	186	342	36	24	29	19
13	70	157	333	105	41	38	228	119	35	29	23	18
14	63	109	118	78	41	37	113	58	34	25	24	18
15	61	86	77	65	41	36	77	42	33	25	22	19
16	3,550	360	80	67	41	36	62	36	33	25	21	19
17	636	97	72	653	40	35	52	36	33	24	22	19
18	194	72	59	1,610	39	34	45	55	33	22	22	19
19	108	60	53	454	40	767	41	71	34	22	22	19
20	81	55	51	324	41	406	35	152	34	22	20	17
21	70	51	47	190	41	178	34	457	34	23	19	17
22	62	49	44	104	41	101	32	329	30	24	21	17
23	57	47	44	77	40	65	31	92	29	24	23	17
24	55	47	44	66	40	48	28	276	30	24	22	17
25	53	45	43	62	41	39	29	3,620	30	22	22	17
26	52	44	42	61	41	38	29	1,040	29	20	36	16
27	51	41	41	56	41	36	32	369	27	20	136	16
28	51	39	41	52	41	35	34	157	28	21	63	16
29	51	39	41	48	-	34	33	101	28	22	33	16
30	50	39	41	45	-	34	33	86	27	20	29	16
31	51	-	41	44	-	34	-	72	-	20	27	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	7,784	3,550	50	251	15,440
November	3,530	509	39	118	7,000
December	1,838	333	38	59.3	3,650
Calendar year 1946	106,255	18,500	14	291	210,800
January	5,440	1,610	44	175	10,790
February	1,117	43	38	39.9	2,220
March	2,510	767	34	81.0	4,980
April	1,508	228	28	50.3	2,990
May	7,806	3,620	22	252	15,480
June	1,067	59	27	35.6	2,120
July	734	29	20	23.7	1,460
August	907	136	19	29.3	1,800
September	554	25	16	18.5	1,100
Water year 1946-47	34,795	3,620	16	95.3	69,030

Peak discharge.- Oct. 16 (8:30 a.m.) 5,230 sec.-ft.; May 25 (time unknown) 6,000 sec.-ft.
Note.- No gage-height record Mar. 13 to Apr. 23, May 24 to June 9; discharge computed on basis of recorded range in stage, weather records, and records for San Antonio River near Falls City.

Mission River at Refugio, Tex.

Location.- Wire-weight gage, lat. 28°17', long. 97°17', at bridge on U. S. Highway 77, 500 feet upstream from Missouri Pacific Railroad bridge and a quarter of a mile southwest of Refugio, Refugio County. Datum of gage is 1.7 feet above mean sea level, datum of 1929.

Drainage area.- 643 square miles.

Records available.- July 1939 to September 1947.

Extremes.- Maximum discharge during year, 15,400 second-feet Oct. 17 (gage height, 29.55 feet); minimum observed, 5.2 second-feet Oct. 9.
1939-47: Maximum discharge, 41,700 second-feet July 7, 1942 (gage height, 33.3 feet); minimum observed, 0.7 second-foot Oct. 7, 9, 1940, Aug. 18-20, Sept. 5, 1945.
Maximum stage known prior to 1942, 32.3 feet in August 1914, May 17, 1938, from information by local residents.

Remarks.- Records fair except those for periods of no gage-height record, which are poor. Gage read twice daily, oftener during floods. No large diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	64	25	20	15	11	14	30	95	22	12	7.3
2	17	62	22	26	14	10	13	18	85	22	15	6.8
3	12	60	22	22	15	13	12	12	76	22	16	6.3
4	9.9	80	23	20	14	14	d11	10	67	23	12	6.3
5	9.3	174	20	16	15	12	9.9	10	59	23	12	6.3
6	7.6	119	21	19	14	13	12	8.8	48	21	11	6.6
7	9.1	89	23	22	15	17	13	8.0	22	20	10	8.0
8	8.8	53	23	26	15	12	15	7.8	46	20	10	8.0
9	13	59	23	34	14	13	16	7.8	48	21	9.6	6.8
10	270	49	24	96	18	12	12	8.0	45	20	9.9	7.0
11	1,160	54	26	218	9.9	11	12	16	44	20	9.9	6.6
12	855	64	29	81	8.6	13	28	9.9	41	23	9.9	6.8
13	179	52	28	62	11	14	212	9.6	38	21	8.8	6.3
14	50	41	26	49	13	13	224	7.8	37	21	9.9	6.1
15	62	34	25	42	12	12	54	6.6	36	19	10	6.6
16	1,120	38	d24	30	12	12	24	6.8	35	18	11	6.3
17	10,000	34	22	28	13	20	13	7.0	36	17	11	5.8
18	c5,860	32	44	26	13	32	10	8.8	36	16	12	5.6
19	c1,260	33	25	34	14	31	10	9.1	36	16	12	6.1
20	c490	31	23	36	13	29	9.6	8.8	46	16	12	5.8
21	333	31	23	34	11	28	9.9	8.8	43	16	12	6.1
22	234	32	16	27	10	27	9.9	7.3	36	15	12	5.8
23	154	30	17	21	12	26	8.3	1,220	33	15	12	5.6
24	138	28	15	20	11	24	8.3	8,170	31	14	12	5.8
25	126	27	41	18	10	23	8.3	c4,380	30	14	11	6.8
26	100	28	43	18	9.9	22	59	c1,190	28	14	15	6.8
27	94	26	12	17	11	21	954	c451	26	14	27	6.6
28	89	26	11	17	12	19	363	188	28	13	23	6.8
29	83	25	13	16	-	18	131	166	27	13	21	6.8
30	66	26	11	16	-	17	57	130	25	13	20	6.3
31	67	-	10	15	-	16	-	111	-	12	11	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	22,708.7	10,000	7.6	733	45,040
November	1,501	174	25	50.0	2,980
December	710	44	10	22.9	1,410
Calendar year 1946	37,526.3	10,000	2.0	103	74,430
January	1,126	218	15	36.3	2,230
February	355.4	18	8.6	12.7	705
March	555	32	10	17.9	1,100
April	2,333.2	954	8.3	77.8	4,630
May	16,232.9	8,170	6.6	524	32,200
June	1,283	95	22	42.8	2,540
July	554	23	12	17.9	1,100
August	400.0	27	8.8	12.9	793
September	194.8	8.0	5.6	6.49	386
Water year 1946-47	47,954.0	10,000	5.6	131	95,110

c Backwater from return of overbank flow; discharge computed on basis of backwater curve based on discharge measurements.
d Doubtful gage-height record; discharge interpolated.
Note.- No gage-height record Oct. 23, Dec. 11, 13-15, Feb. 19, Mar. 15-17, Mar. 19 to Apr. 2; discharge computed on basis of weather records.

Nueces River at Laguna, Tex.

Location.- Water-stage recorder, lat. 29°25'45", long. 99°59'50", half a mile downstream from Sycamore Creek and 1 mile northeast of Laguna, Uvalde County. Datum of gage is 1,119.72 feet above mean sea level, datum of 1929.

Drainage area.- 764 square miles.

Records available.- October 1923 to September 1947.

Average discharge.- 24 years, 143 second-feet.

Extremes.- Maximum discharge during year, 9,380 second-feet Oct. 9 (gage height, 9.47 feet); minimum, 33 second-feet Sept. 30.

1923-47: Maximum discharge, 222,000 second-feet July 13, 1939 (gage height, 26.40 feet), from rating curve extended above 40,000 second-feet on basis of float measurement (110,000 second-feet) and slope-area determination (213,000 second-feet); minimum, 7.8 second-feet Nov. 3-15, 18, 1934.

Flood of Sept. 21, 1923, reached a stage of 26.5 feet (discharge, 226,000 second-feet, based on rating curve mentioned above). Flood of June 1913 reached a stage 2 or 3 feet higher than that of Sept. 21, 1923, from information by local resident.

Remarks.- Records good. No diversions above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65	149	89	80	168	124	98	127	98	230	72	55
2	62	149	86	83	175	121	95	124	95	213	70	55
3	58	152	86	83	171	117	95	121	92	200	72	53
4	58	145	86	83	164	114	95	117	86	187	67	53
5	58	152	86	80	164	107	92	114	83	175	67	51
6	62	149	83	75	164	141	92	110	78	168	65	48
7	58	138	83	72	156	134	86	107	75	164	60	46
8	638	134	83	72	156	127	86	104	75	168	60	46
9	4,180	131	83	78	152	121	86	101	72	164	58	44
10	1,210	127	83	83	149	117	83	121	67	164	60	42
11	688	131	86	89	149	114	83	168	65	156	67	42
12	521	131	86	89	149	107	83	152	62	149	70	42
13	423	124	83	89	145	107	80	138	62	141	67	42
14	358	117	83	86	145	107	80	131	62	138	60	41
15	326	117	80	83	138	101	78	127	62	127	58	39
16	306	114	80	92	134	101	75	131	62	124	53	39
17	292	114	78	141	131	98	75	141	62	121	51	37
18	282	110	78	164	131	127	72	168	60	117	48	36
19	262	107	80	171	131	141	72	152	89	145	46	36
20	253	104	80	183	131	134	70	141	98	156	58	36
21	235	101	80	208	131	124	70	134	86	127	77	34
22	217	101	75	213	131	121	67	131	78	114	70	34
23	200	101	75	213	124	117	67	124	107	107	65	34
24	192	98	75	208	124	114	67	121	586	98	62	34
25	179	98	72	200	121	107	92	117	576	92	60	34
26	172	98	72	196	121	107	131	114	474	89	65	34
27	168	98	72	187	124	107	134	107	379	86	65	34
28	160	95	72	179	124	101	131	104	316	83	62	34
29	152	92	72	175	-	101	127	101	277	78	60	34
30	156	92	72	168	-	101	127	98	253	78	60	33
31	152	-	75	164	-	98	-	98	-	75	60	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	12,143	4,180	58	392	24,090
November	3,569	152	92	119	7,080
December	2,474	89	72	79.8	4,910
Calendar year 1946	33,664	4,180	11	92.2	66,770
January	4,087	213	72	132	8,110
February	4,003	175	121	143	7,940
March	3,558	141	98	115	7,060
April	2,689	134	67	89.6	5,330
May	3,844	168	98	124	7,620
June	4,637	586	60	155	9,200
July	4,234	230	75	137	8,400
August	1,935	77	46	62.4	3,840
September	1,222	55	33	40.7	2,420
Water year 1946-47	48,395	4,180	33	133	96,000

Nueces River below Uvalde, Tex.

Location.- Water-stage recorder, lat. 29°08', long. 99°54', on Smyth ranch, 4 miles upstream from bridge on U. S. Highway 83, 9 miles southwest of Uvalde, Uvalde County, and 15 miles downstream from West Nueces River. Datum of gage is 796.1 feet above mean sea level, datum of 1929.

Drainage area.- 1,947 square miles.

Records available.- April 1939 to September 1947.

Extremes.- Maximum discharge during year, 4,490 second-feet Oct. 9 (gage height, 6.85 feet); minimum, 12 second-feet June 13, 14.
1939-47: Maximum gage height, 19.25 feet July 13, 1939 (discharge not determined); minimum, 4.0 second-feet Apr. 14, 1946.
Maximum stage known, 40.4 feet June 14, 1935, from floodmarks (discharge at former station 5 miles upstream, 616,000 second-feet, by slope-area method).

Remarks.- Records good. Part of flow of Nueces River enters Edwards limestone in Balcones fault zone which crosses basin just north of Uvalde. At low stages most of headwater flow inters this formation. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	30	26	20	15	15	16	17	15	81	28	20
2	15	33	26	20	15	15	16	17	15	73	32	20
3	15	31	26	18	15	15	16	16	15	66	34	20
4	15	31	26	18	15	15	16	16	15	59	30	20
5	15	31	26	18	15	15	15	16	15	51	29	20
6	15	31	26	17	15	16	16	16	15	47	27	19
7	14	31	26	17	15	15	16	16	15	43	26	19
8	16	31	25	17	15	15	16	16	15	39	26	19
9	1,560	31	24	18	15	15	16	16	14	38	24	19
10	2,210	31	24	17	15	16	16	16	14	35	24	18
11	778	30	26	16	15	16	15	16	14	34	29	18
12	408	30	24	16	15	16	16	16	13	33	28	18
13	291	30	24	16	15	15	15	16	13	32	26	18
14	213	30	23	16	15	15	15	16	13	30	24	18
15	167	30	23	15	15	15	15	16	13	29	24	47
16	134	30	23	15	15	15	15	16	13	29	23	34
17	112	30	22	16	15	15	15	16	13	28	22	23
18	93	30	22	15	15	19	15	16	13	27	22	21
19	76	30	22	15	15	16	16	16	104	33	22	20
20	62	30	22	15	15	16	15	16	28	32	26	19
21	53	30	21	15	15	16	15	15	21	30	30	18
22	46	29	21	15	15	16	16	15	19	29	32	18
23	40	28	21	15	15	16	16	16	18	28	28	18
24	37	28	20	15	15	16	16	16	49	27	26	18
25	33	28	20	15	15	16	22	15	163	27	24	18
26	32	28	20	15	15	16	20	15	176	27	26	18
27	32	27	20	15	15	16	18	15	146	27	23	18
28	31	26	19	15	16	16	18	15	123	27	23	18
29	30	26	18	15	-	16	18	15	103	27	22	18
30	30	26	19	15	-	16	18	15	89	28	21	18
31	30	-	20	15	-	16	-	15	-	27	21	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	6,619	2,210	14	214	13,130
November	887	33	26	29.6	1,760
December	705	26	18	22.7	1,400
Calendar year 1946	11,487.1	2,210	4.4	31.5	22,800
January	500	20	15	16.1	992
February	421	16	15	15.0	835
March	486	19	15	15.7	964
April	488	22	15	16.3	968
May	489	17	15	15.8	970
June	1,292	176	13	43.1	2,560
July	1,143	81	27	36.9	2,270
August	802	34	21	25.9	1,590
September	610	47	18	20.3	1,210
Water year 1946-47	14,442	2,210	13	39.6	28,650

Nueces River near Asherton, Tex.

Location.- Water-stage recorder, lat. 28°30', long. 99°42', at bridge on county road between Asherton and Brundage, 1.2 miles downstream from El Moro Creek and 5.5 miles northeast of Asherton, Dimmit County. Datum of gage is 470.9 feet above mean sea level, datum of 1929.

Drainage area.- 4,082 square miles.

Records available.- October 1939 to September 1947.

Extremes.- Maximum discharge during year, 2,910 second-feet June 28 (gage height, 18.94 feet); no flow at times.

1939-47: Maximum discharge, 15,400 second-feet Sept. 2, 1944 (gage height, 30.24 feet); no flow at times.

Maximum stage known, about 33 feet June 17, 1935, present site and datum, based on relation determined from levels to floodmarks of the June 17, 1935, and the Sept. 2, 1944, floods at farmhouse on left bank, 0.8 mile upstream from gage.

Remarks.- Records good. Part of flow of Nueces River and its headwater tributaries enters Edwards limestone in Balcones Fault zone which crosses basin just north of Uvalde. At low stages most of headwater flow enters this formation. Flow partly regulated by several small reservoirs above station. About 12,000 acres irrigated from river or jointly from wells and river above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	134	1.7	0					0	5.8	183	0	25
2	78	1.4	0					0	4.2	113	.2	16
3	47	.9	0					0	3.2	80	28	9.5
4	31	.4	0					0	2.5	53	25	6.4
5	23	.3	0					0	2.0	36	6.3	4.0
6	19	.2	0					0	1.4	24	25	2.5
7	16	.2	0					0	.9	16	60	1.4
8	15	.1	0					0	.8	11	80	.8
9	310	.1	0					0	.4	6.7	57	.4
10	495	0	0					2.0	0	4.3	38	.1
11	254	0	5.2					47	0	3.2	24	0
12	1,030	0	1.6					6.1	0	2.4	15	0
13	589	0	.6					2.8	0	1.9	10	0
14	314	0	.3					2.1	0	1.4	6.2	0
15	217	0	.2					1.6	0	1.1	3.9	0
16	255	0	.2					2.2	0	.6	2.7	0
17	191	0	.1					2.1	0	.4	1.8	0
18	122	0	0					75	0	.1	1.0	0
19	92	0	0					19	0	0	.7	0
20	73	0	0					224	0	0	.5	0
21	59	0	0					228	462	0	5.5	0
22	46	0	0					174	236	0	21	0
23	36	0	0					200	270	0	14	0
24	27	0	0					390	1,750	0	30	0
25	20	0	0					200	2,350	0	13	0
26	15	0	0					94	2,220	0	8.0	0
27	9.8	0	0					53	2,740	0	41	0
28	6.2	0	0					31	2,740	0	58	0
29	4.3	0	0					19	1,760	0	63	0
30	3.2	0	0					13	539	0	48	0
31	2.3	-	0					8.5	-	0	34	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	4,533.8	1,030	2.3	146	8,990
November	5.3	1.7	0	.18	11
December	8.2	5.2	0	.26	16
Calendar year 1946	39,388.2	7,340	0	108	78,130
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	0	0	0	0	0
May	1,794.4	390	0	57.9	3,560
June	15,088.2	2,740	0	503	29,930
July	538.1	183	0	17.4	1,070
August	720.8	80	0	23.3	1,430
September	66.1	25	0	2.20	131
Water year 1946-47	22,754.9	2,740	0	62.3	45,140

Nueces River at Cotulla, Tex.

Location.- Wire-weight gage, lat. 28°26', long. 99°16', at bridge on U. S. Highway 81 at Cotulla, La Salle County, a third of a mile upstream from International-Great Northern Railroad bridge. Datum of gage is 368.08 feet above mean sea level, datum of 1929.

Drainage area.- 5,260 square miles.

Records available.- October 1923 to September 1947. July 1915 to June 1918 at site 4 miles upstream. U. S. Weather Bureau has collected gage heights in this vicinity during 1914-17 and since 1922.

Average discharge.- 24 years, 321 second-feet.

Extremes.- Maximum discharge during year, 8,600 second-feet June 27 (gage height, 16.67 feet, from graph based on gage readings); no flow at times.
1923-47: Maximum discharge, 82,600 second-feet June 18, 1935 (gage height, 32.4 feet, from floodmarks), by slope-area method; no flow at times.

Remarks.- Records fair. Gage read once daily. Part of flow of Nueces River and its headwater tributaries enters Edwards limestone in Balcones fault zone which crosses basin just north of Uvalde in an east-west course. At low stages most of headwater flow enters this formation. Low-water flow partly regulated by small storage reservoirs above station; most of it is diverted above station by pumping.

Cooperation.- Gage-height record furnished by U. S. Weather Bureau.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	387	4.7	0.3	0	0.3			0	24	3,440	0	35
2	328	3.2	.3	.3	.2			0	17	1,540	.1	30
3	65	2.4	.3	.4	.2			0	12	513	.4	19
4	105	1.7	.3	.4	.2			0	6.5	200	.4	14
5	67	.7	.2	.4	.1			0	2.0	116	.4	11
6	54	2.0	.2	.4	.1			0	1.7	72	.3	8.6
7	46	1.7	.2	.4	.1			0	.3	48	.2	5.3
8	44	.9	.1	.4	0			0	.1	32	.1	1.7
9	88	.4	.1	.5	0			0	0	22	.2	.7
10	89	.4	.2	1.7	0			0	0	18	3.7	.4
11	900	.5	.2	1.4	0			0	0	14	33	.2
12	2,270	.4	.1	.9	0			0	0	13	33	.1
13	1,920	.4	.1	.5	0			0	0	6.5	27	0
14	1,600	.6	.1	.5	0			0	0	3.7	24	.1
15	1,340	.7	.3	.4	0			0	0	1.7	15	0
16	636	.9	.3	.5	0			0	0	1.2	8.6	.2
17	381	.9	.2	.6	.1			0	0	.4	6.5	.1
18	362	.6	.2	.6	.1			73	0	.2	1.7	.1
19	319	.6	.2	.6	.1			224	0	.1	.9	0
20	221	.5	.2	.6	0			230	0	.1	.5	0
21	161	.6	.2	.4	0			254	0	.1	1.4	0
22	119	.5	.2	.4	0			325	77	0	.6	0
23	88	.5	.2	.4	0			334	873	0	.4	0
24	62	.6	.2	.4	0			288	869	0	.3	0
25	44	.5	.1	.4	0			254	689	0	.3	0
26	35	.4	.1	.4	0			365	2,980	0	.4	0
27	33	.4	0	.3	0			294	7,800	0	.7	0
28	24	.4	0	.4	0			176	5,880	0	10	0
29	20	.4	0	.4	-			136	2,720	0	7.2	0
30	14	.4	0	.4	-			51	3,440	0	9.3	0
31	7.9	-	0	.4	-			33	-	0	32	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	11,829.9	2,270	7.9	382	23,460
November	28.9	4.7	.4	.96	57
December	5.1	.3	0	.16	10
Calendar year 1946	95,099.4	11,400	0	261	188,600
January	15.3	1.7	0	.51	31
February	1.5	.3	0	.05	3.0
March	0	0	0	0	0
April	0	0	0	0	0
May	3,037	365	0	98.0	6,020
June	25,391.6	7,800	0	846	50,360
July	6,042.0	3,440	0	195	11,980
August	218.6	33	0	7.05	434
September	126.5	35	0	4.22	251
Water year 1446-47	46,696.9	7,800	0	128	92,610

Nueces River near Tilden, Tex.

Location.- Water-stage recorder, lat. 28°18', long. 98°34', at bridge on State Highway 173, 2 miles upstream from Cow Creek and 10.5 miles south of Tilden, McMullen County. Datum of gage is 183.3 feet above mean sea level, datum of 1929 (levels by State Highway Department).

Drainage area.- 8,192 square miles.

Records available.- November 1942 to September 1947.

Extremes.- Maximum discharge during year, 57,500 second-feet Oct. 11 (gage height, 26.46 feet), from rating curve extended above 30,000 second-feet; no flow Sept. 27-30.
1943-47: Maximum discharge, that of Oct. 11, 1946; no flow at times.

Remarks.- Records good. Part of flow of Nueces River and its headwater tributaries enters Edwards limestone in Balcones fault zone which crosses basin just north of Uvalde. At low stages most of headwater flow enters this formation. About 12,000 acres irrigated from river or jointly from wells and river above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	772	26	0.9	1.2	1.2	0.4	0.4	346	1,960	930	4.5	77
2	838	22	.8	1.3	1.0	.4	.4	271	396	1,180	4.0	34
3	431	18	.8	1.3	1.0	.4	.4	156	151	1,520	45	20
4	382	16	.9	1.1	1.0	.4	.4	352	87	2,060	451	16
5	406	13	.9	1.1	.9	.4	.4	457	54	2,940	804	26
6	299	10	.8	1.1	.8	.4	.3	382	36	3,550	892	28
7	182	8.1	.8	1.0	.8	.4	.3	255	27	3,240	788	23
8	147	5.4	.8	1.1	.8	.4	.3	127	22	2,840	372	18
9	1,230	4.4	.8	1.4	.8	.4	.4	69	18	1,270	235	15
10	6,170	4.2	.8	1.7	.6	.4	.3	40	15	142	169	13
11	52,700	3.3	.8	1.7	.6	.5	.2	56	11	71	94	10
12	34,500	2.8	.9	1.7	.6	.5	3.9	23	7.9	48	51	7.8
13	20,700	2.8	.9	1.6	.6	.5	210	15	6.4	36	35	6.8
14	12,800	2.7	.9	1.4	.6	.5	223	8.7	5.4	28	23	5.5
15	8,330	2.7	.9	7.2	.6	.4	217	4.7	4.2	20	16	4.4
16	6,150	2.7	.9	6.8	.5	.4	234	3.1	3.7	18	10	3.1
17	3,550	2.0	.9	4.5	.5	.4	86	2.7	3.1	13	12	2.4
18	2,660	1.8	.8	3.9	.5	.6	56	932	3.0	11	19	1.9
19	2,360	1.7	.9	3.9	.5	.6	85	1,780	3.4	8.9	15	1.4
20	2,120	1.6	.9	4.2	.5	.6	44	1,810	3.0	7.4	12	1.0
21	1,720	1.5	.9	3.6	.5	.6	26	1,580	3.1	6.1	9.5	.9
22	684	1.4	.9	3.9	.4	.6	17	1,740	93	5.0	12	.7
23	346	1.2	.9	3.7	.5	.6	12	3,150	140	4.4	9.4	.6
24	235	1.2	1.0	3.4	.5	.5	7.8	9,010	277	3.6	262	.4
25	156	1.1	1.0	3.3	.4	.5	5.5	13,300	245	3.1	266	.2
26	115	1.0	1.0	2.7	.4	.5	66	10,100	431	2.7	260	.1
27	88	.9	1.0	2.4	.4	.4	176	7,690	610	2.6	322	0
28	67	.9	1.0	2.3	.4	.3	110	6,450	710	2.1	220	0
29	51	.8	1.0	1.9	-	.3	285	4,750	756	2.0	156	0
30	40	.9	.9	1.8	-	.4	288	3,720	804	2.1	100	0
31	32	-	1.0	1.5	-	.4	-	2,940	-	4.5	100	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	160,261	52,700	32	5,170	317,900
November	162.1	26	.8	5.40	322
December	27.7	1.0	.8	.89	55
Calendar year 1946	294,331.4	52,700	0	806	583,800
January	79.7	7.2	1.0	2.57	158
February	17.9	1.2	.4	.64	36
March	14.1	.6	.3	.45	28
April	2,156.0	288	.2	71.9	4,280
May	71,520.2	13,300	2.7	2,307	141,900
June	6,886.2	1,960	3.0	230	13,660
July	19,969.5	3,550	2.0	644	39,610
August	5,768.4	892	4.0	186	11,440
September	317.2	77	0	10.6	629
Water year 1946-47	267,180.0	52,700	0	732	530,000

Nueces River near Three Rivers, Tex.

Location.- Water-stage recorder, lat. 28°26'10", long. 98°11'10", 100 feet downstream from San Antonio, Uvalde & Gulf (Missouri Pacific) Railroad bridge, half a mile downstream from Frio River, and 2 miles southeast of Three Rivers, Live Oak County. Datum of gage is 101.16 feet above mean sea level, datum of 1929.

Drainage area.- 15,600 square miles.

Records available.- July 1915 to September 1947. U. S. Weather Bureau has collected gage-height records in this vicinity since 1922.

Average discharge.- 30 years (1915-18, 1920-47), 846 second-feet.

Extremes.- Maximum discharge during year, 40,700 second-feet Oct. 13 (gage height, 42.57 feet); minimum, 2.2 second-feet Sept. 30.
1915-47: Maximum discharge observed, 85,000 second-feet Sept. 18, 1919 (gage height, 46.0 feet), from rating curve extended above 55,000 second-feet; no flow at times.

Remarks.- Records good. Part of flow of Nueces and Frio Rivers and their headwater tributaries enters Edwards limestone in Balcones fault zone which crosses basin just north of Uvalde. At low stages most of headwater flow enters this formation. About 5,000 acres irrigated from river above station, and about 12,000 acres jointly from river and wells.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,100	232	68	53	52	39	42	430	4,250	2,230	10	141
2	2,990	218	68	53	52	39	42	533	3,430	2,500	20	114
3	3,040	205	64	53	52	39	41	356	1,250	2,080	42	65
4	3,310	489	61	53	52	39	41	212	306	1,800	77	48
5	2,580	350	61	54	53	39	39	384	175	2,080	539	38
6	1,220	188	61	50	50	39	37	555	117	2,500	922	33
7	922	172	60	42	41	43	37	480	85	2,920	1,040	43
8	658	164	61	49	41	48	36	318	66	3,250	922	39
9	2,000	163	60	65	42	40	35	170	54	3,280	368	33
10	7,210	158	61	119	42	39	33	99	49	2,440	218	28
11	8,860	126	64	270	41	39	33	73	43	287	163	23
12	19,000	116	69	225	41	39	77	89	38	128	106	18
13	39,300	108	122	136	41	39	1,410	63	35	82	84	70
14	34,100	103	90	90	41	47	1,550	49	32	131	55	32
15	23,400	101	76	73	41	47	494	44	28	189	43	18
16	20,800	99	81	65	41	44	269	36	36	73	32	13
17	24,200	95	73	103	41	42	254	44	46	50	21	11
18	22,000	147	64	301	41	46	136	56	47	38	15	23
19	13,600	205	60	430	41	129	84	1,370	35	31	19	13
20	7,150	150	59	240	41	662	117	3,190	748	25	28	8.6
21	3,980	112	65	126	40	542	85	2,980	730	20	40	7.2
22	2,500	99	65	90	40	225	66	2,650	411	16	239	5.0
23	1,310	89	61	84	40	136	57	3,140	192	12	472	4.2
24	706	85	54	82	40	87	51	4,770	205	10	742	3.8
25	511	82	53	85	40	66	45	5,260	695	7.9	350	3.3
26	450	79	53	53	40	57	567	8,830	1,120	6.7	1,240	2.9
27	400	76	53	53	40	51	970	9,800	1,660	6.0	874	2.5
28	346	72	53	53	40	48	433	8,860	1,520	5.3	1,710	2.8
29	320	69	53	53	-	44	218	7,360	1,430	4.8	775	2.6
30	286	69	53	53	-	42	309	6,010	1,850	4.6	225	2.3
31	254	-	53	53	-	41	-	4,990	-	4.8	150	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	254,503	39,300	254	8,210	504,800
November	4,421	489	69	147	8,770
December	1,999	122	53	64.5	3,960
Calendar year 1946	602,047.2	39,300	.4	1,649	1,194,000
January	3,309	430	42	107	6,560
February	1,207	53	40	43.1	2,390
March	2,877	662	39	92.8	5,710
April	7,608	1,550	33	254	15,090
May	73,201	9,800	36	2,361	145,200
June	20,683	4,250	28	689	41,020
July	26,212.1	3,280	4.6	846	51,990
August	11,541	1,710	10	372	22,890
September	848.2	141	2.3	28.3	1,680
Water year 1946-47	408,409.3	39,300	2.3	1,119	810,100

Note.- Discharge computed from graph based on daily readings of staff gage furnished by U. S. Weather Bureau Oct. 24 to Nov. 12, Dec. 21 to Jan. 22, Jan. 26 to Mar. 11.

Nueces River near Mathis, Tex.

Location.- Water-stage recorder, lat. 28°02', long. 97°52', at bridge on U. S. Highway 59, 200 feet downstream from Texas & New Orleans Railroad bridge, 0.8 mile downstream from Lake Corpus Christi Dam, and 4 miles southwest of Mathis, San Patricio County. Datum of gage is 27.53 feet above mean sea level, datum of 1929.

Drainage area.- 16,660 square miles.

Records available.- August 1939 to September 1947.

Extremes.- Maximum discharge during year, 33,700 second-feet Oct. 16 (gage height, 32.92 feet); minimum, 59 second-feet (regulated) Apr. 24, 25.

1939-47: Maximum discharge, 49,400 second-feet July 12, 1942 (gage height, 37.38 feet); minimum, 3.7 second-feet (regulated) Aug. 15, 1940; minimum daily, 6.8 second-feet (regulated) Aug. 15, 1940.

Maximum stage known, 39.9 feet in September 1919 at railroad bridge 200 feet upstream, from floodmark identified by Texas & New Orleans Railroad engineers.

Remarks.- Records fair. Flow regulated by Lake Corpus Christi Reservoir. (Original capacity at spillway crest, about 64,000 acre-feet, as determined by Texas State Board of Water Engineers, computed from Geological Survey advance topographic sheets, scale 1:48,000, contour interval, 10 feet; the U. S. Soil Conservation Service, in connection with a siltation survey, determined capacity in 1942 to be 43,400 acre-feet, which survey also determined original capacity to be 54,000 acre-feet, indicating a loss of 10,600 acre-feet by siltation.) Part of flow of Nueces River and its headwater tributaries enters Edwards limestone in Balcones fault zone which crosses basin just north of Uvalde. At low stages most of headwater flow enters this formation. About 5,000 acres irrigated from river above station, and about 12,000 acres jointly from river and wells above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,850	386	95	86	104	81	76	672	4,280	1,630	79	314
2	9,810	339	86	88	81	80	75	421	2,540	1,820	91	111
3	6,580	339	82	130	80	80	74	101	3,020	2,220	80	111
4	2,090	426	82	108	168	81	71	117	1,830	1,240	77	102
5	2,640	468	82	86	79	81	87	122	988	1,500	76	98
6	2,740	436	82	82	79	86	68	154	420	1,690	80	95
7	1,850	301	82	82	85	104	67	264	129	2,040	79	95
8	1,340	273	82	82	80	95	66	320	111	2,630	130	94
9	1,430	255	80	82	77	79	65	288	101	3,210	368	94
10	4,530	320	75	81	77	80	64	210	100	3,070	368	91
11	7,420	264	76	80	79	80	61	246	97	2,580	292	93
12	8,150	237	76	80	85	81	172	264	91	1,120	219	93
13	11,000	228	76	80	82	94	137	136	84	107	156	98
14	17,200	226	75	80	82	76	82	101	82	89	118	95
15	26,300	224	75	80	81	80	126	88	77	80	102	93
16	33,000	255	75	102	80	80	173	86	80	80	89	91
17	31,600	282	98	112	80	81	172	86	80	77	86	91
18	28,300	219	100	93	80	84	101	102	80	336	86	93
19	27,000	205	82	95	90	84	306	84	79	446	86	94
20	27,000	203	81	84	80	84	257	571	133	258	84	91
21	20,200	170	80	84	76	85	64	2,750	93	89	89	89
22	10,500	107	77	82	77	85	64	3,000	118	85	88	90
23	2,700	102	79	82	76	89	64	4,720	237	82	90	90
24	988	101	80	82	75	85	62	11,200	214	82	129	91
25	777	132	79	86	77	80	86	8,980	206	81	348	90
26	647	241	79	84	79	81	94	6,780	316	80	436	90
27	584	136	79	82	79	81	233	7,470	623	80	803	89
28	560	117	77	81	79	81	501	9,490	988	81	677	88
29	548	89	135	80	-	84	776	10,300	1,590	80	802	88
30	468	85	82	123	-	81	750	9,810	1,630	77	814	88
31	426	-	107	80	-	77	-	7,690	-	77	734	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	297,228	33,000	426	9,588	589,500
November	7,166	468	85	239	14,210
December	2,596	135	75	83.7	5,150
Calendar year 1946	658,629	33,000	46	1,804	1,306,000
January	2,739	130	80	88.4	5,430
February	2,347	168	75	83.8	4,660
March	2,580	104	76	83.2	5,120
April	4,994	776	61	166	9,910
May	86,623	11,200	84	2,794	171,800
June	20,417	4,280	77	681	40,500
July	27,117	3,210	77	875	53,790
August	7,756	814	76	250	15,380
September	3,030	314	88	101	6,010
Water year 1946-47	464,593	33,000	61	1,273	921,500

Nueces River at Calallen, Tex.

Location.- Staff gage, lat. 27°52'40", long. 97°37'35", at old pump house of city of Corpus Christi, half a mile northwest of Calallen, Nueces County, and half a mile upstream from tidewater and breakwater dam. Datum of gage is 1.12 feet above mean sea level, datum of 1929.

Drainage area.- 16,920 square miles.

Records available.- August 1915 to September 1947 (1918-47 gage heights only).

Extremes.- Maximum gage height observed during year, 12.06 feet Oct. 17; minimum observed, 3.46 feet Sept. 30.
1915-47: Maximum gage height observed, 13.58 feet July 13, 1942; no flow Aug. 23-29, 1918 (only period of no flow known).

Remarks.- Discharge not computed. Gage read twice daily.

Cooperation.- Gage readings furnished by city of Corpus Christi.

Gage height, in feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.16	4.18	3.73	3.77	3.76	3.72	3.67	4.56	9.19	5.27	3.69	4.66
2	8.56	4.15	3.70	3.76	3.77	3.73	3.68	4.49	8.74	5.32	3.93	4.15
3	8.89	4.10	3.63	3.73	3.74	3.65	3.69	4.27	7.94	5.45	3.87	3.76
4	8.97	4.12	3.71	3.75	3.70	3.65	3.67	3.90	7.32	5.63	3.74	3.68
5	7.96	4.20	3.70	3.75	3.82	3.67	3.71	3.81	6.24	5.25	3.70	3.63
6	6.90	4.26	3.70	3.67	3.68	3.68	3.77	3.80	5.14	5.30	3.69	3.65
7	6.38	4.20	3.75	3.71	3.66	3.73	3.68	3.81	4.40	5.41	3.68	3.69
8	5.63	4.03	3.78	3.74	3.69	3.71	3.68	4.03	4.01	5.64	3.65	3.68
9	5.25	4.00	3.72	3.75	3.77	3.76	3.67	4.11	3.88	6.01	3.78	3.63
10	5.38	4.03	3.73	3.77	3.71	3.69	3.65	4.07	3.79	6.40	4.16	3.60
11	6.79	4.08	3.72	3.74	3.69	3.71	3.68	4.03	3.72	6.48	4.17	3.67
12	7.93	4.00	3.76	3.76	3.73	3.71	3.65	4.00	3.73	6.26	4.07	3.58
13	8.47	3.96	3.74	3.76	3.71	3.71	3.96	3.92	3.73	5.06	3.99	3.72
14	8.83	3.94	3.75	3.75	3.74	3.70	4.00	3.83	3.69	4.16	3.88	3.77
15	9.41	3.93	3.76	3.71	3.72	3.71	3.80	3.79	3.73	3.86	3.79	3.80
16	10.49	3.95	3.73	3.76	3.74	3.71	3.75	3.75	3.69	3.76	3.71	3.66
17	11.84	4.00	3.73	3.75	3.70	3.69	3.83	3.75	3.71	3.70	3.69	3.61
18	11.97	4.03	3.73	3.79	3.68	3.71	3.88	3.76	3.64	3.66	3.61	3.59
19	11.65	3.95	3.82	3.80	3.65	3.73	3.80	3.79	3.63	3.98	3.64	3.55
20	11.46	3.94	3.76	3.80	3.72	3.70	4.02	3.72	3.68	4.30	3.58	3.60
21	11.35	3.92	3.77	3.74	3.73	3.69	4.08	4.40	3.92	4.04	3.60	3.67
22	11.05	3.89	3.79	3.72	3.72	3.71	3.75	5.78	3.91	3.70	3.61	3.67
23	10.14	3.85	3.77	3.65	3.73	3.72	3.68	6.15	3.63	3.67	3.61	3.66
24	8.98	3.84	3.78	3.74	3.71	3.70	3.68	6.87	3.80	3.58	3.69	3.62
25	7.13	3.75	3.75	3.74	3.73	3.64	3.68	7.84	3.87	3.60	3.80	3.63
26	5.02	3.82	3.71	3.75	3.66	3.63	3.82	8.69	3.82	3.61	4.14	3.57
27	4.68	3.96	3.70	3.75	3.64	3.65	3.93	8.89	3.94	3.65	4.31	3.59
28	4.51	3.83	3.71	3.68	3.68	3.64	3.91	8.79	4.20	3.58	4.70	3.67
29	4.38	3.76	3.77	3.75	-	3.69	4.28	8.85	4.77	3.59	4.41	3.56
30	4.31	3.75	3.76	3.73	-	3.74	4.56	9.06	5.21	3.56	4.70	3.52
31	4.22	-	3.77	3.78	-	3.66	-	9.20	-	3.60	4.67	-

West Nueces River near Brackettville, Tex.

Location.- Water-stage recorder, lat. 29°28'55", long. 100°14'20", at Bruce Ranch, 11 miles upstream from Liveoak Creek and 15.8 miles northeast of Brackettville, Kinney County. Datum of gage is 1,326.8 feet above mean sea level, datum of 1929.

Drainage area.- 700 square miles.

Records available.- September 1939 to September 1947.

Extremes.- Maximum discharge during year, 6,720 second-feet Oct. 8 (gage height, 10.10 feet); no flow at times.

1939-47: Maximum gage height, 11.56 feet Oct. 27, 1939, from floodmark (discharge not determined); no flow most of time.

Maximum stage known, 48.0 feet June 14, 1935, from floodmark, at site 0.6 mile above gage (discharge at a point 33 miles above gage and 2½ miles below Kickapoo Creek, 580,000 second-feet, by slope-area method; a second determination 24 miles below gage and 8 miles north of Cline, 536,000 second-feet, by slope-area method).

Remarks.- Records good. In ordinary years most of runoff from basin is lost by seepage into Edwards limestone above station. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.5	4.9	0.1	0	0.6		0	1.8	1.4	26	0.7	
2	1.3	4.6	0	0	.5		0	1.4	1.1	22	.7	
3	1.1	3.4	0	0	.5		0	.9	.8	20	.9	
4	1.2	3.0	0	0	.4		0	.6	.7	17	.7	
5	1.5	2.8	0	0	.4		0	.4	.6	14	.6	
6	2.6	2.4	0	0	.3		0	.3	.6	13	.6	
7	7.3	2.3	0	0	.3		0	.2	.5	11	.5	
8	2,040	2.0	0	0	.2		0	.2	.5	10	.4	
9	573	2.0	0	0	.2		0	.1	.4	8.8	.4	
10	216	1.7	0	0	.1		0	.2	.4	7.6	.4	
11	160	1.5	0	0	.1		0	.4	.3	6.8	.4	
12	138	1.2	0	0	.1		0	1.2	.3	5.8	.4	
13	116	1.1	0	0	.1		0	2.2	.2	5.2	.4	
14	100	1.0	0	0	0		0	2.3	.2	4.3	.3	
15	88	.9	0	0	0		0	1.7	.2	3.4	.2	
16	71	.8	0	0	0		0	3.9	.2	2.8	.2	
17	54	.7	0	0	0		0	7.2	.1	2.4	.1	
18	42	.6	0	.4	0		0	11	.1	2.2	0	
19	32	.6	0	3.2	0		0	11	.5	5.1	0	
20	26	.5	0	6.1	0		0	13	1.1	3.9	0	
21	20	.5	0	6.8	0		0	13	1.7	3.0	0	
22	15	.4	0	6.8	0		0	12	1.3	2.3	0	
23	12	.4	0	6.4	0		0	12	1.2	1.7	0	
24	11	.4	0	5.2	0		0	10	226	1.5	0	
25	9.2	.4	0	4.0	0		0	8.4	242	1.2	0	
26	8.4	.3	0	3.0	0		0	6.8	114	1.2	0	
27	8.0	.3	0	2.4	0		.7	5.2	86	1.0	0	
28	7.2	.2	0	1.8	0		1.8	3.7	64	.9	0	
29	6.4	.2	0	1.3	-		2.3	2.6	48	.8	0	
30	5.8	.1	0	1.0	-		2.4	2.2	36	.8	0	
31	5.2	-	0	.8	-		-	1.7	-	.7	0	

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,780.7	2,040	1.1	122	7,500
November	41.2	4.9	.1	1.37	82
December	.1	.1	0	.003	.2
Calendar year 1946	3,840.8	2,040	0	10.5	7,620
January	49.2	6.8	0	1.59	98
February	3.8	.6	0	.14	7.5
March	0	0	0	0	0
April	7.2	2.4	0	.24	14
May	137.6	13	.1	4.44	273
June	830.4	242	.1	27.7	1,650
July	206.4	26	.7	6.66	409
August	7.9	.9	0	.25	16
September	0	0	0	0	0
Water year 1946-47	5,064.5	2,040	0	13.9	10,050

Frio River at Concan, Tex.

Location.- Water-stage recorder, lat. 29°29', long. 99°42', half a mile southeast of Concan post office, Uvalde County, and 15 miles upstream from Dry Frio River. Datum of gage is 1,203.71 feet above mean sea level, datum of 1929.

Drainage area.- 485 square miles.

Records available.- October 1923 to September 1947.

Average discharge.- 22 years (1924-29, 1930-47), 107 second-feet.

Extremes.- Maximum discharge during year, 15,000 second-feet Oct. 8 (gage height, 10.46 feet, from floodmark), from rating curve extended above 8,000 second-feet on basis of slope-area determination at gage height 34.44 feet; minimum daily, 15 second-feet Oct. 7.

1923-47: Maximum discharge, 162,000 second-feet July 1, 1932 (gage height, 34.44 feet, from floodmarks), by slope-area method; minimum observed, 8.1 second-feet Aug. 2, 3, 1928.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Part of flow of Frio River enters Edwards limestone in Balcones fault zone which crosses basin just north of Uvalde and below station. Most of low flow enters this formation. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	83	74	69	124	88	78	121	81	187	67	44
2	18	86	72	76	121	83	78	111	78	170	67	43
3	17	146	72	69	121	83	76	108	76	161	72	43
4	17	216	69	65	117	83	76	105	74	153	69	44
5	16	191	69	65	114	83	74	102	72	146	65	44
6	16	166	69	63	111	83	74	97	72	139	63	43
7	15	146	69	65	108	88	74	94	69	135	61	43
8	3,640	139	69	63	108	86	74	91	65	128	59	43
9	1,590	131	69	67	102	83	74	88	63	124	57	43
10	485	121	72	74	102	83	74	105	61	117	55	41
11	326	111	78	74	102	83	72	157	61	114	53	41
12	243	108	74	74	102	83	72	117	61	111	55	40
13	200	105	72	74	102	81	72	108	61	108	53	43
14	170	100	72	74	100	81	72	105	61	105	51	43
15	161	97	72	72	97	78	72	102	59	102	50	41
16	153	94	69	72	94	78	72	105	63	100	50	41
17	142	91	69	97	91	76	69	108	61	94	48	40
18	131	88	67	105	91	108	69	108	61	91	48	38
19	124	88	67	149	91	97	69	100	86	102	46	38
20	117	86	67	195	91	91	69	94	111	94	50	37
21	111	86	67	178	91	86	67	94	108	88	51	35
22	105	83	67	166	91	83	65	91	94	86	55	35
23	100	83	67	153	91	83	63	91	101	81	57	34
24	97	81	67	153	88	83	63	91	1,030	78	57	34
25	97	81	67	149	88	81	81	88	769	76	55	34
26	94	76	67	146	88	81	199	88	424	76	55	34
27	94	76	67	139	91	81	174	86	307	74	57	32
28	91	76	65	139	94	81	153	83	260	72	53	32
29	88	76	63	139	-	78	139	81	227	72	50	32
30	86	76	63	131	-	78	128	81	200	69	48	32
31	83	-	67	128	-	78	-	81	-	67	46	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	8,645	3,640	15	279	17,150
November	3,187	216	76	106	6,320
December	2,138	78	63	69.0	4,240
Calendar year 1946	23,927	3,640	10	65.8	47,470
January	3,283	195	63	106	6,510
February	2,811	124	88	100	5,580
March	2,592	108	76	83.6	5,140
April	2,592	199	63	86.4	5,140
May	3,081	157	81	99.4	6,110
June	4,916	1,030	59	164	9,750
July	3,320	187	67	107	6,590
August	1,723	72	46	55.6	3,420
September	1,167	44	32	38.9	2,310
Water year 1946-47	39,455	3,640	15	108	78,260

Peak discharge.- Oct. 8 (10:45 p.m.) 15,000 sec.-ft.; June 24 (9:30 a.m.) 2,400 sec.-ft.

Note.- No gage-height record Oct. 1-9, 11-13, 19-23; discharge computed on basis of floodmark, weather records, and engineers' notes.

Frio River near Derby, Tex.

Location.- Water-stage recorder and concrete control, lat. 28°44'10", long. 99°08'45", at bridge on U. S. Highway 81, 150 feet upstream from International-Great Northern Railroad bridge, 750 feet downstream from Leona River, and 2.4 miles south of Derby, Frio County. Datum of gage is 449.3 feet above mean sea level, datum of 1929.

Drainage area.- 3,493 square miles.

Records available.- August 1915 to September 1947.

Average discharge.- 32 years, 154 second-feet.

Extremes.- Maximum discharge during year, 3,820 second-feet June 22 (gage height, 8.20 feet); no flow at times.
1915-47: Maximum discharge, 230,000 second-feet July 4, 1932 (gage height, 29.60 feet, present site, from floodmarks at former site), by slope-area method; no flow at times.

Remarks.- Records good. Part of flow of Frio River and its headwater tributaries enters Edwards limestone in Balcones fault zone which crosses basin just north of Uvalde. At low stages most of headwater flow enters this formation. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	571	0.2	0.1	0.3	0.2	0.1	0.2		0	36	0	
2	124	.2	.1	.3	.2	.1	.2		0	20	0	
3	41	.2	.2	.2	.2	.1	.2		0	11	0	
4	20	.2	.2	.2	.2	.1	.2		0	7.0	0	
5	9.4	.2	.2	.2	.2	.1	.2		0	4.6	0	
6	6.2	.3	.3	.2	.2	.1	.2		0	3.2	0	
7	15	.3	.2	.2	.2	.1	.2		0	2.6	0	
8	21	.3	.2	.2	.2	.2	.2		0	2.6	0	
9	14	.3	.2	.3	.2	.2	.2		0	1.4	0	
10	842	.3	.2	.3	.3	.2	.2		0	.8	0	
11	1,640	.3	.3	.2	.3	.2	.2		0	.4	0	
12	402	.3	.3	.1	.4	.2	.2		0	.3	0	
13	184	.3	.2	.1	.4	.2	.2		0	.3	0	
14	86	.3	.2	.1	.4	.2	.2		0	.3	0	
15	44	.4	.3	.1	.4	.1	.2		0	.1	0	
16	29	.4	.3	.2	.4	.2	.2		0	0	0	
17	17	.4	.3	.2	.2	.1	.2		0	0	0	
18	47	.4	.2	.3	.2	.2	.2		0	0	0	
19	32	.5	.3	.3	.1	.3	.2		0	0	0	
20	13	.5	.3	.3	0	.2	.2		91	0	0	
21	5.4	.4	.3	.2	0	0	.2		1,000	0	0	
22	2.2	.4	.3	.2	0	0	.2		2,620	0	0	
23	1.0	.3	.3	.2	0	0	.2		598	0	0	
24	.8	.3	.3	.2	0	.1	.2		250	0	0	
25	.5	.1	.3	.2	0	.2	.1		676	0	0	
26	.4	.2	.3	.2	0	.2	.1		1,710	0	0	
27	.4	.2	.3	.1	.1	.2	.1		2,130	0	0	
28	.3	.2	.3	.1	.1	.2	.1		788	0	22	
29	.2	.2	.1	.1	-	.3	0		236	0	4.6	
30	.2	.2	.1	.1	-	.3	0		75	0	.5	
31	.2	-	.2	.1	-	.2	-		-	0	.2	

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	4,169.2	1,640	0.2	134	8,270
November	8.8	.5	.1	.29	17
December	7.4	.3	.1	.24	15
Calendar year 1946	29,159.3	4,940	0	79.9	57,830
January	6.0	.3	.1	.19	12
February	5.1	.4	0	.18	10
March	4.9	.3	0	.16	9.7
April	5.2	.2	0	.17	10
May	0	0	0	0	0
June	10,174	2,620	0	339	20,180
July	90.6	36	0	2.92	180
August	27.3	22	0	.88	54
September	0	0	0	0	0
Water year 1946-47	14,498.5	2,620	0	39.7	28,760

Peak discharge.- Oct. 11 (6 a.m.) 2,070 sec.-ft.; June 22 (4 a.m.) 3,820 sec.-ft.; June 27 (8 a.m.) 2,440 sec.-ft.

Note.- No gage-height record Oct. 19-29; discharge computed on basis of recorded range in stage.

Frio River at Calliham, Tex.

Location.- Water-stage recorder and concrete control, lat. 28°29'30", long. 98°20'45", at bridge on Calliham-Whitsett highway, 1 mile north of Calliham, McMullen County, and 9.7 miles downstream from San Miguel Creek. Datum of gage is 153.47 feet above mean sea level, datum of 1929.
Drainage area.- 5,491 square miles.
Records available.- October 1924 to April 1926, April 1932 to September 1947.
Average discharge.- 16 years (1924-25, 1932-47), 288 second-feet.
Extremes.- Maximum discharge during year, 17,000 second-feet Oct. 17 (gage height, 29.57 feet); no flow Aug. 15-21, Sept. 22-30.
1924-26, 1932-47: Maximum discharge, 109,000 second-feet July 6, 1932 (gage height, 39.20 feet, from floodmarks), by slope-area method; no flow at times.
Remarks.- Records good. Part of flow of Frio River and its headwater tributaries enters Edwards limestone in Balcones fault zone which crosses basin just north of Uvalde. At low stages most of headwater flow enters this formation. Diversions above station for irrigation.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Jan. 12 to Apr. 11, Aug. 6-23)

2.37	0	2.9	15	5.0	528	21.0	5,720
2.4	.3	3.0	22	6.5	996	26.0	9,400
2.5	1.2	3.2	42	8.0	1,350	27.5	11,900
2.6	2.5	3.4	73	12.0	2,330	28.2	13,500
2.7	5.0	3.5	93	15.0	3,270		
2.8	9.2	3.9	192	18.0	4,300		

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	814	55	25	18	15	8.8	11	25	36	1,480	0.6	
2	1,340	52	23	19	14	13	10	32	27	1,260	1.0	a3.2
3	2,380	49	22	19	14	13	9.8	26	22	268	1.3	
4	2,260	48	21	19	13	13	9.2	25	19	89	1.1	
5	904	46	21	18	13	12	7.9	20	16	53	1.7	1.8
6	267	43	21	22	13	12	6.7	16	13	36	3.5	5.0
7	324	41	21	24	13	11	6.7	11	9.8	27	2.8	2.2
8	201	52	21	23	12	9.8	6.7	8.8	8.6	21	1.8	1.6
9	1,790	43	21	26	12	8.8	6.7	7.1	7.5	16	1.2	1.1
10	5,830	40	21	39	11	8.4	6.7	6.3	9.2	13	.8	.8
11	4,020	38	21	73	11	9.2	6.3	6.3	8.8	9.2	.8	.7
12	2,510	36	30	45	11	9.8	18	6.3	6.7	7.1	.6	.5
13	1,720	34	26	31	11	20	45	6.3	5.0	5.8	.4	5.1
14	1,240	34	26	28	13	20	16	5.8	4.0	4.5	.2	2.3
15	1,530	33	32	26	14	17	8.8	4.8	3.5	4.8	0	1.1
16	11,300	33	31	25	14	15	7.5	25	3.0	6.7	0	1.0
17	13,400	32	26	26	13	14	6.7	21	2.8	4.2	0	1.0
18	5,310	38	21	27	13	14	7.9	45	5.3	3.0	0	.9
19	1,510	58	20	27	11	47	11	165	144	2.2	0	.7
20	297	41	20	25	11	138	10	423	882	1.7	0	.5
21	195	35	19	24	11	126	8.8	450	501	1.5	17	.3
22	168	32	18	21	10	85	9.2	479	183	1.1	26	.1
23	145	30	17	24	9.8	48	9.8	471	85	1.0	69	0
24	118	29	17	36	9.2	29	9.8	313	157	.9		0
25	98	29	17	30	8.8	21	9.2	1,230	577	.8		0
26	85	28	17	25	8.4	17	41	607	1,070	.8		0
27	77	27	17	21	8.4	15	55	279	1,100	.7	a91	0
28	70	25	16	19	8.8	13	39	261	428	.6		0
29	64	24	16	18	-	11	27	201	728	.5		0
30	61	24	14	18	-	9.8	21	95	1,170	.5		0
31	58	-	14	16	-	10	-	55	-	.5		-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	60,086	13,400	58	1,938	119,200
November	1,129	58	24	37.6	2,240
December	652	32	14	21.0	1,290
Calendar year 1946	164,734.6	13,600	0	451	326,800
January	812	73	16	26.2	1,610
February	326.4	15	8.4	11.7	647
March	798.6	138	8.4	25.8	1,580
April	448.4	55	6.3	14.9	889
May	5,326.7	1,230	4.8	172	10,570
June	7,232.4	1,170	2.8	241	14,350
July	3,321.1	1,480	.5	107	6,590
August	857.8	-	0	27.7	1,700
September	39.5	5.1	0	1.32	78
Water year 1946-47	81,029.9	13,400	0	222	160,700

Peak discharge.- Oct. 3 (9:30 p.m.) 2,660 sec.-ft.; Oct. 10 (1 p.m.) 6,180 sec.-ft.; Oct. 17 (2:30 a.m.) 17,000 sec.-ft.
a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and records for Nueces River near Tilden and near Three Rivers and Atascosa River at Whitsett.

Sabinal River near Sabinal, Tex.

Location.- Water-stage recorder, lat. 29°30', long. 99°29', 470 feet upstream from low-water road crossing on Sabinal-Utopia road, 3.5 miles downstream from Onion Creek, and 12 miles north of Sabinal, Uvalde County. Datum of gage is 1,131.2 feet above mean sea level, datum of 1929.

Drainage area.- 206 square miles.

Records available.- October 1942 to September 1947.

Extremes.- Maximum discharge during year 9,800 second-feet June 24 (gage height, 9.60 feet); minimum, 2.9 second-feet Sept. 21-30.

1942-47: Maximum discharge, that of June 24, 1947; no flow Aug. 10 to Sept. 15, 1946.

Flood of July 2, 1932, reached a stage of about 29.9 feet, from information by local residents; discharge, 72,000 second-feet, by slope-area method, at Sabinal, 12 miles downstream from gage.

Remarks.- Records good. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	35	35	27	39	35	25	31	18	43	13	7.0
2	11	42	33	29	39	33	25	29	17	41	14	7.0
3	11	98	33	27	39	31	25	27	16	37	16	7.0
4	11	73	31	25	39	31	27	25	14	35	14	7.0
5	11	68	31	25	39	31	27	24	13	33	13	7.0
6	14	62	31	25	39	29	27	22	13	33	12	6.3
7	11	58	31	25	39	33	27	22	12	31	12	6.3
8	793	55	29	25	37	31	27	20	11	33	11	6.3
9	501	53	29	27	37	31	29	20	11	31	11	6.3
10	136	50	29	31	37	31	29	23	9.7	29	9.7	5.6
11	86	48	31	33	37	29	27	55	9.7	27	9.7	5.6
12	68	48	31	31	37	29	27	37	9.7	27	9.7	5.6
13	58	48	29	29	37	27	27	31	8.6	29	9.7	5.6
14	50	46	27	29	37	27	29	27	8.6	25	9.7	5.6
15	48	46	27	27	37	27	27	25	8.6	24	9.7	5.6
16	46	46	27	25	37	27	25	25	8.6	24	8.6	13
17	46	46	27	31	37	27	24	27	8.6	24	7.8	6.3
18	43	43	25	43	37	39	25	27	7.8	22	8.6	5.6
19	41	43	25	55	37	41	24	24	86	24	7.8	4.9
20	39	41	25	55	37	35	24	27	17	24	7.8	4.2
21	39	41	25	50	35	33	24	50	12	22	9.7	3.5
22	39	39	25	46	35	31	24	29	11	20	11	2.9
23	39	39	25	46	35	29	22	24	139	18	10	2.9
24	39	37	25	43	33	29	22	146	1,120	18	26	2.9
25	39	37	25	43	33	27	31	39	133	17	16	2.9
26	37	37	25	43	33	27	39	25	83	17	22	2.9
27	37	37	25	41	35	27	41	22	65	16	22	2.9
28	37	37	25	41	37	25	39	20	55	16	11	2.9
29	35	35	25	43	-	25	35	18	50	16	9.7	2.9
30	35	35	24	41	-	25	33	18	46	16	8.6	2.9
31	35	-	27	39	-	25	-	18	-	14	7.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,448	793	11	79.0	4,860
November	1,423	98	35	47.4	2,820
December	862	35	24	27.8	1,710
Calendar year 1946	8,363.6	793	0	22.9	16,590
January	1,100	55	25	35.5	2,180
February	1,030	39	33	36.8	2,040
March	927	41	25	29.9	1,840
April	837	41	22	27.9	1,660
May	957	146	18	30.9	1,900
June	2,021.9	1,120	7.8	67.4	4,010
July	786	43	14	25.4	1,560
August	368.6	26	7.8	11.9	731
September	157.4	13	2.9	5.25	312
Water year 1946-47	12,917.9	1,120	2.9	35.4	25,620

Peak discharge.- Oct. 8 (10 p.m.) 5,650 sec.-ft.; June 24 (12:30 a.m.) 9,800 sec.-ft.

Leona River spring flow near Uvalde, Tex.

Location.- Water-stage recorder, lat. 29°09', long. 99°44', at old road crossing on White's ranch, 3½ miles downstream from Cooks slough and 4.6 miles southeast of Uvalde, Uvalde County. Datum of gage is 838.4 feet above mean sea level, datum of 1929.

Records available.- January 1939 to September 1947. Occasional discharge measurements since 1925 in connection with seepage investigations.

Extremes.- Maximum daily spring discharge during year, 18 second-feet June 27, 28; maximum gage height, 12.57 feet June 24, from floodmark; minimum daily spring discharge, 1.8 second-feet Oct. 2, 3.

1939-47: Maximum daily spring discharge, 33 second-feet Feb. 15-18, 1942; maximum gage height, 13.63 feet Aug. 30, 1944, from floodmark; minimum daily spring discharge, 0.4 second-foot Aug. 13-27, 1946.

Remarks.- Records good. Discharge represents flow from several springs that enter river above station and below Uvalde. Surface runoff from precipitation is excluded. A few small diversions by pumping from river channel above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.9	3.1	5.9	7.5	7.5	9.3	11	12	11	16	15	16
2	1.8	3.3	5.9	7.9	7.5	9.3	11	12	11	16	16	15
3	1.8	3.3	5.9	7.1	7.9	9.3	11	12	11	17	16	15
4	1.9	3.3	5.9	7.1	7.9	9.3	12	12	11	17	16	15
5	e1.9	3.4	6.2	7.5	7.5	9.8	12	12	10	17	17	15
6	e2.0	3.6	6.2	7.9	7.9	9.8	12	12	10	17	17	15
7	2.0	3.6	6.2	7.9	7.9	9.8	12	12	10	17	17	15
8	e2.0	3.8	6.2	7.9	7.9	10	13	12	9.8	17	17	15
9	e2.1	3.8	6.5	7.9	7.9	10	13	11	9.8	17	16	15
10	e2.2	3.8	6.5	7.9	8.3	10	13	12	9.8	17	16	14
11	e2.3	4.0	6.5	7.9	8.3	10	13	12	9.3	17	16	14
12	2.3	4.0	6.5	7.9	8.3	10	12	12	9.3	16	16	14
13	2.2	4.0	6.5	7.9	8.3	10	12	12	8.8	16	16	14
14	2.2	4.2	6.5	7.9	8.3	10	12	12	8.8	16	16	14
15	2.3	4.4	6.5	7.9	8.3	10	12	12	8.8	15	16	14
16	2.4	4.6	6.8	7.9	8.3	10	12	12	8.8	15	16	14
17	2.4	4.6	6.8	7.9	8.3	10	12	e12	8.8	15	15	14
18	2.4	4.6	6.8	7.9	7.9	e10	12	e12	8.3	15	15	14
19	2.4	4.8	6.8	7.5	7.9	10	12	12	e9.0	17	15	14
20	2.4	4.8	6.8	7.5	7.9	10	12	12	e10	17	15	14
21	2.4	4.8	6.8	7.1	7.9	10	12	12	e12	16	16	14
22	2.4	4.8	6.8	7.1	7.9	10	12	12	14	15	17	14
23	2.6	5.0	7.1	7.1	8.3	11	12	12	e14	15	17	14
24	2.6	5.2	7.1	7.5	8.3	11	11	12	e15	15	17	13
25	2.7	5.4	7.1	7.9	8.3	11	e12	12	e16	15	e17	13
26	2.7	5.4	7.1	7.9	8.3	11	12	12	e17	15	17	13
27	2.7	5.4	7.1	7.9	8.8	11	12	11	e18	15	17	13
28	2.8	5.4	7.1	7.9	9.3	11	12	11	18	15	17	13
29	3.0	5.4	7.1	7.9	-	11	12	11	17	15	17	13
30	3.1	5.6	7.1	7.5	-	11	12	11	16	15	17	13
31	3.1	-	7.5	7.5	-	11	-	11	-	15	17	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	73.0	3.1	1.8	2.35	145
November	131.4	5.6	3.1	4.38	261
December	205.8	7.5	5.9	6.64	408
Calendar year 1946	1,016.4	7.5	.4	2.78	2,020
January	238.1	7.9	7.1	7.68	472
February	227.1	9.3	7.5	8.11	450
March	315.6	11	9.3	10.2	626
April	360	13	11	12.0	714
May	368	12	11	11.8	726
June	350.3	18	8.3	11.7	695
July	493	17	15	15.9	978
August	505	17	15	16.3	1,000
September	423	16	13	14.1	839
Water year 1946-47	3,688.3	18	1.8	10.1	7,310

e Gage height not representative of average spring flow for day; discharge interpolated.

Leona River seepage investigations

A series of five discharge measurements was made on Leona River and tributaries, Texas. The series was made in March between the old Uvalde-Pearsall road bridge, 1.7 southeast of Uvalde, Uvalde County, and Kincaid Camp, 9.5 miles southeast of Uvalde. Measurements were made to establish relation between flow of river and water table in the river valley. See report of Texas Board of Water Engineers (p. 9), "Relationship of Ground Water to the Discharge of the Leona River in Uvalde and Zavalla Counties, Tex." - April 1947. Investigation was made during a constant stage and determinations represent natural conditions. Distances along river measured on tracings from aerial photographs and U. S. Department of Agriculture soil-survey map.

Discharge measurements on Leona River, Texas, March 1947

Date	Stream	Location	Distance below initial point (miles)	Discharge in second-feet				
				Main stream	Tributary	Diversion	Gain or loss in section	Total gain or loss
Mar. 1	Leona River...	Highway bridge 1.7 miles southeast of Uvalde.	0	3.49	-	-	-	-
1	....do.....	At USGS gaging station 4.6 miles southeast of Uvalde.	3.8	10.0	-	-	+6.51	+6.51
1	....do.....	On W. E. Lee Ranch, 5.2 miles southeast of Uvalde.	4.6	17.0	-	-	+7.00	+13.5
1	....do.....	2,500 feet downstream from Kincaid Dam and 9.1 miles southeast of Uvalde.	9.3	12.9	-	-	-4.1	+9.4
1	....do.....	At Kincaid Camp, 9.5 miles southeast of Uvalde.	9.8	18.4	-	-	+5.5	+14.9

Atascosa River at Whitsett, Tex.

Location.- Water-stage recorder and wooden control, lat. 28°37'20", long. 98°17'05" (revised), 0.9 mile west of Whitsett, Live Oak County, and 4 miles downstream from La Parita Creek. Datum of gage is 159.0 feet above mean sea level, datum of 1929.

Drainage area.- 1,171 square miles.

Records available.- September 1924 to May 1926, May 1932 to September 1947.

Average discharge.- 16 years (1924-25, 1932-47), 156 second-feet.

Extremes.- Maximum discharge during year, 10,800 second-feet Oct. 17 (gage height, 27.65 feet); minimum not determined.
1924-26, 1932-47: Maximum discharge, 39,300 second-feet July 7, 1942 (gage height, 38.3 feet, from floodmark), from rating curve extended above 12,000 second-feet on basis of slope-area determination at gage height 38.0 feet; no flow at times.

Remarks.- Records good except those for July 10 to Sept. 30, which are fair, and those for periods of rapidly changing stage, which are poor. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	427	66	38	34	33	30	31	23	26	5.9	3.4	21
2	215	64	37	39	32	26	31	22	23	5.5	3.4	18
3	165	63	36	45	32	30	31	20	22	5.2	17	15
4	136	66	36	45	31	27	31	18	19	5.0	14	13
5	126	69	36	41	30	29	30	18	17	4.7	6.1	11
6	125	67	35	39	30	29	29	16	15	4.5		11
7	108	63	35	38	30	28	28	15	14	4.0		9.4
8	97	62	35	38	30	27	27	15	14	4.0		8.2
9	331	60	35	47	30	27	26	14	13	4.3	5.0	7.5
10	1,050	58	38	147	30	27	25	14	13	4.2		6.2
11	535	56	38	132	30	27	25	14	12	4.1		6.2
12	185	54	69	89	30	27	36	14	11	4.0	6.8	5.5
13	118	52	75	69	30	27	108	17	11	16		6.8
14	95	50	50	56	30	26	99	23	9.8	179		5.2
15	107	49	47	50	31	25	41	15	9.4	42		4.7
16	5,110	49	47	47	30	24	30	14	27	5.6		5.0
17	9,830	57	40	142	30	23	26	13	40		5.0	16
18	4,120	125	38	319	30	46	25	50	26			10
19	366	75	38	173	30	205	23	1,070	18			6.8
20	191	55	37	103	30	531	22	371	16			5.2
21	139	50	36	79	30	125	21	62	30			4.3
22	120	46	36	62	30	72	21	41	18		314	3.6
23	101	45	35	54	30	56	21	591	13		674	2.9
24	96	44	35	46	29	48	23	322	11	3.0	174	2.4
25	89	43	35	43	28	43	20	3,070	9.4		113	2.1
26	83	42	35	41	27	38	20	1,470	8.5		149	2.1
27	79	41	35	39	26	36	31	95	7.8		809	1.9
28	75	39	35	38	26	34	27	51	7.2		1,160	1.7
29	72	38	34	38	-	32	26	38	6.5		82	1.5
30	70	38	32	37	-	31	26	31	6.2		41	1.9
31	67	-	31	36	-	31	-	29	-	3.5	28	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	24,428	9,830	67	788	48,450
November	1,686	125	38	56.2	3,340
December	1,219	75	31	39.3	2,420
Calendar year 1946	129,999.8	18,200	0	356	257,800
January	2,206	319	34	71.2	4,380
February	835	33	26	29.8	1,660
March	1,787	531	23	57.6	3,540
April	960	108	20	32.0	1,900
May	7,576	3,070	13	244	15,030
June	473.8	40	6.2	15.8	940
July	343.5	179	-	11.1	681
August	3,669.7	1,160	-	118	7,280
September	216.1	21	1.5	7.20	429
Water year 1946-47	45,400.1	9,830	-	124	90,050

Peak discharge.- Oct. 10 (10:30 a.m.) 1,140 sec.-ft.; Oct. 17 (1 p.m.) 10,800 sec.-ft.; May 19 (8 p.m.) 1,610 sec.-ft.; May 25 (3 p.m.) 4,080 sec.-ft.; Aug. 28 (6 a.m.) 1,840 sec.-ft.

Note.- No gage-height record June 4-6, July 10-12, 17-30, Aug. 6-11, 13-21; discharge computed by interpolation or on basis of records for Nueces River near Three Rivers and near Tilden and Frio River at Calliham.

Rio Grande at Thirtymile Bridge, near Creede, Colo.

Location.- Water-stage recorder, lat. 37°44', long. 107°16', in sec. 13, T. 40 N., R. 4 W., 500 feet upstream from Squaw Creek, three-quarters of a mile downstream from Rio Grande Reservoir, and 20 miles southwest of Creede.

Drainage area.- 163 square miles.

Records available.- June 1909 to September 1913 and October 1933 to September 1947 in reports of Geological Survey. June 1909 to September 1947 in reports of State engineer.

Average discharge.- 34 years (1910-23, 1926-47), 228 second-feet.

Extremes.- Maximum discharge during year, 1,510 second-feet June 9 (gage height, 4.08 feet); minimum daily, 1.4 second-feet Nov. 30 to Mar. 31.
1909-47: Maximum discharge, 7,500 second-feet June 28, 1927 (gage height, 7.03 feet); minimum daily, 0.6 second-foot at times when reservoir was about empty and gates were closed.

Remarks.- Records excellent except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by Rio Grande Reservoir (capacity, 51,110 acre-feet).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	38						220	850	1,210	169	276
2	96	38						328	1,000	1,180	160	246
3	108	43					76	604	1,220	1,250	154	237
4	99	57						592	1,250	1,220	180	220
5	99	57						880	1,050	1,090	229	218
6	97	54						641	858	1,100	169	220
7	117	68						704	1,160	1,070	158	198
8	92	39					85	912	1,220	1,180	169	185
9	104	50						896	1,320	1,230	167	220
10	89	24						812	1,370	770	152	253
11	58	b19						580	1,350	749	145	256
12	65	78						424	1,040	835	145	226
13	68	73					75	409	812	872	147	204
14	61	62						419	749	850	141	188
15	62	45						424	722	865	139	176
16	57	b30	1.4	1.4	1.4	1.4		386	805	920	145	169
17	57	b41						339	1,140	904	180	201
18	57	60					120	320	880	685	185	364
19	41	58						400	697	390	204	59
20	50	b64						550	920	335	207	1.6
21	50	b60						722	1,050	283	226	1.4
22	50	b50						865	880	308	586	6.6
23	45	b45						920	880	294	616	1.5
24	43	b30						629	850	262	373	1.4
25	38	b54						842	850	234	294	75
26	40	b66					185	1,060	944	223	266	198
27	43	*b30						1,110	1,100	215	266	188
28	52	2.2						987	1,090	212	259	176
29	78	1.6			-			798	1,190	212	250	174
30	43	1.4			-			716	1,260	190	308	174
31	43	-			-		-	896	-	178	256	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,060	117	38	66.5	4,090
November	1,338.2	78	1.4	44.6	2,650
December	43.4	-	-	1.4	86
Calendar year 1946	64,601.6	1,500	-	177	128,100
January	43.4	-	-	1.4	86
February	39.2	-	-	1.4	78
March	43.4	-	-	1.4	86
April	3,630	-	-	121	7,200
May	20,385	1,110	220	658	40,430
June	30,507	1,370	697	1,017	60,510
July	21,316	1,250	178	688	42,280
August	7,045	616	139	227	13,970
September	5,113.5	364	1.4	170	10,140
Water year 1946-47	91,564.1	1,370	-	251	181,600

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- No gage-height record Nov. 10, 18-19, Dec. 3 to May 1 (stage-discharge relation affected by ice during part of period); discharge computed on basis of gate openings at Rio Grande Reservoir.

Rio Grande at Wason, below Creede, Colo.

Location.- Water-stage recorder, lat. 37°49', long. 106°53', in NE¼ sec. 8, T. 41 N., R. 1 E., at Wason, 1½ miles downstream from Willow Creek and 3 miles southeast of Creede.

Drainage area.- 705 square miles.

Records available.- April 1907 to September 1913 and October 1933 to September 1947 in reports of Geological Survey. April 1907 to September 1947 in reports of State engineer.

Average discharge.- 40 years, 629 second-feet.

Extremes.- Maximum discharge during year, 3,280 second-feet June 8 (gage height, 3.94 feet); minimum daily, 58 second-feet Jan. 15.
1907-47: Maximum discharge, 9,750 second-feet June 28, 1927 (gage height, 7.65 feet); minimum not determined.

Remarks.- Records excellent except those for period of ice effect, which are fair. Diversions above station for irrigation. Flow regulated by three reservoirs (total capacity, 122,900 acre-feet).

Rating tables, water year 1946-47, except period of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Nov. 4-13)

Oct. 1 to Nov. 11		Nov. 12 to Sept. 30					
0.7	156	0.5	91	1.1	280	2.5	1,330
.9	219	.6	114	1.4	415	3.0	1,880
1.1	295	.7	141	1.7	605	3.7	2,880
1.3	385	.9	204	2.0	850		

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	193	219	130	78	72	72	165	522	2,060	1,870	496	591
2	226	202	133	78	75	82	211	805	2,240	1,760	570	549
3	349	180	136	80	78	78	215	1,360	2,600	1,800	577	522
4	291	180	147	82	80	78	188	1,780	2,520	1,860	650	490
5	313	168	141	83	82	80	194	1,650	2,440	1,680	832	448
6	279	162	119	80	84	87	184	2,250	2,140	1,640	752	459
7	354	171	100	76	86	90	191	1,720	2,600	1,650	665	448
8	313	202	100	78	86	88	181	2,200	2,830	1,700	635	415
9	313	162	107	80	82	93	204	2,310	2,570	1,660	665	454
10	300	168	102	77	78	105	194	2,090	2,720	1,390	556	522
11	237	132	112	75	70	98	188	1,890	2,510	1,230	542	556
12	230	138	119	73	74	96	162	1,510	2,180	1,310	522	496
13	244	204	81	69	74	107	150	1,460	1,730	1,340	535	448
14	233	178	71	62	80	98	162	1,420	1,650	1,280	470	415
15	237	174	68	58	86	96	188	1,400	1,630	1,320	490	395
16	230	119	75	60	96	112	226	1,320	1,640	1,400	490	380
17	226	130	77	62	88	107	248	1,250	1,920	1,410	516	395
18	223	141	*83	64	*83	114	329	1,190	2,080	1,280	591	958
19	196	*147	84	66	82	133	347	1,250	1,560	1,010	628	1,180
20	202	150	82	65	82	150	380	1,410	1,780	913	628	704
21	199	165	82	*64	84	171	459	1,630	2,140	814	612	522
22	199	174	84	65	86	188	490	1,910	1,870	805	958	437
23	196	174	88	69	88	174	454	2,000	1,770	832	1,250	385
24	193	156	90	72	92	147	496	1,670	1,650	744	922	334
25	189	150	92	74	98	*136	400	1,620	1,650	744	736	316
26	189	150	94	78	100	147	385	2,090	1,660	704	620	483
27	183	156	100	80	110	174	426	2,480	1,820	620	612	476
28	196	150	96	70	66	197	410	2,310	1,820	612	570	420
29	336	119	82	64	-	197	385	2,170	1,820	591	570	405
30	326	130	80	65	-	178	385	2,150	1,920	542	628	432
31	251	-	80	66	-	181	-	2,240	-	549	584	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	7,646	354	183	247	15,170
November	4,851	219	119	162	9,620
December	3,035	147	68	97.9	6,020
Calendar year 1946	155,823	2,420	63	427	309,100
January	2,213	83	58	71.4	4,390
February	2,342	110	66	83.6	4,650
March	3,854	197	72	124	7,640
April	8,597	496	150	287	17,050
May	53,057	2,480	522	1,712	105,200
June	61,520	2,830	1,560	2,051	122,000
July	37,060	1,870	542	1,195	73,510
August	19,872	1,250	470	641	39,420
September	15,035	1,180	316	501	29,820
Water year 1946-47	219,082	2,830	58	600	434,500

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 3 to Mar. 8.

Rio Grande near Del Norte, Colo.

Location.- Water-stage recorder, lat. 37°41', long. 106°28', in NW¼ sec. 29, T. 40 N., R. 5 E., 5 miles upstream from Pinos Creek and 6 miles west of Del Norte. Datum of gage is 7,982.21 feet above mean sea level, datum of 1929.

Drainage area.- 1,320 square miles.

Records available.- July 1889 to November 1906 (at site 4 miles downstream), April 1908 to September 1913, and October 1933 to September 1947 in reports of Geological Survey, July 1889 to September 1906 and April 1908 to September 1947 in reports of State engineer. May to September 1907 (at site 4 miles downstream), unpublished, in files of State engineer.

Average discharge.- 58 years (1889-1947), 954 second-feet.

Extremes.- Maximum discharge during year, 4,390 second-feet June 8; maximum gage height, 4.09 feet May 6; minimum daily discharge, 120 second-feet Jan. 16.
1889-1947: Maximum discharge, 18,000 second-feet Oct. 5, 1911 (gage height, 6.80 feet), from rating curve extended above 6,000 second-feet; minimum daily, 88 second-feet Dec. 20, 1945.

Remarks.- Records excellent except those for periods of ice effect or no gage-height record, which are fair. Small diversions above station for irrigation. Flow regulated by three main reservoirs (total capacity, 122,900 acre-feet) and several smaller ones.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	225	374	220	165	142	b130	440	786	3,000	2,270	582	770
2	230	338	220	165	148	b138	434	1,210	3,170	2,160	582	770
3	368	320	*210	165	160	b174	446	2,000	3,600	2,130	634	698
4	392	270	210	170	*162	b158	368	2,910	3,500	2,210	667	682
5	452	285	215	175	162	*b162	320	2,410	3,480	2,080	872	650
6	398	285	245	170	166	b162	374	3,640	3,150	1,980	861	658
7	458	302	260	*160	175	b174	422	2,610	3,460	2,000	778	642
8	464	344	230	160	182	b190	356	3,210	3,970	1,980	730	589
9	434	320	b235	165	180	b178	392	3,420	3,620	2,020	762	634
10	428	285	b220	170	170	b210	356	3,120	3,900	1,700	666	698
11	362	255	b235	165	160	220	404	2,990	3,460	1,450	610	762
12	314	245	b265	160	140	210	362	2,340	3,150	1,460	650	714
13	332	308	b255	158	158	195	296	2,210	2,570	1,480	658	642
14	320	320	b190	150	155	190	308	2,140	2,320	1,450	666	596
15	314	320	b180	140	170	186	368	2,060	2,320	1,490	658	561
16	320	240	b200	120	178	186	434	1,950	2,320	1,490	634	533
17	314	210	b190	125	195	190	464	1,840	2,460	1,570	666	533
18	308	225	*b180	130	*185	215	568	1,780	2,880	1,490	722	1,140
19	280	235	178	135	180	230	674	1,810	2,390	1,260	818	1,840
20	260	314	175	140	175	255	714	2,060	2,360	1,100	861	1,300
21	275	280	178	*135	177	270	818	2,340	2,840	982	802	971
22	270	265	175	138	180	320	883	2,730	2,750	949	1,060	810
23	265	260	182	140	181	350	818	2,950	2,500	1,040	1,600	730
24	260	290	190	150	186	308	872	2,550	2,270	960	1,300	626
25	255	265	195	155	190	*275	730	2,430	2,190	949	1,030	596
26	250	210	200	160	205	245	658	2,910	2,190	894	883	658
27	250	235	215	165	210	308	674	3,420	2,340	818	834	698
28	260	270	195	170	214	392	658	3,360	2,340	778	802	650
29	519	235	180	155	-	416	626	3,100	2,290	754	778	603
30	674	215	185	135	-	398	610	3,060	2,360	682	778	610
31	452	-	175	140	-	398	-	3,230	-	642	842	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	10,703	674	225	345	21,230
November	8,320	374	210	277	16,500
December	6,383	265	175	206	12,660
Calendar year 1946	216,106	3,190	120	592	428,700
January	4,731	175	120	153	9,380
February	4,886	214	140	174	9,690
March	7,433	416	130	240	14,740
April	15,847	883	296	528	31,430
May	78,576	3,640	786	2,535	155,900
June	85,150	3,970	2,190	2,838	168,900
July	44,218	2,270	642	1,426	87,710
August	24,786	1,600	582	800	49,160
September	22,364	1,840	533	745	44,360
Water year 1946-47	313,397	3,970	120	859	621,700

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- No gage-height record Dec. 19 to Feb. 28 (stage-discharge relation affected by ice during entire period); discharge computed on basis of 4 discharge measurements and weather records.

Rio Grande near Monte Vista, Colo.

Location.- Water-stage recorder, lat. 37°37', long. 106°09', at west line of sec. 19, T. 39 N., R. 8 E., 2 miles north of Monte Vista. Datum of gage is 7,654.54 feet above mean sea level, datum of 1929.

Drainage area.- 1,590 square miles.

Records available.- October 1933 to September 1947 in reports of Geological Survey (no winter records in earlier years). May 1926 to September 1947 in reports of State engineer.

Average discharge.- 14 years (1933-47), 336 second-feet.

Extremes.- Maximum discharge during year, 1,910 second-feet May 6 (gage height, 4.01 feet); minimum daily, 5.0 second-feet Apr. 7-9.
1926-47: Maximum discharge, 18,500 second-feet June 30, 1927 (gage height, 7.85 feet); minimum daily, 4 second-feet Apr. 18, 1926.

Remarks.- Records good except those below 100 second-feet and those for period of ice effect, which are fair. Diversions above station for irrigation. Flow regulated by three main reservoirs (total capacity, 122,900 acre-feet) and several smaller ones.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	15	215	190	166	198	16	64	853	639	50	203
2	84	18	201	180	173	176	13	286	901	631	50	190
3	101	28	*203	180	182	184	13	724	992	588	105	148
4	158	229	187	190	184	107	18	968	974	571	125	134
5	94	277	190	195	187	*82	12	583	1,070	516	160	136
6	80	289	209	190	187	69	10	1,090	945	504	138	127
7	74	305	235	180	184	67	5.0	760	1,060	600	105	176
8	78	328	215	180	190	64	5.0	882	1,280	579	107	120
9	51	341	171	185	187	71	5.0	896	886	635	118	111
10	56	283	150	190	203	64	8.0	782	980	508	107	160
11	37	271	168	185	195	69	36	867	786	413	86	203
12	30	255	195	179	171	67	80	678	939	359	138	232
13	21	318	223	182	166	60	86	710	768	345	166	190
14	18	345	212	166	158	46	100	635	678	332	113	138
15	15	335	206	160	160	14	98	639	834	341	82	107
16	14	286	206	160	146	12	62	778	843	309	58	82
17	13	243	246	*163	150	31	55	728	834	359	48	58
18	12	240	190	166	*148	15	67	683	918	309	46	212
19	11	261	190	156	116	12	94	678	834	184	73	1,110
20	11	293	190	160	100	11	38	692	696	226	195	862
21	10	309	190	166	92	11	111	710	1,000	184	190	447
22	10	309	190	168	109	9.0	148	896	945	118	229	322
23	11	289	195	168	136	7.0	156	1,030	710	156	652	232
24	11	305	205	171	138	6.0	182	891	521	150	500	150
25	12	309	210	171	134	6.0	187	737	477	153	315	100
26	13	258	220	176	182	6.0	74	891	305	134	268	80
27	12	238	230	182	215	6.0	45	1,030	648	129	246	171
28	11	280	220	201	220	6.0	60	1,000	631	100	229	176
29	12	264	210	192	-	7.0	28	912	635	76	195	136
30	129	223	205	163	-	7.0	19	912	670	57	182	136
31	63	-	200	166	-	8.0	-	934	-	48	268	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,322	158	10	42.6	2,620
November	7,744	345	15	258	15,360
December	6,277	246	150	202	12,450
Calendar year 1946	73,445	1,050	10	201	145,700
January	5,461	201	156	176	10,830
February	4,579	220	92	164	9,080
March	1,498.0	198	6.0	48.3	2,970
April	1,831.0	187	5.0	61.0	3,630
May	24,066	1,090	64	776	47,730
June	24,913	1,280	477	830	49,410
July	10,253	639	48	331	20,340
August	5,344	652	46	172	10,600
September	6,649	1,110	58	222	13,190
Water year 1946-47	99,937.0	1,280	5.0	274	198,200

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Dec. 19 to Feb. 25.

Rio Grande at Alamosa, Colo.

Location.- Water-stage recorder, lat. 37°29', long. 105°53', in SE¼ sec. 4, T. 37 N., R. 10 E., a quarter of a mile northwest of Alamosa and 7 miles upstream from Alamosa Creek. Datum of gage is 7,532.66 feet above mean sea level, datum of 1929.

Drainage area.- 1,710 square miles.

Records available.- May 1912 to September 1913 and October 1933 to September 1947 in reports of Geological Survey. May 1912 to September 1947 in reports of State engineer.

Average discharge.- 35 years, 314 second-feet.

Extremes.- Maximum discharge during year, 605 second-feet Sept. 21 (gage height, 4.59 feet); minimum daily, 8.9 second-feet Oct. 30.
1912-47: Maximum discharge, 14,000 second-feet July 1, 1927 (gage height, 9.37 feet); minimum daily, 2 second-feet Oct. 24-29, 1933.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Many diversions above station for irrigation. During irrigation season low-water flow is water returned from irrigated lands above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	22	278	215	190	260	29	21	48	37	18	41
2	16	17	258	205	195	230	26	a35	29	47	16	41
3	17	12	253	200	200	210	21	a70	27	69	16	39
4	20	34	*249	205	210	220	18	a130	43	75	15	36
5	25	66	246	210	215	*192	16	a250	63	70	14	32
6	28	140	256	212	210	148	15	145	132	59	25	30
7	26	194	272	208	210	131	14	347	119	49	30	29
8	24	217	281	204	205	124	13	236	157	74	26	35
9	22	244	254	208	215	116	12	214	270	101	26	37
10	22	253	220	210	205	114	12	166	110	106	39	35
11	22	236	208	212	225	111	10	105	126	74	33	39
12	23	225	227	200	220	114	12	127	56	61	32	38
13	24	220	239	195	200	110	12	112	117	44	36	31
14	23	251	267	200	195	104	34	102	122	39	55	29
15	22	270	265	*185	185	95	46	55	94	34	48	27
16	20	281	253	180	190	78	51	44	176	32	41	25
17	19	283	251	180	170	67	41	64	163	30	38	26
18	18	251	242	185	175	68	28	62	145	22	37	33
19	17	269	220	190	*150	64	26	52	174	20	36	53
20	17	296	217	180	130	61	33	44	157	18	35	480
21	18	306	b210	190	115	55	27	45	79	18	34	460
22	15	324	b210	195	108	50	24	33	196	19	34	234
23	11	326	215	195	135	46	23	53	276	25	35	132
24	12	322	220	195	155	42	22	119	198	29	126	78
25	12	322	235	200	160	40	47	91	122	28	145	52
26	13	318	245	200	150	39	53	47	71	25	79	42
27	11	294	250	205	200	38	31	57	49	24	59	36
28	12	290	260	215	240	36	25	96	74	26	55	31
29	11	308	240	220	-	35	25	74	28	24	50	27
30	8.9	302	230	210	-	33	25	58	25	21	48	26
31	9.6	-	220	190	-	30	-	45	-	19	43	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	552.5	28	8.9	17.8	1,100
November	6,894	326	12	230	13,670
December	7,491	281	208	242	14,860
Calendar year 1946	33,343.5	326	8.9	91.4	66,130
January	6,199	220	180	200	12,300
February	5,158	240	108	184	10,230
March	3,061	260	30	98.7	6,070
April	771	53	10	25.7	1,530
May	3,097	347	21	99.9	6,140
June	3,402	276	25	113	6,750
July	1,317	108	18	42.5	2,610
August	1,324	145	14	42.7	2,630
September	2,254	480	25	75.1	4,470
Water year 1946-47	41,520.5	480	8.9	114	82,360

* Winter discharge measurement made on this day.
a No gage-height record: discharge computed on basis of records for station near Monte Vista.
b Stage-discharge relation affected by ice.
Note.- No gage-height record Dec. 23 to Mar. 4 (stage-discharge relation affected by ice during most of period); discharge computed on basis of 2 discharge measurements and weather records.

Rio Grande above mouth of Trinchera Creek, near La Sauses, Colo.

Location.- Water-stage recorder, lat. 39°19', long. 105°45', in sec. 35, T. 36 N., R. 11 E., a quarter of a mile upstream from Trinchera Creek and 5 miles north of La Sauses.

Drainage area.- 5,740 square miles (includes 2,940 square miles in closed basin).

Records available.- May 1936 to September 1947.

Average discharge.- 11 years, 307 second-feet.

Extremes.- Maximum discharge during year, 738 second-feet Sept. 21 (gage height, 3.93 feet); minimum daily, 22 second-feet Oct. 3.
1936-47: Maximum discharge, 4,740 second-feet June 28, 1941 (gage height, 8.77 feet), from rating curve extended above 4,000 second-feet; minimum daily, 0.4 second-foot July 4, 1940.

Remarks.- Records good except those below 100 second-feet and those for period of ice effect or no gage-height record, which are fair. Storage and several diversions above station for irrigation. During irrigation season, low flow is water returned from irrigated lands above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	54	303	155	180	192	84	76	298	165	61	121
2	25	60	279	160	190	206	81	73	286	155	57	121
3	22	104	265	160	195	204	77	76	277	160	50	121
4	28	71	*260	160	195	286	67	95	258	169	50	120
5	28	72	277	165	200	*326	62	149	242	165	50	114
6	28	110	267	170	200	253	64	258	222	189	46	100
7	34	246	277	170	205	194	64	282	160	224	41	96
8	31	258	291	165	210	183	69	608	132	225	40	90
9	44	282	291	165	215	178	62	432	198	232	40	95
10	40	308	279	165	210	178	55	441	167	212	38	98
11	37	308	240	165	190	182	54	453	139	192	38	100
12	42	286	b250	160	180	182	56	453	121	173	40	110
13	44	291	b230	155	210	182	69	438	100	157	40	126
14	44	321	b210	150	200	178	72	450	53	159	33	137
15	43	361	b200	150	215	171	91	390	52	219	52	135
16	43	364	b200	145	240	156	100	373	57	319	98	120
17	43	370	b195	150	*258	147	106	367	58	208	82	103
18	42	337	b190	160	b250	139	92	373	64	174	76	104
19	40	313	180	170	b245	139	89	358	78	161	77	103
20	37	316	190	*172	b210	129	102	358	92	149	87	159
21	42	324	180	172	b220	116	112	334	118	128	86	625
22	39	329	175	170	b210	108	95	296	183	118	84	561
23	45	345	180	170	208	104	91	326	265	110	86	340
24	40	353	190	170	216	100	94	396	258	93	93	239
25	38	345	180	175	210	104	116	456	239	86	203	174
26	39	345	185	175	214	100	153	456	237	99	219	140
27	37	331	195	180	262	98	142	408	218	86	166	130
28	45	301	190	190	274	94	118	390	194	93	139	114
29	48	306	180	180	-	91	88	396	158	96	132	106
30	47	316	160	165	-	89	78	324	144	70	128	104
31	47	-	165	175	-	87	-	313	-	67	126	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,190	48	22	38.4	2,360
November	8,127	370	54	271	16,120
December	3,854	303	160	221	13,590
Calendar year 1946	38,033.8	370	1.8	104	75,430
January	5,134	190	145	166	10,180
February	6,012	274	180	215	11,920
March	4,896	326	87	158	9,710
April	2,603	153	54	86.8	5,160
May	10,628	608	73	343	21,080
June	5,068	298	52	169	10,050
July	4,856	319	67	157	9,630
August	2,561	219	33	82.6	5,080
September	4,806	625	90	160	9,530
Water year 1946-47	62,735	625	22	172	124,400

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- No gage-height record Oct. 4 to Nov. 1, Dec. 11, Dec. 19 to Feb. 17 (stage-discharge relation affected by ice during most of period); discharge computed on basis of 2 discharge measurements, weather records, and records for station near Lobatos.

Rio Grande near Lobatos, Colo.

Location.- Water-stage recorder, lat. 37°05', long. 105°45', in sec. 22, T. 33 N., R. 11 E., 6 miles north of Colorado-New Mexico State line, 7 miles downstream from Culebra Creek, and 10 miles east of Lobatos. Datum of gage is 7,426.79 feet above mean sea level, datum of 1929.

Drainage area.- 7,700 square miles (includes 2,940 square miles in closed basin).

Records available.- June 1899 to September 1913 and October 1933 to September 1947 in reports of Geological Survey. June 1899 to September 1947 in reports of State engineer.

Average discharge.- 48 years (1899 to 1947), 722 second-feet.

Extremes.- Maximum discharge during year, 1,960 second-feet May 11 (gage height, 3.43 feet); minimum daily, 31 second-feet Aug. 11.
1899-1947: Maximum daily discharge, 13,100 second-feet June 8, 1905, from rating curve extended above 8,000 second-feet; minimum daily, 5.0 second-feet Aug. 4, 1940.

Remarks.- Records good except those for period of ice effect or no gage-height record, which are fair. Diversions above station for irrigation. Flow regulated by many reservoirs on headwaters. Records of water analysis for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	95	410	230	270	372	123	323	607	208	62	160
2	44	105	*384	230	280	323	127	458	591	192	54	155
3	39	197	359	235	*283	335	127	735	607	189	48	155
4	50	142	347	235	283	*329	116	1,120	679	174	46	155
5	a50	208	347	240	285	444	102	1,390	607	174	50	160
6	a50	164	365	*248	295	410	95	1,560	552	178	48	138
7	a60	197	384	250	305	353	105	1,630	465	224	44	135
8	a55	522	398	250	320	311	112	1,730	465	245	42	127
9	a80	384	398	245	320	299	112	1,620	599	257	39	135
10	a70	384	391	240	305	287	105	1,810	671	289	35	135
11	a65	424	323	240	285	293	86	1,910	568	218	31	135
12	a75	353	347	235	270	287	95	1,740	417	218	33	135
13	a78	391	341	230	320	281	98	1,440	311	183	42	151
14	79	353	311	225	310	281	116	1,270	240	178	48	174
15	76	398	281	220	330	269	116	1,150	169	192	46	174
16	76	417	281	210	365	251	135	1,070	155	353	76	174
17	76	417	*278	220	*397	245	151	1,000	138	287	108	155
18	74	417	260	235	380	234	151	928	116	229	108	146
19	69	391	250	245	360	229	138	857	131	203	98	151
20	66	417	260	*250	320	224	178	805	160	187	116	347
21	74	417	250	250	325	213	197	752	183	169	116	500
22	69	384	243	250	317	192	359	687	257	164	116	711
23	79	404	250	245	311	183	486	703	458	151	116	465
24	71	430	270	245	311	169	515	910	500	131	119	335
25	66	410	250	250	335	155	583	955	444	108	183	240
26	69	424	255	255	341	174	486	875	378	108	323	192
27	66	424	270	260	391	160	404	875	359	116	275	164
28	71	404	260	265	410	151	391	875	287	98	213	151
29	86	391	242	250	-	146	365	928	257	119	183	146
30	82	404	228	230	-	146	329	744	208	95	178	146
31	82	-	240	260	-	138	-	647	-	74	164	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,089	86	39	67.4	4,140
November	10,468	522	95	349	20,760
December	9,473	410	228	306	18,790
Calendar year 1946	58,036	522	11	159	115,100
January	7,473	265	210	241	14,820
February	9,024	410	270	322	17,900
March	7,884	444	138	254	15,640
April	6,503	583	86	217	12,900
May	33,497	1,910	323	1,081	66,440
June	11,579	679	116	386	22,970
July	5,671	353	74	183	11,250
August	3,160	323	31	102	6,270
September	6,247	711	127	208	12,390
Water year 1946-47	113,068	1,910	31	310	224,300

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for station below Taos Junction Bridge, near Toas, N. Mex.
Note.- Stage-discharge relation affected by ice Dec. 12 to Feb. 21.

Rio Grande below Taos Junction Bridge, near Taos, N. Mex.

Location.- Water-stage recorder, lat. 36°19'00", long. 105°45'30", in N½ sec. 15, T. 24 N., R. 11 E., 2 miles downstream from Taos Creek and bridge on Taos-Taos Junction highway and 12 miles southwest of Taos.

Drainage area.- 9,730 square miles (includes 2,940 square miles in closed basin in northern part of San Luis Valley, Colo.).

Records available.- October 1930 to September 1947 in reports of Geological Survey. July 1925 to December 1931 in reports of State engineer.

Average discharge.- 22 years (1925-47), 850 second-feet.

Extremes.- Maximum discharge during year, 3,340 second-feet May 11 (gage height, 6.39 feet); minimum daily discharge, 242 second-feet Oct. 1, 2.
1930-47: Maximum discharge, 9,630 second-feet May 17, 1941 (gage height, 9.41 feet); minimum daily, 140 second-feet (estimated) Aug. 21, 1931.

Remarks.- Records good. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	242	354	645	348	470	609	451	713	1,110	438	290	383
2	242	354	645	401	511	581	451	753	1,090	419	280	365
3	246	360	645	464	511	490	451	960	1,040	451	275	365
4	251	338	645	401	518	532	451	1,460	1,050	413	265	371
5	285	305	630	425	511	581	425	1,960	1,120	407	256	377
6	295	305	630	425	518	660	401	2,240	1,040	432	260	365
7	338	332	616	438	525	638	395	2,380	996	464	260	360
8	348	348	623	451	532	588	383	2,310	915	458	256	343
9	338	389	623	458	532	560	383	2,530	879	504	256	354
10	332	464	630	451	539	525	383	2,840	978	490	256	348
11	326	518	d600	458	525	518	377	3,260	1,070	484	251	343
12	326	560	d550	458	581	518	365	3,170	960	451	280	338
13	316	595	a550	464	574	518	343	2,760	819	425	305	332
14	310	616	a570	458	588	511	343	2,380	713	413	310	332
15	305	616	a570	464	602	504	348	2,170	645	395	290	343
16	305	630	a570	464	581	497	360	2,040	560	395	316	354
17	305	623	a570	458	588	484	365	1,870	511	477	295	354
18	310	602	567	458	595	470	383	1,660	484	539	326	354
19	305	595	511	444	602	464	407	1,540	490	464	338	343
20	300	588	444	444	567	464	401	1,450	470	419	354	348
21	300	588	383	451	574	458	438	1,370	458	395	354	395
22	295	595	444	458	560	458	497	1,280	504	389	360	574
23	300	602	484	451	539	458	609	1,240	532	371	377	794
24	295	616	490	458	546	451	802	1,280	660	371	360	652
25	295	630	511	470	539	432	853	1,470	769	360	383	539
26	300	630	539	470	553	432	906	1,470	705	332	371	451
27	300	638	546	490	553	419	810	1,400	638	326	470	395
28	300	638	574	497	574	444	769	1,370	588	326	484	365
29	332	645	553	497	-	451	737	1,390	539	321	438	348
30	348	645	490	477	-	451	721	1,420	490	300	395	343
31	354	-	425	470	-	451	-	1,220	-	321	389	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	9,444	354	242	305	18,730
November	15,719	645	305	524	31,180
December	17,273	645	383	557	34,260
Calendar year 1946	142,326	668a	200	390	282,300
January	14,021	497	348	452	27,810
February	15,408	602	470	550	30,560
March	15,617	660	419	504	30,980
April	15,008	906	343	500	29,770
May	55,356	3,260	713	1,786	109,800
June	22,823	1,120	458	761	45,270
July	12,750	539	300	411	25,290
August	10,100	484	251	326	20,030
September	11,928	794	332	398	23,660
Water year 1946-47	215,447	3,260	242	590	427,300

a No gage-height record; discharge computed on basis of weather records and records for station at Embudo.
d Doubtful gage-height record; discharge computed as explained in footnote a.

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Rio Grande at Embudo, N. Mex.

Location.- Water-stage recorder, lat. 36°12'20", long. 105°57'40", in SW¼SW¼ sec. 23, T. 23 N., R. 9 E., a quarter of a mile downstream from bridge at Embudo and 2½ miles downstream from Embudo Creek.

Drainage area.- 10,400 square miles (includes 2,940 square miles in closed basin in northern part of San Luis Valley, Colo.).

Records available.- January 1889 to December 1903, September 1912 to September 1916, and October 1930 to September 1947 in reports of Geological Survey. January 1889 to December 1903 and September 1912 to December 1931 in reports of State engineer.

Average discharge.- 47 years (1889-93, 1894-1903, 1912-16, 1917-47), 1,062 second-feet.

Extremes.- Maximum discharge during year, 4,080 second-feet May 11 (gage height, 7.03 feet); minimum daily, 226 second-feet Oct. 1.
1889-1903, 1912-47: Maximum discharge, 15,900 second-feet June 19, 1903 (gage height, 15.8 feet); minimum daily, 35 second-feet Dec. 31, 1903.

Remarks.- Records good. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	226	371	758	392	500	625	510	900	1,240	456	300	432
2	244	371	752	432	535	615	535	1,000	1,200	428	282	406
3	235	378	740	545	555	540	545	1,240	1,120	456	273	392
4	300	332	674	456	555	525	545	1,740	1,120	428	267	388
5	365	300	656	505	550	610	500	2,300	1,160	420	261	385
6	340	354	640	496	550	668	464	2,570	1,120	428	261	378
7	490	402	650	505	555	698	456	2,790	1,040	480	264	368
8	415	410	668	520	575	635	432	2,740	970	460	273	350
9	375	492	662	530	565	610	432	3,010	935	492	264	364
10	355	600	656	525	575	580	436	3,360	970	488	264	371
11	360	565	620	525	560	560	424	3,960	1,080	484	255	360
12	345	600	565	525	590	570	416	3,840	970	460	267	350
13	335	625	565	540	600	555	388	3,360	851	432	354	350
14	340	615	585	535	610	545	392	2,900	734	424	297	340
15	340	640	590	530	620	545	385	2,570	645	410	297	350
16	365	650	590	505	615	540	402	2,400	560	406	326	360
17	355	674	580	492	610	530	402	2,190	492	436	303	364
18	340	662	a570	525	625	525	428	1,990	472	570	322	364
19	330	668	565	525	630	520	468	1,790	515	484	374	360
20	325	716	500	510	595	520	464	1,640	488	436	410	364
21	320	704	444	510	580	520	520	1,600	464	410	440	382
22	315	728	480	505	585	520	620	1,460	510	402	464	530
23	315	770	525	510	575	525	734	1,420	535	385	472	764
24	306	770	560	510	570	515	1,000	1,460	635	374	440	680
25	312	788	570	525	560	484	1,040	1,600	782	364	496	555
26	312	794	610	520	575	484	1,040	1,640	722	343	480	468
27	306	788	645	535	585	488	1,000	1,550	645	329	496	416
28	315	782	710	540	600	500	935	1,500	600	326	540	388
29	332	776	645	545	-	505	935	1,500	550	322	484	368
30	402	776	540	500	-	500	900	1,550	496	309	460	357
31	382	-	480	505	-	505	-	1,370	-	322	518	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	10,397	490	226	335	20,620
November	18,101	794	300	603	35,900
December	18,795	758	444	606	37,280
Calendar year 1946	160,666	895	194	440	318,700
January	15,823	545	392	510	31,380
February	16,200	630	500	579	32,130
March	17,062	698	484	550	33,840
April	17,748	1,040	385	592	35,200
May	64,940	3,960	900	2,095	128,800
June	23,621	1,240	464	787	46,850
July	12,964	570	309	418	25,710
August	11,204	540	255	361	22,220
September	12,304	764	340	410	24,400
Water year 1946-47	239,159	3,960	226	655	474,300

a No gage-height record; discharge computed on basis of records for stations at Otowi Bridge and below Taos Junction Bridge.

Rio Grande at Otowi Bridge, near San Ildefonso, N. Mex.

Location.- Water-stage recorder, lat. 35°52'25", long. 106°08'35", in San Ildefonso Pueblo Grant, 100 feet downstream from highway bridge, 1⅝ miles southwest of San Ildefonso Pueblo, 2½ miles downstream from Rio Pojoaque, and 7 miles west of Pojoaque. Datum of gage is 5,488.48 feet above mean sea level, datum of 1929.

Drainage area.- 14,300 square miles (includes 2,940 square miles in closed basin in northern part of San Luis Valley, Colo.).

Records available.- February 1895 to December 1905, June 1909 to December 1914, and October 1930 to September 1947 in reports of Geological Survey. February 1895 to December 1905 and June 1909 to December 1931 in reports of State engineer.

Average discharge.- 20 years (1927-47), 1,549 second-feet.

Extremes.- Maximum discharge during year, 5,740 second-feet May 10 (gage height, 6.69 feet); minimum daily, 270 second-feet Oct. 1.
1930-47: Maximum discharge, 22,500 second-feet May 16, 1941; maximum gage height, 13.70 feet May 14, 1941; minimum daily discharge, 128 second-feet June 21, 1934.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Flow partly regulated by El Vado Reservoir (see p. 212). Diversions above station for irrigation. Records of water analysis for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	270	463	2,000	472	585	765	681	1,260	1,260	1,410	640	893
2	276	445	2,000	505	601	753	717	1,390	1,170	1,070	1,390	468
3	279	458	2,000	560	634	687	824	1,630	1,130	978	1,390	391
4	292	454	1,940	535	640	623	844	2,100	1,090	978	1,210	400
5	645	420	1,890	510	645	693	747	2,610	1,130	a940	1,260	387
6	601	432	1,890	565	634	729	645	2,950	1,130	a900	1,260	395
7	1,030	458	1,890	585	634	778	590	3,020	1,030	949	1,210	379
8	747	486	1,940	585	651	741	560	3,090	970	963	1,420	464
9	472	515	1,890	585	651	735	545	3,160	893	1,390	1,930	605
10	416	618	1,890	585	681	693	606	4,050	907	1,440	1,630	605
11	407	687	1,840	580	693	651	565	4,970	1,020	1,390	1,580	463
12	407	699	1,840	585	693	657	555	4,700	949	1,340	1,680	432
13	399	753	1,730	601	729	693	530	4,340	1,260	1,340	1,490	420
14	399	976	1,730	628	735	663	476	3,610	1,260	1,340	a600	407
15	411	1,890	1,730	601	741	645	472	3,160	1,040	1,300	535	395
16	424	2,000	1,730	550	753	640	535	2,950	978	1,260	608	399
17	420	2,000	1,680	500	798	612	628	2,740	886	1,090	1,040	395
18	407	2,060	1,680	575	804	596	693	2,420	858	1,020	670	399
19	399	1,320	1,630	580	817	606	798	2,170	886	1,170	a530	705
20	395	1,410	1,580	585	765	618	858	1,940	1,210	1,030	854	490
21	399	2,000	1,260	575	711	618	1,010	1,780	1,210	935	699	454
22	391	2,060	723	580	717	628	1,130	1,680	1,390	921	1,030	476
23	383	2,060	657	590	687	663	1,210	1,630	1,440	844	1,100	675
24	387	2,110	663	590	687	663	1,390	1,680	1,650	810	a650	778
25	379	2,110	651	596	687	634	1,440	1,730	1,680	791	a670	657
26	387	2,060	675	612	693	606	1,340	1,730	1,630	765	a580	580
27	383	2,060	711	618	729	590	1,340	1,630	1,260	753	a500	472
28	387	2,060	778	640	798	634	1,260	1,580	1,130	711	a520	407
29	411	2,060	735	623	-	681	1,210	1,530	1,090	699	560	375
30	468	2,000	634	565	-	693	1,170	1,530	1,030	675	505	a356
31	481	-	555	570	-	687	-	1,440	-	651	454	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	13,552	1,030	270	437	26,880
November	39,124	2,110	420	1,304	77,600
December	44,542	2,000	555	1,437	88,350
Calendar year 1946	269,223	2,110	166	738	534,000
January	17,831	640	472	575	35,370
February	19,593	817	585	700	38,860
March	20,675	778	590	667	41,010
April	25,369	1,440	472	846	50,320
May	76,200	4,970	1,260	2,458	151,100
June	34,567	1,680	858	1,152	68,560
July	31,853	1,440	651	1,028	63,180
August	30,195	1,930	454	974	59,890
September	14,722	893	356	491	29,200
Water year 1946-47	368,223	4,970	270	1,009	730,300

a Incomplete or no gage-height record; discharge computed on basis of available recorder trace, weather records, and records for nearby stations.

Rio Grande at Cochiti, N. Mex.

Location.- Water-stage recorder, lat. 35°37'10", long. 106°19'10", in NE¼ sec. 17, T. 16 N., R. 6 E., at highway bridge, 1½ miles northeast of Cochiti, 4 miles north of Pena Blanca, and 8 miles upstream from Galisteo Creek. Datum of gage is 5,224.70 feet above mean sea level, datum of 1929.

Drainage area.- 14,600 square miles (includes 2,940 square miles in closed basin in northern part of San Luis Valley, Colo.).

Records available.- October 1930 to September 1947 in reports of Geological Survey. January 1925 to December 1931 in reports of State engineer.

Average discharge.- 22 years (1925-47), 1,547 second-feet.

Extremes.- Maximum discharge during year, 5,760 second-feet May 10 (gage height, 6.78 feet); minimum daily, 131 second-feet Oct. 1.
1930-47: Maximum discharge, 23,400 second-feet May 15, 1941 (gage height, 10.03 feet); minimum daily, 1 second-foot Aug. 10-12, 1934.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	131	305	1,930	525	584	728	591	1,240	1,320	792	562	760
2	a140	325	1,930	482	584	712	591	1,400	1,120	1,370	1,050	482
3	a150	352	1,930	496	640	672	696	1,680	1,010	803	1,270	334
4	a160	295	1,920	555	626	591	768	2,230	990	803	1,040	310
5	382	262	1,900	555	640	648	776	2,430	990	760	1,040	340
6	440	244	1,900	617	640	688	591	2,850	1,090	803	1,040	328
7	765	290	1,930	657	656	736	500	3,050	1,060	770	1,010	236
8	692	325	1,930	701	664	664	480	3,260	1,000	750	1,150	236
9	416	392	2,000	665	680	626	480	3,150	869	1,090	1,740	427
10	364	570	1,930	657	696	612	485	4,300	825	1,270	1,410	616
11	342	633	1,930	665	720	552	480	5,340	869	1,270	1,200	450
12	398	641	1,930	665	672	540	505	5,200	902	1,280	1,230	418
13	392	692	1,860	641	704	570	485	4,550	1,080	1,380	1,280	450
14	315	701	1,900	674	704	558	415	3,810	1,160	1,240	582	290
15	285	1,750	1,870	641	728	591	394	3,400	1,010	1,190	442	258
16	290	1,870	1,870	617	752	552	398	3,050	869	1,120	403	230
17	285	2,080	1,830	578	776	516	500	2,850	740	1,050	753	230
18	275	2,080	1,760	578	792	510	546	2,580	690	954	526	264
19	320	1,790	1,730	719	768	516	712	2,150	710	1,070	441	553
20	310	1,300	1,610	701	752	522	744	1,840	990	935	626	616
21	244	1,930	a1,400	593	672	522	836	1,700	1,090	869	837	450
22	239	2,080	a900	585	680	564	980	1,530	1,310	814	808	396
23	234	2,160	692	570	672	584	1,050	1,420	1,300	760	1,410	508
24	230	2,080	701	578	672	558	1,480	1,540	1,450	730	730	643
25	226	2,080	719	562	640	534	1,310	1,590	1,640	880	705	589
26	262	2,000	710	585	656	490	1,370	1,660	1,620	643	589	625
27	290	2,000	764	585	688	495	1,300	1,600	1,200	634	442	517
28	230	2,000	818	618	736	510	1,190	1,500	1,050	589	508	382
29	244	1,930	737	619	-	626	1,120	1,440	1,010	562	571	292
30	280	1,930	649	577	-	626	1,140	1,620	902	562	589	258
31	336	-	601	564	-	605	-	1,590	-	553	499	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	9,667	765	131	312	19,170
November	37,087	2,160	244	1,236	73,560
December	46,281	2,000	601	1,493	91,800
Calendar year 1946	249,607	2,160	110	684	495,100
January	18,825	719	482	607	37,340
February	19,194	792	584	686	38,070
March	18,218	736	490	588	36,130
April	22,893	1,480	394	763	45,410
May	77,550	5,340	1,240	2,502	153,800
June	31,866	1,640	690	1,062	63,210
July	28,096	1,380	553	906	55,730
August	26,463	1,740	403	854	52,490
September	12,488	760	230	416	24,770
Water year 1946-47	348,628	5,340	131	955	691,500

a No gage-height record; discharge computed on basis of weather records and records for station at Otowi Bridge.

Rio Grande at San Felipe, N. Mex.

Location.- Water-stage recorder, lat. 35°26'30", long. 106°26'30", in NW¼SW¼ sec. 17, T. 14 N., R. 5 E., at highway bridge in San Felipe Grant, 2,000 feet downstream from Tonque Arroyo, half a mile upstream from San Felipe Pueblo, and 12 miles northeast of Bernalillo. Datum of gage is 5,110.38 feet above mean sea level, datum of 1929. Datum was 0.59 foot lower from May 16, 1945, to Sept. 30, 1946.

Drainage area.- 16,100 square miles (includes 2,940 square miles in closed basin in northern part of San Luis Valley, Colo.)

Records available.- October 1930 to September 1947 in reports of Geological Survey. March 1925 to December 1931 in reports of State engineer.

Average discharge.- 21 years (1926-47), 1,657 second-feet.

Extremes.- Maximum discharge during year, 5,580 second-feet May 11 (gage height, 4.81 feet); minimum daily, 200 second-feet Oct. 1.
1930-47: Maximum discharge, 42,100 second-feet Aug. 21, 1935, from rating curve extended above 15,000 second-feet by logarithmic plotting; maximum gage height, 11.13 feet June 26, 1937; minimum daily discharge, 34 second-feet July 7, 1934.

Remarks.- Records fair. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	200	412	2,020	b550	582	797	610	1,240	1,280	842	568	672
2	208	399	2,020	b500	603	770	618	1,410	1,120	1,060	1,050	561
3	216	470	2,020	b500	642	722	706	1,730	1,120	815	1,410	412
4	220	464	2,020	b520	674	650	770	2,100	1,010	870	1,270	577
5	457	444	1,950	b540	674	650	770	2,500	1,000	833	1,220	431
6	561	424	1,950	582	666	706	714	2,420	1,120	860	1,220	418
7	834	444	1,950	610	658	762	610	2,680	1,090	815	1,210	405
8	770	498	1,950	666	666	770	568	2,940	1,040	833	1,400	393
9	568	512	1,940	658	690	754	540	2,850	890	1,100	1,500	554
10	470	603	1,920	642	714	738	540	3,820	815	1,280	1,410	848
11	393	658	1,920	642	738	674	561	5,200	833	1,300	1,340	658
12	405	658	1,880	618	690	642	526	5,320	940	1,350	1,280	610
13	418	706	1,800	626	754	658	554	4,590	1,050	1,400	1,330	540
14	363	722	1,800	642	738	666	464	3,810	1,170	1,270	797	418
15	381	1,610	1,770	666	746	650	438	a3,500	1,060	1,220	610	345
16	369	1,940	1,740	d620	754	658	431	a3,200	940	1,180	610	290
17	363	2,100	1,650	d600	797	603	526	a2,900	910	1,170	1,010	255
18	387	2,020	1,610	d580	815	575	582	a2,600	860	1,040	a700	250
19	369	1,740	1,600	582	815	561	674	a2,300	900	1,070	a550	424
20	399	1,090	1,580	626	788	589	797	a2,100	1,170	980	a600	568
21	357	2,100	1,450	650	754	596	824	a1,900	1,200	930	1,010	387
22	357	2,180	920	610	714	596	1,050	1,730	1,240	870	842	323
23	306	2,180	746	582	722	642	1,070	1,610	1,400	824	1,290	387
24	270	2,260	722	589	722	596	1,200	1,580	1,340	770	815	547
25	270	2,260	738	589	706	596	1,330	1,650	1,530	730	788	575
26	290	2,180	730	596	698	561	1,340	1,760	1,430	698	706	589
27	340	2,100	779	634	714	547	1,400	1,690	1,200	682	642	505
28	285	2,100	806	658	746	547	1,300	1,580	1,120	634	618	405
29	301	2,100	b820	626	-	582	1,210	1,530	1,010	589	706	334
30	318	2,020	b700	582	-	666	1,170	1,620	920	582	674	318
31	399	-	b620	561	-	603	-	1,430	-	568	582	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	11,844	834	200	382	23,490
November	39,394	2,260	399	1,313	78,140
December	46,121	2,020	620	1,488	91,480
Calendar year 1946	272,087	2,260	157	745	539,700
January	18,647	666	500	602	36,990
February	19,980	815	582	714	39,630
March	20,127	797	547	649	39,920
April	23,893	1,400	431	796	47,390
May	77,290	5,320	1,240	2,493	153,300
June	32,708	1,530	815	1,090	64,880
July	29,165	1,400	568	941	57,850
August	29,758	1,500	550	960	59,020
September	13,999	848	250	467	27,770
Water year 1946-47	362,926	5,320	200	994	719,900

a No gage-height record; discharge computed on basis of records for stations at Cochiti and near Bernalillo.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge computed as explained in footnote a.

Rio Grande near Bernalillo, N. Mex.

Location.- Water-stage recorder, lat. 35°17'05", long. 106°35'45", in Alameda Grant, 2 miles northwest of Sandia Pueblo, 3 miles southwest of Bernalillo, Sandoval County, 3.5 miles downstream from State Highway 44, and 8.5 miles downstream from Jemez Creek.

Records available.- May 1941 to September 1947.

Extremes.- Maximum discharge during year, 6,120 second-feet May 11; maximum gage height, 3.96 feet Aug. 23; minimum daily discharge, 21 second-feet Oct. 4.
1941-47: Maximum discharge, 25,400 second-feet May 16, 1941; maximum gage height, 6.83 feet Sept. 20, 1941; minimum daily discharge, 20 second-feet July 25-27, Sept. 14, 26, 27, 1946.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	86	190	1,990	494	560	710	388	812	1,400	370	108	424
2	40	188	2,020	449	570	662	388	1,080	734	1,000	133	580
3	25	460	1,920	*b450	610	600	435	1,300	650	463	1,280	197
4	21	373	1,920	b400	600	518	590	1,960	600	382	1,220	260
5	324	245	1,850	b500	620	463	640	2,410	580	400	650	411
6	469	225	1,850	b550	620	550	770	2,480	630	860	674	159
7	587	192	1,920	b600	650	570	376	2,440	610	840	610	324
8	600	282	2,020	b670	650	570	302	2,480	1,080	394	662	280
9	352	352	2,020	b660	662	698	260	2,640	442	402	1,320	260
10	235	541	1,990	b650	674	463	251	2,970	364	910	1,520	472
11	184	610	1,920	*b650	698	414	260	5,190	382	927	1,160	214
12	a180	620	1,850	b650	722	421	241	4,660	470	944	770	174
13	380	630	1,820	b620	758	388	449	4,340	376	1,400	1,460	135
14	338	674	1,870	*662	746	352	478	3,330	944	1,400	789	297
15	a150	1,050	2,020	640	662	340	284	3,060	1,220	826	275	270
16	a120	1,800	1,850	600	710	550	223	2,720	1,080	686	885	87
17	a110	1,970	1,800	a570	674	307	214	2,560	421	734	1,040	a70
18	a120	2,040	1,710	570	746	296	270	2,300	346	510	600	45
19	a120	1,970	1,650	590	798	302	340	1,930	358	907	494	111
20	396	1,340	1,600	600	746	329	650	1,720	414	1,050	512	285
21	324	1,670	1,500	600	710	442	a700	1,500	674	995	625	442
22	a150	1,940	998	630	698	456	734	1,240	1,180	449	1,090	318
23	96	2,040	848	550	698	662	a850	1,200	1,500	358	1,440	122
24	a95	2,120	734	600	640	394	a1,000	1,280	927	280	910	205
25	93	2,200	722	570	620	382	a900	1,660	1,500	275	1,030	290
26	111	2,040	746	570	640	364	a1,000	1,400	1,160	251	812	251
27	380	2,070	734	590	710	358	a1,300	1,400	826	585	620	223
28	331	2,020	770	640	686	358	1,140	1,280	494	674	318	329
29	a150	2,020	662	662	-	394	896	1,080	927	174	407	285
30	132	1,990	600	630	-	686	854	1,280	868	135	290	84
31	152	-	542	550	-	382	-	1,240	-	122	435	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	6,851	600	21	221	13,590
November	35,832	2,200	180	1,194	71,070
December	46,446	2,020	542	1,498	92,120
Calendar year 1946	208,080	2,200	20	570	412,700
January	18,167	670	400	586	36,030
February	18,878	798	560	674	37,440
March	14,381	710	296	464	28,520
April	17,183	1,300	214	573	34,080
May	66,942	5,190	812	2,159	132,800
June	23,157	1,500	346	772	45,930
July	19,703	1,400	122	636	39,080
August	24,139	1,520	108	779	47,880
September	7,604	580	45	253	15,080
Water year 1946-47	299,283	5,190	21	820	593,600

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for stations at San Felipe and at Albuquerque.
b Stage-discharge relation affected by ice.

Rio Grande at Albuquerque, N. Mex.

Location.- Water-stage recorder, lat. 35°05'20", long. 106°40'45", in SE¼ sec. 13, T. 10 N., R. 2 E. (projected), at bridge on U. S. Highway 66, at Albuquerque, in Albuquerque Grant. Datum of gage is 4,946.04 feet above mean sea level, datum of 1929. Previous to Sept. 18, datum of gage was 4,948.10 feet above mean sea level, datum of 1929.

Records available.- January 1942 to September 1947.

Extremes.- Maximum discharge during year, 6,460 second-feet May 11 (gage height, 3.67 feet); minimum daily discharge, 49 second-feet Oct. 4.
1942-47: Maximum discharge, 25,000 second-feet Apr. 24, 1942, from rating curve extended above 13,900 second-feet by logarithmic plotting; maximum gage height, 4.13 feet May 7, 1945; minimum daily discharge, 25 second-feet Aug. 2, 3, 1946.

Remarks.- Records fair. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	67	91	2,150	a600	608	678	239	678	1,390	410	75	235
2	65	106	2,150	544	636	690	243	910	712	483	88	488
3	51	301	2,180	520	646	608	256	1,070	588	620	421	308
4	49	473	2,150	424	636	560	350	1,350	488	251	1,020	98
5	176	488	2,020	386	636	480	480	1,690	431	297	636	420
6	317	488	2,000	410	646	473	588	1,950	438	385	504	64
7	541	410	1,950	608	646	520	350	2,450	466	617	438	55
8	655	398	1,900	636	636	438	a250	2,540	655	646	392	76
9	552	392	1,900	712	690	480	a150	2,710	552	405	881	279
10	380	544	1,980	666	701	410	163	2,990	297	445	1,450	458
11	324	617	1,920	678	701	334	226	5,000	218	655	1,070	243
12	313	666	1,920	678	678	279	160	4,950	226	608	712	94
13	350	626	1,850	666	646	274	187	4,550	274	882	896	84
14	274	646	1,850	701	690	247	288	4,020	411	1,070	784	86
15	184	1,070	1,850	666	666	203	308	3,120	826	770	a300	101
16	114	1,850	1,900	608	690	387	188	2,680	798	588	741	140
17	106	2,080	1,830	579	690	297	126	2,390	741	560	683	64
18	111	2,100	1,720	552	736	214	140	2,480	431	560	570	51
19	114	2,050	1,720	579	798	199	156	1,520	192	868	308	51
20	166	1,310	1,670	626	784	163	330	1,650	199	770	302	63
21	170	1,660	1,600	579	770	192	560	1,330	402	826	581	135
22	101	1,780	1,230	626	736	274	747	1,160	792	747	712	92
23	a85	2,150	840	655	701	459	770	1,230	1,040	454	1,230	190
24	77	2,340	747	636	701	374	678	1,410	942	226	655	150
25	75	2,150	770	598	690	308	990	1,690	1,110	173	617	122
26	73	2,280	758	598	678	269	974	1,250	958	163	910	112
27	114	2,260	736	598	678	288	1,140	1,290	882	208	560	96
28	226	2,120	747	617	736	226	1,110	1,050	488	421	324	94
29	247	2,150	812	626	-	235	896	990	608	400	251	96
30	173	2,050	770	646	-	452	840	1,160	678	192	230	168
31	98	-	a650	626	-	424	-	1,180	-	a100	243	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	6,348	655	49	205	12,590
November	37,646	2,340	91	1,255	74,670
December	48,270	2,180	650	1,557	95,740
Calendar year 1946	191,348	2,340	25	524	379,500
January	18,644	712	386	601	36,980
February	19,250	798	608	688	38,180
March	11,435	690	163	369	22,680
April	13,883	1,140	126	463	27,540
May	64,438	5,000	678	2,079	127,800
June	18,233	1,390	192	608	36,160
July	15,800	1,070	100	510	31,340
August	18,584	1,450	75	599	36,860
September	4,713	488	51	157	9,350
Water year 1946-47	277,244	5,000	49	760	549,900

a No gage-height record; discharge computed on basis of records for stations at San Felipe, near Bernalillo, and near Belen.

Rio Grande near Belen, N. Mex.

Location.- Water-stage recorder, lat. 34°39'10", long. 106°44'10", in Tome Claim, at bridge on State Highway 52, 2 miles east of Belen, Valencia County.

Records available.- January 1942 to September 1947.

Extremes.- Maximum discharge during year, 6,400 second-feet May 11 (gage height, 3.91 feet); minimum daily, 40 second-feet Oct. 5.

1942-47: Maximum discharge, 23,100 second-feet Apr. 24, 1942 (gage height, 5.05 feet), from rating curve extended above 12,500 second-feet by logarithmic plotting; minimum daily, that of Oct. 5, 1946.

Remarks.- Records fair except those for periods of no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a44	78	2,210	578	637	744	192	481	955	269	88	173
2	a43	86	2,150	554	628	744	176	370	1,090	371	83	168
3	42	82	2,100	516	646	733	168	460	436	240	79	160
4	a41	203	2,120	502	637	602	176	523	328	310	73	158
5	a40	269	1,980	474	682	462	248	1,270	262	206	74	186
6	a45	258	2,120	442	700	318	281	1,950	215	184	79	243
7	108	262	2,070	538	691	285	293	2,310	200	206	89	203
8	293	240	2,040	700	655	318	285	2,560	206	192	92	133
9	310	181	2,040	664	655	350	184	2,700	310	209	96	120
10	227	240	2,100	700	646	412	163	3,290	227	215	429	124
11	186	285	2,070	691	637	380	148	4,840	218	203	691	139
12	192	332	2,100	646	655	297	144	4,910	212	230	488	128
13	148	365	2,120	664	673	218	148	4,600	215	244	360	110
14	146	318	2,010	777	682	234	156	3,860	221	317	602	101
15	137	360	1,920	722	733	197	181	3,060	230	395	488	104
16	118	1,410	1,820	700	691	192	186	2,210	314	420	277	104
17	103	2,240	1,900	628	691	192	156	2,010	328	332	1,040	91
18	99	1,980	1,870	602	651	218	144	2,450	289	293	899	83
19	99	2,120	1,870	562	777	195	133	1,850	224	535	375	85
20	94	2,070	1,790	578	799	186	137	1,280	203	528	516	88
21	110	1,260	1,690	628	788	173	148	1,060	195	502	403	89
22	122	2,240	1,530	602	766	176	153	985	209	481	523	85
23	103	2,120	a1,000	628	691	234	203	1,040	318	400	1,610	86
24	94	2,300	a850	646	682	380	186	1,920	412	273	1,700	83
25	98	2,370	a740	637	655	258	186	1,080	418	221	791	78
26	94	2,430	700	628	673	230	628	1,440	435	184	1,100	81
27	91	2,430	799	664	700	189	523	888	448	137	530	86
28	67	2,240	777	637	711	173	700	927	385	124	400	86
29	79	2,270	777	619	-	166	777	722	281	116	310	83
30	82	2,300	766	664	-	160	570	862	265	108	212	91
31	79	-	700	691	-	200	-	810	-	99	203	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,534	310	40	114	7,010
November	35,339	2,430	78	1,178	70,100
December	50,729	2,210	700	1,636	100,600
Calendar year 1946	166,708	2,430	40	457	330,700
January	19,282	777	442	622	38,250
February	19,272	799	628	688	38,230
March	9,616	744	160	310	19,070
April	7,753	777	133	258	15,380
May	58,718	4,910	370	1,894	116,500
June	10,049	1,090	195	335	19,930
July	8,544	535	99	276	16,950
August	14,700	1,700	73	474	29,160
September	3,549	243	78	118	7,040
Water year 1946-47	241,085	4,910	40	661	478,200

a No gage-height record; discharge computed on basis of weather records and records for stations at Albuquerque and near Bernardo.

Rio Grande near Bernardo, N. Mex.

Location.- Water-stage recorder, lat. 34°25'00", long. 106°47'50", in W½NW¼ sec. 12, T. 2 N., R. 1 E. (projected), at bridge on U. S. Highway 60, 2½ miles east of Bernardo and 3½ miles upstream from Rio Puerco. Datum of gage is 4,723.95 feet above mean sea level, datum of 1929.

Drainage area.- 19,230 square miles (includes 2,940 square miles in closed basin in northern part of San Luis Valley, Colo.).

Records available.- June 1936 to January 1939, October 1941 to September 1947.

Extremes.- Maximum discharge during year, 5,590 second-feet May 11 (gage height, 5.51 feet); minimum daily, 9 second-feet Oct. 1.
1936-39, 1941-47: Maximum discharge not determined, probably occurred Apr. 25, 1942; maximum daily discharge, 19,600 second-feet Apr. 25, 1942; maximum gage height, 6.90 feet Apr. 25, 1942; minimum daily discharge, 8 second-feet Aug. 21, Sept. 29, 1946.

Remarks.- Records fair except those for periods of doubtful or no gage-height record and those above 1,500 second-feet, which are poor. Many diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9	153	2,190	a700	642	680	184	618	948	268	83	280
2	16	110	2,040	680	630	680	160	466	1,170	439	78	196
3	21	164	2,010	a600	655	642	116	370	642	348	78	150
4	21	192	2,040	a550	630	592	99	496	298	370	39	168
5	16	310	2,150	a500	630	506	125	705	210	292	17	156
6	12	325	2,270	a480	655	362	304	1,420	200	235	19	235
7	100	292	2,150	a500	705	348	274	1,710	105	176	23	220
8	196	325	2,080	a600	692	348	385	2,310	110	128	24	176
9	362	262	2,150	a700	680	403	196	2,470	172	146	34	168
10	378	250	2,230	a700	668	439	164	3,080	230	136	24	153
11	310	340	2,150	a700	655	496	128	4,560	92	85	537	139
12	225	421	2,120	a700	630	332	125	4,800	24	92	430	164
13	215	466	2,150	a700	655	268	132	4,440	51	176	370	150
14	230	496	2,080	a750	668	220	119	3,800	59	184	292	150
15	225	475	1,980	a750	655	205	136	2,910	78	280	630	113
16	205	655	2,010	735	692	210	142	2,310	132	421	403	89
17	164	1,980	1,980	720	705	240	128	2,080	262	325	1,110	67
18	172	1,940	1,940	680	680	310	105	2,270	215	225	1,160	57
19	168	2,230	1,900	630	680	200	87	1,980	139	457	559	51
20	210	2,150	1,840	592	765	156	78	1,230	105	528	642	53
21	184	d1,500	1,800	605	780	122	81	1,120	125	642	580	60
22	153	1,380	1,710	642	780	108	85	1,080	160	592	642	64
23	136	2,120	1,080	655	705	105	87	1,040	180	630	1,450	74
24	87	2,590	720	642	642	256	146	1,650	340	298	2,330	76
25	78	2,230	642	642	680	486	139	1,400	506	146	874	81
26	67	2,430	705	580	642	205	510	1,530	318	89	754	85
27	71	2,470	780	605	655	205	840	984	548	67	720	105
28	108	2,510	735	692	668	142	705	1,120	421	78	448	72
29	176	2,390	795	618	-	146	1,040	948	310	69	385	81
30	156	2,430	910	605	-	150	892	855	192	71	292	69
31	132	-	825	692	-	132	-	750	-	87	348	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	4,603	378	9	148	9,130
November	35,586	2,590	110	1,186	70,580
December	52,142	2,270	642	1,682	103,400
Calendar year 1946	167,756	2,590	8	460	332,700
January	19,945	750	480	643	39,560
February	18,924	780	630	676	37,540
March	9,694	680	105	313	19,230
April	7,712	1,040	78	257	15,300
May	56,502	4,800	370	1,823	112,100
June	8,342	1,170	24	278	16,550
July	8,080	642	67	261	16,030
August	15,375	2,330	17	496	30,500
September	3,702	280	51	123	7,340
Water year 1946-47	240,607	4,800	9	659	477,300

a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and records for stations at Belen and at San Acacia.
d Doubtful gage-height record; discharge computed as explained in footnote a.

Rio Grande at San Acacia, N. Mex.

Location.- Water-stage recorder, lat. 34°15'20", long. 106°53'30", in NE¼ sec. 1, T. 1 S., R. 1 W., 0.2 mile downstream from San Acacia diversion dam, half a mile east of San Acacia, and 2 miles downstream from Rio Salado. Datum of gage is 4,660.16 feet above mean sea level, datum of 1929.

Drainage area.- 26,770 square miles (includes 2,940 square miles in closed basin in northern part of San Luis Valley, Colo.).

Records available.- April 1936 to September 1947 in reports of Geological Survey. February to December 1925, January 1926 to September 1927 (gage heights and discharge measurements only) in reports of State engineer. January 1941 to December 1947 in reports of Rio Grande Compact Commission.

Average discharge.- 11 years (1936-47), 1,465 second-feet.

Extremes.- Maximum discharge during year, 6,170 second-feet Aug. 18 (gage height, 6.78 feet); minimum daily, 2 second-feet Apr. 19.
1936-47: Maximum discharge, 27,400 second-feet Aug. 5, 1936 (gage height, 8.35 feet; datum of gage, 4,662.56 feet), from rating curve extended above 18,000 second-feet by logarithmic plotting; no flow June 22 to July 7, 1946.

Remarks.- Records good December to February, others fair. Diversions above station for irrigation. Records of water analyses and sediment loads for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	123	2,030	758	632	716	37	509	758	141	12	263
2	12	64	1,950	*716	652	705	50	399	804	385	11	160
3	6	102	1,950	*b620	726	663	28	282	663	296	11	94
4	6	131	1,980	b550	623	613	37	416	331	289	11	115
5	6	250	2,110	b550	694	584	57	456	226	331	9	191
6	240	456	1,860	*500	594	399	83	1,300	• 175	244	7	204
7	282	375	1,810	440	642	346	186	1,880	87	115	9	270
8	822	317	1,810	555	642	309	146	2,240	28	44	9	160
9	804	263	1,860	726	663	474	127	2,350	57	70	10	796
10	465	203	1,860	736	663	448	107	2,510	74	60	1,000	812
11	346	302	2,030	804	574	391	57	3,410	50	40	600	263
12	244	383	1,950	716	584	324	44	4,830	25	23	416	141
13	226	509	1,860	674	684	220	33	4,690	12	60	660	102
14	186	483	1,860	804	663	156	23	4,020	3	77	1,250	87
15	214	432	1,660	747	632	131	25	3,150	3	102	1,280	47
16	203	407	1,670	674	747	175	37	2,550	11	244	1,340	23
17	156	1,350	1,890	849	623	151	27	2,140	41	302	4,010	19
18	136	1,960	1,820	860	623	136	37	2,240	83	175	4,090	14
19	106	2,110	1,810	758	555	141	2	2,020	106	424	2,990	289
20	127	2,090	1,760	663	652	77	11	1,160	52	407	1,500	493
21	151	1,700	1,480	623	674	54	11	1,080	34	509	1,460	119
22	110	1,600	1,450	663	705	32	11	920	57	416	1,980	74
23	203	1,790	1,300	747	632	67	10	981	64	474	4,540	32
24	52	2,070	969	747	574	64	32	1,110	119	353	3,410	18
25	50	2,200	920	674	603	237	52	1,360	309	115	2,820	16
26	34	2,140	815	574	603	131	51	1,160	324	52	2,020	11
27	50	2,110	860	623	536	87	399	1,010	331	28	1,060	6
28	102	d2,050	804	694	705	77	474	933	407	23	694	32
29	94	2,160	849	613	-	52	594	884	375	23	492	12
30	151	2,200	826	555	-	44	674	694	180	10	465	10
31	119	-	634	705	-	42	-	716	-	10	500	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	5,715	822	6	184	11,340
November	32,330	2,200	64	1,078	64,130
December	48,437	2,110	634	1,562	96,070
Calendar year 1946	163,296	2,200	0	447	323,900
January	20,918	860	440	675	41,490
February	17,900	747	536	639	35,500
March	8,046	716	32	260	15,960
April	3,462	674	2	115	6,870
May	53,400	4,830	282	1,723	105,900
June	5,789	804	3	193	11,480
July	5,842	509	10	188	11,590
August	38,666	4,540	7	1,247	76,690
September	4,873	812	6	162	9,670
Water year 1946-47	245,378	4,830	2	672	486,700

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge computed on basis of recorder trace, weather records, and records for station at San Marcial.

Rio Grande at San Marcial, N. Mex.

Location.- Water-stage recorder, lat. 33°40'50", long. 106°59'15", in Pedro Armendaris Grant 33, at Atchison, Topeka & Santa Fe Railway bridge, 1.1 miles downstream from San Marcial, Socorro County. Datum of gage is 4,455.38 feet above mean sea level (levels by International Boundary Commission).

Drainage area.- 27,700 square miles (includes 2,940 square miles in closed basin in northern part of San Luis Valley, Colo.).

Records available.- January 1895 to September 1947 in reports of Geological Survey. Prior to January 1922 at site 0.3 mile upstream; January 1922 to February 1932 at highway bridge half a mile northeast of San Marcial and 1.8 miles above present site.

Average discharge.- 51 years (1896-1947), 1,511 second-feet.

Extremes.- Maximum discharge during year, 5,680 second-feet May 14; maximum gage height, 14.93 feet Aug. 24; no flow Aug. 6-10.
1895-1947: Maximum discharge, about 50,000 second-feet Oct. 11, 1904; no flow at times.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. Diversions above station for irrigation. Records of water analyses and sediment loads for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	109	1,930	a640	620	652	109	406	554	87	11	519
2	14	114	1,900	a500	630	630	89	434	554	54	8	320
3	13	94	1,860	*385	611	663	79	359	602	213	5	225
4	16	131	1,740	314	573	685	81	309	611	109	5	147
5	206	179	1,700	270	611	652	83	265	340	94	4	120
6	26	276	1,770	245	592	630	85	287	230	109	0	154
7	443	346	1,620	270	564	544	83	427	168	104	0	150
8	292	292	1,430	406	519	487	89	1,020	128	63	0	215
9	511	265	1,660	519	503	434	114	1,470	79	37	0	a400
10	519	240	1,840	641	455	406	126	1,720	52	30	0	a500
11	340	225	1,900	788	495	406	134	2,050	39	28	59	399
12	276	255	1,810	1,100	544	420	120	2,590	30	32	211	a300
13	235	287	1,880	1,120	511	434	108	4,350	30	31	255	a200
14	211	320	1,740	836	564	366	101	5,170	28	28	309	†176
15	199	340	1,790	812	602	304	89	4,400	27	27	427	a150
16	199	326	1,700	357	630	255	72	3,420	24	24	519	a100
17	168	352	1,590	230	641	215	65	2,710	23	21	663	†80
18	128	602	1,550	260	641	191	63	2,280	24	23	1,990	a60
19	120	874	1,490	479	630	187	55	2,100	23	47	4,450	a50
20	111	1,270	1,570	685	620	183	49	1,880	24	54	3,350	45
21	128	1,570	1,550	812	611	179	46	1,290	26	128	1,950	a150
22	128	1,490	1,550	888	620	150	43	1,020	27	158	1,510	a200
23	126	1,250	1,510	812	652	126	39	848	27	183	1,550	†98
24	168	1,450	1,200	740	685	101	37	788	23	187	3,030	a80
25	109	1,770	944	685	663	99	35	986	20	179	2,500	a60
26	74	1,810	930	652	630	101	35	1,200	18	97	1,810	†34
27	52	1,860	*902	641	641	131	36	972	37	44	1,420	a30
28	48	1,860	930	582	630	137	43	902	60	33	1,150	a26
29	74	1,810	b900	573	-	131	137	788	114	30	812	†22
30	74	1,930	b900	564	-	126	250	729	120	23	527	a23
31	126	-	b800	564	-	106	-	582	-	17	573	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	5,146	519	12	166	10,210
November	23,897	1,930	94	790	47,000
December	46,586	1,930	800	1,503	92,400
Calendar year 1946	145,858.0	1,930	0	400	289,300
January	18,370	1,120	230	593	36,440
February	16,688	685	455	596	33,100
March	10,131	685	99	327	20,090
April	2,493	250	35	83.1	4,940
May	47,752	5,170	265	1,540	94,710
June	4,062	611	18	135	8,060
July	2,294	213	17	74.0	4,550
August	29,098	4,450	0	939	57,720
September	5,033	519	22	168	9,980
Water year 1946-47	211,350	5,170	0	579	419,200

* Winter discharge measurement made on this day.
† Result of discharge measurement used for daily discharge.
a No gage-height record; discharge computed on basis of weather records and records for station at San Acacia.
b Stage-discharge relation affected by ice.

Rio Grande below Elephant Butte Dam, N. Mex.

Location.- Water-stage recorder, lat. 33°09'05", long. 107°12'10", in N½ sec. 25, T. 13 S., R. 4 W. (projected), 3,800 feet downstream from Elephant Butte Dam in Pedro Armendaris Grant.

Records available.- October 1916 to September 1947.

Average discharge.- 31 years, 1,198 second-feet.

Extremes.- Maximum daily discharge during year, 1,570 second-feet Aug. 17; minimum daily, 175 second-feet Sept. 28.
1916-47: Maximum daily discharge, 8,220 second-feet May 22, 1942; no flow at times.

Remarks.- Records good. Many diversions above station for irrigation. Flow regulated by Elephant Butte Reservoir (capacity, 2,197,600 acre-feet, see p.212). Records furnished by Bureau of Reclamation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,190	1,180	800	1,040	843	924	1,270	1,180	797	1,120	1,030	937
2	1,150	939	1,010	1,120	687	691	1,340	1,070	1,020	1,190	1,000	679
3	1,150	617	1,140	1,100	940	1,080	1,300	955	1,140	1,160	1,040	697
4	1,260	766	1,110	974	1,050	968	1,280	840	1,140	982	907	623
5	973	968	1,130	644	1,080	981	1,060	1,090	1,070	909	1,050	915
6	707	967	1,080	1,070	1,080	1,090	796	1,120	1,120	867	1,080	710
7	896	937	1,090	1,030	1,230	1,030	1,110	1,150	1,080	1,100	1,070	762
8	1,390	976	770	960	942	889	1,260	1,120	978	1,160	1,060	653
9	1,140	799	1,000	1,030	959	712	1,300	1,080	1,060	1,180	1,060	382
10	1,190	555	1,030	1,000	1,020	971	1,140	1,040	1,200	1,140	949	222
11	1,160	689	1,120	872	1,150	975	1,240	865	1,360	1,120	1,050	311
12	1,110	921	1,110	779	1,080	970	986	1,090	1,370	1,090	1,460	281
13	841	924	1,110	903	1,070	967	807	1,170	1,160	964	1,530	235
14	1,300	934	967	997	1,050	1,000	1,130	1,260	1,090	1,140	1,290	241
15	1,280	980	753	1,060	916	735	1,200	1,180	1,030	1,210	1,220	257
16	1,230	803	988	1,070	709	673	1,210	1,120	1,230	1,110	1,270	255
17	1,300	535	1,140	1,240	987	953	1,180	1,050	1,150	1,190	1,570	267
18	1,150	869	1,050	1,020	1,040	972	1,170	885	1,340	1,130	1,530	292
19	955	980	931	824	990	1,020	1,100	1,030	1,130	1,060	1,510	470
20	751	996	986	970	1,010	1,000	880	1,090	1,090	983	1,450	237
21	1,050	957	867	929	897	1,050	1,200	1,090	972	1,200	1,440	259
22	1,250	945	688	919	875	858	1,260	1,110	933	1,250	1,180	237
23	1,120	763	846	924	642	447	1,250	1,210	1,100	1,220	793	194
24	1,150	594	748	907	1,050	1,220	1,320	1,010	1,240	1,250	720	185
25	1,170	820	641	831	1,300	1,160	1,330	798	1,270	1,270	731	178
26	967	1,060	824	671	1,120	1,130	1,100	1,040	1,150	1,090	741	177
27	844	1,050	1,020	915	1,110	1,140	925	1,260	1,290	873	334	179
28	1,020	1,030	1,020	1,030	1,070	1,110	1,100	1,080	1,050	1,090	274	175
29	1,110	1,140	829	1,010	-	842	1,240	1,090	1,060	1,050	199	184
30	1,150	1,110	963	932	-	730	1,370	1,050	1,100	1,260	270	206
31	1,130	-	984	1,030	-	1,150	-	968	-	1,270	670	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	34,084	1,390	707	1,099	67,600
November	26,804	1,180	535	893	53,160
December	29,745	1,140	641	960	59,000
Calendar year 1946	418,584	1,820	535	1,147	830,200
January	29,801	1,240	644	961	59,110
February	27,877	1,300	642	996	55,290
March	29,438	1,220	447	950	58,390
April	34,854	1,370	796	1,162	69,130
May	33,091	1,260	798	1,067	65,640
June	33,720	1,370	797	1,124	66,880
July	34,628	1,270	867	1,117	68,680
August	31,478	1,570	199	1,015	62,440
September	11,400	937	175	380	22,610
Water year 1946-47	356,920	1,570	175	978	707,900

Rio Grande below Caballo Dam, N. Mex.

Location.- Water-stage recorder, lat. 32°53'05", long. 107°17'30", in NE¼SW¼ sec. 30, T. 16 S., R. 4 W., 600 feet upstream from Bojarquez bridge, 4,200 feet downstream from Caballo Dam, 1 1/3 miles upstream from Percha diversion dam, 3 miles northeast of Arrey, and 5 miles south of Caballo. Datum of gage is 4,140.9 feet above mean sea level.

Records available.- January 1938 to September 1947.

Extremes.- Maximum daily discharge during year, 2,810 second-feet July 10; minimum daily, 1.8 second-feet Sept. 26, 27.
1938-47: Maximum daily discharge, 7,650 second-feet May 20, 1942; minimum daily, 1.3 second-feet Nov. 18-21, Dec. 12-27, 1940.

Remarks.- Records good. Considerable diversion above station for irrigation. Flow regulated by Caballo Reservoir (capacity, 345,900 acre-feet) and Elephant Butte Reservoir (capacity, 2,197,600 acre-feet, survey of 1946).

Cooperation.- Records furnished by Bureau of Reclamation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	478	3.3	3.8	7.9	17	487	2,770	1,520	1,740	2,180	2,420	2,040
2	870	3.3	4.0	8.0	18	42	2,640	1,620	1,760	2,170	2,600	2,090
3	800	3.3	4.0	8.0	19	44	2,490	1,600	1,750	2,240	2,660	2,180
4	747	3.2	4.2	7.9	19	49	2,410	1,610	1,780	2,320	2,520	2,190
5	697	3.2	4.2	8.0	20	55	2,520	1,540	1,810	2,400	2,450	2,000
6	578	3.2	4.2	8.2	21	54	2,700	1,520	1,920	2,480	2,430	2,270
7	454	3.2	4.3	8.1	22	54	2,720	1,620	2,100	2,520	2,320	2,340
8	293	74	4.6	8.1	22	53	2,740	1,680	2,180	2,670	2,280	2,070
9	236	263	4.8	8.3	24	53	2,580	1,360	2,080	2,720	2,290	1,900
10	136	558	4.9	8.3	25	54	2,550	1,010	1,990	2,810	2,310	1,730
11	9.8	888	5.0	8.5	26	55	2,490	1,140	2,010	2,740	2,290	1,660
12	8.5	693	5.2	8.9	27	52	2,510	1,260	2,100	2,720	2,350	1,260
13	4.3	422	7.5	9.0	28	52	2,590	1,240	2,030	2,700	2,450	230
14	4.9	342	9.7	9.0	29	53	2,530	1,290	2,110	2,680	2,540	148
15	4.9	247	12	9.1	30	690	2,380	1,260	2,120	2,590	2,480	199
16	4.1	203	635	9.1	32	1,820	2,280	1,080	2,120	2,500	2,140	145
17	5.1	31	836	9.2	34	1,920	2,020	1,320	2,070	2,410	1,890	52
18	5.1	8.5	674	9.4	36	1,950	1,740	1,470	1,690	2,160	1,120	18
19	4.4	3.4	462	9.5	37	1,880	1,530	1,510	1,310	2,080	828	7.0
20	4.7	3.3	197	9.6	32	1,830	1,490	1,480	1,260	2,180	1,220	4.6
21	4.5	3.3	55	10	27	1,970	1,470	1,430	1,420	2,200	1,330	4.1
22	4.7	3.3	8.4	11	369	2,350	1,440	1,400	1,680	2,220	1,300	3.5
23	4.5	3.3	8.2	11	1,030	2,510	1,410	1,260	1,680	2,270	1,060	3.2
24	4.5	3.5	8.2	12	1,030	2,500	1,470	1,310	1,750	2,320	933	2.7
25	4.2	3.5	8.1	13	908	2,600	1,540	1,400	1,850	2,250	931	2.3
26	4.2	3.6	8.1	13	776	2,690	1,440	1,390	1,860	2,350	1,080	1.8
27	4.4	3.8	8.1	14	707	2,750	1,390	1,390	1,960	2,470	1,240	1.8
28	3.4	3.9	8.0	15	712	2,740	1,360	1,390	2,180	2,360	1,360	1.9
29	3.4	4.0	8.0	15	-	2,750	1,420	1,350	2,180	2,250	1,360	2.1
30	3.4	3.9	8.0	16	-	2,780	1,480	1,380	2,190	2,360	1,670	2.1
31	3.4	-	7.8	16	-	2,770	-	1,610	-	2,430	1,900	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	5,389.4	870	3.4	174	10,690
November	3,795.0	888	3.2	126	7,530
December	3,022.3	836	3.8	97.5	5,990
Calendar year 1946	384,968.0	2,730	1.5	1,055	763,600
January	318.1	16	7.9	10.3	631
February	6,077	1,030	17	217	12,050
March	39,657	2,780	42	1,279	78,660
April	62,100	2,770	1,360	2,070	123,200
May	43,440	1,680	1,010	1,401	86,160
June	56,660	2,190	1,260	1,889	112,400
July	74,750	2,810	2,080	2,411	148,300
August	57,752	2,660	828	1,863	114,500
September	24,559.1	2,340	1.8	819	48,710
Water year 1946-47	377,519.9	2,810	1.8	1,034	748,800

Reservoirs in Rio Grande Basin

Elephant Butte Reservoir.- Water-stage recorder, lat. 33°09'15", long. 107°11'30", at dam on Rio Grande in NW¼ sec. 30, T. 13 S., R. 3 W. (surveys by Bureau of Reclamation), 1 mile west of Elephant Butte, N. Mex., and 4 miles northeast of Hot Springs. Datum of gage is 43.3 feet above mean sea level. Records available, January 1940 to September 1947. Maximum daily contents during year, 623,400 acre-feet Oct. 1 (gage height, 4,339.36 feet); minimum daily, 298,500 acre-feet Aug. 22 (gage height, 4,311.91 feet). Maximum daily contents during period 1940-47, 2,303,000 acre-feet June 16-18, 1942 (gage height, 4,409.19 feet); minimum daily, that of Aug. 22, 1947.

Reservoir is formed by concrete dam; storage began Jan. 6, 1915; dam completed May 13, 1916. Capacity, 2,197,600 acre-feet (revised) between gage heights 4,231.5 feet (sill of lower outlet gate) and 4,407.0 feet (spillway crest). Figures given herein represent usable contents. No dead storage. Prior to Jan. 1, 1947, figures represent usable contents computed from capacity table based on survey of 1940; after Jan. 1, 1947, figures represent usable contents computed from revised capacity table based on survey of December 1946 by Bureau of Reclamation. Water is used for power development and irrigation on Rio Grande project of Bureau of Reclamation. Contents given herein are computed from mean daily gage heights. Gage-height record and capacity table furnished by Bureau of Reclamation.

Revised capacity table used since Jan. 1, 1947 (gage height, in feet, and contents, in acre-feet)

4,231.5	0	4,330.0	493,700
4,260.0	13,800	4,340.0	625,000
4,270.0	37,900	4,350.0	774,600
4,280.0	75,300	4,360.0	944,500
4,290.0	129,100	4,370.0	1,136,100
4,300.0	198,700	4,380.0	1,363,700
4,310.0	281,300	4,390.0	1,633,800
4,320.0	378,900	4,400.0	1,949,400
		4,410.0	2,309,500

Caballo Reservoir.- Water-stage recorder, lat. 32°53'45", long. 107°17'30", at dam on Rio Grande, in SE¼SW¼ sec. 19, T. 16 S., R. 4 W., 0.5 mile downstream from mouth of Apache Canyon, 0.9 mile upstream from Bojarquez Bridge, 2 miles upstream from Percha diversion dam, 3.5 miles northeast of Arrey, and 4.5 miles south of Caballo, N. Mex. Datum of gage is 43.3 feet above mean sea level. Records available, February 1938 to September 1947. Maximum daily contents during year, 309,600 acre-feet Mar. 15 (gage height, 4,178.77 feet); minimum daily, 3,780 acre-feet Sept. 13 (gage height, 4,119.19 feet). Maximum daily contents during period 1938-47, 347,000 acre-feet Mar. 4, 1942 (gage height, 4,182.06 feet); minimum daily, 118 acre-feet Oct. 14, 1938 (gage height, 4,108.1 feet).

Reservoir is formed by earth-fill dam; storage began Feb. 8, 1938; dam completed Sept. 19, 1938. Capacity, 345,900 acre-feet between gage heights 4,104 feet (bottom of tunnel entrance to gates) and 4,182 feet (gage height above which spillway gates operate automatically). No dead storage. Figures given herein represent usable contents. Water released from Elephant Butte Reservoir for power development is stored in Caballo Reservoir and released for irrigation on Rio Grande project of Bureau of Reclamation. Contents given herein are computed from mean daily gage heights.

Gage-height record and capacity table furnished by Bureau of Reclamation.

Carson Reservoir.- Water-stage recorder, lat. 36°25', long. 105°50', in NW¼ sec. 12, T. 25 N., R. 10 E., on Aguaje de la Petaca, 4¾ miles northwest of Carson, Taos County, N. Mex. Records available, January 1940 to September 1947. Maximum daily contents during year, 14 acre-feet Mar. 24 (gage height, 9.30 feet); no storage for extended periods. Maximum contents during period 1940-47, 3,620 acre-feet May 6, 1941 (gage height, 38.5 feet); no storage for extended periods.

Reservoir is formed by earth-fill dam, rock-faced, completed in 1935. Capacity, 5,684 acre-feet between gage heights 8.0 feet (sill of outlet gate) and 45 feet (crest of spillway). Dead storage negligible. Water used for irrigation in Carson Irrigation District near Carson, N. Mex. No storage during water year 1947, except for period Mar. 23-27 when a small quantity of water was stored and released.

El Vado Reservoir.- Water-stage recorder (records stages above spillway floor only) and staff gage, lat. 36°35'45", long. 106°43'55", at left end of dam on Rio Chama, in SE¼ sec. 4, T. 27 N., R. 2 E. (projected), 2 miles downstream from old town of El Vado and 13 miles southwest of Tierra Amarilla, N. Mex. Datum of gage is 9,565 feet above mean sea level, datum of 1929. Records available, January 1935 to September 1947. Maximum daily contents during year, 186,800 acre-feet June 11 (gage height, 6,898.6 feet); minimum daily, 18,310 acre-feet Dec. 21-23 (gage height, 6,801.1 feet). Maximum daily contents during period 1935-47, 204,000 acre-feet June 6, 7, 1945 (gage height, 6,903.1 feet, surcharge due to heavy inflow); minimum daily, 56 acre-feet Jan. 1, 1935.

Reservoir is formed by rock-fill dam, steel-faced; storage began in January 1935. Capacity, 197,500 acre-feet (revised) between gage heights 6,740.0 feet (bottom of trash rack) and 6,902.0 feet (top of spillway gate). Dead storage unknown. Prior to Jan. 1, 1947, figures represent usable contents computed from capacity table furnished by Middle Rio Grande Conservancy District in 1940; after Jan. 1, 1947, figures represent usable contents computed from revised capacity table based on survey of 1944 by Corps of Engineers. Water is used for irrigation by Middle Rio Grande Conservancy District. Gage read daily about 7:30 a.m. Continuous recorder registers gage height above 6,879.3 feet (floor of spillway). Contents given herein are those at 7:30 a.m. Staff-gage readings furnished by Middle Rio Grande Conservancy District.

Reservoirs in the Rio Grande Basin--Continued

Nichols Reservoir.- Water-stage recorder, lat. 35°41'20", long. 105°52'40", at dam on Santa Fe Creek, in E½NE¼ sec. 21, T. 17 N., R. 10 E., three-quarters of a mile upstream from lower storage reservoir, 2½ miles downstream from upper storage reservoir of Public Service Co. of New Mexico, and 3½ miles east of Santa Fe, N. Mex. Datum of gage is 7,313.2 feet above mean sea level, datum of 1929. Records available, December 1942 to September 1947. Maximum daily contents during year, 830 acre-feet May 30 to June 1 (gage height, 171.6 feet); minimum daily, 217 acre-feet Sept. 4, 5. Maximum daily contents during period 1943-47, that of May 30 to June 1, 1947; minimum daily, 16 acre-feet Feb. 11 to Mar. 10, 1944.

Reservoir is formed by earth-fill dam. Storage began Mar. 16, 1943. Capacity, 796 acre-feet between gage heights 121.2 feet (bottom of lower operational gate) and 171.0 feet (top of flashboards in spillway). Dead storage, 14 acre-feet. Figures given herein represent total contents. Water is used for municipal consumption of city of Santa Fe. Contents given herein are those for 12 p.m. Capacity table computed from survey furnished by Public Service Co. of New Mexico.

Alamogordo Reservoir.- Water-stage recorder, lat. 34°36'30", long. 104°23'10", in SW¼ sec. 34, T. 5 N., R. 24 E., at dam on Pecos River, 5 miles northeast of Guadalupe, 12 miles northwest of Fort Sumner, N. Mex. Datum of gage is at mean sea level, Bureau of Reclamation datum. Drainage area, 4,390 square miles (contributing area). Records available, January 1939 to September 1947. Maximum daily contents during year, 49,440 acre-feet Mar. 1-4 (elevation, 4,250.00 feet); minimum daily, 1,700 acre-feet July 17 (elevation, 4,205.35 feet). Maximum daily contents during period 1939-47, 149,400 acre-feet Apr. 19, 20, 1942 (elevation, 4,275.30 feet); minimum daily, 1,570 acre-feet July 28, 1946 (elevation, 4,205.00 feet).

Reservoir is formed by Alamogordo Dam; completed and storage began in 1938. Total capacity, 132,200 acre-feet at elevation 4,275.0 feet (top of spillway gates) above mean sea level. Dead storage, 284 acre-feet below elevation 4,200.0 feet (sill of outlet gates). Contents given herein are those at 8 a.m. Gage-height record furnished by Bureau of Reclamation. Figures represent total contents computed from capacity table based on survey of March 1944 by Corps of Engineers.

Lake McMillan.- Staff gage, lat. 32°35'45", long. 104°20'55", in SE¼ sec. 2, T. 20 S., R. 26 E., at dam on Pecos River, 3 miles southeast of Lakewood, N. Mex. Datum of gage is 3,241.6 feet above mean sea level, Bureau of Reclamation datum. Drainage area, 16,990 square miles (contributing area). Records available, January 1939 to September 1947. Maximum daily contents during year, 17,630 acre-feet Oct. 12-16, 18, 19 (gage height, 21.5 feet); no storage for extended periods. Maximum daily contents during period 1939-47, 68,500 acre-feet Sept. 26, 1941 (gage height, 29.95 feet); no storage at times in 1944-47.

Lake is formed by McMillan Dam, completed and storage began in 1906. Capacity, 38,660 acre-feet between gage heights 0.0 foot (sill of outlet gate) and 26.1 feet (crest of spillway 1). No dead storage. Figures given herein represent usable contents. Water is used for irrigation on Carlsbad project of Bureau of Reclamation. Contents computed from daily readings at 6 a.m. Gage-height record and capacity table furnished by Bureau of Reclamation.

Lake Avalon.- Staff gage, lat. 32°29'25", long. 104°15'00", in SW¼ sec. 12, T. 21 S., R. 26 E., at dam on Pecos River, 5 miles north of Carlsbad, N. Mex. Datum of gage is 3,157.0 feet above mean sea level, Bureau of Reclamation datum. Drainage area, 18,070 square miles (contributing area). Records available, January 1939 to September 1947. Maximum daily contents during year, 6,000 acre-feet Oct. 13, Jan. 2-6, Feb. 10-12, Mar. 22 (gage height, 20.40 feet); no storage July 25-28. Maximum daily contents during period 1939-47, 11,000 acre-feet May 22, 1941 (gage height, 25.0 feet); no storage at times in 1940, 1944-47 when natural flow was passing through reservoir.

Lake is formed by Avalon Dam; storage began in 1906. Capacity, 6,600 acre-feet between gage heights 0.0 foot (sill of outlet gates) and 21.0 feet (crest of spillway 1). No dead storage. Figures given herein represent usable contents. Water is used for irrigation on Carlsbad project of Bureau of Reclamation. Contents computed from once-daily readings at 6 a.m. Gage-height record and capacity curve furnished by Bureau of Reclamation.

Red Bluff Reservoir.- Staff gage, lat. 31°54'05", long. 103°54'40", at right end of Red Bluff Dam on Pecos River, 3 miles upstream from Salt (Screwbean) Draw, 4.5 miles north of Orla, Reeves County, Tex. Datum of gage is 0.30 foot below mean sea level, datum of 1929. Subtract 0.30 foot from elevations given herein to obtain elevation above mean sea level, datum of 1929. Contributing drainage area, 20,720 square miles. Records available, February 1937 to September 1947. Maximum contents observed during year, 85,850 acre-feet Mar. 16, 18, 19 (elevation, 2,813.3 feet); minimum observed, 11,580 acre-feet Aug. 18 (elevation, 2,782.1 feet). Maximum contents observed during period 1937-47, 352,000 acre-feet Sept. 27, 28, 1941 (elevation, 2,846.2 feet, observed on staff gage at service spillway, affected by variable drawdown due to flow through taintor gates); minimum observed, that of Aug. 18, 1947.

Reservoir is formed by earth-fill dam, rock-faced; storage began in 1936; dam completed early in 1937. Capacity, 307,000 acre-feet between elevations 2,764.0 feet (penstock intake sill) and 2,842.0 feet (top of taintor gates). Dead storage, 3,000 acre-feet. Figures given herein represent total contents. Water is used for power development and for irrigation from Mentone to Grandfalls. Contents computed from intermittent gage readings. Elevation record and capacity curve furnished by Red Bluff Water Power Control District.

Reservoirs in the Rio Grande Basin--Continued

Monthly gage heights and contents of reservoirs in Rio Grande Basin, water year October 1946 to September 1947

Date	Elephant Butte Reservoir			Caballo Reservoir		
	Elevation or gage height (feet)	Contents (acre-feet)	Change in contents during month (acre-feet)	Elevation or gage height (feet)	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	4,339.52	†625,400	-	4,143.96	59,860	-
Oct. 31	4,335.50	570,700	-54,700	4,155.21	114,300	+54,440
Nov. 30	4,333.50	544,300	-26,400	4,161.56	156,900	+42,600
Dec. 31	4,336.51	‡584,200	+39,900	4,167.66	204,500	+47,600
Calendar year 1946	-	-	-546,000	-	-	+40,500
Jan. 31	4,334.99	557,400	-19,900	4,173.33	255,000	+50,500
Feb. 28	4,333.48	537,900	-19,500	4,176.79	288,700	+33,700
Mar. 31	4,331.10	507,400	-30,500	4,174.51	266,600	-22,100
Apr. 30	4,326.03	446,300	-61,100	4,168.19	208,400	-58,200
May 31	4,327.32	461,100	+14,800	4,165.68	188,600	-19,800
June 30	4,322.46	405,500	-55,600	4,159.85	144,500	-44,100
July 31	4,316.33	341,300	-64,200	4,146.65	70,560	-73,940
Aug. 31	4,314.68	325,100	-16,200	4,136.36	35,710	-34,850
Sept.30	4,313.85	316,900	-8,200	4,126.28	12,980	-22,730
Water year 1946-47	-	-	-301,200	-	-	-46,880

Date	El Vado Reservoir			Nichols Reservoir		
Sept.30	6,862.0	††96,140	-	165.8	649	-
Oct. 31	6,864.8	101,600	+5,460	166.6	673	+24
Nov. 30	6,842.5	63,440	-38,160	167.3	695	+22
Dec. 31	6,802.5	‡‡19,350	-44,090	-	673	-22
Calendar year 1946	-	-	-65,290	-	-	+469
Jan. 31	6,808.4	24,650	+4,650	-	612	-61
Feb. 28	6,814.6	30,080	+5,430	162.1	547	-65
Mar. 31	6,826.2	42,090	+12,010	163.2	577	+30
Apr. 30	6,853.0	79,470	+37,380	166.7	676	+99
May 31	6,895.4	176,900	+97,430	171.6	830	+154
June 30	6,892.6	168,600	-8,300	168.1	719	-111
July 31	6,878.4	130,300	-38,300	162.2	550	-169
Aug. 31	6,868.7	108,500	-21,800	148.0	248	-302
Sept.30	6,871.9	115,300	+6,800	147.5	240	-8
Water year 1946-47	-	-	+19,990	-	-	-409

Date	Alamogordo Reservoir			Lake McMillan		
Sept.30	4,226.05	14,760	-	19.75	11,520	-
Oct. 31	4,238.50	29,020	+14,260	20.8	15,070	+3,550
Nov. 30	4,241.10	32,840	+3,820	19.7	11,360	-3,710
Dec. 31	4,244.65	38,780	+5,940	18.9	8,910	-2,450
Calendar year 1946	-	-	+20,940	-	-	+7,450
Jan. 31	4,247.70	44,590	+5,810	18.2	6,930	-1,980
Feb. 28	4,249.80	49,000	+4,410	15.9	1,920	-5,010
Mar. 31	4,244.30	38,160	-10,840	15.45	1,330	-590
Apr. 30	4,234.15	23,320	-14,840	17.0	3,980	+2,650
May 31	4,243.35	36,510	+13,190	15.5	1,390	-2,590
June 30	4,242.15	34,510	-2,000	11.6	5	-1,385
July 31	4,208.00	2,840	-31,670	12.5	25	+20
Aug. 31	4,219.10	9,280	+6,440	9.8	0	-25
Sept.30	4,218.10	8,610	-670	0.0	0	0
Water year 1946-47	-	-	-6,150	-	-	-11,520

Date	Lake Avalon			Red Bluff Reservoir		
Sept.30	16.00	2,350	-	-	a29,500	-
Oct. 31	20.15	5,760	+3,410	2,801.7	43,250	+13,750
Nov. 30	20.15	5,760	0	2,805.9	56,150	+12,900
Dec. 31	19.80	5,430	-330	-	a62,800	+6,650
Calendar year 1946	-	-	+1,500	-	-	+13,700
Jan. 31	19.85	5,480	+50	2,811.1	75,950	+13,150
Feb. 28	19.90	5,520	+40	-	a82,700	+6,750
Mar. 31	17.90	3,770	-1,750	2,811.9	79,550	-3,150
Apr. 30	13.90	1,100	-2,670	2,803.8	49,400	-30,150
May 31	19.45	5,100	+4,000	2,802.5	45,500	-3,900
June 30	13.95	1,130	-3,970	2,799.7	38,280	-7,220
July 31	10.95	302	-828	2,787.9	17,670	-20,610
Aug. 31	12.15	512	+210	-	a11,820	-5,850
Sept.30	11.75	430	-82	2,784.2	13,400	+1,580
Water year 1946-47	-	-	-1,920	-	-	-16,100

† 618,100 acre-feet from revised capacity table.
‡ 577,300 acre-feet from revised capacity table.
†† 95,310 acre-feet from revised capacity table.
‡‡ 20,000 acre-feet from revised capacity table.

Clear Creek below Continental Reservoir, Colo.

Location.- Water-stage recorder and Parshall flume, lat. 37°53', long. 107°11', in sec. 22, T. 42 N., R. 3 W., 1,000 feet downstream from Continental Reservoir and 15 miles west of Creede.

Drainage area.- 51.7 square miles.

Records available.- October 1933 to September 1947 in reports of Geological Survey. May 1929 to September 1947 in reports of State engineer.

Average discharge.- 18 years, 31.6 second-feet.

Extremes.- Maximum discharge during year, 287 second-feet Aug. 5 (gage height, 3.26 feet); minimum daily, 5.9 second-feet Sept. 20 (regulated).
1929-47: Maximum discharge, 313 second-feet May 4, 1937 (gage height, 3.41 feet); no flow June 22, 23, 1935.

Remarks.- Records fair. Flow regulated by Continental Reservoir (capacity, 26,700 acre-feet).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.5							12	130	82	153	27
2	9.8							12	136	63	281	30
3	13							12	135	64	279	30
4	11							12	139	62	280	19
5	14							12	140	57	281	13
6	15							20	140	56	273	19
7	16							29	130	56	264	21
8	16							35	121	59	248	19
9	16							95	119	59	183	23
10	16							165	121	59	152	27
11	16							181	126	55	152	25
12	16							193	126	52	145	25
13	16							203	114	45	91	25
14	16							206	76	37	58	27
15	16							208	46	37	57	27
16	15	12	12	12	12	12	12	203	50	37	53	25
17	14							176	61	42	48	24
18	14							154	67	48	38	24
19	14							120	93	48	33	13
20	14							78	118	48	70	5.9
21	12							79	120	48	56	14
22	11							80	120	48	33	13
23	11							86	112	46	38	13
24	11							111	101	39	39	15
25	11							147	71	39	34	15
26	11							200	51	39	31	15
27	11							179	55	34	30	17
28	11							187	57	34	28	16
29	12				-			206	87	35	29	15
30	12				-			145	112	36	30	16
31	12	-			-		-	117	-	36	29	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	411.3	16	8.5	13.3	816
November	360	-	-	12	714
December	372	-	-	12	738
Calendar year 1946	15,063.9	270	.2	41.3	29,880
January	372	-	-	12	738
February	336	-	-	12	666
March	372	-	-	12	738
April	360	-	-	12	714
May	3,663	208	12	118	7,270
June	3,074	140	46	102	6,100
July	1,500	82	34	48.4	2,980
August	3,516	281	28	113	6,970
September	597.9	30	5.9	19.9	1,190
Water year 1946-47	14,934.2	281	5.9	40.9	29,630

Note.- No gage-height record Nov. 1 to May 6; discharge computed on basis of gate openings at Continental Reservoir.

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Goose Creek near Wagon Wheel Gap, Colo.

Location.- Water-stage recorder, lat. 37°41', long. 106°50', in NW¼ sec. 26, T. 40 N., R. 1 E., 1½ miles downstream from Roaring Fork and 6 miles south of Wagon Wheel Gap.

Drainage area.- 53.6 square miles.

Records available.- October 1939 to September 1947 (no winter records after October 1941). October 1924 to July 1926 at site 1 mile upstream.

Extremes.- Maximum discharge during year, 477 second-feet June 7 (gage height, 2.30 feet); minimum daily determined, 10 second-feet Dec. 20, 29-31, but may have been less during period of no record.

1924-26, 1939-47: Maximum discharge, 780 second-feet June 23, 1941 (gage height, 2.99 feet), from rating curve extended above 500 second-feet; minimum daily recorded, 7.8 second-feet Apr. 1, 5, 6, 1945.

Remarks.- Records fair. Lake Humphreys (capacity, 842 acre-feet) has slight effect on flow.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	24	14				29	70	221	127	19	57
2	20	22	14				29	97	277	127	26	50
3	25	21	14				28	125	273	122	29	44
4	24	21	14				26	158	269	118	36	43
5	27	18	14				24	164	269	110	49	41
6	23	18	14				22	221	269	100	39	44
7	27	18	15				23	213	326	100	40	47
8	25	21	13				22	221	365	92	39	43
9	29	19	12				23	225	360	92	40	50
10	26	18	14				22	188	335	81	35	52
11	20	14	14				21	164	277	75	32	47
12	21	18	15				20	139	212	67	34	41
13	21	18	15				19	127	172	63	38	38
14	22	17	15				22	125	166	62	35	34
15	23	18	14				27	122	182	64	42	31
16	22	14	15				31	112	185	63	40	28
17	24	14	14				37	112	182	63	41	28
18	20	15	*13				43	114	198	57	44	98
19	17	16	a11				49	118	169	53	53	172
20	20	17	a10				58	137	166	50	50	158
21	19	17	a11				70	152	209	48	47	134
22	19	16	a11				67	179	182	46	80	112
23	19	17	a12				63	175	158	49	85	97
24	18	17	a12				64	150	150	43	70	85
25	18	16	a13				50	166	152	41	59	75
26	18	14	a12				44	192	164	39	54	66
27	18	16	a13				47	202	166	39	55	57
28	19	16	a12				42	209	161	39	60	54
29	50	16	a10				41	188	152	39	54	50
30	36	14	a10				52	208	139	35	57	47
31	31	-	a10				-	223	-	28	64	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	718	50	17	23.2	1,420
November	520	24	14	17.3	1,030
December	400	15	10	12.9	793
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	1,115	70	19	37.2	2,210
May	4,996	225	70	161	9,910
June	6,506	365	139	217	12,900
July	2,132	127	28	68.8	4,230
August	1,446	85	19	46.6	2,870
September	1,923	172	28	64.1	3,810
Water year	-	-	-	-	-

* Winter discharge measurement made on this day.

a No gage-height records (stage-discharge relation affected by ice during most of period); discharge computed on basis of weather records.

Note.- No gage-height records Oct. 6-8, 13-21, Apr. 1-19, May 30-31, June 12, July 13-14; discharge computed on basis of records for South Fork Rio Grande at South Fork.

South Fork Rio Grande at South Fork, Colo.

Location.- Water-stage recorder, lat. 37°40', long. 106°39', in sec. 4, T. 39 N., R. 3 E., 1¼ miles upstream from mouth and 1½ miles southwest of village of South Fork. Datum of gage is 8,221.79 feet above mean sea level, datum of 1929.

Drainage area.- 216 square miles.

Records available.- August 1910 to September 1913 and May 1936 to September 1947 in reports of Geological Survey. August 1910 to September 1922 and May 1936 to September 1947 in reports of State engineer. Records for 1910-22 at site 1 mile downstream.

Average discharge.- 23 years (1910-22, 1936-47), 230 second-feet.

Extremes.- Maximum discharge during year, 954 second-feet May 8 (gage height, 4.19 feet); minimum daily, 21 second-feet Jan. 17, 18, 21.

1910-22, 1936-47: Maximum discharge, 8,000 second-feet Oct. 5, 1911 (gage height, 9.7 feet, from floodmarks, present site and datum), from rating curve extended above 1,500 second-feet; minimum daily, 20 second-feet Jan. 1, 2, 8, 17, 23-25, 1915, Dec. 20, 1937.

Remarks.- Records excellent except those below 200 second-feet, which are good, and those for period of ice effect or no gage-height record, which are fair. A few small diversions above station for irrigation, and several small storage reservoirs.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	98	60	31	41	40	110	242	705	290	65	93
2	48	86	67	33	40	42	128	350	770	275	64	93
3	67	75	58	33	40	46	126	484	806	265	63	82
4	64	78	68	30	41	46	110	614	765	261	63	86
5	122	96	58	31	42	45	98	650	745	238	94	84
6	78	94	58	32	43	44	87	740	720	226	77	78
7	104	93	52	33	43	43	90	735	780	229	76	70
8	82	80	47	30	43	42	87	790	828	211	75	69
9	92	72	41	28	43	46	92	839	817	198	81	96
10	82	84	39	26	43	45	87	834	770	182	65	106
11	51	71	48	25	44	46	87	775	650	163	59	90
12	60	87	45	25	44	46	80	645	556	156	70	78
13	59	75	44	26	44	50	76	584	470	147	83	70
14	57	78	46	25	45	48	92	548	452	145	94	66
15	60	67	46	23	46	49	118	532	470	152	109	60
16	56	64	44	22	47	51	138	484	470	136	94	57
17	61	75	42	21	49	54	152	445	452	136	110	69
18	50	75	*45	21	*45	56	187	445	500	131	104	298
19	37	*81	38	22	44	60	194	448	459	130	128	288
20	45	81	34	22	44	68	224	516	448	120	142	220
21	44	65	36	*21	42	76	275	580	488	117	110	180
22	44	74	37	22	42	86	285	660	473	117	224	156
23	41	72	38	23	43	85	272	690	435	167	220	140
24	39	65	40	24	47	78	280	604	390	186	169	120
25	44	57	42	25	46	*75	236	650	374	167	140	117
26	42	54	41	27	45	99	211	710	374	156	125	108
27	43	60	43	27	43	108	206	750	371	156	125	100
28	48	59	40	32	41	120	194	755	356	159	118	100
29	242	60	36	30	-	126	188	640	333	149	106	94
30	183	60	30	29	-	123	190	660	311	122	103	93
31	129	-	32	28	-	110	-	715	-	84	94	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,212	242	37	71.4	4,390
November	2,236	98	54	74.5	4,440
December	1,395	68	30	45.0	2,770
Calendar year 1946	41,659	690	30	114	82,660
January	827	33	21	26.7	1,640
February	1,220	49	40	43.6	2,420
March	2,053	126	40	66.2	4,070
April	4,700	285	76	157	9,320
May	19,114	839	242	617	37,910
June	16,538	828	311	551	32,800
July	5,371	290	84	173	10,650
August	3,250	224	59	105	6,450
September	3,361	298	57	112	6,670
Water year 1946-47	62,277	839	21	171	123,500

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Nov. 4 to Dec. 29. No gage-height record Dec. 30 to Mar. 24 (stage-discharge relation affected by ice during most of period); discharge computed on basis of 2 discharge measurements and weather records.

Pinos Creek near Del Norte, Colo.

Location.- Water-stage recorder and Parshall flume, lat. 37°27', long. 106°35', in sec. 29, T. 39 N., R. 5 E., just downstream from Bennett Creek and 8 miles southwest of Del Norte.

Drainage area.- 53 square miles.

Records available.- May 1936 to September 1947 in reports of Geological Survey. May 1919 to September 1924 and May 1936 to September 1947 in reports of State engineer. (No winter records most years.)

Extremes.- Maximum discharge during year, 166 second-feet Aug. 21 (gage height, 1.82 feet); minimum not determined, occurred during period of no gage-height record. 1919-24, 1936-47: Maximum daily discharge, 2,400 second-feet June 3, 1922; minimum daily recorded, 3.6 second-feet Oct. 27, 1939, Nov. 9, 1944 (discharge measurement).

Remarks.- Records excellent except those below 30 second-feet, which are good, and those for period of no gage-height record, which are poor. One small diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.5						14	50	117	47	15	22
2	9.5						15	70	120	44	14	19
3	10						14	96	123	43	14	18
4	12	(*)					12	111	119	38	16	18
5	16						12	112	111	37	17	19
6	11						12	112	112	44	16	17
7	12						11	99	114	42	16	16
8	10						11	111	114	36	16	18
9	11						12	118	113	35	17	20
10	10						12	113	104	31	14	19
11	8.0						12	100	97	28	14	18
12	9.4						12	85	91	25	14	16
13	9.0						12	87	81	24	16	16
14	8.6						12	91	76	27	22	16
15	9.0	6.5	6.0	4.0	6.1	9.2	13	87	73	31	20	16
16	8.5						14	81	68	27	19	15
17	9.0						18	80	66	30	19	19
18	7.2						23	82	105	30	20	57
19	7.6						24	90	96	27	28	30
20	8.5						28	99	80	24	25	22
21	7.6						38	107	97	23	29	20
22	7.2						40	119	87	23	26	18
23	7.6						50	120	74	24	29	16
24	8.0						43	102	69	21	30	16
25	7.2					(*)	40	110	66	19	22	16
26	7.2						35	124	63	18	21	15
27	7.2						31	128	58	22	23	14
28	7.6						31	128	55	21	24	14
29	18				-		31	118	52	18	25	14
30	14				-		36	123	50	18	24	13
31	11	-			-		-	124	-	16	22	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	298.4	18	7.2	9.63	592
November	195.0	-	-	6.5	387
December	186.0	-	-	6.0	369
Calendar year 1946	5,299.0	55	-	14.5	10,520
January	124.0	-	-	4.0	246
February	170.8	-	-	6.1	339
March	285.2	-	-	9.2	566
April	669	50	11	22.3	1,330
May	3,177	128	50	102	6,300
June	2,651	123	50	88.4	5,260
July	893	47	16	28.8	1,770
August	627	30	14	20.2	1,240
September	567	57	13	18.9	1,120
Water year 1946-47	9,843.4	128	-	27.0	19,520

* Winter discharge measurement made on this day.

Note.- No gage-height record Oct. 11-14, Oct. 30 to Apr. 1 (stage-discharge relation affected by ice during most of period), Apr. 5, 6, 8-13, 25, May 1, 2; discharge computed on basis of 2 discharge measurements, weather records, and records for South Fork Rio Grande at South Fork.

Rock Creek near Monte Vista, Colo.

Location.- Water-stage recorder and 8-foot Parshall flume, lat. 37°29', long. 106°16', in SE¼ sec. 36, T. 38 N., R. 6 E., 3 miles downstream from North Fork and 9 miles southwest of Monte Vista.

Drainage area.- 33.6 square miles.

Records available.- May 1935 to September 1947 in reports of Geological Survey. April 1919 to September 1924 and May 1935 to September 1947 in reports of State engineer. (No winter records.)

Extremes.- Maximum discharge during year, 113 second-feet July 14 (gage height, 2.04 feet); minimum daily recorded, 3.7 second-feet Nov. 2, 3, but may have been less during period of no record.
1919-24, 1935-47: Maximum discharge, 178 second-feet May 15, 1944 (gage height, 2.88 feet); minimum daily recorded, 1.6 second-feet Oct. 27-31, 1921.

Remarks.- Records good except those below 10 second-feet, which are fair. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.6	4.7				-	9.9	30	43	18	5.6	11
2	5.3	3.7				-	10	45	43	17	5.6	12
3	5.3	3.7	*6.2			-	11	66	42	17	5.6	11
4	6.0	*b4.3				-	9.9	81	40	16	6.3	11
5	6.6	-				-	8.4	80	38	16	8.0	11
6	5.6	-				-	8.8	78	38	16	6.6	9.9
7	6.0	-				-	8.0	72	37	15	5.3	9.2
8	6.0	-				-	8.4	76	35	15	6.3	9.9
9	6.0	-				-	8.8	74	35	14	9.5	10
10	5.6	-				-	8.0	67	34	13	5.6	9.9
11	4.7	-				-	8.4	57	33	12	5.6	9.2
12	6.3	-				-	7.7	48	32	12	5.3	8.0
13	6.3	-				-	8.8	47	29	12	5.6	7.7
14	6.3	-				-	8.0	48	26	12	7.7	7.3
15	6.3	-				-	8.8	46	24	11	7.3	6.6
16	6.0	-				-	9.2	45	23	10	6.6	6.3
17	6.0	-				-	11	44	22	11	6.6	7.7
18	6.0	-				-	14	46	36	13	7.7	13
19	4.3	-				-	16	49	33	12	11	9.9
20	5.6	-				-	17	52	28	9.9	9.5	8.8
21	6.0	-				-	22	53	32	9.9	9.5	8.4
22	5.6	-				-	24	56	31	9.5	9.9	8.0
23	5.6	-				-	26	53	27	9.9	18	7.7
24	5.3	-				-	26	45	26	8.4	9.5	7.7
25	5.3	-				-	20	46	24	8.0	9.5	8.0
26	5.3	-				-	19	48	23	7.7	10	7.7
27	5.3	-				-	18	49	22	7.0	9.9	7.3
28	5.3	-				8.4	19	47	20	6.6	10	6.6
29	11	-				8.4	20	44	19	6.3	11	6.6
30	8.0	-				9.2	22	45	18	6.3	11	6.6
31	6.0	-				9.5	-	43	-	5.6	11	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	184.5	11	4.3	5.95	366
November	-	-	-	-	-
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	416.1	26	7.7	13.9	825
May	1,680	81	30	54.2	3,330
June	913	43	18	30.4	1,810
July	357.1	18	5.6	11.5	708
August	256.6	18	5.3	8.28	509
September	264.0	13	6.3	8.80	524
Water year	-	-	-	-	-

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Closed basin in San Luis Valley, Colo.

Kerber Creek at Ashley Ranch, near Villa Grove, Colo.

Location.- Water-stage recorder, lat. 38°15', long. 106°08', in sec. 7, T. 46 N., R. 8 E., at Ashley Ranch, 10 miles west of Villa Grove.

Drainage area.- 38 square miles.

Records available.- May 1936 to September 1947 in reports of Geological Survey. June 1923 to September 1926 and May 1936 to September 1947 in reports of State engineer. (No winter records some years.)

Extremes.- Maximum discharge during year, 100 second-feet May 11 (gage height, 5.04 feet); minimum daily recorded, 1.8 second-feet Oct. 1.
1923-26, 1936-47: Maximum discharge, 407 second-feet May 14, 1941 (gage height, 3.88 feet), from rating curve extended above 150 second-feet; minimum daily recorded, 1.2 second-feet Aug. 14, 16, 17, 1940, Oct. 4, 1944.

Remarks.- Records fair except those for periods of no gage-height record, which are poor. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.8						5.6	19	53	20	3.8	3.4
2	2.5						5.9	28	57	20	3.5	3.4
3	3.2						5.2	36	58	21	3.5	3.1
4	3.0						4.3	47	58	23	4.1	3.0
5	3.4						3.7	58	61	23	5.0	3.0
6	3.1						3.4	73	62	20	3.5	3.0
7	3.5						3.4	79	66	20	3.3	2.8
8	3.5						3.6	85	67	18	3.3	2.8
9	3.8						3.7	79	63	16	3.3	3.4
10	3.8						3.6	88	56	16	3.2	5.9
11	3.3						3.5	93	46	14	3.2	5.6
12	2.7						3.4	79	32	12	5.3	3.4
13	3.9						3.4	66	26	12	4.4	3.2
14	3.5						4.5	59	22	11	3.8	3.0
15	3.3						6.0	59	21	11	3.2	3.0
16	3.3						6.6	59	21	11	5.3	3.0
17	3.3						6.2	55	22	11	7.0	3.4
18	3.3						8.5	53	22	12	5.3	6.5
19	2.7						8.8	55	22	10	7.0	4.7
20	3.1						10	73	23	8.3	5.0	4.1
21	3.0						14	76	27	9.6	5.0	3.5
22	3.0						15	80	26	9.2	5.3	3.4
23	3.0						15	79	24	7.8	5.6	3.2
24	3.0						14	66	24	7.0	4.1	3.1
25	3.0						13	61	26	6.2	3.8	3.0
26	3.0	†2.2					11	61	26	5.9	3.5	3.0
27	3.3						12	62	26	5.0	3.2	3.0
28	3.0						14	62	25	5.0	3.2	2.9
29	3.9						15	56	23	5.0	3.1	2.9
30	5.5						17	53	20	4.4	3.2	2.9
31	4.0						-	56	-	4.1	3.5	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	101.7	5.5	1.8	3.28	202
November	-	-	-	-	-
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	243.3	17	3.4	8.11	483
May	1,955	93	19	63.1	3,880
June	1,105	67	20	36.8	2,190
July	378.5	23	4.1	12.2	751
August	129.5	7.0	3.1	4.18	257
September	104.6	6.5	2.8	3.49	207
Water year	-	-	-	-	-

† Result of discharge measurement.

Note.- No gage-height records Oct. 1-31, Apr. 1-23; discharge computed on basis of 1 discharge measurement and records for stations on nearby streams.

Closed basin in San Luis Valley, Colo.

Saguache Creek near Saguache, Colo.

Location.- Water-stage recorder, lat. 38°09', long. 106°19', in sec. 11, T. 45 N., R. 6 E., 10 miles northwest of Saguache.

Drainage area.- 595 square miles.

Records available.- August 1910 to September 1912 and October 1933 to September 1947 in reports of Geological Survey. August 1910 to September 1912 and June 1914 to September 1947 in reports of State engineer. (No winter records some years.)

Average discharge.- 24 years (1910-12, 1914-32, 1940-42, 1943-47), 79.9 second-feet.

Extremes.- Maximum discharge during year, 293 second-feet May 6 (gage height, 1.61 feet); minimum daily recorded, 13 second-feet Nov. 3, but may have been less during period of no gage-height record.
1910-12, 1914-47: Maximum discharge, 746 second-feet June 15, 1921 (gage height, 3.45 feet, datum then in use); minimum daily, 12 second-feet Dec. 11, 1943.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	30	41			30	33	90	175	135	64	69
2	30	28	39			32	37	140	175	140	57	68
3	33	13	b39			33	41	179	179	135	57	79
4	29	39	b38			32	32	211	175	149	59	62
5	32	37	b45			31	24	211	168	146	77	62
6	30	46	46			31	19	238	162	149	79	66
7	34	48	42			31	25	229	155	177	71	66
8	34	47	37			30	23	215	166	175	61	57
9	37	35	34			32	22	225	173	164	66	66
10	37	41	25			31	20	250	166	153	64	88
11	30	17	26			32	19	253	155	133	59	90
12	26	27	25			32	16	213	155	120	73	79
13	39	37	b28			33	14	182	146	112	80	64
14	33	40	b29			31	23	179	129	112	79	57
15	32	28	b29			32	30	190	123	116	82	52
				21	22							
16	32	26	25			34	43	202	129	127	75	51
17	32	29	23			35	35	193	127	125	86	52
18	32	32	24			36	43	193	149	116	90	90
19	28	35	18			38	55	184	182	106	106	125
20	28	33	*19			40	46	186	173	94	100	123
21	29	32	20			43	72	193	166	96	88	96
22	29	33	21			45	82	206	195	106	90	84
23	29	34	23			48	69	215	184	106	98	90
24	29	31	24			44	84	204	168	92	92	77
25	29	*28	26			40	73	190	149	84	82	79
26	29	43	25			40	57	193	146	79	75	79
27	32	50	26			*42	64	195	142	75	73	79
28	34	39	24			37	62	199	138	71	77	77
29	39	38	22		-	41	57	190	133	71	71	77
30	54	38	21		-	33	57	175	131	69	79	77
31	38	-	20		-	38	-	184	-	66	82	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,011	54	26	32.6	2,010
November	1,034	50	13	34.5	2,050
December	883	46	18	28.5	1,750
Calendar year 1946	*17,112	110	-	46.9	33,960
January	651	-	-	21	1,290
February	616	-	-	22	1,220
March	1,107	48	30	35.7	2,200
April	1,277	84	14	42.6	2,530
May	6,107	253	90	197	12,110
June	4,714	195	123	157	9,350
July	3,599	177	66	116	7,140
August	2,392	106	57	77.2	4,740
September	2,271	125	51	75.7	4,500
Water year 1946-47	25,662	253	-	70.3	50,890

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Note.- No gage-height record Nov. 12-24, Dec. 16 to Mar. 26 (stage-discharge relation affected by ice during most of periods), Apr. 4, 5, Aug. 12, Sept. 10, 11; discharge computed on basis of discharge measurement on Dec. 20, weather records, and records for stations on nearby streams.

Closed basin in San Luis Valley, Colo.

North Crestone Creek near Crestone, Colo.

Location.- Water-stage recorder, lat. 38°01', long. 105°41', in sec. 5, T. 43 N., R. 12 E., 1½ miles upstream from Crestone and 3 miles upstream from South Crestone Creek.

Drainage area.- 10.7 square miles.

Records available.- May 1936 to September 1947 (no winter records).

Extremes.- Maximum discharge during year, 154 second-feet June 19 (gage height, 2.12 feet); minimum daily recorded, 1.9 second-feet Apr. 5.
1936-47: Maximum discharge, 735 second-feet Aug. 6, 1936 (gage height, 4.33 feet), by slope-area method; minimum daily recorded, 0.4 second-foot Apr. 3, 1945.

Remarks.- Records good except those below 10 second-feet and those for period of no gage-height record, which are fair. No diversions above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.4	3.2				-	2.2	12	48	69	10	10
2	2.5	2.4				-	2.4	21	61	76	10	9.1
3	2.5	4.1				-	2.5	31	65	67	9.1	8.3
4	3.4	5.8				-	2.1	40	59	63	9.7	8.3
5	4.5	3.2				-	1.9	44	59	60	11	8.0
6	3.6	2.9				-	2.1	54	64	60	9.7	7.7
7	4.3	2.9				-	2.3	56	76	66	8.6	6.9
8	4.3	2.9				-	2.3	60	80	62	8.6	7.4
9	4.3	3.2				-	2.3	62	76	58	8.3	8.6
10	4.1	3.2				-	2.4	64	62	54	7.4	8.3
11	3.6	3.6				-	2.3	54	50	52	8.0	9.1
12	3.6	2.7				-	2.2	40	36	46	8.8	8.6
13	3.6	2.6				-	2.6	34	31	41	8.3	8.0
14	3.6	2.6				-	2.6	38	40	39	8.3	7.7
15	3.6	2.6				-	2.9	37	46	40	7.7	7.4
16	3.4	b2.6				-	2.7	32	48	36	8.3	7.4
17	3.4	b2.8				-	2.9	31	52	33	8.8	7.4
18	3.2	b2.9				-	3.4	34	87	32	10	16
19	2.9	b3.0				-	3.4	38	149	29	24	24
20	3.1	2.4				-	4.3	44	133	25	37	24
21	3.1	2.4				-	5.8	48	113	25	29	20
22	3.1	2.4				-	5.5	50	88	26	25	17
23	3.1	a2.6				-	6.0	45	83	a33	25	16
24	2.9	a2.5				-	6.5	36	86	a27	23	14
25	2.9	a2.4				-	5.5	40	86	a22	21	14
26	2.9	*a3.4				-	5.8	50	86	a20	17	12
27	2.9	a3.6				2.1	6.5	55	79	a18	16	12
28	2.7	a3.2				2.4	6.0	54	77	a16	14	10
29	4.0	a3.0				2.3	5.5	44	73	14	13	10
30	4.1	a2.8				2.3	6.5	49	70	13	12	10
31	3.4	-				2.3	-	48	-	12	12	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	105.0	4.5	2.4	3.39	208
November	89.9	5.8	2.4	3.00	178
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March 27-31	11.4	2.4	2.1	2.28	23
April	111.4	6.5	1.9	3.71	221
May	1,345	64	12	43.4	2,670
June	2,163	149	31	72.1	4,290
July	1,234	76	12	39.8	2,450
August	428.6	37	7.4	13.8	850
September	337.2	24	6.9	11.2	669
Water year 1946-47	-	-	-	-	-

* Winter discharge measurement made on this day.
a No gage-height records (stage-discharge relation affected by ice Nov. 23-30); discharge computed on basis of 1 discharge measurement, weather records, and records for stations on nearby streams.
b Stage-discharge relation affected by ice.

Closed basin in San Luis Valley, Colo.

Carnero Creek near La Garita, Colo.

Location.- Water-stage recorder, lat. 37°52', long. 106°20', in sec. 26, T. 42 N., R. 6 E., 3 miles northwest of La Garita.

Drainage area.- 117 square miles.

Records available.- October 1933 to September 1947 in reports of Geological Survey. April 1919 to September 1947 in reports of State engineer. (No winter records most years).

Extremes.- Maximum discharge during year, 173 second-feet July 22 (gage height, 2.00 feet); minimum daily recorded, 1.5 second-feet Oct. 12.
1919-47: Maximum discharge, 1,600 second-feet July 21, 1945 (gage height, 5.75 feet), from rating curve extended above 170 second-feet; minimum daily, 0.3 second-foot Aug. 9, 10, 1946.

Remarks.- Records fair. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a2.5	2.4				-	8.1	16	20	6.8	4.7	24
2	2.7	2.7				-	7.6	16	20	6.3	4.4	24
3	2.7	2.4				-	8.6	20	18	6.8	4.1	26
4	3.3	2.7				-	7.2	23	18	9.0	4.7	24
5	3.9	2.7				-	6.8	23	18	8.6	8.2	24
6	3.9	2.7				-	3.3	23	16	10	12	29
7	4.2	2.7				-	3.3	22	16	10	7.0	24
8	4.5	3.6				-	3.6	22	14	10	5.4	22
9	3.6	3.3				-	3.9	24	13	10	5.4	25
10	3.3	3.6				-	1.8	25	12	15	5.0	25
11	2.7	3.6				-	2.1	32	14	8.6	4.7	26
12	1.5	4.2				-	2.1	29	15	5.8	12	21
13	2.7	3.9				-	2.4	24	16	4.5	14	20
14	2.7	3.9				-	2.7	24	12	5.8	10	16
15	2.7	4.2				-	5.8	24	12	12	9.5	15
16	3.0	b5.0				-	9.0	25	12	12	8.6	15
17	3.0	b4.5				-	5.8	33	10	16	8.6	15
18	2.7	b3.3				-	9.5	30	13	14	12	23
19	2.1	b3.0				-	11	27	18	12	19	22
20	1.8	b3.5				-	10	27	14	7.2	26	18
21	2.4	b3.7				-	16	26	14	5.4	18	15
22	3.0	a4.0				-	14	25	18	18	18	13
23	3.0	a4.3				-	13	25	18	20	26	12
24	2.7	a4.4				-	12	25	15	12	21	12
25	2.4	*a4.4				*a9.8	6.8	24	13	10	23	12
26	2.1	a4.4				8.1	6.8	23	12	9.0	22	12
27	2.4	a4.3				7.6	11	23	10	8.6	21	12
28	3.0	a4.3				9.5	12	22	9.5	7.8	20	12
29	6.3	a4.5				6.8	12	21	7.6	7.0	18	11
30	8.1	a4.4				6.8	13	20	7.2	6.2	18	11
31	3.9	-				7.6	-	20	-	5.8	23	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	98.8	8.1	1.5	3.19	196
November	110.6	5.0	2.4	3.69	219
December	-	-	-	-	-
Calendar year 1946	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March. 25-31	-	9.8	-	8.03	111
April	56.2	16	6.8	7.71	459
May	231.2	33	1.8	24.0	1,470
June	425.3	20	7.2	14.2	844
July	300.2	20	4.5	9.68	595
August	413.3	26	4.1	13.3	820
September	560	29	11	18.7	1,110
Water year 1946-47	-	-	-	-	-

* Winter discharge measurement made on this day.
a No gage-height record (stage-discharge relation affected by ice during part of periods); discharge computed on basis of 2 discharge measurements and weather records.
b Stage-discharge relation affected by ice.

Closed basin in San Luis Valley, Colo.

La Garita Creek near La Garita, Colo.

Location.- Water-stage recorder, lat. 37°49', long. 106°18', in sec. 10, T. 41 N., R. 6 E., 4 miles southwest of La Garita.

Drainage area.- 61 square miles.

Records available.- October 1933 to September 1947 in reports of Geological Survey. April 1919 to September 1947 in reports of State engineer. (No winter records most years.)

Extremes.- Maximum discharge during year, 350 second-feet Aug. 12 (gage height, 2.69 feet), from rating curve extended above 90 second-feet; minimum daily recorded, 1.9 second-feet Nov. 18, 19.

1919-47: Maximum discharge, 457 second-feet May 16, 1941 (gage height, 5.11 feet), from rating curve extended above 220 second-feet; minimum daily, 0.7 second-foot Aug. 29, 1940.

Remarks.- Records fair. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.3	2.1				-	a9.0	19	28	14	6.2	28
2	5.6	2.7				-	a8.6	28	28	14	5.5	21
3	5.6	2.7				-	a9.0	32	28	15	5.5	18
4	6.2	3.0				-	a8.0	33	28	17	6.2	22
5	7.4	b3.0				-	a7.0	30	25	16	7.2	21
6	6.5	b3.0				-	a6.0	32	25	15	8.5	23
7	7.4	b4.0				-	a4.1	28	25	15	6.5	20
8	6.8	4.7				-	a4.3	31	25	15	5.9	18
9	7.1	b4.1				-	a4.5	42	25	15	6.2	19
10	5.6	b4.4				-	*a2.2	37	24	15	5.2	18
11	3.8	b4.0				-	5.0	38	24	12	4.8	17
12	3.8	b3.5				-	3.8	31	24	11	33	15
13	5.0	3.0				-	4.1	31	22	10	17	14
14	4.7	a3.0				-	3.8	29	20	12	16	12
15	4.7	3.0				-	5.6	30	18	20	17	11
16	4.1	b4.4				-	6.8	30	18	15	16	10
17	4.1	3.2				-	5.0	33	17	17	17	12
18	4.1	1.9				-	8.4	32	23	17	16	25
19	3.6	1.9				-	8.4	32	29	12	17	21
20	3.6	2.5				-	7.1	35	26	9.8	24	16
21	3.6	2.5				-	9.4	34	23	9.4	20	13
22	*4.4	a3.8				-	8.4	39	28	9.4	17	12
23	3.4	a4.4				-	7.8	38	26	12	17	11
24	3.4	a4.6				-	9.0	32	21	8.2	18	8.5
25	2.5	*a4.5				*7.5	6.5	32	19	8.2	23	9.8
26	2.5	a4.3				-	7.1	34	18	7.8	25	9.4
27	2.5	a4.3				*8.6	8.1	34	18	7.2	27	9.0
28	2.3	a4.7				-	6.8	37	17	7.8	22	9.0
29	4.1	a4.6				-	6.8	32	16	7.5	18	8.5
30	3.0	a4.4				-	10	32	15	7.2	25	9.0
31	2.1	-				-	-	32	-	6.8	25	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	138.8	7.4	2.1	4.48	275
November	108.0	4.7	1.9	3.53	210
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	200.6	10	2.2	6.69	398
May	1,009	42	19	32.5	2,000
June	683	29	15	22.8	1,350
July	378.3	20	6.8	12.2	750
August	477.7	33	4.8	15.4	948
September	460.2	28	8.5	15.3	913
Water year 1946-47	-	-	-	-	-

* Winter discharge measurement made on this day.

a No gage-height record (stage-discharge relation affected by ice during most of period); discharge computed on basis of 2 discharge measurements, weather records, and records for Carnero Creek near La Garita.

b Stage-discharge relation affected by ice.

Alamosa Creek above Terrace Reservoir, Colo.

Location.- Water-stage recorder, lat. 37°23', long. 106°21', in sec. 8, T. 36 N., R. 6 E., 3 miles upstream from Terrace Reservoir Dam and 15 miles northwest of Capulin.

Drainage area.- 107 square miles.

Records available.- September 1911 to June 1912 and October 1934 to September 1947 in reports of Geological Survey. April 1915 to October 1919, October 1923 to September 1927 and October 1934 to September 1947 in reports of State engineer. (No winter records most years.)

Extremes.- Maximum discharge during year, 888 second-feet May 8 (gage height, 3.22 feet); minimum daily determined, 14 second-feet Mar. 1, 7, 8, 10-12, 14.
1911-12, 1915-19, 1923-27, 1934-47: Maximum discharge, 5,200 second-feet Oct. 5, 1911 (gage height, 11.0 feet, datum then in use, from floodmark), computed by weir formula; minimum not determined.

Remarks.- Records good except those for period of ice effect or no gage-height record, which are fair. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	35				14	46	184	493	178	35	80
2	29	32				15	54	307	545	178	32	68
3	40	29				16	58	488	527	175	31	60
4	42	32				17	48	635	476	166	32	60
5	58	30				16	40	661	460	155	60	60
6	40	29				15	36	661	476	146	42	54
7	47	30				14	38	575	533	146	39	48
8	42	30				14	37	654	533	135	45	48
9	45	26				15	40	680	504	125	67	60
10	44	26				14	37	493	460	112	48	72
11	31	25				14	38	420	390	101	39	57
12	30	29				14	34	328	307	92	45	51
13	31	*31				15	34	303	256	87	47	43
14	30	31				14	36	320	260	87	73	39
15	*32	32				15	43	324	283	90	70	36
16	31	23	26	16	17	16	48	307	264	81	72	32
17	31	30				18	64	283	267	80	90	44
18	32	32				19	94	303	315	78	85	425
19	26	32				20	92	324	283	72	80	303
20	28	30				23	122	420	295	68	83	213
21	29	35				27	169	482	328	62	70	166
22	29	32				34	181	533	287	57	108	135
23	29	35				35	188	498	234	60	106	115
24	28	34				30	197	375	210	54	94	103
25	26	27				26	149	425	217	47	74	96
26	26	24				30	130	504	230	46	67	87
27	26	26				32	125	521	230	43	125	76
28	27	26				*38	117	498	217	42	101	73
29	58	26			-	39	110	425	200	42	81	68
30	48	25			-	42	117	476	188	38	78	67
31	44	-			-	46	-	504	-	35	78	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,086	58	26	35.0	2,150
November	884	35	23	29.5	1,750
December	806	-	-	26	1,600
Calendar year 1946	26,554	455	13	72.8	52,680
January	496	-	-	16	984
February	476	-	-	17	944
March	697	46	14	22.5	1,380
April	2,522	197	34	84.1	5,000
May	13,911	680	184	449	27,590
June	10,268	545	188	342	20,370
July	2,878	178	35	92.8	5,710
August	2,097	125	31	67.6	4,160
September	2,839	425	32	94.6	5,630
Water year 1946-47	38,960	680	-	107	77,270

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Nov. 3-25. No gage-height record Nov. 26 to Mar. 18 (stage-discharge relation affected by ice during most of period); discharge computed on basis of weather records.

Alamosa Creek below Terrace Reservoir, Colo.

Location.- Water-stage recorder, lat. 37°21', long. 106°17', in sec. 23, T. 36 N., R. 6 E., half a mile downstream from Terrace Reservoir and 11 miles northwest of Capulin.

Drainage area.- 116 square miles.

Records available.- April 1909 to June 1912 and October 1933 to September 1947 in reports of Geological Survey. April 1909 to November 1912, April to October 1915, February 1917 to October 1920, and April 1922 to September 1947 in reports of State engineer.

Average discharge.- 29 years (1909-10, 1915-18, 1922-47), 120 second-feet.

Extremes.- Maximum discharge during year, 680 second-feet May 10 (gage height, 4.31 feet); minimum daily, 11 second-feet (regulated) Nov. 30 to Jan. 31.
1909-12, 1915, 1917-20, 1922-47: Maximum daily discharge, 1,450 second-feet June 16-18, 1917; minimum daily, 0.2 second-foot (regulated) Nov. 13, 1942.

Remarks.- Records excellent except those below 60 second-feet, which are good, and those for period of no gage-height record, which are fair. Flow regulated by Terrace Reservoir (capacity, 17,700 acre-feet). No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	29	28	11	11	12	13	37	207	408	217	47	111
2	30	28	11	11	12	13	37	204	468	183	47	111
3	32	29	11	11	12	13	37	242	475	165	48	111
4	32	29	11	11	*12	13	37	269	472	162	48	111
5	33	29	11	11	12	13	38	472	468	162	61	109
6	35	29	11	11	12	13	38	635	430	162	93	106
7	47	30	11	11	12	13	38	647	436	180	76	99
8	47	30	11	11	12	13	38	647	447	174	59	59
9	47	22	11	11	12	13	38	651	499	140	69	59
10	47	14	11	11	12	13	38	663	499	106	69	59
11	48	13	11	11	12	13	38	659	479	109	67	59
12	48	14	11	11	12	13	40	523	381	123	69	59
13	48	*14	11	11	12	13	40	378	302	146	91	58
14	48	14	11	11	12	13	40	371	233	118	89	58
15	47	14	11	11	12	13	51	364	233	116	77	58
16	44	14	11	*11	12	14	118	361	233	93	72	58
17	46	14	11	11	12	14	118	354	233	95	70	58
18	44	14	11	11	12	14	118	348	236	106	65	64
19	44	14	11	11	12	14	121	345	242	109	64	65
20	43	14	11	11	12	14	121	345	242	109	65	69
21	43	14	11	11	12	14	126	348	246	109	67	69
22	34	14	11	11	12	14	171	398	246	104	79	64
23	27	14	11	11	12	14	220	468	275	104	81	49
24	27	14	11	11	12	14	220	454	272	111	85	51
25	27	14	11	11	12	14	217	385	207	109	116	52
26	27	14	11	11	12	14	213	388	207	93	116	52
27	27	14	11	11	12	14	213	395	213	89	116	52
28	27	14	11	11	12	*14	213	398	213	61	116	52
29	27	12	11	11	-	19	210	398	217	74	116	52
30	27	11	11	11	-	38	210	402	217	74	113	52
31	28	-	11	11	-	37	-	405	-	61	111	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,160	48	27	37.4	2,300
November	542	30	11	18.1	1,080
December	341	11	11	11.0	676
Calendar year 1946	26,530.9	461	-	72.7	52,630
January	341	11	11	11.0	676
February	336	12	12	12.0	666
March	471	38	13	15.2	934
April	3,194	220	37	106	6,340
May	13,124	663	204	423	26,030
June	9,729	499	207	324	19,300
July	3,764	217	61	121	7,470
August	2,462	116	47	79.4	4,880
September	2,086	111	49	69.5	4,140
Water year 1946-47	37,550	663	11	103	74,490

* Winter discharge measurement made on this day.
Note.- No gage-height record Nov. 26 to Mar. 27; discharge computed on basis of 2 discharge measurements and gage openings at Terrace Reservoir.

La Jara Creek at Gallegos Ranch, near Capulin, Colo.

Location.- Water-stage recorder, lat. 37°09', long. 106°13', in NE¼ sec. 32, T. 34 N., R. 7 E., 2 miles upstream from former station (published as La Jara Creek near Capulin), 2½ miles upstream from Canyon Del Rancho, 11 miles southwest of Capulin, and 11½ miles downstream from La Jara Reservoir.

Drainage area.- 79 square miles.

Records available.- May 1936 to September 1947 (no winter records).

Extremes.- Maximum discharge during year, 200 second-feet May 3 (gage height, 3.35 feet); minimum daily recorded, 5.9 second-feet Sept. 16.
1936-47: Maximum discharge, 653 second-feet Apr. 15, 1937 (gage height, 5.94 feet), from rating curve extended above 220 second-feet; minimum daily recorded, 3.5 second-feet Nov. 28, 1936.

Remarks.- Records good except those below 10 second-feet, which are fair. Small diversions above station for irrigation. Flow regulated by La Jara Reservoir (capacity, 14,040 acre-feet).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.4	13				-	56	68	17	10	36	13
2	7.4	7.0				-	65	96	16	10	31	11
3	7.4					-	54	130	15	10	20	11
4	31					-	36	131	14	12	18	12
5	39					-	28	110	13	11	21	9.8
6	45					-	24	104	13	11	19	7.8
7	50					-	26	75	13	15	28	9.4
8	18					-	25	70	12	9.8	29	8.2
9	19					-	30	72	11	9.8	30	8.6
10	18					-	22	69	11	9.0	29	8.2
11	13					-	23	69	12	8.2	30	7.4
12	12					-	21	59	12	7.8	49	7.8
13	12	(*)				-	18	52	12	8.2	51	7.0
14	9.8					-	21	68	11	9.8	54	6.3
15	7.4					-	34	63	11	9.0	50	6.3
16	7.8	9				-	43	68	11	9.8	39	5.9
17	7.8					-	49	63	12	35	24	7.8
18	7.8					-	60	34	14	40	22	15
19	7.0					-	51	32	20	40	16	13
20	7.4					-	57	31	16	39	14	9.0
21	7.4					-	75	28	15	43	12	8.2
22	7.4					-	62	25	19	43	12	7.8
23	7.8					-	57	28	15	44	12	7.4
24	7.4					-	58	33	13	34	11	7.8
25	7.0					-	48	26	13	29	11	7.8
26	7.0					-	48	22	12	27	11	7.8
27	6.6					-	47	22	11	26	10	7.4
28	6.6					32	40	22	11	26	10	7.4
29	11					42	40	22	11	34	10	7.8
30	19					51	51	19	10	36	11	9.4
31	21	-				54	-	18	-	36	11	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	442.4	50	6.6	14.3	877
November	272.0	-	-	9.1	540
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	1,269	75	18	42.3	2,520
May	1,729	131	18	55.8	3,430
June	396	20	10	13.2	785
July	692.4	44	7.8	22.3	1,370
August	731	54	10	23.6	1,450
September	263.3	15	5.9	8.78	522
Water year	-	-	-	-	-

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 3-30 (no gage-height record Nov. 26-30).

Trinchera Creek above Turners Ranch, near Fort Garland, Colo.

Location.- Water-stage recorder, lat. 37°22', long. 105°19', in sec. 2, T. 31 S., R. 71 W., just upstream from Turners Ranch and 7 miles southeast of Fort Garland.

Drainage area.- 45 square miles.

Records available.- October 1933 to September 1947 in reports of Geological Survey. April 1928 to September 1947 in reports of State engineer. (No winter records most years.)

Extremes.- Maximum discharge during year, 490 second-feet May 10 (gage height, 3.73 feet), from rating curve extended above 180 second-feet: minimum daily recorded, 9.2 second-feet Oct. 20, 22-24, 26-28.

1923-47: Maximum discharge, 689 second-feet May 27, 1942, from rating curve extended above 240 second-feet; maximum gage height, 3.47 feet May 15, 1944; minimum daily discharge recorded, 3.0 second-feet Oct. 3, 1942.

Remarks.- Records good except those for May, which are fair. No diversion or regulation above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	11				-	15	65	130	84	35	25
2	10	10				-	17	95	130	77	35	23
3	10	-				-	18	142	130	76	31	21
4	13	-				-	15	200	138	74	31	21
5	17	-				-	15	225	135	73	31	21
6	12	-				-	15	286	138	73	29	20
7	17	-				-	13	308	141	74	28	18
8	13	-				-	11	320	144	66	29	20
9	12	-				-	11	342	147	61	28	20
10	12	-				-	11	420	147	59	26	20
11	10	-				-	11	381	138	57	26	20
12	11	-				-	12	284	130	55	27	18
13	11	-				-	15	216	118	54	27	17
14	11	-				-	11	187	110	52	30	16
15	11	-				-	11	175	104	51	29	15
16	11	-				-	14	158	96	51	28	14
17	11	-				-	12	141	92	51	27	14
18	11	-				-	14	144	106	50	28	16
19	10	-				-	17	155	161	45	28	17
20	9.2	-				-	17	161	175	43	27	17
21	9.6	-				-	26	164	175	43	26	14
22	9.2	-				-	36	172	172	45	25	12
23	9.2	-				-	44	179	155	50	25	11
24	9.2	-				-	46	a168	144	45	28	12
25	9.6	-				-	38	a135	130	41	28	11
26	9.2	-				12	34	a130	120	39	26	11
27	9.2	-				12	36	a130	112	37	24	11
28	9.2	-				14	39	a137	106	36	23	10
29	15	-				14	41	a132	96	35	23	12
30	15	-				13	48	135	85	35	23	13
31	13	-				14	-	130	-	35	24	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	349.6	17	9.2	11.3	693
November	-	-	-	-	-
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March 26-31	79	14	12	13.2	157
April	663	48	11	22.1	1,320
May	6,017	420	85	194	11,930
June	3,905	175	85	130	7,750
July	1,687	84	35	53.8	3,310
August	855	35	23	27.6	1,700
September	490	25	10	16.3	972
Water year	-	-	-	-	-

a No gage-height record; discharge computed on basis of station above Mountain Home Reservoir, near Fort Garland.

Trinchera Creek above Mountain Home Reservoir, near Fort Garland, Colo.

Location.- Water-stage recorder upstream from rating flume, lat. 37°24', long. 105°32', in sec. 31, T. 30 S., R. 71 W., 1½ miles upstream from Mountain Home Reservoir Dam and 4 miles southeast of Fort Garland.

Drainage area.- 61 square miles.

Records available.- October 1933 to September 1947 in reports of Geological Survey. May 1923 to September 1947 in reports of State engineer. (No winter records most years).

Extremes.- Maximum discharge during year, 421 second-feet May 11 (gage height, 3.02 feet), from rating curve extended above 110 second-feet; minimum observed, 3.6 second-feet (discharge measurement) Dec. 19.
1923-47: Maximum discharge, that of May 11, 1947; minimum not determined.

Remarks.- Records fair. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.8	7.0					13	44	111	66	16	13
2	4.8	7.6					14	79	102	63	15	12
3	4.8	b3.9					16	122	90	62	14	11
4	5.4	.6					15	194	91	62	13	9.4
5	9.2	3.4			(*)		11	224	93	62	15	9.4
6	6.5	(b)					9.8	262	100	63	14	8.8
7	11	(b)					13	252	116	66	12	7.6
8	8.7						11	276	146	51	12	9.4
9	7.6						9.8	324	136	49	12	16
10	5.8						8.7	388	121	45	11	16
11	5.1						8.7	385	117	41	10	16
12	4.8						7.0	309	111	40	12	14
13	4.8					7.0	7.0	258	93	40	10	14
14	5.1						9.2	202	81	40	12	14
15	5.1		4.0	(*)5.0	6.0		9.8	193	72	38	13	13
16	5.1						9.8	160	68	42	14	13
17	4.8						9.8	131	63	42	16	12
18	*4.4	6.3					10	122	80	38	15	13
19	4.4		(*)				13	128	124	36	16	14
20	4.4	(*)					13	132	128	34	14	13
21	4.4						16	136	138	33	14	12
22	4.4						22	132	a130	30	12	11
23	5.1						29	138	118	35	12	11
24	4.8						35	110	99	32	15	10
25	4.4						29	100	94	26	16	10
26	4.8					*8.5	25	100	87	26	14	10
27	5.4					12	25	103	82	26	11	10
28	6.2					13	28	111	76	23	10	10
29	7.6				-	13	28	111	71	20	11	10
30	12				-	13	34	124	69	19	11	12
31	8.7	-			-	13	-	118	-	18	12	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	184.4	12	4.4	5.95	366
November	180.0	-	-	6.00	357
December	124.0	-	-	4.0	246
Calendar year 1946	2,847.7	23	-	7.80	5,650
January	155.0	-	-	5.0	307
February	168.0	-	-	6.0	333
March	247.5	-	-	7.98	491
April	489.6	35	7.0	16.3	971
May	5,468	388	44	176	10,850
June	3,007	146	63	100	5,960
Jnly	1,268	66	18	40.9	2,520
August	404	16	10	13.0	801
September	354.6	16	7.6	11.8	703
Water year 1946-47	12,050.1	388	-	33.0	23,900

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for station above Turners Ranch, near Fort Garland.
b Stage-discharge relation affected by ice.
Note.- No gage-height record Nov. 8 to Mar. 26 (stage-discharge relation affected by ice during most of period); discharge computed on basis of 5 discharge measurements and weather records.

Trinchera Creek below Smith Reservoir, near Blanca, Colo.

Location.- Water-stage recorder, lat. 37°23', long. 105°35', in sec. 5, T. 31 S., R. 73 W., 1 mile downstream from Smith Reservoir and 5 miles southwest of Blanca.

Drainage area.- 396 square miles.

Records available.- October 1933 to September 1947 in reports of Geological Survey. October 1929 to September 1947 in reports of State engineer. (No winter records most years.)

Extremes.- Maximum discharge during year, 313 second-feet May 12 (gage height, 3.50 feet), from rating curve extended above 125 second-feet; minimum daily, 0.1 second-foot Sept. 9, 10, 13, 14.

1929-47: Maximum daily discharge, 1,340 second-feet May 11, 1942; minimum daily recorded, 0.1 second-foot at times in 1937, 1938, 1945, and 1947.

Remarks.- Records good except those below 22 second-feet, which are fair. Diversions above station for irrigation. Flow regulated by Smith Reservoir (capacity, 5,335 acre-feet).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.3	0.3	0.3	0.3	0.3	0.4	38	82	3.1	0.6	0.5
2	.3	.4	.3	.3	.3	.3	.4	48	77	2.3	.6	.5
3	.3	.4	.3	.3	.3	.3	.4	74	53	2.1	.6	.5
4	.3	.4	.3	.3	.3	.3	.4	110	36	1.9	.6	.5
5	.3	.3	.3	.3	*.3	.3	.4	145	21	1.9	.6	.5
6	.3	.3	.3	.3	.3	.3	.4	188	10	2.1	.6	.5
7	.4	.3	.3	.3	.3	.3	.4	207	2.7	1.9	.6	.5
8	.4	.3	.3	.3	.3	.3	.4	218	1.8	2.1	.6	.5
9	.4	.3	.3	.3	.3	.3	.5	224	1.5	2.1	.6	.1
10	.4	.3	.3	.3	.3	.3	.6	250	1.0	2.7	.6	.1
11	.4	.3	.3	.3	.3	.3	.7	281	1.0	1.9	.6	.2
12	.4	.3	.3	.3	.3	.3	1.0	296	1.0	1.8	.6	.2
13	.4	.3	.3	.3	.3	.3	.8	247	1.0	1.6	.6	.1
14	.4	.3	.3	.3	.3	.3	1.2	207	1.0	1.2	.6	.1
15	.4	.3	.3	*.3	.3	.3	2.1	188	1.0	1.0	.6	.3
16	.4	.3	.3	.3	.3	.3	.8	196	1.0	.8	.6	.3
17	.4	.3	.3	.3	.3	.3	.6	188	1.0	.8	.6	.3
18	.4	.3	.3	.3	.3	.3	.6	166	1.0	.8	.6	.4
19	.4	.3	*.3	.3	.3	.3	.6	156	1.0	.8	.5	.4
20	.3	*.3	.3	.3	.3	.3	.5	148	14	.8	.4	.4
21	.3	.3	.3	.3	.3	.3	.5	141	76	.7	.4	.4
22	.3	.3	.3	.3	.3	.3	.7	140	125	.7	.5	.4
23	.3	.3	.3	.3	.3	.3	3.1	117	133	.7	.4	.5
24	.3	.3	.3	.3	.3	.3	11	137	105	.7	.4	.5
25	.3	.3	.3	.3	.3	.3	26	150	78	.7	.5	.5
26	.3	.3	.3	.3	.3	*.3	39	140	55	.7	.5	.5
27	.3	.3	.3	.3	.3	.3	44	110	40	.7	.4	.5
28	.3	.3	.3	.3	.3	.3	43	97	26	.7	.4	.6
29	.4	.3	.3	.3	-	.4	40	91	11	.7	.4	.7
30	.3	.3	.3	.3	-	.4	37	84	5.6	.6	.4	.6
31	.3	-	.3	.3	-	.4	-	77	-	.6	.4	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	10.7	0.4	0.3	0.35	21
November	9.3	.4	.3	.31	18
December	9.3	.3	.3	.30	18
Calendar year 1946	1,298.3	23	.2	3.56	2,570
January	9.3	.3	.3	.30	18
February	8.4	.3	.3	.30	17
March	9.6	.4	.3	.31	19
April	257.5	44	.4	8.58	511
May	4,859	296	38	157	9,640
June	963.6	133	1.0	32.1	1,910
July	41.2	3.1	.6	1.33	82
August	16.4	.6	.4	.53	33
September	12.1	.7	.1	.40	24
Water year 1946-47	6,206.4	296	.1	17.0	12,310

* Winter discharge measurement made on this day.

Note.- No gage-height records Nov. 15 to Mar. 26, June 8-20, July 1-22; discharge computed on basis of 5 discharge measurements and gate opening at Smith Reservoir.

Sangre de Cristo Creek near Fort Garland, Colo.

Location.- Water-stage recorder, lat. 37°26', long. 105°24', in sec. 23, T. 30 S., R. 72 W., 1½ miles east of Fort Garland and 4 miles upstream from Ute Creek.

Drainage area.- 187 square miles.

Records available.- October 1933 to September 1947 in reports of Geological Survey. March to October 1916 and May 1923 to September 1947 in reports of State engineer. (No winter records most years.)

Extremes.- Maximum discharge during year, 473 second-feet June 20 (gage height, 6.74 feet); no flow Oct. 1-13.
1916, 1923-47: Maximum discharge, 1,520 second-feet Aug. 31, 1936, by slope-area method; maximum gage height, 7.65 feet May 10, 1942, from floodmarks; no flow at times during 1934-36, 1939-40, 1943, 1946.

Remarks.- Records good except those below 50 second-feet, which are fair. A few diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0						45	155	104	62	14	12
2	0						46	204	93	a56	13	12
3	0						56	a225	85	a55	12	10
4	0						42	a260	74	56	12	9.0
5	0				(*)		30	a275	70	60	14	9.0
6	0						29	a280	64	56	14	8.6
7	0						35	a275	55	64	13	7.8
8	0						31	a300	48	53	12	7.4
9	0						33	324	40	46	13	9.8
10	0						30	336	37	42	11	11
11	0					16	28	336	34	38	10	9.8
12	0						24	327	38	33	13	10
13	0						24	297	37	31	13	9.4
14	.1						25	277	31	32	14	8.6
15	2.6	4.0	3.2	*4.5	7.5		29	260	26	31	15	7.8
16	2.6						23	265	22	30	16	7.4
17	2.2						25	241	18	34	15	7.0
18	*2.6						26	214	40	32	12	11
19	2.2		(*)				32	214	312	31	14	15
20	2.6	(*)					36	221	384	30	15	11
21	3.0						52	206	252	28	12	9.8
22	3.0						79	194	236	29	12	9.0
23	3.4					27	126	202	158	34	12	8.6
24	3.4						126	209	134	33	14	8.2
25	3.4						104	174	118	25	25	8.6
26	3.4					*33	88	154	100	23	20	9.0
27	3.7					37	95	149	90	22	15	8.6
28	3.7					41	99	145	84	22	13	8.2
29	6.3				-	41	101	140	77	20	12	9.0
30	9.4				-	33	117	125	66	17	12	10
31	8.5				-	42	-	112	-	16	12	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	66.1	9.4	0	2.13	131
November	120	-	-	4.0	238
December	99.2	-	-	3.2	197
Calendar year 1946	2,416.2	45	0	6.62	4,800
January	139.5	-	-	4.5	277
February	210.0	-	-	7.5	417
March	682	42	-	22.0	1,350
April	1,636	126	23	54.5	3,240
May	7,096	336	112	229	14,070
June	2,927	384	18	97.6	5,810
July	1,141	64	16	36.8	2,260
August	424	25	10	13.7	841
September	282.6	15	7.0	9.42	561
Water year 1946-47	14,823.4	384	0	40.6	29,390

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for stations on nearby streams.
Note.- No gage-height record Nov. 1 to Mar. 25 (stage-discharge relation affected by ice during most of period); discharge computed on basis of 4 discharge measurements and weather records.

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Ute Creek near Fort Garland, Colo.

Location.- Water-stage recorder upstream from rating flume, lat. 37°28', long. 105°24', in sec. 2, T. 30 S., R. 72 W., 2½ miles north of Fort Garland and 6 miles upstream from mouth.

Drainage area.- 32 square miles.

Records available.- October 1933 to September 1947 in reports of Geological Survey. March to October 1916 and May 1923 to September 1947 in reports of State engineer. (No winter records some years.)

Extremes.- Maximum discharge during year, 151 second-feet May 11 (gage height, 2.37 feet); minimum daily recorded, 5.4 second-feet Oct. 17, 18.
1916, 1923-47: Maximum daily discharge, 630 second-feet May 15, 1941; minimum daily recorded, 1.5 second-feet Sept. 23, 1944.

Remarks.- Records good except those below 25 second-feet, which are fair, and those for periods of ice effect or no gage-height record, which are poor. A few diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.8	11				9.4	14	25	66	39	15	25
2	7.8	10				10	15	41	73	35	14	24
3	7.4	6.5				11	16	68	60	35	14	21
4	8.8	6.5				10	12	91	58	51	14	21
5	19	14				10	10	115	59	67	54	22
6	12	14				10	9.6	116	58	67	28	20
7	17	12				10	12	113	72	79	21	18
8	15	12				9.0	11	119	87	69	18	18
9	13	12				9.6	12	125	80	79	16	22
10	12	12				9.2	10	139	70	59	14	20
11	12	8.0				9.6	9.2	128	58	46	12	20
12	12	10				10	7.0	96	50	39	14	20
13	13	12				10	7.4	83	40	36	16	19
14	12	b11				9.4	9.6	77	42	35	19	18
15	13	b9.0				9.8	9.6	82	50	39	18	17
16	11	7.0				10	8.3	78	53	35	23	16
17	5.4	8.0				10	9.2	65	51	39	25	15
18	5.4	8.4				11	9.6	61	65	37	23	26
19	5.8	8.8				12	14	61	76	34	28	28
20	6.5	*7.4				13	16	63	71	35	35	26
21	7.4	7.0				14	18	62	78	32	27	23
22	7.4	7.4				14	21	62	76	28	28	20
23	6.5	8.0				15	25	68	56	39	35	19
24	6.2	7.0				14	26	58	49	33	31	18
25	6.5	6.4				14	25	54	49	27	37	17
26	7.0	8.0				*13	23	60	49	25	31	15
27	7.4	8.5				12	22	75	48	23	28	14
28	7.4	8.0				13	21	76	47	21	24	14
29	11	7.0				13	18	64	44	18	23	14
30	14	7.0				12	18	61	41	17	23	14
31	12	-				12	-	68	-	16	23	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	308.7	19	5.4	9.96	612
November	273.9	14	6.4	9.13	543
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	349.0	15	9.0	11.3	692
April	438.5	26	7.0	14.6	870
May	2,454	139	25	79.2	4,870
June	1,776	87	40	59.2	3,520
July	1,234	79	16	39.8	2,450
August	731	54	12	23.6	1,450
September	584	28	14	19.5	1,160
Water year	-	-	-	-	-

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- No gage-height record Nov. 11, 12, 16-30, Mar. 1-25 (stage-discharge relation affected by ice during most of periods); discharge computed on basis of 1 discharge measurement and weather records.

Conejos River at Platoro, Colo.

Location.- Water-stage recorder, lat. 37°21'00", long. 106°31'30", in sec. 22, T. 36 N., R. 4 E., half a mile east of Platoro and 5 miles downstream from Adams Fork.

Drainage area.- 44.4 square miles.

Records available.- April 1937 to September 1947 (no winter records).

Extremes.- Maximum discharge during year, 1,000 second-feet June 7 (gage height, 2.82 feet); minimum daily recorded, 12 second-feet Nov. 21.
1937-47: Maximum discharge, 1,310 second-feet June 25, 1941 (gage height, 3.15 feet), from rating curve extended above 850 second-feet; minimum daily recorded, 3.5 second-feet Oct. 20, 1943.

Remarks.- Records excellent except those for November and for Apr. 1-15, which are fair. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	49					a20	152	465	220	32	54
2	41	43					23	267	578	229	31	48
3	49	37					26	405	573	229	28	43
4	61	41					27	505	530	229	43	38
5	68	46					b28	505	556	194	75	37
6	52	b48					b30	500	618	174	49	36
7	59	b48					25	455	722	177	46	32
8	57	31					30	520	734	155	54	31
9	59	30					26	578	716	149	57	33
10	57	b28					b26	435	618	135	48	46
11	49	b27					b26	347	470	118	38	36
12	48	b30					b29	276	352	105	49	32
13	44	a32					b27	229	285	100	61	30
14	43	b32					26	220	333	97	75	26
15	43	b33					38	208	376	97	69	19
16	40	b27					38	191	356	86	88	18
17	40	b25					69	177	366	77	126	51
18	38	b27					69	191	380	75	110	410
19	36	b30					71	212	324	73	88	272
20	34	32					113	272	395	68	79	202
21	34	12					162	320	405	62	75	149
22	36	b18					184	361	294	59	174	115
23	36	23					184	376	250	66	152	97
24	34	20					191	294	233	56	121	84
25	32	b24					135	302	258	51	97	77
26	33	b16					110	390	294	48	84	73
27	32	b18					97	475	302	43	79	64
28	34	24					84	445	285	41	77	59
29	68	b24					79	352	258	41	61	57
30	57	b24					90	390	233	37	57	56
31	61	-					-	425	-	34	61	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,405	68	30	45.3	2,790
November	899	49	12	30.0	1,780
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	2,083	191	20	69.4	4,130
May	10,775	578	152	348	21,370
June	12,559	734	233	419	24,910
July	3,325	229	34	107	6,600
August	2,284	174	28	73.7	4,530
September	2,325	410	18	77.5	4,610
Water year	-	-	-	-	-

a No gage-height record; discharge computed on basis of records for station near Mogote.
b Stage-discharge relation affected by ice.

Conejos River at Counsellors Cabin, near Mogote, Colo.

Location.- Water-stage recorder, lat. 37°07'30", long. 106°20'00", in SE¼ sec. 5, T. 33 N., R. 6 E., half a mile east of Counsellors Cabin, 2 miles downstream from Elk Creek, and 14 miles northwest of Mogote. Datum of gage is 8,606.23 feet above mean sea level (Bureau of Reclamation bench mark).

Drainage area.- 211 square miles.

Records available.- October 1943 to September 1947 (discontinued).

Extremes.- Maximum discharge during year, 1,950 second-feet, May 9 (gage height, 4.16 feet); minimum not determined.
1943-47: Maximum discharge, 2,440 second-feet June 1, 2, 1944 (gage height, 4.62 feet); minimum daily recorded, 26 second-feet Nov. 9, 1945.

Remarks.- Records excellent except those for periods of ice effect or no gage-height record, which are fair. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	*124					186	427	1,060	537	87	135
2	87	107	(*)				210	678	1,330	526	83	112
3	112	80					218	1,000	1,390	531	77	98
4	119	64					186	1,340	1,220	543	77	94
5	193	90					167	1,450	1,250	502	165	92
6	132	105					161	1,460	1,270	456	122	85
7	143	105					152	1,350	1,440	445	107	79
8	132	105					143	1,540	1,520	462	110	75
9	137	92				54	149	1,680	1,430	411	146	83
10	130	88					135	1,360	1,370	378	119	102
11	109	82					132	1,130	1,140	327	105	92
12	107	86					122	881	867	281	107	81
13	102	92					112	788	730	253	132	73
14	98	92					107	776	736	253	196	66
15	100	88					137	750	840	240	196	62
			68	47	57							
16	96	79				62	164	717	782	222	200	57
17	96	b76				68	193	678	788	204	262	81
18	93	b78				78	253	704	881	200	235	698
19	81	b80				90	248	782	834	215	196	659
20	85	85				100	311	895	847	196	192	491
21	85	67				115	432	1,000	944	172	196	389
22	83	71				125	476	1,110	808	159	281	301
23	83	77				120	482	1,180	691	165	344	248
24	79	77				*110	521	923	634	152	301	211
25	77	69				114	396	916	622	130	226	189
26	75	69				124	340	1,120	659	119	189	185
27	75	b74				127	316	1,270	659	114	178	162
28	75	b72				137	292	1,300	646	105	162	146
29	161	b72			-	148	269	965	591	102	141	138
30	177	b74			-	155	287	1,000	561	100	130	138
31	146	-			-	170	-	1,140	-	92	124	-

Month	Second-feet-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,343	193	75	108	6,630
November	2,520	124	64	84.0	5,000
December	2,108	-	-	68	4,180
Calendar year 1946	70,087	1,330	-	192	139,000
January	1,457	-	-	47	2,890
February	1,596	-	-	57	3,170
March	2,651	170	-	85.5	5,260
April	7,297	521	107	243	14,470
May	32,310	1,680	427	1,042	64,090
June	28,540	1,520	561	951	56,610
July	8,592	543	92	277	17,040
August	5,186	344	77	167	10,290
September	5,422	698	57	181	10,750
Water year 1946-47	101,022	1,680	-	277	200,400

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- No gage-height record Nov. 3-15, Dec. 1 to Mar. 24 (stage-discharge relation probably affected by ice during most of periods); discharge computed on basis of 2 discharge measurements, weather records, and records for station near Mogote.

Conejos River near Mogote, Colo.

Location.- Water-stage recorder, lat. 37°03', long. 106°11', in SE¼ sec. 34, T. 33 N., R. 7 E., three-quarters of a mile downstream from Fox Creek and 5½ miles west of Mogote.

Drainage area.- 282 square miles.

Records available.- September 1899 to March 1900, April 1903 to September 1913, and October 1933 to September 1947 in reports of Geological Survey. September 1899 to March 1900 and April 1903 to September 1947 in reports of State engineer.

Average discharge.- 45 years (1902-47), 370 second-feet.

Extremes.- Maximum discharge during year, 2,140 second-feet May 9 (gage height, 4.37 feet); minimum daily, 41 second-feet Jan. 16.

1899-1900, 1903-47: Maximum discharge, 9,000 second-feet Oct. 5, 1911 (gage height, 8.50 feet, site and datum then in use), from rating curve extended above 3,500 second-feet; minimum, 18 second-feet (discharge measurement) Dec. 19, 1939.

Remarks.- Records excellent except those for period of ice effect, which are fair. No diversion or regulation.

Rating tables, water year 1946-47, except period of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 4,
Nov. 11 to Dec. 28, Mar. 15-29).

Oct. 1 to Dec. 31				Jan. 1 to Sept. 30					
1.6	51	2.1	129	1.6	45	2.0	116	3.1	720
1.7	63	2.2	151	1.7	56	2.3	221	3.5	1,080
1.8	77	2.3	178	1.8	70	2.5	310	4.1	1,770
				1.9	88	2.7	420	4.3	2,040

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	127	82	50	53	48	202	565	1,210	542	88	146
2	79	116	84	49	55	54	230	882	1,470	520	84	126
3	104	80	79	49	*53	60	238	1,260	1,610	520	83	108
4	108	67	79	51	55	*60	190	1,590	1,400	535	81	96
5	164	108	79	53	53	59	159	1,670	1,410	505	159	99
6	131	109	86	*52	55	55	139	1,750	1,430	441	139	88
7	133	109	84	49	55	54	152	1,590	1,610	434	110	84
8	131	108	71	47	56	52	139	1,760	1,730	441	110	81
9	131	94	57	44	56	56	152	1,940	1,610	392	156	86
10	129	89	61	44	58	52	129	1,630	1,550	364	129	110
11	116	77	69	44	59	56	129	1,340	1,280	321	110	99
12	108	87	82	44	56	55	126	1,030	962	287	113	88
13	108	97	76	48	61	62	113	899	780	260	132	81
14	104	94	73	43	62	55	119	873	762	264	194	74
15	104	92	69	43	62	59	149	856	873	255	209	70
16	102	79	67	41	62	66	182	814	822	251	202	64
17	101	77	*58	48	*67	72	217	780	830	230	251	72
18	101	79	62	49	69	83	297	788	917	234	242	455
19	92	82	50	46	59	91	296	890	882	238	209	728
20	92	86	69	*47	59	110	375	1,010	873	217	198	469
21	92	80	69	46	59	132	550	1,120	980	194	186	370
22	92	71	76	50	59	136	602	1,240	856	175	234	292
23	92	79	77	53	63	139	610	1,390	728	179	321	247
24	89	86	82	56	62	*116	656	1,060	648	175	296	213
25	86	77	80	58	62	108	498	1,010	625	152	238	190
26	84	71	77	57	69	123	427	1,220	664	139	205	190
27	84	91	77	56	63	132	403	1,420	664	129	190	166
28	86	84	69	52	53	156	375	1,470	656	116	175	152
29	136	84	43	52	-	169	359	1,110	595	110	156	142
30	178	86	49	52	-	179	386	1,100	558	108	142	142
31	142	-	55	53	-	190	-	1,290	-	94	132	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,370	178	71	109	6,680
November	2,666	127	67	88.9	5,290
December	2,191	86	43	70.7	4,350
Calendar year 1946	75,885	1,490	35	208	150,500
January	1,526	58	41	49.2	3,030
February	1,655	69	53	59.1	3,280
March	2,839	190	48	91.6	5,630
April	8,598	656	113	287	17,050
May	37,347	1,940	565	1,205	74,080
June	30,985	1,730	558	1,033	61,460
July	8,822	542	94	285	17,500
August	5,274	321	81	170	10,460
September	5,328	728	64	178	10,570
Water year 1946-47	110,601	1,940	41	303	219,400

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Dec. 29 to Mar. 14.

Conejos River near La Sauses, Colo.

Location.- Two water-stage recorders (two channels), lat. 37°23', long. 105°45', in sec. 2, T. 35 N., R. 11 E., half a mile upstream from mouth and 2 miles north of La Sauses. Datum of gage (north channel) is 7,495.02 feet above mean sea level (Colorado State Highway Department bench mark).

Drainage area.- 887 square miles.

Records available.- October 1933 to September 1947 in reports of Geological Survey. March 1921 to September 1947 in reports of State engineer.

Average discharge.- 26 years, 234 second-feet.

Extremes.- Maximum discharge during year, 1,610 second-feet May 6; minimum daily, 1.5 second-feet July 31.
1921-47: Maximum discharge, 3,890 second-feet May 15, 1941; no flow July 21 to Sept. 8, 1934.

Remarks.- Records good. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.4	47	55	43	61	64	46	314	308	17	1.7	19
2	8.2	47	55	52	61	58	49	531	307	10	2.0	19
3	9.6	43	59	62	61	68	48	867	375	7.9	2.2	19
4	9.5	43	59	42	60	84	44	1,190	410	7.9	2.4	19
5	12	49	62	43	61	85	44	1,350	350	8.0	2.3	20
6	11	51	62	47	63	83	37	1,400	314	10	2.2	21
7	15	66	60	49	63	77	40	1,220	288	13	2.0	20
8	19	66	60	52	63	68	37	1,090	369	13	2.0	21
9	14	55	58	54	63	65	40	1,140	454	14	2.0	23
10	15	53	54	53	61	63	28	1,400	398	13	1.6	22
11	18	49	50	49	71	62	22	1,440	298	15	2.0	22
12	20	49	52	46	71	61	23	1,090	200	15	2.1	22
13	20	44	52	48	75	60	23	789	155	12	2.1	22
14	21	49	54	43	72	60	23	672	108	9.6	2.0	21
15	22	47	56	54	70	58	26	579	90	5.4	2.1	21
16	22	46	56	57	72	58	26	559	78	8.1	2.6	20
17	a23	49	54	57	78	56	27	501	56	8.2	3.1	20
18	a23	56	49	50	73	58	23	446	39	3.5	3.4	22
19	a24	59	47	50	63	58	42	418	43	3.4	3.5	117
20	a26	58	43	52	68	58	51	363	57	3.1	5.3	214
21	28	51	43	54	66	54	117	357	64	2.6	11	137
22	28	47	43	54	68	48	308	389	148	2.3	12	90
23	29	44	42	55	75	48	358	435	201	2.3	14	56
24	28	46	42	55	77	51	399	573	157	2.6	32	36
25	29	43	46	55	82	53	411	450	107	2.5	54	28
26	29	46	51	57	84	58	292	417	67	2.4	42	27
27	28	50	58	59	84	55	248	448	40	2.2	34	26
28	28	50	58	62	89	53	257	508	27	2.3	28	26
29	30	54	56	64	-	53	263	475	21	2.2	25	26
30	31	56	47	59	-	48	241	344	19	2.0	21	28
31	42	-	56	49	-	45	-	315	-	1.5	19	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	670.7	42	8.2	21.6	1,330
November	1,513	66	43	50.4	3,000
December	1,639	62	42	52.9	3,250
Calendar year 1946	13,924.4	348	.5	38.1	27,620
January	1,626	64	42	52.5	3,230
February	1,955	89	60	69.8	3,880
March	1,870	85	45	60.3	3,710
April	3,593	411	22	120	7,130
May	22,070	1,440	314	712	43,780
June	5,548	454	19	185	11,000
July	222.0	17	1.5	7.16	440
August	340.6	54	1.6	11.0	676
September	1,184	214	19	39.5	2,350
Water year 1946-47	42,231.3	1,440	1.5	116	83,780

a No gage-height record on main channel; discharge computed on basis of flow in secondary channel.

San Antonio River at Ortiz, Colo.

Location.- Water-stage recorder, lat. 37°00', long. 106°02', in New Mexico, in sec. 19, T. 32 N., R. 9 E., a quarter of a mile south of Colorado-New Mexico line, half a mile south of Ortiz, and half a mile upstream from Los Pinos Creek.

Drainage area.- 110 square miles.

Records available.- October 1933 to September 1947 in reports of Geological Survey. January to October 1915, May 1919 to October 1920, and October 1924 to September 1947 in reports of State engineer. (No winter records prior to 1941.)

Extremes.- Maximum discharge during year, 475 second-feet May 3 (gage height, 3.07 feet) no flow at times.

1915, 1919-20, 1924-47: Maximum discharge, 1,750 second-feet Apr. 15, 1937 (gage height, 5.38 feet), from rating curve extended above 1,100 second-feet; no flow at times in most years.

Remarks.- Records good except those below 10 second-feet, which are fair. A few small diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	*4.6	4.6				54	312	16	0	0	8.8
2	0	4.9	*4.6				*67	330	15	.1	0	6.7
3	0	6.4	4.4		(*)		82	333	13	0	0	3.2
4	0	2.9	4.9			(*)	60	297	11	0	0	1.6
5	4.4	1.3	4.4				44	259	10	0	0	1.1
6	7.6	2.4	3.8	(*)			34	226	8.5	0	0	1.5
7	4.4	2.4	3.2				33	185	7.6	0	0	1.1
8	4.9	11	4.1				30	172	4.9	0	0	.9
9	4.4	7.3	4.6				34	164	2.7	.2	0	1.1
10	3.5	4.9	5.2				30	212	2.2	.2	0	1.3
11	2.9	4.4	5.2				33	196	2.4	0	0	2.5
12	4.4	4.4	4.1				36	158	3.2	0	0	1.6
13	2.4	4.1	5.5				36	174	2.9	0	.2	1.3
14	1.8	3.5	5.5				35	169	2.5	0	2.0	.9
15	1.3	3.5	4.1				48	139	1.8	0	7.0	.7
16	1.3	2.5	4.1	0.9	2.0	7	67	124	1.8	0	5.5	.4
17	2.2	2.5	*3.5				79	111	2.0	0	13	.3
18	2.4	*2.7	3				126	88	2.0	0	6.7	.2
19	2.4	2.7	3				116	77	12	8.8	11	3.8
20	1.8	3.8	3				161	67	9.2	5.8	9.2	4.6
21	2.0	4.1	3				218	54	4.4	1.8	9.2	2.9
22	2.7	3.2	3				234	44	7.6	1.5	9.6	1.1
23	2.7	3.5	3				250	41	5.8	1.6	7.0	.8
24	2.2	2.9	3			(*)	256	42	3.2	3.2	6.1	.9
25	2.2	2.7	3				180	31	1.6	2.5	5.2	1.1
26	1.8	3.2	2				150	28	.6	1.3	4.4	1.3
27	2.2	4.6	2				202	26	.2	.3	2.5	1.3
28	2.4	4.1	2				220	24	.2	.2	2.7	.7
29	3.8	3.5	2				228	23	.1	.1	2.4	.2
30	14	4.4	2		-		248	20	0	0	1.3	.1
31	7.9	-	2		-		-	18	-	0	1.0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	96.0	14	0	3.10	190
November	118.4	11	1.3	3.95	235
December	111.8	5.5	2	3.61	222
Calendar year 1946	4,141.0	220	0	11.3	8,220
January	27.9	-	-	.9	55
February	56.0	-	-	2.0	111
March	217	-	-	7	430
April	3,391	256	30	113	6,730
May	4,144	333	18	134	8,220
June	154.4	16	0	5.15	306
July	27.6	8.8	0	.89	55
August	106.0	13	0	3.42	210
September	54.0	8.8	.1	1.80	107
Water year 1946-47	8,504.1	333	0	23.3	16,870

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Nov. 8 to Dec. 17, Mar. 26-31. No gage-height record Dec. 18 to Mar. 25, Apr. 5-6 (stage-discharge relation affected by ice during most of period); discharge computed on basis of 4 discharge measurements and weather records.

San Antonio River at mouth, near Manassa, Colo.

Location.- Water-stage recorder, lat. 37°11', long. 105°53', in sec. 21, T. 34 N., R. 10 E., 1 mile upstream from mouth and 2½ miles east of Manassa.

Drainage area.- 348 square miles.

Records available.- October 1933 to September 1947 in reports of Geological Survey. April 1923 to September 1947 in reports of State engineer.

Average discharge.- 24 years, 97.7 second-feet.

Extremes.- Maximum discharge during year, 1,100 second-feet May 4 (gage height, 5.58 feet); no flow during several periods.
1923-47: Maximum discharge, 2,620 second-feet May 14, 1941 (gage height, 6.26 feet), from rating curve extended above 2,200 second-feet; no flow at times in most years.

Remarks.- Records excellent except those below 10 second-feet, which are fair. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0.0			6.0	25	426	149	3.1	0.1	
2		0	.1			6.0	18	642	149	5.0	.1	
3		0	.1			6.0	14	860	139	3.6	.1	
4		0	*.1			*6.0	13	936	109	3.1	.1	
5		0	.1			7.0	5.0	916	107	2.4	.3	
6		0	.1			7.2	1.3	908	91	3.6	.1	
7		0	.1			6.6	1.5	754	79	6.6	.1	
8		0	.1			6.3	7.6	740	79	8.7	0	
9		0	.1			6.0	2.9	702	79	8.7	0	
10		0	.1			6.0	1.3	793	63	8.7	0	
11		0	.1			6.0	1.5	779	57	6.9	0	
12		0	.1			6.0	1.5	538	62	5.6	0	
13		0	.1			5.3	6.8	480	56	3.6	0	
14		0	.1			5.0	9.5	458	44	3.6	0	
15		0	.2	0.3	4.0	4.7	3.6	418	32	6.6	0	
16		0	.2			4.4	14	406	28	7.6	0	
17		0	.2		(*)	4.4	18	372	24	8.0	.1	
18		0	.2			4.1	59	342	24	8.3	.1	
19		0	.2			4.1	78	342	45	6.3	.1	
20		0	.2	(*)		3.6	107	322	56	5.0	.1	
21		.1	.2			1.9	284	302	44	4.7	.1	
22		.1	.2			2.2	376	304	56	3.6	.1	
23		.1	.2			3.1	402	324	59	3.1	.1	
24		.1	.2			3.1	458	334	63	2.7	.1	
25		.1	.2			3.9	362	272	52	1.9	0	
26		0	.2			4.1	286	264	34	1.5	0	
27		0	.3			3.9	282	262	20	1.5	0	
28		.1	.3			3.6	306	254	11	1.0	0	
29		.1	.3		-	2.4	296	220	5.6	.5	0	
30		.1	.3		-	3.6	296	170	4.7	.4	0	
31		-	.3		-	14	-	152	-	.3	0	

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	0	0	0	0	0
November	.8	.1	0	.03	1.6
December	5.3	.3	.1	.17	11
Calendar year 1946	6,343.7	392	0	17.4	1,2580
January	9.3	-	-	.3	18
February	112.0	-	-	4.0	222
March	156.5	14	1.9	5.05	310
April	3,736.3	458	1.3	125	7,410
May	14,993	936	152	484	29,740
June	1,821.3	149	4.7	60.7	3,610
July	136.2	8.7	.3	4.39	270
August	1.7	.3	0	.05	3.4
September	0	0	0	0	0
Water year 1946-47	20,972.4	936	0	57.5	41,600

* Winter discharge measurement made on this day.
Note.- No gage-height record Dec. 29 to Mar. 5 (stage-discharge relation affected by ice during most of period); discharge computed on basis of 3 discharge measurements and weather records.

Los Pinos River near Ortiz, Colo.

Location.- Water-stage recorder, lat. 36°58', long. 106°03', in New Mexico, in N½ sec. 34, T. 32 N., R. 8 E., 1 mile south of Colorado-New Mexico State line, 2 miles southwest of Ortiz, and 2½ miles upstream from mouth.

Drainage area.- 167 square miles.

Records available.- October 1933 to September 1947 in reports of Geological Survey. January 1914 to November 1920 and October 1924 to September 1947 in reports of State engineer. (No winter records most years.)

Extremes.- Maximum discharge during year, 1,740 second-feet May 3 (gage height, 4.83 feet), from rating curve extenced above 1,200 second-feet; minimum daily, 11 second-feet Dec. 24.

1914-20, 1924-47: Maximum discharge, 3,160 second-feet May 12, 1941 (gage height, 5.77 feet), from rating curve extended above 1,600 second-feet; minimum observed, 4.0 second-feet Dec. 17, 1945 (discharge measurement), but may have been less during period of no gage-height record.

Remarks.- Records excellent except those for period of ice effect or no gage-height record, which are fair. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	*32	19	16	18	33	135	691	296	57	14	41
2	23	35	*18	14	18	37	156	960	320	63	14	29
3	41	16	22	14	*18	41	153	1,140	320	57	14	24
4	35	30	30	15	18	*42	122	1,040	286	52	14	31
5	107	26	25	16	18	41	96	1,040	278	54	29	25
6	50	69	25	*15	18	40	82	918	268	48	22	22
7	48	61	12	14	19	39	84	830	272	50	20	19
8	45	60	13	14	20	39	77	820	268	51	18	18
9	47	55	19	14	20	41	79	830	254	45	19	23
10	39	47	22	14	21	35	68	820	237	39	16	29
11	30	39	40	14	22	38	79	859	206	34	16	23
12	27	43	44	14	21	34	77	539	184	30	16	22
13	28	38	40	15	24	32	69	535	163	30	31	19
14	28	29	35	14	25	25	76	503	144	30	36	16
15	28	23	30	14	25	31	113	483	137	31	50	15
16	29	15	29	13	26	25	158	455	126	32	55	15
17	29	18	*23	15	28	25	226	419	122	31	60	15
18	29	*16	35	16	30	26	303	408	135	36	39	178
19	26	19	29	15	29	26	278	451	163	55	50	156
20	24	21	38	15	28	27	390	447	130	34	41	84
21	25	20	38	15	28	35	539	451	135	29	31	66
22	27	13	39	16	29	43	599	459	168	27	47	54
23	24	16	39	17	31	50	591	495	142	27	64	45
24	23	11	40	18	31	*55	563	394	122	26	58	41
25	22	18	38	19	32	68	394	373	102	23	43	39
26	21	18	35	19	37	57	352	398	91	21	39	40
27	21	35	27	18	36	63	380	408	84	21	35	38
28	21	27	23	17	34	74	387	394	76	21	35	32
29	52	30	16	17	-	82	359	320	69	18	31	34
30	81	17	18	17	-	100	451	310	64	16	28	38
31	48	-	19	18	-	115	-	324	-	16	31	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,096	107	18	35.4	2,170
November	897	69	11	29.9	1,780
December	880	44	12	28.4	1,750
Calendar year 1946	23,250	671	-	63.7	46,110
January	482	19	13	15.5	956
February	704	37	18	25.1	1,400
March	1,419	115	25	45.8	2,810
April	7,436	599	88	248	14,750
May	18,314	1,140	310	591	36,330
June	5,382	320	64	179	10,640
July	1,104	63	16	35.6	2,190
August	1,016	64	14	32.8	2,020
September	1,231	178	15	41.0	2,440
Water year 1946-47	39,941	1,140	11	109	79,240

* Winter discharge measurement made on this day.

Note.- Stage-discharge relation affected by ice Nov. 6 to Dec. 31, Mar. 6-9. No gage-height record Jan. 1 to Mar. 4, 21-23 (stage-discharge relation affected by ice during most of period); discharge computed on basis of 3 discharge measurements and weather records.

Culebra Creek at San Luis, Colo.

Location.- Water-stage recorder and 12-foot Parshall flume, lat. 37°11', long. 105°26', in sec. 35, T. 3 N., R. 72 W., Beaubien Grant survey, 1 mile southeast of San Luis and 1½ miles upstream from Rito Seco.

Drainage area.- 220 square miles.

Records available.- January 1910 to December 1911 and October 1933 to September 1947 in reports of Geological Survey. May 1909 to December 1910, and April 1927 to September 1947 in reports of State engineer. 1911-19 (unpublished) in files of State engineer.

Average discharge.- 30 years (1909-19, 1927-47), 65.1 second-feet.

Extremes.- Maximum discharge during year, 654 second-feet July 1 (gage height, 5.09 feet), from rating curve extended above 300 second-feet; minimum daily, 9.5 second-feet Jan. 27.

1909-19, 1927-47: Maximum discharge, that of July 1, 1947; mimimum daily, 5 second-feet Sept. 14-16, 1934.

Remarks.- Records good except those for period of no gage-height record, which are fair. Diversions above station for irrigation. Flow regulated by Sanchez Reservoir on Ventero Creek (capacity, 103,000 acre-feet).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	29	18	14	23	a20	11	24	29	27	293	261	81
2	30	18	14	26	a14	12	24	29	69	60	238	68
3	30	12	13	26	a27	24	27	36	97	43	199	88
4	32	17	14	26	a29	24	27	39	135	42	250	88
5	26	33	26	21	30	23	24	32	151	35	250	74
6	12	34	27	14	29	24	12	54	166	29	235	55
7	30	21	26	32	29	24	25	54	166	33	208	41
8	24	30	14	32	26	23	25	46	191	28	208	44
9	23	18	24	32	14	14	25	77	239	26	253	56
10	23	14	25	32	23	25	25	60	286	39	141	59
11	23	18	25	28	26	26	24	38	289	42	140	81
12	23	21	25	14	26	26	24	44	290	93	131	77
13	12	24	25	29	26	25	24	55	286	97	113	42
14	18	32	21	28	27	25	24	38	257	237	94	32
15	18	30	14	27	25	22	24	38	235	281	76	29
16	24	24	14	27	14	14	24	36	218	299	59	34
17	18	14	12	a27	26	25	24	32	218	278	67	34
18	18	26	12	a20	26	26	24	27	207	258	79	38
19	16	26	17	a13	26	26	26	29	161	243	94	37
20	12	26	24	a19	26	26	14	30	133	209	94	42
21	17	26	12	23	26	26	18	38	130	200	68	30
22	20	26	14	24	24	24	24	42	92	199	56	25
23	20	25	29	24	12	13	25	38	92	191	37	18
24	18	14	25	24	14	25	26	34	163	76	44	33
25	12	14	14	24	13	26	26	26	188	39	74	35
26	18	14	26	11	12	26	24	34	211	140	64	39
27	13	25	27	9.5	12	24	13	37	203	142	66	42
28	18	27	25	25	12	24	25	47	216	189	85	20
29	23	28	14	25	-	23	26	40	169	224	104	45
30	20	25	24	25	-	14	32	40	228	237	108	44
31	19	-	24	27	-	24	-	40	-	254	77	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	639	32	12	20.6	1,270
November	680	34	12	22.7	1,350
December	620	29	12	20.0	1,230
Calendar year 1946	11,334.5	112	6.4	31.1	22,490
January	737.5	32	9.5	23.8	1,460
February	614	30	12	21.9	1,220
March	694	26	11	22.4	1,380
April	709	32	12	23.6	1,410
May	1,239	77	26	40.0	2,460
June	5,513	290	27	184	10,930
July	4,556	299	26	147	9,040
August	3,973	261	37	128	7,880
September	1,431	88	18	47.7	2,840
Water year 1946-47	21,405.5	299	9.5	58.6	42,470

a No gage-height record; discharge computed on basis of weather records.

Culebra Creek below San Luis, Colo.

Location.- Water-stage recorder, lat. 37°12', long. 105°26', in sec. 27, T. 3 N., R. 72 W., Beaubien Grant survey, 500 feet downstream from bridge on State Highway 159 (revised), 600 feet downstream from Rito Seco, and a quarter of a mile southwest of San Luis.

Drainage area.- 255 square miles.

Records available.- August 1938 to September 1947 (no winter records most years).

Extremes.- Maximum discharge during year, 678 second-feet July 1 (gage height, 3.72 feet), from rating curve extended above 400 second-feet; minimum daily, 16 second-feet Jan. 27.

1938-47: Maximum discharge, 866 second-feet May 30, 1942 (gage height, 4.54 feet), from rating curve extended above 400 second-feet; minimum daily, 13 second-feet Apr. 21 1946.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	26	23	37	35	19	40	42	66	346	280	85
2	40	25	23	37	23	25	40	48	82	82	261	71
3	38	19	22	37	40	37	42	54	101	58	222	87
4	42	24	23	37	49	37	40	59	143	56	283	89
5	32	44	38	31	*50	36	34	47	159	49	286	80
6	20	39	38	27	50	38	24	76	175	49	264	60
7	46	29	38	40	50	39	42	80	167	48	231	46
8	34	34	24	44	40	38	40	70	178	36	228	49
9	33	30	38	44	25	34	39	97	234	35	207	56
10	33	22	37	44	35	40	40	87	292	49	153	59
11	27	28	37	32	40	40	40	65	296	59	153	89
12	21	31	37	27	41	39	40	64	309	101	150	89
13	19	34	38	45	41	39	40	53	302	110	126	53
14	28	42	33	46	42	36	40	50	264	249	103	43
15	30	39	24	*44	41	28	40	56	240	296	89	43
16	30	31	25	44	23	22	40	49	219	316	70	44
17	28	26	22	44	40	39	39	44	219	296	78	43
18	32	34	22	33	41	40	42	44	216	276	83	46
19	26	37	*26	23	41	42	40	44	161	258	97	45
20	21	37	33	29	41	40	25	39	138	219	97	48
21	26	38	21	31	41	39	25	40	136	204	80	38
22	28	38	22	32	41	37	38	44	97	204	64	35
23	30	38	34	32	20	24	37	52	95	204	49	28
24	28	26	34	32	23	38	42	44	161	83	53	41
25	22	23	22	32	21	38	42	38	201	46	80	43
26	28	23	37	24	20	*37	40	45	228	136	71	45
27	22	38	37	16	20	37	25	45	219	138	73	46
28	29	38	34	40	20	39	42	59	225	190	91	29
29	34	40	22	40	-	33	43	50	175	234	110	52
30	30	35	34	40	-	25	43	50	237	249	112	53
31	28	-	35	41	-	39	-	62	-	270	89	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	923	46	19	29.8	1,830
November	968	44	19	32.3	1,920
December	933	38	21	30.1	1,850
Calendar year 1946	14,700	114	13	40.3	29,160
January	1,105	46	16	35.6	2,190
February	994	50	20	35.5	1,970
March	1,094	42	19	35.3	2,170
April	1,144	43	24	38.1	2,270
May	1,697	97	38	54.7	3,370
June	5,735	309	66	191	11,380
July	4,946	346	35	160	9,810
August	4,333	286	49	140	8,590
September	1,635	89	28	54.5	3,240
Water year 1946-47	25,507	346	16	69.9	50,590

* Winter discharge measurement made on this day.

Note.- No gage-height record Oct. 5-7, 13, 14, Jan. 2-6, Jan. 9 to Mar. 5, Mar. 14-17 (stage-discharge relation probably affected by ice during part of periods); discharge computed on basis of 2 discharge measurements, weather records, and records for station at San Luis.

Costilla Creek above reservoir, near Costilla, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 36°54'25", long. 105°15'00", in Sangre de Cristo Grant, 2¾ miles by road upstream from Costilla Dam and 17 miles southeast of Costilla, Taos County.

Records available.- April 1937 to September 1947 (irrigation seasons only).

Extremes.- Maximum discharge recorded during year, 8.8 second-feet Sept. 29 (gage height, 0.52 foot); minimum daily recorded, 2.0 second-feet Oct. 26.
1937-47: Maximum discharge recorded, 346 second-feet May 11, 1944 (gage height, 1.60 feet); maximum gage height, 1.90 feet May 15, 1938, former site and datum; minimum daily discharge recorded, 1.2 second-feet Nov. 7, 1944.

Remarks.- Records good except those for September, which are poor. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.5								-			-
2	2.5								-			-
3	2.5								-			-
4	4.2								-			6.2
5	3.9								-			6.2
6	2.8								†19			5.4
7	5.0								-			5.0
8	4.2								-			4.6
9	3.9								-			4.6
10	3.3								-			4.2
11	3.3								-			4.2
12	b4.2								-			3.9
13	b4.0								-			4.2
14	4.2								-			3.9
15	4.6								-			3.9
16	3.6								-			a3.8
17	3.6								-			a3.8
18	3.0								-			a3.8
19	3.3								-			3.6
20	3.3								-			3.6
21	2.8								-			3.3
22	2.8								-			3.3
23	2.5								†12			3.0
24	2.5								-			3.3
25	2.2								-			3.6
26	*2.0								-			3.0
27	-								†9.5			2.8
28	-								-			2.8
29	-								-			4.2
30	-								-			5.0
31	-								-			-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October 1-26	86.7	5.0	2.0	3.33	172
November	-	-	-	-	-
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June	-	-	-	-	-
July	-	-	-	-	-
August	-	-	-	-	-
September 4-30	109.2	6.2	2.8	4.04	217
Water year 1946-47	-	-	-	-	-

* Winter discharge measurement made on this day.
† Result of discharge measurement.
a No gage-height record; discharge computed on basis of engineers' notes and records for Casias Creek near Costilla and Latir Creek near Cerro.
b Stage-discharge relation affected by ice.

Costilla Creek below reservoir, near Costilla, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 36°52'25", long. 105°16'55", in Sangre de Cristo Grant, 125 feet downstream from outlet of reservoir at Costilla Dam and 18 miles southeast of Costilla, Taos County.

Records available.- April 1937 to September 1947 (irrigation seasons only prior to 1945).

Extremes.- Maximum daily discharge during year, 130 second-feet Aug. 11; minimum daily, 0.3 second-foot June 13, Sept. 10.
1937-47: Maximum discharge recorded, 263 second-feet May 9, 10, 1942 (gage height, 2.65 feet); no flow at times.

Remarks.- Records poor. Diversions above station for irrigation. Flow regulated by Costilla Reservoir (capacity, 15,700 acre-feet).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.2	0.9	0.5	0.5	0.5	0.5	0.7	0.5	8	71	50	40
2	6.2	.7	.5	.5	.5	.5	.7	.5	25	74	10	25
3	6.2	.7	.5	.5	.5	.5	.7	.5	25	51	20	25
4	6.2	.9	.5	.5	.5	.5	.7	.5	40	26	110	10
5	6.2	.9	.5	.5	.5	.5	.7	.5	50	26	100	14
6	6.2	.7	.5	.5	.5	.5	.7	.5	54	26	20	14
7	6.2	.5	.5	.5	.5	.5	.7	.5	61	26	15	20
8	6.2	.7	.5	.5	.5	.5	.7	.5	62	30	15	39
9	6.7	.7	.5	.5	.5	.5	.7	.7	82	56	15	39
10	6.7	.7	.5	.5	.5	.5	.7	.7	102	56	50	24
11	6.7	.7	.5	.5	.5	.5	.7	.5	102	39	130	16
12	6.7	.5	.5	.5	.5	.5	.7	.5	34	26	120	16
13	6.7	.5	.5	.5	.5	.5	.7	.5	.3	32	100	16
14	6.7	.5	.5	.5	.5	.5	.7	.7	17	85	50	16
15	6.7	.5	.5	.5	.5	.5	.7	.7	37	101	15	16
16	4.4	.5	.5	.5	.5	.5	.7	.7	45	81	12	16
17	.7	b.5	.5	.5	.5	.5	.7	.7	73	81	25	11
18	.7	b.5	.5	.5	.5	.5	.7	.7	82	38	40	3.8
19	.7	b.5	.5	.5	.5	.5	.7	.7	106	21	50	.3
20	.7	b.5	.5	.5	.5	.5	.7	.7	101	27	40	6.4
21	.7	b.5	.5	.5	.5	.6	.7	.7	85	73	40	9.2
22	.7	b.5	.5	.5	.5	.6	.7	.7	71	73	10	9.2
23	.7	b.5	.5	.5	.5	.6	.7	.7	64	63	30	9.2
24	.7	b.5	.5	.5	.5	.6	.7	.7	57	53	40	9.2
25	.7	b.5	.5	.5	.5	.6	.7	.7	57	30	50	9.2
26	.7	b.5	.5	.5	.5	.6	.7	.7	61	12	60	7.2
27	.9	b.5	.5	.5	.5	.6	.7	.7	43	20	55	6.2
28	.9	b.5	.5	.5	.5	.6	.7	.7	32	80	45	5.8
29	.9	.5	.5	.5	-	.6	.5	.7	39	85	30	5.8
30	.9	.5	.5	.5	-	.6	.5	.7	80	90	15	5.8
31	.9	-	.5	.5	-	.8	-	.7	-	80	20	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	112.4	6.7	0.7	3.63	223
November	17.6	.9	.5	.59	35
December	15.5	.5	.5	.50	31
Calendar year 1946	3,573.2	151	0	9.79	7,090
January	15.5	.5	.5	.50	31
February	14.0	.5	.5	.50	28
March	16.8	.8	.5	.54	33
April	20.6	.7	.5	.69	41
May	19.5	.7	.5	.63	39
June	1,695.3	106	.3	56.5	3,360
July	1,612	101	12	52.0	3,200
August	1,382	130	10	44.6	2,740
September	444.3	40	.3	14.8	881
Water year 1946-47	5,365.3	130	.3	14.7	10,640

b Stage-discharge relation affected by ice.
Note.- No gage-height record Nov. 29 to Apr. 16, May 20 to June 5, July 27 to Sept. 3; discharge computed on basis of occasional staff-gage readings during winter period, reservoir operator's records, and records for station near Costilla.

Costilla Creek near Costilla, N. Mex.

Location.- Water-stage recorder, lat. 36°56'30", long. 105°30'10", in Sangre de Cristo Grant, 1 mile upstream from diversion dam and 2 miles southeast of Costilla, Taos County.

Records available.- March 1936 to September 1947 (irrigation seasons only 1936-43).

Extremes.- Maximum daily discharge during year, 224 second-feet May 11; minimum daily, 2 second-feet Dec. 30.
1936-47: Maximum discharge, 1,150 second-feet May 11, 1942 (gage height, 5.37 feet, site and datum then in use); minimum daily recorded, 2 second-feet Dec. 30, 1946.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. Diversions above station for irrigation. Flow regulated by Costilla Reservoir (capacity, 15,700 acre-feet).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	16	11	b5	9.9	7	53	74	67	91	86	68
2	15	15	12	b5	11	10	65	102	64	94	36	a50
3	16	14	9.5	b4	11	13	60	146	68	89	34	a55
4	19	14	b10	b3	11	12	41	189	78	56	96	a50
5	25	15	12	b4	12	11	22	187	100	53	137	a40
6	18	19	12	b5	12	10	30	176	107	57	61	a45
7	31	b18	14	b5	12	10	33	163	117	68	40	a45
8	23	19	10	b6	13	10	27	153	115	55	41	54
9	20	19	b9	b7	12	11	30	157	121	76	39	57
10	19	17	b8	b7	16	10	24	198	a140	78	35	58
11	19	b15	b10	b6	14	10	25	224	a150	70	131	a40
12	19	b16	14	b6	10	11	22	198	a110	45	151	a30
13	21	17	13	b7	13	10	18	165	53	45	132	a30
14	19	17	12	b7	13	10	26	148	47	85	112	a30
15	20	17	12	b6	13	10	31	142	68	121	65	a30
16	20	17	11	b4	12	10	40	142	70	113	47	a30
17	*16	b15	9.0	b3	15	12	35	133	98	102	41	a25
18	14	b14	b8	b4	15	16	54	121	117	101	54	a20
19	14	b14	b4	b5	15	19	60	115	150	63	59	15
20	13	b15	b9	b5	15	24	55	112	144	49	58	14
21	13	16	b8	b6	15	30	71	109	142	84	57	19
22	13	16	b8	b7	15	42	77	102	126	98	55	20
23	12	16	*b10	b8	13	48	85	107	118	96	41	20
24	12	16	b9	*9.3	12	46	84	112	106	78	45	19
25	12	15	b8	9.0	11	33	70	98	98	66	56	21
26	12	b14	b7	8.7	11	34	68	89	91	37	59	19
27	12	*16	b7	8.7	11	41	62	88	86	38	72	16
28	11	12	b6	9.6	9.0	49	59	85	55	79	66	16
29	19	12	b4	9.6	-	49	57	81	51	94	51	17
30	31	11	b2	9.0	-	40	63	76	88	106	a40	21
31	20	-	b4	9.6	-	44	-	71	-	102	a50	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	542	31	11	17.5	1,080
November	467	19	11	15.6	926
December	282.5	14	2	9.11	560
Calendar year 1946	8,383.5	131	2	23.0	16,630
January	198.5	9.6	3	6.40	394
February	351.9	16	9.0	12.6	698
March	692	49	7.0	22.3	1,370
April	1,447	85	18	48.2	2,870
May	4,063	224	71	131	8,060
June	2,945	150	47	98.2	5,840
July	2,389	121	37	77.1	4,740
August	2,047	151	34	66.0	4,060
September	974	68	14	32.5	1,930
Water year 1946-47	16,398.9	224	2	44.9	32,530

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for station below reservoir and sum of Cerro Canal and Acequia Madre.
b Stage-discharge relation affected by ice.

Costilla Creek at Garcia, Colo.

Location.- Water-stage recorder, lat. 36°59'40", long. 105°32'00", in Sangre de Cristo Grant, 300 feet upstream from New Mexico-Colorado State line and half a mile south of Garcia.

Records available.- June 1944 to September 1947 (no winter records).

Extremes.- Maximum daily discharge recorded during year, 210 second-feet May 11; no flow at times.
1945-47: Maximum daily discharge recorded, that of May 11, 1947; no flow at times.

Remarks.- Records poor except those for October and April, which are fair. Diversions above station for irrigation. Flow regulated by Costilla Reservoir (capacity, 15,700 acre-feet).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	3.1					22	55	a10	6.3	0.1	0
2	0	3.6					31	81	a11	11	0	0
3	0	2.1					32	125	a9	11	0	.5
4	0	b1					18	a170	a13	12	0	.1
5	0	b1					11	a160	8.9	13	.7	a0
6	0	b2					18	a140	11	12	5.8	a0
7	1.2	b3					21	a120	11	15	0	a0
8	3.1	4.7					10	a110	13	10	0	a0
9	5.2	5.8					0	112	10	11	0	a2
10	5.0	b5					0	a170	11	11	0	1.6
11	3.1	b5					0	a210	14	9.4	0	.2
12	3.2	b5					0	a175	15	.9	9.5	0
13	3.9	5.0					0	a140	12	5.8	4.8	0
14	3.1	5.0					0	a125	8.9	.4	2.7	0
15	3.1	5.0					0	a120	23	.9	0	0
16	3.1	b4					.3	a120	11	.2	0	0
17	*2.3	b4					.7	a110	10	1.0	0	3.9
18	1.5	b5					.1	a90	13	5.5	0	0
19	.9	b5					1.1	a80	24	5.1	0	.2
20	.6	b5					0	a75	19	.2	0	2.1
21	.6	b5					.3	a80	18	.7	3.3	0
22	.6	5.8					.6	69	18	.5	3.9	0
23	.5	4.2					.1	70	6.8	.1	0	0
24	.4	4.7					3.1	67	9.9	0	0	0
25	.4	4.5					5.4	54	16	1.5	0	0
26	.4	*4.2					2.6	42	13	.3	a0	0
27	.2	5.4					2.1	32	1.0	0	a0	0
28	.2	5.4					2.1	29	.9	0	a0	0
29	3.2	4.7					13	22	.3	.7	.4	0
30	8.9	4.5					44	18	.8	1.3	a0	0
31	4.5	-					-	12	-	5.4	1.4	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	59.2	8.9	0	1.91	117
November	127.7	5.8	1	4.26	253
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	238.5	44	0	7.95	473
May	2,983	210	12	96.2	5,920
June	342.5	24	.3	11.4	679
July	152.2	15	0	4.91	302
August	32.6	9.5	0	1.05	65
September	10.6	3.9	0	.35	21
Water year	-	-	-	-	-

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for station near Costilla.
b Stage-discharge relation affected by ice.

Casias Creek near Costilla, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 36°54'05", long. 105°15'30", in Sangre de Cristo Grant, 200 feet downstream from road crossing, 2.5 miles by road upstream from Costilla Dam, 17 miles southeast of Costilla, Taos County.

Records available.- April 1937 to September 1947 (irrigation seasons only).

Extremes.- Maximum discharge recorded during year, 72 second-feet July 17 (gage height, 1.05 feet); minimum daily recorded, 3.8 second-feet Oct. 21, 24.
1937-47: Maximum discharge recorded, 121 second-feet Aug. 10, 1943, maximum gage height recorded, 1.90 feet June 14, 1938 (backwater from Costilla Reservoir); minimum daily discharge recorded, 2.4 second-feet Aug. 5, 6, 16, 1946.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.5							-	a40	19	9.1	7.6
2	4.8							-	a40	18	8.6	8.1
3	4.5							-	a41	19	8.6	8.1
4	6.7							-	41	19	8.6	9.5
5	6.2							-	43	19	7.6	9.5
6	4.8							-	44	19	7.6	8.1
7	6.7							-	44	19	7.6	8.1
8	6.2							-	45	20	7.6	8.1
9	5.1							-	45	20	7.6	8.1
10	4.2							-	44	19	6.7	8.6
11	b5.0							-	41	18	7.1	8.6
12	b5.0							-	39	16	7.6	8.6
13	b4.5							-	36	15	7.6	9.1
14	b5.0							-	33	16	7.1	9.5
15	5.1							42	32	13	7.1	9.1
16	4.5							37	31	16	7.1	8.1
17	4.8							32	30	29	6.7	6.2
18	b4.5							30	36	38	5.4	7.1
19	b4.5							31	34	28	5.7	a6.0
20	b4.0							33	31	23	5.7	a6.0
21	3.8							34	30	22	5.7	a5.8
22	4.2							37	31	20	5.7	a5.6
23	4.2							43	28	17	5.7	a5.4
24	3.8							38	27	15	5.7	a5.8
25	4.2							37	24	13	6.2	a6.2
26	*4.2							38	22	13	6.2	a5.7
27	-							40	20	13	6.7	5.7
28	-							39	20	11	6.7	5.7
29	-							39	20	11	7.1	8.6
30	-							a39	19	10	7.1	8.1
31	-							a40	-	9.5	7.6	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October 1-26	125	6.7	3.8	4.81	248
November	-	-	-	-	-
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May 15-31	629	43	30	37.0	1,250
June	1,011	45	19	33.7	2,010
July	556.5	38	9.5	18.0	1,100
August	217.1	9.1	5.4	7.00	431
September	224.7	9.5	5.4	7.49	446
Water year	-	-	-	-	-

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Costilla Creek above reservoir, near Costilla and Latir Creek near Cerro.
b Stage-discharge relation affected by ice.

Santistevan Creek near Costilla, N. Mex.

Location.- Water-stage recorder and metal Parshall flume, lat. 36°53'05", long. 105°16'50", in Sangre de Cristo Grant, 200 feet upstream from road crossing, 0.9 mile upstream from Costilla Dam, and 16 miles southeast of Costilla, Taos County.

Records available.- April 1937 to September 1947 (irrigation seasons only).

Extremes.- Maximum discharge recorded during year, 6.0 second-feet June 18 (gage height, 0.82 foot); minimum daily recorded, 0.7 second-foot Sept. 21, 26-28.
1937-47: Maximum discharge recorded, 18 second-feet Aug. 11, 1941 (gage height, 1.73 feet); minimum daily recorded, 0.5 second-foot Oct. 23, 1938, Apr. 13, 16, 1943.

Remarks.- Records good except for those periods of no gage-height record, which are poor. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.8								-	3.1	2.1	1.4
2	.8								-	3.0	2.0	1.3
3	.8								-	3.0	a2.0	1.3
4	1.0								-	2.9	a2.0	1.3
5	1.0								-	3.0	a2.5	1.2
6	.8								5.2	3.3	a2.3	1.2
7	.9								5.4	3.0	a2.0	1.2
8	1.0								5.4	2.7	a1.9	1.2
9	.9								5.4	2.6	a1.8	1.2
10	.9								5.4	2.5	a1.7	1.1
11	1.1								5.4	2.5	a1.6	1.1
12	1.0								5.4	2.6	a2.0	1.0
13	.9								5.3	2.6	a3.5	1.0
14	1.0								5.1	2.5	a2.5	1.0
15	1.0								4.9	2.4	1.9	1.0
16	.9								4.7	2.6	1.8	.9
17	.9								4.5	2.8	1.7	.9
18	.9								4.9	3.3	1.8	.9
19	a.9								4.6	2.6	1.7	.8
20	a.9								4.3	2.4	1.6	.8
21	a.9								4.2	2.5	1.9	.7
22	a.8								4.1	2.4	1.7	.8
23	a.8								3.8	2.5	1.7	.8
24	a.8								3.7	2.4	1.8	.8
25	a.8								3.5	2.4	1.6	.8
26	.8								3.4	2.4	1.6	.7
27	-								3.4	2.3	1.5	.7
28	-								3.3	2.3	1.4	.7
29	-								3.1	2.2	1.4	.8
30	-								3.0	2.2	1.4	.8
31	-								-	2.1	1.4	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October 1-26	23.3	1.1	0.8	0.90	46
November	-	-	-	-	-
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June 6-30	111.4	5.4	3.0	4.46	221
July	81.1	3.3	2.1	2.62	161
August	57.8	3.5	1.4	1.86	115
September	29.4	1.4	.7	.98	58
Water year	-	-	-	-	-

a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and records for Costilla Creek above Reservoir, Latir Creek near Cerro, and Rio Hondo at Arroyo Hondo.

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Principal diversions from Costilla Creek, N. Mex. and Colo.

Records of discharge are collected at nine gaging stations on four diversions from Costilla Creek. Each of these stations is equipped with a water-stage recorder and a Parshall flume. Water diverted is used for irrigation in the Sangre de Cristo Grant in New Mexico and Colorado below the gaging station near Costilla. Records are collected during irrigation seasons only.

Acequia Madre at Costilla, N. Mex.- Lat. 36°58'00", long. 105°30'50", 275 feet downstream from diversion dam. Records available, May 1944 to September 1947. Acequia diverts from right bank of Costilla Creek.

Mesa ditch near Garcia, Colo.- Lat. 36°59'50", long. 105°30'45", 429 feet north of milepost No. I36+54 on New Mexico-Colorado State line. Records available, June 1944 to September 1947. Ditch diverts from right bank of Acequia Madre for irrigation in Colorado.

Middle ditch at Garcia, Colo.- Lat. 36°59'50", long. 105°31'25", 300 feet north of New Mexico-Colorado State line. Records available, July 1944 to September 1947. Ditch diverts from Acequia Madre for irrigation in Colorado.

Cordillera ditch at Garcia, Colo.- Lat. 36°59'40", long. 105°31'40", 570 feet south of New Mexico-Colorado State line. Records available, June 1944 to September 1947. Ditch diverts from Acequia Madre for irrigation in Colorado.

Cerro Canal near Costilla, N. Mex.- Lat. 36°57'50", long. 105°31'10", 1,400 feet downstream from diversion dam. Records available, April 1944 to September 1947. Canal diverts from left bank of Costilla Creek.

Cerro Canal near Jaroso, Colo.- Lat. 36°59'35", long. 105°34'35". Records available, June 1944 to September 1947. Flow measured is delivered to Colorado and to New Mexico branch of Cerro Canal.

New Mexico Branch Cerro Canal near Jaroso, Colo.- Lat. 36°59'35", long. 105°34'45", 225 feet downstream from head gate. Records available, June 1944 to September 1947. Canal diverts from left bank of Cerro Canal for irrigation in New Mexico.

Alire ditch at Garcia, Colo.- Lat. 36°59'45", long. 105°32'05", 430 feet southeast of milepost No. I37+64 on New Mexico-Colorado State line. Records available, June 1944 to September 1947. Ditch diverts from left bank of Costilla Creek for irrigation in Colorado.

Eastdale No. 1 intake canal near Jaroso, Colo.- Lat. 37°02'40", long. 105°37'00", 1,100 feet downstream from head gate. Records available, June 1944 to September 1947. Canal diverts from right bank of Costilla Creek to Eastdale Reservoir No. 1 for irrigation in Colorado.

Diversions, in acre-feet, water year October 1946 to September 1947

Month	Acequia Madre	Mesa ditch	Middle ditch	Cordillera ditch	Cerro Canal at Costilla	Cerro Canal near Jaroso, Colo.	New Mexico branch Cerro Canal	Alire ditch	Eastdale No. 1 intake
October....	198	0	0.4	56	499	219	33	0	0
November...	a34	a0	a0	b25	a351	a204	c58	a0	0
December...	-	-	-	-	-	-	-	-	0
January....	-	-	-	-	-	-	-	-	0
February...	-	-	-	-	-	-	-	-	0
March.....	-	-	-	-	-	-	-	-	129
April.....	d331	e64	-	f10	g1,190	h1,070	h269	d0	279
May.....	890	192	0	6.3	1,010	515	87	k15	1,340
June.....	1,480	440	m0	-	3,150	2,210	295	1.0	6.0
July.....	1,480	385	n6.9	-	2,470	1,560	312	1.4	0
August.....	p1,160	385	33	9.3	2,200	1,590	341	-	13
September..	s57	110	.2	45	1,140	773	109	-	91
Water year.	-	-	-	-	-	-	-	-	1,860

a Nov. 1-26.
b Nov. 1-25.
c Nov. 1-27.
d Apr. 16-30.
e Apr. 17-30.
f Apr. 15-30.
g Apr. 19-30.
h Apr. 18-30.
j May 1-16.
k May 1-10, 22-31.
m June 1-27.
n July 25-31.
p Aug. 1-23.
r Aug. 7-31.
s Sept. 26-30.

Latir Creek near Cerro, N. Mex.

Location.- Water-stage recorder and concrete Parshall flume, lat. 36°49'45", long. 105°32'45", in S½SW¼ sec. 15, T. 30 N., R. 13 E., at mouth of canyon, 100 feet upstream from heading of Cerro community ditch and 6 miles northeast of Cerro.

Drainage area.- 10 square miles.

Records available.- April 1937 to September 1947 (irrigation seasons only prior to 1946).

Extremes.- Maximum discharge during year, 101 second-feet Aug. 31 (gage height, 2.44 feet); minimum daily, 2.3 second-feet Jan. 16.
1937-47: Maximum discharge determined, 121 second-feet June 3, 1942, from rating curve extended above 56 second-feet by logarithmic plotting; maximum gage height, 4.2 feet July 19, 1945 (log jam); minimum daily discharge recorded, 0.6 second-foot May 9, 1937.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.3	5.1	3.0	a2.5	2.6	b2.5	*4.1	15	23	12	6.1	14
2	5.7	4.9	3.0	a2.5	2.6	b2.6	4.5	20	25	11	6.1	13
3	5.7	b4.5	3.0	a2.5	2.6	*2.6	4.1	18	26	11	5.9	15
4	9.5	b4.7	3.0	a2.5	2.6	2.6	3.4	13	26	12	6.1	12
5	12	b4.9	3.0	a2.5	2.6	2.5	3.3	16	26	11	8.2	11
6	7.5	4.9	3.0	a2.6	2.6	2.5	3.6	18	28	12	7.0	9.7
7	10	4.7	3.0	a2.6	2.6	2.5	3.4	21	28	13	6.4	8.4
8	8.2	4.3	3.0	a2.6	2.6	2.5	3.4	20	28	12	6.8	8.2
9	7.7	4.5	3.0	a2.6	2.6	2.5	3.3	21	26	11	5.7	8.2
10	7.0	4.1	b2.8	a2.6	2.6	2.5	3.3	23	24	10	5.5	7.3
11	6.6	4.3	b2.9	a2.6	*2.6	2.8	3.0	19	23	9.2	5.3	6.8
12	6.8	4.1	b3.0	a2.6	2.6	b2.6	3.0	18	21	8.7	8.0	6.8
13	6.8	4.1	b3.0	a2.6	2.8	2.6	b3.0	19	19	8.4	9.5	6.4
14	6.1	4.1	3.0	a2.6	2.8	2.6	3.1	19	18	8.2	10	6.1
15	6.1	4.0	3.0	a2.6	2.8	2.6	3.3	19	18	8.0	8.4	a6.0
16	5.7	4.0	3.0	a2.3	2.8	2.8	3.3	18	18	8.7	9.2	a6.0
17	5.5	3.6	3.0	a2.4	2.8	2.8	3.8	18	18	10	8.7	a6.0
18	5.3	3.6	3.0	a2.4	2.8	2.8	4.7	19	20	12	8.7	a6.0
19	4.9	3.4	3.0	a2.4	2.8	2.8	4.3	20	18	9.5	8.2	a6.3
20	4.9	3.4	3.0	*2.4	2.8	3.0	4.7	21	17	8.7	7.5	a6.4
21	4.9	3.4	3.0	2.4	2.8	3.0	7.5	22	19	9.0	8.7	a6.3
22	5.1	3.3	3.0	2.4	2.8	3.3	10	22	20	8.4	8.0	a6.3
23	4.9	3.3	3.0	2.4	2.6	3.3	11	23	18	8.7	7.7	a6.4
24	4.5	3.1	*2.8	2.5	2.6	3.0	7.5	23	17	7.7	10	6.4
25	4.3	*3.1	2.8	2.5	2.6	3.1	*6.1	23	16	7.3	9.0	6.1
26	4.5	3.0	2.8	2.5	2.6	3.1	6.4	23	15	7.0	7.7	5.7
27	*4.3	3.0	2.8	2.5	2.6	3.6	7.7	24	15	8.0	7.7	5.5
28	4.3	3.0	2.8	2.5	2.6	3.6	6.8	23	14	8.0	6.8	5.5
29	11	3.0	2.8	2.5	-	3.4	8.2	21	13	7.3	6.6	5.5
30	7.7	3.0	b2.7	2.5	-	3.6	10	22	12	6.8	6.6	5.7
31	6.1	-	b2.4	2.6	-	3.8	-	23	-	6.4	18	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	198.9	12	4.3	6.42	395
November	116.4	5.1	3.0	3.88	231
December	90.6	3.0	2.4	2.92	180
Calendar year 1946	1,660.3	12	2.2	4.55	3,290
January	77.7	2.6	2.3	2.51	154
February	74.8	2.8	2.6	2.67	148
March	89.5	3.8	2.5	2.89	178
April	153.8	11	3.0	5.13	305
May	624	24	13	20.1	1,240
June	609	28	12	20.3	1,210
July	291.0	13	6.4	9.39	577
August	244.1	18	5.3	7.87	484
September	229.0	15	5.5	7.63	454
Water year 1946-47	2,798.8	28	2.3	7.67	5,560

Peak discharge.- May 3 (5:30 p.m.) 53 sec.-ft.; Aug. 31 (12:30 p.m.) 101 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range in stage and records for stations on Rio Colorado and Rio Hondo.
b Stage-discharge relation affected by ice.

Rio Colorado near Red River, N. Mex.

Location.- Water-stage recorder, lat. 36°37'20", long. 105°23'20", in NE¼ sec. 36, T. 28 N., R. 14 E., 100 feet downstream from confluence of Middle and East Forks and 6 miles south of Red River.

Records available.- July 1940 to September 1947 (no winter records prior to 1944).

Extremes.- Maximum discharge during year, 106 second-feet May 10; maximum gage height, 3.19 feet Jan. 16 (ice jam); minimum daily discharge, 3.5 second-feet Mar. 1.
1940-47: Maximum discharge recorded, 218 second-feet June 19, 1941, from rating curve extended above 160 second-feet by logarithmic plotting; maximum gage height, 3.19 feet Jan. 16, 1947 (ice jam); minimum daily discharge recorded, 3.5 second-feet Jan. 20, 21, 1945, Mar. 1, 1947.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.7	10	7.1		a4.5	b3.5	8.3	25	80	34	12	12
2	10	8.7	7.5			a4	9.2	39	86	34	12	11
3	10	6.1	6.8	a5			9.2	51	90	33	12	10
4	16	8.3	7.1		a5		8.7	65	90	33	12	12
5	18	10	7.5				7.9	72	88	31	11	10
6	15	10	7.5	(a)		a4.5	8.7	73	90	30	12	10
7	17	10	7.5	(a)			7.9	70	94	28	12	9.6
8	14	10	6.8	(a)			7.5	73	98	26	12	10
9	14	10	7.1	(a)			7.5	84	98	26	12	10
10	13	9.6	6.1	(a)	a4.5		7.1	100	94	24	10	10
				5.5								
11	11	8.7	6.4	(a)		4.3	6.8	90	86	22	10	10
12	12	9.2	7.1	(a)	a5	4.3	6.4	73	78	21	11	9.6
13	12	9.2	7.1	(a)	a5	4.6	6.4	60	70	22	12	8.7
14	11	8.7	7.1	(b)	*4.9	4.9	6.8	53	65	20	13	8.3
15	12	9.2	7.1	(b)	4.6	4.9	6.8	50	63	19	14	8.3
16	11	8.3	6.8		4.6	4.9	7.5	46	63	18	15	7.9
17	10	8.3	6.8		4.6	5.2	7.9	42	62	20	14	7.1
18	9.6	7.9	6.8	a4.5	4.6	5.2	9.2	42	62	22	14	7.5
19	8.7	8.3	b6		4.6	5.4	9.6	46	60	20	13	7.5
20	9.6	8.3	6.1		4.3	5.4	11	53	56	18	13	7.1
21	9.6	8.3	6.8		4.3	5.8	14	59	57	17	12	7.1
22	9.2	8.3	6.8		4.6	6.1	19	62	54	16	14	6.8
23	9.2	8.3	6.8		4.3	6.4	22	68	47	15	14	6.8
24	8.7	8.3	6.4	a5	4.3	6.1	21	62	44	15	15	6.8
25	8.7	7.9	6.4		4.3	6.1	17	62	44	14	15	6.8
26	8.7	7.5	6.4		a4	6.4	15	70	42	15	14	6.8
27	8.7	7.9	b6.4		a4	6.8	15	78	41	15	14	6.8
28	8.7	7.5	6.4		b4	7.1	15	84	40	14	13	6.8
29	18	7.5	b5.5		-	7.1	15	73	36	14	12	8.3
30	15	7.5	b5	a4.5	-	7.5	17	77	34	13	12	7.9
31	12	-	a5		-	7.9	-	80	-	12	12	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	359.1	18	8.7	11.6	712
November	257.8	10	6.1	8.59	511
December	206.2	7.5	5	6.65	409
Calendar year 1946	3,898.6	31	3.6	10.7	7,730
January	156.5	-	-	5.05	310
February	128.0	-	-	4.57	254
March	165.9	7.9	3.5	5.35	329
April	330.4	22	6.4	11.0	655
May	1,982	100	25	63.9	3,930
June	2,012	98	34	67.1	3,990
July	661	34	12	21.3	1,310
August	393	15	10	12.7	780
September	257.5	12	6.8	8.58	511
Water year 1946-47	6,909.4	100	3.5	18.9	13,700

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of fragmentary recorder trace, weather records, records for station near Questa, and records for stations in same or adjoining drainage basins.
b Stage-discharge relation affected by ice.

Rio Colorado near Questa, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 36°42'10", long. 105°34'00", in SW¼ sec. 33, T. 29 N., R. 13 E. (projected), 1½ miles upstream from Cabresto Creek and 2 miles east of Questa. Datum of gage is 7,449.88 feet above mean sea level.

Drainage area.- 112 square miles.

Records available.- October 1912 to August 1915 (fragmentary) and October 1930 to September 1947 in reports of Geological Survey. October 1912 to December 1931 in reports of State engineer.

Average discharge.- 31 years (1915-25, 1926-47), 65.2 second-feet.

Extremes.- Maximum discharge during year, 560 second-feet May 10 (gage height, 1.60 feet); minimum daily, 13 second-feet Dec. 31.

1930-47: Maximum discharge, 886 second-feet May 25, 1942 (gage height, 2.32 feet), from rating curve extended above 450 second-feet by logarithmic plotting; minimum daily, 6.3 second-feet Nov. 24, 25, 1931.

Remarks.- Records good except those for periods of ice effect or doubtful or no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	42	24	d15	b18	18	32	108	171	64	25	28
2	25	37	24	d15	b19	b18	39	117	171	64	24	28
3	28	30	23	d15	20	*19	43	122	165	62	24	28
4	35	22	24	d14	21	19	40	165	165	62	24	28
5	49	22	24	d15	20	19	30	300	165	62	24	27
6	38	25	25	d15	20	19	28	410	165	62	25	26
7	56	30	25	16	20	19	31	330	165	70	a27	25
8	42	35	23	16	20	18	29	360	165	66	a27	24
9	38	35	21	16	19	18	30	463	165	62	a27	24
10	36	34	b21	16	20	18	29	516	171	58	a27	24
11	32	26	21	17	*20	18	28	442	177	54	a24	24
12	31	30	22	16	20	18	28	310	171	52	a27	24
13	31	28	22	17	20	18	24	212	147	49	a31	24
14	30	28	21	16	20	18	29	230	137	49	35	23
15	30	30	22	17	21	18	30	230	132	49	37	23
16	30	26	23	d15	21	18	35	198	127	47	42	22
17	28	27	22	d17	22	18	35	165	122	47	43	21
18	26	24	22	18	22	20	46	159	122	46	43	21
19	24	24	b20	17	20	23	49	159	127	46	40	21
20	24	27	b18	18	22	23	53	171	112	46	36	21
21	24	26	b20	18	20	24	77	171	108	45	34	20
22	24	28	21	18	19	25	90	171	112	43	35	19
23	24	30	20	18	20	26	97	205	97	42	35	19
24	24	30	21	18	19	26	100	198	94	39	35	19
25	24	*28	22	18	19	23	87	177	84	38	40	22
26	23	24	23	18	19	24	82	171	77	37	39	22
27	23	26	*23	18	19	27	77	184	72	38	37	21
28	24	26	23	19	18	29	79	198	70	34	32	20
29	39	26	21	19	-	29	79	177	68	30	30	20
30	58	24	19	b17	-	28	84	177	66	27	30	22
31	49	-	d13	b16	-	30	-	171	-	26	29	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	993	58	23	32.0	1,970
November	850	42	22	28.3	1,690
December	673	25	13	21.7	1,330
Calendar year 1946	9,756	64	13	26.7	19,340
January	518	19	14	16.7	1,030
February	558	22	18	19.9	1,110
March	668	30	18	21.5	1,320
April	1,540	100	24	51.3	3,050
May	7,167	516	108	231	14,220
June	3,890	177	66	130	7,720
July	1,516	70	26	48.9	3,010
August	988	43	24	31.9	1,960
September	690	28	19	23.0	1,370
Water year 1946-47	20,051	516	13	54.9	39,780

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of available recorder trace, recorded range in stage, weather records, and records for Rio Taos at Los Cordovas, Rio Hondo at Arroyo Hondo, and Rio Colorado near Red River.

b Stage-discharge relation affected by ice.

d Doubtful gage-height record; discharge computed as explained in footnote a.

Cabresto Creek near Questa, N. Mex.

Location.- Water-stage recorder and 3-foot concrete Parshall flume, lat. 36°43'45", long. 105°33'10", in SE¼SE¼ sec. 21, T. 29 N., R. 13 E., a quarter of a mile downstream from Llano ditch heading, 3 miles northeast of Questa, and 3½ miles upstream from mouth.

Records available.- September 1943 to September 1947.

Extremes.- Maximum discharge during year, 81 second-feet May 4 (gage height, 2.74 feet); minimum daily, 3.0 second-feet Dec. 31, Mar. 1.

1943-47: Maximum discharge, 135 second-feet May 13, 1945 (gage height, 3.32 feet); minimum daily, 2.4 second-feet Oct. 13, 1945.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. Llano ditch (see below) diverts water half a mile (revised) above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.0	7.0	5.6	3.5	4.2	3.0	8.9	31	24	12	11	10
2	5.2	6.0	5.6	4.0	4.2	3.6	9.8	41	23	12	10	10
3	5.5	5.0	5.4	3.5	4.2	4.6	11	50	20	13	10	10
4	6.5	6.0	5.6	3.5	4.1	4.4	10	56	17	13	10	9.8
5	8.9	7.0	5.6	4.0	4.1	4.4	9.4	57	15	13	10	9.6
6	7.3	7.5	5.6	4.0	4.1	4.5	8.9	55	16	13	9.8	9.4
7	8.6	7.6	5.6	4.0	4.2	4.5	9.6	51	13	14	9.4	9.6
8	7.6	7.6	5.4	4.0	4.2	4.4	9.1	47	14	14	9.4	9.8
9	7.6	7.0	5.2	4.0	4.2	4.4	8.9	52	12	13	9.4	10
10	7.4	6.9	5.0	4.0	4.2	4.4	8.6	68	12	13	8.9	10
11	7.3	6.6	5.2	4.0	*4.1	4.5	8.2	66	11	13	8.8	10
12	7.0	7.0	5.4	4.0	4.2	4.6	8.1	61	12	13	10	10
13	6.6	6.6	5.4	4.0	4.4	4.1	6.4	58	13	13	11	9.6
14	6.6	6.6	5.4	4.0	4.4	4.6	7.6	58	12	14	12	9.8
15	6.6	6.6	5.2	4.0	4.5	4.6	7.8	58	13	14	12	9.6
16	6.6	6.6	5.0	3.5	4.6	4.5	8.4	57	12	13	11	9.4
17	6.4	6.4	5.0	4.0	4.8	4.8	8.8	54	12	13	10	9.3
18	6.4	6.0	5.0	4.0	4.9	5.2	10	50	11	14	10	9.3
19	6.2	6.4	4.5	4.5	4.8	5.3	12	49	12	13	11	9.1
20	6.0	6.4	4.5	4.0	4.6	6.0	12	46	13	13	10	9.1
21	6.0	6.4	5.0	4.0	4.2	6.4	16	42	12	15	10	8.8
22	6.0	6.4	5.0	4.5	4.5	7.4	25	40	12	15	11	8.6
23	6.0	6.2	5.0	*4.5	4.6	8.2	30	42	12	15	11	8.6
24	5.9	6.4	4.8	4.5	4.5	8.2	35	38	12	14	11	8.6
25	5.8	6.0	4.5	4.5	4.5	7.6	27	35	12	13	11	8.6
26	5.8	5.4	4.5	4.2	4.4	7.9	24	33	12	13	10	8.4
27	5.5	6.0	4.5	4.1	4.5	8.4	23	32	12	14	9.8	8.2
28	5.3	6.0	4.0	4.1	4.4	8.9	29	32	11	13	9.8	8.2
29	8.1	6.0	3.5	4.1	-	8.8	17	30	12	12	9.6	8.4
30	11	6.0	3.3	4.0	-	8.4	20	28	12	12	9.3	8.6
31	8.8	-	3.0	b4.0	-	8.6	-	26	-	11	9.4	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	209.5	11	5.0	6.76	416
November	193.8	7.6	5.0	6.45	384
December	152.3	5.6	3.0	4.91	302
Calendar year 1946	2,348.6	20	3.0	6.43	4,660
January	125.0	4.5	3.5	4.03	248
February	122.6	4.9	4.1	4.38	243
March	179.2	8.9	3.0	5.78	355
April	429.5	35	8.4	14.3	852
May	1,443	68	26	46.5	2,860
June	408	24	11	13.5	805
July	410	15	11	13.2	813
August	315.8	12	8.8	10.2	626
September	278.4	10	8.2	9.28	552
Water year 1946-47	4,264.9	68	3.0	11.7	8,460

* Winter discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.- No gage-height record Nov. 1-22, Nov. 25 to Dec. 23, Dec. 25 to Jan. 22, Apr. 21-24; discharge computed on basis of weather records and records for nearby stations.

Llano ditch near Questa, N. Mex.

Location.- Water-stage recorder and 3-foot Parshall flume, lat. 36°43'45", long. 105°33'00", in SE¼SE¼ sec. 21, T. 29 N., R. 13 E., 3½ miles northeast of Questa and 3¼ miles upstream from mouth of Cabresto Creek.

Records available.- September 1943 to September 1947 (irrigation season only).

Extremes.- Maximum daily discharge recorded, 21 second-feet June 7; no flow at times.

1943-47: Maximum daily discharge recorded, 32 second-feet June 7, 11, 16-18, 1945; no flow at times.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Ditch diverts water from right bank of Cabresto Creek for irrigation near Questa.

Monthly discharge, 1946-47

Month	Maximum	Minimum	Mean	Runoff in acre-feet
October	0.1	0	0.003	0.2
November 1-23	0	0	0	0
December	-	-	-	-
March 27-31	0	0	0	0
April	12	0	1.86	111
May	20	11	15.5	950
June	21	4.3	12.7	758
July	11	0	3.54	218
August	1.1	0	.15	9.1
September	.5	0	.03	1.6

Rio Hondo near Valdéz, N. Mex.

Location.- Water-stage recorder and concrete control, at. 36°32'20", long. 105°33'30", in S½ sec. 28, T. 27 N., R. 13 E. (projected), a quarter of a mile upstream from Forest Service gate, 1½ miles east of Valdez, and 9 miles upstream from mouth.

Records available.- August 1934 to September 1947. October 1930 to September 1934 at site half a mile downstream, below two diversions.

Average discharge.- 13 years (1934-47), 43.6 second-feet.

Extremes.- Maximum discharge during year: 250 second-feet May 10; maximum gage height, 2.67 feet Jan. 7 (backwater from ice); minimum daily discharge, 8 second-feet Dec. 31.
1934-47: Maximum discharge, 541 second-feet May 13, 1941, from rating curve extended above 300 second-feet by logarithmic plotting; maximum gage height, 5.59 feet Dec. 15, 1936 (ice jam), datum then in use; minimum daily discharge, 3.0 second-feet Jan. 21, 1935.

Remarks.- Records good except those for periods of ice effect or doubtful gage-height record, which are poor. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	24	21	b10	b13	b10	26	51	111	47	23	20
2	23	23	21	b14	14	b12	28	67	108	46	23	19
3	23	18	21	b13	14	b13	29	83	111	46	22	19
4	28	20	21	b12	14	14	27	111	108	45	22	19
5	35	23	21	b13	14	14	24	130	113	42	22	19
6	28	23	21	b15	14	13	22	141	111	41	23	19
7	35	22	21	b16	14	13	22	138	113	40	23	18
8	31	22	21	b16	14	13	21	138	120	40	22	19
9	28	21	b20	b15	14	13	21	157	120	40	21	19
10	27	21	b19	b15	14	13	21	228	118	38	19	19
11	26	b20	b19	b15	14	13	21	225	111	37	19	18
12	25	22	b20	b15	13	13	20	169	104	36	22	17
13	25	21	b20	b15	*14	13	20	128	98	35	22	16
14	24	21	20	15	13	13	20	118	100	35	23	16
15	24	21	20	16	14	13	21	116	100	34	21	16
16	24	b22	20	b12	14	13	22	113	93	33	21	15
17	24	21	b20	b14	15	14	24	113	87	32	21	15
18	24	22	b19	b16	15	15	27	111	83	33	22	16
19	23	22	*b17	b16	15	16	28	108	76	32	20	16
20	22	22	b17	b15	15	18	30	116	74	31	21	16
21	22	21	b18	b14	13	20	40	118	76	30	22	15
22	21	21	b19	b16	14	22	46	120	71	29	23	15
23	21	21	b20	14	14	23	50	116	67	28	22	15
24	21	*21	19	14	13	21	50	111	66	27	21	14
25	21	21	19	*13	13	20	44	111	62	26	22	15
26	21	b20	19	d14	13	21	41	118	58	26	21	16
27	20	21	19	d15	*13	22	41	118	55	26	21	15
28	*20	21	18	d16	11	24	44	118	52	25	20	16
29	27	21	b14	13	-	23	42	106	50	24	20	16
30	28	21	b10	b12	-	23	44	104	48	24	20	16
31	25	-	b8	b12	-	24	-	108	-	24	21	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	767	35	20	24.7	1,520
November	640	24	18	21.3	1,270
December	582	21	8	18.8	1,150
Calendar year 1946	7,750	40	8	21.2	15,360
January	441	16	10	14.2	875
February	385	15	11	13.8	764
March	512	24	10	16.5	1,020
April	916	50	20	30.5	1,820
May	3,809	228	51	123	7,560
June	2,664	120	48	88.8	5,280
July	1,052	47	24	33.9	2,090
August	665	23	19	21.5	1,320
September	504	20	14	16.8	1,000
Water year 1946-47	12,937	228	8	35.4	25,670

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge computed on basis of weather records and records for Rio Hondo at Arroyo Hondo, Rio Colorado near Questa, and Rio Taos near Los Cordovas.

Rio Hondo at Arroyo Hondo, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 36°31'55", long. 105°41'05", in sec. 32, T. 27 N., R. 12 E., 1 mile downstream from Arroyo Hondo and 1½ miles upstream from mouth.

Records available.- April 1910 to August 1915 (at site 200 yards above mouth, published as Rio Hondo near Arroyo Hondo) and January 1932 to September 1947 in reports of Geological Survey. April 1910 to December 1928 in reports of State engineer.

Average discharge.- 15 years (1932-47), 31.5 second-feet.

Extremes.- Maximum discharge during year, 148 second-feet May 11 (gage height, 2.25 feet); minimum daily, 5.0 second-feet Apr. 13.
1932-47: Maximum discharge, 2,510 second-feet Aug. 23, 1935 (gage height, 5.45 feet, datum then in use), from rating curve extended above 170 second-feet by logarithmic plotting; minimum daily, 4.0 second-feet July 13-16, 1934.

Remarks.- Records good. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.1	24	22	10	15	11	18	18	53	14	8.5	9.5
2	7.1	24	21	15	18	12	18	37	55	14	8.1	8.7
3	7.1	23	21	b14	19	16	16	55	56	14	7.9	8.7
4	8.8	24	21	b12	19	16	16	79	56	13	7.9	8.7
5	16	26	21	14	18	15	15	98	52	13	7.9	8.5
6	18	24	21	16	17	15	14	100	53	22	8.1	8.5
7	28	23	22	18	16	15	14	100	53	22	7.9	8.5
8	26	23	22	18	16	15	14	80	56	21	7.6	9.0
9	24	25	22	18	18	16	14	77	57	20	7.9	9.2
10	23	23	20	16	*18	15	14	122	56	18	7.9	9.2
11	23	21	21	16	18	15	13	135	53	16	7.9	9.2
12	23	23	22	17	18	15	10	120	51	12	11	9.2
13	22	22	22	19	18	15	5.0	104	49	12	9.2	9.0
14	21	22	22	19	18	15	5.4	92	47	12	8.5	8.3
15	23	23	21	19	18	15	5.7	86	44	12	8.7	8.3
16	21	23	22	b15	18	14	5.7	74	39	11	9.0	8.3
17	20	23	21	b16	19	14	5.4	70	36	12	8.7	8.3
18	19	22	22	*b17	19	14	5.4	64	38	14	9.2	8.5
19	18	23	17	20	19	15	6.7	59	39	12	9.2	8.5
20	18	23	17	17	19	15	8.8	59	37	12	9.7	8.3
21	18	23	18	16	16	13	11	61	37	11	9.5	8.3
22	17	22	20	18	17	9.7	12	56	36	11	14	8.1
23	17	21	23	18	17	14	13	57	31	10	14	7.9
24	16	23	23	18	16	13	13	58	25	10	12	8.1
25	16	23	20	18	15	14	14	61	22	10	11	8.3
26	16	21	20	18	15	16	14	62	21	9.7	10	8.1
27	16	22	21	18	15	17	12	62	19	9.7	11	8.1
28	16	22	*20	18	14	18	12	57	17	9.5	13	8.3
29	20	22	15	17	-	18	15	58	17	8.7	11	8.3
30	26	22	8.8	14	-	18	16	53	15	9.0	10	8.3
31	25	-	8.3	b14	-	17	-	55	-	8.7	10	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	576.1	28	7.1	18.6	1,140
November	685	26	21	22.8	1,360
December	617.1	23	8.3	19.9	1,220
Calendar year 1946	4,600.5	28	5.4	12.6	9,120
January	513	20	10	16.5	1,020
February	483	19	14	17.2	958
March	460.7	18	9.7	14.9	914
April	356.1	18	5.0	11.9	706
May	2,269	135	18	73.2	4,500
June	1,220	57	15	40.7	2,420
July	403.3	22	8.7	13.0	800
August	296.3	14	7.6	9.56	588
September	256.2	9.5	7.9	8.54	508
Water year 1946-47	8,135.8	135	5.0	22.3	16,130

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Rio Taos at Los Cordovas, N. Mex.

Location.- Water-stage recorder, lat. 36°23'20", long. 105°38'00", in N½ sec. 23, T. 25 N., R. 12 E. (projected), in Martinez Grant, 50 feet downstream from Rio Ranchos de Taos and Arroyo Seco, half a mile northeast of Los Cordovas, and 3½ miles west of Taos.

Drainage area.- 359 square miles.

Records available.- April 1910 to August 1915 and October 1930 to September 1947 in reports of Geological Survey. April 1910 to December 1931 in reports of State engineer.

Average discharge.- 36 years (1910-25, 1926-47), 64.7 second-feet.

Extremes.- Maximum discharge during year, 720 second-feet May 10, 11 (gage height, 4.14 feet); minimum daily, 3.0 second-feet Aug. 2.
1930-47: Maximum discharge, 1,830 second-feet May 14, 1941 (gage height, 5.81 feet), from rating curve extended above 1,300 second-feet by logarithmic plotting; minimum daily, 1.4 second-feet Aug. 5, 10, 1934.

Remarks.- Records good except those for periods of ice effect or doubtful gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.4	18	28	22	26	31	65	54	81	6.8	4.4	16
2	8.4	19	26	23	27	27	69	92	72	8.0	3.0	15
3	8.8	20	25	21	31	33	71	128	63	8.4	3.3	17
4	9.8	21	26	b21	32	35	67	202	54	8.8	3.8	16
5	11	25	27	21	32	40	53	260	52	11	4.1	16
6	11	26	28	21	32	35	49	275	51	14	3.6	14
7	13	26	28	22	31	33	47	255	44	15	3.6	11
8	13	26	28	22	32	38	39	250	39	12	3.6	11
9	13	29	25	22	30	37	37	288	37	11	7.2	11
10	13	26	23	21	*32	34	34	595	35	9.8	8.8	13
11	12	24	21	21	32	32	30	700	30	8.8	5.1	10
12	12	25	23	23	29	32	28	560	26	8.4	5.1	10
13	13	26	26	22	31	29	26	440	23	6.8	8.4	10
14	13	28	26	22	32	29	26	359	19	6.1	11	10
15	13	35	24	22	32	29	23	320	16	5.5	8.8	10
16	14	31	23	b20	32	27	24	298	15	7.2	9.3	9.3
17	14	29	23	*b18	33	28	25	258	13	8.0	9.3	9.3
18	13	29	21	26	37	28	26	218	11	9.3	12	10
19	13	30	19	26	32	29	28	194	12	9.3	13	10
20	13	31	19	24	31	30	28	184	14	8.8	19	9.3
21	13	30	20	24	29	32	33	174	15	8.8	18	8.0
22	13	28	*21	24	29	37	41	144	18	8.0	23	7.2
23	13	28	22	25	29	44	56	153	18	7.2	23	8.0
24	13	35	23	26	29	52	66	160	d17	8.0	25	8.4
25	12	30	23	26	30	46	63	137	d15	7.5	26	8.4
26	12	26	22	26	29	47	51	121	d14	6.8	24	8.4
27	13	27	26	28	33	50	43	116	d12	6.8	21	8.4
28	14	28	24	28	37	57	44	111	11	6.5	18	8.4
29	24	28	21	26	-	59	47	111	10	5.8	16	8.8
30	21	28	18	26	-	57	45	90	9.3	5.1	16	8.8
31	19	-	b16	27	-	61	-	83	-	5.1	16	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	406.4	24	8.4	13.1	806
November	812	35	18	27.1	1,610
December	725	28	16	23.4	1,440
Calendar year 1946	7,518.5	81	2.8	20.6	14,900
January	726	28	18	23.4	1,440
February	871	37	26	31.1	1,730
March	1,178	61	27	38.0	2,340
April	1,284	71	23	42.8	2,550
May	7,330	700	54	236	14,540
June	846.3	81	9.3	28.2	1,680
July	258.6	15	5.1	8.34	513
August	372.4	26	3.0	12.0	739
September	320.7	17	7.2	10.7	636
Water year 1946-47	15,130.4	700	3.0	41.5	30,000

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge computed on basis of weather records and records for Rio Lucero near Arroyo Seco and Rio Pueblo de Taos near Taos.

Rio Lucero near Arroyo Seco, N. Mex.

Location.- Water-stage recorder and wooden control, lat. 36°30', long. 105°32', in sec. 10, T. 26 N., R. 13 E., in Antoine Leroux Grant, 200 feet upstream from diversion dam for Tenorio and Indian ditches, 2 miles southeast of Arroyo Seco, 4½ miles north of Taos Pueblo, and 7½ miles northeast of Taos.

Records available.- April 1910 to December 1916 (published as Rio Lucero near Taos) and November 1933 to September 1947 in reports of Geological Survey. January 1911 to December 1915 in reports of State engineer.

Average discharge.- 13 years (1934-47), 26.0 second-feet.

Extremes.- Maximum discharge during year, 130 second-feet May 10 (gage height, 2.14 feet); minimum daily, 4.4 second-feet Jan. 13, 15.
1933-47: Maximum discharge, 300 second-feet May 13, 1941 (gage height, 3.12 feet); minimum daily not determined.

Remarks.- Records good except those for periods of ice effect or no gage-height record and those for April, May, and June, which are poor. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	12	9.9	6.9	6.5	7.2	18	32	68	25	11	13
2	13	11	9.9	6.1	6.9	7.2	22	43	75	25	12	12
3	12	9.1	9.9	6.1	7.2	7.6	22	56	77	23	12	12
4	17	11	9.5	5.8	7.2	7.9	19	73	77	23	12	12
5	18	13	9.5	5.8	7.2	7.6	16	81	73	22	12	11
6	15	12	9.1	5.8	7.2	7.2	15	80	75	22	11	11
7	19	11	9.9	5.8	7.2	6.9	13	75	76	21	12	11
8	16	11	9.1	5.4	*7.2	6.5	11	75	76	21	12	11
9	16	11	9.9	5.1	6.9	6.5	11	88	75	20	12	11
10	15	11	b9.0	5.1	6.9	6.5	11	124	74	19	12	11
11	14	11	b8.0	4.7	6.9	6.5	11	122	68	18	12	11
12	14	11	b8.5	4.7	6.5	6.5	9.9	93	63	17	12	11
13	14	11	b9.0	4.4	6.5	6.9	11	77	55	17	13	11
14	14	11	9.1	4.7	6.5	6.9	10	73	52	17	14	11
15	14	9.9	8.7	4.4	7.2	6.9	11	66	50	16	13	10
16	13	12	7.9	4.7	7.6	6.9	12	60	48	15	13	10
17	13	11	7.9	a4.5	8.3	7.2	14	56	48	16	13	9.5
18	13	11	b7.0	a5.0	9.1	9.5	16	56	46	17	12	9.1
19	12	12	b6.5	a5.0	9.1	12	18	56	46	15	12	9.1
20	12	11	b6.5	a5.5	8.7	14	22	61	45	14	13	9.1
21	12	11	*b7.5	a6.5	8.3	16 *	28	67	44	14	13	9.1
22	12	*10	7.6	a6.0	8.3	18	33	71	42	14	19	8.7
23	12	9.5	6.9	a6.0	7.9	18	36	72	38	14	18	7.9
24	11	9.1	7.2	a6.5	7.6	17	34	64	36	13	17	7.9
25	11	9.1	7.6	a6.0	7.6	15	28	62	34	12	17	7.9
26	10	9.1	7.6	a6.0	7.2	14	25	68	32	12	16	7.9
27	10	8.7	7.2	a6.5	6.9	16	26	75	32	13	15	7.9
28	10	9.1	7.6	a6.5	6.5	17	24	75	30	13	14	7.6
29	16	9.5	6.9	a6.0	-	16	25	66	28	13	14	7.6
30	15	9.9	6.9	6.9	-	16	25	65	26	12	13	7.6
31	13	-	6.5	6.9	-	17	-	70	-	12	13	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	418	19	10	13.5	829
November	318	13	8.7	10.6	631
December	254.3	9.9	6.5	8.20	504
Calendar year 1946	4,483.9	33	4.5	12.3	8,900
January	175.3	6.9	4.4	5.65	348
February	207.1	9.1	6.5	7.40	411
March	334.4	18	6.5	10.8	663
April	576.9	36	9.9	19.2	1,140
May	2,202	124	32	71.0	4,370
June	1,609	77	26	53.6	3,190
July	524	25	12	16.9	1,040
August	414	19	11	13.4	821
September	295.9	13	7.6	9.86	587
Water year 1946-47	7,328.9	124	4.4	20.1	14,530

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Rio Pueblo de Taos near Taos and Rio Taos at Los Cordovas.
b Stage-discharge relation affected by ice.

Principal diversions from Rio Lucero, N. Mex.

Records of discharge are collected for five ditches that divert water from the Rio Lucero below gaging station on that stream near Arroyo Seco. Each of these ditches is equipped with a water-stage recorder for collecting gage-height records. Water diverted by these ditches is used for irrigation in the valley of the Rio Lucero below the gaging station near Arroyo Seco.

Tenorio ditch diverts from right bank in sec. 10, T. 26 N., R. 13 E. (projected), 200 feet downstream from gaging station on Rio Lucero near Arroyo Seco. Records available, June 1935 to September 1947 (irrigation seasons only).

Indian ditch diverts from left bank in sec. 10, T. 26 N., R. 13 E. (projected), 200 feet downstream from gaging station on Rio Lucero near Arroyo Seco. Records available, July 1934 to September 1947 (irrigation seasons only).

Seco ditch diverts from right bank in sec. 10, T. 26 N., R. 13 E. (projected), 600 feet downstream from gaging station on Rio Lucero near Arroyo Seco. Records available, July 1934 to September 1947 (irrigation seasons only except water years 1938-40).

Juan Manuel ditch diverts from right bank in sec. 16, T. 26 N., R. 13 E. (projected). Records available, June 1935 to September 1947 (irrigation seasons only).

Prado ditch diverts from right bank in sec. 21, T. 26 N., R. 13 E. (projected). Records available, May 1934 to September 1947 (irrigation seasons only except water years 1938-40).

Diversions, in acre-feet, water year October 1946 to September 1947

Month	Tenorio ditch	Indian ditch	Seco ditch	Juan Manuel ditch	Prado ditch
October	a49	a287	a87	a0.4	209
November	-	-	-	-	161
December	-	-	-	-	b47
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	c12	-
April	d.6	d2.4	d115	435	e121
May	218	103	536	972	666
June	441	506	410	481	726
July	147	433	115	12	286
August	77	277	99	12	161
September	57	171	86	13	107

a Oct. 1-24.
b Dec. 1-10.
c Mar. 26-31.
d Apr. 22-30.
e Apr. 23-30.

Rio Pueblo de Taos near Taos, N. Mex.

Location.- Water-stage recorder, lat. 36°26', long. 105°30', in sec. 36, T. 26 N., R. 13 E., 2½ miles east of Taos Pueblo, 4½ miles northeast of Taos, and 5 miles upstream from confluence with Rio Lucero.

Records available.- February 1940 to September 1947.

Extremes.- Maximum discharge during year, 310 second-feet May 5 (gage height, 2.55 feet); minimum daily, 5.0 second-feet Dec. 19, Jan. 30, Sept. 27, 28.
1940-47: Maximum discharge, 970 second-feet May 14, 1941 (gage height, 3.90 feet, from high-water mark in gage well), from rating curve extended by logarithmic plotting; minimum daily, 4.4 second-feet Feb. 6, 1940.

Remarks.- Records good except those for periods of ice effect, which are fair. Diversion above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.2	8.6	10	b7.5	8.6	6.6	31	68	71	17	7.6	9.1
2	7.9	8.6	9.1	7.9	6.9	9.1	36	95	70	17	7.6	8.6
3	7.2	5.6	9.1	6.9	6.9	10	39	138	71	17	7.6	7.9
4	9.5	8.0	9.9	6.9	6.9	9.5	35	170	70	17	7.6	7.9
5	12	11	11	7.2	6.9	8.6	28	170	68	17	7.9	7.6
6	9.5	9.9	10	6.9	7.2	7.9	22	173	65	17	7.9	6.9
7	12	8.2	10	6.6	7.2	7.9	22	218	63	17	9.1	6.6
8	11	9.5	9.9	6.6	*7.9	7.6	19	200	62	17	9.1	6.3
9	9.9	9.9	7.9	6.6	7.9	7.9	20	200	60	15	9.5	6.6
10	9.9	9.1	6.3	6.3	8.2	7.9	21	167	58	15	7.9	7.9
11	9.1	6.1	6.3	6.3	7.9	8.2	19	197	54	14	7.6	7.2
12	9.1	8.6	8.2	6.6	7.6	7.9	17	151	50	13	7.9	6.6
13	9.5	9.9	b8.4	6.6	7.9	7.9	15	143	47	13	10	6.3
14	8.6	9.1	9.5	6.6	8.2	8.2	17	132	41	14	12	6.3
15	9.5	8.6	8.6	6.6	7.9	8.2	19	122	39	12	11	6.0
16	9.1	8.2	8.2	b6.0	9.1	7.9	23	112	37	12	12	5.6
17	9.1	9.1	6.9	b5.5	9.9	9.9	25	100	35	12	16	5.3
18	8.6	8.6	6.9	7.2	10	12	33	93	35	16	11	5.3
19	8.2	8.6	5.0	6.9	9.9	14	37	90	15	15	9.9	6.0
20	8.6	9.9	5.6	6.6	9.1	17	42	92	35	12	10	6.0
21	8.2	10	*6.9	*6.6	8.2	20	54	92	32	12	11	5.6
22	8.2	*9.1	7.2	6.6	9.1	27	68	92	33	11	12	5.6
23	7.9	9.5	8.2	6.6	8.6	30	76	98	29	10	14	5.3
24	7.9	10	7.9	6.6	8.6	27	72	97	27	10	11	5.3
25	7.9	9.9	7.6	6.6	9.5	21	63	86	24	9.5	13	5.3
26	7.9	6.6	7.2	6.3	8.2	22	53	85	22	9.9	12	5.3
27	7.6	9.9	7.6	6.3	8.2	25	49	88	21	12	11	5.0
28	7.6	10	7.9	6.0	6.9	30	51	90	20	9.9	11	5.0
29	9.5	10	6.9	5.6	-	28	53	83	19	8.6	9.9	5.6
30	14	11	7.6	b5.0	-	26	55	74	18	8.2	9.5	5.6
31	10	-	b7.5	7.2	-	27	-	72	-	7.9	9.1	5.6

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	282.2	14	7.2	9.10	560
November	271.1	11	5.6	9.04	538
December	249.3	11	5.0	8.04	494
Calendar year 1946	4,533.8	45	4.8	12.4	8,990
January	203.7	7.9	5.0	6.57	404
February	229.4	10	6.9	8.19	455
March	467.2	30	6.6	15.1	927
April	1,114	76	15	37.1	2,210
May	3,788	218	68	122	7,510
June	1,313	71	18	43.8	2,600
July	408	17	7.9	13.2	809
August	312.7	16	7.6	10.1	620
September	189.6	9.1	5.0	6.32	376
Water year 1946-47	8,828.2	218	5.0	24.2	17,500

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Embudo Creek at Dixon, N. Mex.

Location.- Water-stage recorder, lat. 36°12'35", long. 105°54'35", in NW¼SW¼ sec. 20, T. 23 N., R. 10 E., at bridge on U. S. Highway 64, 0.5 mile upstream from mouth, three-quarters of a mile east of Embudo, and 1¼ miles northwest of Dixon.

Drainage area.- 305 square miles.

Records available.- October 1930 to September 1947 in reports of Geological Survey. October 1923 to December 1931 in reports of State engineer.

Average discharge.- 24 years (1923-47), 92.1 second-feet.

Extremes.- Maximum discharge during year, 1,440 second-feet Aug. 31 (gage height, 5.94 feet); minimum daily, 4.2 second-feet July 30 to Aug. 3, Aug. 5, 6.
1930-47: Maximum discharge, 2,180 second-feet Aug. 22, 1946 (gage height, 7.00 feet); minimum daily, 1 second-foot July 23, 24, 1932.

Remarks.- Records fair except those for periods of ice effect, doubtful or no gage-height record, and those for June and September, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a15	36	38	b25	b30	17	54	149	a100	12	4.2	a75
2	a15	35	36	b27	62	15	62	194	a90	12	4.2	a50
3	a30	33	33	b36	30	27	74	234	a85	12	4.2	48
4	a40	29	33	b35	30	22	69	295	81	10	4.5	42
5	a50	39	36	b35	30	26	49	349	74	d10	4.2	36
6	a35	44	36	b35	32	22	44	349	69	d12	4.2	33
7	a80	39	36	b35	30	22	46	326	64	d10	4.9	28
8	a60	43	35	b35	30	20	38	326	58	10	6.0	25
9	a50	43	29	34	27	27	39	376	55	10	6.0	20
10	a45	43	24	b34	30	23	42	536	48	8.5	5.2	24
11	a45	32	20	b34	28	27	36	563	39	8.5	4.5	26
12	a45	39	27	b34	24	28	36	495	34	5.6	14	24
13	a40	42	34	34	*27	22	28	445	33	5.6	16	20
14	a40	40	36	34	30	24	34	a400	33	6.0	12	17
15	a40	46	35	33	28	26	30	a350	30	6.0	10	16
16	a40	40	33	b30	28	23	38	a300	28	5.6	8.5	14
17	a40	36	*29	b30	33	29	36	a270	26	6.4	12	13
18	a35	36	23	34	35	32	50	a250	23	6.8	16	a12
19	a35	36	b20	b34	29	36	64	a230	25	18	24	a12
20	a35	40	b19	b34	25	40	65	a210	36	10	d30	a12
21	a33	42	b21	b34	23	43	100	a190	36	8.5	d25	a12
22	32	36	b25	*b34	26	52	128	a180	36	9.5	d35	a12
23	30	36	33	b30	26	57	165	a200	36	8.5	d45	a11
24	29	46	43	b30	28	57	176	a180	34	7.6	d40	a10
25	27	44	42	29	29	46	146	a160	33	6.4	d50	a9
26	27	36	39	30	26	48	119	a150	28	6.0	d45	a9
27	29	43	44	30	29	52	108	a150	23	6.0	d40	a9
28	30	42	35	29	26	55	115	a140	19	5.6	d35	a9
29	30	40	20	26	-	52	124	a130	24	4.9	d30	a10
30	44	40	b16	b25	-	49	124	a120	13	4.2	d25	a10
31	40	-	b14	b28	-	49	-	a110	-	4.2	a150	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,166	80	15	37.6	2,310
November	1,176	46	29	39.2	2,330
December	944	44	14	30.5	1,870
Calendar year 1946	14,288	198	3	39.1	28,330
January	987	36	25	31.8	1,960
February	801	35	23	28.6	1,590
March	1,068	57	15	34.5	2,120
April	2,239	176	28	74.6	4,440
May	8,357	563	110	270	16,580
June	1,313	100	13	43.8	2,600
July	256.4	18	4.2	8.27	509
August	714.6	150	4.2	23.1	1,420
September	648	75	9	21.6	1,290
Water year 1946-47	19,670.0	563	4.2	53.9	39,020

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records, discharge measurements, and records for Rio Santa Cruz at Cundiyo, Nambe Creek near Nambe, Rio Tesuque near Santa Fe, and Rio Grande near Taos and near Embudo.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge computed as explained in footnote a.

Rio Chama at Park View, N. Mex.

Location.- Water-stage recorder, lat. 36°44'15", long. 106°34'40", in Tierra Amarilla Grant, at bridge on State Highway 51, just below present mouth (shifts position) of Rio Brazos and half a mile northwest of Park View, Rio Arriba County.

Drainage area.- 405 square miles.

Records available.- November 1912 to September 1916 and October 1930 to September 1947 in reports of Geological Survey. November 1912 to September 1916 and August 1924 to December 1931 in reports of State engineer. Records include flow of Rio Brazos.

Average discharge.- 24 years (1913-15, 1925-47), 375 second-feet.

Extremes.- Maximum discharge during year, 4,460 second-feet May 2 (gage height, 6.10 feet); minimum daily, 17 second-feet Aug. 2-4.
1930-47: Maximum discharge, 8,530 second-feet Apr. 16, 1937; maximum gage height, 8.12 feet May 26, 1941, site and datum then in use; minimum daily discharge, 3 second-feet July 6, 7, 1934.

Remarks.- Records good except those for periods of ice effect or doubtful or no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	94	72	b45	a45	b52	355	1,680	563	94	18	86
2	43	78	70	b55	a52	b65	398	2,350	574	94	17	58
3	78	43	66	b54	a55	b75	372	3,040	574	80	17	47
4	93	41	70	b50	*b57	b70	285	2,590	510	78	17	43
5	332	69	74	b45	b60	*b65	226	2,590	480	76	52	52
6	114	86	76	b50	b65	64	175	2,200	450	66	30	50
7	152	82	78	*b55	b70	59	182	1,940	450	78	24	40
8	123	94	70	b55	b75	61	171	1,890	450	94	35	40
9	132	88	61	b54	b70	61	159	2,080	414	78	56	56
10	104	84	50	b52	b70	59	148	2,560	389	64	44	92
11	76	66	56	b52	b65	66	142	1,860	348	58	36	61
12	69	88	59	b52	b60	66	136	1,520	313	50	41	48
13	70	86	56	b55	b70	59	163	1,590	280	47	53	42
14	66	84	58	a55	b70	64	226	1,540	247	46	117	40
15	67	92	58	a55	b75	62	274	1,410	218	41	67	38
16	74	76	53	a50	b85	74	313	1,320	200	39	114	35
17	72	76	*50	a48	b90	100	364	1,220	182	39	132	46
18	72	74	55	a55	*b80	*132	432	1,060	208	36	102	484
19	55	72	39	a55	b70	148	d400	1,060	253	38	78	355
20	56	80	59	a54	b70	175	530	1,020	226	35	86	190
21	59	82	66	*b52	b70	195	763	962	226	34	70	132
22	58	74	67	a52	b70	231	d900	930	292	32	152	102
23	55	74	61	a52	b75	231	d1,000	1,030	263	30	226	86
24	52	86	59	a54	b80	195	d900	883	222	28	200	72
25	50	78	58	a55	b75	167	d800	790	195	27	132	66
26	50	67	58	a55	b75	195	d760	776	175	26	102	67
27	51	72	53	a55	b70	236	d700	763	152	25	74	62
28	53	78	51	a55	66	280	d650	763	139	24	62	58
29	164	76	51	a55	-	285	790	632	126	21	55	56
30	231	74	b40	a55	-	306	1,080	598	112	20	52	59
31	142	-	b35	a50	-	341	-	568	-	19	50	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,843	332	50	91.7	5,640
November	2,314	94	41	77.1	4,590
December	1,829	78	35	59.0	3,630
Calendar year 1946	50,706.8	2,260	6.0	139	100,600
January	1,636	55	45	52.8	3,240
February	1,935	90	45	69.1	3,840
March	4,239	341	52	137	8,410
April	13,794	1,080	136	460	27,360
May	45,215	3,040	568	1,459	89,680
June	9,231	574	112	308	18,310
July	1,517	94	19	48.9	3,010
August	2,311	226	17	74.5	4,580
September	2,663	484	35	88.8	5,280
Water year 1946-47	89,527	3,040	17	245	177,600

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records, records for San Juan River at Pagosa Springs, Colo., and records for other nearby stations.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge computed as explained in footnote a.

Rio Chama below El Vado Dam, N. Mex.
(Formerly published as Rio Chama near Tierra Amarilla, N. Mex.)

Location.- Water-stage recorder, lat. 36°34'50", long. 106°43'30", in NW¼ sec. 15, T. 27 N., R. 2 E. (projected), 1.5 miles downstream from El Vado Dam, 2.7 miles upstream from Rio Nutrias, and 13 miles southwest of Tierra Amarilla.

Records available.- October 1935 to September 1947 in reports of Geological Survey. October 1913 to November 1916 at site 1.5 miles upstream (records of unregulated flow), published as Rio Chama near El Vado and near Tierra Amarilla in reports of Geological Survey. October 1913 to September 1916 and February 1920 to December 1924 in reports of State engineer.

Average discharge.- 11 years (1936-47), 439 second-feet, subsequent to completion of El Vado Dam.

Extremes (regulated).- Maximum discharge during year, 1,350 second-feet Nov. 14 (gage height, 3.89 feet); minimum daily, 0.9 second-foot Dec. 30.
1935-47: Maximum discharge, 6,010 second-feet May 17, 1941 (gage height, 6.89 feet); maximum gage height, 9.63 feet May 30, 1937, site and datum then in use; minimum daily discharge, that of Dec. 30, 1946.

Remarks.- Records excellent. Diversions above station for irrigation. Flow regulated by El Vado Reservoir (see p. 212).

Discharge, in second-feet, wster year October 1946 tc September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	17	1,270	1.4	2.2	2.0	3.6	5.6	19	616	1,310	38
2	16	16	1,270	1.4	2.2	2.0	3.6	6.0	19	604	1,260	26
3	16	16	1,250	1.2	2.5	2.2	3.6	6.5	18	598	1,070	16
4	17	16	1,240	1.4	2.5	2.5	3.6	7.0	18	592	1,070	16
5	16	16	1,240	1.4	2.8	2.5	3.6	8.7	18	586	1,060	16
6	15	16	1,230	1.6	3.3	2.2	3.6	11	18	580	1,060	16
7	21	16	1,210	1.6	4.0	2.2	3.6	11	18	645	1,110	16
8	15	16	1,200	1.6	4.4	2.5	3.6	12	18	1,100	1,330	16
9	14	16	1,190	1.6	4.8	2.8	3.6	13	18	1,110	1,330	20
10	14	16	1,170	1.8	4.4	2.8	3.6	16	78	1,100	1,320	16
11	13	16	1,160	1.6	3.3	2.8	3.6	16	232	1,080	1,320	16
12	13	16	1,140	1.8	3.3	2.8	3.6	16	791	1,050	749	16
13	14	426	1,120	2.2	3.0	2.5	3.6	16	612	1,020	38	16
14	14	1,330	1,100	1.8	2.8	2.5	3.6	16	458	1,000	36	15
15	15	1,340	1,080	1.6	3.3	2.5	3.6	16	490	976	36	15
16	15	1,340	1,060	1.8	3.3	2.5	3.6	18	484	721	43	15
17	16	1,340	1,040	2.0	4.0	2.8	3.6	19	484	532	38	19
18	16	520	1,020	2.0	3.0	2.8	3.6	19	528	580	38	30
19	17	820	1,010	2.0	2.5	2.8	3.6	20	803	562	39	18
20	17	1,340	496	2.0	2.5	2.8	3.6	20	906	544	38	16
21	19	1,330	3.3	2.0	2.5	3.0	3.6	20	1,050	526	38	16
22	19	1,320	2.3	2.0	2.5	3.0	4.0	20	1,060	508	38	16
23	19	1,310	1.8	2.0	2.5	3.0	4.4	20	1,060	520	38	15
24	19	1,320	1.2	2.0	2.8	3.0	4.4	20	1,050	520	38	15
25	19	1,320	1.2	2.2	2.5	3.0	4.8	20	964	514	38	15
26	20	1,300	1.2	2.2	2.5	3.0	4.8	19	646	514	38	15
27	20	1,290	1.4	2.2	2.5	3.0	5.2	19	640	508	38	15
28	20	1,290	1.4	2.2	2.8	3.3	5.2	19	634	508	38	15
29	20	1,280	1.2	2.2	-	3.3	5.6	19	628	502	38	15
30	19	1,270	.9	2.2	-	3.6	5.6	19	622	502	38	15
31	19	-	1.2	2.2	-	3.3	-	19	-	536	38	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	523	21	13	16.9	1,040
November	21,679	1,340	16	723	43,000
December	22,513.1	1,270	.9	726	44,650
Calendar year 1946	87,836.3	1,340	.9	241	174,200
January	57.2	2.2	1.2	1.85	113
February	84.7	4.8	2.2	3.02	168
March	85.0	3.6	2.0	2.74	169
April	119.6	5.6	3.6	3.99	237
May	486.8	20	5.6	15.7	966
June	14,384	1,060	18	479	28,530
July	21,254	1,110	502	686	42,160
August	14,713	1,330	36	475	29,180
September	524	38	15	17.5	1,040
Wster year 1946-47	96,423.4	1,340	.9	264	191,300

Rio Chama near Abiquiu, N. Mex.

Location.- Water-stage recorder, lat. 36°13'00", long. 106°15'00", at bridge on State Highway 96 in Juan Jose Lobato Grant, 1¾ miles upstream from El Rito Creek, 5 miles downstream from Abiquiu, Rio Arriba County, and 13.5 miles downstream from Abiquiu dam site.

Records available.- January 1942 to September 1947.

Extremes.- Maximum discharge during year, 1,990 second-feet Aug. 31 (gage height, 4.21 feet); minimum daily, 1 second-foot June 11.

1942-47: Maximum discharge, 6,330 second-feet Apr. 23, 1942 (gage height, 5.80 feet), from rating curve extended above 3,300 second-feet by logarithmic plotting; minimum daily, that of June 11, 1947.

Remarks.- Records good except those for periods of no gage-height record, which are fair, and those for periods of ice effect, which are poor. Diversions above and below station for irrigation. Flow regulated by El Vado Reservoir (see p. 212).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	32	1,290	b25	a23	47	82	80	24	600	826	204
2	12	31	1,320	b22	b24	34	102	86	18	600	1,310	65
3	15	38	1,320	b20	b25	34	128	125	14	600	1,160	49
4	38	36	1,320	a18	b25	32	112	174	12	592	1,100	40
5	158	42	1,290	a20	25	27	88	178	14	584	1,110	55
6	92	43	1,280	a22	*25	32	68	174	11	584	1,070	32
7	287	47	1,250	b23	26	*36	60	161	7	600	1,070	23
8	126	45	1,240	b24	25	34	82	152	10	813	1,310	20
9	47	52	1,220	*b25	b23	36	102	145	6	1,110	1,360	66
10	32	49	1,190	a23	b24	37	100	309	2	1,070	1,290	88
11	26	43	1,180	a23	b30	43	90	525	1	1,050	1,290	76
12	23	42	1,180	a24	b35	60	84	434	242	1,040	1,320	36
13	25	42	1,160	b25	b40	72	72	332	676	1,040	583	25
14	24	786	1,130	b26	b40	49	68	247	490	1,050	148	21
15	22	1,310	1,120	b25	b50	43	90	208	441	1,010	117	20
16	22	1,320	1,080	a24	b60	38	122	182	469	976	532	19
17	24	1,360	1,060	a21	b70	38	134	161	462	560	418	20
18	24	1,320	1,050	a22	b65	43	161	139	469	576	128	190
19	23	300	1,020	a23	b60	52	148	114	654	600	158	330
20	24	1,260	*1,000	a23	*b50	55	152	95	830	546	311	164
21	25	1,360	410	a23	b48	55	171	82	1,050	525	189	104
22	25	1,350	104	a23	45	55	148	70	1,080	511	540	*55
23	25	1,380	67	a24	42	63	142	65	1,060	483	273	43
24	25	1,430	53	*b24	38	70	139	78	1,060	497	152	39
25	25	1,400	49	b26	38	65	148	82	1,060	497	92	36
26	26	1,380	42	b26	40	47	125	62	810	497	76	32
27	26	1,380	42	b25	52	46	107	50	632	490	74	a26
28	26	1,350	45	b26	62	58	100	43	624	483	58	a24
29	28	1,320	42	b27	-	74	95	35	624	483	55	a21
30	30	1,320	35	b24	-	78	88	29	608	469	52	a20
31	36	-	b30	b22	-	80	-	24	-	469	171	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,352	287	11	43.6	2,680
November	21,868	1,430	31	729	43,370
December	24,619	1,320	30	794	48,830
Calendar year 1946	100,189	1,430	10	274	198,700
January	728	27	18	23.5	1,440
February	1,110	70	23	39.6	2,200
March	1,533	80	27	49.5	3,040
April	3,308	171	60	110	6,560
May	4,641	525	24	150	9,210
June	13,460	1,080	1	449	26,700
July	21,005	1,110	469	678	41,660
August	18,343	1,360	52	592	36,380
September	1,943	330	19	64.8	3,850
Water year 1946-47	113,910	1,430	1	312	225,900

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records, discharge measurements, and records for station near Chamita.

b Stage-discharge relation affected by ice.

Rio Chama near Chamita, N. Mex.

Location.- Water-stage recorder, lat. 36°04'20", long. 106°06'40", in NE¼ sec. 8, T. 21 N., R. 8 E., 200 feet downstream from Espanola-Ojo Caliente highway bridge, 2½ miles upstream from mouth, and 2½ miles northwest of Chamita.

Records available.- October 1912 to June 1915 and October 1930 to September 1947 in reports of Geological Survey. October 1912 to December 1931 in reports of State engineer.

Average discharge.- 33 years (1913-17, 1918-47), 673 second-feet.

Extremes.- Maximum discharge during year, 2,670 second-feet Aug. 8 (gage height, 4.18 feet); minimum daily, 3 second-feet June 12.
1930-47: Maximum discharge, 9,910 second-feet May 14, 1941; maximum gage height, 8.11 feet May 16, 1941; no flow at times.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. Diversions above station for irrigation. Flow regulated by El Vado Reservoir (see p. 212).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	42	a1,340	b36	54	100	232	352	42	610	581	440
2	16	45	a1,350	b33	63	91	257	490	26	570	1,220	91
3	16	47	a1,360	b31	70	88	313	540	16	560	1,180	68
4	44	49	a1,360	b32	73	88	278	540	8	540	1,050	65
5	155	52	a1,330	b35	73	73	244	472	7	510	1,200	47
6	208	54	1,270	b38	*73	65	214	376	6	540	1,140	33
7	455	56	1,280	b41	70	76	214	278	5	560	1,010	20
8	264	58	1,270	b44	65	82	202	264	5	640	1,290	16
9	94	a60	1,250	*b46	61	94	202	244	5	1,030	1,550	47
10	68	a60	1,230	b44	68	91	220	670	4	1,010	1,340	56
11	56	a55	1,220	b46	76	82	196	1,010	4	1,030	1,250	54
12	45	a50	1,200	b48	91	85	202	910	3	1,040	1,290	32
13	38	a50	1,190	b49	79	112	202	946	590	1,050	841	22
14	40	a350	1,160	b47	100	100	175	712	490	1,050	160	16
15	40	a1,280	1,150	b43	112	85	190	490	360	1,010	145	14
16	40	a1,350	1,140	b41	120	104	244	376	392	994	345	13
17	40	a1,350	1,110	b40	160	56	278	344	400	635	502	14
18	33	a1,330	1,090	b43	132	68	336	278	409	463	180	50
19	32	a400	1,080	b44	128	79	384	202	500	683	202	352
20	32	a1,160	*1,050	b45	104	91	409	160	778	620	391	124
21	32	a1,400	611	b46	94	97	570	128	899	530	214	70
22	30	a1,390	124	b47	88	112	600	104	1,020	481	638	35
23	29	a1,430	82	b48	88	128	590	108	1,090	427	424	17
24	28	a1,460	79	*b50	88	145	560	108	1,220	427	238	15
25	29	a1,440	73	b52	88	140	418	104	1,080	392	180	13
26	30	a1,420	65	b53	82	120	306	82	982	427	155	12
27	30	a1,410	70	b54	97	128	368	63	811	463	165	11
28	32	a1,380	73	b56	128	165	344	45	712	427	160	10
29	35	a1,360	65	b50	-	214	271	44	734	427	132	a9
30	37	a1,360	47	b44	-	226	271	44	690	436	136	a8
31	38	-	b40	49	-	226	-	45	-	427	132	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,083	455	16	67.2	4,130
November	21,948	1,460	42	732	43,530
December	25,759	1,360	40	831	51,090
Calendar year 1946	107,590	1,460	0	295	213,400
January	1,375	56	31	44.4	2,730
February	2,525	160	54	90.2	5,010
March	3,411	226	56	110	6,770
April	9,290	600	175	310	18,430
May	10,529	1,010	44	340	20,880
June	13,288	1,220	3	443	26,360
July	20,009	1,050	392	645	39,690
August	19,441	1,550	132	627	38,560
September	1,774	440	8	59.1	3,520
Water year 1946-47	131,432	1,550	3	360	260,700

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for station at Abiquiu.
b Stage-discharge relation affected by ice.

Willow Creek near Park View, N. Mex.

Location.- Water-stage recorder, lat. 36°40'20", long. 106°42'10", in Tierra Amarilla Grant, 400 feet upstream from Willow Creek dam site, 0.3 mile downstream from Horse Lake Creek, and 7 miles southwest of Park View, Rio Arriba County.

Records available.- May 1936 to September 1947 (no winter records prior to 1943).

Extremes.- Maximum discharge during year, 1,300 second-feet Sept. 18 (gage height, 6.07 feet); no flow at times.
1936-47: Maximum discharge, 4,500 second-feet Apr. 23, 1942 (gage height, 10.49 feet), by slope-area method; no flow at times.

Remarks.- Records fair except those for periods of no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0				1	16	1	1	0	0	1
2	0	0				1	14	1	1	0	0	0
3	1	0				2	14	1	1	0	0	0
4	3	0				3	11	1	0	0	0	0
5	4	0	-			2	8	1	0	0	0	0
6	0	0				2	6	0	0	0	1	0
7	17	0				3	6	0	0	24	1	0
8	5	0				4	5	1	0	11	0	0
9	1	0				5	5	1	0	4	3	21
10	0	0				12	5	5	0	2	4	6
11	0	0				22	5	13	0	1	3	3
12	0	0				29	4	21	0	0	21	1
13	0	0				21	4	17	0	0	5	0
14	1	0				18	3	13	0	0	24	0
15	1	0				16	3	11	0	0	11	0
16	1	0				24	3	9	0	0	99	0
17	1	0				51	2	9	0	0	30	42
18	1	0				70	2	8	0	0	6	487
19	1	0				60	2	6	2	0	4	23
20	1	0				55	2	4	3	0	9	4
21	1	0				45	2	4	1	0	9	2
22	1	0				40	1	3	2	0	29	1
23	1	0				25	1	2	2	0	82	0
24	0	0				20	1	2	2	0	19	0
25	0	0				10	2	2	1	0	5	0
26	0	1				20	2	3	0	0	3	0
27	0	1				30	2	2	0	0	2	0
28	0	0				35	1	2	0	0	.1	0
29	0	0				40	1	2	0	0	0	0
30	0	0				25	1	2	0	0	1	0
31	0	-				20	-	2	-	0	25	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	41	17	0	1.3	81
November	2	1	0	.1	4
December	0	0	0	0	0
Calendar year 1946	910.1	258	0	2.49	1,800
January	0	0	0	0	0
February	0	0	0	0	0
March	712	70	1	23.0	1,410
April	134	16	1	4.5	266
May	150	21	0	4.8	298
June	16	3	0	.5	32
July	42	24	0	1.4	83
August	397	99	0	12.8	787
September	591	487	0	19.7	1,170
Water year 1946-47	2,085	487	0	5.7	4,130

Peak discharge.- Mar. 18 (10:20 p.m.) 630 sec.-ft.; Aug. 16 (6:10 p.m.) 530 sec.-ft.; Aug. 31 (5 p.m.) 690 sec.-ft.; Sept. 9 (10 p.m.) 308 sec.-ft.; Sept. 18 (6:15 a.m.) 1,300 sec.-ft.

Note.- No gage-height record Jan. 17-20, Feb. 12 to Mar. 3, Mar. 18-31, Sept. 10-14; discharge computed on basis of weather records and records for El Rito Creek near El Rito and Rio Ojo Caliente near La Madera.

El Rito Creek near El Rito, N. Mex.

Location.- Water-stage recorder, lat. 36°23'30", long. 106°14'20", in NW¼ sec. 19, T. 25 N., R. 7 E., three-quarters of a mile upstream from boundary of Carson National Forest and 3 miles northwest of El Rito.

Records available.- May 1931 to September 1947. No winter records 1937-41.

Average discharge.- 12 years (1931-37, 1941-47), 19.2 second-feet.

Extremes.- Maximum discharge during year, 244 second-feet May 2 (gage height, 3.06 feet); minimum daily, 0.4 second-foot Aug. 1-3.
1931-47: Maximum discharge not determined; minimum daily recorded, 0.3 second-foot June 21-23, 1934, June 30, July 1, 11, 1946.

Remarks.- Records good except those for period of ice effect, which are poor. One diversion above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.1	1.8	2.3	b1	2.3	3.1	31	119	12	2.3	0.4	2.3
2	1.4	1.7	2.2	b1	2.5	3.1	37	139	12	3.1	.4	1.6
3	1.8	1.2	2.7	b1	2.5	3.1	31	139	10	2.7	.4	1.3
4	3.1	1.4	2.3	b1	2.5	3.1	27	117	10	2.5	.6	1.2
5	6.0	2.2	*3.1	b2	2.5	2.9	21	105	9.2	2.7	1.7	1.4
6	2.9	2.0	2.7	b2	2.5	2.9	18	83	8.4	2.5	1.4	1.2
7	3.5	1.8	3.1	b3	2.7	3.1	24	74	7.7	2.5	1.4	1.1
8	3.1	2.5	2.3	*b3	2.7	3.5	28	68	6.7	2.5	1.4	1.1
9	2.5	2.2	1.3	b3	2.7	3.1	30	70	6.0	2.0	1.4	1.7
10	2.5	1.8	1.8	b2	2.7	3.3	27	129	5.4	1.4	1.2	1.8
11	2.0	1.2	2.5	b1	2.9	4.0	26	107	5.1	1.3	1.0	1.4
12	1.7	3.1	3.1	b1	2.9	4.0	22	109	5.4	1.2	2.0	1.2
13	1.7	2.5	2.7	1.2	2.9	4.0	21	100	4.8	1.2	5.4	1.1
14	1.7	2.2	2.2	1.4	3.1	3.8	30	76	4.8	1.4	4.5	.9
15	1.7	2.9	2.2	2.2	3.1	4.0	43	60	4.3	1.2	3.3	.9
16	2.0	1.4	2.5	2.3	3.3	3.5	50	54	4.3	1.2	10	.9
17	2.0	2.2	1.6	2.2	3.5	4.8	59	49	3.8	1.6	13	.8
18	1.8	2.2	1.8	2.3	3.8	5.4	62	42	4.5	1.7	4.8	1.7
19	1.7	2.2	2.2	2.3	4.0	6.3	60	37	6.0	1.7	4.8	2.3
20	1.6	2.5	2.7	2.3	4.0	8.0	77	33	4.5	1.3	5.4	1.4
21	1.6	2.2	2.5	2.3	3.8	9.6	112	28	4.5	1.1	4.5	1.2
22	1.6	1.7	3.5	2.3	3.8	9.2	112	25	6.0	1.2	5.1	1.1
23	1.4	2.2	5.1	*2.3	3.8	9.6	109	34	4.5	1.2	5.7	1.0
24	1.4	2.9	4.5	2.3	3.8	10	84	31	3.5	1.7	4.3	.9
25	1.4	2.3	3.3	2.3	3.5	9.2	55	24	3.3	1.1	3.3	.8
26	1.3	1.6	2.7	2.3	3.5	11	55	21	3.3	1.0	3.3	.8
27	1.4	3.1	2.9	2.5	3.5	14	69	20	2.9	1.0	2.5	.8
28	1.4	2.3	2.7	2.5	3.3	18	62	19	2.7	.8	2.2	.8
29	2.0	2.0	2.9	2.5	-	20	66	17	2.5	.6	1.8	.9
30	3.8	2.3	b2	2.5	-	23	91	14	2.3	.6	1.7	1.0
31	2.5	-	b1	2.5	-	24	-	14	-	.5	1.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	65.6	6.0	1.1	2.12	130
November	63.6	3.1	1.2	2.12	126
December	80.4	5.1	1	2.59	159
Calendar year 1946	2,442.2	105	.3	6.69	4,850
January	63.5	3	1	2.05	126
February	88.1	4.0	2.3	3.15	175
March	236.6	24	2.9	7.63	469
April	1,539	112	18	51.3	3,050
May	1,957	139	14	63.1	3,880
June	170.4	12	2.3	5.68	338
July	48.8	3.1	.5	1.57	97
August	100.7	13	.4	3.25	200
September	36.6	2.3	.8	1.22	73
Water year 1946-47	4,450.3	139	.4	12.2	8,820

Peak discharge.- May 2 (8:30 p.m.) 244 sec.-ft.; Aug. 16 (9:10 p.m.) 70 sec.-ft.
* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Rio Ojo Caliente at La Madera, N. Mex.

Location.- Water-stage recorder, lat. 36°20'45", long. 106°02'50", in NE¼ sec. 1, T. 24 N., R. 8 E., 2.5 miles south of La Madera, 3 miles downstream from confluence of Rio Vallecitos and Rio Tusas, and 4 miles north of Ojo Caliente.

Records available.- April 1932 to September 1947.

Average discharge.- 15 years, 81.3 second-feet.

Extremes.- Maximum discharge during year, 660 second-feet May 2; maximum gage height, 3.84 feet Oct. 4; minimum daily discharge, 2.3 second-feet July 28, 29.
1932-47: Maximum discharge, 2,980 second-feet Apr. 23, 1942, from rating curve extended above 1,300 second-feet by logarithmic plotting; maximum gage height, 7.60 feet July 15, 1933, site and datum then in use; minimum daily discharge, 1 second-foot at times.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	29	19	16	b16	19	162	421	27	15	2.7	63
2	12	25	17	20	21	16	189	448	26	9.3	2.7	30
3	12	18	18	b20	22	29	185	449	31	6.7	2.9	22
4	26	14	18	a18	24	24	140	405	28	4.9	3.4	19
5	17	17	19	a15	*25	29	104	359	24	4.7	4.2	21
6	15	18	*24	a16	24	25	96	314	22	4.7	6.2	16
7	70	22	24	a18	24	20	106	271	28	4.7	4.5	14
8	38	32	22	*18	26	21	101	275	27	7.1	13	17
9	30	28	17	18	22	32	122	271	24	7.1	8.4	13
10	26	24	12	17	28	22	101	435	18	7.1	5.3	13
11	22	17	12	16	24	28	109	480	14	5.3	4.5	11
12	17	22	18	17	22	28	101	410	13	6.2	4.9	11
13	15	27	18	20	24	23	89	405	13	6.2	8.9	11
14	15	23	18	20	25	27	92	350	13	5.8	16	10
15	15	24	18	b18	24	27	125	262	12	4.9	23	9.3
16	16	20	17	b16	23	22	165	234	11	4.0	20	8.9
17	17	16	16	a14	29	32	200	242	8.9	3.8	34	8.9
18	15	17	12	a18	33	38	258	192	9.3	4.2	24	11
19	15	18	10	a18	25	48	238	165	9.3	4.0	18	13
20	14	18	12	a16	26	59	318	143	16	3.1	19	15
21	15	23	14	a16	25	83	415	119	17	3.6	22	14
22	15	20	14	a20	25	109	430	101	20	3.6	24	11
23	14	20	18	*22	26	117	420	99	23	4.0	30	10
24	14	25	23	21	28	109	386	125	20	3.1	36	8.9
25	14	24	22	21	29	76	262	87	18	2.7	32	7.5
26	13	18	21	21	28	85	258	70	16	2.5	30	7.5
27	13	19	28	22	33	104	341	59	15	2.5	26	7.1
28	12	23	24	25	31	122	323	53	15	2.3	27	8.9
29	19	22	12	22	-	134	305	49	15	2.3	22	10
30	41	20	9.5	16	-	143	347	39	15	2.9	21	10
31	37	-	15	b16	-	152	-	32	-	2.9	48	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	625	70	11	20.2	1,240
November	643	32	14	21.4	1,280
December	541.5	28	9.5	17.5	1,070
Calendar year 1946	11,308.6	341	2.6	31.0	22,430
January	571	25	14	18.4	1,130
February	712	33	16	25.4	1,410
March	1,803	152	16	58.2	3,580
April	6,488	430	89	216	12,870
May	7,364	480	32	238	14,610
June	548.5	31	8.9	18.3	1,090
July	151.2	15	2.3	4.88	300
August	543.6	48	2.7	17.5	1,080
September	432.0	63	7.1	14.4	857
Water year 1946-47	20,422.8	480	2.3	56.0	40,520

Peak discharge.- Oct. 4 (2 p.m.) 572 sec.-ft.; May 2 (10:50 p.m.) 660 sec.-ft.; Aug. 31 (8 p.m.) 350 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records, discharge measurements, and records for other stations in Rio Chama Basin.

b Stage-discharge relation affected by ice.

Rio Santa Cruz at Cundiyo, N. Mex.

Location.- Water-stage recorder, lat. 35°57'40", long. 105°54'10", in SE¼NW¼ sec. 17, T. 20 N., R. 10 E., 135 feet downstream from highway bridge at confluence of Rio Medio and Rio Frijoles and a quarter of a mile northwest of Cundiyo.

Records available.- September 1931 to September 1947 in reports of Geological Survey. September 1915 to December 1931 (published as Rio Medio at Cundiyo and Rio Santa Cruz above Chimayo) in reports of State engineer.

Average discharge.- 30 years (1916-29, 1930-47), 33.9 second-feet.

Extremes.- Maximum discharge during year, 215 second-feet Aug. 15 (gage height, 2.99 feet); minimum daily, 5.8 second-feet Aug. 6.
1931-47: Maximum discharge, 2,610 second-feet Sept. 24, 1931 (gage height, 8.20 feet, datum then in use), from rating curve extended above 170 second-feet by logarithmic plotting; minimum daily, 3 second-feet Feb. 3, 1932, Jan. 21, 1935.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.9	9.9	b9.0	a7.0	b9.0	b9.0	19	35	34	12	7.0	16
2	7.9	9.6	b8.5	b8.0	a9.5	b7.0	21	41	32	12	7.2	15
3	7.6	9.1	b9.5	a9.0	a9.0	b9.0	21	44	30	11	6.5	15
4	11	8.7	b10	*b8.8	a9.0	b10	18	52	28	11	6.8	15
5	17	10	10	8.2	a9.0	9.5	14	54	28	11	6.8	15
6	12	9.6	9.8	a8.0	a9.0	10	16	52	28	14	5.8	14
7	27	9.1	9.5	a8.0	a9.5	b9.0	15	55	28	11	10	13
8	16	10	8.8	a8.0	a9.0	b9.0	14	55	27	11	9.8	14
9	13	9.9	b8.2	a8.0	a9.0	9.2	16	67	24	a8.0	8.2	17
10	12	8.6	b8.0	a8.0	a10	9.5	15	125	21	a7.0	8.0	17
11	11	7.2	b8.5	a8.0	a9.5	9.5	14	118	22	7.0	6.8	13
12	10	12	b9.2	a8.5	*9.5	9.5	13	103	22	6.5	6.8	12
13	11	9.9	9.2	a8.5	b9.5	*9.5	12	97	21	7.5	13	11
14	10	9.6	b9.0	a8.5	b10	9.2	14	82	21	9.5	11	10
15	10	*10	b9.0	a8.5	b9.5	9.2	15	74	19	9.2	15	9.8
16	10	b8.5	*b9.0	a8.5	b9.5	9.8	17	70	18	11	14	9.5
17	9.9	b8.0	b8.5	*a8.5	b10	10	18	64	17	11	13	9.2
18	9.6	b9.0	b8.0	a8.5	9.5	11	21	58	19	9.5	8.4	9.5
19	8.3	b9.0	b7.5	a8.5	9.2	12	19	55	23	10	12	8.9
20	9.6	b9.0	b7.0	a8.5	b8.5	14	24	52	20	9.2	13	9.2
21	9.6	9.5	a7.5	a8.5	b8.0	15	28	50	18	8.0	9.2	8.9
22	9.4	b9.0	a8.0	a8.5	b8.5	17	28	46	17	8.2	26	8.9
23	9.4	8.9	a8.5	a8.5	b8.5	15	35	50	17	9.5	25	8.5
24	9.4	d9.5	a8.5	a8.5	b9.0	15	33	47	16	8.2	23	8.0
25	9.1	d9.0	a8.5	a9.0	b9.5	14	28	42	15	7.2	24	7.2
26	9.1	b8.2	a8.5	a9.0	*10	16	25	41	14	8.9	22	7.0
27	9.1	b9.0	a8.0	a9.0	a10	15	28	40	13	8.0	21	7.0
28	9.1	b9.0	a8.0	a9.0	a10	18	28	39	12	7.7	20	7.5
29	13	b9.0	a8.0	*9.2	-	16	28	39	12	6.8	20	7.7
30	19	b9.0	a7.0	b8.0	-	16	29	37	12	6.0	18	8.0
31	12	-	a6.0	b9.0	-	17	-	36	-	6.3	16	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	349	27	7.6	11.3	692
November	276.8	12	7.2	9.23	549
December	262.7	10	6.0	8.47	521
Calendar year 1946	5,355.7	50	3.8	14.7	10,620
January	261.7	9.2	7.0	8.44	519
February	260.2	10	8.0	9.29	516
March	368.9	18	7.0	11.9	732
April	626	35	12	20.9	1,240
May	1,820	125	35	58.7	3,610
June	628	34	12	20.9	1,250
July	283.2	14	6.0	9.14	562
August	413.3	26	5.8	13.3	820
September	331.8	17	7.0	11.1	658
Water year 1946-47	5,881.6	125	5.8	16.1	11,670

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Embudo Creek at Dixon, Nambe Creek near Nambe, and Rio Tesuque near Santa Fe.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge computed as explained in footnote a.

Rio Santa Cruz at Riverside, N. Mex.

Location.- Water-stage recorder, lat. 35°59'15", long. 106°04'05", in SW¼ sec. 2, T. 20 N., R. 8 E., at bridge on U. S. Highway 285, at south edge of Riverside, half a mile upstream from mouth and three-quarters of a mile east of Espanola.

Records available.- January 1942 to September 1947.

Extremes.- Maximum discharge during year, 562 second-feet Oct. 7 (gage height, 3.72 feet); no flow at times.
1942-47: Maximum discharge, 643 second-feet Apr. 24, 1942; maximum gage height, 4.85 feet June 7, 1942; no flow at times.

Remarks.- Records poor. Diversions above station for irrigation. Flow partly regulated by Santa Cruz Reservoir (capacity, 4,614 acre-feet, original survey).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	1	0	a3	b2	5	0	0	0	12	0	2
2	0	1	0	a2	b2	5	0	0	0	a8	0	a5
3	0	2	0	a1	2	5	0	0	0	a3	0	4
4	0	2	0	*a2	3	3	0	0	0	0	0	3
5	0	3	0	b2	3	2	0	0	0	0	0	7
6	0	4	0	b2	4	3	0	0	0	0	0	0
7	55	4	0	b2	*4	3	0	0	0	0	0	0
8	15	3	0	b2	3	2	0	0	0	0	0	3
9	a2	1	0	b3	2	3	0	a2	1	0	0	20
10	a1	0	0	*b5	5	3	0	a30	5	1	0	18
11	a0	0	0	5	4	2	0	a25	1	3	0	2
12	a0	0	1	4	*5	2	1	a20	2	3	0	3
13	a0	0	1	b3	5	2	0	a10	0	1	0	2
14	a1	0	0	b2	3	2	0	a5	0	3	0	0
15	2	0	0	b2	3	2	0	a0	0	0	1	a0
16	1	0	0	b1	3	2	0	a0	0	3	14	a0
17	0	0	0	b1	3	2	0	a0	0	3	a0	a0
18	1	0	0	b1	3	1	0	a0	0	2	a0	a2
19	3	0	1	b1	2	2	a0	a0	2	0	a2	1
20	2	0	1	b1	b2	2	a0	0	0	0	0	a0
21	1	0	2	b2	1	2	a0	0	0	0	5	a0
22	0	0	1	b3	3	1	a0	0	0	2	5	a2
23	0	0	2	b4	3	0	a1	14	0	3	2	a1
24	1	0	1	b6	3	0	a1	7	0	0	0	a0
25	0	0	1	*8	2	0	a0	7	0	0	4	0
26	0	0	3	5	3	0	0	4	0	0	0	a0
27	0	0	2	4	3	0	0	0	1	0	2	a0
28	0	0	1	3	4	0	0	0	0	0	2	a0
29	1	1	1	*1	-	0	0	2	0	0	0	a2
30	1	0	a1	1	-	0	0	0	0	0	0	a4
31	1	-	a1	2	-	0	-	0	-	0	0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	88	55	0	2.8	175
November	22	4	0	.7	44
December	20	3	0	.6	40
Calendar year 1946	1,091	99	0	3.0	2,160
January	84	8	1	2.7	167
February	85	5	1	3.0	169
March	56	5	0	1.8	111
April	3	1	0	.1	6.0
May	126	30	0	4.1	250
June	12	5	0	.4	24
July	47	12	0	1.5	93
August	37	14	0	1.2	73
September	81	20	0	2.7	161
Water year 1946-47	661	55	0	1.8	1,310

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of available recorder trace, 6 discharge measurements, engineer's notes, and weather records.
b Stage-discharge relation affected by ice.

Nambe Creek near Nambe, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 35°52', long. 105°57', in sec. 24, T. 19 N., R. 9 E., in Nambe Pueblo Grant, 1,000 feet downstream from diversion dam for Nambe Canal, 2½ miles southeast of Nambe, and 6½ miles upstream from Rio Tesuque.

Records available.- October 1932 to September 1947.

Average discharge.- 15 years, 11.7 second-feet.

Extremes.- Maximum discharge during year, 46 second-feet Aug. 22 (gage height, 3.37 feet); minimum daily, 1.4 second-feet Aug. 5.
1932-47: Maximum discharge recorded, 878 second-feet Aug. 23, 1935 (gage height, 6.43 feet), from rating curve extended above 65 second-feet by logarithmic plotting; no flow several days in October 1934.

Remarks.- Records good except those for periods of ice effect, which are poor. Nambe Canal diverts water for irrigation 1,000 feet upstream from station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.0	6.4	5.4	b4.3	b3.4	3.0	5.7	10	15	3.9	2.7	6.4
2	5.0	6.2	5.2	4.8	b3.6	2.7	6.6	12	14	3.4	2.0	5.9
3	5.0	5.2	b5.0	b4.8	*b3.4	3.3	6.9	16	13	3.6	2.7	5.2
4	7.4	6.0	5.4	b4.8	b3.3	3.3	5.9	18	14	4.3	1.8	5.2
5	8.3	6.9	5.4	b4.8	b3.4	3.6	4.7	18	12	4.1	1.4	4.7
6	6.9	6.6	5.4	b4.5	b3.3	3.4	4.8	18	12	5.2	1.6	4.3
7	11	5.9	5.4	b4.3	b3.5	3.4	4.7	18	11	3.6	1.7	4.1
8	8.3	6.4	5.0	b4.3	b3.4	3.4	4.7	18	13	3.6	1.8	3.9
9	7.9	6.4	4.5	b4.3	b3.4	3.8	4.3	24	9.3	3.3	3.0	5.0
10	8.3	5.4	b4.3	b4.3	3.4	3.6	4.1	37	9.6	3.0	3.6	5.0
11	7.6	5.4	b4.8	b4.2	3.3	3.8	4.1	35	9.3	2.8	2.0	5.2
12	7.6	6.4	5.4	b4.2	b3.1	3.8	4.1	28	9.0	3.0	2.0	4.7
13	7.6	6.2	*5.4	*4.3	b3.2	*3.6	4.6	27	8.6	3.9	1.8	3.6
14	7.6	6.2	5.2	4.1	3.3	3.8	4.1	25	8.3	4.5	2.6	3.3
15	7.6	6.2	5.2	b4.0	b3.3	3.8	4.5	24	8.6	3.8	4.1	2.8
16	7.6	5.7	b4.8	b3.9	b3.6	3.8	5.4	22	6.4	2.8	6.4	2.4
17	7.4	5.4	b4.5	b3.9	3.6	3.8	6.2	21	5.4	2.0	5.9	2.3
18	7.4	5.3	b4.7	3.9	3.4	3.1	6.9	20	6.6	2.4	6.1	2.4
19	6.9	5.4	b4.4	b3.8	3.4	3.4	6.4	20	9.0	3.4	7.1	3.9
20	7.1	6.2	b4.2	3.9	b3.2	3.6	8.3	21	6.6	3.1	8.0	2.7
21	7.1	6.2	b4.6	b3.8	*b2.9	4.5	9.0	21	6.6	3.6	7.1	3.1
22	7.1	5.9	b4.8	b3.8	b3.1	4.8	9.3	21	7.9	2.8	12	3.1
23	7.1	5.9	4.8	b3.7	b3.0	4.7	11	24	6.4	3.0	16	3.1
24	7.1	6.2	5.0	b3.6	b2.9	4.7	11	22	5.2	3.8	14	3.1
25	6.9	6.2	5.0	3.6	b3.1	3.9	9.0	20	5.7	3.4	14	3.1
26	6.6	5.4	4.8	3.6	3.3	4.5	8.3	18	5.9	3.6	13	3.3
27	6.6	5.9	4.8	b3.4	3.4	4.7	10	18	4.8	3.6	12	3.3
28	6.9	5.9	4.7	3.3	3.3	5.2	9.6	18	4.7	3.8	9.6	2.6
29	8.8	*5.9	b4.5	b3.1	-	5.0	8.6	17	5.4	3.3	9.0	3.4
30	8.6	5.7	b3.8	b2.8	-	5.0	9.0	16	3.9	3.1	8.6	3.1
31	7.4	-	b3.1	b2.9	-	4.7	-	16	-	2.7	7.9	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	227.7	11	5.0	7.35	452
November	179	6.9	5.2	5.97	355
December	149.5	5.4	3.1	4.82	297
Calendar year 1946	2,362.6	22	1.8	6.47	4,690
January	123	4.8	2.8	3.97	244
February	32.5	3.6	2.9	3.30	183
March	121.7	5.2	2.7	3.93	241
April	201.8	11	4.1	6.73	400
May	643	37	10	20.7	1,280
June	257.2	15	3.9	8.57	510
July	108.4	5.2	2.0	3.43	211
August	191.5	16	1.4	6.18	380
September	114.2	6.4	2.3	3.81	227
Water year 1946-47	2,407.5	37	1.4	6.60	4,780

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Principal diversions from Nambe Creek, N. Mex.

Records of discharge are collected for 11 ditches that divert water from Nambe Creek between Nambe diversion dam, 2½ miles upstream from Nambe, and confluence with Rio Tesuque. Each of these ditches is equipped with a water-stage recorder for collecting gage-height records and each one, except Las Joyas, with a Parshall flume. Water diverted by these ditches is used for irrigation in the valley of Nambe Creek, except that diverted by Jacona ditch, which is used for irrigation on the left bank of Rio Pojoaque below Rio Tesuque.

Nambe Canal diverts from right bank in SE¼ sec. 24, T. 19 N., R. 9 E., 1,000 feet upstream from gaging station on Nambe Creek near Nambe. Records available, May 1932 to September 1947 (except winter periods for water years 1942-46).

Llano Frio ditch diverts from right bank in SW¼ sec. 14, T. 19 N., R. 9 E. Records available, March 1936 to September 1947 (irrigation seasons only after 1941).

Llano ditch diverts from right bank in SW¼ sec. 14, T. 19 N., R. 9 E. Records available March 1936 to September 1947 (irrigation seasons only after 1941).

Mocha ditch diverts from right bank in SW¼ sec. 14, T. 19 N., R. 9 E. Records available, May 1936 to September 1947 (irrigation seasons only after 1941).

Comunidad ditch diverts from right bank in NE¼ sec. 14, T. 19 N., R. 9 E. Records available, March 1936 to September 1947 (irrigation seasons only after 1941).

Ortiz ditch diverts from right bank in SE¼ sec. 10, T. 19 N., R. 9 E. Small flow diverted between gage and head gate for irrigation of about 5 acres. Records available, February 1936 to September 1947 (irrigation seasons only after 1941).

Canyon ditch diverts from right bank in NW¼ sec. 10, T. 19 N., R. 9 E. Records available, March 1936 to September 1947 (irrigation seasons only after 1941).

Acequia Rincon diverts from left bank in SE¼ sec. 9, T. 19 N., R. 9 E. Records available, March 1936 to September 1947 (irrigation seasons only after 1941).

Las Joyas ditch diverts from right bank in NW¼ sec. 9, T. 19 N., R. 9 E. Records available, March 1936 to September 1947 (irrigation seasons only after 1941).

Barranco Alto ditch diverts from left bank in NW¼ sec. 8, T. 19 N., R. 9 E. Records available, March 1936 to September 1947 (irrigation seasons only after 1941).

Jacona ditch diverts from left bank in NE¼ sec. 7, T. 19 N., R. 9 E. Gaging station is three-quarters of a mile downstream from head and 4½ miles east of San Ildefonso. Records include seepage inflow and, at times, inflow from Rio Tesuque. Records available, January 1940 to September 1947 (irrigation seasons only after 1941). Records not equivalent to those for Jacona ditch near Nambe collected April 1936 to December 1939.

Several other ditches divert from Nambe Creek, but no records for them were obtained.

Diversions, in acre-feet, water year October 1946 to September 1947

Month	Nambe Canal	Llano Frio ditch	Llano ditch	Mocha ditch	Comunidad ditch	Ortiz ditch
October	31	188	25	1.8	65	20
November	34	182	b20	a8.1	b70	b9.3
December	18	-	-	-	-	-
January	20	-	-	-	-	-
February	20	-	-	-	-	-
March	28	c19	d36	cO	c87	c12
April	54	54	71	6.5	92	47
May	73	208	113	14	94	91
June	88	64	63	26	66	61
July	54	44	43	17	16	41
August	48	35	34	20	42	51
September	69	29	67	19	33	34

Month	Canyon ditch	Acequia Rincon	Las Joyas ditch	Barranco Alto ditch	Jacona ditch	
October	88	56	96	0.2	52	
November	85	43	60	0	12	
December	-	-	-	-	-	
January	-	-	-	-	-	
February	-	-	-	-	-	
March	c8.7	c26	c26	c26	d38	
April	41	48	84	35	62	
May	160	120	186	26	71	
June	81	63	94	34	42	
July	24	25	44	24	29	
August	35	41	65	18	7.7	
September	38	23	44	18	15	

a Nov. 1-22.
b Nov. 1-29.
c Mar. 13-31.
d Mar. 14-31.

Rio Tesuque above diversions, near Santa Fe, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 35°44', long. 105°54', in SE¼ sec. 32, T. 18 N., R. 10 E., 1 mile upstream from Rito Tesuque and 4 miles northeast of Santa Fe.

Records available.- March 1936 to September 1947 in reports of Geological Survey. May to October 1913 at site 175 feet downstream in reports of State engineer.

Average discharge.- 11 years (1936-47), 3.66 second-feet.

Extremes.- Maximum discharge during year, 23 second-feet Aug. 19 (gage height, 2.56 feet); minimum daily, 0.4 second-foot Aug. 6, 11, 12.

1936-47: Maximum discharge, 425 second-feet July 19, 1938 (gage height, 4.2 feet, from floodmarks), from rating curve extended above 10 second-feet by logarithmic plotting on basis of slope-area determination at gage height 4.0 feet; minimum daily, 0.2 second-foot Dec. 11, 1945.

Remarks.- Records good except those for periods of ice effect, which are poor.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.6	1.3	1.6	b0.8	1.4	0.8	2.3	3.4	5.2	1.3	0.6	1.1
2	1.6	1.3	1.4	1.1	1.4	1.0	2.4	3.6	4.9	1.3	.6	1.1
3	1.4	1.1	1.3	1.1	*1.3	1.0	2.3	3.1	4.9	1.1	.6	1.1
4	2.0	1.4	1.7	1.1	1.3	.9	2.0	3.4	4.7	1.2	.5	1.3
5	2.0	1.3	1.7	1.1	1.3	1.0	1.6	3.4	4.7	1.1	.5	1.3
6	1.6	1.6	1.7	.9	1.3	.8	1.6	3.4	4.5	1.3	.4	.9
7	2.6	1.4	1.7	.9	1.4	b.8	1.7	3.4	4.2	1.1	.5	.9
8	2.0	1.4	1.3	.9	1.1	.8	1.7	3.1	4.0	1.1	.7	1.0
9	1.9	1.3	1.2	.9	1.2	.8	1.7	4.2	3.8	1.1	.7	1.2
10	1.9	1.1	1.3	.9	1.1	.8	1.6	8.9	3.8	1.1	.6	1.2
11	1.9	1.1	b1.6	.9	1.1	.9	1.4	10	3.6	1.0	.4	1.0
12	1.9	1.3	1.9	a1.0	1.1	.8	1.4	11	3.4	.9	.4	1.0
13	1.9	1.3	*1.7	*a1.0	1.1	.8	.9	11	3.1	1.3	.5	.9
14	1.9	1.3	1.6	1.1	1.1	.9	1.4	11	2.9	1.6	.7	.8
15	1.6	1.3	1.6	1.1	1.1	.9	1.3	10	2.7	1.3	.7	.9
16	1.6	1.3	1.6	1.2	1.1	.9	1.4	10	2.6	1.3	1.1	.8
17	1.6	1.2	1.3	1.1	1.1	1.1	1.4	9.3	2.4	1.1	1.2	.7
18	1.6	1.2	b1.2	1.1	1.1	1.2	1.7	9.3	2.9	1.3	.9	.9
19	1.4	1.4	b1.0	1.1	1.1	1.6	1.6	8.9	3.1	1.4	1.9	1.1
20	1.4	1.6	b1.1	1.1	.9	1.9	1.9	8.4	2.4	1.2	.9	.8
21	1.4	1.4	b1.2	1.1	*.9	*2.3	2.3	8.0	2.3	1.1	3.0	.7
22	1.4	1.4	b1.2	1.1	1.0	2.4	2.3	8.0	2.3	1.1	2.4	.7
23	1.4	1.4	1.2	1.1	1.1	2.3	2.6	8.0	2.1	1.0	2.6	.6
24	1.4	1.6	1.1	1.1	1.0	2.3	2.7	7.7	2.0	.9	2.0	.6
25	1.4	1.4	1.1	1.1	1.1	1.9	2.7	7.1	1.7	.9	1.7	.6
26	1.3	1.2	1.1	1.1	1.0	2.1	2.7	7.1	1.6	1.1	1.7	.6
27	1.4	1.7	1.1	1.2	1.0	2.3	2.7	6.8	1.6	1.0	1.4	.7
28	1.6	1.7	1.1	1.2	1.0	2.3	2.9	6.4	1.4	.8	1.2	.7
29	1.9	1.7	b1.0	1.2	-	2.3	3.1	5.8	1.2	.7	1.2	.7
30	1.9	*1.6	b.8	1.4	-	2.1	3.1	5.8	1.2	.7	1.1	.7
31	1.4	-	b.6	1.3	-	2.1	-	5.5	-	.6	1.1	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	51.9	2.6	1.3	1.67	103
November	41.3	1.7	1.1	1.38	82
December	41.0	1.9	.6	1.32	81
Calendar year 1946	619.9	6.0	.5	1.70	1,230
January	33.3	1.4	.8	1.07	66
February	31.7	1.4	.9	1.13	63
March	44.1	2.4	.8	1.42	87
April	60.4	3.1	.9	2.01	120
May	215.0	11	3.1	6.94	426
June	91.2	5.2	1.2	3.04	181
July	34.0	1.6	.6	1.1	67
August	33.8	3.0	.4	1.09	67
September	26.6	1.3	.6	.89	53
Water year 1946-47	704.3	11	.4	1.93	1,400

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and records for Nambe Creek near Nambee, and Rio Santa Cruz at Cundiyo.

b Stage-discharge relation affected by ice.

Acequia Medio near Santa Fe, N. Mex.

Location.- Water-stage recorder and 1-foot Parshall flume, lat. 35°46', long. 105°56', near east line of sec. 25, T. 18 N., R. 9 E., 350 feet downstream from head and 5 miles north of Santa Fe.

Records available.- March 1936 to March 1947 (irrigation seasons only after 1941).

Remarks.- Records good. Acequia diverts for irrigation from right bank of Rio Tesuque. No diversion between station and head.

Discharge, in acre-feet, 1946-47	
October 1946	22
November	16
March 14-31, 1947	0

Mitchell ditch near Santa Fe, N. Mex.

Location.- Water-stage recorder and 1-foot rectangular weir, lat. 35°46', long. 105°56', near N¼ corner sec. 25, T. 18 N., R. 9 E., at pipe-line outlet 5½ miles north of Santa Fe.

Records available.- June 1936 to September 1947 (not continuous).

Remarks.- Records good. Discharge computed by formula for rectangular weir. Ditch supplied by underground flow from pipe line laid in bed of Rio Tesuque; water diverted is used for irrigation. No diversion between station and head.

Discharge, in acre-feet, 1946-47	
October 1946	2.6
November	23
March 13-31, 1947	8.3
April	10
May	20
June	29
July	28
August	21
September	15

Well ditch at San Ildefonso, N. Mex.

Location.- Water-stage recorder and 1-foot Parshall flume, lat. 35°54', long. 106°06', in NW¼ sec. 9, T. 19 N., R. 8 E., 50 feet downstream from head of open ditch and three-quarters of a mile northeast of San Ildefonso.

Records available.- June 1938 to September 1947 (irrigation season only after 1941).

Remarks.- Records fair. Ditch supplied by underground flow from pipe line in bed of Rio Pojoaque; water is used for irrigation. No diversions between station and head.

Discharge, in acre-feet, 1946-47	
October 1946	37
November	49
March 14-31, 1947	34
April	51
May	59
June	61
July	52
August	40
September	43

Santa Fe Creek near Santa Fe, N. Mex.

Location.- Water-stage recorder and sharp-crested concrete control, lat. 35°41'15", long. 105°50'10", in NW¼SW¼ sec. 24, T. 17 N., R. 10 E., about 300 feet downstream from McClure Dam (name changed) and 6 miles east of Santa Fe.

Records available.- May to June 1910 (at site 3 miles downstream), April 1913 to December 1914 (at site 2 miles downstream), and October 1930 to September 1947 in reports of Geological Survey. January 1913 to November 1930 (at site 2 miles downstream) and November 1930 to December 1931 in reports of State engineer.

Average discharge.- 17 years (1930-47), 8.24 second-feet.

Extremes.- Maximum daily discharge during year, 42 second-feet May 11; minimum daily, 0.7 second-foot July 16-18.

1930-47: Maximum discharge, 418 second-feet Apr. 23, 1942 (gage height, 3.51 feet), from rating curve extended above 150 second-feet; minimum daily, 0.2 second-foot Dec. 3-14, 16-29, 1943.

Remarks.- Records good except those for periods of ice effect, which are fair. Flow regulated by McClure Reservoir (capacity, about 2,000 acre-feet). No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.3	4.1	4.1	b2.2	1.6	b1.6	4.6	7.9	32	7.6	0.8	1.0
2	2.3	4.1	4.1	b2.2	1.6	b1.6	4.9	9.3	13	7.6	.8	1.0
3	2.1	3.6	b4.1	b2.2	1.4	b1.6	5.2	11	7.3	7.3	1.0	.8
4	4.4	b4.4	3.9	*b2.0	1.3	b1.6	4.9	14	7.3	7.0	1.0	1.0
5	4.6	4.1	3.9	b2.0	1.3	1.6	4.6	12	7.0	7.0	1.0	2.7
6	3.6	4.1	3.6	b2.0	1.3	1.6	4.9	5.8	7.0	6.7	1.0	5.5
7	8.2	b4.2	3.6	b2.0	b1.3	b1.6	4.9	3.7	7.0	6.7	.8	5.5
8	5.5	4.4	3.4	b1.9	1.4	1.6	4.9	1.8	7.0	6.4	.8	8.8
9	4.9	4.4	b2.9	b1.8	b1.5	1.8	4.6	1.9	7.0	6.4	.8	7.4
10	4.6	b3.9	b2.5	b1.8	1.6	1.8	4.6	20	7.0	6.1	.8	7.3
11	4.4	b4.1	b2.7	b1.8	1.6	1.9	4.4	42	7.0	7.0	.8	7.0
12	4.1	4.1	b2.9	b1.8	b1.8	1.9	3.9	31	7.0	7.6	.8	7.0
13	4.1	3.9	*2.9	1.9	*1.8	*2.1	3.9	8.6	7.0	7.0	.8	6.7
14	4.1	*3.9	3.2	1.9	1.6	2.1	3.6	8.6	7.0	13	.8	6.7
15	4.1	3.9	2.9	1.8	b1.6	2.3	3.4	7.6	7.3	4.5	.8	6.4
16	3.6	b3.6	b2.9	*1.6	b1.7	2.5	3.6	7.6	7.3	.7	.8	6.4
17	3.6	b3.6	2.7	1.6	b1.8	2.7	3.6	7.9	7.3	.7	.8	4.1
18	3.6	b3.6	b3.2	1.6	1.8	2.9	4.4	8.6	7.3	.7	.8	4.4
19	3.4	b3.6	b2.5	1.6	1.8	3.2	4.6	8.9	7.3	.8	.8	4.6
20	3.2	b3.5	b2.5	1.6	1.6	3.6	5.5	8.6	7.0	.8	.8	4.4
21	3.2	3.4	b2.7	1.6	b1.6	3.6	6.1	8.6	7.0	.8	1.1	4.4
22	2.9	3.4	b2.5	1.6	b1.6	4.1	6.7	8.6	7.0	.8	1.0	4.4
23	2.9	3.4	2.7	1.6	b1.6	4.4	7.3	9.3	7.0	1.0	1.0	6.1
24	2.7	3.9	2.3	1.8	1.6	4.6	7.6	9.3	7.3	1.0	1.0	7.9
25	2.7	3.9	2.3	1.8	1.6	4.4	7.0	9.3	7.3	1.0	1.0	8.2
26	2.5	b3.9	2.3	1.8	1.6	4.4	7.3	9.6	7.3	1.0	1.0	7.9
27	2.5	4.1	2.3	1.8	*1.6	4.6	7.6	12	7.9	1.0	1.0	7.3
28	2.7	3.9	1.9	1.6	1.6	4.9	7.6	29	8.2	1.0	1.0	7.0
29	5.2	4.1	b1.9	b1.4	-	4.9	7.6	36	7.9	1.0	1.0	6.1
30	5.8	*4.4	b2.1	*b1.6	-	4.6	7.6	35	7.9	1.0	1.0	5.5
31	*4.4	-	b2.4	b1.6	-	4.6	-	33	-	.8	1.0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	118.2	8.2	2.1	3.81	234
November	117.5	4.4	3.4	3.92	233
December	89.9	4.1	1.9	2.90	178
Calendar year 1946	1,697.3	20	1.3	4.65	3,360
January	55.5	2.2	1.4	1.79	110
February	44.2	1.8	1.3	1.58	88
March	90.7	4.9	1.6	2.93	180
April	161.4	7.6	3.4	5.38	320
May	426.5	42	1.8	13.8	846
June	247.9	32	7.0	8.26	492
July	122.0	13	.7	3.94	242
August	27.9	1.1	.8	.90	55
September	163.5	8.8	.8	5.45	324
Water year 1946-47	1,665.2	42	.7	4.56	3,300

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Galisteo Creek at Domingo, N. Mex.

Location.- Water-stage recorder, lat. 35°30'45", long. 106°18'55", in SW¼ sec. 21, T. 15 N., R. 6 E., in Santo Domingo Pueblo Grant, at highway bridge, 0.3 mile northeast of Domingo, 2½ miles east of Santo Domingo Pueblo, and 4 miles upstream from mouth. Datum of gage is 5,255.5 feet above mean sea level, datum of 1929 (levels by Corps of Engineers).

Records available.- October 1941 to September 1947.

Extremes.- Maximum discharge during year, 9,880 second-feet Aug. 22 (gage height, 5.85 feet), from rating curve extended above 740 second-feet by logarithmic plotting; no flow at times.
1941-47: Maximum discharge, 16,700 second-feet Aug. 20, 1946; no flow at times.

Remarks.- Records poor. Several small diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1	1	0	a0	1	0		0	0	0	0	1
2	1	1	1	a0	0	0		0	0	6	0	0
3	0	3	1	a0	0	0		0	0	0	0	0
4	1	a3	1	a0	0	0		0	0	0	0	7
5	36	3	1	a0	0	0		0	0	0	0	4
6	13	3	1	a0	0	0		0	0	0	0	1
7	57	2	1	a0	0	0		0	0	0	1	2
8	20	2	1	b0	0	0		0	0	0	12	a0
9	11	2	1	0	0	1		1	0	0	5	a0
10	7	2	1	0	1	0		13	0	0	0	0
11	6	2	1	0	0	0		3	0	0	0	0
12	4	2	1	0	0	0		1	0	0	0	0
13	3	2	1	0	0	0		1	0	0	32	0
14	1	2	1	0	0	0		0	0	0	0	0
15	1	2	1	0	0	0		0	0	0	1	0
16	1	1	1	0	0	0		0	0	0	10	0
17	1	2	1	0	0	0		0	0	0	263	0
18	1	1	1	0	0	0		0	3	7	1	0
19	1	1	0	[illegible]	0	0		0	0	a0	0	0
20	1	1	0	0	0	0		0	0	a0	8	0
21	1	1	0	0	0	0		0	0	0	108	0
22	1	1	0	a0	0	0		0	0	0	277	0
23	1	1	1	a0	0	0		0	0	0	176	0
24	0	2	1	a0	0	0		0	0	0	28	0
25	0	2	1	a0	0	0		0	0	a0	38	0
26	1	1	1	a0	0	0		0	0	a0	12	0
27	1	1	1	a0	3	0		0	0	a0	5	0
28	1	1	0	0	1	0		0	0	a0	2	0
29	1	1	0	0	-	0		0	0	0	1	0
30	0	1	1	0	-	0		0	0	0	1	0
31	1	-	a0	0	-	0		0	-	0	2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	175	57	0	5.6	347
November	50	3	1	1.7	99
December	23	1	0	.7	46
Calendar year 1946	3,633	1,140	0	10.0	7,200
January	0	0	0	0	0
February	6	3	0	.2	12
March	1	1	0	.03	2
April	0	0	0	0	0
May	19	13	0	.6	38
June	3	3	0	.1	6
July	13	7	0	.4	26
August	1,033	277	0	33.3	2,050
September	15	7	0	.5	30
Water year 1946-47	1,338	277	0	3.7	2,660

Peak discharge.- Aug. 13 (12:20 a.m.) 2,850 sec.-ft.; Aug. 17 (6:20 a.m.) 4,000 sec.-ft.; Aug. 21 (5:45 p.m.) 1,300 sec.-ft.; Aug. 22 (11:15 p.m.) 9,880 sec.-ft.; Aug. 25 (3:10 p.m.) 1,290 sec.-ft.

a No gage-height record; discharge computed on basis of weather records, available recorder trace, range in stage, and records for Rio Grande at Cochiti and at San Felipe.

b Stage-discharge relation affected by ice.

Jemez Creek near Bernalillo, N. Mex.

Location.- Water-stage recorders on right and left banks, lat. 35°23'40", long. 106° 32'25", in S½ sec. 32, T. 14 N., R. 4 E., about 2 miles upstream from mouth and 6.2 miles north of Bernalillo. Datum of gage is 5,120.11 feet above mean sea level, datum of 1929.

Records available.- March 1936 to January 1938, March 1943 to September 1947.

Extremes.- Maximum discharge during year, 5,730 second-feet Aug. 16 (gage height, 3.20 feet), from rating curve extended above 3,000 second-feet by logarithmic plotting; no flow at times.

1936-38, 1943-47: Maximum discharge, 15,300 second-feet Oct. 18, 1944, from rating curve extended above 3,000 second-feet by logarithmic plotting; maximum gage height, 5.62 feet Aug. 29, 1943; no flow at times.

Remarks.- Records poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	14	21	b6	*b15	25	79	72			a0	3
2	0	14	19	b6	21	23	88	79			a0	1
3	0	24	20	b6	17	33	82	60			a0	0
4	60	35	19	b7	10	28	79	70			a0	0
5	105	19	26	b8	8	30	65	88			a0	33
6	16	19	29	b9	*21	20	58	91			a0	1
7	135	18	35	b10	18	36	55	84			a0	0
8	a20	23	34	b11	22	46	57	79			a0	4
9	a15	22	33	b12	b20	60	53	67			a2	16
10	11	20	31	b14	b15	40	50	216			a0	9
11	10	17	21	*b15	d16	25	48	400			a0	0
12	9	16	24	b14	d20	43	57	174			a0	0
13	9	23	17	b12	d22	33	60	84			a0	0
14	8	25	a14	b10	d24	29	55	53			0	0
15	8	21	a12	b10	d25	25	60	55			0	0
16	8	19	a10	b10	d25	40	52	50			758	0
17	6	19	a10	10	*24	48	57	46			20	0
18	6	20	a10	10	23	50	67	30			15	0
19	5	19	a10	12	22	55	79	25			6	19
20	4	21	*b10	24	21	88	74	19			26	3
21	4	19	b20	42	20	138	116	13			26	0
22	4	26	24	32	18	132	109	9			110	0
23	4	25	28	*35	12	109	113	8			59	0
24	2	26	39	48	23	120	138	7			89	0
25	1	19	34	26	20	106	84	6			94	0
26	2	25	36	31	27	116	91	4			3	0
27	3	22	*43	*20	30	95	98	1			5	0
28	4	25	36	20	24	150	113	0			4	0
29	6	20	11	d16	-	84	88	0			8	0
30	8	21	b9	d12	-	84	74	0			3	0
31	12	-	b7	d10	-	67	-	0			0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	485	135	0	15.6	962
November	636	35	14	21.2	1,260
December	692	43	7	22.3	1,370
Calendar year 1946	7,198	308	0	19.7	14,280
January	508	48	6	16.4	1,010
February	563	30	8	20.1	1,120
March	1,978	150	20	63.8	3,920
April	2,299	138	48	76.6	4,560
May	1,890	400	0	61.0	3,750
June	0	0	0	0	0
July	0	0	0	0	0
August	1,228	758	0	39.6	2,440
September	89	33	0	3.0	177
Water year 1946-47	10,368	758	0	28.4	20,570

Peak discharge.- May 11 (8:30 a.m.) 1,050 sec.-ft.; Aug. 16 (5:15 a.m.) 5,730 sec.-ft.; Aug. 22 (4 p.m.) 1,120 sec.-ft.; Aug. 25 (5:10 p.m.) 1,340 sec.-ft.; Sept. 5 (1:20 a.m.) 1,000 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records, recorded range in stage, and records for nearby stations.

b Stage-discharge relation affected by ice.

d Doubtful gage-height record; discharge computed as explained in footnote a.

Tijeras Creek near Albuquerque, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 35°03'40", long. 106°29'40", in SW¼ sec. 26, T. 10 N., R. 4 E., at Mann diversion dam and 9 miles east of Albuquerque.

Records available.- April 1943 to September 1947 in reports of Geological Survey. January 1921 to January 1922 in reports of State engineer.

Extremes.- Maximum discharge during year, 4,810 second-feet Aug. 22 (gage height, 7.60 feet), from rating curve extended above 630 second-feet by logarithmic plotting; minimum daily, 0.1 second-foot many times.

1943-47: Maximum discharge, 6,410 second-feet July 19, 1944 (gage height, 8.75 feet), from rating curve extended above 1,100 second-feet; minimum daily, 0.1 second-foot many times in 1947.

Remarks.- Records fair except those after June, which are poor. Several diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	0.5	d0.4	b0.2	0.6	0.4	0.1	0.2	0.2	a0.1	0.1	0.2
2	.4	.4	d.3	b.2	.6	.4	.1	.2	.1	a.1	.1	.2
3	.6	.7	*.3	b.2	.6	.3	.2	.1	.1	a.1	.1	.2
4	.7	.7	.2	*b.3	.6	.4	.3	.1	.1	a.1	.1	3.8
5	.7	.6	.2	b.3	.6	.4	.2	.1	.1	a.1	.1	3.1
6	1.2	.6	.2	b.4	.5	a.4	.2	.1	.1	a.1	.1	.3
7	5.5	.7	.2	.6	.5	a.4	.2	.1	.1	a.1	.1	.2
8	1.4	a.6	.2	.5	.2	a.4	.2	.1	.1	a.1	.1	.2
9	.5	a.6	.3	.5	.1	a.4	.2	.2	.1	a.1	.1	.3
10	.5	a.6	.4	.5	.2	a.4	.3	.4	.1	a.1	.1	.3
11	.5	a.5	.4	.6	.2	a.4	.2	.3	.1	a.1	.1	.3
12	.5	a.5	.4	.7	.2	a.4	.2	.1	.1	a.1	1.6	.3
13	.5	a.5	.2	.5	.3	.4	.2	.1	.1	a.1	.4	.2
14	.5	a.5	.3	*.4	.3	.4	.2	.1	.1	a.1	a.2	.2
15	.5	a.5	.3	.4	.4	.4	.3	.1	.1	a.1	2.2	.3
16	.5	a.5	.2	.4	.6	.4	.2	.1	.1	a.1	1.4	.2
17	.4	a.5	.3	.5	.6	.3	.3	.1	.1	a.1	a.3	.2
18	.4	a.5	.3	.4	.4	a.3	.2	.1	.3	1.6	a.2	.2
19	.4	a.5	.3	.5	.4	a.3	.2	.1	.2	1.0	a.2	.2
20	.4	a.5	.3	.4	.4	.4	.1	.1	a.2	4.9	3.5	.2
21	.4	a.5	*b.3	.5	.4	.4	.2	.1	a.1	d2	3.9	.2
22	.4	a.5	.3	.5	.5	.5	.2	.1	a.1	d.5	66	.2
23	.4	a.5	.3	.6	.5	.5	.2	.2	a.1	a.3	5.6	.2
24	.4	a.5	.3	.6	.5	.5	.2	.2	a.1	a.2	a.5	.1
25	.5	a.5	.2	.7	.4	.4	.2	.1	a.1	a.1	a.3	.1
26	.5	a.5	.2	.7	.5	.5	.2	.1	a.1	.1	.2	.1
27	.6	a.5	.2	.6	.6	.4	.2	.1	a.1	.1	.2	.1
28	.3	d.5	.2	.6	.5	.4	.2	.1	a.1	.1	.2	.1
29	1.9	d.4	.2	.5	-	.4	.3	.1	a.1	.1	.2	.1
30	1.2	d.4	.2	.5	-	.2	.2	.1	a.1	.1	.1	.2
31	.6	-	b.2	.6	-	.2	-	.1	-	.1	1.3	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	23.9	5.5	0.3	0.77	47
November	15.8	.7	.4	.53	31
December	8.3	.4	.2	.27	16
Calendar year 1946	444.8	50	.2	1.22	880
January	14.9	.7	.2	.48	30
February	12.2	.6	.1	.44	24
March	12.0	.5	.2	.39	24
April	6.2	.3	.1	.21	12
May	4.1	.4	.1	.13	8.1
June	3.5	.3	.1	.12	6.9
July	12.9	4.9	.1	.42	26
August	89.6	66	.1	2.89	178
September	12.5	3.8	.1	.42	25
Water year 1946-47	215.9	66	.1	.59	428

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records, available recorder trace, and engineer's notes.

b Stage-discharge relation affected by ice.

d Doubtful gage-height record; discharge computed as explained in footnote a.

Rio Puerco near Cabezon, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 35°42'10", long. 107°00'40", in SE¼ sec. 14, T. 17 N., R. 2 W., 1½ miles downstream from San Luis diversion dam, 2½ miles northeast of San Luis, 7 miles northeast of Cabezon, and 15 miles upstream from Chico Arroyo.

Drainage area.- 360 square miles.

Records available.- February 1943 to September 1947.

Extremes.- Maximum discharge during year, 3,070 second-feet Aug. 25 (gage height, 8.52 feet); no flow at times.
1943-47: Maximum discharge, 4,400 second-feet June 28, 1943 (gage height, 10.6 feet), by slope-area method; no flow at times.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a0.2	1.1	0.8	0.2	0.4	4.1	0.1	9.7	0.2	0	0.1	6.9
2	a.1	.5	.2	a.2	.3	1.3	.1	9.1	.2	0	0	2.5
3	.1	.6	.6	.2	.3	2.6	.2	6.4	.2	0	0	.7
4	284	3.0	.4	a.1	.2	6.8	.4	5.1	.1	0	.2	.3
5	114	5.5	.5	a.1	*1.5	5.1	.2	a1.6	.1	0	3.4	.2
6	8.8	3.2	1.2	a.2	b1.5	2.8	.2	.1	.1	0	.1	.1
7	422	1.9	1.4	a.2	b1.5	2.5	.2	.1	0	0	26	.1
8	12	2.5	.8	a.2	b1.0	1.8	.2	.1	0	0	25	.1
9	a5	2.9	.9	.2	b1.0	5.1	.1	3.4	0	0	a3.0	.1
10	a3	2.2	.4	.3	b1.0	5.9	.1	118	0	0	a2.0	3.9
11	.8	1.4	.3	.3	b1.0	2.4	.1	136	.1	0	a.8	1.6
12	.5	1.0	.3	.2	b1.5	2.8	.1	a120	.1	0	22	.2
13	.2	1.3	.3	.3	b2.0	.7	.1	a100	.1	0	2.8	.1
14	.2	1.1	.3	.3	b2.3	.3	.1	a70	.1	0	a2.0	.1
15	.1	1.0	.3	.4	b2.5	.3	.1	a55	.1	0	6.8	.1
16	.1	1.0	.3	.3	b2.3	.2	.1	a62	.3	0	184	.1
17	.1	1.2	.1	.2	b2.0	.2	.1	a55	.1	0	45	0
18	.2	.9	.1	.2	b2.0	.2	.2	a35	2.0	0	a10	9.4
19	.2	1.1	.1	.1	b1.5	.2	1.2	a25	.4	2.1	.4	18
20	.1	1.3	.1	.3	b1.5	.2	3.2	a15	.1	.1	31	4.1
21	.1	1.2	.1	.4	b1.6	.2	14	a10	.1	.1	3.6	.5
22	.1	1.2	.1	.2	b1.8	.2	23	a9.0	.1	.2	.3	.1
23	.1	.8	.1	.3	*2.0	.2	7.4	a7.0	.1	.1	45	.1
24	.1	1.6	.1	.4	.9	.2	9.7	8.3	.1	.1	32	.1
25	.1	5.5	.1	.8	1.3	.2	3.2	6.4	.1	.1	87	.1
26	.1	2.4	.1	.8	1.3	.2	a1.0	1.7	0	.1	215	.1
27	.1	1.7	5.1	.8	1.9	.1	5.2	.3	0	.1	34	.1
28	.1	1.8	2.5	.7	3.8	.1	4.0	.2	0	.1	8.0	.1
29	.1	1.7	1.1	.7	-	.1	a1.0	.2	0	.1	5.7	.1
30	.4	1.3	.3	.6	-	.1	1.3	.2	0	.1	3.8	.2
31	2.2	-	.2	.4	-	.1	-	.2	-	.1	3.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	855.2	422	0.1	27.6	1,700
November	53.9	5.5	.3	1.80	107
December	19.2	5.1	.1	.62	38
Calendar year 1946	3,657.9	422	0	10.0	7,250
January	10.6	.8	.1	.34	21
February	41.9	3.8	.2	1.50	83
March	47.2	6.8	.1	1.52	94
April	76.9	23	.1	2.56	153
May	870.1	136	.1	28.1	1,730
June	4.8	2.0	0	.16	9.5
July	3.4	2.1	0	.11	6.7
August	802.8	215	0	25.9	1,590
September	50.1	18	0	1.67	99
Water year 1946-47	2,836.1	422	0	7.77	5,630

Peak discharge.- Oct. 4 (7:50 p.m.) 2,370 sec.-ft.; Oct. 7 (4:15 a.m.) 1,350 sec.-ft.; Aug. 12 (5:20 p.m.) 608 sec.-ft.; Aug. 16 (5:20 a.m.) 555 sec.-ft.; Aug. 25 (12 p.m.) 3,070 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records, available recorder trace, and records for station at Cabezon.

b Stage-discharge relation affected by ice.

Rio Puerco at Cabezon, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 35°37'20", long. 107°07'00", in NW¼ sec. 13, T. 16 N., R. 3 W., 0.7 mile southwest of Cabezon and 5½ miles upstream from Chico Arroyo.

Records available.- October 1945 to September 1947.

Extremes.- Maximum discharge during year, 2,100 second-feet Aug. 26 (gage height, 2.76 feet), from rating curve extended above 80 second-feet on basis of records for station near Cabezon; no flow at times.

1945-47: Maximum discharge, 2,440 second-feet Aug. 2, 1946, from rating curve extended above 80 second-feet on basis of records for station near Cabezon; no flow at times.

Remarks.- Records fair except those for periods of no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a0	1.8	1.0	0	a0.2	a3.3	0	46		0	0	13
2	a0	1.0	.5	0	a.1	a2.0	0	62		0	0	8.7
3	0	.2	.5	0	a.1	a2.4	0	27		0	0	6.0
4	a150	1.8	.4	0	a.1	a5.0	2.4	39		0	0	a.8
5	a300	7.7	.5	0	1.1	a4.0	2.1	39		0	a3	a.3
6	a15	5.6	.8	0	.6	a3.0	2.8	4.3		0	a2	a0
7	a450	5.3	1.5	0	.6	a2.0	2.6	9.3		0	a10	a0
8	46	3.4	1.0	0	.7	a1.4	.8	7.7		0	27	a0
9	a10	3.0	.6	0	.6	a3.0	0	14		0	27	a0
10	a5	2.6	.3	0	.6	a4.5	0	152		0	a4	4.0
11	2.1	2.1	.3	0	a.8	2.0	.1	157		0	0	4.6
12	.8	1.6	.2	0	a1.0	1.6	0	146		0	29	1.0
13	.6	1.4	.3	0	a1.3	1.4	0	120		0	4.9	.3
14	.3	1.8	.3	a0	a1.5	1.2	0	97		.1	.8	.1
15	.3	1.6	.2	a0	a1.7	1.0	0	62		0	9.3	0
16	.2	.6	.2	a0	a1.8	.9	0	65		0	168	0
17	.2	.8	.1	a0	a1.6	.9	0	62		0	106	.1
18	.1	.6	.1	a0	a1.5	.9	0	46		0	55	.5
19	.1	.7	.1	a0	a1.3	.8	2.8	34		0	2.8	42
20	.1	.8	.1	a0	a1.0	.7	4.6	a22		0	77	27
21	0	1.1	.1	a0	a1.0	.6	14	a16		0	18	4.9
22	0	1.0	.1	a0	a1.0	.3	46	a12		0	3.4	1.8
23	0	1.2	.1	a0	.8	.2	42	a10		0	111	.7
24	0	1.6	.1	a0	.9	.2	68	20		0	93	a.3
25	0	2.4	.1	a.2	1.1	.2	55	14		0	31	a.1
26	0	3.4	.1	a.4	.8	.1	8.7	6.0		0	243	0
27	0	1.6	a2.5	a.4	a1.2	a.1	17	3.0		0	72	0
28	0	2.8	a3.5	a.4	a3.0	0	49	.6		0	20	0
29	0	1.4	a2.0	a.4	-	0	12	0		0	8.2	0
30	.1	1.5	a.4	a.4	-	0	6.0	0		0	6.0	0
31	.1	-	0	a.3	-	0	-	0		0	5.3	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	981.0	450	0	31.6	1,950
November	62.4	7.7	.2	2.08	124
December	18.0	3.5	0	.58	36
Calendar year 1946	3,890.4	450	0	10.7	7,720
January	2.5	.4	0	.08	5.0
February	28.0	3.0	.1	1.00	56
March	43.7	5.0	0	1.41	87
April	335.9	68	0	11.2	666
May	1,292.9	157	0	41.7	2,560
June	0	0	0	0	0
July	.1	.1	0	.003	.2
August	1,136.7	243	0	36.7	2,250
September	116.2	42	0	3.87	230
Water year 1946-47	4,017.4	450	0	11.0	7,960

a No gage-height record; discharge computed on basis of weather records, available recorder trace, and records for station near Cabezon.

Rio Puerco at Rio Puerco, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 34°47'35", long. 106°59'15", in W½ sec. 31, T. 7 N., R. 1 W (projected), in hamlet of Rio Puerco in San Clemente Grant, at Atchison, Topeka & Santa Fe Railway bridge, 7 miles downstream from San Jose River.

Drainage area.- 5,160 square miles.

Records available.- September 1910 to October 1911, August 1912 to December 1914 (records fragmentary, gage heights only prior to March 1913), and March 1934 to September 1947 in reports of Geological Survey. January 1913 to December 1925 and September 1926 to December 1927 in reports of State engineer.

Average discharge.- 22 years (1913-17, 1919-20, 1921-24, 1926-27, 1934-47), 95.2 second-feet.

Extremes.- Maximum discharge during year, 11,400 second-feet Aug. 17 (gage height, 4.37 feet); no flow at times.
1934-47: Maximum discharge, 28,000 second-feet Aug. 21, 1935 (gage height, 7.24 feet), by computation of flow over dam; no flow at times.

Remarks.- Records fair except those for periods of no gage-height record or those below 10 second-feet, which are poor. Several diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.2	0.8	0	0.6	0.2		0	0	0	0	0.7
2	2.0	.2	.5	0	.5	.2		0	0	51	0	14
3	.2	.3	.4	0	.7	.3		0	0	36	0	3.9
4	6.0	1.0	.6	0	.5	.3		0	0	12	0	2.5
5	673	.9	.8	0	.8	.3		0	0	1.8	0	127
6	324	.8	.8	0	.8	.3		0	0	.2	0	45
7	638	.5	.7	0	.9	.2		0	0	0	45	22
8	1,240	.6	.4	0	1.2	.2		0	0	0	10	179
9	109	1.0	.6	0	.4	.2		0	0	0	466	1,290
10	24	2.3	.5	.3	.6	.2		0	0	6.2	350	202
11	15	2.0	.4	.6	.3	.2		63	0	.5	70	61
12	12	2.0	.7	.5	1	.1		469	0	0	64	18
13	6.6	3.9	.5	.4	.1	.1		112	0	0	329	5.4
14	3.1	3.9	.5	.9	.1	.1		48	0	0	514	.8
15	1.2	2.3	.6	.4	.1	.1		28	0	0	362	.2
16	.7	1.6	.6	.2	.1	0		20	0	0	2,240	0
17	.4	1.2	.5	.1	.1	0		12	0	0	4,440	0
18	.3	.6	.3	.1	.1	0		11	0	.2	3,000	26
19	.3	.9	.2	.1	.1	0		8.8	2	.4	1,570	845
20	.3	1.2	.2	.3	.1	0		3.9	15	0	635	64
21	.2	.9	.1	.2	.1	0		.8	3	0	1,560	112
22	.2	.6	.1	.3	.1	0		.4	1	0	2,910	48
23	.2	.7	.2	.3	.1	0		.2	0	0	1,880	15
24	.2	.6	1.2	.3	.1	0		51	0	0	568	7.3
25	.2	.8	.8	.4	.1	0		16	0	0	523	1.0
26	.2	.5	.5	.9	.1	0		3.9	0	0	503	.1
27	.2	.6	.8	1.4	.1	0		.4	0	0	473	0
28	.2	.5	.5	.9	.1	0		.1	0	0	83	0
29	.1	.6	.2	.6	-	0		0	0	0	54	0
30	.2	.7	.1	.4	-	0		0	0	0	15	0
31	.2	-	.1	.3	-	0		0	-	0	4	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,058.3	1,240	0.1	98.7	6,070
November	33.9	3.9	.2	1.13	67
December	15.2	1.2	.1	.49	30
Calendar year 1946	16,882.4	2,470	0	46.3	33,490
January	9.9	1.4	0	.32	20
February	9.0	1.2	.1	.32	18
March	3.0	.3	0	.10	6.0
April	0	0	0	0	0
May	848.5	469	0	27.4	1,680
June	21.0	15	0	.70	42
July	108.3	51	0	3.49	215
August	22,668	4,440	0	731	44,960
September	3,089.9	1,290	0	103	6,130
Water year 1946-47	29,865.0	4,440	0	81.8	59,240

Peak discharge.- Oct. 7 (9 p.m.) 4,340 sec.-ft.; Aug. 16 (6 p.m.) 4,720 sec.-ft.; Aug. 17 (1:30 p.m.) 11,400 sec.-ft.; Aug. 18 (6:30 p.m.) 9,570 sec.-ft.; Aug. 21 (11:30 a.m.) 5,620 sec.-ft.; Aug. 22 (5:30 p.m.) 5,840 sec.-ft.

Note.- No gage-height record Jan. 1-9, 16-18, Feb. 12-18, Feb. 20 to Mar. 9, Mar. 11-19, Mar. 21 to Apr. 10, May 29 to June 17, June 19-24, Aug. 30, 31; discharge computed on basis of weather records, engineers' notes, and records for upstream and downstream stations.

Rio Puerco near Bernardo, N. Mex.

Location.- Water-stage recorder, lat. 34°24'30", long. 106°51'10", in Sevilleta Grant, at bridge on U. S. Highway 85, 1.2 miles southwest of Bernardo, 3 miles upstream from mouth, and 16 miles south of Belen.

Records available.- November 1939 to September 1947. September 1910 to August 1914 (fragmentary gage heights only) at site 1½ miles downstream, published as Rio Puerco near La Joya.

Extremes.- Maximum discharge during year, 9,020 second-feet Aug. 23 (gage height, 8.98 feet); no flow for extended periods.
1939-47: Maximum discharge, 18,800 second-feet Sept. 23, 1941, from rating curve extended above 7,800 second-feet by logarithmic plotting; maximum gage height, 10.00 feet July 22, 1944; no flow for extended periods.

Remarks.- Records poor. Many diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7	0						0	0	323	0	3
2	0	0						0	0	197	0	1
3	0	0						0	0	23	0	0
4	0	0						0	0	19	0	1
5	49	0						0	0	5	0	1
6	a600	1						0	0	1	0	184
7	a150	0						0	0	0	0	15
8	a1,100	0						0	0	0	1	3
9	252	0						0	0	0	175	1,480
10	47	0						0	0	0	1,450	480
11	16	0						0	0	0	186	142
12	7	0						a250	0	0	38	40
13	3	0						150	0	0	594	13
14	2	0						a100	0	0	661	6
15	0	0						52	0	0	582	1
16	0	0						28	0	0	1,660	0
17	0	0						18	0	0	4,630	0
18	0	0						12	0	1	2,610	86
19	0	0						8	0	0	2,770	712
20	0	0						10	0	0	488	384
21	0	0						7	1	0	983	70
22	0	0						4	0	0	2,000	95
23	0	0						3	0	0	3,890	29
24	0	0						10	0	0	860	13
25	0	0						63	0	0	563	5
26	0	0						19	0	0	912	1
27	0	0						6	0	0	403	0
28	0	0						1	0	0	158	0
29	0	0						0	0	0	43	0
30	0	0						0	0	0	16	0
31	0	-						0	-	0	8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,233	1,100	0	72.0	4,430
November	1	1	0	.03	2
December	0	0	0	0	0
Calendar year 1946	17,308	2,820	0	47.4	34,330
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	0	0	0	0	0
May	741	250	0	23.9	1,470
June	1	1	0	.03	2
July	569	323	0	18.4	1,130
August	25,681	4,630	0	828	50,940
September	3,765	1,480	0	126	7,470
Water year 1946-47	32,991	4,630	0	90.4	65,440

Peak discharge.- July 1 (11 p.m.) 5,280 sec.-ft.; Aug. 10 (4 a.m.) 6,040 sec.-ft.; Aug. 17 (1 p.m.) 6,580 sec.-ft.; Aug. 18 (1:20 a.m.) 7,900 sec.-ft.; Aug. 19 (3 a.m.) 7,440 sec.-ft.; Aug. 23 (1 a.m.) 9,020 sec.-ft.

a No gage-height record; discharge computed on basis of records for station at Rio Puerco.

Chico Arroyo near Guadalupe, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 35°35'30", long. 107°11'05", in W½ sec. 29, T. 16 N., R. 3 W., a quarter of a mile upstream from mouth, 5 miles northwest of Guadalupe, and 8.1 miles by road west of Cabezon.

Drainage area.- 1,390 square miles.

Records available.- November 1943 to September 1947.

Extremes.- Maximum discharge during year, 9,800 second-feet Aug. 16 (gage height, 12.8 feet, by slope-area method; no flow at times.
1943-47: Maximum discharge, 12,700 second-feet July 21, 1944, from rating curve extended above 2,500 second-feet by logarithmic plotting; maximum gage height, that of Aug. 16, 1947; no flow at times.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a0	0.1		0	0.1	a2		0		0	a0	23
2	a0	.1		0	.1	a1		0		0	a0	9.1
3	0	1.1		0	.1	a2		0		0	a0	4.0
4	41	1.9		0	.1	a3		0		0	a1	1.9
5	116	1.8		.1	*.1	a3		0		0	a4	1.9
6	25	2.5		.1	.1	a2		0		0	a5	1.4
7	760	4.3		.3	0	a1		0		61	a20	1.0
8	6.6	4.8		.2	0	a.5		0		16	a20	1.0
9	a3	4.0		*.1	0	a2		.1		138	a20	81
10	a1	3.7		.2	0	a1		43		8.5	a10	7.5
11	.1	2.5		0	0	.1		268		a.1	a10	4.3
12	.1	1.6		.1	0	.1		a20		0	a20	2.1
13	0	3.7		.1	0	0		a10		0	a10	.6
14	0	5.0		.1	0	0		a7		0	a50	.4
15	0	3.4		.1	0	0		a5		0	337	0
16	0	2.1		.1	0	0		a6		0	2,630	0
17	0	.9		0	0	0		a4		0	776	.2
18	0	.7		0	0	0		a3		3.1	1,950	0
19	0	.4		.2	0	0		a2		5.0	523	26
20	0	.2		.2	0	0		a1		.2	961	117
21	0	.2		b.4	0	0		a1		0	1,580	3.4
22	0	.1		.3	0	0		a1		0	2,010	3.7
23	0	.1		.3	0	0		a4		2.9	a800	a2
24	0	.1		.2	a0	0		.1		.6	a300	a1
25	0	.1		.6	a0	0		0		0	a100	a.4
26	0	0		.6	a0	0		0		0	a50	0
27	.1	0		.3	a.5	0		0		0	a20	0
28	.1	0		.1	a2	0		0		0	14	0
29	.1	0		.1	-	0		0		0	14	0
30	.1	0		.1	-	0		0		0	17	0
31	0	-		.1	-	0		0		0	15	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	953.2	760	0	30.7	1,890
November	45.4	5.0	0	1.51	90
December	0	0	0	0	0
Calendar year 1946	6,356.2	1,220	0	174	12,600
January	5.0	.6	0	.16	9.9
February	3.1	2	0	.11	6.1
March	17.7	3	0	.57	35
April	0	0	0	0	0
May	375.2	268	0	12.1	744
June	0	0	0	0	0
July	235.4	138	0	7.59	467
August	12,267	2,630	0	396	24,330
September	292.9	117	0	9.76	581
Water year 1946-47	14,194.9	2,630	0	38.9	28,150

Peak discharge.- Oct. 7 (3:40 a.m.) 1,950 sec.-ft.; Aug. 15 (11:30 p.m.) 3,250 sec.-ft.; Aug. 16 (8:30 p.m.) 9,800 sec.-ft.; Aug. 18 (1:40 a.m.) 9,460 sec.-ft.; Aug. 20 (7 p.m.) 3,860 sec.-ft.; Aug. 22 (1 p.m.) 4,940 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of available recorder trace, weather records, and records for Rio Puerco at and near Cabezon.

Bluewater Creek near Bluewater, N. Mex.

Location.- Water-stage recorder, lat. 35°17'50", long. 108°01'40", in W½SW¼ sec. 5, T. 12 N., R. 11 W., 2½ miles northwest of Bluewater and 8 miles downstream from storage reservoir of Bluewater-Toltec Irrigation District.

Drainage area.- 235 square miles.

Records available.- May 1912 to December 1914 and October 1930 to September 1947 in reports of Geological Survey. May 1912 to June 1919 and April 1921 to December 1931 in reports of State engineer.

Average discharge.- 17 years (1930-47), 14.3 second-feet (unadjusted).

Extremes.- Maximum discharge during year, 70 second-feet Aug. 12 (gage height, 3.47 feet); minimum daily, 0.3 second-foot Aug. 1.
1930-47: Maximum discharge, 1,010 second-feet Sept. 1, 1936 (gage height, 6.15 feet, site and datum then in use), from rating curve extended above 65 second-feet by logarithmic plotting; no flow Mar. 9, 1931, Feb. 3, 1935, and at times in 1946.

Remarks.- Records excellent except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by Bluewater-Toltec Reservoir (capacity, 46,000 acre-feet).

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.0	1.2	a0.9	b0.8	1.8	0.6	0.6	0.7	0.6	0.4	0.3	1.0
2	1.0	1.3	a.9	b1.1	1.4	.6	.6	.7	.5	.4	.4	1.0
3	1.0	1.8	a.9	b.9	2.0	.6	.6	.7	.5	.5	.4	.9
4	.9	1.6	a.8	b1.0	1.6	.6	.7	.7	.5	.5	.4	.9
5	1.0	1.6	a.8	b.7	1.3	.6	.7	.7	.5	.5	1.8	a.9
6	1.0	a1.5	*.8	b.7	.9	.6	.7	.7	.5	.5	.9	a.9
7	.9	a1.5	.8	b1.0	.7	.6	.6	.8	.5	.5	.7	a1.1
8	1.0	a1.4	.8	b1.0	.5	.6	.6	.7	.4	.7	.8	a1.3
9	1.0	a1.3	.8	1.0	.5	.6	.6	1.0	.4	.6	1.1	a1.2
10	.9	a1.3	.8	.8	.4	.6	.7	1.4	.4	.5	2.2	a1.1
11	.9	a1.3	.9	.7	.4	.6	.7	1.3	.4	.4	5.2	a1.1
12	1.0	a1.3	1.0	.8	*.4	.6	.7	1.0	.5	.4	9.8	a1.1
13	1.0	a1.3	.9	1.4	.4	.6	.7	.8	.4	.4	3.9	a1.0
14	1.0	a1.3	.8	1.5	.4	.5	.7	.8	.4	.4	1.8	a1.0
15	1.0	a1.5	.8	1.4	.4	.6	.7	.8	.4	.4	1.5	a1.0
16	1.0	a1.4	.8	1.0	.5	.6	.7	.9	.4	.5	2.2	a.9
17	1.0	a1.3	.8	1.5	.5	.6	.7	.8	.4	.5	1.6	a.9
18	1.0	a1.3	1.0	2.1	.5	.6	.7	.8	.6	.5	2.2	a.9
19	1.0	a1.2	.8	2.6	.5	.6	.6	.8	.6	.5	1.5	a.8
20	1.0	a1.2	.8	2.6	.5	.6	.6	.7	.6	.5	1.3	a.8
21	1.0	a1.2	.8	2.7	.5	.6	.7	.7	.5	.5	1.8	a.8
22	1.0	a1.2	.9	2.6	.5	.6	.7	.7	.6	.5	2.9	a.8
23	1.0	a1.2	.9	2.4	.6	.6	.7	.8	.6	.5	2.1	a.7
24	1.0	a1.4	.8	2.6	.6	.6	.7	.8	.5	.5	1.4	a.7
25	1.0	a1.2	.7	2.4	.6	.6	.8	.7	.5	.4	1.2	a.7
26	1.0	a1.0	.7	2.3	.6	.6	.7	.7	.5	.4	1.1	a.7
27	1.1	a1.0	.7	2.1	.7	.5	.7	.7	.4	.4	1.0	a.6
28	1.1	a1.0	.6	1.6	.8	.6	.7	.6	.4	.4	1.0	a.6
29	1.2	a1.0	.4	1.2	-	.6	.7	.6	.4	.4	1.1	.6
30	1.2	a1.0	.8	.7	-	.6	.8	.6	.4	.4	1.3	.6
31	1.1	-	b.8	1.3	-	.6	-	.6	-	.4	1.1	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	31.3	1.2	0.9	1.01	62
November	38.8	1.8	1.0	1.29	77
December	25.0	1.0	.4	.81	50
Calendar year 1946	208.5	15	0	.57	414
January	46.5	2.7	.7	1.50	92
February	20.5	2.0	.4	.73	41
March	18.4	.6	.5	.59	36
April	20.4	.8	.6	.68	40
May	24.3	1.4	.6	.78	48
June	14.3	.6	.4	.48	28
July	14.4	.7	.4	.46	29
August	56.0	9.8	.3	1.81	111
September	26.6	1.3	.6	.89	53
Water year 1946-47	336.5	9.8	.3	.92	667

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of recorded range in stage and weather records.
b Stage-discharge relation affected by ice.

San Jose River near Grants, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 35°04', long. 107°44', in SE¼SE¼ sec. 23, T. 10 N., R. 9 W., at west boundary of Acoma Indian Reservation and 8½ miles southeast of Grants.

Records available.- June 1936 to September 1947.

Average discharge.- 11 years, 7.50 second-feet.

Extremes.- Maximum discharge during year, 1,330 second-feet Aug. 21 (gage height, 4.15 feet, from floodmarks), from rating curve extended above 500 second-feet by logarithmic plotting; minimum daily, 4.2 second-feet Sept. 6-9.
1936-47: Maximum discharge, that of Aug. 21, 1947; minimum daily, 2.5 second-feet May 7-10, 1943.

Remarks.- Records good except those for period of no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.9	4.6	4.4	4.6	6.3	6.3	5.7	4.9	5.4	5.7	6.0	a7
2	4.9	4.6	4.4	4.6	6.3	6.0	5.4	4.9	5.4	5.7	6.0	a6
3	4.9	4.4	4.6	4.6	6.6	5.7	5.4	4.9	5.4	5.7	6.0	a6
4	4.9	4.4	4.6	4.6	6.8	6.0	6.0	4.9	5.4	5.7	6.0	a5
5	4.9	4.4	4.6	4.6	7.2	5.7	6.3	5.1	5.4	5.7	6.3	4.6
6	4.9	4.4	4.6	4.6	7.2	6.0	6.3	5.1	5.4	5.7	5.7	4.2
7	4.9	4.4	4.6	4.6	6.6	5.7	5.4	5.1	5.4	5.7	a6	4.2
8	4.9	4.4	4.6	4.6	6.9	5.7	5.1	5.1	5.4	6.0	a6	4.2
9	4.9	4.4	4.6	4.6	6.6	6.3	6.0	21	5.4	12	a6	4.2
10	4.6	4.4	4.6	4.9	6.3	6.9	6.3	12	5.4	5.7	a7	7.2
11	4.6	4.4	4.6	4.9	6.3	7.2	6.3	11	5.4	5.4	a7	11
12	4.6	4.4	4.6	4.9	6.0	4.9	5.7	7.2	5.4	5.4	a10	6.9
13	4.6	4.4	4.6	4.9	6.3	4.9	6.0	6.3	5.4	5.7	a8	5.4
14	4.6	4.4	4.6	4.9	6.3	6.3	6.0	5.7	5.4	5.4	a6	4.9
15	4.6	4.4	4.6	4.9	6.0	6.9	5.7	5.4	5.4	5.4	a6	4.6
16	4.6	4.4	4.6	4.9	6.3	6.9	5.1	5.4	5.4	5.4	a6	4.6
17	4.6	4.4	4.6	4.9	6.3	6.9	4.9	5.4	5.4	5.4	a6	4.6
18	4.6	4.4	4.6	4.9	6.0	7.2	4.6	5.4	5.4	5.4	a6	4.6
19	4.6	4.4	4.6	4.9	6.3	7.2	4.6	5.4	5.4	5.7	a6	12
20	4.6	4.4	4.6	4.6	6.0	6.3	4.9	5.4	5.4	5.7	a6	25
21	4.6	4.4	4.6	4.6	5.7	6.3	4.9	5.4	5.4	5.7	a200	5.7
22	4.6	4.4	4.6	4.6	5.7	6.6	4.9	5.4	5.4	5.7	a50	4.9
23	4.6	4.4	4.6	4.6	5.7	6.6	4.6	5.4	5.4	5.4	a25	5.1
24	4.6	4.4	4.6	4.6	6.0	6.3	4.6	5.4	5.4	5.4	a10	4.9
25	4.6	4.4	4.6	4.9	6.0	6.3	4.6	5.1	5.4	5.4	a8	4.9
26	4.6	4.4	4.6	4.9	6.0	6.3	4.6	5.1	5.4	5.7	a7	4.9
27	4.6	4.4	4.6	5.7	6.3	5.4	4.9	5.1	5.4	5.7	a6	4.9
28	4.6	4.4	4.6	5.7	6.6	5.1	4.9	5.1	5.4	5.7	a6	4.9
29	4.6	4.4	4.6	5.7	-	5.4	4.9	5.1	5.4	6.0	a6	4.9
30	4.6	4.4	4.6	5.4	-	5.7	4.9	5.1	5.7	6.0	a6	4.9
31	4.6	-	4.6	6.4	-	5.4	-	5.1	-	6.0	a8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	145.3	4.9	4.6	4.69	288
November	132.4	4.6	4.4	4.41	263
December	142.2	4.6	4.4	4.59	282
Calendar year 1946	2,711	80	3.7	7.43	5,380
January	152.1	6.4	4.6	4.91	302
February	176.6	7.2	5.7	6.31	350
March	190.4	7.2	4.9	6.14	378
April	159.5	6.3	4.6	5.32	316
May	192.9	21	4.9	6.22	383
June	162.3	5.7	5.4	5.41	322
July	181.2	12	5.4	5.85	359
August	460.0	200	5.7	14.8	912
September	186.2	25	4.2	6.21	369
Water year 1946-47	2,281.1	200	4.2	6.25	4,520

Peak discharge.- May 9 (6 p.m.) 87 sec.-ft.; Aug. 21 (time unknown) 1,330 sec.-ft.; Sept. 20 (4:30 a.m.) 59 sec.-ft.

a No gage-height record; discharge computed on basis of weather records and records for station at Correo.

San Jose River at Correo, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 34°58'00", long. 107°10'10", in NE¼ sec. 32, T. 9 N., R. 3 W., 0.6 mile upstream from U. S. Highway 66, 0.7 mile northeast of Correo, and 13 miles upstream from mouth.

Records available.- April 1943 to September 1947.

Extremes.- Maximum discharge during year, 1,730 second-feet Aug. 18 (gage height, 4.56 feet); no flow at times.
1943-47: Maximum discharge, 8,010 second-feet May 26, 1944 (gage height, 9.20 feet), from rating curve extended above 1,700 second-feet by logarithmic plotting; no flow at times.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. Several diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0		0	b0.2	1.0		0	0	0	0	0.3
2	.2	0		0	b.1	.9		0	0	77	0	0
3	0	0		0	b.2	.5		0	0	6.8	0	0
4	.2	0		0	b.3	1.5		0	0	1.5	0	0
5	0	0		0	b.3	.4		0	0	a.3	0	12
6	0	0		0	b.1	1.6		0	0	a0	0	.3
7	38	.4		0	0	1.6		0	0	a0	0	0
8	.6	.7		0	0	1.3		0	0	a0	0	1.3
9	0	.8		0	0	3.0		0	0	8.2	.5	481
10	0	.7		b.1	1.2	3.0		0	0	.8	111	22
11	0	.5		b.3	*1.5	1.1		0	0	.1	10	7.5
12	0	.4		b.4	.4	.7		0	0	0	39	1.5
13	0	.2		b.6	.4	.9		0	0	0	126	.4
14	0	.1		b.9	.4	.3		0	0	0	211	0
15	0	.1		b.7	0	0		0	0	0	106	0
16	0	0		b.5	0	0		0	0	0	413	0
17	0	.1		0	0	0		0	0	0	621	11
18	0	0		0	0	0		0	0	0	334	124
19	0	0		0	0	0		0	58	0	506	162
20	0	0		.6	.5	0		0	4.0	0	97	57
21	0	0		b1.0	.8	0		0	.9	0	51	46
22	0	0		*b.6	1.2	0		0	0	0	439	18
23	0	0		b.6	.4	0		16	0	1.2	473	6.1
24	0	0		b.8	1.5	0		41	0	0	302	0
25	0	0		b1.5	.8	0		0	0	0	217	0
26	0	0		b.9	.7	0		0	0	0	72	0
27	0	0		b1.2	1.4	0		0	0	0	9.5	0
28	0	0		b1.9	1.6	0		0	0	0	4.2	0
29	0	0		*.3	-	0		0	0	0	1.8	0
30	.5	0		0	-	0		0	0	0	.8	0
31	.2	-		0	-	0		0	-	0	.4	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	40.0	38	0	1.29	79
November	4.0	.8	0	1.33	7.9
December	0	0	0	0	0
Calendar year 1946	3,736.4	467	0	10.2	7,410
January	12.9	1.9	0	.42	26
February	14.0	1.6	0	.50	28
March	17.8	3.0	0	.57	35
April	0	0	0	0	0
May	57	41	0	1.84	113
June	62.9	58	0	2.10	125
July	95.9	77	0	3.09	190
August	4,145.2	621	0	134	8,220
September	950.4	481	0	31.7	1,890
Water year 1946-47	5,400.1	621	0	14.8	10,710

Peak discharge.- Aug. 12 (11:20 p.m.) 960 sec.-ft.; Aug. 18 (11:30 p.m.) 1,730 sec.-ft.; Aug. 22 (5:20 a.m.) 890 sec.-ft.; Aug. 23 (4:30 a.m.) 890 sec.-ft.; Sept. 9 (6:40 p.m.) 1,300 sec.-ft.; Sept. 18 (7:50 p.m.) 890 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records, engineer's notes, field estimates, and records for Rio Puerco at Rio Puerco.

b Stage-discharge relation affected by ice.

Socorro main canal north at San Acacia, N. Mex.

Location.- Water-stage recorder, lat. 34°15'15", long. 105°53'50", in SE¼NW¼ sec. 1, T. 1 S., R. 1 W., at San Acacia, half a mile downstream from point of diversion from Rio Grande. Datum of gage is 4,659.74 feet above mean sea level, datum of 1929.

Records available.- April 1936 to September 1947.

Extremes.- Maximum daily discharge during year, 179 second-feet Aug. 11; no flow at times.
1936-47: Maximum daily discharge, 234 second-feet Aug. 26, 1938; no flow at times.

Remarks.- Records fair. Canal diverts water from right bank of Rio Grande for irrigation. Three acequias, together irrigating about 300 acres, divert water from canal above station.

Monthly discharge, in second-feet, water year October 1946 to September 1947

Month	Maximum	Minimum	Mean	Runoff in acre-feet
October	101	33	80.1	4,920
November	105	0	42.0	2,500
December	0	0	0	0
Calendar year 1946	177	0	71.8	52,000
January	0	0	0	0
February	123	0	49.6	2,760
March	158	87	133	8,200
April	171	124	148	8,780
May	155	82	130	8,000
June	172	95	142	8,420
July	166	43	132	8,120
August	179	0	74.3	4,570
September	140	68	102	6,100
Water year 1946-47	179	0	86.2	62,370

Pecos River near Pecos, N. Mex.

Location.- Water-stage recorder, lat. 35°42'25", long. 105°41'00", in NE¼NE¼ sec. 17, T. 17 N., R. 12 E., at bridge on private road, 600 feet upstream from Indian Creek, 2 miles downstream from Holy Ghost Creek, and 11 miles north of Pecos.

Drainage area.- 189 square miles (contributing area).

Records available.- March 1910 to December 1914 (published as Pecos River near Cowles) and October 1930 to September 1947 in reports of Geological Survey. March 1910 to December 1931 (published as Pecos River near Cowles prior to 1926) in reports of State engineer.

Average discharge.- 17 years (1930-47), 108 second-feet.

Extremes.- Maximum discharge during year, 690 second-feet May 10 (gage height, 3.52 feet); minimum daily 20 second-feet Jan. 4, 15, 16, 30.
1930-47: Maximum discharge, 1,960 second-feet May 14, 1941 (gage height, 4.57 feet); minimum daily, 6.1 second-feet Jan. 16, 1934.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	44	46	b25	b28	30	73	179	146	42	28	61
2	37	43	47	b22	b32	32	83	233	140	47	27	57
3	37	32	44	b21	b28	*29	87	271	129	44	27	53
4	84	46	50	b20	b30	a32	73	327	124	44	27	50
5	101	52	*46	b28	b28	a30	60	368	117	44	31	52
6	65	49	44	b25	b26	a28	54	364	112	47	28	48
7	115	48	43	b30	b27	a30	55	364	105	42	35	46
8	87	48	40	b31	b26	a29	57	368	99	41	37	44
9	75	47	39	b30	b25	a32	64	407	93	39	37	46
10	67	44	43	b26	28	a32	60	604	87	37	31	48
11	61	44	47	b28	28	a30	54	640	82	35	28	43
12	57	48	52	b30	30	a30	53	550	80	34	29	40
13	55	46	44	a35	31	a40	46	479	76	36	31	39
14	52	47	42	a25	27	a40	52	412	73	48	35	36
15	53	49	40	a20	30	a38	55	373	70	44	37	35
16	52	43	40	a20	34	a32	67	332	67	49	60	34
17	49	47	32	a21	31	a30	70	300	62	50	54	33
18	47	48	48	a25	27	a25	97	275	68	52	40	34
19	43	52	43	a23	26	a26	101	259	85	58	50	36
20	43	52	43	a25	28	a30	127	248	73	43	104	33
21	42	44	53	a25	29	a35	163	240	65	40	95	32
22	41	44	58	a26	31	a40	166	233	64	39	151	32
23	41	43	55	a26	31	a45	191	240	60	38	117	30
24	39	47	48	a27	28	a55	179	222	58	36	117	29
25	39	44	35	a28	26	a52	137	202	55	33	117	28
26	38	42	38	a30	26	52	119	195	52	36	107	28
27	38	47	32	a28	25	53	122	191	48	35	97	27
28	40	44	31	a26	24	62	132	188	46	32	85	27
29	61	47	b25	a28	-	62	137	172	44	30	78	27
30	71	48	b22	a20	-	58	146	163	43	29	73	31
31	53	-	b22	*b25	-	62	-	157	-	28	67	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,720	115	37	55.5	3,410
November	1,379	52	32	46.0	2,740
December	1,292	58	22	41.7	2,560
Calendar year 1946	20,074	172	18	55.0	39,810
January	799	35	20	25.8	1,580
February	790	34	24	28.2	1,570
March	1,201	62	25	38.7	2,380
April	2,880	191	46	96.0	5,710
May	9,556	640	157	308	18,950
June	2,423	146	43	80.8	4,810
July	1,252	58	28	40.4	2,480
August	1,880	151	27	60.6	3,730
September	1,159	61	27	38.6	2,300
Water year 1946-47	26,331	640	20	72.1	52,220

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for station near Anton Chico.
b Stage-discharge relation affected by ice.

Pecos River near Anton Chico, N. Mex.

Location.- Water-stage recorder, lat. 35°10'50", long. 105°06'20", in Anton Chico Grant, 2 miles upstream from Canyon Blanco, 2½ miles southeast of Anton Chico, and 10 miles downstream from Tecolote Creek.

Drainage area.- 1,050 square miles (contributing area).

Records available.- April 1910 to December 1914 and October 1930 to September 1947 in reports of Geological Survey. April 1910 to December 1931 in reports of State engineer. During successive periods prior to July 2, 1937, station was at five different sites ranging from a sixth of a mile to 5 miles upstream from present site.

Average discharge.- 17 years (1930-47), 150 second-feet.

Extremes.- Maximum discharge during year, 3,310 second-feet Oct. 4 (gage height, 5.56 feet); minimum daily, 0.8 second-foot July 30.

1930-47: Maximum discharge, 40,300 second-feet June 1, 1937 (gage height, 20.34 feet, present site and datum), by slope-area method; no flow at times.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a56	77	61	b20	11	34	55	90	112	1.3	0.9	34
2	a40	67	62	b36	33	32	54	106	106	1.6	1.0	22
3	a30	66	57	b37	39	27	64	156	80	1.7	1.0	11
4	566	66	55	b33	34	27	78	197	72	1.4	1.2	4.9
5	468	53	54	b36	37	27	77	247	78	1.4	1.1	3.2
6	291	63	60	b36	35	32	66	285	71	2.0	1.2	2.3
7	240	71	*58	b35	27	27	54	291	69	1.3	1.3	2.1
8	265	67	55	b40	29	30	42	296	57	1.2	1.2	2.1
9	208	71	54	b37	27	28	42	322	52	1.2	1.2	2.1
10	a150	72	46	b35	25	30	41	431	40	1.2	1.1	1.8
11	a125	67	39	b32	30	30	49	556	24	1.1	1.0	3.8
12	a100	57	37	26	38	29	44	545	23	1.0	1.0	11
13	a89	60	37	24	31	28	42	486	a22	1.0	1.2	9.0
14	a80	68	44	25	28	31	47	431	a19	1.0	1.2	8.2
15	a70	64	45	31	27	36	38	379	a14	1.0	4.3	3.0
16	a72	63	41	19	28	36	37	353	a10	1.0	133	3.0
17	a70	67	40	*7.1	26	35	40	334	a6	104	218	1.8
18	a66	58	38	13	27	30	40	296	4.1	90	207	4.6
19	a60	55	25	18	32	28	40	267	13	53	64	6.3
20	a55	54	17	17	32	20	55	244	77	5.7	35	9.7
21	a54	57	22	20	30	21	60	227	60	7.4	65	5.7
22	a52	60	30	20	26	26	77	213	40	1.8	173	3.0
23	a48	57	26	19	24	32	93	213	15	1.3	241	2.0
24	a46	56	36	18	24	40	122	213	8.2	1.2	140	2.0
25	a45	63	42	19	28	47	148	206	5.7	1.1	135	2.3
26	44	63	40	18	30	49	122	175	a3	1.1	235	3.3
27	44	61	39	19	34	45	110	154	a2	3.0	216	5.7
28	45	56	40	23	32	42	90	138	a2	1.2	124	5.7
29	47	61	39	19	-	48	88	131	1.3	.9	92	5.7
30	52	60	16	24	-	60	90	129	1.3	.8	63	2.8
31	92	-	b16	8.2	-	61	-	117	-	.9	48	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,670	566	30	118	7,280
November	1,880	77	53	62.7	3,730
December	1,271	62	16	41.0	2,520
Calendar year 1946	28,413.7	1,500	.8	77.8	56,360
January	764.3	40	7.1	24.7	1,520
February	824	39	11	29.4	1,630
March	1,068	61	20	34.5	2,120
April	2,005	148	37	66.8	3,980
May	8,228	556	90	265	16,320
June	1,087.6	112	1.3	36.3	2,160
July	293.8	104	.8	9.48	583
August	2,208.9	241	.9	71.3	4,380
September	184.1	34	1.8	6.14	365
Water year 1946-47	23,484.7	566	.8	64.3	46,590

Peak discharge.- Oct. 4 (5:15 p.m.) 3,310 sec.-ft.; July 17 (9:40 p.m.) 617 sec.-ft.; Aug 16 (9:10 p.m.) 840 sec.-ft.; Aug. 22 (8:00 p.m.) 423 sec.-ft.; Aug. 26 (6:40 a.m.) 927 sec.-ft

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records and records for stations near Pecos and at Santa Rosa.

b Stage-discharge relation affected by ice.

Pecos River at Santa Rosa, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 34°56'05", long. 104°41'25", in SW¼SW¼ sec. 2, T. 8 N., R. 21 E., at bridge on U. S. Highway 66 at Santa Rosa, 1 mile upstream from Rio Agua Negra Chiquita.

Drainage area.- 2,650 square miles (contributing area).

Records available.- May 1903 to December 1906 (gage heights only), February 1910 to July 1911, September 1912 to December 1914, and October 1930 to September 1947 in reports of Geological Survey. February 1910 to July 1911 and September 1912 to December 1931 in reports of State engineer.

Average discharge.- 28 years (1912-14, 1916-23, 1928-47), 172 second-feet.

Extremes.- Maximum discharge during year, 12,400 second-feet Oct. 5 (gage height, 9.66 feet); minimum daily, 17 second-feet July 30, 31, Aug. 2.
1930-47: Maximum discharge, 55,200 second-feet June 2, 1937 (gage height, 25.7 feet), from rating curve extended above 32,000 second-feet by logarithmic plotting; minimum daily, 2.7 second-feet June 25, 1937.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. Several diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	109	28	31	b27	b24	26	23	24	26	a50	18	30
2	106	29	32	29	28	26	23	23	26	a30	17	28
3	104	31	31	b26	26	28	21	22	25	a25	19	26
4	358	35	31	b25	24	26	23	23	26	a20	19	26
5	3,640	34	32	30	25	26	21	37	28	a20	19	24
6	357	43	32	33	26	28	23	90	28	a20	20	24
7	290	38	32	33	25	b26	22	155	26	a20	24	24
8	171	35	32	31	26	31	24	167	26	a21	25	21
9	402	36	*31	34	26	29	24	255	24	21	22	21
10	195	36	31	29	26	26	24	410	22	21	21	20
11	138	36	31	29	28	26	24	593	24	22	22	20
12	92	36	30	28	26	28	26	550	23	24	21	20
13	67	36	26	28	26	28	26	468	24	a21	21	20
14	50	36	26	28	26	26	26	393	25	a22	22	19
15	38	35	26	28	*26	*26	29	334	26	a20	37	20
16	34	35	28	b27	28	26	25	280	26	a21	426	20
17	31	35	28	*30	28	28	26	222	25	a25	394	21
18	29	35	26	31	26	29	25	191	25	a30	416	21
19	30	35	b25	b30	26	28	24	171	26	a40	236	21
20	31	34	b28	b30	26	26	24	112	26	a30	76	21
21	32	33	30	29	26	26	23	76	28	a25	37	22
22	32	32	30	30	26	26	21	60	23	a22	29	21
23	32	32	29	29	25	25	21	48	25	a20	31	21
24	32	32	30	29	25	24	22	51	26	a21	124	20
25	32	33	29	29	25	24	25	41	24	21	230	19
26	31	33	29	26	28	25	31	38	20	21	302	20
27	31	32	30	26	26	25	45	32	18	21	240	20
28	33	32	29	26	29	25	36	24	18	21	163	20
29	31	32	28	26	-	26	31	22	21	20	87	21
30	30	32	b26	b23	-	25	25	25	22	17	48	19
31	28	-	b26	b27	-	24	-	25	-	17	35	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	6,616	3,640	28	213	13,120
November	1,021	43	28	34.0	2,030
December	905	32	25	29.2	1,800
Calendar year 1946	35,802	3,640	20	98.1	71,020
January	886	34	23	28.6	1,760
February	732	29	24	26.1	1,450
March	818	31	24	26.4	1,620
April	763	45	21	25.4	1,510
May	4,962	593	22	160	9,840
June	732	28	18	24.4	1,450
July	729	50	17	23.5	1,450
August	3,201	426	17	103	6,350
September	650	30	19	21.7	1,290
Water year 1946-47	22,015	3,640	17	60.3	43,670

Peak discharge.- Oct. 5 (4:30 a.m.) 12,400 sec.-ft.; Oct. 9 (2:30 p.m.) 2,060 sec.-ft.; May 10 (2 a.m.) 1,010 sec.-ft.; May 11 (9:30 a.m.) 1,030 sec.-ft.; Aug. 16 (7 a.m.) 1,160 sec.-ft.; Aug. 18 (1 a.m.) 1,610 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records and records for stations near Anton Chico and near Puerto de Luna.

b Stage-discharge relation affected by ice.

Pecos River near Puerto de Luna, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 34°43', long. 104°32', in sec. 29, T. 6 N., R. 23 E., 10 miles southeast of Puerto de Luna and 14 miles upstream from Alamogordo Dam.

Drainage area.- 3,970 square miles (contributing area).

Records available.- April 1938 to September 1947.

Extremes.- Maximum discharge during year, 10,200 second-feet Oct. 5 (gage height, 5.59 feet); minimum daily, 62 second-feet July 29, 31, Aug. 2.
1938-47: Maximum discharge, 48,600 second-feet Sept. 1, 1942 (gage height, 17.00 feet), from rating curve extended above 7,400 second-feet on basis of flow at Santa Rosa; minimum daily, 50 second-feet June 11-13, 1946.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Many diversions above station for irrigation. Discharge represents inflow to Alamogordo Reservoir (capacity, 157,000 acre-feet).

Cooperation.- Gage-height record collected in cooperation with Bureau of Reclamation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	186	106	109	a105	94	106	85	94	97	171	65	94
2	118	112	103	a110	100	118	78	94	106	75	62	82
3	112	112	109	a105	97	112	91	91	100	72	68	82
4	112	115	126	a105	103	118	94	91	91	78	65	75
5	3,600	126	109	a110	103	100	91	94	85	65	72	80
6	774	162	122	a105	100	106	88	122	100	75	70	68
7	530	143	112	a110	109	112	94	200	80	72	97	75
8	394	129	115	a115	100	112	75	465	94	75	285	68
9	517	112	112	a125	106	132	80	762	91	78	82	75
10	574	115	122	a110	97	109	85	1,030	80	78	75	72
11	240	109	122	a110	109	100	78	574	91	80	70	70
12	186	118	112	a105	100	94	88	634	106	72	65	78
13	174	118	112	a105	106	94	94	510	100	82	78	72
14	150	115	106	a105	109	91	103	402	100	75	144	78
15	132	109	109	a105	109	94	109	363	88	70	126	78
16	126	109	100	115	115	97	94	378	103	68	306	78
17	118	109	94	94	103	a100	88	349	94	70	364	75
18	118	115	112	106	115	a100	91	294	94	80	625	78
19	112	122	106	126	115	a100	91	258	91	103	328	80
20	115	112	a105	109	112	a100	97	235	103	129	258	85
21	129	122	a105	106	112	100	94	195	80	106	154	88
22	122	112	a110	112	112	115	88	166	80	85	103	91
23	112	109	a105	109	112	115	82	146	91	78	88	86
24	112	122	a110	106	112	88	72	143	85	68	109	88
25	109	118	a105	112	100	94	91	143	103	72	a300	91
26	97	126	a105	103	112	88	91	129	88	70	210	91
27	118	109	a110	94	118	100	97	115	91	65	402	85
28	109	109	a105	94	115	94	118	103	72	70	246	85
29	115	122	a105	91	-	91	106	88	78	62	215	88
30	100	109	a95	91	-	97	100	85	94	70	154	85
31	115	-	a95	112	-	94	-	88	-	62	118	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	9,626	3,600	97	311	19,090
November	3,526	162	106	118	6,990
December	3,367	126	94	109	6,680
Calendar year 1946	64,353	3,600	50	176	127,600
January	3,310	126	91	107	6,570
February	2,995	118	94	107	5,940
March	3,171	132	88	102	6,290
April	2,733	118	72	91.1	5,420
May	8,441	1,030	85	272	16,740
June	2,756	106	72	91.9	5,470
July	2,476	171	62	79.9	4,910
August	5,404	625	62	174	10,720
September	2,423	94	68	80.8	4,810
Water year 1946-47	50,228	3,600	62	138	99,630

Peak discharge.- Oct. 5 (8 a.m.) 10,200 sec.-ft.; May 9 (11 p.m.) 5,420 sec.-ft.
a No gage-height record; discharge computed on basis of weather records and records for station at Santa Rosa.

Pecos River below Alamogordo Dam, N. Mex.

Location.- Water-stage recorder, lat. 34°36'20", long. 104°23'10", in lot 1, sec. 2, T. 4 N., R. 24 E., 1,200 feet downstream from Alamogordo Dam, 1½ miles downstream from Alamogordo Creek, and 4½ miles northeast of Guadalupe. Datum of gage is 4,142.67 feet above mean sea level (Bureau of Reclamation datum).

Drainage area.- 4,390 square miles (contributing area).

Records available.- October 1912 to December 1914, October 1930 to September 1936 (at site 1½ miles upstream), and September 1936 to September 1947 in reports of Geological Survey. October 1912 to December 1931 in reports of State engineer.

Average discharge.- 21 years (1913-16, 1918-25, 1926-37), 264 second-feet (prior to completion of Alamogordo Dam), 10 years (1937-47) 283 second-feet (unadjusted).

Extremes.- Maximum daily discharge during year, 1,450 second-feet Mar. 28, 29; minimum, 1.4 second-feet Jan. 20, 27, 28, 31, Feb. 1-8, 10-16.
1930-47: Maximum discharge, 42,800 second-feet Sept. 1, 1942, by computation of flow over spillway and through outlet gates of Alamogordo Dam by Bureau of Reclamation; maximum gage height, 13.58 feet Sept. 22, 1941, from floodmark; no flow at times.

Remarks.- Records good except those between 140 and 300 second-feet and those below 5 second-feet, which are fair. Diversions above station for irrigation. Flow regulated by Alamogordo Reservoir (see p. 213). Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	78	2.2	1.9	1.4	56	1,380	98	112	917	72	74
2	78	74	2.2	2.2	1.4	89	1,340	99	104	1,340	72	73
3	78	75	2.2	1.9	1.4	90	1,320	96	94	1,310	75	69
4	80	75	1.9	1.9	1.4	90	1,310	96	106	1,280	105	68
5	70	76	1.9	1.9	1.4	90	1,290	102	107	1,240	105	83
6	2.6	76	1.9	1.9	1.4	89	734	102	104	1,230	104	107
7	2.2	76	1.9	1.9	1.4	88	111	106	99	1,200	103	94
8	2.2	75	1.9	1.9	1.4	89	100	101	99	1,180	83	94
9	2.6	76	1.9	1.9	1.6	90	100	97	98	1,120	61	94
10	1.9	76	1.6	1.9	1.4	90	99	1.9	99	1,030	55	94
11	1.9	76	1.9	1.9	1.4	90	97	1.9	99	1,030	55	95
12	41	76	1.6	1.9	1.4	90	96	1.9	99	1,000	56	95
13	157	76	1.9	1.9	1.4	92	91	1.9	99	965	56	95
14	95	76	1.9	1.9	1.4	90	85	1.9	81	740	56	95
15	83	76	1.6	1.9	1.4	91	71	2.2	71	589	79	95
16	77	35	1.6	1.9	1.4	91	84	2.2	71	120	85	95
17	78	2.6	1.6	1.9	1.6	89	70	23	72	80	86	95
18	79	2.6	1.9	1.6	1.6	88	61	98	72	27	78	95
19	80	2.6	1.9	1.6	1.6	89	76	99	73	2.2	89	95
20	82	2.6	1.9	1.4	1.6	92	106	100	73	2.2	90	95
21	82	2.6	1.9	1.6	1.6	92	97	100	74	2.6	90	95
22	82	2.6	1.9	1.6	1.6	89	84	113	79	16	90	89
23	83	2.6	1.9	1.6	1.6	86	85	122	96	86	96	95
24	84	2.6	1.9	1.6	1.9	86	96	118	87	90	96	80
25	84	2.6	1.9	1.6	1.9	87	96	119	76	92	95	70
26	84	2.6	1.9	1.6	1.9	95	97	119	73	92	97	70
27	84	2.2	1.9	1.4	1.9	1,080	98	119	70	92	98	71
28	87	2.2	1.6	1.4	6.6	1,450	97	119	69	92	78	84
29	94	2.2	1.6	1.6	-	1,450	98	119	64	84	73	95
30	94	2.2	1.9	1.6	-	1,430	98	119	67	72	73	95
31	83	-	1.6	1.4	-	1,410	-	119	-	72	80	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,116.4	157	1.9	68.3	4,200
November	1,206.8	78	2.2	40.2	2,390
December	57.4	2.2	1.6	1.85	114
Calendar year 1946	52,974.2	1,360	1.1	145	105,100
January	54.2	2.2	1.4	1.75	108
February	48.0	6.6	1.4	1.71	95
March	9,118	1,450	56	294	18,090
April	9,567	1,380	61	319	18,980
May	2,516.9	122	1.9	81.2	4,990
June	2,587	112	64	86.2	5,130
July	17,193	1,340	2.2	555	34,100
August	2,531	105	55	81.6	5,020
September	2,644	107	68	88.1	5,240
Water year 1946-47	49,639.7	1,450	1.4	136	98,460

Pecos River near Acme, N. Mex.

Location.- Water-stage recorder, lat. 33°32'10", long. 104°22'40", in NW¼ sec. 14, T. 9 S., R. 25 E., 1 mile southeast of Melena railroad station, 3½ miles downstream from Salt Creek, 5 miles southwest of Acme, and 13 miles northeast of Roswell.

Drainage area.- 11,380 square miles (contributing area).

Records available.- July 1937 to September 1947 in reports of Geological Survey. August 1921 to July 1923 in reports of State engineer.

Average discharge.- 10 years (1937-47), 289 second-feet (unadjusted).

Extremes.- Maximum discharge during year, 1,380 second-feet May 11 (gage height, 5.46 feet); no flow at times.

1937-47: Maximum discharge, 45,000 second-feet Sept. 23, 1941 (gage height, 13.71 feet), from rating curve extended above 15,000 second-feet by logarithmic plotting; no flow at times.

Maximum discharge during flood of May 28, 1937, 53,000 second-feet (gage height, 14.82 feet, from floodmarks, site and datum then in use), by slope-area method.

Remarks.- Records good. Diversions above station for irrigation. Flow regulated by Alamogordo Reservoir (see p. 213). Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	115	14	30	a9	1	2	1,180	10		0	0	
2	76	13	23	9	1	2	1,120	15		0	0	
3	55	11	19	a6	1	2	1,140	6		0	0	
4	138	12	17	a5	1	2	1,120	5		593	0	
5	313	17	16	a3	1	2	1,140	4		825	0	
6	140	34	15	*b4	1	2	1,090	3		888	0	
7	222	60	15	b5	1	3	1,080	2		964	0	
8	165	80	18	*b7	1	4	502	2		950	0	
9	95	76	20	9	1	6	118	188		875	0	
10	92	70	19	19	1	43	79	313		925	0	
11	75	63	28	55	1	63	58	898		888	0	
12	60	55	35	*54	1	50	46	272		816	0	
13	42	53	31	47	1	54	54	175		740	0	
14	30	51	32	38	1	58	53	108		708	0	
15	23	51	30	25	1	58	88	63		687	0	
16	16	48	23	19	2	56	81	61		442	0	
17	12	46	18	15	2	58	72	64		565	0	
18	14	44	15	16	2	59	52	58		450	0	
19	23	48	14	14	2	66	36	26		232	0	
20	25	47	13	12	2	66	31	14		123	0	
21	26	36	12	12	2	68	29	*8		65	0	
22	24	26	12	13	2	70	25	3		19	0	
23	23	22	13	12	2	59	18	1		11	0	
24	22	20	14	10	2	61	16	1		15	25	
25	18	20	14	9	1	59	17	1		5	3	
26	17	21	14	7	2	46	19	9		1	0	
27	16	20	14	7	2	26	19	2		0	0	
28	17	22	14	6	2	20	16	0		0	0	
29	19	51	12	4	-	764	16	0		0	0	
30	17	46	9	2	-	1,090	13	0		0	0	
31	15	-	a8	2	-	1,160	-	0		0	0	

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,945	313	12	62.7	3,860
November	1,177	80	11	39.2	2,330
December	567	35	8	18.3	1,120
Calendar year 1946	42,052	1,820	0	115	83,410
January	455	55	2	14.7	902
February	40	2	1	1.4	79
March	4,079	1,160	2	132	8,090
April	9,328	1,180	13	311	18,500
May	2,312	898	0	74.6	4,590
June	0	0	0	0	0
Jnly	11,787	964	0	380	23,380
August	28	25	0	.9	56
September	0	0	0	0	0
Water year 1946-47	31,718	1,180	0	86.9	62,910

* Winter discharge measurement made on this day.

a Partial or no gage-height record; discharge computed on basis of available recorder trace and records for station below Alamogordo Dam.

b Stage-discharge relation affected by ice.

Pecos River near Lake Arthur, N. Mex.

Location.- Water-stage recorder, lat. 32°59'25", long. 104°19'10", on line between secs 26 and 27, T. 15 S., R. 26 E., 1,100 feet upstream from highway bridge, 3 miles east of Lake Arthur, 10 miles upstream from Cottonwood Creek, and 11 miles northeast of Artesia.

Drainage area.- 14,760 square miles (contributing area).

Records available.- August 1938 to September 1947.

Extremes.- Maximum discharge during year, 1,560 second-feet May 9 (gage height, 5.03 feet); no flow Aug. 21, 22.

1938-47: Maximum discharge, 49,600 second-feet Sept. 24, 1941 (gage height, 21.90 feet), from rating curve extended above 16,100 second-feet on basis of slope-area determination at gage height 21.77 feet and logarithmic plotting; no flow Aug. 21, 22, 1947.

Flood of May 30, 1937, reached a stage of 21.77 feet (discharge, 51,500 second-feet, by slope-area method), but may have been exceeded by floods of 1904 and 1919.

Remarks.- Records good except those for periods of ice effect or doubtful or no gage-height record, which are fair. Diversions above station for irrigation. Flow partly regulated by Alamogordo Reservoir, 150 miles above station (see p. 213)

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	420	113	a145	127	82	74	1,060	62	60	13	2.2	25
2	266	109	a155	129	78	75	d1,080	49	55	16	1.4	19
3	214	109	a150	b120	80	76	d1,100	51	47	14	1.4	12
4	203	111	145	b110	78	75	d1,050	56	40	3.2	.8	5.3
5	781	113	142	b105	76	78	d1,130	56	38	323	.9	4.3
6	644	118	142	b115	69	76	d1,080	53	36	743	.9	4.3
7	390	130	140	124	72	82	d1,040	46	30	806	.7	5.7
8	460	148	142	131	69	82	a990	47	24	846	.5	21
9	460	172	140	134	69	82	360	399	21	830	.5	24
10	317	186	138	124	69	83	218	648	13	782	.4	24
11	262	178	145	141	75	80	151	668	6.1	798	.4	19
12	270	175	154	141	76	85	136	963	8.0	758	.4	28
13	238	175	166	157	74	113	134	361	4.3	708	.2	24
14	214	175	169	159	64	109	119	260	5.7	701	1.3	22
15	192	172	163	157	66	111	127	222	5.7	674	2.4	22
16	172	166	160	146	68	117	119	162	14	680	.5	17
17	163	166	157	134	66	113	141	146	6.6	423	.3	15
18	154	163	145	136	64	111	122	164	7.0	504	.6	11
19	151	154	145	131	62	117	129	144	4.6	371	.4	4.0
20	148	151	140	127	62	113	113	122	3.7	260	.2	4.0
21	151	157	135	115	62	111	102	91	4.3	124	0	12
22	154	163	132	113	66	109	87	80	20	82	0	16
23	154	157	132	115	74	109	91	74	22	58	1.3	8.3
24	151	151	132	117	69	106	89	78	13	40	7.0	10
25	130	145	135	113	58	82	76	72	12	30	28	12
26	122	142	140	117	69	78	70	72	20	21	38	16
27	116	145	140	115	74	85	68	66	10	22	47	16
28	122	145	140	111	75	72	76	60	12	22	51	16
29	120	145	135	115	-	63	68	60	14	a15	35	22
30	118	a145	132	119	-	681	56	58	17	a8	27	17
31	118	-	128	92	-	1,030	-	58	-	4.5	27	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	7,575	781	116	244	15,020
November	4,479	186	109	149	8,880
December	4,464	169	128	144	8,850
Calendar year 1946	69,705.7	2,080	0.1	191	138,200
January	3,890	159	92	125	7,720
February	1,966	82	58	70.2	3,900
March	4,378	1,030	63	141	8,680
April	11,182	1,130	56	373	22,180
May	5,448	963	46	176	10,810
June	574	60	3.7	19.1	1,140
July	10,679.7	846	3.2	345	21,180
August	277.7	51	0	8.96	551
September	455.9	28	4.0	15.2	904
Water year 1946-47	55,369.3	1,130	0	152	109,800

a No gage-height record; discharge computed on basis of records for stations near Acme and near Artesia.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge computed as explained in footnote a.

Pecos River near Artesia, N. Mex.

Location.- Water-stage recorder, lat. 32°50'05", long. 104°19'25", in W½NW¼ sec. 18, T. 17 S., R. 27 E., at bridge on Artesia-Lovington highway, 4.3 miles east of Artesia, 7.0 miles north of mouth of Rio Penasco, and 17 miles north of McMillan Dam.

Drainage area.- 15,300 square miles (contributing area).

Records available.- March 1905 to September 1925, October 1931 to February 1936 (published as Pecos River near Dayton), and February 1936 to September 1947 in reports of Geological Survey. March 1905 to December 1931 in reports of State engineer.

Average discharge.- 11 years (1936-47), 466 second-feet.

Extremes.- Maximum discharge during year, 1,160 second-feet Oct. 5, Apr. 6; maximum height, 7.63 feet Apr. 6; no flow Aug. 1-22.
1905-47: Maximum gage height, 15.9 feet Sept. 18, 1919, site and datum then in use (discharge not determined). Flood of May 30, 1937, reached a gage height of 14.7 feet (discharge, 51,500 second-feet, by slope-area method); no flow Aug. 17-24, 1934, Aug. 14-25, 1946, Aug. 1-22, 1947.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Diversions above station for irrigation. Flow partly regulated by Alamogordo Reservoir (see p.213). Discharge represents inflow to Lake McMillan, which stores water for irrigation of about 25,000 acres of Carlsbad project. Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	569	132	160	143	102	83	1,060	a65	55	4.5	0	23
2	324	125	182	141	100	85	1,060	a60	56	3.8	0	20
3	266	122	174	b135	100	90	1,080	55	45	4.3	0	9.0
4	248	125	166	b125	99	89	1,040	56	38	4.5	0	5.3
5	793	130	160	b120	96	90	1,100	60	34	52	0	1.2
6	777	134	156	b130	90	93	1,120	54	a33	680	0	.1
7	483	139	152	b140	86	96	1,080	50	a31	802	0	.4
8	475	160	154	160	87	99	1,040	47	a26	840	0	3.8
9	490	176	156	158	87	99	521	58	a22	840	0	15
10	336	202	156	156	87	100	278	628	16	820	0	17
11	289	202	160	151	89	92	174	565	10	802	0	17
12	312	198	170	158	90	90	141	880	7.3	785	0	12
13	266	198	180	154	92	104	149	a500	6.1	715	0	21
14	242	194	188	174	86	122	139	a320	5.3	698	0	16
15	221	194	186	170	80	118	132	a240	a4.5	662	0	17
16	204	190	182	164	82	125	127	a200	9.3	662	0	16
17	184	188	176	156	79	127	136	a160	6.3	520	0	11
18	176	188	170	154	79	118	143	a170	4.8	410	0	8.6
19	172	184	158	152	79	125	138	a180	3.4	348	0	6.3
20	172	180	152	152	78	122	120	151	3.0	336	0	2.4
21	174	184	151	139	78	113	115	118	2.2	154	0	a1.0
22	176	188	149	136	71	120	98	92	.8	87	0	a2.0
23	176	182	149	132	79	116	90	80	7.1	60	.7	a4.0
24	174	172	145	132	85	122	96	79	11	40	.1	a2.0
25	166	168	149	129	76	96	92	83	5.0	27	1.2	2.2
26	151	166	151	129	66	82	82	75	3.6	16	29	3.2
27	145	162	151	134	82	90	79	66	8.3	7.3	37	5.6
28	138	162	149	130	86	87	79	60	2.4	9.7	38	8.6
29	143	164	149	122	-	80	78	57	3.6	1.9	51	11
30	139	162	147	123	-	321	a70	55	7.6	.2	30	15
31	138	-	145	138	-	960	-	51	-	.1	24	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	8,719	793	138	281	17,290
November	5,071	202	122	169	10,060
December	4,973	188	145	160	9,860
Calendar year 1946	73,631.8	2,160	0	202	146,000
January	4,437	174	120	143	8,800
February	2,391	102	66	85.4	4,740
March	4,254	960	80	137	8,440
April	11,657	1,120	70	389	23,120
May	5,315	880	47	171	10,540
June	467.6	56	.8	15.6	927
July	10,392.3	840	.1	335	20,610
August	211.0	51	0	6.81	419
September	276.7	23	.1	9.22	549
Water year 1946-47	58,164.6	1,120	0	159	115,400

a No gage-height record; discharge computed on basis of records for station near Lake Arthur.
b Stage-discharge relation affected by ice.

Pecos River below McMillan Dam, N. Mex.

Location.- Water-stage recorder, lat. 32°35'30", long. 104°21'00", in NE¼ sec. 11, T. 20 S., R. 26 E., 700 feet downstream from gates in McMillan Dam and 3 miles southeast from Lakewood. Former gage at site 100 feet downstream at different datum.

Drainage area.- 16,990 square miles (contributing area).

Records available.- August 1939 to December 1940, December 1946 to September 1947.

Extremes.- Maximum discharge during period December 1946 to September 1947, 630 second-feet July 17 (gage height, 3.50 feet); no flow at times.
1939-40, 1946-47: Maximum discharge, that of July 17, 1947; no flow during many periods.

Remarks.- Records excellent. Flow regulated by Alamogordo Reservoir and Lake McMillan (see p. 213). Many diversions above station for irrigation. Discharge represents water released from Lake McMillan for irrigation on Carlsbad project.

Rating table, December 1946 to September 1947 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used July 22)

0.4	0.2	0.9	14	2.0	164
.5	.9	1.0	22	2.4	261
.6	2.4	1.2	41	2.8	375
.7	4.8	1.4	64	3.3	550
.8	8.7	1.7	107		

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							0	179	0	0	0.1	1.5
2							0	177	224	0	.1	0
3							209	175	267	0	.1	0
4							350	175	0	0	.1	0
5							366	175	0	0	0	0
6							369	173	0	0	0	0
7							351	171	0	0	0	0
8							322	166	0	0	0	0
9							310	58	0	85	0	0
10							305	19	0	360	0	0
11							277	0	0	467	0	0
12							260	0	0	530	0	0
13							193	0	0	550	0	0
14							139	0	0	530	0	0
15							41	0	0	510	0	0
16							0	0	0	510	0	0
17							0	0	0	492	0	0
18							0	0	0	492	0	0
19							0	0	0	390	0	0
20							0	0	0	336	0	0
21							0	0	0	285	0	0
22							0	0	0	229	0	0
23							63	0	0	128	0	0
24							101	0	0	69	0	0
25							101	0	0	36	0	0
26							99	0	0	16	0	0
27							99	0	0	5.1	0	0
28							121	0	0	.2	0	0
29							184	0	0	.2	0	0
30							182	0	0	.1	0	0
31							-	0	-	.1	0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	-	-*	-	-	-
November	-	-	-	-	-
December 15-31	0	0	0	0	0
Calendar year	-	-	-	-	-
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	4,442	369	0	148	8,810
May	1,468	179	0	47.4	2,910
June	491	267	0	16.4	974
July	6,020.7	550	0	194	11,940
August	.4	.1	0	.01	.8
September	1.5	1.5	0	.05	3.0
The period	-	-	-	-	24,640

Pecos River below Major Johnson Springs, near Carlsbad, N. Mex.

Location.- Water-stage recorder, lat. 32°33'15", long. 104°23'05", in SE¼ sec. 21, T. 20 S., R. 26 E., about 1¼ miles below upper end of Major Johnson Springs, 1½ miles downstream from Seven Rivers, and 15 miles northwest of Carlsbad.

Records available.- January to September 1947.

Extremes.- Maximum discharge during period, 572 second-feet (gage height, 1.72 feet); minimum daily, 13 second-feet many days in August and September.

Remarks.- Records good except those for periods of no gage-height record, which are fair. Flow regulated by Alamogordo Reservoir and Lake McMillan (see p. 213). Many diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				200	186	180	109	341	143	28	28	14
2				195	186	176	114	341	273	27	26	14
3				195	186	173	242	336	443	26	25	13
4				195	186	170	428	336	129	24	23	13
5				195	186	167	461	332	114	23	22	14
6				193	183	160	483	327	102	22	22	14
7				193	183	154	478	309	92	21	21	14
8				193	183	148	456	287	85	20	20	15
9				190	183	148	445	209	75	30	20	15
10				190	183	146	440	154	68	291	19	14
11				186	183	140	420	119	65	415	19	13
12				186	183	137	410	107	60	500	18	13
13				186	183	132	350	104	55	522	17	13
14				186	183	129	313	109	52	516	17	13
15				186	186	124	238	116	50	516	17	13
16				186	186	121	176	121	46	505	17	13
17				186	186	121	176	129	44	494	16	13
18				190	183	121	173	132	42	494	15	14
19				190	186	121	170	134	40	410	15	14
20				190	186	121	170	143	37	350	14	14
21				190	186	121	167	146	35	304	14	13
22				190	186	124	167	146	34	257	14	13
23				190	186	126	193	146	32	180	14	13
24				190	186	124	257	146	30	119	14	13
25				190	186	124	261	146	29	85	14	13
26				190	183	121	261	146	28	64	14	13
27				190	183	119	265	146	30	50	13	13
28				186	180	114	278	146	28	40	13	13
29				186	-	112	341	146	29	34	13	13
30				186	-	112	341	146	28	30	13	13
31				186	-	107	-	143	-	28	13	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October					
November					
December					
Calendar year					
January	5,885	200	186	190	11,670
February	5,166	186	180	184	10,250
March	4,193	180	107	135	8,320
April	8,783	483	109	293	17,420
May	5,789	341	104	187	11,480
June	2,318	443	28	77.3	4,600
July	6,419	522	20	207	12,730
August	540	28	13	17.4	1,070
September	403	15	13	13.4	799
The period	-	-	-	-	78,340

Note.- No gage-height record Jan. 1-5, June 11-23, 24-30, July 2-7, 27-31, Aug. 2-24, Aug 28 to Sept. 16, Sept. 18-20; discharge computed on basis of records for station at dam site 3, near Carlsbad.

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Pecos River at dam site 3, near Carlsbad, N. Mex.

Location.- Water-stage recorder, lat. 32°30'45", long. 104°19'50", in lot 14, sec. 6, T. 21 S., R. 26 E., at dam site 3 of Carlsbad project of Bureau of Reclamation, about a mile upstream from flow line of Lake Avalon, 1.3 miles downstream from Rocky Arroyo, and 8 miles northwest of Carlsbad.

Drainage area.- 17,620 square miles (contributing area).

Records available.- August 1939 to December 1940, August 1944 to September 1947.

Extremes.- Maximum discharge during year, 4,900 second-feet Oct. 5 (gage height, 5.94 feet); minimum daily, 17 second-feet on many days in August and September.
1939-40, 1944-47: Maximum discharge, 5,600 second-feet Oct. 13, 1940 (gage height, 7.05 feet, former site), from rating curve extended above 510 second-feet on basis of slope-area determination at gage height 3.12 feet; minimum daily, 16 second-feet June 18-21, 1946.

Remarks.- Records excellent except those for periods of no gage-height record, which are fair. Flow regulated by Alamogordo Reservoir and Lake McMillan (see p. 213). Many diversions above station for irrigation. Discharge represents inflow to Lake Avalon.

Rating table, water year 1946-47 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Dec. 31)

0.0	12	0.8	123	2.5	915
.1	18	1.0	172	3.0	1,280
.2	27	1.2	236	3.5	1,710
.3	38	1.4	315	4.0	2,230
.4	51	1.7	455	5.0	3,510
.6	83	2.0	605		

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	164	237	217	a205	196	184	110	346	146	31	31	17
2	167	237	217	a200	193	181	112	346	230	30	30	18
3	170	237	214	a200	193	178	194	342	476	29	29	18
4	185	237	214	a200	193	172	430	342	147	27	28	17
5	2,060	234	214	a200	193	172	465	338	119	26	26	17
6	280	234	214	199	190	164	485	324	108	25	26	18
7	198	234	214	199	190	159	485	307	98	24	25	18
8	188	234	214	199	190	154	460	294	89	24	24	19
9	207	230	214	196	190	151	445	229	80	24	24	19
10	191	230	211	a195	190	146	450	156	76	214	23	18
11	191	230	211	a195	190	144	420	125	69	392	23	18
12	195	227	207	a190	187	141	420	112	64	490	22	17
13	198	227	207	a190	187	139	356	108	60	515	21	17
14	201	227	207	a190	190	134	328	112	57	525	21	17
15	204	224	207	a190	190	130	247	119	54	515	21	17
16	207	224	207	a190	190	128	181	125	50	520	21	18
17	211	220	a207	a190	190	125	178	132	47	515	21	18
18	214	220	207	a195	187	125	175	137	46	500	20	18
19	217	220	207	a195	190	125	175	141	43	445	19	18
20	217	220	207	a195	190	125	175	144	39	364	19	18
21	220	217	207	a195	190	125	172	146	38	320	18	17
22	220	217	207	196	190	125	172	151	37	266	18	17
23	220	217	207	196	190	123	187	154	36	190	18	17
24	224	217	207	196	190	128	255	154	36	130	18	17
25	227	220	207	196	190	128	259	154	34	91	18	17
26	230	217	207	196	190	125	259	154	32	66	18	17
27	230	220	207	196	190	123	263	154	34	54	17	17
28	230	220	207	193	184	119	263	151	31	43	17	17
29	234	217	207	193	-	117	338	154	32	37	17	17
30	234	217	a207	196	-	115	342	154	31	34	17	17
31	234	-	a207	193	-	110	-	149	-	a32	17	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	8,368	2,060	164	270	16,600
November	6,762	237	217	225	13,410
December	6,494	217	207	209	12,880
Calendar year 1946	58,641	2,060	16	161	116,300
January	6,059	205	190	195	12,020
February	5,323	196	184	190	10,560
March	4,315	184	110	139	8,560
April	8,801	485	110	293	17,460
May	5,954	346	108	192	11,810
June	2,439	476	31	81.3	4,840
July	6,498	525	24	210	12,890
August	667	31	17	21.5	1,320
September	525	19	17	17.5	1,040
Water year 1946-47	62,205	2,060	17	170	123,400

a No gage-height record; discharge computed on basis of records for station below Major Johnson Springs, near Carlsbad, and contents record for Lake Avalon.

Pecos River at Carlsbad, N. Mex.

Location.- Water-stage recorder, lat. 32°24'50", long. 104°13'20", in NW¼SE¼ sec. 6, T. 22 S., R. 27 E., at Green Street Bridge on Carlsbad and half a mile upstream from Dark Canyon. Datum of gage is 3,080.38 feet above mean sea level, datum of 1929.

Drainage area.- 18,100 square miles (contributing area).

Records available.- May 1903 to March 1908, May 1914 to September 1925, October 1928 to September 1930, and October 1931 to September 1947 in reports of Geological Survey. June 1903 to December 1906, May 1914 to December 1928, and January 1930 to December 1931 in reports of State engineer.

Extremes.- Maximum discharge during year, 269 second-feet Jan. 4 (gage height, 1.90 feet); minimum daily, 44 second-feet Sept. 28.
1903-8, 1914-47: Maximum discharge, 85,700 second-feet Aug. 7, 1916 (gage height, about 21.0 feet), from rating curve extended above 34,000 second-feet by logarithmic plotting; no flow May 9, 1904.

Remarks.- Records good. Flow regulated by Alamogordo Reservoir, Lakes McMillan and Avalon, and at low stages by power plant above station. Many diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65	202	75	80	202	66	77	75	66	54	56	52
2	65	206	75	120	202	70	77	72	66	54	56	56
3	65	206	75	216	202	70	80	72	66	54	54	56
4	68	206	77	216	197	68	80	72	66	52	57	52
5	89	206	82	206	202	68	77	70	68	56	54	56
6	68	202	84	211	197	70	75	75	66	56	56	52
7	70	206	84	242	193	72	80	70	65	59	56	46
8	68	206	84	247	72	72	77	87	66	56	56	51
9	72	206	87	242	61	75	80	70	68	57	54	51
10	63	193	87	242	113	77	77	75	68	57	48	51
11	65	174	87	237	113	82	82	75	66	56	54	49
12	66	237	84	193	65	82	84	72	66	54	49	51
13	109	232	84	193	63	77	80	72	65	51	49	45
14	125	216	84	197	66	84	84	75	65	56	49	51
15	125	216	82	202	66	72	82	75	61	54	51	54
16	129	216	84	193	68	72	84	72	65	56	51	48
17	232	216	84	202	68	72	84	72	66	57	48	52
18	232	211	87	202	68	75	84	72	63	57	54	51
19	232	216	87	206	68	72	84	70	63	57	51	51
20	202	216	82	206	68	68	84	70	63	56	51	51
21	174	216	82	206	68	68	84	68	63	59	51	46
22	170	216	82	211	70	70	87	70	59	57	51	51
23	174	216	80	211	70	72	84	72	65	59	51	51
24	174	216	80	211	70	70	87	70	61	59	49	51
25	211	221	80	206	70	72	87	70	59	57	57	52
26	206	174	80	211	72	72	a85	68	57	59	56	52
27	202	77	80	206	68	72	a82	70	57	56	52	48
28	202	75	82	206	70	72	80	70	57	59	54	44
29	206	75	77	206	-	77	80	68	54	59	54	49
30	202	75	82	206	-	72	77	66	56	57	54	51
31	202	-	82	206	-	80	-	68	-	57	48	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	4,333	232	63	140	8,590
November	5,750	237	75	192	11,400
December	2,542	87	75	82.0	5,040
Calendar year 1946	31,147	237	23	85.3	61,780
January	6,339	247	80	204	12,570
February	2,912	202	61	104	5,780
March	2,261	84	66	72.9	4,480
April	2,445	87	75	81.5	4,850
May	2,223	87	66	71.7	4,410
June	1,896	68	54	63.2	3,760
July	1,747	59	51	56.4	3,470
August	1,631	57	48	52.6	3,240
September	1,521	56	44	50.7	3,020
Water year 1946-47	35,600	247	44	97.5	70,610

a No gage-height record; discharge computed on basis of weather records and records for station near Malaga.

Pecos River near Malaga, N. Mex.

Location.- Water-stage recorder, lat. 32°12'30", long. 104°01'30", in NW¼NW¼ sec. 19, T. 24 S., R. 29 E., 3 miles southeast of Malaga and 3 miles downstream from Black River. Datum of gage is 2,898.68 feet above mean sea level, datum of 1929.

Drainage area.- 19,190 square miles (contributing area).

Records available.- May 1920 to September 1925 and October 1931 to September 1947 in reports of Geological Survey. January 1921 to December 1931 in reports of State engineer.

Average discharge.- 18 years (1920-38), 291 second-feet (prior to completion of Alamogordo Reservoir).

Extremes.- Maximum discharge during year, 615 second-feet Oct. 5 (gage height, 1.49 feet); minimum daily, 21 second-feet Aug. 15, 17.
1920-47: Maximum discharge, 63,700 second-feet Sept. 21, 1941, from rating curve extended above 22,500 second-feet by logarithmic plotting; maximum gage height, 32.1 feet May 22, 1941, from floodmark; no flow Aug. 20-22, 1934.

Remarks.- Records good. Flow regulated by Alamogordo Reservoir, Lakes McMillan and Avalon, and by several small diversion dams that divert for power and irrigation. Many diversions above station for irrigation. Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Cooperation.- Gage-height record collected in cooperation with Bureau of Reclamation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	126	218	140	124	240	133	82	93	104	44	32	44
2	126	220	162	116	251	131	78	92	100	34	27	46
3	129	216	136	170	259	131	71	104	102	35	27	48
4	222	214	127	252	251	129	64	123	105	39	28	45
5	440	220	139	260	254	129	67	118	105	36	29	45
6	304	231	143	268	265	134	62	118	104	34	29	45
7	205	232	140	275	259	146	72	112	93	25	29	46
8	170	238	146	290	238	142	69	123	92	22	28	69
9	153	261	166	294	154	142	57	129	84	30	27	118
10	154	258	152	288	136	152	55	125	84	60	27	81
11	156	236	170	287	187	169	59	134	61	71	44	81
12	149	238	157	273	201	140	68	120	59	39	57	84
13	131	282	163	242	183	133	80	114	57	38	40	82
14	164	280	120	242	165	129	95	112	55	37	25	84
15	196	272	140	242	154	134	100	111	57	32	21	76
16	206	263	148	246	150	138	92	116	55	28	22	80
17	214	264	186	246	146	144	80	120	49	30	21	84
18	258	264	173	257	144	154	75	118	44	30	25	80
19	280	268	154	246	134	157	82	116	42	36	41	80
20	277	266	184	243	131	148	80	114	41	41	42	76
21	258	264	174	238	127	144	84	105	41	39	39	74
22	234	262	137	243	123	144	86	102	36	37	39	50
23	206	270	128	243	127	159	87	107	30	42	35	37
24	206	266	120	240	121	146	72	112	32	41	48	42
25	210	273	128	240	121	127	84	114	38	47	56	35
26	242	276	116	240	127	123	81	111	36	40	45	35
27	241	222	123	240	125	112	81	105	37	36	54	37
28	234	208	123	235	127	104	88	107	39	38	42	41
29	232	140	120	230	-	100	80	105	37	40	35	44
30	239	158	106	232	-	68	87	102	39	42	42	40
31	232	-	130	246	-	68	-	102	-	37	40	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	6,594	440	126	213	13,080
November	7,280	282	140	243	14,440
December	4,451	186	106	144	8,830
Calendar year 1946	43,397	739	17	119	86,060
January	7,488	294	116	242	14,850
February	4,900	265	121	175	9,720
March	4,110	169	68	133	8,150
April	2,318	100	55	77.3	4,600
May	3,484	134	92	112	6,910
June	1,858	105	30	61.9	3,690
July	1,180	71	22	38.1	2,340
August	1,096	57	21	35.4	2,170
September	1,829	118	35	61.0	3,630
Water year 1946-47	46,588	440	21	128	92,410

Pecos River at Red Bluff, N. Mex.

Location.- Water-stage recorder, lat. 32°04'40", long. 104°02'20", at Red Bluff, Eddy County, just downstream from Red Bluff Creek and 5½ miles upstream from Delaware River. Datum of gage is 2,850.0 feet above mean sea level, datum of 1929.

Drainage area.- 19,540 square miles (contributing area).

Records available.- October 1937 to September 1947. May 1914 to September 1937 at site 6 miles downstream near Angeles, Tex.; records comparable to combined flow of Pecos River at Red Bluff and Delaware River near Red Bluff.

Average discharge.- 10 years, 410 second-feet.

Extremes.- Maximum discharge during year, 1,700 second-feet Oct. 5 (gage height, 6.31 feet); minimum, 17 second-feet Aug. 8,9 (gage height, 2.72 feet).
1937-47: Maximum discharge, 52,600 second-feet May 24, 1941 (gage height, 28.3 feet), by slope-area method; minimum, 14 second-feet Aug. 19, 1946.
Maximum stage known prior to 1941, 28.0 feet in October 1904, from information by chief engineer of Panhandle & Santa Fe Railway.

Remarks.- Records excellent. Flow regulated to large extent by reservoirs above Carlsbad. Many diversions above station for irrigation. Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	131	257	161	144	257	129	86	95	104	52	40	39
2	131	237	152	135	250	124	89	98	102	53	35	41
3	131	254	177	135	268	127	89	96	95	48	33	44
4	274	247	138	249	264	127	80	112	96	46	31	51
5	974	247	144	276	261	124	76	118	98	48	27	47
6	434	264	149	283	268	129	79	112	96	44	22	45
7	268	264	154	283	268	133	76	114	100	38	20	48
8	188	261	149	298	264	140	82	122	96	35	17	61
9	171	279	166	310	211	135	79	131	91	29	17	82
10	164	294	164	302	152	140	71	133	87	32	21	96
11	159	272	190	298	152	149	66	133	89	52	26	79
12	152	254	174	294	199	152	69	133	79	58	29	76
13	147	254	169	264	199	131	74	120	76	36	39	80
14	149	298	152	250	180	127	93	116	74	34	36	80
15	185	287	140	254	161	127	108	112	76	34	27	79
16	217	287	154	250	154	131	104	112	79	36	23	77
17	208	264	169	250	149	135	100	118	72	32	24	79
18	226	272	196	268	144	144	89	120	66	27	21	80
19	298	279	171	261	142	154	87	116	59	29	22	79
20	298	283	180	257	135	147	91	114	53	26	28	71
21	294	279	196	254	131	142	91	108	51	32	36	68
22	254	264	169	257	127	140	93	106	51	34	36	65
23	257	290	144	257	122	140	95	106	47	31	39	55
24	226	283	138	257	122	164	87	110	44	34	63	44
25	233	287	140	254	120	135	80	112	50	39	55	45
26	247	294	133	254	122	133	96	112	56	46	69	44
27	276	290	138	254	124	124	91	108	48	39	60	39
28	279	223	138	250	122	114	95	104	44	36	63	44
29	250	182	133	250	-	114	96	106	46	37	51	56
30	279	156	124	250	-	108	89	104	48	44	36	53
31	272	-	140	254	-	93	-	102	-	47	41	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	7,772	974	131	251	15,420
November	7,902	298	156	263	15,670
December	4,842	196	124	156	9,600
Calendar year 1946	47,533	974	16	130	94,280
January	7,852	310	135	253	15,570
February	5,068	268	120	181	10,050
March	4,112	164	93	133	8,160
April	2,601	108	66	86.7	5,160
May	3,503	133	95	113	6,950
June	2,173	104	44	72.4	4,310
July	1,208	58	26	39.0	2,400
August	1,087	69	17	35.1	2,160
September	1,847	96	39	61.6	3,660
Water year 1946-47	49,967	974	17	137	99,110

Pecos River near Orla, Tex.

Location.- Water-stage recorder, lat. 31°49', long. 103°48', 600 feet upstream from Pasotex pipe-line crossing, 6 miles southeast of Orla, Reeves County, 11 miles downstream from Salt (Screwbean) Draw, and 14 miles downstream from Red Bluff Dam. Datum of gage is 2,718.0 feet above mean sea level, datum of 1929.

Drainage area.- 21,300 square miles (contributing area).

Records available.- May 1937 to September 1947.

Average discharge.- 10 years, 424 second-feet.

Extremes (regulated).- Maximum discharge during year, 562 second-feet Apr. 18, 19 (gage height, 2.56 feet); no flow Nov. 4.
1937-47: Maximum discharge, 23,700 second-feet Sept. 29, 1941 (gage height, 20.74 feet); no flow Sept. 9-14, Nov. 4, 1946.

Remarks.- Records excellent. Flow regulated by Red Bluff Reservoir (see p. 213). Occasional runoff from draws between dam and station. Many diversions above station for irrigation. Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.2	1.2	3.0	5.0	2.1	130	526	495	3.4	256	213	32
2	1.8	.6	2.7	4.6	2.4	33	520	464	7.0	353	221	32
3	2.1	.3	2.7	3.8	7.1	5.4	520	454	162	353	146	43
4	5.4	0	6.5	3.0	133	3.8	526	434	78	216	139	52
5	178	.3	133	3.4	115	3.0	526	381	22	268	140	48
6	49	56	60	3.8	18	4.2	515	376	5.4	225	121	48
7	29	7.6	7.6	4.6	6.6	5.0	515	376	2.7	339	111	48
8	17	4.2	5.4	4.6	5.0	3.4	515	376	1.8	415	162	48
9	14	3.8	5.0	5.4	5.0	3.0	531	362	.6	415	198	82
10	12	3.4	5.0	5.0	4.2	3.0	551	330	206	410	198	63
11	7.0	21	7.0	4.6	4.2	2.7	551	225	265	386	186	48
12	6.2	12	5.4	4.2	4.2	2.7	551	221	172	390	165	46
13	5.0	4.6	4.2	4.2	3.8	2.1	546	221	172	372	165	50
14	4.2	4.0	4.2	4.2	3.8	2.1	557	206	93	314	165	50
15	3.4	190	4.2	3.8	3.8	2.7	557	34	92	326	158	49
16	3.4	65	4.2	3.4	3.8	4.2	557	13	165	318	136	50
17	3.0	7.0	3.8	4.2	3.8	12	551	8.8	172	309	80	50
18	2.7	4.6	3.4	6.2	3.8	172	551	7.6	179	277	71	50
19	2.4	3.8	3.8	5.8	3.4	176	541	6.2	253	186	71	50
20	67	3.4	3.8	5.0	3.4	172	520	5.8	237	182	43	50
21	8.8	3.0	3.4	4.2	3.4	176	520	5.0	118	206	63	50
22	4.6	3.0	3.4	4.2	12	194	520	4.2	120	305	71	50
23	3.8	2.7	3.4	4.2	5.0	285	520	4.2	115	305	71	50
24	3.4	2.7	3.8	4.2	3.0	318	515	4.2	125	301	71	50
25	1.8	3.0	3.4	3.8	3.0	390	515	3.8	249	297	67	50
26	27	3.0	3.4	3.0	3.0	386	515	3.0	249	293	37	50
27	7.6	3.0	3.4	2.7	4.4	386	515	2.4	249	281	34	50
28	3.8	2.7	3.4	2.7	130	386	510	2.1	281	133	33	50
29	2.1	3.0	3.0	3.0	-	386	505	1.5	410	130	33	50
30	1.8	2.7	2.7	2.4	-	390	510	.9	410	165	32	50
31	1.5	-	4.6	2.1	-	480	-	8.0	-	179	32	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	480.0	178	1.2	15.5	952
November	421.6	190	0	14.1	836
December	312.8	133	2.7	10.1	620
Calendar year 1946	37,395.2	588	0	102	74,160
January	125.3	6.2	2.1	4.04	249
February	500.2	133	2.1	17.9	992
March	4,519.3	480	2.1	146	8,960
April	15,872	557	505	529	31,480
May	5,035.7	495	.9	162	9,990
June	4,614.9	410	.6	154	9,150
July	8,905	415	130	287	17,660
August	3,433	221	32	111	6,810
September	1,489	82	32	49.6	2,950
Water year 1946-47	45,708.8	557	0	125	90,650

Pecos River at Pecos, Tex.

Location.- Water-stage recorder, lat. 31°26', long. 103°28', at bridge on U. S. Highway 80, 195 feet downstream from Texas & Pacific Railway bridge, 1.7 miles east of Pecos, Reeves County, and 11 miles upstream from Toyah Creek. Datum of gage is 2,552.0 feet above mean sea level, datum of 1929. Prior to Oct. 11, 1946, water-stage recorder at site 284 fest upstream. Datum of gage was 2,554.0 feet above mean sea level, datum of 1929.

Drainage area.- 22,100 square miles (contributing area).

Records available.- August 1939 to September 1947. January 1898 to June 1907 at flume of Barstow Irrigation Co. (old Marguerretta Canal Co.), 6.4 miles upstream, published as Pecos River near Pecos. April 1914 to August 1915 at site 7 miles downstream, published as Pecos River near Barstow. March 1922 to July 1926 at site about 10 miles upstream, published as Pecos River above Barstow.

Extremes (regulated).- Maximum discharge during year, 449 second-feet Apr. 18 (gage height, 6.60 feet); minimum daily, 5.7 second-feet Sept. 27-30.

1898-1907, 1914-15, 1922-26, 1939-47: Maximum gage height, about 20 feet, present datum, at railroad bridge above gage, Oct. 5, 1904 (discharge not determined); flood of Sept. 30, 1941, reached a stage of 19.68 feet, present datum, at site then in use (discharge, 22,200 second-feet); minimum daily discharge not determined, affected by diversions.

Flood of August 1893 reached approximately the same stage as that of Oct. 5, 1904, from information by local residents.

Remarks.- Records good except those for period of no gage-height record, which are fair. Flow regulated to large extent by reservoirs above Orla. Several diversions between Orla and this station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.0	6.0	7.7	7.4	6.3	7.4	345	312	10	286	19	7.5
2	6.7	6.0	7.7	7.2	6.3	31	345	312	9.5	235	18	7.4
3	7.0	6.0	7.8	7.0	6.3	75	326	274	10	217	18	7.0
4	7.4	6.3	7.8	7.0	6.2	46	312	254	12	229	22	6.7
5	7.8	6.7	8.5	6.9	6.2	29	319	229	11	187	19	7.0
6	8.4	7.0	8.5	6.9	23	23	358	193	17	187	16	7.0
7	10	7.4	20	7.0	65	18	358	150	12	131	14	7.0
8	8.4	7.8	40	6.9	40	16	371	147	10	114	12	7.2
9	7.0	8.0	24	7.0	27	13	371	154	10	193	12	7.7
10	6.4	8.0	18	7.0	18	12	358	199	9.5	193	12	7.8
11	6.4	8.5	13	6.7	12	12	371	306	10	199	11	7.7
12	6.7	8.5	10	6.7	10	10	371	223	19	205	12	12
13	6.7	8.5	8.5	6.6	9.0	9.5	384	158	43	248	40	8.5
14	6.7	8.5	7.7	6.4	8.5	9.0	384	164	21	260	45	7.4
15	6.9	9.5	7.5	6.6	8.0	8.5	410	164	19	211	48	6.9
16	7.0	9.5	7.4	6.6	7.8	7.8	423	156	14	205	48	6.9
17	7.0	38	7.2	7.0	7.7	7.8	423	83	9.5	199	47	6.4
18	6.7	48	7.0	6.9	7.5	8.5	436	65	24	187	33	6.2
19	6.6	27	6.9	6.7	7.4	7.8	436	55	23	175	13	6.2
20	6.6	16	6.9	6.7	7.4	95	436	48	42	114	9.5	6.2
21	6.6	11	6.7	6.7	7.4	136	397	43	62	78	8.5	6.2
22	6.4	8.5	6.7	6.4	7.5	147	332	39	43	103	9.0	6.0
23	6.6	7.8	6.9	6.4	7.5	158	319	37	16	129	10	5.9
24	6.4	7.8	6.7	6.4	7.5	205	300	35	12	149	10	5.8
25	6.2	7.7	6.6	6.4	7.7	248	300	32	8.5	148	10	5.8
26	6.2	7.5	6.6	6.3	7.7	319	332	28	18	146	11	5.8
27	6.2	7.5	6.7	6.3	7.7	319	345	24	70	135	15	5.7
28	6.2	7.7	6.6	6.3	7.7	306	345	21	106	241	20	5.7
29	6.0	7.7	6.6	6.3	-	312	326	18	132	82	10	5.7
30	6.0	7.7	6.9	6.2	-	319	319	13	229	32	8.0	5.7
31	6.0	-	7.8	6.2	-	319	-	12	-	24	7.7	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	212.2	10	6.0	6.85	421
November	332.1	48	6.0	11.1	659
December	306.9	40	6.6	9.90	609
Calendar year 1946	20,207.4	402	4.2	55.4	40,070
January	207.1	7.4	6.2	6.68	411
February	350.3	65	6.2	12.5	695
March	3,234.3	319	7.4	104	6,420
April	10,852	436	300	362	21,520
May	3,948	312	12	127	7,830
June	1,032.0	229	8.5	34.4	2,050
July	5,242	286	24	169	10,400
August	587.7	48	7.7	19.0	1,170
September	205.0	12	5.7	6.83	407
Water year 1946-47	26,509.6	436	5.7	72.6	52,590

Note.- No gage-height record Oct. 2-11; discharge computed from estimated gage-height record based on canal records upstream.

Pecos River below Grandfalls, Tex.

Location.- Water-stage recorder, lat. 31°18', long. 102°46', at bridge on State Farm to Market Road 11 between Grandfalls and Imperial, 7.1 miles southeast of Grandfalls, Ward County, and 10 miles downstream from Chacatori Draw. Datum of gage is 2,373.0 feet above mean sea level, datum of 1929 (levels by Corps of Engineers).

Drainage area.- 27,820 square miles (contributing area).

Records available.- August 1939 to September 1947. December 1921 to July 1926 at site about 12 miles downstream, published as Pecos River near Buena Vista.

Extremes (regulated).- Maximum discharge during year, 822 second-feet June 5 (gage height, 6.48 feet); minimum daily, 13 second-feet Sept. 19, 20.
1921-26, 1939-47: Maximum discharge, 22,000 second-feet Oct. 2, 1941 (gage height, 20.98 feet); minimum daily, 8.0 second-feet July 27, 1925.

Remarks.- Records excellent. Flow regulated to large extent by reservoirs above Orla. Many diversions between Orla and this station for irrigation. Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	20	20	52	23	37	28	26	24	23	20	16
2	18	20	22	51	24	36	27	29	24	23	20	16
3	18	19	29	46	23	36	27	30	23	23	20	16
4	18	18	26	39	25	37	26	28	125	23	19	14
5	29	18	26	36	24	60	24	26	445	23	19	14
6	26	18	33	41	24	92	26	26	60	22	19	14
7	26	20	32	41	25	78	26	26	36	22	20	14
8	24	22	32	40	26	62	26	26	33	26	20	14
9	22	22	32	40	26	54	27	28	32	33	19	14
10	22	19	40	41	27	50	28	42	28	32	19	14
11	22	18	46	39	31	47	28	60	26	29	18	14
12	21	18	41	38	35	45	28	59	26	26	18	14
13	20	18	38	36	36	44	28	39	26	25	18	14
14	20	18	35	33	36	42	28	52	25	25	18	18
15	20	18	30	33	36	40	30	42	24	25	18	17
16	20	18	18	32	40	39	33	47	23	25	18	14
17	20	18	18	24	41	38	36	40	22	25	18	14
18	20	18	19	22	39	39	32	36	22	24	18	14
19	20	18	31	22	39	40	28	33	25	23	18	13
20	20	20	31	22	33	39	32	30	25	23	17	13
21	20	20	31	22	30	39	32	28	23	23	17	14
22	20	20	31	22	29	43	28	26	22	23	17	14
23	21	20	29	24	29	46	28	27	21	23	18	14
24	21	20	31	26	29	30	27	32	22	23	18	14
25	21	20	31	26	32	29	27	26	22	23	18	14
26	21	20	31	25	35	29	27	26	22	22	18	14
27	21	20	31	24	35	29	28	26	22	22	18	14
28	21	20	31	24	36	29	28	25	23	22	18	14
29	21	20	33	23	-	33	28	24	23	22	18	14
30	21	20	40	25	-	29	27	24	23	22	18	14
31	21	-	50	23	-	29	-	25	-	21	17	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	653	29	18	21.1	1,300
November	578	22	18	19.3	1,150
December	968	50	18	31.2	1,920
Calendar year 1946	13,010	157	14	35.6	25,800
January	992	52	22	32.0	1,970
February	868	41	23	31.0	1,720
March	1,320	92	29	42.6	2,620
April	848	36	24	28.3	1,680
May	1,014	60	24	32.7	2,010
June	1,297	445	21	43.2	2,570
July	746	33	21	24.1	1,480
August	569	20	17	18.4	1,130
September	431	18	13	14.4	855
Water year 1946-47	10,284	445	13	28.2	20,400

Pecos River near Girvin, Tex.

Location.- Water-stage recorder, lat. 31°05', long. 102°22', at bridge on U. S. Highway 67, about half a mile downstream from Panhandle & Santa Fe Railway bridge, 2.1 miles east of Girvin, Pecos County, and 6½ miles downstream from Comanche Creek. Datum of gage is 2,269.7 feet above mean sea level, datum of 1929.

Drainage area.- 29,560 square miles (contributing area).

Records available.- August 1939 to September 1947.

Extremes (regulated).- Maximum discharge during year, 652 second-feet May 16 (gage height, 4.29 feet); minimum daily, 21 second-feet Aug. 14-17, 20.
1939-47: Maximum discharge, 20,000 second-feet Oct. 5, 1941 (gage height, 20.49 feet); minimum daily, that of Aug. 14-17, 20, 1947.
Flood of September 1932 reached a stage of 17 feet, from information by local residents.

Remarks.- Records good. Flow regulated to large extent by reservoirs above Orla. Many diversions above station for irrigation. Some water from drain and two wasteways returns to river between station below Grandfalls and this station. Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	33	40	64	45	50	42	44	50	47	29	28
2	35	33	40	75	47	50	39	43	53	44	28	28
3	34	31	40	76	45	49	38	40	53	43	31	28
4	33	31	40	75	47	50	36	42	52	42	29	26
5	35	30	43	72	45	48	34	44	53	44	28	26
6	44	31	50	66	44	48	36	45	172	43	26	26
7	66	33	47	62	47	57	36	40	421	40	25	25
8	65	34	50	62	47	103	34	40	156	39	24	24
9	52	37	56	70	48	97	37	42	80	39	24	26
10	49	43	62	69	50	82	36	85	56	38	24	25
11	56	40	69	68	48	75	38	100	48	53	22	30
12	44	54	72	68	49	66	39	110	43	86	22	29
13	39	36	75	66	53	60	39	92	43	64	22	30
14	38	36	70	64	54	60	42	108	40	44	21	26
15	36	37	66	60	56	57	43	92	40	42	21	26
16	a36	37	62	58	58	54	48	387	42	40	21	26
17	35	38	58	60	58	53	47	103	40	39	21	26
18	35	37	45	62	58	54	48	53	39	39	22	28
19	35	38	39	57	62	52	50	57	44	38	22	26
20	34	38	36	48	62	53	50	52	40	39	21	25
21	35	39	43	45	63	53	47	52	39	39	22	23
22	38	40	50	44	57	53	43	49	38	40	22	24
23	38	42	53	44	52	53	49	49	49	40	23	24
24	36	40	54	43	49	49	47	64	178	42	23	23
25	34	42	54	43	48	58	43	58	103	50	24	23
26	38	40	52	47	45	47	43	56	60	42	29	23
27	38	40	54	48	47	40	45	57	52	38	30	22
28	36	40	54	48	50	39	47	52	48	38	32	22
29	38	39	54	44	-	38	45	50	45	37	30	22
30	33	40	53	45	-	39	47	52	45	33	30	22
31	32	-	60	47	-	40	-	53	-	31	30	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,232	66	32	39.7	2,440
November	1,109	43	30	37.0	2,200
December	1,641	75	36	52.9	3,250
Calendar year 1946	20,756	-	-	56.9	41,160
January	1,800	76	43	58.1	3,570
February	1,434	63	44	51.2	2,840
March	1,727	103	38	55.7	3,430
April	1,268	50	34	42.3	2,520
May	2,211	387	40	71.3	4,390
June	2,222	421	38	74.1	4,410
July	1,333	86	31	43.0	2,640
August	778	32	21	25.1	1,540
September	762	30	22	25.4	1,510
Water year 1946-47	17,517	421	21	48.0	34,740

a No gage-height record; discharge interpolated.

Pecos River near Sheffield, Tex.

Location.- Water-stage recorder, lat. 30°39', long. 101°45', at bridge on U. S. Highway 290, 3½ miles southeast of Sheffield, Pecos County, and 4 miles upstream from Liveoak Creek. Datum of gage is 2,026.3 feet above mean sea level, datum of 1929.

Drainage area.- 31,660 square miles (contributing area).

Records available.- October 1921 to April 1925, October 1939 to September 1947.

Extremes.- Maximum discharge during year, 3,410 second-feet May 18 (gage height, 7.86 feet); minimum, 25 second-feet (partly regulated) Aug. 20.
1921-25, 1939-47: Maximum discharge, 13,800 second-feet Oct. 8, 1941 (gage height, 16.75 feet); minimum, 15 second-feet Aug. 15, 1923.
Maximum stage known, about 23.5 feet in September 1916, site and datum in use prior to May 1, 1925, from information by local residents.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Flow regulated to large extent by reservoirs above Orla. Many diversions between Orla and this station for irrigation. Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	52	59	58	71	72	69	63	59	59	61	34	40
2	52	57	58	72	72	68	62	58	59	59	35	40
3	50	54	58	72	71	69	63	59	58	58	38	38
4	50	53	58	77	71	69	63	59	56	57	38	38
5	403	54	58	80	70	69	58	58	54	55	35	37
6	395	54	58	81	70	69	58	56	54	54	34	35
7	89	56	59	81	70	72	58	55	53	53	33	38
8	71	57	62	80	69	73	58	56	68	53	32	38
9	72	57	65	85	69	74	59	59	400	53	31	39
10	92	57	85	82	67	93	57	601	185	50	30	38
11	72	58	166	83	67	98	57	383	93	51	30	38
12	66	60	82	81	67	92	54	108	72	60	30	36
13	67	62	77	80	67	85	54	93	64	55	29	35
14	67	61	77	79	67	82	55	96	59	51	28	36
15	63	59	79	78	67	80	58	93	57	60	27	35
16	61	58	78	77	68	77	59	177	54	54	27	35
17	60	58	76	78	70	77	59	105	53	47	26	35
18	60	58	73	81	71	78	60	1,040	52	46	26	35
19	58	58	72	86	70	76	62	143	62	45	28	35
20	58	58	71	85	69	76	62	98	63	43	26	40
21	58	58	66	85	71	74	61	93	56	42	26	38
22	57	58	64	83	72	74	63	82	54	41	30	33
23	57	58	63	82	72	73	64	81	87	39	30	32
24	55	58	67	81	72	70	61	77	803	38	102	31
25	54	58	69	80	70	70	58	71	134	37	102	31
26	55	58	70	79	69	69	60	69	110	35	141	30
27	56	58	71	78	68	71	62	70	101	35	118	32
28	57	58	70	77	68	69	60	66	82	34	55	30
29	55	58	69	76	-	64	61	64	70	36	50	32
30	54	58	69	73	-	63	61	62	64	35	45	32
31	55	-	72	73	-	62	-	59	-	34	43	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,571	403	50	82.9	5,100
November	1,728	62	53	57.6	3,430
December	2,220	166	58	71.6	4,400
Calendar year 1946	26,871	403	34	73.6	53,290
January	2,456	86	71	79.2	4,870
February	1,946	72	67	69.5	3,860
March	2,305	98	62	74.4	4,570
April	1,789	64	54	59.6	3,550
May	4,250	1,040	55	137	8,430
June	3,236	803	52	108	6,420
July	1,471	61	34	47.5	2,920
August	1,360	141	26	43.9	2,700
September	1,062	40	30	35.4	2,110
Water year 1946-47	26,394	1,040	26	72.3	52,360

Note.- No gage-height record Nov. 2-4, Jan. 16 to Feb. 9, June 8-15, Aug. 28 to Sept. 30; discharge computed on basis of recorded range in stage and records for station near Girvin.

Gallinas River near Montezuma, N. Mex.

Location.- Water-stage recorder, lat. 35°39'00", long. 105°19'10", in Las Vegas Grant, 2 miles west of Montezuma, San Miguel County, and 6 miles northwest of Las Vegas.

Drainage area.- 84 square miles.

Records available.- October 1930 to September 1947 in reports of Geological Survey. March 1915 to December 1931 (no winter records 1915-26) in reports of State engineer.

Average discharge.- 21 years (1926-47), 21.3 second-feet.

Extremes.- Maximum discharge during year, 135 second-feet Oct. 7 (gage height, 2.09 feet); minimum daily, 0.9 second-foot Aug. 10.
1930-47: Maximum discharge, 3,310 second-feet Sept. 23, 1941 (gage height, 7.78 feet), from rating curve extended above 350 second-feet by logarithmic plotting; minimum daily, 0.8 second-foot Aug. 15-18, 21, 25, 26, 30, 1934, Jan. 20, 1938.

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	20	28	b9	b5.5	5.5	16	20	12	3.4	1.6	7.1
2	19	19	26	b8	6.6	5.7	20	23	11	3.7	1.7	6.0
3	16	19	24	b7	6.0	6.0	20	29	11	4.3	1.7	6.2
4	42	22	23	b8	6.2	5.7	18	33	7.4	3.9	1.6	6.2
5	107	20	*22	b9	6.2	6.0	15	38	8.5	3.4	1.5	5.7
6	75	19	22	b9	6.0	5.7	14	41	6.9	3.2	1.5	5.0
7	95	21	21	b8	5.5	5.5	14	40	6.9	3.2	1.5	4.8
8	73	24	20	a8	a5.5	6.0	13	41	6.6	2.9	1.4	4.4
9	60	23	18	b9	b5.0	6.2	14	43	4.8	2.7	1.1	4.4
10	53	21	16	b8	b5.0	5.5	14	82	3.9	2.7	.9	4.8
11	45	20	16	b8	b5.5	6.0	13	93	4.1	2.6	1.0	4.4
12	38	22	17	b7	5.7	6.2	11	78	3.9	2.5	1.1	4.1
13	33	22	17	b7	*6.2	5.7	12	65	4.8	2.4	1.3	3.7
14	29	27	15	b8	6.2	6.6	14	54	4.1	2.4	1.6	3.5
15	25	32	'14	*b8.3	6.2	6.4	13	49	3.0	2.5	2.4	3.2
16	23	30	14	5.7	6.2	6.4	14	44	3.5	2.4	3.4	3.2
17	21	28	13	a6	6.2	7.4	13	39	4.3	5.0	4.1	2.9
18	20	26	b11	b7	6.2	7.1	14	33	3.5	5.5	4.4	2.7
19	18	27	b11	a7	6.0	6.9	15	29	11	6.2	3.5	2.9
20	16	27	b11	a7	5.7	7.7	16	26	7.1	4.4	5.7	3.0
21	15	26	12	a8	5.7	9.1	19	22	6.0	3.7	6.0	3.0
22	14	26	12	a8	5.7	11	20	20	5.3	4.4	8.5	2.7
23	14	29	11	a8	6.0	14	21	21	3.7	4.1	8.5	2.6
24	13	32	11	a8.5	6.0	16	25	22	5.7	3.5	11	2.1
25	12	32	11	8.8	6.2	14	23	18	5.3	3.0	14	1.8
26	12	28	10	a9	5.7	14	21	16	3.9	3.7	15	1.8
27	12	28	a9	a9	6.4	16	21	16	3.4	3.5	15	2.2
28	12	26	10	a8	6.0	17	21	13	3.4	3.4	11	2.4
29	16	29	9.1	5.7	-	16	21	14	3.5	1.8	9.3	2.5
30	28	29	a8	b5.5	-	13	21	13	3.4	1.6	8.5	2.9
31	22	-	a8	b5.5	-	14	-	13	-	1.6	8.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,000	107	12	32.3	1,980
November	754	32	19	25.1	1,500
December	470.1	28	8	15.2	932
Calendar year 1946	5,312.5	126	1.1	14.6	10,540
January	238.0	9	5.5	7.68	472
February	165.3	6.6	5.0	5.90	328
March	278.3	17	5.5	8.98	552
April	506	25	11	16.9	1,000
May	1,088	93	13	35.1	2,160
June	171.9	12	3.0	5.73	341
July	103.6	6.2	1.6	3.34	205
August	158.0	15	.9	5.10	313
September	112.2	7.1	1.8	3.74	223
Water year 1946-47	5,045.4	107	.9	13.8	10,010

Peak discharge.- Oct. 5 (4:20 a.m.) 120 sec.-ft.; Oct. 7 (2 a.m.) 135 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of observers' notes, weather records, and records for station at Montezuma.
b Stage-discharge relation affected by ice.

Gallinas River at Montezuma, N. Mex.

Location.- Water-stage recorder, lat. 35°39'15", long. 105°16'30", in Las Vegas Grant, at highway bridge half a mile downstream from Montezuma, San Miguel County, and 5 miles northwest of Las Vegas.

Drainage area.- 87 square miles.

Records available.- August 1903 to December 1914 (prior to October 1904, gage heights only) and October 1930 to September 1947 in reports of Geological Survey. October 1904 to December 1931 in reports of State engineer (prior to 1930, published as Gallinas River near Las Vegas).

Average discharge.- 40 years (1905-11, 1913-47), 21.5 second-feet.

Extremes.- Maximum discharge during year, 266 second-feet June 24 (gage height, 4.25 feet); minimum daily, 0.2 second-foot June 13, 14.
1930-47: Maximum discharge, 2,590 second-feet Sept. 23, 1941 (gage height, 6.23 feet), from rating curve extended above 1,000 second-feet by logarithmic plotting; no flow (result of regulation) Oct. 4-7, 1934.

Remarks.- Records good except those for period of no gage-height record, which are poor. Flow regulated by reservoirs owned by New Mexico Power Co. Several diversions above station for irrigation and municipal water supply.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	18	26	4.7	2.2	2.6	12	14	5.5	0.4	0.4	3.3
2	15	14	24	6.4	2.2	2.1	16	11	4.4	.4	.5	2.8
3	14	16	20	6.1	2.4	2.2	17	18	4.2	.4	.4	2.8
4	40	15	19	4.2	2.6	2.6	16	26	4.0	.5	.5	2.6
5	145	18	18	7.4	2.6	2.6	12	32	2.8	.6	.5	2.2
6	101	17	16	7.1	2.8	2.6	11	34	2.9	.6	.5	1.9
7	119	17	12	6;7	2.6	2.2	12	33	2.1	.6	.5	1.7
8	90	21	13	5.8	2.6	2.4	10	36	1.8	.6	.8	1.8
9	74	21	14	7.1	2.4	3.1	12	36	1.8	.6	.4	1.8
10	62	18	14	6.1	2.4	2.8	12	88	1.1	.6	.4	1.8
11	47	16	13	5.0	2.6	2.6	11	115	.8	.6	.4	1.5
12	36	20	14	5.2	2.9	2.9	7.7	84	.4	.7	.4	1.7
13	29	19	14	5.5	3.1	2.9	9.3	62	.2	.6	.5	1.7
14	a25	22	14	5.2	2.9	3.1	10	47	.2	.6	.6	1.4
15	a23	28	13	5.0	2.8	3.1	9.7	40	.3	.5	.6	1.7
16	a21	27	12	3.8	2.8	2.6	10	36	.4	.6	.6	1.5
17	a19	26	11	3.3	2.8	3.8	9.7	35	.4	.5	.6	1.5
18	a18	24	6.7	4.7	2.8	3.8	10	32	.6	.6	.5	1.7
19	16	24	8.5	4.7	2.8	4.0	12	24	2.0	.5	.5	1.4
20	a15	26	7.4	4.0	2.6	4.4	13	21	7.7	.4	.6	1.5
21	14	25	7.4	2.9	2.4	5.5	16	18	1.2	.5	.6	1.2
22	10	25	9.3	2.9	2.4	7.1	15	14	.8	.6	.6	.7
23	2.9	27	8.9	2.6	2.4	9.7	10	14	.6	.5	.6	.5
24	7.1	30	8.9	2.6	2.2	11	17	16	8.7	.5	.7	.5
25	7.7	31	8.5	2.6	2.8	8.1	24	14	4.7	.4	.8	.4
26	10	26	7.1	2.6	2.4	3.8	22	12	1.5	.4	.7	.4
27	9.3	27	3.3	2.6	2.4	4.4	22	9.7	1.3	.4	.8	.4
28	9.3	26	3.3	2.6	2.9	7.1	20	6.7	.8	.4	.8	.5
29	11	26	5.8	2.6	-	12	18	7.1	.5	.4	2.8	.6
30	24	26	4.4	2.2	-	12	19	6.1	.4	.4	3.8	.6
31	19	-	5.0	2.2	-	12	-	5.8	-	.4	4.0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,051.3	145	2.9	33.9	2,090
November	676	31	14	22.5	1,340
December	361.5	26	3.3	11.7	717
Calendar year 1946	4,362.6	145	.1	12.0	8,650
January	136.4	7.4	2.2	4.40	271
February	72.8	3.1	2.2	2.60	144
March	151.1	12	2.1	4.87	300
April	415.4	24	7.7	13.8	824
May	947.4	115	5.8	30.6	1,880
June	63.9	8.7	.2	2.13	127
July	15.8	.7	.4	.51	31
August	26.4	4.0	.4	.85	52
September	44.1	3.3	.4	1.47	87
Water year 1946-47	3,962.1	145	.2	10.9	7,860

Peak discharge.- Oct. 4 (4 p.m.) 119 sec.-ft.; Oct. 5 (12:30 p.m.) 165 sec.-ft.; Oct. 7 (7 a.m.) 147 sec.-ft.; June 24 (12:30 a.m.) 266 sec.-ft.

a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and records for station near Montezuma.

Rio Ruidoso at Hondo, N. Mex.

Location.- Water-stage recorder, lat. 33°23'00", long. 105°16'30", in NE¼SW¼ sec. 4, T. 11 S., R. 17 E., a quarter of a mile upstream from confluence with Rio Bonito and half a mile southwest of Hondo.

Drainage area.- 307 square miles.

Records available.- October 1930 to September 1947 in reports of Geological Survey. August 1930 to December 1931 in reports of State engineer.

Average discharge.- 17 years (1930-47), 23.7 second-feet.

Extremes.- Maximum discharge during year, 330 second-feet Oct. 9 (gage height, 2.54 feet); minimum daily, 0.3 second-foot Feb. 27, Aug. 8, 9.
1930-47: Maximum discharge, 12,400 second-feet Sept. 29, 1941 (gage height, 21.13 feet, from floodmark), from rating curve extended above 130 second-feet on basis of velocity-area studies; no flow Aug. 15, 16, 1935.

Remarks.- Records good. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	12	11	11	9.3	0.5	0.6	0.5	1.0	0.7	0.6	0.4
2	17	12	12	11	10	.5	.6	.5	1.0	.6	.6	.4
3	9.3	13	11	9.3	9.3	.7	.6	.6	1.0	.7	.6	.4
4	5.6	13	9.3	9.3	10	.7	.6	.6	1.1	.6	.6	.4
5	4.6	13	8.6	10	9.3	1.0	.6	.6	1.0	.7	.6	.4
6	8.0	13	6.8	10	8.6	1.3	.6	.6	1.0	.7	.6	.4
7	12	13	7.4	10	9.3	1.1	.6	.6	.8	.7	.6	.4
8	17	13	6.8	10	11	.8	.6	.6	.8	.7	.3	.4
9	48	13	6.8	11	11	1.0	.7	.7	.8	.8	.3	.4
10	16	13	6.8	10	10	1.1	.6	.7	.8	4.9	.4	.4
11	16	13	7.4	11	12	1.1	.6	.7	.8	.7	.4	.4
12	18	13	6.2	11	12	1.0	.6	.7	.7	.6	.4	.4
13	20	12	6.2	11	12	1.0	.6	.7	.8	.5	.5	.4
14	20	12	6.8	11	11	1.0	.6	.7	.8	.5	.4	.4
15	20	13	6.8	12	13	.7	.6	.7	.7	.5	.4	.4
16	17	13	8.0	11	13	.7	.6	.7	.7	.5	.4	.4
17	15	13	6.8	12	11	.7	.6	.7	.7	.8	.5	.4
18	14	12	6.8	12	10	.7	.6	.7	.7	.7	.4	.4
19	14	10	6.8	12	12	.7	.6	.8	.7	.6	6.9	.4
20	15	12	6.8	12	12	.8	.6	.7	.7	.6	.5	.4
21	15	13	8.0	12	12	2.9	.6	.8	.7	.7	.5	.4
22	15	11	8.0	12	5.1	.7	.6	.8	.7	.7	.5	.4
23	16	10	8.0	13	2.7	.7	.6	7.1	.7	.7	.5	.4
24	14	10	7.4	12	2.4	.7	.6	.8	.7	.7	.5	.4
25	15	12	8.6	11	2.2	.7	.6	.8	.6	.7	2.2	.4
26	17	11	9.3	10	1.2	.7	.6	.8	.7	.7	.4	.4
27	16	11	8.6	10	.3	.7	.6	.8	.7	.7	.4	.4
28	14	11	8.0	12	.5	.7	.6	.8	.7	.7	.4	.4
29	11	11	9.3	13	-	.7	.6	.8	.7	.6	.4	.4
30	11	10	10	12	-	.7	.6	.8	.7	.6	.5	.4
31	11	-	11	12	-	.7	-	.8	-	.6	.5	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	481.5	48	4.6	15.5	955
November	361.0	13	10	12.0	716
December	251.3	12	6.2	8.11	498
Calendar year 1946	3,017.5	66	6	8.27	5,990
January	345.6	13	9.3	11.1	685
February	242.2	13	.3	8.65	480
March	27.0	2.9	.5	.87	54
April	18.1	.7	.6	.60	36
May	28.2	7.1	.5	.91	56
June	23.5	1.1	.6	.78	47
July	24.5	4.9	.5	.79	49
August	22.8	6.9	.3	.74	45
September	12.0	.4	.4	.40	24
Water year 1946-47	1,837.7	48	.3	5.03	3,640

Rio Hondo at Diamond A Ranch, near Roswell, N. Mex.

Location.- Water-stage recorder, lat. 33°20'40", long. 104°51'10", in NE¼ sec. 20, T. 11 S., R. 21 E., at Diamond A Ranch, 8 miles upstream from Rocky Arroyo and 18 miles west of Roswell.

Drainage area.- 960 square miles (contributing area).

Records available.- May 1939 to September 1947 in reports of Geological Survey. May 1906 to August 1909 in reports of State engineer.

Extremes.- Maximum discharge during year, 4,010 second-feet June 24 (gage height, 21.6 feet); no flow at times.
1939-47: Maximum discharge, 27,000 second-feet Sept. 22, 1941 (gage height, 28.78 feet), by slope-area method; no flow at times.

Remarks.- Records fair except those for periods of ice effect or no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	*Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	9.0	13	b13	19	0		0	0	42	0	32
2	29	7.3	12	b13	20	.3		0	0	21	0	4.0
3	24	8.3	14	a13	14	.8		0	0	0	0	a1
4	18	9.3	14	a11	17	.1		0	0	0	0	a0
5	17	11	12	a14	16	0		0	0	0	0	0
6	a20	11	12	a17	15	4.0		0	0	0	0	2.8
7	25	9.6	11	*b18	17	12		0	0	0	0	2.8
8	20	12	11	b16	17	9.0		0	0	0	0	12
9	23	16	11	b17	19	14		59	0	0	0	4.2
10	85	18	12	b19	19	5.6		443	0	0	0	2.1
11	41	17	13	b20	18	3.4		16	0	2.8	0	2.1
12	31	16	11	21	19	0		10	0	0	0	1.9
13	29	28	9.6	*23	18	0		4.2	0	0	0	1.2
14	28	27	9.6	22	16	0		0	0	0	0	.9
15	28	25	10	18	16	0		0	0	0	0	.5
16	26	25	11	17	11	1.1		0	0	0	0	0
17	26	26	12	19	7.0	0		0	0	.6	0	0
18	24	26	11	21	5.4	0		0	0	31	2.1	0
19	22	27	12	21	3.8	0		0	0	57	26	0
20	22	25	11	19	1.4	0		0	0	a14	8.3	0
21	23	21	11	18	.8	0		0	0	4.2	a1	0
22	20	23	9.3	18	2.6	0		0	0	2.4	0	0
23	18	18	10	17	.6	0		0	0	0	0	0
24	15	23	11	16	.7	0		28	358	0	.4	0
25	15	23	11	16	1.8	0		15	48	0	86	0
26	14	20	11	18	1.4	0		3.5	5.4	0	94	0
27	15	20	9.6	17	1.3	0		0	.6	0	28	0
28	13	16	9.6	16	0	0		0	0	0	18	0
29	10	16	9.6	15	-	0		0	.1	0	a10	0
30	9.6	14	*11	18	-	0		0	0	0	a5	0
31	9.6	-	b12	18	-	0		0	-	0	a75	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	725.2	85	9.6	23.4	1,440
November	547.5	28	7.3	18.2	1,090
December	347.3	14	9.3	11.2	689
Calendar year 1946	6,558.1	465	0	18.0	13,010
January	539	23	11	17.4	1,070
February	297.8	20	0	10.6	591
March	50.3	14	0	1.62	100
April	0	0	0	0	0
May	578.7	443	0	18.7	1,150
June	412.1	358	0	13.7	817
July	175.0	57	0	5.65	347
August	353.8	94	0	11.4	702
September	67.5	32	0	2.25	134
Water year 1946-47	4,094.2	443	0	11.2	8,130

Peak discharge.- May 10 (3:30 p.m.) 2,010 sec.-ft.; June 24 (6:20 p.m.) 4,010 sec.-ft.; Aug. 25 (8:40 p.m.) 386 sec.-ft.; Aug. 26 (2:40 p.m.) 304 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of engineer's notes, weather records, and records for Rio Bonito at Hondo and Rio Ruidoso at Hondo.

b Stage-discharge relation affected by ice.

Rio Bonito at Hondo, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 33°23'20", long. 105°16'30", in NE¼NW¼ sec. 4, T. 11 S., R. 17 E., at Hondo, half a mile upstream from confluence with Rio Ruidoso.

Drainage area.- 306 square miles (contributing area).

Records avialable.- October 1930 to September 1947 in reports of Geological Survey. August 1930 to December 1931 in reports of State engineer.

Average discharge.- 17 years (1930-47), 12.0 second-feet.

Extremes.- Maximum discharge during year, 830 second-feet July 17 (gage height, 3.85 feet), from rating curve extended above 220 second-feet on basis of slope-area determination at gage height 19.0 feet; no flow at times.
1930-47: Maximum discharge, 11,000 second-feet Sept. 28 or 29, 1941 (gage height, 20.92 feet, from floodmark), from rating curve extended above 220 second-feet on basis of slope-area determination at gage height 19.0 feet; no flow at times.

Remarks.- Records poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.4	4.5	2.7	0				0	0	0	0	4.0
2	6.0	4.5	3.1	0				0	0	0	0	3.3
3	5.6	5.2	2.5	0				0	0	0	0	1.5
4	5.6	4.5	2.5	0				0	0	0	0	.4
5	4.8	4.8	1.9	0				0	0	0	1.8	0
6	4.5	4.5	.7	0				0	0	0	.3	0
7	4.5	4.2	.4	0				0	0	0	0	0
8	4.5	4.2	.4	0				0	0	0	0	0
9	13	4.2	a0	0				.5	0	0	0	5.1
10	a6	4.2	a0	a.1				.4	0	.2	0	15
11	a5	4.0	a0	a.1				a0	0	0	0	8.5
12	a5	4.2	a0	0				0	0	0	0	a5
13	4.5	3.7	0	0				0	0	0	0	a2
14	4.2	4.0	0	0				0	0	0	.4	a2
15	3.7	4.0	0	0				0	0	0	7.2	2.0
16	3.7	4.2	0	0				0	0	0	6.0	2.0
17	3.5	4.2	0	a.2				0	0	68	20	1.8
18	3.5	4.5	0	a.1				0	0	7.5	12	1.3
19	3.3	4.8	0	a.1				0	0	8.1	11	a1
20	3.3	4.5	0	.1				a.1	0	3.3	3.3	a0
21	3.3	4.5	0	0				a.1	0	1.2	a1.3	a0
22	3.3	4.2	0	0				0	0	0	a0	0
23	3.3	3.3	0	0				0	0	0	14	0
24	3.1	2.9	0	.1				0	0	0	5.2	0
25	3.1	3.1	0	0				0	.1	0	12	0
26	3.3	3.5	0	0				0	.2	0	4.2	0
27	3.3	2.9	0	0				0	0	0	2.2	0
28	3.7	2.9	0	0				0	0	0	a1	0
29	3.7	2.9	0	.1				0	0	0	a1	0
30	3.7	2.9	0	.2				0	0	0	40	0
31	4.0	-	0	.2				0	-	0	20	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	138.4	13	3.1	4.46	275
November	120.0	5.2	2.9	4.00	238
December	14.2	3.1	0	.46	28
Calendar year 1946	2,151.9	318	0	5.90	4,270
January	1.3	.2	0	.04	2.6
February	0	0	0	0	0
March	0	0	0	0	0
April	0	0	0	0	0
May	1.1	.5	0	.04	2.2
June	.3	.2	0	.01	.6
July	88.3	68	0	2.85	175
August	162.9	40	0	5.25	323
September	54.9	15	0	1.83	109
Water year 1946-47	581.4	68	0	1.59	1,150

a No gage-height record; discharge computed on basis of available recorder gages, engineers' notes, and records for Rio Ruidoso at Hondo and Rio Hondo at Diamond A Ranch.

Rio Felix at old highway bridge, near Hagerman, N. Mex.

Location.- Water-stage recorder, lat. 33°07'30", long. 104°20'40", in SW¼ sec. 4, T. 14 S., R. 26 E., on downstream side of bridge, 1½ miles northwest of Hagerman and 2½ miles upstream from mouth.

Drainage area.- 932 square miles (contributing area).

Records available.- April 1939 to September 1947. March 1932 to April 1939 at site 1 mile downstream. Records for periods of low flow not equivalent.

Extremes.- Maximum discharge during year, 345 second-feet Oct. 5 (gage height, 3.85 feet); minimum daily, 0.1 second-foot June 24, 27, July 25.

1939-47: Maximum discharge, 20,000 second-feet Sept. 22, 1941 (gage height, 23.0 feet), from rating curve extended above 5,100 second-feet by logarithmic plotting; minimum daily, that of June 24, 27, July 25, 1947.

Remarks.- Records fair. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	2.0	0.6	0.4	0.3	0.4	0.4	0.6	0.4	0.2	0.5	0.3
2	44	1.8	.5	.4	.3	.4	.4	.6	.4	.2	.4	.3
3	49	1.6	.5	.4	.3	.4	.5	.6	.4	.2	.4	.3
4	74	1.6	.6	.4	.3	.4	.6	.7	.4	.2	.4	.3
5	164	1.6	.6	.4	.3	.4	.4	.8	.4	.2	.3	.3
6	63	7.6	1.2	.4	.5	.4	.4	.8	.5	.2	.3	.3
7	54	17	1.3	.4	1.6	.4	.4	.8	.7	.2	.3	.3
8	41	17	1.2	12	1.0	.4	.4	.7	.4	.2	.3	.4
9	33	17	.9	27	.4	.4	.4	13	.4	.2	.3	.4
10	32	6.7	.6	7.8	.3	.4	.3	7.0	.4	.2	.2	.5
11	30	6.7	.5	.7	.4	.4	.3	1.2	.5	.2	.2	.4
12	31	6.7	.5	.6	.3	.4	.3	.4	.4	.2	.3	.4
13	31	4.6	.5	.5	.3	.4	.4	.4	.4	.2	.3	.4
14	30	1.6	.4	.4	.4	.4	.5	.4	.4	.2	.4	.4
15	30	1.0	.4	.4	.4	.4	.4	.4	.4	.2	.4	.4
16	30	1.2	.4	.4	.4	.4	.4	.4	.4	.2	.4	.4
17	30	1.2	.4	.4	.4	.4	.4	11	.4	.2	.4	.3
18	30	1.3	.4	.4	.4	.4	.4	.4	.3	.2	.5	.3
19	31	1.5	.4	.4	.4	.4	.5	.4	.3	.2	.5	.3
20	31	1.3	.4	.3	.4	.4	.5	.5	.3	.2	.5	.3
21	30	1.0	.4	.3	.4	.5	.8	.6	.2	.2	.3	.3
22	30	.6	.4	.3	.4	.4	.4	.6	.2	.2	.3	.3
23	29	.4	.4	.3	.4	.4	.4	.7	.2	.2	.3	.3
24	20	.5	.4	.4	.4	.5	.5	.6	.1	.2	.3	.3
25	12	.5	.4	.4	.4	.4	.5	.6	.2	.1	.3	.3
26	9.7	.5	.4	.3	.4	.4	.5	.6	.2	.2	.3	.3
27	9.1	.5	.4	.3	.4	.4	.5	.5	.1	.3	.3	.3
28	9.1	.5	.4	.3	.4	.4	.5	.4	.2	.4	.3	.2
29	7.6	.6	.4	18	-	.4	.5	.4	.2	.4	.3	.2
30	3.0	.6	.4	16	-	.4	.6	.4	.2	.4	.3	.2
31	2.5	-	.4	.3	-	.4	-	.4	-	.6	.3	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,058.0	164	2.5	34.1	2,100
November	106.7	17	.4	3.56	212
December	16.7	1.3	.4	.54	33
Calendar year 1946	6,423.3	1,730	.3	17.6	12,740
January	91.0	27	.3	2.94	180
February	12.3	1.6	.3	.44	24
March	12.6	.5	.4	.41	25
April	13.5	.8	.3	.45	27
May	46.9	13	.4	1.51	93
June	10.0	.7	.1	.33	20
July	7.2	.6	.1	.23	14
August	10.6	.5	.2	.34	21
September	9.7	.5	.2	.32	19
Water year 1946-47	1,395.2	164	.1	3.82	2,770

Cottonwood Creek near Lake Arthur, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 32°55'00", long. 104°22'00", in SW¼SE¼ sec. 15, T. 16 S., R. 26 E., 1½ miles upstream from mouth and 6 miles south of town of Lake Arthur.

Drainage area.- 199 square miles (contributing area).

Records available.- March 1932 to September 1947.

Average discharge.- 15 years, 10.3 second-feet.

Extremes.- Maximum discharge during year, 117 second-feet Oct. 5 (gage height, 7.03 feet); minimum daily, 0.2 second-foot Apr. 9, June 7, 9.
1932-47: Maximum discharge, 1,100 second-feet June 13, 1935, from rating curve extended above 15 second-feet by logarithmic plotting; maximum gage height, 13.5 feet May 30, 1937, present datum, from floodmarks, (backwater from Pecos River); no flow at times.

Remarks.- Records good except those for March to July, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	17	18	13	14	6.0	4.1	3.3	e4.9	e0.3	1.3	0.7
2	17	17	15	14	15	10	2.6	.4	e2.7	e.3	1.3	.7
3	15	17	16	14	14	8.7	1.8	1.6	e2.4	e.3	1.3	.7
4	17	17	17	14	13	6.8	1.7	3.5	e2.2	e.5	1.6	.7
5	97	17	15	14	8.7	5.8	3.3	2.0	e4.5	1.3	1.5	.7
6	60	17	14	15	9.5	9.6	8.8	1.8	e1.8	2.2	1.1	.8
7	30	17	14	15	9.3	10	e2.6	1.8	e.2	1.3	1.1	.8
8	24	17	14	16	9.3	10	e.6	2.0	e.3	2.2	1.1	1.3
9	22	17	12	18	9.4	10	e.2	8.2	e.2	2.0	1.1	.9
10	20	17	12	19	9.7	5.4	e1.2	16	e.3	2.0	1.2	.9
11	19	17	13	18	10	a6	e.6	9.8	e1.8	1.3	1.3	.9
12	18	17	12	17	9.9	a6	3.1	7.6	e1.7	1.8	1.0	.9
13	17	17	11	18	9.9	a6	10	3.5	e1.7	1.8	.9	.9
14	16	17	9.6	18	9.9	a6	11	2.4	e1.7	1.6	.9	.8
15	16	17	12	12	9.9	a6	7.4	3.0	e3.4	1.3	1.2	.8
16	17	17	10	11	9.9	a9	2.8	2.8	e1.9	1.3	1.1	.8
17	17	17	10	12	10	a6	3.1	3.1	e2.0	1.5	1.0	.7
18	18	17	9.8	17	9.5	a6	5.2	6.3	e1.8	1.4	.9	.7
19	a18	17	8.0	18	8.9	6.3	7.4	e3.0	e1.7	1.3	.9	.7
20	a18	18	8.6	17	6.1	5.5	11	e3.2	e1.4	1.4	.9	.7
21	a18	17	12	17	5.8	6.4	5.9	e3.8	e.3	1.4	.9	.7
22	a18	16	12	17	5.6	5.9	5.7	e6.3	e.3	1.3	.9	.7
23	18	15	11	17	6.4	9.4	6.8	e3.3	e.3	1.3	1.3	.8
24	18	14	12	12	7.1	5.0	5.5	e6.1	e.3	1.3	1.8	.8
25	18	16	12	11	8.0	5.0	4.4	e6.3	e.3	1.1	.9	.8
26	18	16	9.3	15	7.3	4.3	4.0	e6.3	e.3	a1.1	.9	.8
27	18	15	9.3	13	7.3	7.0	5.0	e5.9	e.4	a1.1	.9	.8
28	18	15	12	15	6.6	5.7	2.8	e5.7	e.4	a1.2	.9	.9
29	17	16	12	17	-	6.5	5.0	e5.2	e.4	a1.2	.9	.9
30	17	16	12	15	-	6.9	4.8	e5.2	e1.1	a1.2	.9	.9
31	17	-	12	14	-	7.5	-	e3.0	-	1.2	.7	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	692	97	15	22.3	1,370
November	497	18	14	16.6	986
December	376.6	18	8.0	12.1	747
Calendar year 1946	3,199.6	123	.1	8.77	6,340
January	473	19	11	15.3	938
February	260.0	15	5.6	9.29	516
March	214.7	10	4.3	6.93	426
April	138.4	11	.2	4.61	275
May	142.4	16	.4	4.59	282
June	42.7	4.9	.2	1.42	85
July	40.5	2.2	.3	1.31	80
August	33.7	1.8	.7	1.09	67
September	24.2	1.3	.7	.81	48
Water year 1946-47	2,935.2	97	.2	8.04	5,820

a No gage-height record; discharge computed on basis of recorded range in stage, fragmentary gage heights, and weekly pattern of diversions.
e Stage-discharge relation indefinite; discharge computed by adding estimated leakage to flow over control.

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Black River above Malaga, N. Mex.

Location.- Water-stage recorder, lat. 32°14'00", long. 104°09'15", in E½ sec. 11, T. 24 S., R. 27 E., 0.6 mile upstream from Black River diversion dam, 4.8 miles west of Malaga, and 7 miles upstream from mouth. Former gage at site 0.2 mile downstream at different datum.

Drainage area.- 343 square miles.

Records available.- March to December 1940, December 1946 to September 1947.

Extremes.- Maximum discharge during period December 1946 to September 1947, 168 second-feet Aug. 23 (gage height, 1.85 feet); minimum daily, 9.4 second-feet June 7, July 4-8.

1940, 1946-47: Maximum discharge, 3,280 second-feet Oct. 13, 1940 (gage height, 5.50 feet, site and datum then in use), from rating curve extended above 34 second-feet by logarithmic plotting based on computation of flow over dam at gage height 5.12 feet; minimum daily, 2.4 second-feet Oct. 10, 1940.

Maximum stage known, 19.0 feet in September 1941, from well-defined floodmarks determined in 1947 (discharge not determined).

Remarks.- Records good. Diversions above station for irrigation.

Rating table, December 1946 to September 1947
(gage height, in feet, and discharge, in second-feet)

0.8	6.6	1.2	42
.9	12	1.3	56
1.0	20	1.5	89
1.1	30	1.7	130

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			-	a16	18	19	17	12	10	10	11	12
2			-	a16	18	19	16	12	10	10	12	12
3			-	a16	18	20	16	12	10	10	12	11
4			-	a16	18	20	15	11	10	9.4	12	10
5			-	a17	18	18	14	11	10	9.4	12	10
6			-	a17	19	20	14	11	10	9.4	12	10
7			-	a17	18	19	14	11	9.4	9.4	12	11
8			-	a17	18	19	14	14	10	9.4	12	43
9			-	a17	17	19	13	14	10	10	12	17
10			-	a17	17	19	12	15	10	11	12	13
11			-	a17	16	17	12	14	10	12	12	12
12			-	a17	17	16	12	13	10	13	12	12
13			-	17	18	16	12	13	10	13	12	12
14			-	17	19	16	13	12	10	13	13	12
15			-	17	19	17	14	12	10	13	13	12
16			-	17	19	18	13	12	11	13	14	12
17			-	18	20	18	13	12	11	13	15	12
18			-	19	20	20	13	12	11	15	14	11
19			-	18	20	20	12	11	11	15	13	11
20			16	18	19	20	12	10	11	15	12	11
21			16	18	20	19	12	11	11	14	12	11
22			16	18	21	19	12	11	10	14	12	11
23			16	19	20	18	12	12	11	14	24	11
24			16	19	20	18	13	12	11	14	16	11
25			17	19	20	18	12	12	11	14	13	11
26			17	18	20	18	12	12	11	12	13	11
27			16	18	20	18	12	11	12	12	14	11
28			a16	18	20	18	12	10	11	11	13	11
29			a16	17	-	17	12	10	11	11	12	11
30			a16	17	-	17	12	11	10	11	12	11
31			a16	18	-	17	-	10	-	10	12	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	-	-	-	-	-
November	-	-	-	-	-
December 20-31	194	17	16	16.2	385
Calendar year	-	-	-	-	-
January	540	19	16	17.4	1,070
February	527	21	16	18.8	1,050
March	567	20	16	18.3	1,120
April	392	17	12	13.1	778
May	366	15	10	11.8	726
June	313.4	12	9.4	10.4	622
July	370	15	9.4	11.9	734
August	402	24	11	13.0	797
September	376	43	10	12.5	746
The period	-	-	-	-	8,030

a No gage-height record; discharge interpolated.

Delaware River near Red Bluff, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 32°01', long. 104°03', sec. 23, T. 26 S., R. 28 E., at bridge on U. S. Highway 285, 3½ miles upstream from mouth and 4 miles south of Red Bluff, Eddy County. Datum of gage is 2,900.7 feet above mean sea level, datum of 1929.
Drainage area.- 967 square miles.
Records available.- October 1937 to September 1947. April 1912 to September 1913 at site 3 miles upstream, published as Delaware River near Malaga, N. Mex. May 1914 to June 1915 at site 2½ miles downstream, published as Delaware River near Angeles, Tex.
Average discharge.- 11 years (1912-13, 1937-47), 12.7 second-feet.
Extremes.- Maximum discharge during year, 3,120 second-feet Oct. 4 (gage height, 5.75 feet); no flow at times.
1912-13, 1914-15, 1937-47: Maximum discharge, 34,600 second-feet June 27, 1938 (gage height, 18.00 feet, from floodmarks), by slope-area method; no flow at times.
Remarks.- Records good except those for period of ice effect, which are poor. No diversion above station.

Rating table, water year 1946-47 except period of ice effect
(gage height, in feet, and discharge, in second-feet)

0.52	0	0.9	1.1	1.3	5.5	1.7	14	2.1	34	2.5	98
.6	.1	1.0	1.9	1.4	7.1	1.8	18	2.2	44	2.6	130
.7	.2	1.1	2.9	1.5	9.2	1.9	21	2.3	56	2.8	205
.8	.6	1.2	4.1	1.6	12	2.0	27	2.4	72	3.0	290

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	2.3	2.8	b2.7	2.4	2.4	2.2	1.3	0.6		0	0.1
2	13	2.2	2.7	b2.7	2.5	2.4	2.1	1.3	.4		0	.1
3	6.8	2.0	2.8	b2.7	2.5	2.4	2.1	1.3	.3		0	.1
4	276	2.1	2.8	b2.7	2.4	2.5	2.0	1.3	.2		0	0
5	145	2.5	2.9	b2.7	2.4	2.4	1.8	1.2	.2		0	0
6	46	2.8	2.9	b2.7	2.5	3.0	1.9	1.1	.2		0	0
7	15	2.8	2.9	b2.7	2.5	3.6	2.0	1.0	.1		0	0
8	8.1	2.7	2.9	b2.7	2.4	3.2	2.0	1.6	.1		0	0
9	5.9	2.7	3.0	b2.7	2.4	2.9	1.9	1.8	.1		0	0
10	4.8	2.6	3.0	b3.0	2.5	2.8	1.7	3.4	.1		0	1.1
11	4.5	2.7	3.7	3.2	2.5	2.7	1.7	4.7	0		0	1.0
12	3.6	2.7	3.3	3.0	2.5	2.5	1.6	6.3	0		0	.4
13	3.5	2.7	3.0	*2.8	2.4	2.4	1.8	3.0	0		0	.3
14	3.3	2.7	2.8	2.7	2.4	2.4	2.2	1.7	0		0	.2
15	3.2	2.7	2.8	2.6	2.4	2.4	2.9	1.4	0		0	.2
16	3.2	2.6	2.8	2.6	2.5	2.4	2.8	1.1	.2		0	.2
17	3.0	2.6	2.7	3.0	2.6	2.5	2.5	1.0	.9		0	.1
18	2.8	2.6	2.6	3.7	2.4	3.2	2.3	1.0	.6		5.2	.1
19	2.7	2.6	2.7	3.6	2.5	3.3	1.9	1.1	.5		4.5	.1
20	2.8	2.6	2.8	3.1	2.5	3.0	1.7	1.2	.4		2.3	.1
21	2.8	2.6	2.8	3.0	2.6	2.7	1.7	1.0	.3		1.0	.1
22	3.0	2.7	2.8	2.9	2.6	2.7	1.7	.9	.1		.5	.1
23	2.8	2.7	2.7	2.9	2.5	2.5	1.5	5.7	.1		.3	.2
24	2.6	2.7	2.8	2.8	2.4	2.1	1.5	3.2	0		.3	.2
25	2.5	2.9	2.8	2.7	2.4	2.1	1.5	1.6	.9		.9	.2
26	2.5	3.0	2.8	2.7	2.5	2.2	1.7	1.2	.6		2.5	.2
27	2.7	2.9	2.8	2.6	2.5	2.2	1.8	.9	.2		.8	.2
28	2.7	2.9	2.7	2.6	2.5	2.1	1.9	.7	.1		.5	.3
29	2.6	2.9	2.5	2.4	-	2.1	1.7	.5	0		.4	.3
30	2.6	2.9	b2.7	2.3	-	2.2	1.4	.5	0		.2	.3
31	2.5	-	b2.7	2.4	-	2.1	-	.6	-		.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	598.5	276	2.5	19.3	1,190
November	79.4	3.0	2.0	2.65	157
December	88.0	3.7	2.5	2.84	175
Calendar year 1946	2,393.7	543	0	6.56	4,750
January	86.9	3.7	2.3	2.80	172
February	69.2	2.6	2.4	2.47	137
March	79.4	3.6	2.1	2.56	157
April	57.5	2.9	1.4	1.92	114
May	54.6	6.3	.5	1.76	108
June	7.2	.9	0	.24	14
July	0	0	0	0	0
August	19.6	5.2	0	.63	39
September	6.2	1.1	0	.21	12
Water year 1946-47	1,146.5	276	0	3.14	2,280

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Salt (Screwbean) Draw near Orla, Tex.

Location.- Water-stage recorder and low-water control, lat. 31°52'40", long. 103°56'50", at bridge on U. S. Highway 285, 157 feet upstream from Panhandle & Santa Fe Railway bridge, 2.7 miles southwest of Red Bluff Dam, 4.1 miles northwest of Orla, Reeves County, and 5 miles upstream from mouth. Datum of gage is 2,804.2 feet above mean sea level, datum of 1929.

Drainage area.- 455 square miles (contributing area).

Records available.- August 1939 to December 1940, October 1943 to September 1947.

Extremes.- Maximum discharge during year, 586 second-feet Oct. 4 (gage height, 9.26 feet), from rating curve extended above 460 second-feet; no flow at times.
1939-40, 1943-47: Maximum discharge, 3,040 second-feet Aug. 18, 1944 (gage height, 13.88 feet), from rating curve extended above 460 second-feet; no flow at times.
Floods have reached a stage of 18 or 19 feet, from information by local residents.

Remarks.- Records fair. No diversion above station. Records of water analyses for water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.3	0.1	0.3	0.6	0.1	0.1		0				
2	.8	0	.3	.6	.2	.2		0				
3	2.3	0	.3	.6	.2	.2		0				
4	89	0	.3	.6	.2	.2		0				
5	158	0	.3	.5	.2	.1		0				
6	38	.1	.3	.5	.2	.3		0				
7	21	.1	.3	.4	.2	.6		0				
8	6.9	.2	.3	.5	.2	.7		0				
9	4.4	.2	.4	.6	.2	.6		9.6				
10	5.6	.2	.5	.6	.2	.5		6.6				
11	2.4	.3	.8	.6	.3	.4		2.8				
12	1.8	.3	.8	.5	.2	.3		1.5				
13	1.1	.3	.6	.5	.2	.3		.8				
14	.8	.3	.5	.4	.3	.2		.5				
15	.8	.3	.5	.3	.2	.2		.3				
16	.6	.3	.4	.3	.2	.2		.2				
17	.5	.3	.3	.5	.2	.2		.1				
18	.4	.3	.3	.6	.2	.3		0				
19	.3	.3	.3	.6	.2	.4		0				
20	.3	.3	.3	.6	.2	.4		0				
21	.3	.2	.3	.6	.2	.4		0				
22	.3	.2	.3	.5	.2	.4		0				
23	.3	.2	.3	.5	.2	.3		.6				
24	.3	.2	.3	.4	.2	.2		.1				
25	.1	.2	.3	.4	.2	.2		0				
26	.1	.2	.3	.3	.2	.1		0				
27	.1	.3	.3	.3	.2	.1		0				
28	.1	.3	.3	.3	.2	.1		0				
29	.1	.3	.2	.2	-	.1		0				
30	.1	.3	.2	.2	-	0		0				
31	.1	-	.4	.2	-	0		0				

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	338.2	158	0.1	10.9	671
November	6.3	.3	0	.21	12
December	11.3	.8	.2	.36	22
Calendar year 1946	1,020.7	318	0	2.80	2,020
January	14.3	.6	.2	.46	28
February	5.7	.3	.1	.20	11
March	8.3	.7	0	.27	16
April	0	0	0	0	0
May	23.1	9.6	0	.75	46
June	0	0	0	0	0
July	0	0	0	0	0
August	0	0	0	0	0
September	0	0	0	0	0
Water year 1946-47	407.2	158	0	1.12	806

Principal diversions from Pecos River between Red Bluff Reservoir and Imperial, Tex.

Records of discharge are collected for eight canals that divert water from Pecos River between Red Bluff Reservoir and Imperial, Tex. Each of these canals is equipped with a water-stage recorder for collecting gage-height records. All stations are located within 2 miles of canal head gate except as noted herein. Water diverted by these canals is used for irrigation of lands on both sides of Pecos River in Reeves, Ward, and Pecos Counties. Stations prior to 1941 were published separately (daily discharge figures for the earlier records). Gage-height records collected in cooperation with Red Bluff Water Power Control District, Pecos, Tex.

Reeves County Water Improvement District No. 2 Canal near Mentone, diverts from right bank, lat. 31°38', long. 103°34'. Records available, February 1922 to July 1925 (published as Farmers Independent Canal near Porterville, Tex.) and August 1939 to September 1947.

Ward County Water Improvement District No. 3 Canal near Barstow, diverts from left bank, lat. 31°34', long. 103°31'. Records available, August 1939 to September 1947.

Ward County Irrigation District No. 1 Canal near Barstow, diverts from left bank, lat. 31°33', long. 103°29'. Records available, February 1922 to September 1925 at site about half a mile upstream (published as Barstow Canal near Barstow, Tex.), and August 1939 to September 1947.

Grandfalls-Big Valley Canal near Barstow, diverts from left bank, lat. 31°25', long. 103°15'. Records available, March 1922 to November 1925, September 1939 to September 1947. Water diverted through Ward County Water Improvement District No. 2 Canal irrigates most of lands formerly supplied by this canal.

Pecos County Water Improvement District No. 2 upper diversion canal near Grandfalls, diverts from right bank, lat. 31°18', long. 102°55' (gage 15 miles downstream from head gates). Records available, March 1922 to July 1925 at site 11 miles upstream (published as Imperial High-line Canal near Grandfalls, Tex.), and August 1939 to September 1947.

Pecos County Water Improvement District No. 2 Canal near Imperial, diverts from right bank, lat. 31°16', long. 102°45' (gage 7½ miles below outlet head gate at Imperial Reservoir). Records available, April 1940 to September 1947.

Ward County Water Improvement District No. 2 Canal near Grandfalls, diverts from left bank, lat. 31°22', long. 103°01'. Records available, August 1939 to September 1947.

Pecos County Water Improvement District No. 3 Canal near Imperial, diverts from Pecos County Water Improvement District No. 2 Canal above station near Imperial on that canal, lat. 31°18', long. 102°45'. Records available, March 1940 to September 1947.

Several smaller diversions (pumps) divert water between Red Bluff Reservoir and Imperial for irrigation of lands adjacent to Pecos River, but no records for them were obtained.

Diversions, in acre-feet, water year October 1946 to September 1947

Month	Reeves County District 2 Canal near Mentone	Ward County District 3 Canal near Barstow	Ward County District 1 Canal near Barstow	Grandfalls Big-Valley Canal near Barstow
October	362	149	a68	808
November	59	0	a79	0
December	22	0	111	0
Calendar year 1946	5,500	5,870	17,170	2,840
January	0	0	70	0
February	23	0	117	a32
March	53	0	466	6.7
April	a,c1,470	3,200	4,300	961
May	c1,370	1,190	2,390	806
June	984	a266	2,630	0
July	c2,080	1,950	2,430	a903
August	c530	878	3,840	0
September	57	13	1,360	0
Water year 1946-47	7,010	7,650	17,860	3,520

Month	Pecos County District 2 Canal (upper diver.) near Grandfalls	Pecos County District 2 Canal near Imperial*	Ward County District 2 Canal near Grandfalls	Pecos County District 3 Canal near Imperial*
October	0	0	a380	0
November	0	0	a1,200	0
December	0	0	1,430	3.0
Calendar year 1946	20,730	8,520	19,930	8,120
January	305	0	716	e48
February	a421	0	43	117
March	3,200	0	829	0
April	9,770	3,860	8,710	3,500
May	6,490	1,720	2,420	1,960
June	1,600	653	2,040	1,430
July	3,980	3,180	4,730	3,770
August	874	911	880	110
September	447	165	378	0
Water year 1946-47	27,090	10,490	23,760	10,940

* Combined flow of Pecos County Water Improvement District No. 2 Canal near Imperial and Pecos County Water Improvement District No. 3 Canal near Imperial represents released water from Imperial Reservoir (fed by Pecos County Water Improvement District No. 2 upper diversion canal) plus water diverted from Pecos River by Pecos County Water Improvement District No. 2 lower diversion canal.

a No gage-height record at times; discharge computed on basis of available measurements, recorded range in stage, and engineers' notes.

c Backwater from check gates part of month.

e Gage height not representative of discharge part of month; discharge computed on basis of engineers' notes.

Madera Canyon near Toyahvale, Tex.

Location.- Water-stage recorder, lat. 30°52', long. 103°58', in Jeff Davis County, 11 miles upstream from Aguja Canyon and 12 miles southwest of Toyahvale, Reeves County.

Drainage area.- 54 square miles.

Records available.- July 1932 to September 1947.

Average discharge.- 15 years, 4.88 second-feet.

Extremes.- Maximum discharge during year, 1,400 second-feet Oct. 7 (gage height, 4.47 feet), from rating curve extended above 200 second-feet on basis of slope-area determination at gage height 6.8 feet; no flow at times.
1932-47: Maximum discharge, 5,120 second-feet Sept. 29, 1932 (gage height, 8.00 feet, from floodmark), from rating curve extended above 200 second-feet on basis of slope-area determination at gage height 6.8 feet; no flow at times.

Remarks.- Records fair except those for period of no gage-height record, which are poor. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	2.0	0.4	0.4	0.4	0		0		0		
2	13	1.8	.4	.4	.4	0		0		0		
3	13	1.7	.4	.4	.4	0		0		0		
4	15	1.5	.4	b.3	.4	0		0		0		
5	34	1.4	.4	b.3	.4	0		0		0		
6	31	1.3	.4	.4	.3	0		0		0		
7	351	1.2	.4	.4	.3	0		0		0		
8	123	1.1	.4	.4	.3	0		0		0		
9	74	1.1	.4	.6	.3	0		0		0		
10	43	1.0	.6	*.6	.3	.1		118		0		
11	30	.9	.6	.4	.2	.1		60		0		
12	22	.8	.4	.4	.2	.1		16		0		
13	18	.8	.4	.4	.2	.1		7.6		0		
14	14	.8	.4	.4	.2	.1		4.6		0		
15	12	.8	.4	.4	.2	0		2.6		0		
16	11	.8	.4	.4	.1	0		1.6		0		
17	11	.8	.4	.4	.1	0		1.1		8.0		
18	9.8	.6	.4	.6	.1	0		1.0		1.0		
19	9.0	.6	.4	.6	.1	0		.8		.5		
20	8.4	.6	.4	.6	0	0		.8		.1		
21	7.4	.6	.4	.6	0	0		.6		0		
22	6.8	.5	.4	.6	0	0		.4		0		
23	6.2	.5	.3	.5	0	0		.4		0		
24	5.6	.5	.3	.5	0	0		.4		0		
25	5.1	.5	.3	.4	0	0		.3		0		
26	4.6	.5	.3	.4	0	0		.3		0		
27	4.1	.5	.3	.4	0	0		.2		0		
28	3.3	.5	.3	.4	0	0		.2		0		
29	3.1	.5	.3	.4	-	0		.2		0		
30	2.6	.4	.3	.4	-	0		.1		0		
31	2.3	-	.4	.4	-	0		0		0		

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	907.3	351	2.3	29.3	1,800
November	26.6	2.0	.4	.89	53
December	12.0	.6	.3	.39	24
Calendar year 1946	2,162.6	411	0	5.92	4,290
January	13.8	.6	.3	.45	27
February	4.9	.4	0	.18	9.7
March	.5	.1	0	.02	1.0
April	0	0	0	0	0
May	217.2	118	0	7.01	431
June	0	0	0	0	0
July	9.6	8.0	0	.31	19
August	0	0	0	0	0
September	0	0	0	0	0
Water year 1946-47	1,191.9	351	0	3.27	2,360

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- No gage-height record Oct. 15 to Nov. 22, Jan. 6-9; discharge computed on basis of recorded range in stage and weather records.

Toyah Creek below Toyah Lake, near Pecos, Tex.

Location.- Water-stage recorder, lat. 31°21', long. 103°24', at bridge on county road between Pecos and Grandfalls, at lower end of Toyah Lake, 6 miles upstream from mouth and 7.4 miles southeast of Pecos, Reeves County.

Drainage area.- 3,709 square miles (contributing area).

Records available.- August 1939 to September 1947.

Extremes.- Maximum discharge during year, 12 second-feet May 11 (gage height, 1.52 feet); no flow most of time.
1939-47: Maximum discharge, 5,850 second-feet Aug. 7, 1940 (gage height, 4.17 feet); no flow most of time.
Flood of September 1932 reached a stage of 7.7 feet, from information by local residents.

Remarks.- Records fair. Several diversions above station for irrigation. Flood flow materially affected by use of spread-out dams above station. Records of water analyses for the water year 1947 are given in Water-Supply Paper 1102.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0							0			0	
2	0							0			0	
3	0							0			0	
4	0							0			0	
5	0							0			0	
6	0							0			0	
7	.9							0			0	
8	1.9							0			0	
9	.6							0			0	
10	1.2							2.8			0	
11	.2							10			0	
12	0							6.9			0	
13	0							2.4			0	
14	0							.4			0	
15	0							.4			0	
16	0							5.2			0	
17	0							2.3			0	
18	0							.6			0	
19	0							1.0			0	
20	0							.2			0	
21	0							.1			0	
22	0							0			0	
23	0							0			0	
24	0							0			.9	
25	0							0			5.2	
26	0							0			4.2	
27	0							0			2.4	
28	0							0			1.2	
29	0							0			.5	
30	0							0			.2	
31	0							0			0	

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	4.8	1.9	0	0.15	9.5
November	0	0	0	0	0
December	0	0	0	0	0
Calendar year 1946	101.8	11	0	.28	202
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	0	0	0	0	0
May	32.3	10	0	1.04	64
June	0	0	0	0	0
July	0	0	0	0	0
August	14.6	5.2	0	.47	29
September	0	0	0	0	0
Water year 1946-47	51.7	10	0	.14	102

San Solomon Springs at Toyahvale, Tex.

Location.- Water-stage recorder and sharp-crested weir, lat. 30°56', long. 103°47', on South Canal at Toyahvale, Reeves County, and 540 feet downstream from spring pool. Datum of gage is 3,311.0 feet above mean sea level, datum of 1929.

Records available.- October 1931 to December 1933, March 1941 to September 1947. 1900, 1904, 1919, 1922-25, 1934-36 (occasional discharge measurements published as miscellaneous measurements).

Extremes.- Maximum daily discharge during year, 51 second-feet Oct. 11-13; minimum daily, 31 second-feet Sept. 7, 8, 16-22, 24-30.
1931-33, 1941-47: Maximum daily discharge, 71 second-feet Oct. 7-9, 1932, Oct. 26-30, 1941; minimum daily, 30 second-feet Nov. 5-11, 1931, Jan. 22 to Feb. 23, 1932.
Maximum discharge measured during years when occasional measurements were made, 46 second-feet Sept. 5, 1900, July 21, 1904.

Remarks.- Records good. Discharge represents total flow of springs and is determined by combining flows in South Canal and two additional outlets (flow measured periodically), Middle and North Canals. Flow into each canal regulated by operation of head gates. Water used for irrigation in vicinity of Balmorhea.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	45	42	41	37	35	34	35	35	34	33	33
2	42	45	42	41	37	35	34	35	35	34	33	32
3	42	45	42	41	37	35	34	35	35	34	33	32
4	43	45	42	41	37	35	34	35	34	34	33	32
5	43	44	42	40	37	35	34	35	35	34	33	32
6	44	44	42	40	37	35	34	35	34	34	33	32
7	45	44	42	40	37	35	34	35	34	34	33	31
8	48	43	42	40	37	34	34	35	34	34	33	31
9	49	43	42	40	37	34	35	35	35	34	33	32
10	50	43	42	39	37	37	35	35	35	34	33	32
11	51	43	42	39	37	34	35	36	35	34	32	32
12	51	43	42	39	37	34	35	36	35	34	32	32
13	51	43	42	39	37	34	35	36	35	34	32	32
14	50	43	42	39	37	34	35	36	35	34	32	32
15	50	43	42	39	37	34	35	36	35	34	33	32
16	49	42	42	39	37	34	35	36	34	34	33	31
17	49	42	42	39	36	34	35	36	34	34	33	31
18	49	42	42	38	36	34	35	36	34	34	33	31
19	48	42	42	38	36	34	35	36	34	34	32	31
20	47	42	42	38	36	34	35	36	34	34	32	31
21	47	42	42	38	36	34	35	36	34	34	32	31
22	46	42	42	38	36	34	35	36	34	34	32	31
23	46	42	42	38	36	34	34	36	34	34	32	32
24	46	42	42	38	36	34	34	36	34	34	32	31
25	46	42	42	38	36	34	34	36	34	34	32	31
26	46	42	42	38	36	34	35	36	34	34	32	31
27	46	42	42	38	36	34	35	36	34	34	33	31
28	45	42	42	38	36	34	35	36	34	33	33	31
29	45	42	42	38	-	34	35	35	34	33	33	31
30	45	42	42	38	-	34	35	35	34	33	33	31
31	45	-	42	37	-	34	-	35	-	33	33	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,446	51	42	46.6	2,870
November	1,286	45	42	42.9	2,550
December	1,302	42	42	42.0	2,580
Calendar year 1946	13,766	51	34	37.7	27,300
January	1,207	41	37	38.9	2,390
February	1,024	37	36	36.6	2,030
March	1,061	35	34	34.2	2,100
April	1,039	35	34	34.6	2,060
May	1,103	36	35	35.6	2,190
June	1,031	35	34	34.4	2,040
July	1,050	34	33	33.9	2,080
August	1,011	33	32	32.6	2,010
September	945	33	31	31.5	1,870
Water year 1946-47	13,505	51	31	37.0	26,770

Comanche Springs at Fort Stockton, Tex.

Location.- Water-stage recorder, lat. 30°53', long. 102°52', on outlet canal of Pecos County Water Improvement District No. 1, in eastern outskirts of Fort Stockton, Pecos County, a quarter of a mile upstream from bridge on U. S. Highway 290 and 0.5 mile downstream from head of springs. Datum of gage is 2,922.8 feet above mean sea level, datum of 1929.

Records available.- February 1941 to September 1947. 1899, 1904, 1919, 1922, 1924-25, 1932-41 (occasional discharge measurements published as miscellaneous measurements).

Extremes.- Maximum daily discharge during year, 45 second-feet Feb. 25 to Mar. 11; minimum daily, 39 second-feet Sept. 13-30.

1941-47: Maximum daily discharge, 54 second-feet Jan. 30, 1942; minimum daily, 39 second-feet Aug. 12 to Sept. 21, 1945, Sept. 13-30, 1947.

Maximum discharge measured prior to 1941, 66 second-feet June 23, 1899; minimum measured, 38.7 second-feet July 14, 1936.

Remarks.- Records good. Discharge represents total flow of springs exclusive of surface runoff from precipitation. Spring flow fluctuates slowly; aquatic growth changes stage-discharge relation frequently; daily discharge determined from hydrograph based on discharge measurements. About 6,000 acres of land irrigated below station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	43	42	41	43	45	43	43	42	40	40	40
2	43	43	42	41	43	45	43	43	42	40	40	40
3	43	43	41	41	44	45	43	43	42	40	40	40
4	43	43	41	41	44	45	43	43	42	40	40	40
5	43	43	41	41	44	45	43	43	42	40	40	40
6	43	42	41	41	44	45	43	43	41	40	40	40
7	43	42	41	41	44	45	43	43	41	40	40	40
8	43	42	41	42	44	45	43	43	41	40	40	40
9	43	42	41	42	44	45	43	43	41	40	40	40
10	43	42	41	42	44	45	43	43	41	40	40	40
11	43	42	41	42	44	45	43	43	41	40	40	40
12	43	42	41	42	44	44	43	43	41	40	40	40
13	43	42	41	42	44	44	43	43	41	40	40	39
14	43	42	41	42	44	44	43	43	41	40	40	39
15	43	42	41	42	44	44	43	43	41	40	40	39
16	43	42	41	42	44	44	43	43	41	40	40	39
17	43	42	41	42	44	44	43	43	41	40	40	39
18	43	42	41	42	44	44	43	43	41	40	40	39
19	43	42	41	42	44	44	43	43	41	40	40	39
20	43	42	41	42	44	44	43	43	41	40	40	39
21	43	42	41	42	44	44	43	43	41	40	40	39
22	43	42	41	42	44	44	43	43	40	40	40	39
23	43	42	41	43	44	44	43	43	40	40	40	39
24	43	42	41	43	44	44	43	43	40	40	40	39
25	43	42	41	43	45	44	43	43	40	40	40	39
26	43	42	41	43	45	44	43	42	40	40	40	39
27	43	42	41	43	45	44	43	42	40	40	40	39
28	43	42	41	43	45	43	43	42	40	40	40	39
29	43	42	41	43	-	43	43	42	40	40	40	39
30	43	42	41	43	-	43	43	42	40	40	40	39
31	43	-	41	43	-	43	-	42	-	40	40	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,333	43	43	43.0	2,640
November	1,265	43	42	42.2	2,510
December	1,273	42	41	41.1	2,520
Calendar year 1946	15,843	46	41	43.4	31,420
January	1,304	43	41	42.1	2,590
February	1,234	45	43	44.1	2,450
March	1,371	45	43	44.2	2,720
April	1,290	43	43	43.0	2,560
May	1,327	43	42	42.8	2,630
June	1,226	42	40	40.9	2,430
July	1,240	40	40	40.0	2,460
August	1,240	40	40	40.0	2,460
September	1,182	40	39	39.4	2,340
Water year 1946-47	15,285	45	39	41.9	30,310

Devils River near Juno, Tex.

Location.- Water-stage recorder, lat. 29°58', long. 101°09', 500 feet downstream from Walter Baker ranch house, 2 miles upstream from Phillips Creek, and 13½ miles southwest of Juno, Val Verde County. Datum of gage is 1,489.7 feet above mean sea level, datum of 1929 (Corps of Engineers bench mark).

Drainage area.- 2,733 square miles.

Records available.- May 1925 to September 1947.

Average discharge.- 22 years, 188 second-feet.

Extremes.- Maximum discharge during year, 6,140 second-feet Oct. 8 (gage height, 8.22 feet); minimum, 53 second-feet Sept. 25-30.
1925-47: Maximum discharge, 370,000 second-feet Sept. 1, 1932 (gage height, 31.3 feet, from floodmarks), by slope-area method; minimum, 48 second-feet June 4-6, 1930.

Remarks.- Records good except those above 150 second-feet, which are fair. No diversion above station.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	101	86	82	85	83	80	76	68	76	63	60	59
2	95	88	82	83	83	80	74	66	74	63	65	63
3	94	85	82	82	83	80	74	66	74	63	66	59
4	92	83	82	82	82	80	76	66	72	63	63	59
5	92	85	82	82	82	80	74	66	71	63	62	58
6	941	85	82	82	82	79	74	65	72	63	60	56
7	503	85	83	82	82	79	74	65	71	63	60	56
8	1,190	85	83	80	82	79	74	65	72	63	59	55
9	1,510	85	83	85	80	79	76	65	71	63	58	55
10	320	85	86	85	80	79	74	71	71	63	58	56
11	139	85	99	83	82	79	74	71	71	65	58	56
12	115	83	86	82	82	79	74	69	71	65	59	66
13	109	83	86	82	82	77	72	68	72	66	59	69
14	104	83	86	82	82	77	74	69	72	65	59	66
15	103	83	85	82	82	77	74	935	74	65	58	63
16	101	83	85	83	80	77	74	129	71	63	58	60
17	101	83	33	97	80	77	74	109	69	63	58	59
18	101	83	83	103	80	83	74	101	68	63	56	58
19	99	83	83	103	80	77	74	97	69	63	56	58
20	97	83	83	101	80	77	74	92	68	63	58	58
21	95	83	83	97	80	77	71	88	68	63	60	56
22	94	82	83	95	80	77	72	86	66	62	62	56
23	94	82	83	94	80	77	72	85	66	62	62	55
24	94	82	83	92	80	77	71	83	68	62	62	55
25	94	82	82	88	80	77	74	80	68	62	63	55
26	92	82	82	88	80	76	71	79	66	60	68	53
27	92	82	82	88	80	76	72	77	65	60	68	53
28	92	82	80	86	82	76	72	77	65	62	65	53
29	90	82	80	86	-	76	72	76	65	60	63	53
30	88	82	79	85	-	76	71	76	63	60	60	53
31	88	-	85	85	-	76	-	76	-	60	60	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	7,020	1,510	88	226	13,920
November	2,505	88	82	83.5	4,970
December	2,588	99	79	83.5	5,130
Calendar year 1946	46,405	9,210	58	127	92,040
January	2,710	103	80	87.4	5,380
February	2,271	83	80	81.1	4,500
March	2,416	83	76	77.9	4,790
April	2,202	76	71	73.4	4,370
May	3,286	935	65	106	6,520
June	2,089	76	63	69.6	4,140
July	1,944	66	60	62.7	3,860
August	1,883	68	56	60.7	3,730
September	1,731	69	53	57.7	3,430
Water year 1946-47	32,645	1,510	53	89.4	64,740

Peak discharge.- Oct. 8 (7:30 p.m.) 6,140 sec.-ft.; May 15 (5:00 a.m.) 5,310 sec.-ft.

Las Moras Springs at Brackettville, Tex.

Location.- Staff gage, lat. 29°18', long. 100°25', in spring pool at Brackettville, Kinney County, a quarter of a mile upstream from bridge on Brackettville-Fort Clark road. Datum of gage is 1,095.0 feet above mean sea level (Texas Highway Department bench mark).

Records available.- December 1895 to August 1938 (occasional miscellaneous discharge measurements), September 1938 to September 1947 (discharge measurements only).

Extremes.- 1895-1947: Maximum discharge measured, 60 second-feet (by Prof. T. U. Taylor) June 30, 1899; minimum measured, 5.7 second-feet July 21, 1945.

Remarks.- Discharge measurements represent total flow of springs. Springs issue from limestone in Balcones fault zone and respond to rainfall on Edwards Plateau. Elevation of spring pool is regulated by outlet gate which materially affects discharge. City of Brackettville diverts water from spring pool for domestic and recreational uses.

Discharge measurements, in second-feet, of Las Moras Springs at Brackettville, Tex., water year October 1946 to September 1947

Month	Gage height (feet)	Discharge (second-feet)	Month	Gage height (feet)	Discharge (second-feet)
Oct. 8	3.84	35.7	Apr. 3	†3.66	25.7
Oct. 26	†4.08	42.1	May 8	††6.16	30.4
Dec. 6	3.94	35.1	June 23	††5.72	41.4
Jan. 16	††5.28	22.0	July 30	††5.72	43.5
Feb. 26	†3.96	35.7	Sept.10	†3.82	30.6

† Outlet gate open; water flowing under gate and effective head on springs increased.
†† Outlet gate closed; water flowing over top of gate and effective head on springs decreased.
Note.- Values of gage height indicate elevation of water surface in spring pool. Variation of head on springs has a material effect on their discharge.

MIMBRES RIVER BASIN

Mimbres River near Mimbres, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 32°52'20", long. 107°59'00", in NE¼SW¼ sec. 33, T. 16 S., R. 11 W., a quarter of a mile downstream from Bear Canyon and 1½ miles northwest of Mimbres.

Drainage area.- 183 square miles.

Records available.- October 1930 to September 1947 in reports of Geological Survey. May 1921 to December 1931 in reports of State engineer.

Average discharge.- 24 years (1921-24, 1926-47), 11.9 second-feet.

Extremes.- Maximum discharge during year, 300 second-feet July 18 (gage height, 3.95 feet, from floodmarks), from rating curve extended above 120 second-feet by logarithmic plotting; minimum daily, 0.9 second-foot July 22.
1930-47: Maximum discharge, 2,230 second-feet Aug. 19, 1944 (gage height, 5.54 feet), from rating curve extended above 120 second-feet by logarithmic plotting; minimum daily, that of July 22, 1947.

Remarks.- Records fair. Flow partly regulated by Bear Canyon Reservoir (capacity, 700 acre-feet; no release during water year 1947). Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.6	6.9	6.7	5.9	4.9	2.4	3.0	3.1	1.8	1.3	1.2	6.5
2	3.2	6.8	6.7	5.8	4.9	2.5	2.7	2.6	1.7	1.3	1.2	4.0
3	3.9	6.7	6.7	5.7	4.9	2.5	2.5	2.1	1.8	1.3	1.2	2.8
4	5.4	6.6	6.6	5.6	4.8	2.5	2.5	2.1	1.7	1.4	1.4	2.7
5	6.6	6.7	6.6	a5.5	4.8	2.4	2.3	2.0	1.8	1.4	1.4	2.7
6	6.6	6.6	6.6	a5.5	4.8	2.4	2.3	2.2	1.7	1.4	1.3	2.4
7	5.8	6.6	6.6	a5.4	4.9	1.9	2.7	2.4	1.4	1.4	1.4	1.4
8	5.8	6.5	6.5	a5.4	4.8	1.9	1.9	2.6	1.4	1.4	1.4	1.4
9	5.9	6.5	6.5	5.3	4.9	1.9	1.9	3.4	1.2	1.4	1.4	1.4
10	5.9	6.5	6.4	5.3	4.8	1.9	2.1	3.5	1.3	1.4	1.3	1.7
11	5.9	6.5	6.4	5.3	4.8	1.9	2.3	3.7	1.3	1.4	1.3	2.1
12	6.0	6.5	6.2	5.3	4.8	1.9	2.9	4.2	1.2	1.4	1.3	2.2
13	6.0	6.6	6.2	5.2	4.8	1.9	3.4	4.1	1.3	1.3	1.3	2.5
14	6.2	6.7	6.2	5.1	4.8	1.8	3.2	3.8	1.4	1.3	1.4	2.9
15	6.4	6.7	6.2	5.1	4.8	1.7	3.1	3.5	1.7	1.3	1.9	3.3
16	6.4	6.7	6.1	5.0	4.8	1.6	2.7	2.8	1.6	1.4	4.3	2.4
17	6.4	6.7	6.1	5.1	4.8	1.5	2.4	2.7	1.5	1.5	2.4	2.2
18	6.5	6.7	6.1	5.1	3.1	1.6	2.5	2.7	5.0	6.4	2.4	4.9
19	6.6	6.7	6.1	5.1	1.9	1.8	2.3	2.8	5.8	5.0	7.9	4.7
20	6.5	6.7	6.1	5.1	2.5	2.4	2.0	2.5	5.2	2.5	5.6	4.3
21	6.4	6.7	6.0	5.1	2.1	2.6	2.1	1.9	3.5	1.0	4.9	4.2
22	6.4	6.7	6.0	5.1	1.9	1.9	2.2	1.8	2.7	.9	64	4.1
23	6.4	6.7	5.9	5.1	1.8	1.9	2.4	2.0	2.9	1.0	32	4.1
24	6.4	6.8	5.9	5.1	1.8	1.8	2.5	1.8	2.2	1.4	13	3.9
25	6.4	6.7	5.9	5.0	1.8	1.8	2.6	1.7	2.2	1.3	10	4.0
26	6.4	6.7	6.0	5.0	1.8	2.0	3.0	1.6	2.4	1.2	7.4	4.2
27	6.6	6.7	6.1	5.0	2.3	2.2	3.2	2.2	2.3	1.2	d6	3.3
28	6.6	6.7	6.1	4.9	2.4	2.3	3.4	2.4	2.1	1.2	d5	3.3
29	8.6	6.7	6.0	5.0	-	1.8	3.5	2.4	2.0	1.1	a4	3.1
30	7.4	6.7	5.9	5.0	-	2.1	3.4	2.1	1.6	1.2	3.5	2.9
31	7.0	-	5.9	4.9	-	2.6	-	1.8	-	1.1	7.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	189.2	8.6	2.6	6.10	375
November	200.0	6.9	6.5	6.67	397
December	193.3	6.7	5.9	6.24	383
Calendar year 1946	1,832.4	95	1.4	5.02	3,640
January	162.0	5.9	4.9	5.23	321
February	105.5	4.9	1.8	3.77	209
March	63.4	2.6	1.5	2.05	126
April	79.0	3.5	1.9	2.63	157
May	80.5	4.2	1.6	2.60	160
June	65.7	5.8	1.2	2.19	130
July	49.8	6.4	.9	1.61	99
August	200.0	64	1.2	6.45	397
September	95.6	6.5	1.4	3.19	190
Water year 1946-47	1,484.0	64	.9	4.07	2,940

a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and engineer's notes.
d Doubtful gage-height record; discharge computed as explained in footnote a.

Mimbres River near Faywood, N. Mex.

Location.- Water-stage recorder, lat. 32°35'10", long. 107°55'10", in NW¼ sec. 7, T. 20 S., R. 10 W., 6 miles northeast of Faywood Hot Springs, 10 miles northeast of Faywood, and 12 miles upstream from San Vicente Arroyo.
Drainage area.- 485 square miles.
Records available.- April 1908 to December 1914 and October 1930 to September 1947 in reports of Geological Survey. April 1908 to December 1931 in reports of State engineer.
Average discharge.- 31 years (1908-10, 1912-17, 1919-24, 1926-27, 1929-47), 20.8 second-feet.
Extremes.- Maximum discharge during year, 6,380 second-feet Aug. 28 (gage height, 7.20 feet), from rating curve extended above 410 second-feet by logarithmic plotting; no flow at times.
1930-47: Maximum discharge not determined; maximum gage height, 11.0 feet Aug. 4, 1939, present datum; no flow at times.
Remarks.- Records fair except those for periods of ice effect or no gage-height record and those above 100 second-feet, which are poor. Several diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.2	0	0.3	4.5	2.1	1.6	0.9	0.2		0	a30
2	.2	.3	0	.3	4.3	2.1	1.6	.9	.2		0	6.6
3	.1	.4	0	.3	4.0	2.2	1.6	.8	.2		0	2.5
4	3.9	.4	0	b2	3.5	2.1	1.6	.7	.2		2.7	1.8
5	.3	.6	0	b4	3.2	2.1	1.6	.7	.2		0	1.2
6	.2	.4	0	6.2	2.2	2.1	1.5	.7	.2		0	1.1
7	.1	.3	0	5.9	1.9	2.1	1.5	.7	.2		0	1.1
8	.1	.2	0	5.5	1.9	2.1	1.5	.7	.2		0	1.1
9	.1	.2	0	*4.8	2.1	1.9	1.4	.7	.1		0	1.2
10	.1	.2	0	4.5	2.1	1.8	1.4	.7	.1		0	1.2
11	.1	.1	0	4.5	1.9	1.8	1.4	.7	.1		0	1.1
12	.1	.1	0	4.0	1.9	1.8	1.2	.7	.1		0	1.1
13	.1	.1	0	4.0	1.9	1.6	1.2	.7	.1		0	1.2
14	.1	0	0	4.0	1.9	1.6	1.2	.7	.1		0	1.5
15	.1	0	0	3.8	1.9	1.6	1.4	.7	0		27	2.1
16	.1	0	0	3.8	1.9	1.6	1.2	.7	0		194	1.9
17	.1	0	1.4	4.0	1.9	1.6	1.4	.6	0		9.1	12
18	.1	.1	3.5	4.0	1.9	1.8	1.5	.6	.4		6.1	3.4
19	.1	.1	1.4	3.7	1.9	1.8	1.5	.5	.1		1.1	1.1
20	.1	0	.8	3.5	1.9	1.8	1.5	.5	.1		.1	.8
21	0	0	0	3.2	2.1	1.8	1.4	.5	.1		0	.7
22	0	0	0	3.5	2.2	1.8	1.4	.5	.1		57	.6
23	0	0	0	3.5	2.2	1.6	1.2	.5	0		36	.8
24	.1	0	0	3.5	2.5	2.1	1.2	.5	0		5.9	.8
25	.1	0	0	3.0	2.5	1.8	1.2	.5	0		17	.9
26	.1	0	*0	3.2	2.5	1.9	1.1	.4	0		7.0	.9
27	.1	0	0	3.2	2.5	1.8	1.1	.4	0		0	.8
28	.1	0	.2	3.0	2.2	1.6	1.1	.3	0		238	.8
29	.2	0	.1	4.3	-	1.8	1.1	.3	0		304	.7
30	.2	0	.2	4.5	-	1.8	.9	.2	0		a100	.6
31	.2	-	.1	4.3	-	1.8	-	.2	-		a200	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	7.3	3.9	0	0.24	14
November	3.7	.6	0	.12	7.3
December	7.7	3.5	0	.25	15
Calendar year 1946	1,108.4	116	0	3.04	2,200
January	112.3	6.2	.3	3.62	223
February	67.4	4.5	1.9	2.41	134
March	57.4	2.2	1.6	1.85	114
April	40.5	1.6	.9	1.35	80
May	18.2	.9	.2	.59	36
June	3.0	.4	0	.10	6.0
July	0	0	0	0	0
August	1,205.0	304	0	38.9	2,390
September	81.6	30	.6	2.72	162
Water year 1946-47	1,604.1	304	0	4.39	3,180

Peak discharge.- Aug. 16 (12:45 a.m.) 2,360 sec.-ft.; Aug. 22 (6:30 p.m.) 870 sec.-ft.; Aug. 28 (6 p.m.) 6,380 sec.-ft.; Aug. 29 (5 p.m.) 4,080 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records, recorded range in stage, observers' notes, and records for station near Mimbres.
b Stage-discharge relation affected by ice.

Bear Canyon near Mimbres, N. Mex.

Location.- Water-stage recorder and concrete Parshall flume, lat. 32°52'50", long. 107°59'20", in SW¼SW¼ sec. 28 (revised), T. 16 S., R. 11 W., 100 feet downstream from bridge on State Highway 167, 200 feet downstream from Bear Canyon Dam, and 2 miles northwest of Mimbres.
Records available.- October 1937 to September 1947.
Average discharge.- 10 years, 0.90 second-foot.
Extremes (regulated).- No flow throughout year.
1937-47: Maximum discharge, 76 second-feet Sept. 29, 1941 (gage height, 2.88 feet), from rating curve extended above 21 second-feet by logarithmic plotting; no flow for long periods.
Remarks.- No flow during water year. Flow regulated by Bear Canyon Reservoir (capacity, 700 acre-feet). One small diversion above station for irrigation. During calendar year 1946, total second-foot-days was 37.7, maximum daily discharge was 15 second-feet, minimum daily discharge was zero, mean annual discharge was 0.10 second-foot, and total runoff was 75 acre-feet.

Rio Tularosa near Tularosa, N. Mex.

Location.- Water-stage recorder and concrete control, lat. 33°05'35", long. 105°58'35", in SE¼SE¼ sec. 16, T. 14 S., R. 10 E., 200 feet upstream from diversion dam for Tularosa Community ditch and 3 miles northeast of Tularosa.

Records available.- December 1912 to December 1914 and October 1931 to September 1947 in reports of Geological Survey. December 1912 to December 1914 and October 1916 to July 1917 in reports of State engineer.

Average discharge.- 14 years (1932-37, 1938-47), 14.6 second-feet.

Extremes.- Maximum discharge during year, 2,620 second-feet Aug. 23 (gage height, 3.84 feet), from rating curve extended above 23 second-feet on basis of slope-area determination at gage heights 3.4 and 8.5 feet; minimum daily, 4.3 second-feet June 30.

1913-47: Maximum discharge, 9,640 second-feet Sept. 3, 1938 (gage height, 8.50 feet, from floodmarks), by slope-area method; minimum daily, 1 second-foot July 31, Aug. 1, 1934.

Remarks.- Records fair except those for period of no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1946 to September 1947

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	14	16	12	17	16	12	7.2	6.6	48	9.8	a14
2	12	15	17	16	17	16	13	6.4	6.2	a15	9.8	a13
3	11	16	17	12	17	17	13	8.8	7.0	a12	9.8	a13
4	28	15	16	12	17	15	16	6.5	11	a12	7.4	a13
5	18	16	15	12	15	16	16	7.9	12	a12	6.7	a13
6	14	16	16	14	16	18	13	8.1	11	a12	21	a13
7	14	16	16	17	16	18	11	13	12	a12	10	a35
8	14	15	17	17	16	16	9.8	14	11	9.8	9.5	a18
9	14	15	17	16	14	16	13	14	8.6	7.3	9.8	a15
10	14	17	17	17	16	16	14	16	a8.5	7.8	6.2	a13
11	14	16	17	17	14	17	16	16	a8.5	7.2	6.5	a13
12	15	17	15	17	14	16	16	12	a8.5	7.9	6.8	a13
13	16	17	17	17	14	16	16	9.5	6.2	5.7	11	a13
14	16	17	17	17	15	16	13	10	9.7	4.4	12	a13
15	16	16	18	18	15	16	14	10	6.4	5.9	14	13
16	15	16	16	17	16	16	14	11	4.9	14	14	13
17	14	16	13	18	17	12	15	12	6.9	20	13	12
18	14	14	14	17	14	12	14	8.9	14	59	12	12
19	13	17	14	17	16	12	13	9.6	16	a15	12	12
20	14	18	16	17	13	11	9.5	8.4	14	a10	21	12
21	14	18	15	18	14	12	12	16	13	a10	20	10
22	14	18	16	17	15	15	11	16	12	6.4	19	8.6
23	13	18	17	18	15	17	16	16	8.9	6.3	92	7.8
24	14	18	17	18	14	16	17	16	7.9	6.3	a30	12
25	14	18	16	18	14	16	16	14	7.0	6.3	a40	12
26	14	18	17	18	16	16	17	10	6.6	8.3	a80	12
27	13	17	17	18	18	16	16	8.9	9.1	6.6	33	12
28	13	17	16	17	14	12	11	8.8	9.3	5.2	19	12
29	13	17	16	15	-	14	8.5	9.3	5.2	6.0	30	11
30	13	17	14	14	-	12	8.3	8.7	4.3	9.1	a16	12
31	13	-	13	17	-	10	-	10	-	9.3	a15	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	447	28	11	14.4	887
November	495	18	14	16.5	982
December	495	18	13	16.0	982
Calendar year 1946	5,887.6	250	6.8	16.1	11,670
January	505	18	12	16.3	1,000
February	429	18	13	15.3	851
March	464	18	10	15.0	920
April	404.1	17	8.3	13.5	802
May	343.0	16	6.4	11.1	680
June	274.3	16	4.3	9.14	544
July	376.8	59	4.4	12.2	747
August	616.3	92	6.2	19.9	1,220
September	395.4	35	7.8	13.2	784
Water year 1946-47	5,244.9	92	4.3	14.4	10,400

Peak discharge.- July 1 (2:15 p.m.) 1,310 sec.-ft.; July 18 (9:15 p.m.) 811 sec.-ft.; Aug. 23 (2 p.m.) 2,620 sec.-ft.; Aug. 25 (12 m.) 1,210 sec.-ft.; Aug. 26 (1:30 p.m.) 1,920 sec.-ft.

a No gage-height record; discharge computed on basis of recorded range in stage, weather records, and records for Rio Ruidoso near Hondo.

Alamogordo-La Luz ditch at La Luz, N. Mex.

Location.- Water-stage recorder and concrete Parshall flume, lat. 32°58'50", long. 105°56'15", in SW¼ sec. 25, T. 15 S., R. 10 E., a quarter of a mile upstream from La Luz and half a mile downstream from head gate.

Records available.- October 1934 to September 1947.

Average discharge.- 13 years, 6.94 second-feet.

Extremes.- Maximum daily discharge during year, 11 second-feet Jan. 17; minimum daily, 1.9 second-feet July 3.
1934-47: Maximum daily discharge, 22 second-feet Feb. 2, 3, 5-13, 1942; no flow at times.

Remarks.- Records fair. Ditch diverts water from left bank of Rio La Luz for irrigation.

Monthly discharge, in second-feet, water year October 1946 to September 1947

Month	Maximum	Minimum	Mean	Runoff in acre-feet
October	8.7	4.7	7.83	482
November	7.6	6.1	7.21	429
December	7.6	7.0	7.52	462
Calendar year 1946	12	1.3	6.85	4,960
January	11	6.8	7.91	486
February	9.6	7.2	8.15	453
March	8.9	7.2	7.95	489
April	8.9	4.9	6.77	403
May	5.3	3.5	4.31	265
June	3.8	2.2	2.86	170
July	6.4	1.9	3.09	190
August	9.4	2.5	4.94	303
September	6.3	4.4	5.13	305
Water year 1946-47	11	1.9	6.13	4,440

Alamogordo water supply near Alamogordo, N. Mex.

Location.- Water-stage recorder and rectangular contracted weir, lat. 32°52'25", long. 105°55'40", in NW¼ sec. 33, T. 16 S., R. 10 E., at lower end of pipe line, about a mile downstream from Alamo Canyon and 2 miles southeast of Alamogordo.

Records available.- October 1932 to September 1947.

Average discharge.- 15 years, 1.88 second-feet.

Extremes.- Maximum daily discharge during year, 1.6 second-feet Oct. 1-6, 9-14; minimum daily, 1.1 second-feet Sept. 27-30.
1932-47: Maximum daily discharge, 4.2 second-feet Sept. 15, 1942; no flow July 7, 1933, Sept. 29, 1941.

Remarks.- Records good.

Monthly discharge, in second-feet, water year October 1946 to September 1947

Month	Maximum	Minimum	Mean	Runoff in acre-feet
October	1.6	1.5	1.54	95
November	1.5	1.5	1.50	89
December	1.5	1.5	1.50	92
Calendar year 1946	1.9	1.5	1.63	1,180
January	1.5	1.4	1.49	92
February	1.4	1.4	1.40	78
March	1.4	1.4	1.40	86
April	1.4	1.4	1.40	83
May	1.4	1.3	1.34	83
June	1.3	1.2	1.28	76
July	1.2	1.2	1.20	74
August	1.3	1.2	1.20	74
September	1.2	1.1	1.19	71
Water year 1946-47	1.6	1.1	1.37	993

Measurements of stream flow in the western Gulf of Mexico basins made at points other than gaging stations are given in the following table:

Miscellaneous discharge measurements in western Gulf of Mexico basins during water year October 1946 to September 1947

Mermentau River Basin

Date	Stream	Tributary to or diverting from--	Locality	Discharge (sec.-ft.)
Nov. 12	Bayou Queue de Tortue	Mermentau River..	Sec. 18, T. 11 S., R. 1 W. Louisiana meridian, at bridge on State Highway 128, 100 feet below Southern Pacific Railroad bridge and ½ mile northeast of Riceville, La.	2,310
Dec. 18	....do.....	....do.....	....do.....	71.4
Jan. 7	....do.....	....do.....	....do.....	678
16	....do.....	....do.....	....do.....	3,020
Apr. 30	....do.....	....do.....	....do.....	75.5
June 3	....do.....	....do.....	....do.....	272

Sabine River Basin

Oct. 23	Little Cow Creek.....	Sabine River.....	At bridge on State Highway 87, above McGraw Creek and ½ mile south of Burkeville, Tex.	47.6
Dec. 4	....do.....	....do.....	....do.....	59.6
Feb. 17	....do.....	....do.....	....do.....	73.1
May 1	....do.....	....do.....	....do.....	61.2
July 10	....do.....	....do.....	....do.....	44.0
Aug. 1	....do.....	....do.....	....do.....	46.0
Sept.19	....do.....	....do.....	....do.....	37.2
Oct. 23	McGraw Creek.....	Little Cow Creek.	1 mile above mouth and 2 miles southeast of Burkeville, Tex.	27.0
Dec. 4	....do.....	....do.....	....do.....	36.1
Feb. 17	....do.....	....do.....	....do.....	49.4
May 1	....do.....	....do.....	....do.....	39.0
July 10	....do.....	....do.....	....do.....	25.7
Aug. 1	....do.....	....do.....	....do.....	24.0
Sept.19	....do.....	....do.....	....do.....	16.8
Oct. 24	Quicksand Creek.....	Sabine River.....	At U. S. Highway 190, 0.7 mile above mouth and 1¼ miles east of Bon Wier, Tex.	29.9
Feb. 17	....do.....	....do.....	....do.....	78.0
July 11	....do.....	....do.....	....do.....	28.5
Aug. 1	....do.....	....do.....	....do.....	27.8
14	....do.....	....do.....	....do.....	27.4
Sept.18	....do.....	....do.....	....do.....	21.2

Neches River Basin

Aug. 15	Lanana Creek.....	Angelina River...	At Texas & New Orleans Railroad bridge, 4½ miles above mouth and 6 miles south of Nachogdoches, Tex.	3.62

Cedar Bayou Basin

May 6	Cedar Bayou.....	Gulf of Mexico...	Lat. 30°01'55", long. 95°03'15", 1.8 miles northeast of Huffman, Tex.	a0.85

a Furnished by city of Houston.

Oyster Creek Basin

Aug. 11	American Canal Co.'s canal.	Oyster Creek.....	Lat. 29°36'20", long. 95°34'55", at county bridge 0.1 mile below 2nd lift pump plant and 1½ miles southwest of Stafford, Fort Bend County, Tex.	247
22	....do.....	....do.....	....do.....	134

Brazos River Basin

Aug. 11	Brazos River.....	Gulf of Mexico...	Lat. 31°50'30", long. 97°19'30", below Whitney dam site, 7½ miles south of Whitney, Tex.	556
Sept.17	.....do.....	....do.....	....do.....	852
Aug. 8	Brisco Irrigation Co.'s canal.	Brazos River.....	Lat. 29°30', long. 95°33', at bridge over canal, 4,500 feet below pump plant and about 4 miles east of Thompsons, Tex.	b413
22	....do.....	....do.....	....do.....	0
Sept. 4	....do.....	....do.....	....do.....	c342

b 3 pumps in operation.
c 2 pumps in operation.

Colorado River Basin

Dec. 4	Dove Creek.....	Spring Creek.....	Just below Stilson Dam, 1½ miles below Dove Creek Springs and 7 miles southwest of Knickerbocker, Tex.	d0.75
4	Stilson Canal.....	Dove Creek.....	50 feet below head at Stilson Dam, 7 miles southwest of Knickerbocker, Tex.	8.69

d Total flow of creek.

Miscellaneous discharge measurements in western Gulf of Mexico basins during water year October 1946 to September 1947--Continued

Guadalupe River Basin

Date	Stream	Tributary to or diverting from--	Locality	Discharge (sec.-ft.)
Oct. 31	Hueco Springs.....	Guadalupe River....	Lat. 29°45'35", long. 98°08'25", 3.8 miles north of New Braunfels, Tex.	88.8
Dec. 7	....do.....	....do.....	....do.....	85.5
Jan. 12	....do.....	....do.....	....do.....	96.0
Feb. 13	....do.....	....do.....	....do.....	88.7
Mar. 20	....do.....	....do.....	....do.....	77.4
Apr. 24	....do.....	....do.....	....do.....	64.6
May 29	....do.....	....do.....	....do.....	45.6
July 2	....do.....	....do.....	....do.....	25.0
Aug. 7	....do.....	....do.....	....do.....	19.3
Sept.11	....do.....	....do.....	....do.....	16.9
Oct. 14	San Marcos Springs (San Marcos River).	....do.....	At San Marcos, Tex.....	e200
Nov. 2	....do.....	....do.....	....do.....	e210
Dec. 7	....do.....	....do.....	....do.....	e238
Jan. 13	....do.....	....do.....	....do.....	e241
Feb. 25	....do.....	....do.....	....do.....	e216
Mar. 22	....do.....	....do.....	At San Marcos, Tex.....	e219
Apr. 26	....do.....	....do.....	....do.....	e199
June 5	....do.....	....do.....	....do.....	e167
July 3	....do.....	....do.....	....do.....	e151
Aug. 9	....do.....	....do.....	....do.....	e153
Sept.13	....do.....	....do.....	....do.....	e156
July 16	San Marcos River.....	....do.....	Lat. 29°43'30", long. 97°45'40", above mouth of Bart Creek, 500 feet below road (bridge) crossing on river, and about ½ mile southwest of Prairie Lea, Tex.	181
16	....do.....	....do.....	Lat. 29°42'50", long. 97°45'05", about 50 feet below road (bridge) crossing on river, about 0.6 mile above mouth of Brushy Creek, and about 1 mile south of Prairie Lea, Tex.	177
16	....do.....	....do.....	Lat. 29°41'05", long. 97°43'25", about 2¼ miles above Galveston, Houston & San Antonio Railroad and about 3 5/8 miles southeast of Prairie Lea, Tex.	187
17	....do.....	....do.....	Lat. 29°40'05", long. 97°42'00", 150 feet above bridge on U. S. Highway 90, above Galveston, Houston & San Antonio Railroad bridge, and about 3 miles southeast of Luling, Tex.	186
17	....do.....	....do.....	Lat. 29°40'05", long. 97°41'00", about 0.9 mile above mouth of Seal Creek and 2.2 miles southwest of Luling, Tex.	180
18	....do.....	....do.....	Lat. 29°36', long. 97°35', 15 feet below low-water bridge in Palmetto State Park, at Ottine, Tex.	216

e Total flow of springs.

Nueces River Basin

Oct. 15	Frio River.....	Nueces River.....	Near Texas & New Orleans Railroad bridge, 0.6 mile above Dry Frio and 10 miles northeast of Uvalde, Tex.	f0

f Observations of no flow also made Oct. 24, Dec. 5, Jan. 17, Mar. 2, Apr. 5, May 9, June 19, Aug. 3, Sept. 13.

Rio Grande Basin

Mar. 12	Rio Grande.....	Gulf of Mexico.....	At mile post 918.5 of Atchison, Topeka & Santa Fe Railroad, near Isleta, N. Mex.	148
14	....do.....	....do.....	1,000 feet above mile post 937.5 of Atchison, Topeka & Santa Fe Railroad, near Belen, N. Mex.	219
21	....do.....	....do.....	In sec. 31 or 32, T. 3 S., R. 1 E., opposite mouth of Socorro Riverside drain and 4 miles below Socorro, N. Mex.	139
June 13	Costilla Creek.....	Rio Grande.....	500 feet above Comanche Creek.....	4.03
13	....do.....	....do.....	1,000 feet below Latir Creek.....	37.7
13	....do.....	....do.....	Above Amalia irrigated area.....	38.4
30	....do.....	....do.....	Below head gate, near Costilla, N. Mex.	14.3
13	Comanche Creek.....	Costilla Creek.....	500 feet above mouth.....	3.90
13	Latir Creek.....	....do.....	100 feet above mouth.....	22.9
13	Ute Creek.....	....do.....	Above irrigated area.....	7.88
Oct. 14	Santa Fe Creek.....	Rio Grande.....	Lat. 35°41', long. 105°50', in sec. 24, T. 17 N., R. 10 E., above McClure Reservoir (formerly Granite Point Reservoir), 6½ miles east of Santa Fe, N. Mex.	3.76
31	....do.....	....do.....	....do.....	3.89
Nov. 14	....do.....	....do.....	....do.....	3.90
30	....do.....	....do.....	....do.....	4.26

Miscellaneous discharge measurements in western Gulf of Mexico basins during water year October 1946 to September 1947--Continued

Rio Grande Basin--Continued

Date	Stream	Tributary to or diverting from--	Locality	Discharge (sec.-ft.)
Dec. 13	Santa Fe Creek.....	Rio Grande.....	Lat. 35°41', long. 105°50' in sec. 24, T. 17 N., R. 10 E., above McClure Reservoir (formerly Granite Point Reservoir), 6½ miles east of Santa Fe, N. Mex.	2.57
Jan. 3	....do.....	....do.....	....do.....	1.40
16	....do.....	....do.....	....do.....	1.47
Apr. 12	....do.....	....do.....	....do.....	2.90
12	....do.....	....do.....	....do.....	2.90
24	....do.....	....do.....	....do.....	5.85
May 8	....do.....	....do.....	....do.....	18.7
29	....do.....	....do.....	....do.....	12.5
June 11	....do.....	....do.....	....do.....	5.97
27	....do.....	....do.....	....do.....	2.77
July 11	....do.....	....do.....	....do.....	1.67
31	....do.....	....do.....	....do.....	1.29
Aug. 13	....do.....	....do.....	....do.....	1.18
28	....do.....	....do.....	....do.....	4.73
Sept. 26	....do.....	....do.....	....do.....	1.48
Oct. 15	Bernardo Interior drain.	....do.....	Lat. 34°24'55", long. 106°49'15", T. 2 N., R. 1 E., at bridge on U. S. Highway 60, 3/4 mile east of Bernardo and 1½ miles west of gaging station on Rio Grande near Bernardo, N. Mex.	h.20
25	....do.....	....do.....	....do.....	.80
Nov. 9	....do.....	....do.....	....do.....	h1.0
15	....do.....	....do.....	....do.....	1.05
22	....do.....	....do.....	....do.....	h1.0
29	....do.....	....do.....	....do.....	.99
Dec. 9	....do.....	....do.....	....do.....	h1.0
14	....do.....	....do.....	....do.....	h1.0
20	....do.....	....do.....	....do.....	1.21
Jan. 16	....do.....	....do.....	....do.....	1.39
24	....do.....	....do.....	....do.....	h1.25
31	....do.....	....do.....	....do.....	h1.30
Feb. 10	....do.....	....do.....	....do.....	1.84
14	....do.....	....do.....	....do.....	h1.30
21	....do.....	....do.....	....do.....	h1.30
Mar. 3	....do.....	....do.....	....do.....	1.88
14	....do.....	....do.....	....do.....	1.78
17	....do.....	....do.....	....do.....	1.61
26	....do.....	....do.....	....do.....	1.41
Apr. 24	....do.....	....do.....	....do.....	1.98
Oct. 2	San Francisco River-side drain.	....do.....	Lat. 34°25", long. 106°48', in NE¼ sec. 11, T. 2 N., R. 1 E., on downstream side of bridge on U. S. Highway 60, 2 miles east of Bernardo and 3½ miles above mouth of Rio Puerco.	3.26
15	....do.....	....do.....	....do.....	6.26
25	....do.....	....do.....	....do.....	7.95
30	....do.....	....do.....	....do.....	8.89
Nov. 9	....do.....	....do.....	....do.....	12.6
15	....do.....	....do.....	....do.....	13.6
22	....do.....	....do.....	....do.....	15.7
29	....do.....	....do.....	....do.....	17.2
Dec. 9	....do.....	....do.....	....do.....	14.9
14	....do.....	....do.....	....do.....	h15.0
20	....do.....	....do.....	....do.....	16.2
29	....do.....	....do.....	....do.....	14.2
Jan. 16	....do.....	....do.....	....do.....	15.2
24	....do.....	....do.....	....do.....	h15.0
31	....do.....	....do.....	....do.....	h16.0
Feb. 10	....do.....	....do.....	....do.....	13.8
14	....do.....	....do.....	....do.....	15.9
21	....do.....	....do.....	....do.....	16.7
Mar. 3	....do.....	....do.....	....do.....	16.4
14	....do.....	....do.....	....do.....	14.0
17	....do.....	....do.....	....do.....	13.5
26	....do.....	....do.....	....do.....	12.5
Apr. 24	....do.....	....do.....	....do.....	11.8
Oct. 2	Rio Salado.....	....do.....	Lat. 34°16'05", long. 106°52'10", in Sevilleta Grant, at Atchison, Topeka & Santa Fe Railroad bridge, 1,000 feet above mouth, and 2 miles northeast of San Acacia, N. Mex.	8.94
7	....do.....	....do.....	....do.....	7.09
28	....do.....	....do.....	....do.....	h1.0
Nov. 15	....do.....	....do.....	....do.....	0
Dec. 16	....do.....	....do.....	....do.....	0
Jan. 6	....do.....	....do.....	....do.....	0
27	....do.....	....do.....	....do.....	0
Feb. 19	....do.....	....do.....	....do.....	0
Mar. 17	....do.....	....do.....	....do.....	0
29	....do.....	....do.....	....do.....	0
Apr. 22	....do.....	....do.....	....do.....	0
May 8	....do.....	....do.....	....do.....	0
June 3	....do.....	....do.....	....do.....	0
19	....do.....	....do.....	....do.....	47.4
July 9	....do.....	....do.....	....do.....	46.0
19	....do.....	....do.....	....do.....	56.1

h Field estimate.

Miscellaneous discharge measurements in western Gulf of Mexico basins during water year October 1946 to September 1947--Continued

Rio Grande Basin--Continued

Date	Stream	Tributary to or diverting from--	Locality	Discharge (sec.-ft.)
Aug. 12	Rio Salado	Rio Grande	Lat. 34°16'05", long. 106°52'10", in Sevilleta Grant, at Atchison, Topeka & Santa Fe Railroad bridge, 1,000 feet above mouth, and 2 miles northeast of San Acacia, N. Mex.	h2.0
15	....do	....do	....do	80.9
20	....do	....do	....do	174
22	....do	....do	....do	54.0
25	....do	....do	....do	425
Sept. 5	....do	....do	....do	32.1
9	....do	....do	....do	86.6
15	....do	....do	....do	0
Mar. 21	Socorro Riverside drain.	....do	In sec. 31, T. 3 S., R. 1 E., 4 miles below Socorro, N. Mex. (made in conjunction with measurement of Rio Grande opposite mouth of this drain).	22.1
26	Pecos River	....do	In NW¼ sec. 19, T. 3 N., R. 26 E., at Fort Sumner, N. Mex.	h2.0
June 30	....do	....do	....do	h1.2
Mar. 26	....do	....do	In SW¼ sec. 36, T. 2 N., R. 26 E., below project near Fort Sumner, N. Mex.	39.9
June 30	....do	....do	....do	14.2
Feb. 4	....do	....do	Lat. 33°22'25", long. 104°24'00", in NE¼ sec. 9, T. 11 S., R. 25 E., just above Rio Hondo, 6 miles east of Roswell, N. Mex.	23.1
5	....do	....do	....do	21.9
4	....do	....do	In NW¼ sec. 10, T. 13 S., R. 26 E., at Dexter Bridge, 2¼ miles northeast of Dexter, N. Mex.	56.4
5	....do	....do	....do	55.6
4	....do	....do	In sec. 35, T. 13 S., R. 26 E., ¼ mile above Rio Felix and 2 miles northeast of Hagerman, N. Mex.	64.2
5	....do	....do	....do	64.9
May 6	Storrie Main Canal	Storrie Lake	N½ of NE¼ sec. 34 T. 17 N., R. 16 E. at head, near Las Vegas, N. Mex.	37.6
7	....do	....do	In sec. 36, at downstream end of flume near Las Vegas, N. Mex.	36.4
7	....do	....do	In NE¼SE¼, sec. 1, T. 16 N., R. 16 E., at U. S. Highway 85 crossing, near Las Vegas, N. Mex.	36.0
7	....do	....do	In SE¼NE¼ sec. 12, R. 16 E., T. 16 N., on Bishop's farm, near Las Vegas, N. Mex.	34.7
7	....do	....do	In SE¼SE¼ sec. 12, T. 16 N., R. 16 E., at Jones farm, near Las Vegas, N. Mex.	31.1
7	....do	....do	In SW¼NE¼ sec. 24, T. 16 N., R. 16 E., 150 feet above tunnel and about 2 miles east of Las Vegas, N. Mex.	28.7
Mar. 26	Fort Sumner Canal	Pecos River	In NW¼ sec. 12, T. 3 N., R. 25 E., below spillway at head, near Fort Sumner, N. Mex.	86.9
27	....do	....do	....do	106
Apr. 5	....do	....do	....do	94.0
June 30	....do	....do	....do	57.1
July 1	....do	....do	....do	109
15	....do	....do	....do	117
Mar. 26	....do	....do	In SW¼ sec. 36, T. 2 N., R. 26 E....	17.1
June 30	....do	....do	....do	0
July 15	....do	....do	....do	0
Feb. 4	Rio Hondo	Pecos River	In E½ sec. 9, T. 11 S., R. 25 E., at mouth, about 6 miles east of Roswell, N. Mex.	12.2
5	....do	....do	....do	11.7
4	Hagerman Canal	Rio Hondo	Lat. 30°24'20", long. 104°26'20", in NE¼ sec. 31, T. 10 S., R. 25 E., at head, 5 miles east of Roswell, N. Mex.	48.4
5	....do	....do	....do	48.8
4	Rio Felix	Pecos River	In S½ sec. 35, T. 13 S., R. 26 E., ½ mile above mouth.	5.50
5	....do	....do	....do	6.06
4	Walnut Creek	....do	200 feet above mouth near Lake Arthur, N. Mex.	2.14
5	....do	....do	....do	2.44
Dec. 4	Carlsbad Main Canal	....do	In sec. 12, T. 21 S., R. 26 E., at head (Avalon Dam).	273
9	....do	....do	....do	356
19	....do	....do	....do	133
Feb. 9	....do	....do	....do	64.8
9	....do	....do	....do	66.4
11	....do	....do	....do	86.0
12	....do	....do	....do	125
26	....do	....do	....do	145
28	....do	....do	....do	181
Mar. 3	....do	....do	....do	184
4	....do	....do	....do	222

h Field estimate.

Miscellaneous discharge measurements in western Gulf of Mexico basins during water year October 1946 to September 1947--Continued

Rio Grande Basin--Continued

Date	Stream	Tributary to or diverting from--	Locality	Discharge (sec.-ft.)
Mar. 25	Carlsbad Main Canal..	Pecos River.....	In sec. 12, T. 21 S., R. 26 E., at head (Avalon Dam).	159
Apr. 1	....do.....	....do.....	....do.....	377
8	....do.....	....do.....	....do.....	387
22	....do.....	....do.....	....do.....	225
July 15	....do.....	....do.....	....do.....	484
Dec. 4	....do.....	....do.....	In outlet end of flume over Pecos River in sec. 26, T. 21 S., R. 26 E.	263
9	....do.....	....do.....	....do.....	325
11	....do.....	....do.....	....do.....	300
19	....do.....	....do.....	....do.....	127
Apr. 8	....do.....	....do.....	....do.....	353
22	....do.....	....do.....	....do.....	215
July 15	....do.....	....do.....	....do.....	451
Dec. 4	....do.....	....do.....	In sec. 18, T. 22 S., R. 27 E., at golf course bridge, below lateral No. 7.	238
5	....do.....	....do.....	....do.....	249
11	....do.....	....do.....	....do.....	296
12	....do.....	....do.....	....do.....	292
19	....do.....	....do.....	....do.....	124
Apr. 8	....do.....	....do.....	....do.....	340
21	....do.....	....do.....	....do.....	194
June 5	....do.....	....do.....	....do.....	368
July 16	....do.....	....do.....	....do.....	375
17	....do.....	....do.....	....do.....	401
Dec. 5	....do.....	....do.....	In sec. 4, T. 23 S., R. 27 E., at wagon bridge at lateral No. 14.	118
12	....do.....	....do.....	....do.....	144
20	....do.....	....do.....	....do.....	104
Apr. 9	....do.....	....do.....	....do.....	214
21	....do.....	....do.....	....do.....	123
29	....do.....	....do.....	....do.....	130
June 5	....do.....	....do.....	....do.....	200
July 17	....do.....	....do.....	....do.....	231
18	....do.....	....do.....	....do.....	198
Dec. 5	....do.....	....do.....	In sec. 15, T. 23 S., R. 27 E., at wagon bridge at lateral No. 16.	85.5
6	....do.....	....do.....	....do.....	91.1
13	....do.....	....do.....	....do.....	112
20	....do.....	....do.....	....do.....	93.7
Apr. 9	....do.....	....do.....	....do.....	180
29	....do.....	....do.....	....do.....	108
July 18	....do.....	....do.....	....do.....	168
21	....do.....	....do.....	....do.....	107
Dec. 6	....do.....	....do.....	In sec. 25, T. 23 S., R. 27 E., at wagon bridge at lateral No. 22.	75.8
13	....do.....	....do.....	....do.....	67.6
20	....do.....	....do.....	....do.....	78.4
Apr. 10	....do.....	....do.....	....do.....	132
24	....do.....	....do.....	....do.....	79.6
30	....do.....	....do.....	....do.....	59.9
July 21	....do.....	....do.....	....do.....	74.4
Dec. 4	East Canal.....	....do.....	In sec. 25, T. 21 S., R. 26 E., at head, in rating flume.	28.8
9	....do.....	....do.....	....do.....	31.5
Apr. 8	....do.....	....do.....	....do.....	14.5
22	....do.....	....do.....	....do.....	9.89
July 15	....do.....	....do.....	....do.....	33.9
Apr. 8	Lateral No. 1.....	Carlsbad Main Canal	In sec. 36, T. 21 S., R. 26 E., at head.	7.95
Dec. 4	Lateral No. 5.....	....do.....	In sec. 12, T. 22 S., R. 26 E., 500 feet from Carlsbad Main Canal.	12.0
4	Lateral No. 9.....	....do.....	In sec. 20, T. 22 S., R. 27 E., 400 feet from Carlsbad Main Canal.	3.93
Apr. 21	....do.....	....do.....	....do.....	11.9
June 5	....do.....	....do.....	....do.....	18.8
Dec. 5	Lateral No. 10½.....	....do.....	In sec. 28, T. 22 S., R. 27 E., 300 feet from Carlsbad Main Canal.	12.9
13	Lateral No. 12.....	....do.....	In SW¼ sec. 27, T. 22 S., R. 27 E., at East Fork, 150 feet below Carlsbad Main Canal.	16.5
Apr. 21	....do.....	....do.....	....do.....	21.7
June 5	....do.....	....do.....	....do.....	65.7
July 17	....do.....	....do.....	....do.....	56.0
Apr. 21	Lateral No. 13.....	....do.....	In NE¼SE¼ sec. 33, T. 22 S., R. 27 E., at head.	24.0
June 5	....do.....	....do.....	....do.....	28.0
5	Lateral No. 14.....	....do.....	In SE¼ sec. 33, T. 22 S., R. 27 E., at head.	23.1
Dec. 5	Lateral No. 14½.....	....do.....	In sec. 3, T. 23 S., R. 27 E., 100 feet from Carlsbad Main Canal.	11.1
Apr. 29	....do.....	....do.....	....do.....	8.20
July 18	....do.....	....do.....	....do.....	11.5
Dec. 13	Lateral No. 15.....	....do.....	In NE¼ sec. 9, T. 23 S., R. 27 E., 150 feet below Carlsbad Main Canal.	12.4
Apr. 9	....do.....	....do.....	....do.....	7.43
July 18	....do.....	....do.....	....do.....	12.5
Dec. 5	Lateral No. 15½.....	....do.....	In sec. 9, T. 23 S., R. 27 E., 100 feet from Carlsbad Main Canal.	5.00
5	Lateral No. 16.....	....do.....	In sec. 10, T. 23 S., R. 27 E., 150 feet from Carlsbad Main Canal.	12.0

Miscellaneous discharge measurements in western Gulf of Mexico basins during water year October 1946 to September 1947--Continued

Rio Grande Basin--Continued

Date	Stream	Tributary to or diverting from--	Locality	Discharge (sec.-ft.)
Apr. 10	Lateral No. 18.....	Carlsbad Main Canal	In sec. 14, T. 23 S., R. 27 E., at head in throat of 6-foot flume.	27.3
10	Lateral No. 19.....	....do.....	In NW¼ sec. 24, T. 23 S., R. 27 E., at head.	28.0
10	Lateral No. 23.....	....do.....	In sec. 29, T. 23 S., R. 28 E., at 5-foot Parshall flume.	16.8
Dec. 6	Lateral No. 23½.....	....do.....	In sec. 29, T. 23 S., R. 28 E., 100 feet from Carlsbad Main Canal.	3.83
Apr. 24	....do.....	....do.....	....do.....	4.22
July 21	....do.....	....do.....	....do.....	7.63
Apr. 10	Lateral No. 24.....	....do.....	In sec. 33, T. 23 S., R. 28 E., at 10-foot Cippoletti weir at head.	53.8
24	....do.....	....do.....	....do.....	7.69
July 21	....do.....	....do.....	....do.....	16.8
Apr. 10	Lateral No. 25.....	....do.....	In sec. 33, T. 23 S., R. 28 E., at head.	15.5
Dec. 20	Black River Supply ditch.	....do.....	In sec. 33, T. 23 S., R. 28 E., in Parshall flume at head.	68.3
Apr. 10	....do.....	....do.....	....do.....	40.2
24	....do.....	....do.....	....do.....	40.2
6	Blue Springs Canal..	Black River.....	In sec. 14, T. 24 S., R. 26 E., at head.	13.9
6	....do.....	....do.....	In sec. 13, T. 24 S., T. 26 E., at siphon.	12.9
21	Phantom Lake Spring.	Phantom Lake Irrigation System Canal.	Lat. 30°56', long. 103°51', at source (mouth of cave) 3.7 miles west-southwest of Toyahvale, Tex.	15.8
May 22	....do.....	....do.....	....do.....	g15.8
June 14	....do.....	....do.....	....do.....	15.2
July 20	....do.....	....do.....	....do.....	15.0
Aug. 29	....do.....	....do.....	....do.....	14.5
Nov. 23	Giffin Springs.....	Main Canal of Reeves County Water Improvement District No. 1.	Lat. 30°57', long. 103°47' in middle of northeast boundary, sec. 20, block 13, Houston & Great Northern Railroad Survey, at Toyahvale, Tex.	5.00
Feb. 16	....do.....	....do.....	....do.....	4.44
Apr. 21	....do.....	....do.....	....do.....	5.06
June 14	....do.....	....do.....	....do.....	4.58
Aug. 30	....do.....	....do.....	....do.....	4.86
Nov. 23	West Sandia Springs.	Canal of Reeves County Water Improvement District No. 1.	Lat. 30°59', long. 103°44', at head of feeder canal, 500 feet south of U. S. Highway 290 at Balmorhea, Tex.	1.73
Feb. 16	....do.....	....do.....	....do.....	2.02
Apr. 21	....do.....	....do.....	....do.....	1.68
June 14	....do.....	....do.....	....do.....	1.57
Aug. 30	....do.....	....do.....	....do.....	1.61
Nov. 23	East Sandia Spring..	....do.....	Lat. 30°59', long. 103°44', at former gaging station just below small dam, 1 mile east of Balmorhea, Tex.	.70
Feb. 16	....do.....	....do.....	....do.....	1.06
Apr. 21	....do.....	....do.....	....do.....	.91
June 14	....do.....	....do.....	....do.....	.67
Aug. 30	....do.....	....do.....	....do.....	.89
Nov. 24	San Pedro Springs...	San Pedro Co.'s canal.	Lat. 30°59', long. 102°49', in W½ Survey 208, Joseph Burleson, Pecos County, just below source, 7 miles northeast of Fort Stockton, Tex.	3.93
Jan. 8	....do.....	....do.....	....do.....	4.28
Feb. 11	....do.....	....do.....	....do.....	4.85
Mar. 13	....do.....	....do.....	....do.....	4.50
Apr. 15	....do.....	....do.....	....do.....	4.60
May 21	....do.....	....do.....	....do.....	4.10
June 16	....do.....	....do.....	....do.....	3.97
July 19	....do.....	....do.....	....do.....	3.73
Aug. 28	....do.....	....do.....	....do.....	3.52

g New concrete lined canal from mouth of springs now eliminates seepage losses to Phantom Lake.

Tularosa Valley

Oct. 13	La Luz ditch.....	Alamogordo-La Laz ditch.	Lat. 32°58'45", long. 105°56'20", in SW¼ sec. 25, T. 15 S., R. 10 E., at head, ¼ mile upstream from La Luz and 6 miles north of Alamogordo, N. Mex.	0.81
Nov. 15	....do.....	....do.....	....do.....	.81
Dec. 13	....do.....	....do.....	....do.....	.83
Jan. 13	....do.....	....do.....	....do.....	.85
Feb. 13	....do.....	....do.....	....do.....	.80
Mar. 14	....do.....	....do.....	....do.....	.84
Apr. 13	....do.....	....do.....	....do.....	.78
May 14	....do.....	....do.....	....do.....	.82
June 13	....do.....	....do.....	....do.....	.63
July 10	....do.....	....do.....	....do.....	.76
Aug. 5	....do.....	....do.....	....do.....	.61
15	....do.....	....do.....	....do.....	.63
Sept.15	....do.....	....do.....	....do.....	.77

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