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UNITED STATES DEPARTMENT OF THE INTERIOR

SURFACE WATER SUPPLY
of the **UNITED STATES**
1932

PART 7

LOWER MISSISSIPPI RIVER BASIN

Prepared in cooperation with the States of
ARKANSAS, KANSAS, MISSOURI, NEW MEXICO, TENNESSEE, and TEXAS

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 732

UNITED STATES DEPARTMENT OF THE INTERIOR
HAROLD L. ICKES, Secretary
GEOLOGICAL SURVEY
W. C. MENDENHALL, Director

Water-Supply Paper 732

SURFACE WATER SUPPLY *of the* UNITED STATES 1932

PART 7
LOWER MISSISSIPPI RIVER BASIN

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Prepared in cooperation with the States of
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TENNESSEE, and TEXAS



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ILLUSTRATION

FIGURE 1. Typical river-measurement station showing concrete well and house for water-stage recorder and staff gages, cable, and car.	Page
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SURFACE WATER SUPPLY OF THE LOWER MISSISSIPPI RIVER BASIN, 1932

AUTHORIZATION AND SCOPE OF WORK

This volume is one of a series of 14 reports presenting results of measurements of flow made on streams in the United States during the year ending September 30, 1932.

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

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

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

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

Annual appropriations for the fiscal years ending June 30, 1895-1933

1895-----	\$12, 500. 00	1911-17 ---	\$150, 000. 00	1928-----	\$147, 000. 00
1896-----	24, 500. 00	1918-----	175, 000. 00	1929-----	270, 500. 00
1897-99 ---	50, 000. 00	1919-----	148, 244. 10	1930-----	275, 000. 00
1900-----	70, 000. 00	1920-----	175, 000. 00	1931-----	565, 000. 00
1901-2-----	100, 000. 00	1921-23 ---	180, 000. 00	1932-----	711, 000. 00
1903-6-----	200, 000. 00	1924-25 ---	170, 000. 00	1933-----	600, 000. 00
1907-----	150, 000. 00	1926-----	165, 000. 00		
1908-10 ---	100, 000. 00	1927-----	151, 000. 00		

In the execution of the work many private and State organizations have cooperated, either by furnishing data or by assisting in collecting data. Acknowledgments for cooperation of the first kind are made in connection with the description of each station affected; cooperation of the second kind is acknowledged on page 9.

Measurements of stream flow have been made at about 6,590 points in the United States and also at many points in Alaska and the Hawaiian Islands. In July 1932, 2,790 gaging stations were being maintained by the Geological Survey and the cooperating organizations. Many miscellaneous discharge measurements were made at other points. In connection with this work data were also collected in regard to precipitation, evaporation, storage reservoirs, river profiles, and water power in many sections of the country and will be made available in water-supply papers from time to time.

DEFINITION OF TERMS

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

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

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

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

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

The following terms not in common use are here defined:

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

“Control”, a term used to designate the natural section or stretch of the channel or artificial structure below the gage which determines the stage-discharge relation at the gage.

EXPLANATION OF DATA

The data presented in this report cover the year beginning October 1, 1931, and ending September 30, 1932. At the beginning of January in most parts of the United States much of the precipitation in the preceding 3 months is stored in the form of snow or ice, or in ponds, lakes, and swamps, or as underground water, and this stored water passes off in the streams during the spring break-up. At the end of September, on the other hand, the only stored water available for run-off is possibly a small quantity in the ground; therefore the run-off for the year beginning October 1 is practically all derived from precipitation within that year.

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

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

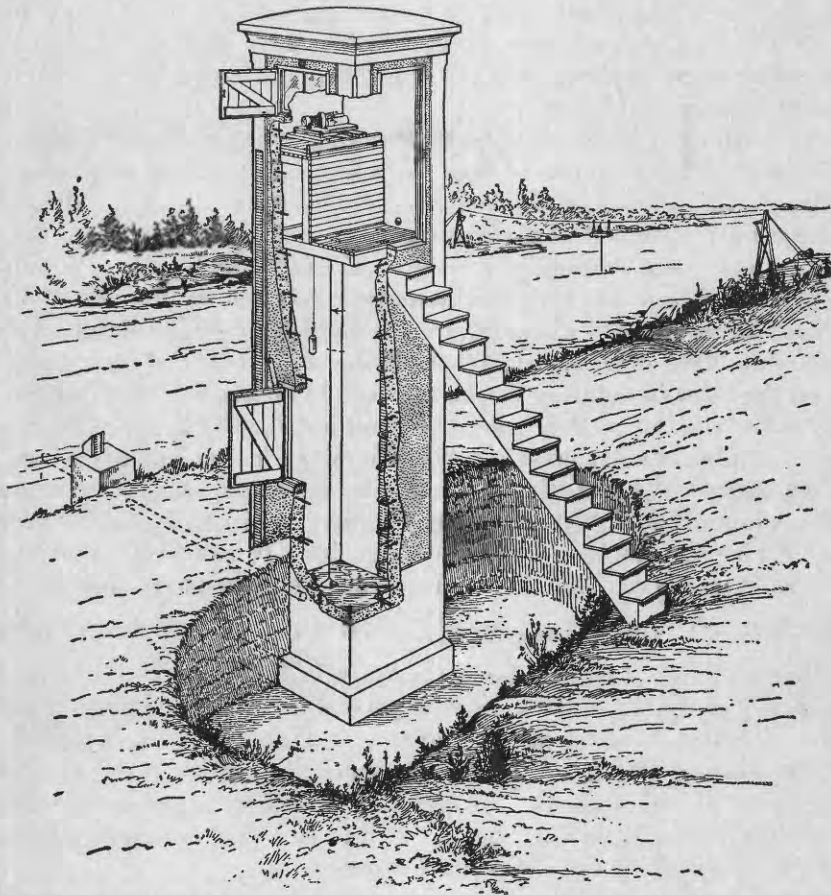


FIGURE 1.—Typical river-measurement station showing concrete well and house for water-stage recorder and staff gages, cable, and car.

Rating tables giving the discharge for any stage are prepared from the discharge measurements. The application of the daily gage heights to these rating tables gives the daily discharge from which the monthly and yearly mean discharge is determined.

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

The description of the station gives, in addition to statements regarding location and type of gage, information as to diversions that decrease the flow at the gage, artificial regulation, maximum and minimum recorded discharges, and the accuracy of the records. The maximum discharge given under "Extremes" does not represent the crest discharge unless a water-stage recorder was in operation or a nonrecording gage was read at the time of the crest.

The table of daily discharge gives, in general, the discharge in second-feet corresponding to the daily gage height which may be a once-daily reading or the mean of twice-daily readings of a non-recording gage, or the mean daily gage height obtained from a water-stage recorder graph.

At stations on streams subject to sudden or rapid diurnal fluctuation, the discharge obtained from the rating table and the mean daily gage height may not be the true mean discharge for the day. If such stations are equipped with water-stage recorders, the mean daily discharge may be obtained by averaging discharge at regular intervals during the day or by using the discharge integrator, an instrument for obtaining mean daily discharge from a continuous gage-height graph and containing as an essential element the rating curve of the station.

In the table of monthly discharge the column headed "Maximum" gives the maximum daily discharge, and not the discharge when the water surface was at crest height. Likewise, in the column headed "Minimum" the quantity given is the minimum daily discharge. The column headed "Mean" is the average flow in cubic feet per second during the month. On this average flow are based computations recorded in the remaining columns, which are defined on page 2.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of stream-flow data depends primarily (1) on the permanency of the stage-discharge relation and (2) on the accuracy of observation 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 records are accurate within 5 percent; "good," within 10 percent; "fair", within 15 percent; and "poor", 20 percent or more.

The monthly means for any station may represent with high accuracy the quantity of water flowing past the gage, but the figures showing discharge per square mile and depth in inches may be subject to gross errors caused by the inclusion of large noncontributing districts in the measured drainage area, by lack of information concerning water diverted for irrigation or other use, or by inability to interpret the effect of artificial regulation of the flow of the river above the station. "Second-feet per square mile" and "run-off in inches" are therefore not computed if such errors appear probable.

The computations are also omitted for stations on streams draining areas in which the annual rainfall is less than 20 inches.

The table of monthly discharge gives a general idea of the flow at the station. The table of daily discharge allows more detailed studies of the variation in flow. It should be borne in mind, however, that the observations in each succeeding year may be expected to throw new light on data previously published.

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

PUBLICATIONS

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

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

PART 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. North Pacific slope basins, in three parts:

A, Pacific slope basins in Washington and upper Columbia River Basin.

B, Snake River Basin.

C, Pacific slope basins in Oregon and lower Columbia River Basin.

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

1. Copies may be purchased at nominal cost from the Superintendent of Documents, Government Printing Office, Washington, D.C., who will, 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 local offices of the water-resources branch of the Geological Survey, as follows:

Augusta, Maine, Statehouse.
Boston, Mass., 2500 Customhouse.
Hartford, Conn., 203 Federal Building.
Albany, N.Y., 603 State Public Works Building.
Trenton, N.J., 228 Federal Building.
Harrisburg, Pa., 492 Education Building.
Charlottesville, Va., Brooks Museum, University of Virginia.
South Charleston, W.Va., Naval Ordnance Plant.
Asheville, N.C., 220 Post Office Building.
Columbia, S.C., 801 National Loan & Exchange Bank Building.
Ocala, Fla., Post Office Building.
Montgomery, Ala., Post Office Building.
Chattanooga, Tenn., 630 Power Building.
Columbus, Ohio, Engineering Experiment Station, Ohio State University.
Indianapolis, Ind., 319 Federal Building.
Urbana, Ill., 302 University New Agricultural Building.
Madison, Wis., 337N State Capitol.
St. Paul, Minn., 632 State Office Building.
Iowa City, Iowa, 402 Hydraulic Laboratory, University of Iowa.
Topeka, Kans., 23 Federal Building.
Rolla, Mo., Rolla Building, Missouri School of Mines and Metallurgy.
Fort Smith, Ark., Post Office Building.
Austin, Tex., State Highway Building.
Santa Fe, N.Mex., State Capitol.
Tucson, Ariz., 210 Post Office Building.
Denver, Colo., 403 Post Office Building.
Salt Lake City, Utah, 303 Federal Building.
Idaho Falls, Idaho, 228 Federal Building.
Boise, Idaho, Federal Building.
Helena, Mont., 421 New Federal Building.
Tacoma, Wash., 406 Federal Building.
Portland, Oreg., 606 Post Office Building.
San Francisco, Calif., 303 Customhouse.
Los Angeles, Calif., 510 Eighth and Figueroa Building.
Honolulu, Hawaii, 225 Federal Building.

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

Stream-flow records have been obtained at about 6,590 points in the United States, and the data obtained have been published in the reports tabulated on page 7.

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 in the same relative order as the regular gaging stations. An index of the reports containing records obtained prior to 1904 has been published in Water-Supply Paper 119.

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

[A=Annual report; B=Bulletin; W=Supply Paper]

Report	Character of data	Year
10th A, pt. 2.....	Descriptive information only.....	
11th A, pt. 2.....	Monthly discharge and descriptive information.....	1884 to Sept., 1890.
12th A, pt. 2.....	do.....	1884 to June 30, 1891.
13th A, pt. 2.....	Mean discharge in second-feet.....	1884 to Dec. 31, 1892.
14th A, pt. 2.....	Monthly discharge (long-time records, 1871 to 1893).....	1883 to Dec. 31, 1892.
B 151.....	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 (also many data covering earlier years).....	1895.
W 11.....	Gage heights (also gage heights for earlier years).....	1896.
18th A, pt. 4.....	Descriptions, measurements, ratings, and monthly discharge (also similar data for some earlier years).....	1895-96.
W 15.....	Descriptions, measurements, and gage heights, eastern United States, eastern Mississippi River, and Missouri River above junction with Kansas River.....	1897.
W 16.....	Descriptions, measurements, and gage heights, western Mississippi River below junction of Missouri and Platte Rivers, and western United States.....	1897.
19th A, pt. 4.....	Descriptions, measurements, ratings, and monthly discharge (also some long-time records).....	1897.
W 27.....	Measurements, ratings, and gage heights, eastern United States, eastern Mississippi River, and Missouri River.....	1898.
W 28.....	Measurements, ratings, and gage heights, Arkansas River and western United States.....	1898.
20th A, pt. 4.....	Monthly discharge (also for many earlier years).....	1898.
W 35 to 39.....	Descriptions, measurements, gage heights, and ratings.....	1899.
21st A, pt. 4.....	Monthly discharge.....	1899.
W 47 to 52.....	Descriptions, measurements, gage heights, and ratings.....	1900.
22d A, pt. 4.....	Monthly discharge.....	1900.
W 65, 66.....	Descriptions, measurements, gage heights, and ratings.....	1901.
W 75.....	Monthly discharge.....	1901.
W 82 to 85.....	Complete data.....	1902.
W 97 to 100.....	do.....	1903.
W 124 to 135.....	do.....	1904.
W 165 to 178.....	do.....	1905.
W 201 to 214.....	do.....	1906.
W 241 to 252.....	do.....	1907-8.
W 261 to 272.....	do.....	1909.
W 281 to 292.....	do.....	1910.
W 301 to 312.....	do.....	1911.
W 321 to 332.....	do.....	1912.
W 351 to 362.....	do.....	1913.
W 381 to 394.....	do.....	1914.
W 401 to 414.....	do.....	1915.
W 431 to 444.....	do.....	1916.
W 451 to 464.....	do.....	1917.
W 471 to 484.....	do.....	1918.
W 501 to 514.....	do.....	1919-20.
W 521 to 534.....	do.....	1921.
W 541 to 554.....	do.....	1922.
W 561 to 574.....	do.....	1923.
W 581 to 594.....	do.....	1924.
W 601 to 614.....	do.....	1925.
W 621 to 634.....	do.....	1926.
W 641 to 654.....	do.....	1927.
W 661 to 674.....	do.....	1928.
W 681 to 694.....	do.....	1929.
W 696 to 709.....	do.....	1930.
W 711 to 724.....	do.....	1931.
W 726 to 739.....	do.....	1932.

The following table gives, by years and drainage basins, the numbers of the papers on surface-water supply published from 1899 to 1932. The data for any particular station will, as a rule, be found in the reports covering the years during which the station was maintained. For example, data from 1910 to 1920 for any station in the area covered by part 3 are published in Water-Supply Papers 283, 303, 323, 353, 383, 403, 433, 453, 473, and 503, which contain records for the Ohio River Basin for those years.

Numbers of water-supply papers containing results of stream measurements, 1899-1932

[For basins included see p. 5]

Year	1	2	3	4	5	6	7	8	9	10	11	12-A	12-B	12-C
1899		35	36	36	36	36	37	37	37	38	38	38	38	38
1900	47, 48	48	48	49	49	49	50	50	50	51	51	51	51	51
1901	65, 75	65	65	65	65	65	66	66	66	66	66	66	66	66
1902	82	82	82	82	82	82	83	83	83	83	83	83	83	83
1903	97	97	97	97	97	97	98	98	98	98	98	98	98	98
1904	124, 125, 126	124	124	124	124	124	125	125	125	125	125	125	125	125
1905	165, 166, 167	165	165	165	165	165	166	166	166	166	166	166	166	166
1906	203, 204	203	203	203	203	203	204	204	204	204	204	204	204	204
1907-8	241	241	241	241	241	241	242	242	242	242	242	242	242	242
1909	261	261	261	261	261	261	262	262	262	262	262	262	262	262
1910	281	281	281	281	281	281	282	282	282	282	282	282	282	282
1911	301	301	301	301	301	301	302	302	302	302	302	302	302	302
1912	321	321	321	321	321	321	322	322	322	322	322	322	322	322
1913	351	351	351	351	351	351	352	352	352	352	352	352	352	352
1914	381	381	381	381	381	381	382	382	382	382	382	382	382	382
1915	401	401	401	401	401	401	402	402	402	402	402	402	402	402
1916	431	431	431	431	431	431	432	432	432	432	432	432	432	432
1917	451	451	451	451	451	451	452	452	452	452	452	452	452	452
1918	471	471	471	471	471	471	472	472	472	472	472	472	472	472
1919-20	501	501	501	501	501	501	502	502	502	502	502	502	502	502
1921	521	521	521	521	521	521	522	522	522	522	522	522	522	522
1922	541	541	541	541	541	541	542	542	542	542	542	542	542	542
1923	561	561	561	561	561	561	562	562	562	562	562	562	562	562
1924	581	581	581	581	581	581	582	582	582	582	582	582	582	582
1925	601	601	601	601	601	601	602	602	602	602	602	602	602	602
1926	621	621	621	621	621	621	622	622	622	622	622	622	622	622
1927	641	641	641	641	641	641	642	642	642	642	642	642	642	642
1928	661	661	661	661	661	661	662	662	662	662	662	662	662	662
1929	681	681	681	681	681	681	682	682	682	682	682	682	682	682
1930	696	696	696	696	696	696	697	697	697	697	697	697	697	697
1931	711	711	711	711	711	711	712	712	712	712	712	712	712	712
1932	726	726	726	726	726	726	727	727	727	727	727	727	727	727

* Rating tables and index to Water-Supply Papers 35-39 contained in Water-Supply Paper 39. Tables of monthly discharge for 1899 in Twenty-first Annual Report, part 4.

* James River only.

* Gallatin River.

* Green and Gunnison Rivers and Colorado River above Gunnison River.

* Mohave River only.

* Kings and Kern Rivers and south Pacific slope drainage basins.

* Rating tables and index to Water-Supply Papers 47-52 and data on precipitation, wells, and irrigation in California and Utah contained in Water-Supply Paper 52.

* Tables of monthly discharge for 1900 in Twenty-second Annual Report, part 4.

* Wissachickon and Schuykill Rivers to James River.

* Safford River.

* Loup and Platte Rivers near Columbus, Nebr., and all tributaries below junction with Platte River.

* Tributaries of Mississippi River from east.

* Lake Ontario and tributaries to St. Lawrence River proper.

* Hudson Bay only.

* New England Rivers only.

* Hudson River to Delaware River, inclusive.

* Susquehanna River to York River, inclusive.

* Platte and Kansas Rivers.

* Great Basin in California, except Truckee and Carson River Basins.

* Below junction with Gila.

* Rogue, Umpqua, and Siletz Rivers only.

COOPERATION

The work in the several States was done under cooperative agreements as follows: In Arkansas, with the Arkansas Geological Survey, Dr. George C. Branner, State geologist; in Kansas, with the water-resources division of the Kansas Board of Agriculture, George S. Knapp, chief engineer; in Missouri and for the station on the White River at Beaver, Ark., with the Missouri Bureau of Geology and Mines, H. A. Buehler, State geologist, the Missouri Game and Fish Department, J. A. Ross, commissioner, the Missouri Highway Department, T. H. Cutler, chief highway engineer, and the city of Joplin, D. C. Schink, commissioner, department of streets and public works; in New Mexico, with the office of the State engineer, George M. Neel; in Tennessee, with the Tennessee Division of Geology, Walter F. Pond, State geologist; in Texas, with the Texas State Board of Water Engineers, consisting of John A. Norris, chairman, C. S. Clark, and A. H. Dunlap.

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DIVISION OF WORK

The data for stations in the several States were collected and prepared for publication as follows: In Arkansas, except for the station on the White River at Beaver, Ark., in Oklahoma, and at the station on Red River near Denison, Tex., by John H. Gardiner, district engineer; in Kansas, by J. B. Spiegel, district engineer, assisted by Charles Wells, W. M. Littlefield, R. V. Smrha, H. Gerald Bobst, and Mrs. Maude Moon; in Mississippi, by C. E. McCashin, district engineer, assisted by D. M. Corbett, J. L. Saunders, C. H. Prior, E. J. Tripp, I. E. Anderson, W. M. Littlefield, W. S. Eisenlohr, Jr., and Miss Annie L. Hardin; in Missouri, and for the station on the White River at Beaver, Ark., by H. C. Beckman, district engineer, assisted by H. C. Bolon, R. D. Schmickle, C. J. Eyberg, and C. H.

Jennings; in New Mexico, by Berkeley Johnson, district engineer, assisted by E. L. Barrows, H. G. Neel, W. G. Bratschi, T. E. Yates, Miss C. G. Haskell, and Mrs. Jean Teague; in Tennessee, by W. R. King, district engineer, assisted by Warren Withée, C. E. Knox, W. J. Perry, and Miss Gladys Boulton; and in Texas, by C. E. Ellsworth, district engineer, assisted by Trigg Twichell, Seth D. Breeding, Tate Dalrymple, N. C. Magnuson, Tinnie Schmitt, P. H. Holland, F. C. Ames, V. L. Austin, R. W. Yarborough, and W. C. Dodd.

The records were reviewed and the manuscript assembled by David S. Jenkins.

GAGING-STATION RECORDS

MAIN MISSISSIPPI RIVER

MISSISSIPPI RIVER NEAR VICKSBURG, MISS.

LOCATION.—In T. 16 N., R. 3 E., at combined highway and railway bridge of Vicksburg Bridge & Terminal Co., $1\frac{1}{2}$ miles below mouth of Yazoo River and 3 miles southwest of Vicksburg.

DRAINAGE AREA.—1,144,000 square miles (measured by Mississippi River Commission).

RECORDS AVAILABLE.—April 1930 to September 1932. Stages only, April 1930 to June 1931.

GAGE.—Water-stage recorder in concrete house on fourth pier from left bank. The downstream cavity of the pier is used as the stilling well. Water is admitted to the well by three 6-inch intake pipes at different elevations and inclined 30° from the vertical. Zero of gage is 46.16 feet above mean sea level.

DISCHARGE MEASUREMENTS.—Discharge measurements are made from the downstream side of the highway section of the bridge. The highway section is on the upstream side of the bridge, and the railway section on the downstream side. The metering equipment is lowered through an opening between the floors of the highway and railway. The equipment is operated by means of a reel and boom mounted on a low-wheeled truck frame. The truck frame also carries a four-cylinder automobile engine which supplies power for operating the metering equipment and moving the truck from point to point along the bridge. Depth of water and position of meter are shown by a depth indicator attached to the reel. During medium and high stages the depth of water and velocity are such that the metering equipment is carried downstream and the indicated depth is too large. Conversion to true depth is effected by use of two correction tables, one of which gives the correction to slant length of supporting line above water surface, and the other gives the correction to curved length of line below water surface. The use of each table requires a measurement of the vertical angle in the supporting line above water surface, and this measurement is accomplished by use of a protractor applied to the line just below the bridge floor. The corrections to indicated depth are lessened by the use of large sounding weights. The maximum sounding weight used at the Vicksburg station is 300 pounds.

EXTREMES.—Maximum discharge during period, 1,410,000 second-feet Feb. 26, 1932; maximum gage height, 50.27 feet Feb. 29, 1932; minimum discharge, 125,000 second-feet Nov. 19, 1931 (gage height, 2.85 feet).

DETERMINATION OF DISCHARGE.—Daily discharge determined by shifting-control method. Changes in stage-discharge relation determined by frequent measurements. Gage heights estimated from records for Weather Bureau gage at Vicksburg for Apr. 24 to May 13, 1930; June 9 to July 22, 1930; June 18 to July 9, 1931; Nov. 27 to Dec. 1, 1931; and Feb. 11–16, 1932. Records of daily discharge excellent Mar. 17 to Sept. 30, 1932, and fair prior to that period.

Discharge measurements of Mississippi River near Vicksburg, Miss., 1931-32

Date	Width	Area of section	Mean velocity	Gage height	Discharge
1931					
July 13.....	<i>Feet</i> 2,445	<i>Square feet</i> 86,400	<i>Feet per second</i> 2.51	<i>Feet</i> 9.32	<i>Second-feet</i> 217,000
Oct. 26.....	2,427	81,600	2.70	8.50	221,000
Oct. 27.....	2,434	82,800	2.76	8.96	227,000
Nov. 19-20.....	2,299	68,800	1.86	2.90	128,000
Nov. 20-21.....	2,299	68,000	1.87	3.07	127,000
Dec. 3-4.....	2,628	114,000	4.22	21.04	481,000
Dec. 4-5.....	2,651	117,000	4.45	22.22	521,000
Dec. 9-10.....	2,719	128,000	4.80	26.38	613,000
1932					
Jan. 5-6.....	2,847	154,000	5.42	36.55	835,000
Jan. 7.....	2,847	152,000	5.47	36.50	832,000
Jan. 11.....	2,849	151,000	5.43	36.60	820,000
Feb. 17-18.....	*3,396	*188,000	6.93	48.45	1,300,000
Feb. 19-20.....	*3,396	*189,000	6.98	48.72	1,320,000
Mar. 16.....	2,857	165,000	5.21	40.51	860,000
Mar. 17.....	2,860	161,000	5.18	39.42	834,000
Mar. 19.....	2,837	156,000	4.92	37.14	767,000
Mar. 22.....	2,782	147,000	4.73	33.45	695,000
Mar. 23.....	2,759	141,000	4.63	32.02	653,000
Mar. 24.....	2,754	138,000	4.57	30.57	631,000
Mar. 26.....	2,714	132,000	4.36	28.29	575,000
Mar. 28.....	2,699	128,000	4.38	27.04	560,000
Mar. 29.....	2,699	127,000	4.47	26.95	568,000
Apr. 1.....	2,719	135,000	4.77	29.49	643,000
Apr. 8.....	2,806	151,000	5.36	34.98	810,000
Apr. 9.....	2,821	152,000	5.34	35.56	811,000
Apr. 12.....	2,854	158,000	5.40	37.14	854,000
Apr. 13.....	2,864	159,000	5.50	37.52	876,000
Apr. 15.....	2,886	160,000	5.50	38.26	880,000
Apr. 18.....	2,893	162,000	5.64	39.13	914,000
Apr. 19.....	2,903	163,000	5.64	39.30	919,000
Apr. 21.....	2,916	164,000	5.58	39.45	916,000
Apr. 22.....	2,911	163,000	5.60	39.39	912,000
Apr. 25-26.....	2,861	159,000	5.41	38.34	860,000
Apr. 26.....	2,861	158,000	5.29	37.93	835,000
Apr. 27.....	2,846	157,000	5.29	37.19	832,000
Apr. 29.....	2,801	150,000	5.03	34.96	755,000
May 2.....	2,766	142,000	4.71	31.56	670,000
May 3.....	2,754	139,000	4.70	30.61	653,000
May 5.....	2,724	137,000	4.79	29.65	658,000
May 7.....	2,739	137,000	4.77	29.75	653,000
May 9.....	2,754	140,000	4.80	30.44	672,000
May 10.....	2,774	140,000	4.90	30.76	686,000
May 12.....	2,759	141,000	4.91	30.99	692,000
May 13.....	2,759	140,000	4.85	30.80	679,000
May 16.....	2,714	136,000	4.51	28.99	613,000
May 18.....	2,694	132,000	4.36	27.19	575,000
May 19.....	2,679	128,000	4.34	26.17	556,000
May 21.....	2,669	124,000	4.09	24.39	507,000
May 23.....	2,639	120,000	4.04	22.69	485,000
May 25.....	2,624	117,000	3.85	21.68	451,000
May 27.....	2,624	116,000	3.91	21.68	453,000
May 31.....	2,619	114,000	3.88	20.87	443,000
June 1.....	2,592	113,000	3.82	20.16	432,000
June 3.....	2,581	106,000	3.45	17.57	366,000
June 4.....	2,574	101,000	3.25	16.01	323,000
June 6.....	2,554	96,500	3.09	13.94	298,000
June 8.....	2,490	93,500	2.95	12.91	276,000
June 9.....	2,490	93,800	2.94	12.76	276,000
June 11.....	2,495	96,000	3.10	13.53	298,000
June 13.....	2,574	99,000	3.35	14.95	332,000
June 15.....	2,579	101,000	3.44	16.03	347,000
June 16.....	2,585	102,000	3.48	16.40	355,000
June 18.....	2,589	104,000	3.46	16.80	360,000
June 20.....	2,576	102,000	3.41	16.22	345,000
June 21.....	2,569	101,000	3.36	15.76	339,000
June 23.....	2,569	99,900	3.27	15.19	327,000
June 27.....	2,574	101,000	3.37	15.80	340,000
June 29.....	2,576	103,000	3.35	16.06	345,000
July 1.....	2,585	107,000	3.46	16.94	370,000
July 2.....	2,590	107,000	3.72	17.80	398,000
July 4.....	2,600	113,000	3.74	19.65	423,000
July 5.....	2,620	115,000	4.19	20.81	482,000
July 6.....	2,630	119,000	4.20	22.08	500,000
July 7.....	2,640	122,000	4.30	23.14	524,000
July 9.....	2,677	126,000	4.52	25.03	570,000
July 11.....	2,690	131,000	4.50	26.38	589,000

* Flowing water only.

Discharge measurements of Mississippi River near Vicksburg, Miss., 1931-32—
Continued

Date	Width	Area of section	Mean velocity	Gage height	Discharge
	<i>Feet</i>	<i>Square feet</i>	<i>Feet per second</i>	<i>Feet</i>	<i>Second-feet</i>
1932					
July 13.....	2,700	133,000	4.59	27.12	610,000
July 15.....	2,710	136,000	4.79	28.37	652,000
July 18.....	2,750	141,000	5.02	30.62	708,000
July 20.....	2,760	145,000	5.06	31.38	733,000
July 21.....	2,760	144,000	4.94	31.38	712,000
July 23.....	2,742	142,000	4.87	30.55	692,000
July 25.....	2,705	137,000	4.54	27.97	622,000
July 27.....	2,645	123,000	4.02	23.32	494,000
July 29.....	2,585	100,000	3.59	18.30	395,000
July 30.....	2,575	105,000	3.40	16.20	357,000
Aug. 1.....	2,560	96,600	3.07	13.24	297,000
Aug. 3.....	2,480	93,700	2.88	11.82	270,000
Aug. 5.....	2,475	91,500	2.84	10.79	260,000
Aug. 8.....	2,420	89,200	2.65	10.32	236,000
Aug. 10.....	2,490	90,900	2.82	10.85	256,000
Aug. 15.....	2,490	91,800	3.04	11.85	279,000
Aug. 17.....	2,480	90,600	2.78	10.70	252,000
Aug. 19.....	2,473	89,300	2.70	10.16	241,000
Aug. 22.....	2,485	91,700	2.86	11.06	262,000
Aug. 24.....	2,490	93,200	3.02	12.15	285,000
Aug. 27.....	2,572	98,600	3.31	14.16	326,000
Aug. 29.....	2,575	103,000	3.45	15.46	355,000
Sept. 1.....	2,570	99,500	3.23	14.56	321,000
Sept. 3.....	2,485	96,100	3.00	12.79	288,000
Sept. 6.....	2,450	88,000	2.65	9.88	238,000
Sept. 8.....	2,450	84,900	2.58	8.58	215,000
Sept. 12.....	2,460	85,900	2.57	8.96	221,000
Sept. 14.....	2,455	85,100	2.46	8.45	209,000
Sept. 17.....	2,435	82,100	2.34	7.44	192,000
Sept. 19.....	2,425	79,900	2.27	6.56	181,000
Sept. 21.....	2,426	78,400	2.20	6.12	172,000
Sept. 24.....	2,415	77,000	2.05	5.16	158,000
Sept. 28.....	2,425	78,600	2.15	5.86	169,000

Gage height, in feet, of Mississippi River near Vicksburg, Miss., 1930-32

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1930							1930						
1.....		20.39	33.75	20.74	7.40	4.82	16.....		25.80	16.10	13.16	5.17	5.23
2.....		19.91	33.10	19.91	7.16	4.90	17.....		26.50	15.69	12.61	5.08	5.28
3.....		19.79	32.66	18.95	6.98	4.94	18.....		27.20	15.61	11.96	5.08	5.41
4.....		19.60	30.82	18.21	6.87	4.98	19.....	25.96	28.36	15.96	11.51	5.10	5.66
5.....		19.56	29.34	17.61	6.81	4.99	20.....	25.34	29.18	16.52	11.11	5.03	5.91
6.....		19.65	27.81	16.84	6.64	4.93	21.....	24.73	29.98	17.71	10.68	5.05	6.31
7.....		19.77	26.24	16.26	6.38	4.88	22.....	24.15	30.60	19.41	10.35	5.08	6.59
8.....		19.93	24.64	15.86	6.19	4.85	23.....	23.56	31.17	19.66	9.89	5.09	7.20
9.....		20.03	23.30	15.68	6.00	4.84	24.....	23.06	31.80	19.76	9.51	5.16	7.66
10.....		20.56	21.93	15.46	5.86	4.98	25.....	22.59	32.40	19.96	9.14	5.25	8.09
11.....		20.84	20.56	15.14	5.72	4.95	26.....	22.22	33.02	20.12	8.81	5.26	8.35
12.....		21.34	19.41	14.71	5.56	4.95	27.....	21.95	33.58	20.86	8.54	5.24	8.40
13.....		22.23	18.36	14.21	5.46	4.90	28.....	21.64	34.00	21.52	8.34	5.20	8.26
14.....		23.66	17.51	14.01	5.37	4.91	29.....	21.32	34.22	21.91	8.14	5.07	8.09
15.....		24.89	16.76	13.71	5.24	5.10	30.....	20.94	34.28	21.46	7.98	4.98	7.90
							31.....		34.15		7.67	4.83	-----

Gage height, in feet, of Mississippi River near Vicksburg, Miss., 1930-32—Con.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1	7.64	5.18	6.42	5.60	6.16	18.03	17.14	22.85	20.40	11.6	11.55	8.58
2	7.35	5.32	6.40	5.38	6.15	18.57	17.18	22.95	20.30	10.9	12.02	8.58
3	6.96	5.33	6.40	5.34	6.12	19.06	17.18	23.55	20.06	10.3	12.18	8.57
4	6.54	5.30	6.41	5.40	6.02	19.36	17.50	24.43	19.63	10.0	12.10	8.72
5	6.11	5.20	6.68	5.60	6.84	19.69	18.20	25.40	19.16	9.8	11.80	9.14
6	5.67	5.09	7.11	5.65	5.66	19.80	19.52	26.26	18.64	9.8	11.08	9.66
7	5.38	4.91	7.52	5.61	5.52	20.07	21.44	26.80	17.85	9.8	10.15	9.97
8	5.20	4.67	7.80	5.58	5.42	19.92	23.38	26.98	17.25	9.6	9.22	10.00
9	5.03	4.42	7.97	5.52	5.51	19.50	24.96	26.96	16.82	9.5	8.40	9.73
10	4.82	4.24	8.41	5.58	5.52	19.10	26.15	26.63	16.40	9.30	7.88	9.58
11	4.63	4.05	9.27	5.69	5.47	19.06	26.95	26.03	15.95	9.28	7.68	9.70
12	4.60	3.90	9.98	5.85	5.37	19.10	27.58	25.30	15.49	9.33	7.78	10.12
13	5.01	3.81	10.29	6.06	5.41	19.18	28.12	24.60	14.98	9.32	8.09	10.68
14	5.59	3.80	10.28	6.36	6.87	19.38	28.65	23.68	14.29	9.30	8.60	11.16
15	5.96	3.81	10.03	6.67	8.76	19.74	29.12	22.78	13.65	9.28	8.73	11.40
16	6.01	3.96	9.66	7.05	10.02	20.06	29.56	21.82	13.08	9.33	8.77	11.31
17	5.98	3.98	9.39	7.43	10.76	20.24	30.00	20.84	12.75	9.30	8.65	10.94
18	5.98	3.91	9.29	7.91	11.59	20.26	30.30	19.90	13.0	9.20	8.48	10.34
19	5.94	3.89	9.35	8.41	12.50	20.06	30.51	18.98	13.4	9.00	8.35	9.52
20	5.85	3.97	9.46	8.69	13.27	19.75	30.56	18.28	13.8	8.80	8.32	9.60
21	5.71	4.05	9.42	8.71	14.00	19.34	30.49	17.71	14.5	8.62	8.80	7.60
22	5.52	4.10	9.18	8.58	14.74	18.95	30.21	17.38	15.2	8.45	8.30	6.70
23	5.46	4.30	8.80	8.30	15.28	18.47	29.66	17.20	16.1	8.27	8.30	5.90
24	5.61	4.56	8.28	8.00	15.79	18.08	28.94	17.16	16.8	8.12	8.22	5.26
25	5.61	4.80	7.78	7.69	16.20	17.60	28.10	17.13	16.9	8.04	8.00	4.72
26	5.43	4.95	7.36	7.39	16.57	17.12	27.13	17.12	16.4	8.10	7.68	4.46
27	5.15	5.30	6.92	7.08	17.01	16.75	26.10	17.13	15.5	8.40	7.46	4.52
28	4.99	5.72	6.58	6.85	17.60	16.70	25.04	17.51	14.4	8.00	7.60	4.74
29	4.87	6.04	6.36	6.57	-----	16.70	24.04	18.88	13.2	9.40	8.00	5.05
30	4.82	6.34	6.11	6.35	-----	16.73	23.20	19.40	12.3	10.00	8.30	5.15
31	4.99	-----	5.88	6.18	-----	16.96	-----	20.12	-----	10.82	8.50	-----
1931-32												
1	5.00	8.29	18.20	35.98	45.76	50.20	29.46	32.62	20.10	16.91	13.15	14.49
2	4.70	7.87	19.67	36.06	46.06	50.12	30.38	31.60	18.92	17.84	12.35	13.70
3	4.46	8.26	20.89	36.12	46.36	49.98	31.29	30.56	17.43	17.83	11.76	12.66
4	4.43	6.59	22.02	36.18	46.68	49.92	32.17	29.96	15.90	19.72	11.26	11.66
5	4.72	5.99	23.06	36.36	46.87	49.75	32.96	29.65	14.73	20.93	10.76	10.67
6	5.33	5.39	24.07	36.56	47.08	49.51	33.68	29.60	13.92	22.15	10.46	9.80
7	6.14	4.87	24.96	36.49	47.26	49.05	34.34	29.77	13.32	23.20	10.33	9.19
8	6.92	4.47	25.83	36.43	37.44	48.62	34.98	30.07	12.91	24.18	10.32	8.58
9	7.40	4.22	26.35	36.40	47.68	48.07	35.56	30.45	12.77	25.08	10.51	8.54
10	7.56	4.03	26.34	36.46	47.66	47.32	36.12	30.78	13.02	26.82	10.90	8.80
11	7.44	3.86	26.12	36.62	47.69	46.46	36.67	30.98	13.60	26.34	11.30	8.99
12	7.20	3.69	25.73	37.20	47.78	45.49	37.13	30.98	14.35	26.75	11.68	8.94
13	6.90	3.64	25.30	37.75	47.82	44.37	37.53	30.77	14.98	27.16	12.06	8.70
14	6.50	3.41	24.96	38.09	47.90	43.15	37.91	30.34	15.55	27.73	12.15	8.43
15	6.03	3.28	24.40	38.37	48.08	41.86	38.26	29.73	16.06	28.43	11.77	8.12
16	5.67	3.14	24.08	38.70	48.28	40.62	38.57	28.92	16.44	29.19	11.67	7.78
17	5.34	3.03	24.20	39.06	48.41	39.44	38.84	28.03	16.72	29.98	10.15	7.40
18	5.13	3.00	24.50	39.41	48.54	38.30	39.12	27.11	16.76	30.68	10.27	6.97
19	4.98	2.89	24.95	39.76	48.70	37.13	39.28	26.10	16.57	31.15	10.17	6.63
20	4.86	2.99	25.86	40.14	48.80	35.91	39.41	25.20	16.18	31.40	10.33	6.44
21	4.90	3.12	27.26	40.64	49.10	34.65	39.45	24.30	15.73	31.37	10.66	6.07
22	5.15	3.20	28.81	40.94	49.27	33.33	39.98	23.45	15.37	31.12	11.11	5.67
23	5.70	3.42	30.20	41.60	49.50	31.97	39.22	22.64	15.22	30.47	11.64	5.34
24	6.63	3.76	31.47	42.07	49.70	30.62	38.93	22.03	15.24	29.38	12.23	5.14
25	7.70	3.44	32.50	42.65	49.89	29.36	38.55	21.67	15.42	27.76	12.90	5.03
26	8.50	5.28	33.40	43.12	50.07	28.28	37.45	21.55	15.59	25.58	13.57	5.10
27	9.00	6.60	34.14	43.56	50.22	27.54	37.18	21.58	15.80	23.04	14.27	5.48
28	9.15	8.95	34.66	44.00	50.23	27.05	36.03	21.58	15.98	20.40	15.02	5.87
29	9.06	12.50	35.00	44.43	50.23	26.96	34.92	21.50	16.07	18.03	15.44	5.86
30	8.72	15.80	35.33	45.00	-----	27.34	33.80	21.25	16.27	15.97	15.44	5.67
31	8.50	-----	35.76	45.42	-----	28.52	-----	20.82	-----	14.32	15.07	-----

Discharge, in thousands of second-feet, of Mississippi River at Vicksburg, Miss., 1931-32

Day	July	Aug	Sept.	Day	July	Aug.	Sept.
1931				1931			
1	268	268	217	16	229	221	263
2	256	275	217	17	229	217	256
3	246	279	217	18	227	216	246
4	241	277	219	19	224	214	232
5	238	272	226	20	221	212	224
6	238	260	236	21	217	212	200
7	238	244	241	22	214	212	185
8	234	227	241	23	212	212	172
9	232	214	236	24	209	210	162
10	229	205	234	25	207	207	154
11	229	202	236	26	209	202	150
12	229	204	243	27	214	198	150
13	229	209	253	28	222	200	155
14	229	216	261	29	231	207	158
15	229	219	265	30	241	212	161
				31	255	216	

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931-32												
1	158	212	411	824	1,170	1,400	642	696	430	369	293	320
2	154	205	447	824	1,180	1,380	666	668	399	399	279	306
3	150	195	479	821	1,200	1,360	694	654	363	411	268	286
4	149	183	508	824	1,210	1,340	721	656	325	424	263	266
5	154	173	539	831	1,220	1,330	747	656	307	484	260	248
6	162	164	562	837	1,230	1,300	772	651	297	504	250	231
7	175	156	582	834	1,240	1,260	790	654	284	527	241	222
8	188	150	603	828	1,240	1,230	812	661	275	552	236	214
9	197	146	615	824	1,250	1,200	815	671	275	573	244	212
10	200	143	615	824	1,260	1,150	828	688	284	585	256	217
11	197	142	605	821	1,260	1,110	843	694	300	589	263	221
12	193	138	592	840	1,270	1,060	855	694	318	601	272	219
13	188	136	578	855	1,270	1,010	880	678	333	612	280	214
14	182	134	560	868	1,270	961	883	656	340	628	262	207
15	173	132	550	877	1,290	908	886	638	348	651	277	202
16	168	130	543	886	1,300	865	896	612	356	671	270	197
17	162	128	546	899	1,300	834	905	592	359	691	241	190
18	160	128	552	908	1,310	801	916	573	359	711	244	185
19	158	127	564	922	1,330	769	922	555	356	726	241	180
20	156	128	585	933	1,330	744	919	530	348	734	244	176
21	158	130	612	958	1,350	721	919	504	337	714	253	170
22	164	131	647	972	1,360	691	916	495	331	708	261	164
23	173	134	681	992	1,370	651	902	484	327	694	272	160
24	188	140	714	1,010	1,380	633	886	463	327	661	286	156
25	207	134	739	1,030	1,400	603	868	449	333	619	300	155
26	221	164	758	1,050	1,410	576	824	449	337	555	315	156
27	227	187	777	1,070	1,400	564	834	454	340	486	329	162
28	227	231	793	1,090	1,400	559	793	454	344	432	344	168
29	226	295	801	1,100	1,400	569	755	454	346	388	354	168
30	219	359	809	1,130		580	726	449	354	352	350	164
31	216		824	1,150		615		441		318	338	

Month	Discharge in thousands of second-feet			Run-off in thousands of acre-feet
	Maximum	Minimum	Mean	
1931				
July	268	207	230	14,100
August	279	198	224	13,800
September	265	150	214	12,700
The period				40,600
1931-32				
October	227	149	182	11,200
November	359	127	165	9,820
December	824	411	619	38,190
January	1,150	821	924	56,800
February	1,410	1,170	1,300	74,800
March	1,400	559	928	57,100
April	922	642	827	49,200
May	696	441	580	35,700
June	430	275	334	19,900
July	734	318	560	34,400
August	354	236	278	17,100
September	320	155	205	12,200
The year	1,410	127	573	416,000

TRIBUTARIES OF MISSISSIPPI RIVER BELOW MOUTHS OF MISSOURI AND OHIO RIVERS

MERAMEC RIVER BASIN

MERAMEC RIVER NEAR STEELVILLE, MO.

LOCATION.—Chain gage in NE¼ sec. 21, T. 38 N., R. 4 W., 2½ miles north of Steelville. Zero of gage is 681.86 feet above mean sea level.

DRAINAGE AREA.—About 830 square miles.

RECORDS AVAILABLE.—December 1922 to September 1932.

EXTREMES—Maximum discharge during year, 2,460 second-feet Jan. 23 (gage height, 4.00 feet); minimum, 93 second-feet Sept. 29, 30 (gage height, 0.44 foot). 1922-32: Maximum discharge, 36,000 second-feet Apr. 1, 1927 (gage height, 19.40 feet); minimum, that of Sept. 29, 30, 1932.

Maximum stage known, 26.5 feet Aug. 20, 1915 (discharge, about 60,000 second-feet).

REMARKS.—Records good.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	103	116	319	2,040	437	235	267	180	145	174	103	165
2.....	103	116	284	1,090	397	251	267	174	145	148	103	154
3.....	103	116	251	1,010	397	251	251	174	137	140	113	145
4.....	103	113	235	545	357	251	235	168	145	162	103	* 145
5.....	103	113	220	625	337	251	235	162	145	162	103	* 140
6.....	100	113	220	930	319	* 251	220	162	145	183	103	140
7.....	100	113	201	752	301	251	220	160	140	186	118	137
8.....	108	113	189	570	284	251	220	157	134	177	116	129
9.....	123	118	198	522	284	235	220	157	129	157	110	126
10.....	165	118	284	457	267	235	220	151	123	157	108	118
11.....	151	129	267	397	301	220	220	151	123	140	123	118
12.....	145	126	357	357	377	204	204	* 145	118	129	478	113
13.....	151	195	397	337	397	204	204	140	113	121	437	113
14.....	168	204	397	301	357	204	189	140	113	116	* 720	113
15.....	186	189	357	284	319	204	180	140	110	113	545	113
16.....	171	174	301	284	319	204	174	140	110	106	337	108
17.....	165	162	284	1,340	457	235	204	140	110	103	235	108
18.....	148	171	251	1,830	478	1,440	* 198	140	108	103	220	108
19.....	137	168	235	930	437	855	192	134	108	103	204	108
20.....	129	204	220	720	417	625	186	134	108	100	189	103
21.....	123	284	235	570	357	500	186	134	108	98	174	103
22.....	123	337	235	855	337	457	186	134	108	98	162	98
23.....	121	267	235	2,240	337	522	180	134	108	145	151	100
24.....	121	251	220	1,630	319	437	174	132	108	142	142	98
25.....	121	220	204	820	301	397	174	132	108	116	134	98
26.....	121	235	195	892	284	357	174	134	108	116	137	98
27.....	121	235	183	970	267	319	168	140	132	118	251	108
28.....	118	251	174	820	251	319	168	* 140	301	118	545	103
29.....	118	267	174	720	251	301	168	* 145	235	116	251	93
30.....	118	301	204	570	-----	267	180	145	192	* 110	183	93
31.....	118	-----	720	478	-----	267	-----	134	-----	103	157	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October.....	186	100	129	0.155	0.18	7,930
November.....	337	113	184	.222	.25	10,900
December.....	720	174	266	.320	.37	16,400
January.....	2,240	284	835	1.01	1.16	51,300
February.....	478	251	343	.413	.45	19,700
March.....	1,440	204	355	.428	.49	21,800
April.....	267	168	202	.243	.27	12,000
May.....	180	132	147	.177	.20	9,040
June.....	301	108	134	.161	.18	7,970
July.....	186	98	131	.158	.18	8,060
August.....	720	103	221	.266	.31	13,600
September.....	165	93	117	.141	.16	6,960
The year.....	2,240	93	256	.308	4.20	186,000

* Estimated.

MERAMEC RIVER BASIN

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MERAMEC RIVER NEAR SULLIVAN, MO.

LOCATION.—Chain gage in N $\frac{1}{2}$ SW $\frac{1}{4}$ sec. 35, T. 40 N., R. 2 W., at Sappington highway bridge 6 miles southeast of Sullivan. Zero of gage is 582.64 feet above mean sea level.

DRAINAGE AREA.—1,550 square miles.

RECORDS AVAILABLE.—September 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 3,800 second-feet Nov. 20 (gage height, 7.75 feet); minimum discharge, 160 second-feet Sept. 22–30; minimum gage height, 1.38 feet Sept. 28, 29.

1921–32: Maximum discharge, 28,300 second-feet June 2, 1927 (gage height, 22.89 feet); minimum discharge and gage height, those of September 1932.

Maximum stage known, about 30.7 feet in August 1915 (discharge, about 90,000 second-feet).

REMARKS.—Records good.

Discharge, in second-feet, 1931–32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	205	230	750	2,120	1,020	575	575	396	260	315	205	295
2.....	205	230	700	2,060	910	575	550	375	295	245	205	260
3.....	218	230	650	1,430	910	550	528	355	278	550	192	260
4.....	205	230	600	1,190	800	575	505	355	278	355	180	230
5.....	205	230	575	1,130	750	575	482	335	278	355	180	230
6.....	218	230	505	1,310	700	550	482	335	278	355	180	218
7.....	218	230	482	1,370	650	550	460	315	278	355	180	205
8.....	230	230	482	1,190	650	528	460	315	278	315	180	205
9.....	230	245	528	1,020	625	505	460	315	260	295	180	192
10.....	230	245	550	965	600	482	438	315	245	260	180	192
11.....	245	245	750	855	750	482	438	295	245	245	192	192
12.....	260	315	855	800	800	460	417	295	230	230	205	192
13.....	295	965	1,130	750	855	460	417	295	230	245	1,990	192
14.....	375	600	1,020	700	800	460	396	278	230	218	555	192
15.....	335	482	910	650	750	438	375	278	230	205	750	180
16.....	335	396	800	700	750	438	375	260	218	205	625	180
17.....	315	375	700	1,250	855	750	396	260	218	205	505	180
18.....	278	460	650	2,440	965	1,800	417	260	218	192	417	180
19.....	278	417	625	2,180	910	2,060	417	260	230	180	335	180
20.....	260	2,780	575	1,610	855	1,670	417	260	230	180	295	170
21.....	260	1,020	550	1,490	800	1,250	417	260	230	180	260	170
22.....	245	855	550	1,860	800	1,190	375	260	230	180	260	160
23.....	245	750	550	3,060	750	1,190	375	245	218	260	245	160
24.....	245	650	528	2,850	750	1,080	375	245	218	295	230	160
25.....	230	575	482	2,180	700	910	355	245	205	260	218	160
26.....	230	550	460	1,860	650	855	355	245	205	245	218	160
27.....	245	600	438	1,800	625	800	335	278	315	245	218	160
28.....	230	600	438	1,730	625	700	335	295	438	230	396	160
29.....	245	650	417	1,490	600	650	335	278	438	218	482	160
30.....	245	750	438	1,310	-----	625	396	278	375	218	355	160
31.....	245	-----	650	1,130	-----	600	-----	260	-----	218	205	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October.....	375	205	252	0.163	0.19	15,500
November.....	2,780	230	546	.352	.39	32,500
December.....	1,130	417	624	.403	.46	38,400
January.....	3,060	650	1,500	.968	1.12	92,200
February.....	1,020	600	766	.494	.53	44,100
March.....	2,060	438	785	.506	.58	48,300
April.....	575	335	422	.272	.30	25,100
May.....	396	245	292	.188	.22	18,000
June.....	438	205	263	.170	.19	15,900
July.....	550	180	259	.167	.19	15,900
August.....	1,990	180	362	.234	.27	22,300
September.....	295	160	191	.123	.14	11,400
The year.....	3,060	160	522	.337	4.58	379,000

MERAMEC RIVER NEAR EUREKA, MO.

LOCATION.—Chain gage in SE¼ sec. 32, T. 44 N., R. 4 E., at Votaw Ford highway bridge, 2 miles east of Eureka. Zero of gage is 407.22 feet (revised) above mean sea level.

DRAINAGE AREA.—3,800 square miles.

RECORDS AVAILABLE.—August 1903 to July 1906; October 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 9,540 second-feet Jan. 3, Aug. 14 (gage height, 8.35 feet); minimum, 300 second-feet Sept. 24 (gage height, 0.30 foot).

1921-32: Maximum discharge, 64,000 second-feet Apr. 3, 1927 (gage height, 29.47 feet); minimum discharge, 295 second-feet Aug. 12, 1930, Sept. 22, 1931; minimum gage height, 0.26 foot Aug. 12, 1930.

Maximum stage known, 39.2 feet Aug. 22, 1915 (discharge, about 175,000 second-feet).

REMARKS.—Records good.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	475	375	2,560	3,260	2,830	1,220	1,220	1,060	575	760	497	1,060
2.....	450	400	2,450	6,960	2,830	1,220	1,220	1,140	605	665	509	865
3.....	425	375	2,340	9,230	2,830	1,220	1,140	1,020	605	635	575	830
4.....	400	375	1,790	5,110	2,720	1,220	1,140	980	635	795	485	728
5.....	400	375	1,590	3,290	2,500	1,220	1,060	900	605	795	428	635
6.....	375	375	1,390	2,940	2,280	1,140	1,020	865	605	865	406	605
7.....	960	350	1,210	3,890	2,170	1,140	1,020	865	605	830	473	569
8.....	920	350	1,210	4,490	2,060	1,140	980	830	830	795	473	527
9.....	880	350	1,210	3,170	1,960	1,140	980	795	635	695	411	491
10.....	640	350	1,300	2,610	1,860	1,060	940	760	635	665	385	473
11.....	580	425	1,590	2,280	2,610	1,060	940	760	563	635	605	461
12.....	550	425	2,900	1,960	3,050	980	940	728	533	605	865	433
13.....	610	500	2,900	1,760	2,720	980	900	695	515	533	4,610	467
14.....	1,040	810	3,140	1,670	2,610	940	865	695	509	515	8,360	438
15.....	880	1,590	2,900	1,580	2,500	940	865	665	575	485	6,690	411
16.....	775	1,040	2,560	1,490	2,500	940	830	635	533	455	4,250	400
17.....	705	920	2,230	2,280	2,610	980	900	605	557	433	4,490	880
18.....	640	1,080	1,900	4,730	2,720	2,060	1,670	605	515	411	2,720	370
19.....	610	960	1,590	7,100	2,830	3,050	1,670	605	485	390	1,670	390
20.....	560	1,690	1,390	4,850	2,940	3,170	1,580	575	509	370	1,860	380
21.....	525	4,220	1,300	3,650	2,940	2,720	1,490	575	539	350	1,220	370
22.....	500	3,380	1,210	4,130	2,830	2,610	1,310	569	557	360	1,060	350
23.....	450	2,230	1,210	5,890	2,720	2,500	1,220	575	551	1,060	900	340
24.....	450	1,900	1,210	6,960	2,610	2,280	1,140	533	497	865	795	310
25.....	425	1,590	1,300	7,380	2,390	2,060	1,060	557	461	728	728	325
26.....	425	1,390	1,210	5,760	2,280	1,960	1,020	533	461	760	830	350
27.....	425	1,390	1,080	4,850	1,860	1,760	980	545	479	635	665	860
28.....	425	1,490	1,000	4,730	1,490	1,670	900	545	665	695	728	310
29.....	400	1,690	920	4,850	1,400	1,490	900	575	1,060	635	865	315
30.....	400	1,900	920	4,010	-----	1,400	1,060	575	795	557	1,220	320
31.....	400	-----	1,120	3,290	-----	1,310	-----	575	-----	527	1,020	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October.....	1,040	375	571	0.150	0.17	35,100
November.....	4,220	350	1,140	.300	.33	67,800
December.....	3,140	920	1,700	.447	.52	105,000
January.....	9,230	1,490	4,200	1.11	1.28	258,000
February.....	3,050	1,400	2,470	.650	.70	142,000
March.....	3,170	940	1,570	.413	.48	96,500
April.....	1,670	830	1,100	.289	.32	65,500
May.....	1,140	533	708	.186	.21	43,500
June.....	1,060	461	590	.155	.17	35,100
July.....	1,060	350	629	.166	.19	38,700
August.....	8,360	385	1,640	.432	.50	101,000
September.....	1,060	310	475	.125	.14	28,300
The year.....	9,230	310	1,400	.368	5.01	1,020,000

BOURBEUSE RIVER AT UNION, MO.

LOCATION.—Chain gage in SW $\frac{1}{4}$ sec. 26, T. 43 N., R. 1 W., at bridge on State highway 50 about 800 feet above Flat Creek and 1 mile east of Union. Zero of gage is 491.93 feet above mean sea level.

DRAINAGE AREA.—767 square miles.

RECORDS AVAILABLE.—June 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 8,540 second-feet Jan 3 (gage height, 10.80 feet); minimum discharge, 17 second-feet Nov. 5, July 22; minimum gage height, 0.76 foot July 22.

1921-32: Maximum discharge, 22,500 second-feet Apr. 3, 1927 (gage height, 19.10 feet); minimum discharge, that of Nov. 5, 1931, and July 22, 1932; minimum gage height, that of July 22, 1932.

Maximum stage known, 25.5 feet Aug. 22, 1915 (discharge, about 50,000 second-feet).

REMARKS.—Records good.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	78	27	885	4,360	525	158	148	103	37	32	53	167
2	64	27	1,150	7,580	432	158	130	96	43	35	45	122
3	56	22	658	5,200	349	148	122	93	35	35	43	103
4	50	24	432	1,240	330	139	122	90	48	148	32	87
5	45	17	349	850	296	130	130	106	50	158	24	75
6	40	19	280	968	296	148	122	106	45	113	22	73
7	37	19	237	3,010	265	139	113	106	48	99	43	61
8	37	19	237	1,870	251	148	103	99	113	78	30	59
9	48	24	280	995	212	139	106	90	81	73	30	53
10	45	24	296	689	200	139	103	81	53	70	45	48
11	35	45	602	550	224	139	96	75	59	70	56	50
12	40	32	920	453	212	130	90	73	67	64	48	48
13	87	81	718	389	224	122	90	64	59	56	1,870	56
14	78	37	752	349	212	113	84	64	53	48	4,140	56
15	50	35	752	313	330	113	81	61	53	43	2,540	50
16	53	67	720	330	251	110	81	59	73	37	1,240	45
17	59	330	500	453	224	122	90	59	45	32	2,340	45
18	45	237	410	1,960	224	113	265	53	40	27	453	45
19	43	188	313	2,820	237	122	224	48	30	24	265	43
20	50	658	265	1,150	453	113	280	50	90	24	265	40
21	48	237	237	720	349	130	200	50	78	22	167	40
22	50	237	212	658	313	148	167	59	75	17	158	35
23	45	296	188	995	265	167	158	48	48	265	122	32
24	45	280	432	2,260	251	178	139	48	45	122	113	24
25	32	265	349	2,440	237	251	122	50	43	64	106	30
26	32	237	265	1,320	212	330	110	40	35	56	106	24
27	37	313	237	995	212	251	106	40	56	167	113	24
28	37	432	212	1,410	188	224	103	48	48	113	98	24
29	35	500	188	1,590	167	200	94	40	43	87	73	24
30	30	785	296	995	-----	188	113	32	45	70	73	35
31	27	-----	720	720	-----	167	-----	35	-----	56	70	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	87	27	47.0	0.061	0.07	2,890
November	785	17	184	.240	.27	10,900
December	1,150	188	455	.593	.68	28,000
January	7,580	313	1,600	2.09	2.41	98,400
February	525	167	274	.357	.38	15,800
March	330	110	157	.205	.24	9,650
April	280	81	130	.169	.19	7,740
May	106	32	66.6	.087	.10	4,100
June	113	30	54.6	.071	.08	3,250
July	265	17	74.4	.097	.11	4,570
August	4,140	22	477	.622	.72	29,300
September	167	24	53.9	.070	.08	3,210
The year	7,580	17	300	.391	5.33	218,000

BIG RIVER AT BYRNESVILLE, MO.

LOCATION.—Chain gage in SE¼ sec. 12, T. 42 N., R. 3 E., at highway bridge 200 feet below dam and mill at Byrnesville.

DRAINAGE AREA.—892 square miles.

RECORDS AVAILABLE.—May 1922 to September 1932.

EXTREMES.—Maximum discharge during year, 7,000 second-feet Aug. 13 (gage height, 13.35 feet); minimum, 42 second-feet July 21 (gage height, 1.80 feet).

1922-32: Maximum discharge, 21,900 second-feet Apr. 2, 1927 (gage height, 22.63 feet); minimum discharge, 34 second-feet July 18, 1931; minimum gage height, 1.80 feet Aug. 5, 1930, July 21, 1932.

Maximum stage known, 30.2 feet in August 1915 (discharge, about 80,000 second-feet).

REMARKS.—Records good except those of discharge below 200 second-feet, which are fair, owing to regulation by gristmills upstream.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	73	87	1,040	1,000	618	344	330	388	128	157	98	223
2.....	64	87	690	1,000	618	330	316	358	128	128	92	166
3.....	60	92	548	728	583	330	302	330	115	115	128	142
4.....	60	98	450	583	548	330	275	288	122	166	103	128
5.....	64	103	388	515	482	330	275	248	122	188	87	116
6.....	73	103	358	515	450	344	262	223	122	275	82	103
7.....	1,380	87	330	653	418	344	243	211	115	211	73	87
8.....	548	98	316	583	388	344	236	199	109	157	64	82
9.....	482	115	344	515	388	302	248	188	188	128	56	78
10.....	275	135	373	450	373	288	248	188	142	115	52	78
11.....	211	128	548	418	920	275	236	199	115	103	73	78
12.....	166	128	1,000	388	880	262	211	176	103	87	223	64
13.....	211	166	1,220	358	653	275	211	157	92	82	4,450	60
14.....	653	728	1,220	358	515	262	211	157	92	73	1,940	50
15.....	373	418	542	358	450	243	199	150	92	73	1,220	60
16.....	248	275	653	482	450	262	199	128	166	60	880	56
17.....	211	223	548	1,450	583	418	248	128	150	56	548	68
18.....	166	199	450	3,240	583	2,260	960	135	109	53	583	78
19.....	142	236	418	1,700	548	1,700	804	128	98	50	548	87
20.....	128	690	373	1,130	482	1,080	728	122	98	47	728	87
21.....	115	2,540	358	1,000	450	880	583	115	115	43	418	64
22.....	109	1,130	344	1,700	482	1,320	450	115	128	47	388	68
23.....	103	690	358	3,620	515	1,000	418	115	109	103	211	68
24.....	103	515	302	2,540	515	766	373	115	92	115	176	68
25.....	103	368	302	1,700	482	653	344	115	87	128	150	78
26.....	98	388	275	1,270	418	583	316	128	82	211	135	78
27.....	92	418	262	1,430	388	515	302	128	82	166	122	56
28.....	87	482	248	1,320	373	482	248	157	388	157	122	52
29.....	92	515	236	1,040	368	450	262	150	418	128	728	64
30.....	92	728	236	880	-----	388	316	135	236	115	583	68
31.....	98	-----	388	766	-----	358	-----	128	-----	103	330	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October.....	1,380	60	215	0.241	0.28	13,200
November.....	2,540	87	399	.447	.60	23,700
December.....	1,600	236	517	.580	.67	31,800
January.....	3,620	358	1,090	1.22	1.41	67,000
February.....	920	358	514	.576	.62	29,600
March.....	2,260	248	572	.641	.74	35,200
April.....	960	199	345	.387	.43	20,500
May.....	388	115	177	.198	.23	10,900
June.....	418	82	138	.155	.17	8,210
July.....	275	43	117	.131	.15	7,190
August.....	4,450	52	493	.553	.64	30,300
September.....	223	50	85.0	.095	.11	5,060
The year.....	4,450	43	389	.436	5.95	233,000

HEADWATER DIVERSION CHANNEL BASIN

CASTOR RIVER AT ZALMA, MO.

LOCATION.—Chain gage in $S\frac{1}{4}$ sec. 29, T. 29 N., R. 9 E., at bridge on State highway 51 in Zalma. Zero of gage is 350.55 feet above mean sea level.

DRAINAGE AREA.—395 square miles.

RECORDS AVAILABLE.—September 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 5,920 second-feet Jan. 17 (gage height, 20.22 feet); minimum, 36 second-feet Oct. 2, 3.

1921-32: Maximum discharge, 19,400 second-feet Dec. 14, 1927 (gage height, 26.50 feet); minimum discharge, 30 second-feet Aug. 31, 1924; minimum gage height, 1.06 feet Sept. 21, 30, 1931.

Maximum stage known 28.0 feet in August 1915 (discharge, about 30,000 second-feet).

REMARKS.—Records good.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	63	225	3,050	447	272	272	160	60	69	42	60
2	36	60	240	1,620	465	288	256	146	69	57	42	57
3	36	52	210	1,070	447	288	240	127	66	57	44	78
4	40	57	210	740	429	357	225	127	75	52	60	82
5	42	57	195	1,020	357	321	225	108	78	54	54	78
6	42	54	180	1,970	321	304	195	108	82	60	50	72
7	42	57	173	1,260	304	272	210	108	63	60	44	60
8	42	54	153	850	288	272	690	108	72	60	44	63
9	44	63	146	660	272	240	600	108	120	52	44	57
10	42	63	140	560	256	225	465	102	82	52	42	52
11	47	69	166	465	240	225	411	96	72	54	40	52
12	44	69	188	502	321	210	375	102	69	52	40	52
13	40	75	256	1,620	272	195	339	91	66	47	44	50
14	47	72	288	1,560	256	188	272	86	66	47	54	52
15	47	72	288	1,040	256	166	288	86	66	47	82	50
16	50	78	288	1,490	256	160	272	86	54	44	140	47
17	44	78	256	5,420	1,670	2,120	288	82	63	42	127	47
18	50	78	240	4,900	994	2,210	288	78	54	38	127	47
19	50	86	225	2,300	660	1,230	240	72	60	40	114	50
20	44	180	195	1,460	521	874	256	72	54	40	96	50
21	50	429	210	1,070	521	600	225	75	57	38	82	50
22	47	429	225	898	560	580	210	72	57	40	69	50
23	42	288	166	1,940	502	521	210	72	57	40	57	47
24	42	240	153	1,830	465	447	210	69	52	47	57	47
25	52	210	140	1,360	429	375	210	66	52	44	54	42
26	52	180	127	1,020	393	357	188	66	54	69	57	47
27	52	166	127	946	357	357	180	66	54	78	57	50
28	50	146	114	806	339	321	166	66	82	54	57	50
29	52	166	114	720	321	272	166	63	82	52	69	52
30	63	210	922	620	-----	240	173	63	75	47	82	47
31	63	-----	4,290	560	-----	288	-----	66	-----	44	75	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	63	36	46.3	0.117	0.13	2,850
November	429	52	130	.329	.37	7,740
December	4,290	114	350	.886	1.02	21,500
January	5,420	465	1,460	3.70	4.27	89,800
February	1,670	240	445	1.13	1.22	25,600
March	2,210	160	477	1.21	1.40	29,300
April	690	166	278	.704	.79	16,500
May	160	63	90.2	.228	.26	5,550
June	120	52	67.1	.170	.19	3,990
July	78	38	50.9	.129	.15	3,130
August	140	40	66.0	.167	.19	4,060
September	82	42	54.6	.138	.15	3,250
The year	5,420	36	294	.744	10.14	213,270

OBION RIVER BASIN

SOUTH FORK OF OBION RIVER NEAR GREENFIELD, TENN.

LOCATION.—Staff gage at bridge on State highway 43 about 2½ miles south of Greenfield, Weakley County, and 10 miles above confluence with Middle Fork.

DRAINAGE AREA.—431 square miles.

RECORDS AVAILABLE.—July 1929 to September 1932.

EXTREMES.—Maximum discharge during year, 11,900 second-feet Jan. 15 (gage height, 15.3 feet); minimum discharge, 97 second-feet several days in October, November, and September; minimum gage height, 1.84 feet Aug. 8, 9, 23.

1929-32: Maximum discharge, 12,800 second-feet Jan. 10, 1930 (gage height, 15.52 feet); minimum discharge, 97 second-feet several days in 1930, 1931, and 1932; minimum gage height, 1.5 feet several days in August and September 1930.

REMARKS.—Records fair.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	97	97	369	3,040	6,110	230	2,880	1,880	128	578	115	128
2.....	97	97	275	986	3,970	216	2,880	1,970	128	305	115	202
3.....	97	97	216	470	2,960	321	2,000	770	134	140	134	1,700
4.....	97	97	337	369	2,390	750	690	369	128	920	140	1,380
5.....	97	97	436	1,730	1,440	470	337	230	128	1,130	128	650
6.....	97	97	369	1,880	730	321	290	202	121	1,080	121	216
7.....	103	97	230	1,670	650	245	305	181	121	578	121	140
8.....	103	97	305	730	506	216	2,810	167	115	216	109	128
9.....	103	97	419	453	402	188	2,680	650	115	167	109	121
10.....	97	97	385	369	369	160	2,570	596	115	181	174	121
11.....	97	97	305	337	750	160	2,080	216	115	160	134	121
12.....	97	97	275	1,410	1,500	167	506	181	115	140	188	121
13.....	97	97	3,040	5,090	524	147	321	174	115	134	670	115
14.....	97	97	3,130	7,210	470	140	275	167	167	134	436	109
15.....	97	97	3,040	11,400	1,700	147	245	154	353	128	275	109
16.....	97	97	3,340	6,470	2,680	134	216	154	202	128	134	103
17.....	97	305	2,810	5,760	3,130	542	578	147	128	121	353	103
18.....	97	506	1,036	4,770	2,880	337	690	140	121	115	596	103
19.....	103	202	419	3,600	2,680	216	305	134	121	121	216	103
20.....	103	986	402	1,760	854	188	260	134	121	121	134	402
21.....	103	353	650	614	1,200	174	245	147	115	121	121	337
22.....	103	245	1,010	488	1,610	578	216	216	140	115	115	147
23.....	103	154	770	5,090	986	275	202	154	121	115	109	121
24.....	103	140	1,730	5,420	470	167	216	134	115	115	115	109
25.....	97	128	1,200	7,980	369	140	1,970	134	128	115	109	103
26.....	97	188	770	5,090	337	128	1,910	202	121	115	790	97
27.....	97	488	436	3,340	290	2,080	876	436	147	115	1,610	1,330
28.....	385	290	369	1,310	260	3,040	305	147	167	115	542	1,850
29.....	121	770	305	5,760	245	2,740	337	140	140	115	181	1,180
30.....	115	596	1,030	10,500	-----	3,130	2,080	134	134	181	147	275
31.....	109	-----	3,600	11,400	-----	3,340	-----	128	-----	121	134	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October.....	385	97	110	0.255	0.29
November.....	986	97	230	.534	.60
December.....	3,600	216	1,060	2.46	2.84
January.....	11,400	337	3,760	8.72	10.05
February.....	6,110	245	1,460	3.39	3.66
March.....	3,340	128	679	1.58	1.82
April.....	2,880	202	1,040	2.41	2.69
May.....	1,970	128	342	.794	.92
June.....	353	115	137	.318	.35
July.....	1,130	115	255	.592	.68
August.....	1,610	109	270	.626	.72
September.....	1,850	97	390	.905	1.01
The year.....	11,400	97	812	1.88	25.63

OBION RIVER AT OBION, TENN.

LOCATION.—Chain gage at toll bridge on State Highway 3, a quarter of a mile south of Obion, Obion County, and 7 miles below mouth of North Fork.

DRAINAGE AREA.—1,880 square miles.

RECORDS AVAILABLE.—July 1929 to September 1932.

EXTREMES.—Maximum discharge during year, 33,900 second-feet Jan. 18 (gage height, 29.8 feet); minimum, 335 second-feet Oct. 5 (gage height, 10.31 feet).

1929-32: Maximum discharge, 47,000 second-feet Jan. 11, 1930 (gage height, 31.9 feet); minimum discharge, 311 second-feet several days during August and September 1930; minimum gage height, 10.22 feet Sept. 21, 1931.

REMARKS.—Records poor. Some possibility of back water from Mississippi River during extremely high stages on both rivers.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	350	450	2,210	4,600	22,200	2,240	15,800	2,640	480	420	420	1,580
2	350	405	2,260	10,900	25,200	1,870	15,400	2,540	465	540	405	885
3	350	390	2,280	14,500	22,700	1,600	13,600	2,560	1,000	640	405	1,960
4	350	375	2,210	13,200	19,700	1,580	11,800	2,740	1,120	735	435	2,310
5	335	375	2,060	10,900	16,300	1,700	8,200	2,560	845	1,090	420	2,410
6	350	375	1,740	8,650	13,600	1,890	5,550	2,410	540	1,580	420	2,540
7	350	375	1,420	7,800	10,000	1,840	3,750	1,960	480	1,800	390	2,580
8	350	375	1,030	8,200	8,200	1,800	3,400	1,260	465	1,870	375	2,460
9	350	375	805	7,400	4,900	1,360	5,200	885	480	1,770	360	2,140
10	350	375	825	5,900	3,290	1,050	9,550	945	495	1,380	660	1,220
11	350	375	925	4,300	3,060	825	10,400	965	435	985	785	690
12	350	390	1,140	3,550	2,980	770	8,650	965	435	680	695	480
13	350	375	2,810	3,400	2,950	750	6,600	845	420	525	590	435
14	350	375	6,600	7,400	3,100	735	4,600	680	420	465	845	420
15	375	375	11,400	17,200	3,400	695	3,150	575	435	420	1,030	405
16	405	390	16,300	26,800	3,750	695	2,810	540	510	405	1,280	390
17	390	390	16,300	32,800	6,250	735	2,610	510	590	390	1,520	390
18	375	805	15,000	33,900	13,600	1,030	2,430	495	560	375	1,940	405
19	360	1,420	11,800	31,700	13,600	1,120	2,380	480	480	375	1,890	405
20	360	1,600	8,200	27,300	12,200	1,090	2,390	465	450	360	1,650	390
21	360	1,960	6,250	21,700	10,000	945	2,310	465	420	360	1,180	2,180
22	350	2,010	4,300	16,900	8,200	845	1,840	480	405	360	785	2,710
23	360	1,960	3,210	14,500	7,400	825	1,590	510	405	350	510	2,760
24	360	1,740	3,020	14,500	6,250	825	1,560	540	405	360	435	2,580
25	360	1,360	2,950	16,800	5,200	785	2,240	525	405	360	405	1,820
26	360	1,050	2,980	18,700	3,400	660	2,340	495	390	350	660	1,310
27	360	965	3,060	18,700	3,060	1,840	2,560	605	375	350	1,820	1,560
28	435	1,420	3,160	17,200	2,840	2,740	2,760	885	405	350	2,180	2,380
29	845	1,540	2,980	14,500	2,580	10,000	2,860	785	420	360	2,310	2,510
30	770	1,990	2,950	13,200	-----	15,000	2,780	640	420	420	2,360	2,680
31	575	-----	3,290	16,800	-----	15,800	-----	525	-----	435	2,090	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	845	335	397	0.211	0.24
November	2,010	375	879	.468	.52
December	16,300	805	4,690	2.49	2.87
January	33,900	3,400	14,900	7.92	9.13
February	25,200	2,580	8,960	4.77	5.14
March	15,800	660	2,440	1.30	1.50
April	15,800	1,560	5,370	2.86	3.19
May	2,740	465	1,080	.574	.66
June	1,120	375	505	.269	.30
July	1,870	350	673	.358	.41
August	2,360	360	1,010	.538	.62
September	2,760	390	1,570	.835	.93
The year	33,900	335	3,530	1.88	25.51

RUTHERFORD FORK OF OBION RIVER NEAR BRADFORD, TENN.

LOCATION.—Chain gage at bridge on old State Highway 54, 5½ miles southwest of Bradford, Gibson County, and 17 miles above confluence with South Fork.

DRAINAGE AREA.—190 square miles.

RECORDS AVAILABLE.—July 1929 to September 1932.

EXTREMES.—Maximum discharge during year, about 6,240 second-feet Jan. 30 (gage height, 17.8 feet); minimum discharge, 13 second-feet several days during October; minimum gage height, 0.83 foot June 22, 26.

1929-32: Maximum discharge, 7,650 second-feet Jan. 9, 1930 (gage height, 18.10 feet); minimum, that of October 1931.

REMARKS.—Records fair.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	21	164	1,220	485	100	1,100	745	34	24	19	30
2	13	19	83	283	1,580	100	408	300	32	194	18	283
3	14	17	81	194	850	201	283	128	40	74	30	950
4	14	16	178	142	1,100	164	186	100	34	485	34	975
5	14	16	100	1,540	525	128	114	78	32	249	21	317
6	14	14	69	785	300	114	74	65	31	525	19	81
7	14	15	31	408	217	107	93	59	31	253	19	47
8	14	16	77	249	186	93	2,470	53	31	185	19	52
9	14	14	100	164	186	83	1,280	107	30	64	18	26
10	13	14	82	121	186	78	645	114	31	46	28	25
11	14	14	64	107	505	73	300	73	29	38	26	25
12	13	14	59	2,430	353	70	164	55	27	34	25	23
13	14	14	3,680	4,050	201	70	135	44	27	32	53	22
14	15	14	4,120	283	55	121	39	27	31	31	35	22
15	15	14	1,890	4,440	625	53	100	35	49	28	39	22
16	14	14	565	2,570	1,220	50	82	32	47	26	46	21
17	14	20	135	2,990	2,240	249	317	30	30	24	80	22
18	14	128	93	850	725	128	186	28	26	24	121	21
19	14	70	142	427	371	86	135	28	28	24	50	60
20	14	408	156	249	233	70	107	28	26	22	27	485
21	14	135	201	201	785	70	82	28	24	22	23	240
22	14	93	465	217	705	128	72	114	22	21	14	107
23	14	86	283	4,850	335	50	69	63	24	21	14	33
24	14	72	1,340	3,680	217	41	73	41	24	21	14	29
25	14	58	565	1,000	156	39	427	36	25	20	14	26
26	14	70	249	875	135	42	300	390	22	21	705	30
27	14	335	164	465	128	3,210	142	100	36	53	408	785
28	427	114	135	335	121	2,240	93	45	29	22	217	283
29	135	201	121	5,060	107	645	217	38	26	20	60	164
30	48	408	585	5,940	-----	605	1,480	36	23	20	33	65
31	32	-----	3,380	2,010	-----	2,570	-----	35	-----	20	28	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	427	13	32.9	0.173	0.20
November	408	14	81.5	.429	.48
December	3,800	31	614	3.23	3.72
January	5,940	107	1,680	8.84	10.19
February	2,240	107	519	2.73	2.94
March	3,210	39	375	1.97	2.27
April	2,470	69	375	1.97	2.20
May	745	28	98.9	.521	.60
June	49	22	29.9	.157	.18
July	525	20	83.0	.437	.50
August	705	14	72.8	.383	.44
September	975	21	175	.921	1.03
The year	5,940	13	345	1.82	24.75

NORTH FORK OF OBION RIVER NEAR UNION CITY, TENN.

LOCATION.—Staff gage at bridge on State Highway 22, $4\frac{1}{2}$ miles southeast of Union City, Obion County, and 9 miles above confluence with Obion River.

DRAINAGE AREA.—490 square miles.

RECORDS AVAILABLE.—July 1929 to September 1932.

EXTREMES.—Maximum discharge during year, 9,870 second-feet Jan. 17 (gage height, 17.6 feet); minimum discharge, 86 second-feet Aug. 2; minimum gage height, 3.45 feet Oct. 3-10, Nov. 17.

1929-32: Maximum discharge, about 13,800 second-feet Jan. 10, 1930 (estimated gage height, 19.7 feet); minimum, 85 second-feet Aug. 10, 1931.

REMARKS.—Records fair.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1-----	101	101	1,010	5,140	3,180	203	3,530	910	116	105	95	116
2-----	101	101	355	5,140	1,760	186	1,760	303	110	128	86	110
3-----	94	101	296	3,180	2,940	186	790	203	186	105	155	3,320
4-----	94	101	259	830	2,180	1,360	445	186	397	116	116	1,360
5-----	94	101	259	1,490	545	760	445	155	128	495	95	621
6-----	94	101	224	2,820	475	281	421	155	116	621	90	221
7-----	94	101	207	1,760	425	260	421	148	110	186	90	155
8-----	94	101	207	355	375	240	2,940	141	260	128	90	128
9-----	94	115	277	315	325	170	3,770	221	155	116	90	122
10-----	94	115	224	259	275	116	1,690	155	116	105	674	122
11-----	101	101	459	224	221	128	910	141	105	186	303	122
12-----	101	101	661	1,830	2,760	155	373	128	105	134	194	116
13-----	101	108	5,720	5,880	820	155	260	116	105	105	128	110
14-----	101	101	7,560	5,880	760	155	240	128	105	105	105	110
15-----	115	101	5,670	7,560	731	155	186	128	110	100	470	110
16-----	101	101	2,660	8,800	940	260	155	128	116	95	1,090	110
17-----	101	94	1,520	9,870	6,560	240	445	122	110	95	397	105
18-----	101	756	756	8,540	5,420	221	970	116	105	95	1,430	105
19-----	101	277	503	5,570	2,610	155	470	116	105	95	790	105
20-----	101	1,960	315	2,310	1,790	155	349	116	105	95	186	1,120
21-----	101	1,210	259	1,030	1,060	155	260	128	105	95	141	2,220
22-----	101	525	592	2,140	910	141	186	128	100	95	116	647
23-----	101	277	503	5,290	820	141	303	134	100	95	110	203
24-----	101	175	880	4,530	621	141	731	116	100	95	105	162
25-----	101	175	1,120	3,180	495	141	1,760	116	100	95	105	141
26-----	101	175	259	2,560	349	134	2,220	122	100	95	1,000	134
27-----	101	684	259	1,690	260	3,940	1,060	281	100	95	1,520	880
28-----	259	569	259	1,550	240	6,560	731	141	105	95	281	2,820
29-----	175	277	224	1,690	212	5,880	445	116	105	95	141	1,460
30-----	115	2,220	315	3,770	-----	4,640	880	116	105	116	128	445
31-----	115	-----	5,140	3,390	-----	4,640	-----	116	-----	95	128	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October-----	259	94	108	0.220	0.26
November-----	2,220	94	368	.751	.84
December-----	7,560	207	1,250	2.55	2.94
January-----	9,870	224	3,500	7.14	8.23
February-----	6,560	212	1,390	2.82	3.04
March-----	6,560	116	1,030	2.10	2.42
April-----	3,770	155	972	1.98	2.21
May-----	910	116	172	.351	.40
June-----	397	100	126	.257	.29
July-----	621	95	138	.282	.33
August-----	1,520	86	337	.688	.79
September-----	3,320	105	583	1.19	1.35
The year-----	9,870	86	832	1.70	23.07

SOUTH FORK OF FORKED DEER RIVER AT JACKSON, TENN.

LOCATION.—Staff gage at bridge on State Highway 5, half a mile south of Jackson, Madison County.

DRAINAGE AREA.—574 square miles.

RECORDS AVAILABLE.—July 1929 to September 1932.

EXTREMES.—Maximum discharge during year, 19,800 second-feet Jan. 14 (gage height, 19.8 feet); minimum discharge, 91 second-feet Oct. 13; minimum gage height, 2.32 feet Mar. 26.

1929-32: Maximum discharge, that of Jan. 14, 1932; minimum discharge, that of Oct. 13, 1931; minimum gage height, 1.58 feet July 9, 1929.

REMARKS.—Records fair.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	104	104	547	2,310	5,670	374	1,270	4,460	133	1,990	133	178
2.....	104	104	374	1,200	4,930	354	1,830	2,890	294	3,007	133	688
3.....	104	104	334	616	4,930	547	790	2,230	158	1,400	2,270	4,460
4.....	104	104	1,530	480	4,600	1,470	593	790	141	2,890	900	2,550
5.....	104	104	480	1,400	2,630	816	502	616	126	3,070	334	1,610
6.....	104	104	374	3,160	1,080	334	416	334	126	3,260	219	928
7.....	104	104	314	3,920	844	314	437	275	126	4,460	191	453
8.....	98	104	334	1,680	1,470	294	4,040	246	118	4,840	166	256
9.....	104	104	1,020	712	900	275	2,550	294	133	4,600	141	228
10.....	104	104	502	570	738	256	1,270	354	201	2,710	126	191
11.....	104	104	458	547	958	275	1,170	256	178	688	126	178
12.....	104	104	1,080	2,980	1,020	246	738	237	141	547	126	178
13.....	91	104	5,110	12,800	640	246	593	191	141	592	111	149
14.....	111	104	5,210	17,000	502	237	502	178	149	275	738	143
15.....	111	104	5,210	9,570	1,330	210	416	158	294	287	547	181
16.....	111	104	4,600	6,670	2,390	210	374	149	294	210	664	133
17.....	111	219	3,490	4,380	4,100	374	416	141	149	191	593	133
18.....	98	1,140	2,580	2,890	2,840	275	416	133	133	153	1,230	149
19.....	98	1,200	2,230	1,400	2,800	237	374	133	126	166	480	764
20.....	98	1,270	1,330	688	2,630	210	354	149	183	166	237	1,200
21.....	98	458	1,330	547	1,870	210	334	158	502	166	178	547
22.....	98	256	1,440	458	2,070	334	314	149	178	158	166	314
23.....	98	210	1,140	4,980	1,330	237	275	334	141	149	149	246
24.....	98	201	4,040	4,680	900	210	275	201	133	149	149	210
25.....	98	275	2,710	2,700	593	183	1,400	183	191	502	141	178
26.....	98	201	2,270	2,630	547	178	1,540	178	256	201	178	228
27.....	98	480	1,950	2,070	480	2,470	816	275	294	166	547	210
28.....	191	374	900	1,020	395	4,310	480	166	334	149	210	1,340
29.....	141	437	640	5,310	374	2,310	598	149	314	149	191	372
30.....	111	1,540	524	7,350	-----	2,270	4,600	141	374	149	183	593
31.....	104	-----	4,100	8,130	-----	4,460	-----	141	-----	141	178	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October.....	191	91	107	0.186	0.21
November.....	1,540	104	331	.577	.64
December.....	5,210	314	1,890	3.29	3.79
January.....	17,000	458	3,710	6.46	7.45
February.....	5,670	374	1,920	3.34	3.60
March.....	4,460	178	798	1.39	1.60
April.....	4,600	275	989	1.72	1.92
May.....	4,460	133	525	.915	1.05
June.....	502	126	200	.348	.39
July.....	4,840	141	1,210	2.11	2.43
August.....	2,270	111	379	.660	.76
September.....	4,460	133	655	1.14	1.27
The year.....	17,000	91	1,060	1.85	25.11

SOUTH FORK OF FORKED DEER RIVER AT CHESTNUT BLUFF, TENN.

LOCATION.—Staff gage at highway bridge 1 mile west of Chestnut Bluff, Crockett County, and 12 miles above confluence with North Fork of Forked Deer River.

DRAINAGE AREA.—1,080 square miles.

RECORDS AVAILABLE.—July 1929 to September 1932.

EXTREMES.—Maximum discharge during year, 21,500 second-feet Jan. 17 (gage height, 19.9 feet); minimum discharge, 221 second-feet Oct. 1-27; minimum gage height, 3.68 feet Oct. 2-5, 12, 13.

1929-32: Maximum discharge, that of Jan. 17, 1932; minimum, 195 second-feet Aug. 5-13, 1930 (gage height, 3.2 feet).

REMARKS.—Records fair to good.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	221	225	1,530	4,870	9,250	658	6,300	2,000	264	742	253	317
2	221	225	1,280	5,470	8,490	584	6,300	2,640	258	1,240	253	333
3	221	225	836	5,730	8,730	658	6,010	3,020	302	1,530	351	1,530
4	221	225	917	5,220	9,250	1,060	5,470	3,320	288	2,570	1,130	2,300
5	221	225	1,440	3,800	9,250	1,620	3,980	3,480	270	3,240	1,130	2,640
6	221	225	1,200	4,070	8,260	1,280	1,620	2,060	258	3,800	720	2,860
7	221	225	764	4,070	7,260	975	1,100	1,040	264	3,640	568	2,940
8	221	225	552	4,350	6,300	764	5,470	720	302	3,720	351	1,680
9	221	225	537	4,550	4,550	638	5,220	601	402	3,890	302	917
10	221	225	889	4,450	2,570	537	6,010	601	309	4,070	282	638
11	221	225	699	2,860	1,620	493	6,010	537	351	4,250	270	465
12	221	229	787	2,640	2,300	479	5,220	426	333	4,350	264	360
13	221	229	4,760	4,870	2,300	452	3,240	370	288	4,160	258	325
14	221	229	6,300	5,600	1,400	439	1,580	342	270	2,430	276	302
15	221	229	7,830	10,200	1,360	414	1,060	325	276	1,160	552	288
16	221	229	8,040	12,600	2,940	414	764	317	317	742	836	282
17	221	233	7,630	20,500	4,450	507	658	302	342	522	811	276
18	221	465	6,920	15,800	4,550	619	699	295	288	391	889	276
19	221	678	6,450	10,900	5,730	537	742	288	270	333	1,280	302
20	221	1,060	6,010	8,730	5,870	479	619	282	258	317	889	1,400
21	221	1,830	5,470	7,440	5,730	439	522	295	253	317	552	2,720
22	221	1,200	4,550	5,730	5,220	452	465	498	360	288	391	2,860
23	221	658	3,720	6,600	4,760	522	426	370	295	276	317	2,120
24	221	452	3,720	6,150	4,160	426	414	350	264	270	282	1,130
25	221	351	3,560	6,920	2,570	391	1,400	317	465	276	270	720
26	221	333	3,560	7,830	1,530	370	2,060	302	391	414	302	584
27	221	439	3,640	7,440	1,100	3,160	2,180	402	351	309	862	862
28	264	678	3,640	6,760	889	4,870	1,620	351	351	276	764	2,060
29	317	720	3,480	8,040	742	4,980	1,000	295	351	270	465	1,940
30	258	1,060	2,060	10,500	-----	6,010	1,130	276	507	258	342	1,530
31	233	-----	5,220	11,700	-----	6,600	-----	270	-----	253	302	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	317	221	227	0.210	0.24
November	1,830	225	459	.425	.47
December	8,040	537	3,480	3.22	3.71
January	20,500	2,640	7,300	6.76	7.79
February	9,250	742	4,590	4.25	4.58
March	6,600	370	1,350	1.25	1.44
April	6,300	414	2,640	2.44	2.72
May	3,480	270	862	.798	.92
June	507	253	317	.294	.33
July	4,350	253	1,630	1.51	1.74
August	1,280	253	533	.494	.67
September	2,940	276	1,230	1.14	1.27
The year	20,500	221	2,050	1.90	25.78

MIDDLE FORK OF FORKED DEER RIVER NEAR ALAMO, TENN.

LOCATION.—Staff gage at highway bridge on State Highway 54, 5 miles north of Alamo, Crockett County, and 15 miles above confluence with North Fork.

DRAINAGE AREA.—410 square miles.

RECORDS AVAILABLE.—July 1929 to September 1932.

EXTREMES.—Maximum discharge during year, 10,500 second-feet Jan. 29 (gage height, 14.0 feet); minimum discharge, 87 second-feet Oct. 1-14, 17-24, Nov. 3-13; minimum gage height, 1.28 feet Oct. 1-4.

1929-32: Maximum discharge, that of Jan. 29, 1932 (gage height, 14.0 feet); minimum discharge, 71 second-feet several days in August 1930; minimum gage height, 1.26 feet July 1, 11, 17, 1931.

REMARKS.—Records fair.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	87	93	460	3,000	5,350	217	2,250	1,210	106	243	95	177
2	87	93	362	324	4,430	217	1,790	1,310	100	1,080	95	135
3	87	87	168	440	3,170	208	655	765	162	208	100	2,800
4	87	87	541	324	4,080	520	480	225	111	815	135	1,930
5	87	87	362	1,320	3,630	343	300	177	106	1,160	100	1,860
6	87	87	184	3,270	2,170	287	261	155	100	1,590	100	765
7	87	87	138	1,860	646	234	243	148	100	1,470	95	192
8	87	87	124	1,210	480	200	5,450	142	106	815	95	162
9	87	87	234	420	362	184	3,400	1,140	117	225	95	135
10	87	87	184	324	184	176	1,320	935	111	148	95	129
11	87	87	168	234	784	168	630	261	111	135	480	122
12	87	87	460	1,860	712	168	400	155	106	170	100	117
13	87	87	5,630	6,950	440	168	320	148	111	123	100	111
14	87	99	7,730	5,930	500	176	261	142	106	117	95	111
15	99	93	5,630	8,150	400	176	243	129	123	111	148	111
16	93	93	3,000	7,330	1,290	168	192	123	155	111	162	106
17	87	251	940	5,350	4,630	690	177	117	117	106	155	106
18	87	604	583	2,840	2,170	287	500	111	111	100	960	111
19	87	305	200	1,260	1,400	184	261	111	106	100	208	162
20	87	2,410	184	646	562	184	225	111	106	100	162	1,900
21	87	583	1,080	520	583	176	192	117	111	100	106	965
22	87	217	1,510	541	1,110	217	184	280	111	100	100	208
23	87	200	1,010	5,630	756	184	177	129	106	100	100	142
24	87	184	4,250	6,950	400	168	170	111	106	95	95	135
25	93	138	1,320	5,350	324	153	1,680	111	111	95	95	123
26	93	124	964	2,700	287	234	480	111	111	95	100	117
27	93	847	562	1,040	251	2,410	225	261	148	95	2,610	1,380
28	778	305	269	1,210	251	5,630	162	117	123	95	2,170	1,620
29	168	343	234	6,950	217	2,220	155	111	106	95	1,470	460
30	124	1,180	480	9,050	-----	1,540	2,210	106	106	95	261	177
31	99	-----	4,630	6,590	-----	4,630	-----	106	-----	95	280	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	778	87	115	0.280	0.32
November	2,410	87	304	.742	.83
December	7,730	124	1,410	3.44	3.97
January	9,050	234	3,240	7.90	9.11
February	5,350	184	1,430	3.49	3.76
March	5,630	153	726	1.77	2.04
April	5,450	155	849	2.06	2.30
May	1,310	106	296	.722	.83
June	162	100	114	.278	.31
July	1,590	95	322	.785	.90
August	2,610	95	354	.864	1.00
September	2,800	106	553	1.35	1.51
The year	9,050	87	811	1.98	26.88

HATCHIE RIVER BASIN

HATCHIE RIVER AT BOLIVAR, TENN.

LOCATION.—Staff gage at new highway bridge on State Highway 18, about 250 feet upstream from Illinois Central Railroad bridge, 2,000 feet below mouth of Spring Creek, and 1 mile north of Bolivar, Hardeman County. Prior to July 27, 1932, a staff gage at old highway bridge 50 feet upstream was used.

DRAINAGE AREA.—1,430 square miles.

RECORDS AVAILABLE.—July 1929 to September 1932.

EXTREMES.—Maximum discharge during year, 39,700 second-feet Jan. 14 (gage height, 19.6 feet); minimum, 144 second-feet Oct. 1-5 (gage height, 1.32 feet).

1929-32: Maximum discharge, that of Jan. 14, 1932; minimum, 134 second-feet Aug. 12-14, 1930 (gage height, 1.1 feet).

REMARKS.—Records fair. Discharge estimated July 6, 7.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	144	263	1,950	9,030	20,300	4,800	5,030	5,550	406	2,840	324	423
2	144	249	2,180	7,210	20,900	4,070	5,030	4,070	459	5,550	372	589
3	144	249	2,840	6,150	18,500	3,320	5,030	3,780	908	5,030	609	1,820
4	144	235	2,980	5,550	16,700	3,060	5,030	3,650	669	8,530	649	2,460
5	144	235	3,140	5,280	14,300	2,980	5,030	3,320	513	19,100	711	2,780
6	150	221	3,230	6,150	13,100	2,510	4,800	2,780	459	21,500	609	2,910
7	150	221	3,140	5,550	10,700	2,560	4,400	2,100	406	25,000	389	2,980
8	150	207	3,230	5,030	9,030	2,560	5,550	1,520	389	19,700	340	3,060
9	150	207	3,230	5,030	7,620	2,560	5,280	1,280	372	17,300	293	3,140
10	150	194	3,060	5,550	6,830	2,460	4,230	1,140	649	13,100	278	3,060
11	150	181	2,980	5,840	5,840	2,510	4,070	954	977	7,620	263	2,230
12	150	181	3,420	9,030	5,280	2,010	3,920	841	1,190	8,060	249	1,580
13	150	181	5,550	30,600	4,590	1,700	3,420	753	1,070	6,480	249	931
14	150	181	13,700	39,700	4,070	1,520	3,060	690	732	5,550	235	609
15	156	181	13,100	38,300	4,230	1,400	2,560	649	629	3,920	775	495
16	156	181	11,900	33,400	7,210	1,330	2,010	609	669	2,910	1,600	441
17	156	181	14,300	25,000	8,530	1,280	1,680	570	1,070	2,510	1,900	406
18	156	513	14,900	17,300	9,560	1,310	1,550	532	1,240	1,720	1,850	308
19	156	775	13,100	13,100	11,300	1,330	1,780	513	908	1,050	1,800	372
20	156	1,700	11,300	9,030	13,100	1,310	2,070	495	589	797	2,040	1,210
21	156	1,750	10,100	7,620	13,100	1,240	2,130	495	459	797	2,100	1,580
22	156	1,880	9,030	7,210	11,300	1,240	1,920	551	495	863	1,900	2,160
23	156	1,620	7,620	7,620	9,560	1,400	1,620	570	477	669	1,280	2,100
24	156	1,210	7,210	6,830	9,560	1,480	1,480	629	389	513	797	1,680
25	156	732	6,830	6,150	9,030	1,380	1,650	711	356	441	495	1,070
26	162	570	6,836	5,840	8,060	1,190	2,010	609	532	423	423	551
27	162	609	6,480	5,840	7,210	1,480	2,230	532	1,190	441	495	1,240
28	162	1,020	7,620	6,150	6,150	2,910	2,260	532	1,330	441	1,050	7,210
29	181	1,480	8,060	8,060	5,550	3,780	2,300	609	1,240	389	1,160	7,620
30	278	1,750	8,060	14,300	-----	3,780	5,840	551	1,780	356	775	9,560
31	293	-----	9,560	15,500	-----	5,030	-----	441	-----	324	513	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	293	144	162	0.113	0.13
November	1,880	181	639	.447	.50
December	14,900	1,950	7,121	4.98	5.74
January	39,700	5,030	12,000	8.39	9.67
February	20,900	4,070	10,000	6.99	7.54
March	5,030	1,190	2,310	1.62	1.87
April	5,840	1,480	3,300	2.31	2.58
May	5,550	441	1,800	.951	1.10
June	1,780	356	752	.526	.69
July	25,000	324	5,930	4.15	4.78
August	2,100	235	846	.592	.68
September	9,560	308	2,220	1.55	1.73
The year	39,700	144	3,880	2.71	36.91

HATCHIE RIVER NEAR STANTON, TENN.

LOCATION.—Staff gage at bridge on State Highway 1, 1 mile below Nashville, Chattanooga & St. Louis Railway bridge and 4 miles north of Stanton, Haywood County.

DRAINAGE AREA.—1,940 square miles.

RECORDS AVAILABLE.—July 1929 to September 1932.

EXTREMES.—Maximum discharge during year, 46,200 second-feet Jan. 17 (gage height, 19.40 feet); minimum discharge, 321 second-feet Oct. 20-27; minimum gage height, 2.22 feet Oct. 21, 24.

1929-32: Maximum discharge, that of Jan. 17, 1932 (gage height, 19.40 feet); minimum, 308 second-feet Aug. 12-15, 1930 (gage height, 2.1 feet).

REMARKS.—Records good.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	347	460	1,930	14,600	14,600	7,330	4,540	2,490	725	1,690	635	965
2.....	347	490	2,080	12,900	17,200	6,420	4,680	2,740	690	2,490	600	940
3.....	347	490	2,140	11,300	25,800	6,040	5,020	3,200	690	3,630	1,220	1,100
4.....	347	460	2,250	9,090	24,800	5,720	5,220	3,700	725	3,910	1,860	1,370
5.....	347	416	2,410	9,090	19,900	5,220	5,220	5,020	800	11,300	1,560	1,640
6.....	334	388	2,450	10,500	17,200	4,840	5,020	4,540	780	17,200	1,220	1,890
7.....	334	374	2,530	9,780	14,600	4,420	5,220	4,230	725	26,900	985	1,980
8.....	334	374	2,580	9,090	12,900	4,150	7,330	3,990	670	32,300	880	2,080
9.....	334	374	2,730	7,860	11,300	3,910	7,800	3,840	620	32,300	780	2,150
10.....	334	374	2,830	6,850	10,500	3,700	6,850	3,630	600	23,800	705	2,310
11.....	334	374	2,930	6,040	9,090	3,560	6,420	3,200	585	18,000	620	2,400
12.....	334	374	3,110	8,450	8,450	3,420	6,040	2,440	655	13,700	585	2,490
13.....	334	374	3,700	17,200	7,860	3,400	5,440	1,610	740	11,300	535	2,540
14.....	334	374	5,720	25,800	6,850	3,400	4,840	1,320	860	9,090	520	2,590
15.....	334	374	9,780	33,400	6,420	3,260	4,420	1,140	965	7,330	520	2,490
16.....	334	388	9,780	41,400	7,330	3,020	4,320	1,060	965	6,420	600	1,890
17.....	334	402	12,900	45,000	9,090	2,640	4,150	965	860	5,720	760	1,140
18.....	334	490	12,900	39,000	9,090	2,120	3,990	900	840	5,020	920	880
19.....	334	653	12,900	28,000	9,090	1,830	3,700	860	860	4,540	1,400	760
20.....	321	1,000	14,600	19,000	10,500	1,690	3,330	820	965	4,320	1,530	1,300
21.....	321	2,020	14,600	14,500	11,300	1,640	2,790	800	1,010	3,840	1,660	2,310
22.....	321	2,210	14,600	11,300	13,700	1,640	2,310	760	920	2,900	1,690	2,150
23.....	321	2,210	12,900	14,600	13,700	1,580	2,150	780	760	1,720	1,740	2,010
24.....	321	2,110	12,100	17,200	11,300	1,500	2,150	800	690	1,200	1,780	1,980
25.....	321	1,990	12,900	12,100	10,500	1,470	2,230	800	655	1,030	1,720	1,950
26.....	321	1,810	11,300	9,780	9,780	1,560	2,170	800	620	1,060	1,400	1,930
27.....	321	1,600	10,500	8,450	9,090	1,980	2,010	820	585	965	1,010	1,950
28.....	334	1,520	8,450	7,330	8,450	3,400	1,950	820	620	840	820	1,920
29.....	360	1,390	7,330	12,100	7,860	3,770	1,980	780	780	740	760	1,930
30.....	374	1,490	7,330	18,000	-----	3,630	2,150	760	1,120	705	800	2,010
31.....	416	-----	9,780	16,200	-----	3,910	-----	740	-----	670	920	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October.....	416	321	338	0.174	0.20
November.....	2,210	374	912	.470	.52
December.....	14,600	1,930	7,550	3.89	4.45
January.....	45,000	6,040	16,300	8.40	9.45
February.....	25,800	6,420	12,000	6.20	6.90
March.....	7,330	1,470	3,420	1.76	2.00
April.....	7,860	1,950	4,180	2.15	2.40
May.....	5,020	740	1,950	1.01	1.16
June.....	1,120	585	769	.397	.44
July.....	32,300	670	8,280	4.27	4.82
August.....	1,860	520	1,060	.547	.63
September.....	2,690	760	1,830	.944	1.05
The year.....	45,000	321	4,880	2.62	34.90

WOLF RIVER BASIN

WOLF RIVER AT ROSSVILLE, TENN.

LOCATION.—Chain gage at county highway bridge half a mile north of Rossville, Fayette County, and 8 miles downstream from Moscow and mouth of North Fork.

DRAINAGE AREA.—531 square miles.

RECORDS AVAILABLE.—July 1929 to September 1932.

EXTREMES.—Maximum discharge during year, 15,400 second-feet Jan. 14 (gage height, 11.24 feet); minimum discharge, 125 second-feet Oct. 1-27; minimum gage height, 2.28 feet Oct. 18, 19, 21, 27.

1929-32: Maximum discharge, 16,400 second-feet Jan. 9, 1930 (gage height, 11.32 feet); minimum discharge, that of Oct. 1-27, 1931; minimum gage height, 2.24 feet Aug. 12-14, 1930.

REMARKS.—Records fair.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	125	140	1,200	4,000	4,000	400	2,850	3,700	180	10,800	200	230
2	125	130	1,200	4,000	3,100	370	2,850	4,350	180	12,400	200	340
3	125	130	1,550	2,850	3,400	430	2,100	2,850	180	7,450	645	770
4	125	130	2,100	1,700	3,700	645	1,300	1,200	180	7,000	560	840
5	125	130	2,350	1,900	2,850	575	630	505	180	8,350	430	680
6	125	130	1,900	3,400	1,900	560	415	310	190	5,050	645	770
7	125	130	1,700	3,400	1,900	575	370	275	180	4,000	665	610
8	125	130	1,550	2,600	770	505	1,200	260	180	2,850	800	285
9	125	130	1,100	2,100	630	385	3,100	250	170	3,100	220	240
10	125	140	595	1,400	540	340	2,350	240	355	1,900	220	220
11	125	140	490	700	505	325	1,550	230	325	1,020	210	220
12	125	140	720	2,850	540	310	745	230	355	610	210	210
13	125	140	3,100	12,400	430	300	460	220	355	560	200	210
14	125	140	1,550	13,600	675	300	370	210	230	430	220	210
15	125	140	6,600	5,800	2,600	300	325	210	355	285	415	210
16	125	140	4,000	3,700	5,050	300	300	210	285	250	415	200
17	125	210	2,850	2,850	7,900	300	310	200	240	240	275	200
18	125	630	2,350	2,600	5,400	300	355	200	210	230	370	200
19	125	475	1,700	1,900	3,400	310	340	190	190	220	505	200
20	125	890	1,400	1,550	2,350	325	385	200	180	220	475	720
21	125	1,550	1,300	890	1,900	310	385	200	300	210	575	950
22	125	1,900	1,020	630	1,900	300	310	200	415	210	505	950
23	125	1,200	800	2,100	1,700	285	285	210	230	210	260	390
24	125	800	1,700	2,600	1,550	285	260	210	160	200	230	890
25	125	605	3,100	2,100	1,550	285	385	210	180	275	220	400
26	125	400	2,850	1,700	800	275	525	210	525	260	680	560
27	125	630	3,100	1,900	575	475	430	210	505	260	1,300	2,100
28	250	800	2,100	1,550	460	1,700	325	230	445	260	1,300	4,000
29	180	720	1,200	2,100	415	2,100	275	190	770	310	680	4,000
30	150	890	645	5,050	-----	2,100	1,020	190	3,400	240	355	3,400
31	140	-----	2,100	5,050	-----	2,850	-----	190	-----	210	250	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	250	125	132	0.249	0.29
November	1,900	130	459	0.864	0.96
December	6,600	490	1,530	3.03	4.15
January	13,600	630	3,280	6.18	7.12
February	7,900	415	2,130	4.01	4.32
March	2,850	275	607	1.14	1.31
April	3,100	260	884	1.66	1.85
May	4,350	190	574	1.08	1.24
June	3,400	170	389	0.733	0.82
July	12,400	200	2,250	4.24	4.89
August	1,300	200	443	0.834	0.96
September	4,000	200	857	1.61	1.80
The year	13,600	125	1,160	2.18	29.74

1180 2.22 30.21

1/2111
4.252
1.822

ST. FRANCIS RIVER BASIN

ST. FRANCIS RIVER NEAR PATTERSON, MO.

LOCATION.—Chain gage in N½ sec. 16, T. 29 N., R. 5 E., and 3 miles east of Patterson. Zero of gage is 372.70 feet above mean sea level.

DRAINAGE AREA.—956 square miles.

RECORDS AVAILABLE.—June 1921 to September 1932.

EXTREMES.—Maximum discharge during year ending Sept. 30, 1932, 16,300 second-feet Dec. 30 (gage height, 13.86 feet); minimum discharge, 18 second-feet July 21, 22; minimum gage height, 1.24 feet July 22.

1921-32: Maximum discharge, 51,700 second-feet Dec. 14, 1927 (gage height, 25.20 feet); minimum, that of July 21, 22, 1932.

Maximum stage known, about 31.8 feet in August 1915.

REMARKS.—Records good.

Discharge, in second-feet, of St. Francis River near Patterson, Mo., 1921-23 and 1926-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1921-22												
1-----	1,850	225	1,040	790	1,940	790	15,300	1,940	384	148	58	78
2-----	1,240	152	1,000	670	5,600	750	5,460	1,600	344	141	66	75
3-----	630	138	1,080	552	2,510	670	3,380	1,510	288	915	78	90
4-----	590	117	1,120	710	1,780	630	2,220	1,420	155	790	60	85
5-----	455	117	1,170	750	1,420	790	3,500	1,340	130	552	58	78
6-----	350	114	1,420	1,040	1,170	1,510	8,360	1,420	124	256	54	85
7-----	164	112	1,420	872	958	2,320	3,780	1,170	117	215	56	87
8-----	235	112	1,260	830	710	1,760	2,510	1,080	155	144	50	78
9-----	160	109	790	830	630	1,420	2,700	1,000	120	112	43	66
10-----	85	124	750	872	630	4,340	3,020	790	144	75	38	66
11-----	160	144	670	790	552	3,920	11,500	750	117	114	35	62
12-----	144	144	515	630	515	2,320	4,620	630	130	124	37	54
13-----	120	144	492	590	470	1,940	2,700	590	112	120	31	45
14-----	124	144	377	552	433	2,600	2,130	478	112	98	32	46
15-----	124	144	357	462	364	11,700	3,380	515	103	124	30	40
16-----	115	144	294	405	305	5,040	2,600	433	103	103	60	43
17-----	106	448	750	448	256	2,600	2,700	384	98	138	54	46
18-----	106	1,340	790	462	245	1,850	5,040	391	90	106	48	45
19-----	100	36,600	872	433	230	2,130	2,320	344	85	95	43	40
20-----	95	12,000	710	391	364	6,880	1,760	318	78	95	32	45
21-----	90	3,260	552	364	630	3,380	1,510	288	85	90	23	43
22-----	90	1,680	590	300	710	2,320	1,340	364	90	70	485	39
23-----	82	4,480	915	273	1,000	1,850	1,080	300	95	66	1,000	37
24-----	75	5,320	13,200	196	1,510	1,510	1,000	405	87	64	331	36
25-----	85	5,920	4,760	256	1,170	1,260	958	405	80	66	250	34
26-----	85	5,040	2,420	235	1,080	1,420	1,420	350	90	64	173	32
27-----	90	3,230	1,760	220	915	4,620	1,850	331	112	100	130	29
28-----	90	1,420	1,420	205	830	4,200	13,400	344	144	106	100	27
29-----	152	1,510	1,260	186	-----	2,900	4,900	426	168	106	92	29
30-----	198	1,260	1,000	152	-----	11,700	2,510	350	148	90	85	27
31-----	245	-----	915	168	-----	26,700	-----	338	-----	73	86	-----

NOTE.—Records for 1921-23 supersede those published in Water Supply Papers 547 and 56.

Discharge, in second-feet, of St. Francis River near Patterson, Mo., 1921-23 and 1926-32—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1922-23												
1.....	26	43	100	4,760	34,000	1,080	552	872	2,600	310	131	76
2.....	27	46	85	2,320	21,600	1,080	508	915	1,940	232	104	710
3.....	29	43	103	1,600	11,900	710	630	1,760	2,320	169	104	1,260
4.....	30	40	117	1,260	4,060	1,170	958	3,380	2,320	173	790	710
5.....	28	43	124	958	2,420	1,260	1,760	7,360	1,760	147	310	710
6.....	27	87	103	830	1,940	2,600	1,680	3,260	1,940	126	214	515
7.....	45	85	124	750	1,680	3,380	1,420	2,220	1,170	121	238	358
8.....	58	85	114	690	1,420	2,510	1,260	1,940	1,000	114	173	246
9.....	130	75	106	515	1,260	1,760	1,080	1,420	830	110	163	177
10.....	112	80	133	426	1,170	1,510	1,000	1,260	830	102	214	167
11.....	100	85	112	377	1,080	2,510	830	1,080	1,040	93	228	144
12.....	82	90	117	331	958	13,700	750	872	1,000	98	154	134
13.....	62	168	130	268	1,940	6,400	1,940	750	872	106	118	116
14.....	54	968	124	350	2,320	3,140	5,460	790	750	98	106	106
15.....	46	1,080	117	440	1,680	4,900	2,900	22,400	915	98	96	98
16.....	66	872	106	710	1,340	34,600	2,040	25,800	1,760	106	88	91
17.....	64	830	98	515	1,080	6,080	1,680	7,040	1,680	110	108	86
18.....	58	630	90	455	915	2,420	1,340	3,380	1,940	98	2,040	94
19.....	52	485	80	419	750	2,320	1,170	3,260	1,600	98	830	96
20.....	50	387	80	670	750	1,850	1,040	2,700	1,170	90	426	94
21.....	60	263	75	2,220	670	1,600	915	2,130	915	91	304	98
22.....	58	235	75	2,600	630	1,680	710	1,510	750	85	199	104
23.....	50	215	70	2,320	590	1,510	1,600	1,260	590	80	157	94
24.....	54	191	75	1,600	515	1,340	6,240	1,080	440	76	144	86
25.....	48	168	70	1,340	433	1,260	1,850	1,080	334	76	134	77
26.....	50	155	87	1,340	426	1,080	1,510	2,900	264	77	114	70
27.....	50	130	872	1,600	1,170	915	1,340	2,220	250	76	106	69
28.....	45	117	8,540	3,260	1,080	830	1,680	1,760	915	83	98	65
29.....	46	117	3,020	2,600	-----	750	1,000	3,140	552	76	91	62
30.....	42	109	1,760	2,420	-----	710	915	4,900	334	141	85	66
31.....	45	-----	5,600	7,200	-----	590	-----	2,700	-----	147	76	-----
1926-27												
1.....	1,000	2,040	1,160	1,000	3,450	350	50,000	2,750	29,000	207	235	107
2.....	678	1,800	1,000	1,000	3,760	330	8,260	1,960	17,000	192	325	105
3.....	432	1,720	815	1,000	2,650	300	3,550	1,320	5,950	185	405	102
4.....	460	1,480	710	1,320	2,470	291	2,650	1,320	3,870	177	350	96
5.....	1,480	1,080	580	1,880	2,120	310	2,470	3,550	2,850	167	320	102
6.....	1,240	780	550	1,640	1,800	320	3,450	10,400	1,880	163	232	107
7.....	850	612	490	1,160	1,480	340	2,290	8,440	1,640	157	247	119
8.....	520	490	460	962	1,240	350	12,600	3,450	1,560	150	239	113
9.....	330	550	460	815	1,080	460	5,500	2,650	1,320	143	231	107
10.....	378	520	490	710	962	460	4,320	4,090	1,000	150	215	125
11.....	460	460	460	612	850	550	9,200	2,650	315	137	207	134
12.....	405	460	460	520	815	1,480	4,800	2,120	745	143	192	143
13.....	264	432	460	580	888	4,090	14,100	1,640	1,480	157	185	128
14.....	231	850	432	2,200	815	2,470	35,900	2,650	888	300	962	113
15.....	200	2,380	432	1,800	745	1,880	44,100	1,800	745	232	1,720	125
16.....	177	3,450	405	1,480	710	1,480	22,100	1,320	645	207	678	119
17.....	170	3,450	378	1,320	678	1,240	6,250	1,320	612	200	645	107
18.....	157	5,650	340	2,040	612	12,300	6,100	1,320	710	192	432	102
19.....	143	2,650	320	12,300	710	7,560	10,000	1,240	645	239	350	91
20.....	137	1,880	310	5,950	612	10,200	7,220	1,240	678	185	310	85
21.....	131	1,560	460	3,550	580	8,320	4,090	1,160	645	177	255	80
22.....	125	1,320	710	13,700	550	3,650	2,750	1,160	612	170	215	76
23.....	119	1,240	850	5,500	520	2,750	2,290	1,160	580	150	192	78
24.....	170	1,080	962	3,980	460	1,960	1,880	7,900	550	143	170	74
25.....	163	1,000	1,400	4,200	432	1,640	1,640	33,000	520	137	160	71
26.....	157	1,720	1,480	3,870	405	1,320	1,480	7,050	405	128	150	67
27.....	143	2,290	1,320	3,050	405	1,160	1,320	2,850	330	131	143	76
28.....	131	1,720	1,160	2,290	378	1,000	1,080	2,470	282	128	137	107
29.....	520	1,320	850	4,090	-----	1,160	1,160	1,960	247	125	131	143
30.....	11,100	1,400	925	10,600	-----	1,240	4,090	1,480	231	177	119	255
31.....	3,060	-----	850	5,650	-----	17,000	-----	12,800	-----	300	113	-----

Discharge, in second-feet, of St. Francis River near Patterson, Mo., 1921-23 and 1926-32—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1927-28												
1.....	185	113	340	710	745	888	925	1,000	378	2,290	570	295
2.....	177	107	1,320	710	645	850	850	925	350	1,960	380	267
3.....	185	113	678	580	580	888	678	815	405	1,640	335	220
4.....	177	119	612	480	550	850	645	745	4,200	1,320	295	195
5.....	170	113	580	405	612	850	678	710	3,450	1,080	512	186
6.....	163	107	580	378	745	780	33,000	678	1,960	860	430	175
7.....	215	102	550	378	962	710	13,200	645	1,640	660	358	170
8.....	223	4,090	580	350	1,160	678	3,450	580	1,400	540	295	164
9.....	239	2,290	580	340	1,320	780	2,470	520	29,300	1,060	276	164
10.....	255	1,800	580	320	1,320	678	1,960	490	12,900	860	240	143
11.....	239	1,320	580	310	1,160	678	1,640	432	4,090	600	211	188
12.....	310	1,000	888	305	962	678	1,320	378	2,290	485	198	128
13.....	282	888	21,600	291	850	645	1,160	350	33,000	380	181	120
14.....	247	888	40,500	296	1,320	645	1,160	350	10,200	358	175	112
15.....	207	1,080	7,560	300	3,980	612	962	340	3,450	335	181	107
16.....	177	4,320	3,450	300	2,380	1,000	850	335	2,470	315	164	102
17.....	157	2,200	2,290	330	2,040	1,160	745	340	1,960	295	148	98
18.....	137	1,400	1,880	378	1,800	1,640	678	320	17,600	257	217	90
19.....	131	1,160	1,480	1,320	1,560	2,120	645	310	4,320	295	358	84
20.....	125	1,000	1,160	5,080	1,320	2,850	678	310	28,900	358	430	80
21.....	131	780	962	2,380	925	2,470	19,500	3,250	40,800	335	1,080	75
22.....	125	678	850	1,800	888	2,120	7,050	1,800	10,600	295	1,400	71
23.....	119	580	745	1,320	925	1,640	8,060	2,200	7,220	257	825	67
24.....	125	520	678	1,480	1,800	1,320	8,870	1,800	3,650	240	930	64
25.....	119	432	580	2,380	1,480	1,160	2,750	1,400	3,250	217	2,120	62
26.....	113	405	520	2,120	1,320	1,060	1,960	962	2,380	204	1,480	60
27.....	119	378	520	1,640	1,160	925	1,720	612	1,960	198	950	57
28.....	113	350	580	1,320	1,000	888	1,640	432	9,400	154	758	53
29.....	107	350	678	1,060	962	850	1,400	378	19,200	175	600	56
30.....	113	320	745	962	-----	850	1,160	340	4,090	159	458	57
31.....	107	-----	745	850	-----	1,240	-----	350	-----	154	358	-----
1928-29												
1.....	53	170	2,560	405	1,000	2,120	825	458	458	205	162	65
2.....	60	540	1,640	380	825	1,640	1,320	1,720	435	178	157	65
3.....	88	512	1,160	335	758	1,400	1,400	8,440	1,880	205	152	64
4.....	107	430	1,160	315	692	1,560	7,220	2,950	980	178	140	62
5.....	102	380	1,160	335	600	1,560	3,250	2,560	685	173	127	69
6.....	98	335	1,080	380	570	1,320	2,120	17,600	530	178	140	91
7.....	93	295	1,000	512	570	1,160	1,560	17,300	480	205	192	113
8.....	98	257	930	485	512	1,000	2,560	6,410	458	205	205	122
9.....	117	240	758	458	430	860	10,000	4,940	718	192	390	113
10.....	102	204	600	630	335	725	18,900	3,870	580	178	270	118
11.....	98	186	540	790	358	660	5,080	2,290	505	192	435	113
12.....	93	181	485	790	358	692	3,250	1,800	458	205	435	183
13.....	88	175	1,080	692	380	1,482	2,290	31,100	17,000	192	435	235
14.....	84	170	3,870	630	358	4,090	2,380	17,000	6,100	580	458	230
15.....	84	170	2,750	540	335	4,440	9,400	6,570	3,760	662	270	205
16.....	1,000	295	2,040	570	335	7,560	7,220	3,350	1,880	2,850	220	192
17.....	725	825	9,200	570	358	3,650	3,350	2,560	1,400	4,560	192	235
18.....	405	1,080	7,560	660	380	2,560	2,040	1,800	1,000	1,560	173	205
19.....	315	895	3,250	4,090	380	1,880	1,800	1,960	905	1,000	162	178
20.....	223	725	2,040	2,850	380	1,560	1,400	2,120	690	718	147	162
21.....	211	600	1,560	1,960	380	1,320	2,140	1,480	580	505	137	147
22.....	198	458	1,320	1,640	380	1,160	1,060	1,160	480	435	127	132
23.....	181	405	1,080	1,480	405	1,080	930	930	435	345	118	127
24.....	170	380	860	2,650	430	930	860	775	390	305	109	122
25.....	159	335	790	30,500	458	790	1,160	1,080	345	252	100	118
26.....	148	315	692	6,410	13,000	825	930	805	305	235	96	118
27.....	143	276	600	3,650	5,360	758	758	865	288	220	94	109
28.....	164	257	540	2,120	2,960	692	660	690	270	192	87	100
29.....	159	430	485	1,640	-----	895	600	635	252	178	79	96
30.....	154	6,570	458	1,400	-----	930	512	505	220	178	72	100
31.....	148	-----	430	1,160	-----	860	-----	480	-----	168	60	-----

Discharge, in second-feet, of St. Francis River near Patterson, Mo., 1921-23 and 1926-32—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1920-30												
1.....	100	305	127	530	480	2,040	458	205	72	36	22	29
2.....	91	580	122	690	505	1,480	458	192	69	41	21	32
3.....	96	662	127	2,470	555	1,160	480	192	65	39	21	31
4.....	113	480	122	1,560	3,450	1,000	555	178	64	43	22	31
5.....	132	412	118	1,160	8,260	865	608	178	60	41	21	28
6.....	122	345	127	930	3,550	805	530	173	62	40	21	29
7.....	118	305	137	8,440	2,290	1,560	458	165	60	37	20	37
8.....	109	270	168	7,900	1,800	2,650	412	160	57	36	20	65
9.....	104	252	168	8,650	1,480	1,800	412	155	56	34	19	79
10.....	109	192	173	2,950	1,240	1,560	368	157	53	32	19	76
11.....	113	205	178	2,470	1,080	1,240	345	160	55	31	20	72
12.....	118	235	178	2,950	930	1,000	325	152	57	31	21	76
13.....	122	220	192	36,200	1,000	930	305	182	55	30	24	79
14.....	118	220	458	26,700	1,400	805	345	187	55	29	23	87
15.....	113	220	580	11,900	1,160	718	412	182	53	28	28	113
16.....	109	220	1,800	3,870	930	662	368	132	57	26	32	169
17.....	113	205	3,450	2,380	805	635	390	132	52	25	31	100
18.....	122	205	5,080	1,800	699	580	345	134	50	24	32	87
19.....	118	192	3,760	1,480	635	555	305	132	49	24	31	79
20.....	122	192	1,580	1,320	635	555	288	127	48	25	31	62
21.....	127	173	1,560	1,080	608	505	288	130	45	24	30	57
22.....	122	162	1,240	865	580	480	288	127	43	25	31	67
23.....	118	168	865	718	662	458	270	125	41	28	29	60
24.....	122	157	745	662	745	435	252	118	39	26	28	65
25.....	127	152	635	635	865	505	235	104	38	28	25	79
26.....	122	150	608	608	11,900	530	235	100	36	25	24	76
27.....	132	147	580	580	4,690	690	235	96	34	24	25	69
28.....	147	142	580	555	2,470	635	265	91	33	24	25	82
29.....	162	140	580	580	-----	608	265	83	33	23	26	87
30.....	178	137	530	458	-----	555	205	79	45	23	25	55
31.....	220	-----	480	458	-----	480	-----	76	-----	22	24	-----
1926-31												
1.....	50	74	192	91	125	270	865	1,000	412	50	48	118
2.....	45	76	235	85	122	270	775	805	368	72	43	147
3.....	45	72	252	79	118	252	745	690	345	57	39	152
4.....	43	69	235	87	113	235	690	608	288	55	43	530
5.....	43	65	252	83	113	205	580	530	270	142	43	288
6.....	41	62	325	79	118	265	530	865	252	168	45	192
7.....	62	62	458	109	122	8,260	605	2,040	270	132	41	147
8.....	305	61	435	104	270	9,010	458	1,800	235	104	41	118
9.....	305	60	390	100	435	3,550	412	1,240	305	87	45	91
10.....	270	65	325	88	1,320	2,290	930	252	69	60	70	70
11.....	220	62	268	100	865	1,560	2,470	805	220	62	50	62
12.....	192	65	270	113	662	1,320	1,400	745	205	57	43	66
13.....	178	64	235	127	2,290	1,160	1,080	662	205	55	38	50
14.....	142	65	220	137	2,850	930	930	580	178	50	36	46
15.....	127	69	205	127	1,640	775	775	530	345	45	43	43
16.....	122	152	192	132	1,160	718	718	480	235	41	41	39
17.....	118	220	178	143	930	608	662	412	205	37	39	36
18.....	113	205	157	142	865	580	580	390	178	37	37	32
19.....	109	205	152	130	865	530	505	390	147	36	55	34
20.....	100	205	147	134	718	480	480	435	137	34	205	35
21.....	91	205	137	142	635	458	555	690	113	41	365	34
22.....	96	205	125	140	530	458	580	635	100	39	176	31
23.....	104	192	122	137	480	435	635	580	91	55	127	50
24.....	100	178	120	134	435	458	690	530	81	60	118	45
25.....	104	162	118	137	435	435	662	555	72	41	104	43
26.....	96	147	122	140	345	435	1,400	718	70	137	178	41
27.....	91	137	113	137	305	530	3,650	718	62	178	106	37
28.....	87	132	109	132	288	775	1,960	690	60	122	118	32
29.....	83	147	109	130	-----	1,320	1,400	530	52	118	122	29
30.....	79	173	96	125	-----	1,160	1,240	505	50	79	91	28
31.....	76	-----	96	122	-----	1,000	-----	458	-----	52	76	-----

Discharge, in second-feet, of St. Francis River near Patterson, Mo., 1921-23 and 1926-32—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931-32												
1.....	28	48	930	5,080	865	435	435	368	91	48	50	252
2.....	26	46	745	2,470	805	435	412	390	100	62	45	205
3.....	26	45	635	1,640	775	435	390	390	79	50	91	220
4.....	29	46	530	1,400	718	435	368	345	109	46	62	168
5.....	28	43	505	1,640	662	435	325	345	104	48	48	137
6.....	26	43	458	2,470	580	412	345	325	85	79	39	127
7.....	25	41	412	2,040	530	390	390	305	79	57	34	109
8.....	28	39	368	1,640	480	368	480	288	79	55	32	87
9.....	29	43	368	1,160	480	345	530	288	152	50	31	72
10.....	28	39	345	1,000	412	345	608	270	83	39	29	55
11.....	28	79	390	805	412	325	580	252	79	37	31	55
12.....	29	83	1,480	745	435	305	530	235	62	36	480	52
13.....	31	87	1,160	1,000	412	270	480	220	57	34	220	48
14.....	43	100	1,240	1,480	390	270	435	205	60	29	662	43
15.....	41	192	1,080	1,480	412	270	390	178	57	28	718	37
16.....	41	192	865	2,120	530	252	390	173	69	26	635	36
17.....	39	157	718	11,600	555	1,160	412	157	60	25	390	32
18.....	37	162	635	5,600	580	1,800	435	137	57	24	662	34
19.....	45	147	580	2,650	608	1,400	505	127	60	22	865	26
20.....	43	435	480	1,960	555	1,240	608	118	57	20	480	87
21.....	43	3,550	458	1,480	580	1,000	530	113	56	18	252	36
22.....	41	1,400	435	4,800	608	865	480	104	53	18	235	34
23.....	39	1,000	435	7,730	690	865	435	96	51	79	192	32
24.....	41	635	435	4,940	662	662	390	91	50	36	167	32
25.....	39	505	390	2,650	608	580	390	87	49	270	137	34
26.....	37	458	345	2,120	580	555	390	85	45	235	132	36
27.....	36	435	325	1,960	530	530	368	91	50	157	147	32
28.....	50	390	305	1,800	505	505	345	79	65	100	235	31
29.....	55	458	288	1,640	458	458	345	83	52	72	252	29
30.....	52	662	5,200	1,320	-----	435	345	83	45	62	608	29
31.....	50	-----	10,600	1,000	-----	435	-----	79	-----	55	368	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
1921-22						
October.....	1,850	75	266	0.278	0.32	16,400
November.....	36,600	109	2,860	2.99	3.34	170,000
December.....	13,200	294	1,470	1.54	1.78	90,400
January.....	1,040	152	504	.527	.61	31,000
February.....	5,600	230	1,030	1.08	1.12	57,200
March.....	26,700	630	3,800	3.97	4.58	234,000
April.....	15,300	958	3,960	4.14	4.62	236,000
May.....	1,940	288	710	.743	.86	43,700
June.....	384	78	136	.142	.16	8,090
July.....	915	64	173	.181	.21	10,600
August.....	1,000	23	120	.126	.15	7,380
September.....	90	27	53.0	.055	.06	3,150
The year.....	36,600	23	1,250	1.31	17.81	908,000
1922-23						
October.....	130	26	54.6	.057	.07	3,360
November.....	1,080	40	263	.275	.31	15,600
December.....	8,540	70	723	.756	.87	44,500
January.....	7,200	288	1,520	1.59	1.83	93,500
February.....	34,000	426	3,560	3.72	3.87	196,000
March.....	34,600	590	3,620	3.79	4.37	223,000
April.....	6,240	508	1,590	1.66	1.85	94,600
May.....	25,800	750	3,780	3.95	4.55	232,000
June.....	2,600	250	1,160	1.21	1.35	69,000
July.....	2,310	76	117	.122	.14	7,190
August.....	2,040	76	264	.276	.32	16,200
September.....	1,260	62	226	.236	.26	13,400
The year.....	34,600	26	1,400	1.46	19.79	1,010,000

Discharge, in second-feet, of St. Francis River near Patterson, Mo., 1921-23 and 1926-32—Continued

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
1926-27						
October.....	11,100	119	823	0.861	0.99	-----
November.....	5,650	432	1,580	1.65	1.84	-----
December.....	1,480	310	699	.731	.84	-----
January.....	13,700	520	3,250	3.40	3.92	-----
February.....	3,760	378	1,150	1.20	1.25	-----
March.....	17,000	291	2,850	2.98	3.44	-----
April.....	50,000	1,080	9,220	9.64	10.76	-----
May.....	33,000	1,160	4,200	4.39	5.06	-----
June.....	29,000	231	2,610	2.73	3.05	-----
July.....	300	125	177	.185	.21	-----
August.....	1,720	113	333	.348	.40	-----
September.....	255	67	109	.114	.13	-----
The year.....	50,000	67	2,250	2.35	31.89	-----
1927-28						
October.....	310	107	171	.179	.21	-----
November.....	4,320	102	966	1.01	1.13	-----
December.....	40,500	340	3,070	3.21	3.70	-----
January.....	5,080	291	996	1.04	1.20	-----
February.....	3,980	550	1,260	1.32	1.42	-----
March.....	2,850	612	1,110	1.16	1.34	-----
April.....	33,000	645	3,890	4.07	4.54	-----
May.....	3,250	310	777	.813	.94	-----
June.....	40,800	350	8,720	9.12	10.18	-----
July.....	2,290	154	593	.620	.71	-----
August.....	2,120	148	545	.570	.66	-----
September.....	295	53	121	.127	.14	-----
The year.....	40,800	53	1,840	1.92	26.17	-----
1928-29						
October.....	1,000	53	189	.198	.23	-----
November.....	6,570	170	603	.631	.70	-----
December.....	9,200	430	1,730	1.81	2.09	-----
January.....	30,500	315	2,290	2.40	2.77	-----
February.....	13,000	335	1,190	1.24	1.29	-----
March.....	7,560	660	1,680	1.76	2.03	-----
April.....	18,900	512	3,200	3.35	3.74	-----
May.....	31,100	458	4,720	4.94	5.70	-----
June.....	17,000	220	1,480	1.55	1.73	-----
July.....	4,560	168	562	.588	.68	-----
August.....	458	69	192	.201	.23	-----
September.....	235	62	131	.137	.15	-----
The year.....	31,100	53	1,500	1.57	21.34	-----
1929-30						
October.....	220	91	124	.130	.15	-----
November.....	662	137	248	.259	.29	-----
December.....	5,080	118	882	.923	1.06	-----
January.....	30,200	458	4,020	4.21	4.85	-----
February.....	11,900	480	1,960	2.05	2.14	-----
March.....	2,650	435	919	.961	1.11	-----
April.....	608	205	353	.369	.41	-----
May.....	205	76	139	.145	.17	-----
June.....	72	33	51.2	.054	.06	-----
July.....	43	23	29.8	.031	.04	-----
August.....	32	19	24.9	.026	.03	-----
September.....	113	28	64.3	.067	.07	-----
The year.....	30,200	19	730	.764	10.38	-----

Discharge, in second-feet, of St. Francis River near Patterson, Mo., 1921-23 and 1926-32—Continued

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
1930-31						
October.....	305	41	117	0.122	0.14	-----
November.....	220	60	122	.128	.14	-----
December.....	458	96	206	.215	.25	-----
January.....	142	78	118	.123	.14	-----
February.....	2,850	113	684	.715	.74	-----
March.....	9,010	205	1,310	1.37	1.58	-----
April.....	3,650	412	1,010	1.06	1.18	-----
May.....	2,040	390	727	.760	.88	-----
June.....	412	50	193	.202	.23	-----
July.....	178	34	74.6	.078	.09	-----
August.....	305	36	82.4	.086	.10	-----
September.....	530	28	88.5	.093	.10	-----
The year.....	9,010	28	393	.411	5.57	-----
1931-32						
October.....	55	25	36.5	.038	.04	2,240
November.....	3,550	39	385	.403	.45	22,990
December.....	10,600	288	1,070	1.12	1.29	65,800
January.....	11,500	745	2,620	2.74	3.16	161,000
February.....	865	390	566	.592	.64	32,680
March.....	1,800	252	588	.615	.71	36,200
April.....	608	325	436	.456	.51	25,900
May.....	390	79	197	.206	.24	12,100
June.....	152	45	69.8	.073	.08	4,150
July.....	270	18	61.8	.065	.07	3,800
August.....	865	29	268	.280	.32	16,500
September.....	252	29	72.2	.076	.08	4,300
The year.....	11,500	18	534	.559	7.59	387,000

NOTE.—Records of discharge for years ending Sept. 30, 1922 and 1923, supersede those published in Water-Supply Papers 547 and 567.

ST. FRANCIS RIVER AT FISK, MO.

LOCATION.—Chain gage in SW¼ sec. 28, T. 25 N., R. 8 E., at bridge on State highway 60 at Fisk. Zero of gage is 307.94 feet above mean sea level.

DRAINAGE AREA.—1,370 square miles.

RECORDS AVAILABLE.—October 1927 to September 1932.

EXTREMES.—Maximum discharge during year, 8,600 second-feet Jan. 19 (gage height, 23.38 feet); minimum discharge, 130 second-feet July 20-23; minimum gage height, 1.69 feet July 21, 1932.

1927-32: Maximum discharge, 30,700 second-feet Jan. 16, 1930 (gage height 26.47 feet); minimum discharge, 125 second-feet Aug. 5, 7-13, 1930; minimum gage height, that of July 21, 1932.

Maximum stage known, 28.00 feet Apr. 18, 1927 (discharge, about 50,000 second-feet).

REMARKS.—Records fair.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	142	162	636	6,200	1,760	792	816	516	209	177	177	395
2.....	142	162	804	7,500	1,570	756	756	505	209	169	169	373
3.....	142	162	816	6,720	1,430	720	708	505	225	162	185	384
4.....	136	162	768	4,600	1,340	768	672	516	225	169	185	362
5.....	136	162	696	3,260	1,230	780	612	505	225	185	201	330
6.....	142	162	648	3,510	1,120	756	600	494	225	177	185	290
7.....	136	155	600	3,440	1,030	720	588	472	217	169	169	225
8.....	136	162	564	2,990	952	684	864	450	217	177	155	209
9.....	136	162	528	2,410	864	648	1,160	439	217	201	148	209
10.....	136	162	494	2,000	804	624	1,100	417	261	201	142	201
11.....	136	162	472	1,720	780	600	1,030	406	261	185	142	193
12.....	136	162	528	1,530	828	576	952	384	225	169	142	185
13.....	142	177	756	1,760	804	540	864	362	209	155	261	177
14.....	142	193	1,060	1,900	756	528	804	351	193	148	406	169
15.....	142	201	1,080	1,760	732	505	744	340	185	148	373	162
16.....	148	201	1,080	2,230	864	483	696	330	185	142	406	155
17.....	155	234	991	5,140	1,940	939	672	310	193	142	564	155
18.....	148	261	888	7,200	1,960	1,900	660	300	193	136	540	155
19.....	142	261	804	8,600	1,820	2,070	660	290	193	136	494	155
20.....	148	330	720	7,500	1,650	1,820	672	280	185	130	528	155
21.....	148	600	684	5,340	1,480	1,760	720	270	177	130	540	148
22.....	148	1,360	672	3,800	1,410	1,550	720	261	177	130	461	148
23.....	148	1,370	624	4,360	1,310	1,370	684	252	177	130	373	148
24.....	142	1,130	600	6,720	1,220	1,200	648	243	169	201	320	142
25.....	155	900	576	7,500	1,130	1,100	624	243	169	243	280	136
26.....	155	780	540	6,520	1,040	965	588	234	169	193	280	142
27.....	155	636	516	4,860	978	913	564	225	177	201	270	142
28.....	155	576	483	3,440	900	965	540	225	185	252	351	148
29.....	155	540	461	2,840	840	876	636	225	177	243	395	142
30.....	162	564	576	2,370	-----	804	528	217	177	217	362	142
31.....	162	-----	3,260	2,000	-----	852	-----	209	-----	193	351	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October.....	162	136	145	0.106	0.12	8,920
November.....	1,370	155	408	.298	.33	24,300
December.....	3,260	461	772	.564	.65	47,500
January.....	8,600	1,530	4,250	3.10	3.57	261,000
February.....	1,960	732	1,190	.869	.94	68,400
March.....	2,070	483	954	.696	.80	58,700
April.....	1,160	528	729	.532	.59	43,400
May.....	516	209	348	.264	.29	21,400
June.....	261	169	200	.146	.16	11,900
July.....	252	130	175	.128	.15	10,800
August.....	564	142	308	.225	.26	18,900
September.....	395	136	203	.148	.17	12,100
The year.....	8,600	130	809	.591	8.03	587,000

SURFACE WATER SUPPLY, 1932, PART 7

LITTLE RIVER DITCH 81 NEAR KENNETT, MO.

LOCATION.—Chain gage in NE¼ sec. 4, T. 18 N., R. 10 E., at bridge on State highway 84, 4 miles east of Kennett. Zero of gage is about 240 feet above mean sea level.

RECORDS AVAILABLE.—October 1926 to September 1932 at present site; September 1921 to September 1926 at Kirk, 1¼ miles upstream.

EXTREMES.—Maximum discharge during year, 1,370 second-feet Jan. 18 (gage height, 9.80 feet); minimum, 53 second-feet Nov. 6, 7, 13-17, Sept. 2.

1926-32: Maximum discharge, 2,760 second-feet Apr. 21, 1927 (gage height 15.11 feet); minimum, 42 second-feet Sept. 5-8, 1930 (gage height, 2.31 feet).

REMARKS.—Records fair.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	66	57	179	333	364	219	318	179	106	90	66	57
2.....	66	57	160	289	348	205	275	166	106	85	62	53
3.....	62	57	153	262	348	205	261	153	106	85	80	70
4.....	66	57	147	233	318	205	219	153	106	90	85	80
5.....	62	57	135	275	318	205	205	141	100	80	75	75
6.....	62	53	135	600	303	205	192	147	100	100	70	75
7.....	62	53	129	522	289	205	179	141	95	100	70	70
8.....	62	57	123	397	261	192	348	141	95	95	66	70
9.....	62	57	123	333	247	179	449	135	100	90	66	66
10.....	62	57	123	467	247	179	364	135	95	90	66	66
11.....	62	57	123	261	247	179	303	135	95	85	62	66
12.....	62	57	123	261	261	166	261	135	95	80	62	66
13.....	62	53	179	333	261	166	247	129	95	80	70	66
14.....	62	53	219	414	233	166	233	129	95	80	62	62
15.....	62	53	261	522	247	166	205	123	95	75	66	62
16.....	62	53	233	800	275	160	205	123	90	75	62	62
17.....	62	53	205	1,180	580	166	205	123	90	75	66	62
18.....	57	62	192	1,350	840	205	205	117	90	75	66	62
19.....	57	57	179	1,140	740	192	192	117	90	70	66	62
20.....	57	95	166	960	560	179	179	117	85	70	66	75
21.....	57	135	160	840	449	160	179	117	85	70	66	70
22.....	57	135	153	780	431	160	160	117	80	70	62	70
23.....	57	112	153	920	414	153	160	112	80	70	62	66
24.....	57	100	147	982	348	147	166	106	75	70	57	70
25.....	57	95	135	860	303	147	153	106	80	70	57	80
26.....	57	90	135	740	275	147	166	106	80	70	57	80
27.....	57	95	135	680	261	205	166	106	85	70	66	85
28.....	62	95	129	600	233	333	153	106	95	70	62	80
29.....	62	100	129	522	233	333	153	106	90	66	70	80
30.....	57	166	147	449	-----	289	179	106	90	70	66	80
31.....	57	-----	261	414	-----	303	-----	106	-----	66	57	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	66	57	60.5	3,720
November.....	166	53	75.9	4,520
December.....	261	123	160	9,840
January.....	1,350	233	604	37,100
February.....	840	233	353	20,300
March.....	333	147	197	12,100
April.....	449	153	223	13,300
May.....	179	106	127	7,810
June.....	106	75	92.3	5,490
July.....	100	66	78.5	4,830
August.....	85	57	65.7	4,040
September.....	85	53	69.6	4,140
The year.....	1,350	53	175	127,000

LITTLE RIVER DITCH 1 NEAR KENNETT, MO.

LOCATION.—Chain gage in NE¼ sec 4, T. 18 N., R. 10 E., at bridge on State highway 84, 4 miles east of Kennett. Zero of gage is about 240 feet above mean sea level.

RECORDS AVAILABLE.—October 1926 to September 1932; September 1921 to September 1926 at Kirk, 1¼ miles upstream.

EXTREMES.—Maximum discharge during year, 3,510 second-feet Jan. 18 (gage height, 10.95 feet); minimum, 8 second-feet Sept. 13-18.

1926-32: Maximum discharge, 7,520 second-feet Apr. 25, 1927 (gage height, 16.56 feet); minimum discharge, that of Sept. 13-18, 1932; minimum gage height, 2.57 feet Sept. 18, 1932.

REMARKS.—Records good.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	26	26	188	426	686	404	622	253	102	66	28	14
2.....	26	26	170	506	654	383	562	253	99	63	27	14
3.....	26	26	161	426	654	363	478	243	96	50	40	13
4.....	26	26	152	363	654	363	404	224	92	54	34	16
5.....	26	26	134	383	622	363	383	224	85	51	30	15
6.....	26	26	125	910	590	363	343	215	82	60	30	16
7.....	26	26	116	1,110	534	363	323	206	74	72	25	15
8.....	24	26	113	830	506	343	534	206	74	69	24	13
9.....	24	26	113	654	450	323	830	188	85	66	22	12
10.....	24	26	118	534	450	323	790	188	82	60	22	10
11.....	24	26	118	450	426	303	654	188	76	54	20	10
12.....	24	26	125	426	450	283	534	188	74	51	20	10
13.....	24	26	161	562	450	283	450	170	72	48	18	8
14.....	28	26	343	790	426	283	404	170	72	45	20	8
15.....	26	26	383	990	450	283	363	161	79	43	27	8
16.....	26	26	323	2,000	450	263	343	161	72	40	22	8
17.....	26	26	283	2,990	1,150	263	323	152	66	37	21	8
18.....	26	35	243	3,440	2,240	263	323	152	66	37	21	8
19.....	26	30	215	3,380	2,000	363	323	143	68	36	22	9
20.....	26	69	206	2,990	1,550	363	323	134	62	36	20	22
21.....	26	109	188	2,240	1,250	343	303	134	57	36	20	22
22.....	26	134	188	2,120	1,110	323	283	134	54	37	19	24
23.....	26	102	188	2,660	990	283	283	125	51	36	15	22
24.....	26	85	179	2,860	790	253	283	116	48	36	15	18
25.....	26	76	170	2,420	654	253	283	116	48	35	14	17
26.....	26	69	161	1,760	562	253	263	116	48	35	15	29
27.....	26	69	152	1,450	506	283	253	116	51	37	16	41
28.....	26	66	152	1,200	450	534	243	109	60	35	18	56
29.....	26	79	152	1,030	426	686	234	106	57	34	18	45
30.....	26	125	161	910	-----	562	253	106	63	30	18	40
31.....	26	-----	263	790	-----	534	-----	102	-----	35	15	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	28	24	25.7	1,580
November.....	134	26	49.7	2,960
December.....	383	113	185	11,400
January.....	3,440	363	1,410	86,700
February.....	2,240	426	763	43,900
March.....	686	253	350	21,560
April.....	830	234	400	23,800
May.....	253	102	164	10,100
June.....	102	48	70.5	4,200
July.....	72	30	45.9	2,820
August.....	40	14	21.8	1,340
September.....	56	8	18.4	1,090
The year.....	3,440	8	291	211,000

LITTLE RIVER DITCH 66 NEAR KENNETT, MO.

LOCATION.—Chain gage in NE¼ sec. 4, T. 18 N., R. 10 E., at bridge on State highway 84, 4 miles east of Kennett. Zero of gage is about 240 feet above mean sea level.

RECORDS AVAILABLE.—October 1926 to September 1932; September 1921 to September 1926 at Kirk, 1¼ miles upstream.

EXTREMES.—Maximum discharge during year, 2,490 second-feet Jan. 19 (gage height, 14.52 feet); minimum, 28 second-feet Sept. 1, 2, 16-19.

1926-32: Maximum discharge, 3,650 second-feet Apr. 25, 1927 (gage height, 17.69 feet); minimum discharge, 26 second-feet Sept. 5-8, 1930; minimum gage height, 2.60 feet Sept. 6-8, 1930, Oct. 6, 10, 1931.

REMARKS.—Records good. Little River Ditch No. 66-A is an auxiliary to Ditch No. 66, the two ditches being separated by a low, narrow bank and interconnected by cut-offs. Above stage of 6.2 feet part of flow is carried by Ditch No. 66-A, and above stage of 13 feet the two ditches in the vicinity of the gage unite to form one continuous body of water. For the purpose of determining the discharge of each ditch, the division between them is taken at the top of bank which separates them during low stages.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	40	47	235	990	648	428	579	320	128	108	36	28
2.....	40	45	249	1,180	613	412	579	365	128	102	36	28
3.....	40	45	221	930	613	380	528	320	122	90	48	39
4.....	39	47	207	720	613	365	444	305	122	84	42	40
5.....	37	47	193	579	596	412	396	291	115	84	36	55
6.....	36	45	193	870	579	396	365	263	115	102	35	57
7.....	37	45	180	1,330	545	380	350	263	108	102	35	50
8.....	37	45	180	1,180	511	365	428	249	102	122	34	45
9.....	37	47	167	930	477	335	720	235	108	115	34	42
10.....	36	47	167	702	444	320	850	221	108	108	34	39
11.....	39	52	167	545	444	305	774	221	102	102	34	36
12.....	39	52	180	494	460	291	596	207	96	90	34	33
13.....	39	50	207	588	460	291	494	207	96	84	40	32
14.....	42	50	365	792	444	291	444	193	96	78	36	31
15.....	42	50	428	1,050	428	277	396	193	102	74	41	30
16.....	44	50	380	1,430	444	263	365	180	96	67	39	28
17.....	45	50	335	1,790	630	277	350	180	90	63	50	28
18.....	44	53	305	2,420	1,770	444	335	167	90	59	44	28
19.....	41	50	277	2,490	1,790	970	365	160	96	55	63	28
20.....	41	76	263	2,320	1,550	890	350	160	84	50	48	37
21.....	41	90	249	2,060	1,200	738	335	160	78	48	41	44
22.....	42	291	235	1,770	1,010	545	320	160	76	47	37	51
23.....	42	335	249	1,680	970	428	305	154	71	45	34	47
24.....	42	207	263	1,910	850	365	291	148	67	44	32	44
25.....	42	167	249	1,850	702	320	305	141	65	44	30	42
26.....	42	154	235	1,500	613	305	291	141	67	42	29	59
27.....	42	148	235	1,220	545	320	263	148	71	41	36	71
28.....	47	141	221	1,070	511	494	249	134	84	41	34	90
29.....	48	148	221	930	460	596	249	128	84	40	32	102
30.....	47	180	221	810	-----	428	263	128	128	38	30	96
31.....	47	-----	277	738	-----	511	-----	122	-----	37	29	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	48	36	41.2	2,590
November.....	335	45	95.1	5,690
December.....	428	167	244	15,000
January.....	2,490	494	1,250	76,900
February.....	1,790	428	721	41,500
March.....	970	263	427	26,300
April.....	850	249	419	24,900
May.....	365	122	202	12,400
June.....	128	65	96.5	5,740
July.....	122	37	71.2	4,390
August.....	63	29	37.2	2,290
September.....	102	28	46.0	2,740
The year.....	2,490	28	304	220,000

LITTLE RIVER DITCH 66-A NEAR KENNETT, MO.

LOCATION.—Chain gage in NE¼ sec. 4, T. 18, N., R. 10 E., at bridge on State highway 84, 4 miles east of Kennett. Zero of gage is about 240 feet above mean sea level.

RECORDS AVAILABLE.—January 1927 to September 1932.

EXTREMES.—Maximum discharge during year, 1,280 second-feet Jan. 19 (gage height, 14.43 feet); no flow on many days.

1927-31: Maximum discharge, 2,340 second-feet Apr. 25, 1927 (gage height, 17.62 feet); no flow on many days.

REMARKS.—Records fair except those of discharges below 20 second-feet, which are poor. See "Remarks" under Little River Ditch No. 66.

Discharge, in second-feet, 1931-32

Day	Jan.	Feb.	Mar.	Apr.	Day	Jan.	Feb.	Mar.	Apr.
1.....	126	23	0	15	16.....	432	0	0	0
2.....	216	14	0	13	17.....	752	15	0	0
3.....	96	13	0	6	18.....	1,230	730	0	0
4.....	30	13	0	0	19.....	1,250	774	168	0
5.....	0	13	0	0	20.....	1,130	580	115	0
6.....	74	10	0	0	21.....	934	298	53	0
7.....	300	4.4	0	0	22.....	708	180	7	0
8.....	270	1.8	0	0	23.....	664	156	0	0
9.....	126	0	0	47	24.....	840	72	0	0
10.....	39	0	0	100	25.....	796	39	0	0
11.....	7	0	0	66	26.....	486	17	0	0
12.....	0	0	0	18	27.....	312	6	0	0
13.....	3.4	0	0	2.4	28.....	204	.8	.4	0
14.....	66	0	0	0	29.....	126	0	17	0
15.....	192	0	0	0	30.....	74	-----	5	0
					31.....	47	-----	1.8	0

Month	Maximum	Minimum	Mean	Run-off in acre-feet
January.....	1,250	0	374	23,000
February.....	774	0	102	5,870
March.....	168	0	11.8	726
April.....	100	0	8.91	530
The year.....	1,250	0	4.15	30,100

NOTE.—No flow during months omitted.

LITTLE RIVER DITCH 251 NEAR KENNETT, MO.

LOCATION.—Chain gage in NW¼ sec. 3, T. 18 N., R. 10 E., at bridge on State highway 84, 4 miles east of Kennett. Zero of gage is about 240 feet above mean sea level.

RECORDS AVAILABLE.—November 1926 to September 1932.

EXTREMES.—Maximum discharge during year, 4,480 second-feet Jan. 18 (gage height, 14.50 feet); minimum, 66 second-feet Oct. 11–13 (gage height, 2.16 feet).

1926–32: Maximum discharge, 6,510 second-feet Apr. 24, 25, 1927 (gage height, 17.67 feet); minimum, 52 second-feet Sept. 5–8, 1930 (gage height, 2.10 feet).

REMARKS.—Records good.

Discharge, in second-feet, 1931–32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	81	81	408	1,800	1,280	866	1,280	552	220	186	86	76
2.....	76	81	432	2,040	1,190	816	1,130	696	220	178	86	76
3.....	76	81	384	1,600	1,220	768	1,020	624	220	163	108	102
4.....	76	81	362	1,220	1,290	744	918	576	220	163	96	102
5.....	71	81	340	1,020	1,130	792	840	552	202	156	86	128
6.....	71	81	318	1,600	1,100	792	744	504	202	186	86	128
7.....	71	81	296	2,380	1,050	744	720	480	194	170	81	115
8.....	71	81	296	2,160	996	720	892	456	194	194	81	102
9.....	71	81	276	1,680	918	696	1,560	456	202	186	81	102
10.....	71	81	276	1,280	866	648	1,720	432	194	178	76	96
11.....	66	81	276	1,050	866	624	1,490	408	186	170	76	91
12.....	66	86	318	944	892	600	1,160	408	186	156	76	86
13.....	66	81	362	1,050	918	576	996	384	186	149	91	81
14.....	76	81	696	1,560	866	576	892	362	186	149	86	81
15.....	76	81	768	2,000	840	552	792	362	186	142	102	81
16.....	76	81	696	2,740	866	552	744	340	178	135	96	76
17.....	81	81	600	3,380	1,250	552	720	318	178	128	96	76
18.....	71	91	552	4,360	3,180	792	696	318	170	122	108	76
19.....	71	91	504	4,360	3,280	1,720	720	296	178	115	142	76
20.....	71	128	456	4,080	2,830	1,560	720	296	163	115	122	96
21.....	71	156	432	3,640	2,160	1,280	672	296	156	115	108	115
22.....	71	456	432	3,180	1,840	996	648	276	149	108	96	128
23.....	71	528	456	3,080	1,760	792	624	276	142	102	91	122
24.....	71	340	456	3,430	1,520	696	600	276	142	102	86	115
25.....	71	276	432	3,380	1,320	624	600	256	135	102	81	108
26.....	71	238	408	2,740	1,160	600	624	238	135	102	81	142
27.....	71	238	384	2,200	1,050	624	576	238	149	96	96	163
28.....	81	220	384	1,920	996	1,050	528	238	163	96	91	186
29.....	81	238	362	1,720	918	1,250	528	238	163	91	86	194
30.....	81	276	384	1,520	-----	1,070	552	238	211	91	81	186
31.....	81	-----	504	1,420	-----	1,050	-----	220	-----	86	76	-----
Month							Maximum	Minimum	Mean	Run-off in acre-feet		
October.....							81	66	73.4	4,510		
November.....							528	81	155	9,220		
December.....							768	276	427	26,300		
January.....							4,360	944	2,280	140,000		
February.....							3,280	840	1,360	78,200		
March.....							1,720	552	830	51,000		
April.....							1,720	528	857	51,000		
May.....							696	220	375	23,100		
June.....							220	135	180	10,700		
July.....							194	86	137	8,420		
August.....							142	76	91.5	5,630		
September.....							194	76	110	6,550		
The year.....							4,360	66	571	415,000		

LITTLE RIVER DITCH 250 NEAR KENNETT, MO.

LOCATION.—Chain gage in NW¼ sec. 3, T. 18 N., R. 10 E., at bridge on State highway 84, 4 miles east of Kennett. Zero of gage is about 240 feet above mean sea level.

RECORDS AVAILABLE.—November 1926 to September 1932.

EXTREMES.—Maximum discharge during year, 1,350 second-feet Jan. 17, 18; minimum, 0.1 second-foot Oct. 22 to Nov. 17, Sept. 16-19.

1926-32: Maximum discharge, 4,140 second-feet Apr. 29, 1927 (gage height, 15.57 feet); minimum discharge, 0.1 second-foot Aug. 4, 5, Oct. 22 to Nov. 17, 1931, Sept. 16-19, 1932; minimum gage height, 1.33 feet Aug. 29, 30, Sept. 4-8, 19, 20, 22, 23, 1930.

REMARKS.—Records fair except those of discharge below 5 second-feet, which are poor.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11.....	0.2	0.1	72	464	180	72	360	134	10	3.6	0.4	0.2
2.....	.2	.1	62	208	168	60	270	120	8	2.5	.2	.2
3.....	.2	.1	60	286	208	66	180	110	8	2.0	2.5	.6
4.....	.2	.1	44	208	194	69	145	98	9	2.5	2.2	.4
5.....	.2	.1	42	284	156	69	120	90	6	2.2	1.9	.5
6.....	.2	.1	36	560	129	66	102	83	6	1.9	1.4	.6
7.....	.2	.1	34	536	115	62	98	76	5	2.5	.8	.4
8.....	.2	.1	32	380	102	69	608	76	4.4	2.8	.6	.4
9.....	.2	.1	29	270	90	56	848	76	4.4	2.8	.4	.4
10.....	.2	.1	28	194	90	53	708	72	4.0	2.5	.4	.3
11.....	.2	.1	29	156	86	47	442	69	3.7	2.2	.3	.2
12.....	.2	.1	32	145	115	44	270	66	3.7	2.5	.2	.2
13.....	.2	.1	76	420	110	42	180	59	3.4	2.2	.2	.2
14.....	.5	.1	208	488	94	39	140	56	3.4	2.2	.3	.2
15.....	.2	.1	194	932	110	39	120	53	3.4	2.5	.4	.2
16.....	.2	.1	134	1,170	156	44	106	44	3.2	2.2	.5	.1
17.....	.2	.1	106	1,350	420	39	106	42	3.1	1.9	.4	.1
18.....	.2	.2	86	1,350	464	39	120	36	2.5	1.6	.6	.1
19.....	.2	.2	76	1,290	340	47	115	36	2.5	1.0	.5	.1
20.....	.2	6	72	1,170	238	50	102	34	2.5	.8	.4	.8
21.....	.2	8	69	1,050	168	47	90	32	1.9	.8	.4	.4
22.....	.1	9	62	904	208	42	90	28	1.9	1.9	.3	.4
23.....	.1	11	62	1,110	180	39	83	25	1.6	1.3	.2	.3
24.....	.1	9	56	1,020	140	34	83	21	1.4	1.0	.2	.2
25.....	.1	7	43	820	115	34	110	19	1.3	.8	.2	.2
26.....	.1	5	47	632	102	32	145	18	1.3	.8	.2	1.3
27.....	.1	6	47	488	90	72	124	15	1.6	.7	.3	1.8
28.....	.1	5	44	340	83	340	106	14	1.9	.6	.2	2.0
29.....	.1	8	42	264	80	360	98	12	1.9	.5	.2	2.4
30.....	.1	6	56	270	270	254	115	11	2.4	.5	.2	2.4
31.....	.1	-----	304	238	-----	304	-----	11	-----	.4	.2	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	0.5	0.1	0.18	11
November.....	11	.1	2.74	163
December.....	304	28	73.7	4,530
January.....	1,350	145	612	37,600
February.....	464	80	163	9,380
March.....	360	32	84.8	5,210
April.....	848	83	206	12,300
May.....	134	11	52.8	3,250
June.....	10	1.3	3.78	225
July.....	3.6	.4	1.73	106
August.....	2.5	.2	.55	24
September.....	2.4	.1	.59	35
The year.....	1,350	.1	100	72,800

BIG LAKE OUTLET NEAR MANILA, ARK.

LOCATION.—Chain gage in SE¼ sec. 9, T. 14 N., R. 9 E., 3½ miles southeast of Manila.

RECORDS AVAILABLE.—September 1927 to September 1932.

EXTREMES.—Maximum discharge during year, 12,600 second-feet Jan. 26, 27 (gage height, 18.0 feet); minimum, 105 second-feet Sept. 18 (gage height, 2.4 feet).

1927-32: Maximum discharge, 15,900 second-feet Jan. 16, 1930 (gage height, 19.85 feet); minimum, that of Sept. 18, 1932.

REMARKS.—Records poor. Gage-height record furnished by Mississippi County drainage district no. 17.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	255	230	1,150	2,250	10,400	5,480	3,700	2,450	955	610	280	185
2.....	255	230	1,250	2,300	9,780	5,300	3,880	2,400	910	685	280	185
3.....	255	230	1,300	3,160	9,330	5,130	4,000	2,350	910	645	255	195
4.....	255	230	1,350	3,640	8,880	4,730	4,060	2,300	910	645	255	230
5.....	230	205	1,350	4,000	8,450	4,580	4,060	2,250	865	645	330	265
6.....	230	205	1,350	4,120	8,030	4,240	4,000	2,200	820	645	305	280
7.....	230	205	1,350	4,350	7,490	4,000	3,880	2,150	865	645	280	280
8.....	230	205	1,350	4,550	7,360	3,940	3,880	2,150	775	730	255	268
9.....	205	205	1,300	4,800	6,980	3,760	3,820	2,050	730	820	255	242
10.....	205	205	1,300	5,050	6,620	3,580	3,700	1,950	685	820	230	230
11.....	205	230	1,250	5,300	6,170	3,400	4,060	1,850	685	730	230	205
12.....	205	230	1,250	5,130	5,960	3,220	4,300	1,800	685	645	205	185
13.....	205	230	1,550	5,130	5,660	3,000	4,440	1,750	645	575	205	185
14.....	205	230	1,700	4,970	5,480	2,900	4,440	1,750	610	540	205	166
15.....	205	230	1,850	5,390	5,210	2,800	4,300	1,650	610	510	205	145
16.....	205	230	2,200	5,660	4,970	2,800	4,180	1,600	575	480	205	125
17.....	230	230	2,600	6,390	5,050	2,550	4,060	1,500	575	480	230	125
18.....	230	255	2,800	7,100	5,130	2,400	3,880	1,450	610	480	255	105
19.....	205	305	2,850	8,310	5,570	2,350	3,760	1,450	610	405	280	165
20.....	205	330	2,850	9,480	6,060	2,450	3,580	1,350	540	380	305	165
21.....	205	480	2,850	10,400	6,860	2,600	3,460	1,350	540	355	280	205
22.....	205	645	2,750	11,100	6,860	2,800	3,340	1,250	510	330	255	230
23.....	205	820	2,750	11,600	6,860	2,800	3,160	1,200	510	330	205	255
24.....	205	865	2,600	11,800	6,860	2,800	3,000	1,150	480	330	185	230
25.....	185	865	2,550	12,200	6,620	2,800	2,850	1,150	480	330	185	205
26.....	185	820	2,550	12,600	6,500	2,700	2,750	1,150	480	330	165	205
27.....	185	820	2,350	12,600	6,390	2,450	2,650	1,150	455	305	185	205
28.....	185	800	2,200	12,200	6,060	2,750	2,550	1,050	455	280	185	355
29.....	205	775	2,100	11,800	5,760	2,550	2,450	1,050	455	280	165	380
30.....	230	955	1,950	11,500	-----	2,850	2,350	1,050	510	280	165	380
31.....	230	-----	2,100	10,800	-----	3,400	-----	1,050	-----	280	185	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	255	185	215	13,200
November.....	955	205	416	24,800
December.....	2,850	1,150	1,960	121,000
January.....	12,600	2,250	7,410	456,000
February.....	10,400	4,970	6,810	392,000
March.....	5,480	2,350	3,340	205,000
April.....	4,440	2,350	3,620	215,000
May.....	2,450	1,050	1,650	101,000
June.....	955	455	648	38,600
July.....	820	280	501	30,800
August.....	330	165	233	14,300
September.....	380	105	222	13,200
The year.....	12,600	105	2,240	1,620,000

WHITE RIVER BASIN

WHITE RIVER AT BEAVER, ARK.

LOCATION.—Chain gage in sec. 20, T. 21 N., R. 26 W., at Missouri & North Arkansas Railway bridge a quarter of a mile east of depot at Beaver. Zero of gage is 885.55 feet above mean sea level.

DRAINAGE AREA.—1,270 square miles.

RECORDS AVAILABLE.—July 1909 to December 1910; May 1923, to September, 1932.

EXTREMES.—Maximum discharge during year, 19,100 second-feet Jan. 18 (gage height, 16.15 feet); minimum discharge, 35 second-feet Sept. 14; minimum gage height, 1.96 feet Oct. 10.

1909-10, 1923-32: Maximum discharge, 65,000 second-feet Apr. 16, 1927 (gage height, 37.0 feet); minimum discharge, 33 second-feet Sept. 10, 1925; minimum gage height, 1.55 feet Oct. 1-8, 1909.

REMARKS.—Records good.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	52	159	1,040	256	2,020	912	1,450	599	273	2,220	799	60
2.....	50	147	855	256	1,720	855	1,200	599	273	1,370	532	58
3.....	49	136	745	290	1,530	912	1,100	532	468	1,160	385	56
4.....	50	122	645	326	1,370	799	1,040	510	576	855	308	49
5.....	49	117	553	799	1,230	799	912	468	468	745	256	45
6.....	50	109	489	4,850	1,100	855	855	426	385	693	209	45
7.....	49	101	426	5,000	1,040	972	855	406	326	6,660	194	44
8.....	50	96	406	2,750	912	855	855	385	290	2,750	179	42
9.....	47	87	406	1,920	855	745	855	365	489	1,530	170	42
10.....	49	89	385	1,370	799	693	855	365	308	1,040	170	42
11.....	52	94	406	1,160	799	645	799	365	273	799	156	38
12.....	69	94	426	1,040	745	599	745	345	240	599	365	36
13.....	179	91	912	855	855	576	855	308	240	510	256	38
14.....	308	91	745	855	855	553	745	308	224	426	209	37
15.....	406	112	645	1,160	912	532	693	290	209	345	170	49
16.....	256	117	576	6,820	4,400	510	645	273	194	308	144	58
17.....	194	119	532	15,100	6,500	1,160	745	240	179	273	162	42
18.....	130	128	468	16,000	9,410	1,630	693	240	173	240	164	49
19.....	139	144	447	6,500	5,300	1,720	799	224	173	209	139	69
20.....	122	128	406	4,120	3,700	1,450	799	209	167	194	128	66
21.....	109	122	385	3,200	2,860	1,230	745	209	162	170	112	58
22.....	106	125	365	7,300	2,320	1,100	645	194	147	159	101	117
23.....	406	126	345	16,500	2,030	972	645	194	139	144	91	87
24.....	385	745	326	12,200	1,720	912	599	179	426	144	91	69
25.....	365	510	308	6,980	1,450	799	576	173	365	156	82	75
26.....	426	599	290	5,300	1,300	745	645	173	256	209	80	80
27.....	308	576	273	6,350	1,160	693	645	179	855	326	78	78
28.....	273	468	256	4,700	1,040	645	599	173	2,320	426	73	71
29.....	224	693	256	3,700	972	1,040	645	179	3,440	345	73	62
30.....	194	799	256	2,970	-----	1,450	645	167	3,320	273	69	58
31.....	173	-----	240	2,320	-----	1,370	-----	162	-----	599	62	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October.....	426	47	172	0.135	0.16	10,600
November.....	799	87	235	.185	.21	14,000
December.....	1,040	240	478	.376	.43	29,400
January.....	16,500	256	4,610	3.63	4.18	283,000
February.....	9,410	745	2,100	1.65	1.78	121,000
March.....	1,720	510	923	.727	.84	56,800
April.....	1,450	576	797	.628	.70	47,400
May.....	599	162	304	.239	.28	18,700
June.....	3,440	139	579	.456	.51	34,500
July.....	6,660	144	835	.657	.76	51,800
August.....	799	62	194	.153	.18	11,900
September.....	117	37	57.4	.045	.05	3,420
The year.....	16,500	37	940	.740	10.08	682,000

WHITE RIVER AT FORSYTH, MO.

LOCATION.—Water-stage recorder in SE¼ sec. 33, T. 24 N., R. 20 W., in Forsyth, a quarter of a mile below Swan Creek. Zero of gage is 642.98 feet above mean sea level.

DRAINAGE AREA.—4,610 square miles.

RECORDS AVAILABLE.—January to September 1926; February 1930 to September 1932.

EXTREMES.—Maximum discharge during year, 35,500 second-feet Jan. 17 (gage height, 15.70 feet); minimum, 105 second-feet Sept. 25 (gage height, 1.20 feet). 1926, 1930-32: Maximum discharge, that of Jan. 17, 1932; minimum, that of Sept. 25, 1932.

Maximum stage known, 45.36 feet Apr. 15, 1927 (discharge, about 160,000 second-feet).

REMARKS.—Records good. Flow regulated by hydroelectric plant of Empire District Electric Co.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	756	659	5,070	1,460	7,790	2,610	3,480	1,020	*2,700	7,500	1,320	234
2	655	697	4,370	1,390	6,370	2,660	3,460	2,510	7,680	5,650	1,360	298
3	513	574	4,360	1,550	5,850	2,970	2,990	2,100	9,470	3,910	1,260	303
4	248	693	4,410	3,100	5,370	2,870	3,530	1,720	5,620	4,020	1,290	166
5	552	769	4,100	5,000	4,890	2,030	3,100	1,600	3,670	4,180	1,110	190
6	529	750	2,010	7,940	4,740	1,810	2,090	1,580	3,900	4,730	770	230
7	434	848	2,120	11,900	3,270	2,830	1,820	1,310	3,580	8,060	295	133
8	879	569	2,780	12,000	4,050	3,000	2,420	1,480	2,510	13,600	426	120
9	518	569	2,540	8,740	3,600	2,510	3,130	1,530	3,030	11,200	530	120
10	*515	889	2,700	6,310	3,540	2,470	2,240	1,320	4,630	9,950	534	120
11	*343	469	2,410	6,210	2,100	2,890	3,680	1,040	4,640	6,260	675	267
12	518	694	2,250	5,220	2,510	2,900	3,420	1,010	3,230	5,070	660	129
13	*883	*582	2,080	4,680	2,990	1,610	3,060	929	3,600	4,320	388	151
14	*861	*673	3,370	4,610	1,950	2,520	2,660	1,210	3,350	2,990	506	125
15	*811	*658	2,680	4,610	3,510	2,180	2,200	869	4,000	2,200	483	135
16	*1,110	893	2,650	15,100	3,620	1,670	2,110	1,070	3,640	2,260	675	207
17	*1,460	992	2,140	34,000	5,820	3,100	1,860	787	3,300	*595	559	175
18	*1,270	1,020	2,660	34,000	10,900	5,280	2,440	785	2,040	*1,680	586	127
19	742	883	1,830	28,300	13,200	5,220	3,420	*844	892	*859	567	206
20	947	772	1,640	16,200	9,150	5,490	3,050	*915	1,720	*709	587	286
21	1,000	1,260	1,850	12,200	6,840	5,530	3,080	*814	2,140	*785	149	139
22	1,020	1,710	1,950	24,000	6,520	4,820	2,830	388	2,270	*770	499	344
23	1,150	1,000	1,920	29,200	5,410	4,120	2,590	840	2,410	*1,680	633	185
24	1,960	1,410	1,370	33,500	5,160	3,310	1,690	1,320	1,810	2,620	601	348
25	1,950	2,400	854	25,400	4,580	3,350	2,650	902	2,210	1,390	174	266
26	980	3,180	501	18,000	4,350	3,460	2,600	1,410	2,210	1,270	117	250
27	1,080	3,360	436	14,800	4,120	1,600	1,970	*600	4,200	1,010	191	235
28	861	3,520	1,480	13,900	2,300	2,470	2,120	*418	6,910	1,600	269	249
29	1,080	3,170	1,600	12,200	2,790	2,310	1,900	*400	12,400	1,400	244	249
30	1,100	4,940	1,480	10,100	-----	1,740	1,090	*405	8,860	1,890	248	248
31	1,310	-----	2,130	8,200	-----	2,870	-----	*885	-----	1,360	143	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	1,960	248	903	0.196	0.23	55,500
November	4,940	469	1,350	.293	.33	80,300
December	5,070	436	2,360	.512	.59	145,000
January	34,000	1,390	13,300	2.89	3.33	818,000
February	13,200	1,950	5,080	1.10	1.19	282,000
March	5,530	1,600	3,040	.659	.76	187,000
April	3,680	1,090	2,630	.570	.64	156,000
May	2,510	388	1,100	.239	.28	67,600
June	12,400	892	4,090	.887	.99	243,000
July	13,600	595	3,720	.807	.93	220,000
August	1,360	117	576	.125	.14	35,400
September	348	120	208	.045	.05	12,400
The year	34,000	117	3,200	.694	9.46	2,320,000

* Computed from power-plant records and estimated flow of Swan Creek.

WHITE RIVER NEAR FLIPPIN, ARK.

LOCATION.—Staff gage in NW¼ sec. 9, T. 19 N., R. 15 W., 2½ miles north of Flippin. Zero of gage is 420.92 feet above mean sea level.

DRAINAGE AREA.—6,170 square miles.

RECORDS AVAILABLE.—October 1928 to September 1932.

EXTREMES.—Maximum discharge during year, 46,100 second-feet Jan. 17 (gage height, 18.90 feet); minimum, 182 second-feet Sept. 18 (gage height, 4.18 feet)

1928-32: Maximum discharge, 70,400 second-feet May 9, 1929 (gage height, 23.80 feet); minimum, that of Sept. 18, 1932.

REMARKS.—Records good.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1-----	670	1,150	4,990	2,650	9,340	2,990	2,490	2,050	1,210	10,500	2,490	236
2-----	710	1,330	5,210	2,990	9,340	2,990	3,170	1,770	5,560	8,220	1,510	304
3-----	750	900	4,330	2,330	7,160	3,170	3,730	1,910	7,680	7,680	1,630	304
4-----	670	750	4,550	2,330	7,160	3,530	4,330	2,490	11,100	4,330	1,910	238
5-----	670	630	4,330	7,940	6,160	3,730	3,930	1,910	6,640	4,550	1,770	268
6-----	590	670	4,330	9,940	5,210	2,810	3,930	2,050	6,640	4,990	1,770	298
7-----	400	750	3,170	10,800	5,440	2,810	2,990	1,910	3,930	5,210	1,570	316
8-----	670	800	1,910	14,100	4,330	2,810	2,810	2,490	4,130	12,500	950	250
9-----	590	850	2,330	13,800	4,550	3,530	2,990	2,050	3,730	17,600	590	304
10-----	750	710	2,490	9,940	4,330	3,170	3,530	1,910	3,530	13,100	590	364
11-----	630	630	2,490	6,900	3,530	2,650	4,130	1,770	5,000	11,100	630	238
12-----	590	750	2,990	5,680	3,530	2,990	3,930	1,630	5,210	7,680	710	208
13-----	590	590	2,650	5,680	2,990	3,170	3,930	1,330	4,130	5,680	850	202
14-----	502	670	2,810	4,770	2,990	2,810	3,930	1,530	5,680	5,210	1,150	268
15-----	950	670	3,170	4,330	3,170	2,330	3,730	1,270	4,550	3,530	750	364
16-----	950	590	3,170	4,330	4,130	2,490	3,530	1,570	4,330	2,990	510	292
17-----	900	750	2,490	37,500	5,680	3,730	3,170	1,150	3,170	2,330	710	256
18-----	1,100	950	2,490	43,700	6,640	5,920	2,190	1,210	3,730	2,050	850	190
19-----	1,510	1,000	2,490	40,600	13,800	7,160	2,810	1,150	2,990	1,050	710	226
20-----	1,390	1,050	2,330	31,700	15,500	6,640	2,810	1,050	2,650	1,770	710	262
21-----	950	1,000	2,190	19,400	11,100	7,160	2,330	1,000	1,330	1,270	670	256
22-----	1,000	900	1,910	22,400	8,220	6,400	3,530	900	1,390	900	670	316
23-----	1,000	1,150	2,050	38,400	7,160	5,680	3,730	900	2,650	750	590	316
24-----	1,050	1,910	2,050	39,300	6,640	4,990	2,650	710	2,650	950	406	268
25-----	1,210	1,270	2,050	41,000	5,680	4,550	2,650	900	5,680	2,810	800	316
26-----	1,910	1,450	1,630	29,700	5,440	3,530	2,810	1,510	3,170	2,810	630	304
27-----	1,910	2,810	900	22,400	4,990	4,130	3,170	1,910	2,990	1,910	510	382
28-----	1,050	2,990	590	18,700	4,330	3,930	2,330	2,050	5,440	1,770	340	358
29-----	1,100	3,530	710	17,300	3,350	2,990	2,190	1,570	5,320	1,630	292	316
30-----	900	3,350	1,630	15,100	-----	2,990	1,910	1,000	14,400	1,770	280	292
31-----	1,000	-----	1,910	12,400	-----	3,170	-----	800	-----	1,770	292	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October-----	1,910	400	925	0.150	0.17	56,900
November-----	3,530	590	1,220	.198	.22	72,600
December-----	5,210	590	2,660	.431	.50	164,000
January-----	43,700	2,330	17,400	2.82	3.25	1,070,000
February-----	15,500	2,990	6,270	1.02	1.10	361,000
March-----	7,160	2,330	3,900	.632	.73	240,000
April-----	4,330	1,910	3,180	.515	.57	189,000
May-----	2,490	710	1,520	.246	.28	93,500
June-----	14,400	1,210	4,690	.760	.85	279,000
July-----	17,600	750	4,850	.786	.91	298,000
August-----	2,490	280	898	.146	.17	55,200
September-----	382	190	283	.046	.05	16,800
The year-----	43,700	190	3,980	.645	8.80	2,900,000

JAMES RIVER BELOW BATTLEFIELD, MO.

LOCATION.—Chain gage in NE¼ sec. 32, T. 28 N., R. 22 W., at Blue Spring highway bridge 3 miles southeast of Battlefield.

DRAINAGE AREA.—325 square miles.

RECORDS AVAILABLE.—May 1929 to January 1932 (discontinued). February 1926 to May 1929 at site 3 miles upstream.

EXTREMES.—Maximum discharge during period Oct. 1, 1931, to Jan. 7, 1932, 701 second-feet Jan. 7; minimum, 29 second-feet Nov. 6-10 (gage height, 2.44 feet).

1929-31: Maximum discharge, 5,450 second-feet May 28, 1929; maximum gage height, 10.50 feet Aug. 6, 1931; minimum discharge, 13 second-feet Aug. 8, 10, 13, 1930.

REMARKS.—Records good.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Day	Oct.	Nov.	Dec.	Jan.
1	37	35	460	150	16	93	80	179	-----
2	35	33	360	140	17	80	83	166	-----
3	35	32	300	143	18	63	76	153	-----
4	34	31	257	-----	19	56	70	140	-----
5	33	31	222	-----	20	50	70	129	-----
6	31	29	198	-----	21	48	60	123	-----
7	31	29	175	685	22	50	58	113	-----
8	31	29	164	-----	23	50	58	110	-----
9	31	29	175	-----	24	50	238	100	-----
10	31	30	218	-----	25	40	295	93	-----
11	33	31	252	-----	26	39	262	90	-----
12	39	36	257	-----	27	39	226	83	-----
13	46	126	247	-----	28	39	206	76	-----
14	164	96	222	-----	29	39	234	76	-----
15	100	93	206	-----	30	37	436	76	-----
					31	37	-----	126	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acres-feet
1931-2						
October	164	31	491	0.151	0.17	3,020
November	435	29	105	.323	.36	6,260
December	460	76	179	.551	.64	11,006

JAMES RIVER AT GALENA, MO.

LOCATION.—Chain gage in NW¼ sec. 7, T. 24 N., R. 23 W., at bridge on State highway 44 at Galena, half a mile above Railey Creek. Zero of gage is 925.94 feet above mean sea level.

DRAINAGE AREA.—1,000 square miles.

RECORDS AVAILABLE.—October 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 11,000 second-feet June 28 (gage height, 11.50 feet); minimum discharge, 88 second-feet Sept. 25; minimum gage height, 1.17 feet Sept. 30.

1921-32: Maximum discharge, 41,900 second-feet Apr. 15, 1927 (gage height, 25.15 feet); minimum, 52 second-feet Sept. 6, 7, 9, 10, 1925 (gage height, 0.56 foot).

REMARKS.—Records good.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	162	210	2,040	592	1,400	394	438	350	3,700	1,640	330	124
2.....	162	207	1,720	620	1,330	394	416	310	6,360	1,640	291	153
3.....	156	197	1,400	620	1,260	394	394	310	2,840	1,260	272	142
4.....	150	194	1,260	648	1,110	394	372	291	1,800	1,180	272	134
5.....	144	187	1,040	970	1,040	416	372	272	1,330	1,180	254	124
6.....		136	184	900	970	394	350	254	1,040	1,180	236	121
7.....	127	181	770	2,840	900	394	372	254	835	2,030	229	119
8.....	130	175	708	2,040	835	394	512	233	770	4,490	222	114
9.....	133	172	708	1,640	770	394	592	222	5,780	5,640	222	111
10.....	127	178	739	1,480	739	372	620	222	1,880	2,300	205	106
11.....	125	197	802	1,180	739	394	592	199	1,880	1,720	196	106
12.....	220	184	900	1,040	708	372	565	192	1,330	1,400	205	119
13.....	234	296	900	900	648	372	512	189	1,040	1,110	192	114
14.....	840	490	835	802	620	350	462	180	1,480	970	176	114
15.....	805	438	770	770	592	350	438	170	1,330	835	167	116
16.....	575	538	708	2,390	592	350	394	156	1,110	708	176	121
17.....	463	512	648	6,840	565	462	416	173	900	620	186	139
18.....	363	496	620	4,610	592	592	394	183	739	565	183	132
19.....	340	438	565	3,200	565	802	394	159	648	512	173	121
20.....	318	416	538	2,480	565	802	372	150	1,110	486	180	114
21.....	276	394	512	2,130	538	739	372	145	1,180	438	167	99
22.....	256	372	486	5,110	538	678	350	148	900	416	159	109
23.....	296	350	462	7,160	512	620	350	137	708	394	153	99
24.....	318	648	438	5,110	486	565	330	129	620	372	142	92
25.....	296	1,640	416	3,810	462	512	330	134	565	350	129	90
26.....	276	1,480	394	3,110	462	486	310	186	678	330	124	92
27.....	276	1,260	372	2,660	438	462	272	394	3,700	512	137	106
28.....	252	1,110	350	2,300	438	438	272	254	8,600	565	134	104
29.....	234	1,260	372	2,040	416	438	291	196	3,300	438	126	111
30.....	224	1,880	372	1,800	-----	416	330	173	2,130	394	119	99
31.....	213	-----	438	1,640	-----	438	-----	156	-----	350	119	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October.....	840	125	278	0.278	0.32	17,100
November.....	1,880	172	542	.542	.60	32,800
December.....	2,040	350	748	.748	.86	46,000
January.....	7,160	592	2,420	2.42	2.79	149,000
February.....	1,400	416	718	.718	.77	41,800
March.....	802	350	470	.470	.54	28,900
April.....	620	272	406	.406	.45	24,200
May.....	394	129	210	.210	.24	12,900
June.....	8,600	565	2,010	2.01	2.24	120,000
July.....	5,640	330	1,190	1.19	1.87	73,200
August.....	330	119	190	.190	.22	11,700
September.....	153	90	115	.115	.13	6,840
The year.....	8,600	90	775	.775	10.53	563,000

WILSON CREEK NEAR SPRINGFIELD, MO.

LOCATION.—Water-stage recorder in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 28, T. 29 N., R. 22 W., three quarters of a mile below Jordan Creek and 2 miles southwest of Springfield.

DRAINAGE AREA.—19 square miles.

RECORDS AVAILABLE.—May to September 1932.

EXTREMES.—Maximum discharge during period, about 2,440 second-feet June 27 (gage height, 7.62 feet); minimum, 2.2 second-feet Sept. 30 (gage height, 0.38 foot).

REMARKS.—Records good except those for discharges above 1,000 second-feet, which are fair.

Discharge, in second-feet, 1932

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1.....		251	57	9	9	16.....	7	11	20	10	7
2.....		45	39	9	9	17.....	7	11	18	9	8
3.....		31	52	8	8	18.....	6	11	16	7	7
4.....		28	48	8	7	19.....	7	18	16	7	6
5.....		23	395	8	6	20.....	7	23	14	7	6
6.....		21	70	8	6	21.....	7	16	14	7	5
7.....	9	18	53	21	5	22.....	6	12	14	6	4.4
8.....	9	23	53	9	4.4	23.....	7	11	14	7	3.8
9.....	9	18	42	8	3.8	24.....	7	11	14	6	3.4
10.....	8	17	35	7	3.4	25.....	7	13	14	6	3.4
11.....	8	14	32	7	3.8	26.....	30	273	14	6	3.4
12.....	7	12	28	7	4.4	27.....	9	761	12	7	3.4
13.....	8	19	24	8	5	28.....	6	112	10	6	3.4
14.....	8	14	23	7	6	29.....	6	70	10	6	3.4
15.....	8	12	21	24	6	30.....	6	51	10	6	3.6
						31.....	85		9	16	

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
May 7-31.....	85	6	11.4	0.600	0.56	585
June.....	761	11	65.0	3.42	3.82	3,870
July.....	395	9	38.4	2.02	2.33	2,369
August.....	24	6	8.61	.453	.52	529
September.....	9	3.4	5.27	.277	.31	314
The period.....						7,640

BUFFALO RIVER NEAR RUSH, ARK.

LOCATION.—Staff gage in SE¼ sec. 10, T. 17 N., R. 15 W., immediately above Rush Creek, 24 miles above mouth, and 1½ miles southeast of Rush. Zero of gage is 458.70 feet above mean sea level.

DRAINAGE AREA.—1,110 square miles.

RECORDS AVAILABLE.—October 1928 to September 1932.

EXTREMES.—Maximum discharge during year, 15,200 second-feet Feb. 17 (gage height, 9.95 feet); minimum, 54 second-feet Oct. 10–12; minimum gage height, 0.60 foot, Sept. 10–22.

1928–32: Maximum discharge, 57,000 second-feet May 11, 1930 (gage height, 21.8 feet); minimum, that of Oct. 10–12, 1931; minimum gage height, 0.6 foot Sept. 25–30, Oct. 1–3, 7–9, 1929, Sept. 10–22, 1932.

Maximum stage known, 49.5 feet in April 1927.

REMARKS.—Records good.

Discharge, in second-feet, 1931–32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	60	166	260	940	690	2,000	530	215	2,400	150	66
2	60	60	235	314	810	610	1,700	455	205	2,000	255	66
3	57	60	205	343	690	570	1,600	455	205	1,700	276	66
4	57	60	175	325	610	690	1,300	385	210	1,300	215	64
5	57	57	162	5,000	530	730	1,210	373	200	1,300	175	86
6	57	57	142	6,320	455	850	1,080	349	195	13,200	158	86
7	57	57	130	3,390	385	940	1,030	349	175	5,640	146	78
8	57	57	121	2,100	367	895	1,400	2,100	170	3,260	138	70
9	56	57	121	1,400	331	810	1,500	2,300	170	2,400	130	64
10	54	60	121	1,030	309	730	1,300	1,600	195	1,900	121	58
11	54	60	124	810	298	650	1,400	1,210	270	1,400	109	58
12	54	60	127	650	337	610	1,300	895	308	940	103	58
13	60	60	210	610	385	530	1,120	730	286	730	103	58
14	72	64	220	570	385	492	1,030	610	276	570	109	58
15	66	64	245	530	1,300	492	940	492	255	420	103	58
16	58	64	235	530	4,540	455	850	455	250	385	98	58
17	57	64	215	2,000	13,200	530	810	373	230	308	94	58
18	57	80	200	3,670	6,320	770	770	349	200	270	90	58
19	57	76	185	2,200	4,240	895	1,120	314	180	240	84	58
20	57	90	170	1,700	3,000	850	985	292	162	220	80	58
21	57	90	170	1,300	2,400	770	850	270	150	200	76	58
22	60	82	166	3,880	2,100	770	730	255	146	195	76	58
23	60	76	175	9,550	1,700	690	690	245	134	205	72	64
24	60	92	175	5,980	1,400	610	690	230	134	286	72	66
25	57	98	170	3,810	1,210	570	810	225	379	379	72	62
26	57	86	162	3,000	1,030	530	810	225	895	303	68	66
27	64	90	162	2,520	895	810	730	276	4,090	230	66	70
28	78	92	154	2,100	810	4,090	650	265	4,240	166	66	66
29	66	109	146	1,800	730	3,260	570	250	4,390	158	66	66
30	60	142	158	1,400	-----	2,400	570	230	3,390	180	66	66
31	60	-----	200	1,120	-----	2,200	-----	215	-----	162	66	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acres-feet
October	78	54	59.5	0.054	0.06	3,660
November	142	57	74.1	.067	.07	4,410
December	245	121	172	.155	.18	10,600
January	9,550	260	2,260	2.04	2.35	139,000
February	13,200	298	1,780	1.60	1.73	102,000
March	4,090	455	984	.886	1.02	60,500
April	2,000	570	1,050	.946	1.06	62,500
May	2,300	215	558	.503	.58	34,300
June	4,390	134	744	.670	.75	44,300
July	13,200	158	1,390	1.25	1.44	85,500
August	276	66	113	.102	.12	6,950
September	86	58	64.2	.058	.06	3,820
The year	13,200	54	769	.693	9.42	558,000

NORTH FORK OF WHITE RIVER AT TECUMSEH, MO.

LOCATION.—Chain gage in sec. 16, T. 22 N., R. 12 W., at bridge on State highway 80 at Tecumseh, half a mile below Bryant Creek.

DRAINAGE AREA.—1,180 square miles.

RECORDS AVAILABLE.—October 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 4,250 second-feet Jan. 17, 23 (gage height, 4.18 feet); minimum, 358 second-feet Sept. 12 (gage height, 0.84 foot).

1921-32: Maximum discharge, 53,000 second-feet June 13, 1928 (gage height, 24.00 feet); minimum discharge, that of Sept. 12, 1932.

Maximum stage known, 31.6 feet in July 1905.

REMARKS.—Records good.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	434	384	690	648	1,120	735	735	605	564	605	490	457
2	434	377	605	648	1,070	735	735	605	690	564	490	465
3	434	377	564	605	1,070	735	735	605	648	564	482	434
4	434	391	564	605	970	735	735	605	648	522	457	420
5	427	377	564	1,170	920	735	690	605	605	564	441	427
6	420	377	506	1,630	920	735	690	564	564	920	441	413
7	420	377	498	1,340	870	735	735	605	564	690	434	398
8	420	384	482	1,120	870	690	825	605	564	920	427	398
9	420	377	514	970	825	690	970	605	564	1,020	449	398
10	413	391	522	870	825	648	970	564	564	870	441	391
11	420	406	522	825	825	648	970	564	605	735	427	377
12	420	391	735	790	870	648	870	564	522	648	427	364
13	449	406	735	735	825	648	825	522	514	648	413	370
14	564	391	690	690	825	648	825	522	648	605	498	391
15	498	398	648	648	825	648	780	522	605	564	434	449
16	457	391	648	780	870	648	780	514	605	564	441	420
17	441	449	605	4,100	970	1,450	780	498	564	564	427	398
18	434	449	605	2,510	970	1,630	735	506	522	522	457	398
19	420	449	564	1,750	920	1,340	735	498	605	522	420	384
20	420	498	522	1,510	870	1,170	735	490	522	506	413	398
21	420	522	522	1,280	870	1,170	690	490	564	498	413	406
22	420	522	522	2,930	870	1,070	690	482	564	498	406	391
23	427	482	514	4,100	825	970	690	482	564	522	413	377
24	427	490	506	3,070	780	920	690	473	920	564	406	377
25	420	490	473	2,380	780	920	690	465	648	564	398	384
26	420	490	465	2,120	780	870	648	490	564	522	420	398
27	434	482	465	1,870	735	825	648	605	605	648	427	406
28	420	482	449	1,630	735	825	605	564	648	605	413	398
29	434	605	465	1,510	735	825	605	522	605	564	457	391
30	406	735	564	1,390	825	825	648	514	605	522	434	384
31	406		605	1,220		780		498		498	413	

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acro-foot
October	564	406	433	0.367	0.42	26,600
November	735	377	445	.377	.42	26,500
December	735	449	559	.474	.55	34,400
January	4,100	605	1,530	1.30	1.50	94,100
February	1,120	735	874	.741	.80	50,300
March	1,630	648	860	.729	.84	52,900
April	970	605	749	.635	.71	44,600
May	605	465	540	.458	.53	33,200
June	690	514	599	.508	.57	35,600
July	1,020	498	617	.523	.60	37,900
August	498	398	436	.369	.43	26,800
September	465	364	402	.341	.38	23,900
The year	4,100	364	670	.568	7.75	487,000

NORTH FORK OF WHITE RIVER NEAR HENDERSON, ARK.

LOCATION.—Staff gage in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 26, T. 20 N., R. 12 W., 1 mile below Bennetts Bayou, 19 miles above mouth, and 1 mile southeast of Henderson.

DRAINAGE AREA.—1,640 square miles.

RECORDS AVAILABLE.—July 1909 to December 1910; October 1928 to September 1932.

EXTREMES.—Maximum discharge during year, 7,930 second-feet Jan. 23 (gage height, 6.72 feet); minimum, 380 second-feet Sept. 11–14, 21–30; minimum gage height, 1.34 feet Sept. 24–26, 29, 30.

1928–32: Maximum discharge, 39,800 second-feet Jan. 24, 1929 (gage height, 17.0 feet); minimum, that of September 1932.

Maximum stage known, 29.5 feet in August 1915.

REMARKS.—Records good.

Discharge, in second-feet, 1931–32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	460	432	890	810	1,590	890	890	730	620	1,370	620	432
2.....	460	432	730	810	1,370	850	890	730	850	890	620	490
3.....	460	432	692	810	1,270	935	850	692	810	770	585	490
4.....	460	432	655	810	1,220	1,020	810	692	770	730	552	460
5.....	460	432	655	3,180	1,170	980	810	692	730	730	520	432
6.....	432	432	620	2,620	1,120	935	770	692	730	935	490	405
7.....	432	432	585	2,090	1,120	980	810	730	730	890	490	405
8.....	432	432	585	1,830	1,020	935	1,020	770	692	850	460	405
9.....	460	432	585	1,480	1,020	890	1,220	770	692	1,370	460	405
10.....	460	432	585	1,370	980	850	1,170	730	692	1,070	692	405
11.....	460	460	620	1,220	935	850	1,220	730	692	850	585	380
12.....	460	460	730	1,070	935	850	1,170	692	692	810	520	380
13.....	520	460	935	980	890	810	1,120	655	692	770	490	380
14.....	552	460	850	890	935	770	1,070	655	810	730	460	380
15.....	552	460	810	810	935	770	980	620	810	692	460	432
16.....	520	460	730	890	2,080	770	935	620	730	655	460	432
17.....	490	460	692	4,680	2,090	1,170	980	620	692	655	460	405
18.....	460	552	692	3,910	1,590	2,480	935	620	692	620	460	405
19.....	460	552	655	2,620	1,480	1,830	890	585	655	585	432	405
20.....	432	655	655	1,960	1,370	1,590	890	585	692	585	432	405
21.....	432	620	655	1,710	1,370	1,480	890	585	692	552	405	380
22.....	432	585	620	4,160	1,220	1,370	850	585	655	520	405	380
23.....	460	552	620	7,480	1,170	1,270	850	585	692	520	405	380
24.....	460	552	620	5,060	1,070	1,170	810	585	692	585	405	380
25.....	460	552	585	3,610	1,020	1,070	810	585	1,370	585	405	380
26.....	460	552	585	3,040	980	1,020	810	585	935	552	405	380
27.....	432	552	552	2,620	935	1,070	770	730	810	1,480	405	380
28.....	432	520	552	2,350	935	1,020	770	692	850	770	405	380
29.....	432	730	552	2,220	890	980	730	692	810	730	520	380
30.....	432	770	655	1,960	-----	890	770	655	1,830	655	490	380
31.....	432	-----	770	1,710	-----	935	-----	620	-----	620	460	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October.....	552	432	461	0.281	0.32	28,300
November.....	770	432	509	.310	.35	30,300
December.....	935	552	668	.407	.47	41,100
January.....	7,480	810	2,280	1.390	1.60	140,000
February.....	2,080	890	1,200	.732	.79	69,000
March.....	2,480	770	1,080	.659	.76	66,400
April.....	1,220	730	916	.559	.62	54,500
May.....	770	585	662	.404	.47	40,700
June.....	1,830	620	794	.484	.54	47,200
July.....	1,480	520	778	.474	.55	47,800
August.....	692	405	488	.295	.34	29,700
September.....	490	380	404	.246	.27	24,000
The year.....	7,480	380	853	.520	7.08	619,000

BLACK RIVER AT LEEPER, MO.

LOCATION.—Chain gage in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 27, T. 28 N., R. 3 E., at Missouri Southern Railroad bridge at Leeper. Zero of gage is 425.22 feet above mean sea level.

DRAINAGE AREA.—957 square miles.

RECORDS AVAILABLE.—June 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 5,600 second-feet Jan. 23 (gage height, 6.46 feet); minimum, 178 second-feet July 22 (gage height, 1.35 feet). 1921-32: Maximum discharge, 37,000 second-feet Apr. 15, 1927 (gage height, 16.35 feet); minimum, that of July 22, 1932.

Maximum stage known, about 24.7 feet in March 1904.

REMARKS.—Records good. Discharge estimated Jan. 6-8.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	190	233	475	1,720	925	420	505	326	288	270	211	249
2	190	225	475	1,000	855	420	475	326	283	261	200	249
3	190	222	535	1,900	790	420	448	321	274	237	200	283
4	190	211	565	1,720	758	448	420	306	283	237	218	301
5	190	211	475	1,540	660	448	392	306	261	237	200	296
6	187	211	475	1,600	660	448	420	321	253	261	200	296
7	187	208	475	1,600	595	420	420	316	249	245	200	229
8	194	208	448	1,200	565	420	475	326	249	283	204	229
9	204	208	420	995	535	420	475	321	265	225	214	229
10	204	211	392	925	505	392	448	310	249	222	225	218
11	200	283	448	855	505	392	448	306	237	214	211	214
12	200	274	392	790	475	365	448	301	233	204	233	214
13	200	265	420	790	475	365	392	292	225	190	301	206
14	241	261	288	725	448	354	392	274	229	190	270	208
15	241	249	278	692	448	343	392	270	229	190	261	208
16	237	245	420	725	448	343	392	274	265	190	420	206
17	237	283	420	1,380	505	725	392	265	253	190	660	204
18	233	306	535	3,120	475	692	392	265	237	181	995	204
19	233	295	535	2,100	505	1,070	420	253	233	181	890	204
20	233	505	392	1,720	475	995	392	249	229	181	660	204
21	225	890	420	1,380	475	925	392	249	229	181	595	208
22	222	855	475	1,380	505	855	392	249	222	178	420	197
23	214	692	475	5,000	475	790	392	245	222	200	365	197
24	218	628	448	3,260	475	725	392	245	211	214	321	197
25	214	595	420	2,400	475	660	392	241	218	218	245	194
26	214	565	420	1,900	448	595	392	241	211	237	306	200
27	214	565	420	1,720	448	595	365	253	265	241	301	194
28	241	535	420	1,460	420	565	365	249	257	225	420	194
29	237	505	392	1,300	420	535	354	257	265	222	595	194
30	237	475	448	1,140	-----	505	338	265	283	214	448	190
31	233	-----	1,300	995	-----	505	-----	261	-----	211	301	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	241	187	215	0.225	0.26	13,200
November	890	208	381	.398	.44	22,700
December	1,300	278	468	.439	.56	28,800
January	5,000	692	1,610	1.08	1.94	99,000
February	925	420	543	.567	.61	31,200
March	1,070	343	553	.578	.67	34,000
April	505	338	410	.428	.48	24,400
May	326	241	280	.293	.34	17,200
June	288	211	247	.258	.29	14,700
July	283	178	217	.227	.26	13,800
August	995	200	364	.380	.44	22,400
September	301	190	221	.231	.26	13,200
The year	5,000	178	460	.481	6.55	334,000

CURRENT RIVER NEAR EMINENCE, MO.

LOCATION.—Staff gage in SE¼NW¼ sec. 15, T. 29 N., R. 3 W., 1 mile below Jacks Fork and 8 miles northeast of Eminence. Zero of gage is about 568.9 feet above mean sea level.

DRAINAGE AREA.—1,230 square miles.

RECORDS AVAILABLE.—August 1921 to September 1932.

EXTREMES.—1927-32.: Maximum discharge, 59,400 second-feet June 9, 1928 (gage height, 24.3 feet); minimum discharge, 415 second-feet Sept. 12-14, minimum gage height, 0.78 foot Sept. 13, 14, 1932.

1921-32: Maximum discharge, that of June 9, 1928; minimum, 415 second-feet Aug. 28 to Sept. 13, 1925, Sept. 12-14, 1932.

REMARKS.—Records good.

Discharge, in second-feet, 1926-31

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1926-27												
1.....	1,640	1,890	1,160	1,050	3,810	1,080	25,000	3,490	17,000	1,740	1,170	1,260
2.....	1,080	1,640	1,080	1,080	3,650	1,050	9,600	2,850	37,400	1,640	1,170	1,260
3.....	1,010	1,480	1,080	1,080	3,490	1,010	5,850	2,750	19,200	1,540	1,440	1,260
4.....	972	1,160	1,080	1,010	2,850	1,050	4,800	2,850	8,000	1,540	1,440	1,640
5.....	1,160	1,050	972	972	2,650	1,050	4,290	3,650	6,020	1,440	1,440	1,540
6.....	1,080	935	935	972	2,650	1,060	3,330	12,100	5,660	1,440	1,350	1,350
7.....	1,080	860	860	935	2,250	1,080	4,130	7,820	5,120	1,350	1,350	1,540
8.....	1,010	785	898	860	2,070	1,160	9,600	6,200	4,580	1,350	3,580	1,350
9.....	972	785	935	841	1,890	1,240	6,920	4,620	4,060	1,350	5,300	1,260
10.....	860	750	898	822	1,800	1,240	7,460	8,400	3,740	1,350	3,260	1,170
11.....	860	685	1,010	785	1,640	1,890	7,640	4,980	3,260	1,260	2,820	1,170
12.....	860	655	1,050	750	1,560	2,160	6,560	4,450	2,960	1,260	1,840	1,090
13.....	715	655	1,010	1,080	1,560	2,650	9,600	2,850	2,820	1,350	1,840	1,090
14.....	655	1,010	935	1,890	1,720	2,250	23,400	2,750	3,420	1,440	9,200	1,090
15.....	655	8,200	860	2,350	1,720	1,980	30,700	2,700	2,960	1,350	9,800	1,010
16.....	605	4,405	785	1,640	1,720	1,720	15,900	2,650	2,580	1,260	3,740	1,010
17.....	605	2,850	785	1,640	1,640	1,640	9,200	2,450	3,420	1,260	4,760	1,010
18.....	605	2,650	750	1,890	1,640	3,170	10,000	2,250	2,960	1,170	11,000	1,010
19.....	582	2,450	750	4,290	1,560	6,380	19,400	3,170	2,820	1,170	3,900	1,010
20.....	605	1,980	750	2,850	1,480	4,800	14,000	2,750	2,820	1,350	2,820	1,010
21.....	582	1,890	860	2,650	1,480	5,500	9,600	2,450	6,200	1,260	2,360	1,010
22.....	560	1,720	935	3,970	1,400	4,290	6,560	2,250	5,480	1,260	2,140	940
23.....	560	1,640	1,080	4,130	1,320	3,490	4,980	3,170	5,300	1,260	1,940	940
24.....	560	1,640	1,160	2,850	1,240	2,850	4,800	2,850	2,960	1,170	1,840	940
25.....	560	1,560	1,240	3,650	1,240	2,650	4,800	19,500	2,580	1,170	1,640	940
26.....	540	1,480	1,240	4,130	1,160	2,250	4,130	8,000	2,360	1,170	1,540	1,010
27.....	540	1,480	1,080	4,130	1,160	2,020	3,650	5,850	2,140	1,170	1,540	1,010
28.....	540	1,320	1,080	3,650	1,080	1,800	2,850	4,450	2,040	1,090	1,440	1,010
29.....	3,170	1,320	1,080	3,490	2,070	3,650	4,130	1,840	1,170	1,350	1,350	1,350
30.....	3,330	1,240	1,010	4,290	2,160	3,490	3,970	1,740	1,260	1,350	1,350	1,350
31.....	2,650	1,010	1,010	4,130	11,700	3,650	3,650	1,260	1,260	1,350	1,350	1,350

• Estimated.

Discharge, in second-feet, of Current River near Eminence, Mo., 1926-31—Contd.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1927-28												
1	1,270	950	2,270	1,630	1,450	1,540	1,540	2,660	1,270	4,280	1,450	1,190
2	1,810	950	2,080	1,450	1,450	1,540	1,450	2,460	1,360	3,590	1,540	1,110
3	1,810	990	1,900	1,360	1,360	1,540	1,360	2,270	1,360	3,210	1,360	1,110
4	1,720	990	1,720	1,360	1,360	1,540	1,450	2,180	2,360	2,980	1,360	1,110
5	1,540	990	1,630	1,360	1,450	1,540	1,540	2,080	2,460	2,760	1,630	1,030
6	1,540	950	1,540	1,360	1,450	1,450	8,900	1,900	2,270	2,560	1,450	1,030
7	1,540	990	1,630	1,360	1,720	1,450	7,460	1,900	2,080	2,460	1,360	1,030
8	1,450	3,090	1,630	1,360	2,080	1,450	4,850	1,810	2,760	2,360	1,270	1,030
9	1,270	4,000	1,630	1,270	1,900	1,450	3,720	1,720	44,600	2,360	1,270	1,030
10	1,270	2,560	1,630	1,270	1,810	1,450	3,210	1,720	13,800	2,180	1,450	1,030
11	1,270	2,180	1,630	1,270	1,810	1,450	2,980	1,630	6,420	2,080	1,360	1,030
12	1,360	1,990	1,630	1,270	1,630	1,450	2,660	1,630	44,000	2,080	1,270	1,030
13	1,540	1,810	10,100	1,190	1,810	1,450	2,640	1,630	46,100	1,990	1,190	990
14	1,450	1,810	28,000	1,190	2,460	1,450	2,270	1,450	9,500	1,900	1,190	990
15	1,270	2,270	7,280	1,190	3,090	1,540	2,080	1,450	6,250	1,900	1,190	1,030
16	1,270	3,460	5,930	1,190	2,660	1,810	1,990	1,540	5,450	1,810	1,190	1,030
17	1,190	2,870	4,140	1,190	2,360	2,460	1,810	1,540	5,150	1,810	1,190	990
18	1,110	2,360	3,460	1,360	2,180	2,560	1,810	1,450	8,360	1,720	1,270	950
19	1,110	1,990	2,980	2,180	1,990	2,760	1,720	1,450	6,420	1,720	1,270	950
20	1,030	1,810	2,360	4,000	1,810	2,660	1,900	1,450	5,510	1,720	1,190	950
21	1,030	1,720	2,270	2,980	1,720	2,460	9,500	1,450	12,700	1,630	1,190	950
22	1,030	1,630	2,180	2,560	1,720	2,270	8,720	1,450	9,100	1,630	1,190	950
23	1,030	1,540	1,990	2,270	1,810	2,180	9,100	1,720	9,100	1,630	1,190	915
24	990	1,450	1,900	2,180	1,810	2,080	4,000	1,630	6,590	1,540	2,360	915
25	990	1,360	1,810	2,080	1,720	1,990	3,720	1,540	5,150	1,540	1,900	915
26	950	1,270	1,720	1,900	1,630	2,180	3,860	1,450	4,420	1,450	1,720	915
27	950	1,270	1,630	1,810	1,540	1,990	3,720	1,360	3,860	1,450	1,540	915
28	950	1,270	1,900	1,720	1,540	1,810	3,460	1,270	3,330	1,450	1,360	915
29	950	1,190	1,810	1,630	1,540	1,810	3,090	1,270	5,930	1,450	1,270	915
30	950	1,190	1,810	1,630	1,540	1,810	2,870	1,190	4,420	1,360	1,190	915
31	950	-----	1,720	1,540	-----	1,540	-----	1,190	-----	1,360	1,190	-----
1928-29												
1	880	880	2,080	990	1,630	2,560	1,360	1,450	2,080	1,360	990	810
2	880	1,030	1,630	950	1,540	2,180	1,270	2,270	2,080	1,360	950	810
3	1,030	915	1,450	950	1,450	1,990	1,270	2,660	1,990	1,270	950	810
4	950	950	1,540	950	1,360	1,810	1,270	2,460	1,900	1,230	915	810
5	950	915	1,540	1,190	1,360	1,720	1,270	2,270	1,810	1,190	915	880
6	915	915	1,450	1,270	1,270	1,630	1,190	6,590	1,810	1,270	880	880
7	915	880	1,360	1,270	1,270	1,540	1,190	10,900	1,720	1,270	990	880
8	915	880	1,270	1,270	1,190	1,450	1,450	7,460	1,810	1,270	990	845
9	880	880	1,190	1,270	1,190	1,360	8,540	9,300	1,720	1,190	1,540	810
10	880	880	1,110	1,270	1,110	1,270	8,540	5,000	1,630	1,190	1,720	810
11	880	845	1,110	1,270	1,110	1,190	6,250	4,140	1,540	1,630	2,360	810
12	880	845	1,030	1,270	1,030	1,190	4,280	6,420	1,540	1,360	2,080	810
13	880	845	1,270	1,190	1,030	1,270	3,720	21,200	12,700	1,270	1,810	1,110
14	880	880	1,630	1,190	1,030	1,270	3,460	14,700	5,770	1,190	1,540	1,010
15	880	915	1,540	1,110	990	1,450	8,540	8,540	5,300	1,720	1,360	915
16	915	990	1,720	1,110	1,030	3,860	6,000	6,250	3,590	1,540	1,190	880
17	1,190	1,110	2,080	1,110	1,030	3,090	4,000	5,300	2,980	1,450	1,110	845
18	1,030	1,190	1,900	1,190	1,030	2,660	3,590	4,590	2,560	1,360	1,110	810
19	950	1,270	1,900	1,360	1,030	2,360	2,980	4,420	2,270	1,270	1,030	810
20	915	1,110	1,900	1,450	1,030	2,180	2,760	4,000	1,990	1,190	1,030	810
21	915	1,030	1,630	1,360	1,030	1,990	2,560	3,460	1,900	1,110	990	810
22	915	990	1,450	1,360	1,030	1,810	2,360	3,090	1,810	1,030	950	810
23	880	950	1,360	1,360	1,030	1,720	2,080	3,460	1,720	1,030	950	810
24	880	915	1,270	7,640	1,030	1,630	1,990	2,660	1,630	1,030	950	775
25	880	880	1,270	13,600	1,110	1,540	1,900	2,560	1,630	1,030	950	775
26	880	880	1,190	5,150	7,640	1,450	1,810	2,460	1,540	990	915	775
27	880	880	1,110	3,460	3,860	1,360	1,720	2,360	1,450	950	880	775
28	880	880	1,110	2,760	2,980	1,270	1,630	2,360	1,450	950	880	740
29	880	2,180	1,110	2,270	-----	1,360	1,540	2,180	1,360	950	845	740
30	880	3,210	1,030	1,990	-----	1,270	1,540	2,080	1,360	990	845	740
31	880	-----	1,030	1,810	-----	1,270	-----	2,060	-----	1,030	810	-----

• Estimated.

Discharge, in second-feet, of Current River near Eminence, Mo., 1926-31—Contd.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1926-30												
1.....	775	5,930	775	990	1,400	2,790	1,240	935	822	630	560	560
2.....	740	2,980	740	1,270	1,400	2,430	1,160	898	785	630	560	560
3.....	740	2,460	740	1,540	1,400	2,250	1,240	860	785	630	560	540
4.....	845	1,810	710	1,450	2,700	2,160	1,240	898	785	630	560	540
5.....	810	1,630	740	1,270	4,280	1,980	1,160	898	750	605	560	540
6.....	775	1,540	740	1,270	3,090	1,980	1,160	860	750	605	560	560
7.....	775	1,450	775	1,360	2,790	2,160	1,160	935	750	605	560	560
8.....	775	1,270	775	1,450	2,340	2,520	1,080	898	750	655	560	630
9.....	775	1,190	775	1,720	2,160	2,890	1,080	898	750	630	560	605
10.....	740	1,190	740	1,630	1,980	2,610	1,080	935	715	630	560	605
11.....	845	1,110	740	1,540	1,890	2,430	1,080	1,640	715	630	540	605
12.....	1,360	1,110	740	1,810	1,800	2,250	1,010	1,640	785	605	540	655
13.....	1,630	1,110	775	8,900	1,720	2,070	1,010	1,480	750	605	750	655
14.....	1,360	1,030	775	13,600	1,720	1,980	1,010	1,320	715	605	715	822
15.....	1,190	990	915	8,360	1,560	1,800	1,010	1,240	715	605	715	1,980
16.....	990	990	950	4,700	1,560	1,720	1,080	1,160	715	605	715	2,250
17.....	880	950	1,630	3,720	1,430	1,640	1,010	1,240	715	605	630	1,640
18.....	915	915	1,600	3,190	1,480	1,720	1,010	1,400	715	605	605	1,360
19.....	880	915	2,560	2,790	1,480	1,640	1,010	1,560	715	605	605	1,080
20.....	880	880	2,080	2,520	1,400	1,560	972	1,400	685	582	582	935
21.....	845	845	1,720	2,340	1,400	1,480	972	1,240	685	582	582	890
22.....	845	845	1,540	2,070	1,480	1,400	972	1,160	655	630	560	785
23.....	845	845	1,360	1,800	1,890	1,400	935	1,160	655	630	560	750
24.....	810	810	1,270	1,720	2,430	1,480	935	1,080	655	630	540	715
25.....	810	810	1,190	1,720	4,560	1,400	935	1,010	655	685	540	685
26.....	775	810	1,190	1,640	6,590	1,400	935	972	642	655	540	655
27.....	775	810	1,110	1,640	4,500	1,320	898	935	630	630	540	655
28.....	810	775	1,110	1,480	3,190	1,240	898	935	655	605	540	630
29.....	880	775	1,030	1,480	-----	1,240	898	935	630	582	540	630
30.....	845	775	990	1,480	-----	1,240	972	860	655	582	520	605
31.....	3,090	-----	990	1,400	-----	1,240	-----	822	-----	582	560	-----
1930-31												
1.....	605	630	1,720	582	605	1,080	1,890	1,980	898	630	540	560
2.....	582	630	1,480	582	605	1,010	1,800	1,720	860	630	540	935
3.....	582	630	1,240	582	605	1,010	1,720	1,680	822	630	560	935
4.....	582	605	1,080	582	605	972	1,600	1,600	822	655	540	715
5.....	560	605	1,080	582	582	935	1,400	1,600	785	655	605	685
6.....	582	582	1,980	582	605	972	1,320	1,680	785	630	785	605
7.....	4,560	582	1,800	582	605	4,280	1,240	1,880	822	630	1,240	582
8.....	3,090	582	1,400	605	822	6,260	1,240	1,800	785	605	935	560
9.....	2,070	560	1,240	582	3,190	3,860	1,160	1,680	822	605	715	560
10.....	1,400	560	1,160	582	2,790	2,990	1,640	1,640	750	605	655	560
11.....	1,080	582	1,080	605	2,160	2,520	1,480	1,480	750	605	605	540
12.....	1,010	582	972	655	1,800	2,430	1,320	1,480	1,010	582	582	560
13.....	935	582	972	685	2,160	2,070	1,320	1,400	1,160	582	560	540
14.....	860	582	972	685	3,090	1,800	1,240	1,320	1,560	582	560	540
15.....	822	582	898	655	2,340	1,720	1,240	1,240	1,160	560	540	540
16.....	860	630	785	630	2,070	1,560	1,240	1,160	1,160	560	540	520
17.....	822	935	750	655	2,160	1,480	1,160	1,160	1,080	560	540	520
18.....	750	785	750	655	2,070	1,400	1,160	1,080	972	560	655	520
19.....	750	715	715	655	2,070	1,320	1,160	1,080	898	560	715	520
20.....	685	715	685	655	1,800	1,240	1,160	1,010	860	560	685	500
21.....	655	1,320	685	655	1,640	1,480	1,400	1,010	785	582	750	500
22.....	715	1,080	655	630	1,480	2,160	1,560	1,010	750	605	655	500
23.....	785	860	655	630	1,400	2,430	1,480	972	750	605	630	530
24.....	1,000	822	630	630	1,400	2,430	1,400	972	750	605	560	520
25.....	1,010	750	630	605	1,320	1,980	1,400	1,080	715	582	560	520
26.....	935	715	630	630	1,240	1,890	2,890	1,080	685	560	500	520
27.....	822	685	630	630	1,160	1,980	3,310	1,010	685	560	560	520
28.....	822	655	630	630	1,160	2,250	2,430	972	655	560	620	520
29.....	750	685	605	605	-----	2,420	2,340	972	655	540	605	500
30.....	685	898	605	605	-----	2,160	2,250	972	630	540	605	500
31.....	655	-----	582	605	-----	2,070	-----	935	-----	540	582	-----

• Estimated.

Discharge, in second-feet, of Current River near Eminence, Mo., 1926-31—Contd.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931-32												
1.....	480	480	860	2,340	1,400	750	785	605	630	520	500	480
2.....	480	480	822	1,800	1,320	715	785	605	560	520	500	480
3.....	480	480	750	1,560	1,240	785	750	605	* 622	500	540	462
4.....	480	480	715	*1,560	1,240	822	715	605	685	520	500	462
5.....	480	480	685	1,560	1,160	785	715	605	750	520	480	462
6.....	462	* 480	630	2,430	1,080	785	715	605	655	540	480	462
7.....	462	480	630	2,160	1,010	750	715	605	605	540	462	445
8.....	500	480	630	1,800	1,010	750	785	630	582	540	462	445
9.....	500	480	630	1,560	972	715	860	605	560	520	462	445
10.....	480	540	605	1,320	935	685	972	582	560	520	462	445
11.....	480	500	715	1,180	972	655	935	582	540	500	445	430
12.....	500	560	1,080	1,080	972	655	860	560	540	500	445	415
13.....	582	560	1,080	1,080	935	655	785	560	520	* 490	480	415
14.....	560	540	1,010	972	935	655	750	580	520	480	480	415
15.....	540	520	898	972	898	655	715	560	* 540	480	* 600	430
16.....	520	500	822	1,160	898	655	715	560	560	462	935	445
17.....	500	500	785	4,560	972	1,240	715	540	520	462	750	445
18.....	500	582	715	3,310	972	2,070	715	540	520	462	582	430
19.....	500	560	685	2,520	972	1,890	715	540	540	462	560	430
20.....	480	860	655	2,070	972	1,640	685	540	520	462	540	445
21.....	480	1,010	655	1,890	935	1,480	685	540	520	462	480	445
22.....	480	860	655	4,280	898	1,400	655	540	520	462	462	445
23.....	480	715	630	4,860	898	1,240	655	540	520	* 522	462	445
24.....	480	685	605	3,720	822	1,160	655	540	520	582	445	430
25.....	480	655	582	2,990	785	1,080	630	540	520	560	445	430
26.....	480	605	582	2,610	785	1,010	630	540	520	520	445	445
27.....	480	630	560	2,340	750	1,010	605	560	560	520	655	445
28.....	500	605	560	2,160	750	935	605	560	582	500	560	445
29.....	500	685	560	1,980	750	860	605	540	560	500	520	* 445
30.....	500	860	898	1,720	-----	860	605	520	560	540	480	445
31.....	480	-----	1,640	1,560	-----	822	-----	520	-----	520	480	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
1926-27						
October.....	3,330	540	1,010	0.821	0.95	62,100
November.....	8,200	655	1,740	1.41	1.57	104,000
December.....	1,240	750	979	.796	.92	60,200
January.....	4,290	750	2,250	1.83	2.11	138,000
February.....	3,810	1,080	1,910	1.55	1.61	106,000
March.....	11,700	1,010	2,590	2.11	2.43	158,000
April.....	30,700	2,850	9,190	7.47	8.33	547,000
May.....	19,500	2,250	4,710	3.83	4.42	290,000
June.....	37,400	1,740	5,750	4.70	5.24	344,000
July.....	1,740	1,090	1,320	1.07	1.23	81,200
August.....	11,000	1,170	2,960	2.41	2.78	182,000
September.....	1,640	940	1,150	.935	1.04	68,400
The year.....	37,400	540	2,960	2.41	32.63	2,140,000
1927-28						
October.....	1,810	950	1,240	1.01	1.16	76,200
November.....	4,000	950	1,760	1.43	1.60	106,000
December.....	28,000	1,540	3,420	2.78	3.20	210,000
January.....	4,000	1,190	1,680	1.37	1.58	103,000
February.....	3,090	1,360	1,820	1.48	1.60	105,000
March.....	2,760	1,450	1,820	1.48	1.71	112,000
April.....	9,500	1,360	3,640	2.96	3.30	217,000
May.....	2,660	1,190	1,660	1.35	1.56	102,000
June.....	46,100	1,270	8,060	6.55	7.31	480,000
July.....	4,280	1,360	2,060	1.67	1.92	127,000
August.....	2,360	1,190	1,370	1.11	1.28	84,200
September.....	1,190	915	995	.809	.90	59,200
The year.....	46,100	915	2,450	1.99	27.12	1,780,000

* Estimated.

Discharge, in second-feet, of Current River near Eminence, Mo., 1926-31—Contd.

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
1928-29						
October.....	1,190	880	914	.743	.86	56,200
November.....	3,210	845	1,060	.862	.96	63,100
December.....	2,080	1,030	1,420	1.15	1.33	87,300
January.....	13,600	950	2,140	1.74	2.01	132,000
February.....	7,640	990	1,550	1.26	1.31	86,100
March.....	3,860	1,190	1,760	1.43	1.65	108,000
April.....	8,540	1,190	3,070	2.50	2.79	183,000
May.....	21,200	1,450	5,120	4.16	4.80	315,000
June.....	12,700	1,360	2,490	2.02	2.25	148,000
July.....	1,720	950	1,220	.992	1.14	75,000
August.....	2,360	810	1,140	.927	1.07	70,100
September.....	1,110	740	830	.675	.75	49,400
The year.....	21,200	740	1,900	1.54	20.92	1,370,000
1929-30						
October.....	3,090	740	968	.787	.91	59,500
November.....	5,930	775	1,320	1.07	1.19	78,600
December.....	2,560	710	1,090	.886	1.02	67,000
January.....	13,600	990	2,700	2.20	2.54	166,000
February.....	6,590	1,400	2,350	1.91	1.99	131,000
March.....	2,890	1,240	1,850	1.50	1.73	114,000
April.....	1,240	898	1,040	.846	.94	61,900
May.....	1,640	822	1,100	.894	1.03	67,600
June.....	822	630	713	.580	.65	42,400
July.....	685	582	616	.501	.58	37,900
August.....	750	520	581	.472	.54	35,700
September.....	2,250	540	822	.668	.75	48,900
The year.....	13,600	520	1,260	1.02	13.87	910,000
1930-31						
October.....	4,560	560	1,030	.837	.96	63,300
November.....	1,320	560	704	.572	.64	41,900
December.....	1,980	582	958	.779	.90	58,900
January.....	685	582	620	.504	.58	38,100
February.....	3,190	582	1,550	1.26	1.31	86,100
March.....	6,250	935	2,070	1.68	1.94	127,000
April.....	3,310	1,160	1,600	1.30	1.45	95,200
May.....	1,980	935	1,310	1.07	1.23	80,600
June.....	1,560	630	861	.700	.78	51,200
July.....	655	540	589	.479	.55	36,200
August.....	1,240	540	639	.520	.60	39,300
September.....	935	500	571	.464	.52	34,000
The year.....	6,250	500	1,040	.846	11.46	752,000
1931-32						
October.....	582	462	494	.402	.46	30,400
November.....	1,010	480	595	.484	.54	35,400
December.....	1,640	560	753	.612	.71	46,300
January.....	4,850	972	2,160	1.76	2.03	133,000
February.....	1,400	750	974	.792	.85	56,000
March.....	2,070	655	973	.791	.91	59,800
April.....	972	605	724	.589	.66	43,100
May.....	630	520	566	.460	.53	34,800
June.....	750	520	564	.459	.51	33,600
July.....	582	462	506	.411	.47	31,100
August.....	935	445	519	.422	.49	31,900
September.....	480	415	444	.361	.40	26,400
The year.....	4,850	415	774	.629	8.56	562,000

CURRENT RIVER AT VAN BUREN, MO.

LOCATION.—Chain gage in NE¼NW¼ sec. 25, T. 27 N., R. 1 W., at bridge on State highway 60 in Van Buren. Zero of gage is 445.79 feet above mean sea level.

DRAINAGE AREA.—1,640 square miles.

RECORDS AVAILABLE.—June 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 7,560 second-feet Jan. 23 (gage height, 5.76 feet); minimum discharge, 595 second-feet Sept. 10–12, 15–19, 23, 25–30; minimum gage height, 1.09 feet Sept. 29.

1921–32. Maximum discharge, 49,300 second-feet June 10, 1928 (gage height, 16.45 feet); minimum, 542 second-feet Sept. 6, 8, 9, 12, 1925.

Maximum stage known, 26.0 feet Mar. 26, 1904.

REMARKS.—Records good. Discharge estimated Aug. 22, 28.

Discharge, in second-feet, 1931–32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	675	675	1,120	3,220	1,910	1,080	1,170	865	825	742	742	680
2	640	675	1,170	2,770	1,780	1,120	1,120	865	825	710	710	680
3	675	675	1,030	2,180	1,780	1,220	1,120	825	878	742	710	710
4	640	675	905	1,780	1,660	1,270	1,030	865	878	742	710	680
5	640	675	905	1,910	1,430	1,170	1,030	865	915	808	710	622
6	640	675	865	2,470	1,430	1,120	1,030	865	915	808	650	650
7	675	675	865	3,070	1,380	1,120	988	865	840	808	680	622
8	640	675	825	2,470	1,320	1,170	1,120	865	840	808	650	622
9	640	675	825	1,910	1,220	1,030	1,170	905	808	775	650	622
10	675	710	825	1,780	1,220	1,030	1,270	905	808	710	650	595
11	675	710	865	1,540	1,270	1,080	1,270	865	808	680	650	595
12	675	710	905	1,640	1,220	1,030	1,220	905	808	742	650	595
13	640	710	1,220	1,430	1,270	1,080	1,170	825	775	710	680	622
14	640	710	1,170	1,320	1,270	1,030	1,120	785	775	710	680	622
15	640	710	1,120	1,270	1,220	1,030	1,080	785	808	680	595	595
16	675	710	1,030	1,270	1,270	988	1,030	865	775	650	775	595
17	640	710	1,030	3,070	1,320	1,660	1,080	785	775	680	958	622
18	675	785	988	5,280	1,270	2,180	1,120	785	742	680	878	595
19	640	785	905	4,000	1,320	2,320	1,080	785	742	650	808	595
20	675	905	1,080	2,920	1,270	2,180	1,030	785	742	622	775	650
21	675	1,270	905	2,620	1,270	1,910	1,030	748	710	622	680	622
22	675	1,220	905	3,680	1,220	1,780	988	748	680	622	665	622
23	640	945	865	7,320	1,270	1,780	988	748	680	680	650	595
24	675	905	865	5,720	1,220	1,660	945	748	680	742	650	622
25	675	865	825	4,320	1,220	1,430	945	748	710	742	650	595
26	640	825	785	3,680	1,080	1,380	988	785	742	742	650	595
27	640	825	710	3,220	1,120	1,380	945	748	742	742	680	595
28	675	825	748	2,770	1,080	1,320	905	785	775	680	711	595
29	675	905	825	2,620	1,030	1,320	865	825	840	742	742	595
30	675	988	1,030	2,320	-----	1,220	945	748	775	710	710	595
31	675	-----	1,910	2,180	-----	1,170	-----	748	-----	742	680	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	675	640	659	0.402	0.46	40,580
November	1,270	675	793	.484	.54	47,200
December	1,910	710	968	.590	.68	59,500
January	7,320	1,270	2,830	1.73	1.99	174,000
February	1,910	1,030	1,320	.805	.87	75,900
March	2,320	988	1,360	.829	.96	83,600
April	1,270	865	1,060	.646	.72	63,100
May	905	748	814	.496	.57	50,100
June	915	680	787	.480	.54	46,800
July	808	622	717	.437	.50	44,100
August	958	650	709	.432	.50	43,600
September	710	595	620	.378	.42	36,900
The year	7,320	595	1,050	.640	8.75	765,000

CURRENT RIVER AT DONIPHAN, MO.

LOCATION.—Chain gage in $N\frac{1}{2}$ sec. 27, T. 23 N., R. 2 E., at bridge on State highway 42, three quarters of a mile west of Doniphan. Zero of gage is 322.17 feet (revised) above mean Gulf level.

DRAINAGE AREA.—2,030 square miles.

RECORDS AVAILABLE.—June 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 8,300 second-feet Jan. 24 (gage height, 6.41 feet); minimum discharge, 930 second-feet Sept. 9, 11, 12, 14, 16-18, 23-25, 28-30; minimum gage height, 0.02 foot Sept. 24.

1921-32: Maximum discharge, 48,000 second-feet Apr. 15, 1927; minimum discharge and gage height, those of September 1932.

Maximum stage known, 25.8 feet (revised) during March 1904.

REMARKS.—Records good.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,050	1,050	1,580	3,720	3,050	1,820	1,820	1,420	1,190	1,120	1,120	1,050
2	1,050	1,050	1,660	4,200	2,830	1,740	1,820	1,420	1,260	1,050	1,120	990
3	1,050	1,050	1,580	3,380	2,720	1,820	1,740	1,420	1,260	1,050	1,050	1,050
4	1,050	1,050	1,600	2,940	2,500	1,820	1,740	1,420	1,260	1,050	1,120	1,050
5	1,050	1,050	1,420	3,600	2,400	1,820	1,660	1,340	1,190	1,120	1,120	990
6	1,050	1,050	1,420	3,270	2,300	1,740	1,660	1,340	1,340	1,120	1,050	990
7	1,050	1,050	1,340	3,960	2,200	1,740	1,740	1,340	1,260	1,190	1,120	990
8	1,120	1,050	1,340	3,600	2,200	1,740	2,000	1,420	1,260	1,120	990	990
9	1,050	1,050	1,340	3,160	2,100	1,740	2,000	1,340	1,190	1,190	990	990
10	1,120	1,050	1,260	2,720	2,000	1,740	2,000	1,340	1,190	1,050	990	990
11	1,050	1,120	1,340	2,500	2,000	1,660	2,100	1,260	1,120	1,050	990	990
12	1,050	1,120	1,420	2,300	2,000	1,580	1,910	1,260	1,120	1,050	990	990
13	1,050	1,120	1,660	2,300	1,910	1,580	1,910	1,260	1,120	1,050	1,050	990
14	1,120	1,120	1,740	2,100	1,910	1,580	1,820	1,260	1,120	1,050	1,050	990
15	1,190	1,190	1,660	2,100	1,910	1,580	1,740	1,260	1,120	1,050	1,120	990
16	1,120	1,120	1,580	2,500	3,050	1,580	1,740	1,190	1,120	1,050	1,260	990
17	1,120	1,120	1,580	5,040	2,940	2,100	1,740	1,190	1,120	990	1,260	990
18	1,050	1,190	1,600	5,660	2,500	2,940	1,740	1,190	1,120	990	1,420	990
19	1,050	1,190	1,420	5,660	2,500	3,490	1,740	1,190	1,120	990	1,340	990
20	1,050	1,580	1,420	4,440	2,300	3,380	1,660	1,190	1,120	990	1,190	990
21	1,050	1,580	1,420	3,960	2,300	3,050	1,660	1,190	1,120	990	1,120	990
22	1,050	1,740	1,420	3,600	2,200	2,830	1,580	1,190	1,120	990	1,050	990
23	1,050	1,580	1,340	6,360	2,200	2,610	1,580	1,190	1,120	1,050	990	990
24	1,050	1,420	1,340	7,920	2,100	2,500	1,580	1,190	1,120	1,120	990	990
25	1,050	1,340	1,260	6,640	2,000	2,300	1,580	1,190	1,120	1,120	990	990
26	1,050	1,340	1,260	5,560	1,910	2,200	1,500	1,190	1,050	1,120	990	990
27	1,050	1,340	1,190	4,800	1,910	2,200	1,500	1,190	1,120	1,120	1,050	990
28	1,050	1,260	1,190	4,320	1,820	2,100	1,420	1,190	1,120	1,050	1,050	990
29	1,050	1,340	1,190	3,840	1,820	2,000	1,500	1,120	1,120	1,120	1,190	990
30	1,050	1,500	2,200	3,600	2,000	1,500	1,120	1,120	1,120	1,120	1,050	990
31	1,050		2,940	3,270	1,910		1,120		1,120	1,120	1,050	

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	1,190	1,050	1,070	0.527	0.61	65,800
November	1,740	1,050	1,230	.606	.68	73,200
December	2,940	1,190	1,500	.739	.85	92,200
January	7,920	2,100	3,970	1.66	2.26	244,000
February	3,050	1,820	2,260	1.11	1.20	130,000
March	3,490	1,580	2,090	1.03	1.19	129,000
April	2,100	1,420	1,720	.847	.94	102,000
May	1,420	1,120	1,260	.621	.72	77,500
June	1,340	1,050	1,160	.571	.64	69,000
July	1,190	990	1,070	.527	.61	65,800
August	1,420	990	1,090	.537	.62	67,000
September	1,050	930	980	.483	.54	58,300
The year	7,920	930	1,620	.798	10.86	1,170,000

ROUND SPRING AT ROUND SPRING, MO.

LOCATION.—Staff gage in sec. 20, T. 30 N., R. 4 W., at Round Spring. Zero of gage is about 666.4 feet above mean sea level.

RECORDS AVAILABLE.—October 1928 to September 1932.

EXTREMES.—Maximum discharge during year (estimated), 150 second-feet during backwater from Current River Jan. 23; minimum, 13 second-feet Aug. 24, 31.

1928-32: Maximum discharge (estimated), 220 second-feet during backwater from Current River May 13, 1929; minimum, that of Aug. 24, 31, 1932.

REMARKS.—Records fair.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	*16	21	39	37	20	21	21	18	16	*16	14
2	16	17	20	37	34	20	23	*18	17	16	17	*14
3	16	17	20	34	34	20	*22	16	16	16	16	14
4	*16	17	20	26	33	21	21	16	16	16	16	*14
5	16	17	19	57	33	22	20	16	16	17	16	14
6	16	17	*19	66	32	*23	20	16	16	16	*16	14
7	17	17	19	59	*28	24	*20	21	16	18	17	*14
8	17	*18	19	34	25	24	*21	*19	17	17	17	14
9	17	18	18	34	24	23	*22	17	17	16	16	17
10	17	20	19	*30	22	22	22	16	16	16	16	14
11	16	*20	19	*26	21	21	21	15	16	16	15	14
12	17	*20	*19	22	21	20	21	15	16	16	16	14
13	17	*20	*18	21	20	19	21	15	16	16	16	14
14	17	*20	18	21	*20	19	20	15	18	16	*16	15
15	18	*20	18	24	20	18	19	*16	16	16	16	16
16	17	*20	19	39	20	17	18	16	*16	18	16	16
17	17	*19	18	101	20	20	18	15	16	*17	16	16
18	*17	*19	19	95	20	39	22	15	16	16	17	*16
19	17	*19	18	*72	21	50	20	15	*17	*16	16	15
20	16	*30	19	48	23	*48	18	15	18	16	16	15
21	16	*26	18	*40	25	45	18	*17	16	16	15	14
22	17	*23	18	*120	23	34	17	*20	*16	17	*14	14
23	17	19	18	*150	22	33	17	22	17	18	14	14
24	17	17	17	*130	21	32	*17	*20	16	*17	13	14
25	*17	18	18	122	20	28	17	17	16	16	14	15
26	17	20	18	95	20	27	17	16	16	17	14	16
27	17	23	17	72	20	*26	16	15	16	20	*14	15
28	17	22	17	61	*20	24	17	15	16	21	*14	14
29	17	22	19	53	20	23	16	*15	16	*19	14	15
30	17	21	34	43	-----	21	16	15	16	17	14	15
31	16	-----	43	*40	-----	20	-----	16	-----	16	13	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	18	16	16.7	1,030
November	30	16	19.7	1,170
December	43	17	19.9	1,220
January	150	21	58.4	3,500
February	37	20	24.1	1,390
March	50	17	25.9	1,590
April	23	16	19.3	1,150
May	22	15	16.6	1,020
June	19	16	16.5	982
July	21	16	16.8	1,030
August	17	13	15.4	947
September	17	14	14.7	875
The year	150	13	22.0	16,000

* Estimated.

JACKS FORK AT EMINENCE, MO.

LOCATION.—Chain gage in W½ sec. 26, T. 29 N., R. 4 W., at bridge on State highway 19, at Eminence.

DRAINAGE AREA.—About 376 square miles.

RECORDS AVAILABLE.—October 1921 to September 1932.

EXTREMES.—1928-32: Maximum discharge, about 25,000 second-feet June 13, 1928 (gage height, 16.24 feet); minimum discharge, 91 second-feet Sept. 21, 1932; minimum gage height, 0.58 foot Oct. 31, Nov. 1, 1927.

1921-32: Maximum discharge, that of June 13, 1928; minimum, 86 second-feet Sept. 1, 6-11, 1925.

REMARKS.—Records for 1928, 1929, and 1932 good for discharges below 8,000 second-feet and poor for those above. Records for 1930 and 1931 fair.

Discharge, in second-feet, 1927-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1927-28												
1-----	338	204	338	605	605	580	655	710	350	1,260	370	287
2-----	320	234	338	605	580	580	655	678	350	1,260	357	276
3-----	484	234	338	605	580	555	655	655	350	1,180	345	256
4-----	780	234	320	605	580	630	655	605	482	1,090	332	235
5-----	554	234	320	630	630	630	630	580	770	845	345	256
6-----	462	234	302	630	678	630	5,920	555	655	765	338	266
7-----	395	234	302	622	770	605	5,580	506	530	728	338	266
8-----	419	507	338	613	830	605	1,280	506	530	690	332	256
9-----	376	1,730	357	605	710	630	1,120	506	8,040	690	326	235
10-----	357	900	357	605	678	630	900	482	4,110	650	502	266
11-----	320	675	357	605	655	630	900	482	1,930	615	502	276
12-----	320	507	357	580	655	630	770	482	1,450	615	465	256
13-----	395	554	5,070	580	655	630	710	460	18,200	615	444	250
14-----	376	507	10,300	580	900	630	710	415	5,340	578	423	256
15-----	338	602	3,650	580	1,200	770	655	438	3,080	615	395	256
16-----	320	900	2,030	555	970	900	605	460	2,420	578	332	245
17-----	283	900	1,360	555	970	970	605	460	2,050	578	321	256
18-----	283	727	1,120	530	900	1,220	580	438	3,360	540	357	245
19-----	266	602	970	830	830	970	555	415	2,810	540	357	245
20-----	266	507	900	2,250	830	900	580	415	2,050	540	345	256
21-----	266	462	830	1,120	710	830	2,130	415	4,540	502	332	245
22-----	266	462	770	1,040	710	770	3,370	415	3,360	502	321	250
23-----	250	419	770	1,040	678	770	2,130	415	3,640	465	465	245
24-----	250	419	710	900	655	770	1,630	392	2,290	458	502	225
25-----	250	376	710	830	630	710	1,280	392	2,050	458	540	225
26-----	234	357	710	770	630	678	1,040	370	1,940	451	540	230
27-----	234	338	770	710	605	678	970	350	1,530	444	465	216
28-----	234	338	710	678	605	655	970	350	1,260	444	423	216
29-----	218	320	678	655	580	655	900	350	1,630	395	345	225
30-----	218	338	655	655	-----	630	830	350	1,260	389	332	216
31-----	204	-----	630	605	-----	605	-----	350	-----	382	321	-----

Discharge, in second-feet, of Jacks Fork at Eminence, Mo., 1927-32—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1928-29												
1	225	276	395	256	578	382	357	357	578	364	266	230
2	225	225	332	235	465	357	345	540	540	351	256	230
3	276	225	332	235	451	423	332	845	502	326	235	220
4	235	207	395	245	423	615	321	690	465	326	235	212
5	235	207	465	287	423	615	310	540	458	315	216	261
6	225	216	465	332	395	540	310	1,260	444	364	216	230
7	216	225	465	502	382	409	310	1,530	444	315	235	240
8	216	225	437	395	370	382	345	1,730	502	304	382	230
9	216	216	395	409	357	357	2,680	4,060	465	293	690	230
10	212	207	332	395	298	332	3,500	1,830	430	304	578	220
11	207	216	321	502	310	345	2,550	1,260	416	293	805	212
12	198	207	310	437	298	3 ⁷	1,630	430	293	962	240	240
13	198	207	298	332	298	3 ⁴	1,180	5,020	6,520	282	615	230
14	207	207	540	357	287	395	1,040	4,860	2,290	271	465	338
15	207	225	540	332	293	465	2,940	3,640	3,080	282	395	271
16	216	245	615	332	298	2,170	2,050	2,170	1,630	351	357	250
17	276	276	690	321	276	1,180	1,350	1,630	1,180	370	332	260
18	256	276	1,090	310	298	1,090	1,090	1,440	925	345	298	220
19	216	266	925	395	310	728	925	1,260	805	298	298	250
20	207	266	765	423	321	615	805	1,180	690	287	266	261
21	216	256	540	465	310	578	728	1,000	615	276	276	250
22	225	266	540	423	321	540	650	925	578	266	256	260
23	225	235	465	395	310	860	540	845	502	266	256	202
24	207	256	395	690	298	1,180	540	765	502	245	245	202
25	207	235	382	5,980	345	1,090	540	728	502	295	266	202
26	216	230	332	2,050	1,260	728	465	728	437	245	271	202
27	225	225	321	1,260	502	615	409	690	416	245	261	202
28	225	250	310	1,040	430	332	409	690	402	235	250	194
29	216	409	304	860	345	382	382	650	389	235	240	194
30	216	437	287	690	357	357	357	615	364	298	240	194
31	207	276	615	615	332	332	578	578	321	230	230	---
1929-30												
1	198	2,810	216	298	409	1,180	326	245	245	160	141	124
2	189	1,180	207	370	395	925	345	240	240	162	142	134
3	189	845	198	578	409	805	382	230	240	148	143	127
4	225	615	189	540	962	728	382	235	245	144	144	114
5	189	540	189	437	2,550	728	389	240	235	140	134	108
6	207	502	189	430	1,530	650	382	245	245	140	134	137
7	198	437	207	437	1,180	690	370	245	207	140	127	140
8	189	409	216	465	962	1,260	351	245	216	148	127	180
9	189	370	216	615	845	962	332	235	216	148	127	164
10	189	370	207	615	765	845	315	266	212	148	127	172
11	235	345	207	540	690	805	304	615	220	140	134	180
12	298	345	212	615	615	690	304	1,000	218	137	134	245
13	345	332	216	2,680	615	615	287	690	230	140	140	250
14	370	310	225	5,820	578	578	298	615	225	134	148	310
15	298	310	310	4,220	540	540	304	578	220	134	134	370
16	266	298	437	1,830	465	540	310	465	220	140	230	1,040
17	256	287	615	1,350	458	502	298	437	207	140	189	1,090
18	235	276	1,180	1,260	444	502	282	540	198	134	180	395
19	225	276	845	925	423	465	266	962	198	134	156	266
20	225	266	728	805	402	465	271	962	176	134	156	287
21	216	245	615	728	395	465	266	805	172	134	148	245
22	216	235	540	615	409	423	261	540	176	140	140	220
23	198	235	465	502	540	395	266	502	176	140	127	172
24	207	235	430	540	962	423	261	458	172	148	121	156
25	189	235	382	540	885	409	286	409	172	148	127	172
26	180	245	370	540	4,540	395	260	382	172	148	108	148
27	180	235	345	502	2,050	382	245	345	160	148	108	156
28	189	235	321	437	1,440	364	250	326	160	144	114	148
29	225	225	310	465	345	345	245	298	160	140	108	144
30	216	216	315	423	332	332	250	282	164	134	108	138
31	805	---	310	409	---	321	---	261	---	140	114	---

* Estimated.

Discharge, in second-feet, of Jacks Fork at Eminence, Mo., 1927-32—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1.....	111	200	870	166	173	263	* 712	578	246	158	153	153
2.....	111	200	613	166	166	263	* 634	578	230	156	139	215
3.....	103	186	478	160	160	263	* 556	510	215	160	139	230
4.....	101	173	364	166	166	246	478	510	230	156	134	230
5.....	115	186	364	170	156	246	416	510	215	158	153	230
6.....	111	186	758	160	150	246	388	544	215	156	950	200
7.....	136	173	758	156	153	263	320	544	230	148	870	200
8.....	2, 740	173	544	160	200	2, 490	299	578	215	143	416	173
9.....	876	173	445	166	1, 570	1, 570	281	648	215	148	416	158
10.....	613	170	364	166	1, 270	1, 470	388	613	215	134	230	153
11.....	445	173	340	170	544	832	544	510	215	139	215	148
12.....	364	173	* 302	170	613	795	388	445	281	141	186	143
13.....	281	173	263	186	613	648	388	416	478	125	186	139
14.....	246	170	263	200	1, 570	578	340	340	388	121	168	148
15.....	281	173	230	166	870	544	340	320	388	121	158	143
16.....	281	186	215	173	1, 570	510	299	299	299	117	158	143
17.....	263	388	215	186	684	* 440	340	340	281	117	153	189
18.....	263	281	215	186	684	* 370	388	340	246	139	173	134
19.....	246	170	215	186	684	299	388	340	230	130	230	139
20.....	246	215	215	200	613	281	340	299	230	130	246	130
21.....	215	720	200	186	578	388	299	299	215	148	215	130
22.....	230	445	186	186	388	795	416	320	200	139	230	121
23.....	990	320	186	186	364	1, 190	416	299	200	134	186	121
24.....	416	281	186	170	364	870	445	263	186	153	163	130
25.....	445	246	186	173	320	758	445	263	173	139	158	139
26.....	364	246	173	186	299	684	832	246	173	134	153	139
27.....	281	215	166	170	281	648	1, 190	246	168	134	153	148
28.....	281	200	173	170	281	832	910	263	163	134	163	139
29.....	246	200	160	166	-----	910	648	263	148	134	186	139
30.....	246	263	166	170	-----	870	648	263	143	130	186	134
31.....	230	-----	160	168	-----	* 790	-----	263	-----	121	168	-----
1931-32												
1.....	139	125	340	870	445	215	246	173	163	123	125	115
2.....	139	134	263	648	416	200	215	170	141	117	123	115
3.....	130	130	230	478	388	215	215	168	141	119	109	115
4.....	130	130	230	364	364	230	215	163	200	119	100	109
5.....	130	121	215	478	320	263	200	163	230	127	98	107
6.....	134	117	215	1, 270	320	246	200	163	186	121	105	107
7.....	134	125	215	870	299	230	215	186	163	125	101	100
8.....	130	130	200	684	281	230	230	156	146	130	100	98
9.....	130	134	200	510	263	215	416	168	143	134	98	96
10.....	117	134	186	416	263	200	388	163	136	130	96	96
11.....	130	141	215	364	263	200	340	153	134	119	103	96
12.....	130	139	230	340	246	200	320	153	127	119	109	96
13.....	134	141	299	320	246	200	281	143	123	117	123	98
14.....	163	139	281	299	263	200	263	148	123	109	141	94
15.....	168	139	263	263	246	200	230	143	136	109	123	96
16.....	168	134	246	340	246	200	230	148	127	109	117	98
17.....	173	143	230	1, 790	263	364	246	146	123	105	168	100
18.....	163	153	215	2, 610	320	795	230	141	123	101	134	96
19.....	163	153	200	950	299	648	230	139	121	98	123	101
20.....	139	200	200	720	281	510	230	143	123	98	111	98
21.....	134	246	200	578	281	445	215	139	121	98	109	94
22.....	134	263	186	795	263	388	215	141	117	105	101	100
23.....	121	215	186	2, 370	263	340	215	136	121	117	103	98
24.....	136	200	186	1, 680	246	320	200	132	119	125	101	96
25.....	127	186	173	1, 190	230	299	200	139	123	130	101	98
26.....	130	186	168	950	230	299	200	139	123	121	109	101
27.....	117	186	163	795	230	281	200	141	141	115	107	103
28.....	117	186	163	684	230	263	186	132	134	113	134	100
29.....	115	230	163	648	215	246	186	132	123	123	132	98
30.....	117	263	230	544	-----	263	173	130	123	150	121	96
31.....	113	-----	340	478	-----	230	-----	127	-----	141	109	-----

* Estimated.

Discharge, in second-feet, of Jacks Fork at Eminence, Mo., 1927-32—Continued

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acro-feet
1927-28						
October.....	780	204	331	0.880	1.01	20,400
November.....	1,730	204	502	1.34	1.50	29,900
December.....	10,300	302	1,210	3.22	3.71	74,400
January.....	2,250	580	735	1.95	2.25	45,200
February.....	1,200	580	724	1.93	2.08	41,600
March.....	1,120	555	709	1.89	2.18	43,600
April.....	5,920	555	1,330	3.54	3.95	79,100
May.....	710	350	464	1.23	1.42	28,500
June.....	18,200	350	2,750	7.31	8.16	164,000
July.....	1,260	382	641	1.70	1.96	39,400
August.....	540	321	391	1.04	1.20	24,000
September.....	287	216	248	.660	.74	14,800
The year.....	18,200	204	832	2.21	30.16	605,000
1928-29						
October.....	276	198	221	.588	.68	13,600
November.....	437	207	247	.657	.73	14,700
December.....	1,090	276	460	1.22	1.41	28,300
January.....	5,980	235	694	1.85	2.13	42,700
February.....	1,260	276	390	1.04	1.08	21,700
March.....	2,170	332	615	1.64	1.89	37,800
April.....	3,500	310	980	2.61	2.91	58,300
May.....	5,020	357	1,480	3.94	4.54	91,000
June.....	6,520	364	917	2.44	2.72	54,600
July.....	370	235	297	.790	.91	18,300
August.....	962	216	351	.934	1.08	21,600
September.....	338	194	229	.609	.68	13,600
The year.....	6,520	194	575	1.53	20.76	416,000
1929-30						
October.....	805	180	243	.646	.74	14,900
November.....	2,810	216	449	1.19	1.33	26,700
December.....	1,180	189	368	.979	1.13	22,600
January.....	5,820	298	985	2.62	3.02	60,600
February.....	4,540	395	945	2.51	2.61	52,500
March.....	1,260	321	604	1.61	1.86	37,100
April.....	389	245	301	.801	.89	17,900
May.....	1,000	230	448	1.19	1.37	27,500
June.....	245	160	203	.540	.60	12,100
July.....	160	134	142	.378	.44	8,730
August.....	230	108	138	.367	.42	8,480
September.....	1,090	108	252	.670	.75	15,000
The year.....	5,820	108	420	1.12	15.16	304,000
1930-31						
October.....	2,740	101	383	1.02	1.18	23,600
November.....	720	170	235	.625	.70	14,000
December.....	870	160	322	.856	.99	19,800
January.....	200	166	174	.463	.53	10,700
February.....	1,570	150	553	1.47	1.53	30,700
March.....	2,490	246	689	1.83	2.11	42,400
April.....	1,190	281	486	1.29	1.44	28,900
May.....	648	246	395	1.05	1.21	24,300
June.....	478	143	234	.622	.69	13,900
July.....	160	117	139	.370	.43	8,550
August.....	950	134	240	.638	.74	14,800
September.....	230	121	156	.415	.46	9,280
The year.....	2,740	101	333	.886	12.01	241,000
1931-32						
October.....	173	113	136	.362	.42	8,360
November.....	263	117	164	.436	.49	9,760
December.....	340	163	220	.585	.67	13,500
January.....	2,610	263	816	2.17	2.50	50,200
February.....	445	215	283	.753	.81	16,300
March.....	795	200	295	.785	.90	18,100
April.....	416	173	238	.633	.71	14,200
May.....	186	127	149	.396	.46	9,160
June.....	230	117	138	.367	.41	8,210
July.....	150	98	118	.314	.36	7,260
August.....	168	96	114	.303	.35	7,010
September.....	115	94	100	.266	.30	5,950
The year.....	2,610	94	231	.614	8.38	168,000

ALLEY SPRING AT ALLEY, MO.

LOCATION.—Staff gage in sec. 25, T. 29 N., R. 5. W., at Alley, 400 feet below spring outlet. Zero of gage is 664.49 feet above mean sea level.

RECORDS AVAILABLE.—October 1928 to September 1932.

EXTREMES.—Maximum discharge during year, 396 second-feet Jan. 25 (gage height, 2.87 feet); minimum, 56 second-feet Dec. 27–29, Apr. 2–6.

1928–31: Maximum discharge, 633 second-feet May 14, 1929 (gage height, 3.32 feet); minimum, that of Dec. 27–29, 1931, Apr. 2–6, 1932.

REMARKS.—Records fair. Discharge during high stages includes some surface run-off from small valley above spring.

Discharge, in second-feet, 1931–32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	61	61	* 68	179	* 138	* 74	* 67	72	65	82	74	58
2.....	61	61	61	144	131	* 74	56	72	69	82	74	58
3.....	61	61	61	* 120	* 126	* 74	56	72	65	82	74	58
4.....	61	* 60	* 60	96	122	74	56	72	65	82	74	58
5.....	61	* 60	58	* 150	* 121	74	56	72	69	82	74	61
6.....	61	* 59	58	204	* 119	78	56	72	69	82	72	61
7.....	61	58	58	179	118	78	78	70	69	82	72	58
8.....	61	* 58	* 68	167	* 114	78	* 78	70	65	78	72	58
9.....	61	* 58	* 58	140	* 109	78	78	70	65	78	72	58
10.....	61	58	* 58	* 128	* 104	78	90	67	65	78	72	58
11.....	61	58	* 58	* 116	100	* 78	90	67	65	78	69	58
12.....	61	* 58	58	104	96	78	86	67	69	78	69	58
13.....	61	* 58	* 62	96	96	70	86	67	69	78	69	58
14.....	61	58	65	88	88	70	86	67	69	78	69	58
15.....	61	* 58	65	88	84	70	78	63	69	78	65	58
16.....	61	58	65	88	* 86	70	78	63	69	78	65	58
17.....	61	* 58	65	272	88	* 113	78	63	69	72	65	63
18.....	61	58	65	244	* 88	156	* 78	63	69	72	65	63
19.....	61	58	61	204	88	156	78	63	72	70	65	63
20.....	61	58	61	179	88	156	* 76	63	69	70	65	63
21.....	61	88	61	156	* 86	156	* 75	63	69	70	65	63
22.....	61	61	61	* 222	* 84	98	* 74	63	69	70	61	63
23.....	61	61	* 60	287	* 82	98	72	63	74	70	61	63
24.....	61	61	* 59	* 342	* 80	98	72	61	70	70	58	63
25.....	61	* 60	58	396	78	* 96	72	61	70	70	58	63
26.....	61	* 59	58	390	78	94	72	61	82	70	58	59
27.....	61	58	56	191	78	86	72	61	82	70	58	59
28.....	61	58	56	* 179	74	86	72	61	82	70	58	59
29.....	61	76	56	167	* 74	86	72	* 62	82	78	58	59
30.....	61	76	135	167	-----	86	72	* 63	82	78	58	59
31.....	61	-----	135	144	-----	78	-----	* 64	-----	74	58	-----
Month	Maximum					Minimum			Mean		Run-off in acre-feet	
October.....	61					61			61.0		3,750	
November.....	88					58			62.1		3,700	
December.....	135					56			65.1		4,000	
January.....	396					88			181		11,100	
February.....	138					74			97.2		5,590	
March.....	156					70			91.6		5,630	
April.....	90					56			73.7		4,390	
May.....	72					61			65.7		4,040	
June.....	82					65			70.6		4,200	
July.....	82					70			75.8		4,660	
August.....	74					58			66.0		4,060	
September.....	63					58			59.9		3,560	
The year.....	396					56			80.9		58,700	

* Estimated.

BIG SPRING NEAR VAN BUREN, MO.

LOCATION.—Staff gage in sec. 6, T. 26 N., R. 1 E., 600 feet above mouth of Spring Branch, 400 feet below spring outlet, and 4 miles southeast of Van Buren. Zero of gage is 431.26 feet above mean sea level.

RECORDS AVAILABLE.—January to June 1922; April 1923 to September 1931.

EXTREMES.—Maximum discharge during year, 661 second-feet Jan. 25; minimum, 272 second-feet Sept. 22, 23.

1922, 1923-32: Maximum discharge (estimated), 1,100 second-feet during backwater from Current River in June 1928; minimum, 268 second-feet Sept. 17-24, 1926.

REMARKS.—Records fair.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	332	• 320	354	468	522	381	381	• 339	304	294	290	283
2	332	320	354	536	511	377	377	337	301	290	286	279
3	332	320	346	• 512	• 500	377	• 374	337	301	290	286	279
4	• 330	320	341	489	• 489	381	372	337	301	290	286	279
5	328	320	337	478	• 478	381	368	337	301	290	286	279
6	328	320	• 334	574	• 467	• 379	368	320	301	290	286	279
7	328	320	332	519	• 456	377	• 372	320	301	290	279	279
8	328	• 320	332	539	• 444	372	377	• 320	301	290	279	279
9	328	320	332	522	• 433	368	386	320	301	290	279	276
10	328	320	328	• 490	• 422	363	400	320	297	290	279	276
11	• 328	320	332	458	• 411	363	395	316	297	286	279	276
12	328	320	332	438	400	354	386	316	297	286	279	276
13	328	316	• 339	423	395	• 354	381	312	297	286	279	276
14	• 332	316	346	409	• 392	354	372	312	294	286	279	276
15	• 332	• 316	• 344	400	390	354	372	• 312	294	286	290	276
16	332	316	341	400	386	354	363	312	297	285	304	276
17	328	316	337	• 468	396	529	• 363	312	297	286	308	276
18	• 328	316	332	536	453	588	363	312	• 296	286	324	276
19	328	316	332	516	443	638	363	312	294	286	308	276
20	328	332	• 332	514	433	• 587	359	312	294	286	301	276
21	328	346	332	529	• 426	543	354	312	294	286	294	276
22	328	• 341	332	460	418	505	354	312	294	286	290	272
23	328	337	328	532	404	484	354	312	294	286	290	272
24	324	332	324	• 596	400	458	• 352	312	294	286	286	274
25	• 322	328	324	661	• 395	443	350	312	290	286	283	274
26	320	328	324	578	390	433	350	312	290	290	283	274
27	• 320	328	• 322	574	386	• 423	346	308	294	286	283	274
28	• 320	328	320	624	• 384	413	346	308	297	286	283	274
29	• 320	• 339	320	631	381	404	346	304	294	286	283	274
30	• 320	350	332	617	-----	400	341	304	294	286	283	274
31	• 320	-----	484	• 569	-----	390	-----	304	-----	290	283	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	332	320	327	20, 100
November	350	316	325	19, 300
December	484	320	339	20, 800
January	661	400	518	31, 900
February	522	381	427	24, 000
March	638	354	423	26, 000
April	400	341	366	21, 800
May	339	304	317	19, 500
June	304	280	297	17, 700
July	324	285	288	17, 700
August	324	279	288	17, 700
September	283	272	276	16, 400
The year	661	272	349	254, 000

• Interpolated.

ELEVEN POINT RIVER NEAR BARDLEY, MO.

LOCATION.—Chain gage in NW¼ sec. 20, T. 23 N., R. 2 W., at bridge on State highway 42, 7 miles southwest of Bardley. Zero of gage is about 410.8 feet above mean sea level.

RECORDS AVAILABLE.—October 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 1,280 second-feet Jan. 23, 24 (gage height, 3.60 feet); minimum, 200 second-feet Sept. 23–25, 29, 30 (gage height, 1.77 feet).

1921–32: Maximum discharge, 27,800 second-feet Apr. 14, 1927 (gage height, 18.74 feet); minimum discharge, that of Sept. 23–25, 29, 30, 1932; minimum gage height, 1.06 feet Sept. 6–11, 1925.

Maximum stage known, 19.7 feet in August 1915.

REMARKS.—Records good.

Discharge, in second-feet, 1931–32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	282	265	345	740	775	535	505	370	322	282	265	232
2.....	282	265	322	635	740	535	475	370	322	282	265	232
3.....	282	265	322	565	740	505	475	370	322	282	248	232
4.....	282	265	322	505	705	505	445	370	370	282	248	232
5.....	282	265	300	670	670	505	445	370	345	300	248	232
6.....	282	248	300	845	670	505	445	345	322	322	232	232
7.....	282	248	282	775	635	505	445	370	300	345	232	216
8.....	282	248	282	670	600	475	505	370	300	322	232	216
9.....	282	248	282	635	600	475	535	370	300	300	248	216
10.....	282	248	282	600	565	445	535	370	300	282	232	216
11.....	282	265	282	565	565	445	535	370	300	282	248	216
12.....	265	265	300	535	565	445	505	345	300	265	232	216
13.....	282	265	300	535	535	445	505	345	300	265	232	216
14.....	300	265	300	505	535	445	475	345	300	265	282	216
15.....	282	265	300	505	505	445	475	345	300	265	248	216
16.....	282	265	300	535	635	445	445	345	300	265	248	216
17.....	282	265	300	880	1,060	740	475	345	300	265	322	216
18.....	282	265	300	880	915	810	445	322	282	248	300	216
19.....	282	265	282	810	845	845	445	322	282	248	265	216
20.....	282	345	282	740	775	810	445	322	282	248	248	216
21.....	282	322	282	740	740	775	420	322	282	248	248	216
22.....	265	300	265	775	705	740	420	322	282	248	232	216
23.....	265	282	265	1,200	670	670	420	322	282	300	232	216
24.....	265	282	265	1,280	635	635	420	322	282	265	232	200
25.....	265	282	265	1,200	600	600	420	322	282	265	232	200
26.....	265	282	265	1,130	600	600	420	322	300	265	265	216
27.....	265	282	265	1,060	565	565	395	322	282	265	248	216
28.....	265	265	265	987	565	535	395	322	282	265	248	216
29.....	265	300	265	915	535	535	395	322	282	265	248	216
30.....	265	345	395	880	880	535	395	300	282	282	232	200
31.....	265	-----	600	810	-----	505	-----	300	-----	265	232	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	300	265	277	17,009
November.....	345	248	275	16,409
December.....	600	265	303	18,600
January.....	1,280	505	778	47,800
February.....	1,060	505	664	38,200
March.....	845	445	566	34,800
April.....	535	395	455	27,100
May.....	370	300	341	21,000
June.....	370	282	300	17,900
July.....	345	248	276	17,600
August.....	322	232	249	15,300
September.....	232	200	218	13,000
The year.....	1,280	200	301	284,000

SURFACE WATER SUPPLY, 1932, PART 7

ELEVEN POINT RIVER NEAR ELEVEN POINT, ARK.

LOCATION.—Chain gage in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 30, T. 20 N., R. 1 W., 2 miles southwest of Eleven Point and 15 miles above mouth.

DRAINAGE AREA.—1,090 square miles.

RECORDS AVAILABLE.—November 1929 to September 1932.

EXTREMES.—Maximum discharge during year, 9,510 second-feet Jan. 17 (gage height, 11.65 feet); minimum, 290 second-feet Sept. 30 (gage height, 2.21 feet).

1929-32: Maximum discharge, 11,300 second-feet Jan. 14, 1930 (gage height, 13.01 feet); minimum, that of Sept. 30, 1932.

REMARKS.—Records fair.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	390	390	570	1,340	1,190	900	900	630	510	390	390	340
2	390	340	510	1,120	1,190	900	830	630	510	390	390	340
3	390	340	510	970	1,120	900	830	630	510	390	830	340
4	390	340	450	900	1,120	900	830	630	450	390	450	390
5	390	340	450	4,780	1,040	900	830	630	570	1,540	390	340
6	390	340	450	1,650	970	830	830	630	510	570	390	340
7	390	340	450	1,340	900	830	830	630	510	450	390	340
8	390	340	390	1,190	900	830	1,260	630	510	570	390	340
9	390	340	450	1,040	900	760	1,040	630	450	450	390	340
10	390	340	390	970	900	760	1,040	570	510	450	450	340
11	390	340	450	900	900	760	1,120	570	450	450	390	340
12	390	340	450	970	830	760	970	570	450	450	390	340
13	390	340	510	1,040	830	760	970	570	450	390	390	340
14	390	340	510	900	830	760	900	570	450	390	390	340
15	390	340	450	1,260	830	690	900	570	630	390	450	450
16	390	340	450	3,660	1,420	760	830	570	510	390	630	340
17	390	340	450	6,740	2,700	1,120	830	570	450	390	390	340
18	390	390	450	2,070	1,890	1,040	830	570	450	390	450	340
19	390	340	450	1,570	1,570	1,120	830	510	900	390	450	340
20	390	1,120	450	1,340	1,340	1,120	760	510	450	390	390	340
21	390	450	450	1,260	1,340	1,120	760	570	450	390	390	340
22	390	450	450	1,810	1,190	1,040	760	510	450	390	340	340
23	390	450	390	3,490	1,120	970	760	510	450	390	340	340
24	390	450	390	2,340	1,040	970	760	510	450	450	340	340
25	390	390	390	2,070	1,040	970	690	510	450	390	340	340
26	390	390	390	1,980	970	900	690	510	450	390	390	340
27	390	390	390	1,730	970	1,260	690	510	450	450	450	340
28	390	390	390	1,570	970	1,040	690	510	450	390	390	340
29	390	570	390	1,490	900	970	690	510	390	390	390	340
30	390	510	3,060	1,340	-----	970	690	510	390	570	390	290
31	390	-----	2,250	1,260	-----	900	-----	510	-----	450	390	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	390	390	390	24,000
November	1,120	340	404	24,000
December	3,060	390	586	36,000
January	6,740	900	1,810	111,000
February	2,700	830	1,130	65,000
March	1,260	690	920	56,600
April	1,260	690	845	50,300
May	630	510	564	34,700
June	900	390	487	29,000
July	1,540	390	460	28,300
August	830	340	417	25,600
September	450	290	344	20,500
The year	6,740	290	666	505,000

GREER SPRING AT GREER, MO.

LOCATION.—Staff gage in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 36, T. 25 N., R. 4 W., 500 feet below lower outlet of the spring and 1 mile north of Greer. Zero of gage is about 539.0 feet above mean sea level.

RECORDS AVAILABLE.—August to December 1904; November 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 518 second-feet Jan. 27 (gage height, 0.98 foot); minimum, 150 second-feet Sept. 29, 30.

1921–32: Maximum discharge, 903 second-feet May 26, 1927 (gage height, 1.43 feet); minimum discharge, that of Sept. 29, 30, 1932.

REMARKS.—Records fair. Gage read three times a week; discharge estimated for remaining days.

Discharge, in second-feet, 1931–32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	244	228	260	317	437	298	295	243	208	190	189	167
2.....	246	228	256	312	424	297	290	241	207	192	189	166
3.....	248	228	252	308	411	295	288	240	208	192	186	165
4.....	246	226	248	304	399	292	285	240	210	192	183	165
5.....	244	224	244	300	390	290	290	240	210	192	180	165
6.....	244	226	244	308	382	290	290	236	210	195	177	165
7.....	244	228	244	317	374	290	290	232	210	198	176	165
8.....	244	226	242	326	366	288	290	232	210	196	174	165
9.....	242	224	240	336	360	285	290	232	210	195	174	162
10.....	240	224	244	326	355	282	290	230	208	193	174	159
11.....	240	224	248	317	350	280	290	228	207	191	174	157
12.....	240	224	252	314	350	280	282	226	206	189	172	156
13.....	242	226	250	311	350	280	275	224	204	188	171	154
14.....	244	228	248	305	350	280	275	228	202	186	172	155
15.....	243	226	246	328	350	280	275	227	200	186	174	156
16.....	241	224	244	350	343	308	275	225	198	186	172	156
17.....	240	222	243	375	336	336	275	224	196	185	171	156
18.....	241	220	241	399	336	372	275	220	195	184	171	155
19.....	243	226	240	408	336	408	278	216	194	183	171	154
20.....	244	234	240	418	336	399	280	214	192	186	171	154
21.....	244	240	240	427	336	390	277	213	190	188	171	154
22.....	244	239	240	452	336	382	273	213	189	190	171	153
23.....	240	237	240	477	330	366	270	213	188	192	170	153
24.....	236	236	239	487	323	350	259	213	186	194	169	152
25.....	236	234	237	497	317	340	248	213	187	195	168	152
26.....	236	232	236	508	314	329	247	212	188	193	170	152
27.....	232	230	234	518	311	325	245	211	189	191	171	151
28.....	228	228	232	508	306	321	244	210	189	189	171	151
29.....	228	239	246	498	300	317	244	210	189	189	171	150
30.....	228	250	260	487	-----	308	244	210	189	189	170	150
31.....	228	-----	288	462	-----	300	-----	209	-----	189	168	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	248	228	240	14, 800
November.....	250	220	235	13, 600
December.....	288	232	260	15, 100
January.....	518	300	387	23, 800
February.....	437	300	352	20, 200
March.....	408	280	318	19, 600
April.....	295	244	274	15, 800
May.....	243	209	223	13, 700
June.....	210	186	199	11, 800
July.....	198	183	190	11, 700
August.....	189	168	174	10, 700
September.....	167	150	157	9, 340
The year.....	518	150	249	181, 000

LITTLE RED RIVER NEAR HEBER SPRINGS, ARK.

LOCATION.—Staff gage in NE¼ sec. 1, T. 10 N., R. 10 W., 4 miles northeast of Heber Springs.

DRAINAGE AREA.—1,160 square miles.

RECORDS AVAILABLE.—September 1927 to September 1932.

EXTREMES.—Maximum discharge during year, 47,400 second-feet Jan. 6 (gage height, 31.3 feet); minimum discharge, 1 second-foot several days in October and November; minimum gage height, 2.37 feet Nov. 16.

1927-32: Maximum discharge, 88,800 second-feet Apr. 6, 1928 (gage height, 42.35 feet); no flow Oct. 1-19, 22-30, 1929, Aug. 2-18, 1930.

REMARKS.—Records good. Gage-height record furnished by Arkansas Power & Light Co.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6	1	2,740	8,260	1,910	1,070	2,250	490	190	2,110	114	14
2	5	1	1,730	4,660	1,850	970	2,110	520	160	1,220	122	16
3	5	1	1,170	3,370	1,790	920	1,970	460	142	970	106	18
4	4	1	970	1,970	1,610	1,020	1,730	430	132	820	92	18
5	4	1	870	42,800	1,370	1,370	1,490	370	106	550	76	18
6	4	1	740	47,400	1,270	1,430	1,270	340	92	870	66	16
7	3	1	620	10,100	1,120	1,610	1,170	315	122	2,670	61	61
8	3	1	550	6,090	1,070	1,550	4,230	315	160	1,430	52	52
9	3	1	490	4,230	970	1,370	3,550	580	92	970	48	41
10	3	1	460	3,120	870	1,220	2,530	1,120	84	700	44	32
11	3	1	520	2,810	870	1,070	2,110	820	84	550	48	26
12	3	1	700	2,390	970	1,020	2,250	620	84	385	52	23
13	3	1	1,970	3,040	1,270	920	1,850	520	132	328	66	22
14	3	1	4,230	3,120	1,170	870	1,610	460	142	252	48	22
15	3	1	3,280	3,120	3,460	780	1,320	385	114	220	44	21
16	3	1	2,390	3,930	8,850	740	1,170	328	1,170	200	44	25
17	3	1	1,850	21,400	25,300	970	1,120	290	660	170	38	21
18	3	1	1,610	22,100	14,700	1,020	970	352	370	132	48	21
19	3	1	1,490	6,480	6,480	1,170	870	220	290	114	41	18
20	2	190	1,490	4,660	4,440	1,020	820	200	240	99	35	16
21	2	430	1,670	3,460	3,460	870	740	180	190	84	29	16
22	1	580	1,730	3,640	3,040	870	660	170	160	76	28	16
23	1	370	2,320	24,900	2,600	780	620	152	152	76	26	15
24	1	265	1,970	22,300	2,180	740	620	142	152	1,120	24	14
25	1	240	1,490	7,700	1,910	660	660	152	132	385	21	14
26	1	520	1,370	5,700	1,610	620	620	142	114	230	18	14
27	1	550	1,170	5,340	1,430	820	580	170	122	290	24	16
28	1	520	1,020	4,030	1,270	22,100	520	170	114	160	21	21
29	2	1,170	870	3,640	1,170	6,350	490	302	328	132	18	20
30	2	3,120	13,100	2,810	-----	4,230	520	278	2,110	132	16	18
31	1	-----	17,400	2,250	-----	3,640	-----	230	-----	132	16	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	6	1	2.7	0.0023	0.003	166
November	3,120	1	266	.229	.26	15,800
December	17,400	460	2,390	2.06	2.38	147,000
January	47,400	1,970	9,380	8.09	9.33	577,000
February	25,300	870	3,450	2.97	3.20	198,000
March	22,100	620	2,060	1.78	2.05	127,000
April	4,230	490	1,410	1.22	1.36	83,900
May	1,120	142	359	.309	.36	22,100
June	2,110	84	271	.234	.26	16,100
July	2,670	76	567	.489	.56	34,900
August	122	16	47.9	.041	.05	2,950
September	61	14	22.2	.019	.02	1,320
The year	47,400	1	1,690	1.46	19.83	1,230,000

ARKANSAS RIVER BASIN

ARKANSAS RIVER AT SYRACUSE, KANS.

LOCATION.—Water-stage recorder in NW¼ sec. 18, T. 24 S., R. 40 W., at highway bridge half a mile south of Syracuse.

DRAINAGE AREA.—25,500 square miles.

RECORDS AVAILABLE.—August 1902 to July 1906; June 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 12,400 second-feet June 4 (gage height, 6.44 feet); minimum, 2 second-feet Sept. 19 (gage height 1.67 feet).

1902-6, 1921-32: Maximum stage, about 11.75 feet June 6, 1921 (discharge not determined); minimum discharge, 1 second-foot July 31, 1931. Bank-full stage, 7.0 feet.

REMARKS.—Records good except those for period of ice effect, Nov. 30 to Dec. 5, Jan. 6-31, and those for May and June, which are fair. Diversions for irrigation above station.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2	7	120	32	143	63	37	88	4	210	206	8.
2	2	7		60	158	58	30	88	2	235	592	8.
3	2	7		88	143	56	32	78	4	139	174	8
4	2	7		104	166	44	23	72	158	147	110	7
5		8		155	184	42	13	69	3,710	121	58	6.
6	2	7	94	175	255	77	8	55	532	97	52	5.
7		8	91		341	75	8	63	170	75	22	4
8		8	97		425	94	7	66	97	53	13	3.
9		8	94		397	68	14	60	69	23	11	5.
10		7	91		376	82	18	85	53	14	8	3.
11	2	9	85	300	235	82	15	40	45	12	8	8.
12	7	8	82		215	82	13	30	45	13	10	5.
13	5	8	47		188	91	12	26	508	13	6	4.
14	4	7	37		170	127	11	15	266	11	4	5
15	3	7	40		158	194	6	13	151	11	4	4
16	3	7	55	255	151	158	5	15	82	9	4	5.
17	3	7	72		131	154	6	9	47	9	4	4.
18	4	7	97		123	127	11	7	35	8	4	3.
19	4	8	108		123	91	15	6	397	8	3.	3.
20	7	18	118		123	85	13	7	758	7	3	3.
21	7	24	121	184	123	58	11	6	476	7	3	3.
22	6	19	121	184	123	112	6	6	746	8	60	8
23	6	14	114		119	119	8	5	425	7	118	8.
24	6	9	108		116	142	11	6	235	6	132	7
25	6	21	104		109	127	18	4	162	8	84	7
26	6	21	104	100	106	116	18	6	151	7	45	8.
27	6	28	94		103	116	32	6	175	7	23	8
28	6	50	94		97	94	108	6	296	5	13	8
29	6	69	94		85	85	97	6	260	6	11	9
30	6	90	85			69	85	4	192	6	10	10.
31	6		15			58		4		7	10	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	7	2	4.2	256
November	90	7	16.8	1,000
December		15	92.3	5,680
January		32	179	11,000
February	425	85	179	10,300
March	194	42	95.0	5,840
April	108	5	23.0	1,370
May	88	4	30.7	1,890
June	3,710	2	342	20,300
July	235	5	41.6	2,560
August	592	3	58.2	3,580
September	10	3	5.9	351
The year	3,710	2	88.3	64,100

* Estimated

† Interpolated.

ARKANSAS RIVER AT GARDEN CITY, KANS.

LOCATION.—Water-stage recorder in NW¼ sec. 19, T. 24 S., R. 32 W., half a mile south of Garden City.

DRAINAGE AREA.—28,800 square miles.

RECORDS AVAILABLE.—June 1922 to September 1932.

EXTREMES.—Maximum discharge during year, 4,750 second-feet June 5 (gage height, 6.03 feet); no flow during several periods.

1922-32: Maximum discharge, 21,200 second-feet Aug. 9, 1929 (gage height, 7.74 feet); no flow during several periods. Bank-full stage, 7.0 feet.

REMARKS.—Records fair. Discharge estimated June 9, 10. Diversions for irrigation above station.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	0	5	1	18	4	5	40	0
2	0	0	5	3	22	4	5	23	0
3	0	0	7	5	31	4	6	11	0
4	0	0	6	5	26	6	5	10	4
5	0	0	5	5	33	4	3	9	652
6	0	0	5	4	48	28	1	8	1,690
7	0	0	6	2	63	8	1	8	380
8	0	0	10	3	79	10	0	6	76
9	0	0	9	6	154	16	2	6	6
10	0	0	9	10	159	14	6	6	6
11	0	0	8	10	48	14	3	6	6
12	0	0	6	6	20	17	4	6	4
13	0	0	4	6	10	23	4	3	6
14	0	0	3	23	90	38	3	2	6
15	0	0	3	31	112	48	3	1	2
16	0	0	8	40	124	16	3	1	3
17	0	0	8	45	45	14	3	1	2
18	0	0	11	36	26	10	5	0	3
19	0	0	11	45	12	8	11	0	14
20	1	0	9	63	10	8	10	0	6
21	1	0	8	60	10	7	8	0	2
22	1	0	8	53	8	11	8	0	7
23	2	0	8	38	10	50	8	0	0
24	2	0	6	26	8	26	7	0	10
25	2	0	7	28	8	14	5	0	4
26	1	0	8	22	8	10	4	0	1
27	0	1	6	38	6	10	14	0	0
28	0	3	8	40	5	8	66	0	0
29	0	4	8	31	5	6	16	0	0
30	0	2	6	22	-----	5	45	0	0
31	0	-----	2	22	-----	5	-----	0	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	2	0	0.3	20
November	4	0	.3	20
December	11	2	6.9	422
January	63	1	23.5	1,450
February	159	5	41.3	2,380
March	50	4	14.4	585
April	66	0	8.8	524
May	40	0	4.7	202
June	1,690	0	96.3	5,730
The year	1,690	0	16.1	11,700

NOTE.—No flow during months omitted.

ARKANSAS RIVER AT LARNED, KANS.

LOCATION.—Water-stage recorder in NE¼ sec. 5, T. 22 S., R. 16 W., at Larned, half a mile above Pawnee River.

DRAINAGE AREA.—34,900 square miles.

RECORDS AVAILABLE.—June 1922 to September 1932.

EXTREMES.—Maximum discharge during year, 5,600 second-feet July 6 (gage height, 7.02 feet); no flow during several periods.

1922-32: Maximum discharge, 14,300 second-feet Aug. 25, 1923 (gage height, 9.5 feet); no flow during several periods. Bank-full stage, 8.5 feet.

REMARKS.—Records fair. Diversions for irrigation above station. Discharge estimated Jan. 9 to Feb. 11, Mar. 5-15 because of ice effect.

Discharge, in second-feet, 1931-32

Day	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	18		60	62	48	4	106	48	8
2	0	22		59	59	50	4	95	44	3
3	0	16		55	57	44	14	84	38	0
4	0	19		52	55	41	14	75	22	0
5	0	31			53	38	14	83	18	0
6	0	12	50		51	38	56	1,750	17	0
7	0	0			47	39	70	2,350	14	0
8	0	0			46	42	280	895	11	0
9	8	1			48	33	830	312	18	0
10	11			20	60	30	543	253	12	0
11	11				57	27	356	227	10	0
12	11	10	72		57	24	249	205	8	0
13	4		83		53	23	205	174	7	0
14	2		115		44	21	170	157	5	0
15	1		115		44	19	140	144	3	0
16	6		108	77	42	19	124	157	2	0
17	7		95	70	42	18	108	124	0	0
18	14		106	70	48	18	108	110	0	0
19	17		121	64	51	17	137	101	0	0
20	18	20	124	70	50	14	124	92	0	0
21	20		108	51	46	11	113	88	0	0
22	21		103	55	46	8	106	81	0	0
23	21		92	83	46	6	110	79	0	0
24	23		84	97	46	20	81	79	0	0
25	24		81	90	43	21	79	75	0	0
26	26		77	86	39	19	154	64	0	0
27	24	55	72	86	39	14	233	60	0	0
28	24		67	83	48	15	474	48	0	0
29	27		64	79	52	14	182	46	0	0
30	29			66	50	14	129	51	0	0
31	29			64		10		47	0	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
December	29	0	12.2	750
January		0	25.5	1,660
February	124		77.1	4,440
March	97		53.3	3,250
April	62	39	49.4	2,940
May	50	6	24.4	1,500
June	830	4	174	10,300
July	2,350	46	265	16,300
August	48	0	8.9	549
September	8	0	.4	22
The year	2,350	0	57.3	41,600

NOTE.—No flow during months omitted.

ARKANSAS RIVER NEAR WICHITA, KANS.

LOCATION.—Chain gage on line between secs. 7 and 18, T. 27 S., R. 1 E., 1½ miles above mouth of Little Arkansas River.

DRAINAGE AREA.—40,300 square miles.

RECORDS AVAILABLE.—June 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 2,460 second-feet June 30 (gage height, 8.01 feet); no flow Oct. 1 to Nov. 7.

1921-32: Maximum discharge, 12,000 second-feet Aug. 18, 1927 (gage height, 14.75 feet); no flow at times. Bank-full stage, 14 feet.

REMARKS.—Records fair. Discharge estimated because of ice effect Jan. 13-18, Jan. 28 to Feb. 4, Mar. 3-12.

Discharge, in second-feet, 1931-32

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	0	114	31	15	63	295	129	109	2,110	134	55
2.....	0	109	29		63	271	134	209	1,600	191	48
3.....	0	100	29		63	216	143	259	1,120	180	37
4.....	0	92	30			213	148	198	900	163	32
5.....	0	88	30		77	213	170	184	732	134	33
6.....	0	79	30	134	40	205	315	174	765	117	43
7.....	0	77	29	77		202	605	164	575	109	44
8.....	2	72	31	52		191	515	155	900	101	49
9.....	2	68	29	56		148	460	146	2,110	88	33
10.....	3	65	33	61		148	435	170	1,940	90	24
11.....	3	72	33	61		148	410	668	1,120	76	22
12.....	4	68	33	63		143	315	605	830	78	17
13.....	5	63	33	77	114	137	228	668	700	73	15
14.....	17	59		88	126	131	194	515	545	71	15
15.....	200	56		88	148	128	191	410	460	69	14
16.....	216	47	28	88	202	131	174	360	410	62	12
17.....	151	44		92	224	128	151	315	338	56	12
18.....	140	42		100	231	146	140	259	315	51	15
19.....	112	40	42	109	259	160	131	360	295	46	14
20.....	103	37	54	128	259	163	120	435	259	48	13
21.....	92	34	66	140	263	154	96	410	243	41	13
22.....	92	31	72	131	255	146	90	575	209	37	36
23.....	112	30	63	123	259	140	96	1,360	177	38	27
24.....	140	28	57	114	275	137	98	1,770	184	33	23
25.....	137	28	59	98	315	131	98	1,770	177	32	23
26.....	137	28	57	92	338	134	101	1,440	166	32	20
27.....	137	29	56	77	385	134	96	1,120	163	26	26
28.....	126	30		68	360	134	90	970	163	26	31
29.....	114	30		63	338	128	93	1,280	166	21	24
30.....	114	30	30		315	117	106	2,370	157	23	18
31.....		31			295		137		148	32	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
November.....	216	0	72.0	4,280
December.....	114	28	55.5	3,410
January.....	72		38.3	2,850
February.....	140		79.9	4,060
March.....	385		178	10,900
April.....	295	117	162	9,660
May.....	605	80	200	12,300
June.....	2,370	109	648	38,500
July.....	2,110	148	644	39,000
August.....	191	21	73.5	4,520
September.....	55	12	26.0	1,550
The year.....	2,370	0	182	132,000

* Interpolated.

NOTE.—No flow during October.

ARKANSAS RIVER AT ARKANSAS CITY, KANS.

LOCATION.—Water-stage recorder in NW¼ sec. 25, T. 34 S., R. 3 E., half a mile west of Arkansas City and 5 miles above mouth of Walnut River.

DRAINAGE AREA.—44,700 square miles.

RECORDS AVAILABLE.—September 1902 to July 1906; September 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 7,340 second-feet June 21 (gage height, 12.22 feet); minimum, 92 second-feet Sept. 19 (gage height, 6.58 feet).

1902-6; 1921-32: Maximum stage, 25.46 feet June 11, 1923 (discharge not determined); minimum discharge, 12 second-feet in March and April 1923, owing to diversion by a power canal of Kansas Gas & Electric Co. Bank-full stage, 16.0 feet.

REMARKS.—Records fair. Discharge estimated because of ice effect Mar. 9-13. No diversions for irrigation from the Arkansas River below a point 55 miles east of Colorado-Kansas State line.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	147	147	959	526	615	712	742	493	403	2,780	409	116
2	144	144	866	512	460	675	720	493	615	3,140	380	134
3	141	144	802	500	512	668	720	486	458	2,560	427	164
4	138	141	742	512	538	675	675	480	672	2,020	409	171
5	141	138	705	545	526	638	615	467	718	1,720	380	164
6	138	134	698	573	512	622	601	675	733	1,870	391	160
7	141	134	682	712	506	552	573	403	608	2,020	358	144
8	141	134	645	848	638	519	594	1,020	587	3,470	330	138
9	141	131	645	720	698	480	594	1,030	1,100	2,690	315	144
10	141	134	645	652	712	512	566	967	984	3,300	300	144
11	147	138	652	660	690	506	545	1,060	788	3,060	280	138
12	171	147	660	660	668	545	538	953	1,140	1,950	262	128
13	164	164	660	720	660	545	532	741	1,140	1,620	250	128
14	157	182	645	735	652	566	532	629	993	1,180	234	122
15	160	531	594	712	668	587	526	552	934	1,040	238	122
16	164	3,720	587	712	712	668	506	524	832	919	242	119
17	171	4,060	580	630	772	690	493	484	391	837	260	119
18	171	3,220	580	587	1,030	705	493	445	338	781	242	107
19	167	2,020	569	615	993	663	500	433	355	710	226	92
20	160	1,320	545	690	866	652	512	421	587	643	222	92
21	171	934	532	720	848	638	552	421	6,480	580	206	104
22	167	866	526	712	818	645	566	368	6,080	524	192	352
23	174	848	538	712	802	645	594	346	8,470	490	186	300
24	192	1,190	532	682	825	638	573	310	2,420	452	178	240
25	192	2,120	538	652	832	652	552	290	2,240	427	169	365
26	192	2,070	538	630	832	765	512	280	2,180	421	163	320
27	182	1,470	538	638	818	874	493	276	2,690	403	160	464
28	174	1,240	538	690	795	891	480	280	2,070	390	154	497
29	174	1,240	645	735	742	848	474	280	1,820	471	138	285
30	167	1,080	532	675	818	496	496	276	1,720	510	135	240
31	157	-----	526	645	-----	765	-----	310	-----	445	118	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	192	138	161	9,690
November	4,060	131	998	59,400
December	959	526	624	38,300
January	848	500	655	40,360
February	1,030	460	715	41,100
March	891	480	657	40,400
April	742	474	562	33,400
May	1,060	276	522	22,100
June	6,480	338	1,530	90,900
July	3,470	380	1,400	85,900
August	427	118	257	15,800
September	497	92	194	11,600
The year	6,480	92	688	499,000

ARKANSAS RIVER AT VAN BUREN, ARK.

LOCATION.—Chain gage in sec. 24, T. 9 N., R. 32 W., at Van Buren, $1\frac{1}{2}$ miles below Lee Creek. Zero of gage is 372.67 feet above mean sea level.

DRAINAGE AREA.—150,000 square miles.

RECORDS AVAILABLE.—October 1927 to September 1932.

EXTREMES.—Maximum discharge during year, 184,000 second-feet Jan. 24 (gage height, 22.15 feet); minimum, 1,860 second-feet Oct. 1 (gage-height, 3.55 feet). 1927-32: Maximum discharge, 315,000 second-feet May 16, 1929 (gage height, 29.0 feet); minimum, 1,260 second-feet Sept. 26, 1931 (gage height, 3.14 feet).

Maximum stage known, 35.0 feet in April 1927.

REMARKS.—Records good.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	2,000	6,130	122,000	10,800	53,200	20,000	19,000	10,100	7,990	120,000	16,500	4,750
2.....	3,410	4,970	131,000	10,400	46,000	18,000	17,400	8,870	11,400	104,000	17,000	4,150
3.....	3,070	4,350	98,200	9,790	40,500	17,000	15,600	8,270	21,800	96,800	14,400	4,150
4.....	2,750	3,950	66,400	9,470	38,100	16,500	13,600	7,710	40,500	96,800	11,100	3,950
5.....	2,740	3,770	47,200	33,000	32,000	16,500	12,100	7,430	48,400	73,600	9,170	3,590
6.....	2,590	3,230	37,200	89,000	26,300	17,400	11,100	7,430	44,900	46,000	8,270	3,590
7.....	2,290	3,070	32,000	111,000	23,100	16,500	10,400	7,710	40,500	60,400	7,150	4,350
8.....	2,140	2,750	28,100	107,000	21,200	15,200	9,470	8,570	52,000	74,800	6,370	4,150
9.....	2,000	2,750	24,600	92,900	20,000	13,600	8,870	9,470	40,500	60,400	5,650	3,590
10.....	2,140	2,750	21,800	74,800	19,000	12,800	8,570	10,100	47,200	48,400	5,190	3,770
11.....	2,000	2,590	19,500	50,800	18,400	11,800	8,270	10,400	52,000	62,800	4,550	3,590
12.....	2,000	2,590	19,500	41,600	19,000	11,400	9,470	41,600	65,200	65,200	4,850	3,230
13.....	3,770	2,440	18,400	42,700	19,000	11,100	7,430	8,570	36,100	49,600	4,150	2,910
14.....	8,570	2,290	18,400	43,800	20,000	10,800	6,890	9,170	30,000	40,500	4,150	2,910
15.....	12,800	2,290	17,400	40,500	54,400	10,400	6,630	9,170	28,100	35,000	3,770	2,750
16.....	19,500	2,290	17,000	59,200	89,000	9,790	6,630	8,870	25,400	32,000	3,770	2,590
17.....	17,000	2,750	17,000	156,000	120,000	10,100	7,150	7,990	30,000	30,000	3,770	2,590
18.....	12,500	5,190	18,000	166,000	118,000	11,800	11,100	7,150	28,100	20,000	3,590	2,590
19.....	10,400	5,650	19,500	156,000	111,000	13,200	10,100	6,630	21,800	14,400	3,410	2,440
20.....	8,570	5,650	19,000	132,000	101,000	14,800	7,990	6,130	22,400	11,400	4,350	2,140
21.....	6,890	24,600	17,400	104,000	86,400	13,600	7,710	6,370	20,000	9,790	56,800	2,140
22.....	5,890	42,700	15,600	99,600	71,200	13,200	7,430	6,630	16,500	8,570	48,400	2,140
23.....	15,600	70,000	15,200	168,000	49,600	12,500	8,570	6,630	14,000	7,990	32,000	2,290
24.....	54,400	91,600	14,400	184,000	42,700	11,800	9,170	5,890	39,400	7,430	19,500	2,140
25.....	52,000	132,000	13,600	168,000	39,400	10,800	9,790	5,410	79,900	7,430	14,400	2,140
26.....	38,300	136,000	12,800	146,000	34,000	10,400	9,790	5,190	90,300	7,430	11,400	2,140
27.....	22,400	122,000	12,100	140,000	27,200	13,200	10,800	5,190	81,200	8,270	9,790	2,140
28.....	14,000	120,000	11,800	126,000	23,100	21,800	12,100	5,410	72,400	7,150	8,270	2,140
29.....	10,800	118,000	11,100	105,000	21,200	26,300	12,800	5,190	89,000	12,800	6,890	2,140
30.....	9,470	117,000	10,400	79,900	-----	24,600	12,100	4,970	126,000	21,800	6,130	2,140
31.....	7,710	-----	10,400	64,000	-----	22,400	-----	4,750	-----	17,400	5,190	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	54,400	2,000	11,600	713,000
November.....	130,000	2,290	34,800	2,070,000
December.....	131,000	10,400	30,200	1,860,000
January.....	184,000	9,470	90,700	5,580,000
February.....	120,000	18,400	47,700	2,740,000
March.....	26,300	9,790	14,800	910,000
April.....	19,000	6,630	10,200	607,000
May.....	10,400	4,750	7,450	458,000
June.....	126,000	7,990	43,300	2,580,000
July.....	120,000	7,150	40,600	2,600,000
August.....	56,800	3,410	11,600	713,000
September.....	4,750	2,140	2,980	177,000
The year.....	184,000	2,000	28,800	20,900,000

PAWNEE RIVER NEAR LARNED, KANS.

LOCATION.—Water-stage recorder in sec. 33, T. 21 S., R. 18 W., at Moffet Dam, 11½ miles west of Larned.

DRAINAGE AREA.—About 2,300 square miles.

RECORDS AVAILABLE.—November 1924 to September 1932.

EXTREMES.—Maximum discharge during year, 1,520 second-feet July 6 (gage height, 14.50 feet); minimum, 0.2 second-foot for several days in May, August, and September.

1924-32: Maximum discharge, 2,910 second-feet May 13, 1929 (gage height 21.70 feet); no flow during periods in 1926, 1930, 1931. Bank-full stage, 24 feet.

REMARKS.—Records fair except those estimated for periods of ice affect, Feb. 5-11, Mar. 4-15, and for June 20 to July 7, which are poor. Diversions for irrigation by pumping above station.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	4	3	3	5	5	5	4	8	4		10
2	1	4	3	3	5	5	5	4	7	3		11
3	2	4	3	4	5	4	5	4	7	2		10
4	2	5	3	4	5		5	4	37	2		9
5	2	6	3	4			5	4	34	2		7
6		6	3	4	5		5	4	31	2		5
7	1.5		3	4			5	4	71	2		3
8	.5		4	4			4	4	182	6		3
9	2		4	4			4	4	64	31		2
10	2		4	4			4	4	35	28		2
11	2		4	5	10		4	4	26	21		3
12	2		5	5	8		4	4	20	19		2
13	2		5	5	7		4	4	15	18		1
14	2		4	3	6		4	3	11	10		2
15	3		4	3	5		4		9	14		2
16	2		4	4	5	4	4	3	7	12		1
17		1	4	5	4	4	4	3	6	12		1
18	2	1	4	4	4	4	4	3	12	11		2
19	2	2	4	4	4	4	4	3	60	8		1
20	2	4	4	5	4	4	4	2	182	5		1
21	3	2	4	5	4	4	4	1		6	2	2
22	2	2	5	5	4	4	4	1		6	.6	2
23	2	3	5	5	4	4	4	2		6	.2	2
24	2	3	5	5	4	5	4	2		6	.2	2
25	2	3	5	5	4	6	3	2		5	.2	22
26	2	3	6	6	4	5	3	290	140	5	.2	22
27	2	3	5	6	4	5	3	135	170	4	.2	12
28	2	3	5	6	4	5	3	23	450	3	.2	9
29	4	3	4	5	4	5	4	18	115	5	.2	6
30	4	3	3	3	5	5	4	12	60	5	.2	4
31	4		3	5		5		10		4	1	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	4	0.4	2.05	126
November	6	1	3.2	188
December	6	3	4.0	244
January	6	3	4.5	276
February	10	4	5.1	206
March	6		4.0	246
April	5	3	4.1	244
May	290	1	18.3	1,130
June	450	6	64.5	3,840
July	880	3	48.9	3,010
August	21	.2	3.23	199
September	22	1	5.4	319
The year	880	.2	13.9	10,100

* Estimated.

SURFACE WATER SUPPLY, 1932, PART 7

LITTLE ARKANSAS RIVER AT VALLEY CENTER, KANS.

LOCATION.—Chain gage in SW¼ sec. 1, T. 26 S., R. 1 W., 1 mile south of Valley Center and 14 miles above mouth.

DRAINAGE AREA.—1,340 square miles.

RECORDS AVAILABLE.—June 1922 to September 1932.

EXTREMES.—Maximum discharge during year, 2,530 second-feet July 6 (gage height, 9.30 feet); minimum, 16 second-feet several days in October (gage height, 0.69 foot).

1922-32: Maximum discharge, 10,500 second-feet June 10, 1923 (gage height, 18.02 feet); minimum, 4 second-feet Dec. 17, 1922. Bank-full stage, 10 feet.

REMARKS.—Records fair. Discharge estimated Jan. 16, 17, Feb. 4, 5, Mar. 8, 9.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	17	20	86	46	43	46	64	39	44	528	34	30
2.....	18	22	81	46	45	46	56	38	40	181	50	27
3.....	17	22	70	45	45	46	50	40	46	115	71	27
4.....	17	22	67	43	40	45	45	485	67	91	45	24
5.....	17	22	67	46	40	46	42	862	95	145	37	23
6.....	16	22	67	53	46	45	41	410	56	2,530	33	23
7.....	16	24	64	60	46	43	40	168	124	1,800	30	22
8.....	16	24	64	60	46	40	37	134	83	1,220	29	22
9.....	16	24	60	60	46	38	38	800	64	800	27	21
10.....	16	24	60	53	46	36	37	738	53	575	26	20
11.....	16	24	60	53	46	36	36	238	134	287	24	20
12.....	18	26	64	50	46	39	36	134	64	168	26	21
13.....	18	26	64	50	46	43	36	95	50	115	64	20
14.....	20	48	60	50	46	45	34	79	41	91	41	20
15.....	20	1,160	56	46	46	42	36	67	37	75	31	20
16.....	20	1,410	53	46	50	43	36	60	38	64	29	20
17.....	19	437	53	46	53	45	34	56	33	56	27	20
18.....	20	224	53	46	75	46	34	156	38	53	24	20
19.....	19	126	50	46	99	46	40	156	44	50	24	19
20.....	18	98	50	46	83	45	40	91	238	46	24	22
21.....	18	81	50	50	75	43	42	60	625	45	24	24
22.....	20	70	50	50	67	46	41	50	561	42	22	254
23.....	20	73	50	46	64	46	42	45	575	41	24	321
24.....	21	1,120	50	46	60	53	42	44	168	37	24	95
25.....	20	778	50	46	56	60	40	41	99	37	22	53
26.....	19	363	46	46	53	87	42	40	71	37	22	38
27.....	21	151	46	46	53	115	39	38	410	75	22	46
28.....	20	126	46	46	50	115	40	41	238	42	20	115
29.....	20	119	46	46	50	99	39	42	738	37	22	87
30.....	19	98	46	38	-----	91	39	50	1,070	37	22	50
31.....	19	-----	50	30	-----	75	-----	50	-----	37	28	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	21	16	18.4	1,130
November.....	1,410	20	226	13,500
December.....	86	46	57.4	3,530
January.....	60	30	47.8	2,940
February.....	99	40	53.8	3,100
March.....	115	36	54.5	3,350
April.....	64	34	40.6	2,420
May.....	862	38	172	10,600
June.....	1,070	33	198	11,800
July.....	2,530	37	306	13,800
August.....	71	20	30.6	1,480
September.....	321	19	50.8	3,020
The year.....	2,530	16	105	76,000

WALNUT RIVER AT WINFIELD, KANS.

LOCATION.—Chain gage in NE¼ sec. 33, T. 32 S., R. 4 E., 1 mile south of Winfield and 1 mile above Black Creek.

DRAINAGE AREA.—1,860 square miles.

RECORDS AVAILABLE.—November 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 16,400 second-feet June 21 (gage height, 26.08 feet); minimum, 8 second-feet Nov. 9, 11 (gage height, 2.50 feet).

1921-32: Maximum discharge 94,400 second-feet, Nov. 18, 1928 (gage height, 40.61 feet); no flow Nov. 11, 1928. Bank-full stage, 30 feet.

REMARKS.—Records good except those for periods in October, November, May, June, August, September, which are fair. Discharge interpolated March 10, 14. Occasional storage above station on Sundays.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	55	15	792	199	202	264	168	114	2,920	431	336	30'
2.....	54	14	585	212	202	246	162	136	412	393	229	28
3.....	46	13	545	212	209	246	139	119	202	355	585	26
4.....	21	13	507	246	202	229	144	103	374	2,160	545	26
5.....	32	23	469	469	202	246	139	114	229	5,380	281	27
6.....	17	12	469	545	202	229	125	130	202	7,270	180	30'
7.....	34	28	431	585	196	229	139	202	507	6,500	150	34
8.....	16	15	393	412	209	206	174	507	117	1,460	84	31
9.....	32	20	393	355	202	193	229	545	98	1,110	156	31
10.....	14	13	393	317	209	193	153	336	119	708	136	27
11.....	17	17	393	299	209	193	144	246	450	507	100	26
12.....	32	14	393	281	202	183	153	229	374	393	75	82'
13.....	30	31	374	264	196	174	139	159	193	355	75	48
14.....	55	69	374	246	212	174	125	136	119	317	60	52'
15.....	43	1,160	317	281	212	174	119	117	93	281	55	48
16.....	44	2,480	317	264	281	174	106	122	71	246	55	36
17.....	46	2,980	299	281	750	199	95	117	57	246	54	30'
18.....	17	7,130	299	355	880	193	119	95	52	199	52	27
19.....	24	4,680	281	355	585	193	142	84	150	193	50	27
20.....	42	750	299	299	431	183	174	82	3,030	174	44	26
21.....	32	545	264	281	393	174	206	88	14,900	162	44	22'
22.....	31	393	264	299	393	183	206	68	10,400	144	39	62'
23.....	13	1,830	264	264	355	206	206	68	1,020	133	36	48
24.....	13	8,880	264	264	336	212	168	71	836	119	44	35
25.....	18	9,460	246	246	317	246	199	68	1,210	98	37	30'
26.....	31	2,040	264	264	281	206	193	60	1,940	133	37	42'
27.....	36	1,160	246	246	281	229	162	66	3,970	139	35	64
28.....	31	1,410	229	264	264	864	144	59	2,700	133	36	142'
29.....	14	1,200	229	246	264	246	142	50	924	206	35	95'
30.....	14	1,110	209	229	-----	199	125	68	545	393	31	59'
31.....	52	-----	229	229	-----	193	-----	91	-----	836	31	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	55	13	30.8	1,900'
November.....	9,460	12	1,590	94,300
December.....	792	209	356	21,900
January.....	585	199	300	18,500
February.....	880	196	306	17,600
March.....	264	174	209	12,900
April.....	229	95	155	9,200
May.....	545	50	144	8,830
June.....	14,900	52	1,610	95,600
July.....	7,270	98	1,010	61,800
August.....	585	31	120	7,350
September.....	142	22	43.0	2,560
The year.....	14,900	12	485	352,000

CIMARRON RIVER NEAR FOLSOM, N. MEX.

LOCATION.—Water-stage recorder in NE¼ SW¼ sec. 9, T. 31 N., R. 36 E., 45 miles east of Folsom, about 8 miles west of Kenton, Okla., and 6 miles above mouth of Carrizo Creek. Gage datum lowered 0.61 foot Apr. 11, 1932.

RECORDS AVAILABLE.—October 1930 to September 1932. Records for 1927 to 1930 published by State engineer.

EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, about 3,800 second-feet Sept. 24 (gage height, 9.61 feet present datum); minimum, 0.3 second-foot May 27.

Maximum discharge during year ending Sept. 30, 1932, 2,910 second-feet Aug. 21 (gage height, 8.65 feet); minimum, 0.1 second-foot July 30.

REMARKS.—Records fair except those estimated for year ending Sept. 30, 1931, and those for October, 1931, to January, 1932, June to August, 1932, which are poor. Diversions for irrigation above station.

Discharge, in second-feet 1930-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1	21	3.0		2.2	*2	1.2	1.5	2.1	9.6	0.7	12	*2
2	27	3.0		1.4	2.2	1.2		5.0	4.1	.7	.9	*4
3	5.4	3.0	*3	.6	2.2	1.3		12	1.7	.7	.8	*2
4	1.9	3.0		.5	2.1	1.3	*2	11	1.4	.5	.8	
5	*2	3.0	3.3	1.5	2.1	1.3		9.8	1.4	.5	.8	1.0
6	*2	3.0	3.3	3.0	1.9	1.2		9.6	1.3	.5	*1	1.9
7	2.1	3.0	2.2		1.8	*1	1.8	8.1	1.3	.6	*1	1.0
8	2.1	2.9	2.5	*2	1.8	*1	1.9	6.8	1.2	.5	*6	.9
9	2.1	2.9	2.5		1.8	1.2	1.9	6.4	1.2	.4	*10	*1
10	7.3	2.9	3.3	1.4	1.7	*1	2.1	7.1	1.2	*13	*6	*1
11	510	2.9	2.7	*1.5	*1.5	*1	1.9	7.4	1.1	2.4	*2	*3
12	*20	2.9	3.0	1.5	*1.2	.9	1.9	7.4	1.0	1.7	.6	*4
13	*10	2.9	3.3	1.8	1.0		1.9	7.4	1.0	1.3	.6	*1
14	*9	2.9	3.9	1.9	1.0		1.6	7.6	1.2	1.3	.8	*1
15	*9	2.9	3.5	2.2	1.0	*2	1.1	6.6	1.3	1.4	.9	*6
16	*8	2.9	3.5	2.1	1.0		1.2	2.5	.9	1.5	34	*4
17	7.6	2.7	2.4	2.5	1.0	1.3	1.3	2.1	.9	1.5	21	*3
18	7.6		6.1	2.2	1.0		1.4	2.1	.9	1.5	2.2	*10
19	7.6		4.6	2.4	1.0	*2	1.4	2.1	.8	2.1	1.9	*6
20	7.4		3.0	2.2	1.1		1.4	3.5	.8	1.5	1.7	*5
21	7.1		3.7	1.8	1.2		*1.3	2.2	.7	1.0	1.6	*4
22	7.1		4.3	1.7	1.2		*1.1	23	.7	.7	1.4	*4
23	7.1		5.2	1.5	1.2	*3	1.0	12	.7	.5	1.6	*10
24	6.4	*3	4.8	1.4	1.2		.9	5.2	.7	.5	1.8	456
25	6.4		5.0	1.4	1.0		.8	3.3	.7	.5	1.8	299
26	6.4		4.8	1.3	1.0		.8	2.4		.5	1.7	171
27	6.4		4.6	1.5	1.1		.8	2.2		.5	1.7	*100
28	6.1		6.8		1.1	*2	.8	5.0	*7	.4	1.4	*150
29	6.1		4.1				.7	22		.4	.8	*140
30	5.0		4.1	*1.5			1.1	18	.7	.5	.8	127
31	3.5		3.9					10		.5	*.8	

* Estimated.

Discharge, in second-feet, of Cimarron River near Folsom, N. Mex., 1930-32—Con.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931-32												
1	84	*1	*1.5	2.1	1.4	1.3	1.5	1.2	0.6	101	0.2	0.2
2	73			2.2	1.5	1.4	1.5	1.2	*.23		.2	.2
3	72		1.6	1.5	1.5	1.6	1.7	1.3	.5	7.3	.2	.2
4	72			1.7	1.6	1.6	1.4	1.3	293	7.6	4.7	.2
5	72	*1.5		2.1	1.7	1.7	1.2	1.2		6.8	22	.1
6	69		*2.2	1.8	1.7	1.1	1.2	*100		6.0	7.8	.1
7	63		*2.3	1.8	1.5	1.0	1.4			5.8	3.3	.2
8	61		*1.6	2.4	1.8	1.5	.9	*5		5.8	3.7	.2
9	57	*1	*1.8	2.5	1.9	1.4	.9			5.8	14	.3
10	55		*2.0	2.5	2.1	1.3	.7	1.3		5.6	34	.3
11	53		1.5		2.2	1.2	1.8	*1.3		39	32	.4
12	*25			*3	2.2	1.3	1.2	1.3	*2	18		.3
13	*2	1.0			1.9	1.4	1.1	1.5		8.1		.9
14	*2	*1			1.9	*1.5	1.1	1.7		6.0	*20	.3
15	*2	1.1	*1.5	2.9	2.1	1.3	1.2	1.2		5.8		.3
16	*1	*1		2.7	1.8	1.3	1.2	1.1		5.8		.2
17	*1			2.2	1.8	1.3	1.1	1.1	*1	5.8	20	.3
18	*1		1.5	1.9	1.9	1.3	1.2	1.0		5.6	50	.3
19	*7			1.8	1.9	1.4	1.2	.7		5.3	29	.4
20	*1	*1.5		1.8	1.9	1.3	1.2	1.0	.4	5.3	*25	.4
21	*1		*1.5		2.2	1.4	1.3	1.0	.4	5.3	*350	.4
22	*8		*1.5		2.2	1.4	1.3	.9	.3	5.6	778	.5
23					2.4	1.4	1.6	.8	.3	19	256	.6
24		1.5		*2.5	2.4	1.3	2.0	.8	138	63	*100	.6
25					2.7	1.3	2.0	.7	38	5.1	*50	7.1
26	*1	*1.5	1.4		2.2	1.3	2.1	.6	8.9	1.5	*5	6.0
27					1.6	1.5	1.7	.6	285	.7	.2	1.5
28				1.4	1.3	1.6	1.7	.6	108	.5	.2	.7
29			*2	1.3	1.3	1.5	1.6	.6	59	.2	.2	.5
30	1.3			1.3		1.5	1.5	.6	*50	.1	.2	.4
31	*1			1.3		1.5		.6		.2	.2	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1930-31				
October	510	1.9	23.8	1,460
November			3.06	182
December	6.8		3.75	231
January			1.73	106
February	2.2	1.0	1.41	78
March			1.80	111
April		.7	1.45	86
May	23	2.1	7.42	456
June	9.6		1.38	82
July	13	.4	1.30	80
August	34	.6	3.88	239
September	456	.4	52.5	3,130
The year	510		8.62	6,240
1931-32				
October	84		25.1	1,540
November			1.23	73
December			1.61	99
January			2.25	138
February	2.7	1.3	1.90	109
March	1.7	1.2	1.42	87
April	2.1	.7	1.36	81
May	1.7	.6	1.05	64
June	293	.3	40.5	2,410
July	101	.1	12.3	755
August	778	.2	60.8	3,740
September	7.1	.1	.80	48
The year	778	.1	12.6	9,140

* Estimated.

VERDIGRIS RIVER AT INDEPENDENCE, KANS.

LOCATION.—Chain gage in NE¼ sec. 32, T. 32 S., R. 16 E., 2 miles east of Independence and 3½ miles below Elk River.

DRAINAGE AREA.—2,800 square miles.

RECORDS AVAILABLE.—April to September 1904; November 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 26,600 second-feet Nov. 25 (gage height, 36.18 feet); minimum, 0.1 second-foot Sept. 20 (gage height, 0.74 foot).

1904, 1921-32: Maximum discharge, 124,000 second-feet Oct. 3, 1927 (gage height, 46.04 feet at former site); minimum, 0.1 second-foot Aug. 11, 1926, Sept. 20, 1932. Bank-full stage, 36 feet.

REMARKS.—Records good except those for periods in March, April, May, August, and September, which are fair. Discharge estimated Mar. 7-13, Sept. 9-21.

Discharge, in second-feet, 1931-33

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	4	2,050	452	508	655	342	480	1,640	772	135	18
2	27	4	1,550	424	452	625	315	452	2,150	736	88	16
3	29	4	1,370	452	452	595	302	424	369	473	78	5
4	26	3	1,210	775	480	566	275	424	237	383	61	3
5	26	3	1,080	1,680	508	537	237	566	224	443	66	2
6	15	2	1,020	2,950	480	537	237	508	369	1,530	61	1
7	10	2	955	3,050	452		262	424	275	3,210	61	.7
8	8	2	895	2,100	424	500	288	835	224	2,880	51	.1
9	11	2	865	1,370	396		315	2,150	805	3,210	59	
10	6	3	895	895	424		369	865	2,300	1,370	61	
11	7	2	1,210	595	480		315	537	1,730	921	62	
12	20	2	1,290	508	625	400	275	396	985	569	62	
13	29	3	1,140	424	566		237	342	480	413	32	
14	33	2	1,040	369	537	369	212	288	895	327	42	
15	24	2	985	508	625	396	188	262	1,040	271	37	.1
16	18	2	925	1,290	1,020	424	237	125	925	217	35	
17	15	2,550	835	1,250	5,020	452	262	865	369	181	42	
18	10	14,900	775	2,600	4,060	480	625	396	262	158	51	
19	6	8,190	685	2,050	1,910	480	895	275	224	158	41	
20	3	3,520	655	1,460	1,210	452	537	212	8,540	135	21	
21	2	955	625	1,370	1,550	424	595	177	24,600	104	13	
22	2	3,820	595	895	1,460	452	835	165	22,000	104	10	.3
23	2	15,200	595	835	1,210	424	895	154	4,820	94	8	2
24	5	22,400	566	745	1,040	566	1,290	125	1,240	193	5	11
25	12	26,000	537	685	925	775	1,960	125	882	666	3	17
26	24	21,700	508	655	835	655	1,100	116	960	327	1	26
27	16	15,800	480	715	805	566	745	116	3,210	217	1	40
28	11	7,770	480	745	715	480	625	98	2,290	158	1	84
29	10	3,520	452	745	685	452	566	106	2,180	146	.3	243
30	8	2,800	424	655		396	508	90	882	158	.8	169
31	7		424	566		369		134		243	.1	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	36	2	14.8	908
November	26,000	2	4,970	296,000
December	2,050	424	875	53,800
January	3,050	369	1,090	67,100
February	5,020	396	1,030	59,200
March	775	369	494	30,400
April	1,960	188	528	31,400
May	2,150	90	395	24,300
June	24,600	224	2,900	173,000
July	3,210	94	670	41,200
August	135	.1	38.4	2,360
September	243	.1	21.3	1,270
The year	26,000	.1	1,080	781,000

NEOSHO RIVER NEAR IOLA, KANS.

LOCATION.—Water-stage recorder in NE¼ sec. 9, T. 25 S., R. 18 E., 3 miles southwest of Iola and half a mile below Elm Creek.

DRAINAGE AREA.—3,800 square miles.

RECORDS AVAILABLE.—August 1895 to November 1903; October 1917 to September 1932.

EXTREMES.—Maximum discharge during year, 20,800 second-feet Nov. 24 (gage height, 21.54 feet); minimum, 12 second-feet Nov. 6 (gage height, 2.71 feet).

1895-1903, 1917-32: Maximum discharge, 46,000 second-feet Sept. 13, 1926 (gage height, 33.2 feet); no flow for several days in September and October, 1897.

REMARKS.—Records good except those for Feb. 16 to May 7, July 17 to Sept. 30, which are fair. Discharge estimated Feb. 16-29

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1	105	22	2,160	575	425	400	592	420	356	2,080	1,080	134
2	55	24	1,780	575	411	392	485	388	388	1,210	1,080	131
3	50	20	1,540	564	420	388	411	388	383	1,040	800	119
4	55	20	1,400	558	435	374	406	465	430	1,010	614	256
5	50	19	1,300	830	411	388	370	553	415	1,780	536	339
6	39	16	1,270	1,710	411	388	361	536	301	8,800	475	252
7	41	16	1,240	1,300	420	383	361	770	260	11,700	475	229
8	31	16	1,180	982	420	374	326	2,600	406	14,900	455	185
9	30	19	1,400	830	420	365	317	2,080	548	17,400	440	164
10	24	25	1,780	712	420	348	330	2,080	1,780	19,100	445	140
11	26	22	1,780	619	440	326	322	1,270	1,600	20,200	379	137
12	30	20	1,780	619	505	305	330	890	1,300	17,100	330	128
13	33	20	2,160	630	480	296	343	597	770	3,400	301	128
14	31	25	1,850	630	455	284	392	475	526	1,780	256	128
15	31	740	1,370	624	510	276	392	402	1,470	1,440	240	125
16	33	3,400	1,180	740	1,130	280	392	470	712	1,210	218	122
17	20	9,970	1,010	1,080		276	592	388	370	1,040	229	125
18	20	14,400	951	1,010		288	1,340	343	264	920	284	122
19	19	13,200	920	890		313	830	383	264	830	229	108
20	19	11,700	890	800	600	305	740	343	4,170	712	214	79
21	22	6,610	860	740		592	1,370	284	9,970	712	192	86
22	24	4,280	830	712		663	1,850	240	11,300	652	167	100
23	19	14,100	800	674		982	1,210	221	11,700	586	140	103
24	20	20,200	800	624	550	1,210	2,160	225	4,170	614	143	116
25	22	19,400	740	597		830	1,300	229	1,140	712	157	116
26	26	17,400	685	575		685	951	221	800	860	147	98
27	30	12,800	674	570		1,080	770	196	2,600	770	147	192
28	26	6,250	630	564	-----	1,180	636	192	5,410	570	140	334
29	25	3,510	592	542		982	531	280	6,370	712	140	260
30	22	2,700	580	531		920	460	460	4,060	1,040	137	225
31	22	-----	575	485		740	-----	388	-----	1,400	128	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	105	19	32.3	1,980
November	20,200	16	5,360	318,008
December	2,160	575	1,180	72,889
January	1,710	485	738	48,400
February	-----	411	611	35,208
March	1,210	276	536	33,008
April	2,160	317	696	41,400
May	2,600	192	606	37,209
June	11,700	260	2,470	147,000
July	20,200	570	4,400	270,009
August	1,080	128	346	21,300
September	339	79	159	9,480
The year	20,200	16	1,420	1,030,000

NEOSHO RIVER NEAR PARSONS, KANS.

LOCATION.—Chain gage in NW¼ sec. 22, T. 31 S., R. 21 E., half a mile above the St. Louis-San Francisco Railway bridge and 10 miles east of Parsons.

DRAINAGE AREA.—4,860 square miles.

RECORDS AVAILABLE.—October 1921 to September 1932.

EXTREMES.—Maximum discharge during year, 23,000 second-feet Nov. 28 (gage height, 22.96 feet); minimum, 16 second-feet Nov. 8, 11 (gage height, 1.21 feet).

1921-32: Maximum discharge, 48,100 second-feet Nov. 24, 1928 (gage height, 27.50 feet); minimum, 12 second-feet Sept. 20, 1931. Bank-full stage, 24 feet.

REMARKS.—Records good.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1-----	166	21	3,210	625	575	500	895	729	437	4,450	1,850	126
2-----	135	21	2,610	625	527	551	729	500	376	2,400	1,450	120
3-----	113	22	2,190	500	481	527	575	338	1,390	1,260	112	112
4-----	90	25	1,850	625	481	504	504	504	356	1,070	1,070	106
5-----	69	23	1,650	1,390	504	481	437	504	356	839	783	106
6-----	48	19	1,520	1,990	459	481	395	625	395	895	729	172
7-----	34	18	1,450	2,610	437	481	395	677	356	7,080	575	319
8-----	40	16	1,450	1,920	437	481	376	625	437	10,500	527	240
9-----	156	17	1,780	1,320	459	459	338	2,540	575	12,500	527	225
10-----	100	19	2,400	1,010	481	437	319	2,470	1,010	14,500	481	185
11-----	49	16	2,330	839	437	395	302	2,610	1,390	16,000	437	160
12-----	67	18	2,190	783	895	376	285	1,650	2,120	17,200	437	160
13-----	107	25	2,190	783	677	356	302	1,200	1,650	18,100	376	135
14-----	98	28	2,400	783	500	356	285	839	1,070	9,940	302	130
15-----	62	25	2,400	783	575	338	270	625	625	2,400	285	120
16-----	45	25	1,710	783	783	319	270	481	1,070	1,780	240	114
17-----	35	2,260	1,450	2,470	2,610	338	302	437	1,260	1,450	225	108
18-----	32	10,800	1,260	2,190	4,350	356	895	481	500	1,260	198	108
19-----	33	14,400	1,130	1,580	2,260	356	1,260	395	395	1,070	212	106
20-----	33	14,800	1,070	1,260	1,320	376	1,200	338	1,520	953	240	102
21-----	31	12,300	1,010	1,010	1,130	395	895	376	8,510	839	212	108
22-----	28	9,940	1,010	1,390	1,070	395	1,130	338	9,500	729	198	137
23-----	23	10,900	953	1,130	1,010	416	2,330	285	10,700	677	185	102
24-----	20	16,700	895	895	953	625	2,610	240	11,300	783	148	92
25-----	20	20,200	895	783	895	1,450	3,370	225	6,200	1,260	141	88
26-----	20	21,500	839	500	783	1,070	2,120	225	2,050	895	135	88
27-----	20	22,500	783	1,200	729	839	1,260	198	1,450	729	135	139
28-----	20	22,500	729	895	677	783	1,070	212	2,890	895	139	133
29-----	19	12,200	729	783	625	1,200	839	185	6,090	677	135	114
30-----	18	4,260	677	677	-----	1,130	729	198	6,750	839	126	302
31-----	18	-----	625	500	-----	1,070	-----	285	-----	1,650	114	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October-----	166	18	56.4	3,470
November-----	22,500	16	6,520	383,000
December-----	3,210	625	1,530	94,000
January-----	2,190	500	1,120	65,700
February-----	4,350	437	935	53,800
March-----	1,450	319	576	35,400
April-----	3,370	270	890	52,900
May-----	2,610	185	696	42,800
June-----	11,300	338	2,720	162,000
July-----	18,100	677	4,380	269,000
August-----	1,850	114	447	27,500
September-----	319	88	142	8,440
The year-----	22,500	16	1,660	1,210,000

NEOSHO RIVER NEAR GROVE, OKLA.

LOCATION.—Chain gage in SE¼ sec. 27, T. 25 N., R. 23 E., 3 miles below Spring Branch and 3½ miles northwest of Grove.

DRAINAGE AREA.—7,100 square miles.

RECORDS AVAILABLE.—February 1925 to September 1932.

EXTREMES.—Maximum discharge during year, 39,200 second-feet June 28 (gage height, 15.2 feet); minimum, 320 second-feet Sept. 15 (gage height, 0.20 foot).

1925-32: Maximum discharge, 133,000 second-feet Apr. 15, 1927 (gage height, 34.6 feet); minimum, 250 second-feet September 1925.

REMARKS.—Records good. Regulation at low stages by power plants upstream.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	740	740	14,000	1,870	4,460	2,230	2,230	1,750	4,520	11,500	3,840	535
2.....	635	600	9,550	1,750	4,460	2,230	2,230	1,530	12,000	8,360	3,270	1,190
3.....	568	505	7,260	1,320	4,140	2,230	2,230	1,640	9,400	6,840	2,600	740
4.....	505	600	6,040	1,420	3,990	2,350	1,750	1,420	4,060	4,960	2,110	568
5.....	505	568	5,480	2,860	3,550	1,870	1,530	1,640	2,730	4,960	1,990	568
6.....	505	535	4,790	5,850	3,690	2,470	1,750	1,190	1,750	4,790	1,750	568
7.....	475	600	4,300	6,440	3,270	2,350	1,750	1,130	1,990	9,300	1,320	535
8.....	448	475	3,990	6,040	2,860	2,110	1,420	1,320	1,530	12,300	1,000	505
9.....	448	475	3,550	5,130	2,990	2,350	1,190	1,530	4,820	20,600	1,190	370
10.....	505	535	3,690	3,990	2,860	1,990	1,080	1,750	7,660	16,700	1,080	448
11.....	420	568	4,460	3,410	2,990	1,990	1,130	3,130	7,470	16,700	1,130	475
12.....	600	845	4,620	3,410	2,730	1,640	1,220	3,270	4,790	18,000	1,080	448
13.....	2,470	2,990	4,620	2,730	2,990	1,530	1,320	2,600	4,140	18,600	1,080	568
14.....	3,270	3,270	4,140	2,470	3,130	1,220	1,220	2,110	3,990	19,300	880	370
15.....	2,350	3,270	4,140	2,470	2,470	1,420	1,320	1,530	3,410	15,200	920	370
16.....	2,230	1,750	4,140	4,140	3,130	1,750	1,220	1,320	2,730	5,130	1,000	420
17.....	1,530	1,420	3,690	9,820	2,990	1,990	1,000	1,320	1,990	3,550	845	475
18.....	1,640	1,190	3,270	11,700	3,990	2,600	1,530	1,220	2,730	2,470	775	420
19.....	1,190	10,100	3,130	9,050	4,960	3,270	1,420	1,080	2,110	2,730	705	420
20.....	845	14,000	2,730	6,840	5,300	3,270	2,230	1,080	1,750	1,990	568	395
21.....	705	15,200	2,860	6,440	3,990	2,230	2,470	960	11,800	1,990	740	370
22.....	880	17,000	1,990	11,600	3,270	2,600	2,350	845	24,700	1,750	670	395
23.....	775	24,400	2,600	19,600	3,690	1,990	2,230	740	21,600	1,530	535	448
24.....	920	26,400	2,350	15,500	2,860	1,990	3,840	740	15,200	1,750	740	448
25.....	1,040	30,800	1,990	10,900	2,860	1,870	5,300	845	15,200	2,600	740	448
26.....	1,080	27,200	1,530	11,200	2,990	2,230	5,130	845	10,800	2,110	600	420
27.....	845	26,800	1,990	13,400	2,860	2,730	4,140	670	28,000	2,730	420	420
28.....	810	26,800	2,110	10,100	2,110	1,750	2,730	568	39,200	2,990	535	370
29.....	740	27,500	1,320	7,690	2,110	2,110	2,470	845	27,500	2,230	505	845
30.....	740	28,600	1,640	6,240	-----	1,870	1,990	635	13,100	2,730	505	370
31.....	670	-----	1,640	5,130	-----	2,230	-----	535	-----	4,140	535	-----

Month	Maximum	Minimum	Mean	Run-off in, acre-feet
October.....	3,270	420	1,000	61,500
November.....	30,800	475	9,860	587,000
December.....	14,000	1,320	3,990	245,000
January.....	19,600	1,320	6,790	418,000
February.....	5,300	2,110	3,370	194,000
March.....	3,270	1,220	2,140	122,000
April.....	5,300	1,000	2,110	126,000
May.....	3,270	535	1,350	83,000
June.....	39,200	1,530	9,760	581,000
July.....	20,600	1,530	7,440	457,000
August.....	3,840	420	1,150	70,700
September.....	1,190	345	481	28,600
The year.....	39,200	345	4,110	2,980,000

COTTONWOOD RIVER AT ELMDALE, KANS.

LOCATION.—Chain gage in NW¼ sec. 26, T. 19 S., R. 7 E., a quarter of a mile above Middle Creek and 1 mile east of Elmdale.

DRAINAGE AREA.—1,040 square miles.

RECORDS AVAILABLE.—May 1922 to June 30, 1932 (discontinued).

EXTREMES.—Maximum discharge during year, 6,450 second-feet Nov. 17 (gage height, 22.70 feet); minimum, 8 second-feet Oct. 9 (gage height, 3.40 feet).

1922-32: Maximum discharge, 15,800 second-feet July 12, 1929 (gage height, 36.43 feet); minimum, 1 second-foot July 9, 1926, and Sept. 16, 1931. Bank-full stage, 32 feet.

Maximum stage known, 36.65 feet in 1904.

REMARKS.—Records good except those for days when stage-discharge relation was affected by backwater, Nov. 14-16, 24, 25, June 20-29, which are fair.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	12	12	608	141	92	106	144	81	77
2	13	12	608	141	111	106	126	92	68
3	13	13	492	141	132	106	108	258	77
4	13	12	463	141	144	94	96	608	148
5	15	12	463	148	98	106	96	266	138
6	13	12	203	157	111	106	96	116	111
7	12	12	345	157	106	106	96	178	81
8	12	12	365	181	98	94	101	1,470	77
9	10	15	365	148	98	119	103	743	68
10	12	12	382	126	88	119	96	108	74
11	12	12	400	126	98	106	96	108	154
12	12	15	400	141	88	106	96	108	77
13	15	60	382	141	88	83	96	96	68
14	12	^a 1,380	302	141	88	88	96	85	68
15	12	^a 2,850	275	141	88	106	96	76	60
16	12	^a 3,860	253	135	98	94	94	76	57
17	13	5,430	231	157	116	106	98	85	52
18	13	3,110	219	135	365	106	106	83	45
19	12	945	174	113	492	111	113	65	945
20	13	691	231	126	608	94	116	65	
21	13	463	211	126	181	106	116	65	
22	12	463	211	141	148	94	116	57	^a 1,000
23	13	1,040	211	126	132	106	116	57	
24	13	^a 4,010	211	126	132	325	116	57	
25	13	^a 3,600	181	126	119	717	116	57	
26	12	1,680	191	126	119	1,170	103	77	895
27	15	1,100	181	126	106	1,040	83	124	
28	12	945	167	141	106	717	81	94	^a 1,100
29	13	795	157	141	106	608	72	94	
30	13	636	141	148	-----	434	81	83	151
31	12	-----	148	203	-----	148	-----	74	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	15	10	12.6	778
November	5,430	12	1,110	65,998
December	608	141	296	18,398
January	203	113	141	8,668
February	608	88	150	8,640
March	1,170	83	243	14,980
April	144	72	102	6,090
May	1,470	57	181	11,100
June	-----	45	426	25,400
The period	-----	-----	-----	160,000

^a Estimated.

SPRING RIVER NEAR WACO, MO.

LOCATION.—Chain gage on line between SE¼ sec. 7 and NE¼ sec. 18, T. 29 N., R. 33 W., at highway bridge 1½ miles east of Waco. Zero of gage is 835.25 feet above mean sea level.

DRAINAGE AREA.—1,160 square miles.

RECORDS AVAILABLE.—April 1924 to September 1932.

EXTREMES.—Maximum discharge during year, 19,800 second-feet June 28 (gage height, 20.88 feet); minimum, 38 second-feet Sept. 12 (gage height, 1.22 feet).

1924-32: Maximum discharge, 57,400 second-feet Aug. 17, 1927 (gage height, 28.6 feet); minimum, 22 second-feet Sept. 8, 1925 (gage height, 0.90 foot).

REMARKS.—Records good except those for discharges below 150 second-feet, which are fair, owing to regulation from gristmills.

Discharge in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	84	98	2,070	266	742	322	266	199	1,090	1,250	284	244
2.....	92	80	1,140	266	694	322	244	186	4,250	1,780	266	186
3.....	76	121	888	248	646	303	230	179	1,990	1,300	226	266
4.....	82	94	790	248	646	303	226	159	742	1,040	219	149
5.....	54	94	694	380	556	303	216	146	600	1,140	205	90
6.....	98	100	646	438	556	322	209	146	477	6,450	186	129
7.....	94	82	600	1,300	516	322	230	138	360	4,250	199	111
8.....	59	71	556	742	516	303	248	149	341	3,620	179	94
9.....	68	62	600	556	496	284	284	114	477	1,550	176	84
10.....	66	90	646	496	477	266	248	143	1,830	988	172	88
11.....	98	88	600	496	790	266	248	132	838	838	162	88
12.....	202	76	556	458	646	266	234	121	516	742	156	44
13.....	694	1,360	556	458	516	241	209	111	600	646	143	100
14.....	1,260	1,250	556	399	458	241	189	114	477	556	136	106
15.....	646	742	477	380	458	230	182	107	380	516	129	78
16.....	418	556	458	888	516	234	179	94	303	477	146	60
17.....	284	399	418	1,360	838	477	199	124	237	438	129	66
18.....	237	322	399	1,360	888	742	199	109	219	418	135	86
19.....	199	303	380	938	646	694	219	107	192	399	135	59
20.....	192	266	380	742	516	496	248	94	2,950	380	146	96
21.....	159	244	360	646	458	458	284	92	5,850	360	129	70
22.....	162	3,190	341	1,990	458	399	266	96	3,530	341	118	84
23.....	146	3,890	341	2,870	418	380	248	65	1,360	303	118	73
24.....	146	5,150	322	2,150	399	360	496	109	888	322	114	70
25.....	146	3,270	322	1,480	390	341	477	92	600	284	116	70
26.....	107	1,690	303	1,760	380	322	380	88	556	322	124	53
27.....	132	1,760	284	1,990	360	303	284	103	5,750	418	126	86
28.....	132	1,360	284	1,480	341	284	234	88	15,900	438	126	84
29.....	116	1,550	266	1,040	341	266	223	124	3,800	322	94	66
30.....	107	2,870	266	888	-----	248	202	86	1,560	303	105	65
31.....	105	-----	266	790	-----	248	-----	105	-----	341	399	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October.....	1,200	54	206	0.178	0.21	12,700
November.....	5,150	62	1,040	.897	1.00	61,900
December.....	2,070	266	541	.466	.54	33,300
January.....	2,870	248	952	.821	.95	58,500
February.....	888	341	540	.466	.50	31,100
March.....	742	230	340	.293	.34	20,900
April.....	496	179	253	.218	.24	15,100
May.....	199	65	120	.108	.12	7,380
June.....	15,900	192	1,960	1.69	1.80	117,000
July.....	6,450	284	1,050	.905	1.04	64,600
August.....	399	94	164	.141	.16	10,100
September.....	266	44	98.0	.084	.09	5,830
The year.....	15,900	44	603	.520	7.08	438,000

TURKEY CREEK AT JOPLIN, MO.

LOCATION.—Water-stage recorder in NW¼ NW¼ sec. 34, T. 28 N., R. 33 W., a quarter of a mile below Joplin Creek and 1 mile northwest of Joplin.

DRAINAGE AREA.—33 square miles.

RECORDS AVAILABLE.—July to September 1932.

EXTREMES.—Maximum discharge during period, 262 second-feet July 30 (gage height, 3.74 feet); minimum, 2.0 second-feet Sept. 30 (gage height, 0.61 foot).

Maximum stage known, 10.0 feet (date unknown).

REMARKS.—Records fair.

Discharge, in second-feet, 1932

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1.....		6	13	11.....		3.5	2.2	21.....	7	3.0	11
2.....		5	2.6	12.....		3.3	2.2	22.....	7	3.1	2.7
3.....		5	2.6	13.....		3.1	2.2	23.....	8	3.1	2.4
4.....		4.8	2.6	14.....		3.1	2.2	24.....	8	3.0	2.4
5.....		4.7	2.4	15.....		3.1	13	25.....	7	3.0	2.4
6.....		4.8	2.4	16.....		3.1	3.8	26.....	14	2.4	2.4
7.....		5	2.3	17.....		3.1	2.5	27.....	7	2.4	2.5
8.....		4.4	2.3	18.....		3.0	2.4	28.....	6	2.3	2.5
9.....		4.1	2.3	19.....		3.0	2.3	29.....	6	2.4	2.4
10.....		3.8	2.3	20.....		2.9	2.3	30.....	41	2.4	2.3
								31.....	7	3.7	

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acro-feet
July 21-31.....	41	7	10.7	0.324	0.13	234
August.....	6	2.3	3.54	.107	.12	218
September.....	13	2.2	3.43	.104	.12	204
The period.....						656

SHOAL CREEK NEAR JOPLIN, MO.

LOCATION.—Indicating float gage in S½ sec. 28, T. 33 N., R. 33 W., at Grand Falls hydroelectric plant of Empire District Electric Co., 4 miles south of Joplin.

DRAINAGE AREA.—458 square miles.

RECORDS AVAILABLE.—April 1924 to September 1932.

EXTREMES.—Maximum discharge during year, about 17,200 second-feet June 27 (gage height, 15.0 feet); minimum, 8 second-feet Oct. 9, while plant was shut down.

1924-32: Maximum discharge, that of June 27, 1932; minimum, that of Oct. 9, 1931.

REMARKS.—Records good. Flow regulated by Grand Falls hydroelectric plant.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	101	134	584	135	580	297	227	193	3,210	684	184	97
2	119	134	527	169	541	330	220	182	3,040	583	165	96
3	106	134	473	171	531	346	204	187	610	538	168	78
4	105	134	437	171	498	284	198	170	433	511	191	78
5	173	134	313	209	440	273	188	137	364	490	145	95
6	105	134	407	243	470	292	200	174	343	516	131	80
7	102	122	371	337	419	222	228	155	264	445	132	79
8	65	134	360	285	426	264	227	155	441	393	132	96
9	129	117	387	283	426	267	176	149	675	390	133	80
10	196	117	227	235	392	236	211	170	522	323	149	104
11	91	117	327	266	426	223	193	165	385	290	99	95
12	105	292	293	235	426	259	184	135	376	271	140	79
13	238	297	310	235	375	208	194	137	496	251	131	79
14	263	211	283	219	375	223	165	138	425	268	106	66
15	239	192	267	226	347	235	186	121	305	236	115	82
16	217	175	361	310	318	258	213	134	270	252	105	65
17	189	171	211	579	375	301	246	134	255	250	97	79
18	191	171	267	642	375	325	248	127	226	212	234	79
19	171	164	231	577	340	258	248	138	229	244	167	74
20	170	152	239	533	357	292	204	117	343	199	152	62
21	152	152	199	507	323	276	227	106	426	180	79	96
22	152	219	240	929	352	264	199	133	332	181	99	120
23	152	835	122	1,200	315	225	239	111	273	176	99	112
24	152	815	194	1,030	301	210	225	85	273	186	115	95
25	152	724	184	886	321	226	224	122	316	183	115	86
26	152	556	187	880	315	225	206	124	745	165	116	76
27	152	513	179	847	307	226	175	118	9,890	270	99	82
28	151	472	198	776	284	244	191	135	2,430	276	98	79
29	134	526	170	730	273	242	190	104	1,100	209	78	68
30	134	584	226	664	-----	204	171	121	847	267	80	67
31	134	-----	147	602	-----	241	-----	234	-----	220	115	-----

Month	Maximum	Minimum	Mean	Per square mile	Run-off	
					Inches	Acre-feet
October	263	65	151	0.330	0.38	9,280
November	855	117	258	.629	.70	17,100
December	584	122	288	.629	.73	17,700
January	1,200	135	487	1.06	1.22	29,900
February	580	273	387	.845	.91	22,300
March	346	204	257	.561	.65	15,800
April	248	165	207	.452	.50	12,300
May	234	85	142	.310	.36	8,730
June	9,890	226	995	2.17	2.42	59,200
July	684	165	312	.681	.79	19,200
August	234	78	128	.279	.32	7,570
September	120	62	84.1	.184	.21	5,000
The year	9,890	62	309	.675	9.19	224,000

CANADIAN RIVER NEAR BELL RANCH, N. MEX.

LOCATION.—Water-stage recorder in the Pablo Montoya Grant, 9 miles southwest of Bell Ranch and 1 mile above mouth of Perra Creek.

DRAINAGE AREA.—6,400 square miles.

RECORDS AVAILABLE.—October 1930 to September 1932. Records for 1915 to 1917 and 1927 to 1930 published by State engineer.

EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, about 19,600 second-feet Oct. 1, 5 (gage height, 8.30 feet); no flow June 25 to July 1. Maximum discharge during year ending Sept. 30, 1932, 3,080 second-feet June 24 (gage height, 4.50 feet); no flow during several periods.

REMARKS.—Records fair except those estimated for year ending Sept. 30, 1932, which are poor. Stage-discharge relation affected by ice Dec. 21, 22, 30, 1930; Jan. 4, 5, Dec. 6-13, 16-20, 1931. Diversions for irrigation above station.

Discharge, in second-feet, 1930-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1.....	6,430	132	* 112	* 50	85	77	* 330	1,320	456	0	208	* 28
2.....	7,790	127	* 109	* 50	100	81	* 330	1,010	227	* 300	897	24
3.....	6,420	122	* 106	* 60	112	64	* 320	1,170	130	* 150	314	35
4.....	2,310	120	* 104	* 70	114	68	314	1,640	87	61	296	38
5.....	2,570	114	* 102	* 80	124	74	* 310	1,230	76	94	176	13
6.....	2,680	112	* 100	83	94	83	* 330	1,000	66	77	120	26
7.....	1,230	112	98	85	92	89	* 350	* 850	* 55	149	323	23
8.....	856	112	100	81	83	85	368	* 750	49	120	179	21
9.....	562	112	94	74	83	89	362	* 620	59	87	343	19
10.....	445	110	110	81	77	77	357	569	56	87	1,170	16
11.....	6,830	107	117	79	74	* 75	373	* 570	48	182	680	13
12.....	4,900	105	110	74	76	* 65	378	562	* 50	114	445	11
13.....	2,490	105	103	68	103	* 50	362	511	59	85	231	9
14.....	820	100	107	59	94	50	352	518	30	64	152	7
15.....	556	96	* 110	68	85	* 75	368	518	* 30	61	110	14
16.....	405	92	* 100	66	81	* 100	347	493	103	45	83	72
17.....	394	* 94	* 90	58	76	127	338	493	64	48	58	200
18.....	319	* 96	* 80	61	83	* 150	275	530	45	48	41	630
19.....	262	* 98	* 70	63	83	* 175	389	530	27	* 500	* 30	456
20.....	239	* 101	* 60	56	87	* 160	433	487	* 10	* 150	105	357
21.....	210	* 103	* 50	56	77	* 150	328	536	* 1	* 900	140	292
22.....	202	* 105	* 50	58	72	140	292	582	* 1	* 500	76	275
23.....	182	107	* 50	64	81	135	292	569	* 1	* 250	64	288
24.....	166	94	* 50	58	72	149	296	556	* 1	* 200	100	220
25.....	160	76	* 100	70	64	202	288	451	0	* 150	122	1,010
26.....	163	77	* 80	74	59	270	338	394	0	* 120	206	725
27.....	154	89	* 70	63	58	270	323	* 300	0	* 90	130	518
28.....	152	92	* 60	68	72	279	300	* 270	0	66	85	283
29.....	146	96	* 50	72	-----	* 300	1,350	* 380	0	48	66	231
30.....	143	114	* 50	76	-----	* 330	1,480	* 1,200	0	42	43	292
31.....	140	-----	* 50	79	-----	* 340	-----	883	-----	54	33	-----

* Estimated.

Discharge, in second-feet, of Canadian River near Bell Ranch, N. Mex., 1930-32—Con.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931-32												
1	199	68	58	58	61	58	7	31	250	338	52	* 85
2	176	66	56	43	72	54	6	76	189	166	49	* 80
3	196	* 65	54	33	74	52	6	83	154	173	18	* 75
4	196	* 64	63	52	74	52	4	81	170	451	19	* 70
5	160	* 63	58	68	51	52	3	76	127	362	21	* 60
6	149	* 61	* 50	56	59	51	2	68	117	456	19	* 55
7	132	* 60	* 40	45	70	41	2	66	266	309	28	* 60
8	117	59	* 30	56	92	32	2	70	163	189	39	41
9	107	58	* 30	51	124	30	3	74	117	124	22	36
10	102	54	* 30	54	110	26	3	76	83	63	14	35
11	94	51	* 40	64	92	24	2	138	68	42	8	31
12	94	52	* 40	61	77	19	2	246	51	224	14	27
13	92	59	* 40	64	74	23	2	468	59	389	13	25
14	120	59	45	72	76	25	1	394	59	202	13	23
15	106	68	59	81	77	31	0	410	70	176	13	23
16	98	56	* 40	68	70	45	0	384	56	163	84	22
17	87	56	* 39	72	64	56	0	394	48	135	323	22
18	81	54	* 30	58	68	56	0	427	49	130	179	21
19	77	49	* 40	59	66	51	0	394	72	122	206	20
20	100	43	* 60	61	64	39	1	378	43	117	506	16
21	146	41	66	72	61	32	0	474	34	107	173	14
22	135	42	64	77	54	30	0	487	54	100	154	14
23	163	41	68	72	52	28	0	524	33	98	122	43
24	146	41	76	58	58	24	0	427	853	96	138	74
25	114	33	53	34	68	18	0	439	* 405	170	149	199
26	96	34	77	36	66	15	0	368	352	63	163	451
27	86	32	76	43	64	14	1	338	469	48	389	319
28	81	58	68	45	59	13	6	296	511	45	206	288
29	76	51	61	70	59	12	14	275	296	48	160	166
30	74	64	61	54	54	10	20	238	176	51	112	143
31	72		66	81	81	8		275		54	94	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1930-31				
October	7,790	140	1,620	99,800
November	132	76	104	6,190
December	117	50	85.2	5,240
January	85	50	67.9	4,170
February	124	58	84.3	4,080
March	340	50	141	8,690
April	1,480	275	409	24,300
May	1,640	270	693	42,600
June	466	0	57.7	3,430
July	900	0	156	9,600
August	1,170	30	227	13,900
September	1,010	7	205	12,200
The year	7,790	0	325	235,000
1931-32				
October	199	72	118	7,280
November	68	32	53.1	3,160
December	83	30	52.9	3,250
January	81	33	58.8	3,620
February	124	51	70.9	4,080
March	58	8	32.9	2,030
April	20	0	2.9	173
May	524	31	274	16,800
June	853	33	180	10,700
July	456	42	168	10,300
August	506	8	113	6,940
September	451	14	83.3	4,950
The year	863	0	101	73,300

* Estimated.

CANADIAN RIVER AT LOGAN, N. MEX.

LOCATION.—Water-stage recorder in sec. 15, T. 13 N., R. 33 E., 1 mile south of Logan, three quarters of a mile above Southern Pacific Railroad bridge, 5 miles below Ute Creek, and about 5 miles above Tucumcari Creek.

DRAINAGE AREA.—11,200 square miles.

RECORDS AVAILABLE.—June 1904 to February 1905; December 1908 to May 1914; October 1930 to September 1932. Records for 1922 to 1930 published by State engineer.

EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, about 102,000 second-feet Oct. 11 (gage height, 19.00 feet); no flow during several periods.

Maximum discharge during year ending Sept. 30, 1932, 23,100 second-feet (gage height, 10.02 feet); no flow during several periods.

REMARKS.—Records fair except those estimated, which are poor. Diversions for irrigation above station.

Discharge, in second-feet, 1930-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1	8,420	178	75	* 80	80	68	315	1,380	585	0	78	60
2	12,100	170	78	* 90	88	78	871	2,910	336	26	* 800	46
3	27,600	165	88	95	88	245	315	1,290	200	410	* 1,500	28
4	7,570	165	98	129	90	214	235	1,780	119	245	* 400	20
5	3,680	161	110	147	101	191	250	2,530	161	116	* 350	13
6	* 2,910	* 154	110	147	132	147	255	1,460	122	88	* 200	9
7	* 3,400	143	98	139	129	125	297	1,300	66	46	322	7
8	* 1,500	132	101	119	136	129	364	1,010	47	* 45	204	5
9	* 1,000	136	101	101	136	113	378	999	44	47	1,130	3
10	* 700	139	98	110	143	101	400	973	40	104	1,560	2
11	* 28,000	132	95	139	119	90	315	948	35	214	1,490	1
12	* 12,000	129	95	136	95	78	364	730	32	380	818	1
13	* 5,500	122	90	136	85	66	430	720	32	297	476	0
14	* 2,350	116	95	132	82	48	430	640	32	147	357	0
15	* 1,200	107	113	129	82	54	336	567	23	82	297	0
16	* 800	95	113	132	85	110	285	452	14	48	273	0
17	* 700	92	110	129	113	132	303	460	48	47	224	0
18	* 500	85	107	129	101	147	291	494	24	777	170	0
19	* 400	82	90	116	82	136	336	508	8	730	132	130
20	336	* 110	64	95	72	104	250	594	3	291	129	329
21	309	* 140	52	78	64	95	261	524	1	1,370	476	* 350
22	343	* 170	48	75	66	95	336	438	0	670	415	* 375
23	336	195	46	72	66	95	303	492	0	315	261	* 400
24	315	165	52	72	68	82	322	558	0	255	250	* 300
25	291	122	154	66	68	80	303	840	0	273	178	* 1,500
26	224	101	116	62	62	104	261	430	0	143	245	* 1,100
27	204	88	110	64	64	129	250	291	0	80	182	680
28	204	72	85	60	62	174	261	235	0	42	132	445
29	209	64	* 80	66	-----	191	567	285	0	27	174	315
30	200	68	* 75	68	-----	287	1,830	917	0	22	129	303
31	191	-----	* 70	64	-----	315	-----	1,220	-----	56	90	-----

* Estimated.

Discharge, in second-feet, of Canadian River at Logan, N.Mex., 1930-32—Contd.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931-32												
1	309	40	26	47	26	47	0	0	763	209	12	132
2	415	44	22	50	31	41	0	0	818	250	7	78
3	240	46	32	48	33	35	0	0	936	558	5	50
4	161	48	42	24	33	30	0	0	973	285	3	40
5	143	47	48	34	42	30	0	0	840	219	3	35
6	191	48	36	80	41	31	0	0	2,000	343	3	30
7	157	44	17	139	48	28	0	0	500	800	3	30
8	132	41	15	56	58	24	0	0	200	300	762	20
9	113	42	12	64	50	25	0	0	300	174	500	20
10	104	41	12	68	41	30	0	34	150	110	315	20
11	92	46	17	60	42	31	0	1,320	50	174	209	15
12	88	36	25	52	92	31	0	1,220	30	209	147	15
13	85	38	33	58	122	44	0	912	20	125	204	15
14	80	56	31	44	88	34	0	1,290	15	250	147	15
15	68	46	30	48	75	26	0	1,540	15	267	82	15
16	56	46	12	48	78	22	0	1,570	10	204	42	10
17	52	41	11	46	70	21	0	1,350	10	170	129	10
18	60	34	11	47	68	13	0	1,200	10	161	796	10
19	64	33	15	62	58	8	0	1,230	10	147	603	10
20	256	33	56	66	56	4	0	1,360	5	125	468	10
21	92	31	47	62	62	2	0	1,430	4	95	460	10
22	187	20	52	62	66	7	0	1,510	8	154	200	10
23	98	24	44	54	65	13	0	1,620	936	174	235	10
24	54	18	34	62	60	15	0	1,430	6,510	122	300	10
25	56	15	38	52	60	16	0	1,480	11,100	129	92	10
26	72	13	46	41	55	12	0	1,160	876	122	78	1,530
27	58	10	46	68	55	12	7	999	864	200	82	785
28	47	20	34	82	50	8	4	924	1,450	161	92	438
29	42	36	38	66	48	3	1	960	864	110	260	281
30	38	30	42	46	46	1	0	912	508	64	730	392
31	36		48			0		807		28	422	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1930-31				
October	28,000	191	3,980	245,000
November	195	64	127	7,580
December	154	46	90.9	5,580
January	147	60	102	6,360
February	143	62	91.4	5,080
March	315	43	129	7,940
April	1,530	235	374	22,260
May	2,910	235	902	55,500
June	585	0	65.7	3,910
July	1,370	0	233	14,790
August	1,500	78	433	26,600
September	1,500	0	214	12,790
The year	28,000	0	571	413,000
1931-32				
October	415	36	118	7,230
November	56	10	35.6	2,120
December	58	11	31.2	1,920
January	139	24	57.4	3,530
February	122	26	57.7	3,320
March	47	0	20.8	1,280
April	7	0	0.4	24
May	1,620	0	847	52,100
June	11,100	4	1,030	61,000
July	800	23	203	12,800
August	2,360	3	303	18,600
September	1,530	10	164	9,750
The year	11,100	0	239	174,000

* Estimated.

VERMEJO RIVER NEAR DAWSON, N.MEX.

LOCATION.—Water-stage recorder in the Maxwell Grant, about T. 28 N., R. 20 E., 2¼ miles north of Dawson.

DRAINAGE AREA.—250 square miles.

RECORDS AVAILABLE.—October 1930 to September 1932. Records for 1915 to 1923 and 1927 to 1930 published by State engineer.

EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, about 588 second-feet Aug. 23 (gage height, 4.53 feet); no flow Feb. 25.

Maximum discharge during year ending Sept. 30, 1932, 2,400 second-feet July 10 (gage height, 6.42 feet); no flow during several periods.

REMARKS.—Records fair except those estimated, which are poor. State-discharge relation affected by ice Feb. 22–28, Mar. 1–8, Dec. 28, 29, 1931; Jan. 28, 30, 31, 1932. Diversions for irrigation above station.

Discharge, in second-feet, 1930–32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1	30	9	5	1	9	• 3	13	56	51	• 18	15	8
2	40	10	5	1	10	• 2	18	71	41	• 25	32	14
3	22	10	7	2	9	• 3	20	118	36	• 17	62	6
4	19	10	7	2	10	• 4	14	89	37	• 26	18	5
5	22	9	5	2	12	• 4	10	80	39	• 20	13	5
6	37	8	4	3	12	• 3	12	77	41	16	9	5
7	23	9	2	3	8	• 5	15	74	39	16	12	7
8	20	8	3	3	9	• 6	19	87	40	17	14	9
9	18	8	4	4	9	8	22	77	42	15	36	10
10	75	7	4	4	4	8	20	72	42	13	22	8
11	130	8	6	5	4	8	20	62	40	14	14	27
12	• 25	6	6	5	5	12	20	68	40	13	12	12
13	• 30	6	8	6	7	12	28	66	39	13	10	8
14	20	8	7	4	7	15	26	72	37	12	8	11
15	17	7	4	4	9	13	28	79	41	13	5	24
16	14	4	7	4	6	11	26	87	48	11	4	14
17	13	5	4	4	9	13	22	91	37	12	4	13
18	10	9	3	4	5	14	20	96	31	19	3	46
19	10	2	• 2	4	4	20	23	96	30	46	6	27
20	10	1	2	4	7	16	25	96	18	23	9	19
21	• 10	2		4	7	16	24	93	16	59	12	18
22	10	2		3	• 9	17	20	87	19	26	8	14
23	10	4		3	• 7	20	24	86	20	20	71	62
24	10	4		3	• 5	18	28	84	23	20	23	23
25	10	5	• 1	3	• 2	18	22	84	23	18	10	14
26	10	8		3	• 3	19	25	86	18	17	6	30
27	10	7	1	3	• 3	• 15	26	84	17	14	4	9
28	9	8	• 1	4	• 4	12	26	76	• 15	10	3	7
29	10	12	• 1	4		13	40	76	• 13	8	3	5
30	9	8	1	4		18	50	62	• 14	7	4	5
31	9		1	9		11		58		8	3	

• Estimated.

Discharge, in second-feet, of Vermejo River near Dawson, N. Mex., 1930-32—Con.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931-32												
1.....	5	3	0	4	3	10	0	22	44	33	44	8
2.....	4	4	0	2	4	10	0	23	39	70	16	8
3.....	5	4	0	3	4	8	0	30	39	44	12	8
4.....	5	4	0	2	5	7	0	31	41	26	44	7
5.....	5	4	1	2	6	6	1	34	45	22	10	7
6.....	4	4	1	3	12	5	3	34	40	29	6	9
7.....	3	3	2		20	5	6	25	34	18	5	6
8.....	2	2	3		20	4	8	22	31	14	5	5
9.....	4	2	4	4	16	2	8	24	31	16	4	6
10.....	20	3	5	5	9	1	7	32	29	30	3	5
11.....	20	3	4	5	8	2	6	63	29	100	3	3
12.....	12	4	2	5	10	1	7	69	25	40	3	
13.....	8	4	1	5	13	2	7	74	21	17	9	
14.....	7	4	1	5	8	4	7	79	20	9	56	
15.....	7	3	1	5	4	13	13	77	19	5	26	
16.....	6	3	1	4	2	9	15	79	17	3	98	1
17.....	5	4	2	4	3	6	18	80	16	2	46	
18.....	5	3	2	4	7	6	23	79	15	16	56	
19.....	5	1	4	4	5	5	22	82	16	10	35	
20.....	8	1	2	5	10	3	21	95	15	9	32	
21.....	8	0	1	5	5	3	23	89	15	8	44	1
22.....	6	0	1	7	5	4	26	84	72	7	27	2
23.....	6	0	1	3	5	2	23	84	34	6	47	11
24.....	6	0	1	3	7	1	16	77	81	24	32	82
25.....	6	0	0		7	1	14	68	34	16	35	115
26.....	5	0	0		9	1	18	59	26	18	35	35
27.....	5	0	2	3	7	1	26	56	24	10	37	15
28.....	5	0			8	1	21	55	47	14	20	13
29.....	5	0			9	0	20	65	46	27	14	11
30.....	4	0	4	3	3	0	21	55	26	16	13	10
31.....	3	3	3	3		0	50	50	13	9	9	9

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1930-31				
October.....	130	9	22.3	1,370
November.....	12	1	6.8	405
December.....	8	1	3.5	214
January.....	9	1	3.6	222
February.....	12	2	7.0	357
March.....	20	2	11.4	700
April.....	50	10	22.6	1,350
May.....	118	56	30.3	4,940
June.....	51	13	31.6	1,680
July.....	59	7	18.3	1,120
August.....	71	3	14.7	902
September.....	62	5	14.8	853
The year.....	130	1	19.9	14,490
1931-32				
October.....	20	2	6.4	395
November.....	4	0	2.1	125
December.....	5	0	1.7	105
January.....	7	2	3.7	230
February.....	20	2	8.0	458
March.....	13	0	4.0	244
April.....	26	0	12.7	754
May.....	95	22	57.9	3,580
June.....	81	15	32.7	1,950
July.....	100	2	21.4	1,320
August.....	93	3	26.5	1,630
September.....	115	1	12.8	764
The year.....	115	0	15.9	11,500

* Estimated.

CIMARRON RIVER AT UTE PARK, N.MEX.

LOCATION.—Water-stage recorder in Maxwell Grant, about 1 mile east of post office at Ute Park and half a mile below mouth of Ute Creek.

DRAINAGE AREA.—235 square miles.

RECORDS AVAILABLE.—July 1907 to December 1914; October 1930 to September 1932. Records for 1915 to 1930 published by State engineer.

EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, 130 second-feet Aug. 9 (gage height, 2.52 feet); minimum, 2.5 second-feet Jan. 31 to Feb. 5.

Maximum discharge during year ending Sept. 30, 1932, 126 second-feet June 24 (gage height, 2.58 feet); minimum, 3.5 second-feet Nov. 20, Jan. 29.

REMARKS.—Records good except those estimated, which are fair. Flow regulated by storage in Eagle Nest Reservoir. Diversions for irrigation above station. Stage-discharge relation affected by ice Dec. 6, 1930, to Mar. 11, 1931.

Discharge, in second-feet, 1930-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1.....	11	4.8					7.8	41	68	85	59	11
2.....	10	4.8					7.8	48	74	81	62	11
3.....	9.1	5.2	*4.5	*7	*2.5		7.0	53	72	46	71	11
4.....	7.3	5.2					7.0	56	77	22	71	8.8
5.....	7.3	5.2			2.6		7.6	54	78	78	69	7.6
6.....	7.6	5.2	5.1		*3		7.6	51	59	80	64	6.2
7.....	7.0	5.2			*3		7.0	50	57	83	61	12
8.....	6.4	5.2			3.5		7.3	55	80	83	53	12
9.....	6.4	5.4					9.1	55	81	81	65	11
10.....	7.0	5.4				*5	9.5	53	81	71	75	11
11.....	8.4	5.6		*8			10	47	81	53	62	8.8
12.....	7.3	*6.0	*5				11	39	78	55	61	7.0
13.....	7.3	6.4			*4		12	34	67	72	60	4.8
14.....	7.0	6.2					15	34	67	78	59	3.9
15.....	7.0	6.2					16	44	75	74	54	12
16.....	6.4	6.7		8.2			17	49	75	69	53	6.7
17.....	6.2	7.0					18	56	71	71	57	6.4
18.....	5.6	7.6			5		19	62	62	61	51	8.1
19.....	4.6	5.0				*5	20	65	41	48	42	8.4
20.....	4.3	4.8		*7		*5	22	60	32	51	40	7.6
21.....	4.3	5.9				*5	22	50	31	48	40	6.7
22.....	4.3	5.9	*6			*6	20	40	48	39	38	8.1
23.....	4.3	5.2			*5	*6	20	35	48	39	32	8.8
24.....	4.3	*4.9				*6	20	34	49	39	30	13
25.....	4.1	*4.6				*7	19	35	55	33	28	14
26.....	3.9	*4.3		*4		*6	18	34	54	34	26	15
27.....	4.1	*4.0			5.2	*7	19	33	42	33	20	13
28.....	3.9	3.7			*5	*7	20	37	53	38	12	13
29.....	4.1	*4	*7			*8	25	46	83	54	11	13
30.....	4.1	*4				*7	29	44	81	53	10	13
31.....	4.6			2.5		6.7		45		57	10	

* Estimated.

Discharge, in second-feet, of Cimarron River at Ute Park, N. Mex., 1930-32—Con.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931-32												
1.....	14	8.8	*6	*5	*4	9.8	19	20	46	106	66	38
2.....	15	8.8				9.5	19	21	48	33	60	36
3.....	15	8.8				8.4	20	26	71	27	60	26
4.....	15	8.4				8.4	23	28	57	74	60	18
5.....	15	9.1				11	24	34	36	74	58	34
6.....	14	9.5	6.4	5.0	4.1	*12	28	34	46	74	38	34
7.....	14	12					28	31	64	67	32	35
8.....	14	9.5					28	29	66	60	58	35
9.....	14	9.1					30	38	65	41	54	35
10.....	13	9.1					30	48	67	34	53	21
11.....	11	8.8	*6	*5	*22	11	31	58	64	57	57	16
12.....	11	8.8					35	65	83	64	58	27
13.....	11	8.8					39	52	84	65	38	28
14.....	11	8.4					45	53	85	64	35	28
15.....	9.8	8.4					12	61	85	45	56	23
16.....	9.5	8.4	*6	*5	*22	11	43	66	87	32	53	23
17.....	9.1	8.1					44	65	91	42	56	18
18.....	8.8	7.8					45	66	92	49	57	10
19.....	9.1	7.8					45	64	104	47	58	12
20.....	11	6.4					12	45	74	52	56	13
21.....	11	7.0	*5.5	*4	*12	11	46	76	*110	64	*40	20
22.....	10	5.2					47	73		65		24
23.....	9.8						48	73		119		27
24.....	9.8						46	65		123		21
25.....	10						43	57		107		10
26.....	9.1	*5.5	*4	*3.5	*9.8	11	44	52	118	66	31	7.8
27.....	9.1						42	49	119	66	24	6.4
28.....	9.8						39	44	110	66	23	5.2
29.....	9.1						24	43	108	69	39	4.8
30.....	8.8						21	48	110	50	39	6.7
31.....	8.8					13		49		34	39	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1930-31				
October.....	11	3.9	6.10	375
November.....	7.6	3.7	5.32	317
December.....			5.57	342
January.....			6.44	396
February.....			4.05	225
March.....			5.54	341
April.....	29	7.0	15.0	892
May.....	65	33	46.4	2,850
June.....	83	31	64.0	3,810
July.....	85	22	58.4	3,590
August.....	75	10	46.6	2,870
September.....	15	3.9	9.76	581
The year.....	85		22.9	16,600
1931-32				
October.....	15	8.8	11.3	693
November.....	12		7.70	458
December.....			6.01	370
January.....			4.91	302
February.....			11.5	660
March.....		8.4	11.4	704
April.....	48	19	35.4	2,110
May.....	76	20	50.4	3,100
June.....	123	36	86.4	5,140
July.....	106	27	55.8	3,430
August.....	66	23	46.6	2,860
September.....	38	4.8	21.4	1,280
The year.....	123		29.1	21,100

* Estimated.

b Field estimate.

CIMARRON RIVER AT SPRINGER, N.MEX.

LOCATION.—Water-stage recorder in sec. 33, T. 25 N., R. 22 E., at highway bridge one eighth of a mile west of Springer, 6 miles below mouth of Rayado River, and 6 miles above confluence with Canadian River.

RECORDS AVAILABLE.—July 1907 to December 1909; October 1930 to September 1932. Records for 1919 to 1930 published by State engineer.

EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, 1,130 second-feet Oct. 11 (gage height, 4.00 feet); minimum, 0.5 second-foot Aug. 7. Maximum discharge during year ending Sept. 30, 1932, 802 second-feet May 21 (gage height, 3.44 feet); minimum, 0.2 second-foot Feb. 12.

REMARKS.—Records good except those estimated, which are poor. Diversions for irrigation above station. State-discharge relation affected by ice Nov. 19 to Dec. 31, 1930; Jan. 1 to Feb. 4, Nov. 20, Nov. 22 to Dec. 31, 1931; Jan. 1 to Feb. 10, Mar. 8-15, 1932.

Discharge, in second-feet, 1930-32.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1.....	331	9.1			*14	12	11	124	12	5.0	2.4	2.6
2.....	209	9.1			*15	9.9	9.9	185	11	6.5	4.1	5.5
3.....	288	9.9			*16	13	11	230	12	9.1	3.6	3.1
4.....	34	9.1			*16	15	13	214	14	15	4.1	3.1
5.....	17	9.9			17	14	12	202	23	7.5	3.1	2.6
6.....	91	9.9		*8	17	14	12	212	11	5.5	2.2	2.4
7.....	30	9.9	*11		16	19	14	194	8.3	5.0	1.3	2.4
8.....	7.5	11			13	15	17	194	7.5	3.1	6.5	2.4
9.....	4.6	9.9			13	14	25	238	7.0	3.6	3.6	2.6
10.....	7.0	9.1			13	19	25	241	6.0	3.1	18	2.6
11.....	482	9.1		6.6	13	16	22	241	9.1	3.6	4.1	2.4
12.....	61	8.3			12	15	27	206	11	7.0	2.4	2.6
13.....	19	8.3			12	13	31	171	7.5	5.5	2.0	3.6
14.....	13	8.3			12	14	33	139	9.1	7.0	1.8	4.1
15.....	12	7.5			11	16	30	144	8.3	5.0	1.3	13
16.....	12	91	*11	*7	13	15	30	171	7.0	3.6	1.8	11
17.....	12	32			14	14	30	192	7.5	5.5	2.0	14
18.....	12	22			13	14	28	173	8.3	12	2.2	6.5
19.....	12	*20			12	13	31	165	7.5	7.5	2.2	5.0
20.....	12	*17			12	12	36	219	5.5	7.0	2.0	3.6
21.....	12	*10			11	12	34	140	5.5	7.5	2.0	3.4
22.....	11	*9			12	12	30	91	5.0	5.5	2.0	2.6
23.....	9.9	11			12	12	31	66	4.6	4.1	2.0	5.5
24.....	9.9			*10	12	8.3	38	55	3.6	7.0	1.8	18
25.....	9.1				9.9	7.5	48	52	4.1	5.0	1.8	9.1
26.....	8.3				11	9.9	42	47	3.6	4.6	1.8	5.0
27.....	7.5	*12			11	17	34	43	3.1	3.1	2.0	5.0
28.....	9.1				*12	11	12	30	39	2.6	1.8	4.1
29.....	9.1				*13		12	36	17	2.6	1.8	3.1
30.....	9.1				*13		12	57	18	3.1	2.6	3.1
31.....	9.1				*14		12		12	2.4	2.6	

* Estimated.

Discharge, in second-feet, of Cimarron River at Springer, N. Mex., 1930-32—Con.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931-32												
1	2.6	2.2				4.1	3.1	4.1	74	5.5	3.6	2.0
2	4.1	2.4				2.2	2.6	4.6	66	15	2.0	1.8
3	3.6	2.4	• 5			2.2	3.6	3.1	42	6.5	2.4	1.6
4	2.6	2.0				2.4	3.1	3.1	21	9.9	2.0	1.6
5	• 3.4	1.8				2.6	2.0	4.1	17	3.6	2.0	1.8
6	4.1	2.0				2.4	1.8	4.1	6.5	3.1	2.0	1.8
7	3.6	2.2	• 6			2.6	2.0	3.6	1.8		2.0	1.8
8	2.6	2.2	5.6				5.5	3.1	1.3		2.0	2.0
9	3.1	2.4					6.0	3.1	1.8	• 6	2.2	2.0
10	3.6	2.4					3.1	17	.7		2.0	2.0
11	3.6	3.1	• 5	.5	5.0	• 4	4.1	42	.4	• 40	2.0	1.8
12	4.1	3.1			8.3		4.1	58	.3	20	2.0	1.6
13	4.1	3.6			14		5.0	124	.5	15	2.0	1.3
14	3.6	3.1			12		3.1	142	1.3	9.9	1.8	1.3
15	3.6	3.6			12		2.6	129	2.2	6.5	1.6	1.6
16	2.6	2.6			11	6	2.4	142	1.8	5	1.3	1.6
17	2.6	4.1			9.1	5.5	2.4	120	1.3	4.1	2.2	1.6
18	2.4	3.6			6.5	4.6	3.1	111	1.3	3.1	4.1	1.3
19	2.6	3.1			6	3.6	3.6	99	1.8	5	6	1.3
20	6.5	• 3			5.5	2.2	2.6	126	2.0	5	17	1.1
21	6	3.1	• 4		7	2.2	2.2	208	2.4	4.1	4.6	1.3
22	4.1				7	2.6	2.2	232	4.1	4.1	11	1.8
23	3.6	• 3			6.5	4.6	4.1	76	5	4.1	4.1	3.6
24	3.1				6	4.1	3.1	47	6	4.1	8.3	2.4
25	2.6				5.5	2.6	2.0	61	7.5	4.1	5.5	4.1
26	2.6				6	2.2	2.0	59	9.1	4.1	3.1	4.1
27	2.4				5	2.2	3.6	65	8.3	3.6	2.4	3.6
28	2.6	• 4		8.7	4.1	2.4	9.9	80	11	3.6	2.0	1.8
29	• 2.4				3.6	2.2	5.5	93	7.5	3.1	1.6	2.0
30	2.4			• 10		2.2	4.1	98	5.5	2.6	1.8	1.6
31	2.2					2.6		88		2.2	1.6	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1930-31				
October	482	4.6	57.1	3,510
November	91	7.5	14.5	862
December			10.2	625
January			8.83	543
February	17	9.9	13.0	722
March	19	7.5	13.3	820
April	57	9.9	27.6	1,640
May	241	12	143	8,800
June	23	2.6	7.68	457
July	15	2.4	5.62	345
August	18	1.3	2.99	184
September	18	2.4	5.13	305
The year	482	1.3	26.0	18,800
1931-32				
October	6.5	2.2	3.32	204
November			3.03	180
December			4.47	275
January			5.75	353
February		3.6	8.28	476
March		2.2	3.30	202
April	9.9	1.8	3.48	307
May	232	3.1	72.6	4,480
June	74	.3	10.4	618
July	40	2.2	7.13	438
August	17	1.3	3.49	215
September	4.1	1.1	1.97	117
The year	232	.3	10.7	7,750

• Estimated.

CIENEGUILLA CREEK NEAR THERMA, N.MEX.

LOCATION.—Water-stage recorder in Maxwell Grant, 6 miles south of Therma, about 2,000 feet above high-water line of Eagle Nest Reservoir and half a mile below mouth of Schoolhouse Draw.

RECORDS AVAILABLE.—October 1930 to September 1932. Records for 1928 to 1930 published by State engineer.

EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, 66 second-feet May 3; maximum gage height, 2.62 feet Apr. 19; minimum discharge, 0.3 second-foot Dec. 6.

Maximum discharge during year ending Sept. 30, 1932, 147 second-feet Apr. 25; maximum gage height, 3.26 feet June 30; minimum discharge not determined.

REMARKS.—Records fair except those estimated, which are poor. Diversions for irrigation above station. Stage-discharge relation affected by ice Nov. 20, 1930, to Apr. 8, 1931; Nov. 11, 1931, to Feb. 28, Mar. 8–18, 1932.

Discharge, in second-feet, 1930–32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1.....	2.6	2.1					• 12	39	4.7	5.2	1.1	1.4
2.....	2.7				• 1		• 15	40	2.4	8.4	3.1	1.1
3.....	3.0		• 0.5					45	1.9	3.1	3.7	1.0
4.....	2.9							50	4.2	5.3	1.7	.9
5.....	2.9				• 1	• 4	• 14	42	5.9	2.8	1.0	1.1
6.....	3.0		.3					36	3.9	1.7	.7	1.4
7.....	3.0	• 2.5						28	2.1	1.6	.5	1.5
8.....	2.8						13	24	1.7	1.4	1.0	1.4
9.....	2.7				• 1			19	1.0	1.4	2.2	1.2
10.....	2.8							18	.6	1.4	1.7	1.1
11.....	6.0						• 16	18	.9	1.1	.5	1.4
12.....	3.9							15	1.2	1.0	.5	1.0
13.....	3.2	3.0				• 5		12	1.1	.9	.6	.9
14.....	3.0							19	.8	.9	.7	1.8
15.....	2.8			• 0.5	• 3			25	9.2	1.0	4.8	10
16.....	2.6						24	11	1.1	2.1	.7	3.0
17.....	2.5						24	13	.9	1.7	1.4	9.5
18.....	2.5						30	10	.7	3.1	1.6	11
19.....	2.4		• 5			• 5	38	10	.7	1.9	1.9	11
20.....	2.4						31	13	.7	2.0	1.8	6.0
21.....	2.4	• 2					21	10	.8	1.6	1.7	2.9
22.....	2.5						18	8.0	.9	1.8	2.1	1.6
23.....	2.7					• 5	21	7.8	1.2	1.4	3.0	1.8
24.....	2.9						22	6.2	1.3	1.8	2.9	16
25.....	3.0				• 4		21	6.4	1.6	1.8	1.1	13
26.....	3.0						19	6.2	1.6	1.5	.8	6.8
27.....	3.1						19	6.7	1.4	1.4	.7	4.4
28.....	3.2	• 1				• 5	18	7.0	1.4	1.0	.6	3.6
29.....	3.2	• 1					26	6.0	1.4	.8	.7	3.0
30.....	• 3					10	29	5.4	1.5	.6	.8	3.2
31.....	• 3							5.2		.6	1.0	

• Estimated.

Discharge, in second-feet, of Cieneguilla Creek near Therma, N. Mex., 1930-32—Con.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931-32												
1.....	2.6	* 1.6	* 2.5			43	33	67	3.6	14	2.9	1.3
2.....	2.5	* 1.6	2.9			48	36	72	6.8	15	1.3	1.4
3.....	3.1	* 1.7				52	38	72	13	10	.9	1.4
4.....	2.5	1.7				35	41	65	* 14	6.4	.7	1.3
5.....	2.3	1.8					45	61	14	4.2	.6	1.1
6.....	2.3				* 20	* 25	58	57	11	3.3	.6	.9
7.....	2.3					16	58	50	6.9	3.0	12	1.0
8.....	2.4	* 2.5					61	45	6.8	2.5	14	1.3
9.....	3.0						54	42	9.2	3.3	2.7	1.0
10.....	11	3.3					47	67	11	4.0	1.0	.9
11.....	6.8						* 60	103	11	4.9	4.0	.8
12.....	4.8		* 1.5				98	8.9	13	4.1	.9	
13.....	3.9				* 15	* 25	74	81	8.0	8.5	3.0	.9
14.....	3.7						63	64	7.6	4.4	2.2	.8
15.....	* 3.2				8.3		62	51	7.8	2.7	2.6	.9
16.....	2.7	* 2		* 0.5			61	51	5.6	1.9	5.0	.9
17.....	2.2						64	51	4.3	1.6	4.3	1.3
18.....	2.2						59	48	2.7	1.6	8.3	1.3
19.....	2.0					31	56	50	3.2	1.5	9.7	1.5
20.....	5.6				* 5	28	55	76	3.4	1.0	5.3	1.5
21.....	6.8					25	55	55	2.3	1.6	4.1	1.4
22.....	5.2		* 5			24	53	39	5.2	1.8	3.3	1.6
23.....	3.8						38	31	8.0	2.4	2.9	3.4
24.....	2.4	* 7				* 20	44	25	8.9	2.2	2.9	3.8
25.....	2.1						18	18	8.7	5.7	2.0	3.4
26.....	2.0		* 5		* 25	17	* 55	14	9.7	3.9	1.5	3.8
27.....	1.8	* 1.5					9.7	15	2.6	3.8	3.2	
28.....	1.5						64	8.0	14	1.9	5.9	2.7
29.....	1.4				* 48	* 20	52	7.3	14	1.8	3.8	2.3
30.....	* 1.4						57	6.6	27	2.1	2.2	2.5
31.....	* 1.5						5.0			11	1.3	

Month		Maximum	Minimum	Mean	Run-off in acre-feet
1930-31					
October.....		6.0	2.4	2.96	182
November.....				2.12	126
December.....				.49	30
January.....				.50	33
February.....				2.4	135
March.....				5.2	321
April.....		38		19.8	1,180
May.....		50	5.2	17.3	1,070
June.....		5.9	.6	1.69	100
July.....		8.4	.6	2.13	131
August.....		3.7	.5	1.36	84
September.....		16	.9	4.13	246
The year.....		50		5.02	3,640
1931-32					
October.....		11	1.4	3.26	206
November.....				1.91	114
December.....				1.25	77
January.....				.50	31
February.....				16.6	955
March.....		52		25.9	1,590
April.....			33	53.8	3,200
May.....		103	5.0	48.1	2,950
June.....		27	2.3	9.05	539
July.....		15	1.0	4.64	285
August.....		14	.6	3.84	236
September.....		3.8	.8	1.68	100
The year.....		103		14.2	10,300

* Estimated.

° Field estimate.

SIXMILE CREEK NEAR THERMA, N.MEX.

LOCATION.—Water-stage recorder in Maxwell Grant at highway bridge 3 miles southwest of Therma and a quarter of a mile above high-water line of Eagle Nest Reservoir.

RECORDS AVAILABLE.—October 1930 to September 1932. Records for 1928 to 1930 published by State engineer.

EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, 13 second-feet Sept. 20 (gage height, 2.06 feet); no flow during several periods.

Maximum discharge during year ending Sept. 30, 1932, 15 second-feet Mar. 8, Apr. 10, 21, 22; maximum gage height, 2.03 feet Mar. 8, Apr. 10; no flow during several periods.

REMARKS.—Records fair except those estimated, which are poor. Diversions for irrigation above station. Stage-discharge relation affected by ice Nov. 5, 1930, to Mar. 18, 1931, and Nov. 24, 1931, to Feb. 28, 1932.

Discharge, in second-feet, 1930-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1	2.3	3.2	*2.5	}	*1	}	*5	9.8	0.9	0.3	0.6	3.2
2	1.9	3.2						9.3	1.1	.5	.6	3.2
3	1.1	3.2						8.7	*1	.5	.9	2.7
4	1.1	2.3						8.1	*1	.4	1.1	1.9
5	1.3				1	*2	6.7	7.4	0	.3	1.3	1.6
6	1.3		2.4				6.7	7.4	0	.1	.9	1.9
7	1.3	*2					6.0	8.1	*.4	.1	.9	1.8
8	1.3		*2				6.0	8.1	.9	0	1.1	1.7
9	1.6						6.0	7.4	1.1	.1	1.6	1.6
10	1.6						6.0	6.7	.9	.2	1.6	1.5
11	2.3					6.0	6.7	.7	.2	1.6	1.4	
12	2.3				*1	*3	6.0	7.4	.5	.2	.9	1.3
13	1.9					6.0	7.4	.4	.2	.9	1.3	
14	1.9					6.0	7.4	.5	.3	.6	1.3	
15	1.9					5.4	7.4	.5	.3	.6	2.7	
16	1.9		*1			5.4	6.7	.4	.5	1.6	1.1	
17	1.9	*3				5.4	6.7	.4	.6	2.3	1.6	
18	2.7					6.0	6.0	.3	1.1	2.3	1.9	
19	2.7					6.7	6.0	.2	.6	2.3	2.3	
20	2.7		*1			7.4	6.0	.2	.5	*2.3	8.7	
21	2.7					7.4	6.0	.5	.5	*2.3	1.6	
22	2.7					8.7	5.4	.6	.4	3.2	1.1	
23	2.7					8.7	4.2	*.5	.3	2.7	.9	
24	2.3				*2	9.3	3.7	*.4	.4	2.3	1.1	
25	3.2					9.3	3.7	.3	.4	1.6	2.7	
26	3.2	*2.5				9.3	3.7	.5	.4	1.3	2.7	
27	3.2					9.8	3.2	.9	.3	1.3	3.2	
28	2.7					9.8	2.7	.6	.2	1.6	*2.9	
29	2.3					10	1.9	.3	.2	1.9	*2.6	
30	3.7					9.8	1.3	.2	.4	2.7	*2.3	
31	3.7							1.1	.5	3.2		

3 * Estimated,

Discharge, in second-feet, of Sixmile Creek near Therma, N.Mex., 1930-32—Contd.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931-32												
1	2.0	1.7	1.7			5.0	4.1	7.0	3.8	1.0	0.5	1.4
2	1.7	1.6	1.9			4.7	4.1	8.0	3.3	.7	.3	1.3
3	1.7	1.6				7.0	6.6	9.9		.8	.4	1.4
4	1.7	1.6				9.9	7.5	11	*3	.7	.1	1.4
5	1.7	1.7			a 4	7.5	12	12	2.7	.8	.2	1.9
6	1.7	1.7				7.5	13	13	2.5	.6	.3	1.7
7	1.6	1.7				2.4	10	13	1.9	.4	.3	1.7
8	1.6	1.6				5.7	8.0	12	1.7	.8	.3	1.7
9	1.6	1.6				9.0	9.0	12	1.6	1.0	.3	1.6
10	1.7	1.6			b 4	11	12	12	1.4	1.0	.6	1.3
11	1.7	1.6				*7	11	12	1.6	1.2	.9	1.3
12	1.7		*1				11	12	1.4	1.3	1.0	1.2
13	1.7						12	12	1.2	1.4	1.0	1.2
14	1.6					9.0	12	11	.6	1.0	.9	1.4
15	1.6					9.0	13	11	.7	1.0	1.2	1.4
16	1.6					7.0	14	9.9	.7	1.0	1.9	1.2
17	1.6					4.1	14	9.5	.8	1.0	1.6	1.2
18	1.6	*1				3.6	14	8.5	.8	1.0	1.7	1.2
19	1.6					3.8	14	10	.8	.8	2.2	1.0
20	1.6					4.4	14	13	.8	.3	2.0	1.2
21	1.6					5.0	15	13	.8	.2	1.9	1.2
22	1.6		0			4.4	15	12	1.0	.2	1.6	1.2
23	1.6					4.4	14	12	1.4	.2	1.7	1.0
24	1.6	.5				4.1	13	12	1.3	.8	1.9	1.0
25	1.6					2.5	11	10	1.0	.9	1.9	1.2
26	1.5					3.1	9.5	9.0	1.0	.7	1.7	1.0
27	1.4	*1	*0			4.7	7.5	8.5	.9	.8	1.7	1.0
28	1.3					4.7	9.0	7.5	.8	.7	1.7	1.0
29	1.3				5.7	5.4	8.0	6.6	.7	.6	1.7	1.0
30	1.7					4.4	7.5	5.7	.6	.5	1.7	.9
31	1.7					4.1		5.0		.6	1.6	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1930-31				
October	3.7	1.1	2.24	138
November			2.65	157
December			1.38	85
January			1.0	61
February			1.3	73
March			2.93	180
April	10		6.99	416
May	9.8	1.1	5.99	368
June	1.1	0	.54	32
July	1.1	0	.35	22
August	3.2	.6	1.62	99
September	3.7	.9	2.19	131
The year	10	0	2.44	1,760
1931-32				
October	2.0	1.3	1.62	100
November			1.22	72
December		0	.73	43
January			3.62	208
February			5.46	356
March	15	4.1	10.5	622
April	13	5.0	10.3	635
May	3.8	.6	1.46	87
June	1.4	.2	.77	48
July	2.2	.1	1.19	73
August	1.9	.9	1.27	76
September				
The year	15	0	3.17	2,300

* Estimated.

* Field estimate.

NOTE.—No flow during January 1932.

MORENO CREEK AT THERMA, N. MEX.

LOCATION.—Water-stage recorder in Maxwell Grant, at highway bridge 1,000 feet west of Therma and half a mile above high water-line of Eagle Nest Reservoir.

RECORDS AVAILABLE.—October 1930 to September 1932. Records for 1928 to 1930 published by State engineer.

EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, 57 second-feet Apr. 19; maximum gage height, 1.72 feet Mar. 20; minimum discharge, 0.2 second-foot Dec. 5.

Maximum discharge during year ending Sept. 30, 1932, 126 second-feet Mar. 4; maximum gage height, 1.65 feet May 20; minimum discharge, 0.1 second-foot Aug. 4.

REMARKS.—Records fair except those estimated, which are poor. Diversions for irrigation above station. Stage-discharge relation affected by ice Nov. 4, 1930, to Mar. 18, 1931, and Nov. 12, 1931, to Feb. 9, 1932.

Discharge, in second-feet, 1930-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.				
1930-31																
1.....	6.4	1.8	.1				*16	20	8.1	2.1	.7	0.9				
2.....	5.1	1.8					17	21	8.1	1.8	.7	.9				
3.....	4.5	1.8					*14	27	7.2	1.5	.9	.8				
4.....	4.0	1.8					11	32	6.8	2.4	1.0	.7				
5.....	3.4		.2				12	28	6.8	2.7	.9	.7				
6.....	3.4	*1.5	1.9				*1	12	27	5.6	1.2	.9	1.0			
7.....	3.7		13					27	4.2	1.1	.8	1.1				
8.....	3.4		12					32	4.2	1.1	.7	1.1				
9.....	3.4		14					32	4.8	1.1	.8	1.1				
10.....	4.0						13	31	4.5	.9	.8	1.0				
11.....	6.0						14	30	4.5	.9	.7	1.0				
12.....	5.1					1.5	15	25	4.5	.9	.7	1.0				
13.....	4.2					14	22	4.0	.7	.8	.9					
14.....	4.2					15	20	4.0	.6	.8	1.1					
15.....	4.0	*1			*1	*7	19	22	4.0	.7	.8	2.6				
16.....	3.7						20	26	4.2	.7	1.2	1.9				
17.....	2.6						17	27	4.0	.7	1.1	1.9				
18.....	2.6						17	26	3.4	.9	1.1	2.3				
19.....	2.7						13	23	2.5	.7	1.1	2.4				
20.....	2.7		*1				*14	20	30	2.7	.7	1.1	4.0			
21.....	2.9						14	24	2.4	.6	1.5	2.9				
22.....	2.7						12	18	2.3	.6	1.6	2.1				
23.....	2.9	*2					14	15	2.1	.8	1.2	2.1				
24.....	2.4						14	14	1.8	.8	1.1	4.0				
25.....	2.4						*14	12	1.3	.8	.8	3.7				
26.....	2.6						10	12	2.1	.7	.7	2.7				
27.....	2.3						8.9	11	1.8	.7	.7	2.6				
28.....	2.4	3.5					8.9	11	1.3	.7	.7	2.6				
29.....	2.1	*3					16	9.7	1.1	.7	.7	2.3				
30.....	1.6						19	8.9	1.2	.7	.7	2.3				
31.....	1.6							8.5		.7	.7					

* Estimated.

Discharge, in second-feet, of Moreno Creek at Therma, N. Mex., 1930-32—Contd.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931-32												
1	2.1	1.9	* 1.2			11	13	27	19	1.4	1.6	1.4
2	2.3	2.1	1.2			11	18	27	18	2.2	1.4	1.4
3	2.6	2.1				9.6	23	26	16	1.9	.8	1.4
4	2.3	1.9				25	30	28	* 16	1.1	.1	1.3
5	2.1	1.9			* 7	8.4	35	32	16	.8	.2	.8
6	1.8	1.9				9.2	41	33	13	.9	.5	.8
7	1.8	1.9				10	37	30	12	.8	.8	.8
8	1.6	1.9				9.2	34	25	11	.6	1.3	.8
9	1.9	2.1					31	25	10	.6	1.4	.9
10	4.2	2.1		* 1.5	7.0		28	35	8.8	.9	1.6	.9
11	2.7	2.3				* 10	30	56	8.4	.9	3.6	1.
12	2.4		* 1.5				30	51	7.9	1.3	4.3	1.
13	2.3				* 5		31	46	7.9	2.2	3.2	.9
14	2.1						12	34	47	7.5	1.6	3.2
15	2.1					3.7	9.2	36	51	7.1	1.4	3.4
16	1.9	* 2					9.2	32	50	* 5	1.4	2.6
17	1.8						9.2	35	51	* 3	1.3	2.6
18	1.9						9.6	37	50	1.3	1.3	2.4
19	1.9						10	35	58	.9	2.4	1.1
20	2.4				* 4		14	34	87	* 2	1.0	1.0
21	2.9	* 1.5		1.5			11	36	73		1.0	1.1
22	2.7		1.7				13	39	60	2.6	1.0	1.9
23	2.6						27	43	58	.8	2.2	2.4
24	2.6	1.4					14	45	50	3.4	2.6	1.9
25	2.6				* 10		12	39	43	2.4	2.6	3.4
26	2.4		* 1.5	* 1.5			11	37	37	2.6	3.4	1.1
27	2.4	* 1.3					11	32	34	3.4	2.9	1.4
28	2.3						11	37	30	2.6	1.3	3.2
29	1.9						11	33	28	2.4	1.4	2.6
30	1.9						11	29	24	1.3	1.3	1.6
31	1.9						11		21		2.4	1.4

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1930-31				
October	6.4	1.6	3.39	208
November			1.69	101
December			1.10	68
January			1	61
February			1	56
March			7.92	487
April	23	8.9	14.6	866
May	32	8.5	21.8	1,340
June	8.1	1.1	3.91	232
July	2.7	.6	1.01	62
August	1.6	.7	.90	56
September	4.0	.7	1.86	110
The year	32		5.04	3,650
1931-32				
October	4.2	1.6	2.27	140
November			1.78	106
December			1.49	91
January			1.50	92
February			6.64	382
March	25	8.4	11.6	713
April	45	13	33.1	1,970
May	87	21	41.7	2,560
June	19	1.3	7.27	432
July	3.4	.6	1.46	90
August	4.3	.1	1.88	116
September	4.6	.8	1.62	96
The year	87	.1	9.36	6,790

* Estimated.

RAYADO RIVER AT SAUBLE'S RANCH, NEAR CIMARRON, N.MEX.

LOCATION.—Water-stage recorder in Maxwell grant, T. 25 N., R. 19 E., 10 miles southwest of Cimarron.

RECORDS AVAILABLE.—October 1930 to September 1932; May 1911 to December 1914, at site 3 miles upstream. Records for 1915 to 1930 published by State engineer.

EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, about 290 second-feet May 3 (gage height, 2.88 feet); minimum, 1 second-foot Dec. 26 to Jan. 3.

Maximum discharge during year ending Sept. 30, 1932, 316 second-feet May 12 (gage height, 2.95 feet); minimum discharge, 1.5 second-foot Nov. 19.

REMARKS.—Records good except those estimated, which are fair. No diversions above station. Stage-discharge relation affected by ice Nov. 21 to Dec. 5, Dec. 17-31, 1930; Jan. 1 to Feb. 1, Nov. 20 to Dec. 31, 1931; Jan. 1 to Feb. 26, 1932.

Discharge, in second-feet, 1930-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1.....	20	4.6	*6		*3.5	4.8	8.7	108	*20	14	7.3	6.3
2.....	24	4.3	*6		3.6	4.2	12	186	*15	19	6.8	4.4
3.....	9.3	4.6	*7		3.2	4.3	13	194	*15	13	7.6	3.8
4.....	5.9	4.6	*7		3.3	4.4	8.7	186	*20	20	6.3	3.4
5.....	6.8	4.6	*5		3.3	4.4	8.7	*120	*15	12	5.6	3.2
6.....	6.1	4.6	4.3	*2	3.2	3.6	14	*80	15	8.3	4.9	3.8
7.....	5.4	4.6	3.6		3.1	*3	19	*60	14	7.6	4.8	6.1
8.....	5.1	4.2	3.6		3.2	*3	41	*65	13	7.6	11	4.0
9.....	3.8	3.8	3.7		3.2	*3	37	*60	13	8.0	15	3.8
10.....	13	3.8	4.0		3.4	*4	37	*55	13	7.6	16	4.3
11.....	45	2.5	3.7	2.6	3.2	*4	47	*50	13	7.3	8.0	4.2
12.....	11		3.7		3.6	*4	63	*50	11	8.0	6.6	3.8
13.....	9.7	*3	3.3		3.8	4.9	55	*50	9.3	7.1	5.6	3.7
14.....	8.3		3.7		4.0	4.9	54	*55	9.3	6.8	5.4	4.8
15.....	7.3		4.0		4.3	4.8	48	*60	9.7	6.8	4.9	14
16.....	7.1	3.1	2.8		4.3	5.1	36	*65	9.3	7.6	4.9	8.3
17.....	6.6	6.8			4.4	5.9	40	69	8.0	11	8.0	8.0
18.....	6.8	11			4.2	6.6	40	71	7.6	34	6.6	7.6
19.....	6.6	4.0			4.6	6.6	45	78	7.6	13	10	*24
20.....	6.3	3.7		*3	4.9	6.1	46	75	8.0	14	6.8	8.7
21.....	5.9	*4			4.9	6.6	34	57	8.3	11	8.3	6.3
22.....	5.6	*4			5.4	8.3	33	38	9.0	8.0	9.3	*5
23.....	5.4	*5			4.9	10	43	20	9.3	6.8	12	6.6
24.....	5.1	*6			4.8	10	39	*15	9.3	6.8	10	48
25.....	4.9	*7		*2	4.6	10	37	*10	11	7.6	6.8	18
26.....	4.9	*8			4.6	7.6	38	*8	14	6.6	5.6	11
27.....	5.1	*8		3.6	4.6	6.3	34	*7	11	5.4	4.9	9.3
28.....	5.1	*9			4.9	6.3	36	*7	8.7	5.1	4.8	8.3
29.....	5.1	*12				7.1	51	*50	8.3	4.8	4.4	8.0
30.....	4.9	*9		*3.5		6.8	66	*40	10	6.3	4.2	8.3
31.....	4.6					5.4		*30		6.3	4.6	

* Estimated.

Discharge, in second-feet, of Rayado River at Sauble's ranch, near Cimarron, N. Mex.,
1930-32—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931-32												
1.	6.8	6.1	*2	*3		14	*30	57	16	15	7.1	3.3
2.	6.8	5.4				12		65	16	16	5.9	3.3
3.	6.6	5.4				9.7		*70	14	13	5.4	3.2
4.	5.9	5.6				9.0		*75	15	11	5.4	3.1
5.	5.1	5.4	*5	4-4	*6	9.3	*13	*80	14	9.7	6.1	3.2
6.	4.8	5.4				8.7		50	*11	9.3	5.4	3.1
7.	4.6	4.9				9.7		44		9.3	5.6	3.1
8.	4.6	4.9				7.1		40		9.0	10	3.2
9.	4.9	5.1	*5	*6	*5	49	*12	44	*9	9.3	5.9	3.3
10.	30	4.9				36		87		10	4.8	3.3
11.	8.3	5.1				41		127		13	4.6	3.2
12.	6.8	4.8				44		179		22	4.8	3.2
13.	6.1	4.2	*2	*4	*7	45	*8	163	*11	23	4.6	3.8
14.	5.9	3.4				46		135		12	4.4	3.6
15.	5.6	3.4				46		141		9.7	4.3	3.6
16.	5.4	4.3				45		141		8.7	4.2	3.6
17.	5.4	3.6	*2	*4	*8	48	*15	129	*9	8.3	7.3	3.4
18.	6.1	4.0				48		96		8.0	6.1	3.3
19.	*9	2.6				46		93		8.0	7.6	3.3
20.	15					47		109		8.3	6.6	3.4
21.	13		*2	*3	*7	48	*8	106	*11	16	9.0	5.1
22.	9.3					50		86		19	8.0	4.4
23.	7.6					34		74		20	8.0	6.1
24.	6.3					38		66		17	9.3	5.4
25.	6.1	*2	*3	*4	*8	61	*15	57	*11	16	9.7	4.3
26.	5.6					57		47		16	9.0	3.8
27.	5.1					39		40		18	8.0	3.8
28.	5.1					31		39		17	8.7	3.8
29.	5.6		*4	*5	*9	44	*12	31	*15	15	8.7	4.0
30.	5.4					57		24		14	8.7	3.7
31.	5.4							20		11	3.3	4.3

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1930-31				
October	45	3.8	8.73	537
November	12		5.29	315
December	7		3.27	201
January			2.75	169
February	5.4	3.1	4.04	224
March	10	3	5.68	349
April	66	8.7	36.1	2,150
May	194	7	65.1	4,000
June	20	7.6	11.5	694
July	34	4.8	9.92	610
August	16	4.2	7.32	450
September	48	3.2	8.63	514
The year	194		14.1	10,200
1931-32				
October	30	4.6	7.36	453
November	6.1		3.68	219
December			2.97	183
January			3.75	231
February			6.77	389
March			10.1	624
April	61		42.6	2,540
May	179	20	83.1	5,110
June	20		13.6	809
July	23	8.0	10.7	656
August	10	3.3	5.28	325
September	9.3	3.1	4.14	246
The year	179		16.2	11,800

* Estimated.

MORA RIVER AT LA CUEVA, N.MEX.

LOCATION.—Water-stage recorder in Mora grant, at highway bridge at La Cueva, a quarter of a mile below Las Vegas-Mora Highway bridge and half a mile below La Cueva Dam site, below wasteway from La Cueva Canal.

RECORDS AVAILABLE.—August 1903 to July 1911; April 1931 to September 1932.

EXTREMES.—Maximum discharge during period ending Sept. 30, 1931, about 930 second-feet May 2 (gage height, 3.20 feet); minimum, 9.5 second-feet Sept. 3.

Maximum discharge during year ending Sept. 30, 1932, 818 second-feet June 28 (gage height, 3.05 feet); minimum, 6.4 second-feet Jan. 26.

REMARKS.—Records for period ending Sept. 30, 1931, excellent except those estimated, which are fair. Records for year ending Sept. 30, 1932, fair except those for October, March, and September, which are good, and those estimated, which are poor. Stage-discharge relation affected by ice Dec. 10, 1931, to Feb. 8, 1932. Diversions for irrigation above station.

Discharge, in second-feet, 1931-32

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.	
1931														
1		• 250	56	• 35	14	15	16	43	• 115	18	13	24	89	
2		• 290	51	• 70	18	16	17	66	120	17	14	32	66	
3		335	48	• 65	29	13	18	57	136	16	42	30	91	
4		242	46	• 110	34	10	19	56	145	13	49	28	100	
5		201	47	82	33	10	20	58	131	14	46	25	93	
6		183	53	70	27	11	21	56	116	14	35	42	80	
7		183	67	57	22	12	22	46	100	21	26	53	72	
8		213	68	49	69	14	23	47	85	23	18	46	74	
9		195	36	41	94	15	24	53	84	24	14	42	316	
10		189	• 34	34	85	19	25	46	89	21	14	38	110	
11		• 160	• 32	26	63	18	26	47	85	21	14	34	91	
12		• 140	• 29	18	44	17	27	44	78	18	14	25	82	
13		• 120	• 27	14	37	16	28	• 40	72	16	12	20	78	
14		• 110	24	13	33	28	29	• 100	64	• 15	12	16	74	
15	41	• 110	23	13	24	19	30	• 270	60	• 25	12	15	72	
							31		57		13	16		
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.		
1931-32														
1	67	• 24	• 13	• 10	• 15	• 10	24	14	61	• 160	38	30	44	
2	57	24	• 11				21	13	70	• 130	69	24	43	
3	57	23	• 12				19	14	77	• 90	66	• 18	41	
4	53	• 21	• 14				21	18	74	• 55	54	• 16	38	
5	49	19	• 15				18	20	78	• 55	44	• 15	36	
6	47	19	14	• 10	15	16	19	21	78	60	37	• 12	35	
7	40	19	• 13				24	16	74	49	31	• 14	33	
8	38	19	• 13				18	13	70	43	20	• 14	32	
9	37	• 19	12				19	12	51	48	18	• 12	27	
10	50	• 19					16	18	61	60	18	• 12	16	
11	43	• 18	• 20	14	16	18	15	299	84	25	• 14	18		
12	42	• 18					15	18	11	222	78	• 50	• 14	13
13	39	• 18					14	19	11	246	74	• 70	• 20	12
14	37	18					14	18	23	270	69	• 60	• 25	• 15
15	36	19					15	16	42	335	61	• 40	• 22	• 13
16	34	20	• 15	• 12	15	11	46	425	46	• 35	• 20	• 12		
17	33	18					14	11	63	425	29	• 30	28	• 11
18	32	18					14	11	80	• 410	26	29	31	12
19	34	18					14	10	• 70	• 390	28	25	56	13
20	42	18					14	13	• 45	• 360	27	24	85	12
21	36	18	• 10	6	15	12	14	• 40	• 340	21	24	• 100	12	
22	32	14					18	12	• 30	319	23	24	• 90	15
23	28	14					19	11	• 45	323	34	24	• 60	82
24	27	14					21	12	54	281	33	27	• 70	63
25	25	13					21	17	33	270	34	48	58	54
26	25	12	• 10	• 7	21	12	14	34	264	34	41	54	43	
27	• 25	12					21	12	49	256	40	• 35	63	36
28	• 25	11					22	14	51	250	85	• 30	• 70	34
29	• 25	11					22	13	56	242	46	• 25	• 60	32
30	• 24	• 12						12	58	239	35	• 25	• 55	31
31	• 24					13		• 190		• 30	48			

• Estimated.

Discharge, in second-feet, of Mora River at La Cueva, N.Mex., 1931-32—Contd.

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1931				
April 15-30.....	270	40	66.9	2,120
May.....	335	57	144	8,840
June.....	67	13	30.4	1,810
July.....	110	12	33.7	2,070
August.....	94	14	35.9	2,210
September.....	316	10	57.4	3,416
The period.....				20,500
1931-32				
October.....	67	24	37.5	2,310
November.....	24	11	17.3	1,030
December.....			13.9	857
January.....			11.0	674
February.....	22		15.0	965
March.....	24	10	15.8	972
April.....	80	11	33.8	2,010
May.....	425	51	227	14,000
June.....	160	21	55.2	3,296
July.....	70	18	36.0	2,210
August.....	100	12	39.0	2,400
September.....	82	11	29.3	1,740
The year.....	425		44.5	32,400

• Estimated.

MORA RIVER AT GOLONDRINAS, N.MEX.

LOCATION.—Water stage recorder in Mora Grant, 2 miles east of Golondrinás and half a mile above mouth of Coyote Creek.

RECORDS AVAILABLE.—October 1930 to September 1932. Records for 1915 to 1930 published by State engineer.

EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, about 585 second-feet May 2 (gage height, 5.05 feet); minimum, 3.4 second-feet Dec. 14.

Maximum discharge during year ending Sept. 30, 1932, 475 second-feet July 2 (gage height, 4.53 feet); minimum, 3.1 second-feet Sept. 13.

REMARKS.—Records for year ending Sept. 30, 1931, fair except those estimated, which are poor. Records for year ending Sept. 30, 1932, good except those estimated, which are poor. Diversions for irrigation above station. Stage discharge relation affected by ice Dec. 16–31, 1930; Jan. 1 to Feb. 7, Feb. 13, 14, Dec. 21–31, 1931; Jan. 1 to Feb. 25, 1932.

Discharge, in second-feet, 1930–32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1930–31												
1	• 250	19	22	• 20	• 20	20	39	266	43	44	8.7	16
2	• 600	18	23			• 15	43	322	38	90	18	13
3	• 150	18	22			• 15	43	382	37	87	25	12
4	• 100	20	19			• 15	42	270	37	135	30	9.1
5	39	20	16			• 15	40	236	40	125	28	7.4
6	49	18	18	• 20	• 20	• 15	39	214	48	82	20	7.4
7	• 90	19	17			• 18	42	295	57	66	12	15
8	• 70	19	17			20	45	205	59	58	36	12
9	• 80	20	16			20	33	51	199	47	52	95
10	• 100	20	18			31	46	175	39	40	92	60
11	• 90	22	19	21	18	42	43	150	30	28	74	55
12	• 110	22	19		18	42	45	132	22	25	54	25
13	• 90	21	18		• 19	39	45	115	20	18	46	18
14	• 60	20	18		• 19	39	48	114	16	12	37	18
15	• 50	• 17	19		20	32	50	123	14	14	30	253
16	• 45	• 14			22	33	50	133	12	24	37	115
17	• 40	• 14			23	35	102	139	12	12	61	80
18	• 35	• 14			24	35	97	155	9.1	42	40	103
19	• 34	• 14			22	36	88	152	7.8	42	44	139
20	• 34	• 14	• 15		23	30	83	137	6.9	65	35	110
21	• 33	• 14		• 20	22	22	81	107	6.5	43	49	91
22	• 32	• 14			21	30	75	97	9.6	• 30	69	80
23	32	19			22	32	63	71	11	• 20	81	88
24	32	21			22	33	57	68	10	• 15	63	332
25	• 30	18			25	32	71	79	10	12	49	167
26	• 29	• 18			27	32	66	64	8.7	10	43	130
27	• 28	• 17	• 30		28	32	59	54	10	11	27	115
28	26	• 16			25	32	54	46	6.9	9.1	21	103
29	23	• 15				32	95	39	6.9	7.4	19	95
30	21	20				49	332	41	20	4.9	18	94
31	18					39		37		6.5	16	

• Estimated.

Discharge, in second-feet, of Mora River at Golondrinas, N.Mex., 1930-32—Con.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931-32												
1.....	122	24	* 20	* 25	* 15	30	23	65	118	103	39	39
2.....	86	22				29	25	69	105	167	27	87
3.....	79	22				28	25	78	92	146	21	34
4.....	72	22				26	32	75	84	89	20	31
5.....	65	21	* 35	* 30	* 20	27	28	83	84	75	18	29
6.....	60	21				25	28	72	89	58	14	28
7.....	55	20				25	29	70	76	43	16	25
8.....	50	21				25	23	69	70	27	16	24
9.....	49	21	* 40	* 35	* 25	24	21	60	68	19	14	22
10.....	58	21				25	22	70	66	16	14	14
11.....	59	21				25	* 18	322	88	19	16	10
12.....	58	22				26	* 15	273	70	62	16	9
13.....	54	22	* 35	* 25	* 20	27	* 12	259	59	101	24	6
14.....	49	24				27	12	259	50	95	32	12
15.....	47	24				28	30	275	42	57	27	10
16.....	41	25				23	40	313	33	47	22	10
17.....	39	25	* 35	* 25	* 20	22	47	313	27	32	31	9
18.....	38	22				21	66	304	22	30	43	9
19.....	38	21				20	59	294	18	14	76	14
20.....	49	20				20	35	313	14	10	90	11
21.....	49	30	* 35	* 25	* 20	20	28	294	9	6	123	12
22.....	39	20				22	* 15	294	71	12	96	18
23.....	38	20				22	36	284	45	21	70	115
24.....	34	* 26				25	38	255	46	24	102	178
25.....	30	* 19	* 30	* 20	* 15	25	57	230	40	50	88	132
26.....	30	* 18				31	29	208	42	41	69	122
27.....	27	* 17				29	44	184	46	47	63	115
28.....	25	* 16				25	56	186	71	30	61	107
29.....	25	* 15	* 17	* 15	* 15	26	* 74	219	62	35	* 70	101
30.....	25	15				25	66	199	47	39	* 60	106
31.....	24					25		146		39	* 30	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1930-31				
October.....	500	18	73.5	4,520
November.....	22	14	17.8	1,060
December.....			18.1	1,110
January.....			20.0	1,230
February.....	28		21.3	1,180
March.....	52	15	30.5	1,870
April.....	332	39	67.8	4,030
May.....	382	87	146	8,960
June.....	59	6.5	23.1	1,380
July.....	135	4.9	39.6	2,440
August.....	95	8.7	41.2	2,530
September.....	332	7.4	79.1	4,710
The year.....	500	4.9	48.4	35,000
1931-32				
October.....	122	24	48.7	3,000
November.....	25	15	20.7	1,230
December.....			31.4	1,930
January.....			24.3	1,490
February.....			20.6	1,190
March.....	31	20	25.1	1,540
April.....	74	12	34.6	2,060
May.....	322	60	198	12,200
June.....	118	9	58.5	3,480
July.....	146	6	49.8	3,060
August.....	123	14	46.1	2,830
September.....	178	6	46.3	2,760
The year.....	322	6	50.6	36,800

* Estimated.

MORA RIVER NEAR SHOEMAKER, N.MEX.

LOCATION.—Water-stage recorder in sec. 10, T. 18 N., R. 20 E., $5\frac{1}{2}$ miles east of Shoemaker and about 23 miles above confluence with Canadian River.

DRAINAGE AREA.—1,160 square miles.

RECORDS AVAILABLE.—October 1930 to September 1932. Records for 1914 to 1930 published by State engineer.

EXTREMES.—Maximum discharge, during year ending Sept. 30, 1931, about 2,590 second-feet Oct. 2 (gage height, 5.24 feet); minimum, 1 second-foot July 31.

Maximum discharge during year ending Sept. 30, 1932, 790 second-feet May 12 (gage height, 3.30 feet); minimum discharge, 2 second-feet Aug. 14.

REMARKS.—Records fair except those estimated, which are poor. Diversions for irrigation above station. Stage-discharge relation affected by ice Dec. 7-31, 1930; Jan. 1 to Feb. 1, Dec. 30, 31, 1931; Jan. 5-19, 23-26, Jan. 29 to Feb. 25, 1932.

Discharge, in second-feet, 1930-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1	419	47	42			* 35	96	* 400	13	4	4	7
2	969	45	42				101	* 550	* 10	47	4	6
3	222	47	44			34	101	* 700	* 10	69	24	7
4	134	44	45		* 35		105	* 500	* 5	48	69	7
5	105	44	45			* 35	96	* 350	* 5	175	90	7
6	101	42	47	* 40			96	* 308	* 5	67	48	7
7	114	44				* 40	92	* 300	4	31	37	6
8	122	42			29	44	92	* 350	5	19	29	5
9	139	45				51	101	* 320	4	11	63	5
10	179	44				45	110	* 280	4	8	110	4
11	160	44	* 45	38	* 30	49	99	* 250	4	36	82	33
12	193	44				62	86	* 220	4	18	60	25
13	119	42				78	90	* 180	4	10	42	11
14	92	41				78	92	* 150	6	8	33	6
15	80	40			31	74	92	* 150	7	8	22	106
16	76	41				70	88	* 200	5	9	16	318
17	70	41				72	* 120	252	4	* 5	50	152
18	65	44			* 30	76	* 150	271	5	* 5	35	126
19	67	44				82	187	262	4	5	16	149
20	64	* 45		* 40		86	176	255	5	11	19	173
21	60	* 46			31	76	162	225	6	17	13	142
22	57	* 47				65	155	190	5	14	18	681
23	48		* 40			67	136	157	4	12	14	271
24	58	52				70	162	134	4	10	24	169
25	58	47			* 35	70	165	119	4	8	17	* 190
26	55	44				96	147	103	4	7	11	* 180
27	55	44				* 94	132	76	4	5	9	173
28	55	39		39		* 91	126	* 60	4	4	7	152
29	54	41				88	129	* 45	5	3	6	132
30	51	40		* 35		126	* 600	* 30	4	4	6	116
31	48					112		15		4	6	

* Estimated.

Discharge, in second-feet, of Mora River near Shoemaker, N. Mex., 1930-32—Con.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931-32												
1.....	147	41	31	* 40		48		57			18	36
2.....	162	42	26	42		49					17	34
3.....	124	40	30	52	* 25	44		* 90	* 150	* 180	14	35
4.....	122	39	30	47		35					10	35
5.....	110	36	29			28					7	31
6.....	* 95	35	36				* 20					
7.....	* 80	30	48	* 50				* 85		* 100	8	26
8.....	* 65	25	40			* 20		74		65	7	28
9.....	* 65	28	37					74	* 100	40	6	22
10.....	* 70	27	48					72		29	5	20
11.....								70		28	4	19
12.....	67	30	65			17		362		49	3	19
13.....	* 68	28	57	* 40		18	* 10	702		67	4	18
14.....	* 65	29			* 30	27		503	* 120	112	6	18
15.....	* 60	30				58	6	489		124	12	17
16.....	* 55	25	* 50			57	6			76	10	17
17.....	* 50	16				34	6			58	12	18
18.....	48	15	* 55	* 45		27	8			47	11	15
19.....	49	14					9	* 500	* 45	30	8	13
20.....	* 50	16	57			* 25	10			26	7	12
21.....	* 70	14	54	40			13			25	20	10
22.....	84	11	48	42			11		* 60	24	89	12
23.....	67	11	44	47			10			24	107	15
24.....	60	33	41		* 35		11	* 400		55	24	67
25.....	57	34	48				10			42	24	62
26.....	55	34	39	* 45			10			33	24	78
27.....						* 20						
28.....	51	33	37		37		8		72	48	70	179
29.....	51	29	41	55	37		11		45	41	49	165
30.....	48	27	36	* 40	37		35	* 300	34	44	55	139
31.....	49	29	37		39		51		34	28	64	122
32.....	41	33		* 30			64		124	* 25	58	122
33.....	18		* 40							* 30	47	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1930-31				
October.....	969	48	132	8,130
November.....	52	39	43.9	2,610
December.....			42.1	2,590
January.....			39.4	2,420
February.....			32.5	1,810
March.....	126		66.8	4,110
April.....	600	86	136	8,100
May.....	700	15	239	14,700
June.....	13	4	5.2	311
July.....	175	3	22.0	1,350
August.....	110	4	31.7	1,950
September.....	631	4	112	6,640
The year.....	969	3	75.5	54,700
1931-32				
October.....	162	18	71.1	4,370
November.....	42	11	27.8	1,650
December.....	65	26	43.5	2,680
January.....			43.4	2,670
February.....			31.0	1,790
March.....	58		27.0	1,660
April.....			17.0	1,010
May.....	702		311	19,100
June.....			87.9	5,230
July.....		24	68.1	4,190
August.....	107	3	30.2	1,850
September.....	305	10	56.8	3,380
The year.....	702	3	68.3	49,600

* Estimated.

COYOTE CREEK NEAR GOLONDRINAS, N. MEX.

LOCATION.—Water-stage recorder in Mora Grant $1\frac{3}{4}$ miles northeast of Golondrin, three quarters of a mile below Coyote Creek dam site, and $1\frac{1}{4}$ miles above confluence with Mora River.

RECORDS AVAILABLE.—October 1930 to September 1932. Records for 1928 to 1930 published by State Engineer.

EXTREMES.—Maximum discharge during year ending Sept. 30, 1931, about 212 second-feet May 3 (gage height, 3.60 feet); minimum, 0.4 second-foot Aug. 30.

Maximum discharge during year ending Sept. 30, 1932, 197 second-feet May 12 (gage height, 3.52 feet); minimum, 0.8 second-foot Mar. 29–31.

REMARKS.—Records for year ending Sept. 30, 1931, fair except those estimated. Records for year ending Sept. 30, 1932, good except those estimated. Diversions for irrigation above station. Stage-discharge relation affected by ice Dec. 15, 1930, to Feb. 10, 1931, and Jan. 5 to Feb. 17, 1932.

Discharge, in second-feet, 1930–32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1930-31												
1.....	35	9.6	* 10			11	16	* 100	1.2		2.1	
2.....	18	10	* 11			6.4	16	* 140	1.2		7.4	
3.....	15	11	11			6.1	16	185	1.2	* 10	1.2	* 1
4.....	12	11	8.0			6.4	17	147	1.1		2.6	
5.....	12	11	7.7			6.4	19	108	.9	3.2	1.9	
6.....	12	11	8.0	* 15	* 15	* 1	* 15	76	.9	2.9	1.6	1.5
7.....	12	11	9.6			9.6	* 15	54	.8	2.4	1.5	1.6
8.....	12	11	12			18	* 15	30	.9	2.4	2.1	1.9
9.....	12	10	9.6			19	* 20	37	.9	2.4	4.5	1.9
10.....	12	8.7	11			19	* 25	55	1.0	1.3	5.4	1.9
11.....	11	8.4	12	14	18	18	* 20	59	1.0	1.3	5.7	1.9
12.....	23	8.4	13		15	16	14	57	1.0	1.2	8.0	1.9
13.....	18	8.4	12		13	11	14	55	1.0	1.1	5.0	1.9
14.....	16	9.2	8.7		13	14	14	52	1.1	1.2	3.2	2.9
15.....	14	10			11	19	14	48	1.2	1.2	4.1	5.7
16.....	12	9.2			11	19	13	45	1.2	1.3	4.5	7.7
17.....	11	8.7			11	19	18	43	1.2	1.3	4.3	9.6
18.....	11	9.2			10	20	18	33	1.2	1.3	1.5	12
19.....	11	8.7			9.2	21	18	32	1.2	1.8	1.4	16
20.....	11	8.4			9.2	21	19	30	1.2	2.6	1.2	19
21.....	11	8.0		* 15	10	21	20	30	1.2	2.5	.8	18
22.....	11	7.0	* 10		9.6	19	20	26	1.6	2.9	.8	16
23.....	11	9.2			11	19	19	22	1.9	2.9	.8	19
24.....	11	8.0			14	25	21	19	1.9	2.9		26
25.....	11	8.7			15	32	22	15	1.9	4.1		27
26.....	11	8.7			15	24	19	9.2	1.9	4.5	* 5	29
27.....	11	7.4			16	21	* 17	5.4	2.2	4.3		30
28.....	11	6.1			16	22	* 15	3.6	2.2	2.9		25
29.....	11	5.4				32	* 80	2.5	2.1	1.6		22
30.....	11	10				25	* 150	1.8	3.2	1.3	.4	20
31.....	9.6					19		1.3		1.1	* 5	

* Estimated.

Discharge, in second-feet, of Coyote Creek near Golondrinas, N.Mex., 1930-32—
Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1931-32												
1.....	19	12	11	7.0		19	1.0	45	11	9.6	3.1	8.4
2.....	19	12	8.4	7.0		17	1.0	35	7.0	19	3.9	7.7
3.....	18	11	9.2	12		13	1.2	24	6.4	12	2.9	5.7
4.....	14	11	13	12		12	1.1	25	7.4	8.4	2.8	3.6
5.....	13	11	17			9.6	.9	24	6.4	7.4	2.8	5.0
6.....	12	11	16	*14		9.6	.9	20	4.5	6.7	2.6	5.0
7.....	11	11	9.2			8.4	1.1	20	4.3	6.7	2.6	4.7
8.....	11	11	11			7.4	1.2	20	3.9	6.1	2.8	4.7
9.....	11	10	9.6	*7	*8	8.0	1.3	19	3.2	6.1	2.9	4.7
10.....	15	10	8.7			8.0	4.7	31	2.9	7.7	2.9	4.7
11.....	13	10	8.7			7.7	2.5	125	2.8	11	3.1	4.7
12.....	16	10	8.0			8.0	2.2	159	2.6	18	3.1	4.7
13.....	18	9.6	11			*8.6	2.6	114	2.2	10	3.4	5.0
14.....	16	8.4	15			9.2	1.6	94	1.6	8.0	3.1	5.0
15.....	13	7.7	15			9.2	1.9	83	1.6	7.0	2.8	5.0
16.....	13	7.7	15			9.2	1.9	83	1.6	6.1	5.4	4.7
17.....	12	7.4	15			9.6	2.4	80	1.5	5.7	8.4	4.7
18.....	13	7.0	17	*10	7.4	9.2	2.9	72	1.5	5.0	4.7	4.7
19.....	12	7.4	18		6.7	6.4	2.9	68	1.5	6.1	8.4	4.5
20.....	17	7.0	17		7.0	5.2	2.4	68	1.5	4.7	32	4.7
21.....	18	7.7	14		7.0	4.5	2.4	63	1.6	6.1	36	4.5
22.....	16	8.0	13		9.2	4.5	2.2	56	12	4.7	13	3.1
23.....	18	7.7			8.7	4.3	4.3	49	5.7	4.5	10	13
24.....	19	11			8.4	4.3	4.1	43	3.2	4.3	25	40
25.....	16	8.7	*15		8.7	3.9	5.0	36	2.4	4.1	31	23
26.....	15	12		12	9.6	3.6	36	28	3.1	3.6	11	19
27.....	15	11		*15	12	2.8	49	23	4.1	3.6	11	15
28.....	15	7.0	16		19	1.4	48	20	4.5	3.6	11	14
29.....	12	9.6	9.2		25	.8	48	24	3.4	3.4	11	13
30.....	12	9.6	7.4	*6		.8	48	21	14	3.1	11	13
31.....	12		7.7			.8		16		3.2	9.6	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
1930-31				
October.....	35	9.6	13.2	812
November.....	11	5.4	9.05	538
December.....			10.1	622
January.....			15.0	920
February.....			13.5	748
March.....	32	6.1	17.6	1,080
April.....	150	13	24.0	1,430
May.....	185	1.3	49.1	3,020
June.....	3.2	.8	1.38	82
July.....		1.1	3.22	198
August.....	8.0		2.46	151
September.....	30		10.8	643
The year.....	185		14.1	10,200
1931-32				
October.....	19	11	14.6	900
November.....	12	7.0	9.48	564
December.....		7.4	12.7	784
January.....			9.94	611
February.....	25		9.13	525
March.....	19	.8	7.29	448
April.....	49	.9	9.49	565
May.....	159	16	51.2	3,150
June.....	14	1.5	4.31	257
July.....	19	3.1	6.95	427
August.....	36	2.5	9.14	562
September.....	40	3.1	8.65	515
The year.....	159	.8	12.8	9,310

* Estimated.

LEE CREEK NEAR VAN BUREN, ARK.

LOCATION.—Staff gage in SW¼ sec. 31, T. 10 N., R. 32 W., at Arkansas-Oklahoma State line 6¼ miles northwest of Van Buren.

DRAINAGE AREA.—430 square miles.

RECORDS AVAILABLE.—September 1930 to September 1932.

EXTREMES.—Maximum discharge during year, 23,200 second-feet Jan. 16 (gage height, 18.1 feet); no flow Sept. 8–21.

1930–32: Maximum discharge, 24,600 second-feet Feb. 8, 1931 (gage height, 18.8 feet); no flow Sept. 1–24, 1930, Sept. 8–21, 1932.

REMARKS.—Records good.

Discharge, in second-feet, 1931–32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4	56	755	139	658	315	855	122	412	38	28	1
2	4	48	500	128	625	285	722	113	156	35	23	1
3	4	46	412	116	560	276	592	104	168	35	20	1
4	4	42	360	320	470	295	560	98	125	33	17	1
5	4	38	295	6,000	412	855	500	88	88	36	13	1
6	4	35	244	2,460	360	755	440	80	68	35	12	1
7	4	33	204	1,410	335	592	412	98	58	38	11	1
8	4	31	188	1,030	310	500	412	116	50	46	9	0
9	4	30	212	755	262	412	360	116	42	46	9	0
10	4	29	208	625	244	360	335	101	36	36	10	0
11	3	30	470	530	262	335	330	85	35	31	10	0
12	4	29	820	755	285	320	310	75	33	28	11	0
13	7	28	625	820	262	295	280	66	36	24	23	0
14	9	33	470	690	960	267	262	60	29	21	21	0
15	56	30	385	592	3,090	258	236	56	27	17	19	0
16	44	33	320	17,700	5,710	244	220	52	24	15	17	0
17	34	35	335	6,760	4,850	335	212	47	22	12	12	0
18	27	41	335	2,820	2,460	385	196	44	20	12	9	0
19	22	42	310	1,810	1,650	385	188	40	19	11	7	0
20	18	54	290	1,330	1,260	360	176	36	17	9	6	0
21	15	66	276	1,100	1,030	360	164	36	16	8	5	0
22	28	104	276	9,550	855	325	153	34	15	7	4	1
23	2,210	85	262	5,290	722	285	164	31	12	9	3	1
24	690	890	232	2,730	625	258	180	29	13	20	3	1
25	305	820	220	1,810	470	244	208	30	15	36	2	1
26	200	560	208	4,420	412	232	180	31	31	24	3	1
27	139	470	180	2,370	385	658	153	35	30	20	2	1
28	113	470	168	1,730	385	1,100	136	29	23	28	2	1
29	88	690	156	1,330	335	890	139	28	47	33	2	1
30	68	1,100	150	960		820	136	27	41	38	1	1
31	60		139	1,180		1,180		27		33	1	

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	2,210	3	135	8,300
November	1,100	28	200	11,900
December	820	139	323	19,900
January	17,700	116	2,560	167,000
February	5,710	244	1,040	54,800
March	1,180	232	458	28,200
April	855	136	307	18,300
May	122	27	62.4	3,940
June	412	12	56.9	3,390
July	46	7	26.3	1,620
August	28	1	10.2	627
September	1	0	.5	30
The year	17,700	0	431	313,000

RED RIVER BASIN

RED RIVER NEAR DENISON, TEX.

LOCATION.—Chain gage on Denison-Colbert toll bridge, half a mile below Missouri-Kansas-Texas Railroad bridge and $4\frac{1}{2}$ miles northeast of Denison. Datum of gage raised 0.22 foot Oct. 1, 1931.

DRAINAGE AREA.—39,400 square miles.

RECORDS AVAILABLE.—October 1923 to September 1932.

EXTREMES.—Maximum discharge during year, about 71,400 second-feet Feb. 16 (gage height, 12.2 feet); minimum, 140 second-feet Oct. 4 (gage height, 0.56 foot).

1923-32: Maximum discharge, 132,000 second-feet Oct. 17, 1923 (gage height, 19.2 feet, present datum); minimum, that of Oct. 4, 1931.

REMARKS.—Records fair. No diversions.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	150	2,260	8,780	2,660	5,190	6,620	2,020	6,110	3,440	31,000	2,800	1,670
2	155	1,900	6,890	2,660	4,970	5,410	1,900	5,640	4,350	25,600	2,660	1,560
3	155	1,560	8,080	3,270	4,550	4,760	1,900	4,970	6,110	23,200	2,390	1,460
4	150	1,460	7,170	4,160	4,160	4,350	1,780	4,760	9,940	23,200	2,260	6,700
5	260	1,270	6,110	15,400	3,970	5,410	1,670	5,870	10,300	21,700	2,140	14,900
6	278	1,080	4,760	30,000	3,610	4,970	1,670	6,110	10,800	25,600	2,020	12,500
7	254	920	3,610	38,000	3,440	3,970	1,560	20,700	9,940	30,000	1,900	8,780
8	206	960	3,440	36,300	3,440	3,610	1,560	17,100	10,300	36,300	1,900	6,110
9	176	880	2,950	24,800	3,270	3,270	1,460	11,600	11,600	38,600	1,780	4,760
10	155	840	2,800	12,500	3,270	3,270	1,460	7,460	19,600	25,600	1,670	3,970
11	150	800	2,660	8,780	3,110	3,110	1,460	6,620	28,200	17,700	1,670	3,610
12	445	780	2,520	8,420	2,960	2,800	1,460	6,620	27,300	12,000	1,670	3,270
13	3,970	690	2,390	7,170	3,110	2,660	1,560	6,110	21,700	9,940	1,560	8,110
14	3,270	725	2,140	5,870	3,270	2,660	1,560	5,640	17,700	9,160	1,670	2,950
15	5,190	690	1,900	4,760	5,410	2,390	1,460	5,190	16,500	9,160	1,780	2,660
16	5,190	585	1,780	18,100	41,300	2,390	1,460	4,760	15,900	5,410	1,780	2,520
17	6,620	585	2,660	24,800	34,100	2,260	1,460	3,970	19,600	4,760	1,670	2,260
18	7,460	550	3,440	15,000	23,200	2,390	1,460	3,970	21,000	4,350	1,670	2,020
19	8,420	880	3,440	10,300	17,100	2,260	4,100	3,970	14,900	3,790	1,780	1,900
20	6,360	11,200	3,610	8,420	12,900	2,140	6,360	3,440	11,600	3,440	1,900	1,780
21	6,620	11,200	5,190	7,170	9,940	2,020	6,360	3,440	8,420	3,270	3,790	1,780
22	4,350	9,940	8,780	8,420	16,500	2,020	6,110	5,870	6,890	3,110	5,870	1,670
23	12,900	6,360	9,940	20,300	33,000	1,900	5,190	4,970	5,870	2,950	7,170	1,670
24	22,400	11,600	8,780	24,000	34,100	2,020	5,190	4,160	5,410	2,800	5,410	1,560
25	20,300	21,000	7,170	20,300	21,700	2,140	4,760	3,610	5,190	3,610	3,610	1,780
26	10,300	17,100	6,110	20,300	13,400	1,900	3,970	3,270	9,780	6,620	3,270	1,900
27	7,460	15,400	4,760	11,200	11,200	1,780	3,440	3,110	27,300	6,360	2,950	1,780
28	5,640	10,800	4,350	8,420	8,080	1,670	4,350	2,950	27,900	5,410	2,800	1,900
29	4,550	7,460	3,970	7,460	7,460	1,900	7,170	2,950	60,900	4,350	2,520	2,020
30	3,270	8,420	3,440	6,360	-----	2,020	6,110	2,950	35,200	3,610	2,140	2,140
31	2,660	-----	2,660	5,640	-----	2,020	-----	2,800	-----	3,110	1,780	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	22,400	150	4,820	296,000
November	21,000	550	5,000	298,000
December	9,940	1,780	4,720	290,000
January	38,600	2,660	13,600	336,000
February	41,300	2,950	11,800	679,000
March	6,620	1,670	2,970	183,000
April	7,170	1,460	3,070	183,000
May	20,700	2,800	5,830	358,000
June	60,900	3,440	16,100	958,000
July	38,600	2,800	13,100	806,000
August	7,170	1,560	2,580	159,000
September	14,900	1,460	3,560	212,000
The year	60,900	150	7,240	5,260,000

RED RIVER AT GARLAND CITY, ARK.

LOCATION.—Chain gage in SE¼ sec. 17, T. 14 S., R. 25 W., on St. Louis Southwestern Railway bridge at Garland City.

RECORDS AVAILABLE.—October 1927 to December 1931 (discontinued).

EXTREMES.—Maximum discharge during period, 37,400 second-feet Oct. 28 (gage height, 17.9 feet); minimum, 400 second-feet Oct. 8–19 (gage height, 3.2 feet).

1927–32: Maximum discharge, 119,000 second-feet May 22, 23, 1930 (gage height, 32.5 feet); minimum, that of October 1931.

Maximum stage known, 35.4 feet in April 1927.

REMARKS.—Records poor.

Discharge, in second-feet, 1931

Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.
1	440	12,000	24,800	11	400	2,420	10,300	21	2,900	1,120	34,700
2	440	9,040	24,100	12	400	2,260	9,640	22	5,600	1,230	35,600
3	440	7,440	25,200	13	400	1,940	10,700	23	6,140	1,230	34,700
4	440	6,500	26,400	14	400	1,790	11,480	24	6,500	1,230	32,900
5	440	5,600	26,400	15	400	1,640	17,100	25	6,860	7,440	30,200
6	440	4,900	24,400	16	400	1,490	18,100	26	19,000	10,700	28,100
7	440	4,220	23,000	17	400	1,230	21,000	27	34,700	16,300	23,800
8	400	3,540	20,400	18	400	1,340	25,600	28	37,400	26,800	22,700
9	400	3,220	14,600	19	400	1,230	31,500	29	26,900	27,300	19,000
10	400	2,900	11,600	20	1,020	1,340	33,300	30	19,300	26,800	15,800
								31	15,300		13,600

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	37,400	400	6,110	376,000
November	27,300	1,120	6,540	389,000
December	35,600	9,640	22,600	1,390,000
The period				2,160,000

PEASE RIVER NEAR CROWELL, TEX.

LOCATION.—Water-stage recorder used for floods and some low-water periods, and chain gage used when recorder was not operating, on Quanah-Crowell highway bridge 1 mile below mouth of Devils Creek and 8 miles north of Crowell, Foard County.

DRAINAGE AREA.—2,940 square miles, about 533 square miles of which is probably noncontributing.

RECORDS AVAILABLE.—January 1924 to September 1932.

EXTREMES.—Maximum discharge during year, about 24,000 second-feet July 6 (gage height, 8.90 feet); no flow during several periods.

1924–32: Maximum discharge not determined; maximum gage height, 9.92 feet Oct. 3, 1926; no flow during several periods.

REMARKS.—Monthly records fair. Daily records not sufficiently accurate for publication. No diversions.

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	1,500	0	157	9,650
November	990	0	93.0	5,530
December	272	9.0	63.6	3,910
January	427	4.6	74.3	4,570
February	81	.4	12.1	606
March	4.2	0	.53	33
April	1,400	0	203	12,100
May	1,050	.8	115	7,070
June	6,190	39	1,760	105,000
July	5,230	.4	647	39,800
August	5,850	0	194	11,900
September	1,400	.2	184	10,900
The year	6,190	0	290	211,000

NORTH FORK OF RED RIVER AT LUGERT DAM, OKLA.

LOCATION.—Staff gage in SW¼SE¼ sec. 22, T. 5 N., R. 20 W., at Lugert Dam.
Mean altitude of crest of dam is 1,514.31 feet above mean sea level, gage height 10.00 feet.

DRAINAGE AREA.—2,200 square miles.

RECORDS AVAILABLE.—March 1930 to September 1932 (discontinued).

EXTREMES.—Maximum discharge during year, 2,680 second-feet June 26 (gage height, 11.5 feet); no flow on various days during year.

1930-32: Maximum discharge, 10,400 second-feet May 7, 1930 (gage height, 13.70 feet); no flow on various days each year.

Maximum stage known, 14.5 feet May 16, 1928.

REMARKS.—Records fair. Discharge estimated Jan. 19-21.

Discharge, in second-feet, 1931-32

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
1	0	50	43	43	43	5	254	500	208	0
2	0	43	43	43	43	5	143	143	531	0
3	0	43	43	43	43	5	72	80	427	0
4	0	32	43	43	23	5	43	80	357	0
5	0	19	230	43	19	5	43	106	143	0
6	0	19	230	43	19	5	43	291	1,100	0
7	0	19	330	43	19	5	32	1,660	385	0
8	0	19	219	43	19	5	32	624	254	0
9	0	19	143	43	19	5	32	330	143	0
10	0	19	124	32	19	5	19	230	143	0
11	0	19	106	32	19	0	19	291	57	0
12	0	19	80	32	9	0	9	330	43	0
13	0	19	80	32	9	0	5	254	3	0
14	0	19	57	32	9	0	5	385	0	0
15	0	19	57	32	9	0	5	470	0	0
16	0	19	143	43	15	0	15	335	0	0
17	0	19	124	43	19	0	106	330	0	115
18	291	80	124	43	19	0	88	385	0	1,160
19	254	208	100	43	19	6	37	330	0	291
20	106	291	70	106	19	50	19	330	0	124
21	50	230	40	124	19	72	15	385	0	57
22	43	230	19	124	19	57	9	254	0	9
23	43	175	19	124	19	160	9	291	0	3
24	43	124	43	124	19	427	19	357	0	0
25	43	124	43	124	19	208	23	427	0	0
26	43	124	43	80	19	124	43	1,670	0	0
27	43	106	43	80	9	72	37	2,020	0	0
28	57	80	43	50	9	106	19	1,000	0	0
29	124	57	43	43	9	500	15	291	0	0
30	88	43	43	-----	9	470	5	230	0	0
31	-----	43	43	-----	5	-----	143	-----	0	0

Month	Maximum	Minimum	Mean	Run-off in acre-feet
November	291	0	40.9	2,430
December	291	19	75.2	4,620
January	330	19	90.7	5,580
February	124	32	59.7	3,430
March	43	5	18.3	1,130
April	500	0	74.9	4,460
May	254	5	43.8	2,660
June	2,020	80	482	23,700
July	1,100	0	122	7,500
August	1,160	0	56.7	3,490
The year	2,020	0	88.2	64,000

NOTE.—No flow during months omitted.

WASHITA RIVER NEAR DURWOOD, OKLA.

LOCATION.—Chain gage in sec. 3, T. 4 S., R. 3 E., 3 miles north of Durwood.

RECORDS AVAILABLE.—August 1928 to September 1932.

EXTREMES.—Maximum discharge during year, 17,300 second-feet Nov. 24 (gage height, 28.20 feet); minimum, 100 second-feet Oct 1-11 (gage height, 3.10 feet). 1928-32: Maximum discharge, that of Nov. 24, 1931; minimum, 35 second-feet Sept. 3, 1931 (gage height, 2.90).

Maximum stage known, 38 feet in April and June 1927.

REMARKS.—Records good.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	100	480	1,750	800	1,240	1,080	660	1,160	498	7,810	530	462
2	100	368	1,680	800	1,160	1,010	595	940	4,840	8,580	530	530
3	100	357	1,540	1,240	1,080	640	530	695	5,400	7,070	465	565
4	100	357	1,470	1,320	1,080	640	530	628	5,620	6,950	465	628
5	100	357	1,400	15,400	1,010	905	530	595	5,620	6,950	465	730
6	100	357	940	16,800	1,010	905	530	595	5,670	12,500	465	870
7	100	357	498	10,100	940	835	498	1,820	6,200	15,300	465	870
8	100	357	498	6,300	905	800	498	628	7,250	14,700	465	800
9	100	357	498	3,320	905	800	498	660	8,350	6,470	432	530
10	100	335	498	2,550	905	800	498	628	8,510	4,350	432	498
11	100	324	498	2,140	870	800	498	628	5,920	2,990	432	465
12	296	258	498	1,750	870	800	498	628	5,080	2,770	530	432
13	1,030	207	498	1,400	870	765	465	628	5,220	2,140	628	400
14	3,900	207	498	1,160	2,320	695	465	530	4,880	1,680	595	400
15	3,440	164	498	1,010	3,210	695	465	465	4,960	1,470	530	400
16	2,400	291	498	7,250	7,010	695	465	432	4,920	1,240	498	370
17	910	720	498	8,580	7,070	695	465	465	4,800	1,160	498	340
18	545	1,560	465	3,870	4,140	695	465	498	4,550	940	530	370
19	510	3,000	1,320	2,500	3,210	695	2,200	465	3,870	800	1,800	340
20	1,350	3,500	1,320	1,960	2,820	695	2,120	498	2,600	835	3,620	316
21	1,630	2,940	1,400	1,540	2,770	695	800	498	1,890	870	4,320	304
22	3,750	3,800	1,320	5,080	4,410	695	595	465	1,540	835	4,190	286
23	9,750	12,200	1,080	10,300	3,210	695	462	465	1,470	800	2,500	316
24	5,180	16,900	800	5,760	2,020	695	462	432	1,470	800	1,610	340
25	2,400	12,700	628	4,640	1,540	695	595	432	1,400	800	1,400	370
26	580	7,320	628	3,920	1,400	730	730	400	3,170	730	1,160	400
27	545	5,130	628	3,160	1,320	730	695	370	7,840	628	1,010	370
28	545	4,190	628	2,500	1,160	730	730	340	10,500	628	870	334
29	545	2,940	628	1,960	1,080	730	870	370	8,540	628	730	316
30	1,030	2,140	628	1,680	-----	730	835	400	7,320	595	628	292
31	950	-----	628	1,400	-----	730	-----	432	-----	595	595	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	9,750	100	1,370	84,200
November	16,900	164	2,810	167,000
December	1,750	465	850	52,300
January	16,600	800	4,270	263,000
February	7,070	870	2,120	122,000
March	1,080	695	777	47,800
April	2,200	462	675	40,200
May	1,820	340	587	36,100
June	10,500	498	5,030	299,000
July	15,300	595	3,700	228,000
August	4,320	432	1,080	66,400
September	870	286	456	27,100
The year	16,900	100	1,970	1,430,000

LITTLE RIVER NEAR HORATIO, ARK.

LOCATION.—Chain gage in E½ sec. 11, T. 10 S., R. 32 W., 2 miles south of Horatio.
 RECORDS AVAILABLE.—December 1930 to September 1932.

EXTREMES.—Maximum discharge during year, 35,000 second-feet Jan. 24 (gage height, 31.84 feet); minimum, 24 second-feet Sept. 23-26, 30 (gage height, 3.56 feet).

1930-32: Maximum discharge, that of January 1932; minimum, that of September 1932.

Maximum stage known, 38 feet in August 1915.

REMARKS.—Records good. Discharge estimated Oct. 1-24.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....		340	12,200	5,080	5,620	2,620	6,900	2,240	1,960	14,500	360	40
2.....		300	11,900	4,090	4,540	2,310	5,170	1,680	1,610	14,800	280	40
3.....		240	10,600	3,340	4,810	2,310	3,910	1,400	4,990	15,300	260	44
4.....		225	8,000	2,860	12,900	2,700	3,180	1,120	5,620	14,400	225	50
5.....		210	5,530	20,200	4,180	3,340	2,620	930	4,540	10,900	195	44
6.....		195	3,820	34,300	3,500	4,270	2,240	720	5,620	8,800	170	38
7.....		170	2,860	29,900	3,100	3,910	1,960	660	3,910	13,500	150	38
8.....		160	2,240	25,300	2,780	2,860	1,750	870	2,100	16,200	140	34
9.....		150	1,890	22,300	2,540	2,460	1,820	3,910	1,400	14,100	150	33
10.....		140	1,820	18,800	2,240	2,100	1,750	5,530	1,050	10,100	140	32
11.....	75	140	1,960	12,000	2,240	1,820	1,680	4,000	810	5,620	130	30
12.....		140	3,910	13,200	2,460	1,680	2,620	690	2,940	118	32	
13.....		140	9,500	20,300	2,620	1,540	1,470	1,820	570	2,100	110	33
14.....		140	12,400	20,000	2,700	1,400	1,330	1,330	540	1,610	100	36
15.....		140	7,770	17,600	9,400	1,330	1,190	1,120	435	1,260	130	34
16.....		130	4,000	15,000	21,000	1,190	1,050	930	385	930	120	40
17.....		130	8,300	18,100	28,800	1,260	930	660	360	720	116	52
18.....		120	15,300	27,300	33,300	1,400	810	660	320	570	112	56
19.....		120	19,600	24,800	31,100	1,610	1,120	540	280	485	98	42
20.....		150	15,400	22,600	28,500	1,540	1,750	435	225	410	86	36
21.....		140	11,800	20,700	26,100	1,400	1,750	410	180	340	78	30
22.....		150	8,500	17,100	22,300	1,260	1,750	360	170	300	74	27
23.....	1,250	340	6,900	28,200	17,000	1,120	1,680	320	160	260	74	24
24.....	2,850	2,380	5,800	35,000	10,400	990	5,170	280	150	240	70	24
25.....	5,620	7,100	4,810	32,500	6,430	930	7,100	240	410	210	66	24
26.....	5,890	7,200	3,910	32,000	4,900	930	5,350	225	720	210	58	24
27.....	2,860	5,350	3,180	30,200	4,000	1,820	3,910	630	690	260	56	27
28.....	1,260	4,630	2,620	26,700	3,420	8,600	2,780	2,780	1,120	360	52	26
29.....	660	4,450	2,310	22,000	2,940	9,810	2,380	2,780	3,740	300	50	26
30.....	600	9,600	2,170	16,800	-----	8,300	2,780	2,030	11,400	435	46	24
31.....	435	-----	3,020	9,810	-----	7,700	-----	1,400	-----	360	44	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	5,890	-----	744	45,700
November.....	9,600	120	1,490	88,700
December.....	19,600	1,820	6,900	424,000
January.....	35,000	2,860	20,300	1,250,000
February.....	33,300	2,240	10,600	610,000
March.....	9,810	930	2,790	172,000
April.....	7,100	810	2,630	156,000
May.....	5,530	225	1,440	88,500
June.....	11,400	150	1,870	111,000
July.....	16,200	210	4,920	303,000
August.....	360	44	124	7,620
September.....	56	24	34.7	2,060
The year.....	35,000	24	4,480	3,260,000

SULPHUR RIVER NEAR DARDEN, TEX.

LOCATION.—Staff gage on St. Louis Southwestern Railway bridge 1 mile south of Darden, Bowie County. Zero of gage is 221.7 feet above mean sea level.

DRAINAGE AREA.—2,750 square miles.

RECORDS AVAILABLE.—October 1923 to September 1932.

EXTREMES.—Maximum discharge during year, 34,700 second-feet Jan. 9 (gage height, 29.10 feet); minimum, 0.2 second-foot Aug. 28 to Sept. 3.

1923-32: Maximum discharge, 67,200 second-feet May 19, 1930 (gage height, 31.7 feet); no flow Sept. 2-5, 1929, Oct. 3-5, 1930.

REMARKS.—Records good. No diversions. Gage-height record furnished by United States Weather Bureau.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.7	72	390	1,080	11,900	4,010	3,320	254	535	410	50	0.2
2	1.7	46	390	675	9,400	2,850	3,640	400	511	254	42	2.2
3	1.7	33	370	549	7,400	2,220	3,380	380	390	164	33	2.6
4	1.7	24	475	1,120	5,100	1,920	2,580	352	289	122	27	14
5	1.7	19	735	3,760	3,710	2,280	1,650	325	206	136	21	5.0
6	1.7	16	782	6,800	2,880	2,700	895	271	129	459	16	2.5
7	1.7	11	619	16,800	2,220	3,080	475	235	82	1,360	13	1.7
8	1.7	8.3	431	31,200	1,610	3,640	307	390	62	2,060	11	.9
9	1.7	6.5	334	32,600	1,070	4,550	235	520	46	2,460	8.3	.9
10	1.7	6.5	254	26,300	720	6,050	192	1,130	42	2,880	6.5	.9
11	1.7	5.0	289	20,300	523	6,800	157	1,860	36	3,640	6.5	.9
12	1.7	5.0	412	16,300	464	6,300	87	2,090	53	4,950	5.0	.9
13	1.7	3.5	619	15,100	442	4,250	77	2,360	62	6,800	3.5	.9
14	1.7	3.5	675	14,700	795	3,170	108	2,190	185	8,000	2.5	.9
15	1.7	3.5	990	16,800	2,190	2,420	92	1,430	136	7,400	2.5	.9
16	1.7	3.5	1,740	19,800	3,080	1,710	87	830	77	6,800	2.5	.9
17	1.7	5.0	3,130	15,800	4,010	1,110	82	475	50	5,600	2.5	.9
18	.9	5.0	3,850	15,106	4,950	633	82	262	46	3,850	2.5	2.5
19	.9	5.0	4,550	12,300	6,550	380	82	164	46	2,550	1.7	5.0
20	.9	6.5	5,800	10,700	9,900	289	92	136	46	1,470	1.7	3.5
21	.9	11	8,900	11,100	16,300	254	144	206	39	661	1.7	3.5
22	1.7	19	12,700	13,500	15,500	214	538	222	33	258	1.7	3.5
23	1.7	13	13,500	13,900	13,500	192	675	150	24	97	1.7	2.5
24	1.7	8.3	11,500	13,100	11,500	171	475	122	19	50	.9	2.5
25	1.7	5.0	9,900	13,100	10,700	150	343	97	21	46	.9	2.5
26	19	5.0	8,300	18,300	9,500	143	271	82	24	39	.9	2.5
27	492	27	6,550	22,600	8,000	240	246	67	43	30	.9	2.5
28	511	33	4,450	20,800	7,100	698	222	54	683	27	.2	2.5
29	352	184	3,160	18,800	5,400	1,370	222	63	942	21	.2	5.0
30	199	361	2,380	16,800	-----	2,040	238	481	705	19	.2	6.5
31	122	-----	1,670	14,300	-----	2,760	-----	591	-----	39	.2	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	511	0.9	55.9	3,440
November	361	3.5	31.8	1,890
December	13,500	254	3,540	218,000
January	32,600	549	14,700	904,000
February	16,300	442	6,080	350,000
March	6,800	143	2,210	136,000
April	3,640	77	700	41,700
May	2,360	54	587	36,100
June	942	19	185	11,000
July	8,000	19	2,020	124,000
August	50	.2	8.65	532
September	14	.2	2.66	168
The year	32,600	.2	2,520	1,830,000

CYPRESS CREEK NEAR JEFFERSON, TEX.

LOCATION.—Staff gage at Farrell Bridge, on Jefferson-Harleton highway, 8 miles west of Jefferson, Marion County, and 14 miles above mouth of Black Cypress Creek.

DRAINAGE AREA.—848 square miles.

RECORDS AVAILABLE.—July 1924 to September 1932.

EXTREMES.—Maximum discharge during year, about 14,900 second-feet Jan. 8 (gage height, 21.1 feet); minimum, 0.4 second-foot Sept. 2, 3, 9, 10.

1924-32: Maximum discharge, about 22,600 second-feet May 20, 1930 (gage height, 25.37 feet); no flow for several periods.

REMARKS.—Records good except those of discharge above 7,000 second-feet, which are fair. No diversions.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	2.4	10	363	1,180	3,230	1,890	544	340	62	29	7.0	0.4
2.....	2.1	7.6	526	954	2,660	1,640	678	340	62	38	5.4	.4
3.....	1.9	7.4	544	636	2,350	1,570	692	320	62	44	5.1	.4
4.....	1.6	7.4	544	896	2,000	1,640	720	340	62	53	7.0	.4
5.....	1.4	7.6	532	4,150	1,740	2,000	706	361	68	59	11	.5
6.....	1.4	9.6	508	7,350	1,570	2,350	664	350	71	59	14	.5
7.....	1.2	13	460	8,340	1,440	1,690	580	320	62	56	11	.5
8.....	1.4	11	427	14,300	1,300	1,820	484	205	40	44	8.2	.4
9.....	1.7	9.8	416	12,600	1,180	2,200	350	187	34	42	5.4	.4
10.....	1.6	12	351	9,040	1,080	2,660	310	187	30	42	3.3	.4
11.....	1.6	13	300	5,960	1,000	2,830	290	260	29	86	2.6	.4
12.....	1.6	12	290	4,580	920	2,420	260	372	32	233	2.4	7.6
13.....	1.6	12	887	3,720	848	2,070	241	449	72	350	2.2	24
14.....	1.6	12	1,380	2,920	832	1,540	232	532	106	394	2.2	21
15.....	1.6	12	1,100	2,580	816	1,270	214	594	66	372	2.2	13
16.....	2.6	14	1,060	3,140	864	1,270	205	678	36	201	2.2	11
17.....	5.2	17	1,450	4,580	960	1,180	196	706	28	98	1.8	9.4
18.....	3.3	25	2,070	4,280	1,190	1,000	196	664	23	47	1.8	6.2
19.....	1.8	32	2,000	3,340	5,290	832	196	608	20	32	1.5	4.5
20.....	1.7	36	2,000	2,740	7,350	692	205	496	20	26	1.2	4.2
21.....	1.5	42	2,070	2,350	7,150	608	214	330	29	23	1.2	3.4
22.....	1.6	46	2,620	1,940	6,020	556	223	250	38	19	1.0	4.7
23.....	4.1	53	3,530	1,690	4,720	484	232	223	32	18	.9	11
24.....	14	65	4,000	1,570	4,000	438	232	196	22	16	.9	12
25.....	22	74	3,580	1,540	3,860	394	241	152	19	15	.9	7.8
26.....	18	74	2,920	1,880	3,580	420	241	128	47	19	.8	3.3
27.....	15	78	2,500	3,000	3,120	394	241	113	106	20	.8	3.3
28.....	16	143	2,070	4,580	2,580	361	241	99	84	16	.8	3.2
29.....	15	223	1,740	4,390	2,070	340	280	85	43	11	.6	3.0
30.....	14	50	1,540	4,420	-----	350	340	82	29	9.2	.5	3.0
31.....	13	-----	1,350	3,860	-----	472	-----	74	-----	8.8	.5	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	22	1.2	5.60	344
November.....	223	7.4	37.6	2,240
December.....	4,000	290	1,460	89,800
January.....	14,300	636	4,150	255,000
February.....	7,350	816	2,610	150,000
March.....	2,830	340	1,270	78,100
April.....	720	196	348	20,700
May.....	706	74	324	19,900
June.....	106	19	47.8	2,840
July.....	394	8.8	52.9	5,100
August.....	14	.5	3.43	211
September.....	24	.4	5.34	318
The year.....	14,300	.4	860	625,000

OUACHITA RIVER AT REMMEL DAM, NEAR MALVERN, ARK.

LOCATION.—Water-stage recorder in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 36, T. 3 S., R. 18 W., 700 feet below Rammel Dam and 9 miles northwest of Malvern. Zero of gage is 247.94 feet above mean sea level.

DRAINAGE AREA.—1,540 square miles.

RECORDS AVAILABLE.—January 1925 to September 1932.

EXTREMES.—Maximum daily discharge during year, 67,400 second-feet Jan. 5 (gage height, 26.0 feet); minimum, 42 second-feet July 2 (gage height, 1.77 feet).

1925-32: Maximum discharge, about 138,000 second-feet Apr. 21, 1927 (gage height, 35.7 feet); minimum, 15 second-feet Sept. 12, 13, 1925 (gage height, 1.52 feet).

Maximum stage known, 36.3 feet May 16, 1923 (discharge, about 140,000 second-feet).

REMARKS.—Records good. Regulation by Rammel Dam.

Discharge, in second-feet, 1931-32

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.....	320	138	5,450	6,380	4,330	2,790	4,160	404	460	120	367	962
2.....	129	147	4,120	4,220	3,900	2,980	4,170	564	1,700	114	322	600
3.....	91	275	4,480	2,810	4,280	3,070	3,380	864	1,130	164	120	852
4.....	112	586	2,940	8,860	4,770	3,010	3,330	304	292	1,330	181	248
5.....	128	400	2,870	60,900	4,580	3,570	4,230	439	139	2,910	148	90
6.....	277	195	2,120	38,800	4,310	2,800	3,600	595	422	6,860	193	356
7.....	385	291	2,670	11,400	2,820	2,990	2,640	1,440	604	6,750	255	386
8.....	303	126	2,940	5,620	2,950	2,990	2,770	496	443	5,590	302	466
9.....	219	99	2,910	5,210	2,800	3,000	2,500	626	362	3,600	172	360
10.....	262	250	2,920	3,780	2,500	3,000	1,530	977	240	2,810	353	76
11.....	112	212	3,000	3,880	2,500	3,010	2,120	483	308	2,730	155	249
12.....	150	522	2,820	5,910	2,500	2,990	2,040	794	135	2,780	146	120
13.....	135	890	28,300	4,570	2,870	2,830	2,290	659	95	1,410	154	495
14.....	1,000	605	10,200	7,530	2,460	3,010	1,860	718	136	756	564	257
15.....	742	364	7,330	22,000	8,330	2,660	1,210	151	138	561	136	253
16.....	393	218	6,450	13,000	30,200	2,650	752	574	113	176	126	498
17.....	419	347	20,000	18,300	43,400	3,040	345	973	96	123	111	123
18.....	121	146	17,900	15,000	29,100	2,780	512	798	120	264	197	414
19.....	141	186	11,400	8,330	8,670	2,620	678	580	165	626	129	196
20.....	206	662	8,110	4,900	4,950	988	489	720	99	152	105	98
21.....	447	459	3,540	4,950	6,460	2,270	409	440	349	120	223	145
22.....	415	144	5,360	9,150	4,240	2,640	538	196	100	135	112	123
23.....	562	212	4,220	21,900	4,570	2,480	1,180	237	98	698	268	121
24.....	197	572	3,420	19,000	4,990	2,450	1,210	506	328	137	175	98
25.....	104	606	1,900	9,720	7,420	2,160	1,020	365	102	540	253	80
26.....	195	605	2,470	13,400	7,000	2,310	656	545	123	206	591	190
27.....	739	1,590	1,950	11,900	4,540	1,650	738	670	138	437	444	209
28.....	255	2,000	2,600	8,730	2,420	3,920	568	133	119	394	563	145
29.....	108	3,670	2,790	6,340	2,150	3,920	602	130	182	437	600	109
30.....	182	3,920	13,000	4,810	-----	7,780	312	185	148	192	588	114
31.....	175	-----	15,300	4,150	-----	6,490	-----	578	-----	857	1,100	-----

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October.....	1,000	91	291	17,900
November.....	3,920	99	678	40,300
December.....	28,300	1,900	6,630	408,000
January.....	60,900	2,810	11,800	726,000
February.....	43,400	2,150	7,450	429,000
March.....	7,780	988	3,060	188,000
April.....	4,230	512	1,730	103,000
May.....	1,440	130	553	34,000
June.....	1,700	95	296	17,600
July.....	6,860	114	1,420	87,300
August.....	1,100	105	295	18,100
September.....	962	76	281	16,700
The year.....	60,900	76	2,870	2,090,000

MISCELLANEOUS DISCHARGE MEASUREMENTS

In addition to the records of stream flow obtained at gaging stations and reported in the preceding pages, measurements of flow were made at a number of other points, as shown by the following table.

Miscellaneous discharge measurements in Lower Mississippi River drainage basin during the years ending Sept. 30, 1931 and 1932

Date	Stream	Tributary to—	Locality	Gage height	Dis-charge
				Feet	Sec.-ft.
1932					
June 22	Westover Spring.....	Huzzah Creek.....	Westover, Crawford County Mo.	-----	10
Mar. 21	St. Francis River Floodway.	St. Francis River.....	SE¼ sec. 10, T. 11 N., R. 6 E., at dam near Marked Tree, Ark.	21.7	3,990
Sept. 23	do.....	do.....	do.....	14.8	6.9
Apr. 8	Leeper Spring.....	Black River.....	Leeper, Mo.	-----	.17
8	Mill Spring.....	do.....	Mill Spring, Mo.	-----	15
5	Boze Mill Spring.....	Eleven Point River..	12 miles east of Alton, Mo.	-----	32
May 23	Spring River.....	Black River.....	Mammoth Spring, Ark.	-----	259
24	do.....	do.....	Dam 3, Arkansas-Missouri Power Co., Ark.	.58	26.7
24	do.....	do.....	do.....	2.10	424
24	do.....	do.....	do.....	1.51	215
24	do.....	do.....	do.....	.96	80.1
June 2	Neosho River.....	Arkansas River.....	Council Grove, Kans.	-----	15.1
20	do.....	do.....	do.....	-----	2,070
July 5	do.....	do.....	do.....	-----	19,500
5	do.....	do.....	do.....	-----	17,700
7	do.....	do.....	Emporia, Kans.	-----	8,480
1931					
Nov. 25	do.....	do.....	Chanute, Kans.	26.53	24,800
1932					
June 21	Cottonwood River..	Neosho River.....	Emporia, Kans.	-----	4,420
July 7	do.....	do.....	do.....	20.75	10,500
1930					
Oct. 4	Ute Creek.....	Canadian River.....	SE¼ sec. 13, T. 16 N., R. 30 E., at Logan-Mosquero highway bridge 4½ miles northwest of Gallegos, N. Mex.	2.38	402
18	do.....	do.....	do.....	1.63	33.8
Nov. 23	do.....	do.....	do.....	1.57	14.5
Dec. 13	do.....	do.....	do.....	1.47	8.55
1931					
Jan. 9	do.....	do.....	do.....	1.48	9.31
25	do.....	do.....	do.....	1.63	18.84
Feb. 13	do.....	do.....	do.....	1.48	6.24
Mar. 11	do.....	do.....	do.....	1.46	8.01
Apr. 2	do.....	do.....	do.....	1.50	11.8
22	do.....	do.....	do.....	-----	0
May 15	do.....	do.....	do.....	-----	0
June 5	do.....	do.....	do.....	-----	2.5
20	do.....	do.....	do.....	1.31	0.80
July 9	do.....	do.....	do.....	-----	0
22	do.....	do.....	do.....	1.14	8.11
Aug. 13	do.....	do.....	do.....	1.29	4.60
Sept. 3	do.....	do.....	do.....	-----	0
29	do.....	do.....	do.....	1.45	8.79

• Estimated.

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