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UNITED STATES DEPARTMENT OF THE INTERIOR

SURFACE WATER SUPPLY *of the* UNITED STATES 1929

PART VII

LOWER MISSISSIPPI RIVER BASIN

Prepared in cooperation with the States of
MISSOURI, ARKANSAS, KANSAS, AND TEXAS

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 687

UNITED STATES DEPARTMENT OF THE INTERIOR
RAY LYMAN WILBUR, Secretary
GEOLOGICAL SURVEY
GEORGE OTIS SMITH, Director

Water-Supply Paper 687

SURFACE WATER SUPPLY *of the* UNITED STATES 1929

PART VII
LOWER MISSISSIPPI RIVER BASIN

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

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FIGURE 1. Typical river measurement station showing concrete well and house for water-stage recorder and staff gages, cable, and car 3

SURFACE WATER SUPPLY OF LOWER MISSISSIPPI RIVER BASIN, 1929

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, 1929.

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

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

The work was begun in 1888 in connection with special studies relating to irrigation in the West. 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, 1895–1929

1895	$12, 500. 00	1919	$148, 244. 10
1896	24, 500. 00	1920	175, 000. 00
1897–1899	50, 000. 00	1921–1923	180, 000. 00
1900	70, 000. 00	1924–25	170, 000. 00
1901–2	100, 000. 00	1926	165, 000. 00
1903–1906	200, 000. 00	1927	151, 000. 00
1907	150, 000. 00	1928	147, 000. 00
1908–1910	100, 000. 00	1929	270, 500. 00
1911–1917	150, 000. 00	1930	275, 000. 00
1918	175, 000. 00		

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

Measurements of stream flow have been made at about 5,830 points in the United States and also at many points in Alaska and the

Hawaiian Islands. In July, 1929, 2,240 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 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, and run-off in inches and in acre-feet. They may be defined as follows:

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

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

"Run-off in inches" is the depth to which an area would be covered if all the water flowing from it in a given period were uniformly distributed on the surface. It is used for comparing run-off with rainfall, which is usually expressed in 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, 1928, and ending September 30, 1929. At the beginning of January in most parts of the United States much of the precipitation in

the preceding three months is stored in the form of snow or ice, 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.

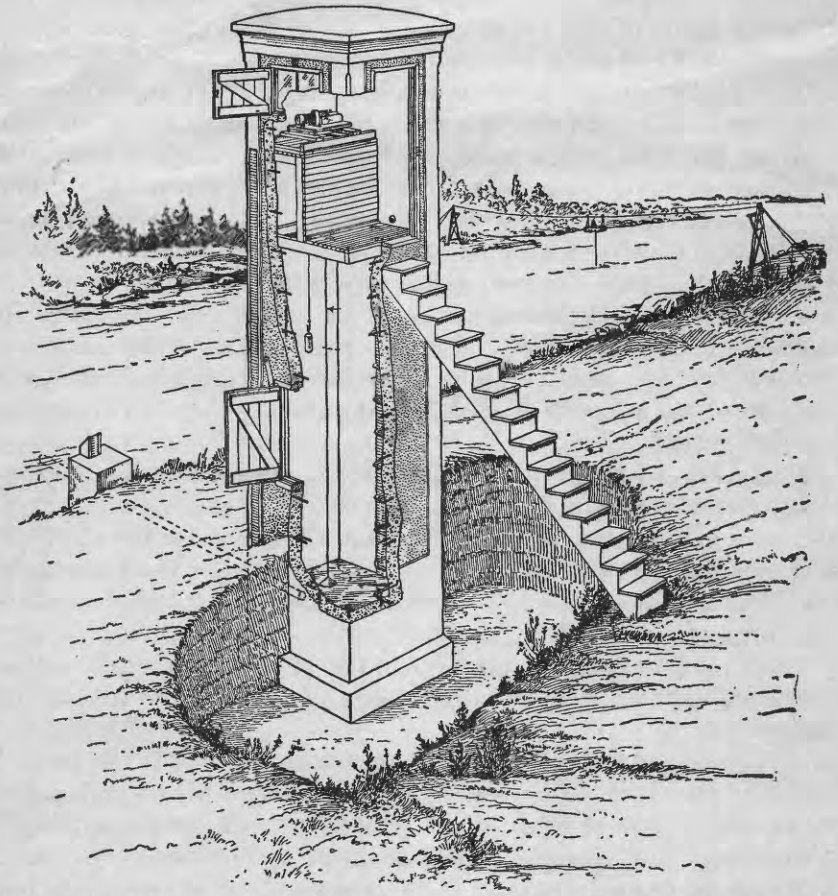

FIGURE 1.—Typical river measurement station showing concrete well and house for water-stage recorder and staff gages, cable, and car

The base data collected at gaging stations consist 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 dis-

charge. A typical gaging station, equipped with water-stage recorder and measuring cable and car, is shown in Figure 1.

From the discharge measurements rating tables are prepared that give the discharge for any stage. The application of the daily gage heights to these rating tables gives the daily discharge from which the monthly and yearly mean discharge 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 stages, 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 unless 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 nonrecording 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 per cent; "good," within 10 per cent; "fair," within 15 per cent; and "poor," within 20 per cent 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 run-off in inches may be misleading owing to the inclusion of large noncontributing districts in the measured drainage area, and they may also be subject to gross errors caused 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 tables of monthly discharge give 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 stations 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 water-supply papers, but some have appeared in the monographs, bulletins, professional papers, 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 I. North Atlantic slope basins (St. Johns River to York River).
II. South Atlantic slope and eastern Gulf of Mexico basins (James River to the Mississippi).
III. Ohio River Basin.
IV. St. Lawrence River Basin.
V. Hudson Bay and upper Mississippi River Basins.
VI. Missouri River Basin.
VII. Lower Mississippi River Basin.

Part VIII. Western Gulf of Mexico basins.
IX. Colorado River Basin.
X. The Great Basin.
XI. Pacific slope basins in California.
XII. 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, Me., Statehouse.
Boston, Mass., 2500 Customhouse.
Hartford, Conn., 60 Washington Street
Albany, N. Y., 506 Broadway-Arcade Building.
Trenton, N. J., 710 Trenton Trust Building.
Charlottesville, Va., Brooks Museum, University of Virginia.
South Charleston, W. Va., Naval Ordnance Plant.
Asheville, N. C., 210 Post Office Building
Columbia, S. C., 801 National Loan & Exchange Bank Building.
Ocala, Fla., Post Office Building.
Tuscaloosa, Ala., Post Office Building.
Chattanooga, Tenn., 630 Power Building.
Columbus, Ohio, Engineering Experiment Station, Ohio State University
Indianapolis, Ind., 319 Federal Building.
Lansing, Mich., M9 State Office Building.
Chicago, Ill., 1503 Consumers Building.
Madison, Wis., 337N State Capitol.
St. Paul, Minn., 202 Old State Capitol.
Topeka, Kans., 23 Federal Building.
Rolla, Mo., Rolla Building, School of Mines and Metallurgy.
Fort Smith, Ark., Post Office Building.
Austin, Tex., State Capitol.
Tucson, Ariz., 210 Post Office Building.
Denver, Colo., 403 Post Office Building.
Salt Lake City, Utah, 313 Federal Building.
Idaho Falls, Idaho, 228 Federal Building.
Boise, Idaho, Federal Building.
Helena, Mont., 416 Power Block.
Tacoma, Wash., 406 Federal Building.
Portland, Oreg., 606 Post Office Building.
San Francisco, Calif., 303 Customhouse.
Los Angeles, Calif., 751 South Figueroa Street, room 510.
Honolulu, Hawaii, Territorial Office Building.

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

Stream-flow records have been obtained at about 5,830 points in the United States, and the data obtained have been published in the reports tabulated below.

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

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

Report	Character of data	Year
10th A, pt. 2	Descriptive information only	
11th A, pt. 2	Monthly discharge and descriptive information	1884 to Sept., 1890.
12th A, pt. 2	do	1884 to June 30, 1891.
13th A, pt. 3	Mean discharge in second-feet	1884 to Dec. 31, 1892.
14th A, pt. 2	Monthly discharge (long-time records, 1871 to 1893)	1888 to Dec. 31, 1893.
B 131	Descriptions, measurements, gage heights, and ratings	1893 and 1894.
16th A, pt. 2	Descriptive information only	
B 140	Descriptions, measurements, gage heights, ratings, and monthly discharge (also many data covering earlier years).	1895.
W 11	Gage heights (also gage heights for earlier years)	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also similar data for some earlier years).	1895 and 1896.
W 15	Descriptions, measurements, and gage heights, eastern United States, eastern Mississippi River, and Missouri River above junction with Kansas.	1897.
W 16	Descriptions, measurements, and gage heights, western Mississippi River below junction of Missouri and Platte Rivers, and western United States.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also some long-time records), 1897.	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.

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.

The following table gives, by years and drainage basins, the numbers of the papers on surface-water supply published from 1899 to 1929. 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 for 1910 to 1920 for any station in the area covered by Part III are published ih 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, 1899–1929

[[1]For basins included see p. 5[1]]

Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII-A	XII-B	XII-C
1899 [a]	35	[b] 35, 36	36	36	36	[c] 36, 37	37	37	[d] 37, 38	38, [e] 39	38, [f] 39	38	38	38
1900 [g]	47, [h] 48	48	48, [i] 49	49	49	49, [j] 50	50	50	50	51	51	51	51	51
1901	65, 75	65, 75	65, 75	65, 75	[k] 65, 66, 75	66, 75	[k] 65, 66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75
1902	82	[b] 82, 83	83	[l] 82, 83	[k] 83, 84	84	[k] 83, 84	84	85	85	85	85	85	85
1903	97	[b] 97, 98	98	97	[k] 98, 99, [m] 100	99	[k] 98, 99	99	100	100	100	100	100	100
1904	[n] 124, [o] 125, [p] 126	[p] 126, 127	128	129	[k] 128, 130	130, [q] 131	[k] 128, 131	132	[r] 133	133, [r] 134	134	135	135	135
1905	[n] 165, [o] 166, [p] 203	[p] 167, 168	169	170	171	172	[k] 169, 173	174	175, [s] 177	176, [r] 177	177	178	178	[t] 177, 178
1906	[n] 201, [o] 202, [p] 203	[p] 203, 204	205	206	207	208	[k] 205, 209	210	211, [s] 213	212, [r] 213	213	214	214	214
1907–8	241	242	243	244	245	246	247	248	249	250, [r] 251	251	252	252	252
1909	261	262	263	264	265	266	267	268	269	270, [r] 271	271	272	272	272
1910	281	282	283	284	285	286	287	288	289	290	291	292	292	292
1911	301	302	303	304	305	306	307	308	309	310	311	312	312	312
1912	321	322	323	324	325	326	327	328	329	330	331	332–A	332–B	332–C
1913	351	352	353	354	355	356	357	358	359	360	361	362–A	362–B	362–C
1914	381	382	383	384	385	386	387	388	389	390	391	392	393	394
1915	401	402	403	404	405	406	407	408	409	410	411	412	413	414
1916	431	432	433	434	435	436	437	438	439	440	441	442	443	444
1917	451	452	453	454	455	456	457	458	459	460	461	462	463	464
1918	471	472	473	474	475	476	477	478	479	480	481	482	483	484
1919–20	501	502	503	504	505	506	507	508	509	510	511	512	513	514
1921	521	522	523	524	525	526	527	528	529	530	531	532	533	534
1922	541	542	543	544	545	546	547	548	549	550	551	552	553	554
1923	561	562	563	564	565	566	567	568	569	570	571	572	573	574
1924	581	582	583	584	585	586	587	588	589	590	591	592	593	594
1925	601	602	603	604	605	606	607	608	609	610	611	612	613	614
1926	621	622	623	624	625	626	627	628	629	630	631	632	633	634
1927	641	642	643	644	645	646	647	648	649	650	651	652	653	654
1928	661	662	663	664	665	666	667	668	669	670	671	672	673	674
1929	681	682	683	684	685	686	687	688	689	690	691	692	693	694

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

COOPERATION

The work was done in cooperation with the several States as follows: In Missouri with the Missouri Bureau of Geology and Mines, H. A. Buehler, State geologist; in Arkansas with the Arkansas Geological Survey, Dr. G. C. Branner, State geologist; in Kansas with the water resources division of the State Board of Agriculture, George S. Knapp, chief engineer; in Texas with the State through the Board of Water Engineers, John A. Norris, chairman, C. S. Clark, and A. E. Dunlap.

Acknowledgment is due also to the Corps of Engineers, United States Army, for financial assistance in collecting records published herein.

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DIVISION OF WORK

Data for stations in Missouri were collected and prepared for publication under the direction of H. C. Beckman, district engineer, assisted by V. L. Austin, H. C. Bolon, R. D. Schmickle, A. L. Hill, and C. H. Jennings.

Data for stations in Arkansas, Oklahoma, and Louisiana were collected and prepared for publication under the direction of W. S. Frame and J. H. Gardiner, district engineers, assisted by O. B. Johnson.

Data for stations in Kansas were collected and prepared for publication under the direction of J. B. Spiegel, district engineer, assisted by Charles Wells, W. M. Littlefield, R. V. Smrha, and Mrs. Maude Moon.

Data for stations in Mississippi were collected and prepared for publication under the direction of C. E. McCashin, district engineer, assisted by P. E. Hanson, Penn Livingston, D. M. Corbett, J. L. Saunders, W. S. Eisenlohr, jr., C. H. Prior, K. C. Tippy, E. J. Tripp, I. E. Anderson, and Miss Annie L. Hardin.

Data for stations in Texas and for the station on Kiamichi River near Belzoni, Okla., were collected and prepared for publication under the direction of C. E. Ellsworth, district engineer, assisted by Trigg Twichell, S. D. Breeding, Tate Dalrymple, A. C. Cook, N. C. Magnuson, Kate Casparis, A. B. Goodwin, C. A. Young, B. S. Odom, V. W. Rupp, P. H. Holland, F. C. Ames, and V. L. Austin.

The manuscript was reviewed and assembled by J. I. Perrey.

GAGING-STATION RECORDS

MERAMEC RIVER BASIN

MERAMEC RIVER NEAR STEELVILLE, MO.

LOCATION.—Chain gage in NE. ¼ sec. 21, T. 38 N., R. 4 W., half a mile above Whittenberg Creek and 2½ miles north of Steelville. Zero of gage is 681.86 feet above mean sea level.

DRAINAGE AREA.—Approximately 830 square miles.

RECORDS AVAILABLE.—December, 1922, to September, 1929.

EXTREMES.—Maximum discharge during year, 17,600 second-feet May 7 (gage height, 14.25 feet); minimum discharge, 151 second-feet Oct. 1–7; minimum gage height, 0.70 foot Sept. 27–30.

1923–1929: Maximum discharge, 36,000 second-feet Apr. 1, 1927 (gage height, 19.40 feet); minimum, 115 second-feet July 25 to Aug. 1, 1926.

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

REMARKS.—Records good except those estimated.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	151	165	200	[a] 195	355	595	3,700	425	595	[a] 395	[a] 270	[a] 178
2	151	165	230	[a] 193	332	535	1,030	2,700	3,050	[a] 393	[a] 254	[a] 178
3	151	165	222	192	332	450	820	4,300	2,790	[a] 390	[a] 238	178
4	151	165	215	192	310	565	718	2,110	1,680	[a] 388	222	175
5	151	165	215	222	310	565	595	1,680	1,100	[a] 385	215	185
6	151	165	215	270	310	478	535	6,510	890	[a] 383	207	200
7	151	165	215	310	290	425	505	17,600	1,340	[a] 380	[a] 200	222
8	165	165	215	[a] 310	290	400	2,880	3,320	[a] 1,180	378	[a] 700	207
9	165	165	215	310	[a] 260	355	6,070	3,500	1,030	355	655	203
10	165	165	192	290	230	332	7,940	2,280	855	332	450	200
11	165	165	192	250	270	332	2,960	1,770	718	332	685	192
12	165	165	192	270	250	310	1,940	1,520	595	310	625	222
13	165	165	215	250	250	310	1,430	5,300	1,340	[a] 290	535	230
14	165	168	215	230	250	310	1,260	4,300	1,030	[a] 270	450	[a] 240
15	178	172	215	230	230	595	1,860	2,790	855	[a] 400	355	250
16	192	178	230	230	230	6,730	2,280	[a] 2,620	1,520	[a] 500	332	230
17	200	185	270	230	250	2,880	[a] 1,690	2,450	625	[a] 420	270	215
18	196	200	310	270	250	1,520	1,100	2,360	535	[a] 360	[a] 270	207
19	192	230	332	378	250	1,100	960	2,450	505	310	270	207
20	185	222	290	478	250	890	855	1,770	478	270	230	[a] 207
21	178	215	270	425	250	750	820	1,430	450	270	270	207
22	[a] 175	200	270	378	250	750	820	1,100	425	250	250	[a] 205
23	[a] 171	189	230	355	250	565	718	960	425	250	250	203
24	168	192	230	[a] 850	[a] 260	535	685	890	[a] 525	250	[a] 221	200
25	165	185	222	1,340	270	535	595	820	625	230	192	196
26	165	185	219	1,100	655	1,600	535	785	685	230	185	192
27	165	185	215	820	785	890	450	750	565	230	182	158
28	165	185	207	625	750	685	400	750	505	[a] 230	178	[a] 158
29	165	185	203	565	------	595	450	[a] 642	400	[a] 230	178	158
30	165	185	200	450	------	505	425	535	[a] 398	[a] 230	178	158
31	165	------	196	400	------	450	------	750	------	[a] 230	[a] 178	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	200	151	168	0.202	0.23
November	230	165	180	.217	.24
December	332	192	228	.275	.32
January	1,340	192	407	.490	.56
February	785	230	320	.386	.40
March	6,730	310	888	1.07	1.23
April	7,940	400	1,570	1.89	2.11
May	17,600	425	2,620	3.16	3.64
June	3,050	398	924	1.11	1.24
July	500	230	318	.383	.44
August	700	178	313	.377	.43
September	250	158	199	.240	.27
The year	17,600	151	680	.819	11.11

[a] Estimated.

MERAMEC RIVER NEAR SULLIVAN, MO.

LOCATION.—Chain gage in N. ½ SW. ¼ 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, 1929.

EXTREMES.—Maximum discharge during year, 19,000 second-feet May 7 (gage height, 18.20 feet); minimum, 295 second-feet Sept. 3 (gage height, 2.28 feet).

1921–1929: Maximum discharge, 28,300 second-feet June 2, 1927 (gage height, 22.89 feet); minimum discharge, 200 second-feet Aug. 31 and Sept. 8 and 9, 1925; minimum gage height, 1.48 feet Aug. 12, 1926.

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

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	364	385	535	435	810	1,240	3,460	810	1,760	668	385	303
2	364	435	535	410	750	1,120	2,300	4,650	2,090	640	435	303
3	385	435	510	410	695	93	1,830	9,230	3,000	612	410	303
4	410	435	485	385	612	870	1,310	5,350	3,150	585	385	303
5	385	435	485	435	585	870	1,180	4,150	2,650	585	385	303
6	385	410	460	535	560	810	1,120	10,600	2,300	585	410	322
7	364	385	460	535	535	810	990	18,600	2,580	560	385	385
8	364	364	435	560	535	750	3,220	14,200	2,370	585	385	385
9	364	385	435	535	510	668	7,350	5,350	1,900	560	1,380	385
10	364	385	435	560	535	640	13,600	4,350	1,570	535	1,380	342
11	364	385	460	585	535	585	8,810	3,380	1,380	510	870	342
12	342	385	460	585	585	585	4,550	3,150	1,180	1,120	870	322
13	364	385	485	535	460	560	3,150	8,310	2,580	668	810	342
14	364	385	460	510	460	535	2,510	10,900	2,370	612	695	535
15	364	410	485	485	435	640	2,930	9,510	1,900	560	612	485
16	435	410	510	485	435	4,750	4,060	5,450	1,760	640	485	460
17	435	435	612	435	435	6,530	3,460	3,300	1,440	668	435	435
18	460	535	722	460	435	3,540	2,720	3,000	1,180	640	435	385
19	485	585	870	695	460	2,440	2,090	6,420	1,120	560	410	364
20	435	560	750	930	460	1,960	1,760	4,550	990	535	385	342
21	435	510	695	870	460	1,640	1,700	3,220	930	510	385	342
22	410	485	612	810	460	1,440	1,760	2,580	870	485	385	342
23	410	435	560	722	435	1,240	1,640	2,230	870	460	364	342
24	410	435	535	750	460	1,240	1,380	1,900	870	435	342	342
25	385	410	485	1,500	460	1,120	1,240	1,760	1,240	435	342	322
26	385	385	485	2,790	668	1,570	1,240	1,640	1,570	410	342	322
27	385	385	460	2,020	1,570	1,900	1,120	1,570	1,120	410	342	322
28	385	385	460	1,500	1,500	1,380	1,050	1,570	870	385	322	322
29	385	410	435	1,240	-------	1,120	990	1,500	810	385	322	322
30	385	435	435	1,050	-------	1,120	870	1,380	750	385	303	322
31	385	-------	410	870	-------	990	-------	1,380	-------	364	303	-------

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	485	342	392	0.253	0.29
November	585	364	427	.275	.31
December	870	410	521	.336	.39
January	2,790	385	794	.512	.59
February	1,570	435	601	.388	.40
March	6,530	535	1,470	.948	1.09
April	13,600	870	2,850	1.84	2.05
May	18,600	810	5,030	3.25	3.75
June	3,150	750	1,640	1.06	1.18
July	1,120	364	551	.355	.41
August	1,380	303	506	.326	.38
September	535	303	355	.229	.26
The year	18,600	303	1,270	.819	11.10

MERAMEC RIVER NEAR EUREKA, MO.

LOCATION.—Chain gage in SE. ¼ sec. 32, T. 44 N., R. 4 E., at Votaw Ford highway bridge, 2 miles east of Eureka. Zero of gage is 407.40 feet above mean sea level.

DRAINAGE AREA.—3,800 square miles.

RECORDS AVAILABLE.—August, 1903, to July, 1906, and October, 1921, to September, 1929.

EXTREMES.—Maximum discharge during year, 33,400 second-feet May 15 (gage height, 21.10 feet); minimum, 545 second-feet Sept. 4 (gage height, 0.75 foot).

1922–1929: Maximum discharge, 64,000 second-feet Apr. 3, 1927 (gage height, 29.47 feet); minimum discharge, 320 second-feet Sept. 28, 1922; minimum gage height, 0.52 foot Sept. 2, 1925.

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

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	635	728	830	900	1,860	3,290	10,000	[a] 2,000	3,890	1,490	795	563
2	635	728	865	865	1,760	2,720	7,800	17,600	5,630	1,490	795	551
3	605	795	865	865	1,670	2,500	8,360	21,500	4,250	1,400	795	563
4	635	830	900	830	1,490	2,170	4,010	24,900	7,380	1,310	760	545
5	635	830	940	900	1,400	2,060	3,170	23,400	5,760	1,310	795	563
6	635	795	900	1,060	1,310	2,060	2,720	21,900	3,770	1,220	830	563
7	635	760	900	1,060	1,310	2,280	2,500	26,000	4,850	1,220	795	635
8	635	760	[a] 868	1,060	1,220	2,060	13,500	31,100	4,730	1,140	795	665
9	635	760	865	1,140	1,220	1,760	13,600	28,800	6,280	1,140	760	695
10	635	728	830	1,310	1,140	1,580	20,300	21,300	5,760	1,140	1,490	665
11	635	728	830	1,220	1,140	1,490	24,900	8,640	3,650	1,490	2,170	665
12	575	695	795	1,220	1,140	1,400	22,200	8,080	3,290	1,670	1,960	665
13	635	695	[a] 868	1,220	1,060	1,400	9,860	16,700	4,490	1,860	1,670	635
14	635	695	940	1,140	1,060	1,310	6,420	27,200	4,730	1,580	1,490	728
15	605	695	1,020	1,580	1 060	1,490	7,940	32,700	4,980	1,490	1,310	830
16	760	728	[a] 1,210	2,280	1,060	6,020	9,080	27,800	3,770	2,500	1,220	865
17	940	760	1,400	1,310	1,020	13,500	7,520	10,700	3,050	4,010	980	728
18	940	795	2,170	1,140	1,060	16,100	6,020	17,900	2,270	2,060	940	760
19	900	940	1,860	1,860	1,060	15,400	5,110	19,400	2,280	1,860	865	728
20	865	980	1,760	2,170	1,060	4,850	3,890	19,000	2,170	1,490	830	695
21	830	[a] 960	1,580	2,500	1,020	3,890	5,890	16,900	2,060	[a] 1,360	795	665
22	795	940	1,310	2,500	1,060	3,650	4,730	10,800	1,860	1,220	760	665
23	760	900	1,220	2,060	1,060	3,050	4,010	5,500	1,860	1,140	695	635
24	728	830	1,220	1,860	1,020	2,610	3,410	4,610	2,170	1,060	695	635
25	728	795	1,140	3,890	1,140	[a] 2,610	3,050	4,130	2,060	1,020	695	605
26	695	760	1,140	7,380	1,580	11,000	2,610	3,650	2,170	980	665	605
27	695	760	1,060	4,850	3,770	8,080	2,500	3,410	2,390	940	635	605
28	695	728	1,020	3,770	3,050	9,860	2,280	3,170	2,060	900	635	605
29	695	728	980	2,940	-------	4,610	2,170	2,940	1,860	900	605	605
30	695	760	940	2,500	-------	3,290	2,060	2,940	1,580	865	605	665
31	695	-------	900	2,170	-------	2,940	-------	2,940	-------	865	575	------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	940	575	704	0.185	0.21
November	980	695	786	.207	.23
December	2,170	795	1,100	.289	.33
January	7,380	830	1,990	.524	.60
February	3,770	1,020	1,390	.366	.38
March	16,100	1,310	4,550	1.20	1.38
April	24,900	2,060	7,390	1.94	2.16
May	32,700	2,000	15,100	3.97	4.58
June	7,380	1,580	3,580	.942	1.05
July	4,010	865	1,420	.374	.43
August	2,170	575	949	.250	.29
September	865	545	653	.172	.19
The year	32,700	545	3,320	.874	11.83

[a] Estimated.

MERAMEC SPRING NEAR ST. JAMES, MO.

LOCATION.—Staff gage in SE. ¼ sec. 1, T. 37 N., R. 6 W., 600 feet below outlet of spring and 6 miles southeast of St. James. Zero of gage is 774.59 feet above mean sea level.

RECORDS AVAILABLE.—March, 1903, to July, 1906, and November, 1921, to October, 1929 (discontinued).

EXTREMES.—Maximum discharge during period Oct. 1, 1928, to Oct. 31, 1929, estimated (owing to backwater from Meramec River) at 350 second-feet May 7; minimum discharge, 84 second-feet Oct. 28–30, 1929; minimum gage height, 1.05 feet Jan. 4 and Feb. 11–16.

1922–1929: Maximum discharge estimated at 650 second-feet several days during 1927 and 1928; minimum, 69 second-feet Sept. 25–27, 1926.

REMARKS.—Records good except those estimated.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.
1	111	104	106	[a] 107	127	153	225	140	178	173	134	[a] 109	94
2	111	104	[a] 106	106	124	148	209	181	[a] 270	167	134	[a] 108	94
3	111	104	106	106	[a] 122	[a] 164	193	248	248	167	129	106	116
4	111	[a] 104	106	104	121	181	184	222	241	161	[a] 128	106	98
5	108	104	104	108	121	156	178	[a] 210	222	161	127	106	98
6	108	104	104	[a] 114	119	150	164	278	209	161	127	106	[a] 96
7	[a] 108	104	104	119	119	142	[a] 160	[a] 350	[a] 230	[a] 158	[a] 200	104	94
8	108	104	104	119	119	137	252	288	[a] 220	156	[a] 180	[a] 99	88
9	108	101	[a] 106	119	116	132	302	278	[a] 210	156	161	94	94
10	108	101	108	119	[a] 115	[a] 130	333	252	[a] 200	153	150	104	94
11	108	[a] 101	108	119	114	129	264	237	193	153	[a] 150	104	94
12	108	101	[a] 108	119	114	127	248	[a] 230	190	153	150	104	225
13	106	101	108	[a] 118	114	129	225	278	209	153	140	106	[a] 180
14	[a] 106	106	108	116	114	129	[a] 218	278	209	[a] 150	134	106	150
15	106	106	108	114	114	134	212	264	196	148	[a] 132	[a] 106	129
16	106	106	[a] 112	111	114	292	215	248	[a] 240	148	[a] 129	[a] 106	116
17	108	108	116	111	[a] 116	[a] 266	206	237	[a] 220	148	127	106	108
18	106	[a] 108	116	114	119	241	190	222	[a] 200	148	[a] 124	[a] 105	108
19	106	108	114	[a] 132	119	219	181	[a] 224	[a] 188	150	121	104	98
20	106	108	114	150	119	196	176	225	176	150	121	104	[a] 96
21	[a] 106	108	111	140	119	187	[a] 172	215	173	[a] 149	121	101	94
22	106	106	114	130	[a] 118	178	167	206	173	148	121	[a] 100	94
23	106	106	[a] 111	120	116	173	164	196	[a] 170	145	116	98	88
24	106	106	108	145	[a] 122	[a] 164	159	190	167	137	116	98	86
25	104	[a] 106	[a] 108	170	127	156	159	187	225	137	[a] 115	98	88
26	104	106	108	160	187	178	150	[a] 182	219	137	114	96	86
27	104	106	108	[a] 150	181	203	150	178	196	137	[a] 114	98	[a] 85
28	[a] 104	106	108	142	164	181	[a] 146	190	193	[a] 136	114	98	84
29	104	[a] 106	108	134	-------	173	142	181	178	134	111	[a] 97	84
30	104	106	[a] 108	129	-------	167	142	[a] 180	[a] 176	134	111	96	84
31	106	-------	108	124	-------	160	-------	178	-------	134	111	-------	140

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
1928–29				June	270	167	204
October	111	104	107	July	173	134	150
November	108	101	105	August	200	111	131
December	116	104	109	September	109	94	102
January	170	104	125				
February	187	114	125	The year	350	94	146
March	292	127	170				
April	333	142	196	1929			
May	350	140	225	October	225	84	106

[a] Estimated.

BOURBEUSE RIVER AT UNION, MO.

LOCATION.—Chain gage in SW. ¼ sec. 26, T. 43 N., R. 1 W., 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, 1929.

EXTREMES.—Maximum discharge during year, 12,400 second-feet May 21 (gage height, 13.90 feet); minimum discharge, 33 second-feet Oct. 26; minimum gage height, 1.05 feet Sept. 12.

1921–1929: Maximum discharge, 22,500 second-feet Apr. 3, 1927 (gage height, 19.10 feet); minimum discharge, 27 second-feet Sept. 20, 1925; minimum gage height, 0.80 foot Oct. 5 and 6, 1922.

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

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	42	51	58	65	226	875	2,740	425	1,690	185	49	39
2	45	62	55	65	226	650	4,970	4,240	3,540	146	48	40
3	45	48	51	65	226	590	5,520	7,700	1,600	120	45	40
4	55	65	58	58	212	450	1,400	10,800	2,640	100	43	41
5	46	55	46	96	198	402	960	4,540	1,310	100	43	43
6	39	48	45	100	180	590	720	4,860	758	82	48	38
7	38	55	51	110	164	795	590	7,940	875	133	43	39
8	39	45	48	105	154	620	2,070	10,900	1,080	113	40	43
9	45	42	45	180	154	475	6,080	5,300	3,740	120	48	50
10	42	44	42	241	154	340	7,940	1,400	1,880	128	49	40
11	39	55	51	256	129	304	6,880	1,040	960	116	76	36
12	36	51	48	212	115	271	2,640	1,000	590	128	340	35
13	39	45	62	198	115	271	1,690	1,130	560	300	340	43
14	51	45	69	212	120	241	1,130	6,880	720	146	137	43
15	45	48	62	212	115	271	960	9,880	1,500	133	105	40
16	39	58	65	212	110	2,640	795	2,450	685	141	105	40
17	50	62	100	212	110	8,420	720	1,400	475	128	92	46
18	51	65	100	212	96	12,200	650	3,040	380	300	79	43
19	48	62	91	271	96	2,640	530	7,460	322	430	73	43
20	48	62	82	402	86	1,500	475	10,500	288	245	64	46
21	36	62	82	1,310	86	1,080	1,400	8,420	241	162	64	46
22	36	55	82	758	86	875	1,880	1,400	212	126	52	56
23	39	55	82	560	86	720	960	960	288	122	52	40
24	46	78	91	475	82	620	875	720	425	89	45	43
25	36	65	110	475	124	475	650	590	288	84	45	41
26	33	48	105	340	134	2,740	475	450	304	78	45	40
27	45	48	96	1,310	175	6,880	425	402	560	70	50	43
28	45	51	91	960	1,220	9,380	402	380	425	64	53	41
29	45	55	86	530	------	1,880	360	360	304	59	41	41
30	45	65	73	425	------	1,220	322	340	226	53	36	78
31	45	------	73	340	------	960	------	450	------	52	40	------

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	55	33	43	0.056	0.06
November	78	42	55	.072	.08
December	110	42	71	.093	.11
January	1,310	58	354	.462	.53
February	1,220	82	178	.232	.24
March	12,200	241	1,980	2.58	2.97
April	7,940	322	1,910	2.49	2.78
May	10,900	340	3,790	4.94	5.70
June	3,740	212	962	1.25	1.40
July	430	52	137	.179	.21
August	340	36	77.1	.101	.12
September	78	35	43.4	.057	.06
The year	12,200	33	805	1.05	14.26

BIG RIVER AT BYRNESVILLE, MO.

LOCATION.—Chain gage in SE. ¼ 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, 1929.

EXTREMES.—Maximum discharge during year, 15,200 second-feet May 15 (gage height, 20.00 feet); minimum discharge, 97 second-feet Sept. 4; minimum gage height, 2.40 feet Oct. 3.

1922–1929: Maximum discharge, 21,900 second-feet Apr. 2, 1927 (gage height, 22.63 feet); minimum, 64 second-feet Oct. 1, 1922, and Aug. 12, 1926.

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

REMARKS.—Records good for discharges above 200 second-feet and fair for those below. Slight diurnal fluctuation during low stages is caused by gristmills above.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	132	176	232	253	585	1,120	1,260	486	762	257	175	116
2	132	193	337	242	486	936	727	5,260	848	246	175	108
3	126	202	337	212	455	765	654	9,930	1,160	234	157	108
4	146	232	299	212	455	727	585	7,600	892	224	157	102
5	193	232	276	311	424	690	551	3,940	678	224	184	116
6	160	202	264	287	394	619	585	8,600	596	224	193	139
7	146	193	253	299	394	551	518	11,800	936	224	175	148
8	184	184	253	276	365	486	3,120	9,300	1,420	224	184	139
9	146	168	232	324	337	455	3,400	2,980	980	234	224	157
10	139	168	222	351	287	394	8,000	2,520	980	234	234	148
11	139	168	232	351	276	394	9,400	1,800	720	281	1,120	131
12	139	168	242	337	264	365	2,980	2,460	557	257	848	131
13	139	176	253	324	324	365	1,980	8,900	1,700	805	454	157
14	146	176	287	212	287	365	1,860	13,800	1,260	363	246	257
15	153	176	365	287	299	551	4,540	13,700	1,070	294	213	224
16	168	184	486	264	299	1,420	5,260	4,900	805	1,070	213	203
17	311	193	892	311	311	3,050	2,700	2,460	637	2,910	184	175
18	337	276	1,480	394	337	1,860	1,700	3,190	557	1,120	175	157
19	264	365	1,260	936	365	1,260	1,420	4,720	486	596	166	139
20	242	351	848	1,160	299	1,020	1,210	3,620	454	454	157	131
21	212	311	619	936	287	892	1,120	2,100	378	306	157	131
22	202	253	518	765	287	848	980	1,640	363	257	148	123
23	184	232	455	654	337	727	892	1,360	348	281	148	123
24	176	212	394	727	324	619	765	1,210	363	246	139	123
25	160	202	365	3,120	394	585	690	1,070	363	234	131	123
26	168	202	351	5,350	1,160	1,920	654	1,020	320	224	139	116
27	160	193	324	1,750	2,910	848	619	936	320	203	157	116
28	153	193	299	1,210	1,530	690	551	892	269	193	123	116
29	168	202	276	892	------	619	518	762	234	193	123	123
30	160	193	264	765	------	585	518	720	257	184	123	131
31	160	------	253	690	------	518	------	637	------	175	116	------

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	337	126	176	0.197	0.23
November	365	168	213	.239	.27
December	1,480	222	425	.476	.55
January	5,350	212	781	.876	1.01
February	2,910	264	517	.580	.60
March	3,050	365	847	.950	1.10
April	9,400	518	1,990	2.23	2.49
May	13,800	486	4,330	4.85	5.59
June	1,700	234	690	.774	.86
July	2,910	175	418	.469	.54
August	1,120	116	230	.258	.30
September	257	102	140	.157	.18
The year	13,800	102	901	1.01	13.72

HEADWATER DIVERSION CHANNEL BASIN

CASTOR RIVER AT ZALMA, MO.

LOCATION.—Chain gage in S. ½ sec. 29, T. 29 N., R. 9 E., at highway bridge in Zalma. Zero of gage is 350 feet above mean sea level.

DRAINAGE AREA.—395 square miles.

RECORDS AVAILABLE.—September, 1921, to September, 1929.

EXTREMES.—Maximum discharge during year, 7,250 second-feet June 14 (gage height, 21.98 feet); minimum, 56 second-feet Sept. 4 (gage height, 1.68 feet).

1921–1929: Maximum discharge, 19,400 second-feet Dec. 14, 1927 (gage height, 26.50 feet); minimum, 30 second-feet Aug. 31, 1924 (gage height, 1.10 feet).

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

REMARKS.—Records fair. Discharge estimated Nov. 24–28 and May 26.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66	198	3,050	262	600	1,460	460	244	298	146	92	60
2	63	1,210	1,560	262	520	1,110	460	406	298	146	87	57
3	66	1,310	1,090	244	480	828	442	2,120	370	158	96	57
4	164	828	828	244	442	244	784	1,330	298	152	87	57
5	105	660	806	280	424	2,430	1,020	850	262	130	87	57
6	105	660	740	298	406	1,720	740	946	228	125	87	60
7	100	442	540	280	370	1,020	600	5,980	212	158	87	96
8	96	424	480	262	370	828	540	3,890	228	152	100	78
9	87	352	580	244	334	700	2,180	4,160	228	146	125	78
10	87	334	560	370	298	620	6,120	2,210	198	140	115	70
11	82	316	540	460	280	540	2,460	1,460	177	164	120	74
12	78	280	580	460	280	540	2,120	1,160	170	140	105	87
13	78	262	600	406	298	620	1,330	1,380	2,900	125	96	146
14	70	244	1,720	334	280	2,620	1,160	1,280	7,250	115	87	170
15	78	244	1,460	388	244	2,300	2,330	2,760	3,310	125	82	135
16	1,360	660	1,160	352	244	6,190	2,270	1,670	1,410	146	78	120
17	4,110	784	2,270	352	244	3,390	1,460	1,210	1,020	560	74	105
18	1,460	1,890	4,700	700	228	1,410	1,040	1,160	720	370	70	96
19	762	1,380	2,650	4,380	228	1,040	762	806	520	262	70	96
20	520	922	1,540	1,800	228	784	620	740	442	198	70	87
21	460	640	1,110	1,540	212	600	620	640	388	152	70	82
22	388	600	874	1,380	228	560	540	520	334	152	66	82
23	388	520	540	970	198	480	560	480	298	146	63	78
24	280	464	806	4,240	212	406	424	424	280	135	63	78
25	280	408	560	6,260	228	352	500	388	298	125	63	78
26	244	352	520	6,800	4,240	316	500	397	228	120	63	78
27	280	296	442	2,690	5,050	298	406	406	198	120	63	78
28	280	240	406	1,640	2,120	262	352	388	184	115	63	78
29	244	184	370	1,260	-------	244	316	334	170	105	60	74
30	228	3,760	334	994	-------	280	262	298	158	100	60	74
31	198	-------	298	762	-------	244	-------	262	-------	92	57	-------

Month	Maximum	Minimum	Mean	Per square mile	Run-off in inches
October	4,110	63	413	1.05	1.21
November	3,760	184	695	1.76	1.96
December	4,700	298	1,090	2.76	3.18
January	6,800	244	1,320	3.34	3.85
February	5,050	198	689	1.74	1.81
March	6,190	244	1,110	2.81	3.24
April	6,120	262	1,110	2.81	3.14
May	5,980	244	1,300	3.29	3.79
June	7,250	158	769	1.95	2.18
July	560	92	162	.410	.47
August	125	57	80.8	.205	.24
September	170	57	85.5	.216	.24
The year	7,250	57	737	1.87	25.31

ST. FRANCIS RIVER BASIN

ST. FRANCIS RIVER FLOODWAY NEAR MARKED TREE, ARK.

LOCATION.—Staff gage in SE. ¼ sec. 10, T. 11 N., R. 6 E., at dam of Poinsett County Drainage District No. 7 near Marked Tree.

RECORDS AVAILABLE.—September, 1927, to September, 1929.

EXTREMES.—Maximum discharge during year, 15,300 second-feet May 26 (gage height, 28.7 feet); minimum, 380 second-feet Sept. 30 (gage height, 12.7 feet).

1928–29: Maximum discharge, 21,400 second-feet July 5–9, 1928 (gage height, 31.2 feet); minimum, 380 second-feet Sept. 30, 1929 (gage height, 12.7 feet).

REMARKS.—Records fair. Gage-height record furnished by Poinsett County Drainage District No. 7.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	515	2,760	2,640	8,700	10,500	6,840	8,700	11,400	13,400	3,880	1,830	530
2	440	2,640	2,640	8,700	11,400	8,500	8,700	11,200	12,600	3,620	1,620	530
3	430	2,460	2,640	8,300	12,200	8,300	8,500	11,000	11,900	3,380	1,420	530
4	640	2,230	2,760	8,100	13,100	9,120	8,300	10,700	11,200	3,040	1,280	530
5	515	2,060	2,950	7,720	13,800	10,000	8,100	10,200	10,200	2,820	1,150	455
6	470	1,900	3,080	7,180	14,300	11,000	8,100	9,780	9,340	2,550	1,000	480
7	490	1,840	3,140	6,840	14,600	11,900	8,100	9,340	8,500	2,300	910	530
8	480	1,790	3,280	6,260	14,800	12,900	8,100	8,900	8,100	2,010	880	630
9	470	1,740	3,480	5,900	14,800	13,600	8,300	9,120	7,180	1,740	880	760
10	460	1,690	3,760	5,610	14,600	14,100	8,300	9,120	6,540	1,620	880	820
11	450	1,690	3,970	5,430	14,100	14,300	8,100	9,340	6,020	1,620	1,000	820
12	440	1,690	4,250	5,160	13,600	14,600	7,900	9,780	5,710	1,580	1,320	760
13	430	1,690	4,480	4,980	13,100	14,600	7,900	10,000	5,280	1,460	1,580	730
14	430	1,740	4,720	4,890	12,600	14,300	8,100	10,200	5,120	1,460	1,830	680
15	440	1,790	4,890	4,800	12,200	14,100	8,300	10,500	4,830	1,420	2,010	630
16	450	1,740	4,980	4,720	11,400	13,800	8,500	1,1000	4,620	1,420	2,100	630
17	545	1,690	5,340	4,640	10,700	13,400	8,700	11,700	4,410	1,460	2,010	655
18	685	1,640	5,610	4,560	10,000	12,900	8,900	12,400	4,140	1,460	1,780	680
19	735	1,540	5,700	4,480	9,340	12,400	9,340	13,400	4,000	1,500	1,540	655
20	965	1,490	6,020	4,480	8,900	11,900	9,780	13,800	3,880	1,540	1,360	630
21	1,640	1,490	6,400	4,480	8,100	11,400	10,500	14,300	3,680	1,620	1,180	500
22	2,120	1,540	6,840	4,560	7,720	10,700	11,200	14,600	3,620	1,620	1,090	555
23	2,700	1,590	7,180	4,720	7,000	10,200	11,400	14,800	3,620	1,620	1,000	555
24	3,020	1,690	7,540	4,980	6,400	9,780	11,700	15,000	3,560	1,620	910	530
25	3,210	1,790	7,720	5,160	6,140	9,340	11,900	15,000	3,680	1,620	850	455
26	3,340	1,840	7,900	5,430	6,260	9,120	11,900	15,300	3,810	1,620	820	430
27	3,340	1,960	8,100	5,800	6,140	8,700	11,900	15,000	3,880	1,700	705	430
28	3,340	2,120	8,300	6,400	6,400	8,700	11,900	15,000	3,940	1,830	630	430
29	3,340	2,340	8,500	7,180	--------	8,700	11,700	14,800	4,000	1,960	605	405
30	3,210	2,580	8,500	8,500	--------	8,700	11,400	14,300	4,000	2,010	580	380
31	3,020	--------	8,700	9,560	--------	8,500	--------	13,800	--------	1,920	530	--------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	3,340	430	1,380	84,800
November	2,760	1,490	1,890	112,000
December	8,700	2,640	5,360	330,000
January	9,560	4,480	6,070	373,000
February	14,800	6,140	10,900	605,000
March	14,600	6,840	11,200	689,000
April	11,900	7,900	9,470	564,000
May	15,300	8,900	12,100	744,000
June	13,400	3,560	6,160	367,000
July	3,880	1,420	1,970	121,000
August	2,100	530	1,200	73,800
September	820	380	580	34,500
The year	15,300	380	5,650	4,100,000

LITTLE RIVER DITCH NO. 81 NEAR KENNETT, MO.

LOCATION.—Chain gage in NE. ¼ sec. 4, T. 18 N., R. 10 E., at bridge on State highway No. 84, 4 miles east of Kennett. Zero of gage is 240 feet above mean sea level.

RECORDS AVAILABLE.—October, 1926, to September, 1929, at present site; September, 1921, to September, 1926, at Kirk, 1¼ miles upstream.

EXTREMES.—Maximum discharge during year, 2,000 second-feet Feb. 27 (gage height, 10.88 feet); minimum, 80 second-feet Oct. 11–15 and Sept. 29 and 30.

1927–1929: Maximum discharge, 2,760 second-feet Apr. 21, 1927 (gage height, 15.11 feet); minimum discharge, 73 second-feet Sept. 17 and 18, 1927; minimum gage height, 2.61 feet Sept. 18, 1927.

REMARKS.—Records good. Discharge estimated Apr. 17 and June 10–12.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	85	154	525	223	525	1,070	337	239	184	133	96	90
2	85	170	373	207	465	924	391	223	192	120	96	85
3	90	255	287	184	409	691	319	303	184	133	96	85
4	90	239	271	192	391	779	337	271	177	133	96	85
5	90	207	355	192	319	1,250	337	239	177	120	96	96
6	90	184	337	207	287	924	319	239	170	114	96	85
7	85	177	287	223	271	691	287	485	162	114	108	114
8	85	162	255	207	271	605	271	427	192	114	108	102
9	85	154	223	207	271	585	287	605	177	114	133	96
10	85	154	223	287	287	545	355	545	175	120	177	90
11	80	147	207	355	287	391	373	427	174	120	162	90
12	80	147	207	337	271	391	545	335	172	108	140	90
13	80	140	239	271	255	337	391	355	170	108	133	96
14	80	140	391	255	255	319	391	779	271	108	120	114
15	80	140	337	223	255	355	545	950	255	108	114	96
16	90	133	287	223	255	355	713	713	207	108	114	96
17	605	192	465	223	255	319	619	545	192	184	108	90
18	525	184	1,000	255	255	303	525	465	177	184	108	90
19	337	207	713	802	255	287	303	409	162	147	108	85
20	255	177	545	1,000	239	287	287	373	154	140	102	85
21	207	170	445	605	239	271	287	337	147	126	102	85
22	184	154	409	465	223	271	373	319	147	120	96	85
23	184	147	373	409	207	255	303	271	147	120	96	85
24	223	140	337	391	223	255	271	255	140	114	96	85
25	184	140	303	1,610	355	239	255	239	147	108	90	85
26	162	140	287	1,770	1,770	239	255	239	140	108	90	85
27	170	140	271	1,400	2,000	223	239	223	133	108	90	85
28	170	140	255	1,000	1,610	223	271	223	133	102	90	85
29	162	140	192	802	-------	303	255	207	133	102	90	80
30	162	319	223	691	-------	391	255	192	133	96	90	80
31	154	-------	223	605	-------	545	-------	192	-------	96	90	-------

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	605	80	163	May	950	192	376
November	319	133	170	June	271	133	171
December	1,000	192	350	July	184	96	120
January	1,770	184	510	August	177	90	107
February	2,000	207	454	September	114	80	90
March	1,250	223	472				
April	713	239	357	The year	2,000	80	278

LITTLE RIVER DITCH NO. 1 NEAR KENNETT, MO.

LOCATION.—Chain gage in NE. ¼ sec. 4, T. 18 N., R. 10 E., at bridge on State highway No. 84. 4 miles east of Kennett. Zero of gage is 240 feet above mean sea level.

RECORDS AVAILABLE.—October, 1926, to September, 1929, at present site; September, 1921, to September, 1926, at Kirk, 1¼ miles upstream.

EXTREMES.—Maximum discharge during year, 4,010 second-feet Feb. 27 and 28 (gage height, 11.6 feet); minimum, 49 second-feet Sept. 21, 27–31 (gage height, 2.82 feet).

1927–1929: Maximum discharge, 7,520 second-feet Apr. 25, 1927 (gage height, 16.56 feet); minimum discharge, that of Sept. 21, 27–31, 1929; minimum gage height, 2.69 feet Sept. 21–27, 1927.

REMARKS.—Records good. Discharge estimated Feb. 16 and Apr. 17.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	63	163	1,000	435	1,270	3,770	655	346	304	122	78	58
2	56	163	880	405	1,040	3,230	800	375	318	118	71	52
3	56	276	620	375	920	2,440	655	620	304	125	71	52
4	66	346	555	375	840	1,900	655	555	290	125	71	52
5	70	304	585	375	760	2,940	690	465	276	122	64	64
6	66	263	725	405	690	2,660	620	435	263	118	61	64
7	50	237	620	435	690	1,900	555	760	250	118	86	93
8	50	212	525	405	655	1,400	495	1,090	263	110	101	78
9	50	212	465	690	655	800	555	1,360	250	108	163	75
10	50	200	435	525	655	760	655	1,360	224	105	163	61
11	50	187	405	760	585	725	800	1,000	224	105	140	61
12	50	175	375	690	555	725	1,600	800	212	97	131	52
13	50	175	435	585	555	690	1,000	840	224	97	122	61
14	58	175	760	495	555	690	840	1,450	375	93	114	68
15	58	163	760	465	555	690	1,270	2,560	555	93	95	64
16	71	163	690	435	555	760	1,360	2,170	360	97	86	61
17	304	175	920	435	555	725	1,040	1,700	332	175	82	58
18	620	290	2,390	495	555	620	725	1,270	290	152	78	55
19	525	360	2,000	1,500	525	585	620	920	250	136	75	54
20	346	304	1,450	2,120	495	555	555	760	224	127	68	52
21	263	276	1,040	1,650	495	555	555	620	212	114	64	49
22	224	237	920	1,320	465	525	620	555	187	105	64	52
23	212	200	800	1,180	435	495	585	495	175	97	64	52
24	212	200	725	920	435	525	525	465	163	93	64	52
25	212	187	655	3,350	585	465	495	435	187	89	64	52
26	175	175	620	3,830	3,410	435	465	435	163	82	58	52
27	175	175	585	3,650	4,010	435	405	435	163	82	58	49
28	187	163	555	3,470	4,010	405	435	435	163	82	58	49
29	175	163	525	3,050	-------	318	405	375	152	78	58	49
30	175	405	465	2,220	-------	690	405	346	152	82	58	49
31	163	-------	435	1,650	-------	690	-------	318	-------	78	58	-------

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	620	50	157	May	2,560	318	831
November	405	163	224	June	555	152	250
December	2,390	375	772	July	175	78	107
January	3,830	375	1250	August	163	58	83.5
February	4,010	435	982	September	93	49	58.0
March	3,770	318	1,100				
April	1,600	405	701	The year	4,010	49	542

LITTLE RIVER DITCH NO. 66 NEAR KENNETT, MO.

LOCATION.—Chain gage in NE. ¼ sec. 4, T. 18 N., R. 10 E., at bridge on State highway No. 84, 4 miles east of Kennett. Zero of gage is 240 feet above mean sea level.

RECORDS AVAILABLE.—October, 1926, to September, 1928, at present site; September, 1921, to September, 1926, at Kirk, 1¼ miles upstream.

EXTREMES.—Maximum discharge during year, 2,800 second-feet Feb. 27 and 28 (gage height, 15.3 feet); minimum discharge, 65 second-feet Oct. 15 (gage height, 3.18 feet).

1927–1929: Maximum discharge, 3,650 second-feet Apr. 25, 1927 (gage height, 17.69 feet); minimum, that of Oct. 15, 1928.

REMARKS.—Records good. Discharge estimated Apr. 17. 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 the 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 the bank that separates them during low stages.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	235	1,350	380	1,500	2,640	596	335	380	193	122	78
2	78	235	1,450	365	1,130	2,390	648	335	365	193	115	76
3	78	380	1,650	365	910	1,940	613	477	365	193	115	74
4	90	774	850	350	720	1,400	579	528	365	193	108	71
5	96	648	720	335	666	1,970	613	460	320	193	102	77
6	84	494	930	350	596	2,260	613	444	305	180	102	78
7	78	396	850	460	579	1,880	528	666	291	180	128	122
8	78	320	684	444	562	1,450	477	1,220	291	180	148	102
9	78	291	562	396	579	1,090	477	1,290	277	180	207	102
10	74	263	494	428	545	850	684	1,330	320	180	193	96
11	69	249	428	666	511	720	1,180	1,090	291	180	263	90
12	67	249	412	666	494	648	1,330	870	277	167	207	84
13	67	221	460	579	460	613	1,070	738	277	207	180	102
14	66	221	702	494	460	613	850	1,770	596	193	160	180
15	65	207	1,010	428	460	648	850	1,770	774	180	134	154
16	84	207	890	396	460	684	1,030	1,770	810	207	128	141
17	380	494	830	396	460	738	902	1,200	702	221	122	134
18	850	870	1,740	428	477	684	774	1,030	511	277	115	115
19	792	950	2,000	702	477	596	648	792	412	277	115	102
20	528	792	1,770	1,880	444	545	562	666	350	249	108	96
21	365	596	1,200	1,940	428	528	528	596	305	221	102	96
22	305	460	970	1,850	396	511	528	528	277	180	96	96
23	277	380	792	1,740	380	528	511	477	263	167	96	90
24	291	320	648	1,350	380	511	494	444	249	160	90	90
25	305	291	579	1,940	460	477	460	412	249	154	90	90
26	263	277	545	2,680	1,660	460	428	412	221	141	90	90
27	249	263	511	2,680	2,800	428	396	684	221	141	90	90
28	249	263	477	2,570	2,800	396	396	756	221	134	84	84
29	263	249	460	2,420	------	396	380	596	221	134	84	78
30	263	350	412	2,260	------	545	365	494	221	134	84	78
31	249	------	396	2,000	------	596	------	428	------	122	84	------

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	850	65	221	May	1,770	335	794
November	950	207	398	June	810	221	358
December	2,000	396	844	July	277	122	184
January	2,680	335	1,090	August	263	84	125
February	2,800	380	778	September	180	71	98.5
March	2,640	396	959				
April	1,330	365	650	The year	2,800	65	542

LITTLE RIVER DITCH NO. 66-A NEAR KENNETT, MO.

LOCATION.—Chain gage in NE. ¼ sec. 4, T. 18 N., R. 10 E., at bridge on State highway No. 84, 4 miles east of Kennett. Zero of gage is 240 feet above mean sea level.

RECORDS AVAILABLE.—January, 1927, to September, 1929.

EXTREMES.—Maximum discharge during year, 1,680 second-feet Feb. 27 and 28; maximum gage height, 15.18 feet Feb. 28; no flow on many days.

1927–1929: Maximum discharge, 2,340 second-feet Apr. 25, 1927 (gage height, 17.62 feet); no flow on many days.

REMARKS.—Records good for discharges above 20 second-feet and poor for those below. See this paragraph under Little River ditch No. 66. Discharge estimated Apr. 17.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	0	0	502	0	630	1,580	21	0	0
2	0	0	608	0	308	1,340	36	0	0
3	0	0	242	0	146	1,010	28	0	0
4	0	82	124	0	60	542	27	10	0
5	0	41	67	0	47	1,030	31	0	0
6	0	4	164	0	24	1,290	26	0	0
7	0	0	115	0	15	956	13	41	0
8	0	0	53	0	14	586	1	422	0
9	0	0	18	0	15	274	1	442	0
10	0	0	2	0	11	134	53	502	0
11	0	0	0	41	7	53	362	308	0
12	0	0	0	41	3	41	482	129	0
13	0	0	0	19	0	31	274	78	0
14	0	0	60	2	0	28	120	170	24
15	0	0	212	0	0	34	120	860	90
16	0	0	134	0	0	53	226	860	106
17	0	4	106	0	0	70	156	382	56
18	120	129	860	0	0	53	86	242	7
19	98	170	1,110	290	1	28	41	98	0
20	12	90	860	956	0	15	18	50	0
21	0	30	362	1,010	0	11	9	26	0
22	0	0	184	932	0	8	10	9	0
23	0	0	82	836	0	10	8	1	0
24	0	0	38	502	0	7	3	0	0
25	0	0	24	1,010	0	1	0	0	0
26	0	0	12	1,600	764	0	0	0	0
27	0	0	7	1,580	1,680	0	0	47	0
28	0	0	1	1,530	1,680	0	0	78	0
29	0	0	0	1,420	-------	0	0	26	0
30	0	0	0	1,270	-------	15	0	2	0
31	0	-------	0	1,060	-------	30	-------	0	-------

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	120	0	7.42	March	1,580	0	298
November	170	0	18.3	April	482	0	71.7
December	1,110	0	192	May	860	0	154
January	1,600	0	455	June	106	0	9.43
February	1,680	0	193				

NOTE.—No flow during July, August, and September.

LITTLE RIVER DITCH NO. 251 NEAR KENNETT, MO.

LOCATION.—Chain gage in NW. ¼ sec. 3, T. 18 N., R. 10 E., at bridge on State highway No. 84, 4 miles east of Kennett. Zero of gage is 240 feet above mean sea level.

RECORDS AVAILABLE.—November, 1926, to September, 1929.

EXTREMES.—Maximum discharge during year, 5,020 second-feet Feb. 28 (gage height, 15.37 feet); minimum discharge, 156 second-feet Sept. 4 and 28–30; minimum gage height, 2.90 feet Sept. 4.

1927–1929: Maximum discharge, 6,510 second-feet Apr. 24 and 25, 1927 (gage height, 17.67 feet); minimum discharge, 134 second-feet Nov. 14, 1926; minimum gage height, that of Sept. 4, 1929.

REMARKS.—Records good. Discharge estimated Apr. 17.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	192	420	2,520	748	2,780	4,780	1,160	645	720	362	220	163
2	192	420	2,700	696	2,160	4,300	1,280	645	696	340	220	163
3	192	645	2,040	670	1,760	3,580	1,160	852	696	362	211	163
4	201	1,350	1,560	670	1,380	2,600	1,160	932	672	362	202	156
5	210	1,100	1,320	670	1,250	3,640	1,350	826	600	340	194	163
6	192	878	1,720	670	1,130	4,080	1,160	774	576	318	194	170
7	192	696	1,560	826	1,070	3,520	1,020	1,220	552	318	238	220
8	192	570	1,250	800	1,040	2,700	932	2,290	552	318	256	202
9	183	520	1,040	748	1,070	1,960	904	2,420	504	318	362	194
10	183	495	904	826	1,020	1,600	1,320	2,470	552	318	362	186
11	174	470	826	1,220	960	1,350	2,160	2,040	528	408	456	178
12	174	445	774	1,220	904	1,220	2,470	1,560	504	318	362	170
13	174	420	878	1,040	878	1,160	1,960	1,350	504	362	318	186
14	174	420	1,520	878	852	1,130	1,560	1,680	1,050	318	276	276
15	174	395	1,920	800	852	1,190	1,640	3,280	1,380	318	238	256
16	192	395	1,640	748	852	1,380	1,880	3,280	1,460	362	238	238
17	645	774	1,840	722	852	1,420	1,630	2,200	1,220	408	220	220
18	1,560	1,520	3,180	774	878	1,280	1,380	1,880	892	480	220	211
19	1,420	1,680	3,750	2,040	878	1,130	1,220	1,490	744	480	211	186
20	932	1,350	3,230	3,430	826	1,020	1,070	1,280	648	432	202	178
21	645	1,020	2,240	3,580	800	960	1,020	1,130	576	362	194	178
22	545	800	1,840	3,430	748	932	1,040	1,020	528	318	194	170
23	470	670	1,490	3,230	722	932	988	944	504	296	186	163
24	570	595	1,280	2,520	696	1,420	932	866	456	276	186	163
25	545	545	1,130	3,520	878	1,130	826	816	456	276	186	170
26	495	520	1,040	4,840	3,130	722	826	792	432	256	178	163
27	445	495	988	4,720	4,960	748	748	1,190	408	256	178	163
28	445	470	932	4,600	5,020	722	774	1,320	408	238	170	156
29	470	470	878	4,420	-------	722	748	1,050	384	238	170	156
30	470	696	800	4,080	-------	1,190	696	892	384	238	170	156
31	445	-------	774	3,700	-------	1,220	-------	792	-------	220	170	-------

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	1,560	174	422	May	3,280	645	1,420
November	1,680	395	708	June	1,460	384	653
December	3,750	774	1,600	July	480	220	330
January	4,840	670	2,030	August	456	170	232
February	5,020	696	1,440	September	276	156	184
March	4,780	722	1,800				
April	2,470	696	1,230	The year	5,020	156	1,000

LITTLE RIVER DITCH NO. 259 NEAR KENNETT, MO.

LOCATION.—Chain gage in NW. ¼ sec. 3, T. 18 N., R. 10 E., at bridge on State highway No. 84, 4 miles east of Kennett. Zero of gage is 240 feet above mean sea level.

RECORDS AVAILABLE.—November, 1926, to September, 1929.

EXTREMES.—Maximum discharge during year, 1,330 second-feet Feb. 26 and 27 (gage height, 9.4 feet); minimum discharge, 5 second-feet Oct. 1 and Sept. 12; minimum gage height, 1.60 feet Sept. 12.

1927–1929: Maximum discharge, 4,140 second-feet Apr. 29, 1927 (gage height, 15.57 feet); minimum discharge and gage height, those given above.

REMARKS.—Records fair. Discharge estimated Apr. 17.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5	28	199	127	238	815	308	153	79	27	16	6
2	6	34	175	118	199	533	336	164	76	26	16	6
3	6	48	142	113	175	366	252	153	76	26	16	6
4	6	62	132	108	175	450	336	142	72	26	14	6
5	7	58	153	118	164	740	336	142	65	24	14	7
6	7	51	153	122	153	648	252	187	58	24	14	6
7	7	48	132	118	153	414	199	294	58	24	14	11
8	7	44	122	113	153	322	164	336	51	21	15	8
9	7	41	113	108	153	252	225	717	51	21	19	7
10	7	38	108	175	153	212	280	602	48	22	20	7
11	6	36	100	199	142	187	366	398	48	21	38	6
12	6	36	100	164	132	175	414	294	44	21	33	5
13	6	34	187	153	132	164	280	199	51	21	27	6
14	6	36	322	132	132	175	238	238	100	19	22	6
15	6	36	252	127	132	175	450	579	104	21	17	8
16	10	35	199	127	142	212	366	450	95	21	15	8
17	30	34	579	127	142	187	282	294	83	30	14	7
18	58	58	840	175	132	164	199	252	68	38	14	7
19	54	65	694	336	132	153	175	252	58	33	13	6
20	41	58	450	336	132	142	153	322	51	30	12	6
21	34	54	308	266	127	132	175	238	44	26	11	6
22	32	44	266	252	122	127	238	175	44	24	11	6
23	27	41	225	225	118	132	187	142	38	23	10	6
24	30	41	199	225	127	122	153	122	37	21	9	6
25	30	38	175	740	322	118	142	113	41	20	8	6
26	28	38	175	717	1,330	113	132	142	38	18	8	6
27	29	37	164	510	1,330	113	118	132	36	18	8	6
28	28	38	153	450	1,120	108	199	122	34	17	7	6
29	29	33	142	366	-------	153	280	104	31	17	7	6
30	29	104	132	308	-------	398	199	91	31	16	7	6
31	28	-------	132	280	-------	322	-------	83	-------	16	7	-------

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	58	5	19.7	May	717	83	246
November	104	28	44.9	June	104	31	57.0
December	840	100	233	July	38	16	23.0
January	740	108	240	August	38	7	14.7
February	1,330	118	274	September	11	5	6.5
March	815	108	269				
April	450	118	248	The year	1,330	5	139

BIG LAKE OUTLET NEAR MANILA, ARK.

LOCATION.—Chain gage in SE. ¼ sec. 9, T. 14 N., R. 9 E., 3½ miles southeast of Manila.

RECORDS AVAILABLE.—September, 1927, to September, 1929.

EXTREMES.—Maximum discharge during year, 10,600 second-feet Mar. 6 (gage height, 16.89 feet); minimum, 510 second-feet Sept. 26–30 (gage height, 4.10 feet).

1928–29: Maximum discharge, 15,700 second-feet July 5, 1928 (gage height, 19.7 feet); minimu n, 510 second-feet Sept. 26–30, 1929 (gage height, 4.10 feet).

REMARKS.—Records good. Discharge interpolated Apr. 11 and June 23. Gage-height record furnished by Mississippi County Drainage District No. 17.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	595	1,750	1,850	4,370	10,100	7,230	3,820	4,180	4,000	1,550	910	575
2	595	1,750	2,000	4,120	9,780	8,590	3,880	4,120	3,820	1,450	865	575
3	685	1,850	2,350	3,880	9,480	9,630	4,060	4,060	3,580	1,400	820	540
4	685	1,850	2,850	3,640	9,030	10,100	4,240	3,880	3,340	1,350	775	540
5	820	1,950	3,700	3,400	8,590	10,400	4,510	3,880	3,100	1,350	730	540
6	775	2,150	3,880	3,280	7,890	10,600	4,650	3,880	2,950	1,250	775	575
7	775	2,150	3,880	3,160	7,490	10,300	4,730	3,880	2,800	1,200	775	645
8	685	2,250	3,760	3,000	6,980	9,780	4,730	4,000	2,700	1,200	775	775
9	685	2,250	3,760	2,950	6,500	9,330	4,730	4,440	2,500	1,200	955	775
10	640	2,150	3,820	2,900	6,060	8,590	4,650	4,970	2,300	1,200	1,150	775
11	595	2,050	3,880	2,950	5,760	7,890	4,730	5,660	2,150	1,200	1,359	685
12	595	1,950	3,880	2,950	5,300	7,230	4,810	6,060	2,050	1,200	1,550	685
13	550	1,850	3,880	3,100	5,130	6,740	5,210	6,280	2,050	1,250	1,600	645
14	550	1,750	3,880	3,100	4,810	6,170	5,660	6,280	2,050	1,250	1,600	685
15	550	1,650	3,880	3,100	4,510	5,860	5,760	6,500	2,050	1,200	1,500	730
16	865	1,650	3,940	3,160	4,300	5,570	5,960	6,740	2,150	1,250	1,450	685
17	1,100	1,750	4,120	3,050	4,120	5,390	5,960	7,100	2,350	1,350	1,300	645
18	1,400	1,750	4,370	2,950	4,000	5,130	6,060	7,360	2,550	1,450	1,100	610
19	1,800	1,850	4,650	3,050	3,880	5,050	5,860	7,360	2,550	1,550	955	610
20	2,200	2,150	5,480	3,220	3,700	4,810	5,660	7,230	2,550	1,550	910	610
21	2,350	2,250	6,060	3,880	3,640	4,580	5,480	6,740	2,400	1,500	865	610
22	2,550	2,400	6,390	4,440	3,520	4,370	5,210	6,500	2,250	1,400	820	575
23	2,550	2,400	6,500	4,970	3,340	4,240	5,050	6,170	2,120	1,350	775	540
24	2,450	2,350	6,500	5,480	3,520	4,120	4,890	5,760	2,000	1,300	730	540
25	2,350	2,250	6,280	5,860	3,880	4,580	4,730	5,480	1,950	1,150	730	540
26	2,250	2,150	6,060	6,500	4,000	3,820	4,440	5,210	1,900	1,100	685	510
27	2,150	2,050	5,760	7,490	4,240	3,700	4,300	4,890	1,800	1,050	685	510
28	2,050	1,950	5,480	8,450	5,480	3,700	4,240	4,810	1,650	1,000	645	510
29	2,000	1,850	5,210	9,180	-------	3,640	4,180	4,650	1,550	955	610	510
30	1,950	1,850	4,890	9,630	-------	3,580	4,180	4,440	1,550	955	610	510
31	1,850	-------	4,650	10,100	-------	3,580	-------	4,240	-------	955	610	-------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	2,550	550	1,340	82,400
November	2,400	1,650	2,000	119,000
December	6,500	1,850	4,440	273,000
January	10,100	2,900	4,560	280,000
February	10,100	3,340	5,680	315,000
March	10,600	3,580	6,400	394,000
April	6,060	3,820	4,880	290,000
May	7,360	3,880	5,380	331,000
June	4,000	1,550	2,430	145,000
July	1,550	955	1,260	77,500
August	1,600	610	955	58,700
September	775	510	609	36,200
The year	10,600	510	3,320	2,400,000

WHITE RIVER BASIN

WHITE RIVER AT BEAVER, ARK.

LOCATION.—Chain gage in sec. 20, T. 21 N., R. 26 W., at Missouri & North Arkansas Railroad bridge one-fourth 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, and May, 1923, to September, 1929.

EXTREMES.—Maximum discharge during year, 33,900 second-feet Jan. 26 (gage height, 23.85 feet); minimum, 93 second-feet Sept. 30 (gage height, 2.69 feet).

1909–10, 1923–1929: 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 (transferred to datum of gage used 1923–1929) Oct. 1–8, 1909.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	121	130	595	420	2,060	3,840	2,470	2,580	3,050	1,080	302	112
2	121	135	1,080	395	1,760	3,170	5,750	2,810	7,140	1,080	281	110
3	121	135	842	370	1,570	2,690	3,840	5,450	6,350	3,560	273	107
4	121	140	800	347	1,390	2,360	3,560	4,700	15,500	7,300	254	105
5	135	161	730	1,160	1,300	2,060	2,930	3,300	10,400	3,050	235	125
6	128	167	595	2,810	1,160	1,960	2,470	4,700	6,660	2,060	228	142
7	130	161	565	6,200	1,080	1,960	2,060	3,700	6,820	2,260	222	215
8	150	150	535	3,170	1,040	1,760	3,840	7,460	5,900	20,100	235	184
9	138	145	475	2,360	960	1,570	11,100	20,500	6,820	20,300	302	170
10	130	140	448	1,960	920	1,390	22,700	20,500	3,980	5,450	215	148
11	130	138	395	1,960	880	1,210	11,000	7,940	3,430	3,560	265	140
12	125	130	370	1,760	800	1,120	6,200	9,410	2,580	2,690	232	187
13	121	130	535	1,480	842	1,120	4,400	9,240	2,160	2,060	228	302
14	116	130	565	1,210	800	4,550	6,820	7,620	6,820	1,660	215	250
15	114	161	2,690	1,040	842	3,700	16,700	6,660	4,260	1,390	199	228
16	128	302	2,160	960	842	5,900	12,600	5,300	2,580	1,210	184	190
17	132	347	3,300	880	960	5,900	6,820	5,000	1,960	1,080	178	167
18	135	660	6,500	880	1,080	3,840	6,820	4,700	1,570	960	170	145
19	156	960	5,450	880	1,480	2,930	7,620	7,300	1,300	880	167	130
20	184	842	3,050	1,480	1,660	2,360	8,740	5,750	1,160	800	161	125
21	170	628	2,160	1,390	1,570	2,160	6,820	3,980	1,040	730	153	121
22	156	505	1,660	1,210	1,480	2,160	5,300	3,050	1,040	660	150	112
23	145	420	1,390	1,040	1,570	1,960	4,120	2,470	1,160	595	145	110
24	140	370	1,120	3,980	1,760	1,660	3,300	2,160	12,600	535	135	107
25	135	324	920	19,600	2,580	1,480	2,810	1,860	5,600	475	145	103
26	128	302	800	29,300	4,700	1,300	4,120	1,860	5,450	448	142	101
27	130	273	695	8,100	8,260	1,160	3,430	5,900	3,050	420	138	99
28	125	258	628	5,300	5,150	1,120	2,690	10,100	2,060	420	125	97
29	125	370	565	3,840	-------	2,060	4,400	9,410	1,570	370	120	95
30	121	475	595	2,930	-------	3,430	3,430	6,350	1,300	347	116	95
31	116	-------	475	2,360	-------	3,170	--------	3,980	--------	324	114	------

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	184	114	133	0.105	0.12	8,180
November	960	130	306	.241	.27	18,200
December	6,500	370	1,370	1.08	1.24	84,200
January	29,300	347	3,570	2.81	3.24	220,000
February	8,260	800	1,800	1.42	1.48	100,000
March	5,900	1,120	2,490	1.96	2.26	153,000
April	22,700	2,060	6,300	4.96	5.53	375,000
May	20,500	1,860	6,310	4.97	5.73	388,000
June	15,500	1,040	4,510	3.55	3.96	268,000
July	20,300	324	2,830	2.23	2.57	174,000
August	302	114	194	.153	.18	11,900
September	302	95	144	.113	.13	8,570
The year	29,300	95	2,500	1.97	26.71	1,810,000

WHITE RIVER NEAR FLIPPIN, ARK.

LOCATION.—Staff gage in NW. ¼ sec. 9, T. 19 N., R. 15 W., 2½ miles north of Flippin. Zero of gage is 423.52 feet above mean sea level.
DRAINAGE AREA.—6,170 square miles.
RECORDS AVAILABLE.—October, 1928, to September, 1929.
EXTREMES.—Maximum discharge during year, 70,400 second-feet May 9 (gage height, 23.80 feet); minimum, 292 second-feet Aug. 27 (gage height, 4.44 feet).
REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,190	820	4,440	2,510	9,450	20,100	5,920	10,300	18,700	5,260	1,600	563
2	1,360	820	3,680	3,860	8,090	16,500	6,610	11,500	12,800	4,240	1,800	590
3	1,420	820	2,990	2,210	7,330	13,100	7,330	15,800	23,200	4,050	920	680
4	920	820	2,670	2,360	6,850	10,900	7,090	17,600	32,900	3,500	1,480	1,600
5	870	870	2,510	3,160	6,380	9,730	8,890	19,800	27,100	4,640	1,300	635
6	1,190	870	5,920	8,350	5,700	7,580	7,830	18,000	28,700	8,090	1,300	770
7	1,540	680	4,050	7,830	4,640	8,090	7,830	16,500	20,100	6,380	1,080	1,140
8	1,300	820	3,680	9,170	3,860	7,830	14,900	32,100	35,500	5,050	1,360	1,020
9	870	870	3,860	12,400	4,440	7,330	45,300	68,900	31,600	5,260	1,420	970
10	920	920	3,500	10,000	5,700	7,090	58,900	65,900	24,300	19,200	1,360	970
11	870	920	2,830	8,890	5,480	6,380	63,400	63,900	19,800	19,400	1,800	920
12	870	920	2,510	7,830	3,160	5,920	49,100	39,600	14,400	5,920	1,800	970
13	970	680	3,160	7,330	4,440	5,920	27,100	34,700	11,800	4,640	1,600	2,360
14	970	680	7,330	6,380	4,240	5,700	22,800	49,100	12,800	5,920	1,420	2,990
15	970	870	8,350	6,380	3,500	6,610	29,100	42,900	12,100	5,260	1,800	3,500
16	770	1,360	7,090	6,150	2,670	13,400	33,800	31,200	15,500	4,440	1,540	2,079
17	870	1,670	10,000	5,480	3,680	14,100	36,000	23,900	11,800	2,990	1,140	1,300
18	1,360	2,990	18,700	4,240	2,510	14,400	25,900	19,400	8,620	2,210	1,240	920
19	1,020	3,500	18,700	4,640	4,050	14,100	20,900	19,800	7,330	1,800	1,020	870
20	1,020	2,210	18,700	5,480	4,440	10,900	24,700	20,100	6,610	2,670	770	1,080
21	920	2,830	15,100	3,680	5,260	10,000	31,600	23,200	5,700	2,510	820	770
22	770	3,160	11,200	5,480	5,920	8,620	36,000	18,000	5,480	2,210	970	680
23	680	2,670	8,620	5,480	6,150	7,330	25,100	14,400	5,480	2,070	970	820
24	970	2,830	7,830	22,600	6,150	6,610	17,600	11,800	5,480	2,070	770	590
25	870	2,210	6,380	35,500	7,580	6,380	16,200	10,000	13,100	2,360	590	518
26	920	2,070	5,050	40,500	17,600	6,150	13,800	11,500	10,000	1,670	554	563
27	920	2,210	4,840	51,000	23,900	5,920	12,100	14,400	9,450	1,480	572	554
28	870	2,070	5,480	41,000	23,600	5,480	12,100	37,300	8,890	1,600	770	680
29	920	2,070	4,050	20,100	--------	5,700	10,600	23,200	6,850	1,540	680	770
30	920	3,860	2,990	14,400	--------	5,050	10,000	26,300	5,700	1,480	590	590
31	870	--------	2,510	11,500	--------	5,700	--------	20,900	--------	1,600	635	--------

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	1,540	680	997	0.162	0.19	61,300
November	3,860	680	1,670	.271	.30	99,400
December	18,700	2,510	6,730	1.09	1.26	414,000
January	51,000	2,210	12,100	1.96	2.26	744,000
February	23,900	2,510	7,030	1.14	1.19	390,000
March	20,100	5,050	8,990	1.45	1.67	553,000
April	63,400	5,920	23,000	3.73	4.16	1,370,000
May	68,900	10,000	26,800	4.34	5.00	1,650,000
June	35,500	5,480	15,100	2.45	2.73	898,000
July	19,400	1,480	4,560	.739	.85	280,000
August	1,800	554	1,150	.186	.21	70,700
September	3,500	518	1,080	.175	.20	64,300
The year	68,900	518	9,100	1.47	20.02	6,590,000

WHITE RIVER NEAR NEWPORT, ARK.

LOCATION.—Chain gage on line between secs. 16 and 17, T. 11 N., R. 3 W., on Missouri Pacific Railroad bridge 2½ miles southwest of Newport.

DRAINAGE AREA.—19,800 square miles.

RECORDS AVAILABLE.—September, 1927, to September, 1929.

EXTREMES.—Maximum discharge during year, 108,000 second-feet May 12, 13 (gage height, 30.0 feet); minimum, 6,000 second-feet Sept. 28–30 (gage height, 3.95 feet).

1928–1929: Maximum discharge, 163,000 second-feet June 25, 1928 (gage height, 32.8 feet); minimum, 6,000 second-feet Sept. 28–30, 1929 (gage height, 3.95 feet).

Maximum stage known, 36.1 feet April, 1927.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,600	7,600	19,000	21,800	82,100	72,100	35,300	62,200	69,200	21,300	9,150	6,600
2	7,420	8,680	21,500	18,800	75,700	73,400	37,800	59,800	65,200	18,900	9,150	6,450
3	7,600	14,000	23,400	17,000	70,800	72,600	40,400	61,800	60,700	17,300	9,750	6,300
4	8,320	15,500	24,000	16,700	66,600	71,200	40,400	63,000	55,600	16,700	8,850	6,300
5	9,230	14,200	21,500	15,800	63,000	71,600	39,600	63,000	57,000	15,800	8,400	6,300
6	9,420	12,800	19,300	14,900	60,200	68,600	41,100	62,600	60,200	15,100	8,100	6,300
7	9,610	11,400	18,800	14,600	57,500	66,200	41,900	63,000	58,800	14,500	8,100	6,600
8	9,040	10,600	19,600	22,100	54,800	63,800	41,900	63,000	57,800	16,000	7,950	6,600
9	8,320	10,600	18,500	22,700	52,400	60,600	47,500	69,000	58,300	19,300	7,800	6,750
10	7,960	9,800	17,500	25,600	49,800	58,600	69,000	82,600	63,200	25,000	8,100	6,900
11	7,780	9,230	16,500	28,500	47,500	52,400	82,600	98,000	62,700	20,500	9,000	6,900
12	7,600	9,040	16,200	28,500	45,600	54,000	94,300	108,000	58,300	30,600	9,900	6,600
13	7,420	8,860	15,800	27,200	43,000	52,000	102,000	108,000	53,400	31,000	10,600	6,600
14	7,240	8,680	22,700	25,600	38,500	50,500	103,000	101,000	48,800	24,200	11,400	6,600
15	7,240	8,500	25,900	23,700	33,900	48,600	96,100	96,100	45,500	19,300	11,700	7,350
16	7,240	7,780	31,500	21,800	30,100	48,200	93,400	96,100	45,100	16,900	11,000	8,100
17	10,200	7,780	35,700	21,000	26,900	49,000	92,600	95,200	43,100	14,900	10,200	8,100
18	14,900	7,960	43,700	20,100	24,000	52,400	91,800	90,200	42,700	14,300	9,750	8,250
19	15,500	10,800	48,600	28,200	22,400	53,200	90,200	83,600	39,500	13,100	9,150	7,500
20	13,200	11,800	54,000	32,800	21,200	53,200	86,800	78,900	35,900	12,200	9,000	6,900
21	11,200	12,800	55,100	34,200	21,200	52,400	85,600	75,600	32,700	11,400	8,400	6,600
22	10,200	12,400	55,100	34,600	21,800	50,100	87,400	74,500	28,500	11,100	7,950	6,450
23	9,610	12,000	53,600	33,600	22,400	47,790	89,500	73,400	25,500	11,000	7,650	6,450
24	9,040	11,600	49,800	32,800	23,400	45,200	88,800	70,700	22,800	10,600	7,500	6,300
25	9,040	11,000	45,200	54,000	25,900	43,000	85,000	67,700	24,000	10,200	7,500	6,150
26	8,500	10,800	41,100	75,700	42,600	40,400	80,600	64,200	23,800	9,900	7,350	6,150
27	8,140	10,600	37,100	91,000	61,800	37,800	75,700	61,200	22,500	9,750	7,200	6,000
28	7,960	10,200	32,800	99,000	69,800	36,000	71,600	59,200	25,800	9,450	6,900	6,000
29	7,960	9,990	30,100	102,000	-------	34,200	68,200	63,700	25,200	9,150	6,900	6,000
30	7,960	12,000	27,500	99,000	-------	40,000	65,000	71,800	23,500	9,000	6,600	6,000
31	7,780	-------	24,600	89,500	-------	36,000	-------	70,700	-------	8,850	6,600	-------

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	15,500	7,240	9,040	0.457	0.53	556,000
November	15,500	7,600	10,600	.535	.60	631,000
December	55,100	15,800	31,200	1.58	1.82	1,920,000
January	102,000	14,600	38,500	1.94	2.24	2,370,000
February	82,100	21,200	44,800	2.26	2.35	2,490,000
March	73,400	34,200	53,400	2.70	3.11	3,280,000
April	103,000	35,300	72,200	3.65	4.07	4,300,000
May	108,000	59,200	76,100	3.84	4.43	4,680,000
June	69,200	22,500	44,500	2.25	2.51	2,650,000
July	31,000	8,850	15,700	.793	.91	965,000
August	11,700	6,600	8,630	.436	.50	531,000
September	8,250	6,000	6,670	.337	.38	397,000
The year	108,000	6,000	34,200	1.73	23.45	24,800,000

WHITE RIVER AT DE VALLS BLUFF, ARK.

LOCATION.—Staff gage in sec. 23, T. 2 N., R. 4 W., 1 mile northeast of De Valls Bluff and 27 miles above mouth of Cache River. Zero of gage is 152.67 feet above mean sea level.

DRAINAGE AREA.—23,500 square miles.

RECORDS AVAILABLE.—December, 1927, to September, 1929.

EXTREMES.—Maximum discharge during year, 113,000 second-feet May 19, 20 (gage height, 26.8 feet); minimum, 6,570 second-feet Sept. 30 (gage height, 6.3 feet).

1928–29: Maximum discharge, 140,000 second-feet June 28, 29, 1928 (gage height, 28.5 feet); minimum, 6,570 second-feet Sept. 30, 1929 (gage height, 6.3 feet).

Maximum stage known, 33.8 feet Apr. 24, 1927.

REMARKS.—Records good. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,970	8,430	11,000	39,300	73,400	41,800	44,400	95,200	64,100	31,100	11,000	7,530
2	7,860	8,560	15,200	37,300	83,600	44,400	45,200	90,800	64,100	30,100	10,800	7,420
3	7,750	8,820	18,800	33,900	88,000	46,100	45,200	86,500	64,100	28,100	10,600	7,310
4	7,750	9,730	20,300	31,100	90,800	51,100	45,200	80,700	64,100	26,200	10,500	7,200
5	7,860	11,900	21,000	27,600	89,400	56,600	44,400	76,400	64,100	24,000	10,400	7,110
6	7,970	13,700	21,400	25,100	86,500	62,800	44,400	73,400	62,800	22,700	10,200	7,020
7	8,190	14,300	21,200	23,100	82,200	68,000	43,600	69,400	61,400	21,400	9,990	6,930
8	8,690	14,000	20,500	22,000	77,800	72,000	43,600	66,700	61,400	20,300	9,860	6,840
9	9,080	13,300	19,900	21,800	73,400	72,000	43,600	66,700	61,400	19,400	9,600	6,930
10	9,080	12,400	19,400	23,100	69,400	72,000	53,300	66,700	61,400	18,900	9,340	7,020
11	8,820	11,700	18,900	24,000	62,800	69,400	43,600	66,700	60,100	19,700	9,210	7,110
12	8,430	11,200	18,500	25,800	58,800	66,700	44,400	68,000	60,100	21,000	9,080	7,110
13	8,190	10,600	18,300	27,200	55,500	64,100	47,000	72,000	60,100	21,800	9,470	7,200
14	7,970	10,100	18,600	28,100	53,300	61,400	52,200	80,700	58,800	23,100	10,100	7,110
15	7,750	9,860	20,700	28,100	50,000	57,700	62,800	90,800	57,700	24,400	10,900	7,110
16	7,640	9,470	24,000	28,100	47,800	55,500	76,400	101,000	55,500	24,400	12,000	7,020
17	8,080	9,210	30,100	27,600	46,100	53,300	86,500	107,000	54,400	23,600	12,300	7,200
18	7,970	8,950	36,000	26,900	44,400	51,100	93,800	112,000	52,200	22,200	12,400	7,530
19	8,820	8,820	38,600	26,500	41,800	50,000	99,600	113,000	50,000	20,800	12,200	7,970
20	10,900	9,210	41,000	27,600	39,300	48,900	101,000	113,000	47,800	19,100	11,600	8,300
21	12,700	10,200	43,600	30,600	37,300	47,800	102,000	112,000	46,100	18,000	11,000	8,300
22	13,000	11,300	45,200	32,600	34,600	47,800	104,000	108,000	45,200	16,700	10,600	7,970
23	12,600	12,000	46,100	33,900	32,100	47,000	104,000	104,000	43,600	15,500	10,100	7,640
24	11,700	12,400	46,100	35,300	31,100	47,000	102,000	99,600	42,700	14,600	9,600	7,310
25	10,900	12,400	46,100	37,300	30,100	47,000	104,000	93,800	41,000	13,800	9,210	7,110
26	10,400	12,200	46,100	38,600	32,600	47,000	104,000	89,400	47,800	13,300	8,820	6,930
27	9,860	11,900	45,200	40,200	36,000	46,100	102,000	85,000	37,300	12,700	8,560	6,840
28	9,470	11,600	45,200	42,700	38,600	46,100	101,000	80,700	36,000	12,300	8,300	6,750
29	9,080	11,300	45,200	46,100	-------	44,400	99,600	76,400	33,900	11,900	8,080	6,660
30	8,820	11,000	44,400	51,100	-------	44,400	95,200	70,700	32,600	11,700	7,970	6,570
31	8,560	-------	41,800	61,400	-------	44,400	--------	68,000	-------	11,300	7,750	-------

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	13,000	7,640	9,160	0.390	0.45	563,000
November	14,300	8,430	11,000	.468	.52	655,000
December	46,100	11,000	30,600	1.30	1.50	1,880,000
January	61,400	21,800	32,400	1.38	1.59	1,990,000
February	90,800	30,100	56,700	2.41	2.51	3,150,000
March	72,000	41,800	54,000	2.30	2.65	3,320,000
April	104,000	43,600	72,600	3.09	3.45	4,320,000
May	113,000	66,700	86,600	3.69	4.25	5,320,000
June	64,100	32,600	53,100	2.26	2.52	3,160,000
July	31,100	11,300	19,800	.843	.97	1,220,000
August	12,400	7,750	10,000	.425	.49	615,000
September	8,300	6,570	7,240	.308	.34	431,000
The year	113,000	6,570	36,800	1.57	21.24	26,600,000

JAMES RIVER NEAR BATTLEFIELD, MO.

LOCATION.—Vertical staff gage near center of sec. 27, T. 28 N., R. 22 W., 1,500 feet above Inniman Branch and 2½ miles southeast of Battlefield. Zero of gage is approximately 1,175 feet above mean sea level.

DRAINAGE AREA.—306 square miles.

RECORDS AVAILABLE.—February, 1926, to May, 1929.

EXTREMES.—Maximum discharge during period Oct. 1 to May 31, 8,010 second-feet Apr. 9 (gage height, 11.20 feet); minimum, 25 second-feet Oct. 28 (gage height, 1.43 feet).

1926–1929: Maximum discharge, 16,200 second-feet June 9, 1928 (gage height, 15.80 feet); minimum discharge, that of Oct. 28, 1928; minimum gage height, 1.15 feet Aug. 14, 1926.

REMARKS.—Records good for discharges below 1,000 second-feet and fair for those above. Discharge estimated May 4.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
1	31	32	63	121	299	675	765	224
2	30	31	61	114	269	521	521	1,780
3	29	31	61	109	254	457	425	1,780
4	29	30	77	96	239	675	377	1,290
5	49	29	102	135	196	591	345	802
6	50	28	99	521	196	521	299	1,310
7	47	28	96	489	172	489	284	2,100
8	38	27	92	489	172	457	5,300	1,910
9	37	30	84	361	150	377	6,220	1,540
10	36	30	82	361	150	329	3,070	1,150
11	34	29	74	425	139	314	1,600	855
12	32	28	70	409	135	314	950	1,310
13	31	28	82	329	129	284	720	4,870
14	30	28	92	299	121	284	556	3,480
15	29	97	489	254	116	299	489	1,780
16	29	127	425	239	116	299	675	1,310
17	36	161	1,780	224	139	675	521	950
18	33	119	1,200	209	161	521	489	900
19	32	112	1,050	377	209	457	425	1,540
20	31	84	900	361	196	409	425	1,540
21	31	74	720	345	183	393	409	1,100
22	30	70	489	329	196	361	393	1,000
23	30	64	361	299	196	314	393	900
24	29	58	345	675	254	284	361	900
25	28	54	284	2,100	409	269	329	720
26	27	53	239	950	1,970	254	314	457
27	26	49	196	720	1,310	224	284	1,840
28	25	47	183	630	810	239	269	2,600
29	29	80	161	457	--------	254	269	1,150
30	28	68	150	377	--------	239	239	720
31	32	--------	139	329	--------	239	--------	720

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	50	25	32.5	0.106	0.12
November	161	27	57.5	.188	.21
December	1,780	61	331	1.08	1.24
January	2,100	96	424	1.39	1.60
February	1,970	116	317	1.04	1.08
March	675	224	388	1.27	1.46
April	6,220	239	924	3.02	3.37
May	4,870	224	1,440	4.71	5.43

JAMES RIVER BELOW BATTLEFIELD, MO.

LOCATION.—Chain gage in NE. ¼ 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 to September, 1929; February, 1926, to May, 1929, at site 3 miles upstream.

EXTREMES.—Maximum discharge during period May 13 to Sept. 30, 1929, 5,450 second-feet May 28 (gage height, 10.04 feet); minimum discharge, 34 second-feet Sept. 3; minimum gage height, 2.38 feet Sept. 29 and 30.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1929

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	-------	515	168	75	35	16	1,500	405	91	64	62
2	-------	460	157	66	35	17	1,100	305	87	55	57
3	-------	405	144	77	34	18	1,170	260	83	53	53
4	-------	350	128	66	38	19	3,380	240	79	50	50
5	-------	305	130	62	44	20	1,690	240	75	45	49
6	-------	260	128	57	44	21	1,170	205	73	41	47
7	-------	305	133	55	44	22	925	240	71	39	45
8	-------	1,100	124	59	44	23	745	350	69	39	44
9	-------	776	117	93	42	24	625	305	68	39	42
10	-------	570	111	95	39	25	542	598	64	39	42
11	-------	460	154	91	38	26	432	350	62	38	41
12	-------	350	124	130	55	27	805	282	60	42	39
13	4,680	625	106	108	71	28	3,470	240	59	41	39
14	3,200	570	100	87	62	29	1,240	205	100	39	37
15	1,890	432	97	73	66	30	805	184	64	37	37
						31	625	-------	79	36	-------

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
May 13–31	4,680	432	1,580	4.86	3.43
June	1,100	184	396	1.22	1.36
July	168	59	100	.308	.36
August	130	36	61.0	.188	.22
September	71	34	45.8	.141	.16

JAMES RIVER AT GALENA, MO.

LOCATION.—Chain gage in NW. ¼ sec. 7, T. 24 N., R. 23 W., at bridge on State highway No. 44 at Galena, half a mile above Railey Creek. Zero of gage is 924.94 feet above mean sea level.

DRAINAGE AREA.—1,000 square miles.

RECORDS AVAILABLE.—October, 1921, to September, 1929.

EXTREMES.—Maximum discharge during year, 16,800 second-feet Apr. 9 (gage height, 14.30 feet); minimum, 145 second-feet Sept. 28 (gage height, 1.61 feet).

1922–1929: Maximum discharge, 41,900 second-feet Apr. 15, 1927 (gage height, 25.15 feet); minimum, 52 second-feet Sept. 6, 7, 9, and 10, 1925 (gage height, 0.56 foot).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	236	219	565	538	1,110	2,040	900	1,110	1,720	620	330	212
2	236	229	512	512	970	1,960	1,180	2,480	1,640	620	330	209
3	236	229	462	486	900	1,720	1,180	5,240	1,640	620	330	209
4	236	222	486	486	835	1,560	1,110	3,700	1,480	592	330	209
5	272	222	486	486	802	1,560	1,040	2,750	1,400	565	310	254
6	310	216	486	512	770	1,640	970	2,750	1,180	538	291	272
7	272	212	486	1,180	739	1,560	900	4,730	1,260	592	291	236
8	254	209	462	1,480	648	1,480	1,640	4,980	2,840	538	291	236
9	236	202	462	1,330	592	1,330	15,600	8,120	2,840	512	330	233
10	236	202	438	1,330	592	1,180	8,280	4,730	2,130	486	372	229
11	229	202	416	1,400	512	1,110	4,850	3,600	1,720	512	620	229
12	222	202	372	1,330	462	1,110	3,500	6,520	1,560	486	462	236
13	216	196	394	1,260	512	1,040	2,840	11,600	3,920	462	438	310
14	212	205	620	1,110	512	970	2,480	7,800	2,220	462	372	291
15	216	272	678	1,040	486	1,040	2,300	5,640	2,220	416	350	272
16	219	350	835	1,040	462	1,640	2,220	4,140	1,720	416	330	254
17	236	394	2,840	900	438	2,300	1,960	3,400	1,480	416	310	254
18	229	416	5,240	802	416	1,960	1,800	3,110	1,330	394	291	229
19	222	438	3,110	835	416	1,720	1,720	6,840	1,180	372	272	222
20	222	394	2,300	1,040	620	1,640	2,570	5,240	1,040	372	272	222
21	222	350	1,960	1,110	678	1,330	3,400	3,600	970	350	272	236
22	222	330	1,640	1,040	708	1,260	2,660	2,930	970	350	254	229
23	216	310	1,330	1,040	678	1,180	2,220	2,390	1,040	350	254	189
24	216	291	1,110	1,330	708	1,040	2,040	2,040	1,040	350	254	164
25	209	254	1,040	4,730	835	970	1,960	1,880	970	330	236	150
26	202	236	900	3,810	4,250	900	1,720	1,800	970	330	236	148
27	209	229	770	2,840	4,030	802	1,560	2,130	900	330	236	153
28	219	222	708	2,130	2,750	770	1,400	3,700	770	310	229	162
29	219	272	648	1,640	-------	770	1,330	3,110	739	310	222	164
30	209	538	620	1,480	-------	770	1,180	2,390	678	330	219	164
31	202	-------	565	1,260	-------	802	-------	1,960	-------	330	216	-------

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	310	202	229	0.229	0.26
November	538	196	275	.275	.31
December	5,240	372	1,060	1.06	1.22
January	4,730	486	1,340	1.34	1.54
February	4,250	416	980	.980	1.02
March	2,300	770	1,330	1.33	1.53
April	15,600	900	2,620	2.62	2.92
May	11,600	1,110	4,080	4.08	4.70
June	3,920	678	1,520	1.52	1.70
July	620	310	441	.441	.51
August	620	216	308	.308	.36
September	310	148	219	.219	.24
The year	15,600	148	1,200	1.20	16.31

BUFFALO RIVER NEAR RUSH, ARK.

LOCATION.—Staff gage in SE. ¼ sec. 10, T. 17 N., R. 15 W., immediately above Rush Creek, 1½ miles southeast of Rush.
DRAINAGE AREA.—1,110 square miles.
RECORDS AVAILABLE.—October, 1928, to September, 1929.
EXTREMES.—Maximum discharge during year, 56,600 second-feet Jan. 25 (gage height, 21.7 feet); minimum, 65 second-feet Sept. 25–30 (gage height, 0.6 foot).
REMARKS.—Records fair.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	460	415	1,340	605	1,430	3,070	4,860	890	1,700	1,030	370	130
2	460	505	1,100	555	1,180	2,940	2,810	10,400	1,340	1,800	415	95
3	460	555	960	555	1,030	2,810	2,110	4,220	1,900	2,810	370	95
4	505	530	655	605	960	2,220	2,110	3,620	5,030	1,700	370	95
5	555	505	605	710	960	2,110	1,900	2,810	2,570	1,430	460	95
6	555	505	555	5,200	890	2,220	1,520	2,940	2,000	1,260	555	130
7	505	460	555	2,690	960	2,570	1,180	2,000	1,700	5,560	460	130
8	505	460	505	2,110	960	2,330	7,540	6,700	1,900	18,200	415	95
9	460	438	505	1,520	890	2,110	26,500	18,800	1,900	3,770	415	95
10	460	370	505	2,110	770	1,900	15,500	8,760	1,340	2,450	370	95
11	460	370	505	1,900	655	1,610	6,900	4,540	1,180	2,110	370	95
12	415	415	460	1,520	710	1,340	4,070	1,700	1,030	2,220	370	95
13	415	415	890	1,340	770	1,180	3,620	3,340	1,610	1,900	370	130
14	460	415	4,860	1,180	830	1,610	5,560	4,700	3,070	1,700	325	95
15	460	460	2,690	1,100	830	2,000	11,700	5,030	2,000	1,340	325	95
16	580	555	2,110	1,030	770	2,110	4,860	2,570	1,700	1,030	285	95
17	655	555	2,110	960	770	2,220	2,810	1,700	1,610	710	285	98
18	555	555	3,770	1,030	890	1,900	4,070	1,340	1,340	580	205	95
19	415	460	2,570	1,180	1,030	1,800	10,400	1,340	1,260	460	205	89
20	415	415	1,800	1,030	1,180	1,610	4,860	1,260	1,100	415	205	80
21	460	415	1,340	890	1,100	1,430	20,400	1,180	1,030	370	165	80
22	460	460	1,260	890	1,260	1,430	7,540	1,030	890	325	165	80
23	460	370	1,180	830	1,340	1,430	3,620	890	6,900	285	130	80
24	460	370	1,030	11,200	1,610	1,520	2,330	830	4,540	245	130	71
25	415	370	770	42,000	6,700	1,520	2,330	770	3,340	245	130	65
26	415	370	530	9,280	24,200	1,260	2,110	1,260	2,330	245	130	65
27	370	325	630	4,700	6,900	1,100	1,800	3,920	1,900	245	130	65
28	370	580	1,260	2,220	4,220	960	1,520	8,000	1,260	245	130	65
29	415	1,030	1,030	2,000	--------	1,900	1,340	5,200	1,180	205	130	65
30	460	1,700	890	1,800	--------	1,340	1,180	3,070	1,030	305	130	65
31	415	--------	655	1,520	--------	1,100	--------	2,110	--------	370	130	------

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	655	370	466	0.420	0.48	28,700
November	1,700	325	512	.461	.51	30,500
December	4,860	460	1,280	1.15	1.33	78,700
January	42,000	555	3,430	3.09	3.56	211,000
February	24,200	655	2,350	2.12	2.21	131,000
March	3,070	960	1,830	1.65	1.90	113,000
April	26,500	1,180	5,640	5.08	5.67	336,000
May	18,800	770	3,770	3.40	3.92	232,000
June	6,900	890	2,060	1.86	2.08	123,000
July	18,200	205	1,790	1.61	1.86	110,000
August	555	130	279	.251	.29	17,200
September	130	65	90.8	.082	.09	5,300
The year	42,000	65	1,950	1.76	23.90	1,420,000

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 No. 80 at Tecumseh, half a mile below Bryant Creek.

DRAINAGE AREA.—1,180 square miles.

RECORDS AVAILABLE.—October, 1921, to September, 1929.

EXTREMES.—Maximum discharge during year, 12,200 second-feet Jan. 25 (gage height, 9.10 feet); minimum discharge, 570 second-feet Sept. 27–30; minimum gage height, 1.20 feet Sept. 30.

1922–1929: Maximum discharge, 53,000 second-feet June 13, 1928 (gage height, 24.00 feet); minimum, 363 second-feet Sept. 5, 1925.

Maximum stage known, 31.6 feet in July, 1905.

REMARKS.—Records good. Discharge estimated January 29.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	740	740	1,360	880	1,590	2,370	1,300	1,590	1,850	1,030	740	610
2	740	785	1,140	830	1,470	2,110	1,300	2,110	1,850	1,360	740	610
3	740	740	1,030	830	1,420	1,980	1,250	2,370	1,850	1,250	740	610
4	785	695	980	830	1,360	1,850	1,250	2,110	1,660	1,080	695	610
5	785	695	1,140	1,030	1,300	1,660	1,250	1,980	1,530	1,030	695	610
6	740	695	1,140	1,420	1,300	1,530	1,250	2,110	1,530	1,030	695	650
7	740	695	1,030	1,360	1,250	1,470	1,200	2,240	1,470	1,030	695	695
8	740	695	980	1,250	1,250	1,420	3,070	6,880	2,930	1,030	695	650
9	695	650	930	1,200	1,140	1,300	8,160	7,680	2,370	980	830	650
10	740	650	880	1,200	1,080	1,250	6,240	4,700	1,980	980	830	610
11	740	650	880	1,250	1,080	1,200	4,400	3,650	1,720	980	930	610
12	740	650	830	1,200	1,030	1,250	4,850	3,210	1,660	980	930	830
13	695	650	1,140	1,140	1,030	1,250	2,930	5,000	3,500	930	830	930
14	695	650	1,530	1,080	1,030	1,250	3,350	6,880	2,790	930	740	785
15	695	740	1,530	1,030	1,030	2,110	6,560	5,300	2,370	880	740	695
16	740	785	1,360	1,030	1,030	3,500	4,700	5,450	2,110	880	695	650
17	785	830	2,240	980	1,030	2,650	3,650	4,100	1,720	880	695	650
18	785	880	2,650	1,030	1,080	2,240	3,210	3,650	1,590	880	695	650
19	740	830	1,980	1,140	1,140	1,980	2,790	3,500	1,470	830	695	610
20	695	785	1,660	1,200	1,080	1,850	2,660	3,070	1,420	830	650	610
21	695	740	1,420	1,140	1,080	1,720	2,650	2,650	1,360	830	650	610
22	740	740	1,300	1,140	1,080	1,660	2,370	2,370	1,300	785	650	610
23	740	695	1,200	1,140	1,080	1,590	2,110	2,240	1,530	785	650	610
24	695	695	1,140	6,560	1,080	1,470	2,110	2,110	1,360	785	650	610
25	695	695	1,080	9,760	2,110	1,420	2,110	1,980	1,250	740	650	610
26	695	650	1,030	4,700	5,600	1,360	1,850	1,980	1,200	740	650	610
27	695	695	980	3,210	3,500	1,300	1,850	5,450	1,140	740	650	570
28	695	695	980	2,510	2,790	1,250	1,720	3,650	1,140	740	650	570
29	695	785	980	2,240	-------	1,300	1,660	2,650	1,080	830	610	570
30	695	1,850	930	1,980	-------	1,300	1,590	2,240	1,080	785	610	570
31	695	-------	880	1,720	-------	1,250	-------	1,980	-------	785	610	-------

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	785	695	725	0.614	0.71
November	1,850	650	758	.642	.72
December	2,650	830	1,240	1.05	1.21
January	9,760	830	1,870	1.58	1.82
February	5,600	1,030	1,500	1.27	1.32
March	3,500	1,200	1,670	1.42	1.64
April	8,160	1,200	2,850	2.42	2.70
May	7,680	1,590	3,450	2.92	3.37
June	3,500	1,080	1,730	1.47	1.64
July	1,360	740	914	.775	.89
August	930	610	709	.601	.69
September	930	570	642	.544	.61
The year	9,760	570	1,500	1.27	17.32

NORTH FORK OF WHITE RIVER NEAR HENDERSON, ARK.

LOCATION.—Staff gage in NE. ¼ SW. ¼ sec. 26, T. 20 N., R. 12 W., 1 mile from Henderson, 1 mile below Bennetts Bayou, and 19 miles above mouth.

DRAINAGE AREA.—1,640 square miles.

RECORDS AVAILABLE.—July, 1909, to December, 1910; October, 1928, to September, 1929.

EXTREMES.—Maximum discharge during year, 39,800 second-feet Jan. 24 (gage height, 17.0 feet); minimum, 639 second-feet Sept. 30 (gage height, 1.73 feet).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	865	910	1,900	1,150	2,380	3,760	2,260	2,140	2,770	1,250	910	695
2	865	955	1,900	1,100	2,140	3,180	2,020	2,260	2,380	1,560	910	695
3	865	910	1,200	1,100	2,020	2,900	1,900	2,900	2,260	1,670	865	695
4	865	910	1,900	1,100	1,780	2,640	1,780	2,770	2,140	1,560	820	695
5	955	910	1,450	1,250	1,670	2,380	1,780	2,510	2,140	1,560	820	655
6	955	910	1,250	1,900	1,670	2,140	1,670	3,460	2,020	1,450	820	695
7	955	865	1,250	1,900	1,670	2,020	1,670	3,040	1,900	1,450	820	775
8	955	865	1,250	1,780	1,560	1,900	12,300	14,500	6,000	1,350	775	820
9	910	865	1,200	1,670	1,560	1,780	13,900	13,400	3,610	1,350	910	775
10	910	865	1,150	1,780	1,450	1,670	10,300	7,480	2,900	1,450	1,150	735
11	910	820	1,100	1,670	1,450	1,670	7,040	5,420	2,510	1,560	1,050	735
12	910	820	1,100	1,670	1,450	1,560	5,060	4,550	2,140	1,450	1,450	910
13	865	820	1,670	1,560	1,350	1,560	4,070	6,000	2,020	1,350	1,250	1,250
14	865	820	2,260	1,450	1,350	1,670	6,400	8,390	4,390	1,350	1,000	1,050
15	865	865	2,140	1,350	1,350	3,430	10,300	7,260	3,040	1,250	910	955
16	910	1,000	2,020	1,350	1,350	4,890	7,930	7,260	2,380	1,200	820	820
17	955	1,050	3,760	1,250	1,350	3,910	5,610	6,200	2,260	1,200	820	735
18	1,000	1,200	2,900	1,450	1,350	3,040	4,720	5,420	2,020	1,150	775	695
19	865	1,150	2,380	1,450	1,450	2,900	4,070	4,890	1,900	1,100	775	695
20	955	1,100	2,140	1,450	1,450	2,640	3,610	4,390	1,780	1,050	775	695
21	955	1,050	1,900	1,560	1,450	2,380	3,760	3,910	1,670	1,050	775	695
22	955	955	1,780	1,560	1,450	2,260	3,610	3,460	1,670	1,000	735	695
23	955	955	1,780	1,450	1,560	2,140	3,320	3,180	1,560	955	735	695
24	910	955	1,560	25,500	1,560	2,020	3,180	2,900	1,560	955	735	655
25	910	955	1,450	18,800	9,380	1,780	2,900	2,640	1,560	910	735	655
26	865	865	1,350	7,480	9,330	1,670	2,640	2,380	1,450	910	735	655
27	865	865	1,350	5,060	5,610	1,670	2,380	2,770	1,450	865	735	655
28	865	865	1,250	3,910	4,390	1,670	2,380	6,660	1,450	865	735	655
29	865	955	1,250	3,180	-------	1,560	2,260	6,200	1,350	865	735	655
30	865	2,380	1,150	2,770	-------	1,560	2,140	3,910	1,350	865	735	655
31	865	-------	1,150	2,640	-------	1,560	-------	3,180	-------	865	695	-------

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	1,000	865	906	0.552	0.64	55,700
November	2,380	820	980	.598	.67	58,300
December	3,760	1,100	1,670	1.02	1.18	103,000
January	25,500	1,100	3,330	2.03	2.34	205,000
February	9,380	1,350	2,380	1.45	1.51	132,000
March	4,890	1,560	2,320	1.41	1.63	143,000
April	13,900	1,670	4,570	2.79	3.11	272,000
May	14,500	2,140	5,010	3.05	3.52	308,000
June	6,000	1,350	2,250	1.37	1.53	134,000
July	1,670	865	1,210	.738	.85	74,400
August	1,450	695	855	.521	.60	52,600
September	1,250	655	748	.456	.51	44,500
The year	25,500	655	2,180	1.33	18.09	1,580,000

BLACK RIVER AT LEEPER, MO.

LOCATION.—Chain gage in SW. ¼ NE. ¼ sec. 27, T. 28 N., R. 3 E., at Missouri Southern Railway bridge at Leeper. Zero of gage is 423.97 feet above mean Gulf level.

DRAINAGE AREA.—957 square miles.

RECORDS AVAILABLE.—June, 1921, to September, 1929.

EXTREMES.—Maximum discharge during year, 32,800 second-feet May 13 (gage height, 15.50 feet); minimum discharge, 347 second-feet Sept. 4; minimum gage height, 1.62 feet Oct. 1 and 12–14.

1921–1929: Maximum discharge, 37,000 second-feet Apr. 15, 1927 (gage height, 16.35 feet); minimum, 194 second-feet Sept. 9–11, 1925.

Maximum stage known, 21.3 feet in August, 1915.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	350	396	1,200	548	1,270	1,880	765	880	1,060	660	548	365
2	365	505	1,340	525	1,200	1,560	820	1,060	1,130	660	525	365
3	365	485	1,270	505	1,060	1,410	880	2,130	2,040	615	548	350
4	380	485	1,000	485	1,000	1,340	765	1,960	1,880	615	525	350
5	380	466	940	505	940	1,270	1,560	1,640	1,480	570	505	350
6	380	447	880	505	880	1,130	1,270	1,880	1,270	615	505	380
7	380	430	820	505	820	1,000	1,000	15,500	1,130	570	525	380
8	365	430	820	505	820	940	1,130	7,320	1,060	570	570	365
9	365	412	710	505	820	880	5,400	6,860	1,130	570	615	380
10	365	396	710	525	765	820	13,800	3,880	1,060	570	660	365
11	365	380	660	525	710	765	5,000	2,650	1,000	570	765	365
12	350	380	660	548	660	765	3,360	2,130	880	615	820	365
13	350	380	820	570	660	940	2,650	21,900	9,360	660	660	430
14	350	380	1,130	570	660	1,060	2,650	13,500	5,800	615	615	430
15	365	396	1,340	548	615	1,130	5,800	7,960	7,300	1,340	570	430
16	412	820	1,560	548	615	1,060	6,640	5,000	3,360	1,340	548	430
17	447	660	2,910	525	615	1,560	3,880	3,360	2,220	1,340	525	412
18	485	570	2,910	548	615	1,480	2,650	2,530	1,800	880	505	396
19	466	525	2,130	765	615	1,410	2,130	2,220	1,560	765	485	380
20	447	505	1,640	820	615	1,270	1,880	2,040	1,340	710	485	365
21	447	525	1,410	765	615	1,130	1,720	1,800	1,200	660	466	380
22	412	505	1,200	765	570	1,060	1,560	1,560	1,060	615	447	365
23	396	505	1,060	940	570	940	1,410	1,480	1,000	615	430	365
24	380	505	880	1,880	570	880	1,340	1,410	940	615	430	365
25	380	485	820	15,700	1,130	820	1,340	1,270	880	570	430	365
26	380	485	820	5,000	2,530	765	1,200	1,200	820	570	412	365
27	380	447	820	2,780	3,360	765	1,130	1,200	765	548	412	350
28	380	447	765	2,130	2,220	765	1,060	1,200	765	548	412	350
29	380	485	660	1,880	------	710	940	1,130	710	548	412	350
30	380	1,200	615	1,560	------	710	940	1,060	710	525	396	350
31	380	------	570	1,410	------	710	------	1,000	------	525	396	------

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	485	350	388	0.405	0.47
November	1,200	380	501	.524	.58
December	2,910	570	1,130	1.18	1.36
January	15,700	485	1,480	1.55	1.79
February	3,360	570	983	1.03	1.07
March	1,880	710	1,060	1.11	1.28
April	13,800	765	2,560	2.68	2.99
May	21,900	880	3,890	4.06	4.68
June	9,360	710	1,890	1.97	2.20
July	1,340	525	684	.715	.82
August	820	396	521	.544	.63
September	430	350	375	.392	.44
The year	21,900	350	1,290	1.35	18.31

BLACK RIVER AT BLACK ROCK, ARK.

LOCATION.—Staff gage in sec. 21, T. 12 N., R. 1 W., at Black Rock.
DRAINAGE AREA.—7,400 square miles.
RECORDS AVAILABLE.—June 1 to Sept. 30, 1929.
EXTREMES.—Maximum discharge, 18,200 second-feet June 1 (gage height, 15.0 feet); minimum, 3,410 second-feet Sept. 28–30 (gage height, 2.7 feet).
REMARKS.—Records fair. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet, 1929

Day	June	July	Aug.	Sept.	Day	June	July	Aug.	Sept.
1	18,200	8,520	5,850	3,970	16	13,800	5,940	6,750	4,230
2	15,600	8,080	5,940	3,970	17	15,000	5,940	6,300	4,140
3	14,200	7,860	5,580	3,810	18	14,600	6,120	5,850	4,050
4	12,600	7,650	5,220	3,650	19	14,200	5,940	5,400	3,890
5	10,900	7,250	4,950	3,650	20	13,200	5,940	5,130	3,810
6	10,000	6,950	4,770	4,500	21	11,400	5,940	4,950	3,810
7	9,640	6,750	4,500	4,140	22	10,100	5,850	4,770	3,730
8	9,880	6,660	4,320	4,050	23	9,880	5,760	4,680	3,650
9	11,400	6,480	4,320	4,050	24	9,760	5,760	4,500	3,570
10	10,400	6,300	4,230	3,890	25	11,400	5,580	4,320	3,570
11	9,400	6,210	4,950	3,810	26	10,700	5,400	4,230	3,490
12	8,740	6,210	8,300	3,730	27	10,400	5,400	4,230	3,490
13	8,740	6,120	9,070	3,890	28	10,000	5,310	4,230	3,410
14	10,600	6,120	8,300	4,320	29	9,400	5,220	4,140	3,410
15	12,300	6,120	7,750	4,320	30	8,960	5,130	4,050	3,410
					31	-------	5,130	4,050	-------

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
June	18,200	8,740	11,500	1.55	1.73	684,000
July	8,520	5,130	6,250	.84	.97	384,000
August	9,070	4,050	5,340	.72	.83	328,000
September	4,500	3,410	3,850	.52	.58	229,000
The period						1,620,000

CURRENT RIVER AT VAN BUREN, MO.

LOCATION.—Chain gage in NE. ¼ NW. ¼ sec. 25, T. 27 N., R. 1 W., at bridge on State highway No. 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, 1929.

EXTREMES.—Maximum discharge during year, 23,100 second-feet May 13 (gage height, 10.48 feet); minimum discharge, 1,030 second-feet Sept. 3 and 28–30; minimum gage height, 2.00 feet Sept. 29 and 30.

1921–1929: Maximum discharge, 49,300 second-feet June 10, 1928 (gage height, 16.45 feet); minimum, 542 second-feet Sept. 6, 8, 9, and 12, 1925.

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

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,270	1,320	3,070	1,270	2,470	3,680	1,910	2,180	2,320	1,660	1,320	1,080
2	1,270	1,380	2,320	1,220	2,470	3,220	1,910	2,620	2,320	1,660	1,430	1,080
3	1,320	1,380	1,910	1,270	2,320	2,920	2,040	3,220	2,320	1,660	1,380	1,030
4	1,380	1,320	1,780	1,270	2,180	2,620	2,180	3,520	2,180	1,660	1,320	1,080
5	1,320	1,320	1,660	1,320	2,180	2,470	2,040	3,220	2,180	1,540	1,320	1,120
6	1,270	1,320	1,660	1,320	2,040	2,470	1,910	4,660	2,180	1,540	1,320	1,220
7	1,270	1,220	1,660	1,380	2,040	2,320	1,910	15,900	2,180	1,540	1,270	1,220
8	1,220	1,220	1,660	1,540	1,910	2,180	2,620	8,600	2,180	1,540	1,780	1,170
9	1,270	1,170	1,660	1,660	1,780	2,040	7,560	11,600	2,040	1,540	2,040	1,120
10	1,220	1,220	1,660	1,660	1,780	1,910	12,800	8,320	2,040	1,540	2,040	1,120
11	1,220	1,170	1,540	1,660	1,660	1,910	8,900	6,160	1,910	1,540	3,070	1,120
12	1,170	1,170	1,540	1,660	1,660	1,910	6,380	7,080	1,780	1,660	3,520	1,270
13	1,220	1,170	1,780	1,540	1,660	1,910	5,060	18,400	10,400	1,660	2,320	1,380
14	1,270	1,220	1,910	1,430	1,540	1,910	4,480	19,200	8,900	1,430	1,780	1,320
15	1,270	1,220	1,910	1,380	1,540	2,320	7,560	15,500	6,840	1,910	1,660	1,220
16	1,320	1,320	2,180	1,430	1,540	3,840	9,500	8,320	5,500	2,470	1,540	1,170
17	1,380	1,430	2,920	1,660	1,540	4,160	6,380	6,380	3,840	2,040	1,430	1,120
18	1,380	1,540	3,070	2,040	1,540	3,370	5,060	5,500	3,220	1,910	1,380	1,120
19	1,320	1,540	2,770	1,910	1,660	2,920	4,320	4,860	2,920	1,660	1,380	1,120
20	1,270	1,430	2,470	1,910	1,660	2,620	4,000	4,480	2,620	1,540	1,320	1,120
21	1,270	1,380	2,180	1,910	1,660	2,620	3,680	4,000	2,470	1,540	1,320	1,120
22	1,270	1,320	1,910	1,780	1,540	2,470	3,370	3,680	2,320	1,430	1,270	1,120
23	1,220	1,320	1,660	1,780	1,540	2,320	3,070	3,520	2,180	1,430	1,270	1,080
24	1,270	1,270	1,660	3,070	1,540	2,180	2,920	3,220	2,180	1,380	1,220	1,080
25	1,170	1,220	1,660	12,800	2,470	2,040	2,770	3,070	2,040	1,380	1,220	1,080
26	1,170	1,220	1,540	9,200	7,080	2,040	2,770	3,070	1,910	1,320	1,170	1,080
27	1,320	1,220	1,430	5,280	6,160	1,910	2,470	3,070	1,910	1,320	1,220	1,080
28	1,270	1,220	1,380	4,160	4,320	1,910	2,470	2,920	1,910	1,320	1,170	1,080
29	1,220	1,430	1,320	3,370	-------	1,910	2,320	2,770	1,660	1,380	1,170	1,030
30	1,220	1,430	1,320	3,070	-------	1,910	2,180	2,620	1,660	1,380	1,120	1,030
31	1,170	-------	1,320	2,770	-------	1,780	-------	2,470	-------	1,380	1,120	-------

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,380	1,170	1,260	0.768	0.89
November	1,540	1,170	1,300	.793	.88
December	3,070	1,320	1,890	1.15	1.33
January	12,800	1,220	2,570	1.57	1.81
February	7,080	1,540	2,270	1.38	1.44
March	4,160	1,780	2,440	1.49	1.72
April	12,800	1,910	4,220	2.57	2.87
May	19,200	2,180	6,260	3.82	4.40
June	10,400	1,660	3,000	1.83	2.04
July	2,470	1,320	1,580	.963	1.11
August	3,520	1,120	1,540	.939	1.08
September	1,380	1,030	1,130	.689	.77
The year	19,200	1,030	2,460	1.50	20.34

CURRENT RIVER AT DONIPHAN, MO.

LOCATION.—Chain gage in N. ½ sec. 27, T. 23 N., R. 2 E., at bridge on State highway No. 42, three-fourths of a mile west of Doniphan. Zero of gage is 323.30 feet above mean sea level.

DRAINAGE AREA.—2,030 square miles.

RECORDS AVAILABLE.—June, 1921, to September, 1929.

EXTREMES.—Maximum discharge during year, 27,800 second-feet May 14 (gage height, 12.40 feet); minimum, 1,620 second-feet several days during October, November, August, and September; minimum gage height, 0.44 foot Sept. 30.

1921–1929: Maximum discharge, 48,800 second-feet Apr. 15, 1927 (gage height, 17.30 feet); minimum, 1,020 second-feet Aug. 27 to Sept. 14, 1925.

Maximum stage known, 25.5 feet in August, 1915.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,810	1,810	4,940	2,030	3,730	5,760	2,510	3,030	3,590	2,260	1,710	1,810
2	1,710	2,640	3,870	1,920	3,450	4,780	2,640	3,730	3,590	2,260	1,810	1,810
3	1,810	2,260	3,170	1,920	3,310	4,320	4,620	4,320	3,590	2,260	1,710	1,710
4	1,810	2,140	2,900	1,920	3,030	4,780	5,100	4,780	3,310	2,260	1,620	1,810
5	1,810	2,030	2,900	1,920	2,900	4,170	3,870	4,470	3,310	2,140	1,620	1,810
6	1,810	1,920	2,900	2,030	2,770	3,730	3,450	4,620	3,170	2,260	1,620	1,920
7	1,810	1,920	2,770	2,140	2,770	3,450	3,170	9,720	3,170	2,260	1,710	1,920
8	1,710	1,810	2,640	2,260	2,640	3,310	3,590	17,100	3,170	2,140	2,140	1,920
9	1,710	1,810	2,380	2,140	2,510	3,030	8,300	12,400	3,170	2,140	2,510	1,810
10	1,710	1,710	2,380	2,140	2,510	2,900	13,500	14,000	2,900	2,640	2,900	1,710
11	1,710	1,710	2,260	2,260	2,380	2,770	15,000	9,100	2,770	2,030	3,730	1,710
12	1,710	1,710	2,140	2,380	2,260	2,510	9,940	7,380	2,770	2,260	4,470	2,030
13	1,710	1,710	2,640	2,260	2,260	2,900	7,560	10,600	4,320	2,140	4,020	2,140
14	1,710	1,620	3,030	2,260	2,260	3,030	5,260	23,700	14,700	2,030	3,030	2,140
15	1,710	1,710	3,170	2,140	2,140	3,030	7,740	23,000	8,700	2,260	2,510	2,030
16	3,030	2,030	3,730	2,030	2,140	3,170	10,400	17,300	8,300	3,730	2,260	1,920
17	2,380	2,140	5,260	2,030	2,140	5,940	9,940	9,940	6,120	3,030	2,140	1,920
18	2,260	2,380	5,760	3,310	2,140	4,780	7,560	8,100	4,780	2,510	2,030	1,810
19	2,030	2,510	5,260	3,170	2,140	4,170	6,300	7,560	4,170	2,260	2,030	1,810
20	1,920	2,380	4,470	3,170	2,140	3,730	5,760	6,840	3,730	2,140	1,920	1,710
21	1,810	2,140	3,870	3,030	2,140	3,450	5,420	6,120	3,450	2,030	1,920	1,710
22	1,920	2,030	3,450	3,030	2,030	3,310	4,940	5,580	3,170	1,920	1,920	1,710
23	1,810	2,030	3,170	2,900	2,030	3,170	4,470	5,260	3,030	1,920	1,920	1,710
24	1,810	1,920	2,900	7,920	2,030	2,900	4,170	4,780	2,900	1,810	1,810	1,620
25	1,710	1,810	2,770	14,500	3,450	2,770	4,020	4,620	2,770	1,810	1,810	1,620
26	1,710	1,810	2,640	17,100	8,700	2,640	3,870	4,470	2,770	1,710	1,810	1,620
27	1,710	1,810	2,510	9,300	9,720	2,510	3,590	4,620	2,640	1,710	1,810	1,710
28	1,810	1,810	2,380	6,840	7,560	2,510	3,450	4,470	2,510	1,710	1,710	1,620
29	1,810	2,140	2,260	5,420	-------	2,380	3,310	4,170	2,510	1,710	1,810	1,620
30	1,710	3,310	2,140	4,620	-------	2,380	3,030	4,020	2,380	1,710	1,810	1,620
31	1,620	-------	2,030	4,170	-------	2,260	-------	3,730	-------	1,710	1,710	------

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	3,030	1,620	1,850	0.911	1.05
November	3,310	1,620	2,030	1.00	1.12
December	5,760	2,030	3,180	1.57	1.81
January	17,100	1,920	4,010	1.98	2.28
February	9,720	2,030	3,190	1.57	1.64
March	5,940	2,260	3,440	1.69	1.95
April	15,000	2,510	5,880	2.90	3.24
May	23,700	3,030	8,180	4.03	4.65
June	14,700	2,380	4,050	2.00	2.23
July	3,730	1,710	2,150	1.06	1.22
August	4,470	1,620	2,180	1.07	1.23
September	2,140	1,620	1,800	.887	.99
The year	23,700	1,620	3,500	1.72	23.41

BIG SPRING NEAR VAN BUREN, MO.

LOCATION.—Vertical staff gage in sec. 6, T. 26 N., R. 1 E., 600 feet above mouth of Spring Branch and 4 miles southeast of Van Buren. Zero of gage is 429.8 feet above mean sea level.

RECORDS AVAILABLE.—January to June, 1922, and April, 1923, to September, 1929.

EXTREMES.—Maximum discharge during year, estimated at 900 second-feet during backwater from Current River in May; minimum, 382 second-feet Nov. 12 and 13 (gage height, 0.54 foot).

1922–1929: Maximum discharge, estimated at 1,100 second-feet during backwater in June, 1928; minimum, 268 second-feet Sept. 17–24, 1926.

REMARKS.—Records poor; fragmentary on account of missing gage readings or backwater from Current River.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	457	410	[a] 600	410			618	[a] 567	505	441	420
2	457	405	[a] 550	405			[a] 646	[a] 550	505	446	420
3	462	[a] 403	495	400			[a] 602	[a] 550	505	441	420
4	457	[a] 400	459	394	[a] 656		[a] 546	[a] 560	498	431	420
5	457	[a] 398	476	[a] 403	[a] 677			[a] 553	492	431	420
6	452	[a] 396	482	[a] 411	[a] 688			[a] 563	492	426	420
7	[a] 449	[a] 394	459	420	656			[a] 563	492	431	420
8	446	[a] 391	449	415	618			[a] 570	492	498	420
9	446	[a] 389	[a] 436	420	570			[a] 570	479	530	415
10	441	[a] 387	423	431	[a] 560			586	473	550	410
11	433	[a] 384	405	431	550			570	468	[a] 706	410
12	[a] 430	382	431	431	543			563	492	[a] 761	410
13	428	382	436	[a] 436	556			[a] 750	486	[a] 682	436
14	[a] 430	[a] 390	492	420	570			[a] 750	473	594	431
15	433	397	530	410	[a] 586			[a] 700	486	537	426
16	[a] 446	413	[a] 554	[a] 423	[a] 634			[a] 761	[a] 656	511	415
17	459	415	[a] 578	436	[a] 600			[a] 730	537	492	415
18	449	[a] 428	[a] 688	492	[a] 553			[a] 543	505	479	410
19	439	441	[a] 661		[a] 586			[a] 518	479	468	410
20	433	420	[a] 646		[a] 594			[a] 527	468	462	405
21	[a] 427	410	610		[a] 592			[a] 537	457	457	405
22	[a] 421	405	524		[a] 590			[a] 563	457	452	405
23	415	[a] 400	[a] 502		[a] 586			[a] 556	452	446	405
24	415	394	479					[a] 563	452	446	405
25	[a] 415	[a] 392	[a] 468					563	446	441	405
26	415	389	457					556	441	441	405
27	[a] 413	389	436					543	441	436	405
28	[a] 412	384	400				[a] 725	530	441	431	400
29	410	[a] 500	[a] 403			656	[a] 631	524	436	426	400
30	410	[a] 550	[a] 407			636	[a] 537	518	441	426	400
31	410		410				[a] 546		441	426	

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	462	410	434	June	761	518	583
November	550	382	408	July	656	436	480
December	688	400	495	August	761	426	489
January 1–18	492	394	422	September	436	400	413
March 4–23	688	543	598				

[a] Estimated.

ELEVEN POINT RIVER NEAR BARDLEY, MO.

LOCATION.—Chain gage in NW. ¼ sec. 20, T. 23 N., R. 2 W., at bridge on State highway No. 42, 7 miles southwest of Bardley.

RECORDS AVAILABLE.—October, 1921, to September, 1929.

EXTREMES.—Maximum discharge during year, 8,000 second-feet Jan. 25 (gage height, 9.55 feet); minimum discharge, 562 second-feet Nov. 11–15, 27, 28, and Sept. 29, 30; minimum gage height, 2.48 feet Sept. 29, 30.

1922–1929: Maximum discharge, 27,800 second-feet Apr. 14, 1927 (gage height, 18.74 feet); minimum, 210 second-feet Sept. 6–11, 1925 (gage height, 1.06 feet).

Maximum stage known, 19.7 feet in August, 1915.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	675	590	802	705	1,340	1,730	1,120	1,260	1,340	900	835	618
2	675	738	738	705	1,260	1,650	1,120	1,570	1,340	970	770	618
3	705	675	738	675	1,260	1,650	1,340	1,490	1,260	970	770	618
4	645	645	835	675	1,190	1,570	1,490	1,420	1,190	900	738	618
5	675	618	1,570	675	1,190	1,490	1,340	1,340	1,190	900	738	835
6	645	618	802	675	1,190	1,420	1,260	1,490	1,190	970	738	675
7	645	618	770	675	1,120	1,340	1,260	1,420	1,190	900	738	645
8	645	590	738	645	1,120	1,260	2,070	1,890	1,260	900	770	645
9	645	590	705	645	1,040	1,260	4,720	3,160	1,190	900	802	618
10	645	590	705	738	970	1,190	3,660	2,360	1,190	900	770	618
11	645	562	675	770	970	1,120	2,760	2,070	1,120	900	900	618
12	645	562	675	738	970	1,120	2,260	1,890	1,120	835	900	900
13	645	562	675	705	970	1,190	1,980	1,980	1,260	835	835	835
14	618	562	835	705	970	1,190	2,070	2,760	1,260	835	835	705
15	618	562	835	675	900	1,190	3,160	2,260	1,340	835	802	675
16	900	645	835	705	900	1,260	2,960	2,160	1,340	835	770	645
17	675	705	1,190	705	900	1,260	2,460	1,890	1,260	900	770	645
18	645	705	1,260	770	900	1,190	2,160	1,810	1,190	835	738	618
19	645	738	1,120	1,040	900	1,190	1,980	2,070	1,120	835	738	618
20	618	645	1,040	970	900	1,190	1,890	1,730	1,120	802	738	618
21	618	645	970	970	900	1,120	1,810	1,650	1,040	802	705	590
22	645	618	900	900	900	1,120	1,730	1,570	1,040	802	705	590
23	618	618	900	900	900	1,120	1,570	1,490	1,040	802	705	590
24	618	590	835	3,760	900	1,120	1,570	1,420	1,040	802	705	590
25	618	590	835	7,000	1,810	1,040	1,570	1,490	970	770	705	590
26	590	590	802	3,260	4,240	1,040	1,490	1,490	970	770	705	590
27	618	562	770	2,360	2,660	970	1,420	1,420	970	770	675	590
28	590	562	770	1,980	2,070	970	1,420	1,490	970	770	675	590
29	590	645	738	1,730	-------	970	1,340	1,420	970	770	675	562
30	590	802	738	1,570	-------	970	1,340	1,340	900	802	675	562
31	590	-------	705	1,490	-------	970	-------	1,260	-------	835	645	-------

Month	Maximum	Minimum	Mean
October	900	590	643
November	802	562	625
December	1,570	675	855
January	7,000	645	1,310
February	4,240	900	1,260
March	1,730	970	1,220
April	4,720	1,120	1,940
May	3,160	1,260	1,740
June	1,340	900	1,150
July	970	770	850
August	900	645	750
September	900	562	641
The year	7,000	562	1,080

GREER SPRING AT GREER, MO.

LOCATION.—Vertical staff gage in SE. ¼ SW. ¼ 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 539.0 feet above mean sea level.

RECORDS AVAILABLE.—August to December, 1904; November, 1921, to September, 1929.

EXTREMES.—Maximum discharge during year, 826 second-feet May 30 to June 1 (gage height, 1.22 feet); minimum, 317 second-feet Sept. 28–30 (gage height, 0.75 foot).

1922–1929: Maximum discharge, 903 second-feet May 26, 1927 (gage height, 1.43 feet); minimum discharge, 151 second-feet Aug. 19, 1925.

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

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	457	457	382	366	382	432	497	723	826	477	417	366
2	450	467	386	366	390	437	490	728	812	484	417	366
3	444	477	390	366	394	437	484	728	798	490	417	361
4	437	482	393	374	399	437	477	728	789	497	417	355
5	437	487	396	382	405	444	477	721	779	497	417	350
6	437	484	399	382	411	450	477	714	770	497	424	343
7	437	480	408	382	417	457	482	723	749	497	430	336
8	437	477	417	385	427	457	487	733	728	497	437	336
9	430	467	417	387	437	457	497	742	707	490	437	336
10	424	457	417	390	437	447	507	770	686	484	437	341
11	417	447	417	378	437	437	518	798	677	477	437	345
12	412	437	417	366	444	430	529	798	669	467	437	350
13	408	427	417	382	450	424	540	798	660	457	417	358
14	412	417	427	384	457	417	570	789	648	437	437	366
15	417	408	437	386	457	417	600	779	636	417	457	358
16	411	399	427	388	457	417	612	770	636	408	447	350
17	405	390	417	390	447	427	624	784	636	399	437	345
18	399	378	411	390	437	437	636	798	644	390	427	341
19	399	366	405	390	430	444	661	798	652	378	417	336
20	399	361	399	390	424	450	686	798	660	366	405	336
21	418	356	417	390	417	457	728	779	673	366	394	336
22	437	350	390	387	408	467	770	761	686	366	382	336
23	444	350	386	385	399	477	779	742	661	371	382	336
24	450	350	382	382	408	477	789	756	636	377	382	332
25	457	358	377	374	417	477	798	770	620	382	382	327
26	447	366	371	366	420	477	784	784	604	390	382	323
27	437	361	366	366	424	477	770	798	588	399	377	320
28	447	355	366	366	427	477	742	807	553	399	371	317
29	457	350	366	369	-------	487	714	817	518	399	366	317
30	457	366	366	371	-------	497	719	826	498	405	366	317
31	457	-------	366	374	-------	497	-------	826	-------	411	366	-------

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	457	399	432	May	826	714	771
November	487	350	411	June	826	498	673
December	437	366	398	July	497	366	431
January	390	366	379	August	457	366	410
February	457	382	424	September	366	317	341
March	497	417	452				
April	789	477	615	The year	826	317	478

LITTLE RED RIVER NEAR HEBER SPRINGS, ARK.

LOCATION.—Staff gage in NE. ¼ 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, 1929.

EXTREMES.—Maximum discharge during year, 41,100 second-feet Feb. 26 (gage height, 29.10 feet); minimum, 1.5 second-feet Sept. 27–30 (gage height, 2.45 feet).

1928–29: Maximum discharge, 88,800 second-feet Apr. 6, 1928 (gage height, 42.35 feet); minimum, 1.5 second-feet Sept. 27–30, 1929 (gage height, 2.45 feet).

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	1,070	7,700	660	2,040	5,100	4,550	2,110	2,250	230	38	5
2	22	1,120	3,830	620	1,730	5,100	6,870	7,420	1,970	220	33	4
3	21	1,370	2,670	520	1,490	3,460	4,440	6,610	1,850	190	49	4
4	22	1,120	1,970	520	1,370	7,560	3,830	4,660	7,420	230	58	5
5	23	580	1,850	550	1,220	6,870	3,120	3,460	3,730	370	49	7
6	21	460	1,120	3,830	1,170	4,660	2,670	2,600	2,390	290	39	8
7	20	370	870	3,460	1,170	3,730	2,180	3,040	1,970	220	43	8
8	18	315	1,120	2,600	1,070	2,880	1,970	2,320	3,730	200	37	8
9	18	265	1,070	2,040	1,070	2,390	31,800	38,000	3,280	190	33	7
10	18	230	780	4,660	1,020	2,040	21,000	7,140	2,810	660	27	6
11	18	210	740	4,440	1,020	1,670	8,850	4,440	1,910	430	24	6
12	14	190	700	3,460	920	1,550	5,830	3,280	1,370	520	24	4
13	14	170	4,660	2,670	820	1,790	3,830	3,280	1,170	385	53	4
14	9	160	15,300	2,320	870	2,960	3,280	13,700	1,120	278	43	4
15	10	160	6,870	1,970	970	2,740	5,580	8,400	1,170	220	33	3
16	18	154	4,440	1,910	1,070	4,330	4,660	5,340	1,120	190	29	3
17	22	170	13,200	1,790	1,120	3,640	3,640	3,550	700	180	24	4
18	24	740	16,100	1,850	1,170	2,810	2,960	2,670	580	150	31	3
19	265	1,370	7,420	8,700	1,370	2,390	5,960	2,250	490	128	29	3
20	328	1,070	7,140	5,700	1,610	2,110	4,550	1,910	430	106	24	3
21	302	780	3,460	4,030	1,550	2,110	13,700	1,550	430	87	19	2
22	170	620	2,670	3,370	1,490	2,250	11,900	1,220	355	78	14	2
23	138	580	2,180	2,740	1,610	2,110	5,830	1,070	385	70	13	2
24	116	460	1,850	4,130	2,040	1,850	3,930	490	355	61	12	2
25	100	400	1,550	3,040	2,810	1,610	4,330	740	2,040	59	12	2
26	82	340	1,320	4,770	40,800	1,430	3,930	970	820	51	9	2
27	78	315	1,170	7,140	22,100	1,910	2,880	1,070	550	45	9	2
28	74	290	1,070	4,880	6,870	7,000	2,530	1,370	460	41	9	2
29	73	278	1,070	3,640	-------	5,460	2,530	2,390	430	39	8	2
30	72	7,980	820	3,040	-------	7,420	2,180	2,880	265	108	8	2
31	68	-------	660	2,390	-------	4,880	-------	3,550	-------	47	6	-------

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	328	9	70.9	0.061	0.07	4,360
November	7,980	154	778	.671	.75	46,300
December	16,100	660	3,790	3.27	3.77	233,000
January	8,700	520	3,140	2.71	3.12	193,000
February	40,800	820	3,700	3.19	3.32	205,000
March	7,560	1,430	3,480	3.00	3.46	214,000
April	31,800	1,970	6,180	5.33	5.95	368,000
May	38,000	490	4,630	3.99	4.60	285,000
June	7,420	265	1,580	1.36	1.52	94,000
July	660	39	196	.169	.19	12,100
August	58	6	27.1	.023	.03	1,670
September	8	2	4.0	.0034	.004	238
The year	40,800	2	2,290	1.97	26.78	1,660,000

CACHE RIVER AT PATTERSON, ARK.

LOCATION.—Staff gage in sec. 6, T. 7 N., R. 2 W., at Patterson. Zero of gage is 188.27 feet above mean sea level.

DRAINAGE AREA.—790 square miles.

RECORDS AVAILABLE.—February, 1928, to September, 1929.

EXTREMES.—Maximum discharge during year, 6,340 second-feet May 16 (gage height, 10.3 feet); minimum, 100 second-feet Sept. 30 (gage height, 3.0 feet).

1928–29: Maximum discharge, 12,100 second-feet June 27 and 28, 1928 (gage height, 11.8 feet); minimum, 100 second-feet Sept. 30, 1929 (gage height, 3.0 feet).

Maximum stage known, 17.1 feet April, 1927, owing to White River levee break.

REMARKS.—Records fair. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	124	1,900	258	2,060	4,530	2,400	1,590	1,110	800	258	221	128
2	120	1,110	258	1,740	4,530	2,950	1,450	1,110	840	258	161	128
3	120	880	243	1,450	4,260	2,950	1,740	1,200	840	258	147	124
4	120	760	243	1,040	4,010	4,010	2,060	1,450	800	273	168	124
5	120	680	243	760	4,010	5,100	2,400	1,320	680	273	168	124
6	116	680	258	645	4,010	5,700	2,400	1,200	610	273	161	124
7	116	680	313	540	4,010	5,700	2,400	1,110	610	273	168	124
8	112	840	475	475	4,010	5,400	2,230	1,040	645	273	168	124
9	112	1,040	680	415	4,010	5,100	2,230	2,400	680	258	168	120
10	112	1,450	980	415	4,010	4,530	2,400	3,560	680	258	175	116
11	112	1,740	1,590	505	3,350	4,260	2,580	4,010	800	258	175	116
12	112	1,740	1,900	575	2,580	4,260	2,760	4,530	800	258	168	112
13	112	1,320	1,900	680	1,900	4,530	2,950	4,530	800	258	140	108
14	112	1,040	1,450	720	1,110	4,530	2,950	5,100	680	258	140	104
15	132	980	1,220	800	880	4,530	3,780	6,020	645	243	161	104
16	154	720	980	930	840	4,400	4,010	6,340	610	336	221	128
17	182	540	980	930	800	4,260	4,010	5,700	575	273	359	140
18	203	445	1,320	1,320	760	3,560	3,780	5,100	540	313	540	140
19	210	385	2,060	1,450	720	2,760	3,560	4,530	505	336	720	136
20	210	313	2,950	1,450	645	2,230	3,350	4,010	540	336	720	124
21	210	273	3,560	1,320	575	1,740	3,150	3,780	610	313	610	119
22	258	258	4,010	1,110	540	1,900	3,350	3,350	680	313	475	113
23	720	232	4,260	980	505	1,900	3,560	2,760	720	336	359	108
24	1,590	210	4,260	760	645	1,740	3,350	2,230	610	336	273	108
25	2,060	203	4,260	1,590	800	1,450	3,150	2,060	645	336	232	108
26	2,230	196	3,780	2,580	980	1,200	2,580	2,060	540	336	196	104
27	2,400	196	3,150	3,150	1,450	1,040	2,400	1,900	475	336	175	104
28	2,400	210	3,150	3,560	2,230	1,040	2,230	1,320	445	336	154	104
29	2,400	243	2,950	3,780	-------	1,320	1,590	1,040	385	273	140	104
30	2,400	258	2,950	4,010	-------	1,590	1,320	880	336	243	136	100
31	2,580	-------	2,400	4,260	-------	1,590	-------	800	-------	232	132	-------

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	2,580	112	708	0.896	1.03	43,500
November	1,900	196	717	.908	1.01	42,700
December	4,260	243	1,900	2.40	2.77	117,000
January	4,260	415	1,480	1.87	2.16	91,000
February	4,530	505	2,240	2.84	2.96	124,000
March	5,700	1,040	3,220	4.08	4.70	198,000
April	4,010	1,320	2,710	3.43	3.83	161,000
May	6,340	800	2,820	3.57	4.12	173,000
June	840	336	628	.795	.89	37,400
July	336	232	288	.365	.42	17,700
August	720	132	256	.324	.37	15,700
September	140	100	117	.148	.17	6,960
The year	6,340	100	1,420	1.80	24.43	1,030,000

ARKANSAS RIVER BASIN

ARKANSAS RIVER AT SYRACUSE, KANS.

LOCATION.—Water-stage recorder in NW. ¼ sec. 18, T. 24 S., R. 40 W., at highway bridge half a mile south of Syracuse.

DRAINAGE AREA.—25,000 square miles.

RECORDS AVAILABLE.—August, 1902, to November, 1905; April to July, 1906; June, 1921, to September, 1929.

EXTREMES.—Maximum discharge during year, 37,000 second-feet Aug. 8 (gage height, 6.04 feet); minimum, probably less than 3 second-feet.

1902-1906, 1921-1929: Maximum stage about 9.75 feet on June 6, 1921 (discharge not known; the value of 45,000 second-feet published in previous reports is much too small); minimum discharge, 2 second-feet in August, 1926. Bank-full stage, 5.0 feet.

REMARKS.—Records fair October and March to June; poor for remainder of year. Diversions for irrigation above station.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6	-------	[a]420	460	-------		97	30	44	[b]15		
2	6	-------	422	429	-------		97	50	44	[b]12	[a]3	
3	6	-------		398	-------		92	63	44	[b]10		
4	6	172	[a]425	429	-------	[a]750	89	66	46	[b]10	1,720	[a]86
5	6	-------		422	-------		86	66	46	[b]15	3,270	
6	6	-------	429	[a]320	-------		75	66	48	[b]30	2,700	
7	6	-------	370	[a]318	-------	295	70	59	59	[b]35	1,990	
8	6	-------	291	[a]227	-------	295	68	55	92	[b]30	13,000	685
9	6	-------	286	[a]236	-------	243	61	44	110	[b]25	14,500	587
10	6	-------	291	[a]246	-------	216	55	37	113	[b]20	7,100	408
11	6	218	344	[a]255	-------	210	50	32	110	[b]20	5,100	304
12	15	-------	445	[a]265	[a]234	201	41	30	103	[b]18	3,300	256
13	129	-------	505	[a]265	-------	180	34	29	92	[b]16	2,100	227
14	97	-------	532	[a]254	-------	171	20	27	89	[b]13	1,330	197
15	70	-------	541	[a]243	-------	167	17	26	86	[b] 9	1,140	170
16	70	-------	550	[a]221	-------	159	15	16	86	[b] 5	950	
17	70	-------	523	[a]210	-------	148	13	15	[a]75		770	
18	70	241	496	[a]210	-------	140	11	13	[a]50			
19	70	-------	414	[a]210	-------	133	12	12	[a]25			
20	68	-------	370	[a]210	-------	129	13	10				[a]180
21	66	-------	313	[a]200	-------	129	20	14				
22	63	-------	313	[a]200	-------	126	35	12				
23	63	-------	363	[a]200	-------	126	44	12	[a]10			184
24	63	-------	390	[a]200	-------	123	44	10		[a] 4	[a]328	167
25	63	-------	414		-------	110	44	9				154
26	63	-------	445	[a]190	-------	97	44	8				144
27	63	-------	445		-------	92	46	9	[b]28			132
28	97	-------	452		-------	100	50	10	[b]100			122
29	92	-------	460	184	-------	119	52	11	[b]30			[a]125
30	[a]92	-------	469	[a]190	-------	110	39	22	[b]15			[a]130
31	[a]92	-------	496	[a]190	-------	110	-------	39	-------			-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	129	6	49.7	3,060
November	-------	-------	200	11,900
December	550	286	421	25,900
January	460	184	257	15,800
February	-------	-------	220	12,200
March	-------	92	272	16,700
April	97	11	47.8	2,840
May	66	8	29.1	1,790
June	113	10	53.5	3,180
July	35	4	11.1	682
August	14,500	3	2,050	126,000
September	685	86	195	11,600
The year	14,500	3	320	232,000

[a]Interpolated or estimated.
[b]Discharge determined from State records of canal diversions.

ARKANSAS RIVER AT GARDEN CITY, KANS.

LOCATION.—Water-stage recorder in NW. ¼ 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, 1929.

EXTREMES.—Maximum discharge during year, 21,200 second-feet Aug. 9 (gage height, 7.74 feet); no flow in October, June, July, and August.

1922-1929: Maximum discharge occurred this year; no flow during several periods. Bank-full stage, 7.0 feet.

REMARKS.—Records good except those for Dec. 6–14, January, February, and Aug. 19 to Sept. 7, which are poor. Diversions for irrigation above station.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Aug.	Sept.
1	0	85	264	222	53	511	18	31	9	0	7
2	0	45	320	390	52	469	14	24	6	0	5
3	0	52	370	500	50	756	11	16	4	0	3
4	0	54	370	420	48	812	11	10		0	1
5	0	92	360	175	45	702	22	12		0	1
6	0	75		108	42	458	14	14	[a]6	525	1
7	0	54		108	38	185	11	16		640	9
8	0	52		120	34	95	11	18	9	1,240	9
9	0	56		154	30	63	13	18	7	15,900	10
10	0	54	[a]340	186	34	45	10	45	3	6,600	27
11	0	49		186	38	43	9	99	1	4,450	27
12	0	45		272	42	33	8	57	1	3,620	28
13	0	45		320	45	26	8	45	4	2,710	14
14	0	47		256	48	24	10	31	2	1,940	10
15	5	43	320	210	50	24	9	20	0	1,340	7
16	2	66	222	180		23	11	14	0	898	5
17	2	72	180	150		20	11	12	0	536	4
18	2	66	164	128		17	11	16	0	295	2
19	2	52	216	124		16	26	11	0	142	1
20	3	78	116	120		16	50	14	0	70	4
21	6	54	120	108	[a]50	14	36	22	0	39	4
22	4	54	128	88		16	28	12	1	29	3
23	9	78	128	80		17	23	11	1	25	1
24	12	62	159	72		14	20	14	1	20	1
25	13	69	256	65		16	16	14	0	17	1
26	18	52	443	55	458	17	11	10	0	16	1
27	20	41	443	55	548	17	10	8	0	16	1
28	34	38	500	55	572	38	10	6	0	14	1
29	78	72	572	55	-------	40	8	6	0	14	1
30	66	210	524	55	-------	31	8	6	0	13	2
31	69	-------	380	55	-------	23	-------	6	-------	12	-------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	78	0	11.1	682
November	210	38	63.7	3,790
December	572	116	310	19,100
January	500	55	164	10,000
February	572	30	97.4	5,410
March	812	14	148	9,100
April	50	8	15.2	904
May	99	6	20.6	1,270
June	9	0	2.43	145
August	15,900	0	1,330	81,800
September	27	1	6.20	369
The year	15,900	0	183	133,000

[a] Estimated.

NOTE.—No flow during July.

ARKANSAS RIVER AT LARNED, KANS.

LOCATION.—Water-stage recorder in NE. ¼ sec. 5, T. 22 S., R. 16 W., south of Larned, half a mile above Pawnee River.

DRAINAGE AREA.—34,900 square miles.

RECORDS AVAILABLE.—June, 1922, to September, 1929.

EXTREMES.—Maximum discharge during year, 11,400 second-feet Aug. 9 (gage height, 8.47 feet); no flow October, July, and August.

1922–1929: 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 poor; control unstable. Diversions for irrigation above station.

Daily and monthly discharge, in second-feet, 1928–29

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9	86			100	77	70	11	1	0	486
2	13	81			200	75	108	7	1	0	440
3	14	81			570	72	120	7	0	0	398
4	30	120			488	70	129	6	0	0	363
5	38	214	[a] 180	[a] 80	373	64	126	6	0	0	324
6	47	570			532	55	98	10	0	0	289
7	38	626			594	59	91	19	0	0	261
8	32	250			510	55	93	19	1	0	236
9	44	260			412	52	86		4	2	229
10	52	270			332	54	95		5	8,050	207
11	54	275			265	48	170		4	6,830	194
12	48	232			219	48	160	[a] 14	4	5,670	182
13	48	224			190	47	165		3	4,570	163
14	54	232	[a] 150		182	59	170		3	3,550	153
15	52	260		[a] 70	174	59	100		1	2,760	135
16	81	360			170	55	54		0	2,030	130
17	114	349			160	52	39	7	0	1,500	124
18	108	322			132	52	30	7	17	1,210	122
19	91	412			114	55	26	4	14	1,080	113
20	83	214	120		108	64	25	2	3	1,050	111
21	81	224	100		103	86	21	2	0	1,030	96
22	75	219	90		95	77	18	1	0	961	92
23	70	219	80		93	73	15	5	0	934	86
24	66	224	70		86	68	13	21	0	880	80
25	75	255	75	[a] 60	79	57	13	10	0	856	75
26	88	270			77	62	9	7	0	784	70
27	77	190			79	60	7	5	0	736	
28	70	190	[a] 70		77	50	6	3	0	690	
29	79	232			81	47	4	2	0	645	[a] 70
30	77	295		--------	79	44	6	1	0	603	
31	--------	295		--------	73	--------	13	--------	0	554	

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
November	114	9	60.2	3,580
December	626	81	260	16,000
January	--------	--------	132	8,120
February	--------	--------	70.7	3,930
March	594	73	218	13,400
April	86	44	59.8	3,560
May	170	4	67.1	4,130
June	21	1	9.13	543
July	17	0	1.97	121
August	8,050	0	1,520	93,500
September	486	70	181	10,800
The year	8,050	0	217	158,000

[a] Estimated.

NOTE.—No flow during October.

ARKANSAS RIVER NEAR WICHITA, KANS.

LOCATION.—Chain gage near center of section 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, 1929.

EXTREMES.—Maximum discharge during year, 7,530 second-feet July 14 (gage height, 12.48 feet); minimum, 71 second-feet Oct. 2; minimum gage height, 6.58 feet Sept. 28.

1921–1929: Maximum discharge, 12,000 second-feet Aug. 18, 1927 (gage height, 14.77 feet); no flow during periods in several years. Bank-full stage, 14 feet.

REMARKS.—Records good except those for period Nov. 16 to May 15, which are fair.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	108	158	850			985	469	439	885	455	425	344
2	82	211	850			1,180	502	409	1,180	455	397	344
3	108	228	850			1,230	439	382	1,490	455	397	320
4	94	228	895			1,330	382	409	1,830	397	370	296
5	108	246	850			1,440	409	439	2,330	370	344	296
6	112	265	805			1,440	382	469	2,330	397	344	274
7	99	265	850			1,230	355	535	1,950	397	344	274
8	94	265	805	[a] 700		940	331	570	1,600	425	370	296
9	90	286	[a] 805			760	331	502	1,280	530	397	296
10	94	265	805			760	331	502	1,180	530	455	296
11	94	265	850		[a] 500	895	331	469	1,080	575	625	296
12	108	265	850			895	307	502	975	975	3,610	296
13	103	265	[a] 872			850	286	680	885	3,250	2,920	274
14	105	307	895			720	286	2,730	735	6,890	2,620	274
15	122	307	850			760	307	3,790	625	6,270	2,470	274
16	126	535	[a] 872			535	331	5,870	490	4,710	2,200	274
17	122	805	895			680	331	4,520	455	3,250	1,950	274
18	129	985	[a] 895			680	307	3,430	425	2,070	1,710	254
19	194	1,130	895			638	331	2,620	425	1,600	1,080	254
20	175	1,330	1,230			605	307	2,070	425	1,280	885	254
21	211	1,330	940		469	570	331	1,600	425	1,280	735	254
22	163	1,180	895		680	535	331	1,490	425	1,280	625	254
23	158	1,080	[a] 828	[a] 600	895	502	331	1,180	625	1,280	530	254
24	150	940	760		805	535	331	885	975	1,280	490	234
25	147	940	[a] 720		895	502	286	805	975	885	455	234
26	147	940	680		805	502	331	675	735	625	455	234
27	136	895	720		720	439	439	675	530	530	425	225
28	136	850	760		850	409	502	625	455	490	397	216
29	150	940			-------	409	502	625	425	455	397	216
30	158	850	[a] 720		-------	409	439	675	425	455	370	216
31	169	-------			-------	439	-------	805	-------	425	344	-------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	211	82	129	7,930
November	1,330	158	619	36,800
December	1,230	680	837	51,500
January	----------	----------	648	39,800
February	----------	----------	576	32,000
March	1,440	409	768	47,200
April	502	286	363	21,600
May	5,870	382	1,330	81,800
June	2,330	425	952	56,600
July	6,890	370	1,430	87,900
August	3,610	344	940	57,800
September	344	216	270	16,100
The year	6,890	82	742	537,000

[a] Interpolated or estimated.

ARKANSAS RIVER AT ARKANSAS CITY, KANS.

LOCATION.—Chain gage in NW. ¼ 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, 1929.

EXTREMES.—Maximum discharge during year, 20,200 second-feet June 24 (gage height, 16.60 feet); minimum, 189 second-feet Oct. 6 (gage height, 6.74 feet). 1902–1905, 1921–1929: Maximum stage, 25.46 feet June 11, 1923 (discharge not determined); minimum discharge, 12 second-feet in March and April, 1923, due to diversion by power canal of Kansas Gas & Electric Co.

REMARKS.—Records good except those for period Aug. 15 to Sept. 30, which are fair. Diversions from Arkansas River cease about 250 miles upstream.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	250	390	1,140	930	930	1,140	930	1,140	1,210	1,600	1,210	*595
2	230	440	*1,100	930	860	1,210	930	1,140	*4,700	1,600	1,140	490
3	234	440	1,070	670	*895	*1,320	860	2,200	8,200	2,650	1,070	490
4	226	*440	1,000	640	930	1,430	860	1,600	6,820	*2,230	*1,000	520
5	196	440	1,000	790	930	1,510	860	1,140	7,260	1,810	930	520
6	189	440	930	*790	930	1,510	860	*1,140	7,490	1,700	930	490
7	*252	465	930	790	930	1,430	*842	1,140	7,260	1,510	860	440
8	315	465	930	790	760	1,350	825	1,600	13,400	2,060	825	*465
9	270	490	*930	*3,380	730	1,350	825	1,210	10,100	1,600	*842	490
10	270	440	930	5,980	*865	*1,320	825	1,070	6,820	8,200	860	465
11	250	*452	930	5,020	1,000	1,280	1,140	1,070	4,500	8,450	*1,070	465
12	226	465	930	4,180	1,000	1,430	1,140	*3,520	3,860	5,580	1,280	490
13	242	490	1,000	*3,060	1,000	1,600	1,280	5,980	3,100	8,200	2,200	465
14	*228	490	1,140	1,930	930	1,430	*1,440	4,180	2,350	9,460	3,700	440
15	214	520	1,140	1,810	930	1,350	1,600	3,250	2,060	9,980	3,250	*480
16	270	670	*1,820	1,600	1,000	1,280	1,350	4,500	*1,830	10,500	3,250	520
17	270	8,950	2,500	1,430	*965	*1,210	1,210	6,610	1,600	10,200	2,500	550
18	290	9,200	3,250	1,430	930	1,140	1,140	5,200	1,430	7,720	*2,160	490
19	290	6,820	2,560	1,430	825	1,070	1,000	5,390	1,430	5,580	1,810	520
20	270	5,200	1,350	*1,430	730	1,000	12,100	4,670	1,430	4,020	1,600	490
21	*318	3,250	1,280	1,430	825	1,000	6,820	3,400	1,350	*3,560	1,350	490
22	365	2,350	1,210	1,210	1,140	1,000	5,020	2,650	1,280	3,100	1,280	*465
23	340	1,810	*1,180	1,280	1,140	930	2,650	2,060	9,980	2,500	1,140	440
24	315	1,600	1,140	1,430	*1,140	*930	1,810	1,810	19,500	2,350	1,070	415
25	340	*1,480	*1,100	860	1,140	930	1,700	1,600	15,400	2,200	*1,000	415
26	340	1,350	1,070	700	1,210	930	2,060	*1,520	8,950	1,930	930	415
27	315	1,280	1,070	*850	1,280	930	1,430	1,430	5,580	1,600	860	390
28	*328	1,140	1,000	1,000	1,210	930	*1,320	1,070	3,860	*1,520	825	390
29	340	1,140	1,000	1,000	--------	930	1,210	1,350	2,800	1,430	760	390
30	340	1,140	1,000	1,000	--------	860	1,140	*1,320	*2,200	1,350	730	365
31	340	--------	1,000	1,000	--------	*895	--------	1,280	--------	1,280	700	------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	365	189	280	17,200
November	9,200	390	1,810	108,000
December	3,250	930	1,240	76,200
January	5,980	640	1,640	101,000
February	1,280	730	970	53,900
March	1,600	860	1,180	72,600
April	12,100	825	1,910	114,000
May	6,610	1,070	2,490	153,000
June	19,500	1,210	5,590	333,000
July	10,500	1,280	4,110	253,000
August	3,700	700	1,390	85,500
September	595	365	468	27,800
The year	19,500	189	1,930	1,400,000

* Interpolated.

ARKANSAS RIVER AT VAN BUREN, ARK.

LOCATION.—Chain gage in sec. 24, T. 9 N., R. 32 W., at Van Buren, 1½ miles below Lee Creek. Zero of gage is 372.67 feet above mean sea level.

RECORDS AVAILABLE.—October, 1927, to September, 1929.

EXTREMES.—Maximum discharge during year, 315,000 second-feet May 16 (gage height, 29.0 feet); minimum, 3,380 second-feet Oct. 2–8 (gage height, 6.6 feet).

1928–29: Maximum discharge, 315,000 second-feet May 16, 1929 (gage height, 29.0 feet); minimum, 3,380 second-feet Oct. 2–8, 1928 (gage height, 6.6 feet).

Maximum stage known, 35.0 feet in April, 1927.

REMARKS.—Records poor Oct. 1 to Mar. 31; good Apr. 1 to Sept. 30.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,780	7,200	58,000	13,900	21,300	62,800	95,000	104,000	62,700	39,000	10,100	4,810
2	3,380	8,140	47,200	13,300	18,700	59,200	69,500	99,900	82,300	34,400	9,650	4,650
3	3,380	8,620	24,100	12,700	17,500	46,000	50,000	87,100	85,900	72,700	9,250	4,350
4	3,380	8,140	17,500	12,700	16,900	35,000	36,000	63,800	102,000	97,300	8,850	4,350
5	3,380	7,660	15,700	13,900	16,300	27,600	28,300	47,000	138,000	88,300	8,150	4,350
6	3,380	6,740	14,500	24,100	16,300	24,100	26,600	46,000	168,000	73,900	7,800	4,350
7	3,380	6,740	13,300	52,000	16,900	21,300	29,100	51,000	156,000	64,900	7,500	4,350
8	3,380	6,740	12,700	70,000	17,500	19,300	27,400	47,000	130,000	56,100	7,200	5,290
9	5,000	6,300	12,100	62,800	17,500	17,500	53,000	77,500	188,000	63,800	6,900	7,200
10	7,200	5,860	11,100	50,800	15,100	15,700	104,000	140,000	152,000	71,500	6,650	7,500
11	8,140	5,860	11,100	48,400	11,600	15,100	148,000	164,000	135,000	68,200	6,650	26,600
12	7,660	5,420	10,100	54,400	11,600	14,500	134,000	143,000	115,000	60,500	6,400	22,700
13	6,300	5,420	10,600	65,200	13,300	18,700	93,400	184,000	105,000	43,000	6,400	17,800
14	5,000	5,860	11,100	64,000	15,700	48,400	66,000	278,000	113,000	51,000	6,650	16,000
15	4,580	5,420	11,600	76,000	17,500	56,800	73,900	300,000	109,000	82,300	6,650	10,100
16	4,580	5,420	15,700	68,800	18,700	64,000	152,000	315,000	96,000	66,000	7,200	8,150
17	5,420	14,500	32,800	50,800	19,300	47,200	171,000	303,000	62,700	56,100	9,250	6,900
18	6,740	23,400	62,800	35,000	21,300	40,500	126,000	283,000	44,000	55,000	10,100	6,000
19	6,740	22,700	95,500	29,600	22,700	31,700	98,600	259,000	35,300	48,000	11,600	5,630
20	6,300	35,000	105,000	26,600	22,000	24,900	85,900	254,000	30,000	43,000	12,600	5,460
21	5,860	94,200	89,000	24,900	21,300	22,700	93,400	292,000	26,600	40,000	10,600	4,810
22	5,420	110,000	82,500	23,400	19,900	20,600	154,000	295,000	40,000	39,000	8,850	4,500
23	7,660	116,000	71,200	22,700	18,100	18,100	194,000	244,000	68,200	38,100	7,800	4,350
24	8,140	101,000	44,900	32,800	17,500	16,900	220,000	194,000	77,500	34,400	7,200	4,350
25	7,200	87,700	31,700	91,600	18,100	15,100	207,000	143,000	78,700	25,800	7,200	4,650
26	7,200	79,900	23,400	90,300	26,600	13,900	166,000	140,000	82,300	19,200	6,400	4,810
27	7,200	76,000	20,600	76,000	37,200	16,900	159,000	143,000	105,000	19,200	6,000	4,350
28	6,740	62,800	19,300	72,400	43,800	22,000	134,000	143,000	87,100	14,800	5,460	4,050
29	6,740	56,800	17,500	53,200	-------	29,600	119,000	113,000	68,200	13,200	5,290	3,900
30	8,620	60,400	16,900	37,200	-------	68,800	110,000	94,700	51,000	12,000	5,130	3,760
31	7,660	-------	15,100	24,100	-------	102,000	-------	77,500	-------	11,000	4,970	-------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	8,620	3,380	5,790	356,000
November	116,000	5,420	34,900	2,080,000
December	105,000	10,100	34,100	2,040,000
January	91,600	12,700	45,000	2,770,000
February	43,800	11,600	19,600	1,090,000
March	102,000	13,900	33,400	2,050,000
April	220,000	26,600	107,000	6,370,000
May	315,000	46,000	165,000	10,100,000
June	168,000	26,600	91,500	5,440,000
July	97,300	11,000	48,400	2,980,000
August	12,600	4,970	7,760	477,000
September	26,600	3,760	7,340	437,000
The year	315,000	3,380	50,100	36,200,000

ARKANSAS RIVER AT LITTLE ROCK, ARK.

LOCATION.—Staff gage in sec. 3, T. 1 N., R. 12 W., in Little Rock. Zero of gage is 223.39 feet above mean sea level.

RECORDS AVAILABLE.—September, 1927, to September, 1929.

EXTREMES.—Maximum discharge during year, 275,000 second-feet May 19 (gage height, 23.3 feet); minimum, 4,160 second-feet Oct. 8–12 (gage height, −0.3 foot).

1928–1929: Maximum discharge, 275,000 second-feet May 19, 1929 (gage height, 23.3 feet); minimum, 4,160 second-feet Oct. 8–12 (gage height, −0.3 foot).

Maximum stages known, 34.6 feet in June, 1833; 33.0 feet Apr. 20, 1927.

REMARKS.—Records good. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,030	8,260	75,000	21,300	72,000	83,000	87,100	132,000	120,000	77,000	14,400	7,450
2	4,730	9,620	74,000	19,800	59,400	90,400	113,000	130,000	95,000	60,500	14,100	7,450
3	4,730	13,800	70,000	17,800	54,700	97,000	107,000	126,000	80,600	45,200	13,400	6,990
4	4,440	13,800	61,200	17,000	39,200	94,800	95,900	123,000	97,400	48,800	12,500	6,990
5	4,730	12,400	44,100	16,500	33,200	88,200	84,000	107,000	109,000	77,000	11,400	6,760
6	4,440	11,700	31,800	20,800	28,400	77,000	70,000	83,000	118,000	98,600	11,400	6,530
7	4,440	10,600	25,200	47,500	25,800	68,000	59,400	62,700	145,000	98,600	10,900	6,530
8	4,160	9,620	20,300	53,800	25,200	58,400	52,000	55,500	163,000	86,600	10,600	6,530
9	4,160	9,280	18,300	72,000	25,800	50,200	56,500	64,900	156,000	87,800	10,100	6,300
10	4,160	8,940	16,100	85,000	27,000	42,400	95,900	75,900	144,000	80,600	9,840	6,300
11	4,160	7,920	15,300	84,000	27,000	35,400	113,000	116,000	144,000	71,500	9,590	7,680
12	4,160	7,920	14,900	76,000	25,800	30,400	146,000	151,000	152,000	75,900	9,590	8,380
13	5,650	7,590	15,300	66,000	22,400	27,000	160,000	165,000	144,000	75,900	9,100	8,620
14	7,260	7,590	22,400	68,000	20,800	27,000	143,000	158,000	125,000	58,500	9,100	17,800
15	8,260	6,930	39,200	75,000	20,800	33,200	122,000	192,000	117,000	50,600	8,860	19,800
16	8,260	6,600	38,400	77,000	24,000	56,500	108,000	226,000	117,000	46,100	8,860	18,200
17	7,920	6,600	39,200	84,000	27,700	74,000	118,000	254,000	117,000	77,000	8,620	16,700
18	7,260	6,280	45,800	81,000	30,400	79,000	159,000	266,000	105,000	73,700	8,620	12,500
19	7,920	8,260	71,000	76,000	30,400	68,000	164,000	275,000	77,000	60,500	8,620	10,400
20	7,590	18,800	94,800	67,000	31,800	60,300	154,000	272,000	51,500	55,500	9,340	9,100
21	6,930	25,800	113,000	58,400	36,100	52,000	120,000	263,000	40,100	50,600	10,600	8,620
22	7,920	33,900	109,000	52,000	36,800	50,200	109,000	254,000	33,200	48,400	12,000	7,910
23	7,920	82,000	99,200	44,100	35,400	48,400	114,000	260,000	29,100	40,100	12,000	7,910
24	7,260	98,100	91,500	40,800	35,400	43,200	151,000	266,000	44,300	37,700	12,200	7,680
25	6,930	100,000	80,000	56,500	36,800	37,600	178,000	251,000	83,000	36,900	10,600	7,450
26	6,600	91,500	65,000	132,000	44,100	32,500	194,000	215,000	93,800	33,900	10,400	6,530
27	7,920	81,000	51,100	132,000	83,000	30,400	192,000	187,000	90,200	29,800	9,840	6,300
28	8,600	76,000	38,400	121,000	80,000	27,700	168,000	178,000	90,200	22,600	8,860	6,300
29	8,260	70,000	31,100	113,000	-------	37,600	162,000	185,000	107,000	18,200	8,620	6,300
30	8,600	66,000	25,800	102,000	-------	45,800	144,000	165,000	92,600	17,800	8,140	6,070
31	8,260	-------	24,000	88,200	-------	56,500	-------	140,000	-------	15,000	7,450	-------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	8,600	4,160	6,410	394,000
November	100,000	6,280	30,600	1,820,000
December	113,000	14,900	50,300	3,090,000
January	132,000	16,500	66,600	4,100,000
February	83,000	20,800	37,100	2,060,000
March	97,000	27,000	54,900	3,380,000
April	194,000	52,000	125,000	7,440,000
May	275,000	55,500	174,000	10,700,000
June	163,000	29,100	103,000	6,130,000
July	98,600	15,000	56,500	3,470,000
August	14,400	7,450	10,300	633,000
September	19,800	6,070	8,940	532,000
The year	275,000	4,160	60,400	43,700,000

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.—Approximately 2,300 square miles.

RECORDS AVAILABLE.—November, 1924, to September, 1929.

EXTREMES.—Maximum discharge during year, 3,880 second-feet May 13 (gage height, 21.70 feet); minimum, about 2 second-feet several days in October. 1924–1929: Maximum discharge this year; no flow at times in 1926. Bank-full stage, 24 feet.

REMARKS.—Records good except those for parts of March, May, June, August, and September, which are poor. Diversions for irrigation by pumping above station.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3	18	11	10	9		8	9		9	22	
2	3	16	12	9	10		9	9		8	19	
3	3	15	10	10	11	[a] 13	9	12		8	7	[a] 6
4	3	18	10	10	11		9	14		8	4	
5	3	15	9	9	12		10	19		8	4	
6	2	14	9	9	12		8	19		9	4	
7	3	12	10	9	9		9	14		15	3	
8	4	11	10	9	9	[a] 12	8	13		495	3	[a] 10
9	4	11	10	10	8		8	12		450	4	
10	4	10	12	13	9		6	18	[a] 15	332	8	
11	3	9	12	22	8		7	459		169	51	
12	3	8	12	21	10		8	780		104	301	
13	4	8	13	20	9	[a] 11	7	3,030		55	372	[a] 15
14	4	9	12	18	15		10	2,600		42	126	
15	5	8	12	14	15		8	907		34	48	
16	5	10	12	14	16		8	[a] 500		29	31	16
17	9	10	12	14	15		9	[a] 300		27	23	13
18	18	12	12	14	16	[a] 10	9	[a] 200		33	20	10
19	16	14	12	14	20		9	[a] 100	22	26	17	10
20	11	13	12	10	23		10	[a] 50	20	23	13	9
21	9	15	14	14	20		7		15	22	8	9
22	5	13	12	15	16		7		13	22	6	9
23	5	12	12	12	16	[a] 9	10	[a] 30	11	20		8
24	6	12	12	12	[a] 16		15		13	20		7
25	6	11	12	11	[a] 16		8		15	22		7
26	6	12	14	11		8			10	21	[a] 6	6
27	7	12	12	11	[a] 15	8			11	21		5
28	7	11	14	10		8	[a] 8	[a] 25	11	22		5
29	7	12	13	10	-------	8			9	27		5
30	7	10	13	9	-------	8			9	25		5
31	10	-------	14	9	-------	7	-------	-------	-------	22	-------	-------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	18	----------	5.97	367
November	18	8	12.0	714
December	14	9	11.8	701
January	22	9	12.4	762
February	23	8	13.4	744
March	----------	----------	10.4	640
April	15	6	8.53	508
May	3,030	9	302	18,600
June	----------	----------	14.3	851
July	495	8	68.6	4,220
August	372	----------	37.0	2,280
September	----------	----------	9.30	553
The year	3,030	----------	42.7	30,900

[a] Interpolated or estimated.

LITTLE ARKANSAS RIVER AT VALLEY CENTER, KANS.

LOCATION.—Chain gage in SW. ¼ 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, 1929.

EXTREMES.—Maximum discharge during year, 7,980 second-feet July 12 (gage height, 15.91 feet); minimum, 38 second-feet Oct. 5 and 6 (gage height, 0.88 foot).

1922–1929: Maximum discharge, 10,500 second-feet June 10, 1923 (gage height, 18.02 feet); minimum discharge, 4 second-feet Dec. 17, 1922. Bankfull stage, 10 feet.

REMARKS.—Records good except those for periods of ice effect, Jan. 23 to Feb. 13, and for June, August, and September, which are fair. Discharge estimated Jan. 23 to Feb. 13.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	47	64	57		189	54	64	850	106	130	72
2	38	47	64	57		297	50	68	1,940	95	123	68
3	38	47	64	57		348	50	81	3,620	90	111	68
4	38	47	64	57	50	348	50	72	4,740	81	106	64
5	38	47	60	57		218	50	68	4,260	72	100	64
6	38	47	57	60		142	50	64	3,220	68	100	64
7	38	47	57	64		111	50	64	2,630	64	100	68
8	38	47	57	64		95	50	60	2,040	64	95	68
9	38	47	57	64		90	50	57	1,510	81	265	68
10	38	47	67	162	40	81	57	57	1,160	81	652	68
11	38	47	57	175		72	90	57	700	2,700	249	68
12	38	47	57	203		68	72	72	428	7,980	536	68
13	38	47	60	189		72	64	90	386	6,120	2,970	64
14	38	50	60	130	50	68	57	850	265	4,660	249	64
15	38	50	60	123	50	64	57	1,640	203	5,060	162	64
16	41	57	66	111	54	64	54	1,560	162	5,400	130	60
17	41	297	68	90	57	60	50	514	136	3,460	111	60
18	57	1,690	72	81	76	60	54	233	123	1,460	100	60
19	64	1,240	64	90	90	57	54	189	117	900	95	60
20	50	386	60	111	81	57	57	149	106	676	90	60
21	44	203	60	100	76	57	925	162	90	514	86	57
22	44	130	60	95	72	57	582	123	86	386	86	57
23	44	106	60		90	57	265	111	90	297	86	57
24	41	90	57		100	54	218	100	605	249	81	54
25	41	81	57		142	54	136	106	850	218	81	54
26	41	72	57		149	54	100	100	700	189	81	50
27	41	72	57	70	111	50	90	90	428	175	81	50
28	41	68	57		149	50	81	86	297	156	81	50
29	41	68	57		-------	50	72	81	189	156	76	50
30	41	64	57		-------	54	68	81	136	142	76	50
31	44	-------	57		-------	50	-------	86	-------	162	76	------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	64	38	41.5	2,550
November	1,690	47	178	10,600
December	72	57	59.8	3,680
January	203	----------	91.2	5,610
February	149	----------	69.2	3,840
March	348	50	102	6,270
April	925	50	122	7,260
May	1,640	57	230	14,100
June	4,740	86	1,070	63,700
July	7,980	64	1,350	83,000
August	2,970	76	238	14,600
September	72	50	61.0	3,630
The year	7,980	38	302	219,000

WALNUT RIVER AT WINFIELD, KANS.

LOCATION.—Chain gage in NE. ¼ 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, 1929.

EXTREMES.—Maximum discharge during year, 94,400 second-feet Nov. 18 (gage height, 40.61 feet); no flow Nov. 11.

1921–1929: Maximum and minimum, those of 1928. Bank-full stage, 30 feet.

REMARKS.—Records good except those for August and September, which are fair.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	2	630	457	436	436	355	630	855	395	279	93
2	17	12	585	457	436	436	335	1,830	1,660	5,800	244	85
3	9	17	585	457	457	395	316	3,680	3,100	2,000	244	103
4	1	12	541	585	436	375	316	1,500	2,320	765	244	93
5	1	30	520	2,100	436	355	316	855	1,830	520	211	19
6	1	24	520	1,940	436	335	261	1,350	1,100	436	205	38
7	180	17	478	1,200	457	316	261	4,220	3,740	436	186	49
8	316	11	478	1,250	395	335	244	2,100	5,870	478	186	49
9	164	8	478	2,490	436	316	227	810	2,380	8,180	186	103
10	114	6	478	9,860	415	316	244	810	1,200	13,800	205	120
11	45	0	457	11,400	395	297	1,350	810	765	13,400	3,500	98
12	41	20	436	5,730	395	1,000	1,560	8,530	630	5,730	1,150	93
13	24	9	585	2,100	375	2,440	675	6,570	520	8,460	585	93
14	19	9	630	1,560	375	1,500	436	2,160	436	4,400	335	85
15	30	6	1,450	1,250	375	855	630	1,100	585	1,100	261	112
16	34	950	1,050	950	375	585	585	1,000	499	900	211	103
17	395	25,000	6,640	1,100	375	541	457	950	395	675	195	103
18	585	71,800	6,220	855	375	478	415	1,940	375	900	180	112
19	205	33,200	2,160	1,050	355	415	478	7,690	855	1,250	170	85
20	173	15,500	1,300	1,200	375	415	14,600	3,260	675	675	170	103
21	20	1,880	900	855	355	395	19,100	1,250	1,050	585	149	103
22	49	1,250	855	810	375	355	10,300	900	950	478	140	38
23	30	1,050	765	675	355	355	1,940	765	2,000	436	131	85
24	17	900	765	675	355	355	1,300	720	4,960	375	131	98
25	13	810	675	585	355	355	1,300	630	3,620	335	131	78
26	9	765	630	585	355	335	1,250	630	1,830	355	126	61
27	12	720	585	585	375	316	855	585	855	316	103	68
28	6	675	585	541	395	316	720	541	630	316	103	61
29	2	675	541	499	------	316	675	520	541	279	98	68
30	8	630	520	478	------	316	585	520	520	297	103	68
31	2	------	499	457	------	316	------	520	------	279	112	------

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	585	1	81.9	0.044	0.05	5,040
November	71,800	0	5,200	2.80	3.12	309,000
December	6,640	436	1,080	.581	.67	66,400
January	11,400	457	1,770	.952	1.10	109,000
February	457	355	394	.212	.22	21,900
March	2,440	297	512	.275	.32	31,500
April	19,100	227	2,070	1.11	1.24	123,000
May	8,530	520	1,920	1.03	1.19	118,000
June	5,870	375	1,560	.839	.94	92,800
July	13,800	279	2,400	1.29	1.49	148,000
August	3,500	98	331	.178	.21	20,400
September	120	19	82.2	.044	.05	4,890
The year	71,800	0	1,450	.780	10.60	1,050,000

VERDIGRIS RIVER AT INDEPENDENCE, KANS.

LOCATION.—Chain gage in NE. ¼ sec. 31, T. 32 S., R. 16 E., 2½ miles below Elk River.

DRAINAGE AREA.—2,800 square miles.

RECORDS AVAILABLE.—April to September, 1904; November, 1921, to September, 1929.

EXTREMES.—Maximum discharge during year, 69,500 second-feet Nov. 19 (gage height, 43.93 feet); minimum, 22 second-feet Nov. 12 (gage height, 1.30 feet).

1904, 1921–1929: Maximum discharge, 124,000 second-feet Oct. 3, 1927 (gage height, 46.04 feet); minimum discharge, 0.1 second-foot Aug. 11, 1926. Bank-full stage, 36 feet.

REMARKS.—Records good except those for Jan. 17–31, February, and September, which are fair. Discharge estimated Jan. 17–22, 24–31, and Feb. 1–28.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	56	212	880	600		600	810	1,830	4,190	570	200	102
2	66	225	810	880		600	775	1,940	8,320	7,360	175	90
3	81	225	775	990		570	740	4,470	13,700	6,990	175	68
4	84	212	740	1,240		570	670	2,710	8,320	6,780	188	51
5	66	188	670	1,570		540	570	2,320	5,590	705	200	49
6	98	150	635	10,000	600	480	570	4,890	7,060	510	188	44
7	84	130	600	7,600		480	570	18,300	5,590	2,490	225	42
8	44	84	570	6,850		510	5,730	21,200	7,760	2,440	200	40
9	38	52	540	9,200		510	2,490	11,400	6,080	1,380	188	34
10	28	38	480	12,400		880	4,050	2,760	2,380	3,460	288	44
11	32	36	540	17,600		950	4,820	1,780	1,200	11,500	635	41
12	58	22	540	11,700		1,200	5,380	28,100	880	3,220	740	47
13	63	25	510	5,940		1,280	6,780	46,100	880	4,890	600	51
14	102	24	540	3,340		3,340	12,900	31,200	845	6,290	390	49
15	98	250	3,340	2,320	500	3,520	11,600	19,500	740	2,760	238	39
16	130	1,380	7,920	1,380		2,220	2,320	2,820	670	1,240	175	35
17	114	16,300	17,800			1,670	2,100	2,270	635	780	175	28
18	118	28,900	18,900			1,570	1,780	3,980	540	740	130	53
19	126	63,700	10,000			1,420	4,120	18,700	880	635	114	57
20	140	34,700	3,840	1,200		1,280	28,300	20,300	2,000	705	130	88
21	162	21,300	2,820		465	990	46,800	4,260	2,270	570	106	68
22	175	15,700	1,570			845	35,300	2,270	4,680	450	112	37
23	162	13,600	1,470	1,030		775	23,300	2,050	2,440	420	126	29
24	175	3,980	1,110			670	13,000	1,620	1,780	390	116	53
25	175	1,330	1,070			670	25,300	1,520	2,320	390	96	55
26	150	1,280	1,030		570	775	19,200	4,050	1,670	315	69	57
27	140	1,110	1,070	800	600	880	3,580	2,270	1,200	300	78	55
28	162	915	1,030		570	990	4,120	1,940	810	288	81	55
29	200	880	1,110		-------	880	2,320	1,620	705	330	122	28
30	140	775	1,070		-------	810	1,830	1,520	540	275	175	28
31	140	-------	990		-------	915	-------	1,720	-------	212	122	-------

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	200	28	110	0.039	0.04	6,760
November	63,700	22	6,920	2.47	2.76	412,000
December	18,900	510	2,740	.978	1.13	168,000
January	17,600	----------	3,490	1.25	1.44	215,000
February	----------	----------	536	.192	.20	29,800
March	3,520	480	1,080	.386	.44	66,400
April	46,800	570	9,060	3.24	3.62	539,000
May	46,100	1,520	8,760	3.13	3.61	538,000
June	13,700	540	3,220	1.15	1.28	192,000
July	11,500	212	2,240	.800	.92	138,000
August	740	69	212	.076	.09	13,000
September	102	28	50.6	.018	.02	3,010
The year	63,700	22	3,210	1.14	15.48	2,320,000

NEOSHO RIVER NEAR IOLA, KANS.

LOCATION.—Water-stage recorder in NE. ¼ 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.—October, 1917, to September, 1929. August, 1895, to November, 1903, at city water and power dam 4 miles upstream.

EXTREMES.—Maximum discharge during year, 35,200 second-feet Nov. 20 (gage height, 30.42 feet); minimum, 82 second-feet Oct. 3 (gage height, 2.97 feet). 1895–1903, 1917–1929: Maximum discharge, 46,000 second-feet Sept. 13, 1926 (gage height, 33.2 feet); no flow on several days in September and October, 1897. Bank-full stage, 26 feet.

REMARKS.—Records good except those for January, February, and March 1–10, which are fair and based on gage-height records obtained from Weather Bureau gage 4 miles upstream. Discharge interpolated Dec. 27 and 31.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	132	230	2,000	955	990	3,870	2,430	1,400	2,970	920	578	309
2	108	230	2,200	885	990	2,970	4,420	3,980	5,520	774	440	309
3	89	230	1,840	885	885	2,340	3,760	4,200	3,650	691	397	278
4	106	230	1,600	815	885	1,800	1,600	2,300	3,150	649	360	262
5	113	955	1,440	3,060	822	1,400	1,130	1,880	3,870	649	343	297
6	103	530	1,280	2,380	754	1,060	955	2,610	4,420	643	343	326
7	135	411	1,200	2,200	691	885	885	1,520	3,060	601	421	301
8	129	289	1,130	1,400	691	822	1,480	1,360	3,760	584	416	297
9	1,100	282	1,100	1,920	643	754	1,440	1,200	4,970	1,320	334	289
10	1,060	270	1,020	3,350	643	754	3,060	1,100	4,970	1,320	1,880	297
11	480	252	990	7,840	643	715	4,090	2,700	3,250	2,610	3,350	274
12	297	220	990	9,450	643	767	4,530	16,100	2,040	10,100	4,310	270
13	255	223	1,800	8,560	691	1,840	3,550	13,500	1,880	14,900	4,640	270
14	197	217	9,450	4,860	691	2,520	1,880	15,200	1,600	16,400	2,700	266
15	182	248	6,520	3,060	691	2,120	2,250	17,400	1,320	16,800	1,440	266
16	191	4,750	5,520	3,060	643	1,480	2,200	18,000	1,100	17,600	920	262
17	185	30,100	11,900	3,060	754	1,160	1,560	9,320	990	18,400	661	255
18	1,200	31,200	11,100	3,060	822	990	1,360	13,200	920	19,300	551	252
19	1,720	32,400	5,410	3,060	885	920	1,280	12,700	4,750	13,500	480	248
20	822	34,400	3,550	2,970	1,400	850	8,440	4,090	3,350	2,250	440	241
21	480	33,500	2,430	2,880	1,840	815	12,700	2,520	3,980	1,600	445	234
22	397	31,200	1,960	2,700	1,520	754	10,900	2,080	6,290	1,320	416	230
23	322	28,300	1,800	2,520	1,440	715	8,440	1,680	4,970	1,100	392	230
24	248	15,300	1,640	2,300	2,000	697	12,400	1,640	2,520	955	365	227
25	241	3,060	1,560	2,120	885	679	7,240	1,520	2,250	843	352	220
26	230	2,430	1,480	1,960	1,600	655	2,790	1,400	1,560	754	352	217
27	230	2,040	1,290	1,840	3,760	631	2,040	1,520	1,480	655	352	207
28	230	1,840	1,100	1,840	3,760	619	1,760	1,360	1,400	607	343	204
29	223	1,800	1,100	1,320	-------	619	1,560	1,240	1,160	562	309	191
30	197	1,800	1,800	1,130	-------	607	1,440	1,440	1,020	551	347	179
31	204	-------	1,380	1,060	-------	808	-------	1,480	-------	520	347	-------

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	1,720	89	374	0.098	0.11	23,000
November	34,400	217	8,630	2.27	2.53	514,000
December	11,900	990	2,890	.761	.88	177,000
January	9,450	815	2,860	.752	.87	176,000
February	3,760	643	1,170	.308	.32	65,000
March	3,870	607	1,210	.319	.37	74,400
April	12,700	885	3,790	.998	1.11	226,000
May	18,000	1,100	5,210	1.37	1.58	320,000
June	6,290	920	2,940	.774	.86	175,000
July	19,300	520	4,820	1.27	1.46	296,000
August	4,640	309	936	.246	.28	57,600
September	326	179	257	.068	.08	15,300
The year	34,400	89	2,930	.771	10.60	2,120,000

NEOSHO RIVER NEAR PARSONS, KANS.

LOCATION.—Chain gage in NW. ¼ sec. 22, T. 31 S., R. 21 E., 500 feet above St. Louis-San Francisco Railway bridge and 10 miles east of Parsons.

DRAINAGE AREA.—4,860 square miles.

RECORDS AVAILABLE.—October, 1921, to September, 1929.

EXTREMES.—Maximum discharge during year, 48,100 second-feet Nov. 24 (gage height, 27.53); minimum, 116 second-feet Oct. 6 and 7 (gage height, 1.85 feet).

1921–1929: Maximum discharge, 48,100 second-feet Nov. 24, 1928 (gage height, 27.53 feet); minimum discharge, 17 second-feet Dec. 3, 1921 (gage height, 1.12 feet). Bank-full stage, 24 feet.

REMARKS.—Records are good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	162	190	2,540	1,460	1,330	4,180	1,030	1,990	1,920	1,210	970	409
2	150	190	2,380	1,520	2,060	4,090	2,860	2,220	3,180	2,140	855	364
3	148	175	2,620	1,330	1,520	3,340	4,630	4,900	10,600	1,520	800	321
4	136	175	2,380	1,580	1,390	2,700	4,000	6,340	11,500	910	745	300
5	120	175	1,990	4,720	1,330	2,220	2,220	3,180	10,300	855	695	300
6	116	460	1,780	6,780	1,270	1,780	1,520	8,080	8,680	2,220	645	321
7	116	745	1,580	5,700	1,090	1,520	1,270	17,400	8,800	4,090	595	321
8	138	500	1,520	3,820	745	1,270	3,500	8,800	6,010	1,150	595	321
9	175	400	1,390	4,450	745	1,210	4,180	4,900	4,720	1,090	800	300
10	380	320	1,330	12,300	700	1,150	6,450	2,700	5,200	2,060	645	300
11	1,150	300	1,270	15,200	700	1,030	14,100	1,920	5,400	5,700	1,650	280
12	800	282	1,270	15,300	760	1,030	7,120	23,000	3,910	3,820	3,740	280
13	500	250	1,330	13,200	800	1,850	5,200	27,400	2,700	8,200	4,900	280
14	400	235	1,330	9,640	820	2,540	6,340	29,000	2,220	12,700	5,300	205
15	282	235	9,040	5,800	850	3,180	5,100	29,300	1,990	15,200	3,340	205
16	250	265	9,520	5,100	900	2,700	4,000	27,700	1,520	16,400	1,850	241
17	220	8,080	14,300	4,180	960	1,990	3,420	25,300	1,270	17,000	1,330	241
18	220	19,800	16,200	3,660	1,460	1,520	3,020	24,800	1,210	17,700	970	241
19	235	23,200	15,300	4,000	1,330	1,330	3,260	25,100	2,780	18,500	796	241
20	2,140	26,100	8,200	4,090	1,390	1,210	24,400	24,100	6,340	18,300	684	222
21	1,270	29,000	4,630	4,180	1,920	1,090	27,400	15,200	6,010	7,000	630	241
22	1,150	36,800	3,260	4,270	2,220	970	25,100	4,450	5,000	2,460	578	241
23	855	43,200	2,700	3,500	2,060	970	18,700	3,020	6,230	1,990	578	222
24	460	47,400	2,220	3,340	1,650	970	12,200	2,540	5,300	1,650	553	222
25	440	43,900	1,920	2,140	1,460	910	20,700	2,220	2,940	1,460	480	188
26	400	39,300	1,990	1,720	3,020	1,390	21,400	2,300	2,620	1,390	456	176
27	300	25,600	1,920	2,200	3,260	1,270	7,720	2,140	1,920	1,270	456	188
28	220	6,450	1,850	2,100	4,270	970	3,500	2,140	1,650	1,150	409	188
29	205	3,100	1,780	1,920	-------	1,030	2,700	1,850	1,520	1,030	386	188
30	190	2,860	1,650	1,850	-------	970	2,140	1,650	1,390	970	364	188
31	162	-------	1,460	1,650	-------	855	-------	1,780	-------	970	364	------

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	2,140	116	435	0.090	0.10	26,700
November	47,400	175	12,000	2.47	2.76	714,000
December	16,200	1,270	3,960	.815	.94	243,000
January	15,300	1,330	4,930	1.02	1.18	303,000
February	4,270	700	1,500	.309	.32	83,300
March	4,180	855	1,720	.354	.41	106,000
April	27,400	1,030	8,310	1.71	1.91	494,000
May	29,300	1,650	10,900	2.24	2.58	670,000
June	11,500	1,210	4,500	.926	1.03	268,000
July	18,500	855	5,550	1.14	1.31	341,000
August	5,500	364	1,200	.247	.28	73,800
September	409	176	258	.053	.06	15,400
The year	47,400	116	4,610	.948	12.88	3,340,000

NEOSHO RIVER NEAR GROVE, OKLA.

LOCATION.—Chain gage in SE. ¼ sec. 27, T. 25 N., R. 23 E., 3½ miles northwest of Grove.

RECORDS AVAILABLE.—February, 1925, to September, 1929.

EXTREMES.—Maximum discharge during year, 108,000 second-feet Apr. 21 (gage height, 29.60 feet); minimum, 558 second-feet Sept. 30 (gage height, 0.72 foot).

1925–1929: Maximum discharge, 133,000 second-feet Apr. 15, 1927 (gage height, 34.6 feet); minimum, 250 second-feet September, 1925.

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

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,870	1,000	5,300	3,850	4,730	11,800	6,090	8,020	7,570	4,550	2,110	1,000
2	920	1,180	4,370	3,370	4,190	9,960	6,290	10,700	12,600	7,570	2,110	880
3	765	1,130	3,370	2,920	4,020	9,210	6,500	15,900	40,900	9,710	1,990	1,000
4	1,180	1,000	4,020	2,780	3,690	8,250	8,480	15,300	52,700	5,890	1,870	920
5	1,130	960	3,850	5,890	4,020	7,570	8,960	15,000	36,700	4,370	1,750	1,130
6	1,080	920	3,070	19,600	3,690	6,290	6,710	11,200	24,100	3,850	1,640	1,130
7	1,270	840	2,780	15,300	3,370	5,890	5,490	21,500	21,800	8,020	1,640	1,320
8	1,750	1,180	2,780	12,000	3,370	5,300	27,200	39,700	39,200	21,500	1,530	1,180
9	1,130	1,640	2,780	11,000	3,220	4,920	64,400	63,900	31,200	10,500	1,640	1,000
10	1,130	1,530	2,240	22,400	2,780	4,730	58,800	44,000	16,500	5,690	1,640	1,220
11	1,040	1,220	2,370	25,400	2,780	3,690	35,900	18,600	13,900	4,730	2,370	1,130
12	1,000	920	2,110	21,500	2,500	3,690	28,200	38,000	13,100	14,500	2,640	1,040
13	1,990	1,080	2,240	19,200	2,920	4,920	18,300	106,000	25,800	11,000	4,370	1,080
14	1,750	960	2,640	17,700	2,780	4,730	41,800	100,000	21,500	9,960	5,490	1,180
15	1,220	1,530	2,780	14,200	3,070	5,490	46,300	89,000	10,500	14,200	6,290	1,180
16	1,420	2,240	9,710	9,960	2,920	6,500	26,800	63,000	8,250	16,500	5,110	765
17	1,530	2,640	31,200	8,720	3,530	5,890	17,400	48,100	6,710	17,700	3,370	920
18	1,130	6,500	34,700	8,480	5,890	5,110	15,300	58,800	6,090	18,000	2,370	1,040
19	1,220	18,600	28,200	8,480	6,090	4,730	24,800	86,000	8,480	18,900	1,990	1,000
20	1,320	21,500	28,700	8,960	4,730	4,370	69,600	81,200	32,700	19,200	1,750	765
21	1,220	22,100	16,500	8,020	4,370	3,690	106.000	60,200	32,000	19,600	1,530	1,040
22	2,640	23,700	10,200	7,790	4,550	3,530	98,000	44,500	20,200	13,400	1,320	1,000
23	2,500	24,100	7,350	7,130	4,370	3,370	75,900	23,400	13,100	4,920	1,220	840
24	2,240	25,400	6,290	7,130	5,110	3,370	50,400	12,800	12,000	3,690	1,130	800
25	1,870	26,800	5,690	9,460	5,890	3,070	37,100	11,000	21,200	3,070	1,180	800
26	1,530	31,600	5,110	8,480	17,700	3,690	28,200	9,960	9,960	2,780	1,180	880
27	1,220	39,200	5,300	7,570	18,300	3,370	28,600	9,460	8,480	2,500	1,180	920
28	1,220	41,800	4,920	6,710	13,100	4,730	21,800	8,960	6,710	2,640	1,040	730
29	960	38,800	4,020	6,710	--------	6,290	11,000	8,480	5,490	2,240	1,080	660
30	1,130	17,100	4,020	5,890	--------	7,130	9,460	9,460	5,300	2,240	1,080	590
31	1,180	--------	3,690	5,110	--------	6,500	--------	8,250	--------	2,240	1,080	------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	2,640	765	1,400	86,100
November	41,800	840	12,000	714,000
December	34,700	2,110	7,980	491,000
January	25,400	2,780	10,400	640,000
February	18,300	2,500	5,270	293,000
March	11,800	3,070	5,540	341,000
April	106,000	5,490	33,000	1,960,000
May	106,000	8,020	36,800	2,260,000
June	52,700	5,300	18,800	1,120,000
July	21,500	2,240	9,210	566,000
August	6,290	1,080	2,150	132,000
September	1,320	590	971	57,800
The year	106,000	590	12,000	8,660,000

COTTONWOOD RIVER AT ELMDALE, KANS.

LOCATION.—Chain gage in NW. ¼ sec. 26, T. 19 S., R. 7 E., one-fourth mile above Middle Creek and 1 mile east of Elmdale.

DRAINAGE AREA.—1,040 square miles.

RECORDS AVAILABLE.—May, 1922, to September, 1929.

EXTREMES.—Maximum discharge during year, 16,000 second-feet July 12 (gage height, 36.60 feet); minimum, 10 second-feet Oct. 3 (gage height, 3.35 feet).

1922–1929: Maximum discharge occurred in 1929; minimum discharge, 1 second-foot July 9, 1926. Bank-full stage, 32 feet.

1904: Flood stage 36.65 feet.

REMARKS.—Records good except for period Jan. 5 to Apr. 10, which are fair. Discharges given for stages above 33 feet are poor. An unmeasurable overflow occurs at the station.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	65	382	253	664	445	433	353	2,510	232	638	128
2	16	57	382	235	608	465	195	272	1,780	157	610	120
3	13	57	382	219	579	485	141	498	1,930	103	554	103
4	35	56	365	271	521	505	90	372	1,870	75	554	91
5	42	50	345	280	433	492	92	272	1,130	58	527	91
6	43	51	258	166	280	211	103	254	610	38	527	82
7	63	57	215	103	280	184	92	254	1,840	38	527	73
8	56	65	203	166	235	184	92	218	2,610	38	527	73
9	56	65	192	183	195	184	92	204	1,180	98	2,720	79
10	52	65	178	200	195	184	2,850	183	722	1,390	5,340	103
11	48	74	157	217	235	135	638	2,780	527	9,400	2,640	95
12	48	83	151	234	235	150	254	5,790	372	15,100	993	91
13	52	74	167	251	280	195	157	8,880	334	14,600	666	91
14	56	77	664	269	325	235	115	2,470	315	9,820	582	91
15	56	74	521	287	365	211	103	858	315	2,240	554	79
16	920	3,140	463	305	400	203	84	694	280	1,780	527	68
17	521	12,200	521	325	463	141	68	466	186	802	498	68
18	463	12,000	550	463	463	121	68	315	131	912	466	58
19	400	6,450	579	579	433	108	68	254	126	939	430	48
20	325	1,380	550	691	433	121	1,540	272	1,510	912	391	48
21	215	550	550	743	365	121	4,220	272	1,050	1,020	353	40
22	178	433	521	845	365	121	2,680	280	430	1,070	315	52
23	170	433	492	895	325	121	912	280	430	1,020	315	79
24	144	433	433	945	325	121	666	236	582	966	272	79
25	111	433	382	995	365	108	554	176	527	912	236	52
26	72	400	365	895	385	113	466	157	554	858	222	44
27	62	400	345	845	405	121	372	145	554	831	222	32
28	54	433	345	820	425	121	466	142	334	777	186	28
29	56	400	325	769	------	121	527	128	166	722	186	24
30	56	400	302	643	------	121	430	638	82	694	169	12
31	56	------	276	691	------	492	------	2,820	------	666	145	------

Month	Discharge in second-feet				Run-off	
	Maximuin	Minimum	Mean	Per square mile	Inches	Acre-feet
October	521	13	144	0.138	0.16	8,850
November	12,200	50	1,350	1.30	1.45	80,300
December	664	151	373	.359	.42	22,900
January	995	103	480	.462	.53	29,500
February	664	195	378	.364	.38	21,000
March	505	108	214	.206	.24	13,200
April	4,220	68	619	.596	.66	36,800
May	8,880	128	998	.960	1.11	61,400
June	2,610	82	833	.801	.89	49,600
July	15,100	38	2,200	2.12	2.44	135,000
August	5,340	145	738	.710	.82	45,400
September	128	12	70.7	.068	.08	4,210
The year	15,100	12	702	.675	9.16	508,000

SPRING RIVER NEAR WACO, MO.

LOCATION.—Chain gage on line between SE. ¼ sec. 7 and NE. ¼ 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, 1929.

EXTREMES.—Maximum discharge during year, 25,000 second-feet May 13 (gage height, 22.65 feet); minimum, 60 second-feet Sept. 28 (gage height, 1.37 feet).

1924–1929: 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 slightly affected by regulation from gristmills. Discharge affected by ice Feb. 9–12.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	172	142	118	338	535	1,310	1,450	1,130	1,010	535	320	66
2	167	139	123	320	514	1,130	1,250	4,220	1,590	950	238	96
3	161	139	113	303	452	950	950	4,950	4,130	730	204	96
4	158	139	110	270	452	890	835	3,140	1,870	580	184	110
5	167	123	116	2,580	432	950	730	1,590	1,590	514	181	120
6	172	145	116	2,900	412	1,070	630	5,750	950	452	178	139
7	175	126	110	1,730	374	835	605	6,750	2,020	1,250	170	142
8	167	123	110	1,190	432	730	15,800	9,570	2,580	680	164	131
9	167	110	96	2,340	403	630	19,400	8,690	1,590	730	158	100
10	161	126	87	4,950	374	580	15,500	4,670	1,130	580	605	145
11	153	113	87	3,230	344	558	7,370	2,420	890	630	286	106
12	153	89	100	1,590	315	558	2,500	12,900	950	680	222	120
13	156	110	106	1,010	286	580	1,870	23,200	6,850	492	204	116
14	153	98	108	835	254	580	2,580	17,800	2,340	412	167	123
15	142	89	96	730	338	558	3,680	10,300	1,800	356	170	116
16	142	128	1,190	680	412	780	2,500	4,400	950	338	175	76
17	167	172	7,150	680	835	780	1,730	2,660	835	303	181	145
18	167	181	4,220	890	1,190	680	2,100	8,470	730	286	222	96
19	167	190	3,680	1,380	730	630	1,800	16,600	7,810	254	153	96
20	156	198	1,660	1,190	730	580	18,800	11,100	7,150	254	150	103
21	147	164	1,190	780	535	535	18,400	4,580	3,770	238	150	70
22	170	164	730	680	492	514	11,700	2,020	1,730	238	147	96
23	167	145	630	630	472	492	4,670	1,660	1,070	222	150	91
24	158	136	558	605	432	452	2,340	1,450	3,500	222	118	142
25	153	139	514	835	2,820	432	2,180	1,310	2,580	207	120	116
26	153	134	452	890	4,580	835	1,800	1,310	1,450	198	120	103
27	158	139	432	835	3,140	1,010	1,590	1,380	1,070	198	126	78
28	139	134	412	730	1,940	950	1,380	1,250	780	195	120	66
29	136	128	393	680	-------	1,190	1,310	2,740	680	190	113	83
30	145	113	356	630	-------	1,450	1,190	1,870	580	190	120	91
31	145	-------	356	580	-------	1,450	--------	1,190	-------	207	106	------

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	175	136	158	0.136	0.16
November	198	89	136	.117	.13
December	7,150	87	823	.709	.82
January	4,950	270	1,190	1.03	1.19
February	4,580	254	865	.746	.78
March	1,450	432	796	.686	.79
April	19,400	605	4,950	4.27	4.76
May	23,200	1,130	5,840	5.03	5.80
June	7,810	580	2,200	1.90	2.12
July	1,250	190	429	.370	.43
August	605	106	185	.159	.18
September	145	66	106	.091	.10
The year	23,200	66	1,470	1.27	17.26

SPOAL CREEK NEAR JOPLIN, MO.

LOCATION.—Gage consisting of float and indicator at Grand Falls hydroelectric plant of Empire District Electric Co., in S. ½ sec. 28, T. 27 N., R. 33 W., 4 miles south of Joplin.

DRAINAGE AREA.—458 square miles.

RECORDS AVAILABLE.—April, 1924, to September, 1929.

EXTREMES.—Maximum discharge during year, 13,400 second-feet May 13 (gage height, 12.92 feet); minimum, 25 second-feet for many short periods when plant was shut down.

1924–1929: Maximum discharge, 15,100 second-feet June 10, 1928 (gage height, 13.83 feet); minimum, 13 second-feet for many short periods during 1924 and 1925 when plant was shut down.

REMARKS.—Records good for discharges below 7,000 second-feet and fair for those above. Discharge estimated Oct. 11–13 and Sept. 30. Flow regulated by Grand Falls hydroelectric plant.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	278	243	269	340	466	741	688	839	792	717	329	189
2	296	238	264	319	466	662	647	952	1,750	761	325	200
3	259	212	156	297	466	640	610	938	5,570	657	236	141
4	295	203	354	305	385	607	630	825	3,460	612	368	213
5	155	237	272	375	420	600	608	768	1,880	600	382	254
6	126	202	231	398	369	591	596	768	1,600	571	332	246
7	210	206	213	456	356	527	602	755	1,440	1,080	282	238
8	210	210	236	486	382	510	1,910	1,140	1,550	876	269	201
9	272	206	205	494	330	484	4,720	2,840	1,390	721	294	214
10	255	230	219	624	291	484	2,210	1,400	1,210	670	301	271
11	284	197	236	604	320	459	1,590	1,140	1,100	628	312	187
12	312	209	223	583	305	427	1,300	4,770	1,060	555	316	227
13	341	204	225	554	341	484	1,220	11,400	1,130	555	304	237
14	370	151	241	510	252	459	1,910	3,530	998	555	295	203
15	395	255	231	484	280	422	1,750	2,570	898	527	258	225
16	285	479	352	466	306	417	1,380	2,300	861	518	264	245
17	378	532	511	466	320	484	1,180	1,890	820	514	238	206
18	366	432	714	466	359	432	2,200	4,600	808	509	251	199
19	335	371	670	425	388	402	2,290	3,450	2,630	478	241	187
20	336	371	614	393	341	420	6,630	2,140	3,160	520	244	216
21	351	338	548	413	445	417	7,460	1,740	1,420	464	238	211
22	316	358	499	414	379	410	2,890	1,500	1,130	448	276	178
23	281	317	466	436	359	402	1,980	1,360	1,020	424	239	173
24	298	270	446	466	359	395	1,660	1,210	1,050	435	190	161
25	200	292	359	544	427	367	1,450	1,140	913	422	236	174
26	241	278	402	624	829	413	1,250	1,070	817	374	206	163
27	224	264	367	624	840	401	1,190	1,010	798	357	270	161
28	258	264	326	617	768	407	996	960	768	364	218	157
29	226	270	364	570	------	487	923	938	757	307	213	159
30	227	270	308	527	------	596	861	876	711	392	228	160
31	220	------	310	493	------	610	------	812	------	404	210	------

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	395	126	277	0.605	0.70
November	532	151	277	.605	.68
December	714	156	349	.762	.88
January	624	297	476	1.04	1.20
February	840	252	412	.900	.94
March	741	367	489	1.07	1.23
April	7,460	602	1,840	4.02	4.48
May	11,400	755	1,990	4.34	5.00
June	5,570	711	1,450	3.17	3.54
July	1,080	367	549	1.20	1.38
August	382	190	270	.590	.68
September	271	141	200	.437	.49
The year	11,400	126	715	1.56	21.20

YAZOO RIVER BASIN

TALLAHATCHIE RIVER NEAR SARDIS, MISS.

LOCATION.—Chain gage in T. 8 S., R. 7 W. Chickasaw meridian, at highway bridge on United States Route 51, 3 miles above Illinois Central Railroad bridge and 5 miles south of Sardis.

DRAINAGE AREA.—1,680 square miles.

RECORDS AVAILABLE.—July, 1928, to September, 1929. At Batesville, 5 miles downstream, comparable record from June, 1906, to December, 1912.

EXTREMES.—Maximum discharge during period, 10,900 second-feet Mar. 26 (gage height, 20.23 feet); minimum, 318 second-feet Oct. 4 (gage height, 2.24 feet).

REMARKS.—Records fair. The Vicksburg office of United States Army Engineers furnished part of field data, and computations were made in conjunction with it.

Daily discharge, in second-feet, 1928–29

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1928											
1	------	845	635	11	------	530	440	21	------	920	355
2	------	670	810	12	------	500	410	22	565	1,580	355
3	------	565	920	13	------	500	410	23	530	1,220	355
4	------	600	1,220	14	------	470	380	24	500	1,040	330
5	------	565	1,530	15	------	410	380	25	565	1,170	330
6	------	530	1,440	16	------	410	380	26	635	1,000	330
7	------	500	880	17	------	380	380	27	670	705	330
8	------	470	635	18	------	355	380	28	705	565	330
9	------	600	530	19	------	1,170	380	29	810	500	330
10	------	600	470	20	------	775	355	30	880	470	318
								31	960	470	------

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1928–29												
1	318	440	960	600	2,700	9,310	2,920	5,120	810	600	705	355
2	318	470	920	600	1,710	9,800	2,580	3,980	740	600	635	355
3	318	500	960	635	1,300	9,170	2,310	2,800	670	670	740	330
4	318	500	1,080	670	960	7,770	2,100	2,420	670	670	810	330
5	318	565	880	920	960	6,860	1,760	3,260	635	635	565	330
6	355	600	810	845	880	4,940	1,580	3,320	635	635	565	355
7	355	565	670	845	880	4,100	1,480	3,020	600	565	565	380
8	355	500	600	960	845	3,500	1,440	3,260	705	530	530	530
9	355	470	565	1,580	880	3,440	1,620	3,920	740	470	600	635
10	355	470	530	1,040	880	3,440	1,760	5,000	845	440	920	740
11	330	470	500	1,220	880	2,800	1,710	5,600	960	410	1,300	810
12	330	440	500	1,170	920	2,530	1,760	7,000	880	380	1,580	1,040
13	318	440	530	1,350	920	2,640	2,200	7,560	705	380	1,440	2,100
14	318	440	635	1,300	920	3,680	2,800	6,580	635	355	1,400	1,660
15	318	410	635	1,170	880	3,740	3,380	5,000	600	440	1,400	1,560
16	410	410	705	960	1,080	4,640	3,260	3,740	600	635	1,300	1,580
17	775	410	1,040	810	1,000	7,840	2,750	3,140	600	2,060	960	1,760
18	740	410	1,080	860	1,170	9,450	2,480	3,080	565	1,220	670	1,860
19	705	440	1,000	1,260	1,260	8,960	2,800	2,750	530	1,400	530	1,660
20	705	440	1,080	1,040	1,300	7,140	3,560	2,160	500	1,480	500	1,350
21	670	470	1,220	1,080	1,900	5,320	3,620	1,660	470	1,350	470	960
22	600	500	1,220	1,300	1,860	4,760	2,640	1,350	470	1,120	440	705
23	500	500	1,000	1,480	1,760	7,560	1,960	1,170	470	810	410	600
24	470	470	775	1,860	1,960	8,330	1,580	1,000	440	565	410	635
25	600	470	705	2,060	4,040	9,520	1,800	1,040	470	500	380	530
26	740	440	670	2,060	7,350	10,900	1,620	1,040	705	500	355	500
27	740	440	635	2,060	7,910	10,100	1,620	1,000	880	500	355	500
28	600	470	600	2,260	7,420	8,680	2,160	1,000	1,040	500	380	500
29	470	530	600	2,530	------	6,790	3,620	960	1,040	530	355	500
30	440	1,120	565	3,020	------	5,060	5,060	920	810	565	355	470
31	440	------	565	3,140	------	4,160	------	880	------	670	355	------

Monthly discharge of Tallahatchie River near Sardis, Miss., 1928–29

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
1928					
July 22-31	960	500	682	0.406	0.15
August	1,580	355	680	.405	.47
September	1,530	318	544	.324	.36
1928-29					
October	775	318	470	.280	.32
November	1,120	410	493	.293	.33
December	1,220	500	782	.465	.54
January	3,140	600	1,380	.821	.95
February	7,910	845	2,020	1.20	1.25
March	10,900	2,530	6,350	3.78	4.36
April	5,060	1,440	2,400	1.43	1.60
May	7,560	880	3,060	1.82	2.10
June	1,040	440	681	.405	.45
July	2,060	355	716	.426	.49
August	1,580	355	709	.422	.49
September	2,100	330	855	.509	.57
The year	10,900	318	1,660	.988	13.45

YOCONA RIVER NEAR ENID, MISS.

LOCATION.—Chain gage in T. 11 S., R. 7 W. Chickasaw meridian, at highway bridge on United States Route 51, 2 miles above Illinois Central Railroad bridge and 2½ miles northeast of Enid.

DRAINAGE AREA.—560 square miles.

RECORDS AVAILABLE.—July, 1928, to September, 1929.

EXTREMES.—Maximum discharge during period, 9,840 second-feet Mar. 24 (gage height, 18.58 feet); minimum, 39 second-feet Aug. 29, 31, Sept. 2 and 4, 1929 (gage height, 0.82 foot).

REMARKS.—Records fair. The Vicksburg office of United States Army Engineers furnished part of field data, and computations were made in conjunction with it.

Daily and monthly discharge, in second-feet, 1928–29

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1928				**1928**				**1928**			
1		77	235	12		61	64	22	93	843	56
2		76	396	13		58	65	23	90	253	54
3		71	216	14		55	64	24	117	132	53
4		96	132	15		55	64	25	110	90	51
5		76	103	16		50	156	26	90	76	51
6		66	90	17		48	124	27	96	68	49
7		67	84	18		47	78	28	156	67	52
8		67	78	19		682	63	29	110	60	53
9		65	72	20		333	58	30	90	59	52
10		312	71	21	96	132	57	31	78	117	
11		64	67								

Daily and monthly discharge, in second-feet, of Yocona River near Enid, Miss., 1928–29—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1928–29												
1	* 51	67	272	172	253	2,530	396	4,020	136	96	810	40
2	* 51	164	172	124	216	1,220	354	1,840	122	102	232	39
3	* 50	148	132	110	207	705	312	1,220	204	232	122	41
4	* 50	90	117	110	207	960	312	860	152	474	96	39
5	* 49	84	96	660	207	1,840	292	1,750	129	160	78	42
6	* 49	78	90	434	207	1,310	272	860	122	186	69	65
7	* 48	84	90	292	198	960	253	664	234	122	78	115
8	48	103	90	190	190	660	234	1,010	1,010	115	78	474
9	47	84	84	292	272	572	594	1,880	252	317	160	108
10	48	78	84	1,190	244	506	843	885	177	122	273	90
11	47	71	90	616	207	440	912	592	136	115	339	122
12	45	72	90	396	181	440	960	985	115	152	935	242
13	44	71	181	234	181	1,900	728	520	102	84	383	2,500
14	43	69	244	181	172	4,730	506	428	252	84	405	1,260
15	49	71	148	172	333	4,970	843	428	152	122	204	451
16	78	70	132	156	889	5,130	1,340	405	122	160	102	213
17	132	71	292	156	682	2,050	935	317	102	1,540	78	177
18	64	84	528	181	484	935	797	273	90	885	71	232
19	57	117	244	462	354	660	440	252	84	426	66	222
20	54	110	181	354	506	572	418	252	90	204	59	108
21	53	90	132	292	3,020	528	312	222	78	108	53	74
22	96	78	117	462	2,010	3,370	253	195	76	84	51	58
23	84	77	110	594	1,140	9,400	292	177	72	76	50	56
24	103	77	108	3,020	889	9,400	272	160	129	76	51	57
25	96	77	117	2,730	2,170	7,020	3,670	160	122	90	50	57
26	70	75	117	1,730	5,610	2,210	2,820	405	115	273	43	66
27	65	76	110	1,140	6,870	985	1,390	474	102	317	41	60
28	77	90	103	843	5,870	751	860	383	213	232	41	56
29	71	117	103	484	------	616	568	295	122	361	39	52
30	74	272	96	375	------	528	1,040	186	90	664	41	51
31	68	------	103	312	------	462	------	152	------	242	39	------

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
1928					
July 21–31	156	78	102	0.182	0.07
August	843	47	139	.248	.29
September	935	49	117	.209	.23
1928–29					
October	132	43	63.3	.113	.13
November	272	67	93.8	.168	.19
December	528	84	147	.262	.30
January	3,020	110	597	1.07	1.23
February	6,870	172	1,210	2.16	2.25
March	9,400	440	2,210	3.95	4.55
April	3,670	234	774	1.38	1.54
May	4,020	152	718	1.28	1.48
June	1,010	72	165	.295	.33
July	1,540	76	265	.473	.55
August	935	39	166	.296	.34
September	2,500	39	239	.427	.48
The year	9,400	39	551	.984	13.37

* Interpolated.

COLDWATER RIVER NEAR COLDWATER, MISS.

Location.—Chain gage in T. 4 S., R. 7 W. Chickasaw meridian, at highway bridge on United States Route 51, 1¼ miles northwest of Coldwater and 1½ miles below Beartail Creek.

Drainage area.—617 square miles.

Records available.—July, 1928, to September, 1929.

Extremes.—Maximum discharge during period, 20,000 second-feet Feb. 27 (gage height, 15.89 feet); minimum, 69 second-feet Sept. 30, 1929; minimum gage height, 2.36 feet Aug. 21, 1929.

Remarks.—Records fair. The Vicksburg office of United States Army Engineers furnished part of field data, and computations were made in conjunction with it.

Daily discharge, in second-feet, 1928–29

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1928				1928				1928			
1	------	98	229	11	------	93	84	21	------	132	74
2	------	97	452	12	------	91	89	22	------	753	90
3	------	95	245	13	------	91	87	23	------	269	93
4	------	101	127	14	------	89	90	24	138	189	91
5	------	95	123	15	------	82	91	25	142	202	90
6	------	89	114	16	------	87	74	26	110	161	89
7	------	97	103	17	------	85	77	27	170	130	87
8	------	91	94	18	------	91	82	28	122	112	88
9	------	92	80	19	------	107	87	29	110	110	86
10	------	92	85	20	------	133	85	30	110	108	85
								31	101	130	------

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1928–29												
1	87	78	1,640	168	295	4,220	638	688	169	128	156	84
2	88	154	1,820	197	240	2,710	580	1,260	116	128	127	85
3	90	566	1,600	223	215	1,060	312	2,770	169	126	111	83
4	82	367	990	190	168	1,280	265	1,000	205	122	105	76
5	84	189	646	180	195	1,950	228	897	237	122	109	146
6	84	156	231	307	201	3,270	196	660	126	136	105	704
7	87	120	175	790	180	2,410	156	353	127	138	107	353
8	93	132	140	530	166	1,900	150	657	187	138	105	144
9	91	116	132	370	168	1,360	2,080	962	1,250	136	101	157
10	91	98	126	939	368	1,120	6,010	2,050	1,000	182	432	99
11	88	118	126	1,300	402	951	5,150	2,800	329	165	234	96
12	88	108	128	1,000	228	666	4,060	1,250	225	128	139	104
13	100	102	187	662	177	730	1,520	922	157	144	130	1,020
14	93	101	337	292	156	1,980	1,430	415	146	128	119	1,080
15	91	99	886	202	172	2,560	1,720	957	148	140	112	598
16	92	96	438	176	422	3,040	4,730	1,140	155	130	100	195
17	822	101	604	205	382	3,190	2,290	809	148	307	101	153
18	1,170	99	1,286	210	451	2,530	1,560	495	128	1,540	101	99
19	761	116	1,640	1,260	295	905	1,400	436	140	3,150	89	91
20	400	106	1,920	1,900	268	536	750	289	146	2,000	81	84
21	232	103	844	4,910	524	417	588	207	130	738	73	79
22	199	96	415	1,160	1,280	658	479	151	130	242	76	81
23	460	97	326	779	1,490	2,180	334	136	129	148	85	83
24	396	103	177	642	1,540	3,040	220	124	138	128	91	84
25	250	102	144	1,540	1,260	3,270	385	130	167	110	97	87
26	251	102	126	1,030	7,650	2,980	1,100	798	231	112	98	97
27	181	126	151	1,080	20,000	2,620	724	1,090	197	111	93	95
28	146	136	142	2,100	14,600	1,090	520	1,170	183	117	91	96
29	136	650	126	1,030	--------	567	307	1,310	189	108	88	87
30	116	1,370	122	738	--------	980	271	962	136	105	85	69
31	122	--------	130	373	--------	951	--------	375	--------	112	86	------

Monthly discharge of Coldwater River near Coldwater, Miss., 1928–29

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
1928					
July 24–31	170	101	125	0.203	0.06
August	753	82	135	.219	.25
September	452	74	112	.182	.20
1928–29					
October	1,170	82	228	.370	.43
November	1,370	78	197	.319	.36
December	1,920	122	573	.929	1.07
January	4,910	168	854	1.38	1.59
February	20,000	156	1,910	3.10	3.23
March	4,220	417	1,840	2.98	3.44
April	6,010	150	1,340	2.17	2.42
May	2,800	124	878	1.42	1.64
June	1,250	116	231	.374	.42
July	3,150	105	362	.587	.68
August	432	73	117	.190	.22
September	1,080	69	210	.340	.38
The year	20,000	69	721	1.17	15.88

YALOBUSHA RIVER AT GRENADA, MISS.

LOCATION.—Chain gage in T. 22 N., R. 5 E. Choctaw meridian, at highway bridge on U. S. Route 51 in Grenada, 1 mile below Batupan River.

DRAINAGE AREA.—1,550 square miles.

RECORDS AVAILABLE.—June to November, 1906; July, 1908, to March, 1912; July, 1928, to September, 1929.

EXTREMES.—Maximum discharge during period, 17,800 second-feet Mar. 25 (gage height 25.42 feet); minimum, 47 second-feet Sept. 6, 1929; minimum gage height, 2.18 feet Oct. 13, 1928.

1906, 1908–1912, 1928–1929: Maximum and minimum discharge, same as above.

REMARKS.—Records fair. The Vicksburg office of United States Army Engineers furnished part of field data, and computations were made in conjunction with it.

Daily and monthly discharge, in second-feet, 1928–29

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1928				1928				1928			
1	-------	224	[a] 740	11	-------	128	99	21	456	75	68
2	-------	508	750	12	-------	120	92	22	337	75	68
3	-------	288	690	13	-------	106	86	23	422	74	63
4	-------	256	580	14	-------	99	80	24	354	422	59
5	-------	208	456	15	-------	98	74	25	371	371	59
6	-------	176	288	16	-------	93	75	26	304	405	[a] 59
7	-------	144	208	17	-------	82	92	27	272	256	57
8	-------	144	168	18	-------	78	77	28	337	710	54
9	-------	136	152	19	-------	77	68	29	388	[a] 710	60
10	-------	128	112	20	634	78	67	30	320	[a] 720	[a] 56
								31	256	[a] 730	-------

Daily and monthly discharge, in second-feet, of Yalobusha River at Grenada, Miss., 1928–29—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1928–29												
1	53	64	101	110	354	4,570	2,310	2,600	272	[a] 713	1,290	52
2	53	73	106	136	288	4,530	1,160	3,340	[a] 248	490	836	52
3	53	73	109	128	[a] 264	[a] 4,080	880	3,520	224	490	[a] 613	52
4	53	75	102	112	240	3,620	750	3,480	192	320	[a] 390	51
5	53	77	102	256	224	2,920	710	[a] 3,070	200	405	168	50
6	54	71	93	[a] 264	224	2,730	652	2,660	176	405	136	47
7	54	73	87	272	224	2,570	[a] 589	2,160	176	288	128	50
8	54	74	84	240	208	1,980	526	2,410	634	184	128	74
9	54	73	78	224	224	1,230	526	2,570	[a] 589	152	176	106
10	57	74	77	439	[a] 224	[a] 960	1,050	2,600	544	136	598	104
11	52	73	75	526	224	690	1,650	2,440	354	128	1,130	98
12	53	68	75	526	208	580	1,950	[a] 1,920	256	112	1,710	168
13	51	64	99	[a] 391	200	1,340	1,570	1,400	200	99	1,460	320
14	52	63	136	256	192	6,190	[a] 1,240	928	168	94	750	598
15	54	60	144	184	208	6,370	904	904	144	92	388	526
16	55	60	144	160	405	6,190	1,080	792	[a] 136	184	256	473
17	55	60	160	136	526	[a] 7,960	1,230	690	128	1,650	184	730
18	53	71	192	144	562	9,720	1,160	634	120	1,860	144	880
19	53	73	208	288	490	9,280	750	[a] 571	101	792	104	670
20	58	78	176	354	422	7,570	634	508	94	304	98	388
21	55	81	152	371	2,410	6,010	[a] 735	598	86	240	93	288
22	60	80	136	354	2,990	7,270	836	544	78	160	90	224
23	80	74	112	320	2,920	15,900	670	456	[a] 267	136	81	168
24	75	71	101	473	2,790	[a] 16,800	562	354	456	272	70	136
25	74	70	[a] 110	1,340	2,160	17,800	3,520	320	354	168	67	120
26	73	73	120	1,740	4,170	14,800	3,440	[a] 337	1,290	304	64	99
27	73	73	112	1,480	4,410	11,800	3,410	354	1,100	288	59	92
28	73	78	99	1,000	4,610	8,620	[a] 3,000	750	1,180	57	57	101
29	70	80	93	652	-------	7,270	2,600	562	1,160	136	54	92
30	66	90	90	508	-------	5,920	1,290	371	[a] 937	422	54	81
31	68	-------	90	422	-------	[a] 4,120	-------	320	-------	1,160	52	-------

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
1928					
July 20–31	634	256	371	0.239	0.11
August	730	74	249	.161	.19
September	750	54	185	.119	.13
1928–29					
October	80	51	59.4	.038	.04
November	90	60	72.2	.047	.05
December	208	75	115	.074	.09
January	1,740	110	445	.287	.33
February	4,610	192	1,160	.748	.78
March	17,800	580	6,500	4.19	4.83
April	3,520	526	1,380	.890	.99
May	3,520	320	1,420	.916	1.06
June	1,290	78	395	.255	.28
July	1,860	57	395	.255	.29
August	1,710	52	369	.238	.27
September	880	47	230	.148	.17
The year	17,800	47	1,050	.677	9.18

[a] Interpolated.

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 4½ miles northeast of Denison, Grayson County.

DRAINAGE AREA.—39,400 square miles.

RECORDS AVAILABLE.—October, 1923, to September, 1929. United States Weather Bureau has obtained readings of stage at Missouri-Kansas-Texas Railroad bridge, half a mile upstream, since January, 1906. Relation between gages not known.

EXTREMES.—Maximum discharge during year, about 113,000 second-feet May 14 (gage height, 15.25 feet); minimum, 314 second-feet Oct. 25.

1923–1929: Maximum discharge, 132,000 second-feet Oct. 17, 1923 (gage height, 19.4 feet); minimum discharge, 314 second-feet Oct. 25, 1928.

REMARKS.—Records fair. No diversions.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	529	1,460	1,560	1,000	1,360	1,460	15,400	2,660	21,000	5,870	1,780	522
2	550	1,360	1,560	960	1,270	1,360	11,600	3,110	23,200	4,760	1,460	480
3	585	1,780	1,460	960	1,270	1,360	8,780	2,660	24,800	3,610	1,270	508
4	585	1,040	1,360	1,040	1,270	1,360	7,760	2,140	21,700	2,950	1,180	452
5	585	880	1,270	1,670	1,270	1,360	7,170	1,900	15,900	2,800	1,180	655
6	550	1,270	1,180	2,520	1,270	1,360	6,890	1,780	11,600	2,800	1,090	920
7	515	2,340	1,140	2,390	1,270	1,270	6,360	1,560	12,000	7,870	1,040	1,460
8	494	2,520	1,090	1,900	1,180	1,270	4,970	1,870	29,200	6,540	920	1,140
9	480	2,260	1,000	2,140	1,140	1,140	4,350	3,240	24,800	5,190	840	7,270
10	473	2,140	1,000	2,140	1,000	1,040	3,970	5,190	15,900	5,870	800	17,200
11	487	1,900	1,000	1,900	1,000	2,610	3,970	3,110	12,000	4,160	800	58,000
12	459	1,670	1,040	1,670	1,140	7,460	4,550	8,150	9,940	2,950	760	52,100
13	438	1,670	1,360	1,460	1,090	5,640	5,640	52,000	7,760	2,660	760	28,200
14	431	1,460	2,140	1,270	1,270	4,970	4,550	97,300	6,360	2,260	760	18,300
15	445	2,480	2,390	1,270	1,180	4,350	2,950	58,000	5,410	1,900	725	14,400
16	431	1,900	2,390	1,180	1,270	3,110	2,800	43,700	4,760	1,900	690	13,400
17	431	1,780	2,260	1,090	1,270	2,950	2,520	31,000	3,970	1,780	725	12,000
18	404	1,460	1,780	1,140	1,270	3,110	2,390	34,100	3,110	1,670	690	10,800
19	386	1,180	1,670	1,140	1,180	2,260	2,260	33,000	2,800	1,460	690	9,940
20	374	2,140	1,900	1,040	1,180	1,780	2,140	36,300	2,800	1,360	690	7,760
21	362	2,140	1,780	1,140	1,270	2,800	2,020	27,300	2,660	1,270	655	5,190
22	362	2,660	1,560	1,140	1,270	2,950	2,020	20,300	2,390	1,270	620	4,160
23	326	4,350	1,460	1,180	1,270	2,260	2,020	13,900	2,520	1,270	655	3,970
24	326	3,610	1,460	2,140	1,180	1,900	3,270	11,600	2,390	5,530	655	3,610
25	320	3,270	1,360	4,040	1,460	1,560	2,950	9,940	2,520	6,620	620	3,270
26	332	3,110	1,270	3,270	1,670	1,460	3,440	9,940	3,610	5,190	690	2,800
27	338	3,270	1,180	2,260	1,560	1,360	3,970	8,780	4,160	4,970	760	2,390
28	438	2,800	1,040	1,670	1,560	1,270	3,970	6,360	4,350	4,550	725	2,260
29	585	2,260	920	1,560	-------	1,460	2,950	7,460	4,970	3,970	620	2,140
30	529	1,900	1,000	1,560	-------	10,900	2,660	9,160	5,640	2,520	585	1,900
31	620	-------	1,000	1,460	-------	24,800	-------	14,400	-------	2,020	550	-------

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	620	320	457	28,100
November	4,350	880	2,140	127,000
December	2,390	920	1,440	88,500
January	4,040	960	1,650	101,000
February	1,670	1,000	1,260	70,000
March	24,800	1,040	3,350	206,000
April	15,400	2,020	4,680	278,000
May	97,300	1,560	18,100	1,110,000
June	29,200	2,390	9,810	584,000
July	7,870	1,270	3,530	217,000
August	1,780	550	838	51,500
September	58,000	452	9,570	569,000
The year	97,300	320	4,750	3,430,000

RED RIVER AT GARLAND CITY, ARK.

LOCATION.—Chain gage in SE. ¼ sec. 17, T. 14 S., R. 25 W., on St. Louis Southwestern Railway bridge at Garland City.

RECORDS AVAILABLE.—October, 1927, to September, 1929.

EXTREMES.—Maximum discharge during year, 107,000 second-feet May 25 (gage height, 30.6 feet); minimum discharge, 660 second-feet Sept. 2; minimum gage height, 4.3 feet Oct. 24–29.

1928–29: Maximum discharge, 107,000 second-feet May 25, 1929 (gage height, 30.6 feet); minimum discharge, 660 second-feet Sept. 2, 1929; minimum gage height, 4.3 feet Oct. 24–29, 1928.

Maximum stage known, 35.4 feet April, 1927.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,980	1,660	6,380	19,600	50,300	45,200	10,600	6,980	75,500	5,250	6,000	860
2	1,820	1,820	5,620	8,760	44,700	46,200	10,100	6,980	73,300	4,260	6,000	660
3	1,660	3,390	12,300	7,640	37,900	45,200	25,200	6,540	70,000	5,250	5,500	720
4	1,820	4,860	13,800	6,540	32,900	43,700	28,500	7,640	66,200	8,600	5,000	860
5	1,820	7,140	12,700	5,890	26,400	44,700	24,400	8,300	65,100	9,380	4,500	790
6	1,980	7,520	11,100	9,680	21,300	43,200	20,100	7,200	63,000	9,900	3,540	720
7	1,820	7,900	9,300	24,100	16,600	39,800	17,100	6,540	60,300	10,700	2,830	860
8	1,820	7,710	7,710	30,300	14,200	35,600	15,000	6,320	55,000	9,900	2,400	1,030
9	1,820	7,140	6,000	44,700	14,000	30,200	14,200	6,320	49,800	8,600	2,200	1,120
10	1,820	6,380	5,430	43,700	15,800	24,400	13,000	5,890	42,200	7,820	2,020	1,030
11	1,820	5,050	5,240	41,300	20,100	19,800	22,000	7,860	43,200	8,600	1,850	1,450
12	1,820	3,750	4,860	38,900	21,300	17,100	28,100	11,300	45,200	11,500	1,700	1,570
13	1,820	3,210	4,290	36,500	20,700	15,000	32,400	13,800	37,900	12,600	1,700	22,700
14	1,820	2,670	4,670	34,200	18,200	14,000	32,000	19,800	29,800	10,700	1,700	51,900
15	2,320	3,030	10,500	31,100	15,500	14,800	28,500	42,700	23,400	9,380	1,570	57,100
16	2,320	3,750	14,700	26,400	14,800	33,800	24,400	65,100	22,400	8,860	1,450	49,300
17	1,980	3,750	18,600	21,600	14,200	38,900	21,300	74,400	24,400	7,820	1,330	37,400
18	1,820	3,390	31,100	20,700	14,800	37,000	19,400	81,200	24,800	6,260	1,220	26,800
19	1,660	5,240	53,900	15,500	15,000	33,800	16,800	85,800	20,700	5,500	1,220	20,700
20	1,350	6,950	63,000	15,200	15,000	30,700	14,200	90,400	16,700	4,750	1,220	17,100
21	1,350	10,100	67,800	15,000	14,500	25,600	11,600	93,400	14,000	4,020	1,220	16,000
22	1,350	10,700	62,400	15,000	14,000	21,000	9,680	101,000	12,600	3,780	1,120	14,500
23	1,350	10,700	57,600	14,000	14,000	18,200	9,220	103,000	11,200	3,540	1,120	13,500
24	1,200	9,500	52,400	13,500	14,500	17,400	8,080	104,000	9,640	3,300	1,030	13,200
25	1,200	7,900	47,700	13,200	16,000	17,100	7,360	107,000	9,120	3,060	940	12,000
26	1,200	6,760	42,200	38,900	17,100	17,400	8,530	101,000	8,860	2,830	940	9,680
27	1,200	5,620	35,600	52,900	18,800	16,800	8,530	94,600	8,600	2,600	940	9,220
28	1,200	5,240	34,700	60,300	38,900	14,800	7,860	84,600	8,600	2,600	940	7,860
29	1,200	4,860	24,100	59,700	------	13,000	7,420	78,300	8,860	2,200	940	6,980
30	1,350	6,000	18,200	59,200	------	11,800	7,200	76,600	5,250	2,200	860	6,540
31	1,350	------	13,800	55,500	------	10,600	------	77,200	------	5,750	860	------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	2,320	1,200	1,650	101,000
November	10,700	1,660	5,790	345,000
December	67,800	4,290	24,400	1,500,000
January	60,300	5,890	28,400	1,750,000
February	50,300	14,000	21,100	1,170,000
March	46,200	10,600	27,000	1,660,000
April	32,400	7,200	16,800	1,000,000
May	107,000	5,890	51,000	3,140,000
June	75,500	5,250	33,500	1,990,000
July	12,600	2,200	6,500	400,000
August	6,000	860	2,120	130,000
September	57,100	660	13,500	803,000
The year	107,000	660	19,300	14,000,000

RED RIVER AT SHREVEPORT, LA.

LOCATION.—Chain gage in sec. 30, T. 18 S., R. 13 W., at Shreveport, half a mile below Cross Bayou. Zero of gage is 130.99 feet above mean sea level.

RECORDS AVAILABLE.—July, 1928, to September, 1929.

EXTREMES.—Maximum discharge during year, 121,000 second-feet May 26–27 (gage height, 27.48 feet); minimum, 1,990 second-feet Oct. 25 (gage height, 3.78 feet).

1928–29: Maximum and minimum discharge, same as given above.

Maximum stages known, 45.9 feet in August, 1849; 37.4 feet Apr. 29 and 30, 1927.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,200	2,040	6,300	46,000	63,600	50,800	19,700	16,400	101,000	11,000	4,420	2,120
2	2,140	2,550	6,300	41,600	58,000	53,800	18,700	16,000	97,500	10,400	6,080	2,070
3	2,140	3,540	6,840	38,500	53,800	53,800	18,700	16,000	94,200	11,400	6,960	2,070
4	2,200	3,660	9,960	35,500	50,800	53,800	29,600	15,200	89,800	14,500	6,520	2,020
5	2,200	4,180	14,000	34,000	46,600	54,400	35,500	14,400	83,200	14,800	6,080	2,020
6	2,260	6,660	16,000	34,000	43,200	55,000	31,500	15,000	80,100	14,000	5,480	2,020
7	2,260	8,000	15,000	50,800	39,000	53,200	27,000	14,400	78,300	14,500	5,100	2,020
8	2,200	8,860	12,400	60,100	36,000	50,200	23,900	13,700	74,700	15,400	4,420	2,020
9	2,200	9,080	10,800	62,900	33,500	46,600	21,800	12,800	68,500	15,400	3,980	2,070
10	2,140	9,080	9,520	60,100	32,000	42,700	20,800	12,200	61,500	14,000	3,580	2,070
11	2,140	8,640	8,000	58,700	35,500	39,000	21,100	11,500	57,400	13,000	3,340	2,120
12	2,200	8,200	7,020	56,800	38,000	36,000	27,800	11,500	58,000	12,700	3,120	2,120
13	2,090	7,600	6,840	54,400	38,500	34,500	35,000	13,300	58,000	15,400	3,020	2,510
14	2,140	7,200	7,020	52,000	37,000	32,000	38,000	16,700	50,800	15,700	2,930	8,000
15	2,260	6,840	7,600	49,600	34,500	32,000	36,500	23,200	43,200	15,700	2,930	50,800
16	2,470	6,660	9,740	47,200	31,000	39,000	34,500	53,200	37,000	14,000	2,840	56,200
17	2,800	6,660	16,400	44,400	28,700	51,400	31,000	69,200	34,000	12,700	2,670	49,600
18	2,800	6,840	24,600	41,600	27,800	53,200	27,800	78,300	35,000	11,400	2,670	40,600
19	2,630	6,300	47,800	38,500	27,000	50,800	25,800	85,400	35,500	9,960	2,590	31,500
20	2,550	5,760	65,700	36,500	26,200	47,200	23,200	89,800	31,500	8,520	2,510	25,000
21	2,470	5,940	72,900	35,500	26,200	44,400	22,500	94,200	27,000	7,400	2,440	21,100
22	2,330	7,020	74,700	35,500	26,200	39,500	21,100	99,700	22,800	6,300	2,370	18,700
23	2,200	10,600	72,900	34,500	25,000	35,500	18,700	105,000	20,000	5,880	2,370	17,200
24	2,090	11,500	70,600	34,000	25,800	31,500	17,500	113,000	17,800	5,100	2,300	16,000
25	1,990	11,700	67,100	33,500	26,200	30,000	18,400	117,000	16,000	4,740	2,300	14,500
26	2,040	10,600	66,400	38,500	27,800	29,200	19,400	120,000	14,800	4,420	2,240	13,000
27	2,090	9,080	65,700	60,800	29,600	28,200	19,400	120,000	13,700	4,420	2,240	11,700
28	2,090	7,800	63,600	69,200	37,000	27,000	18,700	115,000	12,700	4,260	2,180	10,200
29	2,040	6,120	60,800	72,900	-------	25,400	18,100	108,000	12,700	3,980	2,180	8,760
30	2,040	5,940	56,200	72,000	-------	23,600	17,500	102,000	12,000	3,840	2,120	7,620
31	1,990	-------	52,600	67,800	-------	21,800	-------	101,000	-------	3,700	2,120	-------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	2,800	1,990	2,240	138,000
November	11,700	2,040	7,160	426,000
December	74,700	6,300	33,300	2,050,000
January	72,900	33,500	48,300	2,970,000
February	63,600	25,000	35,900	1,990,000
March	55,600	21,800	40,800	2,510,000
April	38,000	17,500	24,600	1,460,000
May	120,000	11,500	57,800	3,550,000
June	101,000	12,000	48,000	2,860,000
July	15,700	3,700	10,300	633,000
August	6,960	2,120	3,420	210,000
September	56,200	2,020	14,200	845,000
The year	120,000	1,990	27,100	19,600,000

PEASE RIVER NEAR CROWELL, TEX.

LOCATION.—Chain gage 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.

RECORDS AVAILABLE.—January, 1924, to September, 1929.

EXTREMES.—Maximum discharge during year, from slope-area method, 18,600 second-feet May 12 (gage height, 8.88 feet). No flow during several periods.

1924–1929: Maximum discharge not determined; maximum gage height, 9.92 feet Oct. 3, 1926; no flow during several periods.

REMARKS.—Yearly record poor. Daily and monthly records not sufficiently accurate for publication. No diversions. Total yearly discharge, 110,000 acre-feet.

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, 1929.

EXTREMES.—Maximum discharge during period, 15,400 second-feet June 1 (gage height, 26.30 feet); minimum, 204 second-feet Oct. 21 (gage height, 3.32 feet).

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

REMARKS.—Records good. Discharge interpolated Dec. 4, Apr. 9, 10, 12, 13, June 8, July 11, 21, 26, and Aug. 29 to Sept. 3, 1929.

Daily and monthly discharge, in second-feet, 1928–29

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1928			1928			1928		
1	------	685	11	830	450	21	580	335
2	------	720	12	910	950	22	545	305
3	------	1,030	13	790	990	23	685	315
4	1,350	755	14	790	870	24	1,350	310
5	1,270	510	15	720	790	25	1,560	300
6	1,420	480	16	685	450	26	510	310
7	1,980	450	17	615	422	27	615	310
8	1,910	450	18	580	395	28	685	300
9	1,270	450	19	580	395	29	510	300
10	830	422	20	580	362	30	450	300
						31	720	------

Daily and monthly discharge, in second-feet, of Washita River near Durwood, Okla., 1928–29—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1928–29												
1	280	545	650	510	395	510	4,390	1,420	15,400	2,580	340	230
2	280	950	615	510	395	510	3,750	910	13,400	1,910	305	230
3	265	950	580	510	395	510	3,550	830	9,280	1,700	395	230
4	275	910	560	1,420	422	510	3,830	755	5,430	1,630	395	230
5	270	650	545	1,350	422	510	3,550	720	4,470	1,560	370	230
6	265	480	480	1,110	580	480	2,760	650	4,550	1,700	345	230
7	265	422	480	990	580	480	1,840	650	4,110	2,820	325	510
8	265	395	450	870	615	480	1,770	2,050	3,700	2,260	320	1,350
9	260	362	450	790	615	450	2,370	685	3,300	1,350	310	2,260
10	255	356	450	615	580	450	2,960	650	2,820	1,190	310	6,350
11	250	351	450	580	510	450	3,550	650	2,400	1,030	310	6,470
12	245	346	450	615	422	1,350	2,790	12,200	2,190	870	310	5,950
13	245	340	910	580	422	3,100	2,030	14,400	1,770	755	300	5,650
14	245	351	950	580	480	1,700	1,270	12,300	1,560	1,030	300	5,230
15	236	373	1,270	545	545	1,190	1,190	9,140	1,350	950	300	4,790
16	236	545	1,190	580	650	910	1,030	12,200	1,270	910	290	4,510
17	245	685	1,110	580	580	755	870	7,950	1,190	830	290	4,110
18	236	1,910	1,110	580	580	755	790	11,900	1,110	685	290	3,750
19	222	2,260	950	545	545	720	790	7,880	1,030	580	280	2,050
20	218	1,560	755	580	510	1,840	755	5,900	950	580	280	1,770
21	208	1,030	720	545	510	990	755	5,070	870	580	275	1,630
22	222	545	685	580	510	685	790	5,030	830	580	270	1,490
23	213	510	650	580	510	545	1,420	5,070	790	545	260	1,350
24	213	1,030	615	755	510	545	1,560	5,030	1,980	545	250	1,110
25	213	1,560	580	755	450	545	1,560	4,510	2,820	545	240	910
26	213	1,420	545	720	510	510	1,420	3,500	2,940	650	240	870
27	213	910	480	685	510	510	1,270	1,760	3,250	755	240	830
28	218	830	510	545	510	580	1,110	1,910	3,700	650	230	755
29	222	720	615	545	------	1,770	950	2,120	3,750	545	230	685
30	226	685	580	450	------	3,950	1,770	3,550	3,760	480	230	650
31	231	------	545	422	------	4,710	------	10,800	------	422	230	------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
1928				
August 4–31	1,980	450	904	52,200
September	1,030	300	504	32,100
The period				84,300
1928–29				
October	280	208	240	14,800
November	2,260	340	799	47,500
December	1,270	450	675	41,500
January	1,420	422	678	41,700
February	650	395	509	28,300
March	4,710	450	1,060	65,200
April	4,390	755	1,950	116,000
May	14,400	650	4,910	302,000
June	15,400	790	3,530	210,000
July	2,820	422	1,070	65,800
August	395	230	292	18,000
September	6,470	230	2,210	132,000
The year	15,400	208	1,500	1,080,000

KIAMICHI RIVER NEAR BELZONI, OKLA.

Location.—Chain gage at Antlers-Rattan highway bridge, 1¾ miles northwest of Belzoni and 6 miles below mouth of Cedar Creek.

Drainage area.—1,420 square miles.

Records available.—December, 1925, to September, 1929.

Extremes of discharge.—Maximum discharge during year, 32,700 second-feet May 14 (gage height, 36.65 feet); minimum, 0.6 second-foot Sept. 2–4 (gage height, 3.53 feet).

1926–1929: Maximum discharge, 61,400 second-feet (subject to considerable error) Dec. 14, 1927 (gage height, 41.24 feet); minimum, that of Sept. 2–4, 1929.

Remarks.—Records fair. Small diversion by city of Antlers.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.6	98	2,060	346	1,230	5,210	982	216	2,060	194	12	0.7
2	7.3	439	1,750	292	1,080	3,620	886	959	1,900	172	11	.6
3	7.6	586	934	276	982	2,670	886	982	1,800	1,750	10	.6
4	6.6	440	700	382	982	2,110	886	700	1,600	934	9.4	.6
5	6.6	310	500	9,770	982	1,750	838	460	1,590	346	8.8	5.6
6	5.8	208	400	10,700	1,330	1,490	746	346	2,010	550	8.2	172
7	6.4	177	328	5,920	1,690	1,180	654	310	1,430	1,950	7.9	156
8	6.2	139	292	2,950	1,800	1,030	608	328	1,080	1,590	7.0	219
9	5.6	106	261	2,330	1,330	982	1,030	1,950	886	1,180	5.0	940
10	5.4	87	222	2,840	1,280	886	1,900	4,630	700	792	4.8	3,410
11	6.4	72	210	2,450	1,180	746	1,590	2,170	564	500	4.8	2,390
12	5.4	59	222	1,800	1,180	3,330	1,330	2,390	460	328	4.8	792
13	4.6	57	440	1,380	1,330	8,400	1,130	20,100	654	230	4.6	1,080
14	4.2	45	886	1,190	1,850	6,840	934	31,100	5,600	191	4.0	838
15	4.2	84	1,430	1,130	1,850	3,730	838	26,500	3,290	164	3.3	542
16	5.4	765	4,690	1,080	1,750	2,950	700	22,200	1,080	142	3.6	420
17	5.6	1,280	13,600	982	1,690	2,170	608	7,680	886	117	3.4	328
18	5.4	1,280	13,500	982	1,490	1,750	542	13,700	700	104	3.2	261
19	8.5	959	8,020	1,080	1,330	1,430	460	14,200	542	91	2.8	199
20	8.2	586	3,230	1,080	1,180	1,280	440	11,900	420	64	2.0	156
21	8.5	420	2,060	1,090	1,080	1,850	382	5,380	346	54	2.0	132
22	25	328	1,280	934	1,380	1,850	346	2,280	328	46	2.0	113
23	30	276	1,090	982	1,649	1,430	310	1,590	292	43	1.8	98
24	21	230	886	14,400	1,590	1,180	346	1,180	246	39	1.8	80
25	18	199	792	23,000	4,030	1,080	382	2,200	219	36	1.8	72
26	14	172	691	19,900	7,360	934	261	13,300	182	31	1.6	60
27	14	152	596	10,100	7,290	792	261	22,000	154	28	1.8	50
28	18	146	520	3,290	5,990	746	246	13,300	180	24	1.3	46
29	30	596	460	2,380	-------	934	246	4,630	185	20	1.2	42
30	42	1,280	420	1,900	-------	1,330	227	2,730	190	14	.9	33
31	66	-------	382	1,490	-------	1,280	-------	2,060	-------	14	.7	-------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	66	4.2	13.2	812
November	1,280	45	386	23,000
December	13,600	210	2,020	124,000
January	23,000	276	4,040	248,000
February	7,360	982	2,070	115,000
March	8,400	746	2,160	133,000
April	1,900	227	700	41,700
May	31,100	216	7,530	463,000
June	5,600	154	1,060	63,100
July	1,950	14	379	23,300
August	12	.7	4.47	275
September	3,410	.6	421	25,100
The year	31,100	.6	1,740	1,260,000

LITTLE RIVER NEAR WILTON, ARK.

LOCATION.—Chain gage in NW. ¼ sec. 30, T. 11 S., R. 29 W., 3 miles north of Wilton and 200 feet below Cossatot River.

RECORDS AVAILABLE.—August, 1928, to September, 1929.

EXTREMES.—Maximum discharge during year, 42,400 second-feet Dec. 19 (gage height, 25.51 feet); minimum discharge, 15 second-feet Sept. 1–3; minimum gage height, 1.88 feet Oct. 1.

1928–1929: Maximum discharge, that of Dec. 19, 1929; minimum, that of Sept. 1–3, 1929; minimum gage height, 1.85 feet Sept. 30, 1928.

Maximum stage known, 30.2 feet August, 1915.

REMARKS.—Records fair.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	206	7,160	1,540	11,700	32,700	3,410	965	12,200	485	73	16
2	40	760	9,190	1,340	6,120	29,000	3,740	1,840	8,950	485	86	16
3	63	2,580	7,270	1,190	4,400	23,500	4,180	2,560	5,540	800	76	16
4	49	1,980	4,450	1,140	3,850	17,600	3,850	2,240	3,960	1,100	71	17
5	52	1,420	2,980	5,540	3,300	10,400	3,300	2,040	2,880	840	65	18
6	67	1,060	2,280	16,300	3,300	7,270	2,880	1,640	2,240	720	65	22
7	98	842	1,980	24,000	3,410	5,540	2,560	1,340	1,640	600	56	32
8	85	680	1,700	27,000	3,960	4,970	2,350	1,190	1,190	485	53	45
9	59	560	1,420	24,800	7,270	4,290	4,510	1,740	880	640	53	67
10	50	485	1,240	20,400	9,430	3,850	14,400	5,890	760	965	49	132
11	55	396	1,140	17,100	8,590	3,960	20,000	6,920	800	1,540	53	1,540
12	52	354	1,060	13,200	7,270	3,850	17,100	6,000	840	1,060	47	11,000
13	49	305	2,380	9,670	6,120	4,290	14,500	5,320	760	840	49	10,500
14	52	284	8,470	6,700	5,430	9,310	10,800	12,600	1,640	600	44	8,350
15	49	298	18,100	4,860	5,200	13,100	8,350	20,800	5,780	572	42	4,070
16	49	312	12,800	3,850	5,430	14,900	6,700	25,500	6,000	422	34	3,630
17	49	1,320	17,900	3,300	5,320	14,100	4,860	26,200	4,290	274	27	1,740
18	46	2,380	24,800	3,740	5,080	11,300	3,740	26,200	2,350	254	26	1,240
19	43	3,380	41,400	3,960	4,620	7,990	3,080	27,500	1,740	312	25	880
20	121	2,580	37,400	4,510	4,400	5,320	2,660	29,900	1,240	241	24	840
21	106	2,280	30,200	4,620	4,290	4,740	2,350	32,200	1,100	173	24	640
22	88	1,890	25,200	4,290	4,860	6,120	2,040	32,200	922	185	26	600
23	65	1,510	19,700	4,180	5,780	6,350	1,840	27,800	840	110	24	408
24	67	1,240	12,000	7,990	6,810	5,320	1,640	22,700	760	110	22	300
25	78	1,010	6,810	16,900	8,470	4,290	1,640	18,200	720	114	22	248
26	49	842	4,860	25,200	14,900	3,520	2,040	12,000	760	146	22	142
27	44	800	3,740	31,400	23,500	2,660	1,940	9,790	800	137	23	110
28	46	720	2,770	30,200	29,300	2,770	1,640	11,500	800	119	22	161
29	63	640	1,840	27,200	-------	2,560	1,440	14,100	680	98	19	137
30	67	1,100	1,740	24,800	-------	2,660	1,340	14,600	560	98	19	179
31	63	-------	1,740	18,200	-------	3,190	-------	14,000	-------	95	18	-------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	121	38	61.4	3,780
November	3,380	206	1,140	67,800
December	41,400	1,060	10,000	615,000
January	31,400	1,140	12,600	775,000
February	29,300	3,300	7,580	421,000
March	32,700	2,560	8,760	539,000
April	20,000	1,340	5,160	307,000
May	32,200	965	13,500	830,000
June	12,200	560	2,450	146,000
July	1,540	95	472	29,000
August	86	18	40.6	2,500
September	11,000	16	1,570	93,400
The year	41,400	16	5,280	3,830,000

SULPHUR RIVER NEAR DARDEN, TEX.

Location.—Staff gage on St. Louis Southwestern Railway bridge 1 mile south of Darden, Bowie County.

Drainage area.—2,750 square miles.

Records available.—October, 1923, to September, 1929.

Extremes.—Maximum discharge during year, about 46,200 second-feet Dec. 21 (gage height, 30.3 feet); no flow Sept. 2–5.

1923–1929: Maximum discharge, that of Dec. 21, 1928; no flow Sept. 2–5, 1929.

Remarks.—Records poor. No diversions. Gage-height record furnished by United States Weather Bureau.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.9	577	102	1,170	12,500	5,300	396	514	2,190	72	8.0	0.3
2	.9	1,290	92	579	10,100	10,100	466	396	2,100	67	5.8	0
3	57	1,580	126	334	8,180	13,900	696	255	2,240	198	5.8	0
4	40	1,870	598	436	5,620	12,500	840	180	2,390	715	5.8	0
5	62	2,210	490	1,640	3,760	11,700	1,070	132	2,460	1,270	14	0
6	62	2,370	396	2,460	2,480	9,460	1,010	108	2,240	1,170	14	.9
7	77	2,370	297	2,960	1,850	6,660	859	87	2,060	1,130	14	.9
8	121	2,060	247	4,460	1,170	4,090	732	77	1,980	1,450	8.0	32
9	354	1,790	180	7,580	1,370	3,210	714	187	2,190	1,580	11	215
10	549	1,490	145	17,300	1,490	2,350	644	263	2,500	1,270	8.0	215
11	935	1,270	132	17,300	1,560	1,660	936	417	2,750	973	5.8	201
12	954	897	205	15,300	1,540	1,250	1,740	1,520	2,890	660	5.8	166
13	804	514	1,090	12,500	1,430	1,290	2,150	2,300	2,550	418	5.8	114
14	786	344	1,150	10,500	1,310	1,850	2,370	3,160	1,600	297	4.1	194
15	750	187	1,230	8,780	1,230	2,260	2,280	4,280	781	208	4.1	497
16	556	108	2,060	5,940	1,430	2,750	1,640	5,460	344	120	2.5	1,230
17	239	97	4,280	4,190	1,640	3,160	1,010	10,100	194	102	2.5	1,350
18	108	346	6,480	2,750	1,790	3,060	660	17,300	132	72	2.5	1,150
19	77	1,110	15,300	2,060	1,870	5,460	490	19,500	108	52	2.5	878
20	40	1,170	35,000	1,390	1,740	5,170	418	18,400	87	44	.9	660
21	32	1,070	46,200	992	1,560	4,000	374	17,800	77	36	4.1	454
22	17	732	36,500	660	1,560	2,890	334	18,400	67	28	2.5	297
23	17	442	28,000	628	1,790	2,460	271	18,900	62	24	2.5	187
24	17	279	20,000	821	2,100	2,150	215	17,300	57	24	2.5	126
25	14	201	14,800	2,020	2,580	2,060	385	14,800	52	20	2.5	87
26	11	145	11,700	2,750	3,110	1,810	514	12,100	52	20	2.5	67
27	8.0	120	8,180	4,850	4,000	1,350	570	10,100	52	17	.9	48
28	57	87	6,660	13,900	4,800	859	570	7,350	102	17	.9	36
29	145	87	4,910	20,500	-------	570	556	5,170	132	14	.9	28
30	159	114	3,040	19,500	-------	430	570	3,520	97	11	.3	20
31	108	-------	1,980	16,300	-------	396	-------	2,550	-------	8.0	.3	-------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	954	0.9	231	14,200
November	2,370	87	898	53,400
December	46,200	92	8,120	499,000
January	20,500	334	6,530	402,000
February	12,500	1,170	3,060	170,000
March	13,900	396	4,070	250,000
April	2,370	215	849	50,500
May	19,500	77	6,860	422,000
June	2,890	52	1,150	68,400
July	1,580	8.0	390	24,000
August	14	.3	4.86	299
September	1,350	0	275	16,400
The year	46,200	0	2,720	1,970,000

CYPRESS CREEK NEAR JEFFERSON, TEX.

LOCATION.—Staff gage at Farrell Bridge, on Jefferson-Harlenton 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, 1929.

EXTREMES.—Maximum discharge during year, about 13,200 second-feet Dec. 20 (gage height, 21.4 feet); minimum, 2.6 second-feet Sept. 2–7 (gage height, 0.78 foot).

1924–1929: Maximum discharge, that of Dec. 20, 1928; no flow for several periods.

REMARKS.—Monthly records fair. Records of daily discharge not sufficiently accurate for publication. No diversions.

Monthly discharge, in second-feet, 1928–29

Month	Maximum	Minimum	Mean	Run-off in acre-feet
October	464	7.5	194	11,900
November	1,740	324	852	50,700
December	12,900	258	2,870	176,000
January	4,810	505	1,890	116,000
February	2,280	992	1,250	69,400
March	2,400	550	1,540	94,700
April	1,740	451	848	50,500
May	2,480	258	1,300	79,900
June	1,380	100	508	30,200
July	451	23	109	6,700
August	23	2.9	7.96	489
September	78	2.6	21.1	1,260
The year	12,900	2.6	951	688,000

BAYOU DORCHEAT NEAR MINDEN, LA.

Location.—Staff gage in T. 19 N., R. 9 W., 3 miles west of Minden.

Records available.—July, 1928, to September, 1929.

Extremes.—Maximum discharge during year, 2,910 second-feet Apr. 29 and 30 (gage height, 12.50 feet); minimum, 2 second-feet Oct. 1 and 2 (gage height, 0.80 foot).

1928–29: Maximum discharge, that of Apr. 29 and 30, 1929; minimum, 2 second-feet Sept. 14, 15, 27–30, Oct. 1 and 2, 1928, Aug. 10–12 and Sept. 27–30, 1929 (gage height, 0.80 foot).

Remarks.—Records good. Discharge estimated Aug. 6–10, 14–31 and Sept. 1–24.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2	30	140	1,480	1,840	1,510	868	2,740	238	22	32	
2	2	39	119	1,260	1,840	1,510	724	2,540	170	22	66	
3	6	48	100	966	1,870	1,510	630	2,410	133	126	42	
4	6	59	91	608	1,870	1,540	542	2,250	105	170	73	
5	24	60	88	700	1,870	1,630	460	2,120	92	119	12	
6	89	55	78	748	1,870	1,630	404	1,960	91	88	10	
7	162	55	66	676	1,840	1,600	369	1,780	86	89	8	
8	154	55	56	748	1,720	1,570	335	1,480	77	96	6	
9	82	53	55	844	1,750	1,630	520	1,200	67	91	4	
10	54	50	53	1,100	1,660	1,690	586	940	61	88	2	
11	39	47	56	1,150	1,450	1,720	404	630	54	96	2	
12	28	43	75	1,170	1,370	1,780	369	480	47	112	2	
13	20	43	254	1,170	1,310	1,990	352	440	42	105	7	10
14	18	40	318	1,200	1,340	2,120	369	369	39	84		
15	16	39	335	1,230	1,370	2,220	564	318	31	73		
16	18	38	440	1,230	1,400	2,280	520	386	30	55		
17	55	35	1,070	1,200	1,420	2,310	440	404	30	54		
18	50	32	1,420	1,200	1,450	2,310	440	404	28	68		
19	39	32	1,280	1,280	1,450	2,280	422	460	22	61		
20	48	32	1,310	1,280	1,450	2,220	370	422	22	48		
21	55	30	1,400	1,280	1,450	2,190	335	369	22	35		
22	54	28	1,540	1,230	1,450	2,190	302	352	22	29	15	
23	45	28	1,600	1,170	1,370	2,220	460	352	22	22		
24	36	25	1,630	1,400	1,310	2,090	868	352	22	18		
25	31	22	1,600	1,570	1,310	1,930	1,400	352	18	18		8
26	27	22	1,570	1,480	1,600	1,750	1,930	352	16	16		4
27	22	22	1,570	1,480	1,600	1,540	2,350	369	20	14		2
28	24	23	1,600	1,600	1,540	1,310	2,740	404	26	12		2
29	22	26	1,660	1,720	-------	1,480	2,910	404	27	10		2
30	25	98	1,600	1,780	-------	1,310	2,880	520	23	27		2
31	25	-------	1,600	1,840	-------	1,020	-------	369	-------	18		-------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	162	2	41.2	2,530
November	98	22	40.3	2,400
December	1,660	53	799	49,100
January	1,840	608	1,220	75,000
February	1,870	1,310	1,560	86,600
March	2,310	1,020	1,810	111,000
April	2,910	302	862	51,300
May	2,740	318	901	55,400
June	238	16	56.1	3,340
July	170	10	60.8	3,740
August	73	2	17.3	1,060
September	----------	2	8.7	518
The year	2,910	2	611	442,000

OUACHITA RIVER NEAR HOT SPRINGS, ARK.

LOCATION.—Chain gage in SW. ¼ sec. 29, T. 3 S., R. 19 W., 5 miles south of Hot Springs and 1 mile above Hot Springs Creek. Zero of gage is 304.8 feet above mean sea level.

DRAINAGE AREA.—1,420 square miles.

RECORDS AVAILABLE.—June, 1922, to September, 1929.

EXTREMES.—Maximum discharge during year, 41,600 second-feet Dec. 17 (gage height, 23.25 feet); minimum, 32 second-feet Sept. 3 and 4 (gage height, 4.90 feet).

1922–1929: Maximum discharge, 143,000 second-feet May 16, 1923 (gage height, 43.9 feet); minimum, 32 second-feet Sept. 3 and 4, 1929 (gage height, 4.90 feet).

REMARKS.—Records good. Discharge estimated Oct. 1–9.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		386	4,040	738	2,030	4,580	2,250	4,170	1,920	315	108	36
2		2,800	2,800	630	1,720	3,520	2,580	6,000	1,530	440	103	34
3		1,920	1,920	595	1,530	2,910	2,580	3,910	2,470	775	94	32
4		1,350	1,440	630	1,440	3,520	2,140	2,580	2,360	1,260	89	32
5	60	930	1,170	6,700	1,350	5,350	1,920	2,030	1,920	890	91	36
6		700	1,010	17,800	1,260	3,910	1,620	1,620	1,620	1,090	91	42
7		560	850	8,450	1,260	3,150	1,440	1,350	1,350	529	96	47
8		440	775	4,300	1,530	2,580	1,350	1,620	1,620	469	114	54
9		386	665	4,170	1,920	2,360	6,520	11,200	1,170	970	386	96
10	76	338	595	5,350	2,030	1,920	16,700	8,240	890	930	228	108
11	76	284	529	4,880	2,030	1,720	9,570	4,880	665	595	195	275
12	76	267	738	3,780	1,920	1,620	3,520	3,520	440	498	195	2,690
13	72	239	8,240	2,910	1,920	1,720	2,580	8,670	630	413	155	1,530
14	67	228	12,100	2,360	1,920	2,470	2,470	22,800	440	338	119	812
15	69	279	8,030	2,360	2,580	2,580	3,270	11,600	440	315	89	700
16	71	338	5,350	2,470	2,910	3,780	2,580	5,350	595	267	80	595
17	94	1,350	41,200	2,580	2,910	3,030	2,030	3,780	630	208	72	469
18	114	2,910	28,300	8,030	2,800	2,580	1,820	3,270	469	214	65	386
19	292	2,250	9,800	10,300	2,690	2,140	1,530	6,000	386	214	62	315
20	250	1,720	5,180	5,030	3,030	1,920	1,350	6,880	338	176	58	250
21	198	1,260	3,910	3,390	3,270	2,140	1,170	4,170	315	152	55	221
22	176	1,010	2,690	3,030	3,150	2,800	1,090	3,270	292	144	55	198
23	146	812	2,250	2,690	3,780	2,690	970	2,800	738	135	52	176
24	135	665	1,920	5,350	4,440	2,250	1,010	2,470	850	152	50	158
25	124	595	1,620	25,300	7,830	1,820	2,140	2,250	1,440	146	47	141
26	106	529	1,350	19,700	22,500	1,720	1,920	1,530	850	114	45	130
27	103	560	1,170	8,030	18,000	1,720	1,530	1,090	700	135	44	119
28	103	440	1,090	4,580	6,700	1,720	1,260	1,530	529	141	42	114
29	119	440	970	3,390	--------	2,030	1,010	1,530	413	132	42	114
30	146	1,170	850	2,800	--------	2,030	1,440	3,390	362	127	38	103
31	173	--------	812	2,360	--------	2,140	--------	3,030	--------	124	37	--------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	292	--------	107	6,580
November	2,910	228	905	53,900
December	41,200	529	4,950	304,000
January	25,300	595	5,630	346,000
February	22,500	1,260	3,940	219,000
March	5,350	1,620	2,590	159,000
April	16,700	970	2,780	165,000
May	22,800	1,090	4,730	291,000
June	2,470	292	946	56,300
July	1,260	114	400	24,600
August	386	37	96.7	5,950
September	2,690	32	334	19,900
The year	41,200	32	2,380	1,650,000

OUACHITA RIVER AT REMMEL DAM, NEAR MALVERN, ARK.

LOCATION.—Water-stage recorder in SW. ¼ NW. ¼ sec. 36, T. 3 S., R. 18 W., 700 feet below Remmel Dam, 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, 1929.

EXTREMES.—Maximum discharge during year, 48,100 second-feet Dec. 17 (gage height, 21.72 feet); minimum, 27 second-feet Nov. 30 and Aug. 25–27 (gage height, 1.70 feet).

1925–1929: Maximum discharge, from extended curve, 138,000 second-feet Apr. 21, 1927 (gage height, 35.7 feet); minimum, 15 second-feet Sept. 12 and 13, 1925 (gage height, 1.52 feet).

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

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	124	940	1,520	170	2,940	5,590	2,760	2,750	2,840	2,100	110	93
2	127	1,500	2,210	522	2,850	4,140	2,590	6,910	2,000	750	131	94
3	116	2,480	2,500	1,210	1,210	3,600	2,700	4,660	2,130	627	122	93
4	133	1,050	2,530	1,430	1,690	5,690	2,800	3,300	2,750	441	125	107
5	211	587	1,910	2,560	2,370	6,360	2,650	2,390	2,810	928	116	122
6	154	882	1,140	15,600	2,190	5,060	2,040	2,610	2,310	1,520	102	90
7	163	1,190	1,260	9,880	1,680	3,880	1,310	2,780	1,320	399	106	124
8	149	475	1,560	5,180	1,810	3,400	1,790	2,360	1,290	818	96	113
9	287	819	172	5,060	2,350	2,730	3,900	8,900	1,270	761	92	107
10	149	301	621	6,040	1,960	2,210	14,500	9,190	1,320	949	97	94
11	131	133	1,520	5,880	2,100	2,550	6,470	5,650	1,090	710	113	102
12	135	198	1,820	4,170	2,310	2,800	4,060	4,440	1,200	630	118	98
13	118	152	6,110	3,250	1,930	2,750	3,250	8,110	1,250	478	104	920
14	121	374	12,100	2,990	1,950	2,580	2,590	24,800	1,120	676	114	285
15	267	346	6,840	2,910	2,850	2,900	3,710	14,000	696	470	107	293
16	141	857	10,200	2,850	2,840	2,760	3,010	6,940	173	371	110	970
17	135	523	41,600	2,880	2,370	2,350	2,790	4,460	652	167	109	474
18	146	437	29,600	8,160	2,640	2,740	2,810	3,910	605	135	179	314
19	140	2,230	12,000	12,600	2,850	2,760	2,850	6,040	420	484	117	281
20	196	2,260	6,580	6,090	3,260	2,690	2,850	7,340	455	112	108	351
21	143	2,140	3,830	4,390	3,700	2,720	1,530	3,200	117	113	107	406
22	138	1,680	3,450	3,450	3,660	2,760	204	2,900	39	125	105	300
23	163	948	2,810	3,190	4,020	2,770	902	2,810	372	128	106	249
24	178	996	2,710	6,070	5,230	2,350	1,580	2,750	200	129	102	170
25	173	568	1,550	24,100	8,900	2,580	2,830	2,770	1,760	131	236	154
26	223	225	1,890	20,800	22,300	2,750	2,260	1,790	1,070	163	96	437
27	154	379	2,410	8,280	21,400	2,570	1,030	1,400	711	142	96	201
28	131	1,090	2,340	5,440	8,140	1,450	843	456	574	150	105	324
29	133	1,270	1,950	3,950	-------	2,230	1,310	864	532	126	102	271
30	133	444	366	3,280	-------	2,380	1,740	2,160	534	192	103	228
31	143	-------	1,140	2,960	-------	2,050	-------	2,830	-------	143	93	-------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	287	116	157	9,650
November	2,480	133	916	54,500
December	41,600	172	5,430	334,000
January	24,100	170	5,980	368,000
February	22,300	1,210	4,410	245,000
March	6,360	1,450	3,100	191,000
April	14,500	204	2,860	170,000
May	24,800	456	5,020	309,000
June	2,840	39	1,120	66,600
July	2,100	112	486	29,900
August	236	92	114	7,010
September	970	90	262	15,600
The year	41,600	39	2,480	1,800,000

OUACHITA RIVER AT ARKADELPHIA, ARK.

LOCATION.—Chain gage on line between secs. 16 and 21, T. 7 S., R. 19 W., at Arkadelphia, 8 miles below Caddo River. Zero of gage is 164.9 feet above mean sea level.

DRAINAGE AREA.—2,350 square miles.

RECORDS AVAILABLE.—April to September, 1929.

EXTREMES.—Maximum discharge during period, 26,600 second-feet May 15 (gage height, 14.11 feet); minimum, 95 second-feet July 24 (gage height, −0.34 foot).

Maximum stage known, 23.9 feet Apr. 21, 1927.

REMARKS.—Records good except those for extremely high stages, which are fair.

Daily and monthly discharge, in second-feet, 1929

Day	Mar.	Apr.	May	June	July	Aug.	Sept.
1			5,510	4,120	900	226	117
2			6,510	3,560	505	209	117
3			7,210	2,900	788	198	108
4			5,350	3,980	1,290	220	112
5			3,980	4,120	788	154	123
6			3,290	3,840	1,630	176	117
7			3,560	2,420	1,540	165	149
8			3,560	2,000	575	154	214
9			8,860	2,000	862	209	575
10			12,600	2,000	1,720	165	360
11			10,000	1,810	1,290	165	372
12			6,510	1,460	1,050	170	575
13			7,930	5,670	575	176	900
14			20,000	4,120	610	214	1,380
15			25,300	2,510	900	144	1,210
16		4,120	13,000	1,380	405	154	286
17		3,420	7,030	750	405	154	298
18		3,420	5,830	1,130	322	165	340
19		3,290	5,030	1,050	238	165	280
20		3,420	9,430	680	575	182	238
21		3,030	5,190	680	214	165	256
22		1,460	3,840	575	176	154	250
23		715	3,560	470	170	149	198
24		1,630	3,560	680	128	154	160
25		4,870	3,420	470	144	154	238
26		4,270	3,160	2,000	154	149	256
27		2,540	2,100	1,630	182	170	292
28	2,120	1,900	2,660	1,380	198	176	262
29		1,540	2,000	938	192	182	220
30		2,310	5,350	470	209	108	316
31			5,030		192	133	

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April 16-30	4,870	715	2,800	83,300
May	25,300	2,000	6,790	418,000
June	5,670	470	2,020	120,000
July	1,720	128	611	37,600
August	226	108	170	10,500
September	1,380	108	343	20,400
The period				690,000

OUACHITA RIVER NEAR CAMDEN, ARK.

LOCATION.—Staff gage in E. ½ sec. 10, T. 13 S., R. 17 W., 2 miles north of Camden, 5 miles below Ecore Fabre Creek, and 20 miles below Little Missouti River.

DRAINAGE AREA.—5,390 square miles.

RECORDS AVAILABLE.—August, 1928, to September, 1929.

EXTREMES.—Maximum discharge during year, 62,400 second-feet Dec. 22; minimum, 150 second-feet Sept. 4 (gage height, −0.12 foot).

1928–29: Maximum discharge, that of Dec. 22, 1928; minimum, that of Sept. 4, 1929.

REMARKS.—Records good. Discharge estimated Dec. 17–27, Jan. 8, 9, 11–15, 20–31, Feb. 27, 28, Mar. 1–4, 6–25, and May 16–18; interpolated Nov. 12, Dec. 16, 28, 29, Jan. 10, and Feb. 1.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	270	378	1,880	5,820	22,000	27,200	5,540	3,920	7,940	1,140	310	175
2	270	585	2,540	4,840	17,560	29,200	5,400	4,980	8,420	940	355	175
3	270	1,770	3,020	3,790	13,100	22,600	5,680	6,480	8,020	750	325	170
4	270	3,400	3,660	3,020	10,900	20,800	5,400	7,860	7,220	750	310	160
5	270	3,980	3,660	3,790	9,060	22,800	4,980	7,000	6,030	1,440	268	172
6	270	3,020	3 400	6, 00	7,620	24,700	4,840	5,610	4,910	1,550	255	182
7	285	1,720	3,080	11,100	6,780	26,100	4,640	4,380	4,570	1,770	242	180
8	360	1,720	2, 30	20,000	7,150	29,200	3,660	4,240	3,790	1,600	242	182
9	378	1,660	2,040	22,000	7,460	22,900	3,660	4,310	3,270	1, 40	242	190
10	412	,550	1, .70	20,100	8,740	21,000	3,920	6,700	2,660	990	242	.68
11	345	1 040	1,440	18,200	10,300	1 ,900	7,150	10,000	2,720	1,340	242	570
12	315	900	1,290	20,000	10,800	11,300	11,100	11,800	2,480	1,240	222	570
13	300	765	1,990	18,000	10,200	10,200	9,220	10,300	2,380	1,140	205	570
14	270	585	5,540	13,100	9,220	9,400	7,620	9,620	2,960	1,140	200	615
15	245	545	7,860	11,700	8,340	9,100	5,890	12,000	6,400	1,140	192	795
16	245	545	11,700	9,620	7,940	9,000	5,120	17,900	6,180	1,140	190	1,090
17	285	545	16,400	8,660	9,700	8,900	5,330	20,700	5,260	990	202	750
18	330	1,290	20,300	8,100	9,940	8,500	4,910	20,400	3,200	890	195	750
19	330	2,260	27,800	8,500	9,300	7,800	4,570	14,300	2,380	750	180	990
20	300	2,960	36,400	14,800	8,580	7,300	3,790	11,900	2,100	570	182	615
21	300	3,460	58,500	21,100	8,500	6,800	3,790	10,700	1,770	548	168	388
22	315	3,400	61,600	20,400	8,980	6,500	4,180	10,000	1,240	660	182	425
23	330	2,960	45,400	15,800	9,700	6,100	3,790	7,380	1,290	405	182	425
24	330	2,320	20,800	17,700	10,600	6,000	2,660	5,610	1,140	355	182	425
25	315	1,990	14,900	20,400	11,500	5,800	3,140	4,700	1,090	340	180	370
26	300	1,660	11,100	23,000	13,100	5,540	5,960	4,440	1,140	340	182	355
27	330	1,600	9,100	27,400	21,400	5,400	8,100	4,240	1,880	325	175	325
28	345	1,550	8,900	32,600	25,500	5,400	7,380	3,920	1,990	310	170	280
29	378	1,550	8,700	38,400	-------	5,120	5,890	3,460	1,500	325	175	325
30	360	1,440	8,500	34,700	-------	4,840	4,310	3,530	1,340	310	172	310
31	330	-------	7,000	26,400	-------	5,400	-------	6,100	-------	340	170	-------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	412	245	311	19,100
November	3,980	378	1,770	105,600
December	61,600	1,290	13,300	818,000
January	38,400	3,020	16,400	1,010,000
February	25,500	6,780	11,200	622,000
March	29,200	4,840	13,100	806,000
April	11,100	2,660	5,390	321,000
May	20,700	3,460	8,340	513,000
June	8,420	1,090	3,580	213,000
July	1,770	310	860	52,900
August	355	168	217	13,300
September	1,090	160	427	25,400
The year	61,600	160	6,240	4,520,000

LITTLE MISSOURI RIVER NEAR MURFREESBORO, ARK.

LOCATION.—Chain gage in SE. ¼ sec. 13, T. 8 S., R. 26 W., 2 miles southwest of Murfreesboro and 1 mile below Muddy Creek. Zero of gage is 323.70 feet above mean sea level.

DRAINAGE AREA.—380 square miles.

RECORDS AVAILABLE.—October, 1927, to September, 1929.

EXTREMES.—Maximum discharge during year, 21,600 second-feet Dec. 17 (gage height, 12.52 feet); minimum, 5 second-feet Aug. 30 to Sept. 3 (gage height) 1.68 feet).

1928–29: Maximum and minimum discharge, same as given above.

REMARKS.—Records fair. Discharge interpolated for Sundays, when gage was not read. Discharge estimated Mar. 10–13.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5	328	835	182	525	1,080	750	980	1,190	43	33	5
2	8	835	630	187	490	790	525	835	910	63	24	5
3	15	340	425	215	458	1,020	490	595	630	630	15	5
4	12	230	351	243	425	1,240	458	490	595	363	14	5
5	15	120	269	10,000	388	980	413	415	490	253	12	6
6	11	92	229	5,740	525	750	357	340	670	205	11	8
7	10	73	200	1,480	425	630	342	284	490	150	9	7
8	9	59	160	1,080	790	560	328	263	375	89	9	50
9	10	51	148	1,670	1,300	1,190	4,320	2,080	309	89	12	215
10	11	36	136	2,080	1,070	900	1,540	1,300	243	63	12	295
11	8	31	108	1,420	835	600	930	930	234	63	14	630
12	9	26	160	1,030	710	650	670	4,210	136	43	17	305
13	11	33	6,290	850	670	700	560	7,490	6,770	43	15	187
14	10	36	2,220	670	595	790	560	3,920	1,240	43	15	215
15	9	200	1,190	670	710	1,480	560	2,080	750	43	11	150
16	9	880	11,400	790	710	1,080	458	1,800	556	26	8	95
17	9	1,540	21,600	750	640	895	400	1,190	363	26	8	68
18	10	1,080	3,920	2,370	560	710	328	1,140	305	26	8	51
19	47	630	2,080	2,370	595	630	289	945	205	26	7	43
20	40	34	1,420	1,780	790	560	284	750	120	15	6	33
21	32	328	1,030	1,190	835	710	279	560	160	15	7	29
22	24	243	790	1,080	930	930	274	490	205	15	7	26
23	19	169	670	1,190	1,420	750	224	375	182	15	7	22
24	12	160	560	2,840	3,180	638	295	340	160	15	6	19
25	11	130	490	4,940	4,940	525	1,030	305	120	43	6	17
26	11	101	425	2,370	3,540	458	104	415	89	43	6	15
27	15	108	382	1,780	2,080	710	51	525	89	26	6	14
28	29	108	328	1,190	1,420	560	207	1,800	63	24	5	14
29	43	169	305	880	------	710	363	1,140	63	15	5	13
30	33	1,540	274	750	------	525	305	3,540	53	15	5	12
31	101	------	243	630	------	458	------	1,800	------	15	5	------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	101	5	19.3	1,190
November	1,540	26	324	19,300
December	21,600	108	1,910	117,000
January	10,000	182	1,760	108,000
February	4,940	388	1,130	62,800
March	1,480	458	781	48,000
April	4,320	51	590	35,100
May	7,490	305	1,400	86,100
June	6,770	53	592	35,200
July	630	15	82.0	5,040
August	33	5	10.5	646
September	630	5	85.3	5,080
The year	21,600	5	723	523,000

SALINE RIVER NEAR WARREN, ARK.

LOCATION.—Chain gage in SW. ¼ sec. 15, T. 13 S., R. 9 W., 3½ miles southeast of Warren and 3 miles below Cypress Creek.

DRAINAGE AREA.—2,490 square miles.

RECORDS AVAILABLE.—August, 1928, to September, 1929.

EXTREMES.—Maximum discharge during year, 11,900 second-feet Mar. 12 (gage height, 20.22 feet); minimum, 18 second-feet Sept. 23–26 (gage height, 1.38 feet).

1928–1929: Maximum and minimum discharge, same as given above. Maximum stage known, 28.0 feet Apr. 27, 1927.

REMARKS.—Records good.

Daily and monthly discharge, in second-feet, 1928–29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	88	480	4,910	8,660	8,770	1,960	3,200	1,140	220	64	27
2	63	130	690	2,370	8,660	8,000	2,010	2,550	1,220	220	72	25
3	83	240	620	1,460	8,770	7,400	2,240	1,960	1,420	182	94	24
4	77	255	550	1,260	8,770	7,600	2,420	2,010	1,540	168	81	21
5	115	270	480	1,340	8,440	8,440	2,460	2,320	1,380	250	72	23
6	330	345	410	1,740	7,700	9,580	2,370	2,550	1,100	327	57	26
7	240	585	375	1,830	6,470	10,300	2,140	2,730	830	182	49	24
8	118	655	315	1,880	4,580	10,800	1,780	2,910	830	160	49	74
9	99	585	300	2,190	3,350	11,300	1,540	3,000	795	145	49	115
10	109	392	315	2,910	3,300	11,700	1,540	3,150	725	140	90	60
11	109	345	315	3,500	3,450	11,900	1,540	3,100	655	235	63	39
12	90	315	315	3,600	3,550	11,900	1,380	2,860	655	205	55	33
13	80	285	1,060	3,600	3,550	11,900	1,540	2,640	690	150	49	28
14	64	240	2,550	3,550	3,500	11,700	1,780	2,780	655	140	42	24
15	67	212	2,370	3,550	3,450	11,300	1,920	3,000	585	170	38	22
16	104	200	1,920	3,500	3,600	10,300	1,880	3,300	795	150	36	22
17	795	188	3,000	3,450	3,650	9,100	1,620	3,450	1,180	136	36	20
18	1,960	141	5,270	3,400	3,600	7,600	1,420	3,600	1,220	117	36	20
19	1,500	143	5,870	3,550	3,550	6,640	1,420	3,750	865	100	36	20
20	900	132	5,870	3,650	3,550	4,740	1,540	3,900	550	89	34	20
21	620	132	5,660	3,400	3,800	3,600	1,740	4,000	410	73	34	20
22	360	130	5,520	3,250	4,300	3,200	1,580	4,150	343	67	34	20
23	255	106	5,660	3,500	4,410	3,050	1,340	4,250	280	64	34	18
24	146	97	6,470	4,360	4,300	3,100	1,180	4,360	265	67	31	18
25	124	88	7,800	6,550	4,360	2,460	1,460	4,250	250	64	31	18
26	120	80	9,100	8,220	6,730	2,280	2,780	3,700	205	60	31	18
27	111	74	10,100	8,880	8,770	2,100	3,300	2,280	205	57	31	19
28	99	80	10,600	9,220	9,340	1,920	3,500	1,140	205	49	31	23
29	90	118	10,600	9,220	------	1,780	3,600	900	250	45	31	24
30	90	143	9,700	8,990	------	1,880	3,550	980	250	57	29	25
31	86	------	7,800	8,660	------	1,960	------	1,060	------	64	29	------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,960	45	292	18,000
November	655	74	226	13,400
December	10,600	300	3,940	242,000
January	9,220	1,260	4,240	261,000
February	9,340	3,300	5,360	298,000
March	11,900	1,780	7,040	433,000
April	3,600	1,180	2,020	120,000
May	4,360	900	2,900	178,000
June	1,540	205	716	42,600
July	327	45	134	8,240
August	94	29	46.7	2,870
September	115	18	29.0	1,730
The year	11,900	18	2,240	1,620,000

BAYOU BARTHOLOMEW NEAR BEEKMAN, LA.

LOCATION.—Chain gage in T. 22 N., R. 6 E., 4 miles south of Beekman and 4 miles above Cypress River. Zero of gage is 70.37 feet above mean sea level.

RECORDS AVAILABLE.—August, 1928, to September, 1929.

EXTREMES.—Maximum discharge during year, 5,230 second-feet Mar. 27 (gage height, 19.20 feet); minimum, 145 second-feet Aug. 30 (gage height, 1.44 feet).

1928–29: Maximum and minimum discharge, same as given above.

REMARKS.—Records good, except those for estimated periods, which are fair. Discharge estimated June 30, July 1–24, Aug. 18–24, and Sept. 8–30.

Daily and monthly discharge, in second-feet, 1928-29

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	197	165	209	980	1,080	2,900	4,190	3,010	493		195	154
2	197	197	209	1,000	1,060	3,190	3,830	3,010	493		195	154
3	186	197	209	1,020	1,040	3,350	3,430	3,120	476		195	154
4	186	186	221	1,040	1,060	3,390	3,230	3,390	428		195	163
5	186	197	245	1,060	1,080	3,430	2,980	3,350	412		195	154
6	186	197	245	1,060	1,140	3,390	2,760	3,120	380		184	154
7	186	197	233	1,060	1,160	3,390	2,730	2,870	348		184	163
8	175	197	221	1,060	1,240	3,430	2,380	2,480	259		173	175
9	186	186	221	1,060	1,320	3,510	2,240	2,200	232		173	200
10	175	175	209	1,040	1,420	3,950	2,170	1,740	232		163	200
11	175	186	221	1,020	1,540	3,550	2,040	1,320	232		154	
12	175	197	496	980	1,600	3,630	1,950	1,240	232	200	154	
13	165	197	595	960	1,620	3,790	1,890	1,080	232		154	
14	165	197	578	940	1,650	3,830	1,800	980	232		154	
15	165	197	612	900	1,620	3,910	1,740	842	232		154	
16	175	209	698	860	1,600	3,990	1,710	824	232		163	
17	175	209	842	770	1,600	4,030	1,680	788	232		163	
18	175	209	940	752	1,570	4,030	1,470	752	245		160	
19	175	221	980	960	1,520	3,950	1,470	734	232		160	
20	175	221	1,000	1,040	1,500	3,830	1,370	680	232		160	
21	165	221	1,060	1,060	1,520	3,790	1,300	680	245		154	160
22	165	233	1,080	1,040	1,600	3,870	1,340	680	245		154	
23	165	233	1,060	1,040	1,650	4,430	1,500	698	245		154	
24	165	233	1,040	1,020	1,710	4,470	1,710	680	232		154	
25	165	221	980	1,020	1,800	4,830	2,420	646	232	184	154	
26	165	221	960	1,060	2,240	5,110	2,760	612	232	195	154	
27	165	221	940	1,100	2,520	5,230	2,840	595	219	184	145	
28	175	209	920	1,140	2,660	4,990	3,010	578	219	184	154	
29	175	209	940	1,160	-------	4,750	2,870	561	207	163	154	
30	175	209	940	1,160	-------	4,470	2,900	527	207	173	145	
31	165	-------	960	1,120	-------	4,270	-------	493	-------	184	154	-------

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	197	165	175	10,800
November	233	165	205	12,200
December	1,080	209	647	39,800
January	1,160	752	1,020	62,700
February	2,660	1,040	1,540	85,500
March	5,230	2,900	3,960	243,000
April	4,190	1,300	2,320	138,000
May	3,390	493	1,430	87,900
June	493	207	279	16,600
July	----------	163	196	12,100
August	195	145	165	10,100
September	----------	----------	162	9,640
The year	5,230	----------	1,010	728,000

MISCELLANEOUS DISCHARGE MEASUREMENTS

Discharge measurements of streams in the lower Mississippi River Basin at points other than regular gaging stations are listed in the following table:

Miscellaneous discharge measurements in the lower Mississippi River drainage basin during the year ending September 30, 1929

Date	Stream	Tributary to—	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
Sept. 28	Dry Fork	Meramec River	In sec. 33, T. 38 N., R. 6 W., 3 miles southeast of St. James, Mo.		1.3
Sept. 4	Huzzah Creek	do	William Waller Ford, 1 mile east of Davisville, Mo.		18
July 12	Middle Fork of Obion River.	Obion River	Near Dresden, Tenn	2.32	115
July 30	do	do	do	2.09	60
Sept. 21	do	do	do	2.15	58
Sept. 26	do	do	do	2.26	83
Oct. 16	St. Francis River	Mississippi River	Marked Tree, Ark	2.60	719
Jan. 11	do	do	do	9.46	1,960
June 25	do	do	do	7.38	1,860
Aug. 22	do	do	do	3.66	989
Oct. 23	Blue Spring	James River	In sec. 32, T. 28 N., R. 22 W., 3 miles southeast of Battlefield, Mo.		3.3
Aug. 24	Eleven Point River	Spring River	Birdell, Ark		830
June 26	Strawberry River	Black River	Jesup, Ark		361
Aug. 16	Mulberry River	Arkansas River	Mulberry, Ark	.95	15.5
Do	do	do	do	.95	16.0
Sept. 10	North Fork of Little Wichita River.	Red River	2,000 feet below Archer City-Holliday highway bridge, Archer County, Tex.		[a] 4,950
July 24	Ecore Fabre Creek	Ouachita River	Mouth, near Camden, Ark		.9

[a] Computed by slope-area method.

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