UNITED STATES DEPARTMENT OF THE INTERIOR

SURFACE WATER SUPPLY *of the* UNITED STATES 1926

PART VII
LOWER MISSISSIPPI RIVER BASIN

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 627

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

Water-Supply Paper 627

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PART VII
LOWER MISSISSIPPI RIVER BASIN

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

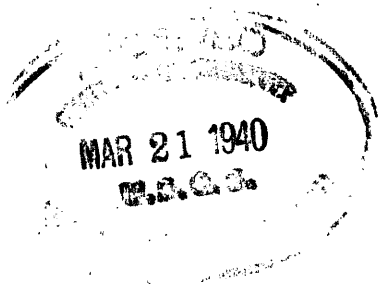

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ILLUSTRATION

SURFACE WATER SUPPLY OF LOWER MISSISSIPPI RIVER BASIN, 1926

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, 1926.

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 arid 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, 1895–1926

1895	$12,500.00	1911–1917	$150,000.00
1896	24,500.00	1918	175,000.00
1897–1899	50,000.00	1919	148,244.10
1900	70,000.00	1920	175,000.00
1901–2	100,000.00	1921–1923	180,000.00
1903–1906	200,000.00	1924–25	170,000.00
1907	150,000.00	1926	165,000.00
1908–1910	100,000.00		

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

Measurements of stream flow have been made at about 5,250 points in the United States and also at many points in Alaska and the Hawaiian Islands. In July, 1926, 1,730 gaging stations were being

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

DEFINITION OF TERMS

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

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

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

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

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

The following terms not in common use are here defined:

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

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

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

EXPLANATION OF DATA

The data presented in this report cover the year beginning October 1, 1925, and ending September 30, 1926. 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 ground water, and this stored water passes off in the streams during the spring break-up. At the end of September, on the other hand, the only stored water available for run-off is possibly a small quantity in the ground; therefore the run-off for the year beginning October 1 is practically all derived from precipitation within that year.

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

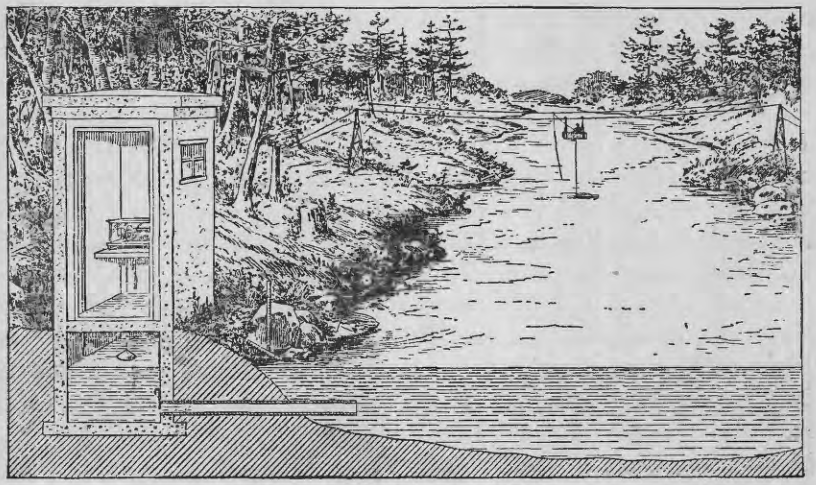

FIGURE 1.—Typical gaging station

supplement the gage heights and discharge measurements in determining the daily flow. The records of stage are obtained either from direct readings on a staff gage 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. The general methods are outlined in standard textbooks on the measurement of river discharge. A typical gaging station, equipped with water-stage recorder and measuring cable and car, is shown in Figure 1.

From the discharge measurements rating tables are prepared that give the discharge for any stage. The application of the daily gage heights to these rating tables gives the 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 giving results

of discharge measurements, a table showing the daily discharge of the stream, and a table of monthly and yearly discharge and run-off.

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

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

The table of daily discharge gives, in general, the discharge in second-feet corresponding to the mean of the gage heights read each day. At stations on streams subject to sudden or rapid diurnal fluctuation the discharge obtained from the rating table and the mean daily gage 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 operating on the principle of the planimeter and containing as an essential element the rating curve of the station.

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

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

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

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

of applying daily gage heights to the rating table to obtain the daily discharge.

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

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

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

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

PUBLICATIONS

Investigation of water resources by the United States Geological Survey has consisted in large part of measurements of the volume of flow of streams and studies of the conditions affecting that flow, but it has comprised also investigation of such closely allied subjects as irrigation, water storage, water powers, underground waters, and quality of waters. Most of the results of these investigations have

been published in the series of water-supply papers, but some have appeared in the 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. John 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. Upper Mississippi River and Hudson Bay Basins.
VI. Missouri River Basin.
VII. Lower Mississippi River Basin.
VIII. Western Gulf of Mexico basins.
IX. Colorado River Basin.
X. Great Basin.
XI. Pacific 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.
Albany, N. Y., 904 Home Savings Bank Building.
Hartford, Conn., 64 State Capitol.
Trenton, N. J., 423 Statehouse Annex.
Charlottesville, Va., Brooks Museum, University of Virginia.
Asheville, N. C., 608 City Hall.
Tuscaloosa, Ala., Post Office Building.
Chattanooga, Tenn., 630 Power Building.
South Charleston, W. Va., Naval Ordnance Plant.
Columbus, Ohio, Engineering Experiment Station, Ohio State University.
Chicago, Ill., 1510 Consumers Building.
Thief River Falls, Minn., 618 Knight Avenue, North.
Madison, Wis., 337N State Capitol.
Rolla, Mo., Rolla Building, School of Mines and Metallurgy.
Fort Smith, Ark., Post Office Building.

Topeka, Kans., 23 Federal Building.
Helena, Mont., 45–46 Federal Building.
Denver, Colo., 403 Post Office Building.
Salt Lake City, Utah, 313 Federal Building.
Idaho Falls, Idaho, 228 Federal Building.
Boise, Idaho, Federal Building.
Tacoma, Wash., 404 Federal Building.
Portland, Oreg., 606 Post Office Building.
San Francisco, Calif., 303 Customhouse.
Los Angeles, Calif., 600 Federal Building.
Tucson, Ariz., 104 Agricultural Building, University of Arizona.
Austin, Tex., State Capitol.
Honolulu, Hawaii, Territorial Office Building.

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

Stream-flow records have been obtained at about 4,990 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 September, 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	Description, 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 the 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.
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.

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

[W = Water-Supply Paper]

Report	Character of data	Year
W 321 to 332	Complete data	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.

NOTE.—No data regarding stream flow are given in the Fifteenth and Seventeenth Annual Reports.

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

The following table gives, by years and drainage basins, the numbers of the papers on surface-water supply published from 1899 to 1924. 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 Machias River at Whitneyville, Me., 1903 to 1921, are published in Water-Supply Papers 97, 124, 165, 201, 241, 261, 281, 301, 321, 351, 381, 401, 431, 451, 471, 501, and 521, which contain records for the New England streams from 1903 to 1921. Results of miscellaneous measurements are published by drainage basins.

Numbers of water-supply papers containing results of stream measurements, 1899–1926

[For basins included see p. 6]

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

[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 Kerns Rivers and south Pacific slope drainage 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 the Platte.
[k] Tributaries of the Mississippi from east.
[l] Lake Ontario and tributaries to St. Lawrence River proper.
[m] Hudson Bay only.
[n] New England rivers only.
[o] Hudson River to Delaware River, inclusive.
[p] Susquehanna River to Yadkin River, inclusive.
[q] Platte and Kansas Rivers.
[r] Great Basin in California, except Truckee and Carson River Basins.
[s] Below junction with Gila.
[t] Rogue, Umpqua, and Siletz Rivers only.

COOPERATION

In Missouri the work was done in cooperation with the Missouri Bureau of Geology and Mines, through H. A. Buehler, State geologist. Financial assistance has also been rendered by the United States Weather Bureau, Little River Drainage District, Ozark Power & Water Co., Missouri Game and Fish Department, Empire District Electric Co., Missouri Hydro-electric Power Co., Willis H. Meredith, and Springfield City Water Co.

In Arkansas the station on White River at Beaver, Ark., was maintained in cooperation with the Ozark Power & Water Co., and the stations on Ouachita River near Hot Springs and Malvern, Ark., were maintained in cooperation with the Arkansas Power & Light Co.

In Kansas the work was done in cooperation with the Kansas Water Commission, Gov. Ben S. Paulen, chairman; H. A. Rice, secretary; and H. B. Walker. Financial assistance was also rendered by G. S. Knapp, State irrigation commissioner; city engineer of Wichita, P. L. Brockway, city engineer; and Kansas Gas & Electric Co.

The Oklahoma Gas & Electric Co. and the Oklahoma Power Co. cooperated in the maintenance of the stations in Oklahoma.

In Texas the work was done in cooperation with the Texas Board of Water Engineers, consisting of John A. Norris, chairman, C. S. Clark, and A. H. Dunlap. Financial assistance has also been rendered by the Board of City Development, Amarillo, Tex., and the Chamber of Commerce, Jefferson, Tex.

DIVISION OF WORK

Data for stations in Missouri and Arkansas were collected and prepared for publication under the direction of H. C. Beckman, district engineer, assisted by V. L. Austin, and W. A. Werner.

Data for stations in Colorado were collected and prepared for publication under the direction of Robert Follansbee, district engineer, assisted by P. V. Hodges and Miss Nellie L. Esterly.

Data for stations in Kansas and Oklahoma were collected and prepared for publication by J. B. Spiegel, district engineer.

Data for stations in Texas and 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 C. E. McCashin, W. E. Armstrong, Trigg Twichell, H. C. Pritchett, J. L. Saunders, S. D. Breeding, Tate Dalrymple, Morris Reedy, Kate Casparis, J. E. Stewart, and R. G. Fisher.

GAGING-STATION RECORDS

MERAMEC RIVER BASIN

MERAMEC RIVER NEAR STEELVILLE, MO.

LOCATION.—In NE. ¼ sec. 21, T. 38 N., R. 4 W., at highway bridge 400 feet below St. Louis-San Francisco Railway bridge, half a mile above Whittenberg Creek, and 2½ miles north of Steelville, Crawford County.

DRAINAGE AREA.—About 830 square miles (measured on topographic and soil survey maps).

RECORDS AVAILABLE.—December 21, 1922, to September 30, 1926. The United States Weather Bureau has obtained records of stage 1 mile upstream since October 1, 1916.

GAGE.—Chain gage on downstream side of bridge; read by Sarah Fockler.

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

CHANNEL AND CONTROL.—Bed composed of clean, coarse gravel. Left bank high and rocky. Right bank thinly wooded; subject to overflow at extremely high stages. Control is a gravel bar extending 200 feet downstream from bridge; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 8.50 feet at 8.20 a. m. November 8 (discharge, 7,270 second-feet); minimum stage, 0.52 foot July 25 to August 1 (discharge, 115 second-feet).

1923–1926: Maximum stage recorded, 12.43 feet May 29, 1924 (discharge, 11,900 second-feet); minimum discharge, that of July 25 to August 1, 1926.

Maximum stage of 26.5 feet (determined from records of United States Weather Bureau) occurred August 20, 1915.

REGULATION.—Natural regulation by large springs.

ACCURACY.—Stage-discharge relation changed slightly during the year; not affected by ice. Rating curve fairly well defined. Gage read to hundredths once or twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

Discharge measurements of Meramec River near Steelville, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 23	1.20	305	May 2	1.18	311	Aug. 23	0.76	160
Feb. 17	1.98	762	June 28	.67	148	Aug. 23	.76	155

Daily discharge, in second-feet, of Meramec River near Steelville, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	248	174	216	176	540	822	1,640	295	192	154	115	142
2	234	162	203	186	675	640	1,640	305	195	165	140	140
3	390	152	192	203	675	570	1,320	290	195	174	136	138
4	540	144	320	241	605	510	1,080	290	192	165	132	144
5	330	130	3,640	256	510	420	898	277	189	156	129	162
6	265	178	2,280	256	480	420	785	261	189	148	125	165
7	230	3,030	1,160	244	420	480	860	261	183	148	121	178
8	200	6,830	935	230	390	480	1,160	310	183	144	118	181
9	174	1,960	675	219	365	450	1,080	365	183	144	118	160
10	146	1,320	640	209	335	420	972	390	200	140	118	165

Daily discharge, in second-feet, of Meramec River near Steelville, Mo., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	144	935	540	198	300	898	898	365	189	136	118	160
12	169	785	450	195	277	1,560	860	365	189	132	118	160
13	181	710	420	195	261	1,240	972	315	183	132	118	154
14	195	570	390	195	420	898	935	269	183	132	118	154
15	212	510	390	195	710	748	748	252	189	132	152	152
16	295	510	390	200	1,160	640	675	237	165	132	148	144
17	622	480	365	200	822	570	605	234	160	132	148	142
18	1,160	450	365	241	640	510	480	286	156	132	148	136
19	605	420	335	365	570	480	480	390	156	132	148	134
20	480	420	310	480	510	570	450	390	156	129	148	132
21	365	335	277	420	480	540	420	340	195	125	148	132
22	305	320	261	390	450	510	390	295	178	125	148	132
23	282	315	244	390	420	450	365	256	169	125	154	130
24	265	310	230	365	390	450	450	237	160	125	165	136
25	265	305	216	365	3,030	420	420	223	156	115	167	140
26	282	300	212	390	2,640	365	420	209	156	115	160	158
27	241	281	212	282	1,320	340	365	198	156	115	156	219
28	226	263	203	300	1,080	315	365	195	152	115	152	237
29	206	244	192	335	-------	295	335	195	148	115	148	320
30	195	230	181	365	-------	335	315	195	144	115	148	605
31	183	-------	172	365	-------	1,010	-------	195	-------	115	144	-------

NOTE.—Gage not read Nov. 27, 28, July 1, and Aug. 21; discharge interpolated.

Monthly discharge of Meramec River near Steelville, Mo., for the year ending September 30, 1926

[Drainage area, 830 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,160	144	317	0.382	0.44
November	6,830	130	759	.914	1.02
December	3,640	172	536	.646	.74
January	480	176	279	.336	.39
February	3,030	261	731	.881	.92
March	1,560	295	592	.713	.82
April	1,640	315	746	.899	1.00
May	390	195	280	.337	.39
June	200	144	175	.211	.24
July	174	115	134	.161	.19
August	167	115	139	.167	.19
September	605	130	175	.211	.24
The year	6,830	115	402	.484	6.58

MERAMEC RIVER NEAR SULLIVAN, MO.

LOCATION.—In N. ½ SW. ¼ sec. 35, T. 40 N., R. 2 W., at Sappington highway bridge, 3½ miles below Brazil Creek and 6 miles southeast of Sullivan, Franklin County.

DRAINAGE AREA.—1,550 square miles (measured on topographic and soil survey maps).

RECORDS AVAILABLE.—September 9, 1921, to September 30, 1926.

GAGE.—Chain gage on upstream side of bridge; read by John V. Sappington.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of silt, gravel, and rock; clean and fairly permanent. Right bank not subject to overflow. Left bank is wooded and is overflowed at stage of about 20 feet. Control is a bar of gravel and boulders 400 feet below gage; practically permanent. Small trees and brush grow on high parts of bar.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 14.60 feet at 2 p. m. November 8 (discharge, 11,800 second-feet); minimum discharge, 235 second-feet July 25 and August 9–12.

1921–1926: Maximum stage recorded, 17.25 feet April 9, 1924 (discharge, 15,400 second-feet); minimum discharge, 200 second-feet August 31 and September 8 and 9, 1925.

The flood of August, 1915, reached a stage of about 30.7 feet, determined by levels to somewhat indefinite floodmarks.

REGULATION.—Natural regulation by large springs.

ACCURACY.—Stage-discharge relation changed slightly during high water February 26; not affected by ice. Rating curves well defined. Gage read to hundredths once daily during low stages and twice daily during high stages. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

Discharge measurements of Meramec River near Sullivan, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 24	2.67	718	June 29	1.74	320	Aug. 24	1.92	409
May 3	2.70	723	June 30	1.73	324			

Daily discharge, in second-feet, of Meramec River near Sullivan, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	765	512	535	422	915	1,920	3,240	770	508	308	271	593
2	625	490	512	422	1,120	1,680	3,160	748	550	328	271	467
3	580	468	490	468	1,390	1,340	3,000	725	550	308	308	447
4	2,220	445	1,860	490	1,280	1,220	2,500	725	508	308	328	427
5	1,680	400	6,400	535	1,170	1,120	1,980	681	488	290	308	508
6	1,390	445	5,200	512	1,020	1,020	1,500	637	467	290	290	488
7	865	5,300	2,850	490	915	1,020	2,100	637	467	290	271	467
8	715	11,600	2,290	490	865	1,060	4,530	637	427	290	253	427
9	670	6,180	1,740	468	815	1,020	3,240	637	427	308	235	467
10	580	3,000	1,390	468	765	965	2,360	681	508	328	235	488
11	512	2,100	1,280	445	670	1,340	2,290	770	593	328	235	447
12	512	1,680	1,170	422	670	2,710	2,160	725	529	308	235	427
13	490	1,500	1,060	400	670	2,360	2,220	681	488	308	271	407
14	580	1,390	1,020	400	1,620	1,980	2,040	637	447	290	271	387
15	915	1,280	965	400	2,640	1,680	1,920	593	427	290	290	367
16	1,120	1,390	915	422	3,480	1,500	1,740	593	427	290	271	347
17	1,390	1,280	865	445	1,740	1,340	1,500	550	407	271	290	328
18	1,680	1,170	765	490	1,390	1,170	1,390	681	387	271	290	308
19	1,500	1,060	765	535	1,280	1,120	1,280	1,740	387	271	271	308
20	1,340	965	765	865	1,170	1,860	1,120	1,390	387	271	725	290
21	1,060	865	670	865	1,120	1,390	1,020	1,170	407	271	367	290
22	865	815	670	865	1,060	1,220	915	965	427	253	347	271
23	865	765	580	765	965	1,120	865	815	407	253	328	271
24	865	715	580	715	865	1,060	1,120	681	387	253	387	290
25	815	670	535	670	3,400	965	1,060	637	367	235	427	347
26	815	670	512	670	5,200	915	1,020	593	347	253	387	1,280
27	765	670	445	670	3,560	815	965	550	347	271	347	865
28	765	625	490	625	2,430	770	915	529	347	271	328	770
29	715	580	490	625	-------	770	865	508	328	271	290	815
30	625	580	468	670	-------	770	815	488	328	271	427	1,390
31	535	-------	468	765	-------	1,920	-------	467	-------	253	865	------

NOTE.—Gage not read May 2; discharge interpolated.

Monthly discharge of Meramec River near Sullivan, Mo., for the year ending September 30, 1926

[Drainage area, 1,550 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	2,220	490	930	0.600	0.69
November	11,600	400	1,650	1.06	1.18
December	6,400	445	1,250	.806	.93
January	865	400	564	.364	.42
February	5,200	670	1,580	1.02	1.06
March	2,710	770	1,330	.858	.99
April	4,530	815	1,830	1.18	1.32
May	1,740	467	730	.471	.54
June	593	328	436	.281	.31
July	328	235	284	.183	.21
August	865	235	336	.217	.25
September	1,390	271	499	.322	.36
The year	11,600	235	944	.609	8.26

MERAMEC RIVER NEAR EUREKA, MO.

LOCATION.—In SE. ¼ sec. 32, T. 44 N., R. 4 E., at Votaw Ford highway bridge on Eureka-Valley Park road, one-fourth mile below Antire Creek, 2 miles east of Eureka, St. Louis County, and 3 miles below Big River.

DRAINAGE AREA.—3,800 square miles (measured on topographic and soil survey maps).

RECORDS AVAILABLE.—August 26, 1903, to July 21, 1906, and October 6, 1921, to September 30, 1926.

GAGE.—Chain gage bolted to handrail on downstream side of bridge; read by J. W. Paul. Datum of present gage not same as that used 1903 to 1906.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and boulders. Right bank high, rocky, and wooded. Left bank, wooded at edge and cultivated beyond, is overflowed at stage of about 27 feet. Control is a short section of river channel of rock and gravel just below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 17.18 feet at 8.30 a. m. November 10 (discharge, 24,800 second-feet); minimum discharge, 410 second-feet July 24 and August 11 and 12.

1922–1926: Maximum stage recorded, 24.45 feet April 19, 1922 (discharge, 38,600 second-feet); minimum discharge, 320 second-feet September 28, 1922.

The flood of August 22, 1915, reached a stage of 38.8 feet, and the flood of February 1, 1916, a stage of 35.6 feet; determined by levels to high-water marks.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during December and February; not affected by ice. Rating curve fairly well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table until December 6 and by shifting-control method, after that date. Records good.

Discharge measurements of Meramec River near Eureka, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 25	2.44	1,780	Mar. 12	4.93	4,930	June 29	0.92	559
Feb. 24	2.85	2,530	May 3	2.34	1,780	Aug. 24	1.81	1,160

Daily discharge, in second-feet, of Meramec River near Eureka, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,560	1,310	1,310	1,740	2,320	9,800	7,550	1,960	1,120	612	470	1,520
2	1,850	a 1,310	1,310	1,740	a 2,830	4,430	10,700	1,740	925	790	450	1,410
3	a 3,660	1,310	1,210	1,520	3,300	3,800	8,760	1,520	a 942	730	560	2,930
4	5,470	1,040	a 5,000	a 1,420	3,430	3,180	8,070	1,630	960	a 645	512	960
5	9,500	960	11,700	1,310	2,930	2,800	7,550	1,520	960	560	512	1,740
6	8,620	925	16,100	1,310	2,680	2,560	6,380	1,520	925	512	490	2,200
7	3,930	a 7,000	11,400	1,310	2,440	2,680	11,800	1,410	890	490	450	1,000
8	2,930	18,100	6,900	1,310	2,200	2,680	12,000	1,310	855	470	450	925
9	2,200	23,000	5,860	1,210	1,960	2,680	13,200	1,310	855	470	450	1,210
10	1,850	24,400	4,690	1,210	1,960	a 3,750	7,940	1,210	a 855	a 491	430	1,410
11	1,520	16,100	3,930	1,210	1,960	4,820	7,290	1,310	855	512	410	1,120
12	a 1,360	a 5,730	3,560	1,120	1,740	5,210	7,290	1,310	820	512	410	925
13	1,210	4,560	3,300	1,120	1,740	6,770	7,030	1,310	960	512	670	1,120
14	1,310	3,680	2,800	1,040	1,520	5,600	6,770	1,310	a 875	a 481	1,210	925
15	1,630	4,180	2,680	1,040	6,440	4,690	5,860	1,210	790	450	640	2,200
16	a 1,860	4,560	2,440	1,000	a 5,700	3,930	4,950	1,120	790	490	535	1,040
17	2,080	4,560	2,320	1,000	4,950	3,560	4,560	1,120	760	a 470	490	760
18	a 3,580	3,930	2,080	1,040	a 4,190	3,300	3,560	1,850	730	450	585	640
19	5,080	3,430	2,080	2,930	3,430	2,930	3,300	1,520	700	470	a 898	612
20	4,180	3,180	1,960	3,430	2,930	a 4,070	2,800	2,680	a 700	470	1,210	560
21	3,180	2,680	1,850	3,430	2,800	5,210	2,680	2,200	700	450	2,080	535
22	2,440	2,320	1,850	3,060	a 2,740	5,990	2,560	1,850	730	430	a 1,640	535
23	2,080	2,200	1,630	2,800	2,680	4,560	2,320	1,630	730	430	1,210	535
24	a 1,910	1,960	1,520	2,440	2,560	3,680	3,800	1,410	760	410	1,120	535
25	1,740	1,740	1,520	2,200	10,200	3,300	3,680	a 1,260	700	430	1,120	790
26	2,080	1,740	1,410	2,200	14,400	2,680	3,430	1,120	670	430	1,410	a 1,160
27	1,850	1,630	2,800	2,200	13,700	2,440	3,180	1,040	670	430	1,000	1,520
28	1,630	1,630	3,300	2,200	11,000	2,200	2,680	960	670	430	820	2,560
29	a 1,520	1,520	2,800	2,200	-------	2,080	2,440	890	640	450	700	2,200
30	1,410	1,410	2,320	2,320	-------	a 3,900	2,200	855	560	470	855	6,250
31	1,310	-------	1,850	2,320	-------	5,730	-------	1,850	-------	470	1,630	-------

a Gage not read; discharge estimated from records of stations upstream.

Monthly discharge of Meramec River near Eureka, Mo., for the year ending September 30, 1926

[Drainage area, 3,800 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	9,500	1,210	2,820	0.742	0.86
November	24,400	925	5,070	1.33	1.48
December	16,100	1,210	3,730	.982	1.13
January	3,430	1,000	1,820	.479	.55
February	14,400	1,520	4,310	1.13	1.18
March	9,800	2,080	4,030	1.06	1.22
April	13,200	2,200	5,880	1.55	1.73
May	2,680	855	1,450	.282	.44
June	1,120	560	803	.211	.24
July	790	410	497	.131	.15
August	2,080	410	820	.216	.25
September	6,250	535	1,390	.366	.41
The year	24,400	410	2,700	.710	9.64

MERAMEC SPRING NEAR ST. JAMES, MO.

LOCATION.—In SE. ¼ sec. 1, T. 37 N., R. 6 W., 600 feet below outlet of spring, 1 mile above mouth of Spring Branch, and 6 miles southeast of St. James, Phelps County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—March 1, 1903, to July 21, 1906, and November 11, 1921, to September 30, 1926.

GAGE.—Vertical staff gage in two sections from 0.0 to 6.7 feet fastened to overhanging oak tree on right bank about 100 feet downstream from gage used 1903 to 1906 and set at different datum; read by F. E. Beezley.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel; small growth of aquatic plants in channel. Control is a coarse gravel bar 200 feet below gage; clean and practically permanent. Stage-discharge relation affected by backwater from Meramec River during high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.86 feet at 3.20 p. m. November 7 (discharge, 412 second-feet); minimum stage, 0.88 foot September 25–27 (discharge, 69 second-feet).

1903–1906: Maximum discharge uncertain owing to backwater from Meramec River; minimum discharge, 73 second-feet numerous days during January and February, 1905.

1922–1926: Maximum discharge, 420 second-feet March 17, 1923; minimum discharge, that of September 25–27, 1926.

ACCURACY.—Stage-discharge relation not permanent during the year; not affected by ice. Rating curve fairly well defined. Gage read to hundredths once daily except Sundays and holidays. Daily discharge ascertained by shifting-control method. Records good.

Discharge measurements of Meramec Spring near St. James, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 1	1.02	97	Feb. 17	1.20	143	June 28	0.92	86
Nov. 7	1.85	398	May 2	1.06	128	Aug. 13	.95	85
Nov. 8	1.77	358						

Daily discharge, in second-feet, of Meramec Spring near St. James, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	124	91	88	a 78	156	209	273	129	94	88	a 79	81
2	124	86	88	76	156	184	292	a 129	94	88	79	79
3	121	86	88	a 81	145	167	256	129	94	86	79	76
4	a 120	86	96	86	132	156	a 230	124	94	a 87	81	76
5	119	84	233	86	119	148	203	124	94	a 87	a 80	a 79
6	114	81	a 207	86	114	145	193	124	a 94	88	a 79	a 82
7	104	288	181	81	a 108	a 144	193	124	a 94	88	a 79	86
8	98	360	164	81	101	142	215	119	94	88	a 78	86
9	96	288	153	81	98	137	203	a 144	94	88	a 78	84
10	91	196	145	a 78	94	134	184	170	98	a 86	a 77	86
11	a 91	193	134	76	88	248	a 187	150	96	a 84	a 77	81
12	91	173	129	74	88	a 236	190	140	94	a 83	76	a 81
13	94	153	a 125	72	86	a 223	193	134	a 94	81	76	81
14	94	142	121	74	a 131	a 210	187	124	94	81	79	81
15	116	a 146	129	72	176	a 197	173	119	91	79	a 79	a 80
16	114	150	124	72	156	a 184	167	a 118	91	81	79	79
17	199	142	119	a 74	142	a 171	161	116	88	79	81	76
18	a 174	134	114	76	140	159	a 153	a 118	88	a 79	81	a 76
19	148	127	114	96	129	153	145	121	88	79	81	a 76
20	132	121	a 109	96	129	150	142	119	a 88	79	81	76
21	121	116	104	94	a 124	a 149	140	116	88	79	81	76
22	116	a 112	96	88	a 119	148	140	114	88	79	a 84	74
23	108	108	94	81	141	148	140	a 111	88	a 79	86	72
24	111	106	94	a 81	114	145	150	108	88	a 79	86	72
25	a 108	104	a 92	81	311	142	a 145	106	88	a 79	84	69
26	106	a 101	91	81	311	134	140	104	88	79	81	a 69
27	101	98	a 86	84	256	124	140	104	a 87	79	81	69
28	96	94	81	94	a 232	a 122	134	101	86	79	81	72
29	96	a 95	81	94	-------	119	129	98	88	79	a 84	79
30	94	96	81	94	-------	124	129	a 97	88	79	86	134
31	91	-------	79	a 125	-------	269	-------	a 95	-------	a 79	81	------

a Gage not read; discharge interpolated.

Monthly discharge of Meramec Spring near St. James, Mo., for the year ending September 30, 1926

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	199	91	113	May	170	95	120
November	360	81	139	June	98	86	91.1
December	233	79	117	July	88	79	82.2
January	125	72	83.6	August	86	76	80.5
February	311	86	145	September	134	69	79.6
March	269	119	165				
April	292	129	178	The year	360	69	116

BOURBEUSE RIVER AT UNION, MO.

LOCATION.—In SW. ¼ sec. 26, T. 43 N., R. 1 W., at highway bridge on St. Clair-Union road, 800 feet above Flat Creek, 1 mile east of Union, Franklin County, and 4 miles below Hamilton Creek.

DRAINAGE AREA.—767 square miles (measured on topographic maps and base map of Missouri).

RECORDS AVAILABLE.—June 7, 1921, to September 30, 1926. The United States Weather Bureau has records of stage since October 19, 1916.

GAGE.—Chain gage on downstream side of bridge; read by J. W. Keller.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of clay and coarse gravel. Control is a coarse gravel bar 800 feet below gage; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 13.14 feet at 7 a. m. November 10 (discharge, 11,800 second-feet); minimum stage, 0.96 foot at 7 a. m. July 31 (discharge, 41 second-feet).

1921–1926: Maximum stage recorded, 14.70 feet April 2, 1922 (discharge, 14,600 second-feet); minimum discharge, 27 second-feet September 20, 1925.

On August 22, 1915, the river reached a stage of 25.5 feet, determined by United States Weather Bureau.

ACCURACY.—Stage-discharge relation changed slightly during February; not affected by ice. Both rating curves well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

Discharge measurements of Bourbeuse River at Union, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 24	2.20	299	May 3	1.99	211	June 29	1.15	56
Feb. 23	2.38	353	June 29	1.15	58	Aug. 25	2.16	266

Daily discharge, in second-feet, of Bourbeuse River at Union, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	650	200	214	137	230	965	4,340	262	101	82	48	88
2	532	200	200	133	214	712	3,040	230	100	62	48	77
3	1,040	165	200	170	680	560	3,040	214	101	57	48	162
4	2,140	160	815	160	650	430	3,240	200	100	57	48	109
5	5,410	160	3,040	181	505	360	1,960	174	90	57	48	162
6	2,500	144	5,080	200	430	360	1,280	174	88	55	46	102
7	928	3,040	2,140	262	340	360	1,360	162	89	51	44	92
8	620	5,850	1,280	262	300	382	2,860	162	90	51	44	84
9	480	9,320	1,040	245	262	405	3,340	151	88	52	44	106
10	382	9,580	965	230	245	505	1,640	140	86	66	48	98
11	320	1,360	745	214	214	390	1,280	140	82	55	56	92
12	280	928	590	186	200	1,870	1,280	140	81	52	57	102
13	245	745	505	178	186	2,050	1,780	174	76	49	54	130
14	230	620	430	168	186	1,200	1,440	200	79	48	53	320
15	214	712	360	153	178	852	965	174	76	48	50	121
16	230	650	320	144	176	680	712	140	72	48	50	102
17	300	745	320	146	245	560	590	140	70	48	50	100
18	455	745	320	230	320	480	505	174	70	48	49	92
19	1,610	590	300	245	280	430	405	151	71	45	55	85
20	890	480	280	712	340	650	340	151	66	44	79	81
21	560	405	262	965	532	1,520	320	200	68	46	107	79
22	430	382	245	620	455	2,320	300	230	69	51	245	75
23	340	320	230	480	360	1,200	280	200	68	48	360	72
24	320	280	230	405	320	852	360	174	70	48	280	86
25	280	262	214	320	1,870	680	505	151	76	46	745	104
26	405	262	200	300	5,080	505	745	130	77	58	320	75
27	300	262	183	262	5,080	405	532	118	71	44	230	86
28	300	230	168	245	1,550	360	405	107	66	43	187	140
29	280	230	160	230	-------	320	340	100	60	43	140	140
30	505	214	151	230	-------	360	280	100	114	42	116	405
31	214	-------	139	230	-------	1,700	-------	121	-------	43	98	-------

Monthly discharge of Bourbeuse River at Union, Mo., for the year ending September 30, 1926

[Drainage area, 767 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	5,410	214	755	0.984	1.13
November	9,580	144	1,310	1.71	1.91
December	5,080	139	688	.897	1.03
January	965	133	279	.364	.42
February	5,080	176	765	.997	1.04
March	2,320	320	804	1.05	1.21
April	4,340	280	1,320	1.72	1.92
May	262	100	164	.214	.25
June	114	60	80.5	.104	.12
July	82	42	51.2	.067	.08
August	745	44	124	.162	.19
September	405	72	119	.155	.17
The year	9,580	42	534	.696	9.47

BIG RIVER AT BYRNESVILLE, MO.

LOCATION.—In SE. ¼ sec. 12, T. 42 N., R. 3 E., at highway bridge in Byrnesville, Jefferson County, 200 feet below dam and mill and 4 miles above Heads Creek and Rockford Dam.

DRAINAGE AREA.—892 square miles (measured on topographic and soil survey maps).

RECORDS AVAILABLE.—May 10, 1922, to September 30, 1926.

GAGE.—Chain gage on downstream side of bridge; read by Charles Steidle.

DISCHARGE MEASUREMENTS.—Made from upstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of silt, gravel, and rock. Control is a bar of clean coarse gravel 500 feet below gage; practically permanent. Brush grows on bar above low-water line.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 18.97 feet at 5.30 p. m. November 9 (discharge, 13,100 second-feet); minimum stage, 2.06 feet at 6 a. m. August 12 (discharge, 64 second-feet).

1922–1926: Maximum stage recorded, that of November 9, 1925; minimum discharge, 64 second-feet October 1, 1922, and August 12, 1926.

REGULATION.—Slight diurnal fluctuation in the flow at low stages is caused by grist mills above.

ACCURACY.—Stage-discharge relation permanent during the year; not affected by ice. Rating curve fairly well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good above 200 second-feet and fair below.

Discharge measurements of Big River at Byrnesville, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 25	4.38	564	May 5	4.19	538	Aug. 25	4.12	490
Feb. 24	5.04	846	June 30	2.69	139			

Daily discharge, in second-feet, of Big River at Byrnesville, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	596	378	454	306	848	1,310	2,400	596	246	158	121	1,020
2	637	363	423	281	892	1,120	2,100	557	246	224	166	720
3	720	333	393	333	848	936	1,580	520	224	184	213	762
4	2,700	333	4,990	363	848	848	1,480	520	234	150	150	294
5	3,330	320	7,300	393	762	762	1,210	454	246	136	128	720
6	1,420	306	4,810	363	678	720	936	454	234	128	114	1,160
7	936	4,630	2,100	333	596	762	4,630	423	224	121	102	486
8	762	9,500	1,530	306	557	1,070	6,100	423	203	121	96	306
9	596	13,100	1,210	306	520	936	3,780	393	193	114	90	637
10	486	2,700	1,070	281	486	848	1,980	393	193	121	84	678
11	393	1,640	936	281	454	1,480	1,860	363	224	114	79	454
12	363	1,310	848	281	423	1,640	2,580	363	320	108	69	423
13	333	1,120	762	257	393	1,420	2,340	333	246	128	520	393
14	848	980	678	257	1,750	1,120	1,920	333	213	121	762	848
15	720	1,120	637	257	4,100	980	1,420	320	203	108	320	805
16	596	2,580	596	269	1,980	892	1,160	306	193	114	193	294
17	1,420	1,700	557	269	1,310	848	1,020	294	193	121	158	224
18	2,580	1,210	520	762	1,070	762	936	423	184	102	175	175
19	1,210	1,020	486	2,520	980	980	848	454	166	90	454	166
20	936	936	454	1,750	892	2,640	762	520	166	102	520	150
21	805	848	423	1,210	805	1,260	720	454	166	84	1,210	150
22	678	762	423	980	720	1,020	678	393	166	84	520	143
23	596	678	393	762	678	936	678	333	158	84	936	224
24	520	596	363	678	805	848	1,120	294	158	84	348	203
25	678	557	363	720	4,270	762	1,480	281	150	74	454	348
26	762	520	320	762	7,800	637	1,070	257	150	79	378	720
27	678	520	281	762	2,460	596	892	257	150	108	281	1,020
28	520	520	257	848	1,800	557	762	234	143	143	213	1,120
29	454	520	257	1,120	------	520	678	224	143	121	234	1,640
30	423	486	306	936	------	720	637	213	143	158	1,120	2,700
31	393	------	281	848	------	2,040	------	363	------	128	1,120	------

Monthly discharge of Big River at Byrnesville, Mo., for the year ending September 30, 1926

[Drainage area, 892 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	3,330	333	906	1.02	1.18
November	13,100	306	1,720	1.93	2.15
December	7,300	257	1,110	1.24	1.43
January	2,520	257	639	.716	.83
February	7,300	393	1,420	1.59	1.66
March	2,640	520	1,030	1.15	1.33
April	6,100	637	1,660	1.86	2.08
May	596	213	379	.425	.49
June	320	143	196	.220	.25
July	224	74	120	.135	.16
August	1,210	69	365	.409	.47
September	2,700	143	633	.710	.79
The year	13,100	69	841	.943	12.82

HEADWATER DIVERSION CHANNEL BASIN

CASTOR RIVER AT ZALMA, MO.

LOCATION.—In S. ½ sec. 29, T. 29 N., R. 9 E., at highway bridge in Zalma, Bollinger County, 2 miles below Perkins Creek and 7 miles above Headwater Diversion levee of Little River Drainage District.

DRAINAGE AREA.—395 square miles (measured on topographic maps, soil-survey maps, and base map of Missouri).

RECORDS AVAILABLE.—September 12, 1921, to September 30, 1926. The Little, River Drainage District, Cape Girardeau, has records of stage from July 1, 1919, to September 11, 1921.

GAGE.—Chain gage on downstream side of bridge; read by John Carr. Zero of gage is 350 feet above mean sea level. Prior to October 1, 1925, 50 feet was added by gage reader to readings from the gage. The recorded gage readings could therefore be reduced to sea-level elevations by adding 300 feet.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of silt, sand, and gravel; fairly permanent. No well-defined control. Banks are wooded and are overflowed at a stage of about 24 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 20.3 feet at 8 a. m. February 26 (discharge, 5,920 second-feet); minimum discharge, 37 second-feet September 24.

1921–1926: Maximum stage recorded, 24.0 feet November 20, 1921, and February 2, 1923 (discharge, 8,100 second-feet); minimum stage, 1.10 feet August 31, 1924 (discharge, 30 second-feet).

DIVERSIONS.—Entire flow is diverted 7 miles below gage into Headwater Diversion Channel, which empties into Mississippi River 3½ miles south of Cape Girardeau.

ACCURACY.—Stage-discharge relation changed slightly during the year; not affected by ice. Rating curve well defined above 50 second-feet. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table; shifting-control method used February 27 to August 4. Records good.

Discharge measurements of Castor River at Zalma, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 18	17.16	3,800	Jan. 26	5.45	633	June 16	1.56	75
Oct. 18	16.19	3,630	Jan. 26	5.44	611	Aug. 10	1.45	55

NOTE.—Measurements of Oct. 18 were made during rapidly falling stages; computed discharges for constant stage are 4,170 and 3,920 second-feet, respectively.

Daily discharge, in second-feet, of Castor River at Zalma, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	139	369	473	139	248	1,700	883	196	96	54	96	82
2	109	322	603	139	660	1,680	820	184	91	52	134	78
3	118	262	419	161	527	1,400	883	184	91	55	114	91
4	234	277	491	161	491	660	740	172	139	51	91	78
5	221	292	3,500	161	353	385	700	161	91	69	42	114
6	527	2,060	2,000	150	353	248	641	150	69	61	73	91
7	196	1,790	1,650	139	353	234	603	150	96	57	61	91
8	184	5,800	1,570	139	353	234	740	134	91	61	50	78
9	172	4,800	1,450	118	307	262	967	150	82	65	51	69
10	128	1,310	946	128	234	262	780	139	78	55	56	63
11	128	385	402	128	208	437	720	128	96	65	41	57
12	234	402	292	128	307	584	760	128	91	61	49	61
13	1,870	680	248	123	277	700	1,050	118	82	54	41	57
14	1,700	1,550	248	118	262	660	967	118	104	52	139	91
15	2,360	1,650	208	123	196	546	800	118	69	57	91	61
16	437	1,700	196	118	248	546	660	123	73	55	139	46
17	1,870	1,620	184	118	248	385	584	150	69	49	208	52
18	4,600	1,570	161	196	248	419	509	118	69	44	208	56
19	3,000	1,520	221	419	248	402	419	139	69	46	161	49
20	1,260	1,430	226	491	208	385	385	118	73	42	139	54
21	455	1,160	262	603	277	385	369	104	86	45	150	54
22	277	1,160	208	1,430	353	369	369	78	69	44	139	48
23	277	800	208	1,030	208	841	1,330	134	61	46	150	44
24	473	402	221	883	208	780	337	104	54	51	221	37
25	292	307	221	527	3,120	603	322	96	61	44	196	78
26	262	385	184	622	5,860	509	277	82	55	39	139	73
27	234	1,520	172	473	2,360	491	248	96	46	61	114	82
28	184	1,790	172	455	2,190	402	234	96	54	78	69	78
29	118	1,870	161	353	-------	369	221	86	57	86	96	208
30	118	841	150	277	-------	353	161	82	46	65	86	96
31	114	-------	150	262	-------	841	-------	82	-------	61	82	-------

NOTE.—Discharge interpolated Sept. 10 because of erroneous gage reading.

Monthly discharge of Castor River at Zalma, Mo., for the year ending September 30, 1926

[Drainage area, 395 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	4,600	109	719	1.82	2.10
November	5,800	262	1,330	3.38	3.77
December	3,500	150	568	1.44	1.66
January	1,430	118	333	.843	.97
February	5,860	196	747	1.89	1.97
March	1,700	234	583	1.48	1.71
April	1,330	161	616	1.56	1.74
May	196	78	126	.319	.37
June	139	46	76.9	.195	.22
July	86	39	55.6	.141	.16
August	221	41	111	.281	.32
September	208	37	73.9	.187	.21
The year	5,860	37	442	1.12	15.20

WHITEWATER RIVER AT WHITEWATER, MO.

LOCATION.—In grant No. 2271, T. 30 N., R. 11 E., at Missouri Pacific Railway bridge in Whitewater, Cape Girardeau County, 1 mile above Crooked Creek and 3 miles above Headwater Diversion Channel.

DRAINAGE AREA.—326 square miles (measured on soil-survey maps).

RECORDS AVAILABLE.—September 12, 1921, to March 31, 1926, when station was discontinued.

GAGE.—Chain gage fastened to guardrail on upstream side of railroad bridge; read by William Fingerhut. Prior to November 30, 1921, a vertical staff gage in two sections, from 32 to 59 feet, fastened to downstream side of bridge piers. Zero of both gages 300 feet above mean sea level.

DISCHARGE MEASUREMENTS.—Made from upstream side of highway bridge 2,000 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of sand, gravel, and silt; shifting; obstructed at times by driftwood at railroad bridge. Control is a section of rocks and boulders just above highway bridge; practically permanent.

EXTREMES OF STAGE.—Maximum stage recorded during period October 1, 1925, to March 31, 1926, 49.85 feet November 9; minimum stage, 31.9 feet October 11–12.

1921–1926: Maximum stage recorded, 55.5 feet November 20, 1921; minimum stage, 31.08 feet August 10, 1922.

ACCURACY.—Stage-discharge relation not permanent; not affected by ice but affected by backwater from Headwater Diversion Channel during high stages of the channel. Gage read to hundredths once daily. Daily discharge not determined.

The following discharge measurements were made:

October 19, 1925: Gage height, 42.51 feet; [1] discharge, 568 second-feet.

January 26, 1926: Gage height, 34.72 feet; [1] discharge, 364 second-feet.

Daily gage height, in feet, of Whitewater River at Whitewater, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1	33.97	33.08	34.00	32.30	35.47	38.33	16	41.36	43.16	33.20	32.13	32.88	33.60
2	32.94	32.93	33.68	32.30	35.62	36.85	17	48.75	38.65	33.04	32.18	32.78	33.38
3	32.64	32.75	33.50	32.36	35.05	34.83	18	49.40	37.13	32.96	33.66	32.82	33.20
4	32.72	32.69	34.73	32.50	34.93	33.98	19	43.38	39.70	32.88	35.63	33.02	33.12
5	33.70	33.32	47.03	32.51	34.43	33.65	20	40.38	38.32	32.85	34.55	34.72	33.06
6	32.76	43.65	44.10	32.42	34.04	33.42	21	38.76	36.74	32.80	34.45	34.20	33.06
7	32.30	40.32	38.30	32.34	33.79	34.63	22	37.34	35.60	32.74	40.36	33.77	32.96
8	32.28	48.35	37.00	32.28	33.56	34.41	23	35.96	34.83	32.60	37.60	33.50	36.80
9	32.14	49.85	35.63	32.26	33.40	33.75	24	37.15	34.34	32.48	36.10	33.37	35.14
10	31.98	42.22	34.70	32.22	33.28	33.46	25	39.15	34.02	32.54	35.50	43.30	34.20
11	31.90	39.75	34.25	32.22	33.12	33.80	26	36.45	33.86	32.54	34.80	49.75	33.67
12	31.90	39.35	33.94	32.21	33.02	35.01	27	34.03	39.40	32.46	34.70	43.95	33.33
13	45.90	46.43	33.67	32.16	32.96	36.64	28	33.90	37.38	32.10	37.70	39.75	33.14
14	43.05	40.34	33.48	32.14	32.98	34.00	29	33.85	35.23	32.34	36.48	-------	33.00
15	44.45	38.70	33.35	32.12	33.11	33.70	30	33.75	34.41	32.32	35.28	-------	32.96
							31	33.25	-------	32.31	35.01	-------	41.16

NOTE.—Stage-discharge relation affected by backwater from Headwater Diversion Channel during high stages of the channel.

ST. FRANCIS RIVER BASIN

ST. FRANCIS RIVER NEAR PATTERSON, MO.

LOCATION.—In N. ½ sec. 16, T. 29 N., R. 5 E., at Black's highway bridge, 1½ miles above Clark Creek, 4 miles below Big Creek, and 3 miles east of Patterson, Wayne County.

DRAINAGE AREA.—956 square miles (measured on topographic maps and base map of Missouri).

[1] Stage-discharge relation affected by backwater from Headwater Diversion Channel.

RECORDS AVAILABLE.—June 16, 1921, to September 30, 1926.

GAGE.—Chain gage on upstream side of bridge; read by W. A. Harris.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of clean sand and gravel; fairly permanent. Right bank high and rocky. Left bank sandy, thinly wooded, and subject to overflow at stage of 20 feet. Control is a heavy gravel bar 1,000 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 20.5 feet at 6 a. m. November 8 (discharge, 38,200 second-feet); minimum stage, 1.90 feet July 25 (discharge, 35 second-feet).

1921–1926: Maximum stage recorded, that of November 8, 1925; minimum discharge, 6 second-feet August 21, 1922. Flood of August, 1915, reached a stage of 31.4 feet, determined from levels to high-water marks.

ICE.—Stage-discharge relation not affected by ice.

ACCURACY.—Stage-discharge relation changed slightly during February. Rating curves fairly well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

Discharge measurements of St. Francis River near Patterson, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 17	11.82	[a] 11,200	June 16	2.36	103
Dec. 10	4.30	1,250	Aug. 7	2.32	88

[a] Made during falling stage; computed discharge for constant stage 11,400 second-feet.

Daily discharge, in second-feet, of St. Francis River near Patterson, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	850	675	780	200	2,080	1,780	1,600	335	161	61	68	885
2	745	605	675	208	1,880	1,420	1,510	305	154	58	94	815
3	710	540	605	217	1,690	1,180	1,420	275	148	55	114	675
4	2,380	508	7,520	208	1,340	1,030	1,180	246	161	53	157	605
5	2,080	3,280	11,500	227	1,260	850	1,030	236	167	51	127	445
6	1,600	3,640	3,640	236	1,100	710	955	227	154	48	107	246
7	1,100	12,100	2,480	246	955	885	885	217	148	44	89	188
8	1,030	31,300	1,880	236	815	1,180	885	208	135	48	80	148
9	885	5,320	1,690	227	745	1,030	955	200	130	73	69	130
10	640	3,040	1,340	217	710	885	955	183	119	83	66	119
11	445	2,700	1,180	200	640	1,340	955	175	114	76	63	109
12	6,880	3,780	1,030	183	572	2,590	1,690	167	105	66	62	114
13	13,400	2,700	885	175	508	1,880	3,400	154	109	55	66	109
14	3,280	1,980	850	160	572	1,600	2,280	141	119	58	305	105
15	4,620	2,180	780	145	885	1,340	1,690	130	114	55	217	100
16	10,800	3,040	710	137	1,030	1,100	1,420	122	109	51	161	98
17	15,300	2,080	640	145	815	1,030	1,180	114	114	48	125	91
18	4,340	2,180	572	367	815	955	955	325	109	46	119	83
19	2,700	2,280	540	2,280	780	850	815	275	100	44	200	76
20	1,780	2,180	475	1,510	815	745	710	236	91	40	540	66
21	1,340	1,690	475	1,690	815	710	605	217	83	40	780	63
22	1,100	1,420	445	1,510	815	605	605	200	80	39	605	62
23	1,030	1,260	403	1,340	850	675	572	175	73	37	508	63
24	1,880	1,030	345	1,260	815	605	540	161	66	37	305	66
25	2,380	955	305	1,180	21,300	605	745	148	63	35	265	475
26	1,880	1,030	275	1,100	9,800	540	675	125	61	66	285	200
27	1,420	1,030	236	1,100	4,620	445	540	109	58	130	217	109
28	1,180	955	208	1,180	2,180	403	475	105	55	100	161	114
29	955	955	200	1,340	------	391	403	100	53	74	141	246
30	850	850	192	1,260	------	415	367	100	51	65	125	330
31	780	------	192	1,690	------	1,100	------	119	------	59	675	------

Monthly discharge of St. Francis River near Patterson, Mo., for the year ending September 30, 1926

[Drainage area, 956 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	15,300	445	2,910	3.04	3.50
November	31,300	508	3,240	3.39	3.78
December	11,500	192	1,390	1.45	1.67
January	2,280	137	715	.748	.86
February	21,300	508	2,190	2.29	2.38
March	2,590	391	996	1.04	1.20
April	3,400	367	1,070	1.12	1.25
May	335	100	188	.197	.23
June	167	51	107	.112	.12
July	130	35	57.9	.061	.07
August	780	62	220	.230	.27
September	885	62	231	.242	.27
The year	31,300	35	1,100	1.15	15.60

LITTLE RIVER DITCH NO. 1 AT KIRK, MO

LOCATION.—In sec. 27, T. 19 N., R. 10 E., at St. Louis-San Francisco Railway bridge at Kirk, Dunklin County, and 20 miles above Arkansas State line where ditch empties into Big Lake.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—September 13, 1921, to September 30, 1926.

GAGE.—Chain gage bolted to downstream guardrail of railroad pile trestle; read by B. F. Brewer and C. W. Tidwell. Zero of gage 200 feet above mean sea level.

CHANNEL AND CONTROL.—Bed composed of clean sand and small gravel; fairly permanent. No well-defined control.

DISCHARGE MEASUREMENTS.—Made at highway bridge 1½ miles below gage, either from bridge or by wading.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 54.80 feet at 8 a. m. October 19 (discharge, 4,730 second-feet); minimum discharge, 128 second-feet July 22, 23, and August 10.

1921–1926: Maximum stage recorded, 56.25 feet April 4, 1922 (discharge, 5,940 second-feet); minimum discharge, 39 second-feet September 5, 8, and 11, 1925.

DIVERSIONS.—Entire flow of Castor and Whitewater Rivers and other small streams which formerly flowed into Little River have been diverted into Mississippi River 70 miles north of the station since 1919.

The area drained and amount of water carried by this ditch were materially changed after June 14, 1926, by diversions and new ditch construction.

ACCURACY.—Stage-discharge relation changed during high water in November; not affected by ice. Rating curves fairly well defined. Gage read to half-tenths once daily; readings prior to August 13 not entirely reliable. Daily discharge ascertained by applying daily gage height to rating table. Records fair.

Discharge measurements of Little River ditch No. 1 at Kirk, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 19	54.37	4,400	June 15	45.76	337
Jan. 27	49.99	2,090	Aug. 13	[a] 44.75	185

[a] Determined from reading on gage 1¼ miles downstream and relationship between the gages.

Daily discharge, in second-feet, of Little River ditch No. 1 at Kirk, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	670	1,700	2,780	758	1,720	1,520	2,020	758	432	162	135	406
2	740	1,540	2,340	758	1,620	1,240	2,020	678	758	162	135	356
3	1,620	1,540	1,920	296	1,620	1,060	1,620	678	758	192	162	356
4	2,170	1,460	1,720	296	1,620	982	1,720	612	678	184	148	314
5	1,880	1,460	1,720	296	1,570	906	1,620	612	612	176	148	296
6	1,540	2,380	1,820	296	1,520	830	1,320	488	612	169	148	278
7	1,340	3,050	1,820	296	1,520	906	1,320	488	488	155	135	296
8	1,160	4,030	1,720	296	1,320	1,060	1,820	488	488	155	142	278
9	1,160	4,520	1,720	296	1,240	982	3,440	548	432	148	135	278
10	1,090	4,520	1,620	612	1,240	1,020	3,800	548	334	142	128	260
11	1,020	4,400	1,420	612	1,060	1,060	2,890	548	296	142	142	242
12	880	4,040	1,320	612	982	1,280	2,560	548	296	142	142	224
13	1,230	3,440	1,320	612	982	1,020	2,230	488	296	142	155	224
14	2,660	2,890	1,240	612	944	982	2,020	488	296	142	224	224
15	3,160	2,670	1,240	612	906	1,140	1,720	432	334	142	380	208
16	3,160	2,340	1,140	612	830	1,060	1,520	432	334	142	296	208
17	3,900	2,340	1,060	548	794	982	1,320	432	314	135	296	192
18	4,300	2,120	1,060	678	794	906	1,240	432	296	135	678	176
19	4,660	1,920	982	830	758	830	1,060	432	296	135	2,020	176
20	4,440	1,920	982	906	794	830	982	432	296	135	1,620	169
21	4,160	2,020	982	1,420	758	758	906	432	260	135	1,140	169
22	3,400	1,820	982	3,800	712	758	906	432	260	128	830	162
23	2,720	1,620	906	4,280	678	758	906	380	260	128	580	169
24	2,720	1,320	830	3,800	678	906	906	380	260	135	488	162
25	3,640	1,320	830	2,780	794	906	906	380	242	135	432	162
26	4,030	1,320	758	2,670	1,620	906	830	380	224	135	644	176
27	3,520	1,720	758	2,020	2,120	830	830	334	192	169	314	169
28	2,830	3,560	758	2,020	2,120	758	758	334	184	155	488	192
29	2,270	3,920	758	1,820	-------	758	758	334	184	155	432	208
30	1,880	3,440	758	1,770	-------	830	758	334	176	135	356	192
31	1,790	-------	758	1,720	-------	906	-------	334	-------	135	334	-------

Monthly discharge of Little River ditch No. 1 at Kirk, Mo., for the year ending September 30, 1926

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	4,660	670	2,440	May	758	334	471
November	4,520	1,320	2,540	June	758	176	363
December	2,780	758	1,290	July	192	128	148
January	4,280	296	1,260	August	2,020	128	432
February	2,120	678	1,190	September	406	162	231
March	1,520	758	957				
April	3,800	758	1,560	The year	4,660	128	1,070

LITTLE RIVER DITCH NO. 81 AT KIRK, MO.

LOCATION.—In sec. 27, T. 19 N., R. 10 E., at St. Louis–San Francisco Railway bridge at Kirk, Dunklin County, and 20 miles above outlet into Big Lake at Arkansas State line.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—September 13, 1921, to September 30, 1926.

GAGE.—Chain gage bolted to guard timber on downstream side of railroad pile bridge; read by B. F. Brewer and C. W. Tidwell. Zero of gage 200 feet above mean sea level.

DISCHARGE MEASUREMENTS.—Made from highway bridge 1½ miles below gage, or by wading at same site.

CHANNEL AND CONTROL.—Bed composed of clean sand and small gravel; fairly permanent. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 51.14 feet at 5 p. m. October 19 (discharge, 1,560 second-feet); minimum discharge 34 second-feet July 24–26.

1921–1926: Maximum stage recorded, 54.05 feet April 4 and 5, 1922 (discharge, 2,390 second-feet); minimum discharge, 17 second-feet September 5 and 8–11, 1925.

DIVERSIONS.—The area drained and amount of water carried by this ditch were materially changed after June 14, 1928, by diversions and new ditch construction.

ACCURACY.—Stage-discharge relation permanent during the year; not affected by ice. Rating curve fairly well defined. Gage read to half-tenths once daily; readings prior to August 14 not entirely reliable. Daily discharge ascertained by applying daily gage height to rating table. Records fair.

Discharge measurements of Little River ditch No. 81 at Kirk, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 19	51.14	1,510	June 15	44.28	105
Jan. 27	47.07	539	Aug. 13	[a] 44.32	114

[a] Determined from reading on gage 1¼ miles downstream and relationship between the gages.

Daily discharge, in second-feet, of Little River ditch No. 81 at Kirk, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	291	564	621	291	488	415	469	80	68	64	64	184
2	379	526	564	274	469	379	343	80	132	98	86	146
3	680	488	488	208	433	274	308	80	68	75	86	146
4	740	469	488	208	433	240	308	80	68	64	98	139
5	740	507	469	208	415	200	208	80	132	64	75	139
6	583	875	602	192	379	176	208	80	129	64	64	139
7	451	925	469	176	379	208	208	68	127	64	64	132
8	415	1,210	415	176	343	240	325	68	124	64	64	132
9	451	1,260	379	176	469	208	469	68	121	64	64	125
10	397	1,290	379	161	469	208	415	68	118	64	64	125
11	361	1,130	343	161	451	361	308	68	116	58	58	112
12	325	900	308	176	415	451	291	68	113	53	52	112
13	545	782	291	176	361	433	274	68	110	53	105	112
14	900	680	361	176	274	415	208	68	108	64	208	118
15	900	602	343	176	274	451	208	68	105	58	308	112
16	900	564	325	176	257	379	192	68	98	53	208	105
17	1,500	526	291	208	240	379	176	68	98	42	176	105
18	1,500	469	257	208	240	361	161	68	98	53	343	105
19	1,560	469	240	224	240	343	132	92	98	64	564	98
20	1,530	469	240	291	240	343	118	80	92	58	564	92
21	1,470	451	224	621	240	308	105	68	86	53	526	92
22	1,310	433	224	1,050	208	257	92	68	80	42	415	92
23	1,130	397	208	1,050	200	240	92	68	75	38	325	92
24	1,130	379	208	760	343	208	92	57	75	34	325	92
25	1,390	379	208	640	397	208	92	46	75	34	325	240
26	1,390	361	208	602	469	208	92	57	70	34	343	92
27	1,310	660	208	583	469	208	92	57	69	86	291	98
28	1,100	1,000	208	583	451	208	92	46	64	125	257	98
29	826	900	208	526	-------	208	92	57	64	86	240	105
30	660	720	208	526	-------	208	80	57	69	64	208	112
31	621	-------	208	488	-------	224	-------	57	-------	64	208	------

NOTE.—Daily discharge estimated May 14–16, 24–31, and June 6–14; gage not read.

Monthly discharge of Little River ditch No. 81 at Kirk, Mo., for the year ending September 30, 1926

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	1,560	291	887	May	92	46	67.9
November	1,290	361	680	June	132	64	95.0
December	621	208	329	July	125	34	61.3
January	1,050	161	370	August	564	52	219
February	488	200	359	September	240	92	120
March	451	176	289				
April	469	80	208	The year	1,560	34	307

LITTLE RIVER DITCH NO. 66 AT KIRK, MO.

LOCATION.—In sec. 27, T. 19 N., R. 10 E., at St. Louis-San Francisco Railway bridge at Kirk, Dunklin County, and 20 miles above outlet into Big Lake at Arkansas State line.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—September 13, 1921, to September 30, 1926.

GAGE.—Chain gage bolted to downstream guardrail of railroad pile bridge; read by B. F. Brewer and C. W. Tidwell. Zero of gage 200 feet above mean sea level.

DISCHARGE MEASUREMENTS.—Made at highway bridge 1½ miles below gage, either from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of clean sand and small gravel; fairly permanent. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 53.07 feet March 19 (discharge, 1,570 second-feet); minimum discharge, 88 second-feet October 2.

1921–1926: Maximum stage recorded, 53.85 feet May 21, 1923 (discharge, 1,580 second-feet); minimum discharge, 1 second-foot numerous days during October and November, 1921, and July and August, 1925.

DIVERSIONS.—The area drained and amount of water carried by this ditch were materially changed after June 14, 1926, by diversions and new ditch construction.

ACCURACY.—Stage-discharge relation changed during October; not affected by ice. Rating curves fairly well defined. Gage read to half-tenths once daily; readings prior to August 13 not entirely reliable. Daily discharge ascertained by applying daily gage height to rating table. Records fair.

Discharge measurements of Little River ditch No. 66 at Kirk, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 19	53.06	1,560	June 15	44.34	100
Jan. 27	48.69	728	Aug. 13	[a]43.65	133

[a] Reading on new gage at same datum 1¼ miles downstream.

Daily discharge, in second-feet, of Little River ditch No. 66 at Kirk, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	107	718	1,200	193	280	353	383	229	280	193	158	383
2	88	610	1,080	169	267	323	383	217	254	217	136	323
3	98	509	754	383	267	294	368	193	254	241	193	323
4	173	509	754	383	280	267	383	193	241	254	158	280
5	197	541	682	353	323	254	383	181	205	229	147	280
6	221	718	754	353	323	241	368	158	205	205	158	267
7	197	970	790	353	294	368	353	169	193	217	147	241
8	173	1,270	754	353	294	383	509	169	169	205	136	241
9	173	1,470	541	353	267	353	718	158	169	193	147	229
10	162	1,470	445	169	267	353	808	181	158	205	136	217
11	157	1,510	353	169	267	413	718	181	147	193	116	205
12	152	1,470	353	169	267	461	610	169	147	169	126	205
13	197	1,390	323	169	217	445	541	181	147	181	126	193
14	423	1,160	294	147	217	383	493	169	136	205	126	193
15	740	970	241	147	205	383	413	158	100	181	181	193
16	938	1,010	294	147	205	368	413	169	147	181	217	181
17	1,120	1,010	267	147	205	308	383	181	136	158	241	181
18	1,470	898	241	193	241	294	353	169	147	147	353	169
19	1,530	646	241	241	241	267	338	205	147	147	682	169
20	1,550	610	241	267	229	267	308	181	126	147	736	158
21	1,470	646	241	718	217	267	267	158	136	126	628	158
22	1,390	646	241	1,200	217	241	280	158	136	136	541	147
23	1,120	541	217	1,240	193	241	280	147	126	136	461	147
24	1,120	509	217	934	205	280	280	136	136	126	398	147
25	1,270	477	217	934	241	280	294	147	126	136	383	158
26	1,430	445	217	898	353	280	280	147	106	136	383	158
27	1,430	718	217	736	383	280	267	136	147	205	368	147
28	1,240	1,080	217	610	383	267	267	147	181	158	353	147
29	790	1,310	217	509	------	267	254	147	169	158	205	169
30	790	1,350	193	509	------	267	229	147	193	136	308	169
31	790	------	193	323	------	338	------	205	------	254	323	------

Monthly discharge of Little River ditch No. 66 at Kirk, Mo., for the year ending September 30, 1926.

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	1,550	88	732	May	229	136	171
November	1,510	445	906	June	280	100	165
December	1,200	193	419	July	254	126	180
January	1,240	147	434	August	736	116	283
February	383	193	262	September	383	147	206
March	461	241	316				
April	808	229	397	The year	1,550	88	373

WHITE RIVER BASIN

WHITE RIVER AT BEAVER, ARK.

LOCATION.—In sec. 20, T. 21 N., R. 26 W., at Missouri & North Arkansas Railroad bridge, one-fourth mile east of depot at Beaver, Carroll County, 3 miles above Leatherwood Creek, and 6 miles below Cedar Creek.

DRAINAGE AREA.—1,270 square miles (measured on topographic maps and base map of Arkansas).

RECORDS AVAILABLE.—July 17, 1909, to December 31, 1910, and May 16, 1923, to September 30, 1926.

GAGE.—Chain gage on upstream side of bridge; read by Harvey Skelton.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of clean sand and gravel. Right bank high and rocky. Left bank thinly wooded and subject to overflow at extremely high stages. Control is a clean gravel bar half a mile below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 14.65 feet at 6.10 p. m. September 30 (discharge, 16,100 second-feet); minimum stage, 2.20 feet August 13 and 14 (discharge, 44 second-feet).

1923–1926: Maximum stage recorded, 18.35 feet May 1, 1924 (discharge, 23,500 second-feet); minimum discharge, 33 second-feet September 10, 1925.

1909–1910: Maximum stage recorded, 17.35 feet May 17, 1910 (discharge, 21,500 second-feet); minimum stage, 1.55 feet October 1–8, 1909 (discharge, 42 second-feet). These gage heights refer to datum of gage used 1923–1926.

ACCURACY.—Stage-discharge relation changed during October; not affected by ice. Rating curves well defined above 2,000 second-feet and fairly well defined below. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

Discharge measurements of White River at Beaver, Ark., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 25	4.73	1,560	Mar. 8	3.67	744	July 28	2.59	140
Dec. 13	3.54	585	May 25	2.87	272			

Daily discharge, in second-feet, of White River at Beaver, Ark., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	800	534	474	366	3,710	1,270	2,970	1,030	203	155	118	393
2	765	504	474	340	3,450	1,110	4,100	950	286	143	101	314
3	765	474	449	366	2,750	950	3,320	1,030	950	131	93	255
4	732	449	449	393	2,310	872	2,750	911	764	121	85	216
5	570	420	449	474	2,000	800	2,200	911	658	112	78	728
6	480	393	1,030	594	1,710	764	1,900	800	564	104	71	1,440
7	423	2,860	1,190	564	1,530	728	1,710	728	504	96	64	1,620
8	540	4,500	1,030	534	1,350	693	2,100	693	420	107	58	1,110
9	5,380	8,120	872	474	1,190	693	2,310	693	340	159	55	836
10	8,920	3,970	800	449	1,110	728	2,000	1,270	300	203	51	872
11	3,320	2,750	728	420	950	1,190	2,420	1,110	264	255	48	1,030
12	2,100	2,100	658	393	836	3,320	3,710	1,030	242	246	48	764
13	1,620	1,710	626	393	836	3,450	3,710	872	211	211	44	594
14	2,000	1,440	594	340	764	2,530	3,200	764	340	186	46	504
15	2,200	1,270	564	340	693	2,000	2,640	658	291	166	51	420
16	3,320	1,110	1,350	314	658	1,710	2,200	594	246	147	64	366
17	5,230	1,190	1,440	420	626	1,440	1,900	534	264	131	166	305
18	7,480	1,030	1,190	658	594	1,350	1,710	504	393	118	242	268
19	3,840	872	1,110	2,420	564	1,190	1,440	449	420	107	340	237
20	2,530	800	950	2,860	564	1,110	1,270	420	420	96	1,900	211
21	1,900	764	872	2,200	626	1,190	1,110	393	564	88	1,270	190
22	1,530	658	800	2,100	626	1,190	1,110	366	564	83	1,030	174
23	1,270	626	728	3,200	594	1,190	1,270	314	420	78	1,800	166
24	1,190	594	658	2,640	594	1,350	1,530	296	366	78	1,350	155
25	1,530	534	564	2,530	764	1,270	2,100	273	309	233	764	1,270
26	1,440	534	534	2,310	950	1,110	2,100	233	268	182	83	728
27	2,530	504	474	2,200	1,620	1,030	1,710	211	237	131	420	1,960
28	872	504	474	2,420	1,440	950	1,440	195	211	140	340	1,440
29	764	474	504	3,200	-------	872	1,270	178	190	174	286	4,780
30	658	504	420	3,200	-------	872	1,190	170	174	166	255	13,900
31	594	-------	393	3,320	-------	1,190	-------	220	-------	137	242	-------

Monthly discharge of White River at Beaver, Ark., for the year ending September 30, 1926

[Drainage area, 1,270 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	8,920	423	2,170	1.71	1.97
November	8,120	393	1,410	1.11	1.24
December	1,440	393	737	.58	.67
January	3,320	314	1,370	1.08	1.24
February	3,710	564	1,260	.992	1.03
March	3,450	693	1,290	1.02	1.18
April	4,100	1,110	2,150	1.69	1.89
May	1,270	170	606	.477	.55
June	950	174	379	.298	.33
July	255	78	145	.114	.13
August	1,900	44	373	.294	.34
September	13,900	155	1,240	.976	1.09
The year	13,900	44	1,090	.858	11.66

WHITE RIVER AT FORSYTH, MO.

LOCATION.—In SE. ¼ sec. 33, T. 24 N., R. 20 W., at bridge on State highway No. 78 at Forsyth, Taney County, one-fourth mile below Swan Creek and 2 miles below hydroelectric plant of Ozark Power & Water Co.

DRAINAGE AREA.—4,610 square miles (measured on base maps of Missouri and Arkansas).

RECORDS AVAILABLE.—January 3 to September 30, 1926.

GAGE.—Gurley water-stage recorder fastened to downstream side of first pier from left bank; inspected by T. F. Van Winkle.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading

CHANNEL AND CONTROL.—Bed composed of clean gravel. Control is a coarse gravel bar 700 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period of record, 10.05 feet April 3 (discharge, 10,000 second-feet); minimum discharge, 124 second-feet July 29, measured with current meter.

ICE.—Stage-discharge relation not affected by ice.

REGULATION.—Flow is largely regulated by power plant 2 miles upstream.

ACCURACY.—Stage-discharge relation permanent during the period of record. Rating curve fairly well defined. Operation of water-stage recorder not satisfactory. Daily discharge ascertained by use of discharge integrator. Records fair for periods when gage operated.

Discharge measurements of White River at Forsyth, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 16	7.33	3,670	Mar. 6	7.30	3,400	July 29	3.69	124
Do	6.59	[a] 2,400	May 26	6.92	[c] 3,110	Do	4.98	[d] 910
Dec. 17	5.67	[b] 1,620	May 27	3.96	252			

[a] Measured during rapidly changing stage; computed discharge for constant stage, 2,530 second-feet.
[b] Measured during rapidly changing stage; computed discharge for constant stage, 1,340 second-feet.
[c] Measured during rapidly changing stage; computed discharge for constant stage, 3,330 second-feet.
[d] Measured during rapidly changing stage; computed discharge for constant stage, 828 second-feet.

Daily discharge, in second-feet, of White River at Forsyth, Mo., for the year ending September 30, 1926

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				5,150	1,720	8,160	745	563	2,180
2				7,140	1,630	8,140	688	520	1,550
3	844			9,030	2,850	7,640	630	418	1,280
4	1,220			8,400	2,870	7,580	513	464	
5	1,140			8,010	1,840	6,320	533	371	
6	1,300			7,090	1,480	4,250	456	328	
7	1,690			6,500	1,400	2,390	460	326	
8	1,620			6,230	1,540	1,800	529		
9				5,920		1,610	673		
10				6,010	4,280	1,770	576	308	
11					5,350	1,300	423	289	
12					5,940	1,670	536	331	
13				7,080	5,280	1,040	813	323	
14				7,250	4,980	1,300		295	
15				6,570	3,940	1,210		380	
16				5,880	2,640	1,510		542	
17	291			5,380	3,430	2,670		682	
18	3,630			5,100	3,340	2,270	420	824	
19	4,430			4,510	3,060	1,420	408	912	1,520
20	4,500			3,700	2,800	248	406	1,020	
21		534		4,360	2,700	2,140	518		
22				4,490	3,120	1,690	444		
23			4,080	3,050	1,900	1,680	372		
24			3,020	2,730	2,200	1,720	328		
25			3,860	3,090	3,170	1,380	319		
26			4,200	3,660	2,530		483		
27			4,240	3,850	2,320	1,160	451		
28			1,600	4,100	2,150	994	549		
29			3,410	2,910	1,560	852	591	3,070	
30			3,840	2,110	1,310	812	484	1,770	
31			4,140		3,990		532	2,220	

NOTE.—No records for missing periods owing to faulty operation of water-stage recorder.

JAMES RIVER NEAR BATTLEFIELD, MO.

LOCATION.—Near center of sec. 27, T. 28 N., R. 22 W., 1,500 feet above Inniman Branch and 2½ miles southeast of Battlefield, Greene County.

DRAINAGE AREA.—306 square miles (measured on soil survey and topographic maps).

RECORDS AVAILABLE.—February 17 to September 30, 1926.

GAGE.—Vertical staff gage in three sections fastened to trees on right bank; read by G. O. Owens. Zero of gage is about 1,175 feet above mean sea level.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Bed composed of clean gravel. Control is a gravel bar 150 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period of record, 6.30 feet September 30 (discharge, 1,920 second-feet); minimum stage, 1.15 feet August 14 (discharge, 15 second-feet).

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

Discharge measurements of James River near Battlefield, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 18	1.98	121	Apr. 27	1.82	90	July 25	1.20	18
Feb. 18	1.97	119	May 23	1.66	72			
Mar. 10	2.10	130	May 31	3.61	546			

Daily discharge, in second-feet, of James River near Battlefield, Mo., for the year ending September 30, 1926

Day	Feb..	Mar.	Apr.	May	June	July	Aug.	Sept.
1		260	120	78	414	48	19	42
2		248	177	75	248	46	20	40
3		212	177	74	223	41	20	36
4		188	273	70	188	37	20	31
5		166	248	68	177	35	20	474
6		166	236	65	137	33	20	690
7		156	223	62	128	33	20	414
8		146	200	61	177	32	18	314
9		137	177	223	177	31	17	770
10		414	166	327	177	31	17	508
11		770	156	260	146	27	16	508
12		610	146	223	96	27	16	354
13		444	146	212	85	26	16	542
14		414	146	177	88	25	15	905
15		414	137	166	82	24	18	650
16		340	137	137	77	23	22	444
17	120	300	128	120	91	22	27	327
18	120	273	128	112	156	22	27	300
19	120	248	120	98	137	22	22	200
20	112	236	112	88	93	22	474	200
21	112	200	104	81	96	21	1,320	177
22	112	188	101	78	112	21	177	166
23	112	177	104	70	98	21	177	146
24	104	166	102	65	82	21	223	128
25	166	156	99	58	78	21	177	128
26	384	146	98	54	75	21	128	327
27	327	146	91	51	70	20	112	327
28	300	137	88	47	65	20	91	314
29		128	84	46	58	19	74	314
30		128	80	42	52	19	68	1,920
31		120		300		19	46	

Monthly discharge of James River near Battlefield, Mo., for the year ending September 30, 1926

[Drainage area, 306 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
February 17–28	384	104	174	0.569	0.25
March	770	120	253	.827	.95
April	273	80	143	.467	.52
May	327	42	116	.379	.44
June	414	52	129	.422	.47
July	48	19	26.8	.088	.10
August	1,320	15	111	.363	.42
September	1,920	31	390	1.27	1.42

JAMES RIVER AT GALENA, MO.

LOCATION.—In NW. ¼ sec. 7, T. 24 N., R. 23 W., at bridge on State highway No. 44 at Galena, Stone County, one-fourth mile above Missouri Pacific Railway bridge and half a mile above Railey Creek.

DRAINAGE AREA.—1,000 square miles (measured on topographic and soil survey maps).

RECORDS AVAILABLE.—October 28, 1921, to September 30, 1926.

GAGE.—Chain gage on upstream side of bridge; read by M. H. Stewart.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel. Small trees and brush grow on gravel bars which are exposed at low stages. Low-water control is a heavy gravel riffle 100 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.82 feet at 6 p. m. September 30 (discharge, 5,700 second-feet); minimum stage, 0.80 foot August 11 (discharge, 80 second-feet).

1922–1926: Maximum stage recorded, 14.77 feet December 19, 1924 (discharge, 18,000 second-feet); minimum stage, 0.56 foot September 6, 7, 9, and 10, 1925 (discharge, 52 second-feet).

ACCURACY.—Stage-discharge relation permanent during the year; not affected by ice. Rating curve fairly well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

Discharge measurements of James River at Galena, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 10	3.34	1,140	Mar. 7	2.22	474	July 28	1.38	186
Dec. 14	2.08	431	May 26	1.49	229	July 29	1.15	137

Daily discharge, in second-feet, of James River at Galena, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	930	480	430	240	1,110	750	690	316	1,170	240	133	390
2	1,680	455	430	254	1,050	630	810	300	1,050	214	144	333
3	1,540	430	430	269	990	555	870	284	870	190	133	300
4	1,110	370	455	269	990	530	930	284	810	190	129	300
5	1,170	370	518	284	870	505	870	269	605	177	120	660
6	1,110	750	580	269	810	480	810	269	505	177	106	4,780
7	1,050	3,740	605	269	810	455	810	269	480	214	101	3,210
8	870	3,210	580	269	750	430	750	300	455	227	97	1,840
9	660	2,010	530	269	660	430	690	370	430	190	89	1,610
10	530	1,540	505	254	580	1,110	660	870	410	166	87	2,400
11	455	1,330	480	254	530	3,090	630	750	390	166	81	2,010
12	410	1,110	455	240	505	2,510	630	690	370	154	82	1,610
13	370	1,050	410	240	480	1,680	630	605	360	144	101	2,200
14	370	930	390	240	455	1,540	630	555	350	144	92	2,800
15	390	810	370	240	430	1,290	605	505	370	133	93	2,100
16	870	660	370	269	410	1,050	605	455	350	133	97	1,680
17	2,850	630	350	455	410	1,110	580	410	350	131	120	1,410
18	3,090	580	350	1,170	390	990	555	390	870	124	254	1,170
19	1,920	530	370	1,410	370	810	505	350	690	116	300	1,050
20	1,410	505	370	1,350	370	660	480	333	555	116	605	930
21	1,170	455	370	1,170	350	690	455	284	580	120	2,620	810
22	990	410	350	1,050	333	660	430	254	580	116	2,620	690
23	1,110	410	333	930	316	605	410	254	480	122	1,680	630
24	1,840	390	333	870	430	580	410	240	430	116	1,680	580
25	1,540	390	300	810	605	555	390	227	410	118	1,170	660
26	1,230	410	254	720	990	530	370	214	370	133	870	990
27	990	390	214	660	930	505	350	202	316	154	690	1,170
28	870	430	227	870	870	455	333	190	300	177	580	1,230
29	690	455	269	1,050	-------	455	333	190	284	154	580	1,680
30	605	455	254	1,110	-------	555	316	720	254	144	455	5,140
31	555	-------	254	1,050	-------	580	-------	1,920	-------	133	430	------

NOTE.—Daily discharge estimated Dec. 5, June 13, and Sept. 14 and 15; gage not read.

Monthly discharge of James River at Galena, Mo., for the year ending September 30, 1926

[Drainage area, 1,000 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	3,090	370	1,110	1.11	1.28
November	3,740	370	857	.857	.96
December	605	214	391	.391	.45
January	1,410	240	607	.607	.70
February	1,110	316	636	.636	.66
March	3,090	430	864	.864	1.00
April	930	316	585	.585	.65
May	1,920	190	428	.428	.49
June	1,170	254	515	.515	.57
July	240	116	156	.156	.18
August	2,620	81	527	.527	.61
September	5,140	300	1,550	1.55	1.73
The year	5,140	81	683	.683	9.28

NORTH FORK OF WHITE RIVER AT TECUMSEH, MO.

LOCATION.—In sec. 16, T. 22 N., R. 12 W., at bridge on State highway No. 80 at west edge of Tecumseh, Ozark County, half a mile below Bryant Creek, 3 miles above Lick Creek, and 8 miles above Missouri-Arkansas line.

DRAINAGE AREA.—1,180 square miles (measured on soil-survey maps).

RECORDS AVAILABLE.—October 24, 1921, to September 30, 1926.

GAGE.—Chain gage on downstream side of bridge; read by Edward Hodo.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand, gravel, and boulders. Control is a bar composed of outcropping rock and coarse gravel 400 feet below gage; clean and practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.70 feet at 8.30 a. m. October 17 (discharge, 5,980 second-feet); minimum stage, 0.54 foot August 8–12 (discharge, 475 second-feet).

1922–1926: Maximum stage recorded, 20.0 feet June 11, 1924 (discharge, 38,300 second-feet); minimum discharge, 363 second-feet September 5, 1925.

Flood of July, 1905, reached a stage of 31.6 feet and that of August, 1915, a stage of 31.0 feet; determined from levels to high-water marks.

REGULATION.—Natural regulation due to flow from large springs.

ACCURACY.—Stage-discharge relation permanent during the year; not affected by ice. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

Discharge measurements of North Fork of White River at Tecumseh, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 23	1.72	1,570	Mar. 5	1.27	1,090	July 30	0.58	486
Dec. 14	1.48	1,280	May 27	.94	794			

Daily discharge, in second-feet, of North Fork of White River at Tecumseh, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,840	1,210	1,300	850	1,590	1,400	1,590	1,030	1,080	600	560	560
2	2,420	1,210	1,210	850	1,590	1,300	1,590	1,030	985	600	560	560
3	1,790	1,160	1,210	850	1,490	1,210	1,490	1,080	1,030	600	520	520
4	1,590	1,160	1,900	895	1,400	1,160	1,400	1,030	1,080	600	520	520
5	1,590	1,690	2,420	850	1,400	1,120	1,400	1,030	985	600	520	600
6	1,400	1,490	2,100	850	1,300	1,120	1,300	985	940	600	505	895
7	1,490	3,700	1,790	808	1,210	1,160	1,590	985	895	600	505	765
8	1,590	4,030	1,590	868	1,210	1,160	1,900	1,030	1,030	640	475	722
9	1,400	2,840	1,490	808	1,160	1,120	1,790	1,080	1,030	600	475	680
10	1,210	2,420	1,400	765	1,120	1,210	1,690	1,300	940	600	475	680
11	1,120	2,100	1,400	765	1,080	2,210	1,590	1,590	850	560	475	640
12	1,790	2,000	1,300	765	1,080	2,630	1,590	1,400	808	560	475	600
13	1,790	1,790	1,210	765	1,080	2,520	1,690	1,300	1,790	560	505	640
14	1,690	1,590	1,300	765	1,080	2,100	1,690	1,210	808	560	498	640
15	3,050	1,590	1,210	765	2,000	1,900	1,590	1,120	765	560	482	600
16	4,140	1,490	1,210	765	985	1,690	1,490	1,080	765	560	520	600
17	5,050	1,400	1,160	765	940	1,590	1,490	1,030	765	520	1,080	600
18	3,160	1,400	1,120	940	985	1,490	1,400	985	722	520	850	560
19	2,420	1,300	1,120	1,080	985	1,400	1,300	1,030	722	520	1,030	560
20	2,000	1,210	1,120	1,080	985	1,400	1,210	985	680	520	940	560
21	1,790	1,210	1,120	1,160	985	1,300	1,210	940	680	560	1,300	560
22	1,690	1,160	1,030	1,120	940	1,300	1,210	895	680	560	940	560
23	1,490	1,120	985	1,080	940	1,210	1,210	895	680	520	765	560
24	3,920	1,120	985	1,120	895	1,210	1,210	850	640	560	722	560
25	2,940	1,160	940	1,120	1,490	1,160	1,210	850	640	600	640	722
26	2,320	1,210	940	1,120	1,790	1,080	1,160	850	680	560	640	808
27	2,000	1,300	895	1,160	1,590	1,080	1,120	808	640	560	600	808
28	1,690	1,400	850	1,210	1,490	1,030	1,120	765	640	600	600	850
29	1,590	1,300	850	1,400	-------	1,030	1,080	765	640	520	560	2,100
30	1,400	1,300	850	1,400	-------	1,080	1,030	808	640	520	560	2,630
31	1,300	-------	850	1,490	-------	1,590	-------	985	-------	520	560	------

Monthly discharge of North Fork of White River at Tecumseh, Mo., for the year ending September 30, 1926

[Drainage area, 1,180 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	5,050	1,120	2,120	1.80	2.08
November	4,030	1,120	1,640	1.39	1.55
December	2,420	850	1,250	1.06	1.22
January	1,490	765	973	.825	.95
February	2,000	895	1,240	1.05	1.09
March	2,630	1,030	1,420	1.20	1.38
April	1,900	1,030	1,410	1.19	1.33
May	1,590	765	1,020	.864	1.00
June	1,790	640	841	.713	.80
July	640	520	566	.480	.55
August	1,300	475	641	.543	.63
September	2,630	520	755	.640	.71
The year	5,050	475	1,160	.983	13.29

BLACK RIVER AT LEEPER, MO.

LOCATION.—In SW.¼ NE. ¼ sec. 27, T. 28 N., R. 3 E., at Missouri Southern Railway bridge at Leeper, Wayne County, 1½ miles above Greenwood Valley Creek and 3 miles below McKenzie Creek.

DRAINAGE AREA.—957 square miles (measured on soil-survey maps).

RECORDS AVAILABLE.—June 15, 1921, to September 30, 1926.

GAGE.—Chain gage fastened to guard timber on downstream side of railroad bridge; read by Pearl Church.

DISCHARGE MEASUREMENTS.—Made from downstream side of railroad or highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of coarse sand and gravel. Control is a bar of coarse gravel 800 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 10.36 feet at 7.30 a. m. November 8 (discharge, 14,600 second-feet); minimum discharge, 213 second-feet July 23, 24, August 8, 10–14, and 16.

1921–1926: Maximum stage recorded, 13.40 feet November 19, 1921 (discharge, 24,000 second-feet); minimum discharge, 194 second-feet September 9–11, 1925.

The river reached a stage of 21.3 feet in August, 1915 (determined by levels to high-water marks by United States Weather Bureau).

ACCURACY.—Stage-discharge relation permanent during the year; not affected by ice. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

Discharge measurements of Black River at Leeper, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 16	5.22	2,780	Dec. 10	3.99	1,420	June 16	2.54	347
Oct. 17	6.52	5,200	Jan. 25	3.21	716	Aug. 7	2.25	228

Daily discharge, in second-feet, of Black River at Leeper, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	555	650	720	365	1,100	1,530	1,230	555	498	280	245	390
2	555	585	685	365	1,100	1,230	1,230	555	470	262	245	365
3	555	585	650	365	1,140	1,140	1,230	525	470	262	262	342
4	555	555	2,720	470	1,140	1,000	1,140	498	498	262	262	300
5	685	875	7,080	442	1,050	918	1,050	470	470	262	245	320
6	650	960	3,360	442	1,000	875	1,000	470	442	280	229	342
7	618	2,580	2,580	442	960	960	918	470	415	300	229	280
8	585	13,800	2,200	415	835	1,000	1,000	470	415	280	213	280
9	525	4,240	1,640	415	795	960	1,140	470	390	280	229	262
10	525	3,360	1,430	415	758	1,050	1,050	470	390	300	213	262
11	442	2,320	1,230	415	685	1,860	1,050	470	442	280	213	245
12	1,640	2,200	1,140	415	685	2,580	1,140	470	415	280	213	245
13	1,860	1,640	1,050	390	650	2,320	1,530	442	390	262	213	262
14	720	1,430	960	390	650	2,200	1,640	415	365	262	213	262
15	1,750	1,430	875	390	650	1,860	1,860	415	365	245	229	245
16	2,580	1,530	875	365	685	1,430	1,230	415	342	245	213	245
17	5,400	1,330	835	390	685	1,230	1,140	415	320	245	300	245
18	2,870	1,330	758	470	685	1,140	1,050	650	320	229	280	229
19	2,080	1,330	720	498	685	1,050	875	1,640	320	229	280	229
20	1,530	1,230	685	758	758	960	795	1,230	320	229	280	229
21	1,230	1,140	650	795	758	918	758	960	300	229	280	229
22	1,000	1,100	618	758	685	875	758	795	300	229	280	229
23	875	960	618	758	685	835	720	720	300	213	320	229
24	1,230	875	585	720	1,050	795	720	618	300	213	300	245
25	1,100	835	555	720	2,580	758	720	585	300	245	300	918
26	960	835	555	720	3,030	720	685	525	300	280	300	498
27	875	835	498	720	2,200	685	650	498	300	262	262	618
28	795	795	300	758	1,750	650	618	498	280	262	262	618
29	795	795	300	918	-------	618	585	498	280	262	262	525
30	758	758	280	875	-------	618	585	470	280	262	245	555
31	758	-------	442	875	-------	758	-------	498	-------	245	262	------

Monthly discharge of Black River at Leeper, Mo., for the year ending September 30, 1926

[Drainage area, 957 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	5,400	442	1,200	1.25	1.44
November	13,800	555	1,760	1.84	2.05
December	7,080	280	1,210	1.26	1.46
January	918	365	556	.581	.67
February	3,030	650	1,050	1.10	1.15
March	2,580	618	1,150	1.20	1.38
April	1,860	585	1,000	1.04	1.16
May	1,640	415	586	.612	.71
June	498	280	367	.383	.43
July	300	213	257	.269	.31
August	320	213	254	.265	.31
September	918	229	341	.356	.40
The year	13,800	213	808	.844	11.47

CURRENT RIVER NEAR EMINENCE, MO.

LOCATION.—In SE. ¼ NW. ¼ sec. 15, T. 29 N., R. 3 W., at foot of Coot Mountain, 1 mile below Jacks Fork and 8 miles northeast of Eminence, Shannon County.

DRAINAGE AREA.—1,230 square miles (measured on soil-survey maps).

RECORDS AVAILABLE.—August 24, 1921, to September 30, 1926.

GAGE.—Vertical staff gage from 0 to 10 feet bolted to outcropping ledge on right bank, and another section from 10 to 26 feet fastened to near-by tree.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Bed composed of clean coarse gravel. Control is a coarse gravel bar one-fourth mile below gage; clean and practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 8.30 feet at 9 a. m. October 17 (discharge, 10,700 second-feet); minimum stage, 0.9 foot July 20–21 and August 10–12 (discharge, 445 second-feet).

1921–1926: Maximum stage recorded, 14.20 feet November 19, 1921 (discharge, 25,800 second-feet); minimum discharge, 415 second-feet August 28 to September 13, 1925.

During 1905 river reached a stage of 37.5 feet, determined by levels to high-water mark.

REGULATION.—Natural regulation through large tributary springs.

ACCURACY.—Stage-discharge relation practically permanent; not affected by ice. Rating curve well defined below 12,000 second-feet and extended above that point. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good except those for high stages which are fair.

The following discharge measurements were made:

October 14, 1925: Gage height, 2.00 feet; discharge, 1,050 second-feet.

March 2, 1926: Gage height, 2.56 feet; discharge, 1,470 second-feet.

August 4, 1926: Gage height, 1.09 feet; discharge, 533 second-feet.

Daily discharge, in second-feet, of Current River near Eminence, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,560	860	935	685	1,980	1,800	1,980	935	630	480	655	480
2	1,640	860	935	685	1,890	1,560	1,980	935	605	480	655	462
3	1,080	822	898	685	1,890	1,400	1,800	898	655	480	605	462
4	1,050	822	2,550	715	1,720	1,240	1,720	898	685	480	520	462
5	972	1,240	5,680	655	1,480	1,160	1,640	860	655	480	520	500
6	898	1,160	2,850	655	1,480	1,240	1,560	860	605	480	480	540
7	822	4,130	2,450	630	1,480	1,320	1,720	860	605	520	462	520
8	785	8,400	2,160	630	1,480	1,400	2,550	860	605	560	462	500
9	685	3,490	1,890	605	1,400	1,400	2,850	879	582	540	462	500
10	655	2,650	1,640	605	1,320	1,640	2,550	898	582	520	445	480
11	630	2,350	1,560	605	1,080	3,330	2,160	860	582	500	445	480
12	1,720	1,800	1,400	605	972	4,130	2,160	935	560	480	445	462
13	1,400	1,640	1,320	582	972	3,330	2,250	860	560	480	480	520
14	1,080	1,560	1,320	582	935	2,650	2,250	860	560	480	480	520
15	2,650	1,480	1,240	582	935	2,250	1,980	785	560	462	462	500
16	4,450	1,400	1,240	582	935	2,070	1,890	750	540	462	462	480
17	10,700	1,320	1,160	605	898	1,890	1,720	750	540	462	462	480
18	3,490	1,240	1,080	655	898	1,640	1,640	750	520	462	582	480
19	2,650	1,160	1,050	750	898	1,560	1,480	935	520	462	540	480
20	1,890	1,080	1,050	860	860	1,560	1,400	860	520	445	560	462
21	1,640	1,050	1,010	898	860	1,400	1,320	785	520	445	560	462
22	1,480	972	935	898	860	1,320	1,320	715	520	480	540	462
23	1,400	935	898	860	860	1,320	1,320	715	520	480	560	540
24	1,720	898	860	785	822	1,240	1,240	685	480	480	715	500
25	2,650	935	785	898	2,160	1,160	1,280	655	480	462	605	655
26	1,400	972	785	898	2,750	1,160	1,320	655	520	480	520	1,050
27	1,480	1,050	715	935	2,250	1,010	1,320	630	500	560	480	1,160
28	1,320	1,050	685	1,080	1,980	1,010	1,240	605	480	540	480	1,080
29	1,160	1,010	685	1,320	------	972	1,080	605	480	500	480	1,800
30	1,050	1,010	685	1,320	------	1,010	972	630	500	480	480	1,890
31	935	------	655	1,400	------	1,560	------	655	------	480	480	------

NOTE.—Discharge estimated Oct. 13, Feb. 21, Apr. 25, May 9, 30, and Aug. 29; gage not read.

Monthly discharge of Current River near Eminence, Mo., for the year ending September 30, 1926

[Drainage area, 1,230 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	10,700	630	1,840	1.50	1.73
November	8,400	822	1,650	1.34	1.50
December	5,680	655	1,390	1.13	1.30
January	1,400	582	782	.636	.73
February	2,750	822	1,360	1.11	1.16
March	4,130	972	1,670	1.36	1.57
April	2,850	972	1,720	1.40	1.56
May	935	605	792	.644	.74
June	685	480	556	.452	.50
July	560	445	487	.396	.46
August	715	445	519	.422	.49
September	1,890	462	646	.525	.59
The year	10,700	445	1,120	.911	12.33

CURRENT RIVER AT VAN BUREN, MO.

LOCATION.—In NE. ¼ NW. ¼ sec. 25, T. 27 N., R. 1 W., at bridge on State highway No. 60 in Van Buren, Carter County, half a mile below Davis Creek and 4 miles above Big Spring.

DRAINAGE AREA.—1,640 square miles (measured on soil-survey maps).

RECORDS AVAILABLE.—June 18, 1921, to September 30, 1926. The Engineering Experiment Station, University of Missouri, has records at the same site from August 25, 1912, to July 30, 1921.

GAGE.—Chain gage on downstream side of bridge; read by J. G. Lester. Zero of gage is 445.79 feet above mean sea level.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel. Control is a coarse gravel bar 1,000 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.67 feet at 5 p. m. October 17 (discharge, 9,500 second-feet); minimum discharge, 580 second-feet August 7–10.

1921–1926: Maximum stage recorded, 10.25 feet November 20, 1921 (discharge, 22,100 second-feet); minimum discharge, 542 second-feet September 6, 8, 9, and 12, 1925.

Flood of March 26, 1904, reached a stage of 26.0 feet; that of August 21, 1915, a stage of 22.9 feet (estimated discharge, 125,000 second-feet); both stages determined by levels to floodmarks.

REGULATION.—Natural regulation through large springs.

ACCURACY.—Stage-discharge relation changed somewhat November 8; not affected by ice. Both rating curves well defined above 3,660 second-feet and fairly well defined below. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

Discharge measurements of Current River at Van Buren, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 14	2.49	1,560	Mar. 3	2.63	1,880	Aug. 5	1.37	629
Oct. 15	2.92	2,100	June 9	1.56	844	Sept. 2	1.24	652
Dec. 9	3.15	2,540						

Daily discharge, in second-feet, of Current River at Van Buren, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,610	1,190	1,320	940	2,220	2,340	2,470	1,270	900	710	860	640
2	1,970	1,140	1,270	940	2,600	2,100	2,600	1,270	860	710	985	640
3	1,840	1,040	1,220	940	2,470	1,860	2,470	1,270	940	710	900	640
4	1,500	1,090	2,470	985	2,220	1,750	2,340	1,220	940	710	820	640
5	1,300	1,840	5,600	940	2,100	1,530	2,100	1,170	900	710	710	610
6	1,090	1,720	4,840	940	1,860	1,530	1,980	1,170	860	710	640	710
7	1,040	3,360	3,680	940	1,640	1,640	1,980	1,120	860	745	580	675
8	1,000	8,120	2,990	900	1,640	1,750	2,600	1,120	860	745	580	675
9	920	5,800	2,470	860	1,530	1,750	3,260	1,170	820	780	580	640
10	880	4,140	2,220	850	1,420	1,750	2,990	1,170	820	745	580	640
11	840	3,260	2,100	860	1,320	3,540	2,730	1,170	820	710	640	640
12	1,720	2,860	1,860	860	1,270	5,020	2,600	1,220	820	710	610	640
13	2,100	2,470	1,750	820	1,220	4,660	2,730	1,170	820	710	640	640
14	1,610	2,100	1,640	820	2,220	3,820	2,860	1,120	780	710	675	640
15	2,230	2,100	1,640	820	1,220	3,260	2,600	1,080	780	675	675	640
16	3,810	1,980	1,530	780	1,220	2,860	2,470	1,030	780	710	820	675
17	7,860	1,860	1,420	820	1,170	2,470	2,220	1,030	780	675	780	640
18	5,800	1,750	1,420	940	1,170	2,340	2,100	1,030	780	675	780	640
19	3,660	1,750	1,320	940	1,170	2,100	1,980	1,120	780	675	780	640
20	2,780	1,640	1,320	1,080	1,120	1,980	1,860	1,120	780	675	780	640
21	2,230	1,530	1,320	1,170	1,120	1,860	1,750	1,080	780	675	780	640
22	1,840	1,420	1,270	1,220	1,080	1,750	1,640	1,030	780	710	745	640
23	1,720	1,320	1,170	1,170	1,080	1,640	1,640	985	745	710	745	640
24	2,500	1,320	1,120	1,170	1,030	1,640	1,640	940	745	745	780	675
25	3,060	1,320	1,080	1,220	2,470	1,530	1,530	940	745	710	860	745
26	2,500	1,320	1,030	1,220	3,540	1,530	1,530	900	780	820	780	860
27	2,100	1,420	1,030	1,270	3,260	1,420	1,420	900	745	780	745	985
28	1,720	1,420	985	1,420	2,730	1,320	1,420	900	710	820	780	940
29	1,500	1,420	985	1,530	------	1,270	1,320	860	745	745	675	940
30	1,400	1,420	940	1,640	------	1,320	1,320	860	745	710	675	1,270
31	1,300	------	940	1,750	------	1,980	------	900	------	710	675	------

Monthly discharge of Current River at Van Buren, Mo., for the year ending September 30, 1926

[Drainage area, 1,640 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	7,860	840	2,180	1.33	1.53
November	8,120	1,040	2,170	1.32	1.47
December	5,600	940	1,800	1.10	1.27
January	1,750	780	1,060	.646	.74
February	3,540	1,030	1,720	1.05	1.09
March	5,020	1,270	2,170	1.32	1.52
April	3,260	1,320	2,140	1.30	1.45
May	1,270	860	1,080	.659	.76
June	940	710	807	.492	.55
July	820	675	720	.439	.51
August	985	580	731	.446	.51
September	1,270	610	709	.432	.48
The year	8,120	580	1,440	.878	11.88

CURRENT RIVER AT DONIPHAN, MO.

LOCATION.—In N. ½ sec. 27, T. 23 N., R. 2 E., at highway bridge three-fourths of a mile west of Doniphan, Ripley County, and 2 miles above Briar Creek.

DRAINAGE AREA.—2,030 square miles (measured on soil-survey maps).

RECORDS AVAILABLE.—June 14, 1921, to September 30, 1926.

GAGE.—Chain gage on upstream side of bridge; read by T. B. Swindel.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge.

CHANNEL AND CONTROL.—Bed composed of clean, coarse gravel; practically permanent. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.50 feet at 7 a. m. October 18 (discharge, 10,300 second-feet); minimum discharge, 1,170 second-feet several days during July, August, and September.

1921–1926: Maximum stage recorded, 13.0 feet February 3, 1923 (discharge, 29,600 second-feet); minimum discharge, 1,020 second-feet August 27 to September 14, 1925.

The flood of August, 1915, reached a stage of 25.5 feet, determined by United States Army Engineers from levels to high-water marks.

REGULATION.—Natural regulation through numerous large springs.

ACCURACY.—Stage-discharge relation changed slightly during the year; not affected by ice. Rating curve used October 1 to December 31 and curve used January 1 to September 30 fairly well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

Discharge measurements of Current River at Doniphan, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 20	3.16	4,680	Mar. 4	2.10	3,060	Aug. 6	0.34	1,270
Dec. 12	2.24	3,270	June 9	.64	1,520			

Daily discharge, in second-feet, of Current River at Doniphan, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,880	2,200	2,530	1,720	3,130	2,640	3,360	2,110	1,630	1,300	1,460	1,230
2	2,760	2,200	2,420	1,630	3,660	2,310	3,940	2,110	1,720	1,380	1,540	1,230
3	2,760	2,100	2,420	1,630	3,520	2,310	3,940	2,010	1,630	1,300	1,460	1,230
4	2,760	2,100	3,390	1,630	3,130	2,760	3,800	2,010	1,630	1,300	1,380	1,230
5	2,640	2,420	5,420	1,630	3,130	2,760	3,600	1,910	1,630	1,230	1,380	1,230
6	2,200	3,390	7,400	1,630	3,000	2,760	3,390	1,910	1,630	1,270	1,300	1,300
7	2,000	3,520	7,050	1,630	2,760	2,760	3,130	1,910	1,540	1,300	1,230	1,300
8	1,900	6,040	6,040	1,630	2,640	2,640	3,260	1,910	1,460	1,340	1,230	1,230
9	1,700	9,500	5,570	1,630	2,530	2,530	3,800	1,910	1,460	1,380	1,230	1,230
10	1,600	6,540	3,940	1,630	2,420	2,530	4,220	1,910	1,460	1,340	1,230	1,230
11	1,600	5,570	3,390	1,540	2,420	3,390	4,080	1,910	1,460	1,300	1,170	1,230
12	1,500	4,670	3,130	1,540	2,210	5,420	3,940	1,910	1,460	1,230	1,170	1,230
13	4,370	4,220	3,130	1,540	2,110	6,200	3,800	1,910	1,460	1,230	1,170	1,230
14	4,080	3,800	2,880	1,540	2,110	6,370	3,660	1,910	1,380	1,230	1,170	1,230
15	3,940	3,660	2,640	1,540	2,110	5,120	3,520	1,810	1,380	1,230	1,170	1,230
16	3,800	3,390	2,530	1,460	2,110	4,370	3,520	1,810	1,380	1,230	1,170	1,230
17	7,760	3,260	2,420	1,460	2,010	4,080	3,390	1,720	1,380	1,230	2,640	1,230
18	10,300	3,130	2,420	1,810	2,010	3,660	3,260	1,720	1,380	1,170	1,540	1,230
19	6,370	3,130	2,420	1,810	2,010	3,390	3,130	2,010	1,300	1,170	1,460	1,170
20	4,820	3,000	2,310	1,910	2,010	3,260	2,880	1,910	1,300	1,170	1,380	1,170
21	3,800	2,880	2,200	2,760	2,010	3,130	2,640	1,810	1,300	1,170	1,380	1,170
22	3,390	2,760	2,200	2,640	2,010	2,880	2,530	1,810	1,300	1,170	1,380	1,170
23	3,130	2,640	2,100	2,310	2,010	2,880	2,530	1,720	1,300	1,170	1,300	1,170
24	3,800	2,530	2,000	2,310	2,760	2,880	2,530	1,630	1,300	1,170	1,300	1,230
25	4,220	2,420	2,000	2,310	4,670	2,760	2,420	1,630	1,300	1,170	1,460	1,230
26	4,520	2,530	2,000	2,310	4,670	2,640	2,310	1,630	1,300	1,170	1,380	1,300
27	4,370	2,530	1,900	2,310	5,120	2,530	2,310	1,540	1,300	1,540	1,300	1,460
28	4,220	2,530	1,800	2,310	3,000	2,420	2,210	1,540	1,300	1,460	1,230	1,540
29	3,940	2,640	1,800	2,530	-------	2,420	2,210	1,540	1,230	1,380	1,230	1,630
30	3,000	2,530	1,700	2,640	-------	2,420	2,110	1,460	1,230	1,300	1,230	1,630
31	2,640	-------	1,700	2,420	-------	3,390	-------	1,460	-------	1,300	1,170	-------

NOTE.—Daily discharge estimated July 6–10; gage not read.

Monthly discharge of Current River at Doniphan, Mo., for the year ending September 30, 1926

[Drainage area, 2,030 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	10,300	1,500	3,640	1.79	2.06
November	9,500	2,100	3,460	1.70	1.90
December	7,400	1,700	3,060	1.51	1.74
January	2,760	1,460	1,920	.946	1.09
February	5,120	2,010	2,760	1.36	1.42
March	6,370	2,310	3,280	1.62	1.87
April	4,220	2,110	3,180	1.57	1.75
May	2,110	1,460	1,810	.892	1.03
June	1,720	1,230	1,420	.700	.78
July	1,540	1,170	1,270	.626	.72
August	2,640	1,170	1,350	.665	.77
September	1,630	1,170	1,270	.626	.70
The year	10,300	1,170	2,360	1.16	15.83

JACKS FORK AT EMINENCE, MO.

LOCATION.—In W. ½ sec. 26, T. 29 N., R. 4 W., at bridge on State highway No. 19 half a mile north of Eminence, Shannon County, 1 mile below Mahans Creek, and 8 miles above mouth.

DRAINAGE AREA.—376 square miles (measured on soil-survey maps).

RECORDS AVAILABLE.—October 18, 1921, to September 30, 1926.

GAGE.—Chain gage on upstream side of bridge; read by A. P. Bales.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel. Control is a coarse gravel bar 300 feet below gage; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.65 feet at 8 a. m. October 17 (discharge, 4,270 second-feet); minimum stage, 0.66 foot September 21 and 22 (discharge, 108 second-feet).

1922–1926: Maximum stage recorded, 10.0 feet February 1, 1923 (discharge, 12,200 second-feet); minimum discharge, 86 second-feet September 1 and 6–11, 1925.

REGULATION.—Natural regulation through large springs.

ACCURACY.—Stage-discharge relation changed October 17; not affected by ice. Rating curve used until October 16 well defined above 220 second-feet and fairly well defined below; curve used after that date well defined below 3,500 second-feet and fairly well defined above. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

Discharge measurements of Jacks Fork at Eminence, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 13	1.62	364	June 8	0.94	176	Aug. 5	0.79	133
Dec. 2	1.52	291	Do	.94	170	Sept. 3	.67	110
Mar. 1	1.92	539						

Daily discharge, in second-feet, of Jacks Fork at Eminence, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	438	338	302	218	727	577	727	250	186	129	136	116
2	770	320	283	218	836	484	675	250	189	129	250	112
3	530	320	266	234	727	439	626	266	204	129	189	110
4	415	302	626	234	626	357	602	250	204	129	160	110
5	350	484	1,830	234	554	357	507	234	204	125	134	143
6	290	484	1,120	218	507	357	462	234	189	125	129	134
7	290	836	836	218	507	376	462	234	181	125	120	167
8	272	3,370	577	218	439	395	554	234	176	148	120	152
9	248	1,450	577	204	395	419	900	266	170	152	116	143
10	202	970	507	189	338	419	727	250	165	143	116	129
11	196	727	484	189	320	727	675	283	165	138	112	120
12	114	626	439	189	320	1,540	626	320	160	134	112	116
13	370	577	439	204	302	1,360	626	283	160	134	116	129
14	415	484	439	204	302	970	602	283	160	129	116	129
15	900	507	439	189	283	780	577	266	160	129	116	134
16	1,730	484	439	189	266	675	507	234	157	123	112	129
17	4,270	439	419	189	250	602	484	218	152	123	152	125
18	1,280	395	395	218	250	530	439	218	152	118	148	120
19	836	395	357	283	250	507	395	283	148	118	162	116
20	626	357	338	320	266	484	376	266	148	114	162	112
21	554	338	338	320	266	439	338	234	143	118	157	108
22	484	320	320	338	266	395	338	218	148	145	148	108
23	439	302	302	283	283	395	338	218	143	123	129	129
24	602	302	283	283	266	357	338	204	143	123	129	134
25	1,200	283	283	357	577	320	320	204	138	118	125	143
26	836	320	266	357	1,200	283	302	181	138	136	125	148
27	675	376	234	357	836	266	283	181	138	127	120	162
28	484	357	234	395	626	283	266	176	134	118	120	173
29	439	376	234	507	-------	283	250	170	134	114	116	189
30	395	357	234	484	-------	302	250	170	129	114	112	320
31	357	-------	218	507	-------	357	-------	187	-------	114	116	-------

Monthly discharge of Jacks Fork at Eminence, Mo., for the year ending September 30, 1926

[Drainage area, 376 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	4,270	114	678	1.80	2.08
November	3,370	283	573	1.52	1.70
December	1,830	218	453	1.20	1.38
January	507	189	276	.734	.85
February	1,200	250	457	1.22	1.27
March	1,540	266	517	1.38	1.59
April	900	250	486	1.29	1.44
May	320	170	234	.622	.72
June	204	129	161	.428	.48
July	152	114	127	.338	.39
August	250	112	135	.359	.41
September	320	108	139	.370	.41
The year	4,270	108	352	.936	12.72

BIG SPRING NEAR VAN BUREN, MO.

LOCATION.—In sec. 6, T. 26 N., R. 1 E., 1,000 feet above mouth of Spring Branch, 4,000 feet below St. Louis-San Francisco Railway bridge over Current River, and 4 miles southeast of Van Buren, Carter County.

RECORDS AVAILABLE.—January 8 to June 30, 1922, and April 1, 1923, to September 30, 1926.

GAGE.—Vertical staff bolted to face of large rock on right bank of Spring Branch, 150 feet below outlet of spring. Zero of gage is 429.8 feet above mean sea level.

DISCHARGE MEASUREMENTS.—Made from temporary wagon bridge 500 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and coarse gravel; practically permanent; moss and weeds grow in bed of stream. Gravel ford across branch 400 feet below gage controls low flow to some extent. Stage-discharge relation is affected part of the time by backwater from Current River.

EXTREMES OF DISCHARGE.—Maximum discharge during year, 700 second-feet December 4–7; minimum discharge, 268 second-feet September 17–24.

1922–1926: Maximum discharge during periods of records, 840 second-feet May 27, 1923; minimum discharge, that of September 17–24, 1926.

ICE.—Stage-discharge relation never affected by ice.

ACCURACY.—Stage-discharge relation not permanent; affected by backwater from Current River whenever the river was above gage height 2.9 feet at Van Buren. Both rating curves fairly well defined; constructed by subtracting from gage heights for discharge measurements the amount that Current River was above 2.9 feet. Gage read to hundredths two or three times a week until March 21 and once daily after that date. Daily discharge ascertained by applying to rating table gage heights corrected for backwater by amount that Current River was above 2.9 feet, whenever that occurred, except for October 22 to December 8, when shifting-control method was used. Discharge was interpolated for days when gage was not read. Records fair.

Discharge measurements of Big Spring near Van Buren, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 15	1.52	507	Mar. 3	1.37	544	Aug. 5	0.52	288
Dec. 9	1.78	691	June 9	.78	365	Sept. 2	.40	288

Daily discharge, in second-feet, of Big Spring near Van Buren, Mo, for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	359	394	404	346	485	547	640	411	371	346	300	278
2	373	390	404	346	504	541	610	411	371	346	322	278
3	386	386	552	346	523	498	610	397	371	346	311	278
4	357	380	700	346	542	454	610	397	384	334	311	278
5	328	374	700	346	561	506	610	397	384	334	311	278
6	299	368	700	338	515	558	586	397	371	322	300	278
7	294	396	700	330	470	610	561	397	371	322	300	278
8	288	423	696	322	425	596	504	397	371	322	300	278
9	283	451	691	322	411	581	486	397	371	334	300	278
10	357	479	635	322	397	566	541	397	358	334	300	278
11	431	506	578	322	384	551	561	397	358	322	300	278
12	505	534	521	322	371	536	561	397	358	322	300	278
13	578	554	488	318	358	521	521	384	358	322	300	278
14	520	574	454	314	358	543	541	384	358	322	300	278
15	462	594	443	311	358	565	561	384	358	322	300	278
16	404	614	433	316	358	587	561	384	358	322	300	278
17	421	634	422	322	358	610	586	371	358	311	300	268
18	438	567	411	329	358	610	561	371	358	311	300	268
19	455	500	407	334	362	610	521	384	358	311	300	268
20	472	485	402	342	365	586	486	384	346	311	300	268
21	459	470	397	350	368	561	470	384	346	311	300	268
22	446	455	388	358	371	536	454	371	346	311	300	268
23	446	440	380	364	466	511	454	371	346	311	300	268
24	446	424	371	371	561	486	454	371	346	311	289	268
25	446	414	368	371	561	470	440	371	346	311	300	278
26	446	404	364	371	561	454	425	371	346	311	300	278
27	435	404	361	389	561	451	425	371	346	322	289	278
28	425	404	358	407	554	447	425	371	346	311	278	289
29	414	404	355	425	.....	443	411	371	346	311	278	300
30	404	404	352	445	.....	440	411	371	346	300	278	311
31	399	.....	349	465	.....	540	.....	371	.....	300	278	.....

NOTE.—Stage-discharge relation affected by backwater from Current River Oct. 16, 20, 26, Nov. 12, Dec. 4, Feb. 2, 27, Mar. 13, 17, Apr. 1–4, and 8–17.

Monthly discharge of Big Spring near Van Buren, Mo., for the year ending September 30, 1926

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	578	283	412	May	411	371	385
November	634	368	461	June	384	346	358
December	700	349	477	July	346	300	320
January	465	311	352	August	322	278	298
February	561	358	445	September	311	268	278
March	610	440	533				
April	640	411	520	The year	700	268	403

ELEVEN POINT RIVER NEAR BARDLEY, MO.

LOCATION.—In NW. ¼ sec. 20, T. 23 N., R. 2 W., at bridge on State highway No. 42, 7 miles southwest of Bardley, Ripley County, 7 miles above Fredericks Fork, and 12 miles above Missouri-Arkansas line.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—October 22, 1921, to September 30, 1926.

GAGE.—Chain gage on upstream side of bridge; read by J. S. Johnson.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand, gravel, and some outcropping rock. Low-water control is a contracted section of clean, coarse gravel 300 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.10 feet at 7 a. m. November 8 (discharge, 2,490 second-feet); minimum stage, 1.32 feet September 19–23 (discharge, 265 second-feet).

1922–1926: Maximum stage recorded, 10.64 feet March 16, 1923 (discharge, 9,450 second-feet); minimum stage, 1.06 feet September 6–11, 1925 (discharge, 210 second-feet).

Flood of August, 1915, reached a stage of 19.7 feet, determined from levels to high-water marks.

REGULATION.—Natural regulation through large springs.

ACCURACY.—Stage-discharge relation permanent during the year; not affected by ice. Rating curve well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

Discharge measurements of Eleven Point River near Bardley, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 22	2.60	828	Mar. 4	2.56	800	June 10	1.84	455
Dec. 12	2.73	856	June 9	1.86	459	Aug. 6	1.42	311

Daily discharge, in second-feet, of Eleven Point River near Bardley, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	465	750	920	505	800	980	1,220	650	445	350	445	290
2	445	750	920	505	800	920	1,160	600	445	350	385	290
3	425	700	800	550	800	800	1,040	600	445	350	335	290
4	405	700	1,040	505	750	750	980	600	485	350	335	290
5	385	800	1,680	505	750	750	920	600	505	350	320	290
6	368	1,040	1,420	485	750	750	920	550	485	350	320	305
7	368	1,290	1,040	465	700	750	860	550	485	350	305	290
8	368	2,490	980	465	700	700	920	550	465	350	290	290
9	350	1,890	980	465	700	700	860	550	465	368	290	290
10	335	1,680	920	445	650	700	980	550	445	350	290	278
11	320	1,290	920	445	600	920	980	550	425	350	290	278
12	320	1,290	920	445	600	1,290	980	550	425	335	290	278
13	750	1,220	860	445	600	1,360	920	550	425	335	290	278
14	750	1,100	800	425	600	1,290	920	550	405	320	425	290
15	750	1,100	800	425	600	1,220	860	505	425	320	2.0	320
16	800	1,040	750	425	550	1,160	860	505	425	320	320	320
17	1,960	1,040	750	425	550	1,100	860	505	405	320	465	278
18	1,680	980	700	505	550	1,040	800	505	405	320	505	278
19	1,100	1,040	700	550	550	980	800	550	385	320	405	265
20	980	980	700	550	550	920	750	505	385	320	385	265
21	860	980	700	600	550	920	750	505	385	320	350	265
22	860	980	700	750	505	920	750	505	385	320	335	265
23	750	920	650	800	505	860	750	485	385	305	320	265
24	1,040	860	600	750	505	660	750	485	385	305	320	278
25	1,750	860	600	750	1,550	860	700	465	368	320	335	290
26	1,290	800	600	750	1,290	800	700	465	368	320	320	290
27	1,100	920	600	700	1,100	750	700	465	368	335	320	290
28	980	980	550	700	1,040	750	650	465	368	320	320	305
29	920	920	550	750	-------	700	650	445	350	320	305	320
30	860	920	505	750	-------	700	650	445	350	320	305	350
31	920	-------	505	750	-------	1,160	-------	425	-------	320	290	------

Monthly discharge of Eleven Point River near Bardley, Mo., for the year ending September 30, 1926

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	1,960	320	795	May	650	425	524
November	2,490	700	1,080	June	505	350	416
December	1,680	505	812	July	368	305	332
January	800	425	567	August	505	290	339
February	1,550	505	721	September	350	265	289
March	1,360	700	915				
April	1,220	650	855	The year	2,490	265	636

GREER SPRING AT GREER, MO.

LOCATION.—In SE. ¼ SW. ¼ sec. 36, T. 25 N., R. 4 W., 500 feet below lower outlet of the spring, 1 mile north of Greer, Oregon County, and 1¼ miles above mouth of the spring branch.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—August 10 to December 31, 1904, and November 18, 1921, to September 30, 1926.

GAGE.—Vertical staff gage fastened to tree on right bank; read by O. S. Caughron and Virgil Bell.

DISCHARGE MEASUREMENTS.—Made by wading 500 feet below gage.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and boulders. Vegetation grows in channel. Control is a section of boulders and rocks just below gage; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.15 feet November 9 (discharge, 612 second-feet); minimum discharge, 205 second-feet July 31, August 1–5, and 12–16.

1922–1926: Maximum stage recorded, 1.68 feet April 11, 1922 (discharge, 835 second-feet); minimum discharge, 151 second-feet August 19, 1925.

ACCURACY.—Stage-discharge relation changed considerably during the year; not affected by ice. Rating curves fairly well defined. Gage read to hundredths three times a week. Daily discharge ascertained by shifting-control method; interpolated for days when gage was not read. Records rather poor.

Discharge measurements of Greer Spring at Greer, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 22	0.97	439	Mar. 4	0.95	377	Aug. 7	0.80	208
Dec. 13	1.00	375	June 10	.86	262			

Daily discharge, in second-feet, of Greer Spring at Greer, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	348	501	460	285	344	352	360	310	294	267	205	221
2	338	501	460	273	344	352	356	310	289	267	205	216
3	329	501	477	273	344	352	352	310	285	267	205	216
4	319	501	494	273	344	352	352	310	285	267	205	216
5	309	501	511	273	344	352	352	310	285	267	205	221
6	299	528	500	273	344	352	366	310	285	265	210	226
7	289	554	490	273	327	373	380	310	285	262	216	226
8	279	583	466	273	310	394	394	310	277	260	213	226
9	270	612	441	273	310	394	394	310	268	260	210	226
10	260	572	426	292	310	394	394	310	260	260	208	226
11	250	533	410	310	310	394	394	310	279	260	207	226
12	240	533	395	310	310	394	394	310	298	260	205	232
13	400	533	395	310	310	394	394	310	292	260	205	237
14	414	533	394	310	310	394	394	310	285	260	205	237
15	432	533	394	304	310	394	394	310	285	260	205	237
16	451	533	394	298	316	394	394	310	285	257	205	237
17	451	533	394	304	321	394	394	310	285	254	212	237
18	451	533	394	310	327	380	386	316	285	243	219	237
19	451	533	394	310	336	366	377	321	285	232	226	237
20	451	533	373	310	344	352	377	327	279	234	221	237
21	451	533	352	310	348	352	377	327	273	235	216	233
22	441	533	352	310	352	352	377	327	273	237	216	230
23	508	533	352	310	349	373	364	318	273	237	216	226
24	575	522	338	331	347	394	352	310	273	237	218	226
25	575	511	324	352	344	390	352	306	266	237	219	226
26	575	494	310	352	352	386	352	302	260	237	221	221
27	575	477	310	352	352	381	352	298	260	233	218	216
28	575	460	310	352	352	377	352	298	260	230	216	216
29	538	460	310	352	-------	373	352	298	262	226	224	216
30	501	460	310	352	-------	369	331	298	265	216	232	216
31	501	-------	298	348	-------	365	-------	298	-------	205	227	-------

NOTE.—Daily discharge Oct. 1–13 estimated from discharge of Eleven Point River near Bardley; gage readings unreliable.

Monthly discharge of Greer Spring at Greer, Mo., for the year ending September 30, 1926

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	575	240	414	May	327	298	310
November	612	460	522	June	298	260	278
December	511	298	394	July	267	205	248
January	352	273	308	August	232	205	213
February	352	310	333	September	237	216	227
March	394	352	375				
April	394	331	372	The year	612	205	333

ARKANSAS RIVER BASIN

ARKANSAS RIVER AT GRANITE, COLO.

LOCATION.—In sec. 31, T. 11 S., R. 79 W., at Granite, Lake County, below mouth of Lake Creek and above Lost Canyon and Clear Creeks.

DRAINAGE AREA.—431 square miles (measured on topographic map).

RECORDS AVAILABLE.—May 1, 1897, to September 10, 1899; April 6, 1910, to September 30, 1926.

GAGE.—Bristol water-stage recorder of float type on right bank 200 feet below highway bridge at Granite.

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

CHANNEL AND CONTROL.—Bed composed of coarse gravel and small boulders. Control shifting. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 3.75 feet at 3 a. m. June 13 (discharge, 1,690 second-feet); minimum discharge occurred during winter.

1910–1926: Maximum discharge, 2,900 second-feet June 16, 1924; minimum discharge recorded, 11 second-feet on March 15, 1918.

ICE.—Stage-discharge relation not seriously affected by ice.

DIVERSIONS.—Water diverted from Arkansas River for irrigation of 1,800 acres between this station and junction of Tennessee and East Forks.

REGULATION.—Discharge affected by operation of Twin Lakes Reservoir, which has a storage decree for 54,450 acre-feet.

COOPERATION.—Complete records furnished by State engineer.

Daily discharge, in second-feet, of Arkansas River at Granite, Colo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	199	158				90	61	279	1,180	1,020	1,040	349
2	193	132				80	62	287	1,360	1,030	1,060	310
3	212	132				80	70	353	1,240	1,030	1,060	279
4	184	109				80	84	400	1,350	1,040	841	165
5	264	105				80	87	442	1,350	1,020	629	171
6	283	109				80	93	476	1,310	1,050	642	145
7	257	120				75	99	390	1,430	1,110	577	131
8	235	109				80	99	432	1,260	1,060	510	126
9	135	109				90	97	406	1,220	1,110	487	117
10	135	90				90	102	385	1,090	988	688	119
11	150	93				90	117	358	1,040	1,010	1,120	131
12	145	95				100	129	327	1,270	988	1,100	131
13	140	90				110	156	315	1,510	932	1,090	124
14	130	95				110	171	287	1,200	878	1,120	117
15	120	82				120	210	331	1,080	763	1,110	110
16	122	90	48			112	275	367	916	722	1,040	106
17	135	93				112	310	395	777	662	980	165
18	132	92				104	336	432	702	603	688	165
19	120	84		61		80	340	481	695	528	353	168
20	116	82				84	319	546	688	622	344	165
21	125	84				86	298	668	675	841	323	114
22	130	82				80	319	841	863	908	302	104
23	145	82				84	353	1,110	863	900	294	97
24	145	85			76	91	315	1,100	841	916	372	95
25	132	90				80	327	1,030	848	948	742	102
26	130	85				69	349	1,080	791	1,000	702	108
27	132	85				73	349	996	900	1,030	648	114
28	132	85				77	283	885	980	1,020	616	122
29	145	82				67	287	833	996	1,020	558	117
30	140	81				62	294	948	1,040	1,020	470	112
31	132					62		1,060		996	390	

NOTE.—No gage-height record Mar. 1-15; discharge based on temperature record and comparison with flow of Arkansas River at Salida.

Monthly discharge of Arkansas River at Granite, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	283	116	158	9,720
November	158	81	97.0	5,770
December			58	3,570
January			65	4,000
February			70	3,890
March	120	62	86.4	5,310
April	353	61	213	12,700
May	1,110	279	588	36,200
June	1,510	675	1,050	62,500
July	1,110	528	928	57,100
August	1,120	294	706	43,400
September	349	95	146	8,690
The year	1,510		349	253,000

NOTE.—Mean discharge for December, January, and February based on three current-meter measurements and comparison with flow of Arkansas River at Salida.

ARKANSAS RIVER AT SALIDA, COLO.

LOCATION.—In sec. 32, T. 50 N., R. 9 E., at Salida, Chaffee County, some distance above mouth of South Fork of Arkansas River, the nearest important tributary.

DRAINAGE AREA.—1,210 square miles (measured on base map of Colorado).

RECORDS AVAILABLE.—April 11, 1895, to October 31, 1903; November 3, 1909, to September 30, 1926.

GAGE.—Bristol water-stage recorder on right bank in City Park 400 feet below highway bridge; inspected by water commissioner. Datum lowered 1.0 foot January 1, 1922.

DISCHARGE MEASUREMENTS.—Made from highway bridge.

CHANNEL AND CONTROL.—Bed composed of coarse gravel; shifts at intervals. No well-defined control. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 5.6 feet at 7 p. m. July 4 (discharge, 3,060 second-feet); minimum discharge, 191 second-feet on February 24.

1909–1926: Maximum stage recorded, 7.2 feet June 16, 1924 (discharge, 5,100 second-feet); minimum discharge recorded, 155 second-feet January 28, 1915.

ICE.—Stage-discharge relation not affected by ice as river is kept open by springs.

DIVERSIONS.—Water diverted from Arkansas River between Granite and Salida for irrigation of 2,800 acres.

REGULATION.—Flow at station regulated to some extent by Twin Lakes and Clear Creek Reservoirs which have storage decrees for 54,450 and 11,500 acre-feet, respectively.

COOPERATION.—Complete records furnished by State engineer.

Daily discharge, in second-feet, of Arkansas River at Salida, Colo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	356	369	264	216	208	225	260	452	1,890	1,680	1,260	553
2	352	352	272	222	205	228	263	447	2,200	1,630	1,310	518
3	347	343	280	219	205	219	263	503	2,130	1,620	1,270	503
4	360	326	241	216	208	216	253	558	2,220	1,840	1,330	403
5	369	305	241	213	210	216	228	649	2,330	1,880	930	378

Daily discharge, in second-feet, of Arkansas River at Salida, Colo., for the year ending September 30, 1926—Continued

Day	Oct.	Nov	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
6	480	313	248	210	210	210	225	729	2,250	1,840	1,110	362
7	470	338	256	210	208	208	231	711	2,500	1,930	1,130	335
8	475	330	248	205	205	210	246	706	2,270	1,930	1,070	335
9	433	321	245	210	210	210	246	660	2,070	1,830	1,020	327
10	378	321	245	210	208	216	240	622	1,830	1,630	1,050	339
11	378	292	241	213	210	216	231	595	1,730	1,530	1,620	343
12	369	292	245	210	210	216	234	558	1,810	1,640	1,630	346
13	356	292	238	205	210	213	263	563	2,170	1,550	1,580	346
14	369	300	241	210	210	213	294	537	1,990	1,440	1,580	339
15	387	292	223	205	210	210	305	532	1,750	1,400	1,560	335
16	387	284	223	208	205	216	335	584	1,600	1,300	1,490	331
17	396	280	227	210	205	208	382	563	1,340	1,200	1,400	309
18	401	280	227	210	202	219	420	611	1,390	1,060	1,340	324
19	383	276	234	208	199	222	429	655	1,290	954	723	320
20	378	272	223	213	199	219	456	1,090	1,260	858	677	316
21	356	276	216	210	199	228	470	1,260	1,180	1,170	655	316
22	356	276	220	205	196	231	452	1,520	1,160	1,300	616	294
23	369	272	223	205	199	216	484	1,570	1,190	1,270	579	287
24	369	284	227	205	191	225	456	1,790	1,220	1,330	548	280
25	352	288	227	208	208	240	447	1,630	1,280	1,320	775	280
26	369	292	227	199	210	225	475	1,730	1,330	1,340	942	284
27	365	288	223	205	222	213	498	1,660	1,450	1,400	870	291
28	369	272	216	202	222	210	456	1,470	1,580	1,410	822	287
29	360	272	220	199	-------	222	429	1,340	1,530	1,360	752	291
30	360	260	216	210	-------	210	456	1,470	1,560	1,360	683	273
31	356	-------	216	208	-------	225	-------	1,660	-------	1,300	600	-------

Monthly discharge of Arkansas River at Salida, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	480	347	381	23,400
November	369	260	299	17,800
December	280	216	235	14,400
January	222	199	209	12,900
February	222	191	207	11,500
March	240	208	218	13,400
April	498	225	348	20,700
May	1,790	447	949	58,400
June	2,500	1,160	1,720	102,000
July	1,930	858	1,460	89,800
August	1,630	548	1,060	65,200
September	553	273	342	20,400
The year	2,500	191	622	450,000

ARKANSAS RIVER AT CANON CITY, COLO.

LOCATION.—Just below Hot Springs Hotel, at mouth of canyon and 1 mile above Canon City, Fremont County. Nearest important tributary, Grape Creek, enters some distance above.

DRAINAGE AREA.—3,090 square miles (measured on base map of Colorado).

RECORDS AVAILABLE.—May 1, 1888, to September 30, 1926.

GAGE.—Bristol float-type water-stage recorder.

DISCHARGE MEASUREMENTS.—Made from car and cable.

CHANNEL AND CONTROL.—Bed composed of gravel; very shifting. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 4.8 feet at 9 p. m. July 21 (discharge, 6,460 second-feet); minimum discharge, 233 second-feet on January 23 and September 25.

1888–1926: Maximum stage recorded, 10.7 feet at 8 p. m. August 2, 1921 (discharge, 19,000 second-feet); minimum discharge, 108 second-feet on April 10, 1897.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Water diverted from Arkansas River between Salida and Canon City for irrigation of 3,000 acres.

REGULATION.—Flow regulated to slight extent by operation of reservoirs on headwaters.

COOPERATION.—Complete records furnished by State engineer.

Daily discharge, in second-feet, of Arkansas River at Canon City, Colo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	339	378	350	294	290	306	356	518	2,350	1,650	1,090	500
2	334	378	350	294	294	306	384	500	2,860	1,760	1,090	471
3	334	366	361	294	306	314	384	512	3,040	1,700	1,070	454
4	339	355	323	294	306	314	388	512	3,000	1,780	1,120	471
5	334	339	318	290	306	330	422	639	3,230	2,160	1,050	374
6	372	344	323	283	306	330	569	777	3,150	2,110	1,040	352
7	417	366	339	283	314	306	589	816	3,520	2,240	977	339
8	400	378	328	279	314	306	476	725	3,480	2,270	1,010	318
9	429	318	318	276	314	310	417	692	3,170	2,030	914	318
10	383	334	344	283	314	322	408	632	2,730	1,760	934	306
11	344	339	355	276	314	322	374	692	2,410	1,590	1,210	306
12	344	318	334	276	314	330	352	758	2,410	1,650	1,460	310
13	355	292	328	272	314	310	343	709	3,040	1,590	1,440	326
14	366	302	328	272	314	306	374	661	2,910	1,460	1,620	318
15	394	292	328	272	314	310	422	556	2,380	1,350	1,440	314
16	394	292	334	268	310	306	433	538	2,050	1,290	1,380	306
17	394	323	328	268	310	306	465	549	1,650	1,190	1,300	306
18	417	318	323	265	310	302	488	582	1,560	1,040	1,240	279
19	383	302	328	265	310	302	549	646	1,450	914	977	276
20	389	313	323	265	310	306	543	701	1,310	796	654	272
21	389	318	323	261	310	352	562	894	1,190	1,070	624	258
22	366	313	313	248	306	365	562	1,250	1,140	1,140	609	258
23	366	308	318	233	306	322	549	1,780	1,230	1,080	582	239
24	372	350	318	272	302	314	562	2,160	1,240	1,140	549	236
25	361	339	318	318	302	310	506	2,210	1,290	1,140	500	233
26	350	350	313	310	302	306	512	2,160	1,350	1,180	835	236
27	378	355	313	298	202	306	549	2,220	1,380	1,190	750	248
28	389	355	308	294	306	306	556	2,050	1,490	1,210	725	251
29	378	361	308	306	------	306	494	1,740	1,520	1,260	646	258
30	378	334	302	302	------	314	471	1,660	1,530	1,200	609	245
31	383	------	302	306	------	330	------	1,980	------	1,170	562	------

Monthly discharge of Arkansas River at Canon City, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	429	334	373	22,900
November	378	292	334	19,900
December	361	302	326	20,000
January	318	233	281	17,300
February	314	290	308	17,100
March	365	302	315	19,400
April	589	343	469	27,900
May	2,220	500	1,060	65,200
June	3,520	1,140	2,170	129,000
July	2,270	796	1,460	89,800
August	1,620	500	968	59,500
September	500	233	313	18,600
The year	3,520	233	699	507,000

ARKANSAS RIVER NEAR PUEBLO, COLO.

LOCATION.—In sec. 34, T. 20 S., R. 65 W., at south side waterworks dam, 2½ miles west of Pueblo, Pueblo County. Nearest tributary, Dry Creek, enters 1 mile below.

DRAINAGE AREA.—4,730 square miles (measured on base map of Colorado).

RECORDS AVAILABLE.—May 26, 1925, to September 30, 1926. May 1, 1885, to September 30, 1886; September 19, 1894, to May 25, 1925, for station at Main Street Bridge in Pueblo. Except run-off in Dry Creek following infrequent heavy rains, discharge at two points comparable. From June 1 to September 30, 1887, and May 1 to August 31, 1889, station maintained at point 9 miles above Pueblo.

GAGE.—Bristol water-stage recorder on right wing wall of dam 20 feet upstream from crest.

DISCHARGE MEASUREMENTS.—Made by wading 200 feet below dam; during high stages made from Denver & Rio Grande Western Railroad bridge just above Dry Creek and half a mile below dam.

CHANNEL AND CONTROL.—Bed composed of sand. Control formed by dam. Stage-discharge relation affected during low water by intake canal for waterworks.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 3.86 feet at 12.30 a. m. June 14 (discharge, 4,520 second-feet); minimum discharge, 112 second-feet on September 23.

1894–1926: Maximum stage from high-water mark, 24.66 feet (gage site at Pueblo) at midnight June 3, 1921 (discharge estimated at 100,000 second-feet); minimum discharge, 25 second-feet on September 11, 1908.

ICE.—Stage-discharge relation slightly affected by ice.

DIVERSIONS.—Water diverted from Arkansas River between Canon City and Pueblo for irrigation of 23,000 acres.

COOPERATION.—Complete records furnished by State engineer.

Daily discharge, in second-feet, of Arkansas River near Pueblo, Colo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	343	284	291	306	243	278	250	622	2,160	1,600	1,070	350
2	364	310	330	264	237	264	306	632	2,380	1,950	1,040	343
3	317	284	408	264	257	224	299	660	2,620	1,850	1,070	313
4	297	272	415	250	230	197	299	660	2,560	1,900	1,020	413
5	324	266	372	328	204	230	373	679	2,670	2,010	978	438
6	324	213	350	278	230	271	514	842	2,780	2,440	1,050	299
7	438	213	379	278	204	197	650	1,030	2,870	2,280	966	230
8	422	266	408	292	217	170	576	875	3,190	2,120	909	204
9	400	272	364	320	250	191	421	909	3,000	1,980	800	191
10	422	242	364	306	271	191	381	821	2,650	1,870	779	165
11	337	297	364	271	271	224	421	831	2,310	1,580	842	165
12	337	278	372	313	243	217	381	842	2,120	1,460	1,510	243
13	364	304	317	299	278	184	381	852	2,540	1,510	1,390	243
14	364	297	372	320	210	170	430	810	2,960	1,440	1,510	250
15	357	260	330	320	210	141	430	728	2,420	1,260	1,280	237
16	357	266	272	197	155	146	479	604	1,950	1,250	1,330	191
17	343	278	278	257	165	146	549	622	1,710	1,120	1,350	170
18	343	291	304	250	184	165	532	595	1,420	943	1,260	155
19	330	266	297	257	150	146	613	650	1,350	810	1,100	160
20	357	242	266	237	179	136	689	758	1,170	689	576	165
21	379	272	230	237	197	179	790	800	1,030	622	514	141
22	343	284	230	237	217	237	699	991	920	1,130	488	116
23	343	291	278	237	237	210	660	1,360	991	978	505	112
24	343	284	330	237	250	210	632	2,090	1,080	955	496	116
25	343	310	284	237	230	184	540	2,440	1,140	1,130	421	160
26	337	310	266	285	230	184	514	2,260	1,230	1,190	532	237
27	330	317	236	271	230	243	523	2,350	1,220	1,100	650	264
28	337	324	254	306	210	250	632	2,280	1,300	1,080	586	243
29	350	330	254	278	-------	250	549	2,310	1,450	1,070	523	224
30	343	324	230	250	-------	250	558	1,930	1,500	1,170	462	230
31	317	-------	208	237	-------	237	-------	1,960	-------	1,100	366	-------

Monthly discharge of Arkansas River near Pueblo, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	438	297	352	21,600
November	330	213	282	16,800
December	415	208	311	19,100
January	328	197	272	16,700
February	278	150	221	12,300
March	278	136	204	12,500
April	790	250	502	29,900
May	2,440	595	1,150	70,700
June	3,190	920	1,960	117,000
July	2,440	622	1,410	86,700
August	1,510	366	883	54,300
September	438	112	226	13,400
The year	3,190	112	650	471,000

ARKANSAS RIVER AT HOLLY, COLO.

LOCATION.—Between secs. 14 and 15, T. 23 S., R. 42 W., at highway bridge half a mile south of Holly, Prowers County. Nearest tributary, Wild Horse Creek, an intermittent tributary, enters 1 mile downstream.

DRAINAGE AREA.—25,000 square miles (measured on base map of Colorado).

RECORDS AVAILABLE.—October 15, 1907, to September 30, 1926.

GAGE.—Bristol float-type water-stage recorder on upstream side of bridge.

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

CHANNEL AND CONTROL.—Bed composed of sand and gravel; shifting. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 3.63 feet from 7 to 10 a. m. July 12 (discharge, 2,200 second-feet); minimum discharge, 1 second-foot for several periods during the summer.

1907–1926: Maximum stage recorded 11 feet at noon, October 20, 1908 (discharge determined from slope measurements, 136,000 second-feet); minimum discharge, river dry.

DIVERSIONS.—Water diverted from Arkansas River between Pueblo and Holly for irrigation of 300,000 acres.

COOPERATION.—Complete records furnished by State engineer.

Daily discharge, in second-feet, of Arkansas River at Holly, Colo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	78	64	150	205	308	107	43	25	1	124	2	1
2	113	82	139	140	299	72	129	18	1	95	5	1
3	113	116	136	246	345	72	95	26	1	72	2	1
4	95	66	139	379	325	82	90	13	1	63	3	5
5	85	68	210	401	308	45	53	11	1	36	2	1
6	75	72	146	334	356	28	111	25	1	15	2	2
7	88	101	142	345	308	26	53	56	15	12	2	2
8	72	98	107	192	334	15	120	135	23	6	2	2
9	75	116	101	185	401	12	69	205	272	7	2	1
10	88	298	92	135	379	38	56	86	412	525	2	1
11	48	400	98	135	316	33	90	140	666	156	2	2
12	75	450	88	165	232	28	86	135	578	1,170	2	1
13	80	440	82	185	368	31	82	111	486	819	2	1
14	72	420	52	219	246	16	107	219	724	316	1	1
15	95	342	75	290	290	19	40	178	472	178	6	1

Daily discharge, in second-feet, of Arkansas River at Holly, Colo., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	60	390	101	299	198	11	53	308	264	135	56	1
17	75	410	150	212	162	26	69	412	205	111	6	1
18	50	400	153	264	107	16	107	325	860	99	2	1
19	104	304	113	290	192	13	146	226	1,270	63	1	1
20	98	280	82	219	162	11	129	156	709	43	2	1
21	98	304	98	212	86	23	95	111	334	31	1	1
22	88	235	110	210	107	43	72	79	232	26	1	1
23	68	235	100	200	90	31	31	50	129	22	1	1
24	75	220	160	200	56	48	103	20	162	19	1	1
25	70	200	240	200	36	45	116	20	146	8	1	1
26	75	176	250	205	31	25	86	18	412	6	1	1
27	66	168	196	210	79	38	76	15	983	4	1	1
28	85	172	150	230	48	20	31	8	499	4	1	1
29	52	139	98	260	------	43	38	6	219	8	1	1
30	54	156	110	280	------	45	28	1	162	6	1	1
31	72	------	132	290	------	53	------	1	------	2	1	------

NOTE.—Daily discharge ascertained by shifting-control method. Stage-discharge relation affected by ice Dec. 22–26, Jan. 11–12, and 22–31; discharge based on temperature record and comparison with flow of Arkansas River near Pueblo.

Monthly discharge of Arkansas River at Holly, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	113	48	78.8	4,850
November	450	64	231	13,700
December	250	52	129	7,930
January	401	135	237	14,600
February	401	31	220	12,200
March	107	11	36.0	2,210
April	146	28	80.1	4,770
May	412	1	101	6,210
June	1,270	1	341	20,300
July	1,170	2	135	8,300
August	56	1	3.71	228
September	5	1	1.27	76
The year	1,270	1	132	95,400

ARKANSAS RIVER AT SYRACUSE, KANS.

LOCATION.—In NW. ¼ sec. 18, T. 24 S., R. 40 W., at highway bridge half a mile south of Syracuse, Hamilton County.

DRAINAGE AREA.—25,500 square miles (measured by State irrigation commissioner).

RECORDS AVAILABLE.—August 21, 1902, to November 30, 1905; April 1 to July 31, 1906; June 20, 1921, to September 30, 1926.

GAGE.—Gurley water-stage recorder on downstream side of bridge pier near center of channel.

DISCHARGE MEASUREMENTS.—Made from downstream side of highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of loose, clean sand; shifting. Control not well defined.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 2.64 feet on June 19 (discharge, 1,600 second-feet); minimum stage from water-stage recorder, 0.76 foot several days in August (discharge, 2 second-feet).

1921–1926: Maximum stage about 9.75 feet on June 6, 1921 (discharge, about 45,000 second-feet); minimum discharge, 4 second-feet during periods in August, September, and October, 1922.

1902–1906: Maximum stage recorded, 7.5 feet July 11, 1903 (discharge, 28,300 second-feet); minimum discharge, 3 second-feet in January, 1905.

ICE.—Stage-discharge relation not seriously affected by ice.

DIVERSIONS.—Nearly all low-water flow during year is diverted for irrigation upstream.

ACCURACY.—Stage-discharge relation not permanent. Rating curve fairly well defined between 7 and 5,000 second-feet. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used throughout the year.

COOPERATION.—Complete records furnished by the Kansas State Board of Agriculture through George S. Knapp, State irrigation commissioner.

Daily discharge, in second-feet, of Arkansas River at Syracuse, Kans., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76	177	253	305	253	114	61	61	31	124	9	3
2	73	159	235	317	247	110	71	61	28	97	7	3
3	73	135	235	305	247	107	88	59	26	81	6	107
4	71	124	230	351	235	100	97	50	21	71	5	114
5	71	114	240	363	230	97	107	42	18	59	5	66
6	68	107	299	386	235	94	104	38	17	48	5	52
7	68	150	260	374	235	88	100	40	16	40	4	56
8	68	175	273	363	230	88	97	42	15	31	4	36
9	68	175	235	340	230	81	91	59	14	38	4	9
10	68	175	225	299	230	76	88	84	124	110	3	6
11	68	175	215	363	230	71	97	91	215	132	3	6
12	66	175	200	363	230	71	100	94	247	195	3	6
13	66	175	195	340	220	66	104	100	220	925	2	5
14	68	450	177	340	230	61	100	114	253	555	2	5
15	71	397	164	317	230	61	104	142	435	409	2	5
16	73	397	146		215	56	104	210	420	247	2	5
17	76	351	142		215	52	100	235	225	155	2	5
18	78	351	190		200	48	100	409	374	104	3	5
19	84	351	220		195	40	100	363	1,320	78	3	5
20	100	317	235	280	215	36	94	260	1,040	64	3	5
21	117	317	240		210	38	91	210	669	48	2	5
22	121	328	235		186	46	91	168	273	42	6	5
23	121	351	225		164	50	88	139	200	38	110	5
24	107	351	210		146	52	78	110	155	32	66	4
25	104	340	253	225	139	52	71	88	128	31	50	4
26	97	340	292	215	135	50	73	61	107	24	26	4
27	94	305	305	210	128	50	73	46	132	20	10	4
28	97	292	299	220	124	50	68	40	279	17	5	4
29	132	286	305	235	------	50	64	36	225	11	5	4
30	177	266	305	247	------	48	59	34	159	10	4	4
31	181	------	305	279	------	52	------	32	------	9	4	------

Monthly discharge of Arkansas River at Syracuse, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	181	66	90.4	5,550
November	450	107	260	15,500
December	305	142	237	14,600
January	386	210	299	18,400
February	253	124	207	11,600
March	114	36	66.3	4,080
April	107	59	88.8	5,280
May	409	32	113	6,950
June	1,320	14	246	14,600
July	555	9	124	7,620
August	110	2	11.8	726
September	114	3	18.2	1,080
The year	1,320	2	146	106,000

ARKANSAS RIVER AT GARDEN CITY, KANS.

LOCATION.—In NW. ¼ sec. 19, T. 24 S., R. 32 W., at highway bridge half a mile south of Garden City, Finney County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—June 21, 1922, to September 30, 1926.

GAGE.—Stevens water-stage recorder in wooden shelter and well, located on downstream side of concrete bridge pier near center of channel; maintained by irrigation commissioner. Gage records height of underground water after surface flow ceases.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of loose, clean sand and gravel; shifting. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage from water-stage recorder, 3.73 feet at 6 p. m. February 20 (discharge, 164 second-feet); minimum discharge, no flow for long periods.

1922–1926: Maximum stage recorded, 7.86 feet June 18, 1923 (discharge, 19,500 second-feet); minimum discharge, no flow during several periods.

ICE.—Stage-discharge relation not affected by ice.

REGULATION.—Flow is regulated by diversion and storage of water in western Kansas and eastern Colorado for irrigation.

ACCURACY.—Stage-discharge relation not permanent. Rating curves fairly well defined. Mean daily gage height determined to hundredths from gage charts by inspection. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used April 27 to May 22. Records fair.

The following discharge measurements were made:

April 30, 1926: Gage height, 2.99 feet; discharge, 3.95 second-feet.

June 21, 1926: Gage height, 3.18 feet; discharge, 18.66 second-feet.

Daily discharge, in second-feet, of Arkansas River at Garden City, Kans., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1	-------	0.2	12	65	58	7	14	4	-------
2	-------	.9	13	75	61	6	13	4	-------
3	-------	.3	14	84	38	6	12	1.5	-------
4	-------	.3	8	87	31	6	15	1.0	-------
5	-------	.3	7	84	29	6	21	.7	-------
6	-------	1.0	15	94	26	6	21	.6	-------
7	-------	12	17	87	25	5	21	.9	-------
8	-------	5	25	84	24	5	18	1.7	-------
9	-------	16	27	84	21	6	19	3	-------
10	-------	17	21	84	20	17	21	3	-------
11	-------	31	25	84	18	13		4	-------
12	-------	107	21	81	18	8		9	-------
13	-------	111	18	74	19	5	15	8	-------
14	-------	64	11	74	23	8		8	-------
15	-------	46	8	91	18	6		5	-------
16	-------	45	9	97	19	6	9	3	-------
17	-------	38	12	104	18	5	8	3	-------
18	0.2	26	17	107	24	5	6	3	7
19	.3	19	33	148	51	3	4	3	13
20	.4	14	36	136	153	3	3	12	14
21	.6	11	34	136	111	9	6	10	14
22	.7	10	34	136	64	23	18	1.4	3
23	.6	13	36	136	43	18	19	-------	.6
24	.4	14	48	136	31	11	14	-------	-------
25	.4	13	40	136	23	8	11	-------	-------
26	.4	12	45	128	14	6	9	-------	-------
27	.3	10	45	111	11	6	6	-------	-------
28	.2	9	43	94	9	7	4	-------	-------
29	.2	13	43	97	-------	7	3	-------	-------
30	.1	13	43	111	-------	6	3	-------	-------
31	.1	-------	43	87	-------	8	-------	-------	-------

NOTE.—Braced figure shows estimated averge daily discharge for period indicated. No flow during periods for which no records are given.

Monthly discharge of Arkansas River at Garden City, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	0.7	0.0	0.158	9.7
November	111	.2	22.4	1,330
December	48	7	25.9	1,590
January	148	65	101	6,210
February	153	9	35.7	1,980
March	23	3	7.78	478
April	21	3	1.9	739
May	12	0	2.90	178
June	14	0	1.72	102
July	0	0	.0	0
August	0	0	.0	0
September	0	0	.0	0
The year	153	0	17.4	15,600

ARKANSAS RIVER AT LARNED, KANS.

LOCATION.—In NE. ¼ sec. 5, T. 22 S., R. 16 W., at highway bridge half a mile above Pawnee River and half a mile south of Larned, Pawnee County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—June 22, 1922, to September 30, 1926.

GAGE.—Stevens water-stage recorder on downstream side of cylinder bridge pier near center of channel. Gage records height of ground water after surface flow ceases.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—The bed is composed of loose clean sand and gravel; shifting. No definite control.

EXTREMES OF DISCHARGE.—Maximum stage from water-stage recorder, 4.41 feet at 7 p. m. January 31 (discharge, 544 second-feet); minimum discharge, no flow for long periods.

1922-1926: Maximum stage recorded, 9.5 feet on August 25, 1923 (discharge, 14,300 second-feet); minimum discharge, no flow during several periods.

ICE.—Stage-discharge relation not affected by ice.

DIVERSIONS.—Large portion of flow is diverted in western Kansas and eastern Colorado for irrigation.

ACCURACY.—Stage-discharge relation not permanent. Rating curves fairly well defined. Daily discharge determined by applying to rating table mean daily gage height obtained by planimeter or by inspection of recorder graph. Records fair.

The following discharge measurements were made:

April 20, 1926: Gage height, 3.78 feet; discharge, 113 second-feet.

May 30, 1926: Gage height, 3.64 feet; discharge, 61.3 second-feet.

Daily discharge, in second-feet, of Arkansas River at Larned, Kans., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
1	23	20	43	45	405	121	9	66
2	22	25	44	50	282	115	9	66
3	21	25	40	65	224	109	28	66
4	20	22	32	80	192	109	269	56
5	20	17	37	85	155	106	250	56
6	18	20	31	125	175	102	202	63
7	18	53	41	150	160	94	180	102
8	17	90	38	140	140	98	170	117
9	17	95	40	140	109	98	155	113
10	17	70	43	140	98	98	165	106
11	17	63	43	160	83	102	214	90
12	14	60	43	180	80	113	224	94
13	13	68	46	220	70	109	208	86
14	18	80	35	297	60	98	186	76
15	20	105	28	206	60	90	175	76
16	20	238	24	306	66	86	170	80
17	22	238	28	360	83	76	150	66
18	23	198	34	333	48	66	117	70
19	21	184	53	333	80	73	121	60
20	20	164	47	270	102	53	117	48
21	20	125	45	260	160	76	109	40
22	20	86	43	250	202	102	106	28
23	15	75	46	240	224	80	102	21
24	20	68	45	230	323	73	83	12
25	25	63	50	220	214	60	73	5
26	28	58	44	210	121	63	76	------
27	25	50	42	210	186	60	80	------
28	18	46	42	220	155	60	76	------
29	19	46	42	240	------	26	76	------
30	19	46	42	414	------	12	70	------
31	18	------	42	513	------	10	------	------

NOTE.—No gage-height record for Oct. 9, Dec. 16, 17, 21–24, Jan. 1–4, 7–13, 20–29, Mar. 5, Sept. 24–29; discharge based on observer's notes and climatologic records. No flow during periods for which no discharge is given.

Monthly discharge of Arkansas River at Larned, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	28	13	19.6	1,210
November	238	17	83.1	4,940
December	53	17	40.4	2,480
January	513	45	216	13,300
February	405	48	152	8,440
March	121	10	81.9	5,040
April	269	9	132	7,860
May	117	0	53.6	3,300
June	0	0	0	0
July	0	0	0	0
August	0	0	0	0
September	14	0	.47	28
The year	513	0	64.3	46,600

ARKANSAS RIVER NEAR WICHITA, KANS.

LOCATION.—Near center of section line between secs. 7 and 18, T. 27 S., R. 1 E., at Thirteenth Avenue highway bridge, 1½ miles above Little Arkansas River and 2 miles northwest of Wichita, Sedgwick County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—June 11, 1921, to September 30, 1926.

GAGE.—Gurley water-stage recorder on downstream side of bridge pier. Inspected by P. L. Brockway, City engineer.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Wide, flat bed composed of clean sand, shifting. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 10.35 feet at noon March 30 (discharge, 885 second-feet). No flow June 9 to Sept. 10.

1921–1926: Maximum discharge, 8,510 second-feet on June 10, 1923; minimum discharge, no flow during periods in several years.

ICE.—Stage-discharge relation slightly affected by ice.

DIVERSIONS.—Most of low-water flow is diverted for irrigation in western Kansas and eastern Colorado.

ACCURACY.—Stage-discharge relation not permanent. One fairly well defined rating curve used. Daily discharge ascertained by applying to rating table mean daily gage heights determined by inspection of recorder graph. Records fair.

The following discharge measurements were made:

March 18, 1926: Gage height, 9.40 feet; discharge, 226 second-feet.

July 8, 1926: Gage height, 8.15 feet; discharge, 0.02 second-foot.

Daily discharge, in second-feet, of Arkansas River near Wichita, Kans., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Sept.
1	80	34	234		211	327	405	200	15	
2	66	34	229		234	327	340	200	13	
3	60	34	217		269	320	275	200	11	
4	40	34	217		308	301	263	194	9	
5	28	36	206		275	294	269	160	7	
6	22	43	200	70	263	269	392	138	5	
7	19	132	177		194	246	542	177	3	
8	18	240	166		160	246	592	160	1	
9	15	282	154		132	240	599	217		
10	13	234	149		94	234	592	211		
11	12	366	138		76	228	585	177		190
12	12	392	126		69	222	578	160		379
13	12	338	126		69	217	578	149		301
14	12	398	121		69	223	578	138		217
15	13	379	94	75	43	217	628	132		183
16	18	66	83		36	229	606	115		160
17	20	353	94		36	229	571	110		200
18	30	340	110		63	234	475	104		217
19	22	340	90		72	234	426	104		275
20	20	340	83		76	234	386	104		183
21	19	353			57	223	353	100		160
22	18	334			72	246	308	97		206
23	18	314		80	217	258	288	97		149
24	32	308			334	269	275	94		90
25	40	308			340	288	263	80		69
26	40	308	75		340	314	252	66		60
27	40	294		100	340	294	240	52		69
28	38	275		230	340	288	223	38		72
29	36	263		230		288	211	24		63
30	34	252		230		620	200	22		60
31	36			223		718		18		

NOTE.—Gage not read during period of ice effect Dec. 21 to Jan. 30; discharge estimated. No gage-height record Mar. 9–12, May 25–28, June 2–4, 9–16, July 18–20, Aug. 8–14, Sept. 1–2, and 7–11; discharge interpolated. No flow during periods for which no discharge is given.

Monthly discharge of Arkansas River near Wichita, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	80	12	28.5	1,750
November	398	34	263	15,700
December	234		124	7,620
January	230		95.6	5,880
February	340	36	171	9,500
March	718	217	286	17,600
April	628	200	410	24,400
May	217	18	124	7,620
June	15	0	2.13	127
July	0	0	0	0
August	0	0	0	0
September	379	0	110	6,550
The year	718	0	134	96,800

ARKANSAS RIVER AT ARKANSAS CITY, KANS.

LOCATION.—In NW. ¼ sec. 25, T. 34 S., R. 3 E., at Chestnut Avenue highway bridge half a mile west of Arkansas City, Cowley County, 5 miles above mouth of Walnut River and 8 miles below Ninnescah River.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—September 23, 1902, to July 31, 1906; September 10, 1921, to September 30, 1926.

GAGE.—Chain gage on upstream handrail of bridge; read by W. C. Sweet.

DISCHARGE MEASUREMENTS.—Made from upstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed is clean sand; shifting. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 13.34 feet at 5 p. m. September 5 (discharge, 7,760 second-feet); minimum stage, 6.48 feet at 7.20 a. m. August 11 and 12 (discharge, 41 second-feet).

1902–1905; 1921–1926: Maximum stage recorded, 25.46 feet on June 11, 1923 (discharge not determined); minimum discharge, 12 second-feet in March and April, 1923.

DIVERSIONS.—Diversions in western Kansas and eastern Colorado for irrigation takes large part of the natural flow.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 10,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage heights to rating table. Records good.

The following discharge measurements were made:

March 17, 1926: Gage height, 7.55 feet; discharge, 536 second-feet.

July 7, 1926: Gage height, 6.77 feet; discharge, 118 second-feet.

Daily discharge, in second-feet, of Arkansas River at Arkansas City, Kans., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	410	255	350	380	545	572	508	572	285	181	92	410
2	475	265	380	442	680	572	508	508	295	136	84	200
3	442	280	380	442	605	572	572	540	410	98	117	181
4	306	285	410	380	572	540	718	540	475	98	98	317
5	275	295	475	442	605	540	830	572	475	104	78	7,510
6	236	290	410	475	680	508	910	572	442	110	76	4,750
7	255	508	410	540	642	475	1,080	572	317	123	70	2,860
8	255	632	410	605	572	475	1,080	605	240	107	76	1,450
9	200	755	410	475	605	508	1,120	540	209	295	60	1,250
10	192	605	442	410	540	475	1,160	572	350	300	50	1,450
11	192	605	410	334	540	475	1,550	540	572	285	45	950
12	177	572	380	270	540	475	1,550	572	508	275	48	642
13	185	572	350	255	475	475	1,450	572	265	350	55	572
14	240	605	350	312	442	475	1,550	572	240	350	52	508
15	218	572	344	339	442	475	1,450	572	232	380	136	642
16	236	540	339	404	475	442	1,350	540	192	410	218	1,120
17	270	475	350	523	442	442	1,250	540	181	312	2,250	1,080
18	265	508	317	642	540	475	1,160	540	209	256	2,550	755
19	265	508	328	642	508	475	1,080	540	162	200	1,160	605
20	275	475	334	642	508	475	950	540	162	170	2,450	572
21	300	442	380	605	540	492	870	508	155	146	1,250	540
22	295	442	306	236	572	508	830	475	152	177	1,160	410
23	344	442	218	245	572	540	792	442	177	285	718	350
24	410	410	236	295	605	540	755	410	155	306	508	350
25	605	410	236	328	642	572	680	410	177	234	475	306
26	328	410	230	442	572	605	680	350	181	162	339	312
27	317	410	220	508	306	572	642	322	270	136	255	328
28	350	380	230	475	439	572	605	295	209	114	209	328
29	312	380	250	475	-------	572	605	285	475	92	200	306
30	275	380	270	410	-------	605	572	285	209	87	240	306
31	255	-------	320	545	-------	572	-------	285	-------	87	830	-------

NOTE.—Stage-discharge relation affected by ice Dec. 26-31; discharge based on weather records and observer's notes. No gage-height record Nov. 8, 15, Dec. 25, Jan. 1, 17, Feb. 1, 28, Mar. 21, Apr. 18, May 23 July 4, 5, 18, 25; discharge interpolated.

Monthly discharge of Arkansas River at Arkansas City, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	605	177	296	18,200
November	755	255	457	27,200
December	475	218	338	20,800
January	642	236	436	26,900
February	680	306	543	30,200
March	605	442	518	31,900
April	1,550	508	962	57,200
May	605	285	490	30,100
June	572	152	279	16,600
July	410	87	205	12,600
August	2,550	45	515	31,700
September	7,510	181	1,050	62,500
The year	7,510	45	505	366,000

GRAPE CREEK NEAR WESTCLIFFE, COLO.

LOCATION.—In sec. 36, T. 21 S., R. 73 W., at concrete weir 1 mile above high-water line of DeWeese-Dye Reservoir 3 miles northwest of Westcliffe, Custer County. Nearest tributary enters from west, half a mile upstream.

DRAINAGE AREA.—346 square miles (measured on Forest Service map).

RECORDS AVAILABLE.—December 1, 1924, to September 30, 1926.

GAGE.—Bristol float-type water-stage recorder at left bank 50 feet upstream from weir; inspected by George Batchelar.

DISCHARGE MEASUREMENTS.—Made by wading except at extreme high stage when measurements are made from bridge some distance upstream.

CHANNEL AND CONTROL.—Bed composed of sand and gravel. Control concrete weir which is permanent. Banks subject to overflow at stage of 3 feet.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 2.78 feet from 9 to 11 p. m. June 8 (discharge, 425 second-feet); minimum stage, 0.22 foot at 4 p. m. September 21 (discharge, 6.3 second-feet).

ICE.—Stage-discharge relation affected by ice; observations discontinued during winter.

REGULATION.—None.

ACCURACY.—Stage-discharge relation slightly shifting; affected by ice. Rating curve well defined. Operation of water-stage recorder satisfactory during open water. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph; shifting-control method used September 16–30. Records excellent except for winter for which they are fair.

COOPERATION.—The State engineer furnished results of discharge measurements and Southern Colorado Power Co. furnished the gage-height record.

Discharge measurements of Grape Creek near Westcliffe, Colo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct 13	0.43	14.1	Feb. 9		24.9	June 15	1.81	189
Nov. 19	.76	37.1	Apr. 8	1.37	110	Aug. 27	.34	10.1
Dec. 19	[a].90	23.0	May 20	1.44	122	Sept. 30	.29	9.0
Jan. 22		16.7						

[a] Stage-discharge relation affected by ice.

NOTE.—Measurements made by employee of State engineer.

Daily discharge, in second-feet, of Grape Creek near Westcliffe, Colo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	21	33				46	56	245	80	16	8.4
2	12	20	34				45	59	261	76	14	8.4
3	12	26	31				51	68	297	85	14	8.4
4	13	28	31				73	57	294	86	13	11.0
5	14	21	33				239	58	319	100	16	12.0
6	17	19	34				384	85	270	117	38	11.0
7	15	22	36			40	230	120	259	172	52	9.2
8	16	45	40				117	82	398	127	48	8.8
9	14	54	43		25		84	68	390	72	38	8.8
10	15	51	40				77	77	334	47	33	8.4
11	15	42	41				56	187	277	42	33	9.5
12	14	32	40				41	266	261	42	30	9.5
13	14	40	28			54	38	273	294	70	24	9.2
14	18	35	24			65	64	166	254	49	29	8.4
15	24	42	22			60	114	82	183	43	42	8.1
16	30	39	21			56	58	76	138	37	31	8.1
17	32	52	22			50	44	84	104	30	26	7.0
18	28	44	22			46	44	93	89	24	26	7.7
19	25	37	23			44	45	127	76	18	23	7.0
20	23	35				72	45	120	60	14	18	7.0
21	21	33				127	71	130	49	15	16	6.6
22	23	30		17		116	124	160	41	17	14	8.1
23	22	39				112	53	193	34	20	14	7.4
24	22	36				85	40	232	31	23	12	7.4
25	19	35				42	39	292	35	29	12	7.7
26	17	36	23			36	38	302	46	26	11	8.4
27	16	35				45	40	299	43	21	9.9	9.5
28	17	38				47	64	304	38	22	9.5	10.0
29	17	39				19	46	217	37	19	8.4	9.9
30	17	34				25	45	195	64	22	8.8	8.8
31	19					40		228		18	8.8	

NOTE.—Stage-discharge relation affected by ice Dec. 4, 15–20, and Mar. 30–31; no gage-height record Dec. 21 to Mar. 12; discharge based on temperature record and current-meter measurements. Braced figures represent mean discharge for periods indicated.

Monthly discharge of Grape Creek near Westcliffe, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	32	12	18.5	1,140
November	54	19	35.3	2,100
December	43	21	28.2	1,730
January			23	1,430
February			25	1,390
March	127	19	52.3	3,220
April	384	38	81.8	4,870
May	304	56	153	9,410
June	398	31	174	10,400
July	172	14	50.4	3,100
August	52	8.4	22.2	1,360
September	12	6.6	8.66	515
The year	398	6.6	56.1	40,700

WEST BEAVER CREEK NEAR VICTOR, COLO.

LOCATION.—In sec. 30, T. 16 S., R. 68 W., at Skaguay power station of Southern Colorado Power Co., 7 miles southeast of Victor, Fremont County. Nearest tributary, East Beaver Creek, enters 2 miles downstream.

DRAINAGE AREA.—66 square miles (drainage area above reservoir outlet).

RECORDS AVAILABLE.—January 1, 1905, to September 30, 1926.

DETERMINATION OF DISCHARGE.—Water used through power house is brought by pipe line from reservoir 3½ miles upstream; quantity measured hourly by weir, and a quantity representing the gain or loss in the reservoir during the period is added or subtracted. To determine the natural flow of stream the seepage through the dam is measured by weir and added to the total quantity thus obtained. This method takes no account of evaporation from the surface of the reservoir.

DIVERSIONS.—Above the power reservoir are three reservoirs from which the town of Victor obtains its municipal supply. In the upper basin are four reservoirs from which water is diverted through St. John Tunnel into Lake Moraine, and thence by natural channels to Colorado Springs, where it is used as municipal supply. During 1926, 1,340 acre-feet were diverted through St. John Tunnel. Below the power plant, adjudicated decrees for diversions of 126 second-feet from Beaver Creek, which is formed by East and West Beaver Creeks. In addition, there is an irrigation reservoir in operation which has a filing for 4,760 acre-feet.

COOPERATION.—Records are furnished through courtesy of Southern Colorado Power Co.

Monthly discharge of West Beaver Creek near Victor, Colo., for the year ending September 30, 1926

Month	Mean discharge in second-feet	Run-off in acre-feet	Month	Mean discharge in second-feet	Run-off in acre-feet
October	4.57	281	May	48.2	2,960
November	1.91	114	June	82.8	4,930
December	6.25	384	July	66.2	4,070
January	12.9	793	August	31.5	1,940
February	13.1	728	September	19.8	1,180
March	7.35	452			
April	13.2	786	The year	25.7	18,600

BOEHMER CREEK NEAR PIKES PEAK, COLO.

LOCATION.—In NW. ¼ sec. 32, T. 14 S., R. 68 W., 3½ miles south of Pikes Peak, El Paso County, above Little Beaver and Sackett Creeks. Altitude, 11,000 feet.

DRAINAGE AREA.—7.2 square miles (measured on topographic map). About 75 per cent of this area is above timber line. To the natural drainage has been added that of West Beaver Creek above intake of Strickler Tunnel.

RECORDS AVAILABLE.—October 1, 1909, to September 30, 1926.

DETERMINATION OF DISCHARGE.—Flow measured by sharp-crested weir, 60 inches long, with complete end contraction. A stake is driven into bed of stream in pool above weir, so that its head is level with crest of weir; depth of water over stake is measured by steel scale. Discharge is computed by Francis formula.

REGULATION.—Flow regulated by series of three reservoirs having an aggregate capacity of 1,400 acre-feet; reservoirs operated by Colorado Springs Water Department.

DIVERSIONS.—Water diverted above weir for use in Victor is measured and added to flow over Boehmer Creek weir to show total run-off.

COOPERATION.—Monthly discharge computed from records furnished by Colorado Springs Water Department.

Monthly discharge of Boehmer Creek near Pikes Peak, Colo., for the year ending September 30, 1926

[Drainage area, 7.2 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	2.34	1.35	1.84	0.256	0.30	113
November	1.35	.92	1.23	.171	.19	73.2
December	.92	.73	.91	.126	.15	56.0
January	.73	.73	.73	.101	.12	44.9
February	.73	.73	.73	.101	.11	40.5
March	.73	.64	.73	.101	.12	44.9
April	3.50	.64	1.00	.139	.16	59.5
May	35.6	5.10	14.7	2.04	2.35	904
June	28.5	13.4	23.6	3.28	3.66	1,400
July	25.3	14.2	19.3	2.68	3.09	1,190
August	14.2	4.98	11.6	1.61	1.86	713
September	8.01	3.50	5.64	.783	.87	336
The year	35.6	.64	6.88	.956	12.98	4,980

LITTLE BEAVER CREEK NEAR PIKES PEAK, COLO.

LOCATION.—In NW. ¼ NW. ¼ sec. 32, T. 14 S., R. 68 W., just above mouth of creek and 3½ miles south of Pikes Peak, El Paso County. Little Beaver Creek enters Boehmer Creek from west 0.3 mile above reservoir No. 4. Altitude of station, 11,000 feet.

DRAINAGE AREA.—1.0 square mile (measured on topographic map). About 25 per cent of area above timber line; remainder sparsely timbered.

RECORDS AVAILABLE.—October 1, 1909, to September 30, 1926.

DETERMINATION OF DISCHARGE.—Flow measured by sharp-crested weir, 24 inches long, with complete end contraction. A stake is driven into bed of stream in pool above weir, so that its head is level with crest of weir; depth of water over stake is measured by steel scale. Discharge is computed by Francis formula.

DIVERSIONS.—None.

REGULATION.—None.

COOPERATION.—Monthly discharge computed from records furnished by Colorado Springs Water Department.

Monthly discharge of Little Beaver Creek near Pikes Peak, Colo., for the year ending September 30, 1926

[Drainage area, 1.0 square mile]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	0.60	0.22	0.38	0.38	0.44	23.4
November	.22	.05	.18	.18	.20	10.7
December	.05	.05	.05	.05	.06	3.1
January	.02	.02	.02	.02	.02	1.2
February	.02	.02	.02	.02	.02	1.1
March	.02	.02	.02	.02	.02	1.2
April	.82	.02	.061	.061	.07	3.6
May	2.64	1.04	1.79	1.79	2.06	110
June	3.96	1.28	2.70	2.70	3.01	161
July	1.78	1.04	1.39	1.39	1.60	85.5
August	1.04	.72	.82	.82	.95	50.4
September	1.07	.25	.55	.55	.61	32.7
The year	3.96	.02	.67	.67	9.06	484

SACKETT CREEK NEAR PIKES PEAK, COLO.

LOCATION.—In SE. ¼ NW. ¼ sec. 32, T. 14 S., R. 68 W., just above mouth of creek and 4 miles southeast of Pikes Peak, El Paso County. Sackett Creek enters Boehmer Creek from north, a short distance above reservoir No. 4. Altitude of station, 11,000 feet.

DRAINAGE AREA.—0.65 square mile (measured on topographic map). About 30 per cent of area above timber line; remainder sparsely timbered.

RECORDS AVAILABLE.—October 1, 1909, to September 30, 1926.

DETERMINATION OF DISCHARGE.—Flow measured by sharp-crested weir 24 inches long with complete end contraction. A stake is driven into bed of stream in pool above weir so that its head is level with crest of weir; depth of water over stake is measured by steel scale. Discharge is computed by Francis formula.

DIVERSIONS.—None.

REGULATION.—None.

COOPERATION.—Monthly discharge computed from records furnished by Colorado Springs Water Department.

Monthly discharge of Sackett Creek near Pikes Peak, Colo., for the year ending September 30, 1926

[Drainage area, 0.65 square mile]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	0.22	0.05	0.113	0.174	0.20	6.9
November	.05	.00	.008	.012	.01	.5
December	.00	.00	.000	.000	.00	.0
January	.00	.00	.000	.000	.00	.0
February	.00	.00	.000	.000	.00	.0
March	.00	.00	.000	.000	.00	.0
April	.02	.00	.011	.017	.02	.7
May	4.32	.22	1.90	2.92	3.37	117
June	4.32	1.18	2.88	4.43	4.94	171
July	1.11	.45	.803	1.24	1.43	49.4
August	.54	.16	.348	.535	.62	21.4
September	.45	.03	.135	.208	.23	8.0
The year	4.32	.00	.518	.797	10.82	375

LION CREEK NEAR HALFWAY, COLO.

LOCATION.—In NE. ¼ sec. 15, T. 14 S., R. 68 W., at mouth of creek, half a mile southwest of Halfway, El Paso County. Lion Creek enters Ruxton Creek from west. Altitude of station, 9,250 feet.

DRAINAGE AREA.—2.0 square miles (measured on topographic map). Includes all area above The Crater apparently tributary to Sheep Creek. About 30 per cent of area above timber line; remainder sparsely timbered.

RECORDS AVAILABLE.—April 1, 1908, to September 30, 1926.

DETERMINATION OF DISCHARGE.—Flow measured by sharp-crested weir 30 inches long, with complete end contraction. A stake is driven into bed of stream in pool above weir, so that its head is level with crest of weir; depth of water over stake is measured by steel scale. Discharge is computed by Francis formula.

DIVERSIONS.—None.

REGULATION.—None.

COOPERATION.—Monthly discharge computed from records furnished by Colorado Springs Water Department.

Monthly discharge of Lion Creek near Halfway, Colo., for the year endeng September 30, 1926

[Drainage area, 2.0 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	1.30	1.10	1.18	0.590	0.68	72.6
November	1.30	.79	1.00	.500	.56	59.5
December	.79	.56	.69	.345	.40	42.4
January	.56	.46	.51	.255	.29	31.4
February	.61	.41	.48	.240	.25	26.7
March	.79	.51	.60	.300	.35	36.9
April	2.23	.46	1.22	.610	.68	72.6
May	2.93	1.45	1.90	.950	1.10	117
June	1.38	.91	1.16	.580	.65	69.0
July	2.57	1.38	2.02	1.01	1.16	124
August	2.40	1.17	1.85	.925	1.07	114
September	1.83	1.17	1.43	.715	.80	85.1
The year	2.93	.41	1.18	.590	7.99	851

SHEEP CREEK NEAR HALFWAY, COLO.

LOCATION.—In SW. ¼ sec. 11, T. 14 S., R. 68 W., a quarter of a mile west of Halfway, El Paso County. No tributary between station and mouth, a short distance below. Sheep Creek enters Ruxton Creek from west a short distance above Halfway. Altitude of station, 9,100 feet.

DRAINAGE AREA.—0.73 square mile (measured on topographic map). Does not include any area above The Crater as this is most probably tributary to Lion Creek. Practically all below timber line but sparsely timbered.

RECORDS AVAILABLE.—April 1, 1908, to September 30, 1926.

DETERMINATION OF DISCHARGE.—Flow measured by sharp-crested weir 30 inches long with complete end contraction. A stake is driven into bed of stream in pool above weir, so that its head is level with crest of weir; depth of water over stake is measured by steel scale. Discharge is computed by Francis formula.

DIVERSIONS.—None.

REGULATION.—None.

COOPERATION.—Monthly discharge computed from records furnished by Colorado Springs Water Department.

Monthly discharge of Sheep Creek near Halfway, Colo., for the year ending September 30, 1926

[Drainage area, 0.73 square mile]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	0.36	0.27	0.34	0.466	0.54	20.9
November	.41	.16	.25	.342	.38	14.9
December	.16	.10	.13	.178	.21	8.0
January	.13	.10	.12	.164	.19	7.4
February	.16	.10	.13	.178	.19	7.2
March	.23	.13	.16	.219	.25	9.8
April	1.17	.13	.63	.863	.96	37.5
May	2.92	1.17	1.85	2.53	2.92	114
June	1.75	.56	.83	1.14	1.27	49.4
July	1.52	.61	1.11	1.52	1.75	68.2
August	.97	.46	.70	.959	1.11	43.0
September	.56	.27	.39	.534	.60	23.2
The year	2.92	.10	.56	.767	10.37	404

SOUTH RUXTON CREEK AT HALFWAY, COLO.

LOCATION.—In SW. ¼ sec. 11, T. 14 S., R. 68 W., just above hydroelectric intake at Halfway, El Paso County. No tributary between station and mouth, a short distance below. South Ruxton Creek enters Ruxton Creek from south of Halfway. Altitude of station, 9,000 feet.

DRAINAGE AREA.—3.95 square miles (measured on topographic map). Practically all below timber line and heavily timbered.

RECORDS AVAILABLE.—June 1, 1906, to September 30, 1926.

DETERMINATION OF DISCHARGE.—Flow measured by two sharp-crested weirs, with complete end contraction. Discharge is computed by Francis formula. The main weir is one-third mile above mouth of creek and a short distance above hydroelectric intake which has a capacity of 4.63 feet. The second weir is halfway between main weir and mouth of creek and measures inflow chiefly from springs below intake and a small amount of seepage. At all times except during high water capacity of intake is sufficient to take entire flow passing main weir, and flow at two weirs is combined to give total run-off of the basin. During high water excess passing intake and recorded at the lower weir does not represent increased flow between weirs and is discarded. In its place is used a constant quantity based on inflow and seepage at other times.

DIVERSIONS.—None.

REGULATION.—None.

COOPERATION.—Monthly discharge computed from records furnished by Colorado Springs Water Department.

Monthly discharge of South Ruxton Creek at Halfway, Colo., for the year ending September 30, 1926

[Drainage area, 3.95 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	1.60	1.17	1.35	0.342	0.39	83.0
November	1.17	.91	1.05	.266	.30	62.5
December	.91	.72	.86	.218	.25	52.9
January	.79	.56	.66	.167	.19	40.6
February	.67	.61	.65	.165	.17	36.1
March	.79	.56	.63	.159	.18	38.7
April	2.49	.56	1.42	.359	.40	84.5
May	12.8	3.80	6.46	1.64	1.89	397
June	13.2	4.00	8.73	2.21	2.47	519
July	4.84	3.06	3.91	.990	1.14	240
August	3.12	2.23	2.77	.701	.81	170
September	2.57	1.60	1.99	.504	.56	118
The year	13.2	.56	2.55	.646	8.75	1,840

CABIN CREEK NEAR HALFWAY, COLO.

LOCATION.—In SW. ¼ NW. ¼ sec. 11, T. 14 S., R. 68 W., just above hydroelectric intake, three-eighths of a mile north of Halfway, El Paso County. Cabin Creek enters Ruxton Creek half a mile below Halfway. Altitude of station, about 9,000 feet.

DRAINAGE AREA.—2.4 square miles (measured on topographic map). About 15 per cent of area above timber line; remainder sparsely timbered.

RECORDS AVAILABLE.—October 1, 1906, to September 30, 1926.

DETERMINATION OF DISCHARGE.—Flow measured by two sharp-crested weirs with complete end contraction. Discharge computed by Francis formula. The main weir is about one-third of a mile above mouth of creek and just above hydroelectric intake. The second weir is 50 feet above mouth of creek and measures flow from springs and small tributaries entering below intake. Except during high water measured flow at weirs is combined to give run-off from basin. During high water record from lower weir is discharged and inflow estimated. (See description of South Ruxton Creek at Halfway, Colo.)

DIVERSIONS.—None.

REGULATIONS.—None.

COOPERATION.—Monthly discharge computed from records furnished by Colorado Springs Water Department.

Monthly discharge of Cabin Creek near Halfway, Colo., for the year ending September 30, 1926

[Drainage area, 2.4 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	1.83	1.17	1.43	0.596	0.69	87.9
November	1.17	.85	1.01	.421	.47	60.1
December	.85	.51	.74	.308	.36	45.5
January	.61	.41	.55	.229	.26	33.8
February	.56	.41	.49	.204	.21	27.2
March	.73	.51	.62	.258	.30	38.1
April	3.06	.56	1.41	.588	.66	83.9
May	6.80	3.60	4.91	2.05	2.36	302
June	5.40	3.06	4.19	1.75	1.95	249
July	5.40	2.84	3.84	1.60	1.84	236
August	2.84	1.75	2.21	.921	1.06	136
September	1.75	1.10	1.36	.567	.63	80.9
The year	6.80	.41	1.91	.796	10.79	1,380

SUTHERLAND CREEK NEAR MANITOU, COLO.

LOCATION.—In SW. ¼ sec. 9, T. 14 S., R. 67 W., 1½ miles southeast of Manitou, El Paso County. No large tributary between station and mouth, 1 mile below. Altitude of station, 6,600 feet.

DRAINAGE AREA.—4.4 square miles (measured on topographic map). Practically all below timber line.

RECORDS AVAILABLE.—January 1, 1918, to September 30, 1926.

DETERMINATION OF DISCHARGE.—Flow measured by sharp-crested weir, 30 inches long, with complete end contraction. A stake is driven into bed of stream in pool above weir so that its head is level with crest of weir; depth of water over stake is measured by steel scale. Discharge is computed by Francis formula.

DIVERSIONS.—None.

REGULATION.—None.

COOPERATION.—Monthly discharge computed from records furnished by Colorado Springs Water Department.

Monthly discharge of Sutherland Creek near Manitou, Colo., for the year ending September 30, 1926

[Drainage area, 4.4 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	0.67	0.41	0.54	0.123	0.14	33.2
November	.51	.27	.42	.095	.11	25.0
December	.36	.27	.33	.075	.09	20.3
January	.36	.36	.36	.082	.09	22.1
February	.36	.36	.36	.082	.09	20.0
March	.46	.36	.38	.086	.10	23.4
April	2.57	.51	1.26	.286	.32	75.0
May	4.52	2.93	3.57	.811	.94	220
June	4.31	1.60	3.03	.689	.77	180
July	1.75	.91	1.44	.327	.38	88.5
August	1.30	.56	.83	.189	.22	51.0
September	1.45	.41	.73	.166	.19	43.4
The year	4.52	.27	1.11	.252	3.44	802

BEAR CREEK NEAR COLORADO SPRINGS, COLO.

LOCATION.—In NE. ¼ sec. 21, T. 14 S., R. 67 W., 3½ miles west of Colorado Springs, El Paso County. Nearest tributary, Hunters Run, enters a short distance above. Altitude of station, 6,615 feet.

DRAINAGE AREA.—6.9 square miles (measured on topographic map). Practically all below timber line.

RECORDS AVAILABLE.—March 1, 1918, to September 30, 1926.

DETERMINATION OF DISCHARGE.—Flow measured by sharp-crested weir, 30 inches long, with complete end contraction. A stake is driven into bed of stream in pool above weir so that its head is level with crest of weir; depth of water over stake is measured by steel scale. Discharge is computed by Francis formula.

DIVERSIONS.—None.

REGULATIONS.—None.

COOPERATION.—Monthly discharge computed from records furnished by Colorado Springs Water Department.

Monthly discharge of Bear Creek near Colorado Springs, Colo., for the year ending September 30, 1926

[Drainage area, 6.9 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	1.30	0.79	0.96	0.139	0.16	59.0
November	.91	.51	.73	.106	.12	43.4
December	.97	.36	.59	.086	.10	36.8
January	.51	.41	.46	.067	.08	28.3
February	.67	.46	.51	.074	.08	28.3
March	1.30	.56	.76	.110	.13	46.7
April	6.80	.73	3.73	.541	.60	222
May	6.32	5.17	5.61	.813	.94	345
June	5.28	2.10	3.77	.546	.61	224
July	10.5	1.75	2.85	.413	.48	175
August	2.07	1.10	1.45	.210	.24	89.2
September	3.50	.85	1.19	.172	.19	70.8
The year	10.5	.36	1.89	.274	3.73	1,370

PAWNEE RIVER NEAR LARNED, KANS.

LOCATION.—At Moffet Dam, 11½ miles west of Larned, in sec. 33, T. 22 S., R. 10 W.

DRAINAGE AREA.—About 2,300 square miles.

RECORDS AVAILABLE.—November 21, 1924, to September 30, 1926.

GAGE.—Au water-stage recorder attached to downstream side of right abutment of Moffet Dam, and staff gage on outside of gage well.

DISCHARGE MEASUREMENTS.—Made by wading at low stages.

CHANNEL AND CONTROL.—Channel straight for about 200 feet above and below gage. An artificial low-water control exists about 190 feet below the gage. Banks high, covered with heavy growth of trees.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 9.08 feet at 4 p. m. September 16 (discharge, 688 second-feet); no flow May 5–7 and July 16. 1925–1926: Maximum stage recorded, 17.95 feet April 4, 1925 (discharge, 2,150 second-feet); no flow May 5–7 and July 16, 1926.

DIVERSIONS.—Small amounts pumped from river for irrigating adjacent lands.

REGULATION.—Moffet Dam used for impounding water within river banks.

ACCURACY.—Stage-discharge relation permanent. Rating curve fairly well defined. Daily gage heights obtained by Au water-stage recorder. Daily discharge obtained by applying mean daily gage heights to rating table. Records fair.

Daily discharge, in second-feet, of Pawnee River near Larned, Kans., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
June 23	2.34	2.12	Aug. 21	3.70	129
July 31	2.39	2.55	Do	4.35	197

Discharge measurements of Pawnee River near Larned, Kans., during the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4	1	4	1	3	4	4	2	7	2	3	2
2	4	1	5	2	3	4	4	3	7	1	3	3
3	3	2	7	4	3	4	4	2	7	1	3	3
4	3	7	4	4	3	4	4	2	5	2	3	3
5	3	19	2	4	3	4	5	0	5	3	3	3
6	2	20	3	4	4	4	6	0	6	2	4	35
7	3	37	4	4	4	4	6	0	4	2	3	87
8	2	25	4	4	4	4	6	1	3	1	4	65
9	2	29	4	4	3	4	6	3	1	1	4	59
10	2	39	4	4	3	4	6	3	2	1	4	38
11	2	94	4	4	3	4	6	4	5	1	4	23
12	2	120	6	3	3	4	6	7	28	1	4	18
13	1	75	7	3	3	4	6	42	38	1	4	422
14	1	72	7	3	3	4	6	34	25	0	4	224
15	1	75	4	3	3	4	5	26	19	1	4	39
16	3	52	4	3	3	3	5	23	16	2	4	582
17	3	35	5	3	3	4	5	22	11	7	3	242
18	3	21	5	3	7	4	5	20	9	17	3	32
19	3	9	5	3	4	4	5	14	7	7	3	17
20	2	9	3	3	4	4	5	13	7	4	2	10
21	1	12	1	3	4	4	4	11	6	4	68	5
22	1	11	1	3	4	4	4	9	3	4	103	4
23	1	15	2	3	4	4	4	9	2	3	31	6
24	2	8	2	3	5	4	4	9	4	2	18	5
25	1	5	3	3	5	4	4	8	4	2	5	3
26	1	5	3	3	6	4	4	7	2	2	2	2
27	2	6	3	3	5	3	4	6	4	2	1	1
28	3	3	1	3	5	3	4	4	4	2	1	1
29	10	2	1	3	-------	3	4	4	4	2	2	1
30	18	4	2	3	-------	4	3	4	3	2	2	1
31	5	-------	2	3	-------	4	-------	5	-------	3	2	-------

NOTE.—From Jan. 14 to May 12 the emergency gate in the control dam was opened for the purpose of draining the pool in which the gage is located. A rating curve was developed from a study of the gage-height graph and the physical structure. As the fluctuations in stream flow during the period under question were not great, the figures shown are believed to be representative of the facts.

Monthly discharge of Pawnee River near Larned, Kans., for the year ending September 30, 1926

[Drainage area, 2,300 square miles]

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	18	1	3.03	186
November	120	1	27.1	1,610
December	7	1	3.61	222
January	4	1	3.19	198
February	7	3	3.82	212
March	4	3	3.88	239
April	6	3	4.80	286
May	42	0	9.58	589
June	38	1	8.27	492
July	17	0	2.74	168
August	103	1	9.81	603
September	582	1	64.5	3,840
The year	582	0	11.9	8,640

LITTLE ARKANSAS RIVER AT VALLEY CENTER, KANS.

LOCATION.—In SW. ¼ sec. 1, T. 26 S., R. 1 W., at highway bridge half a mile west of Goodrich station on the Arkansas Valley Interurban Railroad, 1 mile south of Valley Center, Sedgwick County, and 14 miles above mouth.

DRAINAGE AREA.—1,340 square miles (measured on topographic map).

RECORDS AVAILABLE.—June 10, 1922, to September 30, 1926.

GAGE.—Chain gage on upstream handrail of bridge; read by Clarence H. Corr.

DISCHARGE MEASUREMENTS.—Made from upstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of silt and gravel. Lodged snags and driftwood are frequent. Control is sand and gravel bar under bridge; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.50 feet at 7.45 a. m. September 13 (discharge, 516 second-feet); minimum stage, 0.56 foot at 6.30 a. m. August 10 (discharge, 12 second-feet).

1922–1926: Maximum stage recorded, 18.02 feet on June 10, 1923 (discharge, 10,500 second-feet); minimum discharge, 4 second-feet on December 17, 1922.

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

The following discharge measurements were made:

March 18, 1926: Gage height, 0.91 foot; discharge, 26.2 second-feet.

July 8, 1926: Gage height, 0.74 foot; discharge, 20.7 second-feet.

Daily discharge, in second-feet, of Little Arkansas River at Valley Center, Kans., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	22	33		30	27	26	28	21	17	15	14
2	21	22	30		30	26	28	27	21	16	15	14
3	21	22	28		30	26	28	27	21	16	15	14
4	20	22	28		28	26	30	27	21	16	15	15
5	20	22	25		28	26	33	26	21	15	14	25
6	19	22	25	24	28	26	70	26	20	15	14	141
7	20	26	25		28	26	118	27	20	16	14	370
8	19	30	25		28	26	78	33	19	18	13	135
9	19	61	25		28	26	57	33	19	18	12	47
10	19	36	25		28	26	54	33	113	24	12	38

Daily discharge, in second-feet, of Little Arkansas River at Valley Center, Kans., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	19	33	25		28	26	83	28	54	19	13	30
12	19	33	24		28	26	113	27	38	16	13	25
13	20	30	25	18	28	26	175	26	22	15	13	516
14	20	26	25		28	26	217	25	22	15	13	331
15	20	25	25		28	26	189	25	21	18	15	147
16	21	25	25		27	25	129	24	20	22	24	331
17	21	24	25		27	25	88	24	19	18	19	263
18	20	24	25	20	27	25	88	24	19	18	16	189
19	20	24	25		28	25	83	23	19	17	15	154
20	19	24	27		28	25	44	23	19	17	22	78
21	19	24	24	18	28	25	41	23	19	17	16	50
22	19	24	24		28	30	36	23	19	16	15	36
23	19	24	20		28	33	36	23	19	16	14	33
24	23	24	22		28	47	33	22	18	15	14	26
25	18	24	22	20	28	38	30	21	18	15	14	24
26	18	24	22		27	30	30	21	18	15	14	23
27	19	24	22		27	28	30	21	18	15	14	24
28	21	24	22		27	26	28	21	18	15	14	24
29	21	24	20	28	-------	26	28	21	18	15	14	24
30	20	24	20	30	-------	26	28	21	17	19	14	24
31	21	-------	24	33	-------	26	-------	21	-------	23	14	-------

NOTE.—Stage-discharge relation affected by ice Dec. 21 to Jan. 28. Braced figures show estimated mean discharge for periods indicated.

Monthly discharge of Little Arkansas River near Valley Center, Kans., for the year ending September 30 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	23	18	19.9	1,220
November	61	22	26.4	1,570
December	33	20	24.6	1,510
January			21.9	1,350
February	30	27	28.0	1,560
March	47	25	27.5	1,690
April	217	26	68.4	4,070
May	33	21	25.0	1,540
June	113	17	24.4	1,450
July	24	15	17.0	1,050
August	24	12	14.8	910
September	516	14	106.0	6,310
The year	516	12	33.4	24,200

WALNUT RIVER AT WINFIELD, KANS.

LOCATION.—In NE. ¼ sec. 33, T. 32 S., R. 4 E., at concrete highway bridge 1 mile south of Winfield, Cowley County, 1 mile above Black Creek and 3 miles below Timber Creek.

DRAINAGE AREA.—1,860 square miles.

RECORDS AVAILABLE.—November 14, 1921, to September 30, 1926.

GAGE.—Chain gage on upstream handrail of bridge; read by William Mason.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of silt, sand, and rock; shifting. Control is gravel bar 500 feet below gage; shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 27.45 feet at 1 p. m. September 5 (discharge, 16,800 second-feet); minimum stage, 2.40 feet on August 2 (discharge, 1.0 second-foot).

1921–1926: Maximum stage recorded, 38.7 feet on June 10, 1923 (discharge, 76,000 second-feet); minimum discharge, 0.5 second-foot on September 8, 1925.

ICE.—Stage-discharge relation not affected by ice.

REGULATION.—None.

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

The following discharge measurements were made:

October 1, 1925: Gage height, 2.82 feet; discharge, 13.9 second-feet.

March 17, 1926: Gage height, 3.56 feet; discharge, 90 second-feet.

July 7, 1926: Gage height, 3.08 feet; discharge, 28.1 second-feet.

Daily discharge, in second-feet, of Walnut River at Winfield, Kans., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	7	6	16	61	80	53	93	86	16	3	93
2	252	21	26	53	40	70	57	65	57	7	1	35
3	155	11	6	19	35	57	56	93	86	18	3	37
4	55	5	33	402	31	49	114	460	420	7	2	368
5	60	2	33	227	31	48	265	265	193	22	4	15,800
6	31	14	21	193	14	41	765	164	80	18	8	10,900
7	10	815	65	122	33	16	715	138	107	18	4	1,180
8	9	2,000	31	107	38	65	350	138	63	7	3	402
9	16	460	35	100	30	55	240	122	49	18	4	4,580
10	22	252	16	51	30	19	227	193	350	7	4	5,220
11	4	193	18	80	26	21	865	500	204	8	2	815
12	4	164	38	62	27	43	1,510	240	93	93	2	385
13	10	114	33	57	31	43	278	173	74	53	2	625
14	14	93	25	65	11	16	540	122	80	278	3	2,460
15	14	77	14	53	6	53	350	122	47	193	290	670
16	21	49	38	59	30	31	265	93	27	107	114	540
17	20	41	35	23	23	31	215	122	33	55	67	715
18	18	49	38	70	41	29	193	107	41	24	500	402
19	18	43	16	57	35	38	173	80	1,070	26	540	265
20	16	33	22	43	38	41	155	71	10	19	55	204
21	18	20	29	49	21	35	122	74	43	18	22	155
22	14	22	28	38	67	65	138	67	41	15	10	155
23	7	55	25	45	49	61	122	29	80	7	27	138
24	5	25	26	21	100	74	122	65	93	10	305	122
25	24	20	21	61	155	80	107	59	80	5	765	100
26	107	22	40	29	122	38	107	70	107	7	155	80
27	29	29	27	40	93	47	100	38	164	7	122	155
28	20	44	20	37	68	18	93	28	86	6	130	215
29	20	17	34	49	------	59	93	35	70	7	12	215
30	16	38	33	48	------	65	86	14	53	8	86	183
31	10	------	28	15	------	55	------	75	------	4	138	------

Monthly discharge of Walnut River at Winfield, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	252	4	34.1	2,100
November	2,000	2	158	9,400
December	65	6	27.7	1,700
January	402	15	73.9	4,540
February	155	6	45.9	2,550
March	80	16	46.6	2,860
April	1,510	53	283	16,800
May	500	14	126	7,750
June	1,070	10	133	7,910
July	278	4	35.1	2,160
August	765	1	109	6,700
September	15,800	35	1,570	93,400
The year	15,800	1	218	158,000

VERDIGRIS RIVER AT INDEPENDENCE, KANS.

LOCATION.—In NE. ¼ sec. 31, T. 32 S., R. 16 E., at highway bridge 1 mile east of Independence, Montgomery County, 2½ miles below Elk River and 4½ miles above Drum Creek.

DRAINAGE AREA.—2,800 square miles.

RECORDS AVAILABLE.—November 14, 1921, to September 30, 1926. Intermittent records of stage were obtained April 24 to September 24, 1904.

GAGE.—Chain gage on upstream side of bridge; read by Ben Wainscott.

DISCHARGE MEASUREMENTS.—Made from upstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of silt and rock; permanent. Control is rock riffle 30 feet below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 27.39 feet at 8 a. m. September 6 (discharge, 18,000 second-feet); minimum stage, 0.42 foot August 11 (discharge, 0.1 second-foot).

1921–1926: Maximum stage recorded, 44.11 feet on June 12, 1923 (discharge, 73,900 second-feet); minimum stage, that of August 11, 1926.

1904: Maximum stage 46.7 feet on July 8; referred to present gage datum.

ICE.—Stage-discharge relation not affected by ice.

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

Discharge measurements of Verdigris River at Independence, Kans., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 16	2.36	203	June 4	10.05	3,690	Sept. 15	18.74	10,000
June 4	10.79	4,360	June 4	9.66	3,590	Sept. 15	19.78	11,000
June 4	10.30	4,000	July 7	1.26	23.8	Sept. 16	22.34	13,500

Daily discharge, in second-feet, of Verdigris River at Independence, Kans., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	120	25	175	87	360	300	2,820	315	330	110	9.0	880
2	100	38	150	98	315	250	3,100	300	390	78	10.0	540
3	80	30	150	360	288	238	3,700	360	3,040	56	3.2	330
4	60	25	162	950	262	212	4,960	740	4,400	46	1.3	225
5	40	8,480	175	1,070	238	200	5,870	540	1,380	38	1.6	14,800
6	44	11,900	188	810	225	175	6,080	570	540	30	1.0	17,600
7	36	15,300	200	600	212	162	3,340	600	390	16	1.0	12,000
8	40	16,500	200	420	200	150	2,160	600	250	36	.8	1,110
9	34	10,200	212	360	188	162	1,420	775	275	44	.4	2,380
10	28	4,260	225	300	175	188	1,200	950	288	36	.4	3,580
11	20	880	225	250	162	212	6,640	845	275	28	.1	2,320
12	25	740	225	212	150	212	16,100	705	175	25	.2	670
13	16	600	212	188	140	212	9,520	600	175	22	.2	7,760
14	11	480	200	188	150	200	3,700	540	130	16	.2	11,000
15	20	420	188	188	140	212	1,940	480	106	11	.2	13,300
16	28	390	175	200	130	200	1,670	450	94	7	.2	10,800
17	32	390	175	212	150	188	1,330	390	420	14	.7	9,440
18	36	345	162	390	175	188	1,070	360	705	25	16	1,110
19	46	275	150	670	200	175	950	345	880	20		740
20	38	262	150	880	225	175	775	480	570	15		540
21	44	225	150	540	262	238	670	450	250	11	80	420
22	56	238	162	360	275	200	810	330	250	14		360
23	50	212	150	330	300	212	1,030	288	275	5		315
24	36	162	150	315	390	212	1,520	225	300	3	50	275
25	30	200	162	275	480	225	915	175	300	2	1,030	250
26	28	188	150	225	600	225	600	162	315	28	300	360
27	21	162	114	238	420	225	540	140	345	7	225	510
28	24	150	98	250	360	212	450	122	188	7	150	2,220
29	11	175	94	275	-------	212	390	110	175	8	81	1,940
30	20	162	90	300	-------	200	345	98	140	12	66	1,670
31	16	-------	94	330	-------	1,830	-------	300	-------	11	54	-------

NOTE.—No gage-height record Oct. 1–3 and Aug. 19–23; discharge estimated.

Monthly discharge of Verdigris River at Independence, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	120	11	38.4	2,360
November	16,500	25	2,450	146,000
December	225	90	165	10,100
January	1,070	87	383	23,600
February	600	130	256	14,200
March	1,830	150	258	15,900
April	16,100	345	2,850	170,000
May	950	98	431	26,500
June	4,400	94	578	34,400
July	110	2	25.2	1,550
August	1,030	.1	68.2	4,190
September	17,600	225	3,980	237,000
The year	17,600	.1	946	686,000

NEOSHO RIVER NEAR IOLA, KANS.

LOCATION.—In NE. ¼ sec. 9, T. 25 S., R. 18 E., 2½ miles south and 1½ miles west of Iola, Allen County, half a mile below Elm Creek and 8 miles above Owl Creek.

DRAINAGE AREA.—3,800 square miles.

RECORDS AVAILABLE.—October 12, 1917, to September 30, 1926. August 1, 1895, to November 30, 1903, at city water and power dam 4 miles upstream.

GAGE.—Stevens water-stage recorder on left bank three-fourths of a mile above pipe line ford; inspected by S. E. Ross.

DISCHARGE MEASUREMENTS.—Made from cable at gage or by wading.

CHANNEL AND CONTROL.—Bed composed of shale, gravel, and silt; permanent. Control is a long shale riffle half a mile below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage, 33.2 feet at 11 a. m. September 13 (discharge, 46,000 second-feet); minimum stage, 2.60 feet on August 11–13 and 15–17 (discharge, 10 second-feet).

1917–1926: Maximum stage recorded, that of September 13, 1926; minimum stage, 1.9 feet on June 23, 1920 (discharge, 1 second-foot).

1895–1903: Maximum stage recorded, 22.0 feet on June 3, 1903 (discharge, 39,100 second-feet); minimum discharge, no flow on several days in September and October, 1897.

ICE.—Stage-discharge relation slightly affected by ice.

REGULATION.—Low-water flow regulated by dams upstream.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Water-stage recorder operated satisfactorily except November 7 to January 21 and April 2–10. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Discharge for periods when gage did not operate satisfactorily was determined on basis of gage readings by the United States Weather Bureau at a point 4 miles upstream and by comparison with records of flow for the station near Parsons. Records good except those for periods when gage did not operate which are fair.

Discharge measurements of Neosho River near Iola, Kans., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
1912	*Feet*	*Sec.-ft.*	1912	*Feet*	*Sec.-ft.*
Mar. 16	3.20	133	July 6	2.87	40.6
May 14	4.45	697	Sept. 16	25.66	25,800

Daily discharge, in second-feet, of Neosho River near Iola, Kans., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,150	68	126	65	120	228	228	320	268	61	33	592
2	844	74	126	70	108	174	216	298	436	71	35	236
3	365	41	126	95	120	167	178	276	757	74	30	133
4	216	44	126	125	105	160	2,060	276	540	64	32	5,040
5	216	71	238	365	120	140	4,160	276	618	50	30	15,000
6	160	71	160	276	93	102	2,960	276	488	43	26	7,760
7	102	10,400	160	238	90	102	3,520	298	365	35	23	2,780
8	105	7,760	160	160	68	90	3,720	298	488	46	18	1,150
9	102	1,280	160	160	120	120	1,420	342	365	46	16	3,050
10	57	670	160	125	71	66	1,720	670	514	40	12	1,640
11	44	514	238	125	74	108	3,620	2,060	462	38	10	644
12	40	320	238	96	85	123	5,920	1,720	298	46	10	21,300
13	35	276	276	96	74	129	5,480	1,020	320	48	10	43,800
14	40	276	276	68	68	108	4,380	670	298	44	12	34,300
15	35	276	276	68	105	99	2,420	618	298	40	10	29,700
16	38	320	276	68	46	99	1,560	566	320	41	10	26,500
17	96	320	238	126	46	93	1,150	462	462	43	10	23,600
18	189	320	160	400	117	102	902	462	618	35	20	16,200
19	143	276	96	670	224	102	786	2,150	540	30	18	2,690
20	74	276	126	514	256	102	670	2,150	320	28	320	1,560
21	66	276	126	670	298	99	618	1,080	244	30	514	1,210
22	50	238	96	160	320	126	1,880	644	216	57	143	1,020
23	40	238	96	120	298	88	1,420	514	232	111	276	844
24	96	238	96	111	256	136	1,020	410	164	59	1,150	728
25	592	238	96	85	178	123	699	342	126	41	320	644
26	388	238	80	114	196	129	540	298	102	30	182	592
27	200	160	68	74	236	342	462	276	90	30	320	1,080
28	133	160	60	111	208	320	410	220	79	46	236	2,600
29	76	160	60	111	-------	264	365	216	68	29	140	1,280
30	57	126	60	120	-------	220	320	256	64	28	670	960
31	55	-------	60	120	-------	248	-------	320	-------	30	2,420	-------

NOTE.—Stage-discharge relation affected by ice Dec. 21 to Jan. 18; discharge based on observer's notes.

Monthly discharge of Neosho River near Iola, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	2,150	35	220	13,500
November	10,400	41	857	51,000
December	276	60	150	9,220
January	670	65	184	11,300
February	320	46	146	8,110
March	342	66	145	8,900
April	5,920	178	1,830	109,000
May	2,150	216	638	39,200
June	757	64	339	20,200
July	111	28	45.6	2,800
August	2,420	10	228	14,000
September	43,800	133	8,290	493,000
The year	43,800	10	1,080	780,000

NEOSHO RIVER NEAR PARSONS, KANS.

LOCATION.—In NW. ¼ sec. 22, T. 31 S., R. 21 E., at the bridge on the Parsons-Pittsburg highway, 500 feet above the St. Louis-San Francisco Railroad bridge, 800 feet below Hickory Creek, and 10 miles east of Parsons, Labette County.

DRAINAGE AREA.—4,860 square miles.

RECORDS AVAILABLE.—October 18, 1921, to September 30, 1926.

GAGE.—Chain gage on upstream handrail of bridge; read by C. O. Stewart.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of flat solid rock; permanent. No well-defined control. Bank-full stage, 24 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 27.07 feet at 5 p. m. September 17 (discharge, 45,100 second-feet); minimum stage, 1.20 feet on August 11, 14, and 16 (discharge, 26 second-feet).

1921–1926: Maximum stage recorded, 27.07 feet September 17, 1926 (discharge, 45,100 second-feet); minimum stage, 1.12 feet on December 3, 1921 (discharge, 18 second-feet).

ICE.—Stage-discharge relation not seriously affected by ice.

REGULATION.—Flow apparently not affected by operation of power plant upstream.

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

The following discharge measurement was made:

March 16, 1926: Gage height, 2.14 feet; discharge, 216 second-feet.

Daily discharge, in second-feet, of Neosho River near Parsons, Kans., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,020	104	176	113	387	367	427	558	311	84	51	3,660
2	2,460	94	164	130	367	348	1,700	512	387	73	52	1,440
3	1,560	88	145	164	329	311	2,660	490	630	66	57	580
4	685	100	142	311	293	276	3,340	468	1,560	58	51	1,760
5	407	106	152	658	276	245	5,000	447	960	57	46	11,400
6	260	117	152	1,020	245	230	5,700	387	580	58	39	17,600
7	216	6,560	176	580	245	230	3,910	367	580	65	38	18,800
8	216	16,500	189	427	216	202	3,660	367	407	77	38	9,640
9	164	17,400	260	348	189	216	4,000	367	348	72	38	4,270
10	133	5,700	293	348	189	202	3,340	427	447	164	28	4,090
11	128	1,650	407	311	189	276	3,340	740	427	57	26	3,260
12	117	905	293	276	176	311	7,600	1,820	427	52	27	3,340
13	96	685	311	245	164	276	8,680	2,230	387	42	28	8,680
14	84	558	276	202	164	260	7,120	1,560	293	37	26	19,000
15	86	427	260	202	152	230	5,200	1,020	260	42	27	23,200
16	81	367	202	230	147	216	3,340	740	260	52	26	28,600
17	79	447	189	387	164	202	2,230	630	367	52	36	43,200
18	558	447	189	630	176	189	1,560	490	630	46	44	43,900
19	348	387	164	1,440	905	189	1,320	407	512	42	75	39,900
20	260	348	150	2,090	740	216	1,140	1,140	558	39	176	35,600
21	216	329	150	905	558	490	1,020	2,380	447	46	367	23,700
22	176	329	150	490	512	367	1,500	1,500	558	77	1,320	4,900
23	145	293	176	311	468	348	6,890	850	387	51	580	2,160
24	115	245	176	260	490	447	6,780	580	230	387	407	1,500
25	100	230	152	260	740	387	3,100	468	202	276	427	1,260
26	117	202	147	230	850	348	1,380	387	216	152	850	1,140
27	387	202	135	216	490	348	960	311	189	117	512	1,960
28	329	189	119	230	407	427	850	260	164	88	329	4,720
29	216	176	113	230	-------	468	740	216	117	68	348	7,120
30	176	176	110	230	-------	512	630	202	98	57	293	4,630
31	140	-------	106	407	-------	468	-------	202	-------	51	535	-------

Monthly discharge of Neosho River near Parsons, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	3,020	79	422	25,900
November	17,400	88	1,840	109,000
December	407	106	188	11,600
January	2,090	113	448	27,500
February	905	147	365	20,300
March	512	189	310	19,100
April	8,680	427	3,340	199,000
May	2,380	202	727	44,700
June	1,560	98	431	25,600
July	387	37	84	5,160
August	1,320	26	222	13,600
September	43,900	580	12,500	744,000
The year	43,900	26	1,720	1,250,000

NEOSHO RIVER NEAR GROVE, OKLA.

LOCATION.—In SE. ¼ sec. 27, T. 25 N., R. 23 E., at bridge on State highway No. 25, 3 miles below Spring Branch, and 3½ miles northwest of Grove, Delaware County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—February 21, 1925, to September 30, 1926.

GAGE.—Chain gage on downstream side of bridge; read by W. M. Freeman.

DISCHARGE MEASUREMENT.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel; practically permanent. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 23.0 feet at midnight September 5 (discharge, 72,100 second-feet); minimum stage, 0.21 foot at 6 a. m. August 13 (discharge, 337 second-feet).

1925–1926: Maximum stage recorded, that of September 5, 1926; minimum discharge, about 250 second-feet during first week in September, 1925.

REGULATION.—Slight diurnal fluctuation at low stages is caused by power plants above.

ACCURACY.—Stage-discharge relation permanent during the year except as affected by ice. Rating curve fairly well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good except for discharge below 2,500 second-feet for which records are fair.

Discharge measurements of Neosho River near Grove, Okla., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
June 5	5.76	8,450	Sept. 9	16.04	43,000	Sept. 10	11.91	26,700
June 6	5.08	7,040	Sept. 10	12.91	30,400	Sept. 11	10.09	20,200
Sept. 9	15.70	41,200						

Daily discharge, in second-feet, of Neosho River near Grove, Okla., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,200	775	1,150	865	1,930	3,020	2,400	2,040	8,340	1,500	640	1,820
2	4,000	865	865	685	2,040	2,890	3,020	2,040	6,860	1,500	560	3,020
3	7,070	820	910	775	2,760	2,040	4,880	1,930	17,000	1,500	685	3,850
4	4,330	775	1,000	820	2,280	2,040	9,940	1,930	12,300	955	600	3,700
5	2,760	775	1,600	800	2,040	1,930	8,120	1,820	8,560	1,000	520	47,300
6	1,820	775	1,300	} 700	2,160	1,820	7,700	1,820	6,440	1,050	472	69,300
7	3,280	1,400	775		1,820	1,820	8,340	1,500	4,510	955	440	52,400
8	2,520	12,300	1,000		1,500	1,400	7,280	1,600	3,560	955	480	36,800
9	1,600	26,200	1,400		1,400	1,400	5,840	1,600	3,150	1,300	480	37,200
10	1,050	23,400	1,050		1,300	1,600	6,440	2,760	2,760	2,520	393	28,800
11	910	14,800	1,300		1,600	2,400	6,040	3,150	2,760	5,450	448	19,100
12	685	5,260	1,600		1,200	3,850	6,440	2,160	2,520	3,150	393	13,300
13	820	3,850	1,300		1,300	4,510	10,900	2,040	2,040	2,040	351	9,940
14	685	3,280	1,820		1,400	4,160	11,600	3,280	9,700	1,820	448	22,400
15	775	2,760	1,300	640	865	2,890	10,200	3,020	7,280	1,400	432	24,800
16	865	2,580	1,200	865	1,100	3,420	8,120	2,280	4,510	1,300	456	24,400
17	1,400	2,280	1,100	820	1,050	2,520	6,040	1,600	4,330	1,100	2,280	23,800
18	1,930	2,640	1,300	1,400	1,500	2,280	4,690	1,500	4,160	1,100	3,700	25,200
19	1,500	2,040	1,050	6,860	1,500	2,040	3,850	1,400	3,420	910	3,280	26,200
20	1,250	1,930	1,200	5,640	1,300	2,040	2,890	1,400	2,890	820	5,260	26,900
21	1,400	1,710	820	6,040	1,820	1,710	2,760	1,200	2,420	820	9,700	30,700
22	1,350	1,600	955	4,000	2,160	1,930	2,760	2,400	5,450	775	15,000	34,100
23	1,400	1,820	820	2,760	1,710	1,820	2,640	3,020	4,880	865	13,100	34,100
24	1,300	1,200	955	2,160	1,820	1,930	11,100	1,820	3,420	820	7,910	14,800
25	1,930	1,300	865	1,930	2,280	1,710	12,100	1,400	2,890	1,050	6,440	5,640
26	1,100	1,400	820	1,930	2,760	2,040	7,070	1,400	2,520	775	3,700	5,260
27	1,000	1,100	560	1,930	4,330	1,710	4,690	1,000	3,280	1,250	3,420	4,160
28	1,000	1,500	500	1,500	3,700	1,400	3,150	910	2,400	1,100	3,020	6,040
29	820	1,150	550	1,710	-------	1,200	2,890	910	2,040	1,050	2,640	16,700
30	1,600	865	650	1,820	-------	1,710	2,400	820	1,820	775	1,820	29,100
31	1,100	-------	865	1,820	-------	2,040	-------	4,690	-------	820	2,040	-------

NOTE.—Stage-discharge relation affected by ice Dec. 28-30 and Jan. 6-14; discharge estimated. Braced figure shows mean discharge for period indicated.

Monthly discharge of Neosho River near Grove, Okla., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	7,070	685	1,760	108,000
November	26,200	775	4,100	244,000
December	1,820	500	1,050	64,600
January	6,860	-------	1,740	107,000
February	4,330	865	1,880	104,000
March	4,510	1,200	2,230	137,000
April	12,100	2,400	6,210	370,000
May	4,690	820	1,950	120,000
June	17,000	1,820	4,970	296,000
July	5,450	775	1,370	84,200
August	15,000	351	2,940	181,000
September	69,300	1,820	22,700	1,350,000
The year	69,300	351	4,370	3,130,000

COTTONWOOD RIVER AT ELMDALE, KANS.

LOCATION.—In NW. ¼ sec. 26, T. 19 S., R. 7 E., at highway bridge one-fourth of a mile above Middle Creek, 1 mile east of Elmdale, Chase County, and 2 miles above Diamond Creek.

DRAINAGE AREA.—1,040 square miles.

RECORDS AVAILABLE.—May 9, 1922, to September 30, 1926.

GAGE.—Chain gage on upstream handrail of bridge; read by Miss Rowena Starkey.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of clean coarse sand, gravel, and rock; practically permanent. Control is gravel and rock riffle extending from 200 feet above to 100 feet below gage. Dam at Cottonwood Falls may affect the stage-discharge relation at medium and high stages. Bank-full stage, 32 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 30.73 feet at 7 p. m. September 12 (discharge, 10,500 second-feet); minimum stage, 3.15 feet at 8 a. m. July 9 (discharge, 1 second-foot).

1922–1926: Maximum stage recorded, 35.5 feet at 4 p. m. June 11, 1923 (discharge, 14,800 second-feet); minimum discharge occurred this year.

REGULATION.—None.

ICE.—Stage-discharge relation affected by ice during extreme cold weather.

ACCURACY.—Stage-discharge relation for low stages changed probably during period of ice effect. Rating curves used before and after the change well defined below 200 second-feet and fairly well defined from 200 to 13,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good for low stages and fair for medium and high stages.

The following discharge measurements were made:

March 19, 1926: Gage height, 3.51 feet; discharge, 23.8 second-feet.

July 8, 1926: Gage height, 3.39 feet; discharge, 12.1 second-feet.

September 17, 1926: Gage height, 4.37 feet; discharge, 223 second-feet.

Daily discharge, in second-feet, of Cottonwood River at Elmdale, Kans., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	22	20			23	23	56	35	29	119	7
2	24	16	20			23	23	55	48	22	45	4
3	24	12			15	22	29	54	42	15	29	3
4	24	12				22	39	53	492	10	23	1,290
5	24	12				22	820	52	7	9	22	945
6	30	12			18	23	579	51	6	6	13	258
7	26	118			20	23	463	51	4	6	9	219
8	22	118			23	23	365	85	2	9	7	76
9	20	82			23	23	280	81	92	2	6	748
10	20	51			23	23	302	56	81	31	6	521
11	20	40			23	23	521	38	85	16	4	121
12	20	24			23	23	995	92	48	25	3	8,080
13	20	12			23	23	820	81	25	19	3	8,730
14	20	16			23	18	365	81	12	17	4	1,240
15	20	18			23	18	167	81	7	24	3	382
16	20	20		10	23	18	129	81	5	33	3	717
17	20	20	15		23	18	129	81	6	22	6	244
18	20	20			29	18	103	124	5	20	6	157
19	24	20			23	18	103	103	29	20	129	126
20	24	20			23	23	103	81	23	13	81	106
21	24	20			23	23	103	81	15	9	72	62
22	24	20			23	42	215	67	13	8	39	39
23	24	20			23	35	99	42	25	5	30	34
24	26	20			23	35	67	35	33	5	17	34
25	16	20			23	35	56	35	38	4	7	42
26	12	20			23	35	56	23	33	4	5	57
27	12	20			23	35	56	21	35	3	4	48
28	12	20			23	29	56	92	31	3	3	38
29	12	20			------	29	56	35	23	4	8	36
30	12	20			------	23	56	35	25	5	12	58
31	12	------			------	23	------	35	------	6	13	------

Monthly discharge of Cottonwood River at Elmdale, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	30	12	20.4	1,250
November	118	12	28.8	1,710
December	----------	----------	15.3	941
January	----------	----------	10	615
February	29	----------	21.9	1,220
March	42	18	24.9	1,530
April	995	23	239	14,200
May	124	21	62.5	3,840
June	492	2	44.2	2,630
July	33	2	13.0	799
August	129	3	23.6	1,450
September	8,730	3	814	48,400
The year	8,730	2	108	78,600

NOTE.—Stage-discharge relation affected by ice Dec. 3 to Feb. 7; discharge estimated from observer's notes and a study of weather records. Gage not read Oct. 17 and May 2–6; discharge interpolated.

SPRING RIVER NEAR WACO, MO.

LOCATION.—On line between SE. ¼ sec. 7 and NE. ¼ sec. 18, T. 29 N., R. 33 W., at highway bridge 1 mile below Blackberry Creek and 1½ miles east of Waco, Jasper County.

DRAINAGE AREA.—1,160 square miles (measured on topographic maps).

RECORDS AVAILABLE.—April 25, 1924, to September 30, 1926.

GAGE.—Chain gage on downstream side of bridge; read by Mrs. W. F. Hollingsworth. Zero of gage is 835.25 feet above mean sea level.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and rock. Left bank is overflowed at a stage of about 19 feet; overflow on right bank is slight. Control is a coarse gravel bar 1,000 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 16.4 feet at 6.30 p. m. September 5 (discharge, 13,400 second-feet); minimum stage, 0.96 foot at 8.20 a. m. August 10 (discharge, 26 second-feet).

1924–1926: Maximum stage recorded, 20.12 feet May 29, 1924 (discharge, 18,200 second-feet); minimum stage, 0.90 foot September 8, 1925 (discharge, 22 second-feet).

REGULATION.—Flow during low stages is subject to slight diurnal fluctuation from gristmills above.

ACCURACY.—Stage-discharge relation permanent during the year; not affected by ice. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good except for discharge below 60 second-feet, for which they are fair.

Discharge measurements of Spring River near Waco, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 26	2.12	272	Mar. 9	1.99	228	July 25	1.44	84
Dec. 12	2.24	322	May 24	1.72	157			

Daily discharge, in second-feet, of Spring River near Waco, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	168	130	232	136	350	350	710	232	1,310	188	65	146
2	410	174	217	146	313	330	1,870	217	1,660	182	70	138
3	490	168	202	199	296	280	1,870	217	2,630	171	80	136
4	296	163	217	370	280	264	1,870	217	1,310	152	76	620
5	1,870	163	232	390	264	248	1,130	202	620	143	80	11,700
6	1,660	163	296	313	232	232	760	191	470	143	76	11,300
7	1,080	2,230	350	248	248	217	710	182	370	146	71	6,850
8	510	8,030	350	217	217	202	665	202	450	138	56	3,110
9	350	3,710	350	217	232	232	575	3,890	620	141	35	6,450
10	280	1,520	350	174	217	232	510	965	490	143	41	4,700
11	232	760	330	163	217	2,010	665	490	370	130	65	2,390
12	232	620	264	180	202	1,730	910	410	280	106	59	1,870
13	232	552	264	166	191	965	760	350	248	136	56	7,920
14	191	490	248	152	154	710	552	280	248	120	74	4,880
15	196	470	248	163	168	575	760	248	390	106	60	2,630
16	202	760	217	152	177	530	264	217	280	92	54	1,380
17	202	710	217	552	182	620	390	196	232	84	410	910
18	248	575	202	2,010	232	450	370	217	330	80	350	665
19	280	510	202	1,660	370	410	330	199	350	82	470	575
20	296	410	202	810	350	390	313	217	313	96	4,700	490
21	264	390	202	510	280	350	390	180	552	90	7,150	450
22	232	313	185	450	217	370	313	163	1,080	76	3,350	390
23	217	296	232	470	202	370	510	143	665	90	1,380	370
24	217	296	185	430	280	390	710	146	430	68	410	350
25	313	280	146	280	965	296	330	154	370	84	313	390
26	280	264	202	280	665	264	410	157	296	71	264	390
27	232	264	202	280	710	264	370	146	264	123	248	450
28	232	280	141	313	430	264	296	141	232	103	217	1,380
29	199	232	217	296	-------	248	264	128	232	94	146	3,890
30	154	217	157	350	-------	280	248	120	217	86	143	7,150
31	163	-------	123	330	-------	330	-------	143	-------	73	160	-------

Monthly discharge of Spring River near Waco, Mo., for the year ending September 30, 1926

[Drainage area, 1,160 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,870	154	385	0.332	0.38
November	8,030	130	838	.722	.81
December	350	123	232	.200	.23
January	2,010	136	400	.345	.40
February	965	154	309	.266	.28
March	2,010	202	465	.401	.46
April	1,870	248	661	.570	.64
May	3,890	120	354	.305	.35
June	2,630	217	577	.497	.55
July	188	68	114	.098	.11
August	7,150	35	669	.577	.67
September	11,700	136	2,800	2.41	2.69
The year	11,700	35	647	.558	7.57

SHOAL CREEK NEAR JOPLIN, MO.

LOCATION.—In S. ½ sec. 28, T. 27 N., R. 33 W., at Grand Falls hydroelectric plant of Empire District Electric Co., 2 miles below Silver Creek, and 4 miles south of Joplin, Jasper County.

DRAINAGE AREA.—458 square miles (measured on topographic maps).

RECORDS AVAILABLE.—April 1, 1924, to September 30, 1926.

GAGE.—Float in tailrace connected with indicator on scale board in power plant; read by plant engineer.

DISCHARGE MEASUREMENTS.—Made by wading 300 feet below gage during ordinary stages and from highway bridge 2½ miles above gage during high stages.

CHANNEL AND CONTROL.—Bed composed of clean gravel. Control is a coarse gravel bar 400 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 8.33 feet from 1 to 3 a. m. September 6 (discharge, 6,230 second-feet); minimum discharge, 22 second-feet during numerous short periods when plant was shut down and water stored.

1924–1926: Maximum stage recorded, 13.1 feet July 13, 1924 (discharge determined from extension of rating curve, 14,200 second-feet); minimum discharge, 13 second-feet numerous short periods during 1924 and 1925 when plant was shut down.

REGULATION.—During ordinary stages the flow is controlled completely by the plant, which is run until pond is drawn down to a certain level and then shut down until it is filled, when operation is resumed. During high stages water flows over dam and regulation is small.

ACCURACY.—Stage-discharge relation permanent during the year; not affected by ice. Rating curve fairly well defined below 3,600 second-feet; extended above. Gage read to inches hourly. Daily discharge ascertained by averaging results obtained by applying hourly gage heights to rating table. Records fair.

COOPERATION.—Gage-height record furnished by Empire District Electric Co., P. J. Sergeant, chief engineer.

Discharge measurements of Shoal Creek near Joplin, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 26	0.10	24	Mar. 9	1.44	405	June 1	2.86	1,180
Dec. 12	1.42	341	May 24	.12	25	July 26	1.11	280
Do	.12	24	May 25	.08	20	Do	.15	27

Daily discharge, in second-feet, of Shoal Creek near Joplin, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	141	119	123	103	195	242	218	168	935	213	145	265
2	217	105	139	133	190	221	245	144	1,460	220	97	193
3	146	111	127	118	165	241	256	150	1,400	183	105	184
4	130	104	159	135	180	226	259	149	807	199	106	443
5	147	119	133	118	166	202	249	70	639	164	88	4,620
6	116	104	165	134	154	209	257	157	543	156	101	4,570
7	134	313	124	122	152	206	237	131	476	167	101	1,500
8	130	437	158	102	168	182	242	143	438	188	69	1,070
9	133	400	134	92	169	187	227	163	408	194	134	1,450
10	99	321	123	123	130	223	219	106	322	197	54	1,620
11	107	272	157	104	151	295	268	191	318	162	116	995
12	101	271	124	85	150	319	252	158	259	165	83	751
13	102	250	133	102	144	303	260	170	272	177	61	751
14	114	220	130	89	130	314	258	148	511	156	98	857
15	97	211	133	72	124	288	244	147	696	155	82	622
16	100	206	136	123	118	262	272	130	421	119	82	550
17	146	216	125	149	147	250	253	141	371	159	175	504
18	102	178	124	169	137	247	228	115	327	124	193	466
19	141	183	132	226	167	236	226	117	275	120	814	437
20	143	164	133	205	145	252	208	136	273	117	503	427
21	143	188	75	222	154	211	212	100	365	139	533	364
22	132	146	148	180	152	209	217	143	554	120	965	385
23	123	157	99	196	152	222	224	118	430	130	592	336
24	151	160	101	183	157	194	208	98	343	102	536	321
25	102	164	102	178	194	205	193	102	298	197	499	354
26	140	151	102	193	245	190	194	88	363	230	412	427
27	133	127	111	164	271	167	189	105	270	267	306	415
28	106	161	114	179	270	180	160	107	245	146	308	396
29	119	133	84	183	-------	159	169	89	269	137	280	617
30	104	125	109	182	-------	202	154	84	221	100	112	1,180
31	118	-------	115	163	-------	212	-------	265	-------	128	190	-------

NOTE.—Discharge estimated Mar. 31; gage not read.

Monthly discharge of Shoal Creek near Joplin, Mo., for the year ending September 30, 1926

[Drainage area, 458 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	217	97	126	0.275	0.32
November	437	104	194	.424	.47
December	165	75	125	.273	.31
January	226	72	146	.319	.37
February	271	118	167	.365	.38
March	319	159	228	.498	.57
April	272	154	227	.496	.55
May	265	70	133	.290	.33
June	1,460	221	484	1.06	1.18
July	267	100	162	.354	.41
August	965	54	256	.559	.64
September	4,620	184	902	1.97	2.20
The year	4,620	54	261	.570	7.73

ILLINOIS RIVER NEAR GORE, OKLA.

LOCATION.—At NE. corner of lot 4, sec. 4, T. 12 N., R. 21 E., 500 feet below Smith's ferryboat, 2½ miles northeast of Gore, Sequoyah County, 3¼ miles above Deep Creek, 3¾ miles above highway bridge amd Missouri Pacific Railroad bridge, and 5½ miles above mouth.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—March 25, 1924, to April 1, 1926, when station was discontinued.

GAGE.—Staff gage fastened to sycamore tree at edge of water on right bank 500 feet below ferryboat; read by B. C. Prater.

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

CHANNEL AND CONTROL.—Bed composed of silt, sand, and small rock. Control is riffle 500 feet below gage; fairly permanent.

EXTREMES OF DISCHARGE.—1924–1926: Maximum stage recorded, 9.4 feet at 6.15 a. m. April 27, 1924 (discharge, 16,400 second-feet); minimum discharge estimated, 20 second-feet during period of no gage-height record September 8–14, 1925.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 4,000 second-feet. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to rating table. Records good.

Daily discharge, in second-feet, of Illinois River near Gore, Okla., for year ending September 30, 1926.

Day	Oct.	Nov.	Dec.	Jan.	Mar.	Apr.	Day	Oct.	Nov.	Dec.	Jan.	Mar.	Apr.
1	540	754	516	------	------	1,930	16	2,310	1,180	403	------	1,200	------
2	994	682	492	------	------	------	17	2,650	1,030	403	------	1,120	------
3	1,210	682	480	------	------	------	18	3,310	954	403	------	1,620	------
4	1,400	642	522	------	------	------	19	3,030	898	398	------	1,080	------
5	1,200	603	486	360	------	------	20	2,430	746	392	------	1,560	------
6	986	568	522	------	------	------	21	2,250	658	398	1,750	1,430	------
7	1,440	730	516	------	------	------	22	1,800	666	381	------	1,340	------
8	3,110	1,190	486	------	730	------	23	1,550	682	370	------	1,260	------
9	6,330	3,080	469	------	706	------	24	1,380	658	370	------	1,220	------
10	6,640	2,860	447	------	770	------	25	1,330	658	360	------	1,190	------
11	3,030	2,230	436	------	898	------	26	1,350	596	350	------	1,150	------
12	2,710	1,930	425	------	994	------	27	1,230	547	360	------	1,460	------
13	3,140	1,760	408	------	1,260	------	28	1,110	528	381	------	1,510	------
14	2,040	1,480	414	------	1,340	------	29	1,010	516	360	------	1,010	------
15	1,860	1,300	425	------	1,230	------	30	906	498	350	------	1,110	------
							31	802	------	345	------	1,540	------

Monthly discharge of Illinois River near Gore, Okla., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	6,640	540	2,100	129,000
November	3,080	498	1,040	61,900
December	522	345	422	25,900
March 8–31	1,620	706	1,200	59,100

RED RIVER BASIN

PRAIRIE DOG TOWN FORK OF RED RIVER NEAR CANYON, TEX.

LOCATION.—4 miles northeast of Canyon, Randall County, and 5 miles below confluence of Paloduro and Tule Creeks.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—January 15, 1924, to October 21, 1926, when station was discontinued.

GAGE.—Au 60-day water-stage recorder in timber house over concrete well on left bank; attended by engineers of the United States Geological Survey.

DISCHARGE MEASUREMENTS.—Made from cable half a mile upstream or by wading near gage.

CHANNEL AND CONTROL.—Channel straight for 150 feet above and below station. Bed composed of compact earth; permanent. Right bank not subject to overflow; left bank subject to overflow. Low-water control is concrete road crossing, 170 feet below gage and high-water control is 10-foot dam, 1½ miles downstream.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 3.82 feet at noon May 27 (discharge, 1,460 second-feet, determined from extension of rating curve and subject to considerable error); no flow for several periods.

1924–1926: Maximum stage, that of May 27, 1926; no flow for several periods.

ICE.—None of consequence.

DIVERSIONS.—None.

REGULATION.—During the summer, the Palo Duro Club fills its swimming pool from wells and drains it into the river above, once every two weeks. This only affects extremely low stages for the capacity of the pool is 10,000 cubic feet, and it drains slowly.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined from 0 to 200 second-feet and extended to cover the range of stage. Operation of water-stage recorder not satisfactory, owing to improper attendance. Daily discharge determined by applying mean daily gage height to rating table or by averaging discharge for intervals of a day. Records fair.

The following discharge measurements were made:

November 12, 1925: Gage height, 1.26 feet; discharge, 5.81 second-feet.

December 30, 1925: Gage height, 1.22 feet; discharge, 4.52 second-feet.

August 30, 1926: Gage height, 0.97 foot; discharge estimated, 0.3 second-foot.

Daily discharge, in second-feet, of Prairie Dog Town Fork of Red River near Canyon, Tex., for the period October 1, 1925, to October 21, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Oct.
1	39		5.5	3.8	5.5				47	2.6		
2	29		4.8	3.8	4.3				25	1.8		0.2
3	41		4.3	4.3	3.8				70	1.4		8.7
4	35		4.3	4.8	3.8				96	1.3		15
5	29		4.3	4.8	3.8				323	1.2		6.4
6	27		4.3	4.8	3.3				103	1.2		5.5
7	21	7.1	4.3	3.8	3.8	2.8			52			5.5
8	15		4.8	4.3	2.8			2.8	33			4.3
9	12		4.8	3.8	3.3				25			2.8
10	12		4.8	3.3	3.8				19			2.4
11	12		4.8	3.3	2.2				14			1.8
12	10	5.5	4.8	3.8	2.8				12			1.6
13	10	4.8	4.8	3.8	2.8				10			1.4
14	10	4.8	4.3	3.8	2.8	2.8			8.7			1.4
15	8.7	4.8	3.8	3.8	3.3		2.8		7.5			1.4
16	8.7	5.5	4.3	3.8	2.8			2.8	6.4			1.4
17		4.8	3.8	3.8	2.2			3.8	4.3			2.0
18		4.8	4.3	3.8	3.3			2.6	8.7			1.4
19		4.8	4.3	3.8	3.8			2.4	8.7	.6		1.2
20		4.8	3.8	3.8	3.8			2.4	5.5			2.4
21		3.8	4.3	3.8	2.8			2.2	4.3			2.4
22		4.3	4.8	3.3		2.8		2.2	4.3			
23		4.8	3.8	3.3				1.8	4.3			
24	7.1	5.5	4.3	3.3				1.4	3.8			
25		5.5	4.3	3.3	2.8			1.6	3.8			
26		6.4	4.3	3.8				48	5.5			
27		5.5	4.3	4.3				550	3.8			
28		5.5	4.8	3.8				63	3.3			
29		4.8	3.8	4.8				17	2.8		4.4	
30		4.8	3.8	4.3				8.7	2.8		3.0	
31			3.8	5.5				55			.3	

NOTE.—Braced figures show estimated mean discharge for periods indicated. Discharge partly estimated Nov. 12 and Aug. 29. No flow Aug. 1–28 and Sept. 1 to Oct. 1.

Monthly discharge of Prairie Dog Town Fork of Red River near Canyon, Tex., for the period October 1, 1925, to October 21, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
1925–26				
October	41		13.7	845
November		3.8	5.79	344
December	5.5	3.8	4.34	267
January	5.5	3.3	3.95	243
February	5.5		3.23	179
March			2.80	172
April			2.80	167
May	550		26.0	1,600
June	323	2.8	30.6	1,820
July	2.6		.79	48.6
August	4.4	.0	.25	15.3
September	.0	.0	.00	.0
The year	550	.0	7.87	5,700
1926				
October	15	.0	3.30	137

RED RIVER NEAR DENISON, TEX.

LOCATION.—At Denison-Colbert toll bridge, half a mile below the Missouri, Kansas & Texas Railroad bridge, 4½ miles northeast of Denison, Grayson County, and 10 miles below mouth of Washita River.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—October 9, 1923, to September 30, 1926.

GAGE.—Chain gage attached to downstream side of bridge; read by E. W. Findley.

DISCHARGE MEASUREMENTS.—Made from bridge to which gage is attached or from Missouri, Kansas & Texas Railroad bridge, half a mile upstream.

CHANNEL AND CONTROL.—Channel straight for half a mile above and below the station. Bed composed of sand; shifts. Banks of sand and subject to shift. Left bank is not subject to overflow. Right bank covered with trees and brush and is subject to overflow at the highway bridge at extremely high stages. Control is indefinite; shifts badly.

EXTREMES OF DISCHARGE.—Maximum stage during year from graph drawn from gage readings, 10.3 feet at 10 a. m. August 17 (discharge, 27,300 second-feet); minimum stage, 0.50 foot March 5, 5 p. m. March 6, March 15, 8 a. m. March 16, and 6 p. m. March 20 (discharge, 315 second-feet).

1924–1926: Maximum stage recorded, 19.4 feet at 8.15 a. m. October 17, 1923 (discharge, 132,000 second-feet); minimum stage, that of March 5, 6, 15, 16, and 20, 1926.

ICE.—None of consequence.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve well defined from 600 to 140,000 second-feet. Gage read to hundredths twice daily, but action of wind on chain may influence accuracy of readings. Daily discharge determined by applying mean daily gage height to rating table. Records fair.

Discharge measurements of Red River near Denison, Tex., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 10	4.76	6,190	Apr. 27	4.93	6,730	July 21	2.16	2,080
Dec. 2	1.36	1,150	June 24	3.94	4,610	Aug. 15	.92	652
Feb. 11	1.62	1,420						

Daily discharge, in second-feet, of Red River near Denison, Tex., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,850	1,880	1,060	559	1,630	329	2,400	3,820	2,750	5,350	10,000	5,540
2	7,380	1,750	1,060	622	1,570	329	1,880	3,820	2,010	4,300	9,700	4,980
3	7,160	1,570	1,060	700	1,390	343	1,630	4,980	3,820	3,370	8,100	5,540
4	6,940	1,630	1,000	740	1,280	329	1,390	7,920	4,630	2,670	7,600	5,540
5	6,120	1,570	950	710	1,280	315	1,390	11,800	4,460	1,450	5,920	5,730
6	4,800	1,450	845	680	1,330	322	1,390	8,100	3,230	897	4,460	5,920
7	6,720	2,010	740	650	1,450	350	1,340	7,850	2,670	1,510	3,090	7,600
8	7,600	3,090	710	660	1,510	385	1,880	10,300	2,400	1,510	2,270	8,350
9	6,320	4,460	700	680	1,510	371	2,400	9,700	2,010	1,630	1,750	11,500
10	5,730	6,120	710	680	1,390	393	3,230	11,800	4,140	2,400	1,510	12,700
11	4,980	7,600	792	640	1,390	385	5,920	12,700	4,630	1,880	1,390	11,200
12	4,460	7,600	792	660	1,280	357	12,100	10,000	2,530	2,280	1,170	6,720
13	4,980	6,520	740	730	1,120	336	18,300	7,850	2,140	10,600	950	5,160
14	5,350	5,350	792	845	1,060	329	14,800	6,720	1,630	12,400	845	4,800
15	5,730	4,630	740	845	1,060	315	11,800	5,540	1,510	11,200	690	4,630
16	9,400	3,820	790	1,140	1,060	322	8,850	4,630	1,000	13,400	1,040	5,160
17	10,300	3,520	740	3,610	1,000	393	7,160	4,300	3,500	8,850	21,700	5,160
18	16,400	2,950	740	3,670	897	449	6,520	4,460	6,840	4,460	20,700	4,630
19	11,800	2,400	720	3,090	740	393	5,920	6,940	2,810	3,090	18,800	3,370
20	9,100	2,010	730	2,810	680	322	5,350	9,400	1,880	2,400	16,000	3,980
21	7,160	1,630	710	4,140	622	1,030	4,300	4,980	3,820	2,140	17,400	3,520
22	6,120	1,450	720	5,160	550	3,970	5,540	5,160	3,230	2,010	20,200	2,950
23	4,630	1,390	690	2,810	516	4,460	5,920	4,630	4,800	3,090	11,800	2,530
24	4,140	1,390	700	2,140	533	6,120	5,920	3,230	4,800	3,230	9,100	2,400
25	3,670	1,340	700	1,630	465	7,160	11,200	2,950	3,820	8,390	8,100	2,140
26	3,230	1,280	650	1,450	425	6,720	9,100	2,530	5,160	15,600	9,700	1,880
27	2,810	1,170	622	1,390	433	5,920	6,720	1,880	4,460	16,400	7,850	1,750
28	2,530	1,170	595	1,340	371	4,980	5,730	1,390	3,980	21,200	11,500	1,630
29	2,400	1,170	595	1,390	------	4,800	5,350	1,220	3,370	18,300	8,600	1,630
30	2,270	1,120	586	1,390	------	4,630	4,630	1,060	3,670	16,900	7,380	1,880
31	2,010	------	559	1,450	------	3,230	------	1,280	------	12,100	6,120	------

Monthly discharge of Red River near Denison, Tex., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	16,400	2,010	6,160	379,000
November	7,600	1,120	2,830	169,000
December	1,060	559	759	46,700
January	5,160	559	1,580	97,200
February	1,630	371	1,020	56,600
March	7,160	315	1,940	119,000
April	18,300	1,340	6,000	357,000
May	12,700	1,060	5,900	363,000
June	6,840	1,000	3,390	202,000
July	21,200	897	6,940	426,000
August	21,700	690	8,240	507,000
September	12,700	1,630	5,020	299,000
The year	21,700	315	4,170	3,020,000

PEASE RIVER NEAR CROWELL, TEX.

LOCATION.—At toll bridge on the Quanah-Crowell highway, 1 mile below mouth of Devils Creek and 8 miles north of Crowell, Foard County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—January 8, 1924, to September 30, 1926.

GAGE.—Chain gage attached to the downstream handrail of the bridge; read by H. B. Nelson or A. C. McWhorter.

DISCHARGE MEASUREMENTS.—Made by wading or from bridge to which gage is attached. Measurements at low stages are poor, owing to poor measuring section.

CHANNEL AND CONTROL.—Channel straight for half a mile above and below gage. Bed of stream composed of sand; shifts. Banks not subject to overflow. Control is bed of the stream, which is of deep sand, and shifts badly.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.40 feet September 28 (discharge, 4,220 second-feet, determined from extension of rating curve and subject to considerable error); no flow several periods.

1924–1926: Maximum stage recorded, 8.50 feet at 2 a. m. September 14, 1925 (discharge not determined); no flow several periods.

ICE.—None reported.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve poorly defined below 4,000 second-feet; extended above that point. Gage read once daily to hundredths and oftener during floods. Daily discharge determined by shifting-control method, by estimate, or by interpolation; not of sufficient accuracy to warrant publication. Monthly records poor and annual run-off fair.

Discharge measurements of Pease River near Crowell, Tex., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 21	3.60	156	Feb. 10	3.00	2.61	Aug. 5		0.0
Nov. 10	3.41	37.8	Apr. 1	3.92	105	Sept. 17	3.54	5.41
Nov. 21	3.17	11.9	June 16	3.46	1.90			

Monthly discharge of Pease River near Crowell, Tex., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	810		167	10,300
November	597	0	40.4	2,410
December	7.1	0	.23	14.1
January		0	.71	43.6
February		0	1.19	66.0
March	508	0	35.8	2,200
April	2,700	77	615	36,600
May	1,300	0	105	6,440
June	773	0	95.4	5,680
July	2,540	0	108	6,640
August	428	0	24.8	1,520
September	4,220	0	232	13,800
The year	4,220	0	118	85,700

NOTE.—See paragraph on "Accuracy."

KIAMICHI RIVER NEAR BELZONI, OKLA.

LOCATION.—At Antlers-Rattan highway bridge, 1¾ miles northwest of Belzoni, Pushmataha County, Okla., and 6 miles below mouth of Cedar Creek.

DRAINAGE AREA.—1,420 square miles (measured on topographic maps and post-route map of Oklahoma.

RECORDS AVAILABLE.—December 4, 1925, to September 30, 1926.

GAGE.—Chain gage bolted to the downstream handrail of bridge, read by Raymond Labor.

DISCHARGE MEASUREMENTS.—Made from upstream side of bridge or by wading near the control.

CHANNEL AND CONTROL.—Channel straight for half a mile above and one-fourth of a mile below gage. Bed of stream composed of rock and earth; permanent. Banks wooded. Left bank subject to overflow at high stages. At extremely high stages bridge is completely surrounded by water. Control is boulder and gravel shoal 1 mile below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period, 29.9 feet during the night of May 7 (discharge, 19,700 second-feet, determined from extension of rating curve and subject to considerable error); minimum stage, 3.69 feet at 6.29 a. m. September 29 (discharge, 6.8 second-feet).

ICE.—None reported.

DIVERSIONS.—Small amount diverted by the city of Antlers.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined below 8,000 second-feet, fairly well defined between 8,000 and 36,000 second-feet, and extended to 73,000 second-feet on basis of one slope measurement. Gage read to hundredths twice daily. Daily discharge determined by applying mean daily gage height to the rating table or by averaging discharge for intervals of a day on days of considerable fluctuation. Records fair.

Discharge measurements of Kiamichi River near Belzoni, Okla., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 5	4.38	101	Jan. 22	15.05	6,690	June 25	4.85	133
Jan. 20	12.02	3,920	Jan. 23	14.61	6,020	July 22	4.41	79.3
Do	11.07	3,420	Apr. 28	7.02	1,220	Aug. 16	3.70	7.46
Jan. 21	10.56	3,510						

Daily discharge, in second-feet, of Kiamichi River near Belzoni, Okla., for the year ending September 30, 1926

Day	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	------	60	805	755	1,860	661	330	36	436	77
2	------	77	805	661	1,920	755	281	30	90	26
3	------	168	661	495	1,500	4,400	151	21	60	17
4	85	313	575	495	1,160	4,920	154	20	53	14
5	79	515	535	455	1,000	2,460	179	17	38	14
6	66	535	495	418	1,000	2,880	265	38	30	12
7	68	436	436	436	1,380	13,400	199	35	23	11
8	64	366	400	400	1,620	17,900	151	33	18	11
9	68	313	383	366	1,160	13,400	119	28	15	14
10	68	281	348	661	2,760	5,580	92	38	13	661
11	64	249	313	1,680	5,700	4,080	77	81	12	249
12	64	219	281	1,560	4,380	2,520	64	72	10	102
13	64	193	265	1,280	2,700	1,800	53	905	9.7	190
14	62	196	249	955	1,920	1,280	45	366	8.8	234
15	57	182	234	805	1,440	1,000	39	249	7.9	85
16	66	313	219	661	1,160	805	31	130	7.3	50
17	62	10,100	313	575	955	661	29	102	8,160	33
18	97	12,400	1,000	535	755	575	57	99	5,640	24
19	122	9,080	1,440	475	661	755	102	74	1,440	19
20	102	4,080	1,160	455	617	495	83	51	418	16
21	92	3,660	955	1,280	617	383	51	38	234	14
22	97	5,940	755	4,320	1,280	330	281	112	138	12
23	70	5,400	661	4,860	1,280	281	159	204	97	11
24	97	3,120	575	3,120	2,340	249	196	1,860	77	9.7
25	95	2,280	855	1,980	6,240	219	234	2,760	68	8.5
26	92	1,920	1,060	1,440	2,880	199	154	4,620	72	7.3
27	87	1,560	1,000	1,060	1,680	176	114	1,740	48	7.0
28	85	1,280	1,000	855	1,220	154	83	436	33	7.3
29	77	1,110	------	805	955	135	59	281	26	6.8
30	72	1,000	------	855	755	119	43	219	23	7.3
31	68	905	------	1,280	------	107	------	173	130	------

Monthly discharge of Kiamichi River near Belzoni, Okla., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
December 4–31	122	57	78.2	4,340
January	12,400	60	2,200	135,000
February	1,440	219	635	35,300
March	4,860	366	1,160	71,400
April	6,240	617	1,830	109,000
May	17,900	107	2,670	164,000
June	330	29	129	7,690
July	4,620	17	480	29,500
August	8,160	7.3	562	34,600
September	661	6.8	65.0	3,870
The period				595,000

SULPHUR RIVER NEAR DARDEN, TEX.

LOCATION.—At the St. Louis Southwestern Railroad bridge 1 mile south of Darden, Bowie County, and 2 miles below mouth of White Oak Creek.

DRAINAGE AREA.—2,750 square miles (measured on base map of Texas).

RECORDS AVAILABLE.—October 1, 1923, to September 30, 1926.

GAGE.—United States Weather Bureau staff gage, attached to the downstream side of the center pile bent of the bridge.

DISCHARGE MEASUREMENTS.—Made by wading 1,000 feet above gage or from bridge.

CHANNEL AND CONTROL.—Bed of stream composed of mud and sunken logs; fairly permanent. Channel curved above and straight for a short distance below gage. Right and left banks of earth and subject to overflow at high stages. Low-water control consists of old piles and drift immediately below gage; shifts during floods. Medium and high-stage control is bed and banks of the stream and will probably shift. Above a 22-foot stage, the river overflows its banks for 4,000 feet and divides into two channels 4 or 5 miles above the gage, and water runs through Fish Lake, an old river channel; at these times control is indefinite.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 26.1 feet at 7 a. m. July 19 and 20 (discharge, 13,200 second-feet, determined from extension of rating curve and subject to error); minimum stage, 0.20 foot October 11–13 (discharge, 0.4 second-foot).

1924–1926: Maximum stage, 27.8 feet at 7 a. m. December 18, 1923 (discharge, 19,100 second-feet, determined from extension of rating curve and subject to considerable error); minimum stage, 0.10 foot August 12–18, 31, and September 1–13, 1924 (discharge, 0.2 second-foot).

ICE.—None.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve poorly defined for all stages. Gage read to tenths once daily. Daily discharge determined by applying daily gage height to rating table, but the daily records are not sufficiently accurate for publication. Monthly records fair.

COOPERATION.—Records of stage furnished by the United States Weather Bureau.

Discharge measurements of Sulphur River near Darden, Tex., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 20	8.56	[a] 504	Jan. 28	24.37	8,790	Feb. 4	12.34	[c] 611
Jan. 27	24.46	8,390	Feb. 3	16.50	[b] 1,170	July 24	23.93	[d] 7,930

[a] Discharge corrected for changing stage, 578 second-feet.
[b] Discharge corrected for changing stage, 1,690 second-feet.
[c] Discharge corrected for changing stage, 1,060 second-feet.
[d] Discharge corrected for changing stage, 8,000 second-feet.

Monthly discharge of Sulphur River near Darden, Tex., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	584	0.4	101	6,230
November	3,050	37	816	48,600
December	76	14	42	2,580
January	8,860	14	2,310	142,000
February	4,490	76	569	31,600
March	5,130	169	2,020	124,000
April	7,480	225	3,100	185,000
May	6,620	108	2,720	167,000
June	1,770	33	617	36,700
July	13,200	144	5,290	326,000
August	10,200	51	2,280	140,000
September	3,000	17	665	39,500
The year	13,200	.4	1,730	1,250,000

CYPRESS CREEK NEAR JEFFERSON, TEX.

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

DRAINAGE AREA.—848 square miles (measured on base map of Texas).

RECORDS AVAILABLE.—July 19, 1924, to September 30, 1926.

GAGE.—Staff gage in two sections on the right bank, attached to tree and to trestle of bridge; read by Leonard Pierson.

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

CHANNEL AND CONTROL.—Channel straight for 250 feet above and half a mile below gage. Bed of stream composed of earth and large gravel. One channel at all stages. Left bank is not subject to overflow. Right bank, which is covered with grass and trees, is overflowed at a stage of 10 feet for a distance of 1,000 feet. Control is earth rapids half a mile below gage; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 16.7 feet at 6 a. m. July 17 (discharge, 5,900 second-feet, determined from extension of rating curve and subject to error); no flow October 2–8.

1924–1926: Maximum stage that of July 17, 1926; no flow for several periods.

ICE.—None of importance.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Rating curve used October 1 to July 11 well defined; curve used July 12 to September 30 well defined below 4,800 second-feet and extended above (extension subject to considerable error). Gage read to hundredths once daily. Daily discharge determined by applying mean daily gage height to rating table or, for days of considerable fluctuation in stage, by averaging discharge for intervals of the day. Daily records not sufficiently accurate for publication: monthly records fair.

The following discharge measurements were made:

November 19, 1925: Gage height, 3.54 feet; discharge, 105 second-feet.

July 26, 1926: Gage height, 10.30 feet; discharge, 932 second-feet.

Monthly discharge of Cypress Creek near Jefferson, Tex., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	145	0	45.6	2,810
November	918	41	337	20,100
December	781	56	258	15,900
January	1,940	82	654	40,200
February	1,410	180	422	23,400
March	2,610	190	1,270	78,400
April	1,960	336	1,180	70,300
May	1,460	70	483	29,700
June	519	43	184	11,000
July	5,900	39	1,320	81,100
August	496	26	117	7,160
September	88	69	31.5	1,880
The year	5,900	0	527	382,000

OUACHITA RIVER NEAR HOT SPRINGS, ARK.

LOCATION.—In SW. ¼ sec. 29, T. 3 S., R 19 W., at Smith Ferry highway bridge half a mile below Fourche a Loup Creek, 1 mile above Hot Springs Creek, and 5 miles south of Hot Springs, Garland County.

DRAINAGE AREA.—1,420 square miles (measured on base map of Arkansas).

RECORDS AVAILABLE.—June 27, 1922, to September 30, 1926.

GAGE.—Chain gage on downstream side of bridge; read by D. P. Campbell.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and rock. Channel is somewhat obstructed by outcropping rock dikes on which small trees grow. Control is a rock dike 1,000 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 27.10 feet at 5.30 p. m. January 21 (discharge, 57,600 second-feet); minimum stage, 5.10 feet August 12–14 and September 20 and 21 (discharge, 58 second-feet).

1922–1926: Maximum stage determined by levels to floodmarks, 43.9 feet May 16, 1923 (discharge determined by extending rating curve for main channel and computing overflow by Kutter's formula, 143,000 second-feet); minimum discharge, 42 second-feet, several periods in September, 1922.

ACCURACY.—Stage-discharge relation changed during high water January 22. Both rating curves well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage to rating table. Records good.

Discharge measurements of Ouachita River near Hot Springs, Ark., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 21	8.22	2,220	Jan. 23	16.25	17,800	June 13	5.59	196
Dec. 11	6.46	557	Jan. 24	11.68	7,080	Aug. 9	5.12	60
Jan. 22	23.41	42,400	June 12	5.60	179			

Daily discharge, in second-feet, of Ouachita River near Hot Springs, Ark., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	812	400	1,090	400	1,530	2,140	10,000	1,010	338	130	111	111
2	662	372	1,010	400	1,350	1,920	5,510	930	315	124	98	103
3	459	372	890	625	1,170	1,620	4,040	1,010	440	111	111	103
4	372	2,360	890	812	1,090	1,170	3,030	1,010	498	111	98	119
5	346	5,030	850	1,090	1,010	1,010	2,470	930	440	111	98	124
6	310	5,510	775	1,170	930	1,170	2,030	890	386	98	98	138
7	237	16,100	700	1,010	850	1,440	6,170	775	362	98	98	152
8	310	16,400	662	890	850	1,350	6,170	1,920	362	119	80	152
9	1,090	10,300	625	775	775	1,170	4,300	7,830	315	103	76	130
10	930	4,730	555	700	700	1,440	3,030	4,730	258	130	67	103
11	775	3,150	522	662	665	3,780	2,580	3,520	221	152	67	87
12	1,440	2,580	490	625	630	3,780	2,360	3,780	198	138	58	76
13	6,340	2,030	522	590	630	2,800	2,030	2,690	182	111	58	67
14	4,300	1,620	2,140	555	595	2,250	1,720	2,250	167	98	62	72
15	3,390	1,350	3,520	522	560	1,920	1,530	1,820	152	98	67	76
16	16,100	1,170	2,690	522	529	1,720	1,350	1,260	138	98	67	76
17	29,400	1,010	2,250	1,090	595	1,440	1,170	1,090	124	103	80	72
18	13,100	850	1,820	2,030	2,140	1,350	1,090	1,010	167	124	94	67
19	4,580	1,440	1,530	2,470	2,580	1,260	1,010	850	890	111	98	67
20	2,910	1,530	1,350	2,360	2,360	1,170	930	775	292	111	103	62
21	2,140	1,350	1,170	38,500	2,030	1,260	850	700	208	98	111	58
22	1,620	1,170	1,010	38,500	1,720	3,390	2,140	630	188	98	119	67
23	1,350	1,010	850	15,000	1,530	5,180	2,580	560	176	98	146	67
24	1,170	890	775	6,880	1,260	3,390	4,300	498	158	413	176	80
25	970	812	700	4,440	3,910	3,520	3,270	440	152	338	152	232
26	812	1,090	625	3,270	1,440	4,580	2,360	386	152	315	167	1,820
27	662	2,250	590	2,580	2,690	3,390	1,820	362	440	258	198	1,170
28	555	1,820	522	2,360	2,360	2,800	1,530	338	362	198	198	529
29	490	1,350	490	2,030	-------	2,470	1,350	338	221	176	152	362
30	428	1,260	459	1,720	-------	8,030	1,170	315	152	130	146	271
31	428	-------	428	1,720	-------	20,000	-------	338	-------	124	119	-------

Monthly discharge of Ouachita River near Hot Springs, Ark., for the year ending September 30, 1926

[Drainage area, 1,420 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	29,400	237	3,180	2.24	2.58
November	16,400	372	3,040	2.14	2.39
December	3,520	428	1,050	.739	.85
January	38,500	400	4,400	3.10	3.57
February	3,910	529	1,370	.965	1.00
March	20,000	1,010	3,030	2.13	2.46
April	10,000	850	2,800	1.97	2.20
May	7,830	315	1,450	1.02	1.18
June	890	124	282	.199	.22
July	413	98	146	.103	.12
August	198	58	109	.077	.09
September	1,820	58	220	.155	.17
The year	38,500	58	1,760	1.24	16.83

OUACHITA RIVER AT REMMEL DAM, NEAR MALVERN, ARK.

LOCATION.—In SW. ¼ NW. ¼ sec. 36, T. 3 S., R. 18 W., 700 feet below Remmel Dam of Arkansas Power & Light Co., three-fourths mile above Cove Creek, and 9 miles northwest of Malvern, Hot Springs County.

DRAINAGE AREA.—1,540 square miles (measured on base map of Arkansas).

RECORDS AVAILABLE.—January 30, 1925, to September 30, 1926.

GAGE.—Gurley 7-day water-stage recorder; inspected by G. R. Murray.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Bed composed of clean gravel. Control is a coarse gravel bar 1,000 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 24.3 feet at 8 p. m. January 21 (discharge, 60,900 second-feet); minimum stage, 1.62 feet several times during September while power plant was shut down (discharge, 21 second-feet).

1925–1926: Maximum stage, that of January 21, 1926; minimum stage, 1.52 feet September 12 and 13, 1925 (discharge, 15 second-feet).

Flood of May 16, 1923, reached a stage of 36.3 feet, as determined by levels to floodmarks (discharge determined from extension of rating curve, 113,000 second-feet).

REGULATION.—Flow is regulated almost completely by power plant 700 feet above gage.

ACCURACY.—Stage-discharge relation permanent during the year. Rating curve fairly well defined above 200 second-feet. Operation of water-stage recorder satisfactory except as explained in footnote to table of daily discharge. Daily discharge ascertained by use of discharge integrator. Records good for discharges above 200 second-feet and fair for those below.

Discharge measurements of Ouachita River at Remmel Dam, near Malvern, Ark., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 21	6.57	3,140	Jan. 24	9.05	7,080	June 13	1.90	29
Dec. 11	4.14	948	June 12	1.98	29	June 14	3.23	582
Jan. 22	20.05	43,400	Do	3.58	760	Aug. 9	1.64	26
Jan. 23	13.25	18,100						

Daily discharge, in second-feet, of Ouachita River at Remmel Dam, near Malvern, Ark., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,110	146	2,130	1,060	2,300	3,040	11,500	1,690	222	186	184	108
2	674	488	1,630	1,450	2,190	2,740	6,820	1,450	337	194	330	126
3	235	1,100	1,810	283	1,250	2,560	5,230	1,750	318	71	632	130
4	190	2,030	1,530	1,280	1,500	2,580	3,550	1,260	236	163	722	110
5	677	3,720	1,610	1,280	672	2,500	3,300	1,280	266	112	112	206
6	286	7,290	9,300	1,100	1,510	3,020	2,950	1,340	240	252	112	109
7	318	16,500	979	1,220	866	674	7,790	1,460	434	265	139	118
8	916	17,200	1,220	1,150	1,020	642	8,250	2,130	457	147	122	94
9	1,100	11,300	872	1,010	1,060	805	5,360	4,370	239	171	116	84
10	935	5,390	502	168	1,090	1,940	4,300	6,140	244	100	98	100
11	300	4,350	675	960	740	2,540	3,140	4,300	203	110	105	114
12	1,050	2,700	792	900	1,110	4,390	3,660	4,930	184	148	116	134
13	5,680	2,180	766	810	1,550	4,810	2,630	3,360	150	126	90	107
14	4,500	2,380	1,740	784	590	2,050	2,390	3,060	330	132	103	117
15	4,340	1,240	2,970	872	618	2,960	2,330	2,960	155	150	138	108
16	19,600	2,070	2,990	856	571	2,520	2,000	1,040	154	170	118	96
17	30,000	1,680	2,980	1,380	1,020	2,420	1,920	1,240	178	178	110	92
18	18,800	1,410	2,990	1,720	1,520	2,380	1,160	1,270	198	116	108	84
19	3,510	1,150	2,630	1,930	2,160	2,070	1,560	1,160	608	246	90	124
20	3,780	1,110	2,140	2,530	2,640	1,760	820	1,180	970	246	127	83
21	2,760	1,610	2,400	33,000	1,690	978	800	1,250	140	128	110	83
22	2,610	1,480	960	42,000	1,950	2,390	1,750	1,150	123	115	122	96
23	2,380	1,560	678	17,600	2,440	7,400	2,910	222	109	104	102	78
24	2,560	1,500	704	8,700	2,470	4,640	4,740	812	97	125	92	63
25	1,240	1,840	580	5,500	2,640	5,300	4,910	714	165	149	96	74
26	1,480	1,200	244	4,230	3,480	6,350	2,780	749	122	127	100	80
27	874	1,790	266	2,840	3,890	5,030	1,800	670	101	141	106	74
28	721	2,250	657	2,750	2,490	3,920	2,810	605	144	132	106	100
29	242	1,260	573	2,690	-------	3,340	2,410	256	135	142	116	140
30	745	2,060	606	2,650	-------	10,800	1,450	143	131	119	106	142
31	619	--------	665	1,740	-------	21,900	--------	251	-------	270	100	------

NOTE.—Daily discharge computed from power-plant records for Oct. 10–15, Nov. 7, 8, Dec. 6–11, Feb. 13–20, 25, 26, Mar. 8–11, and Apr. 15–17; operation of water-stage recorder not satisfactory.

Monthly discharge of Ouachita River at Remmel Dam, near Malvern, Ark., for the year ending September 30, 1926

[Drainage area, 1,540 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	30,000	190	3,680	2.39	2.76
November	17,200	146	3,400	2.21	2.47
December	9,300	244	1,630	1.06	1.22
January	42,000	168	4,720	3.07	3.54
February	3,890	571	1,680	1.09	1.14
March	21,900	642	3,890	2.53	2.92
April	11,500	800	3,570	2.32	2.59
May	6,140	143	1,750	1.14	1.31
June	970	97	246	.160	.18
July	270	71	156	.101	.12
August	722	90	156	.101	.12
September	206	63	106	.069	.08
The year	42,000	63	2,090	1.36	18.45

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, 1926

Date	Stream	Tributary to—	Locality	Gage height	Discharge
				Feet	*Sec.-ft.*
Aug. 23	Westover Spring	Huzzah Creek	Westover, Mo		13
Apr. 14	Hatchie River	Mississippi River	Pocahontas, Tenn		944
Aug. 29	Althea Spring	North Fork of White River.	Althea, Mo		27
28	Wilder Spring	Spring Creek	6 miles north of Elijah, Mo		20
27	Bryant Spring	Bryant Creek	Bryant, Mo		1.8
29	Rockbridge Spring	do	Rockbridge, Mo		23
29	Hodgson Mill Spring	do	Sycamore, Mo		24
June 17	Mill Spring	Black River	Mill Spring, Mo		12
	Reeds Spring	West Fork of Black River.	Centerville, Mo		15
11	Mammoth Spring	Spring River	Mammoth Spring, Ark		310
10	Thomasson Mill Spring.	Eleven Point River	18 miles southeast of Alton, Mo.		50
Aug. 2	Arkansas River	Mississippi River	Syracuse, Kans	0.93	6.7
Sept. 17	Cottonwood River	Neosho River	Emporia, Kans	3.35	1,160
July 27	Elk River	do	Noel, Mo		246

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