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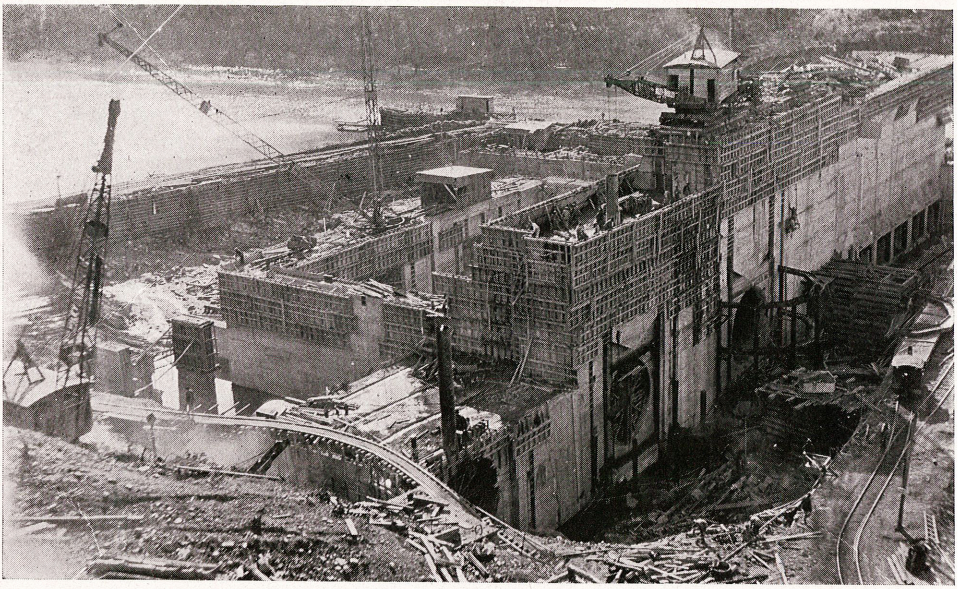
STATE OF ARKANSAS
Arkansas Geological Survey
GEORGE C. BRANNER
STATE GEOLOGIST

ARKANSAS STREAM GAGING REPORT 1

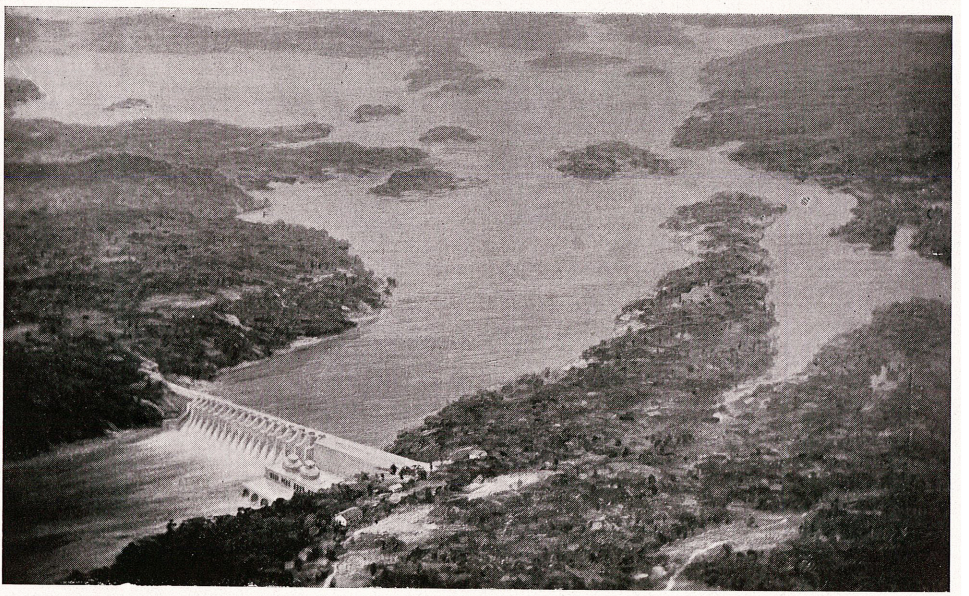
Stream Gaging in Arkansas from 1857 to 1928

By
W. S. FRAME
Acting District Engineer, 1928—1929,
United States Geological Survey

LITTLE ROCK
1930



CARPENTER DAM, OUACHITA RIVER, SOUTH OF HOT SPRINGS, DECEMBER, 1929
(ARKANSAS POWER & LIGHT COMPANY)



CARPENTER DAM AND PLANT, OUACHITA RIVER, SOUTH OF HOT SPRINGS
(PHOTOGRAPH OF OIL PAINTING OF PROPOSED DAM)

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LETTER OF TRANSMITTAL

ARKANSAS GEOLOGICAL SURVEY

LITTLE ROCK, ARK., *October 30, 1930*

Hon. HARVEY PARNELL,
Governor, State of Arkansas,
Little Rock, Ark.

Sir:

I have the honor to submit herewith the report, Stream Gaging in Arkansas from 1857 to 1928, by W. S. Frame, formerly Acting District Engineer, Water Resources Branch, U. S. Geological Survey.

The systematic development of the commercial water power of the rivers and streams of Arkansas rests primarily on the availability of dependable stream gaging data. Intelligent flood control also is dependent to a considerable degree upon the existence of such data. In addition, discharge measurements from stream gaging records are needed for the development of river navigation and for the determination of water available for municipal or industrial uses. Up to the year 1927 most of the stream gaging records made in Arkansas had been kept in a more or less disconnected way, many of them by individuals and firms, and no comprehensive and continuous stream gaging program had been undertaken by the State or Federal Governments.

The present report is a compilation in one volume of a large number of scattered records from 1857 to 1928, which have not been easily accessible to the public.

Co-operative stream gaging with the Federal Government, arranged by the State Geologist and the Director of the U. S. Geological Survey is now in effect and useful records are being collected. As more funds can be provided for this work by this State they will be matched by federal funds, and the scope of the work will be broadened until the State is adequately covered. In this way a comprehensive stream gaging program will become part of a permanent state and federal service. It is planned to publish the results of all stream gaging annually, so that they may be available to all concerned.

It is significant to consider the basic facts concerning the available and developed water power in Arkansas at the present time. The following table of primary and secondary horse power of the streams of Arkansas which may reasonably be expected to provide major power has been compiled from estimates furnished by C. S. Lynch, Charles LeVasseur, William Crooks, and E. E. Bonewits.

Stream	Number of dams	Primary power available 100% of the time (H. P.)	Economic secondary power available less than 100% of the time (H. P.)	Total (H. P.)
White River	1	194,000	74,000	268,000
North Fork	1	66,500	8,700	75,200
Buffalo River	1	21,000	5,400	26,400
Ouachita River	3	54,000	0	54,000
Little Red River	3	9,000	40,000	49,000
Caddo River	1	3,500	20,000	23,500
Spring River	5	5,000	3,000	8,000
Strawberry River	2	6,000	3,000	9,000
Cossatot River	1	1,200	3,000	4,200
Little Missouri River	1	1,000	3,000	4,000
Fourche La Fave	1	3,500	3,000	6,500
Total	20	364,700	163,100	527,800

The hydro-electric plants operating or under construction at the present time in Arkansas are as follows:

River	Name of project	Located near	Operated by	Primary power available 100% of the time (H. P.)	Economic secondary power available less than 100% of the time (H. P.)	Installed generator capacity (H. P.)
Illinois Bayou	Russellville Dam	Russellville	Ark. P. & L. Co.	0	835	835
Spring	Dam No. 1	Mammoth Sprg.	Ark.-Mo. Power Co.	135	645	550
Spring	Dam No. 3	Mammoth Sprg.	Ark.-Mo. Power Co.	465	735	750
Ouachita	Remmel Dam	Malvern	Ark. P. & L. Co.	1,000[2] [4]	16,000[3] [5]	12,100
Ouachita	Carpenter Dam[1]	Hot Springs	Ark. P. & L. Co.	4,800[6]	30,600[7]	75,100
Total				6,400	48,815	89,335

[1] Now under construction.
[2] When Carpenter Dam is in operation, will increase this figure to 2,500 H. P.
[3] When Carpenter Dam is in operation, will decrease this figure to 14,000 H. P.
[4] When Blakely Dam is in operation, will increase this figure to 8,100 H. P.
[5] When Blakely Dam is in operation, will decrease this figure to 0.
[6] When Blakely Dam is in operation, will increase this figure to 20,800 H. P.
[7] When Blakely Dam is in operation, will decrease this figure to 0.

The primary and secondary water power in Arkansas which is either developed or in process of development, compared with the estimated potential power available, is set forth in the following table:

	Developed water power in Ark. (H. P.)	Estimated potential economic water power available in Ark. (H. P.) (see above)	Per cent developed water power	Estimated potential water power available in Ark. (H. P.) (U. S. Geol. Survey, 1928)	Per cent developed water power
Primary	6,400[8]	364,700[8]	1.2	201,300[10]	3.1
Secondary	48,815[9]	163,100[9]	29.9	299,300[11]	16.3
Total	55,215	527,800	10.5	500,600	11.03

[8] For water available 100% of the time.
[9] For water available less than 100% of the time.
[10] For water available 90% of the time.
[11] For water available 50% of the time.

The above estimates indicate that a little more than one-tenth of the available water power of the State is now actually or will soon be developed. It is obvious, therefore, that there is adequate undeveloped water power in Arknsas at the present time to meet any industrial needs which may arise for some time to come.

The progressive development of the available water power of Arkansas, insofar as it is based on sound economics, will exercise a

material influence upon the industrial development of the State by providing a supply of power adequate to growing needs. In addition, provision for flood control and for the development of river navigation are of especial importance at present in connection with the growth of this State.

Respectfully submitted,

GEORGE C. BRANNER,
State Geologist.

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STREAM GAGING IN ARKANSAS FROM 1857 TO 1928

By W. S. FRAME

INTRODUCTION

SOURCES OF INFORMATION

This report has been compiled to make available in convenient and condensed form all the information relating to the flow of streams in Arkansas that has been collected by public agencies. This information is essential in planning the development, use, and control of the streams of the State for the utilization of water power, for flood control, navigation, water supply, sanitation, and other purposes.

Although all available records of the flow of streams in the State have been brought together in this report, most of the periods covered are short and some of the areas served by the streams are small. For these reasons the fullest value of the data presented can be obtained only by continuing the records now being collected and by extending the work to other streams. This report is therefore intended to serve as a basis for future reports, which will be issued annually as additional data are obtained.

The greater part of the material in this report has already been published in State and Federal reports, many of which are now out of print. The records given in these reports have been used freely and the basic facts they contain have been presented, some of them rearranged to conform to present methods of publication. Most of these records were collected by the United States Geological Survey from 1903 to 1906 and by the Geological Survey of Arkansas, in cooperation with the United States Geological Survey, in 1909 and 1910. Many of these early records are, unfortunately, useful only for making rough preliminary investigations because of the short time that they cover and the small number of observations that could be made during that time. However, the basic data now available are all presented in this report. Data now being collected for certain streams will throw additional light on these early records and increase their value.

From 1911 to 1926 very few stream-flow data were collected in Arkansas. Some records were obtained through the cooperation of private companies, but no comprehensive surveys were made.

In 1927 stream gaging was undertaken in Arkansas by the State Geological Survey in cooperation with the Water Resources Branch of the United States Geological Survey. This cooperative arrangement not only procured financial aid for the State in this work but

gave assurance that the work would be done by an experienced personnel according to methods and standards of accuracy developed during a period of forty years. In the short time since this arrangement was made, records have been obtained at nineteen gaging stations in the State. At most of these places other interested agencies, both private and public, have also cooperated, either by furnishing records or by assisting in their collection. The records at twelve of these new stations are here published for the first time.

NATURE, USES, AND VALUE OF STREAM-FLOW RECORDS

PRESENT CONDITIONS IN THE STATE

The streams of Arkansas are among the most valuable of her natural resources. They constitute the only natural resources that is not exhausted by use. Water is necessary for all human activities. Its abundance is often one of the most important factors in the development of a community; its scarcity might limit the growth of a community.

TABLE 1.—MEAN MONTHLY AND ANNUAL PRECIPITATION IN ARKANSAS IN INCHES
(Records of the United States Weather Bureau)

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
1891.	5.34	2.92	5.10	2.75	2.78	3.71	7.24	2.75	0.94	0.65	5.56	4.69	44.43
1892.	2.48	3.47	3.44	6.98	9.52	3.87	3.58	4.39	2.14	3.26	5.83	8.79	57.75
1893.	1.13	4.05	3.55	7.16	9.71	5.20	2.94	3.08	3.75	1.30	4.21	1.83	47.91
1894.	3.63	6.32	9.84	6.18	3.40	1.39	3.98	4.63	3.56	1.52	1.12	3.48	49.05
1895.	5.19	0.71	5.39	1.99	3.91	5.94	7.34	2.64	1.36	1.44	4.82	3.96	44.69
1896.	4.09	3.30	5.28	3.65	3.54	1.91	1.61	2.32	3.25	3.59	4.34	0.84	37.72
1897.	6.78	2.59	9.76	4.14	2.13	3.46	3.25	2.59	0.60	2.01	2.82	6.00	46.13
1898.	7.93	2.08	5.96	3.09	6.44	4.86	4.25	4.35	7.35	5.44	3.20	1.87	56.82
1899.	5.91	2.18	2.97	3.28	6.45	2.74	5.14	2.04	1.21	2.88	2.61	4.08	41.49
1900.	2.69	5.06	2.50	4.98	3.69	7.10	4.46	2.95	4.25	4.31	4.28	2.76	49.03
1901.	2.21	2.18	4.67	3.82	2.95	1.44	2.49	2.95	3.08	2.07	2.99	4.42	35.27
1902.	4.13	2.60	5.34	2.87	4.34	5.27	4.49	2.55	5.06	2.68	6.66	5.71	51.70
1903.	2.60	7.63	5.56	1.86	7.47	2.53	3.86	4.34	2.47	2.22	0.64	3.44	44.62
1904.	3.81	2.47	5.64	3.88	3.39	7.14	4.43	2.81	2.46	0.94	1.38	5.10	43.45
1905.	4.58	2.55	5.31	6.29	9.58	5.90	7.60	3.73	3.90	4.49	3.28	4.96	62.17
1906.	5.19	2.21	5.69	2.55	4.71	4.60	5.96	4.92	6.24	2.38	5.90	5.64	55.99
1907.	5.80	2.77	3.22	5.44	9.48	4.48	1.96	2.92	2.22	3.93	5.71	2.70	49.73
1908.	3.75	5.26	3.79	6.32	7.05	3.85	3.00	4.48	4.00	0.48	5.40	1.50	48.88
1909.	1.79	5.41	3.71	4.52	6.76	4.08	2.51	1.27	2.84	2.15	3.75	5.26	44.05
1910.	2.59	3.66	1.39	5.14	6.56	4.85	5.46	3.92	2.41	5.19	0.47	3.57	45.21
1911.	1.02	4.31	2.17	9.86	1.11	2.53	4.83	8.19	3.67	1.67	3.18	7.00	49.54
1912.	3.01	2.80	7.86	8.14	2.41	5.83	2.82	3.30	2.40	2.97	1.66	2.63	45.83
1913.	8.45	3.74	4.74	4.91	3.32	1.68	4.31	1.62	10.10	5.41	2.47	3.26	54.01
1914.	1.57	4.23	5.13	4.57	3.34	1.00	2.69	6.81	3.19	1.74	2.32	6.26	42.85
1915.	4.38	4.47	3.54	2.96	5.58	4.92	2.40	10.44	1.43	2.83	5.40	4.73	53.08
1916.	9.39	1.78	1.93	3.65	3.56	5.15	2.09	2.63	3.40	2.30	2.95	3.35	42.18
1917.	3.66	1.93	5.32	5.69	3.15	4.87	5.10	4.10	1.76	1.89	1.96	1.29	40.72
1918.	4.39	1.17	1.31	7.63	3.01	3.55	1.53	3.90	4.63	3.99	3.91	5.62	44.64
1919.	3.00	3.34	5.47	3.56	6.01	5.11	1.91	4.29	2.72	10.90	6.27	1.94	54.52
1920.	6.49	1.26	5.31	5.49	8.17	3.41	4.22	4.08	3.56	4.39	1.95	5.95	54.28
1921.	2.07	3.59	6.55	7.87	2.25	4.84	2.42	5.46	3.38	0.72	5.53	2.78	47.46
1922.	2.63	4.89	8.58	5.54	5.00	2.64	4.12	1.90	1.25	1.47	3.89	4.59	46.50
1923.	5.78	4.66	5.04	6.30	8.24	5.20	3.53	2.43	5.56	3.53	3.34	6.24	59.85
1924.	3.19	2.26	3.27	4.99	4.64	3.64	2.35	2.40	3.99	0.29	2.36	3.65	37.03
1925.	2.68	3.37	1.69	2.62	1.88	2.08	4.99	1.81	5.96	7.73	5.67	1.71	42.19
1926.	4.69	2.02	5.57	2.65	2.42	2.60	3.55	5.50	3.99	5.77	3.33	7.15	49.24
1927.	5.41	2.62	7.24	12.93	6.54	6.50	4.25	6.01	3.37	3.13	3.67	4.18	65.85
1928.	2.05	2.23	2.53	8.52	3.60	9.44	3.66	4.62	0.45	4.74	4.25	4.41	50.50
Means	4.09	3.27	4.77	5.13	4.95	4.19	3.85	3.82	3.37	3.09	3.66	4.14	48.32

The value of any stream depends to a large extent on the quantity and distribution of its flow. Precipitation is the primary source of all streams and is the most important factor influencing their flow. Systematic records of precipitation have been collected for many years by the United States Weather Bureau. The average monthly and annual precipitation in Arkansas from 1891 to 1928 is shown in Table 1, page 2, and the average annual distribution over the State, as shown by the records of the United States Weather Bureau up to and including the year 1925, is indicated in Figure 1. Other factors, however, such as topography, geology, shape of drainage basin, vegetation, condition and previous degree of saturation of soil, and evaporation, play important parts in governing the quantity of rainfall that runs off into the streams and the distribution of the flow. For this reason rainfall records alone cannot be depended on to give a reliable indication of the flow of a stream. The best and only consistently accurate method of determining stream flow is to make a series of records of the flow extending over several years.

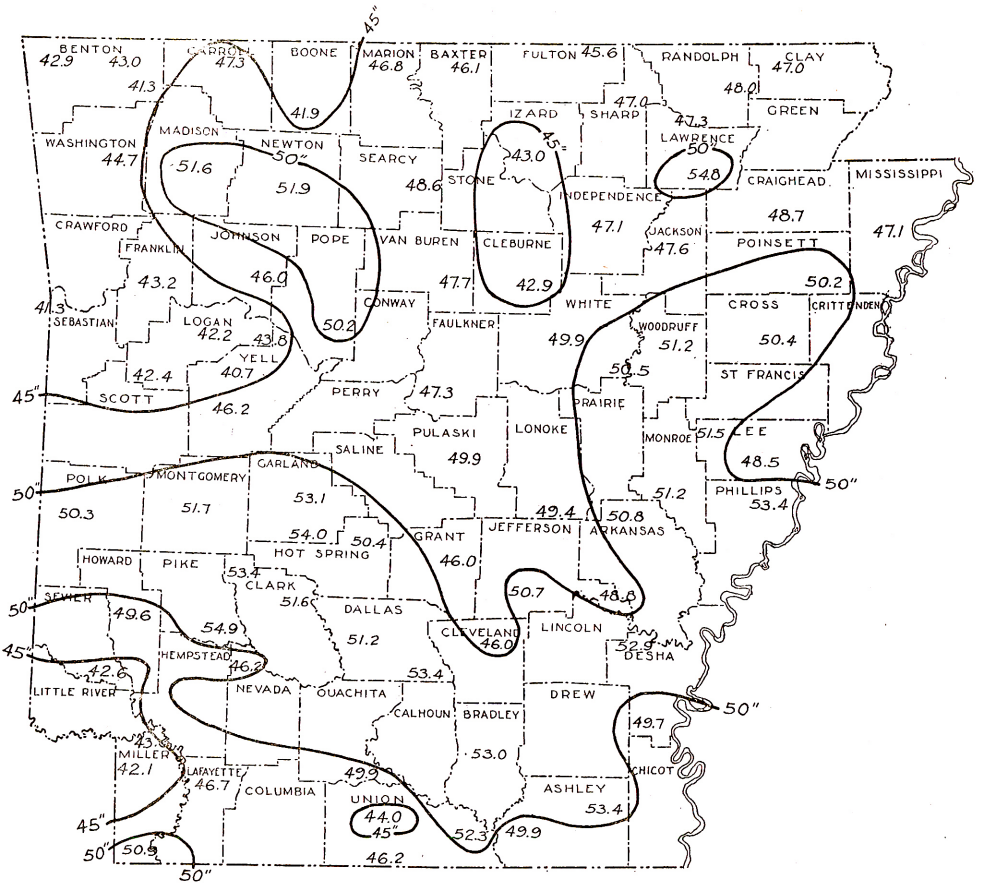


FIGURE 1.—Map showing the average annual precipitation in Arkansas in inches up to and including the year 1925.

Because of the increase in population and of improved sanitation and standards of living more and more water is steadily being required for domestic use. The supply from wells is proving inadequate to meet the needs of our growing cities, and they are looking for supplies of surface water. Many cities in our neighboring State of Oklahoma have also reached this point in their growth. As the population of the cities of Arkansas increases many of them must obtain more abundant supplies. Others will find it necessary to abandon their present source of water because of contamination or of unsuitable quality. When adequate stream-flow records are available these cities will know where to turn. They will not be subject to the hazard of building expensive waterworks only to find their investment nullified because the supply is inadequate.

The pollution of our streams increases with increase in population and in industrial development. A certain amount of sewage and industrial waste may be discharged into streams without harmful results, but during periods of extremely low flow some streams may become so polluted as to form a menace to public health. Knowledge of the low-water discharge of such streams is necessary to eliminate contamination and will be useful to engineers designing plants for the treatment and disposal of sewage. This problem is already receiving the attention of health authorities, to whose work records of stream flow are essential.

Probably the records of stream flow in northern and western Arkansas will be most useful in determining the possible water-power development in these regions. The amount of power that may be obtained from a stream depends only on the fall that can be utilized and the quantity and distribution of the flow of water that runs off. The fall that can be utilized depends on the topography and geology of the region and can be readily determined. The quantity of water varies from day to day, season to season, and year to year. It can be adequately determined only from a series of records of stream flow extending over several years. Where such records are available, water-power development may proceed at a rate commensurate with other industrial development. Where no records of stream flow are available the development of water power will be delayed, at a loss to the region and to industry as a whole. The collection of these records is properly a governmental function, for capital cannot be expected to spend many years in preliminary investigations in unexplored regions when investments in other regions and other kinds of development promise more certain and more immediate returns.

The capacity of the water-power projects that can ultimately be developed in Arkansas is estimated at 500,600 horsepower. At present only 14,235 horsepower is installed, as shown in the following table:

TABLE 2.—DEVELOPED WATER POWER IN ARKANSAS

River.	Name of project.	Located near	Operated by	Installed generator capacity in H. P.
Illinois Bayou	Russellville Dam	Russellville	Ark. P. & L. Co.	835
Spring	Dam No. 1	Mammoth Spring	Ark.-Mo. P. Co.	550
Spring	Dam No. 3	Mammoth Spring	Ark.-Mo. P. Co.	759
Ouachita	Remmel Dam	Hot Springs	Ark. P. & L. Co.	12.100
Total				14,235

EQUIPMENT

Name of Project	Present Generator Installation
Russellville Dam	One 260 K. V. A. generator One 575 K. V. A. generator
Dam No. 1	One 550 K. V. A. generator
Dam No. 3	One 759 K. V. A. generator
Remmel Dam	Three 3,000 K. W. generators

On Ouachita River the Arkansas Power & Light Company has obtained a license from the State Railroad Commission and the Federal Power Commission to build two more dams above the Remmel Dam. Construction is now under way on the first of these. The three dams will develop 54,000 primary horsepower estimated on a 24 hour basis and it is expected that they will give practically complete control of the upper Ouachita River. The power will be fed into the extensive transmission system of central, southern, and eastern Arkansas, and its abundance will be one of the many inducements to manufacturers to locate in this region.

The popularity of Hot Springs and vicinity, already famous the world over, is being enhanced by these developments. The lakes formed by these dams will become wonderful fishing, boating, and bathing resorts. These lakes, combined with the rugged topography, the healthful climate, the curative waters, and good roads, will attract additional thousands of tourists to this popular resort.

Stream-flow records have played their part in the development of the Ouachita River. Records have been collected at the expense of the Arkansas Power & Light Company since 1922 and have been of inestimable value in proving the practicability of the projects and in furnishing data on which to base the design of structures. It is significant that this stream, on which we have the longest period of continuous discharge records in the State, is the first water-power stream to be developed on a large scale.

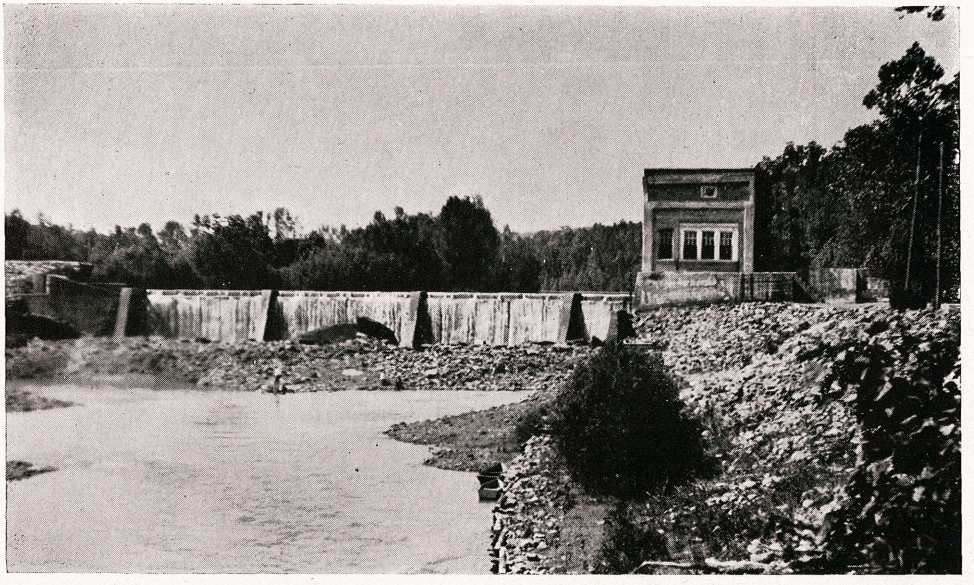
In northern Arkansas the White River Power Company has a license from the State Railroad Commission and has applied for a license from the Federal Power Commission for the construction of proposed dams on White River near Cotter and on the North Fork of the White River and on Buffalo River. The total installed capacity of these proposed developments will be about 370,000 horsepower. On the upper White River, in Missouri, the Forsyth development of the Empire District Electric Company, creating Lake Taneycomo, has an installed capacity of 18,500 horsepower, and final license has been

granted and construction commenced by the same company on a 190-foot dam at Table Rock, Missouri, above Lake Taneycomo, at which abount 220,000 horsepower will be installed. These developments will make White River the most important power stream in this part of the country.

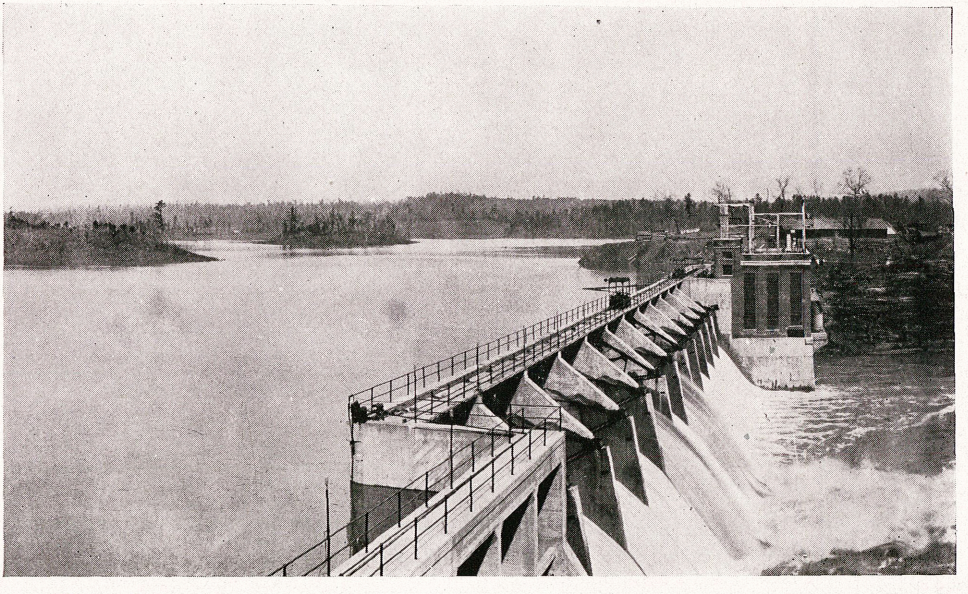
The benefits which the Lake Taneycomo region, in Missouri, is deriving from the Forsyth developments—comparatively small projects—will certainly be enjoyed to a much greater extent by the White River country of Arkansas when these developments are completed as proposed. The whole State will be benefited by the development of the extensive mineral and other resources of this region which the abundant power will make possible and by the stimulated use of electric energy, the attraction to industry, and the tourist trade which will certainly follow.

Capital would not have become interested in these projects without the data on the flow of these streams which have been and are now being collected. Without a knowledge of the stream flow the practicability of the projects could not be assured, the most comprehensive and economical scheme of development could not be determined, and the most economical operation after development could not be maintained. These developments, when completed, are certain to have a beneficial effect in controlling the floods on the lower White River. Stream-flow records will show definitely the benefits in this respect and may be of exceptional value in demonstrating the feasibility of controlling or partly controlling floods by reservoirs.

The Ouachita River and White River developments proposed are by far the largest in the State. Many other smaller developments are possible, however. Statistics show that industry is decentralizing. The movement is away from the large cities to the smaller communities that have the inducements of raw materials, labor, power, and climate. With this decentralizing movement in progress it is reasonable to expect that a number of these smaller projects can eventually be economically built to supply local industrial needs; or the power can be distributed to the constantly growing systems of transmission lines to supply their load requirements. Such streams as the Strawberry and Little Red Rivers, in the White River Basin; Piney, Mulberry and Fourche la Fave Rivers, in the Arkansas River Basin; Caddo and Little Missouri Rivers, in the Ouachita River Basin; and the Cassatot River, in the Red River Basin, all have attractive topographic features for water-power developments. On only two of these streams, however, have we begun to collect discharge records, so the stream flow is still unknown. Its determination will indicate the possibility of its economic utilization. The stream-flow work should be expanded as soon as possible to include these and other streams of the State, not alone to stimulate development of the sites that may prove to be practicable but to discourage investments



A. POWER DAM AND PLANT ON ILLINOIS BAYOU NORTH OF RUSSELLVILLE (ARKANSAS POWER & LIGHT COMPANY)



B. REMMEL DAM AND PLANT, OUACHITA RIVER NEAR MALVERN (ARKANSAS POWER & LIGHT COMPANY)

that are bound to fail because the water supply is inadequate. There have already been a number of failures of this kind, and their effect has been detrimental to the development of projects that are feasible and practicable.

Water is a necessity not alone for water power for producing electric energy. Modern steam-electric plants require large quantities of water for cooling their condensers. The 120,000 horsepower plant of the Louisiana Power & Light Company at Sterlington, on the Ouachita River, in northern Louisiana, uses practically the full low-water flow of this river (approximately 300 cubic feet per second) for cooling their condensers. The assurance of a sufficient and continuous supply of water is of utmost importance in the location of such a plant. Many industries also require considerable quantities of water in manufacturing processes, and the communities that want to attract such industries must show that they have sufficient water available. Stream-flow records will furnish this information.

Stream-flow records are used also in connection with studies of flood control, navigation, and drainage. Almost every year damaging floods occur in some part of Arkansas. The exceptional flood of 1927 caused damages estimated at $40,000,000 in only the nineteen counties affected by the Arkansas River. Even the average yearly damage from floods in the State will be measured in hundred of thousands of dollars. Much work has been done and much more remains to be done to diminish this recurring loss. Knowledge of the quantities of water carried by the main streams and by their principal tributaries is essential to the conception of any intelligent and comprehensive plan for flood control.

Knowledge of the low-water flow is also necessary in controlling and using the stream for navigation. On such streams as the Arkansas River the low-water plane is constantly shifting. The stage of the river is not always a reliable indication of its navigability. H. S. Cole, of the United States Weather Bureau, has determined from data furnished by the United States Engineers, that in 1894 a stage of nearly four feet at Little Rock would have been necessary for a boat drawing two feet to pass from Little Rock to the mouth of the river, but in 1920 it could have passed at a stage of zero. Records of stream flow will form a valuable addition to gage-height data in determining the time and extent of such changes in the channel.

The value of stream-flow records in flood control and navigation projects is shown by the fact that the United States Army Engineers will have spent over $300,000.00 in stream-gaging work throughout the United States during the fiscal year ending June 30, 1929, in connection with studies of flood control and navigation recently authorized by Congress.

Drainage districts in Mississippi and Poinsett counties are cooperating with the Arkansas Geological Survey in collecting infor-

mation concerning stream flow in their territory. This information is of much value to them in their flood control and drainage work. It shows definitely the increased carrying capacities of their artificial and leveed channels and will form the basis of design of additional works.

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 an 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 one foot wide and one foot deep at an average velocity of one 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 during a given period were uniformly distributed over the area. 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 one foot. The term is commonly used in connection with storage for irrigation.

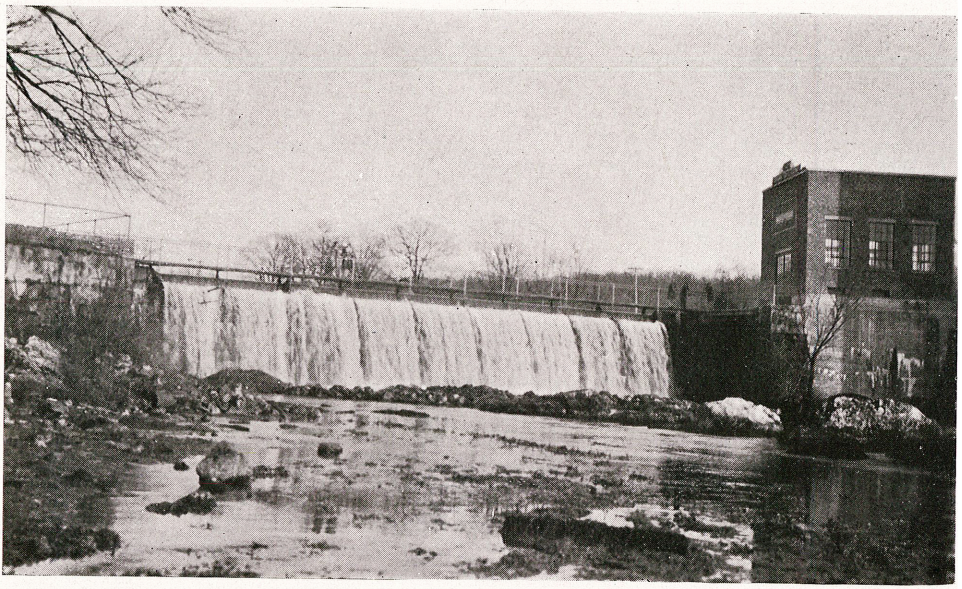
The following terms not in common use are here defined:

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

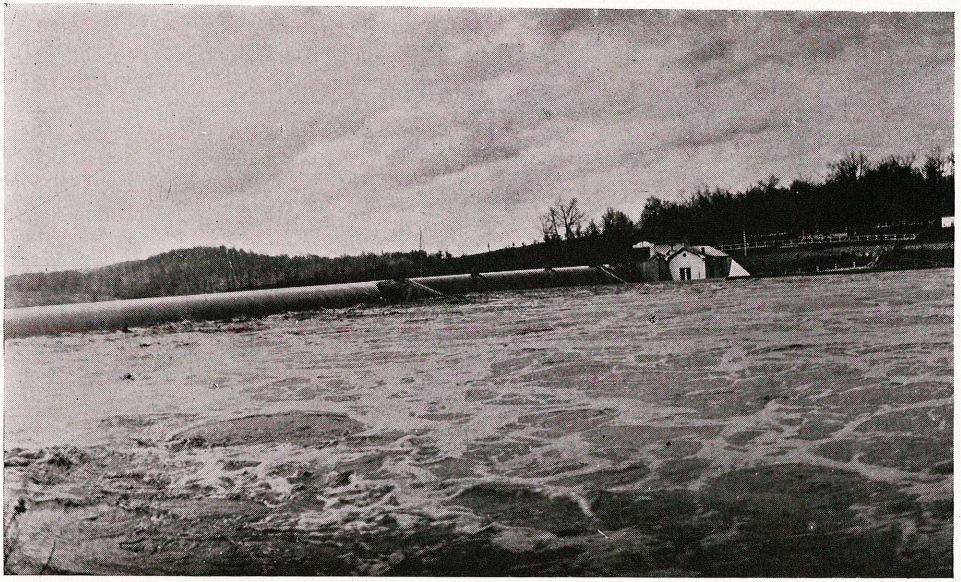
"Control," a term used to designate the section or sections of the stream below the gage which determine the stage-discharge relation at the gage. It should be noted that the control may not be the same section or sections at all stages.

EXPLANATION OF DATA

The gaging station records in this report cover the entire period to and including September 30, 1928. They have been arranged in years ending September 30 to agree with the standard practice of the United States Geological Survey. At the beginning of January



A. POWER DAM AND PLANT AT MAMMOTH SPRING (DAM NO. 1 OF THE ARKANSAS-MISSOURI POWER COMPANY)



B. POWER DAM AND PLANT ON SPRING RIVER, SOUTH OF MAMMOTH SPRING (DAM NO. 3 OF THE ARKANSAS-MISSOURI POWER COMPANY)

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; the run-off for the year beginning October 1 is therefor 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 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.

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 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 information in regard to any conditions that may affect the permanence of the stage-discharge relations, such as the occurrence of ice, the use of the stream for log driving, the 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 fluctation 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 is 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 consequently larger than that given in the column headed "Maximum." Likewise, the column headed "Minimum" gives the mean flow for the day when the mean gage height is lowest. The column headed "Mean" is the average flow in cubic feet per second during the month. On this average flow are based the computations recorded in the remaining columns, the terms used in which are defined on page 8.

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 the observation of stage, measurement of flow, and interpretation of records.

A paragraph in the description of the station gives information regarding (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 gage heights to the rating table to obtain the daily discharge.

In the rating tables the notation "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 notations are very general and are based on the plotting of the individual measurement with reference to the mean rating curve.

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.

ARRANGEMENT AND EXTENT OF RECORDS

The State of Arkansas is naturally divided into five main drainage basins, the St. Francis, White, Arkansas, Ouachita, and Red River basins. The records in this report are grouped under these five basins and are arranged in the order indicated, the stations on the main stream of each basin being given first in downstream order and then the stations on the tributaries in downstream order.

In addition to the records collected within the State, records made at five gaging stations on streams in Missouri that drain into Arkansas and that are maintained by the Missouri Bureau of Geology and

Mines in co-operation with the United States Geological Survey are also presented. These stations are all near the State line in the White River Basin and can be used to estimate very closely the flow of these streams as they enter the State. Additional information has been collected in the White and St. Francis River basins in Missouri, but it is not included in this report. It is available in the yearly water-supply papers of the United States Geological Survey and, in more compact form, in the publications of the Missouri Bureau of Geology and Mines.

PERSONNEL

This report was compiled and prepared for publication by the Arkansas Geological Survey under the direction of George C. Branner, State Geologist. The recent data were collected in co-operation with the United States Geological Survey under the general direction of N. C. Grover, Chief Hydraulic Engineer, and J. C. Hoyt, Chief of Division of Surface Waters, and under the immediate supervision of H. C. Beckman, District Engineer, assisted by V. L. Austin and A. L. Hill. The report was compiled by W. S. Frame, who was assisted by O. B. Johnson.

GAGING STATIONS

The following lists include information concerning the location, type of station, and intervals of reading of gaging stations on the streams of the State. The stations are arranged in six groups, as follows:

I. GAGING STATIONS NOW BEING MAINTAINED AND OPERATED BY THE U. S. GEOLOGICAL SURVEY IN CO-OPERATION WITH THE ARKANSAS GEOLOGICAL SURVEY AND PRIVATE AGENCIES

1. St. Francis River at Marked Tree, Ark.

   In Sec. 35, T. 11 N., R. 6 E., 250 feet upstream from highway bridge at Marked Tree, Poinsett County. Staff gage, read daily.

2. St. Francis River Floodway near Marked Tree, Ark.

   In SE. ¼ Sec. 10, T. 11 N., R. 6 E., at lock and dam of Poinsett County Drainage District No. 7, and 3 miles north of Marked Tree, Poinsett County. Staff gage, read daily.

3. Big Lake Outlet near Manila, Ark.

   In SE. ¼ Sec. 9, T. 14 N., R. 9 E., at highway bridge at Big Lake, a station on the St. Louis-San Francisco Railway, and 3½ miles southeast of Manila, Mississippi County. Chain gage, read twice daily.

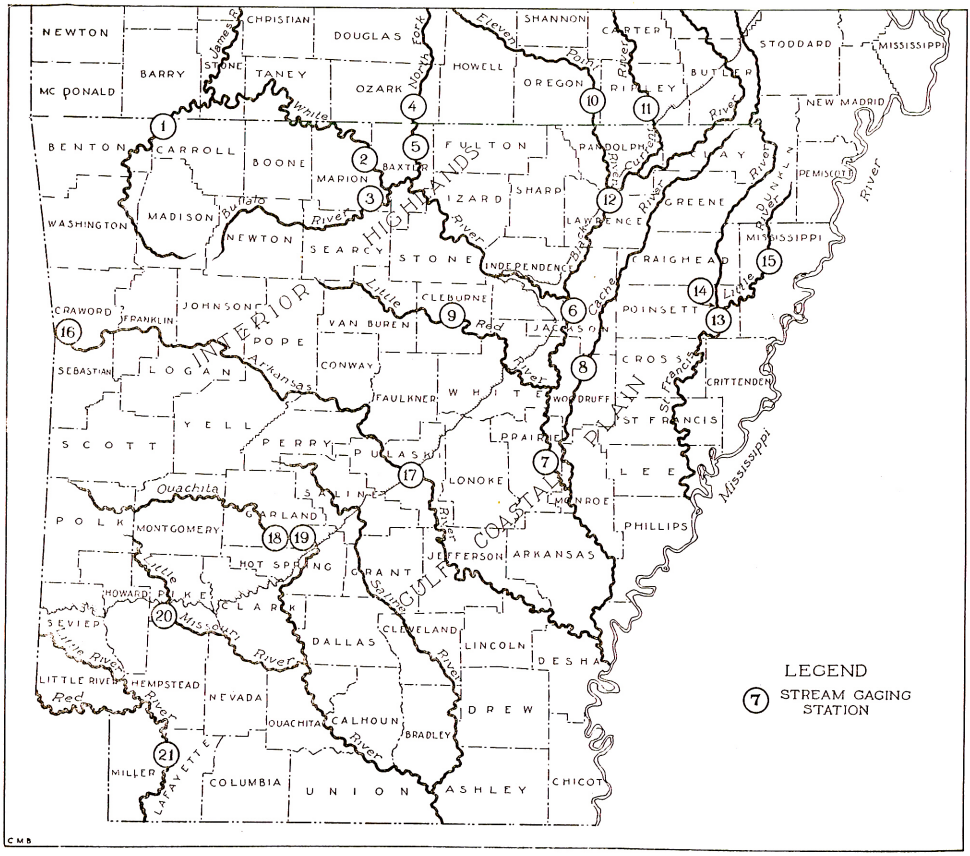


FIGURE 2.—Map showing stream gaging stations being operated in Arkansas and southern Missouri during the year ending September 30, 1929.

1. White River at Beaver, Ark.
2. White River near Flippin, Ark.
3. Buffalo River at Rush, Ark.
4. North Fork of White River at Tecumseh, Mo.
5. North Fork of White River at Henderson, Ark.
6. White River near Newport, Ark.
7. White River at DeVall's Bluff, Ark.
8. Cache River at Patterson, Ark.
9. Little Red River near Heber Springs, Ark.
10. Eleven Point River near Bardley, Mo.
11. Current River at Doniphan, Mo.
12. Black River at Black Rock, Ark.
13. St. Francis River at Marked Tree, Ark.
14. St. Francis River Floodway near Marked Tree, Ark.
15. Pig Lake Outlet near Manila, Ark.
16. Arkansas River at Van Buren, Ark.
17. Arkansas River at Little Rock, Ark.
18. Ouachita River near Hot Springs, Ark.
19. Ouachita River at Remmel Dam, near Malvern, Ark.
20. Little Missouri River near Murfreesboro, Ark.
21. Red River at Garland City, Ark.

NOTE.—For detailed information concerning the gaging stations in Arkansas see pages 11-16.

4. White River near Flippin, Ark.

   In NW. ¼ Sec. 9, T. 19 N., R. 15 W., 2½ miles north of Flippin, Marion County. Staff gage, read twice daily.

5. White River near Newport, Ark.

   On line between Secs. 16 and 17, T. 11 N., R. 3 W., at Missouri Pacific Railway bridge, 2½ miles southwest of Newport, Jackson County. Chain gage, read daily.

6. White River at De Vall's Bluff, Ark.

   In Sec. 23, T. 2 N., R. 4 W., at highway toll bridge 1 mile northeast of De Vall's Bluff, Prairie County, and 8 miles below Wattensaw Bayou. Staff gage, read daily.

7. North Fork of White River at Henderson, Ark.

   In SW. ¼ Sec. 26, T. 20 N., R. 12 W., at Smith's Ferry, a mile from Henderson, Baxter County. Bayou Creek enters from the left about 1¼ miles upstream. Staff gage, read twice daily.

8. Little Red River near Heber Springs, Ark.

   In NE. ¼ Sec. 1, T. 10 N., R. 10 W., at county highway suspension bridge ½ mile west of Tumbling Shoals store and postoffice and 4 miles northeast of Heber Springs, Cleburne County. Staff gage, read daily.

9. Cache River at Patterson, Ark.

   In Sec. 6, T. 7 N., R. 2 W., at Missouri Pacific Railway bridge ¾ of a mile west of Patterson, Woodruff County. Staff gage, read daily.

10. Arkansas River at Van Buren, Ark.

    In Sec. 24, T. 9 N., R. 32 W., at highway bridge at Van Buren, Crawford County, and 1½ miles below Lee Creek. Chain gage, read daily.

11. Arkansas River at Little Rock, Ark.

    In Sec. 3, T. 1 N., R 12 W., at Main Street bridge in Little Rock, Pulaski County. Staff gage, read daily.

12. Ouachita River near Hot Springs, Ark.

    In SW. ¼ Sec. 29, T. 3 S., R. 19 W., at Smith Ferry highway bridge, 1 mile upstream from Hot Springs Creek and 5 miles south of Hot Springs, Garland County. Chain gage, read twice daily.

13. Ouachita River at Remmel Dam, near Malvern, Ark.

    In SW. ¼ NW. ¼ Sec. 36, T. 3 S., R. 18 W., 700 feet below Remmel Dam of Arkansas Power & Light Company, ¾ of a mile above Cove Creek, and 9 miles northwest of Malvern, Hot Spring County. Recording gage.

14. Little Missouri River near Murfreesboro, Ark.

In SE. ¼ Sec. 13, T. 8 S., R. 26 W., at highway bridge 1 mile below Muddy Creek and 2 miles southwest of Murfreesboro, Pike County. Chain gage, read daily.

15. Red River at Garland City, Ark.

In SE. ¼ Sec. 17, T. 16 S., R. 25 W., at St. Louis-Southwestern Railway bridge at Garland City, Miller County. Sulphur River enters 35 miles downstream. Chain gage, read daily.

16. Buffalo River at Rush, Ark.

SE. ¼ Sec. 10, T. 17 N., R. 15 W. Rush Creek enters from left immediately downstream and 1½ miles southeast of Rush, Marion County. Staff gage, read twice daily.

17. Black River at Black Rock, Ark.

In Sec. 21, T. 17 N., R. 1 W., at St. Louis & San Francisco Railroad bridge, at Black Rock, Lawrence County. Staff gage, read daily.

II. GAGING STATIONS NOT NOW BEING MAINTAINED BUT CONCERNING WHICH DISCHARGE DATA IS AVAILABLE OVER PERIODS OF THREE MONTHS OR MORE FROM THE U. S. GEOLOGICAL SURVEY CO-OPERATING WITH THE ARKANSAS GEOLOGICAL SURVEY OR PRIVATE AGENCIES

1. White River near Lead Hill, Ark.

At Bradley's Ferry, 5 miles northeast of Lead Hill, Marion County.

2. White River near Cotter, Ark.

At the Missouri Pacific Railway bridge at Cotter, Baxter County, ¾ of a mile below Falling Ash Creek.

3. Buffalo River near Gilbert, Ark.

At the Missouri & North Arkansas Railroad bridge near Gilbert, Searcy County. Bear Creek enters from the right ¼ mile upstream.

4. Little Red River near Pangburn, Ark.

At Skillern's Ferry, near Pangburn, White County. Big Red Creek enters about 1½ miles downstream.

5. Ouachita River at Rockport Highway bridge, near Malvern, Ark.

In NW. ¼ Sec. 16, T. 4 S., R. 17 W., at Rockport Highway bridge, 1¾ miles northwest of Malvern, Hot Spring County.

6. Ouachita River at Arkadelphia, Ark.

At the St. Louis, Iron Mountain & Southern Railway bridge at Arkadelphia.

III. GAGING STATIONS ON STREAMS NEAR THE ARKANSAS-MISSOURI BOUNDARY LINE NOW MAINTAINED AND OPERATED BY THE U. S. GEOLOGICAL SURVEY IN COOPERATION WITH THE MISSOURI GEOLOGICAL SURVEY OR PRIVATE AGENCIES

1. Current River at Doniphan, Mo.

   In N. ½ Sec. 27, T. 23 N., R. 2 E., at highway bridge ¾ of a mile west of Doniphan, Ripley County, 2 miles above Briar Creek, and 12 miles below Buffalo Creek. Chain gage, read daily.

2. Eleven Point River near Bardley, Mo.

   In NW. ¼ Sec. 20, T. 23 N., R. 2 W., at bridge on State Highway No. 42, 7 miles southwest of Bardley, Oregon County, Missouri, 7 miles above Fredericks Ford, and 12 miles above Missouri-Arkansas line. Chain gage, read daily.

3. North Fork of White River at Tecumseh, Mo.

   In Sec. 16, T. 22 N., R. 12 W., at bridge on State Highway No. 80, at west edge of Tecumseh, Ozark County, ½ mile below Bryant Creek, 3 miles above Lick Creek and 8 miles above Missouri-Arkansas line. Chain gage, read daily.

4. White River at Beaver, Ark.

   In Sec. 20, T. 21 N., R. 26 W., at Missouri & North Arkansas Railroad bridge, ¼ mile east of depot at Beaver, Carroll County, 3 miles above Leatherwood Creek, and 6 miles below Cedar Creek. Chain gage, read daily.

IV. GAGING STATIONS IN MISSOURI ON STREAMS NEAR THE ARKANSAS-MISSOURI BOUNDARY LINE NOT NOW MAINTAINED BUT CONCERNING WHICH DISCHARGE DATA ARE AVAILABLE OVER A PERIOD OF A YEAR AND A HALF FROM THE U. S. GEOLOGICAL SURVEY COOPERATING WITH THE MISSOURI GEOLOGICAL SURVEY AND PRIVATE AGENCIES

1. White River near Branson, Mo.

   At the Missouri Pacific Railway bridge, 600 feet above Turkey Creek and 1 mile south of Branson, Taney County.

V. GAGING STATIONS NOW MAINTAINED AND OPERATED BY THE U. S. GEOLOGICAL SURVEY FOR THE U. S. ENGINEER CORPS, VICKSBURG, MISS.*

1. Ouachita River near Camden, Ark.

   Staff gage, read daily.

2. Saline River near Warren, Ark.

   Chain gage, read daily.

*These stations were not completely installed until August, 1928, and should normally be included in the stream gaging report for 1929.

3. Little River near Wilton, Ark.
   Chain gage, read daily.
4. Ouachita River at Arkadelphia, Ark.
   Chain gage, read daily.

VI. GAGING STATIONS NOW MAINTAINED AND OPERATED BY THE U. S. ENGINEER CORPS, MEMPHIS, TENN.†

1. Mulberry Creek near Mulberry, Ark.
   Staff gage, read daily.
2. Petit Jean River at Danville, Ark.
   Weather Bureau staff gage, read daily.
3. Fourche La Fave River near Nimrod, Ark.
   Staff gage, read daily.

†These stations were not completely installed until January-February-March, 1929, and should normally be included in the stream gaging report for 1929.

DISCHARGE MEASUREMENTS AND GAGING STATION RECORDS

The following measurements and records have been made by the U. S. Geological Survey or by private agencies.

ST. FRANCIS RIVER BASIN

ST. FRANCIS RIVER FLOODWAY NEAR MARKED TREE, ARK.

LOCATION.—In SE. ¼ sec. 10, T. 11 N., R. 6 E., at lock and dam of Poinsett County Drainage District No. 7, and 3 miles north of Marked Tree, Poinsett County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—September 1, 1927, to September 30, 1928.

EQUIPMENT.—Gage is chiseled in vertical concrete headwall of lock. Discharge measurements made from trestle highway bridge 4 miles below gage.

CHANNEL AND CONTROL.—The floodway consists of two parallel dredged ditches half a mile apart with flat, heavily wooded land between. Levees outside the ditches confine the water at high stages to the floodway. Water from St. Francis Lake, formed by a dam across the natural channel, is carried 10 miles by this floodway and discharged again into the natural channel. Bed of ditches sandy; probably shifting. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage recorded, 31.2 feet July 5-9, 1928 (discharge, 21,400 second-feet); minimum discharge, 450 second-feet October 1, 1927 (gage height, 15.5 feet).

The maximum stage of July 5-9, 1928, when there were no breaks in the levees, was 0.6 foot higher than the stage in April, 1927, when there were numerous levee breaks.

DIVERSIONS AND REGULATIONS.—Some water from the lake is passed through sluice gates in the dam down the natural channel of the river. See list of "Miscellaneous Discharge Measurements" for flow in this channel when discharge measurements were made.

ACCURACY.—Stage-discharge relation changed during period of records. Rating curves well defined above 4,000 second-feet; fairly well defined below. Gage read to tenths once daily. Records fair.

COOPERATION.—Gage-height record furnished by Poinsett County Drainage District No. 7, Herman Madole, foreman.

NOTE.—For miscellaneous gaging station and discharge data of the St. Francis River basin, see pages 105, 126-127.

DAILY DISCHARGE, IN SECOND-FEET, OF THE ST. FRANCIS RIVER FLOODWAY NEAR MARKED TREE, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1927 AND 1928

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1927												
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,640
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,060
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,120
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,880
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,650
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,430
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,280
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,130
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,080
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,040
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	995
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	910
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	870
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	830
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	685
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	620
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	560
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	500
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	450
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	425
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	405
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	425
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	425
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	425
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	405
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	405
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	385
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	385
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	385
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	425
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1927–28												
1	450	1,380	4,800	7,360	5,250	4,110	4,320	10,500	3,760	20,200	6,140	1,400
2	530	1,700	4,800	7,360	5,250	4,110	4,250	10,700	3,550	20,600	5,700	1,400
3	685	1,880	4,640	7,180	5,160	4,180	4,180	10,700	3,410	20,900	5,250	1,400
4	910	1,940	4,480	7,000	5,160	4,250	4,110	11,000	3,480	21,200	4,800	1,590
5	1,180	1,940	4,250	6,840	5,070	4,320	3,970	11,000	3,480	21,400	4,400	1,840
6	1,380	1,940	4,110	6,540	4,980	4,400	4,110	11,000	3,410	21,400	4,040	2,120
7	1,480	1,940	3,830	6,540	4,890	4,480	4,320	11,000	3,480	21,400	3,690	2,230
8	1,820	2,060	3,690	6,400	4,890	4,480	4,400	10,700	3,760	21,400	3,280	2,120
9	1,940	2,060	3,410	6,260	4,800	4,480	4,480	10,500	4,180	21,400	2,820	1,900
10	2,060	2,060	3,060	6,020	4,640	4,480	4,890	10,200	4,560	20,900	2,400	1,740
11	2,180	2,000	2,920	5,800	4,640	4,400	5,250	10,000	4,980	20,600	2,060	1,590
12	2,580	2,060	2,710	5,610	4,560	4,400	5,520	9,560	5,250	20,400	1,790	1,440
13	2,990	2,060	2,580	5,430	4,480	4,400	5,700	9,120	5,700	19,900	1,540	1,360
14	3,270	2,060	2,120	5,160	4,480	4,400	5,900	8,500	6,540	19,600	1,400	1,220
15	3,270	2,060	2,380	4,980	4,480	4,400	6,020	7,900	7,540	18,900	1,310	1,100
16	3,270	2,250	2,320	4,720	4,480	4,400	6,140	7,360	8,700	18,400	1,220	1,000
17	3,270	2,320	2,320	4,560	4,480	4,320	6,400	6,840	10,000	17,900	1,140	930
18	3,410	2,380	2,380	4,400	4,480	4,250	6,540	6,400	11,200	17,400	1,140	840
19	3,270	2,510	2,510	4,400	4,320	4,180	6,840	5,900	12,200	16,700	1,140	785
20	3,130	2,710	2,780	4,400	4,250	4,180	7,180	5,610	13,100	16,000	1,140	735
21	2,920	3,340	2,920	4,400	4,180	4,250	7,720	5,250	14,100	15,300	1,100	685
22	2,710	3,620	3,270	4,480	4,110	4,250	7,900	5,160	14,600	14,300	1,140	660
23	2,440	3,830	3,550	4,720	4,040	4,250	8,300	4,980	15,800	13,600	1,140	660
24	2,180	4,180	3,970	4,890	3,970	4,250	8,700	4,720	16,500	12,600	1,140	620
25	2,000	4,320	4,560	4,980	3,900	4,320	9,120	4,560	17,400	11,900	1,140	580
26	1,820	4,480	5,250	5,070	3,830	4,320	9,780	4,480	18,200	11,000	1,180	560
27	1,940	4,640	5,700	5,160	3,830	4,400	10,000	4,400	18,600	10,000	1,180	560
28	1,280	4,720	6,400	5,160	3,900	4,400	10,200	4,320	19,200	9,120	1,220	502
29	1,130	4,800	6,840	5,160	4,040	4,400	10,500	4,180	19,600	8,300	1,260	530
30	950	4,890	7,000	5,250	.....	4,400	10,500	4,040	19,900	7,540	1,260	515
31	870	.....	7,180	5,250	.....	4,400	.....	3,830	.....	6,840	1,310	.....

MONTHLY DISCHARGE OF ST. FRANCIS RIVER FLOODWAY NEAR MARKED TREE, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1927 AND 1928

Month.	Discharge in second-feet.		
	Maximum.	Minimum.	Mean
1927			
September	3,060	385	941
1927-28			
October	3,140	450	2,040
November	4,890	1,380	2,800
December	7,180	2,120	3,960
January	7,360	4,400	5,530
February	5,250	3,830	4,500
March	4,480	4,110	4,330
April	10,500	3,970	6,570
May	11,000	3,830	7,560
June	19,900	3,410	9,870
July	21,400	6,840	16,700
August	6,140	1,100	2,240
September	2,230	502	1,150
The year	21,400	450	5,620

BIG LAKE OUTLET NEAR MANILA, ARK.

LOCATION.—In SE. ¼ sec. 9, T. 14 N., R. 9 E., at highway bridge at Big Lake, a station on the St. Louis-San Francisco Railway, and 3½ miles southeast of Manila, Mississippi County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—September 22, 1927, to September 30, 1928.

EQUIPMENT.—Chain gage on bridge. Discharge measurements made from bridge at gage except at low stages, when they are made from bridges 6 miles downstream.

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

EXTREMES OF DISCHARGE.—Maximum stage recorded, 19.7 feet July 5, 1928 (discharge, 15,700 second-feet); minimum stage, 4.45 feet September 30, 1928 (discharge, 593 second-feet). Flood of April, 1927, reached stage of 20.3 feet.

ACCURACY.—Stage-discharge relation permanent. Rating curves well defined above 1,000 second-feet; fairly well defined below. Gage read to hundredths once daily. Records good.

COOPERATION.—Gage-height record furnished by Mississippi County Drainage District No. 17, O. M. Fairley, Osceola, Ark., Engineer.

DAILY DISCHARGE, IN SECOND-FEET, OF BIG LAKE OUTLET NEAR MANILA, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1927 AND 1928

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1927												
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	763
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	763
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	720
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	720
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	677
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	677
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	763
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	806
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	938
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1927–28												
1	1,160	1,210	2,350	3,890	.....	3,140	2,150	7,490	1,870	14,800	2,060	1,390
2	1,390	1,250	2,150	3,890	.....	3,140	2,060	7,230	1,870	15,200	1,870	1,490
3	1,820	1,250	2,060	3,820	.....	3,040	1,960	7,100	1,770	15,500	1,770	1,540
4	2,150	1,210	2,110	3,820	.....	2,980	1,910	6,860	1,910	15,700	1,720	1,580
5	2,390	1,160	2,060	3,760	.....	2,940	1,870	6,740	2,010	15,700	1,680	1,540
6	2,490	1,120	1,960	3,520	.....	2,840	2,200	6,500	2,490	15,500	1,630	1,440
7	2,540	1,120	1,870	3,300	.....	2,690	2,350	6,170	3,240	15,400	1,580	1,350
8	2,440	1,160	1,770	3,240	.....	2,590	2,840	5,850	3,760	14,800	1,580	1,250
9	2,440	1,210	1,720	3,140	.....	2,540	3,580	5,450	4,380	14,200	1,490	1,210
10	2,540	1,250	1,630	3,040	.....	2,540	4,100	5,060	4,880	13,600	1,390	1,120
11	2,590	1,350	1,630	2,940	.....	2,590	4,460	4,620	5,450	12,900	1,350	1,070
12	2,740	1,440	1,580	2,840	.....	2,640	4,700	4,310	6,060	12,000	1,300	1,030
13	2,740	1,540	1,770	2,690	.....	2,690	4,700	4,030	6,740	11,100	1,250	982
14	2,640	1,680	2,150	2,590	.....	2,690	4,700	3,700	7,230	10,400	1,210	938
15	2,640	1,770	2,440	2,540	.....	2,690	4,620	3,400	7,890	9,480	1,120	938
16	2,640	1,960	2,690	2,490	.....	2,690	4,540	3,190	8,730	8,880	1,070	894
17	2,540	2,150	2,940	2,490	.....	2,640	4,540	2,980	9,180	8,030	1,030	894
18	2,440	2,390	3,140	2,640	.....	2,690	4,540	2,780	9,480	7,460	1,030	763
19	2,250	2,840	3,240	2,740	.....	2,880	4,540	2,590	9,780	6,890	1,070	720
20	2,150	3,140	3,350	3,040	.....	3,040	4,540	2,490	9,780	6,330	1,070	720
21	2,010	3,240	3,350	3,240	.....	3,190	4,790	2,350	9,940	5,760	1,070	720
22	1,910	3,350	3,640	3,580	.....	3,190	4,880	2,300	10,100	5,190	1,070	677
23	1,770	3,350	3,890	3,820	.....	3,140	5,550	2,300	10,400	4,620	1,120	720
24	1,680	3,350	4,030	3,890	.....	3,090	6,390	2,350	11,100	4,240	1,300	677
25	1,580	3,190	3,960	3,890	.....	3,040	7,230	2,350	11,800	3,820	1,350	677
26	1,490	3,040	3,890	3,820	.....	2,940	7,750	2,350	12,600	3,640	1,390	635
27	1,440	2,980	3,890	3,580	.....	2,840	8,030	2,250	12,900	3,300	1,440	635
28	1,390	2,840	3,820	3,240	.....	2,640	8,030	2,250	13,400	3,090	1,390	635
29	1,350	2,740	3,760	3,240	.....	2,490	7,750	2,150	13,800	2,740	1,350	635
30	1,300	2,540	3,760	3,190	.....	2,440	7,750	2,060	14,000	2,540	1,300	593
31	1,210	.....	3,820	3,140	.....	2,300	.....	1,960	.....	2,250	1,350	.....

NOTE.—No gage-height record February 1 to March 1 and July 18-22; discharge estimated March 1 and interpolated July 18-22.

MONTHLY DISCHARGE OF BIG LAKE OUTLET NEAR MANILA, ARK., FOR THE YEAR ENDING SEPTEMBER 30, 1928

Month.	Discharge in second-feet.		
	Maximum.	Minimum.	Mean.
October	2,740	1,160	2,060
November	3,350	1,120	2,090
December	4,030	1,580	2,790
January	3,890	2,490	3,260
March	3,190	2,300	2,810
April	8,030	1,870	4,640
May	7,490	1,960	3,970
June	14,000	1,770	7,620
July	15,700	2,250	9,200
August	2,060	1,030	1,370
September	1,580	593	982

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, 1928.

EQUIPMENT.—Chain gage on upstream side of bridge. During 1909-1910 a chain gage on upstream side of bridge with datum 1.50 feet lower than present datum. Discharge measurements made from 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.—1923-1928: Maximum stage recorded, 37.0 feet April 16, 1927 (discharge, 65,000 second-feet); minimum stage, 2.15 feet August 25 and September 1, 1923; 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 1923-1928.

ACCURACY.—1923-1928: Stage-discharge relation practically permanent; not affected by ice. Rating curves either well or fairly well defined. Gage read to hundredths twice daily. Records good.

1909-1910: Rating curve fairly well defined above 300 second-feet. Records fair for medium and high stages and poor for low stages.

COOPERATION.—Data collected by United States Geological Survey cooperating with the Missouri Bureau of Geology and Mines and the Ozark Power & Water Company.

NOTE.—For miscellaneous gaging station and discharge data for the White River basin, see pages 105-106.

DAILY DISCHARGE, IN SECOND-FEET, OF WHITE RIVER AT BEAVER, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1909-1910, AND 1923-1928

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1909				1909			
1	.....	110	52	16	.....	62	48
2	.....	91	52	17	350	62	45
3	.....	91	52	18	275	62	45
4	.....	91	52	19	225	62	45
5	.....	91	52	20	210	62	45
6	.....	91	57	21	180	57	45
7	.....	76	57	22	180	52	48
8	.....	76	57	23	155	52	45
9	.....	76	52	24	155	52	45
10	.....	76	52	25	132	52	45
11	.....	76	52	26	132	52	45
12	.....	76	52	27	132	52	45
13	.....	69	52	28	132	52	45
14	.....	69	52	29	110	57	45
15	.....	62	52	30	110	57	45
				31	110	52	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10												
1	42	57	132	155	210	3,510	1,520	462	1,440	900	225	132
2	42	57	132	132	225	2,040	970	418	1,280	710	210	155
3	42	57	132	155	180	1,600	802	372	970	590	210	155
4	42	57	132	155	180	1,280	620	330	835	1,120	195	168
5	42	100	1,680	155	210	970	740	310	740	835	180	155
6	42	350	4,630	155	155	835	1,280	292	620	710	180	258
7	42	168	2,570	330	155	770	1,950	292	590	510	535	310
8	42	292	1,440	395	180	620	1,600	292	770	510	1,770	225
9	57	275	970	350	155	590	1,280	292	740	590	1,680	258
10	57	210	770	240	155	620	1,860	310	1,120	650	970	258
11	52	155	650	225	180	535	1,600	310	1,040	970	970	210
12	48	132	535	210	132	485	1,860	275	1,440	8,920	740	210
13	48	121	485	310	155	462	5,230	258	1,280	10,500	770	180
14	57	121	485	372	132	440	2,790	225	970	5,980	562	155
15	48	110	462	330	132	418	2,790	225	802	2,790	485	144
16	48	168	440	330	155	372	2,900	1,770	680	1,950	418	132
17	48	240	395	330	155	350	3,010	21,500	562	1,440	462	121
18	48	292	372	330	180	310	2,570	9,880	462	1,120	395	110
19	52	485	330	372	195	310	1,950	4,630	418	970	372	110
20	57	395	310	330	168	275	1,680	3,010	418	802	292	110
21	62	330	310	330	292	275	1,440	2,350	485	680	275	110
22	84	258	275	330	395	258	1,280	2,040	440	562	275	110
23	84	240	275	330	485	240	970	3,010	395	510	275	100
24	76	210	240	330	590	240	835	3,770	462	462	258	91
25	69	180	210	275	710	210	835	3,640	418	395	225	91
26	62	168	225	310	802	210	710	3,120	680	350	210	91
27	57	155	225	258	1,600	210	620	2,240	680	330	180	91
28	57	132	210	275	3,120	210	562	1,770	1,360	292	168	310
29	57	132	210	210	.....	195	535	1,440	1,950	258	155	275
30	57	132	292	240	.....	258	462	1,120	1,120	275	155	195
31	62	.....	180	210	.....	835	.....	970	.....	258	144	.....

DAILY DISCHARGE, IN SECOND-FEET, OF WHITE RIVER AT BEAVER, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1909-1910, AND 1923-1928—*Continued*

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1910				1910			
1	155	110	91	16	258	91	91
2	132	110	91	17	225	91	91
3	144	110	91	18	195	91	91
4	155	110	110	19	180	91	91
5	258	110	100	20	180	91	91
6	350	110	91	21	180	91	91
7	292	110	91	22	155	91	76
8	258	110	91	23	155	91	76
9	210	110	91	24	155	91	76
10	180	110	91	25	155	91	76
11	155	110	91	26	144	91	76
12	155	91	91	27	132	110	76
13	225	91	91	28	132	110	91
14	350	91	91	29	132	110	91
15	395	91	91	30	132	91	91
				31	132	.....	91

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1923						1923					
1	.....	3,640	650	116	46	16	1,500	1,210	530	53	224
2	.....	2,240	502	110	56	17	13,700	1,210	251	50	195
3	.....	1,740	420	147	52	18	6,730	1,210	270	50	246
4	.....	1,470	365	134	50	19	4,480	1,380	305	49	238
5	.....	1,210	310	108	48	20	3,640	980	215	48	338
6	.....	1,130	280	98	47	21	3,010	805	199	47	840
7	.....	3,120	242	83	59	22	2,350	650	158	45	420
8	.....	2,900	228	79	65	23	4,030	560	134	49	420
9	.....	2,040	211	75	88	24	5,080	530	128	52	338
10	.....	1,470	187	71	275	25	12,600	475	125	56	275
11	.....	1,210	172	67	175	26	9,720	448	113	59	238
12	.....	1,050	161	64	134	27	8,920	448	108	62	203
13	.....	980	150	62	168	28	5,680	740	108	58	175
14	.....	980	140	59	233	29	3,900	740	98	50	158
15	.....	1,740	980	56	134	30	3,010	770	448	50	144
						31	2,790	.....	161	48	.....

DAILY DISCHARGE, IN SECOND-FEET, OF WHITE RIVER AT BEAVER, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1909-1910, AND 1923-1928—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1923–24												
1.....	128	335	3,250	1,100	1,020	570	1,640	21,500	2,680	315	2,350	126
2.....	123	540	2,900	970	930	540	1,440	9,240	2,040	295	5,530	163
3.....	110	2,900	2,140	810	850	510	1,240	5,530	1,640	278	2,240	158
4.....	139	4,630	1,940	700	772	570	1,100	3,900	1,540	260	1,240	225
5.....	155	4,330	1,740	665	735	632	1,020	3,010	1,340	242	850	225
6.....	136	2,140	1,540	600	700	665	970	2,460	970	225	665	210
7.....	128	1,440	1,240	510	665	540	890	2,040	850	225	570	178
8.....	139	1,100	1,100	455	600	510	772	1,840	810	210	2,460	155
9.....	147	850	1,060	430	540	480	735	1,440	735	195	1,060	136
10.....	134	665	2,040	430	510	455	665	1,240	632	192	700	128
11.....	117	570	2,680	405	600	430	1,240	1,100	970	183	540	123
12.....	108	510	2,460	405	850	405	1,020	970	3,510	335	430	112
13.....	108	480	5,380	405	2,040	430	890	850	3,900	632	405	108
14.....	166	700	11,200	380	1,840	405	772	772	2,140	510	358	99
15.....	295	1,740	6,730	380	1,540	480	700	665	1,540	380	315	97
16.....	278	1,540	3,900	358	1,340	570	632	600	1,150	315	380	94
17.....	260	1,100	2,900	335	1,340	810	600	570	1,540	278	295	90
18.....	295	810	2,350	405	1,640	890	540	540	2,240	1,060	260	90
19.....	358	665	1,940	540	1,740	970	570	480	1,240	2,240	242	405
20.....	295	570	1,940	540	1,640	1,060	510	480	850	1,940	242	665
21.....	242	510	2,570	600	1,440	1,020	480	540	1,540	970	225	632
22.....	210	455	3,770	510	1,240	1,640	430	480	2,040	665	210	772
23.....	180	430	8,120	455	1,100	2,570	405	455	1,540	510	186	600
24.....	161	405	7,330	540	1,020	3,770	405	430	1,100	405	172	430
25.....	155	570	4,480	700	930	3,640	405	540	810	358	161	335
26.....	144	510	3,250	2,240	850	2,900	1,940	510	700	315	150	295
27.....	139	540	2,570	1,940	772	2,460	13,400	540	540	278	142	260
28.....	144	735	2,140	1,540	700	2,040	6,130	480	480	260	131	260
29.....	152	772	1,840	1,340	632	2,140	4,480	3,120	405	242	126	242
30.....	315	1,740	1,540	1,240	.....	2,140	12,600	11,500	358	225	120	225
31.....	358	.....	1,340	1,150	.....	1,940	.....	4,930	.....	810	115	.....

DAILY DISCHARGE, IN SECOND-FEET, OF WHITE RIVER AT BEAVER, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1909-1910, AND 1923-1928—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1924–25												
1.....	251	98	154	700	602	1,150	278	3,640	237	92	103	52
2.....	229	95	148	635	602	1,030	274	2,680	224	86	92	48
3.....	214	92	148	635	668	910	274	2,130	210	80	92	40
4.....	193	92	160	602	668	835	269	1,730	194	74	86	43
5.....	455	90	229	570	668	765	269	1,430	178	106	117	45
6.....	455	90	244	510	602	700	259	1,150	166	151	114	43
7.....	336	92	336	510	602	668	371	990	155	124	110	38
8.....	336	87	430	480	602	635	423	872	147	269	174	36
9.....	382	85	1,240	450	800	570	510	800	136	244	151	35
10.....	314	85	835	450	835	540	2,680	800	128	190	1,730	33
11.....	274	82	635	423	990	510	3,900	1,150	124	162	950	38
12.....	244	82	510	396	950	480	2,460	1,330	174	166	510	38
13.....	214	87	430	396	872	488	1,830	1,070	371	168	396	38
14.....	200	92	405	371	800	450	1,430	2,240	255	282	312	92
15.....	186	222	358	371	765	423	1,240	3,250	241	269	259	174
16.....	173	259	336	570	732	423	1,070	2,240	215	206	119	283
17.....	160	732	314	668	668	423	910	1,330	182	170	198	297
18.....	157	570	1,830	1,330	635	423	800	1,070	151	151	174	250
19.....	151	430	9,560	1,530	602	423	732	872	206	139	151	250
20.....	145	336	22,500	1,240	570	396	668	765	396	132	136	241
21.....	136	314	7,480	1,150	540	396	602	688	510	510	190	210
22.....	125	266	3,900	990	602	371	570	570	396	190	155	174
23.....	119	236	2,680	910	700	346	510	510	288	151	147	158
24.....	114	218	2,130	800	3,640	346	450	423	224	143	143	162
25.....	108	200	1,630	765	2,680	336	3,510	423	190	136	132	170
26.....	105	186	1,330	700	2,030	336	1,930	371	158	158	121	224
27.....	105	180	1,070	700	1,630	326	4,480	346	139	158	106	217
28.....	105	173	950	635	1,430	307	8,440	326	128	151	86	635
29.....	105	166	835	635	.....	297	3,200	302	114	131	74	635
30.....	103	160	732	540	.....	288	5,680	283	99	122	62	570
31.....	100	.....	700	570	.....	283	.....	255	.....	110	57	.....
1925–26												
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	214
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	1,900
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	266	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	.....

DAILY DISCHARGE, IN SECOND-FEET, OF WHITE RIVER AT BEAVER, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1909-1910, AND 1923-1928—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July	Aug.	Sept.
1926-27												
1	18,200	7,080	.1,040	1,360	2,870	770	4,360	2,250	8,520	635	14,600	668
2	5,480	4,360	. 920	1,270	3,560	735	5,340	2,050	4,920	575	3,680	575
3	2,980	3,090	. 840	1,140	4,500	770	4,080	1,850	15,100	548	3,940	520
4	5,760	2,450	. 770	1,000	3,440	805	3,200	1,650	21,200	495	2,650	470
5	14,400	2,050	. 735	920	2,870	840	2,650	2,250	10,800	470	2,050	445
6	12,200	1,650	. 668	840	2,550	1,180	2,250	2,250	7,240	445	3,680	398
7	4,640	1,450	.1,650	770	2,250	1,750	2,250	1,950	15,800	420	2,980	375
8	2,980	1,360	.2,150	700	2,050	2,150	5,060	2,050	4,780	398	1,950	352
9	2,250	1,360	.3,680	635	1,850	2,250	10,600	3,090	3,200	375	1,450	330
10	2,650	1,360	.4,920	575	1,750	2,050	7,080	9,000	2,550	375	2,150	310
11	11,100	1,270	.4,920	525	1,550	1,850	5,480	12,400	2,050	352	4,780	290
12	8,520	1,140	.3,680	520	1,550	2,150	9,480	5,340	1,650	330	6,760	270
13	4,500	1,000	.2,980	885	1,550	4,080	13,700	3,680	1,450	352	3,090	270
14	3,090	1,270	.2,450	1,270	1,550	3,090	29,600	2,870	1,180	420	2,050	250
15	2,350	3,940	.2,050	2,255	1,550	2,450	55,600	2,450	1,040	420	1,550	246
16	1,950	9,640	.1,550	1,750	1,450	2,150	57,800	2,050	960	548	1,180	239
17	1,550	5,060	.1,360	1,455	1,360	2,350	23,200	1,750	920	735	2,050	227
18	1,360	3,680	.1,180	1,450	1,270	5,200	12,000	1,550	1,040	735	11,500	216
19	1,090	3,320	.1,040	1,455	1,180	8,840	26,800	1,750	1,360	605	6,320	209
20	,920	2,760	.1,090	2,150	1,140	8,680	34,400	2,450	2,050	520	2,980	203
21	,840	2,550	.2,650	2,985	1,040	9,320	16,900	3,800	3,800	470	2,050	194
22	,700	2,450	.8,520	3,560	1,000	6,460	11,900	2,450	4,220	770	1,550	188
23	,635	2,250	.7,080	9,965	960	4,500	8,360	2,150	2,980	495	1,360	182
24	,575	2,050	.4,500	24,600	920	3,440	6,320	3,320	2,050	420	1,360	188
25	,605	1,850	.3,440	28,805	880	2,870	5,200	3,940	1,650	398	1,180	188
26	,575	1,750	.2,760	18,200	805	2,450	4,360	4,360	1,270	375	1,000	185
27	,548	1,550	.2,350	9,165	770	2,150	3,680	3,090	1,040	352	770	212
28	,495	1,360	.2,050	5,180	735	1,850	3,090	2,350	880	330	700	227
29	2,250	1,270	.1,950	4,785	.....	2,250	2,760	1,850	770	330	700	310
30	8,680	1,090	.1,850	3,940	.....	4,080	2,550	1,550	700	445	668	1,450
31	16,500	.....	.1,550	3,325	.....	4,640	.....	1,360	.....	7,080	805	.....
1927-28												
1	16,900	324	768	1,830	960	960	695	3,320	4,360	2,980	805	420
2	34,500	880	730	1,500	880	920	660	2,870	2,150	2,250	805	395
3	24,700	1,720	695	1,300	805	842	628	2,550	2,050	1,950	595	347
4	38,100	1,940	628	1,160	768	880	628	2,350	2,050	1,550	920	324
5	9,640	1,610	565	1,080	805	880	9,160	2,450	2,250	1,360	2,640	324
6	4,980	1,210	535	1,040	960	1,040	16,000	2,870	2,450	1,180	1,400	302
7	3,600	1,400	535	1,000	1,400	1,000	29,700	2,350	1,850	1,000	842	281
8	3,360	3,000	505	960	4,280	1,610	9,960	2,050	1,550	920	660	273
9	3,240	5,820	960	920	3,600	4,840	5,960	1,950	1,950	840	565	239
10	2,400	3,600	960	880	2,640	6,440	4,420	1,750	1,650	770	505	232
11	1,940	2,640	842	842	2,160	4,280	3,480	1,650	1,750	770	448	232
12	1,610	2,160	805	805	1,830	3,360	2,880	1,450	2,550	1,840	395	225
13	1,610	1,940	2,280	805	1,610	2,760	2,520	1,360	5,060	1,180	395	218
14	1,500	1,610	16,200	768	1,830	2,400	2,160	1,270	28,300	840	370	208
15	1,210	2,280	46,100	730	2,160	2,280	2,400	1,180	25,700	770	347	196
16	1,080	2,520	11,300	695	2,400	3,600	2,050	1,450	8,040	700	324	187
17	960	3,480	6,120	880	2,050	4,700	1,720	3,800	6,760	605	324	184
18	880	2,640	4,560	1,610	1,940	3,600	1,500	4,500	13,300	575	347	175
19	768	2,280	3,480	4,840	1,830	2,880	1,300	5,480	8,040	548	347	170
20	695	2,160	2,760	12,000	1,610	2,400	1,300	7,080	5,060	520	370	161
21	660	2,280	2,280	7,240	1,610	2,050	19,600	6,460	4,920	520	370	156
22	595	2,050	2,050	4,560	1,610	1,830	36,800	7,080	18,000	495	370	158
23	535	1,720	1,830	3,480	1,500	1,610	32,000	5,620	13,700	470	505	153
24	505	1,500	1,610	2,880	1,500	1,400	13,500	4,080	16,200	495	842	132
25	475	1,300	1,400	2,400	1,500	1,300	8,040	2,980	12,000	548	5,400	132
26	420	1,160	1,300	2,050	1,300	1,160	6,040	2,350	7,080	495	3,000	130
27	395	1,080	1,210	1,720	1,210	1,040	5,620	1,950	4,920	520	1,400	125
28	370	960	1,610	1,500	1,080	960	5,760	1,650	3,800	700	960	125
29	347	880	1,610	1,300	1,040	880	4,640	1,450	3,200	520	730	125
30	324	880	2,280	1,120	.....	805	3,800	1,270	4,080	445	595	121
31	324	.....	2,280	1,040	.....	730	.....	1,450	.....	470	505	.....

MONTHLY DISCHARGE OF WHITE RIVER AT BEAVER, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1909-1910, AND 1923-1928

(Drainage area, 1,270 square miles.)

Month.	Discharge in second-feet.				Run-off in inches.
	Maximum.	Minimum.	Mean	Per square mile.	
1909					
July 17-31	350	110	173	0 136	0.08
August	110	52	68.3	.054	.06
September	57	45	49.2	.039	.04
1909-10					
October	84	42	54.3	.043	.05
November	485	57	193	.152	.17
December	4,630	132	636	.501	.58
January	395	132	273	.215	.25
February	3,120	132	407	.320	.33
March	3,510	195	643	.506	.58
April	5,230	462	1,580	1.24	1.38
May	21,500	225	2 290	1.80	2.08
June	1,950	395	839	.661	.74
July	10,500	258	1,510	1.19	1.37
August	1,770	144	450	.354	.41
September	310	91	167	.131	.15
The year	21,500	42	757	.596	8.09
1910					
October	395	132	195	.154	.18
November	110	91	99.9	.079	.09
December	110	76	89.0	.070	.08
1923					
May 16-31	21,500	2,350	6,950	5.47	3.25
June	3,640	448	1,300	1.02	1.14
July	980	98	269	.212	.24
August	147	45	69.5	.055	.06
September	840	46	203	.160	.18
1923-24					
October	358	108	188	0.148	0.17
November	4,630	335	1,140	.898	1.00
December	11,200	1,060	3,210	2.53	2.92
January	2,240	335	744	.586	.68
February	2,040	510	1,050	.827	.89
March	3,770	405	1,230	.969	1.12
April	13,400	405	1,950	1.54	1.72
May	21,500	430	2,670	2.10	2.42
June	3,900	358	1,390	1.09	1.22
July	2,240	183	495	.390	.45
August	5,530	115	738	.581	.67
September	772	90	255	.201	.22
The year	21,500	90	1,260	.992	13.48
1924-25					
October	455	100	203	0.160	0.18
November	732	82	197	.155	.17
December	22,500	148	2,070	1.63	1.88
January	1,530	371	685	.539	.62
February	3,640	540	982	.772	.80
March	1,150	283	512	.403	.46
April	13,200	259	2,000	1.57	1.75
May	3,640	255	1,170	.921	1.06
June	510	99	211	.166	.19
July	510	74	168	.132	.15
August	1,730	57	237	.187	.22
September	635	33	176	.139	.16
The year	22,500	33	716	.564	7.64

MONTHLY DISCHARGE OF WHITE RIVER AT BEAVER, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1909-1910, AND 1923-1928—*Continued*

Month.	Discharge in second-feet.				Run-off in inches.
	Maximum.	Minimum.	Mean.	Per square mile.	
1925-26					
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	.580	.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
1926-27					
October	18,200	495	4,530	3.57	4.12
November	9,640	1,000	2,580	2.03	2.26
December	8,520	668	2,530	1.99	2.29
January	28,800	520	4,460	3.51	4.05
February	4,500	735	1,750	1.38	1.44
March	9,320	735	3,170	2.50	2.88
April	57,800	2,250	12,700	10.00	11.16
May	12,400	1,360	3,060	2.41	2.78
June	21,200	700	4,240	3.34	3.73
July	7,080	330	684	.539	.62
August	14,600	668	3,020	2.38	2.74
September	1,450	182	340	.268	.30
The year	57,800	182	3,590	2.83	38.37
1927-28					
October	38,100	324	5,120	4.03	4.65
November	5,820	324	1,970	1.55	1.73
December	46,100	505	3,900	3.07	3.54
January	12,000	695	2,090	1.65	1.90
February	4,280	768	1,690	1.33	1.43
March	6,440	730	2,110	1.66	1.91
April	36,800	628	7,830	6.17	6.88
May	7,080	1,180	2,910	2.29	2.64
June	28,300	1,550	7,160	5.64	6.29
July	2,980	445	898	.707	.82
August	5,400	324	906	.713	.82
September	420	121	215	.169	.19
The year	46,100	121	3,060	2.41	32.80

WHITE RIVER NEAR BRANSON, MO.

LOCATION.—At the Missouri Pacific Railway bridge, 600 feet above Turkey Creek and 1 mile south of Branson, Taney County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—July 19, 1909, to December 31, 1910; gage-height record and discharge measurements only.

EQUIPMENT.—Chain gage attached to downstream guard rail of bridge. Discharge measurements made from bridge or by wading.

CHANNEL AND CONTROL.—Conditions not known.

EXTREMES OF STAGE.—Maximum mean daily stage recorded, 15.2 feet May 18, 1910; minimum stage, 2.0 feet December 24-27, 1910.

Data insufficient for determination of discharge.

DISCHARGE MEASUREMENTS OF WHITE RIVER NEAR BRANSON, MO., DURING 1909 AND 1910

Date.	Made by	Gage height, feet.	Discharge, second-feet.
1909			
November 22	W. N. Gladson	3 3	1,280
December 18	W. N. Gladson	3.4	1,110
1910			
May 17	W. N. Gladson	10.88	17,500

DAILY GAGE HEIGHT, IN FEET, OF WHITE RIVER NEAR BRANSON, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1909-1910

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909												
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.10	2.55
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	2.50
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	2.50
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.00	2.48
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.95	2.40
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.95	2.40
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.95	2.40
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.98	2.60
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.15	2.55
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.02	2.55
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.95	2.55
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.90	2.52
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.82	2.45
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.75	2.50
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.75	2.45
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.70	2.45
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.65	2.45
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.60	2.45
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.00	2.60	2.40
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.88	2.55	2.40
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	3 75	2.60	2.40
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.65	2.60	2.35
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.60	2.60	2.35
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.48	2.55	2.38
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.40	2.60	2.40
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.35	2.50	2.40
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.30	2.50	2.40
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.25	2.50	2.30
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.25	2.50	2.30
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	3 20	2.48	2.30
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	3 20	2.45	.....
1909–10												
1	2.30	2.50	2.85	2.95	3.0	7.35	2.6	2.95	4.05	4.2	3.3	2.25
2	2.30	2.50	2.85	2.95	3.0	7.15	4.2	3.0	4.0	4.0	3.2	2.5
3	2.30	2.50	2.80	2.95	3.0	6.6	3.9	2.95	4.1	4.0	3.0	3.15
4	2.30	2.50	2.92	2.9	2.9	5.7	3.85	2.55	4.35	4.25	3.0	3.05
5	2.30	2.45	3.95	3.0	2.8	5.55	3.8	2.35	5.9	4.45	3.0	2.9
6	2.30	3.05	6.62	3.0	2.9	4.55	4.15	2.5	6.05	4.15	2.85	3.6
7	2.30	3.75	7.05	3.0	2.9	4.05	4.05	2.7	5.45	4.45	2.85	3.6
8	2.30	3.60	6.48	3.0	2.85	3.8	4.6	3.0	7.2	4.35	3.45	3.5
9	2.40	3.30	4.95	3.2	2.85	3.3	4.45	3.9	8.9	3.85	5.1	3.3
10	2.42	3.50	4.45	3.2	2.7	3.35	4.85	3.85	10.25	3.55	6.5	3.2
11	2.50	3.40	4.20	3.15	2.8	4.1	4.8	3.3	9.45	4.4	5.6	3.2
12	2.50	3.28	4.00	3.1	2.8	3.6	4.0	2.9	7.9	9.1	4.55	2.95
13	2.50	3.10	3.82	3.15	2.75	3.4	4.05	2.65	6.35	11.8	4.15	2.6
14	2.50	3.10	3.70	3.25	2.7	3.3	6.35	2.95	6.0	9.95	3.9	2.7
15	2.50	3.10	3.60	3.4	2.6	3.35	5.45	2.9	5.3	8.0	3.85	2.55
16	2.50	3.65	3.55	3.5	2.7	3.15	5.1	3.05	4.7	5.95	3.8	2.5
17	2.50	3.72	3.50	4.0	2.7	2.9	5.5	11.55	4.15	5.3	3.7	2.4
18	2.50	3.80	3.40	3.8	2.7	2.85	5.0	15.2	4.15	5.0	3.05	2.5
19	2.45	3.70	3.32	3.65	2.7	2.9	5.2	9.9	3.6	4.25	3.35	2.5
20	2.50	3.65	3.22	3.6	3.05	2.8	4.7	7.55	3.35	4.0	3.6	2.45
21	2.50	3.60	3.15	3.6	3.9	2.8	4.35	6.4	3.5	3.85	3.45	2.4
22	2.50	3.40	3.18	3.5	5.05	2.5	3.85	6.0	3.4	3.75	3.3	2.5
23	2.50	3.30	3.30	3.4	5.8	2.3	3.55	5.4	3.45	3.7	3.15	2.5
24	2.50	3.25	3.20	3.35	5.9	2.3	3.2	5.35	3.35	3.7	3.0	2.5
25	2.50	3.10	3.18	3.35	4.8	2.35	3.35	6.25	3.1	3.95	2.9	2.45
26	2.50	3.00	3.05	3.2	3.75	2.35	3.05	6.7	3.4	3.5	2.9	2.4
27	2.50	3.00	3.00	3.2	5.25	2.4	3.1	6.55	3.5	3.3	2.85	2.65
28	2.50	3.00	3.00	3.2	6.25	2.3	2.95	5.7	3.8	3.0	2.7	3.0
29	2.50	2.92	3.00	3.2	....	2.3	3.0	5.0	4.75	2.9	2.6	2.85
30	2.50	2.80	2.90	3.15	....	2.4	2.95	4.65	5.05	2.95	2.6	2.6
31	2.50	.....	3.00	2.9	.....	2.3	.....	4.3	.....	3.35	2.35	.....

DAILY GAGE HEIGHT, IN FEET, OF WHITE RIVER NEAR BRANSON, MO., FOR THE YEARS ENDING SEPTEMBER, 1909-1910—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910												
1	2.55	2.4	2.2									
2	2.5	2.45	2.2									
3	2.6	2.4	2.2									
4	2.7	2.4	2.2									
5	3.1	2.35	2.2									
6	4.45	2.3	2.1									
7	4.9	2.2	2.2									
8	5.05	2.2	2.3									
9	4.6	2.15	2.3									
10	3.7	2.2	2.3									
11	3.4	2.2	2.3									
12	3.3	2.3	2.3									
13	3.6	2.3	2.3									
14	3.9	2.3	2.2									
15	3.5	2.4	2.2									
16	3.3	2.4	2.2									
17	3.1	2.4	2.1									
18	3.0	2.4	2.1									
19	3.0	2.3	2.1									
20	3.0	2.3	2.1									
21	3.15	2.3	2.2									
22	2.95	2.3	2.2									
23	2.65	2.2	2.1									
24	2.85	2.2	2.0									
25	2.8	2.25	2.0									
26	2.8	2.3	2.0									
27	2.85	2.3	2.0									
28	2.7	2.3	2.05									
29	2.55	2.3	2.15									
30	2.5	2.3	2.3									
31	2.5		2.3									

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 Company.

DRAINAGE AREA.—4,610 square miles (measured on map compiled by United States Geological Survey; Scale 1:500,000).

RECORDS AVAILABLE—January 3 to September 30, 1926.

GAGE.—Gurley water-stage recorder fastened to downstream side of first pier from left bank.

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.

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

ACCURACY.—Stage-discharge relation permanent; not affected by ice. Rating curve fairly well defined. Operation of water-stage recorder satisfactory for periods for which records are given. Records good.

COOPERATION.—Data collected by United States Geological Survey cooperating with the Missouri Bureau of Geology and Mines and the Ozark Power & Water Company.

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.—Loss of records due to faulty operation of water-stage recorder.

WHITE RIVER NEAR LEAD HILL, ARK.

LOCATION.—At Bradley's Ferry, 5 miles northeast of Lead Hill, Marion County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—October 1, 1909, to December 31, 1910; gage-height record and discharge measurements only.

EQUIPMENT.—Vertical staff gage in two sections on right bank. Discharge measurements made from ferry boat.

CHANNEL AND CONTROL.—Fishtrap shoals are about 400 feet below the gage.

EXTREMES OF STAGE.—Maximum mean daily stage recorded, 13.2 feet May 18, 1910; minimum stage, 1.1 feet October 1-8, 1909.

Data insufficient for determination of discharge.

DISCHARGE MEASUREMENTS OF WHITE RIVER NEAR LEAD HILL, ARK., DURING 1909 AND 1910

Date.	Made by	Gage height, feet.	Discharge, second-feet.
1909			
August 19	W. N. Gladson	1.1	468
November 22	W. N. Gladson	2.4	1,400
December 20	W. N. Gladson	2.4	1,350
1910			
May 17	W. N. Gladson	5.95	8,700

DAILY GAGE HEIGHT, IN FEET, OF WHITE RIVER NEAR LEAD HILL, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1909-1910

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10												
1.....	1.1	1.3	1.8	1.9	2.0	6.4	2.25	2.6	3.7	3.9	2.7	1.7
2.....	1.1	1.3	1.7	1.9	2.0	6.8	2.6	2.5	3.6	3.6	2.5	2.0
3.....	1.1	1.3	1.8	1.8	1.9	6.1	3.2	2.4	3.4	3.15	2.3	2.3
4.....	1.1	1.3	1.8	1.7	1.9	5.35	3.0	2.3	3.2	3.2	2.2	2.7
5.....	1.1	1.3	4.15	1.8	1.9	4.8	3.0	2.2	3.85	3.55	2.1	2.5
6.....	1.1	3.0	5.8	1.4	1.9	4.45	3.6	2.2	4.85	3.45	2.0	2.95
7.....	1.1	1.85	5.6	1.8	1.8	4.05	4.0	2.3	4.8	3.35	2.0	3.3
8.....	1.1	2.6	6.0	1.8	1.8	3.8	4.1	2.3	4.95	3.2	2.0	3.0
9.....	1.48	2.3	4 9	1 9	1.8	3 6	4.45	3.2	7.7	3.1	5.65	2.8
10.....	1.2	2.2	4.1	1.9	1.7	3.7	4.2	3.45	9.7	3.1	6.75	2.7
11.....	1.2	2.4	3.55	2.2	1.7	4.4	4.0	3.3	9.8	3.05	5.75	2.6
12.....	1.25	2.3	3.45	2.0	1.7	4 25	4.05	3.1	7.45	8.8	4.75	2.45
13.....	1.25	2.1	3.2	2.0	1.7	4.0	4.0	3.0	5.85	10.3	3.95	2.25
14.....	1.3	2.0	3.1	2.0	1.7	3.9	4.55	2.8	5.55	10.75	3.65	2.2
15.....	1.3	2.0	3.0	2.55	1.6	3.75	5.05	2.6	4.7	8.5	3.6	2.1
16.....	1.2	2.0	2.8	2.95	1.6	3.55	4.6	2.85	4.2	6.35	3.3	2.0
17.....	1.21	2.5	2.7	3.1	1.6	3.4	4.75	5.2	4.0	5.75	3.1	1.9
18.....	1.21	2.7	2.6	3.1	1.6	3.15	4.8	13.2	3.7	5.7	3.55	1.8
19.....	1.2	2.8	2.5	2.9	1.6	3.0	4.7	12.5	3.45	4.75	3.3	1.8
20.....	1.2	2.55	2.4	2.8	1.7	2.9	4.6	7.75	3.2	4.1	3.05	1.7
21.....	1.3	2.6	2.3	2.7	2.0	2 8	4.25	6.65	3.1	3.65	2 8	1.7
22.....	1.3	2.5	2.0	2.6	2.45	2.7	3.95	5.3	3.0	3.3	2.95	1.6
23.....	1.3	2.4	2.0	2.6	3.0	2.6	3.7	4.8	3.0	3.2	2.55	1.6
24.....	1.3	2.2	2.1	2 5	3.2	2.5	3.5	4.5	2.9	3.3	2.45	1.5
25.....	1.3	2.1	2.0	2.5	3.15	2.4	3.3	4.6	2.7	3.2	2.4	1.5
26.....	1.3	2.0	1.8	2.4	3.35	2.4	3.15	5.0	2.7	3.2	2.25	1.5
27.....	1.3	1.9	1.7	2 3	5.05	2.3	3.0	5.1	2.7	3.0	2.1	1.9
28.....	1.3	1.8	1.7	2.2	6.1	2.2	2.9	4.5	2.75	2.75	2.0	1.85
29.....	1.3	1.8	1.6	2.2	....	2 2	2.8	4.2	3.1	2.6	2.0	2.2
30.....	1.2	1.7	1.6	2.1	....	2.2	2.7	4.0	4.0	2.5	1.9	2.0
31.....	1.3	.....	2.0	..2.0	....	..2.15	....	3.75	....	2.65	1.8	.....
1910												
1.....	1.9	1.7	1.4	.....	.....	.....	.....	.....	.....	.....	.....	.....
2.....	2.0	1.7	1.4	.....	.....	.....	.....	.....	.....	.....	.....	.....
3.....	2.0	1.7	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
4.....	2.4	1.6	1.2	.....	.....	.....	.....	.....	.....	.....	.....	.....
5.....	2 6	1 6	1 3	.....	.....	.....	.....	.....	.....	.....	.....	.....
6.....	5.5	1.6	1.2	.....	.....	.....	.....	.....	.....	.....	.....	.....
7.....	4.2	1.6	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
8.....	4 3	1 6	1 3	.....	.....	.....	.....	.....	.....	.....	.....	.....
9.....	3.7	1.5	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
10.....	3.3	1.5	1 3	.....	.....	.....	.....	.....	.....	.....	.....	.....
11.....	3.05	1.5	1 3	.....	.....	.....	.....	.....	.....	.....	.....	.....
12.....	2.8	1.5	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
13.....	2.8	1.5	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
14.....	3.05	1.5	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
15.....	3.15	1.5	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
16.....	2.75	1.5	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
17.....	2.65	1.4	1 3	.....	.....	.....	.....	.....	.....	.....	.....	.....
18.....	2.5	1.4	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
19.....	2.3	1.4	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
20.....	2.2	1.4	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
21.....	2.2	1.4	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
22.....	2.4	1.4	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
23.....	2.3	1.4	1 3	.....	.....	.....	.....	.....	.....	.....	.....	.....
24.....	2.2	1.4	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
25.....	2.1	1.4	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
26.....	2.0	1.4	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
27.....	1.9	1.4	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
28.....	1.8	1.4	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
29.....	1.8	1.4	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
30.....	1.8	1.4	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....
31.....	1.8	.....	1.3	.....	.....	.....	.....	.....	.....	.....	.....	.....

WHITE RIVER NEAR COTTER, ARK.

LOCATION.—At the Missouri Pacific Railway bridge at Cotter, Baxter County, three-fourths mile below Falling Ash Creek.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—July 21, 1909, to December 31, 1910; gage-height record and discharge measurements only.

EQUIPMENT.—Chain gage on upstream guard rail of bridge. Discharge measurements made from bridge, from ferry boat 500 feet above gage, or by wading.

CHANNEL AND CONTROL.—Conditions not known.

EXTREMES OF STAGE.—Maximum mean daily stage recorded, 14.3 feet May 19, 1910; minimum stage, 1.0 feet September 30 to October 8, 1909.

Data insufficient for determination of discharge.

DISCHARGE MEASUREMENTS OF WHITE RIVER NEAR COTTER, ARK., IN 1909 AND 1910

Date.	Made by	Gage height, feet.	Discharge, second-feet.
1909			
August 31	W. N. Gladson	1.3	455
November 24	W. N. Gladson	2.9	1,740
December 22	W. N. Gladson	2.85	1,660
1910			
May 18	W. N. Gladson	11.65	28,600

DAILY GAGE HEIGHT, IN INCHES, OF WHITE RIVER NEAR COTTER, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1909-1910

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909												
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.65	1.4
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	2.6	1.4
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.45	1.4
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.4	1.3
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.. ..	2.3	1.4
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.3	1.4
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.15	1.4
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.. ..	2.45	1.4
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.35	1.3
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.. .	2.2	1.3
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.1	1.3
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.... .	2.3	1.3
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.. ..	2.25	1.3
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.1	2.45
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.0	1.4
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.0	1.3
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.9	1.2
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.. ...	1.8	1.2
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.8	1.2
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.75	1.2
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.9	1.65	1.3
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.7	1.6	1.3
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.5	1.5	1.25
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.4	1.5	1.2
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.2	1.4	1.2
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.1	1.4	1.2
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.1	1.4	1.2
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.0	1.3	1.1
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.85	1.3	1.1
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.75	1.3	1.0
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.7	1.3	....
1909–10												
1	1.0	1.5	2.2	2.15	2.4	7.55	2.5	3.25	4.85	5.15	3.5	2.65
2	1.0	1.45	2.2	2.3	2.3	7.5	2.55	3.15	4.55	5.05	3.6	2.45
3	1.0	1.4	2.15	2.35	2.3	7.6	3.05	3.05	4.4	4.5	3.45	2.8
4	1.0	1.3	2.1	2.35	2.3	6.85	3.9	2.9	4.4	4.25	3.2	3.4
5	1.0	1.3	3.35	2.35	2.3	6.2	3.75	2.85	4.6	4.25	3.0	3.7
6	1.0	1.95	6.1	2.35	2.2	5.7	3.75	2.85	4.95	4.65	2.9	4.05
7	1.0	3.35	6.9	2.3	2.2	5.25	4.5	2.85	5.65	4.6	2.9	4.5
8	1.0	2.45	6.8	2.25	2.2	4.95	4.85	2.75	6.1	4.35	2.9	4.4
9	1.35	3.05	6.6	2.25	2.1	4.7	5.3	3.15	9.2	4.1	3.05	4.15
10	1.65	2.95	5.55	2.35	2.1	4.5	5.25	3.9	10.95	6.25	6.55	4.0
11	1.45	2.7	5.0	2.45	2.1	5.05	5.05	4.15	10.8	5.0	7.35	3.75
12	1.2	2.9	4.7	2.75	2.1	5.5	4.9	3.9	10.1	5.3	6.5	3.55
13	1.2	2.65	4.35	2.75	2.0	5.2	4.9	3.7	8.05	13.15	5.55	3.35
14	1.2	2.55	4.2	2.6	2.0	5.0	4.9	3.5	7.15	12.35	5.05	3.2
15	1.2	2.45	3.95	2.55	2.0	4.7	5.95	3.3	6.55	10.95	4.75	3.05
16	1.25	2.4	3.75	2.95	2.0	4.5	6.6	3.4	6.0	8.65	4.45	2.85
17	1.3	2.55	3.5	3.65	1.9	4.3	5.95	4.45	5.5	7.05	4.4	2.8
18	1.3	3.0	3.35	3.85	1.9	4.1	5.9	9.05	5.1	6.75	4.35	2.65
19	1.2	3.25	3.3	3.8	1.8	3.9	5.75	14.3	4.75	6.05	4.35	2.6
20	1.2	3.35	3.15	3.65	2.0	3.75	5.65	11.15	4.55	5.8	4.15	2.55
21	1.3	3.2	3.0	3.5	2.05	3.7	5.45	8.1	4.35	5.3	4.0	2.4
22	1.3	3.1	3.0	3.3	2.4	3.45	4.95	7.05	4.15	4.75	3.9	2.35
23	1.3	3.05	2.9	3.2	3.1	3.3	4.55	6.4	4.0	4.6	3.85	2.3
24	1.3	2.9	2.8	3.1	3.85	3.2	4.45	6.0	3.85	4.6	3.65	2.2
25	1.2	2.75	2.65	3.0	3.95	3.05	4.3	5.75	3.65	4.6	3.45	2.2
26	1.2	2.55	2.5	2.9	4.1	2.95	4.1	6.35	3.6	4.45	3.25	2.2
27	1.25	2.45	2.5	2.9	5.95	2.9	3.9	6.3	3.6	4.35	3.05	2.6
28	1.3	2.3	2.5	2.8	7.4	2.8	3.7	6.1	3.6	4.0	3.0	2.75
29	1.3	2.3	2.35	2.7	.....	2.7	3.5	5.55	3.75	3.75	2.85	2.6
30	1.3	2.2	2.3	2.6	.....	2.55	3.3	5.3	4.3	3.55	2.75	3.1
31	1.4	.....	2.2	2.6	.....	2.5	.....	5.3	.....	3.5	2.7	.....

DAILY GAGE HEIGHT, IN INCHES, OF WHITE RIVER NEAR COTTER, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1909-1910—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910												
1	.....	2.5	2.0	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	2.65	2.5	2.0	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	2.65	2.5	2.0	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	5.1	2.4	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	3.95	2.4	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	6.05	2.3	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	6.65	2.3	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	5.7	2.2	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	5.6	2.2	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	5.05	2.2	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	4.5	2.2	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	4.1	2.2	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	4.0	2.2	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	3.85	2.2	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
15	4.3	2.2	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	4.3	2.1	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	3.9	2.1	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	3.65	2.1	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	3.55	2.1	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	3.35	2.0	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	3.2	2.0	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....
22	3.1	2.0	1.8	.....	.....	.....	.....	.....	.....	.....	.....	.....
23	3.35	2.0	1.8	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	3.4	2.0	1.8	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	3.15	2.0	1.8	.....	.....	.....	.....	.....	.....	.....	.....	.....
26	3.0	2.0	1.8	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	2.95	2.0	1.8	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	2.75	2.0	1.8	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	2.55	2.0	1.8	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	2.5	2.0	1.8	.....	.....	.....	.....	.....	.....	.....	.....	.....
31	2.5	.....	1.8	.....	.....	.....	.....	.....	.....	.....	.....	.....

WHITE RIVER NEAR NEWPORT, ARK.

LOCATION.—On line between secs. 16 and 17, T. 11 N., R. 3 W., at Missouri Pacific Railway bridge, 2½ miles southwest of Newport, Jackson County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—September 18, 1927, to September 30, 1928.

EQUIPMENT.—Chain gage on bridge. Discharge measurements made from bridge.

CHANNEL AND CONTROL.—Banks low and are overflowed. Control is clean gravel bar one-fourth mile downstream; may shift.

EXTREMES OF DISCHARGE.—Maximum stage recorded, 32.8 feet June 25, 1928 (discharge, 163,000 second-feet); minimum stage, 4.80 feet September 30, 1928 (discharge, 7,600 second-feet).

Flood of April, 1927, reached a stage of 36.1 feet; determined by levels to high water marks.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined. Gage read to half-tenths once daily. Records good.

COOPERATION.—Part of gage-height record furnished by Missouri Pacific Railroad Company.

NOTE.—For miscellaneous gaging station data for the White River near Newport see page 105.

DAILY DISCHARGE, IN SECOND FEET, OF WHITE RIVER NEAR NEWPORT, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1927 AND 1928

Day.	Sept.
1927	
1	.....
2	.....
3	.....
4	.....
5	.....
6	.....
7	.....
8	.....
9	.....
10	.....
11	.....
12	.....
13	.....
14	.....
15	.....
16	.....
17	.....
18	.....
19	10,400
20	10,200
21	9,800
22	9,420
23	9,420
24	9,420
25	9,040
26	9,040
27	8,680
28	9,420
29	9,990
30	9,800
31	10,200
	.....

DAILY DISCHARGE, IN SECOND FEET, OF WHITE RIVER NEAR NEWPORT, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1927 AND 1928—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1927–28												
1.....	26,900	9,990	18,500	49,800	26,200	21,200	22,400	79,600	28,200	91,000	14,200	20,100
2.....	40,400	9,800	17,200	47,500	25,300	21,500	21,200	75,600	25,300	88,600	13,800	18,800
3.....	57,100	9,990	15,300	44,800	23,000	20,700	19,800	72,300	24,600	87,800	13,000	17,000
4.....	71,100	10,200	15,500	40,800	21,000	19,800	18,000	69,000	34,200	84,800	12,800	14,900
5.....	82,600	9,800	16,000	36,400	20,100	19,600	19,300	66,200	52,800	81,000	12,800	13,000
6.....	90,200	9,800	15,800	32,500	19,000	19,300	47,500	63,800	59,000	77,300	12,800	11,800
7.....	91,800	9,800	15,500	27,500	19,000	19,000	73,500	60,600	61,000	73,500	12,600	11,200
8.....	86,400	11,600	14,600	25,300	19,300	18,800	91,800	57,500	61,000	69,800	12,800	11,200
9.....	77,300	12,600	14,000	24,300	19,300	19,600	108,000	54,400	59,000	66,600	14,900	10,600
10.....	70,200	31,100	14,000	24,000	20,700	20,100	115,000	51,300	59,000	63,000	15,800	9,990
11.....	64,600	39,300	14,400	21,800	21,500	22,400	104,000	47,900	68,200	59,800	15,100	10,200
12.....	57,100	37,800	14,000	20,100	21,800	25,900	91,000	44,100	73,900	56,300	14,900	9,990
13.....	49,400	35,700	14,900	19,000	21,800	29,500	82,600	39,600	76,800	55,100	13,800	9,610
14.....	41,500	31,500	41,500	18,200	21,800	31,100	76,800	34,200	90,200	54,000	13,000	9,420
15.....	36,700	28,200	76,800	17,200	21,500	30,100	72,700	29,800	158,000	51,300	12,600	9,800
16.....	32,200	38,200	97,200	16,500	21,200	29,200	68,200	26,200	161,000	47,900	12,600	12,000
17.....	27,800	41,500	103,000	16,200	22,100	30,100	63,800	23,000	144,000	45,600	12,600	12,800
18.....	24,300	49,400	104,000	29,200	22,700	32,500	60,200	24,300	135,000	41,500	11,800	11,000
19.....	21,200	53,600	102,000	38,200	23,000	37,500	56,700	23,000	135,000	36,400	11,400	9,610
20.....	18,800	52,800	90,200	37,800	23,000	39,300	54,400	22,700	121,000	31,100	11,400	8,860
21.....	16,200	48,200	82,600	45,600	22,700	40,000	54,400	27,200	112,000	27,200	11,400	8,680
22.....	14,200	43,000	76,000	48,600	22,400	39,300	76,800	31,800	108,000	24,000	12,400	8,320
23.....	14,900	34,600	71,100	50,100	21,800	37,800	99,400	47,100	125,000	21,500	11,600	8,320
24.....	13,000	32,800	66,200	51,300	21,500	35,700	137,000	57,900	155,000	20,100	12,200	8,140
25.....	13,000	29,500	62,200	49,000	21,800	32,800	155,000	61,800	163,000	19,000	13,600	8,140
26.....	12,400	26,500	59,000	45,200	22,700	31,100	147,000	61,800	147,000	17,200	22,400	7,960
27.....	11,400	24,300	54,400	41,500	23,700	29,200	121,000	59,000	127,000	16,700	24,600	7,960
28.....	11,400	22,400	50,500	37,800	24,000	27,200	100,000	52,800	109,000	16,200	25,600	7,600
29.....	11,000	21,000	52,800	34,200	23,000	26,200	88,600	44,500	98,300	15,500	27,800	7,600
30.....	10,600	19,800	51,300	31,500	.....	25,300	83,700	38,200	93,400	14,900	24,300	7.600
31.....	10,200	.....	50,900	28,800	.....	23,000	.....	32,500	.....	14,400	20,700	.....

MONTHLY DISCHARGE OF WHITE RIVER NEAR NEWPORT, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1927 AND 1928

Month	Discharge in second-feet.		
	Maximum.	Minimum.	Mean.
1927			
September 18-30	10,400	8,680	9 600
1927-28			
October	91,800	10,200	38,900
November	53,600	9,800	27,800
December	104,000	14,000	48,100
January	51,300	16,200	33,900
February	26,200	19,000	22,000
March	40,000	18,800	27,600
April	155,000	18,000	77,700
May	79,600	22,700	47,700
June	163,000	24,600	95,500
July	91,000	14,400	47,400
August	27,800	11,400	15,200
September	20,100	7,600	10,700
The year	163,000	7,600	41,000

WHITE RIVER AT DE VALL'S BLUFF, ARK.

LOCATION.—At highway toll bridge 1 mile northeast of De Vall's Bluff, Prairie County, and 8 miles below Wattensaw Bayou.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 14 to September 30, 1928; gage-height record and discharge measurements only.

EQUIPMENT.—United States Weather Bureau vertical staff gage in two sections. Discharge measurements made from bridge.

CHANNEL AND CONTROL.—Banks low and are overflowed. Bed composed of clean sand; shifting. No well-defined control.

EXTREMES OF STAGE.—Maximum stage recorded, 28.5 feet, June 28 and 29; minimum stage, 7.8 feet, September 30. Reached stage of 33.8 feet April 24, 1927.

COOPERATION.—Gage-height furnished by United States Weather Bureau.

Data insufficient for determination of discharge.

DISCHARGE MEASUREMENTS OF WHITE RIVER AT DE VALL'S BLUFF, ARK., DURING THE YEAR ENDING SEPTEMBER 30, 1928

Date.	Made by	Gage height, feet.	Discharge, second-feet.
April 14	H. C. Beckman	26.10	95,600
April 30	V. L. Austin	27.88	105,000
August 9	A. L. Hill	12.10	13,900

DAILY GAGE HEIGHT, IN FEET, OF WHITE RIVER AT DE VALL'S BLUFF, ARK., FOR THE YEAR ENDING SEPTEMBER 30, 1928

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1928												
1								27.9	21.2	28.0	15.5	17.8
2								27.8	21.2	27.6	14.9	17.6
3								27.5	21.0	27.2	14.3	17.1
4								27.1	21.0	26.7	13.8	16.5
5								26.7	20.8	26.1	13.2	15.9
6								26.2	20.8	25.6	12.8	14.9
7								25.8	20.9	25.1	12.5	13.9
8								25.2	21.0	24.6	12.2	12.8
9								24.7	21.2	24.2	12.1	12.0
10								24.2	21.3	23.9	12.2	11.4
11								23.8	21.5	23.5	12.5	11.0
12								23.3	21.5	23.2	12.8	10.5
13								23.0	21.7	23.0	12.9	10.1
14							23.1	22.7	21.8	22.8	12.9	9.7
15							26.4	22.3	22.2	22.5	12.7	9.7
16							26.3	22.1	22.9	22.3	12.3	9.6
17							26.2	21.8	24.2	22.1	11.9	9.5
18							25.8	21.5	25.8	22.0	11.5	9.9
19							25.4	21.2	26.9	21.9	11.4	10.5
20							25.1	20.8	27.5	21.7	11.1	10.5
21							24.9	20.4	28.0	21.6	11.0	10.1
22							24.8	20.1	28.2	21.5	11.2	9.6
23							24.5	19.9	28.3	21.2	11.5	9.1
24							24.6	19.9	28.3	20.9	11.7	8.8
25							25.0	20.1	28.0	20.5	11.7	8.5
26							25.6	20.3	28.1	20.1	11.6	8.3
27							26.5	20.5	28.3	19.4	12.1	8.2
28							27.3	20.6	28.5	18.7	13.9	8.1
29							27.7	20.9	28.5	17.9	15.1	7.9
30							27.9	21.0	28.3	17.0	16.0	7.8
31								21.1		16.3	16.9	

BUFFALO RIVER NEAR GILBERT, ARK.

LOCATION.—At the Missouri & North Arkansas Railway bridge near Gilbert, Searcy County. Bear Creek enters from the right one-fourth mile upstream.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—July 16, 1909, to December 31, 1910; gage-height record and discharge measurements only.

EQUIPMENT.—Chain gage on upstream guard rail of bridge. Discharge measurements made from bridge or by wading.

CHANNEL AND CONTROL.—Conditions not known.

EXTREMES OF STAGE.—Maximum stage recorded, 18.3 feet May 17, 1910; minimum stage, 2.2 feet August 27 to September 4, September 14, 17-20, and October 1-8, 1909.

Data insufficient for determination of discharge.

DISCHARGE MEASUREMENTS OF BUFFALO RIVER NEAR GILBERT, ARK., DURING 1909 AND 1910

Date.	Made by	Gage height, feet.	Discharge, second-feet.
1909			
November 29	W. N. Gladson	3.0	131
December 23	W. N. Gladson	3.2	155
1910			
May 23	W. N. Gladson	7.1	2,660
August 1	W. N. Gladson	2.97	137

DAILY GAGE HEIGHT, IN FEET, OF BUFFALO RIVER NEAR GILBERT, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1909-1910

Day.	July.	Aug.	Sept.
1909			
1	.....	2.6	2.2
2	...	2.6	2.2
3	.....	2.5	2.2
4	.....	2.5	2.2
5	.....	2.5	2.3
6	.....	2.5	2.3
7	.....	2.6	2.3
8	.....	2.7	2.3
9	...	2.7	2.3
10	.....	2.6	2.3
11	...	2.6	2.3
12	.....	2.6	2.3
13	.....	2.5	2.3
14	.....	2.5	2.2
15	.....	2.5	2.3
16	3.0	2.5	2.3
17	3.0	2.5	2.2
18	2.9	2.4	2.2
19	2.8	2.4	2.2
20	2.8	2.4	2.2
21	2.7	2.4	2.3
22	2.7	2.3	2.3
23	2.7	2.3	2.3
24	2.7	2.3	2.3
25	2.7	2.3	2.3
26	2.7	2.3	2.3
27	2.6	2.2	2.3
28	2.6	2.2	2.3
29	2.6	2.2	2.3
30	2.6	2.2	2.3
31	2.6	2.2	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10												
1	2.2	2.5	3.0	2.9	3.2	6.9	3.2	3.5	4.6	4.0	2.9	3.2
2	2.2	2.4	3.0	2.9	3.0	6.3	3.1	3.4	4.5	4.3	2.8	3.3
3	2.2	2.4	3.8	2.9	3.1	5.7	3.1	3.4	4.4	7.2	2.8	3.3
4	2.2	2.4	3.6	2.9	3.1	5.2	6.5	3.4	4.1	6.6	2.8	3.2
5	2.2	2.4	3.6	2.9	2.9	4.8	9.3	3.3	4.3	7.2	2.8	3.2
6	2.2	2.5	4.3	3.2	3.0	4.6	8.1	3.2	4.3	6.2	2.9	7.2
7	2.2	2.5	4.8	3.8	3.0	4.4	6.6	3.2	4.1	5.4	4.2	7.0
8	2.2	2.5	4.3	3.7	2.9	4.1	5.8	3.2	4.0	4.9	7.0	5.2
9	2.6	2.6	4.0	3.6	2.8	4.0	5.3	3.3	5.4	4.4	6.1	4.6
10	2.4	2.5	3.7	3.5	2.8	4.1	5.2	3.2	8.3	4.3	9.3	4.2
11	2.3	2.5	3.6	3.5	2.8	4.9	5.0	3.2	8.2	4.0	6.7	3.9
12	2.3	2.6	4.6	3.4	2.7	4.7	4.9	3.2	7.4	7.1	5.7	3.7
13	2.3	2.6	5.1	3.4	2.8	4.6	5.1	3.1	6.2	8.9	5.1	3.6
14	2.3	2.7	4.8	3.4	2.8	4.4	5.2	3.1	5.6	6.5	5.3	3.5
15	2.3	2.7	4.5	3.4	2.7	4.2	9.9	3.0	5 0	5 9	15.3	3.4
16	2.3	2.9	4.2	3.3	2.8	4.0	7.9	11.2	4.6	5.2	7.1	3.3
17	2.3	3.9	4.0	3.4	3.6	4.0	7.5	18.3	4.3	4.7	5.8	3.2
18	2.3	4.1	3.6	3.5	3.1	3.8	6.6	11.4	4.1	4.4	6.9	3.1
19	2.3	3.9	3.6	4.0	2.9	3.8	5.9	8.3	4.0	4.0	10.3	3.1
20	2.3	3.6	3.4	4.0	2.9	3.6	5.6	7.2	3.9	3.9	7.3	3.0
21	2.3	3.4	3.4	4.2	2.9	3.5	5.0	6.6	3.8	3.7	6.3	3.0
22	2.3	3.3	3.3	4.0	3.0	3.5	4.9	6.0	3.6	3.5	5.5	2.9
23	2.3	3.2	3.2	3.9	3.3	3.5	4.7	3.9	3.5	3.5	4.9	3.1
24	2.3	3.1	3.2	3.8	3.9	3.3	4.4	10.3	3.5	4.0	4.5	3.1
25	2.3	3.1	3.2	3.6	4.1	3.3	4.2	8.1	4.0	4.0	4.2	3.0
26	2.3	3.0	3.1	3.6	4.0	3.4	4.2	7.6	3.9	3.7	4.0	2.9
27	2.3	3.0	3.1	3.5	7.9	3.3	4.0	6.9	4.4	3.5	3.8	3.1
28	2.3	2.9	3.0	3.4	8.4	3.2	3.9	6.1	4.3	3.3	3.6	3.1
29	2.3	2.9	3.0	3.3	.....	3.1	3.8	5.6	.....	3.1	3.5	3.1
30	2.3	2.9	2.9	3.2	.....	3.1	3.6	5.2	.....	3.1	3.4	3.0
31	2.3	.....	2.9	3.2	.....	3.2	.....	4.9	.....	3.0	3.2	.....

DAILY GAGE HEIGHT, IN FEET, OF BUFFALO RIVER NEAR GILBERT, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1909-1910—*Continued*

Day.	Oct.	Nov.	Dec.
1910			
1	3.0	3.1	2.9
2	2.9	3.1	2.8
3	2.9	3.1	2.8
4	6.5	3.1	2.8
5	11.0	3.1	2.9
6	9 6	3 1	2.9
7	7.7	3.1	2.9
8	6.2	3.0	2.8
9	5.4	3.0	2.8
10	4.8	3.0	2.8
11	4.5	3.0	2.8
12	4.2	3.0	2.8
13	5.4	3.0	2.8
14	5.5	3.0	2.8
15	5.0	3.0	2.8
16	4.6	2.9	2.8
17	4.4	2.9	2.8
18	4.3	2.9	2.8
19	4.0	2.9	2.8
20	3.9	2.9	2.8
21	3.8	2.9	2.8
22	3.7	2.9	2.8
23	3.6	2.9	2.8
24	3.5	2.9	2.8
25	3.4	2.9	2.8
26	3.4	2.9	2.8
27	3.4	2.9	2.8
28	3.3	2.9	2.8
29	3.2	2.9	2.9
30	3.2	2.9	2.9
31	3.2	.....	3.6

NORTH FORK OF WHITE RIVER NEAR 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 United States soil survey maps).

RECORDS AVAILABLE.—October 24, 1921, to September 30, 1928.

EQUIPMENT.—Prior to June 29, 1924, a vertical staff gage on left bank 200 feet below bridge; after that date a chain gage on downstream side of bridge set to read same as staff gage. Discharge measurements made from ferry boat, highway 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 STAGE.—Maximum stage recorded, 24.0 feet June 13, 1927 (discharge, 53,000 second-feet); minimum stage, 0.38 foot September 26, 27, 29, 30, October 1, 5, and December 6, 1922; minimum discharge, 363 second-feet September 5, 1925.

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

ACCURACY.—Stage-discharge relation changed slightly; not affected by ice. Gage read to hundredths twice daily. Rating curves well defined. Records good.

Data collected by United States Geological Survey cooperating with Missouri Bureau of Geology and Mines.

DAILY DISCHARGE, IN SECOND-FEET, OF NORTH FORK OF WHITE RIVER AT TECUMSEH, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-1928

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1921–22												
1.....	...	590	1,180	792	750	1,460	5,050	2,140	1,140	792	552	485
2.....	...	590	1,640	750	920	1,360	3 710	1,940	1,090	920	552	470
3.....	...	590	1,840	750	1,000	1,270	3,180	1,840	1,040	1,360	552	470
4.....	...	552	1,640	792	920	1 270	2,760	1 940	1,000	878	552	552
5.....	...	552	1,460	792	920	1,270	3,290	1,940	962	750	552	710
6.....	...	552	1,360	792	878	1 360	3,080	1 940	920	710	552	590
7.....	...	552	1,270	750	835	1,360	2,760	1,940	920	710	552	515
8.....	...	552	1,180	792	750	1 360	2,560	1.740	920	670	552	515
9.....	...	590	1,090	792	750	1,740	3,710	1.640	920	670	515	500
10.....	..	552	1,040	792	750	2,870	4,580	1,550	878	670	515	515
11.....	...	552	1,000	792	750	2,560	6,120	1,460	878	750	515	508
12.....	...	552	962	792	710	2,140	3,920	1,460	835	792	515	492
13.....	...	552	920	750	710	1,940	3,400	1,360	835	750	515	485
14.....	...	552	878	750	670	2.560	2,870	1,360	792	710	515	478
15.....	...	552	835	750	670	2,870	2,760	1,270	792	710	515	470
16.....	...	552	835	710	630	2,340	2.560	1,270	792	670	515	470
17.....	...	590	835	710	630	2,040	3,290	1,270	750	670	515	455
18.....	...	2,040	835	710	630	1,940	2,660	1,270	750	670	515	455
19.....	...	6,260	792	710	630	1,940	2,340	1,180	750	630	590	455
20.....	...	2,450	792	710	710	1,940	2,140	1,140	750	630	515	448
21.....	...	1,640	750	670	2,140	1,840	1,940	1,090	710	630	515	448
22.....	...	1,360	750	670	1,550	1,740	1,840	1,180	710	630	515	455
23.....	...	1,180	750	670	3,710	1,640	1,740	1,140	710	590	515	440
24.....	590	2,340	878	630	3,180	1,550	1,740	1 640	710	590	500	440
25.....	552	2,340	962	630	2 350	1,460	1,740	1,550	750	590	492	440
26.....	590	1,740	962	670	1,940	2,040	1,640	1,360	710	670	492	426
27.....	552	1,550	962	630	1,740	3,080	1,840	1,460	710	670	492	426
28.....	552	1,270	920	630	1,550	2,760	2,870	2,140	710	630	485	440
29.....	590	1,180	878	630	.....	2,560	2,660	1,360	670	590	485	433
30.....	590	1,090	835	630	.....	4,810	2,240	1,270	670	590	485	433
31.....	590	.....	835	630	.....	8,000	.....	1,140	.....	590	485	.....
1922–23												
1.....	426	470	485	1,360	26,700	920	1,140	1,740	2,760	1,180	878	670
2.....	440	470	500	1,040	8,000	920	1,140	1,640	2,140	1,180	835	630
3.....	440	462	515	920	5,570	920	1,180	1,550	4,810	1,140	878	670
4.....	440	455	515	792	3 500	1,000	1,550	1,550	3,710	1,090	835	670
5.....	426	455	500	750	2,660	1,000	1,940	1,550	2,870	1,090	792	630
6.....	630	470	492	670	2,240	1,550	1,550	1,460	2,450	1,040	792	630
7.....	590	470	515	670	2,040	1,640	1,460	1,460	2,340	1,000	750	630
8.....	552	470	590	590	1,840	1,550	1,360	1,460	2,040	1,000	750	630
9.....	515	470	552	590	1,640	1,460	1,270	1,270	1,840	962	750	590
10.....	500	455	515	552	1,550	1 360	1,270	1,270	3,500	962	750	590
11.....	470	455	508	552	1,460	2 340	1,180	1,180	5,180	962	750	552
12.....	462	455	500	515	1,460	4,810	1,180	1.180	3,710	920	710	552
13.....	455	500	478	515	1,460	3.290	1,270	1,180	2,980	1 550	710	552
14.....	455	515	470	552	1,360	2,560	1,360	1,460	2,560	1,270	670	552
15.....	470	515	470	590	1,270	3,820	1,270	4,470	2,240	1,040	670	515
16.....	485	508	470	590	1,180	8,000	1,270	8,720	2,040	1,000	670	552
17.....	470	485	455	590	1,180	3,920	1,270	4,250	2,140	1,270	670	552
18.....	455	515	440	590	1,140	3,080	1,270	3,180	2,140	1,090	670	552
19.....	448	515	440	590	1,090	2,450	1,180	2,560	2,040	962	670	630
20.....	440	508	440	1,090	1,090	2,240	1,180	2,240	1,840	1,000	670	630
21.....	448	485	440	3,920	1,040	2,040	1,550	2,040	1,640	962	630	590
22.....	440	470	440	2,340	1,000	1,940	1,740	1,840	1,550	920	670	552
23.....	455	462	448	1,640	962	1,740	1,640	1,740	1,460	920	670	552
24.....	455	455	440	1,460	962	1,640	1,740	1,940	1,460	878	630	552
25.....	455	455	440	1,270	920	1,550	1,640	5,310	1,360	878	630	552
26.....	455	440	426	1,140	962	1,460	1,550	4,360	1,360	878	630	515
27.....	448	440	670	1,180	962	1,360	1,460	3,500	1,270	878	590	515
28.....	455	440	835	1,270	920	1,360	1,940	2,980	1,460	920	590	508
29.....	455	440	750	1,270	.....	1,270	2,140	2,560	1,270	920	590	500
30.....	—455	440	962	1,180	.....	1,270	1,940	3,500	1,270	962	590	515
31.....	455	.....	1,550	2,660	.....	1,180	.....	2,450	.....	920	590	.....

DAILY DISCHARGE, IN SECOND-FEET, OF NORTH FORK OF WHITE RIVER AT TECUMSEH, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-28—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1923–24												
1	505	512	560	765	680	600	895	1,790	1,690	1,490	895	1,030
2	498	505	560	765	680	600	850	1,490	1,490	1,400	895	940
3	490	560	505	722	640	600	808	1,300	1,490	1,400	850	808
4	520	560	560	722	680	600	765	1,160	1,300	1,300	808	722
5	520	560	560	680	680	600	765	1,120	1,160	1,210	765	680
6	520	560	560	600	680	600	722	985	1,030	1,160	765	680
7	498	520	560	640	640	560	680	895	985	1,120	722	680
8	475	520	560	640	640	560	680	895	940	1,080	765	640
9	475	520	722	640	600	560	722	850	895	1,080	722	640
10	475	490	895	640	600	560	680	808	1,300	1,030	1,400	600
11	475	490	1,120	640	640	560	680	765	31,400	,940	1,210	560
12	468	490	1,030	600	640	560	640	765	6,120	1,080	2,320	600
13	460	490	2,840	600	640	560	640	680	3,160	1,400	1,490	600
14	475	505	2,320	600	600	560	600	680	2,520	1,690	1,210	600
15	475	512	1 590	600	600	560	640	680	2,420	2,320	1,120	600
16	498	498	1,300	600	600	560	640	640	2,630	1,690	1,120	600
17	520	482	1,120	600	640	560	640	640	2,210	1,400	1,210	600
18	520	482	1,030	600	640	560	600	640	2,420	1,490	1,080	600
19	520	475	940	600	680	560	600	600	2,000	1,400	940	680
20	498	475	985	560	680	600	600	722	1,790	1,400	940	1,030
21	482	475	940	560	680	640	600	985	6,400	1,400	895	1,080
22	475	505	1,160	560	640	600	600	895	2,840	1,300	850	895
23	475	520	1,400	520	680	680	600	850	2,630	1,160	722	765
24	475	520	1,300	600	640	680	560	808	2,210	1,120	765	722
25	475	505	1,210	640	640	680	560	808	1,900	1,300	808	722
26	475	512	1,120	640	640	680	600	808	2,740	1,120	808	722
27	475	505	1,030	600	640	680	600	765	2,100	1,030	722	680
28	482	475	985	640	640	680	600	895	2,210	940	680	680
29	498	520	895	640	600	940	1,300	4,140	1,790	940	722	600
30	512	560	895	680	.....	985	1,900	3,050	1,590	940	640	560
31	520	.....	850	640	.....	985	.....	2,100	.....	895	680	.....
1924–25												
1	560	560	520	808	808	1,030	680	2,000	640	490	438	400
2	560	560	475	765	850	940	680	1,690	600	482	445	400
3	600	560	520	722	895	940	680	1,490	600	482	438	392
4	640	560	560	722	940	895	680	1,400	600	505	445	400
5	600	560	600	722	940	895	680	1,300	560	468	445	370
6	640	520	600	722	895	850	640	1,160	600	468	445	385
7	600	560	600	722	895	808	640	1,080	560	475	438	385
8	600	505	600	722	940	850	640	1,030	560	430	452	385
9	600	520	600	722	1,080	765	765	1,030	560	460	460	378
10	600	520	560	722	1,300	850	985	1,030	560	505	445	385
11	600	520	560	680	1,210	808	985	985	560	600	640	385
12	600	560	560	680	1,080	765	895	895	560	512	600	385
13	560	560	560	680	1,080	765	850	895	640	600	505	385
14	560	560	560	680	1,030	808	850	895	640	985	560	560
15	520	722	560	680	985	765	808	850	600	850	498	640
16	560	722	560	1,120	895	765	808	808	600	722	482	560
17	560	680	560	1,400	895	765	808	808	600	600	482	505
18	560	680	560	1,300	850	765	850	765	560	560	460	452
19	560	640	9,620	1,160	808	765	850	765	560	1,210	430	445
20	560	600	2,840	1,120	808	765	850	722	520	765	452	438
21	520	600	1,790	985	850	765	808	722	520	640	452	680
22	560	600	1,490	940	940	765	765	722	505	600	438	940
23	512	600	1,300	895	1,120	722	765	722	505	560	415	850
24	520	560	1,160	895	1,210	722	765	680	640	520	415	722
25	520	520	1,030	850	1,210	722	1,900	680	560	520	415	3,050
26	560	520	940	850	1,120	722	2,940	680	520	512	408	7,360
27	520	520	895	850	1,080	722	3,050	640	520	505	400	6,120
28	560	520	808	808	1,030	680	4,580	640	498	490	408	2,740
29	560	520	808	765	.....	680	3,050	640	512	445	408	1,900
30	560	520	808	765	.....	680	2,320	640	490	475	400	1,590
31	560	.....	808	765	.....	680	.....	640	...	475	400	.....

DAILY DISCHARGE, IN SECOND-FEET, OF NORTH FORK OF WHITE RIVER AT TECUMSEH, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-28—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1925–26												
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	808	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	.....
1926–27												
1	1,880	2,650	1,310	1,420	3,060	1,260	11,000	2,480	1,960	1,640	1,400	1,460
2	1,420	2,130	1,260	1,360	3,200	1,210	5,160	2,350	3,300	1,700	1,230	1,400
3	1,160	1,760	1,260	1,360	3,060	1,210	4,040	2,350	4,600	1,520	1,280	2,350
4	1,760	1,530	1,210	1,310	2,920	1,210	3,340	2,220	3,300	1,460	2,480	1,520
5	2,260	1,360	1,160	1,260	2,650	1,210	3,200	2,480	2,610	1,400	1,830	1,400
6	1,640	1,260	1,110	1,210	2,520	1,210	2,780	8,500	2,220	1,340	1,520	1,340
7	1,420	1,160	1,110	1,210	2,260	1,260	2,650	4,900	2,090	1,340	1,460	1,280
8	1,210	1,210	1,110	1,160	2,130	1,360	4,320	3,870	1,960	1,280	1,820	1,230
9	1,060	1,360	1,260	1,110	2,000	1,360	4,880	4,600	1,830	1,230	3,720	1,230
10	1,420	1,160	1,530	1,060	1,880	1,420	8,600	5,500	1,700	1,230	2,350	1,230
11	1,530	1,110	1,530	1,010	1,880	1,360	7,120	3,870	1,700	1,180	1,960	1,180
12	1,360	1,060	1,530	1,010	1,760	1,760	6,000	3,300	1,580	1,180	1,700	1,180
13	1,210	1,010	1,530	1,210	1,880	1,880	13,300	2,880	1,640	1,120	1,960	1,120
14	1,110	3,760	1,310	1,760	1,880	1,760	35,800	2,740	1,580	1,280	7,300	1,060
15	1,010	7,850	1,210	1,640	1,880	1,640	22,000	2,480	1,460	1,220	11,000	1,060
16	962	3,900	1,160	1,640	1,760	1,640	10,700	2,350	1,400	1,180	5,050	1,060
17	915	3,340	1,110	1,530	1,760	1,640	7,600	2,220	1,580	1,120	8,050	1,010
18	870	3,200	1,060	1,530	1,640	5,440	12,200	2,220	1,830	1,120	6,100	1,010
19	870	2,780	1,060	2,780	1,640	4,600	22,900	2,220	1,830	1,060	4,160	1,010
20	870	2,520	1,160	2,390	1,530	4,040	11,000	2,090	2,090	1,400	3,160	1,010
21	870	2,260	1,530	2,390	1,530	4,740	7,600	1,960	15,100	1,830	2,740	960
22	825	2,130	1,760	4,880	1,530	3,760	5,800	2,220	5,200	1,830	2,480	960
23	825	2,000	1,760	5,160	1,530	3,200	4,900	2,220	3,580	1,580	2,220	960
24	870	1,880	1,760	6,280	1,420	2,780	4,300	2,220	2,880	1,340	2,090	960
25	825	1,760	1,760	5,720	1,360	2,520	3,870	6,550	2,480	1,230	1,830	910
26	782	1,760	1,640	5,440	1,310	2,390	3,440	3,580	2,220	1,180	1,830	910
27	782	1,640	1,420	4,600	1,310	2,130	3,300	2,880	1,960	1,120	1,700	960
28	782	1,530	1,640	4,320	1,260	2,000	3,020	2,480	1,830	1,060	1,640	1,180
29	6,280	1,530	1,530	4,040	.....	2,000	2,880	2,350	1,730	1,060	1,700	1,960
30	5,580	1,360	1,420	3,760	.....	2,130	2,740	2,090	1,640	1,280	1,580	1,700
31	3,620	.....	1,420	3,340	.....	2,390	.....	1,960	.....	1,960	1,520	.....

DAILY DISCHARGE, IN SECOND-FEET, OF NORTH FORK OF WHITE RIVER AT TECUMSEH, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-28—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1927–28												
1.....	1,640	960	1,400	1,830	1,520	1,640	1,520	2,610	1,640	5,950	1,230	1,010
2.....	3,440	1,010	1,400	1,700	1,460	1,520	1,460	2,350	1,700	4,450	1,230	960
3.....	7,600	960	1,340	1,640	1,460	1,520	1,460	2,220	2,740	3,720	1,180	960
4.....	3,020	960	1,280	1,640	1,460	1,520	1,460	2,220	7,900	3,300	1,230	960
5.....	2,220	960	1,230	1,640	1,460	1,580	1,580	2,090	5,050	2,880	1,280	960
6.....	1,960	910	1,230	1,580	1,460	1,520	10,400	1,960	4,020	2,610	1,180	910
7.....	1,700	1,120	1,340	1,580	1,640	1,520	5,350	1,830	3,160	2,480	1,180	910
8.....	1,830	10,900	1,400	1,580	1,830	1,520	3,720	1,830	3,160	2,350	1,120	860
9.....	1,580	4,750	1,280	1,520	1,700	1,830	3,020	1,830	12.000	2,320	1,120	910
10.....	1,520	3,160	1,280	1,520	1,640	1,960	2,740	1,700	9,120	2,220	1,120	910
11.....	1,400	2,610	1,280	1,520	1,580	1,960	2,610	1,700	6,100	2,090	1,120	910
12.....	1,830	2,350	1,340	1,460	1,580	1,960	2,480	1,580	4,600	1,960	1,060	860
13.....	1,830	2,090	15,700	1,460	1,580	1,830	2,220	1,520	33,400	2,090	1,060	860
14.....	1,520	1,960	18,600	1,460	1,960	1,700	2,090	1,520	9,120	1,830	1,010	860
15.....	1,400	2,350	7,150	1,400	2,350	1,830	1,960	1,580	5,950	1,830	1,010	860
16.....	1,340	3.870	5,200	1,400	2,220	2,220	1,830	2,090	5,050	1,700	1,010	860
17.....	1,280	2,880	4,160	1,400	2,090	2,610	1,830	1,700	7,150	1,700	1,010	810
18.....	1,230	2,480	3,440	1,460	1,960	2,480	1,700	1,640	5,800	1,640	1,120	810
19.....	1,180	2,220	3,020	3,160	1,830	2,480	1,700	1,580	4.450	1,580	1,060	760
20.....	1,180	1,960	2,740	3,160	1,830	2,350	1,830	1,520	3,870	1,520	1,010	810
21.....	1,120	1,830	2,480	2,610	1,700	2,220	1,500	1,460	5,800	1,460	1,010	810
22.....	1,060	1,830	2,350	2,350	1,700	2,090	7,900	7,300	4,900	1,520	1,010	760
23.....	1,060	1,640	2,220	2,220	1,700	1,960	6,850	3,870	7,600	1,460	1,010	760
24.....	1,060	1,580	2.090	2,220	1,830	1,960	5,050	2,880	5,950	1,400	2,610	760
25.....	1,010	1,460	2,090	2,090	1,700	1,830	4,020	2,350	4,900	1,340	1,640	760
26.....	1,010	1,460	1,960	1,960	1,700	1,960	3,440	2,090	4,020	1,340	1,830	700
27.....	960	1,400	1,830	1,830	1,700	1,830	3,300	1,960	3,440	1,340	1,400	760
28.....	960	1,340	2,090	1,700	1,640	1,830	3,020	1,830	4,600	1,280	1,230	700
29.....	960	1,340	2,220	1,640	1,640	1,700	2,880	1,700	7,000	1,230	1,180	760
30.....	960	1,280	2,090	1,640	.....	1,640	2,740	1,580	5,050	1,230	1,120	760
31.....	960	.....	1,960	1,580	.....	1,580	.....	1,580	.....	1,230	1,010	.....

MONTHLY DISCHARGE OF NORTH FORK OF WHITE RIVER AT TECUMSEH, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-1928

(Drainage area, 1,180 square miles.)

Month.	Discharge in second-feet.				Run-off in inches.
	Maximum.	Minimum.	Mean.	Per square mile.	
1921-22					
November	6,260	552	1,200	1.02	1.14
December	1,840	750	1,030	.873	1.01
January	792	630	718	.608	.70
February	3,710	630	1,190	1.01	1.05
March	8,000	1,270	2,230	1.89	2.18
April	6,120	1,640	2,900	2.46	2.74
May	2,140	1,090	1,520	1.29	1.49
June	1,140	670	826	.700	.78
July	1,360	590	706	.598	.69
August	590	485	520	.441	.51
September	710	426	481	.408	.46
1922-23					
October	630	426	469	0.397	0.46
November	515	440	472	.400	.45
December	1,550	426	556	.471	.54
January	3,920	515	1,080	.915	1.05
February	26,700	920	2,720	2.31	2.40
March	8,000	920	2,120	1.80	2.08
April	2,140	1,140	1,450	1.23	1.37
May	8,720	1,180	2,500	2.12	2.44
June	5,180	1,270	2,310	1.96	2.19
July	1,550	878	1,020	.864	1.00
August	878	590	699	.592	.68
September	670	500	578	.490	.55
The year	26,700	426	1,320	1.12	15.21
1923-24					
October	520	460	491	0.416	0.48
November	560	475	510	.432	.48
December	2,840	505	1,040	.881	1.02
January	765	520	630	.534	.62
February	680	600	644	.546	.59
March	985	560	636	.539	.62
April	1,900	560	726	.615	.69
May	4,140	600	1,100	.932	1.07
June	31,400	895	3,180	2.69	3.00
July	2,320	895	1,270	1.08	1.24
August	2,320	640	952	.807	.93
September	1,080	560	711	.603	.67
The year	31,400	460	989	.838	11.41
1924-25					
October	640	512	567	0.481	0.55
November	722	505	572	.485	.54
December	9,620	475	1,110	.941	1.08
January	1,400	680	846	.717	.83
February	1,300	808	991	.840	.87
March	1,030	680	788	.668	.77
April	4,580	640	1,220	1.03	1.15
May	2,000	640	936	.793	.91
June	640	490	565	.479	.53
July	1,210	430	578	.490	.56
August	640	400	455	.386	.44
September	7,360	370	1,150	.975	1.09
The year	9,620	370	813	.689	9.32

MONTHLY DISCHARGE OF NORTH FORK OF WHITE RIVER AT TECUMSEH, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-1928—*Continued*

Month.	Discharge in second-feet.				Run-off in inches.
	Maximum.	Minimum.	Mean.	Per square mile.	
1925-26					
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
1926-27					
October	6,280	782	1,550	1.31	1.51
November	7,850	1,010	2,130	1.81	2.02
December	1,760	1,060	1,370	1.16	1.34
January	6,280	1,010	2,540	2.15	2.48
February	3,200	1,260	1,950	1.65	1.72
March	5,440	1,210	2,210	1.87	2.16
April	35,800	2,650	8,010	6.79	7.58
May	8,500	1,960	3,100	2.63	3.03
June	15,100	1,400	2,700	2.29	2.56
July	1,960	1,060	1,340	1.14	1.31
August	11,000	1,230	2,930	2.48	2.86
September	2,350	910	1,220	1.03	1.15
The year	35,800	782	2,580	2.19	29.72
1927-28					
October	7,600	960	1,670	1.42	1.64
November	10,900	910	2,190	1.86	2.08
December	18,600	1,230	3,200	2.71	3.12
January	3,160	1,400	1,800	1.53	1.76
February	2,350	1,460	1,720	1.46	1.58
March	2,610	1,520	1,880	1.59	1.83
April	11,500	1,460	3,460	2.93	3.27
May	7,300	1,460	2,120	1.80	2.08
June	33,400	1,640	6,310	5.35	5.97
July	5,950	1,230	2,100	1.78	2.05
August	2,610	1,010	1,210	1.03	1.19
September	1,010	760	847	.718	.80
The year	33,400	760	2,370	2.01–	27.37

NORTH FORK OF WHITE RIVER NEAR HENDERSON, ARK.

LOCATION.—At Smith's Ferry, near Henderson, Baxter County. Bayou Creek enters from the left about 1¼ miles upstream.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—July 23, 1909, to December 31, 1910; gage-height record and discharge measurements only.

EQUIPMENT.—Gage is vertical staff in three sections attached to trees on left bank. Discharge measurements made from ferry boat or by wading.

CHANNEL AND CONTROL.—Conditions not known.

EXTREMES OF STAGE.—Maximum stage recorded, 6.1 feet October 6, 1910; minimum stage, 1.05 feet September 17, 1910.

Data insufficient for determination of discharge.

DISCHARGE MEASUREMENTS OF NORTH FORK OF WHITE RIVER NEAR HENDERSON, ARK., DURING 1909 AND 1910

Date.	Made by	Gage height, feet.	Discharge, second-feet.
1909			
September 4	W. N. Gladson	1.4	851
November 26	W. N. Gladson	1.6	719
December 21	W. N. Gladson	1.75	911
1910			
May 19	W. N. Gladson	1.95	1,110

DAILY GAGE HEIGHT, IN FEET, OF NORTH FORK OF WHITE RIVER NEAR HENDERSON, ARK., FOR THE YEARS ENDING SEPTMBER 30, 1909-1911

Day.	July.	Aug.	Sept.
1909			
1	.....	2.1	1.7
2	.....	2.0	1.6
3	.....	2.9	1.55
4	.....	2.9	1.5
5	.....	2.8	1.65
6	.....	2.8	1.6
7	.....	2.7	1.5
8	.....	2.65	1.6
9	.....	2.55	1.6
10	.....	2.5	1.55
11	.....	2.4	1.5
12	.....	2.35	1.5
13	.....	1.95	1.5
14	.....	1.7	1.7
15	.....	1.7	1.85
16	.....	1.7	1.75
17	.....	1.6	1.65
18	.....	1.6	1.5
19	.....	1.6	1.5
20	.....	1.5	1.5
21	.....	1.4	1.65
22	.....	1.4	1.75
23	2.2	1.4	1.6
24	2.15	1.35	1.5
25	2.1	1.3	1.5
26	2.1	1.3	1.5
27	2.05	1.3	1.5
28	2.0	1.3	1.5
29	2.0	2.0	1.6
30	2.55	2.0	1.55
31	2.1	1.9	.....

DAILY GAGE HEIGHT, IN FEET, OF NORTH FORK OF WHITE RIVER NEAR HENDERSON, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1909-1910—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10												
1	1.5	1.6	1.8	1.6	1.7	3.45	1.7	1.9	.....	2.0	2.5	1.25
2	1.5	1.65	1.85	1.6	1.7	2.9	1.65	1.8	.....	1.85	2.25	1.15
3	1.5	1.8	1.9	1.7	1.7	2.75	1.6	1.8	.....	2.0	2.0	2.25
4	1.4	1.75	1.8	1.7	1.6	2.7	1.65	1.7	.....	2.3	1.9	2.9
5	1.45	1.55	1.8	1.7	1.6	2.65	1.8	1.6	.....	2.75	1.9	2.75
6	1.5	1.6	1.85	1.8	1.55	2.55	1.95	1.85	2.5	2.9	1.9	3.2
7	1.6	1.7	1.9	1.8	1.5	2.6	2.5	1.9	2.1	2.7	1.9	2.9
8	1.6	1.8	2.0	1.8	1.5	2.7	2.55	1.85	2.2	2.55	1.9	2.45
9	1.6	1.9	2.5	1.8	1.5	2.8	2.35	1.8	5.55	2.35	1.95	2.25
10	1.6	1.85	2.65	1.7	1.6	3.2	2.3	1.85	4.5	4.6	2.4	1.95
11	1.5	1.75	1.9	1.7	1.6	3.45	2.2	1.9	3.65	3.4	2.55	1.9
12	1.5	1.65	1.9	1.7	1.55	2.95	2.3	2.0	3.45	4.7	2.15	1.8
13	1.5	1.6	1.8	1.7	1.5	2.8	2.6	1.9	3.0	5.4	2.0	1.7
14	1.45	1.5	1.85	1.65	1.5	2.75	3.1	1.8	3.0	4.0	2.0	1.65
15	1.4	1.55	1.85	1.65	1.55	2.6	3.45	1.95	2.45	3.95	1.95	1.45
16	1.4	1.7	1.9	1.7	1.6	2.5	3.65	2.4	2.25	3.25	1.9	1.25
17	1.5	1.75	1.8	1.75	1.6	2.4	3.55	2.35	2.1	4.3	1.9	1.05
18	1.5	1.7	1.7	1.8	1.6	2.3	3.15	2.15	2.1	3.55	2.7	1.7
19	1.45	1.65	1.7	1.7	1.6	2.2	2.9	1.95	2.15	2.9	2.4	1.7
20	1.4	1.7	1.7	1.7	1.6	2.15	2.45	1.9	2.1	2.7	2.2	1.7
21	1.5	1.6	1.75	1.6	1.5	2.1	2.35	1.9	2.1	2.45	2.0	1.7
22	1.5	1.65	1.8	1.65	1.5	2.0	2.3	1.9	2.05	2.2	1.9	1.65
23	1.5	1.7	1.8	1.7	1.6	2.0	2.2	1.9	2.05	3.85	1.85	1.6
24	1.5	1.65	1.7	1.7	1.65	1.95	2.2	1.8	2.0	2.3	1.8	1.65
25	1.5	1.6	1.6	1.7	1.7	1.9	2.1	1.8	2.0	2.2	1.8	1.7
26	1.5	1.6	1.6	1.6	1.7	1.9	2.1	1.8	2.0	2.05	1.85	1.7
27	1.45	1.6	1.55	1.6	4.35	1.8	2.1	1.9	2.0	2.0	1.85	1.75
28	1.4	1.7	1.5	1.6	4.0	1.7	2.0	1.9	2.0	2.0	1.8	1.95
29	1.4	1.7	1.6	1.6	.....	1.7	1.95	.....	2.0	1.95	1.8	2.0
30	1.4	1.8	1.6	1.7	.....	1.8	1.9	.....	2.0	2.4	1.75	1.8
31	1.5	.....	1.6	1.7	.....	1.8	.....	.....	....	2.7	1.55	....

Day.	Oct.	Nov.	Dec.
1910			
1	1.7	1.7	1.7
2	1.7	1.7	1.7
3	1.7	1.7	1.7
4	4.75	1.7	1.7
5	3.3	1.7	1.7
6	6.1	1.7	1.7
7	5.65	1.7	1.7
8	3.5	1.7	1.7
9	3.2	1.7	1.7
10	2.6	1.7	1.7
11	2.2	1.7	1.7
12	2.0	1.7	1.7
13	2.0	1.7	1.7
14	2.15	1.7	1.7
15	2.0	1.7	1.7
16	2.0	1.7	1.6
17	2.0	1.7	1.6
18	2.0	1.7	1.6
19	1.9	1.7	1.5
20	1.9	1.7	1.5
21	1.9	1.7	1.5
22	1.9	1.7	1.5
23	1.8	1.7	1.5
24	1.8	1.7	1.5
25	1.7	1.7	1.5
26	1.7	1.7	1.5
27	1.7	1.7	1.5
28	1.7	1.7	1.5
29	1.7	1.7	1.6
30	1 7	1.7	1.7
31	1.7	.....	1.7

CURRENT RIVER AT DONIPHAN, MO.

LOCATION.—In N. ½ sec. 27, T. 23 N., R. 2 E., at highway bridge three-fourths mile west of Doniphan, Ripley County, 2 miles above Briar Creek, and 12 miles below Buffalo Creek.

DRAINAGE AREA.—2,030 square miles (measured on United States soil survey maps); somewhat indefinite on account of numerous large tributary springs.

RECORDS AVAILABLE.—June 14, 1921, to September 30, 1928. The United States Engineer Office, Memphis, Tenn., has records of stage from August, 1918, to June, 1921.

EQUIPMENT.—Chain gage on upstream side of bridge. Prior to May 10, 1922, a painted staff gage on bridge pier and auxiliary staff gage from 0 to 4 feet on right bank. Discharge measurements made from bridge.

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

EXTREMES OF DISCHARGE.—Maximum stage recorded, 17.3 feet April 15, 1927 (discharge, 48,800 second-feet); minimum stage, 0.08 foot September 11-13, 1925; minimum discharge, 1,020 second-feet August 27 to September 14, 1925. Flood of August, 1915, reached a stage of 25.5 feet; determined by United States Army Engineers from levels to flood marks.

REGULATION.—Natural regulation through large springs.

ACCURACY.—Stage-discharge relation practically permanent; not affected by ice. Several rating curves used. Gage read to hundredths once daily. Records for 1921 and 1922 are fair, and those for 1923 to 1928 are good.

COOPERATION.—Data collected by United States Geological Survey cooperating with Missouri Bureau of Geology and Mines and Missouri Hydro-Electric Power Company.

DAILY DISCHARGE, IN SECOND-FEET, OF CURRENT RIVER AT DONIPHAN, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-1928

Day.	June.	July.	Aug.	Sept.	Day.	June.	July.	Aug.	Sept.
1921									
1	.....	2,090	1,620	1,620	16	2,710	1,790	1,790	4,920
2	.....	3,310	1,620	1,620	17	2,450	2,200	1,790	2,710
3	.....	3,310	1,880	1,620	18	2,450	2,450	1,790	2,710
4	.....	3,150	1,790	1,620	19	2,200	2,200	1,700	2,450
5	.....	2,710	1,790	1,620	20	2,090	2,200	1,700	2,450
6	.....	2,450	1,790	1,620	21	1,980	1,980	1,620	2,450
7	.....	2,450	1,790	1,620	22	1,980	1,980	1,620	2,710
8	.....	2,450	1,790	1,620	23	2,450	1,880	1,620	2,320
9	.....	2,200	1,790	1,620	24	2,580	1,790	1,620	2,200
10	.....	2,090	1,790	1,620	25	2,200	1,790	1,620	7,000
11	.....	1,980	1,790	1,620	26	1,980	1,790	1,620	4,600
12	.....	1,980	1,880	1,620	27	2,090	1,700	1,620	2,710
13	.....	1,880	1,880	1,620	28	2,320	1,700	1,620	2,320
14	3,630	1,790	1,880	1,620	29	2,320	1,700	1,620	2,090
15	3,150	1,790	1,880	2,450	30	2,090	1,700	1,620	2,090
					31	.....	1,620	1,620	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1921–22												
1	2,090	1,550	3,800	2,370	2,370	3,660	22,000	7,050	2,370	2,030	1,620	1,620
2	1,790	1,540	3,520	2,370	3,660	3,380	20,800	6,540	2,370	2,140	1,620	1,620
3	1,790	1,530	3,240	2,250	4,370	3,380	11,300	5,720	2,370	2,730	1,620	1,520
4	1,880	1,520	4,520	2,250	4,080	2,980	9,300	5,120	2,250	2,850	1,620	1,520
5	1,980	1,510	4,970	2,140	3,800	2,980	8,500	5,120	2,250	2,370	1,620	1,520
6	1,880	1,500	4,670	2,030	3,800	2,980	8,120	4,670	2,250	2,250	1,520	2,020
7	1,790	1,490	4,080	2,030	3,520	2,980	8,700	4,520	2,140	2,030	1,520	1,920
8	1,790	1,480	3,800	2,030	3,240	3,800	7,580	4,370	2,140	2,250	1,520	1,620
9	1,790	1,470	4,220	2,250	2,980	3,800	7,580	3,800	2,140	1,920	1,520	1,520
10	1,790	1,460	3,520	2,250	2,730	5,420	7,400	3,660	2,370	1,920	1,520	1,520
11	1,790	1,450	3,240	2,370	2,610	7,580	7,580	3,800	2,140	1,820	1,520	1,520
12	1,790	1,450	3,110	2,250	2,370	6,880	11,100	3,520	2,030	1,920	1,520	1,520
13	1,790	1,450	2,730	2,140	2,250	6,040	9,700	3,380	2,030	1,920	1,520	1,420
14	1,700	1,450	2,490	2,140	2,140	5,270	7,580	3,380	2,030	1,820	1,520	1,420
15	1,700	1,450	2,490	2,140	2,140	5,270	7,220	3,240	2,030	1,820	1,520	1,420
16	1,700	1,620	2,250	2,030	2,140	7,580	6,710	3,110	1,920	1,820	1,520	1,420
17	1,700	1,790	2,250	2,030	2,140	6,710	6,370	3,110	1,920	1,720	1,620	1,420
18	1,700	2,200	2,250	2,030	2,030	5,880	8,700	2,980	1,920	1,720	1,620	1,420
19	1,620	10,300	2,140	2,030	2,030	5,720	13,100	2,980	1,920	1,720	1,620	1,420
20	1,620	17,600	2,140	2,140	2,140	5,720	7,050	2,850	2,030	1,720	1,620	1,420
21	1,620	21,000	2,370	2,140	2,140	6,710	6,710	2,850	1,920	1,720	1,620	1,420
22	1,620	7,220	2,370	2,140	2,250	6,370	5,720	2,730	1,820	1,720	1,620	1,420
23	1,620	5,720	2,370	2,140	2,250	5,720	5,270	2,850	1,820	1,620	1,720	1,420
24	1,620	5,420	2,490	2,030	4,220	5,270	4,820	2,850	1,820	1,620	1,720	1,330
25	1,620	5,570	4,080	2,030	6,880	5,120	4,670	2,730	1,820	1,920	1,620	1,330
26	1,610	7,050	3,800	2,030	5,270	4,970	4,370	2,730	1,920	2,250	1,520	1,330
27	1,600	5,570	3,520	2,030	4,820	5,720	4,970	2,610	1,820	2,140	1,520	1,330
28	1,590	5,270	3,110	2,030	4,220	8,900	5,880	2,490	1,820	1,920	1,520	1,330
29	1,580	4,970	2,730	2,030	.....	8,700	9,500	2,490	1,920	1,820	1,520	1,330
30	1,570	4,370	2,610	2,030	.....	8,900	7,580	2,370	1,920	1,620	1,520	1,330
31	1,500	.....	2,370	2,030	.....	12,400	.....	2,370	.....	1,620	1,620	.....

DAILY DISCHARGE, IN SECOND-FEET, OF CURRENT RIVER AT DONIPHAN, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-1928—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1922–23												
1	1,330	1,520	1,420	6,370	7,760	2,680	3,240	3,380	4,520	2,780	2,300	1,800
2	1,330	1,520	1,420	5,720	22,600	2,580	3,120	3,240	4,370	2,680	2,210	1,800
3	1,330	1,520	1,420	4,080	29,600	2,580	3,120	3,240	4,670	2,680	2,120	1,880
4	1,330	1,520	1,520	3,380	16,900	2,680	3,380	4,820	8,900	2,580	2,120	1,960
5	1,330	1,520	1,420	2,850	8,500	2,780	3,940	7,760	7,220	2,480	2,040	1,960
6	1,330	1,520	1,420	2,610	7,050	3,800	3,800	7,940	5,880	2,480	2,040	1,880
7	1,330	1,420	1,520	2,370	6,040	4,080	3,660	6,370	5,720	2,390	1,960	1,960
8	1,330	1,420	1,520	2,250	5,270	4,220	3,660	5,420	4,820	2,390	1,960	1,960
9	1,520	1,420	1,520	2,140	4,820	4,080	3,380	4,820	4,520	2,480	2,040	1,960
10	1,520	1,420	1,520	1,920	4,520	3,800	3,240	4,520	4,370	2,300	2,040	1,880
11	1,520	1,420	1,620	1,920	4,220	5,720	3,120	4,080	4,370	2,300	2,040	1,800
12	1,420	1,420	1,520	1,820	3,940	9,700	3,000	3,940	4,220	2,300	2,040	1,800
13	1,420	1,420	1,520	1,820	3,940	13,100	3,520	3,800	3,660	2,300	1,960	1,800
14	1,330	1,620	1,420	1,820	3,800	10,100	3,940	3,660	3,800	2,300	1,960	1,800
15	1,330	1,620	1,420	1,820	3,660	7,400	4,220	14,200	7,580	2,390	1,960	1,720
16	1,420	1,520	1,420	1,820	3,380	17,100	3,940	16,600	9,300	2,300	1,880	1,720
17	1,420	1,520	1,330	1,920	3,240	20,800	3,660	20,300	8,900	2,390	1,880	1,720
18	1,420	1 620	1,330	1,920	3,240	14,500	3,380	14,900	6,370	2,480	1,880	1,800
19	1,420	1,620	1,330	1,920	3,120	9,100	3,240	9,700	5,420	2,390	1,880	1,800
20	1,330	1,620	1,330	1,920	2,880	7,220	3,240	7,760	4,820	2,300	1,880	1,800
21	1,330	1,620	1,330	7,580	2,880	6,200	3,240	6,200	4,370	2,210	1,880	1,800
22	1,330	1,520	1,330	6,540	2,780	5,720	3,240	5,570	3,940	2,210	1,960	1,800
23	1,330	1,520	1,330	6,200	2,680	5,120	3,240	5,270	3,800	2,120	1,960	1,720
24	1,330	1,420	1,330	4,820	2,580	5,120	3,120	4,970	3,660	2,120	1,960	1,720
25	1,330	1,420	1,240	4,370	2,580	4,820	3,120	4,520	3,240	2,120	1,880	1,720
26	1,330	1,420	1,240	4,080	2,680	4,220	3,000	4,370	3,120	2,120	1,880	1,720
27	1,330	1,420	1,620	3,940	2,680	3,800	3,000	4,220	3,000	2,040	1,880	1,720
28	1,330	1,420	2,030	3,940	2,680	3,660	3,120	4,670	3,000	2,040	1,880	1,720
29	1,330	1,330	3,240	4,370	.....	3,520	4,220	4,520	2,880	2,040	1,800	1,720
30	1,330	1,330	3,380	4,370	.....	3,380	3,660	4,520	2,830	2,040	1,800	1,720
31	1,330	.....	3,800	4,520	.....	3,240	.....	4,820	.....	2 300	1,800	.....
1923–24												
1	1,720	1,720	1,720	2,210	1,720	1,960	3,520	2,210	6,540	3,260	1,960	1,630
2	1,720	1,720	1,720	2,210	1,720	1,960	2,880	2,300	4,820	2,880	1,870	1,630
3	1,720	1,720	1,720	2,120	1,800	1,960	2,780	2,300	4,080	2,770	1,960	1,630
4	1,720	1,720	1,720	1,960	1,880	1,960	2,580	2,300	3,520	2,550	1,960	1,630
5	1,720	1,800	1,720	1,960	2,040	1,960	2,480	2,120	3,130	2,450	1,960	1,560
6	1,720	1,800	1,800	1,960	2,300	1,960	2,480	2,040	2,880	2,250	1,960	1,560
7	1,640	1,720	1,880	1,960	2,300	1,960	2,390	2,040	2,770	2,150	1,870	1,560
8	1,640	1,720	1,880	1,880	2,300	1,880	2,300	2,040	2,660	2,150	1,790	1,560
9	1,640	1,720	1,960	1,880	2,120	1,880	2,300	2,040	2,450	2,050	1,790	1,560
10	1,640	1,720	2,480	1,960	2,120	1,880	2,210	1,960	2,450	2,050	1,790	1,490
11	1,640	1,720	3,240	1,880	2,040	1,800	2,120	1,960	2,450	1,960	1,870	1,490
12	1,640	1,720	3,520	1,880	2,040	1,800	2,120	1,960	2,350	1,960	1,790	1,490
13	1,640	1,720	3,380	1,800	1,960	1,880	2,120	1,960	2,880	2,550	1,790	1,490
14	1,640	1,720	4,080	1,800	1,960	1,880	2,040	1,880	2,770	2,350	1,790	1,560
15	1,640	1,640	5,270	1,800	1,960	1,880	2,040	1,880	2,630	2,450	1,870	1,490
16	1,640	1,640	3,800	1,880	1,880	1,880	2,040	1,800	2,450	2,450	1,870	1,490
17	1,800	1,640	3,120	1,880	1,880	1,880	2,040	1,800	2,350	2,350	2,050	1,490
18	1,880	1,640	2,780	1,880	2,040	1,960	1,960	1,720	2,350	2,350	2,250	1,490
19	1,960	1,640	2,580	1,880	2,120	1,960	1,960	1,720	2,350	2,250	2,150	1,490
20	1,960	1,640	2,480	1,800	2,210	2,040	1,960	1,880	2,350	2,250	2,050	1,490
21	1,880	1,640	2,580	1,800	2,210	2,120	1,960	2,040	2,450	2,250	1,960	2,350
22	1,800	1,640	2,780	1,800	2,210	2,120	1,880	2,040	7,400	2,250	1,870	2,660
23	1,720	1,640	3,240	1,720	2,210	2,210	1,880	2,040	6,040	2,150	1,870	2,150
24	1,720	1,640	3,380	1,720	2,120	2,300	1,880	2,120	4,520	2,150	1,870	2,050
25	1,640	1,640	3,240	1,720	2,040	2,480	1,800	2,040	3,660	2,450	1,790	1,960
26	1,640	1,640	3,120	1,720	2,040	2,580	1,800	2,040	4,820	2,350	1,790	1,870
27	1,640	1,640	2,880	1,720	2,040	2,580	1,800	2,210	6,040	2,250	1,790	1,710
28	1,640	1,640	2,580	1,720	1,960	2,480	1,800	2,300	5,270	2,050	1,710	1,630
29	1,720	1,640	2,580	1,720	1,960	2,480	1,800	3,120	4,520	1,960	1,710	1,560
30	1,720	1,720	2,580	1,720	.....	3,120	2,040	6,040	4,080	1,960	1,710	1,560
31	1,720	.....	2,390	1,720	.....	3,800	.....	8,300	.....	1,960	1,710	.....

DAILY DISCHARGE, IN SECOND-FEET, OF CURRENT RIVER AT DONIPHAN, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-1928—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1924–25												
1	1,490	1,360	1,310	1,500	1,410	2,760	1,500	4,370	1,320	1,230	1,150	1,020
2	1,490	1,360	1,310	1,500	1,410	2,640	1,500	3,660	1,320	1,230	1,080	1,020
3	1,490	1,360	1,310	1,500	1,800	2,530	1,500	3,130	1,320	1,230	1,080	1,020
4	1,490	1,360	1,310	1,410	2,000	2,420	1,500	2,880	1,230	1,230	1,080	1,020
5	1,560	1,360	1,310	1,410	2,000	2,310	1,410	2,760	1,230	1,230	1,080	1,020
6	1,560	1,360	1,310	1,410	2,000	2,200	1,410	2,530	1,230	1,150	1,080	1,020
7	1,560	1,360	1,310	1,410	1,900	2,000	1,410	2,310	1,230	1,150	1,080	1,020
8	1,490	1,360	1,560	1,410	1,900	2,000	1,410	2,200	1,230	1,150	1,080	1,020
9	1,490	1,360	1,490	1,320	2,100	1,900	1,500	2,100	1,230	1,230	1,080	1,020
10	1,490	1,360	1,490	1,320	2,310	1,900	1,600	2,100	1,230	1,230	1,080	1,020
11	1,490	1,360	1,410	1,320	2,420	1,900	1,600	2,000	1,150	1,230	1,080	1,020
12	1,420	1,360	1,410	1,320	2,640	1,900	1,800	2,000	1,150	1,320	1,080	1,020
13	1,420	1,360	1,410	1,320	2,530	1,900	1,800	2,000	6,540	1,230	1,080	1,020
14	1,420	1,360	1,320	1,320	2,310	2,000	1,800	1,900	4,220	1,230	1,080	1,020
15	1,420	1,360	1,320	1,320	2,310	2,000	1,600	1,900	2,530	1,230	1,080	1,150
16	1,360	1,420	1,230	1,410	2,200	2,000	1,600	1,800	2,100	1,230	1,150	1,230
17	1,360	1,420	1,230	1,600	2,200	2,000	1,600	1,700	2,000	1,230	1,150	1,230
18	1,360	1,420	1,230	1,900	2,100	1,900	1,600	1,700	1,800	1,150	1,230	1,230
19	1,360	1,420	1,410	2,000	1,900	1,900	1,800	1,600	1,700	1,150	1,230	1,230
20	1,360	1,420	3,800	2,000	1,800	1,900	2,530	1,600	1,600	1,150	1,150	1,150
21	1,360	1,420	3,520	1,900	1,800	1,900	2,420	1,500	1,600	1,150	1,150	1,150
22	1,360	1,360	3,000	1,800	1,700	1,900	2,200	1,500	1,500	1,150	1,080	1,410
23	1,360	1,360	2,760	1,700	1,900	1,900	2,000	1,500	1,500	1,150	1,080	1,600
24	1,360	1,360	2,640	1,600	3,000	1,800	1,900	1,410	1,500	1,080	1,080	1,800
25	1,360	1,360	2,420	1,600	3,130	1,800	1,900	1,410	1,500	1,080	1,080	1,700
26	1,360	1,310	2,200	1,600	3,260	1,800	3,660	1,320	1,500	1,080	1,080	1,800
27	1,360	1,310	1,900	1,600	3,130	1,800	3,800	1,320	1,410	1,080	1,020	2,000
28	1,360	1,310	1,800	1,600	3,000	1,800	4,520	1,410	1,410	1,080	1,020	2,880
29	1,360	1,310	1,700	1,500	.....	1,700	6,200	1,320	1,320	1,080	1,020	2,880
30	1,360	1,310	1,600	1,500	.....	1,700	5,570	1,320	1,320	1 080	1,020	2,310
31	1,360	.....	1,600	1,500	.....	1,600	.....	1,320	.....	1,150	1,020	.....
1925–26												
1	2,880	2,200	2,630	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 from discharge at Van Buren for October 21- November 15, 1921; June 16, 30, September 30, 1923, and July 6-10, 1926.

DAILY DISCHARGE, IN SECOND-FEET, OF CURRENT RIVER AT DONIPHAN, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-1928—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1926–27												
1.....	2,110	3,800	2,310	2,310	6,370	2,310	9,300	5,940	14,200	3,630	2,620	2,620
2.....	2,420	3,130	2,210	2,310	5,880	2,110	27,000	5,760	39,400	3,480	2,490	2,620
3.....	2,110	2,880	2,110	2,310	5,720	2,210	25,500	5,400	40,800	3,480	2,620	2,620
4.....	1,810	2,420	2,110	2,310	5,570	2,110	9,300	5,400	32,600	3,330	2,900	2,490
5.....	2,110	2,210	2,010	2,310	5,120	2,110	8,300	5,060	21,300	3,180	2,900	2,760
6.....	2,310	2,110	2,010	2,310	4,820	2,110	7,020	10,400	11,700	3,180	2,760	2,900
7.....	2,310	1,910	2,010	2,210	4,520	2,110	6,120	11,300	9,500	3,040	2,620	2,760
8.....	2,110	1,810	1,910	2,110	4,080	2,210	9,500	11,700	8,300	3,040	3,040	3,180
9.....	1,910	1,810	1,910	2,010	3,800	2,210	11,900	8,700	7,380	2,900	5,940	2,620
10.....	1,720	1,910	1,910	2,010	3,660	2,310	12,100	8,700	6,840	2,900	12,100	2,490
11.....	1,720	1,810	1,910	1,810	3,390	3,310	11,700	9,940	6,300	2,760	5,580	2,360
12.....	1,630	1,720	1,810	1,810	3,260	2,640	11,300	8,300	5,940	2,760	4,260	2,240
13.....	1,630	1,630	2,010	1,810	3,260	4,080	13,000	7,200	5,580	2,760	3,630	2,240
14.....	1,540	1,630	2,010	1,910	3,130	4,520	30,600	6,480	5,400	2,900	7,920	2,240
15.....	1,460	2,110	1,910	2,530	3,130	4,080	48,800	5,760	5,580	3,180	10,200	2,120
16.....	1,460	4,970	1,810	3,000	3,260	3,660	42,100	5,220	5,060	3,040	12,600	2,120
17.....	1,380	5,570	1,720	2,880	3,130	3,520	32,200	5,060	4,740	2,760	6,840	2,000
18.....	1,380	4,670	1,720	2,760	3,130	5,880	17,100	4,580	5,760	2,620	6,660	2,120
19.....	1,380	4,220	1,720	3,260	3,000	7,760	20,400	4,740	5,400	2,620	11,900	2,000
20.....	1,380	3,940	1,630	5,270	2,880	9,300	28,200	5,580	5,060	2,620	6,480	2,000
21.....	1,380	3,390	2,110	5,270	2,760	7,760	26,200	5,220	5,220	2,620	5,060	2,000
22.....	1,300	3,260	2,210	11,300	2,760	7,760	14,200	5,060	5,940	2,620	4,580	1,890
23.....	1,300	3,130	2,310	11,500	2,760	7,050	10,800	5,760	9,100	2,620	4,100	1,890
24.....	1,300	2,760	2,420	10,100	2,640	5,880	9,100	6,120	6,120	2,490	3,780	1,890
25.....	1,380	2,640	2,530	8,500	2,530	5,270	8,300	7,200	5,220	2,490	3,480	1,890
26.....	1,380	2,640	2,530	7,580	2,420	4,670	7,920	14,200	4,740	2,360	3,330	1,890
27.....	1,300	2,760	2,420	7,220	2,420	4,220	7,020	17,600	4,420	2,360	3,180	1,890
28.....	1,300	2,640	2,530	7,050	2,310	3,940	6,660	8,500	4,100	2,360	3,040	1,890
29.....	1,300	2,530	2,420	6,200	.....	3,800	6,120	7,380	3,940	2,360	2,900	2,240
30.....	2,420	2,420	2,420	5,720	.....	3,800	6,300	6,480	3,780	2,760	2,760	4,580
31.....	5,570	.....	2,420	6,040	.....	4,220	.....	6,120	.....	2,620	2,760	.....
1927–28												
1.....	2,640	1,810	2,260	3,170	2,900	3,170	2,900	5,100	2,640	8,500	2,770	2,260
2.....	2,640	1,920	3,310	3,170	2,900	3,170	2,770	4,620	2,640	8,500	3,170	2,140
3.....	2,640	1,920	3,170	3,030	2,770	3,030	2,770	4,470	3,310	6,840	3,030	2,140
4.....	3,170	1,920	3,030	2,900	2,770	3,030	2,900	4,170	4,780	6,300	2,770	2,140
5.....	3,170	1,810	2,770	2,900	2,770	3,030	3,030	4,020	5,760	5,580	2,770	2,030
6.....	3,030	1,810	2,640	2,770	2,770	2,900	14,500	3,870	4,470	5,100	2,900	2,030
7.....	2,640	1,810	2,640	2,640	2,900	2,900	17,600	3,730	4,170	4,780	3,030	2,030
8.....	2,380	2,510	2,640	2,640	3,170	2,770	12,600	3,590	3,730	4,480	2,770	2,030
9.....	2,380	4,780	2,640	2,770	3,450	2,770	8,500	3,450	6,840	4,470	2,640	2,030
10.....	2,380	5,760	2,510	2,770	3,450	3,030	6,660	3,450	25,500	4,320	2,510	2,030
11.....	2,260	4,310	2,510	2,640	3,170	2,900	5,760	3,450	40,800	4,020	2,510	1,920
12.....	2,260	3,730	2,510	2,640	3,170	2,900	5,420	3,450	12,800	3,870	2,510	1,920
13.....	2,260	2,260	3,030	2,510	3,170	2,900	5,100	3,170	13,500	3,730	2,510	1,920
14.....	2,380	2,030	33,400	2,510	3,170	2,900	4,780	3,030	43,000	3,590	2,380	1,920
15.....	2,380	2,030	35,000	2,510	3,730	2,900	4,320	2,900	26,200	3,590	2,380	2,510
16.....	2,140	2,030	15,700	2,510	3,310	3,170	4,020	2,900	12,100	3,450	2,380	2,260
17.....	2,140	4,170	9,500	2,380	4,470	3,730	3,870	3,030	9,720	3,310	2,260	2,030
18.....	2,030	4,780	7,920	2,510	4,320	4,320	3,730	2,900	9,100	3,030	2,380	1,920
19.....	2,030	4,020	6,480	2,900	3,730	4,780	3,590	3,030	13,300	3,170	2,640	1,920
20.....	2,030	3,870	5,580	4,320	3,590	4,620	3,590	2,900	11,500	3,170	2,510	1,920
21.....	2,030	3,590	5,100	6,660	3,310	4,470	10,800	3,030	10,800	3,310	2,380	1,920
22.....	1,920	3,170	4,620	5,940	3,310	4,320	16,000	3,450	18,200	3,170	2,260	1,810
23.....	1,920	2,900	4,320	4,320	3,170	4,020	20,000	3,170	20,400	3,030	2,260	1,810
24.....	1,920	2,770	4,020	4,170	3,590	3,870	14,000	3,170	14,500	2,900	2,380	1,810
25.....	1,920	2,640	3,730	4,020	3,730	3,730	9,720	3,030	12,100	2,900	3,030	1,810
26.....	1,920	2,510	3,590	3,870	3,590	3,730	8,900	2,900	10,600	2,900	3,310	1,810
27.....	1,810	2,510	3,310	3,870	3,450	3,590	6,660	2,770	8,100	2,900	2,900	1,810
28.....	1,810	2,380	3,170	3,450	3,310	3,450	6,120	2,770	7,200	3,590	2,770	1,810
29.....	1,810	2,380	3,590	3,310	3,310	3,310	5,760	2,640	7,740	2,770	2,510	1,810
30.....	1,810	2,260	3,450	3,170	.....	3,170	5,420	2,640	12,800	2,770	2,380	1,810
31.....	1,810	.....	3,310	3,030	.....	3,030	.....	2,640	.....	2,640	2,510	.....

MONTHLY DISCHARGE OF CURRENT RIVER AT DONIPHAN, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-1928

(Drainage area, 2,030 square miles.)

Month.	Discharge in second-feet.				Run-off in inches.
	Maximum.	Minimum.	Mean.	Per square mile.	
1921					
June, 14-30	3,630	1,980	2,390	1.18	0.75
July	3,310	1,620	2,130	1.05	1.21
August	1,880	1,620	1,730	.852	.98
September	7,000	1,620	2,360	1.16	1.29
1921-22					
October	2,090	1,560	1,720	0.847	0.98
November	21,000	1,450	4,270	2.10	2.34
December	4,970	2,140	3,140	1.55	1.79
January	2,370	2,030	2,130	1.05	1.21
February	6,880	2,030	3,160	1.56	1.62
March	12,400	2,980	5,700	2.81	3.24
April	22,000	4,370	8,530	4.20	4.69
May	7,050	2,370	3,610	1.78	2.05
June	2,370	1,820	2,040	1.00	1.12
July	2,850	1,620	1,950	.961	1.11
August	1,720	1,520	1,570	.773	.89
September	2,030	1,330	1,480	.729	.81
The year	22,000	1,330	3,270	1.61	21.85
1922-23					
October	1,520	1,330	1,370	.675	0.78
November	1,620	1,330	1,490	.734	.82
December	3,800	1,240	1,640	.808	.93
January	7,580	1,820	3,460	1.70	1.96
February	29,600	2,580	6,070	2.99	3.11
March	20,800	2,580	6,350	3.13	3.61
April	4,220	3,000	3,430	1.69	1.89
May	20,300	3,240	6,580	3.24	3.74
June	9,300	2,830	4,910	2.42	2.70
July	2,780	2,040	2,320	1.14	1.31
August	2,300	1,800	1,960	.966	1.11
September	1,960	1,720	1,810	.892	1.00
The year	29,600	1,240	3,430	1.69	22.96
1923-24					
October	1,960	1,640	1,710	0.842	0.97
November	1,800	1,640	1,690	.833	.93
December	5,270	1,720	2,720	1.34	1.54
January	2,210	1,720	1,860	.916	1.06
February	2,300	1,720	2,040	1.00	1.08
March	3,800	1,800	2,150	1.06	1.22
April	3,520	1,800	2,170	1.07	1.19
May	8,300	1,720	2,390	1.18	1.36
June	7,400	2,350	3,640	1.79	2.00
July	3,260	1,960	2,300	1.13	1.30
August	2,250	1,710	1,880	.926	1.07
September	2,660	1,490	1,680	.828	.92
The year	8,300	1,490	2,180	1.07	14.64
1924-25					
October	1,560	1,360	1,420	0.700	0.81
November	1,420	1,310	1,360	.670	.75
December	3,800	1,230	1,760	.867	1.00
January	2,000	1,320	1,540	.759	.88
February	3,260	1,410	2,220	1.09	1.14
March	2,760	1,600	1,990	.980	1.13
April	6,200	1,410	2,220	1.09	1.22
May	4,370	1,320	1,990	.980	1.13
June	6,540	1,150	1,730	.852	.95
July	1,320	1,080	1,170	.576	.66
August	1,230	1,020	1,090	.537	.62
September	2,880	1,020	1,370	.675	.75
The year	6,540	1,020	1,650	.813	11.04

MONTHLY DISCHARGE OF CURRENT RIVER AT DONIPHAN, MO., FOR THE YEARS ENDING SEPTEMBER 30,1921-1928—*Continued*

Month.	Discharge in second-feet.				Run-off in inches.
	Maximum	Minimum.	Mean.	Per square mile.	
1925-26					
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	15.38
1926-27					
October	5,570	1,300	1,800	0.887	1.02
November	5,570	1,630	2,810	1.38	1.54
December	2,530	1,630	2,100	1.03	1.19
January	11,500	1,810	4,380	2.16	2.49
February	6,370	2,310	3,630	1.79	1.86
March	9,300	2,110	4,130	2.03	2.34
April	48,800	6,120	16,100	7.93	8.85
May	11,700	4,580	7,450	3.67	4.23
June	40,800	3,780	9,980	4.92	5.49
July	3,630	2,360	2,830	1.39	1.61
August	12,600	2,490	5,000	2.46	2.84
September	4,580	1,890	2,350	1.16	1.29
The year	48,800	1,300	5,200	2.56	34.75
1927-28					
October	3,170	1,810	2,250	1.11	1.28
November	5,760	1,810	2,880	1.42	1.58
December	35,000	2,260	6,180	3.04	3.50
January	6,660	2,380	3,290	1.62	1.87
February	4,470	2,770	3,330	1.64	1.77
March	4,780	2,770	3,410	1.68	1.94
April	20,000	2,770	7,390	3.64	4.06
May	5,100	2,640	3,340	1.65	1.90
June	43,000	2,640	12,600	6.21	6.93
July	8,500	2,640	4,090	2.01	2.32
August	3,310	2,260	2,630	1.30	1.50
September	2,510	1,810	1,980	.975	1.09
The year	43,000	1,810	4,430	2.18	29.74

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, Oregon County, 7 miles above Fredericks Ford, and 12 miles above Missouri-Arkansas line.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—October 22, 1921, to September 30, 1928.

EQUIPMENT.—Chain gage on bridge. Discharge measurements made from 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, 18.74 feet, April 14, 1927 (discharge, 27,800 second-feet); minimum stage, 1.06 feet September 6-11, 1925 (discharge, 210 second-feet).

REGULATION.—Natural regulation through flow from large springs.

ACCURACY.—Stage-discharge relation practically permanent; not affected by ice. Several rating curves used. Gage read to hundredths once or twice daily. Records fair for 1922; others good except those above 10,000 second-feet, which are fair.

Data collected by United States Geological Survey co-operating with Missouri Bureau of Geology and Mines.

DAILY DISCHARGE, IN SECOND-FEET, OF ELEVEN POINT RIVER NEAR BARDLEY, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-1928

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1921–22												
1	.....	400	745	640	690	910	5,130	1,310	800	690	515	480
2	.....	400	910	590	1,020	910	2,930	1,250	855	690	515	450
3	.....	400	910	590	910	855	2,450	1,250	800	965	515	450
4	.....	400	910	640	855	855	2,150	1,310	800	800	515	450
5	.....	400	910	590	800	855	2,080	1,250	800	745	515	450
6	.....	400	855	590	745	855	2,080	1,250	745	690	515	450
7	.....	400	800	590	690	910	1,870	1,250	745	690	515	450
8	.....	400	800	590	640	910	1,800	1,080	745	640	515	450
9	.....	400	745	590	640	965	1,940	1,130	745	640	515	450
10	.....	400	690	590	640	1,550	1,870	1,130	745	640	515	450
11	.....	400	690	590	640	1,490	2,450	1,080	745	590	480	450
12	.....	380	745	590	590	1,370	2,370	1,080	690	640	480	450
13	.....	400	690	590	590	1,250	2,010	1,020	690	640	480	450
14	.....	400	640	590	590	1,310	1,800	1,020	690	640	480	450
15	.....	400	690	590	550	1,370	1,670	1,020	690	640	480	450
16	.....	400	640	550	550	1,310	1,610	1,020	690	590	550	425
17	.....	425	690	550	550	1,310	2,010	965	690	590	515	425
18	.....	1,020	640	550	550	1,310	1,940	965	690	590	515	425
19	.....	550	640	550	550	1,490	1,670	965	640	590	480	425
20	.....	2,770	640	550	550	1,730	1,610	965	640	590	480	425
21	.....	1,610	590	515	640	1,610	1,490	910	640	590	480	425
22	380	1,310	590	515	690	1,430	1,490	910	640	550	480	425
23	380	1,130	590	515	800	1,370	1,370	910	640	550	480	425
24	400	1,020	690	515	965	1,250	1,370	910	640	550	480	425
25	400	1,370	690	515	965	1,190	1,370	910	640	590	480	425
26	400	1,250	745	515	965	1,310	1,310	855	640	590	480	425
27	400	1,080	690	515	965	1,870	1,310	855	640	590	480	425
28	400	965	690	515	965	1,870	1,370	855	640	550	450	425
29	400	910	690	480	.....	1,670	1,370	855	640	550	450	425
30	400	855	640	480	.....	2,010	1,370	800	640	550	450	425
31	400	.....	640	480	.....	5,820	.....	800	.....	550	450	.....
1922–23												
1	405	405	360	700	1,680	700	980	920	1,620	920	650	505
2	405	380	360	600	5,460	700	980	920	1,480	920	650	505
3	405	380	360	550	3,150	700	980	920	1,480	920	650	600
4	405	380	360	505	2,260	700	1,040	1,220	1,620	860	600	550
5	405	380	360	505	1,820	700	1,220	1,480	1,420	860	600	505
6	405	380	360	470	1,480	1,100	1,160	1,360	1,360	860	600	505
7	405	380	360	470	1,420	1,220	1,100	1,290	1,360	800	600	505
8	405	380	360	435	1,290	1,160	1,100	1,160	1,290	800	600	505
9	405	380	360	435	1,220	1,040	1,040	1,100	1,220	800	600	505
10	405	380	360	435	1,160	980	1,040	1,040	1,420	800	600	470
11	405	380	360	435	1,040	1,620	980	1,040	3,060	800	600	470
12	405	360	360	405	1,040	3,790	980	980	2,110	800	600	470
13	380	380	340	405	1,100	2,570	1,100	920	1,680	800	600	470
14	380	380	360	405	1,040	1,890	1,160	980	1,480	860	550	470
15	380	380	360	405	920	2,330	1,100	5,460	1,750	800	550	470
16	380	380	360	380	920	9,150	1,040	5,350	1,890	800	550	470
17	380	380	360	380	920	3,330	1,040	3,420	1,680	800	550	470
18	380	380	340	380	860	2,410	980	2,410	1,620	800	550	470
19	380	380	340	380	860	1,960	920	2,110	1,480	750	550	470
20	380	380	340	405	800	1,820	920	1,960	1,360	750	550	470
21	380	380	340	3,600	800	1,680	1,040	1,680	1,290	750	550	470
22	380	360	340	1,480	750	1,550	980	1,550	1,100	700	550	470
23	380	360	340	1,160	750	1,480	980	1,550	1,160	700	550	470
24	380	360	340	1,040	750	1,360	920	1,620	1,100	700	550	435
25	380	360	340	920	700	1,290	920	1,420	1,100	700	505	435
26	380	360	340	860	750	1,290	920	1,360	1,040	700	505	435
27	380	360	380	860	750	1,220	920	1,360	1,040	700	505	435
28	380	360	435	920	750	1,160	1,100	1,290	1,040	700	505	435
29	380	360	435	860	.....	1,100	1,040	1,220	980	700	505	435
30	380	360	435	860	.....	1,100	980	1,360	920	750	505	435
31	380	.....	550	920	.....	1,040	.....	1,680	.....	650	505	.....

DAILY DISCHARGE, IN SECOND-FEET, OF ELEVEN POINT RIVER NEAR BARDLEY, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-1928—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1923–24												
1..	425	385	350	505	385	425	505	750	920	700	485	405
2..	425	368	332	505	385	425	485	650	800	700	485	425
3..	425	405	332	465	385	425	465	600	800	650	485	425
4..	425	405	350	465	550	405	465	550	750	650	465	405
5..	425	405	350	445	650	405	465	550	700	600	465	405
6..	405	385	350	425	600	405	445	505	700	600	445	385
7..	405	385	350	425	550	405	425	505	650	600	445	385
8..	405	368	350	425	505	385	425	485	650	550	425	385
9..	405	368	368	405	465	385	425	465	600	550	425	368
10..	385	368	385	445	465	385	405	465	650	550	1,550	368
11..	385	368	425	425	465	368	405	445	650	550	800	350
12..	385	368	445	405	445	368	385	425	650	550	1,290	350
13..	385	368	505	405	445	368	385	405	600	550	700	350
14..	385	350	600	385	425	368	385	405	600	550	650	350
15..	385	350	550	385	425	385	385	405	600	550	550	350
16..	385	350	550	405	425	385	385	385	750	550	550	350
17..	425	350	505	405	425	385	385	385	700	550	600	332
18..	425	350	505	405	445	385	385	385	700	550	550	332
19..	425	350	485	405	465	385	368	368	650	550	505	350
20..	405	350	505	385	465	405	368	445	650	550	505	350
21..	405	350	650	385	485	425	368	600	800	505	485	368
22..	385	368	650	385	465	425	368	600	1,290	505	485	350
23..	385	350	800	385	465	485	350	550	980	505	465	350
24..	385	350	750	385	465	505	350	600	920	505	465	350
25..	385	350	700	385	445	485	350	550	860	550	445	350
26..	385	350	700	385	445	485	350	550	860	600	445	350
27..	385	332	650	368	445	485	350	550	860	505	425	332
28..	385	332	600	368	445	465	350	600	800	505	425	332
29..	385	368	600	385	425	505	385	980	750	485	405	332
30..	385	350	550	385	.....	550	700	1,040	750	505	405	315
31..	385	.....	550	385	.....	550	.....	980	.....	485	405	.....
1924–25												
1.....	320	290	265	278	290	445	320	750	320	290	240	220
2.....	320	290	252	278	290	425	320	700	320	290	240	220
3.....	320	290	252	278	290	425	320	700	320	290	240	220
4.....	320	278	252	265	290	425	320	650	320	290	230	220
5.....	320	278	265	265	305	405	320	650	305	278	230	220
6.....	320	278	265	265	320	385	320	600	305	278	230	210
7.....	320	278	278	265	305	368	305	550	305	278	230	210
8.....	320	278	320	265	305	350	305	550	305	265	240	210
9.....	320	278	320	265	368	350	305	505	290	265	230	210
10.....	305	278	305	265	425	350	320	505	290	265	230	210
11.....	305	278	305	265	445	350	320	505	290	265	230	210
12.....	305	278	278	265	425	350	320	465	290	252	230	220
13.....	305	278	278	265	405	350	320	465	3,690	252	230	220
14.....	305	278	278	252	385	405	320	445	1,960	278	220	220
15.....	305	278	265	252	385	425	305	425	750	278	220	240
16.....	305	305	265	265	368	445	305	425	600	265	220	385
17.....	290	305	265	385	350	445	305	425	550	278	220	240
18.....	290	278	265	405	335	465	305	425	485	290	220	230
19.....	290	265	290	385	335	445	320	405	465	278	220	220
20.....	290	265	290	385	320	405	335	385	425	265	220	220
21.....	290	265	290	368	320	385	335	385	405	265	230	240
22.....	290	265	320	350	350	385	320	385	385	265	230	290
23.....	290	265	320	350	600	385	320	445	368	265	220	305
24.....	290	265	320	320	550	368	305	368	350	265	220	290
25.....	290	265	305	305	550	350	305	368	350	265	220	290
26.....	290	265	290	305	550	350	368	350	335	252	220	385
27.....	290	265	290	290	445	350	485	335	320	252	220	465
28.....	290	265	278	290	445	350	800	335	335	252	220	485
29.....	290	265	278	290	.....	335	800	320	305	252	220	485
30.....	290	265	278	290	.....	335	800	320	305	240	220	465
31.....	290	.....	278	290	.....	320	.....	320	.. ...	240	220	.....

DAILY DISCHARGE, IN SECOND-FEET, OF ELEVEN POINT RIVER NEAR BARDLEY, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-1928—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1925–26												
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	290	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	860	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	.....
1926–27												
1.....	375	785	575	730	1,720	845	2,860	2,160	6,860	1,580	1,230	1,030
2.....	346	730	552	730	1,720	730	2,160	2,080	6,440	1,510	1,160	1,030
3.....	332	675	552	702	1,650	730	1,860	2,000	5,800	1,440	1,160	1,030
4.....	346	625	530	675	1,580	702	1,440	3,060	4,600	1,440	1,160	1,030
5.....	405	575	530	675	1,580	675	1,580	4,840	3,260	1,440	1,100	1,030
6.....	405	552	510	650	1,510	675	1,510	5,560	2,770	1,440	1,100	1,030
7.....	390	530	490	625	1,440	702	1,440	3,760	2,500	1,440	1,100	1,030
8.....	375	510	490	600	1,300	675	1,860	2,960	2,320	1,440	1,860	1,030
9.....	360	552	510	575	1,230	675	2,320	2,680	2,160	1,370	1,650	965
10.....	360	575	530	552	1,160	675	4,120	3,260	2,080	1,300	1,440	965
11.....	360	530	490	530	1,160	675	3,560	2,860	2,000	1,300	1,300	965
12.....	332	510	530	510	1,160	845	3,060	2,000	1,860	1,300	1,230	965
13.....	332	490	575	552	1,100	1,100	8,160	2,240	2,860	1,300	1,230	965
14.....	332	490	530	530	1,100	1,100	19,900	2,080	2,500	1,300	1,580	965
15.....	332	1,100	490	530	1,100	965	12,500	2,000	1,860	1,650	1,860	905
16.....	332	1,030	472	552	1,030	965	10,100	1,930	1,790	1,300	1,510	905
17.....	320	1,030	455	575	1,030	965	5,080	1,860	1,720	1,300	1,440	905
18.....	320	1,160	455	575	965	3,260	7,140	1,860	2,000	1,300	2,160	905
19.....	320	1,030	455	650	965	2,860	10,700	1,860	1,860	1,230	1,720	905
20.....	320	965	455	785	965	2,160	7,280	1,860	1,790	1,230	1,580	905
21.....	320	905	730	1,030	905	2,000	4,600	1,790	3,660	1,230	1,440	905
22.....	307	845	730	1,440	905	1,100	3,660	1,860	4,360	1,160	1,370	905
23.....	307	785	785	4,120	845	1,100	3,360	2,160	2,320	1,160	1,300	905
24.....	332	702	785	4,120	845	1,580	2,960	2,160	2,000	1,160	1,230	905
25.....	332	675	730	3,460	845	1,440	2,770	2,080	1,930	1,160	1,230	845
26.....	332	675	702	2,960	785	1,300	2,590	2,680	1,790	1,160	1,160	845
27.....	320	675	675	2,500	785	1,300	2,500	2,240	1,720	1,100	1,160	905
28.....	320	650	702	2,320	845	1,230	2,320	2,160	1,720	1,100	1,160	905
29.....	390	625	702	2,160	.....	1,160	2,240	2,680	1,580	1,100	1,160	905
30.....	1,100	600	730	2,000	.....	1,100	2,320	2,160	1,580	2,000	1,100	2,860
31.....	905	.....	730	1,720	.....	1,160	.....	2,000	.....	1,300	1,100	.....

DAILY DISCHARGE, IN SECOND FEET, OF ELEVEN POINT RIVER NEAR BARDLEY, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-1928—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1927–28												
1.....	1,230	785	845	1,370	1,100	1,230	1,160	1,580	965	2,960	1,120	900
2.....	1,100	785	845	1,300	1,100	1,160	1,100	1,510	965	2,460	1,040	835
3.....	1,580	785	785	1,300	1,030	1,160	1,100	1,440	1,030	2,160	1,040	835
4.....	1,300	785	785	1,230	1,030	1,160	1,100	1,440	1,100	1,980	1,040	835
5.....	1,100	785	785	1,230	1,030	1,160	1,160	1,370	1,440	1,890	1,120	835
6.....	1,100	785	785	1,230	1,100	1,100	9,600	1,370	1,230	1,810	1,120	802
7.....	1,030	785	845	1,230	1,230	1,100	5,800	1,300	1,160	1,730	1,040	802
8.....	1,030	785	785	1,160	1,160	1,100	2,860	1,300	1,160	1,650	1,040	802
9.....	1,030	1,650	785	1,160	1,160	1,160	2,240	1,300	2,860	1,650	970	770
10.....	1,030	1,370	785	1,160	1,160	1,160	2,000	1,230	3,060	1,570	1,040	770
11.....	965	1,160	785	1,160	1,160	1,160	1,860	1,230	2,320	1,570	1,040	770
12.....	965	1,100	785	1,160	1,100	1,160	1,790	1,160	1,860	1,490	970	770
13.....	965	1,030	12,100	1,160	1,160	1,160	1,650	1,160	12,500	1,490	970	770
14.....	905	1,030	18,700	1,100	1,160	1,160	1,650	1,160	6,300	1,420	970	770
15.....	905	1,030	11,600	1,100	1,160	1,160	1,510	1,100	3,660	1,420	900	900
16.....	905	1,100	2,960	1,100	1,160	1,230	1,440	1,100	2,860	1,420	900	802
17.....	845	1,100	2,500	1,100	1,160	1,370	1,440	1,100	3,060	1,340	900	770
18.....	845	1,030	2,080	1,100	1,160	1,440	1,370	1,030	2,860	1,260	900	770
19.....	845	1,030	1,930	1,300	1,160	1,440	1,370	1,030	2,460	1,420	970	738
20.....	845	965	1,790	1,440	1,100	1,370	1,370	1,030	2,160	1,260	900	738
21.....	845	965	1,720	1,370	1,100	1,300	7,280	1,030	3,880	1,260	900	738
22.....	845	965	1,650	1,300	1,100	1,300	4,720	1,160	4,120	1,260	900	705
23.....	845	965	1,580	1,300	1,230	1,230	2,960	1,160	5,080	1,340	900	705
24.....	845	965	1,510	1,230	1,440	1,230	2,410	1,100	4,360	1,260	1,040	705
25.....	845	905	1,440	1,230	1,370	1,230	2,000	1,030	3,260	1,260	1,040	705
26.....	845	905	1,440	1,230	1,300	1,230	1,860	1,030	2,860	1,190	900	705
27.....	785	905	1,370	1,160	1,300	1,440	1,790	1,030	2,460	1,120	900	705
28.....	785	905	1,440	1,160	1,300	1,440	1,720	1,030	2,260	1,120	900	705
29.....	785	845	1,510	1,160	1,230	1,300	1,650	965	3,560	1,120	900	705
30.....	785	845	1,510	1,160	.....	1,230	1,650	965	2,860	1,120	835	675
31.....	785	.....	1,440	1,100	.....	1,160	.....	965	.....	1,120	...900	.....

NOTE.—Daily discharge interpolated August 4-7, 1922; gage not read.

MONTHLY DISCHARGE OF ELEVEN POINT RIVER NEAR BARDLEY, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-1928

Month	Discharge in second-feet.		
	Maximum.	Minimum.	Mean.
1921-22			
October 22-31	400	380	396
November	2,770	400	755
December	910	590	717
January	640	480	557
February	1,020	550	725
March	5,820	855	1,450
April	5,130	1,310	1,910
May	1,310	800	1,030
June	855	640	701
July	965	550	629
August	550	450	492
September	480	425	438
1922-23			
October	405	380	390
November	405	360	374
December	550	340	368
January	3,600	380	728
February	5,460	700	1,300
March	9,150	700	1,750
April	1,220	920	1,020
May	5,460	920	1,680
June	3,060	920	1,440
July	920	650	782
August	650	505	566
September	600	435	477
The year	9,150	340	904
1923-24			
October	425	385	399
November	405	332	363
December	800	332	509
January	505	368	410
February	650	385	464
March	550	368	426
April	700	350	409
May	1,040	368	554
June	1,290	600	755
July	700	485	558
August	1,550	405	556
September	425	315	362
The year	1,550	315	481
1924-25			
October	320	290	302
November	305	265	276
December	320	252	284
January	405	252	299
February	600	290	384
March	465	320	385
April	800	305	372
May	750	320	466
June	3,690	290	535
July	290	240	268
August	240	220	226
September	485	210	275
The year	3,690	210	339

MONTHLY DISCHARGE OF ELEVEN POINT RIVER NEAR BARDLEY, MO., FOR THE YEARS ENDING SEPTEMBER 30, 1921-1928—*Continued*

Month.	Discharge in second-feet.		
	Maximum.	Minimum.	Mean.
1925-26			
October	1,960	320	795
November	2,490	700	1,080
December	1,680	505	812
January	800	425	567
February	1,550	505	721
March	1,360	700	915
April	1,220	650	855
May	650	425	524
June	505	350	416
July	368	305	332
August	505	290	339
September	350	265	289
The year	2,490	265	636
1926-27			
October	1,580	785	952
November	1,650	785	968
December	18,700	785	2,580
January	1,440	1,100	1,210
February	1,440	1,030	1,170
March	1,440	1,100	1,230
April	9,600	1,100	2,390
May	1,580	965	1,170
June	12,500	965	3,010
July	2,960	1,120	1,520
August	1,120	835	971
September	900	675	768
The year	18,700	675	1,490
1927-28			
October	1,100	307	386
November	1,160	490	719
December	785	455	586
January	4,120	510	1,290
February	1,720	785	1,150
March	3,260	675	1,180
April	19,900	1,440	4,600
May	5,560	1,790	2,480
June	6,860	1,580	2,720
July	2,000	1,100	1,330
August	2,160	1,100	1,350
September	2,860	845	1,010
The year	19,900	307	1,560

LITTLE RED RIVER NEAR HEBER SPRINGS, ARK.

LOCATION.—In NE. ¼ sec. 1, T. 10 N., R. 10 W., at county highway suspension bridge one-half mile west of Tumbling Shoals store and postoffice and 4 miles northeast of Heber Springs, Cleburne County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—September 15, 1927, to September 30, 1928.

EQUIPMENT.—Gage is vertical staff in several sections attached to trees on left bank 150 feet upstream from bridge. Discharge measurements made from bridge or by wading.

CHANNEL AND CONTROL.—Banks do not overflow; heavily wooded along stream. Bed composed of rocks, sand, and gravel; permanent. Low water control is small rock and gravel riffle one-fourth mile downstream; permanent. High water control is restricted section of channel at island one-half mile downstream.

EXTREMES OF STAGE.—Maximum stage recorded, 42.35 feet at 1:45 p. m. April 6; minimum stage, 3.07 feet September 30, 1928.

High water of April, 1927, reached a stage of 44.0 feet as determined from levels to water marks.

ACCURACY.—Gage read to hundredths once or twice daily. Data not sufficient for determination of discharge.

COOPERATION.—Arkansas Power & Light Company, H. C. Couch, President.

DISCHARGE MEASUREMENTS OF LITTLE RED RIVER NEAR HEBER SPRINGS, ARK., DURING YEARS ENDING SEPTEMBER 30, 1927 AND 1928

Date.	Made by	Gage height, feet.	Discharge, second-feet.
1927			
May 25	H. C. Beckman	16.29	11,200
July 20	H. C. Beckman	4.72	289
September 17	V. L. Austin	3.86	111
1928			
January 13	V. L. Austin	6.94	1,130
March 11	H. C. Beckman	8.10	1,810
April 27	V. L. Austin	9.56	2,740
August 11	A. L. Hill	4.22	195

DAILY GAGE HEIGHT, IN FEET, OF LITTLE RED RIVER NEAR HEBER SPRINGS, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1927 AND 1928

Day.	Sept.
1927	
1	.....
2	.....
3	.....
4	.....
5	.....
6	.....
7	.....
8	.....
9	.....
10	.....
11	.....
12	.....
13	.....
14	.....
15	4.00
16	3.93
17	3.86
18	3.78
19	3.72
20	3.63
21	3.57
22	3.52
23	3.48
24	3.45
25	3.42
26	3.40
27	6.88
28	7.71
29	6.39
30	11.22
31	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1927–28												
1	14.89	4.24	6.00	8.45	6.40	6.20	5.30	7.80	5.91	7.56	3.69	5.27
2	9.91	4.28	5.72	7.80	6.20	6.10	5.20	7.50	5.72	7.07	3.67	5.57
3	13.94	4.28	5.60	7.30	6.00	5.95	5.20	7.10	5.60	6.71	3.59	4.95
4	11.88	4.30	5.54	6.98	5.82	5.90	5.20	6.90	5.95	6.29	3.55	4.62
5	9.44	4.28	5.42	6.77	5.98	6.45	28.90	6.30	8.51	5.84	3.52	4.37
6	7.88	4.28	5.27	6.43	.....	7.25	41.16	6.10	8.00	5.63	3.43	4.20
7	7.76	4.24	5.12	6.37	6.95	7.05	26.10	5.90	7.18	5.39	3.52	4.01
8	9.88	5.62	4.97	7.93	8.15	6.95	14.30	5.70	6.45	5.26	3.65	3.92
9	8.18	6.48	4.92	7.75	8.15	8.60	12.00	5.50	6.05	4.98	3.44	3.83
10	7.35	6.21	5.45	7.63	7.70	8.45	10.70	5.30	7.15	4.83	3.36	3.75
11	6.78	5.88	6.16	7.25	7.37	8.11	9.80	5.20	7.00	4.72	3.93	3.67
12	6.89	6.16	8.30	7.05	7.10	7.80	9.10	5.10	6.47	4.59	3.99	3.62
13	7.02	6.26	14.28	6.93	7.00	7.60	8.50	4.90	6.66	4.47	3.79	3.57
14	6.60	6.19	28.72	6.85	7.10	7.30	8.75	4.80	14.00	4.50	3.62	3.51
15	6.18	9.42	18.00	6.75	7.32	7.00	8.00	4.70	16.35	4.42	3.61	3.47
16	5.88	21.12	13.40	6.72	7.40	8.40	7.65	4.70	12.75	4.43	3.47	3.65
17	5.64	12.88	11.61	7.35	7.20	9.65	7.30	4.70	11.75	4.35	3.41	3.98
18	5.44	10.92	10.18	14.42	7.10	9.30	7.00	4.80	18.00	4.32	3.32	3.77
19	5.22	9.78	9.32	23.55	6.95	8.65	6.75	4.90	12.05	4.30	3.53	3.79
20	5.06	9.28	8.55	14.92	6.75	8.25	6.50	5.50	9.95	4.42	6.90	3.65
21	4.93	8.74	8.00	12.48	6.50	7.90	14.00	5.60	10.62	4.45	5.74	3.57
22	4.86	8.32	7.52	10.98	6.35	7.50	25.40	7.60	12.40	4.42	5.09	3.49
23	4.78	7.44	7.28	10.10	6.55	7.20	18.30	10.90	16.95	4.35	4.97	3.41
24	4.68	7.55	7.06	9.45	6.75	7.00	13.80	9.10	17.10	4.67	4.77	3.35
25	4.62	7.18	6.76	8.88	7.00	6.80	11.90	7.90	12.15	4.36	7.60	3.27
26	4.53	6.95	6.42	.....	6.85	6.45	10.40	7.00	11.45	4.17	7.31	3.22
27	4.46	6.75	6.05	7.90	6.70	6.40	9.58	6.25	10.80	4.07	6.00	3.17
28	4.41	6.48	6.25	7.46	6.40	6.20	9.00	5.85	8.95	4.12	5.42	3.13
29	4.34	6.29	9.05	7.22	6.35	6.15	8.40	5.50	8.65	3.91	4.87	3.12
30	4.30	6.12	9.92	7.00	.....	5.80	8.00	5.25	8.27	3.82	4.77	3.07
31	4.28	.....	9.16	7.84	.....	5.55	.....	5.03	.....	3.73	5.72	.....

LITTLE RED RIVER NEAR PANGBURN, ARK.

LOCATION.—At Skillern's Ferry, near Pangburn, White County. Big Red Creek enters about half a mile downstream.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—July 15, 1909, to December 31, 1910; gage-height record and discharge measurements only.

EQUIPMENT.—Vertical staff gage in three sections attached to trees on right bank. Discharge measurements made from ferry boat or by wading.

CHANNEL AND CONTROL.—Conditions not known.

EXTREMES OF STAGE.—Maximum stage recorded, 25.4 feet May 25, 1910; minimum stage, 1.3 feet September 18-20, 1909.

Data not sufficient for determination of discharge.

DISCHARGE MEASUREMENTS OF LITTLE RED RIVER NEAR PANGBURN, ARK., DURING 1909 AND 1910

Date.	Made by	Gage height, feet.	Discharge, second-feet.
1909			
November 28	W. N. Gladson	3.1	329
December 25	W. N. Gladson	3.7	637
1910			
May 21	W. N. Gladson	8.1	3,380

DAILY GAGE HEIGHT, IN FEET, OF LITTLE RED RIVER NEAR PANGBURN, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1909-1910

Day.	July	Aug.	Sept.
1909			
1	.....	2.0	1.5
2	.....	1.9	1.4
3	.....	1.9	1.4
4	.....	1.8	1.5
5	.....	1.8	1.5
6	.....	1.8	1.5
7	.....	1.8	1.8
8	.....	1.7	1.6
9	.....	1.7	1.5
10	.....	1.7	1.5
11	.....	1.7	1.5
12	.....	1.7	1.4
13	.....	1.7	1.4
14	2.65	1.6	1.4
15	2.9	1.6	1.4
16	3.2	1.6	1.4
17	3.0	1.7	1.4
18	3.2	1.8	1.3
19	3.1	1.7	1.3
20	3.1	1.7	1.3
21	3.1	1.7	1.6
22	2.1	1.7	1.8
23	2.3	1.6	2.2
24	2.2	1.6	1.8
25	2.2	1.6	1.6
26	2.1	1.6	1.6
27	2.1	1.6	1.5
28	2.7	1.6	1.5
29	2.2	1.6	1.4
30	2.0	1.5	1.4
31	2.0	1.5	.....

DAILY GAGE HEIGHT, IN FEET, OF LITTLE RED RIVER NEAR PANGBURN, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1909-1910—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909–10												
1.....	1.4	1.6	3.0	3.1	3.7	16.4	3.5	3.7	6.2	3.9	3.1	2.8
2.....	1.5	1.6	2.9	3.1	3.6	11.4	3.3	3.5	5.3	4.1	3.0	2.8
3.....	1.5	1.6	2.9	3.0	3.4	9.2	3.5	3.4	4.5	9.6	2.9	2.8
4.....	1.5	1.6	5.4	3.0	3.3	7.9	4.1	3.3	4.8	10.5	2.7	2.9
5.....	1.5	1.5	4.8	3.1	3.2	7.1	6.7	3.2	4.7	12.4	2.6	2.9
6.....	1.6	1.5	4.5	3.4	3.0	6.5	24.3	3.1	4.5	9.3	2.6	2.8
7.....	1.6	2.2	5.1	6.4	3.0	6.1	16.0	3.1	4.3	7.5	2.5	2.7
8.....	1.5	2.5	5.0	6.3	3.1	5.6	12.6	2.9	4.6	6.4	2.6	2.6
9.....	1.5	2.4	4.8	5.7	3.0	5.3	9.4	2.9	5.4	5.5	2.8	3.7
10.....	1.5	2.3	4.4	5.4	3.0	5.1	7.5	2 8	12.0	4.7	4.1	3.3
11.....	1.4	2.4	4.5	5.1	2.9	6.6	7.1	2.8	18.5	4.4	6.6	2.8
12.....	1.4	3.0	7.5	4.9	2 9	8.6	6.7	2 7	16.4	9.1	5.3	2.8
13.....	1.4	2.9	13.4	4.8	2 8	7.3	6.5	2 7	11.9	7.4	4.4	2.7
14.....	1.5	2.9	10.6	5.1	2.8	6.5	6.3	2.6	8.7	7.3	4.5	2.6
15.....	1.5	3.0	8.2	5.5	2 7	6.0	6.0	2 6	6.8	7.1	4.8	2.5
16.....	1.5	2.9	7.0	5.4	2.7	5.6	14.0	2 9	5.9	6.7	5.6	2.4
17.....	1 5	2.9	6.4	5.2	2 8	5.2	14.2	4 6	5.4	6.0	6.0	2.4
18.....	1 5	8.4	5.8	5.1	2 8	4.8	11.8	20 1	4.8	5.5	5 2	2.3
19.....	1.5	6.4	5.2	5.4	2.9	4.5	9.4	13.6	4.3	5.0	4.8	2.3
20.....	1.5	5.0	4.9	7.5	2.8	4.3	8.0	9.8	4.0	4.4	4.6	2.2
21.....	1.6	4.3	4.7	7.1	2 8	4.3	7.0	8 4	3.8	4.0	6.0	2.2
22.....	1.5	3.9	4.3	6.3	2.8	4.2	6.4	7.8	3.6	3.6	5.2	2.1
23.....	1.6	3.7	3.9	5.8	3.0	4.4	5.9	14.7	3.5	3.4	4.7	2.1
24.....	1.6	3.5	3.8	5.4	3 9	4.7	5.4	22.45	3.5	3.3	4.4	2.1
25.....	1.6	3.6	3.7	5.1	4.8	4.5	4.9	25.4	3.8	8.1	3.8	2.1
26.....	1.6	3.6	3.7	4.8	5.2	4.3	4.5	14.1	3.6	6.4	3.4	2.0
27.....	1.6	3.5	3.6	4.6	10.8	4.1	4.4	9.7	3.5	5.0	3.4	2.0
28.....	1.6	3.4	3.5	4.5	24.4	4.0	4.2	7.9	3.8	4.5	3.6	2.2
29.....	1.5	3.2	3.4	4.2	.....	3.8	4.0	6.6	4.9	4.0	3.3	2.3
30.....	1.5	3.0	3.3	4.0	.....	3.7	3.9	6.0	4.5	3.6	3.1	2.4
31.....	1.5	.....	3.2	3.8	.....	3.9	.....	5.6	.....	3.3	3.0	.....

Day.	Oct.	Nov.	Dec.
1910			
1.....	2.5	2.7	2.3
2.....	2.0	2.7	2.3
3.....	2.7	2.6	2.3
4.....	2.2	2.6	2.3
5.....	2.8	2.6	2.3
6.....	32.6	2.5	2.4
7.....	38.3	2.5	2.4
8.....	25.1	2.4	2.4
9.....	8.9	2.4	2.3
10.....	7.8	2.4	2.3
11.....	6.7	2.5	2.3
12.....	5.5	2.4	2.3
13.....	5.4	2.4	2.3
14.....	5.5	2.3	2.3
15.....	5.4	2.3	2.3
16.....	5.4	2.3	2.3
17.....	4.3	2.4	2.3
18.....	4.3	2.4	2.3
19.....	4.3	2.4	2.3
20.....	3.4	2.3	2.2
21.....	3.4	2.3	2.2
22.....	3.4	2.3	2.5
23.....	3.3	2.3	2.5
24.....	3.6	2.3	2.4
25.....	3.3	2.3	2.4
26.....	3.1	2.3	2.4
27.....	3.0	2.3	2.4
28.....	2.1	2.4	2.5
29.....	2.9	2.4	3.5
30.....	2.8	2.4	6.7
31.....	2.7	.....	7.8

CACHE RIVER AT PATTERSON, ARK.

LOCATION.—In sec. 6, T. 7 N., R. 2 W., at Missouri Pacific Railway bridge three-fourths of a mile west of Patterson, Woodruff County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—February 1 to September 30, 1928; gage-height record and discharge measurements only.

EQUIPMENT.—Gage is United States Weather Bureau vertical staff in two sections. Discharge measurements made from bridge at gage, from highway bridge 1,000 feet downstream, or by wading.

CHANNEL AND CONTROL.—Banks low, heavily wooded, subject to overflow. Bed composed of sand and silt; fairly permanent. No well-defined control.

EXTREMES OF STAGE.—Maximum stage recorded, 11.8 feet June 27-28; minimum stage, 3.6 feet September 30.

ACCURACY.—Gage read to tenths once daily. Data not sufficient for determination of discharge.

COOPERATION.—Gage-height record furnished by United States Weather Bureau.

DISCHARGE MEASUREMENTS OF CACHE RIVER AT PATTERSON, ARK., DURING THE YEAR ENDING SEPTEMBER 30, 1928

Date.	Made by	Gage height, feet.	Discharge, second-feet.
1928			
March 10	H. C. Beckman	7.39	876
April 13	H. C. Beckman	9.62	4,160
May 1	V. L. Austin	9.30	3,710
June 20	V. L. Austin	11.08	9,110
August 10	A. L. Hill	4.86	199

DAILY GAGE HEIGHT, IN FEET, OF CACHE RIVER AT PATTERSON, ARK., FOR THE YEAR ENDING SEPTEMBER 30, 1928

Day.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1928					—			
1	7.7	6.2	7.1	9.3	8.1	10.9	4.7	5.1
2	7.3	6.2	6.8	9.2	8.0	10.7	4.7	5.6
3	7.1	6.2	6.4	9.2	7.7	10.5	4.7	5.8
4	6.9	6.1	6.0	8.9	7.5	10.4	4.7	5.5
5	6.7	6.3	5.6	8.8	7.6	10.2	4.6	5.3
6	6.5	6.5	6.6	8.4	7.9	10.1	4.5	5.0
7	6.3	6.6	8.6	7.9	8.2	10.0	4.5	5.0
8	6.3	6.7	9.2	7.5	8.3	9.6	4.5	5.6
9	6.5	6.8	9.4	7.1	8.9	9.2	4.4	5.8
10	6.9	7.3	9.2	6.9	9.3	8.5	4.4	5.8
11	7.2	7.3	9.2	6.7	9.3	7.9	4.4	5.3
12	7.4	7.6	9.6	6.5	9.3	7.3	4.4	5.0
13	7.4	7.8	9.7	6.3	9.2	6.9	4.5	4.8
14	7.2	7.9	9.7	6.2	9.3	6.6	4.5	4.5
15	7.1	8.1	9.6	6.1	9.7	6.4	4.5	4.3
16	6.9	8.4	9.4	6.0	10.2	6.1	4.5	4.2
17	6.8	8.8	9.1	5.8	10.6	5.8	4.5	4.2
18	7.0	8.9	8.9	5.7	10.8	5.6	4.5	4.2
19	7.2	8.7	8.8	5.6	11.0	5.3	4.5	4.1
20	7.4	8.3	8.7	5.6	11.1	5.0	4.4	4.0
21	7.4	7.9	8.6	5.5	11.1	5.0	4.4	4.0
22	7.1	7.5	8.8	5.4	10.9	5.1	4.4	4.0
23	6.7	7.4	9.0	5.3	11.0	5.1	4.4	3.9
24	6.4	7.6	9.1	5.2	11.2	5.1	4.4	3.9
25	6.2	7.9	9.1	5.5	11.4	5.0	4.4	3.8
26	6.0	7.9	9.4	5.7	11.6	4.8	4.3	3.8
27	6.0	7.6	9.6	6 0	11.8	4.7	4.3	3.8
28	6.0	7.2	9.6	6.4	11.8	4.5	4.3	3.7
29	6.1	7.1	9.6	6.6	11.5	4.5	4.3	3.7
30	.....	7.1	9.4	7.4	11.2	4.6	4.3	3.6
31	.....	7.1	.....	8.0	....	4.7	4.4	.....

ARKANSAS RIVER BASIN

ARKANSAS RIVER AT VAN BUREN ARK.

LOCATION.—In sec. 24, T. 9 N., R. 32 W., at highway bridge at Van Buren, Crawford County, and 1½ miles below Lee Creek.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—October 3, 1927, to September 30, 1928.

EQUIPMENT.—Chain gage on downstream handrail of bridge. Discharge measurements made from bridge.

CHANNEL AND CONTROL.—Banks fairly high but subject to overflow. Bed composed of sand and gravel; shifting. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage recorded, 25.2 feet at 7 a. m. October 5, 1927 (discharge, 243,000 second-feet); minimum stage, 6.7 feet at 7 a. m. September 29, 1928 (discharge, 3,780 second-feet).

DIVERSIONS AND REGULATION.—Most of low-water flow in Colorado and Kansas diverted for irrigation.

ACCURACY.—One rating curve used; based on 9 discharge measurements well distributed over the range in stage for the period; rather poorly defined because of minor shifting of channel. Gage read to tenths twice daily to January 7; once daily thereafter. Because of the shifting character of the channel, daily discharge values may be considerably in error. Monthly records considered fair.

NOTE.—For miscellaneous gaging station and discharge data on the Arkansas River basin by the U. S. Army Engineers and Mississippi River Commission see pages 130-137.

DAILY DISCHARGE, IN SECOND-FEET, OF ARKANSAS RIVER AT VAN BUREN, ARK., FOR THE YEAR ENDING SEPTEMBER 30, 1928

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1927–28												
1.....	.....	15,700	8,140	36,100	9,100	10,600	12,100	82,500	16,300	95,500	22,700	11,600
2.....	.....	13,300	7,660	26,600	8,620	10,100	11,600	70,000	15,700	99,600	32,800	11,100
3.....	206.000	13,300	18,700	17,500	8,140	9,600	10,600	59,200	15,700	94,200	37,200	11,600
4.....	235,000	11,600	18,700	12,100	7,660	9,600	10,600	55,600	71,200	85,100	27,600	10,100
5.....	241,000	10,600	13,900	9,600	10,100	9,600	14,500	50,800	74,800	74,800	38,300	9,600
6.....	209,000	10,100	11,100	9,600	11,100	9,600	101,000	42,700	79,900	62,800	156,000	9,100
7.....	163,000	9,600	9,600	9,600	21,300	9,600	136,000	37,200	76,000	54,400	171,000	9,100
8.....	129,000	11,600	8,620	10,100	35,000	9,100	151,000	32,800	66,400	46,000	110,000	8,620
9.....	117,000	12,700	7,660	9,600	68,800	12,700	131,000	28,600	67,600	38,300	56,800	7,660
10.....	117,000	11,600	7,660	10,100	70,000	18,700	94,200	24,100	62,800	33,900	36,100	7,200
11.....	111,000	11,600	7,200	10,600	55,600	22,700	67,600	22,000	66,400	28,600	29,600	6,740
12.....	102,000	10,600	7,200	9,600	40,500	26,600	56,800	21,300	96,800	25,700	25,700	6,300
13.....	83,800	10,600	62,800	10,600	25,700	21,300	46,000	19,300	166,000	29,600	22,000	7,200
14.....	72,400	10,600	89,000	11,100	20,600	17,500	37,200	18,700	184,000	33,900	18,700	8,620
15.....	56,800	12,700	78,600	10,600	19,300	14,500	35,000	18,100	198,000	35,000	17,500	7,660
16.....	43,800	19,900	81,200	10,100	25,700	15,700	27,600	18,700	179,000	36,100	18,700	7,200
17.....	30,600	31,700	74,800	9,600	28,600	23,400	22,700	20,600	152,000	79,900	17,500	6,740
18.....	25,700	49,600	58,000	18,700	25,700	47,200	20,600	25,700	124,000	68,800	15,700	6,300
19.....	21,300	43,800	33,900	54,400	24,900	73,600	20,600	66,400	114,000	54,400	13,900	5,860
20.....	18,700	31,700	18,100	70,000	22,000	76,000	18,700	116,000	122,000	42,700	15,700	5,420
21.....	17,500	24,100	14,500	59,200	19,300	70,000	49,600	137,000	158,000	31,700	25,700	5,000
22.....	16,300	19,900	12,700	43,800	17,500	62,800	146,000	120,000	179,000	24,100	19,900	5,000
23.....	15,100	17,500	11,600	25,700	15,100	58,000	206,000	90,300	202,000	20,600	15,700	4,580
24.....	13,900	15,100	10,600	19,900	14,500	41,600	206,000	54,400	235,000	19,300	17,500	4,580
25.....	13,900	12,700	9,600	17,700	13,300	30,600	209,000	46,000	226,000	20,600	26,600	5,000
26.....	12,700	11,600	9,100	15,100	12,700	24,100	189,000	40,500	209,000	22,700	24,900	5,580
27.....	12,100	10,600	8,620	13,300	12,100	20,600	158,000	32,800	175,000	22,000	29,600	5,180
28.....	11,600	9,600	9,600	12,100	11,600	18,100	140,000	26,600	126,000	22,700	23,400	5,180
29.....	11,600	9,100	13,900	11,600	11,100	16,300	128,000	22,700	101,000	25,700	17,500	3,780
30.....	11,100	8,620	16,300	10,600	.....	15,100	107,000	20,600	91,600	22,700	14,500	4,180
31.....	11,100	.....	24,100	10,100	.....	13,900	.....	18,100	.....	22,700	12,700	.....

MONTHLY DISCHARGE OF ARKANSAS RIVER AT VAN BUREN, ARK., FOR THE YEAR ENDING SEPTEMBER 30, 1928

Month.	Discharge in second-feet.		
	Maximum	Minimum.	Mean.
October, 3-31	241,000	11,100	73,400
November	49,600	8,620	16,400
December	89,000	7,200	24,600
January	70,000	9,600	19,500
February	70,000	7,660	23,000
March	76,000	9,100	26,400
April	209,000	10,600	85,500
May	137,000	18,100	46,400
June	235,000	15,700	122,000
July	99,600	19,300	44,300
August	171,000	12,700	35,900
September	11,600	3,780	6,960

ARKANSAS RIVER AT LITTLE ROCK, ARK.

LOCATION.—In sec. 3, T. 1 N., R. 12 W., at Main Street bridge in Little Rock, Pulaski County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—September 16, 1927, to September 30, 1928. United States Weather Bureau has obtained records of stage since 1873.

EQUIPMENT.—United States Weather Bureau Staff gage on concrete pier. Zero of gage is 223.39 feet above mean sea level. Discharge measurements made from bridge.

CHANNEL AND CONTROL.—Right bank high; left bank overflows at extremely high stages. Bankful stage is 25 feet. Channel straight for 4,000 feet above and below gage. Bed composed of sand; shifting. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage recorded, 20.9 feet October 7, 1927 (discharge, 220,000 second-feet); minimum stage, 0.1 foot September 28-30 (discharge, 5,340 second-feet).

United States Weather Bureau records show floods of June, 1833, and April, 1927, reached stages of 34.6 feet and 33.0 feet, respectively.

DIVERSIONS AND REGULATIONS.—Most of low-water flow in Colorado and Kansas diverted for irrigation.

ACCURACY.—One rating courve based on 11 discharge measurements used October 2 to end of year; parallel curve based on one discharge measurement used previous to this. Curves rather poorly defined because of minor shifting of channel. Gage read to tenths once daily. Because of shifting character of channel daily discharge records may be considerably in error. Monthly records considered fair.

COOPERATION.—Gage-height record furnished by United States Weather Bureau.

NOTE.—For Mississippi River Commission and U. S. Army Engineer's gaging station data of the Arkansas River at Little Rock see pages 131-133.

DAILY DISCHARGE, IN SECOND-FEET, OF ARKANSAS RIVER AT LITTLE ROCK, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1927 AND 1928

Day.	Sept.
1927	
1	.....
2	.....
3	.....
4	.....
5	.....
6	.....
7	.....
8	.....
9	.....
10	.....
11	.....
12	.....
13	.....
14	.....
15	.....
16	27,000
17	24,600
18	20,300
19	17,800
20	15,700
21	14,500
22	13,800
23	12,800
24	12,400
25	12,000
26	11,700
27	11,000
28	11,700
29	12,800
30	14,900
31	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1927–28												
1	19,800	14,900	16,500	31,800	21,300	18,800	21,300	131,000	25,200	110,000	24,600	25,200
2	80,000	15,300	15,300	35,400	19,300	17,800	19,800	114,000	22,900	95,900	27,000	21,300
3	114,000	15,300	14,900	50,200	18,300	17,000	18,800	92,600	20,800	81,000	24,000	19,800
4	159,000	17,400	14,500	47,500	17,400	16,500	17,000	76,000	19,300	92,600	24,600	15,300
5	190,000	18,300	13,800	37,600	17,400	15,700	18,300	65,000	19,300	89,300	32,500	14,900
6	218,000	17,000	18,800	27,700	16,100	16,100	42,400	60,300	56,500	77,000	35,400	14,500
7	220,000	17,000	24,000	22,400	17,000	16,100	143,000	55,600	74,000	72,000	50,200	13,500
8	202,000	16,500	21,300	20,800	20,800	16,100	167,000	48,400	78,000	61,200	128,000	12,800
9	171,000	16,100	19,800	20,300	30,400	16,500	171,000	42,400	77,000	52,900	132,000	11,700
10	145,000	14,900	18,800	21,300	44,100	17,400	175,000	38,400	70,000	45,800	99,200	11,700
11	126,000	14,900	17,000	21,800	71,000	18,800	152,000	33,900	70,000	40,000	68,000	11,400
12	120,000	17,000	16,500	20,800	78,000	22,400	130,000	30,400	69,000	34,600	45,800	11,000
13	115,000	17,000	15,700	19,300	71,000	29,000	108,000	25,800	69,000	31,100	35,400	9,960
14	108,000	15,300	79,000	19,300	58,400	34,600	94,800	24,600	139,000	29,700	29,000	8,940
15	94,800	16,100	194,000	18,800	47,500	35,400	83,000	17,800	190,000	30,400	25,800	8,600
16	84,000	19,800	151,000	18,800	38,400	31,100	71,000	17,000	192,000	32,500	23,400	8,260
17	71,000	26,400	122,000	18,800	32,500	29,000	64,100	24,600	180,000	33,900	20,300	9,620
18	64,100	29,700	110,000	19,300	31,800	27,000	54,700	27,700	167,000	36,100	18,800	9,280
19	41,600	31,800	101,000	31,800	39,200	27,700	45,800	28,400	151,000	59,400	19,800	8,940
20	35,400	52,000	87,100	58,400	39,200	45,800	38,400	29,700	130,000	71,000	20,300	8,940
21	31,100	58,400	70,000	88,200	38,400	76,000	37,600	77,000	119,000	60,300	19,800	7,920
22	25,800	50,200	50,200	97,000	34,600	81,000	53,800	119,000	131,000	49,300	17,400	7,260
23	22,900	39,200	36,100	88,200	31,100	78,000	140,000	126,000	162,000	39,200	17,400	6,930
24	19,800	32,500	28,400	73,000	28,400	71,000	182,000	108,000	184,000	31,800	25,200	6,600
25	19,800	28,400	25,200	59,400	25,200	64,100	207,000	86,000	202,000	25,800	26,400	5,960
26	19,800	25,200	21,800	47,500	24,000	56,500	211,000	66,000	213,000	22,400	38,400	5,960
27	19,800	21,800	20,300	39,200	21,800	46,600	200,000	53,800	213,000	22,900	33,200	5,650
28	18,800	20,300	19,800	33,900	21,300	38,400	180,000	46,600	194,000	22,900	31,800	5,340
29	17,000	18,800	19,300	27,700	20,300	31,800	160,000	40,000	167,000	24,600	30,400	5,340
30	15,300	17,400	24,600	24,600	.....	27,700	146,000	33,900	136,000	24,000	31,100	5,340
31	15,300	.....	33,200	22,400	.....	24,000	.....	28,400	.....	24,600	28,400	.....

MONTHLY DISCHARGE OF ARKANSAS RIVER AT LITTLE ROCK, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1927 AND 1928

Month	Discharge in second-feet.		
	Maximum.	Minimum.	Mean.
1927			
September 16-30	27,000	11,000	15,500
1927-28			
October	220,000	15,300	84,000
November	58,400	14,900	23,800
December	194,000	13,800	45,800
January	97,000	18,800	37,500
February	78,000	16,100	33,600
March	81,000	15,700	34,300
April	211,000	17,000	105,000
May	131,000	17,000	57,000
June	213,000	19,300	118,000
July	110,000	22,400	49,200
August	132,000	17,400	38,200
September	25,200	5,340	10,600
The year	220,000	5,340	53,100

OUACHITA RIVER BASIN

OUACHITA RIVER NEAR HOT SPRINGS, ARK.

LOCATION.—In SW. ¼ sec. 29, T. 3 S., R. 19 W., at Smith Ferry highway bridge, 1 mile upstream from 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, 1928.

EQUIPMENT.—Chain gage on bridge. Discharge measurements made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and rock; practically permanent. Channel is obstructed by outcropping rock dikes on which small trees grow. Control is a series of rock dikes 400, 1,000, and 1,500 feet below gage; the upper dike forms the low-water control, and lower dike the high-water control; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage, determined by levels to flood-marks, 43.9 feet May 15, 1923 (discharge, determined by extending rating curve for main channel and computing overflow by Kutter's formula, 143,000 second-feet); minimum discharge, somewhat less than 40 second-feet during later part of September, 1928.

ACCURACY.—Stage-discharge relation not permanent. Several rating curves used. Gage read to hundredths twice daily. Records fair to good except for extreme stages, which may be considerably in error.

COOPERATION.—Arkansas Power & Light Company, H. C. Couch, President.

NOTE.—For miscellaneous gaging station and discharge data of the Ouachita River basin see page 106.

DAILY DISCHARGE, IN SECOND-FEET, OF OUACHITA RIVER NEAR HOT SPRINGS, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1922-1928

Day.	June.	July.	Aug.	Sept.
1922				
1	.....	265	178	44
2	.....	275	157	44
3	.....	363	157	44
4	.....	310	150	44
5	.....	275	150	44
6	.....	201	138	44
7	.....	178	157	43
8	.....	154	327	44
9	.....	147	233	42
10	.....	104	178	42
11	.....	80	164	42
12	.....	54	147	42
13	.....	135	126	42
14	.....	275	115	42
15	.....	217	89	42
16	.....	193	72	42
17	.....	193	89	43
18	.....	157	94	42
19	.....	138	89	42
20	.....	147	82	45
21	.....	132	82	44
22	.....	104	80	45
23	.....	92	77	48
24	.....	84	75	48
25	.....	84	72	50
26	.....	115	70	47
27	168	99	66	45
28	315	94	62	44
29	345	94	54	44
30	285	89	48	42
31	.....	84	43	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1922–23												
1	54	78	163	2,800	22,500	4,580	622	4,170	1,520	655	545	44
2	54	130	163	2,140	21,900	3,390	765	3,780	2,470	200	900	48
3	54	82	171	1,340	45,600	3,030	3,150	3,030	2,250	187	858	46
4	54	72	195	998	20,300	2,360	6,880	2,140	3,780	182	775	44
5	54	71	290	955	7,440	2,690	9,110	1,820	4,040	178	695	858
6	54	69	392	860	6,520	21,200	2,580	1,920	14,800	151	695	695
7	105	59	440	675	4,170	24,400	2,140	1,720	15,600	122	545	735
8	85	54	568	517	2,030	14,800	3,520	1,430	4,170	116	205	655
9	95	61	860	412	2,690	5,190	3,150	1,190	2,360	105	114	408
10	195	69	675	348	3,390	3,390	2,140	998	8,240	101	261	270
11	203	75	675	312	4,580	3,030	2,250	500	12,600	101	218	162
12	137	101	622	342	3,030	2,920	2,470	360	9,260	105	155	178
13	125	275	585	290	3,150	2,860	2,690	622	5,920	139	116	326
14	163	412	517	306	2,360	2,580	2,360	6,520	2,580	187	105	174
15	125	765	425	290	2,580	4,730	2,140	125,000	2,140	214	101	133
16	82	1,140	360	373	2,140	27,700	1,920	37,000	1,920	232	59	127
17	95	1,090	348	386	1,920	18,000	1,520	8,890	1,520	285	98	985
18	93	765	260	348	2,470	5,670	1,430	8,030	1,340	354	300	1,340
19	82	399	241	440	955	4,300	1,280	7,630	1,160	408	300	2,910
20	71	718	260	399	1,280	3,150	1,090	6,000	858	408	223	2,580
21	95	500	212	9,800	1,190	2,800	1,050	2,690	695	366	119	6,880
22	71	622	203	11,400	998	2,030	1,340	2,690	618	343	74	2,800
23	69	386	171	5,030	955	2,140	2,690	3,520	510	320	56	1,620
24	89	336	171	3,390	808	1,820	4,580	8,450	475	280	62	1,170
25	78	290	167	2,910	902	1,620	8,030	7,250	440	232	56	890
26	78	250	163	2,910	23,700	1,280	6,520	9,340	440	205	76	738
27	74	203	373	2,910	12,600	998	5,030	5,510	377	178	66	590
28	78	163	860	5,670	7,440	902	8,450	3,390	343	139	59	490
29	74	133	1,050	6,700	.....	902	8,890	2,580	310	162	58	372
30	78	163	765	34,000	.....	955	4,580	2,180	251	320	54	362
31	78	.....	2,470	18,000	.....	860	.....	1,720	.....	275	49	.....

DAILY DISCHARGE, IN SECOND-FEET, OF OUACHITA RIVER NEAR HOT SPRINGS, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1922-1928—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1923–24												..
1.....	320	1,170	1,350	1,260	1,820	970	1,530	12,800	625	555	80	66
2.....	291	1,090	1,440	1,170	1,620	850	1,260	4,580	522	246	82	890
3.....	263	930	1,530	1,010	1,440	812	1,170	2,910	459	170	70	428
4.....	246	1,720	2,250	930	1,440	775	1,440	2,250	400	140	65	282
5.....	237	3,780	2,690	850	1,260	738	1,350	1,720	351	124	62	216
6.....	277	2,030	2,140	775	1,090	700	1,350	1,440	310	116	60	192
7.....	228	1,440	1,530	700	1,010	625	1,170	1,170	286	114	152	184
8.....	208	1,170	1,440	662	930	625	1,090	1,010	268	111	73	146
9.....	192	930	5,190	625	850	700	1,090	850	254	106	62	116
10.....	181	775	10,700	590	775	738	1,920	738	263	111	59	101
11.....	166	700	9,800	590	812	662	1,920	625	400	174	62	92
12.....	156	555	11,900	700	890	662	1,720	555	1,260	140	121	96
13.....	152	490	23,400	775	890	700	1,440	522	930	133	88	98
14.....	166	459	17,800	700	890	890	1,170	490	590	133	68	101
15.....	181	428	7,630	775	890	1,720	1,090	459	428	181	68	101
16.....	192	400	4,580	2,580	890	2,250	970	428	336	149	86	96
17.....	204	362	3,270	2,910	970	2,800	890	400	277	127	181	101
18.....	192	341	2,580	2,580	1,010	3,030	775	372	246	116	127	127
19.....	174	310	2,250	2,140	1,440	2,800	700	330	212	106	106	166
20.....	166	291	2,030	1,820	2,250	4,440	625	301	188	106	101	351
21.....	159	272	2,360	1,530	2,140	6,170	590	282	196	106	92	372
22.....	156	272	5,830	1,350	1,920	4,880	522	263	216	104	80	212
23.....	152	282	12,300	1,170	1,820	3,910	490	254	212	96	78	152
24.....	146	296	6,520	1,820	1,720	3,150	459	625	181	90	111	133
25.....	146	301	4,170	3,650	1,530	2,580	459	428	146	121	121	121
26.....	146	400	3,030	3,910	1,440	2,140	662	555	130	101	106	116
27.....	146	555	2,360	2,910	1,260	1,920	2,690	1,440	118	98	88	111
28.....	146	700	2,140	2,470	1,170	1,620	3,150	1,440	106	84	76	625
29.....	146	1,010	1,920	2,470	1,010	2,250	2,580	1,440	286	76	73	372
30.....	200	1,170	1,620	2,360	.....	2,140	18,000	970	459	76	71	315
31.....	1,010	.....	1,440	2,140	.....	1,820	.....	738	.....	78	68	.....
1924–25												
1.....	228	71	116	208	459	1,440	159	1,620	86	428	625	76
2.....	228	63	108	188	662	1,170	152	490	86	428	428	76
3.....	181	68	108	188	662	1,010	208	700	80	625	296	76
4.....	146	71	136	188	662	890	700	625	73	700	146	76
5.....	130	71	208	170	662	812	459	346	68	296	136	76
6.....	121	70	263	170	625	700	372	320	68	220	121	68
7.....	118	78	2,690	170	555	625	330	346	68	208	136	68
8.....	114	78	4,040	170	522	590	282	263	92	220	136	68
9.....	101	78	1,720	159	700	490	272	228	86	188	127	63
10.....	108	78	1,170	170	850	428	250	208	76	188	127	60
11.....	90	78	890	237	1,010	400	228	2,470	76	181	121	60
12.....	80	310	700	346	930	372	220	1,920	96	146	121	63
13.....	80	277	555	372	775	341	196	1,820	208	136	108	58
14.....	74	459	490	428	700	320	188	1,620	196	127	108	68
15.....	74	625	400	625	625	306	181	1,010	170	121	108	80
16.....	71	428	362	700	522	291	170	428	159	101	96	76
17.....	71	310	320	1,010	459	282	170	320	282	96	96	152
18.....	71	254	296	1,350	428	259	170	282	362	96	96	272
19.....	71	220	296	1,530	400	259	208	263	490	296	96	263
20.....	71	246	282	1,530	372	246	196	250	459	346	96	237
21.....	71	204	263	1,440	1,920	237	188	170	372	320	96	152
22.....	68	181	250	1,350	3,150	237	159	127	346	590	96	136
23.....	63	170	250	1,170	13,100	216	152	108	296	930	96	76
24.....	59	152	296	1,010	8,030	216	188	121	272	890	96	296
25.....	63	146	296	850	4,170	216	181	136	250	738	86	2,030
26.....	59	136	272	775	2,800	196	96	127	250	555	86	3,780
27.....	59	127	228	700	2,030	196	170	121	237	428	86	5,830
28.....	63	121	228	625	1,620	196	188	108	228	625	86	2,360
29.....	63	121	228	555	.....	177	2,250	96	181	662	86	1,440
30.....	68	116	220	490	.....	177	2,360	96	181	700	76	1,010
31.....	71	.....	208	490	.....	177	.....	106	.....	625	76	.....

DAILY DISCHARGE, IN SECOND-FEET, OF OUACHITA RIVER NEAR HOT SPRINGS, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1922-1928—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1925–26												
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	.....
1926–27												
1.....	250	2,470	738	1,170	2,250	700	2,800	1,170	3,270	529	211	292
2.....	214	1,530	665	2,470	1,920	1,170	2,580	970	18,000	469	195	267
3.....	182	1,170	630	2,250	1,620	1,720	2,360	850	5,030	440	179	243
4.....	182	970	595	1,920	1,260	1,530	2,360	930	2,250	386	164	218
5.....	214	738	560	1,820	1,090	1,440	10,700	850	1,720	362	288	201
6.....	292	595	560	1,440	4,440	1,350	5,180	930	23,100	338	243	185
7.....	292	560	529	1,260	5,510	20,000	3,520	775	5,830	315	284	170
8.....	232	498	738	1,170	4,580	19,400	2,470	738	3,520	271	263	158
9.....	214	498	1,260	1,170	3,910	12,100	20,000	775	2,580	243	246	144
10.....	338	498	2,690	1,090	3,520	5,180	6,170	1,170	1,820	214	440	135
11.....	560	440	3,650	930	3,390	6,340	3,390	1,530	1,090	185	1090	127
12.....	1,440	413	2,470	775	3,270	8,030	3,270	1,720	850	170	700	119
13.....	1,260	362	1,920	700	2,800	6,340	9,570	1,260	700	149	386	108
14.....	890	775	1,620	630	2,470	4,580	50,100	1,090	700	135	315	101
15.....	890	4,170	1,260	630	2,140	3,390	72,800	700	4,440	130	275	94
16.....	738	4,040	1,090	560	1,920	3,150	42,800	560	3,910	127	246	89
17.....	529	2,800	930	498	1,720	2,800	12,300	498	2,800	119	228	85
18.....	498	1,530	850	469	1,620	11,600	6,700	440	1,920	146	211	80
19.....	440	1,720	775	775	1,530	19,200	6,700	560	1,350	176	195	91
20.....	338	1,350	1,720	8,450	1,350	12,800	36,600	1,440	1,350	228	179	85
21.....	292	1,170	75,900	5,830	1,260	6,880	115,000	4,040	10,000	338	164	80
22.....	250	1,010	42,400	12,600	1,170	4,730	56,400	21,900	6,520	362	141	76
23.....	271	930	16,100	30,800	1,090	3,390	12,100	12,100	4,300	1,620	124	72
24.....	850	850	13,500	28,300	970	2,800	6,000	6,520	2,690	1,090	108	72
25.....	1,010	775	8,240	22,800	850	2,360	4,040	7,060	1,720	2,140	96	72
26.....	1,090	775	5,350	17,500	812	2,030	3,150	3,910	1,260	2,360	89	76
27.....	890	775	4,880	13,300	700	1,820	2,470	2,910	930	1,620	83	80
28.....	738	775	6,000	7,630	700	1,720	2,030	2,470	850	812	108	94
29.....	775	850	6,170	4,730	.....	2,140	1,720	1,720	700	362	665	284
30.....	7,830	850	4,170	3,910	.....	2,580	1,440	1,010	595	284	930	201
31.....	3,520	.....	3,780	2,910	.....	2,360	.....	1,720	.....	236	440	.....

DAILY DISCHARGE, IN SECOND-FEET, OF OUACHITA RIVER NEAR HOT SPRINGS, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1922-1928—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1927–28												
1.....	198	96	315	890	560	665	440	1,350	271	630	1,720	292
2.....	232	595	275	775	529	595	440	1,170	284	529	1,260	498
3.....	850	1,720	254	700	529	560	413	1,090	440	440	970	440
4.....	775	1,260	221	630	498	560	469	930	1,720	386	775	292
5.....	700	930	176	560	560	630	1,260	890	4,040	338	630	250
6.....	665	529	135	560	665	630	51,400	812	1,620	284	890	176
7.....	2,470	440	176	812	812	630	31,100	775	1,440	263	890	119
8.....	1,170	413	135	2,580	812	630	6,170	738	1,170	232	630	87
9.....	850	560	98	2,580	700	2,140	4,300	630	1,090	221	529	67
10.....	812	413	80	2,360	665	1,920	3,150	560	1,260	214	469	94
11.....	738	292	498	1,820	630	1,530	2,470	498	1,920	192	386	198
12.....	595	413	4,300	1,530	1,260	1,440	2,030	469	2,690	195	315	198
13.....	338	338	4,880	1,260	1,170	1,260	1,720	440	4,440	292	284	98
14.....	288	315	6,880	1,010	1,090	1,090	2,140	440	7,060	232	243	76
15.....	258	8,890	6,000	970	1,010	1,260	2,030	469	6,880	263	221	72
16.....	221	6,170	4,040	930	970	1,720	1,920	498	3,390	362	214	72
17.....	195	3,270	2,580	850	850	1,920	1,440	665	2,470	1,260	188	67
18.....	176	2,140	1,530	775	775	2,030	1,260	1,010	1,820	3,650	176	65
19.....	164	1,440	1,620	1,350	738	1,620	1,170	970	1,350	1,920	498	63
20.....	155	1,090	1,350	3,270	738	1,440	1,090	1,530	1,090	1,090	338	62
21.....	146	1,010	1,090	2,800	738	1,260	10,000	1,920	4,040	812	236	58
22.....	135	930	970	2,030	775	1,090	30,100	1,720	3,650	630	258	
23.....	130	850	890	1,720	970	970	22,200	1,260	5,510	775	630	
24.....	124	738	738	1,620	970	930	7,630	930	6,340	812	338	
25.....	119	630	630	1,440	930	850	4,440	738	2,800	1,530	292	
26.....	114	560	560	1,170	850	775	3,150	595	1,820	2,030	630	
27.....	103	498	529	1,090	775	700	2,580	498	1,350	1,530	440	40
28.....	94	440	1,170	1,010	738	630	2,140	440	1,090	2,250	469	
29.....	89	413	1,440	890	700	595	1,920	386	930	2,360	560	
30.....	76	386	1,260	775	.....	560	1,530	338	775	3,520	440	
31.....	83	.....	1,090	665	.....	498	.....	292	.....	2,690	386	

NOTE.—Discharge estimated or interpolated August 22-25, September 1-30, October 1-5, December 25, 1922; March 12, May 30, June 11, 12, 1923; September 22-30, 1928; gage not read or readings unreliable.

MONTHLY DISCHARGE OF OUACHITA RIVER NEAR HOT SPRINGS, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1922-1928

(Drainage area, 1,420 square miles.)

Month.	Discharge in second-feet.				Run-off in inches.
	Maximum.	Minimum.	Mean.	Per square mile.	
1922					
July	363	54	159	0.112	0.13
August	327	43	117	.082	.09
September	50	42	43.9	.031	.03
1922-23					
October	203	54	91.7	0.065	0.07
November	1,140	54	318	.224	.25
December	2,470	163	478	.337	.39
January	34,000	290	3,780	2.66	3.07
February	45,600	808	7,490	5.27	5.49
March	27,700	860	5,690	4.01	4.62
April	9,110	622	3,480	2.45	2.73
May	125,000	360	8,780	6.18	7.12
June	15,600	251	3,430	2.42	2.70
July	655	101	234	.165	.19
August	900	49	258	.182	.21
September	6,880	44	953	.671	.75
The year	125,000	44	2,890	2.04	27.59
1923-24					
October	1,010	146	218	.154	.18
November	3,780	272	821	.578	.64
December	23,400	1,350	5,140	3.62	4.17
January	3,910	590	1,610	1.13	1.30
February	2,250	775	1,280	.901	.97
March	6,170	625	1,940	1.37	1.58
April	18,000	459	1,810	1.27	1.42
May	12,800	254	1,370	.965	1.11
June	1,260	106	355	.250	.28
July	555	76	135	.095	.11
August	181	59	88.3	.062	.07
September	890	66	216	.152	.17
The year	23,400	59	1,260	.887	12.00
1924-25					
October	228	59	94.7	0.067	0.08
November	625	63	180	.127	.14
December	4,040	108	577	.406	.47
January	1,530	159	625	.440	.51
February	13,100	372	1,760	1.24	1.29
March	1,440	177	435	.306	.35
April	2,360	96	368	.259	.29
May	2,470	96	543	.382	.44
June	490	68	196	.138	.15
July	930	96	394	.277	.32
August	625	76	138	.097	.11
September	5,830	58	638	.449	.50
The year	13,100	58	487	.343	4.65

MONTHLY DISCHARGE OF OUACHITA RIVER NEAR HOT SPRINGS, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1922-1928—*Continued*

Month.	Discharge in second-feet.				Run-off in inches.
	Maximum.	Minimum.	Mean.	Per square mile.	
1925-26					
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
1926-27					
October	7,830	182	887	0.625	0.72
November	4,170	362	1,200	.845	.94
December	75,900	529	6,830	4.81	5.54
January	30,800	469	5,820	4.10	4.73
February	5,510	700	2,140	1.51	1.57
March	20,000	700	5,670	3.99	4.60
April	115,000	1,440	16,900	11.90	13.28
May	21,900	440	2,720	1.92	2.21
June	23,100	595	3,860	2.72	3.04
July	2,360	119	528	.372	.43
August	1,090	83	300	.211	.24
September	292	72	137	.096	.11
The year	115,000	72	3,910	2.75	37.41
1927-28					
October	2,470	76	421	.296	.34
November	8,890	96	1,260	.887	.99
December	6,880	80	1,480	1.04	1.20
January	3,270	560	1,340	.944	1.09
February	1,260	498	793	.558	.60
March	2,140	498	1,070	.754	.87
April	51,400	413	6,740	4.75	5.30
May	1,920	292	808	.569	.66
June	7,060	271	2,490	1.75	1.95
July	3,650	192	1,030	.725	.84
August	1,720	176	526	.370	.43
September	498	.....	123	.087	.10
The year	51,400	.....	1,500	1.06	14.37

OUACHITA RIVER AT REMMEL DAM, NEAR MALVERN, ARK.

LOCATION.—In SW. ¼ NW. ¼ sec. 36, T. 3 S., R. 18 W., 1,700 feet below Remmel Dam of Arkansas Power & Light Company, three-fourths of a mile above Cove Creek, and 9 miles northwest of Malvern, Hot Spring County.

DRAINAGE AREA.—1,540 square miles (measured on base map of Arkansas).

RECORDS AVAILABLE.—January 30, 1925, to April 8, 1927.

EQUIPMENT.—Gurley 7-day water-stage recorder in concrete house and well. Discharge measurements made from cable or by wading.

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

EXTREMES OF DISCHARGE.—Maximum stage, from water-stage recorder, 30.7 feet at 2 p. m. December 21, 1926 (discharge from extension of rating curve, 97,400 second-feet); minimum stage, 1.52 feet September 12 and 13, 1925, while power plant was shut down (discharge, 15 second-feet).

Flood of May 16, 1923, reached a stage of 36.3 feet, as determined by levels to flood marks (discharge from extension of rating curve, 113,000 second-feet).

DIVERSIONS AND REGULATION.—Flow is regulated almost completely by power plant 1,700 feet above gage.

ACCURACY.—Stage-discharge relation permanent. Rating curve fairly well defined between 200 and 70,000 second-feet; extended above. Operation of water-stage recorder satisfactory except for days when no records are given and for days when discharge was computed from power-plant records. Discharge to September 30, 1925, ascertained by averaging results obtained by applying hourly gage heights to rating table; after that date, by use of discharge integrator except as stated in foot note to daily-discharge table. Records good for discharges between 200 and 70,000 second-feet; others fair.

COOPERATION.—Arkansas Power & Light Company, H. C. Couch, President.

DAILY DISCHARGE, IN SECOND-FEET, OF OUACHITA RIVER AT REMMEL DAM, NEAR MALVERN, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1925-27

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1925												
1	.....	.....	.....	.....	180	1,350	.....	.....	54	152	.....	228
2	.....	.....	.....	.....	1,220	2,060	.....	.....	120	221	.....	134
3	.....	.....	.....	.....	921	1,950	.....	.....	75	122	.....	130
4	.....	.....	.....	.....	919	1,610	.....	.....	53	85	.....	153
5	.....	.....	.....	.....	998	1,520	.....	.....	324	168	.....	155
6	.....	.....	.....	.....	1,160	1,600	.....	.....	200	148	.....	104
7	.....	.....	.....	.....	1,120	1,580	.....	.....	129	150	.....	137
8	.....	.....	.....	.....	38	860	.....	400	84	152	.....	120
9	.....	.....	.....	.....	597	1,720	.....	418	147	133	94	172
10	.....	.....	.....	.....	986	1,090	.....	180	199	110	115	110
11	.....	.....	.....	.....	.....	596	.....	1,040	310	155	128	164
12	.....	.....	.....	.....	.....	634	.....	1,150	100	185	142	156
13	.....	.....	.....	.....	.....	695	.....	1,310	76	180	206	165
14	.....	.....	.....	.....	.....	562	.....	1,330	172	141	136	240
15	.....	.....	.....	.....	134	184	.....	1,400	166	340	147	248
16	.....	.....	.....	.....	806	710	.....	1,510	115	132	136	1,090
17	.....	.....	.....	.....	658	662	.....	811	144	130	228	1,270
18	.....	.....	.....	.....	548	482	.....	1,240	180	214	321	130
19	.....	.....	.....	.....	770	536	.....	933	150	174	422	107
20	.....	.....	.....	.....	508	496	.....	228	149	120	124	126
21	.....	.....	.....	.....	1,140	336	.....	192	282	120	176	204
22	.....	.....	.....	.....	.....	90	.....	140	163	.....	155	116
23	.....	.....	.....	.....	.....	259	.....	104	129	.....	133	257
24	.....	.....	.....	.....	9,410	301	.....	86	150	.....	118	220
25	.....	.....	.....	.....	4,480	304	.....	352	150	.....	132	288
26	.....	.....	.....	.....	3,670	326	.....	402	171	.....	240	864
27	.....	.....	.....	.....	2,320	350	.....	178	153	.....	127	1,520
28	.....	.....	.....	.....	2,550	359	.....	182	151	.....	113	2,050
29	.....	.....	.....	.....	.....	100	.....	173	98	.....	139	2,480
30	.....	.....	.....	1,310	.....	202	.....	162	127	.....	82	2,170
31	.....	.....	.....	888	.....	88	.....	114	.....	.....	98	.....
1925–26												
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	6,500	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	.....

DAILY DISCHARGE, IN SECOND-FEET, OF OUACHITA RIVER AT REMMEL DAM, NEAR MALVERN, ARK., FOR THE YEARS ENDING SEPT. 30, 1925-27—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
1926–27							
1	180	2,650	802	3,880	3,070	1,160	3,830
2	94	2,670	659	3,290	2,600	884	3,150
3	102	2,530	656	2,670	2,550	1,400	3,020
4	92	1,000	381	2,620	2,510	1,120	3,200
5	88	644	647	2,550	2,540	940	9,480
6	84	318	374	2,240	4,270	2,140	4,790
7	80	676	476	1,680	8,740	17,300	3,280
8	106	724	972	1,980	6,260	23,500	3,840
9	112	1,180	1,190	1,690	4,230	11,200	.....
10	208	982	1,310	1,550	2,890	6,170	.....
11	115	458	2,570	1,250	3,850	5,410	.....
12	522	484	2,400	500	4,030	8,340	.....
13	866	257	2,750	1,850	2,710	8,780	.....
14	880	1,550	2,880	1,040	3,370	4,460	.....
15	554	2,740	1,430	763	2,740	4,080	.....
16	396	2,880	1,200	1,030	2,660	3,620	.....
17	429	2,790	1,070	850	2,620	3,010	.....
18	256	2,820	826	638	1,820	11,900	.....
19	526	2,480	1,350	970	1,740	20,400	.....
20	591	2,550	1,250	4,710	841	12,500	.....
21	588	1,810	70,700	8,180	1,610	7,640	.....
22	606	1,250	55,400	11,000	1,320	5,780	.....
23	286	1,030	20,500	31,000	1,320	4,120	.....
24	328	833	12,000	29,300	1,730	3,750	.....
25	454	664	7,480	24,600	2,380	3,300	.....
26	528	1,040	6,460	20,500	2,480	3,220	.....
27	102	650	6,540	13,000	608	3,160	.....
28	132	1,720	7,030	8,340	1,900	3,800	.....
29	964	196	7,480	6,140	.....	3,200	.....
30	3,890	646	7,100	5,370	.....	3,310	.....
31	3,730	.....	3,650	3,080	.....	3,220	.....

NOTE.—Operation of water-stage recorder not satisfactory for days of missing records and for the following days when discharges were computed from power-plant records: October 10-15, November 7, 8, December 6-11, 1925; February 13-20, 25, 26, March 8-11, April 15-17, 1926.

MONTHLY DISCHARGE OF OUACHITA RIVER AT REMMEL DAM, NEAR MALVERN, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1925-1927

(Drainage area, 1,540 square miles.)

Month.	Discharge in second-feet.				Run-off in inches.
	Maximum.	Minimum.	Mean.	Per square mile.	
1925					
March	2,060	88	762	0.495	0.57
May 8-31	1,510	86	585	.380	.34
June	324	53	151	.098	.11
July 1-21	340	85	159	.103	.08
August 9-31	422	82	161	.105	.09
September	2,480	104	510	.331	.37
1925-26					
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
1926-27					
October	3,890	80	577	.375	.43
November	2,880	196	1,410	.916	1.02
December	70,700	374	7,400	4.80	5.53
January	31,000	638	6,400	4.16	4.80
February	8,740	608	2,840	1.84	1.92
March	23,500	884	6,220	4.04	4.66

OUACHITA RIVER AT ROCKPORT HIGHWAY BRIDGE, NEAR MALVERN, ARK.

LOCATION.—In NW. ¼ sec. 16, T. 4 S., R. 17 W., at Rockport highway bridge, 1¾ miles northwest of Malvern, Hot Spring County.

DRAINAGE AREA.—1,570 square miles (measured on base map of Arkansas).

RECORDS AVAILABLE.—March 3, 1903, to April 30, 1905, and June 29, 1922, to September 30, 1924.

EQUIPMENT.—Chain gage on bridge. Gage used 1903 to 1905 was a vertical staff fastened to web between cylindrical piers of bridge; datum 2.0 feet above that of chain gage. Discharge measurements made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of rock with outcropping dikes. Small trees grow on the rocks projecting above low water. Control is a rock outcrop and remains of a timber crib and rock filled dam, 100 feet below gage. Trees and brush grow at control and may cause backwater by catching drift; otherwise the control is practically permanent.

EXTREMES OF DISCHARGE.—1922-1924: Maximum stage, determined from levels to floodmarks, 30.3 feet May 15, 1923) discharge, estimated from extension of rating curve, 89,000 second-feet); minimum stage recorded, 1.28 feet October 1 and 3, 1922 (discharge, 61 second-feet).

1903-1905: Maximum stage recorded, 20.2 feet May 9, 1903 (discharge, 37,400 second-feet); minimum stage, 0 foot December 18-20, 1904 (discharge, 40 second-feet).

ACCURACY.—1922-1924: Stage-discharge relation changed during 1923 and 1924. Rating curves fairly well defined between 3,000 and 14,000 second-feet and poorly defined between 100 and 3,000 second-feet. Gage read to hundredths twice daily during intermittent periods only; readings rather unreliable. Records poor.

1903-1905: Data collected by United States Geological Survey and published in Water Supply Papers 99, 131 and 173. Tables of monthly discharge are considered fair.

DISCHARGE MEASUREMENTS OF OUACHITA RIVER AT ROCKPORT HIGHWAY BRIDGE, NEAR MALVERN, ARK., DURING 1903 AND 1904

Date.	Made by	Gage height, feet.	Discharge, second-feet.
1903			
May 15	J. M. Giles	5.60	4,400
May 16	J. M. Giles	5.00	3,460
July 9	J. M. Giles	.65	171
July 9	J. M. Giles	.65	198
July 10	J. M. Giles	.80	243
1904			
April 25	J. M. Giles	12.30	17,700
April 25	J. M. Giles	11.60	15,700
April 26	J. M. Giles	8.45	8,850
April 26	J. M. Giles	7.90	7,990

DAILY GAGE HEIGHT, IN FEET, OF OUACHITA RIVER AT ROCKPORT HIGHWAY BRIDGE, NEAR MALVERN, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1903-1905

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903							
1	.....	3.3	.....	6.4	1.1	2.6	4.1
2	.....	3.2	.....	6.0	.9	1.7	3.2
3	5.7	3.0	1.8	5.6	.9	1.3	2.5
4	5.5	2.8	1.8	4.3	.9	1.1	2.3
5	5.5	2.8	1.8	4.0	.9	1.0	2.1
6	6.4	2.7	2.0	3.5	.9	1.0	1.6
7	11.3	2.6	2.8	3.0	.9	1.0	1.4
8	10.9	2.5	9.2	3.0	.8	1.0	1.4
9	9.9	3.0	20.2	2.7	.7	1.0	1.4
10	19.4	2.8	10.6	2.9	.8	1.2	1.2
11	20.0	2.6	7.2	2.8	.8	3.3	1.0
12	13.3	2.8	7.8	2.2	.9	5.0	1.0
13	8.8	2.6	7.6	2.0	.8	6.4	1.0
14	7.3	2.6	7.2	1.8	.7	5.0	1.0
15	6.4	2.4	5.8	1.5	.7	4.8	1.0
16	5.7	2.5	5.1	1.4	.7	5.3	1.0
17	5.4	2.4	4.6	1.4	.6	4.1	1.9
18	5.0	2.3	4.3	1.2	.6	4.0	6.4
19	10.6	2.0	4.4	1.0	.6	7.8	4.9
20	6.6	1.9	9.5	1.0	.5	6.1	4.6
21	11.0	1.8	8.5	1.0	.8	3.9	4.6
22	8.5	1.8	6.5	.9	.8	3.3	4.0
23	6.8	1.8	5.0	.9	.7	2.8	3.6
24	5.9	1.8	4.4	.8	.7	2.5	2.8
25	5.2	1.8	3.4	.8	.7	2.2	2.0
26	4.8	1.8	3.2	1.0	.7	1.9	1.8
27	4.6	1.8	2.9	1.5	.7	1.5	1.6
28	4.2	1.8	2.8	1.3	.7	.9	1.3
29	4.0	1.8	2.8	1.2	.6	2.5	1.0
30	3.7	1.8	4.8	1.1	.5	8.0	1.0
31	3.5	.....	7.6	.....	2.2	6.9	.....

DAILY GAGE HEIGHT, IN FEET, OF OUACHITA RIVER AT ROCKPORT HIGHWAY BRIDGE, NEAR MALVERN, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1903-1905—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903–04												
1.....	1.0	1.0	0.7	.....	2.9	3.8	4.5	3.8	1.0	2.0	3.0	0.5
2.....	1.0	.9	.7	.....	2.7	3.4	4.2	3.8	1.0	1.7	1.7	.5
3.....	4.4	.9	.7	.....	2.4	3.0	3.9	3.6	1.0	1.0	1.2	2.1
4.....	4.0	.9	.7	.....	2.3	2.9	3.5	3.0	4.9	1.2	3.5	1.8
5.....	15.6	.8	.7	.....	2.2	2.8	3.3	3.0	12.85	1.1	2.7	1.4
6.....	8.7	.8	.7	.....	2.0	2.7	4.0	3.0	16.65	1.1	2.2	1.0
7.....	7.0	.8	.7	.....	2.0	2.6	4.4	4.5	12.95	1.0	3.5	.8
8.....	5.6	.8	.7	.....	1.9	2.5	6.0	6.0	8.7	1.0	2.8	.8
9.....	4.3	.8	.7	.....	1.8	2.5	6.1	5.6	9.7	1.0	2.8	.8
10.....	3.7	.8	1.0	.....	1.8	2.3	6.1	4.7	10.0	1.0	2.2	.7
11.....	3.3	.7	1.0	.....	1.7	2.2	5.1	3.8	7.6	1.2	2.0	.6
12.....	3.0	.7	1.0	.....	1.6	2.1	4.6	3.3	5.7	1.2	1.9	.6
13.....	2.7	.7	1.0	.....	1.6	4.2	4.0	3.7	4.8	1.1	1.8	.7
14.....	2.7	.7	1.0	.....	1.6	5.3	3.7	3.1	4.4	2.0	1.8	.7
15.....	2.4	.7	1.0	.....	1.5	4.7	3.3	3.0	3.8	1.9	1.2	.5
16.....	2.0	.7	1.0	.....	1.5	4.4	3.3	2.6	3.0	1.0	1.1	.5
17.....	1.9	.7	1.0	.....	1.5	6.0	6.6	2.0	2.7	1.0	1.8	.6
18.....	1.9	.7	1.0	.....	2.4	17.7	4.9	1.9	2.8	1.0	2.0	.6
19.....	1.8	.7	1.0	.....	11.7	11.3	4.4	1.6	2.8	1.0	1.0	.6
20.....	1.8	.7	1.0	.....	11.7	8.0	3.7	1.0	2.4	2.3	1.0	.5
21.....	1.8	.7	1.0	.....	9.4	7.7	3.6	1.0	2.3	2.5	.7	.5
22.....	1.6	.7	1.0	.....	11.2	6.7	4.1	1.0	2.0	3.7	.7	.5
23.....	1.6	.7	1.6	.....	9.4	8.5	4.0	1.0	2.1	3.0	.7	.5
24.....	1.6	.7	1.8	.....	7.9	6.5	5.4	1.0	3.0	2.2	.6	.6
25.....	1.4	.8	3.2	.....	6.5	6.1	11.9	1.0	3.4	2.1	.6	.7
26.....	1.4	.8	..3.0.	.....	5.7	5.6	8.7	1.0	2.0	2.0	.5	.8
27.....	1.4	.8	.....	.....	5.0	6.1	5.0	1.3	2.0	1.9	.4	.9
28.....	1.4	.8	.....	.....	4.6	6.6	4.5	1.0	2.0	1.9	.4	.8
29.....	1.3	.7	.....	.....	4.1	5.4	4.3	1.0	2.0	1.8	.5	1.0
30.....	1.3	.7	.....	.....	.....	5.0	4.3	1.0	2.0	2.0	.5	1.0
31.....	1.3	.....	.....	.....	.....	4.4	.....	1.0	.....	2.5	.5	.....
1904–05												
1.....	.....	.....	0.3	0.4	3.0	3.8	6.4	.....	.....	.....	.....	.....
2.....	.....	.....	.4	.3	3.9	3.7	5.4	.....	.....	.....	.....	.....
3.....	.....	.....	.2	1.3	3.2	3.2	6.1	.....	.....	.....	.....	.....
4.....	.....	.....	.1	1.3	2.8	3.0	12.0	.....	.....	.....	.....	.....
5.....	.....	.....	.1	1.2	2.6	2.9	7.9	.....	.....	.....	.....	.....
6.....	.....	.....	.1	1.2	2.4	2.7	6.1	.....	.....	.....	.....	.....
7.....	.....	.....	.1	1.2	2.4	2.7	5.2	.....	.....	.....	.....	.....
8.....	.....	.....	.1	1.0	3.0	4.6	4.7	.....	.....	.....	.....	.....
9.....	.....	.....	.1	1.3	3.7	12.5	4.2	.....	.....	.....	.....	.....
10.....	.....	.....	.1	2.0	4.5	15.8	3.8	.....	.....	.....	.....	.....
11.....	.....	.....	.1	1.9	4.9	11.2	7.5	.....	.....	.....	.....	.....
12.....	.....	.....	.1	11.2	5.8	8.1	7.9	.....	.....	.....	.....	.....
13.....	.....	.....	.2	10.9	6.0	6.5	6.3	.....	.....	.....	.....	.....
14.....	.....	.....	.2	7.5	5.0	5.5	6.7	.....	.....	.....	.....	.....
15.....	.....	.....	.2	5.2	4.7	4.8	8.6	.....	.....	.....	.....	.....
16.....	.....	.....	.2	5.1	4.0	4.2	8.5	.....	.....	.....	.....	.....
17.....	.....	.....	.1	5.0	3.7	3.9	6.7	.....	.....	.....	.....	.....
18.....	.....	.....	.0	3.5	3.5	4.0	5.6	.....	.....	.....	.....	.....
19.....	.....	.....	.0	3.8	4.0	4.0	5.4	.....	.....	.....	.....	.....
20.....	.....	.....	.0	3.8	3.7	4.0	6.5	.....	.....	.....	.....	.....
21.....	.....	0.8	.1	3.6	3.7	3.9	7.7	.....	.....	.....	.....	.....
22.....	.....	1.0	.1	3.2	4.2	3.7	7.4	.....	.....	.....	.....	.....
23.....	.....	1.0	.3	3.0	5.0	3.5	6.0	.....	.....	.....	.....	.....
24.....	.....	.6	.2	2.9	5.6	3.5	5.3	.....	.....	.....	.....	.....
25.....	.....	.6	.4	2.7	5.7	3.1	7.5	.....	.....	.....	.....	.....
26.....	.....	.4	1.1	2.5	5.4	3.0	8.3	.....	.....	.....	.....	.....
27.....	.....	.4	3.0	2.1	4.9	3.0	7.1	.....	.....	.....	.....	.....
28.....	.....	.4	3.3	2.0	4.2	2.9	6.0	.....	.....	.....	.....	.....
29.....	.....	.4	3.0	2.4	.....	4.5	5.4	.....	.....	.....	.....	.....
30.....	.....	.4	2.0	2.5	.....	8.4	4.6	.....	.....	.....	.....	.....
31.....	.....	.....	2.0	2.7	.....	8.9	.....	.....	.....	.....	.....	.....

MONTHLY DISCHARGE OF OUACHITA RIVER AT ROCKPORT HIGHWAY BRIDGE, NEAR MALVERN, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1903-1905

(Drainage area, 1,570 square miles.)

Month.	Discharge in second-feet.				Run-off in inches.
	Maximum.	Minimum.	Mean.	Per square mile.	
1903					
March 3-31	36,900	1,900	8,910	5.68	6.13
April	1,710	640	1,010	.643	.72
May	37,400	640	5,230	3.33	3.84
June	5,430	240	1,210	.771	.86
July	880	155	248	.158	.18
August	8,100	270	2,180	1.39	1.60
September	5,430	300	1,180	.752	.84
1903-04					
October	25,900	300	2,320	1.48	1.71
November	300	210	229	.146	.16
December 1-26	1,620	210	386	.246	.24
February	16,200	495	3,780	2.41	2.60
March	31,200	820	4,690	2.99	3.45
April	16,600	1,710	3,640	2.32	2.59
May	4,860	300	1,300	.828	.95
June	28,500	270	4,570	2.91	3.25
July	2,100	300	630	.401	.46
August	1,900	130	617	.393	.45
September	820	155	248	.158	.18
1904					
November 21-30	300	130	185	.118	.04
December	1,710	40	267	.170	.20

DAILY DISCHARGE, IN SECOND-FEET, OF OUACHITA RIVER AT ROCKPORT HIGHWAY BRIDGE, NEAR MALVERN, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1922-1924

Day.	June.	July.	Aug.	Sept.
1922				
1	.....	340	191	78
2	.....	325	180	74
3	.....	325	214	74
4	.....	310	180	70
5	.....	280	202	70
6	.....	252	191	70
7	.....	226	151	67
8	.....	191	142	70
9	.....	170	358	67
10	.....	160	266	67
11	.....	160	214	67
12	.....	142	180	67
13	.....	151	160	67
14	.....	515	142	67
15	.....	340	134	67
16	.....	280	134	67
17	.....	214	127	67
18	.....	226	127	67
19	.....	202	127	67
20	.....	180	151	70
21	.....	239	160	70
22	.....	160	151	70
23	.....	134	142	78
24	.....	134	112	78
25	.....	142	112	81
26	.....	191	106	74
27	.....	160	94	70
28	.....	202	89	70
29	310	160	85	70
30	515	134	81	67
31	.....	127	78	.....

DAILY DISCHARGE, IN SECOND-FEET, OF OUACHITA RIVER AT ROCKPORT HIGHWAY BRIDGE, NEAR MALVERN, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1922-1924—*Continued*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1922–23												
1	63	92	217	3,460	13,000	6,010	1,210	6,170	1,480	220	.....	79
2	63	98	217	2,650	10,900	4,450	760	4,550	910	196	.....	86
3	63	92	217	1,840	43,000	3,370	2,650	4,050	2,830	174	.....	102
4	63	92	262	1,750	30,600	2,920	8,270	3,100	2,650	163	.....	102
5	63	98	306	1,410	8,830	2,830	5,570	2,560	2,740	152	.....	126
6	77	92	478	1,070	5,570	22,900	4,790	2,020	20,200	134	.....	790
7	158	98	478	730	4,250	30,200	3,750	1,750	26,500	134	.....	670
8	126	98	478	615	4,690	13,200	3,010	1,670	18,900	134	.....	478
9	126	92	615	565	5,130	5,850	2,920	1,390	9,400	126	.....	420
10	240	92	.....	499	5,570	4,790	.....	1,210	5,290	126	.....	274
11	306	98	.....	438	6,010	3,950	.....	910	19,500	145	.....	196
12	228	694	.....	402	4,450	3,650	.....	910	10,200	126	.....	163
13	186	1,390	.....	386	3,850	3,370	.....	850	4,350	126	.....	152
14	150	458	.....	370	3,550	3,010	.....	3,550	3,550	118	.....	196
15	142	420	.....	370	3,190	3,100	.....	.....	2,650	126	.....	170
16	142	945	.....	354	2,740	25,800	.....	.....	1,570	134	.....	145
17	134	945	.....	438	2,110	22,200	.....	.....	1,390	642	.....	118
18	134	790	.....	565	1,750	8,270	.....	.....	1,210	760	.....	219
19	134	670	.....	520	1,570	6,170	.....	.....	980	642	.....	320
20	126	730	.....	478	1,210	4,350	.1,210	.....	730	402	.....	3,190
21	112	790	.....	4,790	980	3,460	.1,300	.....	615	320	.....	7,370
22	104	565	.....	16,500	910	2,830	1,390	.....	499	220	.....	6,020
23	104	478	.....	8,450	850	2,740	1,210	.....	438	185	.....	4,670
24	98	420	240	5,570	820	2,020	.....	.....	402	145	.....	3,370
25	98	338	228	5,030	820	1,750	.....	14,000	420	145	.....	2,350
26	98	322	228	3,460	32,300	1,300	.....	15,900	438	163	.....	1,330
27	95	287	240	3,370	29,400	1,130	.....	7,190	402	145	.....	690
28	92	252	1,390	5,290	10,900	980	.....	4,350	352	126	.....	615
29	92	228	1,130	6,830	.....	910	.....	3,190	274	134	.....	448
30	92	217	760	30,200	.....	850	.....	2,650	246	144	.....	408
31	92	.....	2,290	28,300	.....	850	.....	2,110	.....	154	.....	.....
1923–24												
1	.....	1,000	1,340	.....	.....	940	.....	.....	.....	.....	.....	196
2	.....	.....	1,700	.....	.....	940	.....	.....	.....	.....	.....	980
3	.....	940	1,930	.....	.....	880	.....	.....	.....	.....	142	499
4	.....	.....	2,410	.....	.....	824	.....	.....	.....	.....	134	438
5	.....	4,910	3,130	.....	.....	770	.....	.....	359	.....	142	278
6	.....	3,750	2,490	.....	.....	716	.....	.....	344	217	134	186
7	314	3,460	1,850	.....	.....	666	.....	1,340	302	176	126	176
8	302	2,970	1,410	.....	.....	.....	.....	1,340	.....	176	126	166
9	268	2,490	7,190	.....	.....	.....	2,410	940	.....	166	126	158
10	279	1,620	6,650	.....	824	.....	2,090	716	.....	166	119	154
11	258	1,060	8,640	.....	940	.....	1,930	716	.....	158	112	150
12	238	593	12,400	.....	1,060	.....	1,770	.....	.....	158	112	150
13	228	570	.....	1,200	1,060	.....	.....	.....	.....	158	104	142
14	248	504	.....	1,410	1,200	940	.....	.....	.....	166	98	126
15	268	484	.....	2,570	1,340	940	.....	.....	.....	158	98	126
16	268	427	.....	.....	1,340	.....	.....	.....	.....	150	98	134
17	504	.....	.....	.....	1,410	.....	.....	.....	.....	150	542	134
18	484	.....	.....	.....	1,270	.....	.....	.....	.....	142	240	196
19	408	.....	.....	.....	1,130	.....	.....	427	.....	142	166	186
20	329	.....	.....	.....	.....	.....	.....	374	.....	142	134	176
21	290	.....	.....	.....	.....	.....	.....	344	.....	142	134	550
22	268	.....	.....	.....	.....	.....	524	290	.....	.....	126	700
23	258	.....	.....	.....	1,930	4,790	504	268	.....	.....	112	322
24	258	.....	.....	.....	2,010	3,210	504	268	.....	.....	112	206
25	248	.....	.....	.....	1,770	2,730	484	547	.....	.....	104	176
26	248	.....	.....	.....	1,620	.....	524	.....	.....	.....	112	176
27	248	524	.....	4,150	1,270	.....	824	.....	.....	.....	112	176
28	248	593	.....	3,850	.....	2,090	1,620	.....	.....	.....	119	160
29	248	824	.....	3,290	.....	2,970	.....	.....	.....	.....	126	910
30	258	1,060	.....	2,810	.....	.....	.....	.....	.....	.....	126	438
31	248	.....	.....	2,410	.....	.....	.....	.....	.....	.....	134	.....

NOTE.—Gage-height records incomplete. Discharge interpolated or estimated October 27, November 12, 20, 27, December 4, 1922; January 5, 6, February 8-10, June 17, 25, July 4, 15, 30, 31, September 1,

MONTHLY DISCHARGE OF OUACHITA RIVER AT ROCKPORT HIGHWAY BRIDGE, NEAR MALVERN, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1922-1924

(Drainage area, 1,570 square miles.)

Month.	Discharge in second-feet.				Run-off in inches.
	Maximum.	Minimum.	Mean.	Per square mile.	
1922					
July	515	127	218	0.139	0.16
August	358	78	154	.098	.11
September	81	67	70.2	.045	.05
1922-23					
October	306	63	123	0.078	0.09
November	1,390	92	399	.254	.28
January	30,200	354	4,410	2.81	3.24
February	43,000	820	8,530	5.43	5.65
March	30,200	850	6,430	4.10	4.73
June	26,500	246	4,700	2.99	3.34
July	760	118	215	.137	.16
September	7,370	79	1,180	.752	.84
1923-24					
October 7-31	504	228	289	0.184	0.17
December 1-12	12,400	1,340	4,260	2.71	1.21
July 6-21	217	142	160	.102	.06
August 3-31	542	98	140	.089	.10
September	980	126	286	.182	.20

OUACHITA RIVER AT ARKADELPHIA, ARK.

LOCATION.—At the St. Louis, Iron Mountain & Southern Railway bridge at Arkadelphia, Clark County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—August 1, 1905, to December 31, 1906.

EQUIPMENT.—Chain gage on bridge. Zero of gage 121.43 feet above mean sea level. Discharge measurements made from bridge.

CHANNEL AND CONTROL.—Channel straight for 500 feet above and 1,200 feet below gage. Both banks overflow, but railroad embankment confines flood flow to the bridge section.

EXTREMES OF STAGE.—Maximum stage recorded, 20.6 feet May 4, 1906; minimum stage, 1.3 feet August 13, 1905.

A stage of 27.0 feet occurred in 1882.

ACCURACY.—Records collected by United States Geological Survey and published in Water Supply Papers 173 and 209. Gage ordinarily read to tenths once daily. Rating curve fairly well defined above 400 second-feet. Monthly discharge values fair above 400 second-feet; poor below.

NOTE.—For miscellaneous gaging station data of the Ouachita River near Arkadelphia see page 106.

DISCHARGE MEASUREMENTS OF OUACHITA RIVER AT ARKADELPHIA, ARK., DURING 1906.

Date.	Made by	Gage height, feet.	Discharge, second-feet.
May 5	J. R. Nagle	17.4	25,500
May 6	J. R. Nagle	12.15	15,800
May 6	J. R. Nagle	11.6	15,600
May 7	J. R. Nagle	10.3	13,000
May 7	J. R. Nagle	10.1	12,600
May 7	J. R. Nagle	9.5	11,200
June 2	T. U. Taylor	4.6	1,600
June 20	T. U. Taylor	3.2	520

DAILY GAGE HEIGHT, IN FEET, OF OUACHITA RIVER AT ARKADELPHIA, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1905-1906

Day.	Aug.	Sept.
1905		
1	5.7	2.9
2	3.8	2.9
3	2.8	3.0
4	2.6	2.8
5	2.3	2.8
6	2.2	2.7
7	2.0	2.7
8	1.9	2.9
9	1.7	3.5
10	1.6	3.5
11	1.5	3.3
12	1.4	4.1
13	1.3	4.6
14	1.6	4.3
15	2.3	3.8
16	2.0	3.6
17	2.8	3.4
18	1.9	3.2
19	1.8	3.2
20	2.2	3.2
21	2.2	3.4
22	2.1	3.7
23	1.8	4.0
24	1.5	3.3
25	1.4	3.2
26	1.4	3.1
27	2.4	3.0
28	3.1	3.0
29	3.0	3.0
30	3.0	3.0
31	2.9	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-06												
1	2.9	4.6	7.1	6.4	5.1	6.2	9.4	4.0	3.5	3.0	4.8	3.8
2	2.9	4.3	3.4	6.1	4.5	5.9	7.8	5.1	4.6	3.0	4.6	3.5
3	3.0	4.1	15.1	10.85	4.7	6.1	7.0	16.75	4.6	3.0	4.1	3.4
4	3.6	4.0	10.3	14.15	4.6	5.8	6.4	20.6	4.6	2.9	3.7	3.3
5	3.9	5.1	8.3	11.2	4.7	5.5	6.3	18.55	4.5	2.9	3.5	3.3
6	4.0	9.2	7.2	8.5	4.7	5.2	6.9	11.6	4.4	2.8	3.4	3.2
7	3.9	8.3	6.6	7.3	4.6	5.1	6.3	9.5	4.4	2.8	3.4	3.8
8	3.7	7.2	6.1	6.7	4.5	5.3	6.0	8.1	4.3	2.9	3.6	3.7
9	3.5	6.6	5.7	6.1	4.4	5.4	5.6	7.0	4.3	3.0	3.4	3.5
10	3.4	11.0	5.4	5.7	4.3	5.3	5.4	6.3	4.3	3.1	3.3	3.5
11	3.3	11.7	5.1	5.5	4.2	5.1	5.1	5.8	4.0	3.3	4.1	3.3
12	3.1	8.1	5.0	5.2	4.1	4.9	5.0	5.4	3.8	3.3	4.5	3.5
13	3.0	8.2	4.9	5.0	4.3	4.8	5.0	5.1	3.6	4.6	3.8	3.3
14	3.0	7.0	5.2	4.9	4.6	5.0	4.9	4.8	3.5	6.1	4.9	3.7
15	2.9	6.8	5.4	4.8	4.8	7.2	8.2	4.6	3.4	5.8	4.7	3.3
16	2.9	6.8	5.3	4.6	5.1	6.8	6.5	4.4	3.4	5.0	3.7	4.5
17	2.9	5.5	5.2	4.4	5.0	6.3	5.7	4.2	3.3	6.7	3.7	4.0
18	2.9	5.2	5.0	4.3	4.8	5.8	5.2	4.1	3.3	5.2	3.4	3.6
19	3.1	4.9	5.1	4.2	4.8	6.8	4.9	4.0	3.5	4.7	3.3	3.4
20	4.7	4.7	7.4	4.1	4.9	7.7	4.7	3.9	3.3	4.2	3.4	3.4
21	4.7	4.5	10.3	6.9	5.4	7.1	4.6	3.8	3.3	3.9	3.3	3.6
22	4.5	4.3	10.5	17.05	6.1	6.5	4.9	3.7	3.7	5.7	3.4	3.5
23	4.2	4.2	12.7	19.65	6.1	6.0	4.7	3.7	3.7	5.8	4.1	3.3
24	4.2	4.4	10.4	14.8	8.1	5.7	4.5	3.8	3.5	4.8	3.7	3.1
25	6.3	4.3	8.6	8.7	11.7	6.4	4.4	3.8	3.9	4.3	3.5	3.0
26	9.5	4.6	7.5	7.6	9.5	7.5	4.2	3.7	3.6	3.9	3.6	3.9
27	8.7	4.9	6.8	6.9	7.7	8.2	4.1	3.7	3.4	3.9	4.0	3.4
28	6.9	4.8	8.0	6.5	6.7	8.3	4.1	3.6	3.3	6.3	3.6	3.4
29	5.8	10.7	7.7	6.0	.....	9.4	4.0	3.5	3.2	9.3	5.5	4.9
30	5.2	9.5	7.6	5.6	.....	16.65	4.1	3.5	3.1	6.3	4.8	4.7
31	4.9	.....	7.2	5.3	.....	14.1	...	3.4	.....	5.2	4.2	.....

DAILY GAGE HEIGHT, IN FEET, OF OUACHITA RIVER AT ARKADELPHIA, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1905-1906—*Continued*

Day.	Oct.	Nov.	Dec.
1906			
1	.....	3.0	3.9
2	.....	2.9	3.9
3	.....	2.9	3.7
4	.....	2.9	3.6
5	.....	2.9	3.6
6	.....	2.9	3.5
7	.....	2.9	3.4
8	.....	2.8	3.4
9	.....	2.8	3.6
10	.....	2.8	3.9
11	.....	2.8	3.9
12	.....	2.8	3.8
13	.....	2.8	3.7
14	.....	2.8	3.6
15	.....	2.8	10.0
16	.....	2.8	16.55
17	.....	3.8	18.6
18	.....	6.3	17.6
19	.....	5.4	11.8
20	.....	7.7	8.5
21	.....	7.9	7.1
22	.....	7.1	6.4
23	.....	6.5	5.9
24	.....	5.9	5.7
25	.....	5.3	5.3
26	.....	5.0	5.2
27	.....	4.7	5.0
28	.....	4.4	5.3
29	.....	4.3	5.7
30	.....	4.1	6.0
31	.....	.....	6.1

MONTHLY DISCHARGE OF OUACHITA RIVER AT ARKADELPHIA, ARK., FOR THE YEARS ENDING SEPTEMBER 30, 1905-1906

Month.	Discharge in second-feet.		
	Maximum.	Minimum.	Mean.
1905			
August	3,380	50	301
September	1,730	305	630
1905-06			
October	11,100	380	1,870
November	15,600	1,100	4,970
December	22,600	640	6,720
January	31,900	1,190	7,380
February	15,600	1,190	3,380
March	25,700	1,980	5,740
April	10,900	1,100	3,370
May	33,800	640	5,340
June	1,730	470	964
July	10,700	340	2,050
August	3,030	580	1,090
September	2,110	420	815
The year	33,800	340	3,640
1906			
October	2,100	305	758
November	7,800	340	1,830
December	29,700	640	5,530

LITTLE MISSOURI RIVER NEAR MURFREESBORO, ARK.

LOCATION.—In SE. ¼ sec. 13, T. 8 S., R. 26 W., at highway bridge 1 mile below Muddy Creek and 2 miles southwest of Murfreesboro, Pike County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—October 2, 1927, to September 30, 1928.

EQUIPMENT.—Chain gage on bridge. Zero of gage is 323.70 feet above mean sea level. Discharge measurements made from bridge or by wading.

CHANNEL AND CONTROL.—Channel straight for 700 feet above and below gage. Both banks low, wooded, subject to overflow. Bed composed of gravel. Control is gravel bar one-fourth mile downstream; may shift.

EXTREMES OF STAGE.—Maximum stage recorded, 7.75 feet at 1:50 p. m. April 21, 1928 (discharge 8,740 second-feet); minimum stage, 1.70 feet September 27-30, 1928 (discharge, 5.0 second-feet).

ACCURACY.—Stage-discharge relation permanent during the year. Rating curve well defined between 10 and 6,000 second-feet; extended beyond these limits. Gage ordinarily read to hundredths once daily except Sundays. Records fair.

COOPERATION.—Part of gage-height record furnished by Arkansas Power & Light Company.

DAILY DISCHARGE, IN SECOND-FEET, OF LITTLE MISSOURI RIVER NEAR MURFREESBORO, ARK., FOR THE YEAR ENDING SEPTEMBER 30, 1928

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1927–28												
1	.....	73	.....	.....	136	224	98	284	43	58	160	73
2	51	86	.....	.....	120	205	89	263	43	43	144	45
3	269	53	.....	.....	114	224	89	224	336	43	89	17
4	192	55	.....	.....	120	229	114	234	630	26	84	17
5	59	53	.....	...317	212	234	710	263	400	26	637	17
6	26	43	.....	.....	305	205	7,490	196	263	40	1,190	11
7	66	71	.....	.....	1,080	160	2,370	128	178	29	630	9.4
8	53	152	.....	.....	750	178	1,540	117	128	26	425	11
9	104	34	.....	.....	560	630	1,030	114	340	22	178	12
10	89	117	.....	.....	458	525	750	108	450	19	178	12
11	160	305	.....	.....	363	400	630	98	560	24	108	9.4
12	51	.....	.....	.....	363	363	490	89	880	24	76	9.4
13	51	.....	.....	.....	363	253	388	89	710	24	43	9.4
14	51	.....	.....	.....	305	243	363	89	1,420	24	43	8.0
15	57	.....	.....	.....	284	253	334	84	750	3,400	43	8.0
16	36	.....	.....	.....	243	790	305	136	560	6,770	40	7.4
17	34	.....	.....	.....	234	595	295	215	432	1,080	38	6.8
18	34	.....	.....	413	224	490	284	169	305	1,030	36	6.8
19	24	.....	.....	425	201	363	253	114	187	490	54	8.0
20	23	.....	.....	425	178	375	205	204	160	263	73	8.0
21	23	.....	.....	425	178	253	8,740	295	140	205	40	8.0
22	22	.....	.....	490	425	243	5,560	317	253	160	22	7.4
23	24	.....	.....	490	525	243	2,370	196	205	114	22	7.1
24	22	.....	.....	351	425	243	1,360	144	200	790	22	6.8
25	19	.....	.....	340	413	220	930	95	196	229	19	6.2
26	20	.....	.....	340	388	196	710	84	120	239	26	7.4
27	16	.....	.....	196	363	160	670	72	108	490	33	5.0
28	36	.....	.....	215	305	152	490	59	63	490	28	5.0
29	13	.....	.....	178	274	144	420	59	63	542	22	5.0
30	20	.....	.....	160	.....	114	351	47	73	595	19	5.0
31	68	.....	.....	140	.....	108	.....	43	.....	328	15	.....

NOTE.—No gage-height record November 12 to January 4 and January 6-17. After February 1 gage ordinarily not read on Sundays; discharge interpolated for following days: February 5, 12, 19, 26, March 4, 25, April 1, 15, 22, May 6, 13, 20, 27, June 3, 10, 17, 24, July 1, 8, 15, 22, 29, August 5, 12, 19, 26, 28, September 2, 4, 9, 16, 23, 30.

MONTHLY DISCHARGE OF LITTLE MISSOURI RIVER NEAR MURFREESBORO, ARK., FOR THE YEAR ENDING SEPTEMBER 30, 1928

Month.	Discharge in second-feet.		
	Maximum	Minimum.	Mean.
October 2-31	269	13	57.1
November 1-11	305	34	94.7
January 18-31	490	140	328
February	1,080	114	342
March	790	103	291
April	8,740	89	1,310
May	317	43	149
June	1,420	43	340
July	6,770	19	569
August	1,190	15	146
September	73	5.0	12.3

RED RIVER BASIN

RED RIVER AT GARLAND CITY, ARK.

LOCATION.—In SE. ¼ sec. 17, T. 14 S., R. 25 W., at St. Louis Southwestern Railway bridge at Garland City, Miller County. Sulphur River enters 35 miles downstream.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—October 1, 1927, to September 30, 1928; gage-height record and discharge measurements only.

EQUIPMENT.—Chain gage on bridge. Discharge measurements made from bridge.

CHANNEL AND CONTROL.—Banks overflow at 29-foot stage. Flow confined by levees some distance back. Channel straight for 300 feet above and below gage, curved beyond. Bed composed of sand and silt; shifting. No well-defined control.

EXTREMES OF STAGE.—Maximum stage recorded, 25.8 feet at 8 a. m. May 24, 1928; minimum stage, 4.8 feet September 26-30, 1928.

A stage of 35.4 feet was reached April 23, 1927, on St. Louis-Southwestern Railroad Company's staff gage, which was set to same datum as present chain stage.

ACCURACY.—Gage read to tenths once daily. Data not sufficient for determination of discharge.

COOPERATION.—Part of gage-height record furnished by St. Louis Southwestern Railway Co.

NOTE.—For miscellaneous gaging station and discharge data of the Red River basin, see pages 106, 137.

DISCHARGE MEASUREMENTS OF RED RIVER AT GARLAND CITY, ARK., DURING THE YEARS ENDING SEPTEMBER 30, 1927 AND 1928

Date.	Made by	Gage height, feet.	Discharge, second-feet.
1927			
July 25	H. C. Beckman	14.68	21,200
September 30	V. L. Austin	6.15	2,340
1928			
January 19	V. L. Austin	7.66	7,240
March 19	H. C. Beckman	10.42	12,800
April 10	H. C. Beckman	25.23	75,600
August 2	A. L. Hill	13.94	20,300
August 3	A. L. Hill	13.73	21,200

DAILY GAGE HEIGHT, IN FEET, OF RED RIVER AT GARLAND CITY, ARK., FOR THE YEAR ENDING SEPTEMBER 30, 1928

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	6.2	6.4	6.7	13.9	8.5	8.3	7 1	23.9	12.5	19.7	14.5	5.8
2	6.5	6.4	6.7	14.9	8.5	7.9	6.8	22.4	11.8	18.7	14.0	6.3
3	6.5	6.5	6.4	13.9	7.9	8.7	6.6	20.9	11.4	17.7	13.8	6.5
4	6 5	6.8	6.4	11.1	7.3	7.4	6 5	19.0	12.0	16.5	13.2	6.3
5	8.5	6.6	6.3	9.9	7.3	7.5	6 4	17.4	13.5	15.4	12.0	6.2
6	14.2	6.9	5.9	9.4	6.9	7.9	6.2	15.4	14.2	14.2	11.4	5.8
7	15.3	6.8	5.9	7.4	8.4	7.9	14.1	13.5	13.9	13.0	11.6	5.6
8	13.0	6.6	5.9	8.7	8.4	7.7	22.8	12.7	13.4	11.8	11.5	5.8
9	13.0	6.5	5.9	8.6	9.4	7.5	24.3	13.2	14.4	11.0	11.3	6.2
10	12.8	6.5	5.8	9.7	11.9	7.7	25.2	13.4	15.6	10.4	10.8	6.0
11	14.1	6.4	6.7	10.3	14.9	8.9	25.1	12.3	15.8	9.9	10.7	6.0
12	14.1	6.3	6.8	10.3	15.4	9.3	25.2	11.5	16.1	9.7	9.5	5.8
13	13.6	6.3	6.7	9.9	14.5	9.3	24.1	10.8	16.4	9.4	8.8	5.7
14	13.1	6.3	7.8	9.3	12.9	9.1	22.9	10.2	18.0	9.3	8.4	5.5
15	12.2	6.3	9.3	8.7	11.3	8.6	21.4	9.6	18.6	9.2	8.1	5.3
16	11.6	6.4	11.3	8.4	10.3	8.4	20.0	9.4	20.3	9.2	8.0	5.3
17	10.5	6.4	16.9	8.1	9.8	7.9	18.9	10.0	21.7	10.0	7.9	5.2
18	9.9	6.3	21.7	7.9	9.4	9.2	17.5	15.0	22.3	10.3	7.7	5.2
19	9.3	10.0	21.7	7.7	8.9	10.4	16.0	17.4	22.7	10.8	7.2	5.0
20	8.9	9.7	23.1	7.6	8.7	11.5	14.0	17.5	23.2	10.8	7.0	5.1
21	8.5	8.6	25.4	10.4	8.9	10.5	12.3	22.7	23.6	10.0	6.8	5.0
22	8.4	8.3	22.4	11.9	8.9	9.5	11.6	24.5	22.6	9.8	6.7	5.0
23	8.1	7.3	15.9	14.0	8.9	9.0	13.6	25.3	20.6	9.4	6.5	5.0
24	7.6	7.3	13.6	15.5	10.0	8.7	19.6	25.8	20.7	9.2	6.5	4.9
25	7.3	7.2	11.5	15.0	10.3	8.3	23.2	24.4	22.0	9.0	6.8	4.9
26	7.1	6.9	8.8	13.9	10.3	7.8	24.8	23.8	23.0	8.9	6.8	4.8
27	7.0	6.9	8.8	12.6	9.5	7.6	25.3	21.9	23.8	8.9	6.7	4.8
28	6.8	6.9	8.5	10.9	9.2	7.5	25.1	20.1	23.0	8.8	6.4	4.8
29	6.6	6.7	8.5	9.9	8.7	7.4	24.7	18.0	21.8	9.8	6.2	4.8
30	6.5	6.7	8.2	9.4	....	7.3	24.9	15.9	20.7	11.0	6.1	4.8
31	6.4	.....	9.0	8.7	.....	7.2	.....	14.0	.....	14.2	6.0	.....

MISCELLANEOUS DISCHARGE MEASUREMENTS IN ARKANSAS

The following miscellaneous discharge measurements have been made in Arkansas by the United States Geological Survey and cooperating parties. Those of Ouachita River, Saline River, and Little River in the Ouachita River and Red River basins are published through the courtesy of the United States Engineer Office, Vicksburg, Miss.

St. Francis River basin:
- St. Francis River (old channel) at Marked Tree.

White River basin:
- White River near Habberton.
- White River east of Rogers.
- White River at Wild Cat Shoals.
- White River at Wall's Ferry.
- White River near Newport.
- White River at Clarendon.
- White River at War Eagle.
- War Eagle Creek near War Eagle Mill.
- Buffalo River, Sec. 8, T. 16 N., R. 20 W.
- Buffalo River, Sec. 35, T. 16 N., R. 20 W.
- North Fork of White River near Norfolk.
- Mammoth Spring at Mammoth Spring.
- Spring River at Hardy.
- Spring River at Imboden.

Ouachita River Basin:
- Ouachita River at Arkadelphia.
- Ouachita River near Camden.
- Ouachita River at Camden.
- Saline River near Warren.

Red River basin:
- Little River near Wilton.

ST. FRANCIS RIVER BASIN

Date.	Stream.	Tributary to	Locality	Gage height, feet.	Discharge, second-feet.
1927					
Sept. 20	St. Francis River (old channel)	Mississippi River	At Marked Tree	3.8	1,060
1928					
Jan. 11	St. Francis River (old channel)	Mississippi River	At Marked Tree	9.4	2,380
March 8	St. Francis River (old channel)	Mississippi River	At Marked Tree	8.43	2,570
April 12	St. Francis River (old channel)	Mississippi River	At Marked Tree	9.63	2,650
May 4	St. Francis River (old channel)	Mississippi River	At Marked Tree	13.89	2,340
June 21	St. Francis River (old channel)	Mississippi River	At Marked Tree	15.20	2,950
30	St. Francis River (old channel)	Mississippi River	At Marked Tree	17.79	2,640
Aug. 13	St. Francis River (old channel)	Mississippi River	At Marked Tree	5.24	1,530

WHITE RIVER BASIN

1909					
Aug. 1	White River	Mississippi River	Near Habberton	[a]5.4	512
22	White River	Mississippi River	East of Rogers	[a]4.9	143
1923					
Sept. 21	White River	Mississippi River	Wildcat Shoals, 3 miles east of Flippin	5.48	1,270
Sept. 21	White River	Mississippi River	Wildcat Shoals, 3 miles NE. of Flippin	5.50	1,280
1909					
Nov. 28	White River	Mississippi River	At Walls Ferry	6.8	2,790
1904					
April 27	White River	Mississippi River	Mo. Pac. R. R. bridge, 2½ miles SW. of Newport	16.7	41,600
1927					
Sept. 24	White River	Mississippi River	Clarendon	12.20	10,900
1928					
Jan. 14	White River	Mississippi River	Clarendon	24.48	37,300
Mar. 12	White River	Mississippi River	Clarendon	21.12	26,500
April 16	White River	Mississippi River	Clarendon	29.80	108,000
1910					
April 4	War Eagle Creek	White River	Near War Eagle Mill	.....	190
April 4	War Eagle Creek	White River	Near War Eagle Mill	.....	180
Aug. 22	Buffalo River	White River	In sec. 8, T. 16 N., R. 20 W.	3.6	43.6
April 8	Buffalo River	White River	In sec. 8, T. 16 N., R. 20 W.	.....	170
Aug. 26	Buffalo River	White River	In sec. 35, T. 16 N., R. 20 W.	3.8	85.2
1923					
Sept. 23	North Fork of White River	White River	Five miles northeast of Norfolk	1.74	717

WHITE RIVER BASIN—*Continued*

Date.	Stream.	Tributary to	Locality.	Gage height, feet.	Discharge, second-feet.
1924					
Dec. 11.....	Mammoth Spring.....	Spring River.....	Near line between secs. 5 and 8, T. 21 N., R. 5 W...	.....	240
1926					
June 11.....	Mammoth Spring.....	Spring River.....	Near line between secs. 5 and 8, T. 21 N., R. 5 W...	.....	310
1927					
July 15.....	Spring River.....	Black River.....	Hardy.....	.....	1,570
1923					
July 26.....	Spring River.....	Black River.....	Imboden.....	1.62	776

OUACHITA RIVER BASIN

1909					
April 6.....	Ouachita River.....	Red River.....	Highway bridge at Arkadelphia.....	3.8	822
1928					
Aug. 24.....	Ouachita River.....	Red River.....	In E. ½ sec. 10, T. 13 S., R. 17 W., 2 miles north of Camden.....	1.21	589
Sept. 6.....	Ouachita River.....	Red River.....	In E. ½ sec. 10, T. 13 S., R. 17 W., 2 miles north of Camden.....	1.84	875
28.....	Ouachita River.....	Red River.....	In E. ½ sec. 10, T. 13 S., R. 17 W., 2 miles north of Camden.....	.22	252
Mar. 18.....	Ouachita River.....	Red River.....	Highway bridge at Camden.....	15.60	8,330
Aug. 9.....	Ouachita River.....	Red River.....	Highway bridge at Camden.....	10.89	4,430
12.....	Saline River.....	Red River.....	In SW. ¼ sec. 15, T. 13 S., R. 9 W., 3½ miles southeast of Warren.....	2.52	226
22.....	Saline River.....	Red River.....	In SW. ¼ sec. 15, T. 13 S., R. 9 W., 3½ miles southeast of Warren.....	2.07	122
Sept. 27.....	Saline River.....	Red River.....	In SW. ¼ sec. 15, T. 13 S., R. 9 W., 3½ miles southeast of Warren.....	1.64	55.0

RED RIVER BASIN

1928					
Aug. 2.....	Little River.....	Red River.....	In NW. ¼ sec. 30, T. 11 S., R. 29 W., 3 miles north of Wilton.....	4.97	2,350
25.....	Little River.....	Red River.....	In NW. ¼ sec. 30, T. 11 S., R. 29 W., 3 miles north of Wilton.....	2.50	208
Sept. 24.....	Little River.....	Red River.....	In NW. ¼ sec. 30, T. 11 S., R. 29 W., 3 miles north of Wilton.....	1.88	38.7

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AND ITS TRIBUTARIES

A great number of discharge measurements of the Mississippi River at places bordering Arkansas and of tributaries in Arkansas have been made by the Mississippi River Commission and the United States Army Engineers. The results of these measurements have been published by the Commission in a report entitled "Results of Discharge Observations, Mississippi River and its Tributaries and Outlets, 1838-1923." The following tables, which include readings at the points listed below, have been copied from that report or from data furnished by the Commission. In the column headed "Method," "M" indicates velocity measurements with one meter; "MM" indicates the mean results of simultaneous measurements with two meters; "F" indicates double floats; "SF" indicates surface floats; and "R" denotes rod floats.

Plum Point Reach near Bullerton, Ark.
Fulton, Tenn.
Memphis, Tenn.
Hampton Landing, Ark.
Helena, Ark.
Friar Point, Miss.
Old Town Bend near Friar Point, Miss.
Chicot, Ark.
Arkansas City, Ark.
Greenville, Miss.
St. Francis River:
- At Parkin, Ark.
- Near mouth.
- St. Francis Bay near mouth.

White River:
- Batesville, Ark.
- Clarendon, Ark.
- Near mouth.

Arkansas River:
- Little Rock, Ark.
- Pine Bluff, Ark.
- Near mouth.

Red River:
- At Kye Smith, Ark.
- At Dooley Ferry, Ark.
- At Garland, Ark.
- Above Sulphur River, Ark.

MISSISSIPPI RIVER

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT PLUM POINT REACH, NEAR BULLERTON, ARK.

Gage heights refer to gage of Mississippi River Commission at Fulton, Tenn.

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1883			
Sept. 5	8.4	204	F
Oct. 26	8.4	214	F
Dec. 8	18.9	514	F
1884			
Sept. 15	7.2	143	M
1890			
Mar. 7	32.8	1,018	M
9	33.6	1,077	M
12	34.2	1,129	M
15	34.7	1,170	M
1891			
Jan. 7	20.6	640	M
26	16.5	495	M
28	15.8	439	M
Sept. 19	7.2	155	M
21	6.7	137	M
22	6.5	150	M
26	5.9	137	M
Nov. 5	2.9	82	M
6	2.8	82	M
10	2.8	82	M
11	2.8	79	M
1894			
Nov. 8	1.8	83	F
10	1.9	82	F

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT FULTON, TENN.

Gage heights refer to Mississippi River Commission gage at Fulton, whose zero is 208.74 feet above mean Gulf level.

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1879			
Nov. 29	8.8	264	F
Dec. 1	9.0	257	F
3	9.8	272	F
4	10.0	293	F
6	10.3	300	F
8	11.0	320	F
10	13.3	393	F
12	15.0	478	F
16	21.6	672	F
18	22.8	714	F
19	23.0	721	F
22	22.4	678	F
26	20.7	609	F
28	23.3	713	F
31	27.3	828	F
1880			
Jan. 3	28.8	954	F
8	27.7	844	F
9	27.4	810	F
10	27.9	859	F
13	30.2	976	F
15	31.2	1,944	F
17	32.0	1,066	F
19	32.2	1,049	F
21	32.0	1,027	F
23	31.1	992	F
26	27.9	807	F
28	25.4	746	F
31	21.3	572	F
Feb. 3	18.2	489	F
5	16.9	453	F
7	15.5	397	F
9	15.1	409	F
12	14.1	370	F
14	15.2	395	F
16	21.6	629	F
18	26.9	858	F
20	29.1	951	F
23	31.4	1,025	F
25	32.3	1,035	F
1880			
Mar. 1	32.9	1,037	F
3	32.8	1,060	F
5	32.7	1,044	F
8	32.3	944	F
10	32.1	1,038	F
12	32.4	1,031	F
16	33.2	1,041	F
18	33.5	1,108	F
20	33.8	1,068	F
22	34.0	1,054	F
24	34.1	1,117	F
26	34.1	1,070	F
29	34.0	1,088	F
31	33.6	1,089	F
April 2	32.5	999	F
3	32.9	951	F
5	29.7	850	F
7	28.0	830	F
9	24.7	777	F
11	27.1	806	F
13	26.6	754	F
15	26.2	767	F
17	24.6	680	F
19	24.2	661	F
21	24.5	700	F
23	25.2	722	F
24	25.4	729	F
27	24.9	701	F
29	23.9	667	F
May 1	24.9	737	F
3	27.1	809	F
4	27.8	851	F
6	28.6	877	F
8	29.0	895	F
10	28.6	872	F
11	28.0	823	F
12	27.0	801	F
13	25.7	755	F
14	24.5	714	F
15	23.2	633	F
17	20.6	533	F
18	19.4	499	F

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT FULTON, TENN.—*Continued*

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1880			
May 19	18.3	462	
20	17.3	421	
21	16.7	421	
22	16.1	389	
24	15.8	390	
25	15.7	385	
26	15.6	378	
27	15.3	369	
28	15.2	369	
29	14.8	351	
31	14.8	362	
June 1	15.3	380	
2	16.0	399	
3	16.8	439	
4	17.4	451	
5	18.0	462	
7	18.4	485	
8	18.4	504	
9	18.6	492	
10	18.5	487	
11	18.3	476	
12	17.8	455	
14	17.4	452	
15	17.4	450	
16	17.1	432	
17	16.7	437	
18	16.0	407	
19	15.8	397	
21	15.5	401	
22	16.3	428	
23	16.6	435	
24	17.2	454	
25	18.2	475	F
26	18.7	507	
28	19.7	540	
29	20.2	550	
July 1	20.5	555	
2	20.3	541	
3	20.2	555	
5	21.3	590	
6	23.0	679	
7	24.0	726	
8	24.9	748	
9	25.9	805	
10	26.0	828	
12	26.1	793	
13	25.7	752	
14	25.2	715	
15	24.7	711	
16	23.9	666	
17	23.3	637	
19	21.8	589	
20	21.0	565	
21	20.1	532	
22	19.4	505	
23	18.6	479	
24	17.8	461	
26	16.5	406	
27	16.0	394	
28	15.5	373	
29	15.1	382	
30	14.6	373	
31	14.2	341	
Aug. 2	12.9	310	
3	12.5	305	

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1880			
Aug. 4	11.9	297	
5	11.6	273	
6	11.2	259	
7	10.8	257	
9	10.2	243	
10	9.9	233	
11	9.8	224	
12	9.6	232	
13	9.5	227	
14	9.4	226	
16	9.2	219	
17	9.2	219	
18	9.0	214	
19	8.8	202	
20	8.6	199	
21	8.4	198	
23	7.9	187	
24	7.7	180	
25	7.3	178	
26	7.0	168	
27	6.7	161	
28	6.7	161	
30	7.4	179	
31	7.7	190	
Sept. 1	8.0	203	
2	8.4	203	
3	8.8	209	
4	9.0	220	
6	9.1	228	
7	9.5	241	
8	9.9	264	
9	10.1	252	
10	10.1	250	F
11	10.2	256	
13	10.7	275	
14	10.9	270	
15	10.5	261	
16	10.2	253	
17	9.6	233	
18	9.0	218	
20	8.1	199	
21	7.8	193	
22	7.5	194	
23	7.4	188	
24	7.2	171	
26	6.7	167	
27	6.5	172	
28	6.4	157	
29	6.3	164	
Oct. 1	6.2	154	
2	6.2	156	
4	6.2	176	
5	6.6	170	
7	7.0	177	
8	7.1	181	
1884			
Feb. 25	35.7	1,411	
26	35.7	1,424	
Mar. 12	31.4	1,047	
19	31.8	1,275	
April 3	35.0	1,520	
25	30.6	1,213	
26	30.0	1,185	
May 8	28.0	1,117	
9	28.4	1,122	

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT FULTON, TENN.—*Continued*

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1884			
May 9	28.4	931	F
24	21.2	591	
June 21	20.4	590	
Aug. 6	14.2	386	
Sept. 16	6.9	181	
Oct. 7	14.6	400	
Nov. 12	8.7	207	
18	7.6	203	
19	7.5	193	
21	7.4	196	
21	7.3	196	
26	6.9	172	
28	7.3	202	
Dec. 8	6.3	170	
9	5.8	173	
12	5.5	156	
1885			
Jan. 9	22.2	669	
19	27.0	933	
Mar. 21	23.9	756	F
April 4	15.8	470	F
16	23.5	737	F
1887			
Feb. 25	33.9	1,122	
1891			
April 1	32.2	1,088	M
1892			
April 15	33.0	1,192	F
16	33.1	1,151	
18	33.2	1,289	
19	33.3	1,382	
21	33.4	1,248	
22	33.4	1,095	
23	33.3	1,218	
25	33.5	1,099	
26	33.7	1,234	
27	33.8	1,267	
28	34.0	1,218	
29	34.2	1,226	
30	34.2	1,245	
May 2	34.2	1,288	
3	34.2	1,283	
1893			
Feb. 24	30.0	970	F
25	30.5	1,051	
28	31.4	1,062	
Mar. 1	31.7	1,131	
2	31.9	1,097	
4	32.2	1,216	
6	31.8	1,088	
7	31.1	1,057	
May 5	32.8	1,120	
8	33.9	1,225	
10	34.4	1,340	
11	34.5	1,264	
13	34.6	1,270	
16	34.6	1,208	
17	34.6	1,262	
19	34.4	1,158	
23	33.1	1,098	

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT MEMPHIS, TENN.

Gage heights refer to U. S. Engineer gage at Memphis, whose zero is 184.21 feet above mean Gulf level.

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1882			
Dec. 29	8.4	296	F
31	9.8	323	
1883			
Jan. 2	10.4	346	
Feb. 20	32.8	1,167	
21	33.3	1,194	
1890			
Mar. 17	35.6	1,335	M
18	35.5	1,273	
20	35.5	1,345	
22	35.6	1,232	
24	35.6	1,316	
25	35.6	1,292	
26	35.5	1,295	
27	35.4	1,264	
29	35.3	1,289	
31	35.3	1,313	
April 1	35.4	1,205	
1891			
May 6	34.0	1,278	
7	34.3	1,232	
10	34.9	1,289	
Sept. 29	3.6	125	
30	3.4	120	
Oct. 1	3.2	118	
1891			
Oct. 2	3.0	118	M
3	2.8	115	
5	2.4	121	
6	2.2	110	
8	1.9	101	
9	1.8	100	
10	1.7	94	
12	1.4	91	
13	1.3	98	
14	1.3	96	
15	1.4	97	
16	1.4	91	
17	1.6	97	
19	1.8	109	
21	2.0	104	
1892			
Oct. 25	1.9	109	
1894			
Nov. 8	—1.4	84	F
10	—1.3	84	F
1895			
Oct. 21	—1.7	88	M
22	—1.8	90	M
1904			
April 9	38.6	1,618	M & F

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT HAMPTON LANDING, ARKANSAS

Gage heights refer to local gage, whose zero is 4.40 feet below zero of the Memphis standard gage.

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1878			
Dec. 27	16.9	485	
28	15.2	464	
1879			
Jan. 23	25.0	809	
24	26.4	838	
Feb. 2	26.7	811	
6	25.4	778	
6	25.3	783	
7	25.3	782	
8	25.7	801	
12	27.0	825	
15	25.4	772	
19	19.8	564	
20	18.2	537	
21	17.0	495	
24	17.7	524	F
27	19.0	568	
28	19.1	573	
Mar. 5	17.5	517	
6	17.2	511	
7	17.1	495	
12	16.4	489	
13	16.1	486	
19	19.8	581	
21	21.2	625	
22	21.8	647	
25	22.9	672	
28	24.6	734	
April 2	25.1	729	
5	24.5	719	
12	23.7	678	
15	23.3	668	
23	23.6	682	
1879			
April 24	22.8	656	
25	22.4	635	
28	19.9	576	
29	18.7	536	
May 2	15.7	435	
8	10.6	329	
9	9.9	312	
10	9.3	290	
14	8.2	271	
15	8.0	266	
16	7.9	271	
17	7.8	268	
20	7.2	253	
21	7.1	255	
22	7.1	255	
23	7.0	255	
27	6.1	237	F
28	6.0	236	
29	6.0	236	
June 5	9.0	300	
6	9.5	323	
7	10.0	327	
10	11.1	346	
11	11.0	344	
12	10.9	344	
13	10.8	348	
14	10.7	332	
16	10.1	335	
18	10.0	333	
19	10.0	328	
21	9.8	312	
23	10.0	322	
24	10.5	340	
25	10.9	345	

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT HELENA, ARK.

Gage heights refer to U. S. Engineer gage at Helena, whose zero is 141.81 feet above mean Gulf level.

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1879			
April 4	33.2	729	
May 12	16.3	305	
22	14.4	282	F
June 3	14.2	295	
13	18.3	386	
1882			
Jan. 21	41.7	1,088	
23	42.2	1,174	
24	42.4	1,151	R
25	42.6	1,181	
31	43.8	1,287	
Feb. 1	43.9	1,212	R
2	44.0	1,142	
4	44.4	1,166	
6	44.6	1,119	M
7	44.8	1,231	
9	45.4	1,330	
11	46.0	1,317	
1882			
Feb. 14	46.6	1,420	
15	46.6	1,348	
17	46.3	1,343	
18	46.1	1,400	
24	45.5	1,287	
25	45.5	1,238	M
28	45.5	1,247	
Mar. 2	45.6	1,241	
3	45.7	1,285	
7	47.0	1,506	
8	47.1	1,558	
13	46.5	1,562	R
14	46.4	1,513	R
15	46.2	1,412	R
17	46.0	1,434	R
27	44.9	1,378	
29	44.7	1,259	M
30	44.5	1,306	
31	44.4	1,317	

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT HELENA, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1882			
April 3	43.8	1,241	
4	43.6	1,230	
6	43.3	1,210	
7	43.1	1,287	
8	42.8	1,282	
10	42.4	1,110	
11	42.1	1,162	
12	41.7	1,093	
13	41.4	1,073	
14	41.1	1,023	
15	40.8	965	
17	40.3	957	
19	40.0	959	
20	39.7	940	
21	39.9	949	
24	38.1	833	
25	37.3	803	
26	36.4	800	
27	35.6	766	
29	35.0	771	
May 1	35.0	767	
2	35.0	788	
3	35.1	760	
4	35.1	791	
5	35.2	801	M
8	35.4	792	
9	35.6	856	
10	36.4	798	
11	37.0	861	
12	38.1	863	
13	39.0	906	
16	40.6	1,016	
17	41.0	1,078	
18	41.2	1,077	
20	41.6	1,112	
22	41.8	1,104	
23	41.8	1,127	
24	41.9	1,080	
25	41.9	1,101	
26	41.8	1,086	
27	41.8	1,145	
29	41.8	1,090	
30	41.6	1,117	
June 1	41.3	1,095	
2	41.2	1,065	
3	41.1	1,044	
5	41.1	1,059	
8	41.3	1,037	
10	41.3	1,077	
12	41.4	1,075	M
16	41.0	1,029	R
20	39.2	958	
21	38.8	944	
22	38.8	934	
23	38.8	920	
27	39.6	978	
28	39.7	972	
29	39.7	942	M
30	39.7	1,041	
July 1	39.5	952	
3	39.2	979	
5	38.8	968	
7	38.8	949	
12	39.7	1,019	
13	39.8	991	

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1882			
July 14	39.8	1,008	
15	39.6	1,029	
17	39.1	911	
18	38.6	907	
19	38.0	898	
20	37.3	860	
22	35.4	800	
24	33.6	728	
25	32.8	724	
26	32.0	687	
27	31.0	660	
29	28.7	595	
31	26.2	540	
Aug. 1	25.2	502	M
2	24.2	463	
3	23.5	439	
5	22.6	422	
7	21.8	421	
8	22.0	417	
9	22.7	469	
10	23.6	481	
11	24.2	488	
12	24.5	500	
14	24.0	522	
16	23.4	456	
17	23.1	480	
18	22.6	467	
19	22.1	437	R
21	21.4	416	M
22	21.1	422	M
23	20.8	410	R
24	20.3	409	
25	19.8	369	
26	19.2	354	M
28	17.9	310	
29	17.3	325	
30	16.8	324	R
31	16.4	278	M
Sept. 2	15.8	277	
5	15.6	267	R
6	15.6	248	
8	15.8	302	M
9	15.8	297	R
11	16.2	293	M
13	16.3	318	
15	16.0	331	M
16	15.7	300	
18	15.0	271	R
19	14.9	269	R
20	15.2	274	R
22	17.1	328	R
23	17.9	308	M
25	17.9	354	
26	17.3	331	
27	16.5	296	R
28	15.7	267	
29	15.0	233	M
29	15.0	251	R
30	14.2	252	R
Oct. 2	13.0	242	R
3	12.6	202	M
3	12.6	224	
4	12.2	220	R
5	11.6	208	
5	11.6	197	M

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT HELENA, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1882			
Oct. 6	11.5	193	M
6	11.5	203	R
7	11.5	186	M
7	11.5	197	R
9	11.5	200	M
9	11.5	201	R
10	11.4	194	M
10	11.4	197	
11	11.3	191	
14	11.1	188	R
17	10.7	180	
19	10.4	174	
20	10.1	169	M
20	10.1	168	R
21	9.8	172	M
21	9.8	164	R
23	9.8	165	M
23	9.8	165	R
24	9.8	172	M
24	9.8	162	R
25	9.8	172	M
25	9.8	164	R
27	10.2	178	M
28	10.2	186	M
28	10.2	171	R
31	10.3	185	R
Nov. 8	10.9	206	
10	11.0	208	M
11	11.1	211	
1884			
Oct. 4	16.2	386	R
6	19.0	448	R
8	20.2	423	M
9	20.0	466	R
10	19.5	396	M
11	19.0	388	
13	18.0	367	
14	17.8	373	
15	17.5	364	
16	17.6	355	
17	18.0	393	
18	18.3	356	
20	18.4	374	
21	18.4	369	
22	18.2	371	
23	17.8	346	
25	16.9	358	
27	16.3	334	
28	16.0	340	
29	16.1	335	M
30	16.2	333	
31	16.4	338	
Nov. 1	16.3	333	
3	16.0	328	
4	15.8	329	
5	15.5	317	
6	15.2	324	
7	14.8	308	
8	14.2	295	
10	13.1	283	
11	12.6	282	
12	12.1	267	
13	11.8	255	
14	11.3	249	
15	11.0	237	

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1884			
Nov. 17	10.3	229	
18	10.0	224	
19	9.9	219	
20	9.7	205	
21	9.6	208	
22	9.5	212	
24	9.4	206	
25	9.3	210	
26	9.1	201	
27	8.9	196	
28	8.9	208	
29	9.1	205	
Dec. 1	10.5	218	
2	10.8	222	
3	11.0	225	
4	10.8	219	
4	10.8	244	
5	10.6	217	
6	10.3	226	
8	9.0	188	
9	8.4	180	
9	8.3	180	
10	7.9	173	
11	7.5	170	
12	7.2	169	
13	7.2	169	
15	8.5	193	
16	9.8	214	
17	10.9	226	
18	12.1	248	
19	13.2	264	
20	14.1	274	
22	15.2	296	M
23	15.2	292	
30	15.1	304	
31	17.6	364	
1885			
Jan. 1	20.7	428	
2	24.0	514	
3	26.9	605	
7	31.9	713	
7	32.0	690	
8	32.2	714	
9	32.5	707	
10	32.8	708	
12	33.6	754	
13	34.4	781	
14	35.0	792	
17	36.9	826	
19	37.6	850	
20	38.0	873	
21	38.3	907	
22	38.7	918	
26	40.1	970	
27	40.4	987	
28	40.5	1,021	
29	40.6	1,013	
Feb. 2	38.5	879	
3	36.8	816	
4	34.9	726	
5	32.7	687	
6	30.9	622	
7	29.2	625	
9	27.0	557	

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT HELENA, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1885			
Feb. 10	26.6	545	
11	26.5	539	
12	26.7	552	
13	26.9	553	
14	27.0	541	
19	29.5	601	
20	29.4	599	
28	18.4	361	
Mar. 2	16.8	334	
3	16.5	328	
4	16.5	336	
5	16.8	337	
6	17.4	355	
7	18.3	370	
9	20.4	423	
10	21.9	457	
11	23.7	491	
12	25.8	571	
13	27.5	578	
14	28.7	631	
16	30.0	644	
17	30.7	667	
18	31.6	696	
19	32.4	717	
20	33.1	737	
23	33.6	738	
24	33.4	724	
25	33.2	696	
26	32.9	694	
27	32.3	681	
28	31.5	663	
30	29.6	614	
31	28.3	560	M
April 1	26.9	536	
2	25.6	516	
3	24.7	504	
4	23.9	462	
7	23.1	453	
9	24.7	515	
10	26.2	542	
1888			
Nov. 28	26.7	565	
29	26.0	569	
30	25.0	548	
Dec. 1	23.8	519	
3	21.1	493	
4	19.9	457	
5	18.6	442	
6	17.3	418	
7	16.0	368	
8	14.7	334	
10	12.7	284	
11	11.8	266	
12	11.1	273	
13	10.5	269	
14	10.0	253	
16	9.4	243	
17	9.4	246	
18	9.2	240	
19	9.1	240	
20	9.0	241	
21	8.9	237	
22	9.0	229	
24	9.6	241	

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1885			
Dec. 25	10.2	252	
26	11.0	273	
27	11.4	274	
28	11.7	281	
29	12.0	289	
31	13.1	297	
1889			
Jan. 1	13.9	318	
3	15.3	342	
5	15.6	347	
7	14.9	327	
8	14.5	319	
9	14.5	332	
10	14.7	327	
11	15.4	358	
12	16.4	377	
14	19.6	450	
16	24.3	603	
17	25.6	630	
18	26.4	620	
19	27.0	640	
21	28.6	656	
22	29.5	685	
23	30.4	758	
24	31.2	774	
27	30.8	696	
28	30.1	705	
29	29.1	668	
30	28.1	620	
31	27.2	603	
Feb. 1	26.9	591	
2	26.9	598	M
4	27.8	643	
5	28.4	641	
6	29.0	658	
7	29.3	671	
8	29.3	684	
9	29.0	656	
11	27.0	592	
12	25.6	556	
13	23.9	517	
16	18.6	389	
18	16.2	354	
19	15.2	338	
20	14.5	322	
21	14.7	342	
22	16.6	383	
23	20.5	497	
25	26.0	611	
26	27.9	672	
27	29.5	724	
28	31.0	756	
Mar. 2	32.3	800	
4	32.1	746	
5	31.6	741	
6	31.1	706	
7	30.8	708	
8	30.4	678	
9	30.3	670	
11	29.5	635	
12	28.8	620	
13	27.9	602	
14	27.0	585	
15	26.1	556	

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT HELENA, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1889			
Mar. 16	25.5	542	
18	24.4	523	
19	24.0	513	
20	23.6	505	
21	22.9	474	
22	22.3	460	
23	21.8	460	
25	21.8	466	
26	22.6	499	
27	23.8	518	
28	24.8	547	
April 1	25.2	555	
3	24.5	518	
5	23.4	504	
6	22.7	489	
8	22.0	468	
9	21.9	480	
10	21.8	479	
11	21.6	473	
13	20.8	443	
15	19.8	425	
16	19.5	416	
17	19.2	420	
18	18.8	397	
19	18.5	395	
20	18.4	385	
22	19.4	423	
23	20.2	427	
24	20.8	454	M
25	21.4	464	
26	21.9	476	
27	22.7	497	
29	23.6	509	
30	23.2	502	
May 1	22.3	468	
2	20.8	437	
1890			
April 3	47.4	1,547	
4	47.4	1,570	
5	47.3	1,501	
7	47.2	1,461	
9	47.0	1,398	
10	47.0	1,405	
12	47.1	1,443	
14	47.2	1,466	
16	47.4	1,497	
17	47.5	1,519	
18	47.3	1,487	
19	47.0	1,471	
21	46.0	1,368	
23	44.5	1,269	
Dec. 23	11.8	246	
24	11.2	239	
24	11.1	235	
26	10.2	223	
27	10.2	239	
1891			
Mar. 11	43.5	1,323	
12	43.6	1,365	
13	43.7	1,368	
17	44.0	1,378	F
18	44.0	1,444	
19	44.1	1,389	

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1891			
Mar. 20	44.2	1,422	
21	44.3	1,455	
22	44.4	1,433	
23	44.4	1,421	
24	44.5	1,426	
25	44.7	1,426	
26	44.7	1,423	
28	44.7	1,434	
31	44.7	1,410	
April 1	44.6	1,407	
2	44.5	1,442	
3	44.5	1,410	
4	44.3	1,354	
6	44.1	1,356	
7	44.1	1,351	
8	44.0	1,352	
9	44.0	1,311	
10	44.0	1,351	
11	44.0	1,381	
13	44.0	1,381	
Sept. 30	4.7	142	
Oct. 1	4.4	128	
2	4.0	132	
3	3.7	125	
5	3.3	133	
6	3.0	127	
7	2.7	126	
8	2.5	118	F
9	2.2	121	
10	2.0	119	
12	1.7	108	
13	1.6	105	
14	1.5	107	
15	1.4	106	
16	1.3	105	
17	1.4	108	
19	1.8	117	
20	2.0	117	
21	2.2	119	
22	2.4	125	
23	2.5	125	
24	2.5	121	
26	2.4	123	
28	2.0	113	
29	1.9	115	
30	1.8	107	
31	1.7	104	
Nov. 2	1.6	115	
3	1.5	108	
4	1.4	108	
5	1.3	108	
6	1.1	107	
7	1.0	104	
9	0.9	109	
10	1.0	106	
11	1.0	105	
1892			
April 18	42.6	1,074	
19	42.7	1,040	
20	42.9	1,098	
21	43.2	1,114	M
May 3	44.5	1,209	
4	44.6	1,206	
5	44.8	1,261	

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT HELENA, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1892			
May 6	44.9	1,256	
7	45.0	1,233	
9	45.5	1,246	
10	45.7	1,290	
11	45.7	1,326	
12	45.7	1,313	
13	45.5	1,321	
14	45.3	1,315	
16	44.8	1,271	
17	44.6	1,250	
June 1	44.7	1,247	
2	44.7	1,194	
3	44.7	1,177	
4	44.6	1,180	
6	44.6	1,185	M
7	44.6	1,177	
8	44.6	1,198	
9	44.7	1,203	
10	44.8	1,200	
11	44.9	1,222	
13	45.0	1,207	
14	45.1	1,227	
15	45.1	1,231	
16	45.1	1,247	
17	45.1	1,210	
18	45.0	1,255	
20	44.8	1,237	
21	44.6	1,191	
22	44.4	1,161	
1893			
May 9	43.1	1,190	M
10	43.3	1,210	M
11	43.5	1,197	M
12	43.7	1,229	F
13	43.8	1,264	F
15	44.2	1,289	M
15	44.2	1,305	F
16	44.4	1,382	M
16	44.4	1,315	F
17	44.6	1,299	M
17	44.6	1,265	F
18	44.9	1,354	M
19	45.2	1,343	M
19	45.2	1,313	F
20	45.7	1,421	M
22	46.9	1,462	F
23	47.5	1,594	M
23	47.5	1,556	F
24	47.7	1,501	M
24	47.7	1,512	F
25	47.9	1,555	M
25	47.9	1,574	F
26	47.8	1,527	M
26	47.8	1,521	F
29	47.0	1,449	M
29	47.0	1,465	F
31	45.9	1,385	M
June 1	45.8	1,413	M
1	45.8	1,387	F
2	45.7	1,386	
5	45.3	1,344	
			M
1895			
Oct. 24	—1.7	93	
24	—1,1	88	

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1896			
Nov. 18	7.1	197	F
19	7.9	204	M
20	8.9	219	M
20	8.9	229	F
21	9.7	224	M
21	9.7	224	F
23	10.4	247	M
23	10.4	247	M
24	10.4	242	M
24	10.4	228	F
1897			
Mar. 12	42.8	1,146	
13	43.5	1,154	
15	44.7	1,256	
16	45.4	1,281	M
17	45.8	1,240	
19	47.7	1,371	
20	48.4	1,435	
20	48.4	1,365	F
22	49.0	1,486	M
22	49.9	1,481	F
Nov. 17	.4	99	
18	.6	101	M
18	.6	105	
18	.6	100	F
18	.6	102	F
19	1.0	107	
19	1.0	110	M
19	1.0	108	
19	1.0	108	F
20	1.5	114	M
1898			
April 9	45.6	1,274	M
11	46.9	1,324	M
12	47.5	1,424	F
12	47.5	1,372	M
13	48.0	1,388	M
14	48.4	1,405	M
15	48.8	1,425	F
15	48.8	1,405	M
16	49.0	1,394	M
1901			
Dec. 3	1.50	118	F
3	1.50	101	
3	1.53	105	M
3	1.53	106	
4	1.65	118	F
4	1.65	110	M
4	1.70	112	M
4	1.70	121	F
4	1.70	113	M
5	1.85	125	F
1903			
Mar. 20	49.35	1,358	
21	49.70	1,401	
22	50.03	1,452	M
23	50.40	1,480	
24	50.68	1,438	
25	50.88	1,558	M
25	50.90	1,686	F
26	51.00	1,534	M

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT HELENA, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1904			
April 6	43.20	1,145	M
9	45.55	1,325	
10	46.30	1,336	
11	46.90	1,379	F
12	47.23	1,405	M
13	47.48	1,406	F
14	47.61	1,412	M
15	47.62	1,370	
1906			
April 14	46.08	1,178	M
15	46.42	1,224	
16	46.70	1,212	
17	46.92	1,196	F
18	47.03	1,259	M
1907			
Jan. 28	45.6	1,318	M
29	46.3	1,380	
30	47.0	1,443	
Feb. 1	48.8	1,634	
3	49.9	1,691	
4	50.2	1,648	M
5	50.4	1,471	F
6	50.4	1,478	F
1908			
Mar. 23	44.83	1,356	MM
24	45.00	1,339	MM
25	45.12	1,228	M
26	45.18	1,247	M
27	45.12	1,309	MM
28	45.00	1,244	MM
29	44.90	1,242	MM
30	44.58	1,225	F
31	44.30	1,191	F
1909			
Mar. 10	44.55	1,274	MM
11	45.15	1,334	
12	45.60	1,267	
13	45.88	1,358	F
13	45.88	1,323	MM
14	46.30	1,290	M
15	46.53	1,313	M
16	46.67	1,359	MM
17	46.77	1,372	
18	46.83	1,328	
18	46.87	1,387	
19	46.98	1,379	F
20	47.18	1,356	MM
21	47.30	1,400	
22	47.47	1,405	
23	47.58	1,429	
24	47.68	1,385	
1912			
April 2	48.8	1,338	M
3	49.7	1,405	F
4	50.6	1,489	M
1912			
April 6	52.2	1,544	MM
7	52.8	1,563	
8	52.2	1,573	
19	54.1	2,004	
21	54.3	1,966	
22	54.3	2,016	M
23	54.1	2,041	
1913			
Jan. 28	46.0	1,297	MM
28	46.3	1,357	F
30	47.2	1,370	MM
31	47.8	1,388	
Feb. 1	48.0	1,388	
2	48.4	1,440	F
4	48.8	1,426	MM
5	48.9	1,454	
6	49.0	1,425	
6	49.0	1,508	F
7	49.0	1,443	MM
9	48.8	1,402	
11	48.4	1,387	
12	48.0	1,323	
1922			
Oct. 27	2.0	116	F
28	2.0	111	F
29	1.8	136	M
30	1.8	127	
31	1.6	121	
Nov. 1	1.6	132	
2	1.6	108	F
3	1.6	110	M
3	1.6	110	F
4	1.5	109	F
5	1.4	121	M
6	1.1	105	F
7	1.1	105	F
8	1.0	102	F
9	.9	106	M
10	.9	103	F
11	.8	104	M
12	.8	97	F
13	.8	106	M
14	1.1	111	F
1925			
Sept. 11	.10	111	FF
12	—.10	102	FF
12	—.10	104	M
13	—.10	108	FF
14	—.20	109	MM
14	—.20	87	FF
15	—.25	101	MM
15	—.20	95	FF
16	—.22	105	MM
16	—.22	98	FF

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT FRIAR POINT, MISS.

Gage heights refer to U. S. Engineer gage at Helena, Ark

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1913			
April 6	49.3	1,486	MM
7	50.6	1,560	
8	51.8	1,577	
10	53.4	1,664	
11	53.6	1,807	F
12	53.6	1,667	MM
13	53.7	1,682	
14	53.8	1,700	
15	53.9	1,831	F
16	54.0	1,659	MM
17	54.2	1,697	
18	54.4	1,729	
19	54.7	1,749	
19	54.7	1,761	
20	55.0	1,932	F
21	55.1	1,729	MM
22	55.2	1,805	
24	54.8	1,712	
25	54.5	1,722	
1914			
Dec. 6	1.5	124	MM
7	1.6	138	F
7	1.6	127	MM
8	1.8	130	MM
9	2.1	140	F
9	2.1	128	MM
10	2.2	135	M
11	2.6	159	F
11	2.6	144	M
12	3.6	156	M
13	5.7	188	M
14	8.2	233	M
1916			
Jan. 13	45.4	1,214	MM
14	45.8	1,210	
15	46.2	1,244	
16	46.5	1,253	
17	46.8	1,231	
18	47.1	1,254	MM
18	47.1	1,353	F
19	47.4	1,273	MM
20	47.8	1,355	
21	48.1	1,313	
22	48.6	1,310	
23	48.9	1,413	
23	48.9	1,473	F
24	48.9	1,368	MM
24	48.9	1,438	F
25	48.9	1,311	MM
26	48.8	1,313	
29	49.0	1,313	
30	49.1	1,312	
31	49.4	1,320	
Feb. 1	49.6	1,348	MM
2	50.0	1,368	
3	50.3	1,410	
3	50.3	1,524	F
4	50.8	1,408	MM
5	51.3	1,410	
6	51.8	1,488	
7	52.3	1,506	
8	52.6	1,525	
1916			
Feb. 8	52.6	1,706	F
9	53.0	1,543	MM
10	53.2	1,565	MM
11	53.4	1,660	F
12	53.4	1,516	MM
1917			
Mar. 29	46.5	1,296	MM
31	47.3	1,380	F
April 1	47.6	1,391	MM
2	47.9	1,374	M
3	48.0	1,326	M
3	48.0	1,419	F
5	48.7	1,400	MM
6	48.8	1,388	MM
6	48.8	1,451	F
7	49.0	1,416	M
8	49.3	1,432	M
9	49.5	1,470	MM
10	49.7	1,411	MM
10	49.7	1,510	F
11	49.8	1,455	MM
12	49.9	1,461	M
12	49.9	1,486	F
13	49.9	1,474	M
14	49.8	1,398	MM
14	49.8	1,504	F
Dec. 25	2.0	143	MM
1920			
April 2	47.40	1,453	MM
2	47.40	1,444	F
3	48.10	1,454	MM
5	49.40	1,535	
7	49.95	1,533	
7	49.95	1,598	F
8	50.10	1,511	MM
9	50.10	1,524	
10	50.00	1,446	
1922			
Mar. 24	46.5	1,323	F
25	47.4	1,297	MM
26	48.1	1,419	
27	49.1	1,388	
28	49.8	1,411	
29	50.3	1,492	
30	50.9	1,517	
31	51.4	1,574	
April 1	51.8	1,563	
2	52.0	1,584	
3	52.3	1,612	
4	52.3	1,612	
5	52.3	1,586	
1927			
Mar. 30	50.50	1,330	M
31	50.80	1,342	
31	50.80	1,365	
April 1	51.00	1,300	
2	51.00	1,289	
3	50.90	1,370	
4	50.70	1,348	
5	50.60	1,334	
6	50.50	1,357	F

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT FRIAR POINT, MISS.—*Continued*

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1927			
April 7	50.50	1,257	
8	50.50	1,378	
9	50.80	1,362	
10	51.00	1,366	
11	51.40	1,374	
12	51.80	1,280	
13	52.20	1,292	M
14	52.50	1,348	
15	53.00	1,363	
16	53.60	1,400	
17	53.70	1,410	
18	53.90	1,411	
19	54.20	1,408	
1927			
April 20	54.50	1,444	F
21	55.20	1,481	
22	55.90	1,523	
23	56.20	1,631	
24	56.40	1,632	M
25	56.60	1,634	
26	56.70	1,698	
27	56.75	1,681	
28	56.70	1,522	F
29	56.55	1,756	
30	56.25	1,702	
May 1	55.75	1,709	M
2	55.25	1,630	
3	54.90	1,630	

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT OLD TOWN BEND, NEAR FRIAR POINT, MISS.

Gage heights refer to U. S. Engineer gage at Helena, Ark.

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1894			
Nov. 8	—2.2	77	
8	—2.2	88	M
9	—2.2	88	

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT CHICOT, ARK.

Gage heights refer to gage of the Mississippi River Commission at Arkansas City, Ark., whose zero is 96.75 feet above mean Gulf level.

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1903			
Mar. 16	50.4	1,743	
17	50.8	1,576	M
18	51.2	1,475	
19	51.6	1,657	F
20	51.9	1,649	M
21	52.2	1,584	M
21	52.3	1,618	F
22	52.4	1,607	
23	52.6	1,598	M
24	52.7	1,665	
25	52.7	1,614	M
25	52.8	1,657	F
26	52.9	1,710	
1904			
Apr. 11	45.8	1,231	M
12	46.5	1,284	
13	47.1	1,305	
14	47.6	1,308	F
15	48.0	1,362	
16	48.4	1,368	M
17	48.7	1,368	
18	48.9	1,357	
18	.....	1,383	F
19	49.0	1,377	
20	49.0	1,403	M
21	49.0	1,376	
1906			
April 15	48.65	1,460	M
16	48.95	1,413	M
17	49.25	1,442	F
18	49.55	1,423	M
19	49.70	1,462	M
19	49.70	1,442	F
20	49.85	1,412	M
21	49.95	1,464	F
1907			
Jan. 14	44.9	1,226	
15	45.6	1,236	M
16	46.2	1,298	
17	46.8	1,263	F
18	47.2	1,345	M
18	47.2	1,312	F
19	47.5	1,352	
21	47.9	1,341	M
22	48.0	1,344	
22	48.0	1,332	F
23	48.1	1,317	
24	48.2	1,357	
26	48.5	1,387	M
28	49.0	1,384	
Feb. 1	50.4	1,461	
2	50.8	1,524	
2	50.8	1,544	F

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT CHICOT, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1907			
Feb. 4	51.5	1,573	M
5	51.8	1,529	M
5	51.8	1,608	F
6	51.9	1,540	M
7	52.0	1,522	M
8	52.1	1,519	M
1908			
Mar. 7	46.83	1,324	M
8	47.06	1,318	M
9	47.16	1,292	M
10	47.15	1,328	MM
12	47.05	1,306	MM
12	.....	1,311	F
13	46.99	1,256	MM
15	46.93	1,279	MM
16	46.98	1,318	MM
17	47.10	1,309	M
18	47.18	1,288	F
1909			
Mar. 17	48.1	1,291	MM
18	48.4	1,328	MM
19	48.6	1,337	F
20	49.0	1,340	MM
21	49.2	1,410	MM
22	49.4	1,420	F
23	49.6	1,472	MM
24	49.7	1,466	MM
25	49.8	1,468	MM
26	49.9	1,514	M
27	50.0	1,520	MM
28	50.1	1,512	MM
29	50.1	1,441	F
1911			
April 28	47.0	1,184	MM
29	47.3	1,233	MM
30	47.6	1,239	MM
May 1	47.8	1,249	F
2	48.0	1,281	MM
3	48.0	1,238	MM
4	47.9	1,240	M
1912			
April 1	49.4	1,614	MM
2	50.2	1,423	M
2	50.2	1,433	MM
3	50.9	1,433	M
3	50.9	1,628	F
4	51.7	1,607	MM
4	51.7	1,518	MM
5	52.4	1,541	MM
5	52.4	1,674	MM
6	53.1	1,592	MM
6	53.1	1,735	MM
8	54.3	1,778	MM
8	54.3	1,770	F
9	54.6	1,813	MM
9	54.6	1,713	MM
10	54.9	1,829	MM
10	54.9	1,855	MM
11	55.1	1,890	MM
11	55.1	1,810	F

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1912			
April 12	55.3	1,926	MM
13	55.2	1,974	MM
13	55.2	1,980	MM
14	55.1	1,937	MM
15	55.0	1,915	MM
15	55.0	1,935	MM
16	55.0	2,007	MM
17	55.0	1,927	MM
17	55.0	1,790	MM
1913			
Jan. 29	46.7	1,321	MM
30	47.3	1,380	MM
31	47.8	1,395	F
Feb. 1	48.3	1,374	MM
2	48.6	1,419	MM
3	48.9	1,417	F
4	49.2	1,436	MM
5	49.4	1,426	MM
6	49.6	1,419	MM
7	49.8	1,472	F
8	49.8	1,464	MM
11	50.0	1,462	MM
12	50.0	1,465	MM
13	49.9	1,514	MM
April 8	49.7	1,537	MM
9	50.6	1,463	MM
10	51.5	1,478	MM
11	52.3	1,587	MM
11	52.3	1,617	F
12	53.0	1,648	MM
13	53.6	1,615	MM
14	54.0	1,671	MM
15	54.3	1,671	MM
16	54.5	1,714	MM
17	54.6	1,623	MM
17	54.6	1,688	F
19	54.9	1,679	MM
19	54.9	1,683	F
20	55.0	1,726	MM
22	55.1	1,704	MM
23	55.1	1,692	MM
24	55.1	1,691	MM
24	55.1	1,773	F
25	55.1	1,741	MM
26	55.0	1,782	MM
1916			
Jan. 23	51.3	1,427	M
24	51.5	1,448	M
24	51.5	1,497	M
25	51.8	1,408	MM
25	51.8	1,493	F
26	52.1	1,486	M
26	52.1	1,461	MM
27	54.2	1,518	M
29	53.1	1,604	M
31	53.9	1,664	M
Feb. 1	54.2	1,728	MM
2	54.5	1,680	MM
3	54.8	1,747	F
4	55.0	1,768	MM
5	55.3	1,798	MM
7	55.8	1,797	MM
8	56.0	1,822	MM
9	56.2	1,847	MM

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT CHICOT, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1916			
Feb. 10	56.4	1,889	MM
11	56.4	1,864	MM
12	56.3	1,881	MM
13	56.3	1,794	MM
14	56.2	1,793	MM
1917			
April 3	48.9	1,346	MM
5	49.7	1,401	M
6	50.0	1,417	F
7	50.3	1,427	MM
9	50.9	1,447	M
10	51.2	1,498	MM
11	51.3	1,527	M
12	51.5	1,500	MM
12	51.5	1,491	MM
13	51.8	1,518	M
14	51.9	1,526	MM
14	51.9	1,569	F
15	52.0	1,551	M
16	52.0	1,522	MM
17	52.1	1,591	M
18	52.1	1,534	MM
18	52.1	1,557	M
1919			
April 2	48.8	1,341	M
2	48.8	1,324	F
3	49.1	1,331	MM
4	49.3	1,329	F
5	49.4	1,378	MM
5	49.4	1,356	MM
1920			
April 8	53.3	1,454	MM
9	53.7	1,486	MM
10	53.9	1,494	MM
10	53.9	1,495	F
11	54.0	1,475	MM
12	54.0	1,513	MM
12	54.0	1,501	MM
13	54.0	1,430	MM
1922			
April 2	54.2	1,524	MM
3	54.7	1,523	MM
4	55.1	1,560	MM
5	55.6	1,597	MM
6	56.0	1,761	F
7	56.3	1,609	M
9	56.6	1,662	MM
10	56.7	1,632	MM
12	57.0	1,639	MM

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1922			
April 13	57.0	1,625	MM
14	57.1	1,622	MM
15	57.3	1,698	MM
17	57.5	1,642	MM
1923			
Mar. 27	46.9	1,174	MM
28	47.5	1,166	MM
29	47.9	1,174	MM
30	48.3	1,237	F
31	48.6	1,224	MM
April 2	49.0	1,213	MM
3	49.1	1,197	MM
4	49.4	1,203	MM
1927			
April 2	54.0	1,385	M
3	54.2	1,342	M
4	54.3	1,457	M
5	54.4	1,393	M
6	54.5	1,440	M
8	54.7	1,445	M
9	54.9	1,441	M
10	55.1	1,446	M
11	55.3	1,483	M
13	55.7	1,490	M
16	57.2	1,603	M
17	57.6	1,610	M
18	58.1	1,615	M
19	58.7	1,628	M
20	59.4	1,712	M
1928			
July 1	51.77	1,330	MM
2	52.02	1,376	MM
3	52.22	1,424	M
4	52.32	1,421	M
6	52.42	1,316	M
6	52.42	1,399	F
7	52.42	1,341	MM
8	52.42	1,339	MM
9	52.42	1,395	M
10	52.37	1,403	F
11	52.22	1,322	M
12	52.07	1,281	M
14	51.77	1,352	M
15	51.57	1,331	M
16	51.27	1,303	MM
17	50.98	1,302	MM
18	50.62	1,279	MM
19	50.21	1,261	F
20	49.57	1,215	M
21	48.77	1,176	MM

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT ARKANSAS CITY, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1885			
Mar. 27	34.6	789	
28	34.3	819	
30	33.3	743	
31	32.6	715	
April 1	31.8	687	
2	30.8	669	
3	29.9	654	
4	28.9	618	
6	27.3	562	
7	26.9	561	
8	26.8	559	
9	27.1	567	
1887			
Mar. 22	46.6	1,427	
23	46.6	1,448	
24	46.6	1,480	
25	46.6	1,406	
26	46.6	1,424	
26	.....	1,411	
1889			
Jan. 22	33.4	789	
23	34.1	894	
24	34.7	849	
28	35.2	901	
29	35.0	834	
30	34.6	845	
31	34.1	815	
Feb. 2	33.5	851	
4	33.3	795	
6	33.5	793	
7	33.8	781	M
8	33.9	738	
9	33.8	773	
11	33.1	721	
12	32.2	720	
14	30.0	625	
16	26.8	510	
19	22.7	416	
20	21.5	406	
21	20.6	405	
22	20.2	398	
23	21.0	434	
25	25.5	532	
26	27.6	587	
27	29.2	689	
28	30.7	635	
Mar. 2	32.8	699	
4	33.8	739	
5	34.1	710	
6	34.5	748	
7	34.9	750	
8	35.0	745	
9	35.0	728	
11	34.6	731	
12	34.2	719	
13	33.6	698	
14	32.9	679	
15	32.1	668	
16	31.3	634	
19	29.0	585	
20	28.6	561	
21	28.0	560	
22	27.5	535	

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1889			
Mar. 23	26.9	524	
25	26.2	518	
26	26.2	508	
27	27.1	549	
28	28.4	594	
29	30.2	627	
30	31.2	642	
April 1	32.1	662	
2	32.1	656	
4	31.8	657	
5	31.4	626	
6	30.9	618	
8	29.9	584	
9	29.4	590	
10	29.2	572	
11	28.9	575	
12	28.6	577	
13	28.1	546	
15	27.1	519	
16	26.6	510	
17	26.0	491	
18	25.4	479	
19	25.0	457	
20	24.6	446	
22	24.3	445	
23	24.5	455	
24	24.8	468	
25	25.2	475	
26	25.6	476	
27	26.4	500	
29	27.9	525	
May 1	27.9	521	M
1890			
Mar. 14	48.2	1,186	
19	48.8	1,418	
25	49.2	1,220	
26	49.4	1,308	
28	49.2	1,223	
30	48.8	1,250	
31	48.8	1,272	
April 2	48.6	1,339	
4	48.3	1,221	
7	47.9	1,187	
9	48.0	1,220	
11	47.9	1,199	
13	47.8	1,335	
15	47.8	1,284	
1891			
Mar. 6	45.0	1,278	
7	45.3	1,255	
8	45.6	1,144	
9	45.6	1,250	
10	45.8	1,287	
11	46.1	1,212	
12	46.4	1,156	
13	46.5	1,165	
14	46.6	1,148	
16	46.9	1,209	
17	46.9	1,219	
18	47.0	1,193	
19	47.1	1,162	
20	47.3	1,182	
21	47.3	1,214	

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT ARKANSAS CITY, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1891			
Mar. 22	47.4	1,234	
23	47.5	1,211	
24	47.6	1,253	
28	47.8	1,391	
30	47.9	1,419	
31	48.0	1,424	
April 1	48.1	1,409	
3	48.2	1,419	
4	48.2	1,406	
6	48.2	1,407	
7	48.2	1,425	
8	48.1	1,398	
9	48.0	1,407	
10	47.9	1,363	
11	47.8	1,342	
13	47.6	1,298	
14	47.5	1,339	
15	47.4	1,303	
16	47.3	1,317	
18	47.2	1,292	
20	47.2	1,269	
21	47.2	1,289	
22	47.1	1,270	
23	47.1	1,283	
24	47.2	1,237	
25	47.3	1,228	
27	47.5	1,228	
28	47.4	1,247	
29	47.3	1,201	
30	47.1	1,189	M
May 2	46.5	1,186	
4	45.6	1,136	
6	43.9	1,023	
7	43.0	986	
8	41.7	937	
9	40.5	874	
11	38.2	818	
12	37.0	796	
1892			
Apr. 22	46.0	1,311	
23	46.4	1,450	
25	46.9	1,385	
26	47.1	1,526	
27	47.2	1,597	
28	47.4	1,525	
29	47.6	1,547	
30	47.8	1,587	
May 2	48.0	1,625	
3	48.0	1,533	
4	48.1	1,734	
4	48.1	1,742	
5	48.2	1,589	
6	48.3	1,648	
7	48.6	1,614	
9	48.8	1,660	
10	48.8	1,601	
11	48.9	1,493	
12	49.0	1,556	
13	49.1	1,467	
14	49.1	1,410	M
16	49.1	1,452	F
19	49.2	1,465	M
21	49.3	1,406	M
23	49.4	1,435	M

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1892			
23	49.4	1,475	F
24	49.5	1,424	
26	49.6	1,445	
27	49.6	1,429	
28	49.7	1,446	
31	49.8	1,441	
31	49.8	1,485	
June 1	49.9	1,485	
3	49.7	1,477	
4	49.6	1,452	
6	49.5	1,416	
7	49.4	1,463	
8	49.4	1,465	M
9	49.4	1,484	
10	49.4	1,481	
11	49.4	1,462	
13	49.4	1,451	
14	49.4	1,446	
14	49.4	1,423	
15	49.4	1,408	
16	49.4	1,451	
17	49.3	1,436	
18	49.2	1,422	
20	49.0	1,404	
20	49.0	1,401	F
21	48.8	1,395	
21	48.8	1,356	
23	48.5	1,344	
24	48.3	1,360	
27	47.5	1,201	
28	47.2	1,179	M
28	46.9	1,298	
29	46.6	1,262	
29	46.6	1,180	
30	46.1	1,046	
30	46.0	1,065	
30	46.1	1,192	
30	46.1	1,184	F
July 1	45.5	1,158	M
1	45.5	1,142	F
1	45.4	1,025	M
1	45.3	1,077	F
2	44.6	1,110	
2	44.6	1,033	
1893			
Mar. 9	43.1	1,054	
9	43.1	1,072	
10	43.2	1,036	
10	43.2	1,054	
11	43.2	1,009	
11	43.2	1,026	
13	43.0	1,106	
18	40.7	1,007	M
20	40.2	931	
21	40.0	960	
21	40.0	935	
22	39.9	983	
24	3.99	939	
25	40.0	946	
25	40.0	916	
27	40.0	931	
27	40.0	932	
29	39.9	911	
29	39.9	921	

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT ARKANSAS CITY, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1893			
Mar. 30	39.6	928	
30	39.6	928	
31	39.4	907	
April 1	39.0	863	M
1	39.0	866	
3	38.0	836	
3	38.0	827	M
4	37.4	821	M
4	37.4	814	M
4	37.4	820	F
5	36.6	791	M
5	36.6	809	
6	35.8	763	
6	35.8	758	
7	35.0	738	
7	35.0	721	
8	34.2	711	
8	34.2	711	
May 5	46.2	1,198	
6	46.8	1,243	
8	48.1	1,329	
8	48.1	1,327	
9	48.4	1,372	
9	48.4	1,349	
10	48.8	1,380	
10	48.8	1,378	
11	49.0	1,406	
11	49.0	1,390	
12	49.1	1,407	
12	49.1	1,400	
13	49.2	1,428	
13	49.2	1,408	
15	49.6	1,453	
15	49.6	1,416	
16	49.6	1,428	
17	49.6	1,411	
17	49.6	1,384	
18	49.6	1,451	M
18	49.6	1,429	
19	49.6	1,438	
19	49.6	1,455	
19	49.6	1,472	
20	49.6	1,442	
20	49.6	1,426	
22	49.6	1,409	
22	49.6	1,482	
23	49.7	1,434	
23	49.7	1,421	
24	49.8	1,471	
24	49.8	1,432	
24	49.8	1,408	
25	50.0	1,440	
25	50.0	1,455	
26	50.0	1,417	
26	50.0	1,486	
27	50.0	1,676	
27	50.0	1,566	
29	50.2	1,538	
29	50.2	1,542	
31	49.8	1,504	
June 1	49.6	1,503	
1	49.6	1,468	
2	49.6	1,496	
2	49.6	1,508	
3	49.6	1,483	

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1893			
June 3	49.6	1,486	
5	49.6	1,469	
5	49.6	1,480	
7	49.5	1,453	
7	49.5	1,433	
1895			
July 8	14.0	283	
8	14.0	302	
9	15.6	321	
Aug. 12	18.6	352	
12	18.6	354	
Oct. 12	— .7	103	
12	— .7	121	
14	—1.0	105	
Dec. 24	9.0	232	
26	15.6	363	
26	15.6	364	
27	20.4	454	
27	20.4	468	
28	23.9	550	M
30	27.3	664	
31	28.2	678	
1896			
Jan. 1	28.8	662	
2	29.5	698	
3	30.2	796	
4	30.6	717	
4	30.6	725	
6	30.8	696	
6	30.8	700	
8	29.4	678	
9	28.3	657	
10	27.6	628	
10	27.6	631	
11	27.2	626	
11	27.2	608	
Dec. 4	11.9	285	
5	14.2	343	
5	14.2	358	
5	14.2	361	F
7	18.2	456	
7	18.2	467	
8	20.0	490	M
9	21.0	504	
9	21.0	515	
9	21.0	499	F
1897			
Mar. 25	50.8	1,596	M
26	51.1	1,597	M
27	51.4	1,646	M
29	51.9	1,618	M
30	51.4	1,613	F
Nov. 26	.5	126	
27	.6	134	
27	.6	133	M
29	.8	131	
29	.8	134	
29	.8	136	M
29	.8	134	M
30	.9	136	F

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT ARKANSAS CITY, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1897			
Nov. 30	.9	132	F
30	.9	137	M
1898			
April 20	51.1	1,497	M
20	51.1	1,514	F
1901			
Dec. 8	1.4	119	M
8	1.4	118	M
8	1.5	119	M
9	1.6	131	F
9	1.7	127	M
10	1.8	126	F
10	1.8	129	F
10	1.8	128	M
10	1.9	123	M
10	1.9	120	M
1903			
Mar. 8	48.0	1,292	M
11	48.8	1,286	M
12	49.0	1,198	M
1917			
Dec. 24	2.9	138	F
26	3.7	150	F
26	3.7	153	F
1922			
Nov. 1	2.5	132	M
2	2.4	120	F
3	2.3	122	M
4	2.3	119	F
7	2.2	123	M
8	2.1	115	F
9	1.9	119	F
10	1.8	121	M
11	1.6	111	F
13	1.5	113	M
15	1.6	119	F
1925			
Sept. 11	2.3	128	M
12	2.0	123	M
13	1.8	116	M
14	1.6	123	M
14	1.6	120	F
15	1.5	113	M
16	1.4	112	M
16	1.4	119	F
17	1.5	112	M
17	1.5	122	F
18	1.5	114	M
18	1.5	120	F

DISCHARGE MEASUREMENTS OF MISSISSIPPI RIVER AT GREENVILLE, MISS.

Gage heights refer to Mississippi River Commission gage at Greenville, Miss., whose zero is 88.53 feet above mean Gulf level.

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1894			
April 19	28.1	740	M
19	28.2	671	M
Nov. 20	—.5	104	M

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.

ST. FRANCIS RIVER

DISCHARGE MEASUREMENTS OF ST. FRANCIS RIVER AT PARKIN, ARK.

Gage heights refer to Mississippi River Commission gage at Parkin, whose zero is 175.68 feet above mean Gulf level.

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.	Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1928							
June 21	19.7	16,656	F	7	24.6	22,269	F
22	20.2	17,800	M	8	24.7	23,270	M
23	21.6	20,966	F	9	24.9	21,536	F
24	22.2	19,327	M	10	25.0	23,658	M
25	22.5	18,383	F	11	25.2	21,964	F
26	22.8	18,369	M	12	25.2	22,601	M
27	22.9	18,223	F	13	25.3	21,705	F
28	23.1	21,643	M	14	25.3	23,180	M
29	23.2	18,928	F	15	25.3	23,649	F
30	23.5	20,022	M	16	25.3	21,589	M
July 1	23.7	21,398	F	17	25.3	19,856	F
2	23.9	20,812	M	18	25.1	21,522	M
3	24.1	23,129	F	19	25.0	19,377	F
4	24.2	22,617	M	20	24.7	20,434	M
5	24.3	21,601	F	21	24.3	17,774	F
6	24.4	22,699	M				

DISCHARGE MEASUREMENTS OF ST. FRANCIS RIVER NEAR MOUTH.

Gage heights refer to U. S. Engineer gage at Memphis, Tenn.
K. C. S. & M. Ry.

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1890			
Mar. 17-19	35.5	487,536	M
28, 29	35.5	484,111	M
St. L., I. M. & S. Ry.			
1890			
Mar. 21-22	35.5	578,817	M
L. R. & M. Ry.			
1890			
April 1, 3	35.4	501,225	M
Soudan, Ark.			
Gage height refers to U. S. Engineer gage at Helena, Ark.			
1916			
Jan. 21	48.1	17,506	F
Westbrook, Ark., 20 miles above mouth.			
Gage height refers to Mississippi River Commission gage at Mhoon Landing, Miss.			
1884			Ship's
Mar. 4	38.8	136,651	log

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
15½ miles above mouth.			
Gage heights refer to U. S. Engineer gage at Helena, Ark.			
1898			
Dec. 17	11.0	6,039	
17	11.0	6,233	
17	11.0	6,175	M
17	11.0	6,093	
17	11.0	6,113	
19	10.5	7,204	F
19	10.5	6,986	F
19	10.5	7,279	M
19	10.5	7,656	M
15 miles above mouth.			
1896			
Nov. 16	7.1	874	M
17	6.9	768	M
17	6.9	1,007	F
17	6.9	824	M
17	6.9	1,012	F

DISCHARGE MEASUREMENTS OF ST. FRANCIS RIVER NEAR MOUTH.—*Continued*

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
8 miles above mouth.			
1909			
April 14.....	31.5	28,811	F
1913			
Feb. 14.....	46.6	60,134	MM
14.....	46.6	66,351	F
14.....	46.6	62,017	MM
15.....	45.4	73,610	MM
15.....	45.4	76,340	F
15.....	45.4	75,340	MM
15.....	45.4	84,829	F
¼-mile above mouth.			
1897			
Nov. 16.....	.2	1,005	M
16.....	.2	955	
16.....	.2	955	
16.....	.2	972	
16.....	.2	988	F
16.....	.2	990	M
16.....	.2	986	
16.....	.2	998	
16.....	.2	1,027	
16.....	.2	1,062	F

DISCHARGE MEASUREMENTS OF ST. FRANCIS BAY AT MOUTH AT RIVER FRONT, ARK.

Gage heights at 8 a. m. readings of Mississippi River Commission gage on St. Francis River at Parkin, Ark.

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1928			
June 23.....	21.6	1,906	F
July 5.....	24.3	1,752	
13.....	25.3	4,978	
14.....	25.3	3,929	M
15.....	25.3	5,294	F
16.....	25.3	4,837	M
1928			
July 17.....	25.3	6,007	F
18.....	25.1	4,889	M
19.....	25.0	6,007	F
20.....	24.7	5,250	M
21.....	24.3	5,402	F

WHITE RIVER

DISCHARGE MEASUREMENTS OF WHITE RIVER AT LOCK NO. 1, NEAR BATESVILLE, ARK.

Gage heights refer to U. S. Weather Bureau gage at Newport, Ark., whose zero is 199.2 feet above mean sea level.

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1900			
June 1.....	5.1	8,290	F
Nov. 2.....	5.4	8,802	
3.....	8.2	15,662	
6.....	7.8	15,189	
22.....	12.3	26,943	
27.....	15.3	33,659	F
27.....	15.0	32,674	
28.....	14.1	28,515	
28.....	13.8	29,963	

DISCHARGE MEASUREMENTS OF WHITE RIVER AT CLARENDON, ARK.

Gage heights refer to Mississippi River Commission gage at Clarendon, whose zero is 140.02 feet above mean Gulf level.

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1879			
Feb. 5	22.0	34,025	
6	22.3	34,113	
7	22.6	37,208	
8	22.8	37,996	
11	23.3	39,405	
12	23.3	39,263	
15	23.2	37,394	
18	22.7	35,925	
19	22.4	33,447	
20	22.1	32,372	
27	18.6	21,726	
Mar. 3	16.6	18,741	
4	16.1	17,503	
5	15.6	17,075	
12	12.9	14,009	
15	12.8	13,934	
19	13.8	16,215	
21	14.3	17,201	
24	15.8	18,982	
25	15.9	18,664	
27	16.0	18,629	
29	15.5	17,377	
31	14.7	14,865	
April 2	14.4	15,332	
5	14.6	15,403	
8	15.4	16,105	
12	16.8	20,439	
15	16.9	20,002	
16	16.8	20,203	
18	16.2	18,196	
26	15.4	16,148	
28	16.0	18,385	
29	16.1	18,398	F
30	16.1	18,340	
May 1	16.3	20,163	
2	16.8	20,683	
5	18.3	24,051	
6	18.7	24,880	
7	9.0	26,072	
8	19.2	26,359	
9	19.3	26,055	
10	19.3	25,634	
13	18.5	23,295	
14	17.9	22,570	
15	17.2	20,543	
16	16.3	19,035	
17	15.5	17,881	
19	13.8	14,920	
22	12.7	13,823	
23	12.6	13,657	
26	11.8	12,346	
27	11.4	11,596	
28	10.9	11,019	
29	10.4	10,373	
June 3	8.7	8,500	
6	8.3	7,565	
7	8.3	8,082	
9	8.7	8,664	
10	8.8	8,609	
12	8.6	8,208	
13	8.4	8,036	
16	7.7	7,167	
18	7.2	6,879	
19	7.0	6,635	
20	6.8	5,962	

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1892			
May 19	28.5	105,412	
20	28.9	111,082	
21	29.3	119,124	
23	30.4	141,693	
24	31.1	155,019	
25	31.8	171,062	
26	32.3	172,357	
27	32.6	169,777	
28	32.7	172,903	
1893			
May 5	29.8	131,402	M
6	30.7	144,267	
8	32.7	180,392	
9	33.4	109,464	
10	33.8	201,870	
1906			
April 4	32.40	205,351	
6	33.08	210,040	
7	32.84	199,493	
8	32.46	196,107	
9	32.00	185,406	
9	32.00	189,386	F
10	31.50	175,650	M
10	31.50	175,956	F
1907			
Jan. 10	32.5	172,675	
11	32.4	106,177	
12	32.3	160,916	
13	32.2	161,149	
14	32.2	160,713	
15	32.0	146,049	
16	32.0	148,510	M
17	32.0	153,709	
18	32.0	151,732	
1912			
April 14	32.6	172,219	
15	32.5	149,753	
16	32.4	147,402	
1915			
Aug. 30	29.77	150,558	
31	31.62	180,630	
Sept. 2	32.97	201,549	MM
3	32.97	184,369	
3	32.97	185,819	F
4	32.32	174,316	MM
1916			
Feb. 7	38.3	322,439	
8	38.4	320,381	M
9	38.1	310,546	
1927			
April 18	32.85	188,115	F
23	43.30	439,648	F
1928			
June 19	29.0	131,873	F
20	29.9	145,199	M
22	31.2	167,423	M

DISCHARGE MEASUREMENTS OF WHITE RIVER AT CLARENDON, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1928			
June 23	31.8	178,305	F
24	32.3	186,743	M
26	33.4	207,903	M
27	33.8	217,913	M
28	34.2	224,206	F
29	34.6	228,981	M
30	34.8	230,252	M
1928			
July 1	34.9	226,665	M
2	34.8	219,090	F
3	34.6	210,098	M
4	34.2	201,327	M
5	33.7	191,280	M
6	33.1	176,684	F

DISCHARGE MEASUREMENTS OF WHITE RIVER NEAR MOUTH

Gage heights refer to U. S. Engineer gage at mouth of White River, whose zero is 108.86 feet above mean Gulf level.

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
Above Arkansas cut-off.			
1896			
Nov. 27	13.5	8,664	M
28	13.5	10,168	M
28	13.5	9,893	M
28	13.5	11,398	F
28	13.5	12,221	F
28	13.5	10,320	M
28	13.5	10,493	M
28	13.5	10,486	M
28	13.5	11,336	F
28	13.5	11,395	F
1897			
Nov. 23	5.6	4,759	M
23	5.6	4,684	M
23	5.6	4,733	M
23	5.6	4,749	M
23	5.6	4,701	M
23	5.6	4,523	M
23	5.6	4,668	M
23	5.6	4,362	M
23	5.6	4,459	F
23	5.6	4,498	F
Below Arkansas cut-off.			
1882			
Mar. 28	46.2	117,599	
Above Sibley chute.			
1918			
Sept. 3	13.1	8,457	
3	13.1	9,036	
Below Sibley chute.			
1918			
Sept. 3	13.1	7,060	
3	13.1	6,370	

ARKANSAS RIVER

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT ARKANSAS CITY, ARK.

Gage heights refer to gage of the Mississippi River Commission at Arkansas City, Ark., whose zero is 96.75 feet above mean Gulf level.

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1884			
Oct. 6	16.6	455	
7	18.0	485	
8	19.2	535	
9	20.0	539	
10	20.6	552	
13	20.2	482	
14	19.5	447	
15	18.8	428	
16	18.4	406	
17	18.2	427	
18	18.1	414	
20	18.5	405	
21	18.5	419	
22	18.4	414	
23	18.2	418	
24	18.0	394	
25	17.6	375	
27	16.8	376	
28	16.4	357	
29	16.2	354	
30	16.0	352	
31	16.3	352	
Nov. 1	16.5	366	
3	16.4	352	
4	16.2	359	
5	16.1	362	
6	16.0	359	
7	15.7	345	
8	15.2	338	
10	14.0	313	
11	13.4	299	
12	12.8	296	M
13	12.2	285	M
14	11.7	269	M
15	11.2	268	M
17	10.2	254	M
18	9.8	243	M
19	9.5	262	M
20	9.2	241	M
21	9.0	250	M
22	8.9	253	
24	8.9	260	
25	8.8	243	
26	8.7	246	
27	8.6	238	
29	8.7	241	
Dec. 1	9.8	259	
2	10.7	283	
3	11.4	288	
4	11.9	292	
5	12.0	287	
8	10.3	260	
9	9.6	252	
10	8.8	248	
12	7.8	234	
13	7.4	221	
15	8.8	243	
16	10.9	286	
17	12.8	321	
19	16.6	365	
20	17.6	390	
22	18.4	415	
23	18.4	393	
24	18.1	397	

Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1884			
Dec. 26	16.8	365	
29	15.0	340	
30	16.8	376	
31	20.3	458	
1885			
Jan. 1	23.3	557	
2	26.1	637	
3	28.7	720	
7	35.6	892	
9	36.8	969	
10	37.3	981	
12	38.1	1,016	
13	38.5	969	
14	39.0	1,045	
16	40.3	1,117	
17	40.6	1,068	
19	41.0	1,101	
20	41.2	1,070	
22	41.4	1,072	
23	41.5	1,092	
31	41.7	1,064	
Feb. 2	41.6	1,077	
3	41.3	1,050	
4	40.8	1,026	
5	39.9	981	
6	38.7	930	
7	37.5	868	
9	35.1	787	
11	33.6	743	
12	33.2	730	
13	32.9	753	M
14	32.7	768	M
16	32.2	734	
17	32.2	759	
18	32.2	735	
20	32.2	758	
21	32.0	726	
23	30.5	669	
24	29.6	626	
27	25.4	519	
28	24.0	484	
Mar. 2	22.1	470	
3	21.8	458	
4	21.8	476	
5	21.8	459	
6	22.2	471	
7	22.8	491	
9	23.8	504	
10	24.5	534	
11	25.5	543	
12	26.7	568	
13	28.1	630	
14	29.3	631	
16	30.9	698	
17	31.4	717	
18	32.0	742	
19	32.7	767	
20	33.4	779	
21	34.0	774	
23	34.8	788	
24	34.8	801	
25	34.9	792	
26	34.8	802	

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT LITTLE ROCK, ARK.

Gage heights refer to U. S. Engineer gage at Little Rock, whose zero is 222.06 feet above mean Gulf level.

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1885			
.....	20.6	110,413	
1886			
Dec. 6.....	4.7	4,365	
1887			
Oct. 3.....	3.4	6,601	
8.....	3.0	5,279	
Nov. 8.....	2.8	3,111	
12.....	2.6	2,639	
Dec. 7.....	11.4	38,367	
1888			
Jan. 2.....	4.4	7,127	
13.....	6.2	14,035	
17.....	7.2	14,720	
Feb. 4.....	9.8	33,410	
Mar. 6.....	10.4	37,746	
9.....	12.8	48,651	
28.....	15.2	65,274	F
April 9.....	7.3	19,607	
13.....	15.1	62,127	
14.....	17.2	92,198	
16.....	18.6	98,233	
18.....			
21.....	10.0	34,889	
25.....	7.6	17,607	
28.....	6.8	16,294	
May 2.....	18.6	98,233	
3.....	19.3	105,094	
21.....	18.6	99,026	
24.....	18.9	92,725	
June 15.....	16.7	71,318	
16.....	14.6	52,315	
18.....	11.7	31,920	
23.....	9.2	21,197	
27.....	16.8	86,995	
Aug. 18.....	4.0	6,618	
29.....	5.2	6,541	
Sept. 4.....	13.2	55,638	
1892			
May 23.....	30.0	456,565	F
24.....	29.4	410,829	F
1893			
May 6.....	25.2	196,907	
7.....	23.8	182,413	
8.....	22.5	158,279	SF
9.....	22.2	141,821	
10.....	22.5	148,817	
1894			
Nov. 23.....	3.4	2,597	
1895			
Aug. 4.....	18.75	132,247	F
1897			
Oct. 12.....	2.8	1,522	
20.....	2.6	1,160	
21.....	2.6	1,195	
22.....	2.6	1,190	

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1898			
May 10.....	28.80	585,524	
11.....	29.30	676,756	F
12.....	28.80	657,859	
13.....	28.00	535,032	
1899			
Oct. 31.....	3.5	2,300	
1903			
June 2.....	26.00	234,464	M
3.....	26.10	282,128	M
1904			
June 10.....	29.2	415,426	M
10.....	29.2	427,699	M
11.....	29.4	408,644	M
11.....	29.4	440,080	F
12.....	29.4	433,238	F
12.....	29.3	425,954	M
13.....	29.1	416,284	F
13.....	29.0	398,313	
13.....	29.0	394,967	
14.....	28.7	385,956	
14.....	28.5	354,047	
15.....	28.1	335,901	
July 15.....	26.2	281,575	M
16.....	26.4	289,505	
16.....	26.4	277,979	
17.....	26.2	269,123	
17.....	26.3	268,559	
18.....	25.9	216,209	
18.....	.....	239,065	F
18.....	.....	230,904	F
19.....	25.4	252,970	M
19.....	.....	229,010	F
1908			
April 15.....	24.90	284,395	
16.....	24.80	256,353	
16.....	24.50	218,418	
17.....	23.70	209,209	
17.....	23.50	184,214	
May 29.....	27.60	325,586	
30.....	27.75	361,029	
30.....	27.75	375,625	M
31.....	27.60	367,225	
June 1.....	27.40	348,832	
2.....	27.12	354,309	
3.....	26.75	268,832	
4.....	26.45	252,183	
4.....	26.45	244,385	
5.....	26.48	256,582	
6.....	26.75	240,924	
1909			
Sept. 3.....	2.3	3,913	
4.....	2.3	4,262	
Oct. 14.....	1.9	3,573	
14.....	1.9	3,595	
15.....	1.8	3,206	
15.....	1.8	3,308	
16.....	1.8	3,303	
16.....	1.8	3,155	

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT LITTLE ROCK, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1909			
Oct. 22	1.4	2,974	
22	1.4	2,708	
1910			
Nov. 1	1.1	2,778	
1	1.1	2,850	
14	.9	2,170	
14	.9	2,212	
26	.7	2,133	
26	.7	2,062	
Dec. 16	.6	1,724	
16	.6	1,754	
1912			
May 4	25.4	321,105	F
5	25.0	288,650	
6	24.4	278,733	
6	23.9	248,882	
1913			
Aug. 11	1.1	2,950	
11	1.1	2,850	
19	.6	1,848	
19	.6	1,736	
27	.3	1,301	
27	.3	1,240	
29	.2	1,208	
29	.2	1,184	
Sept. 2	.2	1,096	
9	—.2	1,058	
9	—.2	1,115	
1915			
June 2	26.7	277,522	
3	26.1	289,864	
3	.....	286,716	
3	.....	275,190	
4	25.3	244,541	
4	.....	240,386	
4	.....	244,468	
4	.....	241,748	
5	24.1	210,584	
5	.....	206,121	
6	22.3	182,651	
6	.....	185,381	
6	.....	186,834	
6	.....	181,148	
7	21.9	171,399	
7	.....	167,604	F
7	.....	167,404	
8	21.6	171,615	
8	.....	174,828	
1916			
Jan. 25	24.0	277,840	
26	23.9	269,460	
26	.....	270,023	
27	23.5	272,938	
27	.....	261,058	
28	24.2	292,008	
29	25.8	309,147	
29	.....	308,625	
29	.....	330,537	
30	27.0	378,209	
30	.....	389,734	

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1916			
Jan. 31	28.1	419,006	F
Feb. 1	28.6	451,848	
1	.....	442,482	
2	28.8	458,255	
3	28.7	437,554	
4	27.9	393,976	
Oct. 7	1.1	3,378	
7	1.1	3,209	
28	1.2	3,609	
28	1.2	3,595	
Nov. 16	.8	2,609	
16	.8	2,576	
18	.7	2,496	
18	.7	2,526	
29	4.6	14,134	
29	4.6	13,598	
29	4.6	12,012	
1917			
Feb. 7	1.5	4,092	
13	1.0	3,589	
March 5	7.8	29,374	
6	7.5	29,228	
6	.....	30,776	
8	6.3	20,770	
April 24	8.5	39,506	
25	9.1	38,967	
25	.....	40,089	
26	8.6	35,437	
26	.....	35,003	
30	7.4	26,512	
July 2	2.5	8,797	
Oct. 15	.5	2,730	
15	.5	2,727	
16	.5	2,718	
16	.5	2,651	
17	.4	2,551	
17	.4	2,571	
25	—.3	1,692	
25	—.3	1,788	
25	—.3	1,784	
25	—.3	1,772	
1918			
April 3	.6	3,847	
3	.....	3,849	
8	8.0	32,718	
8	8.0	32,866	
11	6.8	27,049	
11	6.8	25,216	
18	7.9	32,998	
May 13	18.3	214,558	
13	18.3	221,905	
14	20.1	222,911	
14	.....	215,336	
15	18.3	143,323	
15	.....	145,304	
15	.....	136,323	
15	.....	134,154	
16	16.7	126,038	
16	.....	127,473	
16	.....	121,832	
16	.....	118,462	
18	13.5	75,302	
18	.....	70,609	

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT LITTLE ROCK, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1918			
July 27	—.1	2,688	
July 27	.....	2,661	
Aug. 5	—.2	2,294	
5	.....	2,373	
10	—.3	2,045	
10	.....	2,060	
13	—.5	1,684	
13	.....	1,747	
17	—.6	1,595	
17	.....	1,593	
1920			
Mar. 3	2.8	9,162	
3	.....	9,267	
1923			
June 17	26.4	285,746	M
18	26.7	299,841	F
18	.....	298,767	MM
19	26.7	289,741	MM
20	26.4	275,596	F
1927			
April 18	32.1	616,695	SF
19	32.9	717,986	
21	34.4	813,290	
22	34.3	735,306	
23	33.8	658,742	
24	32.8	612,669	

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT WHITE BLUFF, ARK.

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1917			
July 16	1.0	3,356	

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT JEFFERSON COUNTY FREE BRIDGE, ARK.

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1917			
July 28	4.0	14,203	

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT PINE BLUFF, ARK.

Gage heights for 1879 refer to a local gage whose relation to the present gage is not known. Late gage heights refer to Pine Bluff gage.

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1879			
Feb. 20	12.6	26,949	F
21	12.3	24,167	
22	12.0	23,101	
24	11.2	19,645	
25	10.6	17,893	
26	10.4	17,979	
27	10.1	17,261	
28	10.0	16,282	
Mar. 1	10.0	16,450	
3	9.9	16,392	
4	9.8	16,245	
5	9.6	14,772	
6	9.4	14,470	
7	9.2	13,500	
8	9.0	13,578	
10	8.6	12,649	
11	8.6	11,349	
12	8.6	11,362	
13	8.9	13,079	
14	9.3	15,136	
15	9.6	15,020	
17	9.7	15,676	
18	9.4	15,545	
19	9.6	16,333	
20	9.9	16,841	
21	9.8	16,578	
22	9.6	15,291	
24	9.3	14,880	
25	9.6	15,318	
1879			
Mar. 26	9.6	15,674	F
27	9.3	14,910	
28	9.0	13,260	
29	8.7	12,292	
31	8.2	10,284	
April 1	8.1	10,141	
2	7.9	10,036	
3	8.1	10,348	
4	8.4	11,502	
5	8.6	12,323	
7	8.3	11,422	
8	8.1	10,118	
9	8.3	10,589	
10	9.1	14,823	
11	9.5	14,951	
12	9.8	15,435	
14	9.1	14,199	
15	8.5	11,944	
16	8.2	11,144	
17	7.9	10,446	
18	8.0	10,564	
19	8.2	11,548	
21	7.7	9,431	
22	7.6	9,130	
23	7.4	8,212	
24	7.3	8,760	
26	7.6	9,240	
28	7.8	9,524	
29	8.3	11,756	

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT PINE BLUFF, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.	Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1879				1879			
April 30	11.6	22,797		June 12	7.1	8,140	
May 1	15.2	45,268		13	6.7	6,981	
2	15.7	48,358		14	6.4	6,191	
3	15.6	47,265		16	6.0	5,522	
5	14.5	40,296		17	5.9	4,746	
6	14.5	39,756		18	5.8	4,477	
7	15.5	47,262		19	5.6	3,974	
9	17.4	63,754		20	5.5	3,971	
12	15.9	46,707		21	5.4	3,882	
15	12.3	25,738		23	5.3	4,038	
17	10.8	19,950		24	5.3	4,035	F
20	9.2	14,116		25	5.3	3,822	
23	8.4	11,771		26	5.4	4,115	
24	8.2	11,271		27	5.6	4,500	
26	7.6	10,227	F	28	5.6	4,432	
27	7.4	9,103		30	6.0	4,819	
28	7.2	8,555		July 1	6.5	6,363	
29	7.0	8,338		2	6.8	7,561	
30	6.8	7,595		3	6.8	7,551	
31	6.7	7,133		4	6.7	7,347	
June 2	6.6	7,059		5	6.7	7,513	
3	6.5	6,467					
4	6.4	6,550		1899			
5	6.5	6,528		Nov. 3	2.1	2,521	
6	7.0	7,222					
7	8.8	12,875		1916			
9	8.9	13,886		Oct. 31	3.9	3,684	
10	8.2	11,435		31	3.9	3,560	
11	7.6	9,488					

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT RICHLAND, ARK.

1917							
Aug. 27	7.9	36,659					

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT HANNABERRY, ARK.

1917							
Dec. 11	1.3	6,507					

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT DIAMOND POINT, ARK.

1916				1916			
Sept. 30	2.1	5,066		Oct. 7	1.1	3,727	
30	.....	5,127		7	.....	3,729	
Oct. 4	1.5	4,268		12	1.0	3,270	

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT PLUM ISLAND, ARK.

1917							
Sept. 28	1.0	4,372					

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT PENDLETON, ARK.

1899				1916			
Nov. 4	4.4	2,820		Oct. 28	1.2	3,657	
1916				28	.....	3,828	
Oct. 21	1.0	3,796		31	1.2	4,211	
25	1.3	3,633		1917			
27	1.2	4,120		Dec. 4	—.6	2,372	

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT NOTRIEB BEND, ARK.

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.	Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1916							
Nov. 6.....	.9	3,219					
6.....	.....	3,235					

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT MEDFORD, ARK.

1916				1917			
Nov. 7.....	.9	3,248		Oct. 18.....	.4	3,906	
7.....	.....	3,342					
8.....	.9	3,186					

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT HOPEDALE LANDING, ARK.

Gage heights refer to gage whose zero is 125.3 feet above mean Gulf level.

1896				1896			
Nov. 30.....	1.0	5,309	M	Dec. 1.....	1.19	5,719	M
30.....	1.0	5,426	M	1.....	1.22	5,709	M
Dec. 1.....	1.1	6,046	F	1.....	1.25	6,092	M
1.....	1.12	5,878	F	1.....	1.27	6,079	F
1.....	1.15	5,681	M	1.....	1.3	5,901	F

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT M., H. & L. RAILWAY, BRIDGE, ARK.

1917							
Oct. 25.....	—.3	3,071					
Nov. 30.....	—.8	2,092					

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT SAWMILL BEND, ARK.

1916				1917			
Nov. 21.....	.7	3,162		Jan. 2.....	3.5	9,415	
21.....	.....	3,028					

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT ROSEMARY, ARK.

1916				1917			
Nov. 11.....	1.0	3,159		Nov. 2.....	—.7	2,753	

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT HEAD OF ARKANSAS CUT-OFF, ARK.

				1917			
1916				Jan. 2.....	3.5	9,856	
Nov. 11.....	1.0	3,416		Nov. 2.....	—.7	2,787	

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT NAPOLEON, ARK.

Gage heights for 1857-58 refer to Humphrey and Abbot's Delta Survey gage at Napoleon. The gage height for 1882 refers to U. S. Engineer gage at mouth of White River, whose zero is 108.86 feet above mean Gulf level.

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.
1857			
Dec. 29	38.9	65,193	
1858			
Jan. 1	36.0	58,637	
6	31.9	45,221	
15	34.8	56,917	
16	35.3	57,342	
17	35.0	59,478	
18	34.8	56,079	
19	34.4	54,688	
20	32.9	52,771	
21	33.7	51,421	
22	33.5	50,208	
25	32.6	49,571	
26	33.1	51,627	
27	33.5	51,932	
Feb. 25	27.2	42,139	
26	26.8	41,340	
Mar. 6	25.4	38,898	
9	27.8	48,030	
10	28.3	54,537	
14	30.6	58,199	
18	31.0	58,515	
21	33.5	62,328	
24	37.2	74,505	
26	39.8	77,937	
28	41.4	82,736	
31	44.0	90,305	
April 2	45.0	90,948	
3	45.1	99,835	F
4	45.2	102,680	
5	45.3	105,240	
6	45.4	100,180	
7	45.4	102,850	
8	45.1	102,420	
15	40.2	71,074	
16	39.9	67,249	
17	39.5	65,259	
26	42.1	84,066	
27	42.4	101,440	
May 1	43.4	114,780	
2	43.7	115,380	
6	44.1	117,050	
7	44.1	118,970	
8	44.1	118,470	
9	44.1	119,390	
10	44.1	120,060	
11	44.1	115,380	
12	43.9	120,080	
13	43.8	112,320	
16	43.9	119,480	
17	43.9	120,420	
19	44.2	122,210	
23	44.2	124,320	
27	44.2	125,130	
29	44.2	119,860	
30	44.3	120,590	
June 1	44.4	134,910	
2	44.4	140,430	
3	44.4	138,930	
4	44.5	143,480	
1858			
June 5	44.6	148,210	
6	44.7	141,130	
8	45.0	142,680	
9	45.1	144,580	
10	45.2	145,110	
14	45.3	142,420	
15	45.3	141,770	
20	45.2	142,810	
21	45.2	140,950	
30	44.7	137,120	
July 8	44.7	145,740	
13	43.8	132,510	
14	43.6	128,590	
15	43.3	120,520	
16	42.8	115,380	
17	42.1	109,880	
18	41.4	98,803	
July 21	39.4	81,280	
26	38.1	74,297	
27	38.1	73,786	
Aug. 1	37.8	72,316	
2	37.3	59,937	
3	35.9	55,188	
5	34.8	46,854	
8	32.2	33,544	
9	31.8	33,430	
11	30.8	29,312	
14	28.8	25,772	
16	27.6	26,121	
17	27.1	24,688	
18	26.8	24,497	
20	26.1	23,096	F
21	25.6	21,402	
22	25.1	16,489	
29	21.6	8,284	
30	20.8	7,561	
31	19.7	6,823	
Sept. 2	18.4	6,317	
4	17.9	6,238	
5	17.8	6,212	
6	17.7	6,160	
7	17.2	5,826	
10	15.6	5,408	
11	15.1	5,123	
12	14.6	5,078	
13	14.1	4,761	
15	13.3	4,367	
16	13.2	4,367	
17	13.1	4,307	
18	13.5	4,644	
19	14.1	4,602	
20	14.6	4,754	
21	15.1	4,732	
22	15.6	4,927	
23	16.2	4,927	
24	16.7	5,147	
25	16.6	5,098	
26	16.1	5,098	
27	15.5	5,193	
28	15.1	4,887	
Oct. 1	12.5	4,436	
2	12.1	4,164	
3	11.7	5,133	

DISCHARGE MEASUREMENTS OF ARKANSAS RIVER AT NAPOLEON, ARK.—*Continued*

Date.	Gage height, in feet.	Discharge, in sec.-ft.	Method.	Date.	Gage height, in feet.	Discharge, in thousand sec.-ft.	Method.
1858				1858			
Oct. 4	11.3	3,884		Nov. 4	4.6	2,318	
5	11.0	3,771		5	5.1	2,394	
6	10.5	4,021		6	6.1	2,774	
7	10.1	3,755		11	12.1	8,678	
14	8.5	3,412		12	13.4	9,935	
15	8.3	3,153		13	14.1	14,040	
16	8.1	3,276		14	14.5	12,333	
17	7.9	3,219		19	14.8	12,565	
18	7.7	3,219		20	14.3	11,650	
19	7.5	3,102		21	13.5	11,007	F
20	7.3	2,933		22	12.3	9,450	
21	7.1	2,933	F	23	11.1	8,428	
22	7.0	2,915		24	9.7	7,409	
24	6.7	2,805		25	8.3	6,672	
25	6.5	2,753		26	7.5	6,040	
28	5.9	2,598		27	6.1	4,489	
29	5.7	2,546		28	5.6	3,958	
30	5.5	2,514		29	5.1	3,545	
31	5.3	2,348		30	5.1	3,379	
Nov. 1	5.2	2,348					
2	5.1	2,333		1882			
3	5.0	2,333		Mar. 28	46.2	62,000	SF

RED RIVER

DISCHARGE MEASUREMENTS OF RED RIVER AT KYE SMITH, ARK.

Gage height refers to U. S. Engineer gage at Fulton, Ark., whose zero is 224.48 feet above mean Gulf level.

1893							
Aug. 26	9.6	8,617	M				

DISCHARGE MEASUREMENTS OF RED RIVER AT DOOLEY FERRY, ARK.

Gage height is above mean Gulf level.

1893							
Sept. 1	219.8	4,450	M				

DISCHARGE MEASUREMENTS OF RED RIVER AT GARLAND, ARK.

Gage heights refer to U. S. Engineer gage at Garland, whose zero is 203.16 feet avove mean Gulf level.

1893				1902			
Sept. 15	3.0	2,472	M	Nov. 15	.....	18,627	

DISCHARGE MEASUREMENTS OF RED RIVER ABOVE SULPHUR RIVER, ARK.

Gage height is above mean Gulf level.

1894							
Sept. 24	189.8	2,154	M				

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