UNITED STATES DEPARTMENT OF THE INTERIOR
RAY LYMAN WILBUR, Secretary

GEOLOGICAL SURVEY
GEORGE OTIS SMITH, Director

Water-Supply Paper 626

SURFACE WATER SUPPLY *of the* UNITED STATES

1926

PART VI
MISSOURI RIVER BASIN

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Prepared in cooperation with the States of
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SURFACE WATER SUPPLY OF MISSOURI RIVER BASIN, 1926

AUTHORIZATION AND SCOPE OF WORK

This volume is one of a series of 14 reports presenting results of measurements of flow made on streams in the United States during the year ending September 30, 1926.

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

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

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

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

Annual appropriations for the fiscal years ending June 30, 1895–1927

1895	$12,500.00	1907	$150,000.00	1921–1923	$180,000.00
1896	24,500.00	1908–1910	100,000.00	1924–25	170,000.00
1897–1899	50,000.00	1911–1917	150,000.00	1926	165,000.00
1900	70,000.00	1918	175,000.00	1927	151,000.00
1901–2	100,000.00	1919	148,244.10		
1903–1906	200,000.00	1920	175,000.00		

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

Measurements of stream flow have been made at about 5,250 points in the United States and also at many points in Alaska and the Hawaiian Islands. In July, 1926, 1,730 gaging stations were being maintained by the Geological Survey and the cooperating organizations. Many miscellaneous discharge measurements are made at other points. In connection with this work data were also collected in regard to precipitation, evaporation, storage reservoirs,

river profiles, and water power in many sections of the country and will be made available in the water-supply papers from time to time.

DEFINITION OF TERMS

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

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

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

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

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

The following terms not in common use are here defined:

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

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

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

EXPLANATION OF DATA

The data presented in this report cover the year beginning October 1, 1925, and ending September 30, 1926. At the beginning of January in most parts of the United States much of the precipitation in the preceding three months is stored in the form of snow or

ice, or in ponds, lakes, and swamps, or as ground water, and this stored water passes off in the streams during the spring break-up. At the end of September, on the other hand, the only stored water available for run-off is possibly a small quantity in the ground; therefore the run-off for the year beginning October 1 is practically all derived from precipitation within the 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 or chain gage or from a water-stage recorder

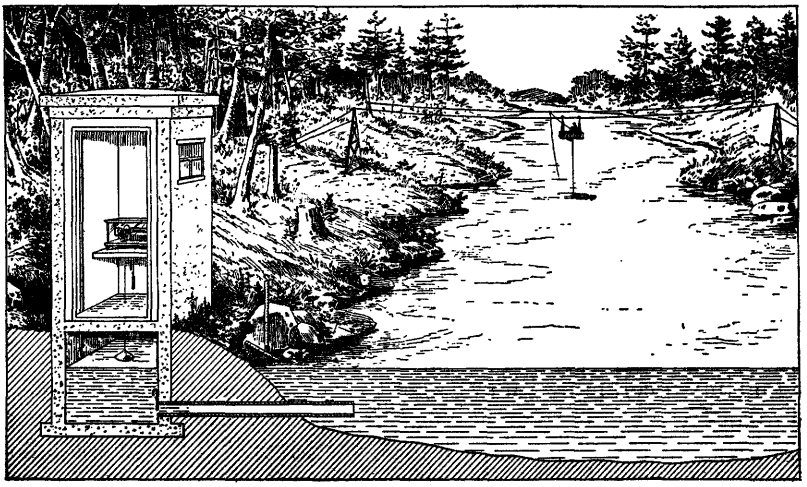

FIGURE 1.—Typical gaging station

that gives a continuous record of the fluctuations. Measurements of discharge are made with a current meter by the general methods outlined in standard textbooks on the measurement of river discharge. A typical gaging station, equipped with water-stage recorder and measuring cable and car, is shown in Figure 1.

From the discharge measurements rating tables are prepared that give the discharge for any stage. The application of the daily gage height to these rating tables gives the daily discharge from which the monthly and yearly mean discharges are determined.

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

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

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

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

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

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

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

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

For the rating tables "well defined" indicates, in general, that the rating is probably accurate within 5 per cent; "fairly well defined," within 10 per cent; "poorly defined," within 15 to 25 per cent.

These notes are very general and are based on the plotting of the individual measurements with reference to the mean rating curve.

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

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

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

PUBLICATIONS

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

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

PART I. North Atlantic slope basins (St. John River to York River).
II. South Atlantic slope and eastern Gulf of Mexico basins (James River to the Mississippi).
III. Ohio River Basin.
IV. St. Lawrence River Basin.
V. Upper Mississippi River and Hudson Bay Basins.
VI. Missouri River Basin.
VII. Lower Mississippi River Basin.
VIII. Western Gulf of Mexico basins.
IX. Colorado River Basin.
X. Great Basin.
XI. Pacific slope basins in California.
XII. North Pacific slope basins, in three volumes:
A, Pacific slope basins in Washington and upper Columbia River Basin.
B, Snake River Basin.
C, Pacific slope basins in Oregon and lower Columbia River Basin.

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

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

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

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

Augusta, Me., Statehouse.
Boston, Mass., 2500 Customhouse.
Hartford, Conn., 64 State Capitol.
Albany, N. Y., 904 Home Savings Bank Building.
Trenton, N. J., 423 Statehouse Annex.
Charlottesville, Va., Brooks Museum, University of Virginia.
South Charleston, W. Va., Naval Ordnance Plant.
Asheville, N. C., 608 City Hall.
Chattanooga, Tenn., 630 Power Building.
Tuscaloosa, Ala., Post Office Building.
Columbus, Ohio, Engineering Experiment Station, Ohio State University.
Chicago, Ill., 1510 Consumers Building.
Madison, Wis., 337N State Capitol.
Thief River Falls, Minn., 618 Knight Avenue, North.
Topeka, Kans., 23 Federal Building.
Rolla, Mo., Rolla Building, School of Mines and Metallurgy.
Fort Smith, Ark., Post Office Building.
Austin, Tex., Capitol Building.
Tucson, Ariz., 104 Agricultural Building, University of Arizona.
Denver, Colo., 403 Post Office Building.
Salt Lake City, Utah, 313 Federal Building.

Idaho Falls, Idaho, 228 Federal Building.
Boise, Idaho, Federal Building.
Helena, Mont., 45–46 Federal Building.
Tacoma, Wash., 404 Federal Building.
Portland, Oreg., 606 Post Office Building.
San Francisco, Calif., 303 Customhouse.
Los Angeles, Calif., 600 Federal Building.
Honolulu, Hawaii, Territorial Office Building.

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

Stream-flow records have been obtained at about 5,250 points in the United States, and the data obtained have been published in the reports tabulated below:

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

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

Report	Character of data	Year
10th A, pt. 2	Descriptive information only	
11th A, pt. 2	Monthly discharge and descriptive information	1884 to September, 1890.
12th A, pt. 2	do	1884 to June 30, 1891.
13th A, pt. 3	Mean discharge in second-feet	1884 to Dec. 31, 1892.
14th A, pt. 2	Monthly discharge (long-time records, 1871 to 1893)	1888 to Dec. 31, 1893.
B 131	Descriptions, measurements, gage heights, and ratings	1893 and 1894.
16th A, pt. 2	Descriptive information only	
B 140	Descriptions, measurements, gage heights, ratings, and monthly discharge (also many data covering earlier years).	1895.
W 11	Gage heights (also gage heights for earlier years)	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also similar data for some earlier years).	1895 and 1896.
W 15	Descriptions, measurements, and gage heights, eastern United States, eastern Mississippi River, and Missouri River above junction with Kansas.	1897.
W 16	Descriptions, measurements, and gage heights, western Mississippi River below junction of Missouri and Platte, and western United States.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also some long-time records).	1897.
W 27	Measurements, ratings, and gage heights, eastern United States, eastern Mississippi River, and Missouri River.	1898.
W 28	Measurements, ratings, and gage heights, Arkansas River and western United States.	1898.
20th A, pt. 4	Monthly discharge (also for many earlier years)	1898.
W 35 to 39	Descriptions, measurements, gage heights, and ratings	1899.
21st A, pt. 4	Monthly discharge	1899.
W 47 to 52	Descriptions, measurements, gage heights, and ratings	1900.
22d A, pt. 4	Monthly discharge	1900.
W 65, 66	Descriptions, measurements, gage heights, and ratings	1901.
W 75	Monthly discharge	1901.
W 82 to 85	Complete data	1902.
W 97 to 100	do	1903.
W 124 to 135	do	1904.
W 165 to 178	do	1905.
W 201 to 214	do	1906.
W 241 to 252	do	1907–8.
W 261 to 272	do	1909.
W 281 to 292	do	1910.
W 301 to 312	do	1911.
W 321 to 332	do	1912.
W 351 to 362	do	1913.
W 381 to 394	do	1914.
W 401 to 414	do	1915.
W 431 to 444	do	1916.
W 451 to 464	do	1917.
W 471 to 484	do	1918.
W 501 to 514	do	1919–20.
W 521 to 534	do	1921.
W 541 to 554	do	1922.
W 561 to 574	do	1923.
W 581 to 594	do	1924.
W 601 to 614	do	1925.
W 621 to 634	do	1926.

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

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

The following table gives, by years and drainage basins, the numbers of papers on surface-water supply published from 1899 to 1926. The data for any particular station will be found in the reports covering the years during which the station was maintained. Results of miscellaneous discharge measurements are also published by drainage basins.

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

[For basins included see p. 6]

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

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

COOPERATION

Part of the work in Montana has been carried on under cooperative agreement with the United States Bureau of Reclamation, the work being done by the Geological Survey and the expense borne by the Bureau of Reclamation. The Legislature of Montana made an appropriation for stream-gaging work, which was expended by the State engineer, as provided in the act, in accordance with paragraph 3, section 2244, of the Revised Codes of 1907 of the State of Montana, which reads as follows:

> The State engineer shall become conversant with the waterways of the State and the needs of the State as to irrigation matters, shall make, or cause to be made, measurements and calculations of the ordinary and flood discharge of streams, cooperating in this work as much as possible with the United States Geological Survey and the Montana Experiment Station; such measurements to be made on streams in the order of their importance, provided that measurements already made, if deemed reliable, may be adopted.

This fund was expended largely on work in connection with several Carey Act projects and irrigation districts in Montana. In addition to the amount expended by engineers of the Geological Survey the State engineer, C. S. Heidel, did stream-gaging work directly with the Geological Survey.

The work on Stillwater River and Woodbine Creek near Nye, Mont., was financed by the Mineral Range Power Co.

Officials of Yellowstone National Park have furnished gage readings and paid for most of the work performed in the park.

In Wyoming the work was carried on in cooperation with the State through Frank C. Emerson, State engineer.

The United States Bureau of Reclamation cooperated in maintaining the stations on Wind River at Riverton and paid the salary of the observer at the station on Dinwoody Creek near Burris.

The United States Indian Service paid part of the cost of maintaining the following stations: Dinwoody Creek near Burris, Dry Creek near Burris, Little Wind River near Fort Washakie, and North Fork of Little Wind River at Fort Washakie.

In Colorado the State engineer, M. C. Hinderlider, paid most of the expense of maintaining the following stations: North Platte River near Walden, North Fork of North Platte River near Walden, Roaring Fork near Walden, Michigan Creek at Walden, Illinois Creek at Walden, South Platte River at South Platte, North Fork of South Platte River at South Platte, North St. Vrain Creek near Allens Park, and Middle St. Vrain Creek near Allens Park.

Barton M. Jones paid for installing the gages on North St. Vrain Creek and Middle St. Vrain Creek near Allens Park and also paid the salary of the observers for those stations.

Chas. W. Thuringer paid for installing the gage on South St. Vrain Creek near Ward and furnished the gage heights for that station.

In Kansas the work was carried on in cooperation with the Kansas Water Commission, Gov. Ben S. Paulen, chairman; H. A. Rice, secretary; and H. B. Walker. The station on Kansas River at Topeka was maintained in cooperation with the United States Weather Bureau. J. M. Piazzek read the gage on Delaware River at Valley Falls without charge.

In Missouri and for the station on Missouri River at Leavenworth, Kans., the work was carried on in cooperation with the Missouri Bureau of Geology and Mines, through H. A. Buehler, State geologist. Salaries of gage readers were paid by other cooperating parties as follows: United States Engineer Corps (Missouri River at Boonville, Mo.), Chicago Great Western Railroad Co. (Missouri River at Leavenworth, Kans.), Missouri Hydroelectric Power Co. (Osage River near Bagnell, Mo.), and Central Missouri Water & Power Co. (Gasconade River at Jerome and near Rich Fountain, Mo.).

DIVISION OF WORK

Data for stations in the upper Missouri River Basin were collected and prepared for publication under the direction of W. A. Lamb, district engineer, assisted by A. H. Tuttle and Miss G. B. McDonough.

Data for seven stations in Yellowstone National Park were collected and prepared for publication under the direction of C. G. Paulsen, district engineer, assisted by Berkeley Johnson, F. M. Veatch, and Miss E. H. Haugse.

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

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

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

The records were reviewed and manuscript assembled by F. C. Christopherson.

63020—30——2

GAGING-STATION RECORDS

MISSOURI RIVER PROPER

RED ROCK RIVER AT METZEL FORD, NEAR MONIDA, MONT.

LOCATION.—Near center of north line of sec. 34, T. 13 S., R. 3 W., at private bridge at Schultz ranch 1 mile below Metzel Ford and 20 miles east of Monida, Beaverhead County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 30, 1925, to September 30, 1926.

GAGE.—Au continuous water-stage recorder on left bank.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel composed of clay. Banks subject to overflow at high stage. Control poorly defined. Considerable moss in creek during summer.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.22 feet at 5 p. m. May 23 (discharge, 278 second-feet); minimum stage, 1.36 feet at 2 p. m. September 23 (discharge, 2.7 second-feet).

1925–1926: Maximum stage recorded, 3.58 feet April 30, 1925 (discharge, 396 second-feet); minimum stage, that of September 23, 1926.

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

DIVERSIONS.—None.

REGULATION.—Natural storage in Red Rock Lakes.

ACCURACY.—Stage-discharge relation not permanent; affected by ice and moss. Two fairly well defined rating curves used during year. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating tables mean daily gage height obtained by inspection of recorder graph, except May 30 to June 13 and September 17–30, for which shifting-control method was used. Records fair.

Discharge measurements of Red Rock River at Metzel Ford, near Monida, Mont., during the year ending September 30, 1926

	Gage height	Discharge		Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 6	[a] 3.26	165	June 13	[b] 2.34	55
Mar. 27	[a] 3.36	158	Aug. 6	[b] 1.50	6.5
May 17	3.06	240			

[a] Stage-discharge relation affected by ice.
[b] Stage-discharge relation affected by moss in channel.

Daily discharge, in second-feet, of Red Rock River at Metzel Ford, near Monida, Mont., for the year ending September 30, 1926

Day	Nov.	May	June	July	Aug.	Sept.
1	175	-------	174	32	8.2	7.2
2	175	-------	164	29	7.9	6.5
3	175	-------	159	30	7.6	5.8
4	162	-------	156	28	7.9	6.5
5	165	-------	132	28	7.2	7.2
6	165	-------	110	28	6.5	6.5
7		-------	106	26	6.5	6.2
8		-------	104	24	6.8	6.2
9		-------	97	22	7.2	6.5
10		-------	85	24	8.2	6.8
11		-------	80	24	10	5.1
12		-------	60	22	9.6	6.2
13	150	-------	52	21	9.6	6.8
14		-------	56	20	9.6	6.2
15		-------	40	20	10	7.6
16		-------	42	19	10	6.8
17		244	43	18	10	5.4
18		246	40	16	11	6.5
19	-------	250	40	16	10	7.2
20	-------	225	36	14	9.0	7.6
21	-------	225	32	12	8.6	6.8
22	-------	252	32	12	8.6	8.2
23	-------	244	34	12	8.6	4.4
24	-------	242	34	10	9.3	4.4
25	-------	223	34	10	9.3	5.4
26	-------	229	35	10	9.3	8.6
27	-------	221	34	10	8.2	9.6
28	-------	207	32	9.0	7.6	10
29	-------	200	30	9.0	7.9	8.2
30	-------	176	30	9.3	10	9.3
31	-------	158	-------	9.0	8.2	-------

NOTE.—Stage-discharge relation affected by ice Nov. 1–18; discharge estimated; braced figure gives mean discharge for period indicated. No record Oct. 1–31 and Nov. 19 to May 16.

Monthly discharge of Red Rock River at Metzel Ford, near Monida, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
November 1–18	-------	-------	156	5,570
May 17–31	252	158	223	6,630
June	174	30	70.1	4,170
July	32	9.0	18.5	1,140
August	11	6.5	8.66	532
September	10	4.4	6.86	408

RED ROCK RIVER BELOW RED ROCK RESERVOIR, NEAR MONIDA, MONT.

LOCATION.—In SW. ¼ sec. 32, T. 13 S., R. 6 W., just below Red Rock Reservoir, 8 miles northwest of Monida, Beaverhead County, and 15 miles east of Lima.

RECORDS AVAILABLE.—July 22, 1911, to September 30, 1918; May 1, 1925, to September 30, 1926.

GAGE.—Stage determined by measuring with graduated rod the depth on a peg set in concrete well with its top at elevation of crest of weir. Read by P. V. Maxwell. Gage heights indicate head on 40-foot weir.

DISCHARGE MEASUREMENTS.—Made from footbridge or by wading.

CHANNEL AND CONTROL.—Channel composed of coarse gravel and boulders. Banks high. Current very swift at high stages causing considerable velocity of approach at weir. Control is concrete weir; subject to shift due to débris washed in above.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.38 feet at 8 a. m. April 21 (discharge, 697 second-feet); minimum stage, 0.06 foot August 5–6 (discharge, 6 second-feet).

1911–1918; 1925–26: Maximum stage recorded, 3.2 feet April 28, 1914 (discharge, 1,220 second-feet); minimum discharge, 5 second-feet January 1 to April 10, 1913.

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

DIVERSIONS.—None.

REGULATION.—Flood water stored in reservoir and released as required during irrigation season.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined above 50 second-feet and fairly well defined below. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

COOPERATION.—Gage-height record furnished by Red Rock Reservoir & Irrigation Co.

Discharge measurements of Red Rock River below Red Rock Reservoir, near Monida, Mont., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 5	0.63	86	Nov. 8	0.96	143	June 12	2.27	645
Nov. 7	.50	59.5	Mar. 26	.44	48	Aug. 6	.10	12.4

Daily discharge, in second-feet, of Red Rock River below Red Rock Reservoir, near Monida, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	156	182	133	61	45	45	51	353	138	665	10	20
2	156	147	121	61	45	45	51	349	138	646	8	21
3	156	99	119	61	45	45	51	334	140	227	8	23
4	156	83	119	61	45	45	51	318	140	56	8	24
5	156	83	117	53	45	45	113	314	138	51	6	24
6	156	83	117	45	45	45	199	318	138	48	6	24
7	161	71	115	45	45	45	199	322	138	45	7	26
8	161	121	106	45	45	45	199	322	138	42	8	26
9	161	147	99	45	45	45	202	318	138	41	9	24
10	161	147	99	45	42	45	246	322	138	41	10	26
11	156	147	95	45	42	45	299	326	410	35	15	27
12	156	147	93	45	42	45	299	326	619	30	20	27
13	156	147	92	45	42	45	369	326	688	29	26	19
14	156	144	92	45	42	45	461	330	683	29	18	15
15	156	144	92	45	42	45	532	326	678	28	20	16
16	156	147	90	45	42	45	546	318	678	26	19	16
17	169	147	92	45	42	45	642	303	678	26	19	16
18	182	147	92	45	42	45	669	284	669	27	18	17
19	182	147	90	45	45	45	669	270	678	26	20	16
20	182	147	90	45	45	45	683	267	678	22	22	16
21	182	147	92	45	45	48	692	263	669	20	26	17
22	182	147	92	45	45	48	637	243	651	18	24	18
23	182	147	88	45	45	48	591	233	669	18	22	17
24	182	147	90	45	45	50	519	240	655	15	19	20
25	182	147	90	45	45	51	414	237	660	14	18	20
26	182	147	92	45	45	51	397	227	651	13	19	18
27	182	147	92	45	45	51	397	211	655	12	18	18
28	182	147	90	45	45	51	385	205	660	11	18	19
29	182	147	85	45	-------	51	365	179	655	10	18	20
30	182	147	81	45	-------	51	353	154	660	10	17	19
31	182	-------	71	45	-------	51	-------	144	-------	10	17	-------

Monthly discharge of Red Rock River below Red Rock Reservoir, near Monida, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	182	156	169	10,400
November	182	71	137	8,150
December	133	71	97.6	6,000
January	61	45	47.3	2,910
February	45	42	44.0	2,440
March	51	45	46.8	2,880
April	692	51	376	22,400
May	353	144	280	17,200
June	688	138	481	28,600
July	665	10	73.9	4,540
August	26	6	15.9	978
September	27	.15	20.3	1,210
The year	692	6	149	108,000

BEAVERHEAD RIVER AT BARRATTS, MONT.

LOCATION.—In SW. ¼ sec. 20, T. 8 S., R. 9 W., at highway bridge at point where highway crosses railroad, 1 mile above Barratts, Beaverhead County, 2 miles below mouth of Grasshopper Creek, and 10 miles southwest of Dillon.

DRAINAGE AREA.—2,850 square miles (measured on county map).

RECORDS AVAILABLE.—August 12, 1907, to September 30, 1926.

GAGE.—Chain gage on downstream side of bridge; read by Jentaro Neishi.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge.

CHANNEL AND CONTROL.—Banks high and not subject to overflow. Stream bed clean and rocky. Two channels at low and medium stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.40 feet April 19–20 (discharge, 1,010 second-feet); minimum stage, 0.50 foot August 3–6 (discharge, 140 second-feet).

1907–1926: Maximum stage recorded, 6.0 feet June 19 and 20, 1908 (discharge, 3,640 second-feet); minimum discharge, 106 second-feet July 28, 29, August 19–31, September 1, 10–17, 1919.

ICE.—Warm springs enter river half a mile above and river seldom freezes at station.

DIVERSIONS.—Numerous diversions are made above station.

REGULATION.—Storage and release of flood waters of Red Rock River near Monida has some effect on flow at this station.

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

Discharge measurements of Beaverhead River at Barratts, Mont., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 5	1.67	582	May 18	0.86	256
Mar. 26	1.52	548	June 12	.59	158

Daily discharge, in second-feet, of Beaverhead River at Barratts, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	428	672	568	379	315	315	379	410	180	428	151	254
2	451	672	518	423	315	315	363	379	154	423	143	254
3	470	672	489	484	315	330	410	367	151	379	140	254
4	489	672	489	388	315	354	446	346	151	379	140	254
5	518	610	528	308	338	414	499	338	151	338	140	189
6	518	538	558	300	338	379	504	315	151	311	148	189
7	518	538	518	300	334	371	656	300	151	300	157	189
8	518	538	489	311	334	346	775	300	151	300	157	189
9	518	538	489	315	315	363	775	323	151	278	157	189
10	518	538	489	315	330	388	758	338	151	244	157	189
11	568	599	489	338	346	405	764	323	151	230	157	189
12	610	620	489	300	338	397	814	296	157	224	157	189
13	620	589	470	327	338	465	825	271	198	217	157	189
14	651	568	451	338	323	508	848	264	204	217	157	189
15	641	568	451	358	311	480	906	264	308	217	157	189
16	636	578	432	315	300	518	929	264	327	217	157	189
17	620	589	432	296	308	636	964	247	338	217	157	183
18	620	589	432	300	300	721	987	240	346	217	157	183
19	620	548	432	315	319	646	1,010	220	346	204	157	183
20	672	548	432	315	338	584	1,010	217	346	198	157	183
21	672	528	451	300	338	568	975	227	379	198	157	183
22	672	538	451	300	338	573	952	230	379	198	157	168
23	672	538	451	300	338	589	906	230	379	198	157	165
24	672	548	451	300	338	599	775	217	379	198	157	165
25	672	548	470	334	338	599	758	220	379	198	157	165
26	672	548	423	308	319	523	758	230	379	192	157	165
27	672	548	423	315	323	518	646	230	354	192	157	165
28	672	548	379	354	315	371	578	230	354	186	157	165
29	672	548	379	330	-------	363	528	198	354	168	157	165
30	672	553	379	308	-------	388	489	189	354	160	254	165
31	672	-------	379	308	-------	379	-------	183	-------	151	254	-------

Monthly discharge of Beaverhead River at Barratts, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	672	428	600	36,900
November	672	528	574	34,200
December	568	379	461	28,300
January	484	296	328	20,200
February	346	300	326	18,100
March	721	315	465	28,600
April	1,010	363	733	43,600
May	410	183	271	16,700
June	379	151	265	15,800
July	428	151	244	15,000
August	254	140	161	9,900
September	254	165	190	11,300
The year	1,010	140	385	279,000

JEFFERSON RIVER NEAR SILVERSTAR, MONT.

LOCATION.—In SE. ¼ sec. 23, T. 2 S., R. 6 W., at highway bridge at Cornforth ranch, 5 miles southwest of Silverstar, Madison County, on road between Silverstar and Iron Rod, and 5 miles below junction of Beaverhead and Bighole Rivers.

DRAINAGE AREA.—7,840 square miles (measured on General Land Office map).

RECORDS AVAILABLE.—August 11, 1910, to September 30, 1916; July 22, 1920, to September 30, 1926.

GAGE.—Chain gage attached to bridge; read by Grace Thomas.

DISCHARGE MEASUREMENTS.—Made from downstream side of highway bridge.

CHANNEL AND CONTROL.—Bed composed of gravel; fairly permanent. Left bank high and clean. Right bank covered with brush and subject to overflow during extreme floods. No definite control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.65 feet at 6.25 p. m. April 20 (discharge, 4,900 second-feet); minimum stage, 1.50 feet at 1.20 p. m. August 7 (discharge, 187 second-feet).

1910–1916; 1920–1926: Maximum stage recorded, 8.8 feet June 15, 1913 (discharge, 16,500 second-feet); minimum stage, 1.36 feet August 30–31, 1924 (discharge, 129 second-feet).

ICE.—Stage-discharge relation affected by ice during most winters.

DIVERSIONS.—Numerous irrigation ditches divert water above and below station.

REGULATION.—Flow partly regulated by two dams; one on Red Rock River near Monida stores water for irrigation, and one on Bighole River near Divide is used for development of power.

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

The following discharge measurements were made:

May 16, 1926: Gage height, 3.36 feet; discharge, 2,060 second-feet.

August 5, 1926: Gage height, 1.50 feet; discharge, 208 second-feet.

Daily discharge, in second-feet, of Jefferson River near Silverstar, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,840	2,000	1,760	1,190	1,180	1,360	1,540	3,730	1,980	840	283	477
2	1,840	2,020	1,740	1,100	1,200	1,410	1,580	3,860	1,770	970	250	509
3	1,820	2,020	1,710	1,090	1,230	1,390	1,540	3,600	1,680	1,010	229	525
4	1,780	1,920	1,650	1,080	1,240	1,360	1,760	3,440	1,460	1,070	220	567
5	1,740	1,830	1,640	1,090	1,230	1,410	1,980	3,600	1,340	992	206	534
6	1,770	1,740	1,650	1,100	1,200	1,410	2,200	3,860	1,240	970	192	620
7	1,800	1,710	1,680	1,100	1,230	1,400	2,420	3,910	1,150	915	187	647
8	1,890	1,660	1,700	1,120	1,250	1,370	2,640	3,710	1,080	1,260	239	674
9	1,900	1,740	1,620	1,130	1,240	1,360	2,850	3,320	1,040	1,800	250	750
10	1,900	1,800	1,540	1,130	1,230	1,390	3,070	3,020	948	1,760	272	770
11	1,890	1,900	1,520	1,140	1,230	1,430	3,290	2,960	850	1,700	312	665
12	1,880	1,890	1,560	1,150	1,250	1,440	4,530	2,780	959	1,340	318	732
13	1,940	1,880	1,640	1,190	1,250	1,430	4,140	2,660	770	1,260	356	790
14	1,950	1,840	1,590	1,210	1,240	1,470	4,070	2,500	810	1,140	410	830
15	1,920	1,820	1,520	1,240	1,230	1,640	4,020	2,360	780	1,090	447	770
16	1,860	1,780	1,500	1,280	1,210	1,710	4,300	2,260	810	1,040	674	750
17	1,830	1,820	1,470	1,300	1,250	1,860	4,530	2,180	882	959	760	674
18	1,830	1,840	1,500	1,280	1,260	1,920	4,570	2,240	871	915	800	750
19	1,860	1,780	1,560	1,260	1,280	1,860	4,760	2,210	970	790	780	810
20	1,900	1,710	1,530	1,240	1,300	1,820	4,900	2,580	1,070	712	760	810
21	1,920	1,650	1,560	1,230	1,250	1,830	4,600	3,270	1,180	620	760	810
22	1,920	1,590	1,520	1,210	1,240	1,820	4,390	3,380	1,280	558	741	790
23	1,920	1,600	1,590	1,200	1,250	1,920	4,200	3,440	1,160	525	703	810
24	1,900	1,620	1,650	1,180	1,260	2,100	3,980	3,210	1,040	462	684	750
25	1,880	1,680	1,710	1,160	1,280	2,290	3,360	3,290	926	397	593	750
26	1,840	1,720	1,640	1,150	1,290	2,130	3,400	3 380	830	349	665	770
27	1,830	1,700	1,560	1,130	1,300	2,050	3,440	3,150	629	403	403	790
28	1,880	1,680	1,480	1,100	1,330	1,920	3,510	2,660	638	376	484	810
29	1,970	1,740	1,410	1,080	-------	1,820	3,640	2,410	647	363	492	790
30	2,000	1,720	1,360	1,100	-------	1,700	3,680	2,210	665	331	484	790
31	2,050	-------	1,280	1,150	-------	1,650	-------	2,110	-------	312	492	-------

NOTE.—Discharge interpolated Apr. 4–10 on account of missing gage heights.

Monthly discharge of Jefferson River near Silverstar, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	2,050	1,740	1,880	116,000
November	2,020	1,590	1,780	106,000
December	1,760	1,280	1,580	97,200
January	1,300	1,080	1,160	71,300
February	1,330	1,180	1,250	69,400
March	2,290	1,360	1,670	103,000
April	4,900	1,540	3,430	204,000
May	3,910	2,110	3,010	185,000
June	1,980	629	1,050	62,500
July	1,800	312	878	54,000
August	800	187	466	28,700
September	830	477	717	42,600
The year	4,900	187	1,570	1,140,000

MISSOURI RIVER BELOW HAUSER LAKE DAM, NEAR HELENA, MONT.

LOCATION.—In SW. ¼ sec. 29, T. 12 N., R. 2 W., at Hauser Lake power plant, 15 miles northeast of Helena, Lewis and Clark County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—December 27, 1922, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder installed on operating platform of power plant and connected to a float in the exciter tailrace; inspected by power-plant employees. Zero of gage is 3,563.00 feet above sea level.

DISCHARGE MEASUREMENTS.—Made from cable three-fourths mile below dam.

CHANNEL AND CONTROL.—Channel composed of heavy boulders and gravel. Control is heavy gravel bar 1,200 feet below power house; not subject to shift.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 72.73 feet at 8.45 a. m. May 26 (discharge, 13,300 second-feet); minimum stage, 65.48 feet at 5.45 p. m. August 15 (discharge, 536 second-feet).

1922–1926: Maximum stage recorded, 75.85 feet at 3.15 p. m. May 22, 1925 (discharge, 22,400 second-feet); minimum stage, 65.40 feet at 7 p. m. September 14, 1924 (discharge, 500 second-feet).

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

DIVERSIONS.—Numerous diversions from river and tributaries above gage and two pumping plants on Hauser Lake.

REGULATION.—Operation of the power plants above station controls low-water flow and regulates partly the flow at higher stages. Storage in Hebgen Reservoir controls flow of Madison River.

ACCURACY.—Stage-discharge relation permanent during year; not affected by ice. Rating curve well defined. Operation of water-stage recorder satisfactory. Daily discharge determined by averaging hourly discharge October 1 to December 31, and by use of the discharge integrator January 1 to September 30. Records excellent.

COOPERATION.—Gage-height record furnished by Montana Power Co.

The following discharge measurements were made:

August 13, 1926: Gage height, 68.71 feet; discharge, 4,540 second-feet.
August 14, 1926: Gage height, 67.89 feet; discharge, 3,190 second-feet.
August 15, 1926: Gage height, 66.80 feet; discharge, 1,650 second-feet.

Daily discharge, in second-feet, of Missouri River at Hauser Lake Dam, near Helena, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,690	7,470	4,240	3,410	3,960	4,660	7,280	11,000	8,890	2,910	4,060	4,480
2	4,600	8,130	4,650	3,190	4,270	4,480	7,580	10,700	6,400	3,160	2,450	4,400
3	4,680	7,630	4,830	2,040	4,500	5,180	7,240	11,800	4,700	3,150	4,040	4,430
4	4,280	6,730	4,340	2,840	4,550	5,180	5,940	11,400	4,700	1,680	3,690	4,420
5	4,170	6,930	4,600	4,120	4,390	5,540	7,180	11,100	4,700	2,470	2,900	3,220
6	4,490	6,120	5,040	3,500	4,480	4,870	6,500	10,800	3,910	3,670	4,460	2,350
7	4,370	5,450	5,160	3,130	4,500	4,110	5,600	11,100	5,020	3,920	4,460	2,510
8	4,190	5,030	4,790	3,270	5,410	4,890	5,230	11,400	5,270	3,540	2,320	3,820
9	4,190	4,390	4,870	3,530	4,810	5,190	4,820	10,700	4,700	3,150	2,570	3,440
10	4,480	4,510	5,030	2,710	4,990	5,340	4,780	11,400	4,530	3,580	4,160	3,500
11	3,830	4,880	5,060	4,630	5,480	4,710	4,730	11,100	4,510	3,690	4,120	4,180
12	4,820	5,010	5,020	4,520	5,350	4,830	6,540	9,440	4,350	5,330	3,450	2,120
13	5,490	5,540	4,300	4,460	5,300	4,970	6,600	6,830	2,170	4,000	4,430	3,410
14	5,580	5,570	5,160	3,680	4,590	4,220	7,560	7,810	3,610	3,620	4,330	4,070
15	5,510	4,880	5,190	3,780	4,460	4,730	9,380	8,500	3,960	3,620	2,350	4,580
16	5,580	5,400	4,900	4,100	4,340	4,460	9,400	7,480	3,070	3,690	3,280	4,560
17	5,330	5,580	4,700	2,560	4,370	4,920	9,370	8,730	3,330	3,230	4,360	4,460
18	4,760	5,380	4,460	3,700	4,250	5,520	9,200	8,130	3,220	3,190	4,360	4,170
19	5,210	5,550	4,020	4,530	3,870	5,700	10,300	6,720	2,910	2,320	2,820	2,190
20	4,870	5,300	3,440	4,950	4,120	5,750	11,200	8,750	2,730	2,930	4,130	3,930
21	5,180	4,360	4,720	4,820	3,850	4,470	12,100	10,300	2,950	3,290	2,450	4,250
22	5,350	3,000	4,960	3,590	4,450	5,940	12,800	11,600	3,030	3,610	627	3,220
23	5,150	3,210	4,730	3,480	4,420	6,260	12,600	10,800	3,180	3,410	3,300	3,940
24	5,260	3,570	5,400	2,500	4,010	5,800	12,500	11,900	3,530	3,120	4,480	4,550
25	4,540	3,400	4,780	3,090	4,670	5,840	11,400	12,500	3,570	1,390	4,470	4,460
26	5,260	3,140	5,550	3,670	4,760	5,880	10,900	13,000	3,730	2,990	4,260	3,890
27	4,780	3,370	4,100	4,060	4,420	5,920	10,900	12,700	3,840	3,610	4,530	3,530
28	4,310	3,610	5,140	3,970	4,010	4,910	9,980	11,000	2,800	3,940	4,530	3,820
29	4,430	3,220	4,670	4,380	-------	6,360	9,730	10,500	2,940	4,060	4,390	3,320
30	4,750	2,880	4,170	4,080	-------	6,070	10,200	8,500	3,090	3,130	4,150	3,380
31	4,960	-------	4,440	3,250	-------	6,500	-------	8,770	-------	4,110	4,520	-------

Monthly discharge of Missouri River at Hauser Lake Dam, near Helena, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	5,580	3,830	4,810	296,000
November	8,130	2,880	4,970	296,000
December	5,550	3,440	4,720	290,000
January	4,950	2,040	3,660	225,000
February	5,480	3,850	4,520	251,000
March	6,500	4,110	5,260	323,000
April	12,800	4,730	8,650	515,000
May	13,000	6,720	10,200	627,000
June	8,890	2,170	3,980	237,000
July	5,330	1,390	3,340	205,000
August	4,530	627	3,690	227,000
September	4,580	2,120	3,750	223,000
The year	13,000	627	5,130	3,720,000

MISSOURI RIVER AT FORT BENTON, MONT.

LOCATION.—In NE. ¼ sec. 26, T. 24 N., R. 8 E., at highway bridge at Fort Benton, Chouteau County.

DRAINAGE AREA.—24,600 square miles.

RECORDS AVAILABLE.—June 16, 1881, to November 14, 1891, and July 1, 1902, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on left bank just below bridge abutment; inspected by M. B. Casey.

CHANNEL AND CONTROL.—Channel composed of coarse gravel and sand. Control is rock ledge covered with heavy boulders 1,000 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.45 feet at 1.45 p. m. April 21 (discharge, 20,400 second-feet); minimum stage, 0.60 foot at 4 p. m. August 1 (discharge, 2,480 second-feet).

1881–1891; 1902–1926: Maximum stage recorded, 16.3 feet June 7, 1908 (discharge, 107,000 second-feet); minimum discharge, 1,420 second-feet August 17, 1919.

Prior to 1918 open-season records only; discharge may have been lower during winter.

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

DIVERSIONS.—Numerous diversions from tributaries.

REGULATION.—Flow partly regulated by operation of storage reservoirs and power plants of Montana Power Co. above station.

ACCURACY.—Stage-discharge relation permanent during year except as affected by ice. Rating curve well defined. Operation of water-stage recorder satisfactory except October 11–13, October 27 to March 27, March 31 to April 6, and July 21–27 when daily discharge was obtained from flow at Volta plant near Great Falls. Daily discharge for remainder of year ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph except from July 28 to September 30, when discharge integrator was used. Records good.

The following discharge measurement was made:
July 27, 1926: Gage height, 1.28 feet; discharge, 3,660 second-feet.

Daily discharge, in second-feet, of Missouri River at Fort Benton, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,900	6,260	5,020	5,790	5,180	5,840	7,440	18,600	12,600	6,020	3,190	4,290
2	8,180	6,470	4,690	5,540	5,080	5,660	7,540	18,300	9,670	5,270	4,720	4,900
3	7,820	7,200	4,820	5,300	5,380	5,290	7,400	17,400	7,950	5,490	4,500	4,840
4	7,640	11,600	4,770	4,490	5,190	5,590	7,190	16,900	6,440	5,460	4,230	4,850
5	6,760	11,200	5,000	4,300	5,680	5,740	7,670	17,400	6,760	4,940	4,650	4,970
6	5,920	12,000	4,720	4,720	5,660	7,140	7,670	18,300	6,250	5,230	4,500	4,460
7	5,760	10,800	4,420	4,660	5,240	7,090	7,460	18,600	7,040	5,080	4,310	4,600
8	5,600	8,870	5,070	5,260	5,280	6,840	7,460	17,700	5,220	6,090	4,270	5,120
9	5,290	7,860	7,060	5,480	6,200	6,740	6,930	16,400	6,250	8,290	5,020	5,040
10	4,890	7,270	7,370	4,560	6,840	6,540	7,640	16,600	6,250	8,610	4,610	4,950
11	4,160	6,920	7,090	4,860	6,980	6,590	7,820	17,200	6,420	7,820	4,250	4,690
12	4,800	6,670	6,610	5,100	7,740	7,040	8,360	17,400	6,760	6,760	4,670	4,880
13	5,220	5,700	6,420	4,730	7,390	6,840	8,540	17,400	6,080	7,390	4,620	4,770
14	3,730	5,360	6,930	4,380	7,090	6,690	9,090	16,400	5,600	7,890	4,430	5,070
15	5,320	5,690	7,110	4,470	5,960	6,440	9,650	14,900	5,470	7,000	4,390	4,690
16	5,450	7,610	7,030	4,850	6,240	6,590	11,900	14,100	5,860	6,080	4,940	4,620
17	7,390	7,510	6,990	4,560	6,860	6,540	13,900	11,500	5,770	5,500	4,530	4,910
18	8,540	6,540	6,680	4,340	5,620	6,540	15,200	9,470	5,820	5,200	4,910	4,510
19	8,540	6,510	6,190	5,590	5,160	6,490	17,700	9,280	6,320	5,080	5,720	4,990
20	7,460	7,480	5,790	4,710	5,340	6,510	18,800	11,000	5,920	4,920	4,580	4,160
21	6,960	6,700	5,740	3,040	5,110	6,790	19,900	13,200	6,750	4,350	4,850	4,900
22	7,140	6,960	5,520	4,540	4,990	6,980	18,800	13,900	8,470	4,470	5,540	4,700
23	8,070	6,260	5,400	5,990	5,350	7,070	17,700	16,400	7,820	4,330	4,890	5,210
24	8,470	5,120	5,790	5,530	5,020	6,690	18,300	17,400	7,350	4,210	4,440	4,270
25	8,900	5,430	5,670	5,540	5,240	6,890	17,400	18,000	6,690	4,610	4,730	4,930
26	9,010	4,990	5,540	5,370	4,960	7,890	17,200	18,000	6,520	4,440	4,740	4,900
27	8,960	4,500	7,140	5,210	5,220	8,240	16,900	17,700	5,980	4,600	4,360	5,100
28	6,700	5,320	7,890	5,370	4,960	7,280	17,200	17,200	6,350	4,880	4,440	5,170
29	6,100	5,150	6,760	5,490	-------	7,100	17,700	16,600	6,220	4,400	4,460	5,190
30	6,180	4,660	7,090	5,680	-------	6,930	17,400	15,900	6,350	5,010	4,360	5,190
31	6,340	-------	7,040	5,240	-------	7,030	-------	13,700	-------	4,720	4,580	-------

Monthly discharge of Missouri River at Fort Benton, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	9,010	3,730	6,780	417,000
November	12,000	4,500	7,020	418,000
December	7,890	4,420	6,110	376,000
January	5,990	3,040	4,990	307,000
February	7,740	4,960	5,750	319,000
March	8,240	5,290	6,700	412,000
April	19,900	6,930	12,500	744,000
May	18,600	9,280	15,900	978,000
June	12,600	5,220	6,760	402,000
July	8,610	4,210	5,620	346,000
August	5,720	3,190	4,590	282,000
September	5,210	4,160	4,830	287,000
The year	19,900	3,040	7,300	5,290,000

MISSOURI RIVER AT LEAVENWORTH, KANS.

LOCATION.—In NE. ¼ sec. 36, T. 8 S., R. 22 E., at Leavenworth Terminal Railway & Bridge Co.'s bridge in Leavenworth, Leavenworth County, 4½ miles below Bee Creek and 6 miles above Platte River.

DRAINAGE AREA.—428,000 square miles.

RECORDS AVAILABLE.—April 1, 1922, to September 30, 1926. The Leavenworth Terminal Railway & Bridge Co. has obtained records of stage since 1878.

GAGE.—Chain gage on upstream handrail of bridge; read by Grant Parker. Zero of gage is 300 feet above St. Louis city datum.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge.

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

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 43.8 feet June 23 (discharge, 75,000 second-feet); minimum discharge, 6,350 second-feet December 24 and 25, when river was frozen.

1922–1926: Maximum discharge recorded, 241,000 second-feet (revised determination), July 7 and 8, 1923; minimum discharge, 3,450 second-feet (measured with current meter) December 22, 1924.

The Missouri River Commission published a maximum stage of 53.0 feet April 29 and 30, 1881, and a low-water stage of 29.2 feet December 9 and 10, 1873, and January 6, 1874.

ACCURACY.—Stage-discharge relation not permanent; affected by ice and by shifting control. Rating curves fairly well defined. Gage read to tenths once daily. Daily discharge ascertained by applying daily gage height to rating table; shifting-control method used May 19 to September 30. Records fair for open-water periods and poor for ice-affected periods.

Discharge measurements of Missouri River at Leavenworth, Kans., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 13	39.80	36,100	July 14	42.54	56,700
Mar. 8	39.98	34,900	Sept. 1	40.28	30,500
May 12	41.14	44,000			

Daily discharge, in second-feet, of Missouri River at Leavenworth, Kans., for the years ending September 30, 1923 and 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1922–23												
1	19,200	16,900	23,100	13,200	22,100	21,100	63,000	54,600	64,600	201,000	82,000	50,400
2	19,200	19,600	22,600	13,200	23,700	26,100	51,800	50,400	69,400	212,000	84,000	50,400
3	18,700	22,600	23,100	14,400	22,600	29,000	51,800	46,600	78,200	230,000	86,000	39,700
4	18,200	23,700	23,100	14,400	15,200	29,000	56,000	45,400	71,000	219,000	90,400	40,800
5	18,200	24,300	22,600	15,200		31,400	56,000	50,400	67,800	230,000	92,600	38,600
6	17,800	23,100	22,600	15,200		26,100	50,400	54,600	66,200	234,000	92,600	37,500
7	17,800	22,100	22,100	15,200		22,600	46,600	54,600	92,600	241,000	90,400	37,500
8	17,400	22,600	21,600	15,200		20,100	51,800	50,400	129,000	241,000	110,000	34,800
9	17,400	24,300	20,100	14,000		20,100	61,600	47,800	147,000	216,000	150,000	33,900
10	17,400	23,700	18,200	14,000		21,600	56,000	44,200	135,000	184,000	129,000	31,400
11	16,900	23,700		15,200		23,700	56,000	44,200	135,000	160,000	121,000	30,600
12	16,900	34,800		18,700		29,000	60,200	40,800	177,000	163,000	115,000	29,000
13	16,900	33,000		25,500		97,200	63,000	45,400	187,000	147,000	112,000	28,200
14	17,800	29,800		19,600		72,800	58,800	43,000	154,000	141,000	115,000	26,800
15	19,200	29,000		20,600	20,000	43,000	57,400	41,900	129,000	141,000	118,000	26,100
16	18,700	34,800		21,100		43,000	84,000	41,900	121,000	135,000	129,000	25,500
17	18,200	37,500		21,100		37,500	99,600	44,200	102,000	135,000	129,000	25,500
18	17,800	33,000		22,100		37,500	82,000	44,200	99,000	123,000	107,000	26,800
19	17,800	27,500	8,400	21,600		22,600	92,600	43,000	118,000	115,000	88,200	26,800
20	17,800	25,500		21,100		16,900	121,000	40,800	174,000	107,000	78,200	30,600
21	17,400	25,500		21,100		21,100	118,000	40,800	205,000	102,000	66,200	32,200
22	17,400	25,500		21,100		20,100	102,000	40,800	147,000	105,000	63,000	30,600
23	17,400	23,700		19,200		15,600	88,200	41,900	129,000	105,000	60,200	39,700
24	17,400	23,100		18,200		24,900	84,000	41,900	121,000	99,600	60,200	51,800
25	17,400	23,100		19,200		58,800	80,000	43,000	138,000	99,600	56,000	43,000
26	17,400	23,700		20,000	26,100	74,600	72,800	41,900	160,000	92,600	54,600	36,600
27	16,900	24,300	8,700	21,100	30,600	67,800	69,400	64,600	170,000	86,000	57,400	33,000
28	16,900	24,300	8,700	21,100	23,700	63,000	63,000	54,600	198,000	82,000	57,400	34,800
29	16,900	23,700	8,700	22,100	-------	72,800	60,200	50,400	216,000	78,200	60,200	36,600
30	16,900	23,100	9,650	22,600	-------	69,400	60,200	60,200	205,000	76,400	53,200	80,000
31	16,900	-------	11,400	22,100	-------	57,400	-------	64,600	-------	76,400	50,400	-------
1925–26												
1	22,500	28,800	26,400	11,200	28,200	43,000	42,100	31,200	45,800	48,800	40,300	31,200
2	22,500	27,600	27,000	11,600	27,600	43,900	35,300	30,600	49,800	46,800	40,300	34,500
3	23,000	27,000	27,600	12,300	27,600	45,800	36,100	30,600	53,000	45,800	37,700	46,800
4	23,000	27,000	27,900	17,100	26,400	43,000	35,300	29,400	55,400	46,800	36,900	72,000
5	27,600	27,000	26,400	21,000	31,800	39,400	34,500	34,500	67,500	45,800	33,800	66,000
6	27,000	27,000	25,200	22,000	34,500	36,900	36,100	46,800	72,000	44,800	32,400	54,200
7	31,400	28,800	24,000	23,000	45,800	35,300	36,100	53,000	57,900	45,800	31,800	49,800
8	28,800	30,000	23,000	22,000	31,800	34,500	35,300	50,800	57,900	56,600	31,200	40,300
9	26,400	28,800	17,100	20,000	29,400	34,500	33,800	47,800	51,900	55,400	30,600	37,700
10	27,000	28,800	15,900	19,000	30,600	43,900	33,800	44,800	48,800	54,200	29,400	57,900
11	27,000	37,200	26,400	17,100	30,600	48,800	33,800	44,800	45,800	50,800	28,800	57,900
12	27,000	41,000	21,000	16,300	37,700	38,500	33,100	43,900	49,800	49,800	28,800	54,200
13	31,400	36,400	21,000	15,900	40,300	34,500	33,100	44,800	51,900	57,900	29,400	57,900
14	33,500	32,800	20,000	17,100	44,800	34,500	31,800	44,800	60,500	60,500	27,000	47,800
15	34,200	31,400	18,000	20,500	49,800	33,800	31,800	44,800	75,000	53,000	27,000	48,800
16	33,500	30,000	16,300	21,000	39,400	34,500	31,200	61,800	63,200	56,600	27,000	63,200
17	33,500	30,000	12,300	20,000	36,900	36,900	31,800	56,600	59,200	53,000	39,400	63,200
18	30,700	28,800	10,900	21,000	36,100	36,900	32,400	51,900	54,200	49,800	34,500	49,800
19	30,000	28,200	9,500	21,000	34,500	35,300	33,100	50,800	53,000	45,800	33,100	41,200
20	27,600	27,000	8,600	20,000	33,800	34,500	33,100	51,900	55,400	44,800	32,400	42,100
21	28,200	27,000	8,300	19,000	32,400	34,500	33,100	53,000	63,200	43,900	30,600	57,900
22	34,900	37,200	7,700	18,000	33,100	33,100	33,100	50,800	63,200	43,000	30,000	67,500
23	34,200	42,000	6,600	17,500	34,500	32,400	33,100	48,800	75,000	40,300	32,400	73,500
24	33,500	40,000	6,350	17,500	34,500	33,800	33,100	50,800	73,500	38,500	31,800	70,500
25	32,100	34,200	6,350	18,000	36,100	46,800	33,800	48,800	67,500	39,400	39,400	55,400
26	31,400	30,000	6,600	23,000	40,300	38,500	33,800	46,800	61,800	50,800	31,800	47,800
27	29,400	28,800	6,600	24,000	38,500	38,500	33,800	43,000	56,600	49,800	32,400	39,400
28	28,800	28,200	7,100	27,000	37,700	36,900	31,200	43,000	51,900	40,300	30,000	34,500
29	27,600	27,600	8,300	27,000	-------	55,400	31,800	44,800	50,800	37,700	30,600	33,100
30	28,800	27,000	9,500	27,000	-------	60,500	30,600	44,800	49,800	42,100	29,400	31,800
31	29,400	-------	10,900	28,200	-------	48,800	-------	44,800	-------	41,200	30,000	-------

NOTE.—Records in the above table from Mar. 13 to Sept. 30, 1923, have been revised and supersede those published in Water-Supply Paper 566. Discharge Dec. 11–26, 1922, and Feb. 5–25, 1923, estimated because of ice, on basis of 1 discharge measurement, gage heights, observer's notes, and weather records. Discharge Dec. 13–31, 1925, Jan. 1–3, 11–14, and 20–27, 1926, estimated, because of ice, from gage heights, observer's notes, and weather records. Braced figures show mean discharge for periods indicated.

Monthly discharge of Missouri River at Leavenworth, Kans., for the years ending September 30, 1923 and 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
1922–23				
October	19,200	16,900	17,700	1,090,000
November	37,500	16,900	25,700	1,530,000
December	23,100	----------	12,900	793,000
January	25,500	13,200	18,700	1,150,000
February	----------	----------	20,900	1,160,000
March	97,200	15,600	39,200	2,410,000
April	121,000	46,600	70,600	4,200,000
May	64,600	40,800	47,500	2,920,000
June	216,000	64,600	134,000	7,970,000
July	241,000	76,400	148,000	9,100,000
August	150,000	50,400	89,000	5,470,000
September	80,000	25,500	36,300	2,160,000
The year	241,000	----------	55,100	40,000,000
1925–26				
October	34,900	22,500	29,200	1,800,000
November	42,000	27,000	30,900	1,840,000
December	27,600	6,350	15,700	965,000
January	28,200	11,200	19,800	1,220,000
February	49,800	26,400	35,200	1,950,000
March	60,500	32,400	39,600	2,430,000
April	42,100	30,600	33,700	2,010,000
May	61,800	29,400	45,600	2,800,000
June	75,000	45,800	58,000	3,450,000
July	60,500	37,700	47,700	2,930,000
August	40,300	27,000	32,300	1,990,000
September	73,500	31,200	50,900	3,030,000
The year	75,000	6,350	36,500	26,400,000

NOTE.—Records for the year ending Sept. 30, 1923, supersede those published in Water-Supply Paper 566

MISSOURI RIVER AT BOONVILLE, MO.

LOCATION.—In sec. 35, T. 49 N., R. 17 W., at bridge on State highway No. 40 at Boonville, Cooper County.

DRAINAGE AREA.—508,000 square miles.

RECORDS AVAILABLE.—October 1, 1925, to September 30, 1926. The United States Weather Bureau has obtained records of stage at the Missouri, Kansas & Texas Railway bridge one-fourth mile upstream since 1873.

GAGE.—Chain gage fastened to downstream side of bridge; read by R. W. Scott.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge.

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

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 20.4 feet September 25 (discharge, 175,000 second-feet); minimum stage, 8.4 feet December 28, 29, January 3, 4; minimum discharge, 22,000 second-feet December 28–31.

On June 21, 1844, the river reached a stage of 35.9 feet and on June 5, 1903, a stage of 33.3 feet; stages determined from chiseled marks on stone monument near right end of bridge.

ACCURACY.—Stage-discharge relation changed during June or July; affected by ice. Rating curves fairly well defined above 30,000 second-feet. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table except from June 24 to July 16, when shifting-control method was used. Records good for discharge above 30,000 second-feet and poor for discharge below.

Discharge measurements of Missouri River at Boonville, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 1	11.83	35,000	Mar. 11	12.74	42,000	June 18	16.64	111,000
Nov. 9	13.64	58,400	Apr. 10	16.38	111,000	July 16	14.42	59,000
Nov. 16	12.97	45,600	May 13	13.07	48,000	Sept. 19	18.65	139,000

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34,700	35,200	33,700	22,200	31,500	70,000	70,000	33,700	52,000	73,600	42,100	39,200
2	36,400	35,200	33,200	22,200	33,700	68,200	53,800	32,700	52,000	70,000	43,100	46,800
3	59,200	34,700	33,200	22,500	34,700	77,200	52,000	32,300	61,000	68,200	43,100	64,000
4	55,600	33,700	33,700	22,800	34,700	73,600	52,000	32,300	66,400	61,000	43,100	82,300
5	52,000	33,200	34,200	32,700	33,200	66,400	68,200	31,900	70,000	57,400	42,100	119,000
6	55,600	33,200	36,400	41,000	34,700	61,000	94,000	31,500	82,600	52,000	39,200	125,000
7	61,000	37,000	36,400	48,800	35,800	55,600	110,000	32,300	96,000	52,000	36,900	107,000
8	62,800	43,400	37,000	46,000	52,000	46,000	116,000	46,000	96,000	48,800	35,000	101,000
9	52,000	57,400	42,200	37,800	41,000	43,400	112,000	53,800	86,200	73,600	34,000	113,000
10	43,400	44,600	48,800	32,700	37,000	42,200	106,000	55,600	80,800	94,000	33,600	105,000
11	37,000	44,600	44,600	31,100	35,800	43,400	106,000	47,400	73,600	73,600	33,200	109,000
12	35,800	43,400	38,800	28,600	37,000	77,200	110,000	47,400	64,600	61,000	34,500	115,000
13	34,700	59,200	35,800	28,300	42,600	70,000	98,000	46,000	62,800	57,400	31,900	115,000
14	34,700	57,400	34,700	28,000	46,000	53,800	84,400	47,400	70,000	46,000	32,300	119,000
15	34,700	52,000	35,800	27,600	52,000	46,000	68,200	52,000	84,400	53,800	32,700	119,000
16	43,400	43,400	37,000	28,000	64,600	42,200	55,600	48,800	120,000	61,000	34,500	119,000
17	55,600	41,000	34,700	28,000	62,800	42,200	48,800	73,600	120,000	56,000	35,600	133,000
18	59,200	38,800	32,700	28,000	61,000	43,400	46,000	79,000	110,000	56,000	35,600	157,000
19	57,400	37,000	31,100	27,600	73,600	46,000	43,400	73,600	110,000	57,600	37,600	145,000
20	47,400	36,400	29,700	26,900	84,400	48,800	41,000	66,400	110,000	52,800	42,100	137,000
21	41,000	34,700	29,000	26,300	80,800	50,400	38,800	66,400	116,000	46,800	40,100	143,000
22	38,800	33,700	28,300	25,700	77,200	50,400	37,800	64,600	118,000	49,700	41,100	161,000
23	37,800	33,200	26,900	25,700	80,800	42,200	38,800	68,200	122,000	49,700	36,900	171,000
24	41,000	39,800	26,000	25,700	75,400	41,000	39,800	64,600	112,000	49,700	36,900	173,000
25	41,000	46,000	24,800	26,000	80,800	46,000	48,800	62,800	118,000	46,800	38,400	175,000
26	38,800	44,600	22,800	26,600	94,000	55,600	46,000	64,600	106,000	44,300	36,200	167,000
27	37,800	41,000	22,200	30,400	92,000	53,800	39,800	64,600	102,000	42,100	36,900	149,000
28	37,000	37,000	22,000	32,300	80,800	48,800	37,000	55,600	98,000	52,800	40,100	127,000
29	37,000	35,200	22,000	31,500	------	46,000	34,700	50,400	86,200	59,200	41,100	103,000
30	35,800	34,700	22,000	31,100	------	62,800	33,700	47,400	79,000	49,700	39,200	88,000
31	35,200	------	22,000	31,500	------	84,400	------	48,800	------	43,100	38,400	------

NOTE.—Stage-discharge relation affected by ice Dec. 26–31, Jan. 1–3, 13–25; daily discharge estimated from daily gage heights, observer's notes, and weather records and by comparison with records of flow at other stations.

Monthly discharge of Missouri River at Boonville, Mo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	62,800	34,700	44,300	2,720,000
November	59,200	33,200	40,700	2,420,000
December	48,800	22,000	32,000	1,970,000
January	48,800	22,200	29,800	1,830,000
February	94,000	31,500	56,900	3,160,000
March	84,400	41,000	54,800	3,370,000
April	116,000	33,700	64,400	3,830,000
May	79,000	31,500	52,300	3,220,000
June	122,000	52,000	90,900	5,410,000
July	94,000	42,100	56,800	3,490,000
August	43,100	31,900	37,700	2,320,000
September	175,000	39,200	121,000	7,200,000
The year	175,000	22,000	56,500	40,900,000

GRASSHOPPER CREEK BASIN

GRASSHOPPER CREEK NEAR DILLON, MONT.

LOCATION.—In NW. ¼ sec. 26, T. 8 S., R. 10 W., 5 miles above Barratts and 14 miles above Dillon, Beaverhead County.

DRAINAGE AREA.—360 square miles (measured on Forest Service map of Beaverhead National Forest).

RECORDS AVAILABLE.—March 10, 1921, to September 30, 1926.

GAGE.—Vertical staff; read by Mrs. Laura Anderson.

DISCHARGE MEASUREMENTS.—Made by wading at gage or from bridge one-eighth mile above.

CHANNEL AND CONTROL.—Banks high and covered with brush. Stream bed composed of boulders and coarse gravel; subject to shift.

EXTREMES OF DISCHARGE.—Maximum open-water stage recorded during year, 5.52 feet at 6 p. m. July 8 (discharge, 197 second-feet); minimum stage, 4.26 feet June 29–30 (discharge, 3.9 second-feet).

1921–1926: Maximum discharge recorded, 557 second-feet June 5, 1925 (gage height, 6.52 feet); minimum stage, 3.85 feet August 28 to September 3, 1924 (discharge, 0.5 second-foot).

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

DIVERSIONS.—Considerable water diverted for irrigation above gage.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent; affected by ice and by shifting control. Standard rating curve fairly well defined. Gage read to half-tenths once daily. Daily discharge ascertained by shifting-control method. Records fair.

Discharge measurements of Grasshopper Creek near Dillon, Mont., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 5	4.60	33.7	June 12	4.34	6.5
Mar. 26	4.84	68	Aug. 5	4.43	10.6
May 18	4.75	46			

Daily discharge, in second-feet, of Grasshopper Creek near Dillon, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	49	49	64		46	74	34	10	17	7.5
2	49	49	60		46	74	27	53	17	7.5
3	49	49	56		53	64	27	40	13	7.5
4	49	49	56		53	72	22	28	13	7.5
5	49	41	56		53	81	10	18	10.5	10
6	48	49	56		51	64	17	23	10	10
7	54	36	56		51	64	17	28	10	10
8	54	42	56		84	64	13	197	10	10
9	54	49	56		84	72	10	105	13	10
10	54	49	72		135	72	7.5	68	10	10
11	53	49	56		113	72	5.4	51	10	10
12	53	42	56		103	62	6.0	39	10	13
13	53	42	56		94	54	7.5	27	7.5	13
14	53	49	56		101	48	7.5	33	7.5	13
15	53	49	56		101	48	10	33	7.5	13

Daily discharge, in second-feet, of Grasshopper Creek near Dillon, Mont., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	51	42	56		101	41	13	27	7.5	10
17	51	60	49		101	41	17	27	7.5	13
18	51	49	56		101	57	22	22	7.5	13
19	51	72	64		101	79	22	22	7.5	13
20	51	64	49		101	88	27	17	7.5	13
21	50	56	49		101	70	33	17	7.5	13
22	50	56	56		83	54	27	22	7.5	13
23	50	64	49		64	53	22	27	7.5	13
24	50	56	49		56	53	17	27	7.5	13
25	50	49	42		56	60	13	22	7.5	17
26	49	49	42	68	72	68	10	22	7.5	17
27	49	56	42	64	90	53	7.5	22	7.5	22
28	49	56	40	60	72	53	5.4	17	7.5	27
29	49	56	40	56	81	40	3.9	17	7.5	22
30	49	56	40	52	72	40	3.9	17	7.5	22
31	49		40	49		40		17	7.5	

NOTE.—Stage-discharge relation affected by ice Dec. 4–7, 15, and 28–31; discharge estimated. No record Jan. 1 to Mar. 25.

Monthly discharge of Grasshopper Creek near Dillon, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	54	48	50.7	3,120
November	72	36	51.1	3,040
December	72	40	52.6	3,230
March 26–31	68	49	58.2	692
April	135	46	80.7	4,800
May	88	40	60.5	3,720
June	34	3.9	15.5	922
July	197	10	35.3	2,170
August	17	7.5	9.23	568
September	27	7.5	13.1	780

BIGHOLE RIVER BASIN

BIGHOLE RIVER NEAR MELROSE, MONT.

LOCATION.—In SE. ¼ sec. 27, T. 3 S., R. 9 W., at highway bridge at Browns siding on Oregon Short Line Railroad, 8 miles south of Melrose, Silver Bow County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—March 16, 1924, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder in wooden shelter on left bank.

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

CHANNEL AND CONTROL.—Channel composed of heavy gravel and sand between large boulders. Control is riffle of same material 400 feet below gage; subject to change due to movement of sand and gravel between boulders.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.38 feet at 3.15 a. m. April 12 (discharge, 3,880 second-feet); minimum stage, 1.45 feet at 5 a. m. August 29 (discharge, 305 second-feet).

1924–1926: Maximum stage recorded, 7.05 feet at 6.30 p. m. July 5, 1925, (discharge, 6,960 second-feet); minimum stage; 1.02 feet at 11.30 p. m. September 3, 1924, (discharge, 228 second-feet).

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

DIVERSIONS.—Several small diversions for irrigation above station.

REGULATION.—Operation of power plant above station causes some fluctuation in stage.

ACCURACY.—Stage-discharge relation fairly permanent during year. Rating curve well defined. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph, except May 10–17 and July 30 to August 6 when discharge was interpolated on account of missing gage heights. Records good.

Discharge measurements of Bighole River near Melrose, Mont., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 4	2.35	646	June 14	2.73	807
Mar. 25	3.06	1,040	Aug. 7	1.60	332
May 18	3.96	1,890			

Daily discharge, in second-feet, of Bighole River near Melrose, Mont., for the year ending September 30, 1926

Day	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		523		566	2,980	1,740	668	391	329
2		544		566	3,040	1,640	696	382	338
3		515		558	2,980	1,520	668	373	346
4	562	444		544	2,910	1,420	652	364	348
5	519	495		535	3,040	1,320	702	355	343
6	507	540		580	3,110	1,270	696	346	340
7	483	515		658	2,910	1,220	696	338	353
8	455	491		935	2,650	1,120	852	340	390
9	511	441		1,270	2,340	1,030	1,320	346	411
10	595	402		1,740	2,300	965	1,320	338	402
11	562	448		2,720	2,260	900	1,120	358	399
12	535	511		3,250	2,220	820	907	374	393
13	483	452		2,720	2,180	788	826	379	390
14	519	444		2,650	2,140	800	764	368	385
15	479	417		2,720	2,100	826	782	356	382
16	535	448		2,840	2,060	865	740	343	385
17	580	463		3,040	2,020	879	674	329	405
18	566	438		3,180	1,980	826	620	358	
19	548	427		3,250	2,040	893	576	385	
20	444	455		3,250	2,400	1,180	548	408	
21	405			3,110	3,040	1,370	515	399	
22	438			2,910	3,110	1,220	507	390	
23	430			2,650	2,980	1,040	495	379	
24	420			2,400	2,780	900	483	358	
25	459		1,110	2,280	2,840	820	475	346	
26	527		1,130	2,340	2,840	752	463	336	
27	448		1,010	2,400	2,720	707	448	317	
28	467		958	2,580	2,460	652	430	311	
29	511		832	2,780	2,160	615	420	309	
30	487		641	2,910	2,040	600	410	313	
31			600		1,920		400	317	

NOTE.—No record Oct. 1 to Nov. 3, Dec. 21 to Mar. 24, and Sept. 18–30.

Monthly discharge of Bighole River near Melrose, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
November 4–30	595	405	499	26,700
December 1–20	544	402	471	18,700
March 25–31	1,130	600	897	12,500
April	3,250	535	2,130	127,000
May	3,110	1,920	2,530	156,000
June	1,740	600	1,020	60,700
July	1,320	400	673	41,400
August	408	309	355	21,800
September 1–17	411	329	373	12,600

BOULDER RIVER BASIN

NORTH FORK OF LITTLE BOULDER RIVER NEAR BOULDER, MONT.

LOCATION.—In SW. ¼ sec. 8, T. 5 N., R. 4 W., one-eighth mile above mouth and 4 miles southwest of Boulder, Jefferson County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 12 to September 30, 1926.

GAGE.—Vertical staff on right bank 500 feet above highway bridge; read by J. J. Menzemer.

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

CHANNEL AND CONTROL.—Channel composed of gravel, sand, and large boulders. Control is boulder riffle just below gage; may shift.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.60 feet at 2.20 p. m. July 8 (discharge, 28.6 second feet); minimum stage, 0.06 foot July 30 and August 2 (discharge, 0.6 second-foot).

ICE.—Not affected by ice during year.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined between 2 and 20 second-feet and fairly well defined below 2 second-feet. Gage read to nearest even hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good for discharge above 2 second-feet and fair for discharge below; records for interpolated days poor.

Discharge measurements of North Fork of Little Boulder River near Boulder, Mont., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 12	1.12	16.5	June 15	0.80	9.5	Aug. 3	0.18	1.25
June 3	.56	5.3	July 2	.40	3.2	Sept. 21	.34	2.8
June 11	.34	2.7	July 27	.22	1.9			

Daily discharge, in second-feet, of North Fork of Little Boulder River near Boulder, Mont., for the year ending September 30, 1926

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	------	6.4	2.9	0.6	1.1	16	20.0	6.2	2.9	1.1	3.1
2	------	5.9	3.3	.6	1.3	17	18.8	6.0	2.9	1.1	3.0
3	------	5.3	4.7	1.4	1.5	18	17.6	5.8	2.3	3.4	2.9
4	------	4.0	6.2	3.3	1.8	19	16.5	5.6	2.1	5.6	2.8
5	------	4.0	7.7	2.1	1.7	20	21.6	12.4	2.1	3.5	2.7
6	------	3.8	9.1	1.2	1.7	21	18.4	9.5	2.1	2.5	2.7
7	------	3.6	18.8	1.4	1.7	22	14.2	6.6	2.2	2.1	2.8
8	------	3.4	28.6	1.1	2.5	23	12.8	5.7	2.3	1.7	2.9
9	------	3.2	21.9	1.7	3.3	24	13.8	4.8	2.2	1.2	3.1
10	------	3.1	10.3	2.0	4.2	25	14.7	4.2	2.0	1.1	3.3
11	------	2.7	6.9	2.4	5.1	26	11.5	3.7	2.1	.8	3.5
12	16.5	4.2	5.3	2.7	3.5	27	10.3	3.2	1.7	1.7	3.7
13	19.4	5.6	4.5	2.5	3.4	28	9.1	2.7	1.3	.9	3.9
14	22.4	7.6	4.3	1.7	3.3	29	8.0	2.6	1.0	.8	4.1
15	21.2	9.5	3.8	1.8	3.2	30	7.6	2.5	.6	1.2	4.3
						31	6.9	------	.7	1.2	------

NOTE.—Gage not read; discharge interpolated May 13, 15–18, 24, 27, 28, June 1, 6–9, 12, 14, 17, 18, 21, 23, 25–27, 29, July 1, 3–5, 7, 20, 22, 24, 29, Aug. 1, 11, 18, 22, 31, Sept. 2, 3, 8–10, 13, 15–20, 22, 23, 25–29.

Monthly discharge of North Fork of Little Boulder River near Boulder, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 12-31	22.4	6.9	15.1	599
June	12.4	2.5	5.13	305
July	28.6	.6	5.45	335
August	5.6	.6	1.82	112
September	5.1	1.1	2.94	175
The period				1,530

SOUTH BOULDER CREEK BASIN

SOUTH BOULDER CREEK NEAR JEFFERSON ISLAND, MONT.

LOCATION.—In sec. 18, T. 2 S., R. 3 W., 200 feet above the dam at headworks of power pipe line of Liberty-Montana Mines Co., 16 miles southwest of Jefferson Island, Madison County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 15 to September 30, 1926.

GAGE.—Stevens 8-day water-stage recorder in wooden shelter on right bank; installed May 15.

DISCHARGE MEASUREMENTS.—Made by wading at gage or from bridge at power house three-fourths mile below.

CHANNEL AND CONTROL.—Bed composed of large boulders, Banks high, clean, and not subject to overflow. Control is channel for some distance below gage; may shift.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.68 feet at 8.30 a. m. May 24 (discharge, 243 second-feet); minimum stage, 1.20 feet at 2.30 a. m. September 24 (discharge, 18 second-feet).

ICE.—Probably seriously affected by ice.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve fairly well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records fair.

COOPERATION.—Gage-height record furnished by Liberty-Montana Mines Co.

The following discharge measurements were made:

April 23, 1926: Gage height, 1.45 feet; discharge, 34.5 second-feet.
May 15, 1926: Gage height, 1.85 feet; discharge, 80 second-feet.
June 22, 1926: Gage height, 1.84 feet; discharge, 63 second-feet.

Daily discharge, in second-feet, of South Boulder Creek near Jefferson Island, Mont., for the year ending September 30, 1926

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	------	160	86	32	23	16	90	83	62	25	24
2	------	161	82	31	24	17	98	76	56	32	23
3	------	163	79	31	24	18	100	79	53	35	23
4	------	165	79	30	24	19	117	94	51	33	22
5	------	167	82	30	24	20	208	81	50	30	22
6	------	172	76	30	23	21	169	78	46	29	22
7	------	169	78	29	25	22	164	73	44	28	23
8	------	164	157	28	25	23	187	76	42	27	22
9	------	157	119	28	25	24	211	81	40	26	22
10	------	145	98	28	23	25	203	84	37	25	23
11	------	128	86	28	23	26	162	92	37	25	22
12	------	120	77	28	23	27	152	98	35	24	22
13	------	112	73	27	23	28	155	100	34	23	22
14	------	103	70	27	23	29	157	94	34	23	23
15	86	94	66	26	22	30	158	92	32	23	23
						31	159	------	32	23	------

NOTE.—Discharge interpolated on account of missing gage readings May 30 to June 4.

Monthly discharge of South Boulder Creek near Jefferson Island, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
May 15–31	211	86	152	5,130
June	172	73	115	6,840
July	157	32	64.3	3,950
August	35	23	27.9	1,720
September	25	22	23.1	1,370
The period				19,000

WILLOW CREEK BASIN

WILLOW CREEK NEAR WILLOW CREEK, MONT.

LOCATION.—In sec. 18, T. 1 S., R. 1 E., at highway bridge at Harwood ranch, 7 miles south of Willow Creek, Gallatin County.

DRAINAGE AREA.—164 square miles (measured on topographic maps).

RECORDS AVAILABLE.—September 5, 1919, to September 30, 1926.

GAGE.—Weight and cable gage on upper handrail of bridge.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel; shifting. Banks low and covered with brush.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.08 feet May 8, 9, and 11 (discharge, 149 second-feet); minimum stage, 1.54 feet August 23, 24, and September 1 (discharge, 6 second-feet).

1919–1926: Maximum stage recorded, 3.40 feet June 21 and 22, 1922 (discharge, 456 second-feet); minimum stage, 0.82 foot September 6, 1919 (discharge, 5.5 second-feet).

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

DIVERSIONS.—Numerous diversions for irrigation both above and below gage.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent. Two rating curves used during year; one applicable October 1 to August 7 fairly well defined between 10 and 100 second-feet; the other used August 8 to September 30 is fairly well defined between 25 and 250 second-feet. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table, using shifting-control method August 8 to September 30, except for periods of ice effect as indicated in footnote to daily-discharge table. Records good prior to August 8; thereafter poor.

The following discharge measurements were made:

May 15, 1926: Gage height, 1.69 feet; discharge, 79 second-feet.

August 4, 1926: Gage height, 1.02 feet; discharge 10.9 second-feet.

Daily discharge, in second-feet, of Willow Creek near Willow Creek, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	103	35	-------	53	80	53	49	14	6
2	44	100		-------	53	96	51	49	14	8
3	49	88	28	-------	42	114	46	46	14	11
4	49	80	32	-------	42	133	42	96	12	19
5	51	69	40	-------	46	141	38	93	12	19
6	52	69	42	-------	49	145	46	86	14	21
7	53	72		-------	46	145	61	80	14	21
8	53	77		-------	44	149	58	74	21	23
9	56	69		-------	42	149	58	66	11	21
10	60	61		-------	42	145	53	56	8	18
11	61	56		-------	40	149	51	46	9	16
12	66	51	40	-------	42	125	53	46	10	13
13	72	42		-------	49	114	56	44	13	11
14	66	40		-------	49	118	58	42	14	13
15	63	36		-------	53	93	61	39	16	16
16	61	38		-------	56	94	58	38	18	17
17	56	38		-------	56	90	56	36	16	19
18	53	42	42	-------	66	80	53	36	20	20
19	54	40	40	-------	72	86	51	36	18	21
20	58	38	40	-------	80	90	53	33	17	21
21	58	38	38	40	74	93	51	32	14	22
22	56	40	36	40	72	96	51	30	12	23
23	54	40	42	42	69	96	53	30	6	25
24	53	40		43	66	100	49	27	6	25
25	57	38	40	46	66	96	44	25	7	26
26	66			51	63	103	42	23	9	26
27	74		40	53	61	96	40	21	9	25
28	61	35	38	58	66	93	49	19	10	25
29	66		34	53	72	90	45	17	10	26
30	74		32	45	74	77	46	16	11	26
31	85	-------	32	49	-------	72	-------	14	9	-------

NOTE.—Discharge estimated because of ice on control Nov. 26 to Dec. 2, Dec. 7–17, and 24–26. Braced figures give mean discharge for periods indicated. Stage-discharge relation seriously affected by ice Jan. 1 to Mar. 20; discharge not computed.

Monthly discharge of Willow Creek near Willow Creek, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	85	44	58.9	3,620
November	103	35	52.7	3,140
December	42	28	38.3	2,360
March 21-31	58	40	47.3	1,030
April	80	40	56.8	3,380
May	149	72	108.0	6,640
June	61	40	50.9	3,030
July	96	14	43.4	2,670
August	21	6	12.5	769
September	26	6	19.4	1,150

MADISON RIVER BASIN

MADISON RIVER NEAR WEST YELLOWSTONE,[1] MONT.

LOCATION.—250 feet upstream from old footbridge at fording place of old Gallatin trail, just north of highway to West Yellowstone, and 4 miles east of West Yellowstone and west boundary of Yellowstone National Park. Gibbon and Firehole Rivers unite to form Madison River 9 miles upstream.

DRAINAGE AREA.—410 square miles (measured on topographic maps).

RECORDS AVAILABLE.—June 16, 1913, to September 30, 1926.

GAGE.—Friez water-stage recorder installed October 20, 1918, on left bank; inspected by park rangers attached to Riverside ranger station. Gage datum raised 2.50 feet on June 29, 1926. Prior to October 10, 1918, a vertical staff at different datum situated on left bank, 500 feet below recording gage, was used. On account of unfavorable conditions caused by ice and snow near recording gage, the staff gage is still used at times during winter.

DISCHARGE MEASUREMENTS.—Made from cable two-thirds mile below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders; somewhat rough; control practically permanent. One channel at all stages. Aquatic growth is present during greater part of year and at times causes backwater.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.27 feet from 5 to 10 a. m. May 21 (discharge, 1,010 second-feet); minimum discharge, 344 second-feet August 7.

1913–1926: Maximum stage recorded, 2.64 feet (old vertical staff), at 6 p. m. June 10, 1917 (discharge, 1,950 second-feet); minimum stage, 1.1 feet (vertical staff) February 2, 1924 (discharge, 284 second-feet).

ICE.—Stage-discharge relation seldom seriously affected by ice. Temperature of water during extremely cold weather kept above freezing point, except for short periods, by numerous hot springs and geysers.

DIVERSIONS.—None above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation slightly affected by aquatic growth. Two well-defined rating curves used. Operation of water-stage recorder satisfactory prior to November 5 and after August 27; clock stopped frequently during May, June, and July. From November 14 to May 8 staff at original gage site was read to hundredths about once a week. Daily discharge ascertained by applying daily gage height to rating table except as indicated in footnote to table of daily discharge. Mean daily gage height was obtained by inspection of recorder graph for periods when water-stage recorder was operated. Records good for periods when water-stage recorder was in operation; others fair.

[1] Formerly called Madison River near Yellowstone, Mont.

Discharge measurements of Madison River near West Yellowstone, Mont., during the year ending September 30, 1926

Date	Gage height: Old staff gage	Gage height: Water-stage recorder	Discharge	Date	Gage height: Old staff gage	Gage height: Water-stage recorder	Discharge
	Feet	*Feet*	*Sec.-ft.*		*Feet*	*Feet*	*Sec.-ft.*
May 25	1.67	4.13	840	June 29	1.27	1.24	401
May 29	1.47	3.93	585	July 30	1.19	1.18	346
June 22	1.31	3.78	459	Sept. 13	1.21	1.18	370

NOTE.—On June 29, before measurement, datum was raised 2.50 feet.

Daily discharge, in second-feet, of Madison River near West Yellowstone, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	520	471		412				939	540	480	352	370
2	500	510		408					530	452	352	370
3	480	500	460		377	400	420		520	424	352	378
4	480	480							500	414	352	386
5	480	471	467				449	990	490	433	352	378
				404								
6	550	461			384	384			480	424	348	386
7	601	452							471	419	344	424
8	550						470	750	471	414	374	452
9	530		462	400				693	480	409	404	404
10	520				392	380	494	637	490	404	462	386
		455										
11	530							580	480	404	520	378
12	550		458	388				570	452	404	473	374
13	550				400	376		560	452	404	425	370
14	510	458					580	560	480	404	378	378
15	500							580	462	404	374	378
			454									
16	500			376	408	395		713	442	386	370	361
17	462						670	846	442	378	388	370
18	500	458						777	442	370	406	378
19	500		449					689	462	378	424	370
20	490			372	416	416		788	510	370	405	361
							625					
21	490							942	471	370	386	361
22	490	458	445					810	452	361	374	352
23	510			368				799	433	361	361	361
24	500				416	404	580	788	433	361	361	370
25	510	454						777	424	361	361	370
26	510		440	368				689	404	361	361	378
27	510				416	392	760	634	404	361	361	378
28	520	449			420			623	404	361	361	370
29	520	455	425		-------	400		590	404	352	370	370
30	490			368	-------			570	414	352	378	462
31	480	-------		370	-------		-------	550	-------	352	378	-------

NOTE.—Because of missing gage heights discharge estimated for periods indicated by braced figures which give mean estimated discharge for periods indicated. Discharge interpolated Nov. 5–6, May 16, 23, 24, June 28, July 7–9, 13, 14, Aug. 1–3, 6, 8, 10, 12, 13, 15, 17, 18, 20, 22, 24–27, Sept. 12.

Monthly discharge of Madison River near West Yellowstone, Mont., for the year ending September 30, 1926

[Drainage area, 410 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	601	462	511	1.25	1.44	31,400
November	510	----------	461	1.12	1.25	27,400
December	----------	----------	450	1.10	1.27	27,700
January	----------	----------	384	.937	1.08	23,600
February	----------	----------	401	.978	1.02	22,300
March	----------	----------	395	.963	1.11	24,300
April	----------	----------	585	1.43	1.60	34,800
May	----------	550	755	1.84	2.12	46,400
June	540	404	461	1.12	1.25	27,400
July	480	352	391	.954	1.10	24,000
August	520	344	384	.937	1.08	23,600
September	462	352	381	.929	1.04	22,700
The year	----------	344	464	1.13	15.36	336,000

CROW CREEK BASIN

CROW CREEK NEAR RADERSBURG, MONT.

LOCATION.—In NE. ¼ sec. 23, T. 6 N., R. 1 W., at Glendale ranger station in Jefferson National Forest, 1 mile above mouth of Slim Sam Creek and 6 miles northwest of Radersburg, Broadwater County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—April 17, 1924, to September 30, 1926. May 26, 1919, to September 30, 1922, at old location 600 feet below mouth of Slim Sam Creek. Records comparable except during short periods in spring when discharge of Slim Sam Creek may be an appreciable percentage of flow in Crow Creek.

GAGE.—Stevens continuous water-stage recorder in wooden shelter on left bank; inspected by M. J. Steere.

DISCHARGE MEASUREMENTS.—Made from bridge below Slim Sam Creek or by wading.

CHANNEL AND CONTROL.—Channel composed of gravel and heavy boulders. No well-defined control. Banks high, covered with brush, and not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.87 feet at 7.30 a. m. May 20 (discharge, 323 second-feet); minimum stage, 1.00 foot at noon March 13 (discharge, 9.0 second-feet).

1919–1922; 1924–1926: Maximum discharge recorded, 817 second-feet at 6 a. m. June 8, 1920; minimum stage, 0.73 foot at 6.45 p. m. December 13, 1924 (discharge, 2.1 second-feet).

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

DIVERSIONS.—None above station but all of normal flow is used below.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during year except as affected by ice. Rating curve well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of recorder graph. Records good.

The following discharge measurements were made:

January 18, 1926: Gage height, 2.30 feet (stage-discharge relation affected by ice); discharge, 21.4 second-feet.

April 27, 1926: Gage height, 2.16 feet; discharge, 132 second-feet.

Daily discharge, in second-feet, of Crow Creek near Radersburg, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	22	------	------	25	216	101	55	24	16
2	23	21	------	------	25	188	94	52	25	17
3	24	20	------	------	25	173	87	46	29	19
4	22	21	------	------	25	186	82	43	25	19
5	22	22	------	------	25	260	78	44	23	17
6	22	22	------	------	25	208	75	48	21	17
7	22	28	------	12	25	176	74	42	21	22
8	22	30	------	11	25	153	68	83	22	34
9	22	21	------	12	25	140	63	90	22	28
10	22	21	------	11	28	134	58	68	19	22
11	23	21	18	11	28	129	54	62	23	25
12	22	20	16	11	30	129	52	57	25	23
13	22	20	16	11	33	140	57	55	22	26
14	21	19	15	12	41	183	64	51	21	23
15	22	20	15	14	59	254	63	49	20	21
16	23	19	17	16	104	271	57	46	20	23
17	18	19	16	17	146	257	52	44	20	23
18	23	19	17	15	176	240	50	41	28	23
19	22	19	15	15	216	235	67	39	31	22
20	23	19	16	15	208	301	78	37	25	20
21	24	------	23	16	176	260	75	37	22	21
22	27	------	35	17	164	227	80	36	20	22
23	26	------	62	21	131	224	78	37	19	22
24	22	------	31	20	114	221	74	34	17	19
25	23	------	17	20	112	200	67	33	17	21
26	22	------	16	17	127	193	60	31	16	21
27	24	------	16	21	144	153	56	30	16	22
28	33	------	16	25	173	138	51	28	16	22
29	37	------	17	25	208	125	49	28	16	22
30	30	------	------	25	232	117	49	26	16	23
31	23	------	------	25	------	110	------	25	16	------

NOTE.—Discharge estimated Sept. 26 and 27 on account of missing gage height.

Monthly discharge of Crow Creek near Radersburg, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	37	18	23.6	1,450
November 1-20	22	19	21.2	841
December 11-29	62	15	20.7	781
March 7-31	25	11	16.6	823
April	232	25	95.8	5,700
May	301	110	192	11,800
June	101	49	67.1	3,990
July	90	25	45.1	2,770
August	31	16	21.2	1,300
September	34	16	21.8	1,300

PRICKLY PEAR CREEK BASIN

PRICKLY PEAR CREEK NEAR CLANCY, MONT.

LOCATION.—In S. ½ sec. 34, T. 9 N., R. 3 W., at private bridge on Haab ranch, one-fourth mile below mouth of Lump Gulch Creek and 1¼ miles north of Clancy, Jefferson County.

DRAINAGE AREA.—178 square miles (measured on topographic maps).

RECORDS AVAILABLE.—July 12, 1910, to September 30, 1916, and July 28, 1921, to September 30, 1926, at present site. July 15, 1908, to June 30, 1909, at old site 1 mile below.

GAGE.—Vertical staff on downstream side of right abutment of bridge; read by Fred E. Haab.

DISCHARGE MEASUREMENTS.—Made by wading or from bridge.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.60 feet at 7.30 p. m. May 20 (discharge, 213 second-feet); minimum stage, 0.98 foot at 8 a. m. March 31 (discharge, 18 second-feet).

1908–1916; 1921–1926: Maximum stage recorded, 4.0 feet June 17, 1915, (discharge, 465 second-feet); minimum stage, 0.71 foot September 9, 1924, (discharge, 9.3 second-feet).

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

DIVERSIONS.—Several small diversions from main stream and tributaries above gage; practically all water is appropriated and used for irrigation below station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during ice period. Rating curve used October 1 to December 31 fairly well defined; curve used March 20 to September 30 well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records prior to March, fair; records from March to September, good.

Discharge measurements of Prickly Pear Creek near Clancy, Mont., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 27	[a] 1.26	26.0	May 20	2.57	206
Mar. 20	1.14	26.2	June 15	1.73	76
May 7	1.95	109			

[a] Stage-discharge relation affected by ice.

Daily dischdrge, in second-feet, of Prickly Pear Creek near Clancy, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	36	34	-------	30	122	74	59	23	24
2	34	34	36	-------	35	122	58	59	23	23
3	33	34	33	-------	30	122	68	54	23	25
4	32	34	30	-------	31	126	76	54	22	25
5	33	34	35	-------	29	152	68	68	21	24
6	32	34	39	-------	27	115	68	67	21	24
7	31	32	38	-------	25	108	66	58	21	26
8	32	32	35	-------	30	103	61	204	22	25
9	32	32	32	-------	23	133	62	108	22	24
10	33	32	28	-------	45	140	62	80	20	24
11	34	32	28	-------	45	154	58	68	21	24
12	35	34	27	-------	40	144	55	54	21	26
13	33	33	31	-------	52	144	63	54	28	32
14	32	32	31	-------	52	149	87	53	32	44
15	32	33	31	-------	76	165	84	51	31	50
16	35	32	32	-------	100	156	76	45	30	31
17	35	33	31	-------	110	170	73	43	33	34
18	35	34	33	-------	120	176	72	40	36	37
19	37	36	32	-------	138	192	85	37	34	38
20	36	33	32	27	135	206	96	37	31	37
21	36	32	33	30	122	162	89	34	31	35
22	40	33	34	32	122	162	89	32	31	32
23	40	33	34	37	121	160	81	30	25	32
24	38	32	33	37	106	148	75	34	25	32
25	38	32	32	35	104	143	73	30	24	34
26	36	32	32	35	114	138	68	29	24	31
27	37	32	30	34	108	124	58	29	24	32
28	34	32	30	34	122	100	52	28	24	35
29	34	32	30	34	127	100	49	23	24	38
30	34	32	30	31	122	74	49	24	24	50
31	36	-------	30	19	-------	68	-------	23	24	-------

NOTE.—Stage-discharge relation slightly affected by ice Nov. 7–11 and Dec. 27–31; discharge estimated. Discharge interpolated Mar. 26–28.

Monthly discharge of Prickly Pear Creek near Clancy, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	40	31	34.7	2,130
November	36	32	32.9	1,960
December	39	27	32.1	1,970
March 20-31	37	19	32.1	764
April	138	23	78.0	4,640
May	206	68	138.0	8,480
June	96	49	69.8	4,150
July	204	23	51.9	3,190
August	36	20	25.6	1,570
September	50	23	31.6	1,880

TENMILE CREEK NEAR RIMINI, MONT.

LOCATION.—In NE. ¼ sec. 20, T. 9 N., R. 5 W., opposite Moose Creek ranger station, 500 feet above mouth of Moose Creek, and 3 miles north of Rimini, Lewis and Clark County.

DRAINAGE AREA.—34 square miles (measured on topographic maps).

RECORDS AVAILABLE.—March 13, 1915, to September 30, 1926.

GAGE.—Friez water-stage recorder on left bank opposite ranger station; observer, D. H. Lewis, forest ranger.

DISCHARGE MEASUREMENTS.—Made from footbridge 75 feet above gage or by wading.

CHANNEL AND CONTROL.—The concrete control constructed March 4, 1917, was partly destroyed October 4, 1925. Left bank high and steep; composed of loose material; not subject to overflow. Right bank sloping and subject to overflow. Control is shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.73 feet at 6 p. m. April 19 (discharge, 200 second-feet); minimum discharge, 0.6 second-foot August 27–28.

1915–1926: Maximum stage recorded, 4.87 feet May 15, 1917 (discharge, 948 second-feet); minimum stage, 0.10 foot March 28, 1925 (discharge, 0.4 second-foot).

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

DIVERSIONS.—Some water is diverted above station for part of the water supply of Helena.

REGULATION.—Small reservoir above station for water-supply system of Helena has a slight effect on the flow.

ACCURACY.—Stage-discharge relation not permanent; affected by ice and by shifting control. Two rating curves, one applicable October 1–3 and the other October 4 to September 30, are well defined. Operations of water-stage recorder unsatisfactory for several periods. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of recorder graph. Shifting-control method used July 10 to September 30. Records for periods when recorder was in operation, good; others fair.

Discharge measurements of Tenmile Creek near Rimini, Mont., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 13	0.56	6.0	Apr. 21	1.60	159	**May 13**	1.30	80
Mar. 6	.45	3.1	Apr. 30	1.56	141	May 22	1.30	79
Apr. 14	.90	24.0	May 5	1.34	83	July 20	.48	1.2

Daily discharge, in second-feet, of Tenmile Creek near Rimini, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.5				9.0	136	43	18	2.0	1.2
2	2.5				9.0	116	40	16	2.1	1.2
3	2.5				9.0	106	38	15	1.8	1.0
4	4.9					95	37	15	1.6	1.0
5	4.6		5.5	3.0		86	33	15	1.5	.9
6	3.6					80	31	15	1.4	1.6
7	3.2		5.5			74	32	15	1.2	2.9
8	4.6				12	69	28	50	1.2	16
9	5.5			4.0		65	25	39	1.6	8.6
10	7.0					64	23	20	3.4	3.0
11	8.2					65	22	17	5.2	5.8
12	9.4		5.5			67	22	15	4.9	2.9
13	9.4	5.8		4.0		82	23	13	4.9	1.6
14	5.8			4.0	27	109	29	10	4.9	2.3
15	4.9			4.3	30	136	28	9.4	5.2	1.8
16	4.9			4.9	45	130	25	8.2	5.2	3.0
17	5.8			5.8	64	130	23	7.0	5.5	2.7
18	5.5			5.5	84	146	31	5.0	6.4	2.5
19	5.2		3.4	5.5	160	130	39	3.1	7.8	2.4
20	4.9			5.8	149	130	36	1.2	5.2	2.3
21	6.4	5.5		6.7	130	119	33	1.2	4.6	2.2
22	8.3			7.8	119	109	30	1.2	1.2	2.1
23	10			10	97	91	27	1.0	1.2	2.0
24	12			9.8	95	86	25	1.0	1.0	1.9
25	11			9.8	102	80	23	1.1	.9	1.8
26	10		5.5		124	73	21	1.2	1.0	2.9
27	9.4				143	65	20	1.3	.6	3.8
28	8.6	4.6		9.0	158	60	19	1.4	.6	5.5
29	8.6				165	51	18	1.5	1.2	6.4
30	8.6	4.6			162	50	18	1.6	1.4	8.2
31	8.6					46		1.8	1.2	

NOTE.—Discharge estimated Oct. 18, 19, 22, 23, 30, 31, Mar. 6–12, Apr. 4–13, June 20–25, July 18, 19, July 25 to Aug. 1, Sept. 19–24 on account of missing gage heights. Discharge estimated Mar. 26 to Apr. 3 on account of ice. Braced figures give mean discharge for periods indicated.

Monthly discharge of Tenmile Creek near Rimini, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	12	1.5	6.63	408
November			[a] 5.0	298
December			[a] 5.0	307
March 5–31	10	3.0	6.26	335
April	165	9.0	66.7	3,970
May	146	46	91.8	5,640
June	43	18	28.1	1,670
July	50	1.0	10.4	640
August	7.8	.6	2.84	175
September	16	.9	3.38	201

[a] Estimated.

TENMILE CREEK NEAR HELENA, MONT.

LOCATION.—In SE. ¼ sec. 22, T. 10 N., R. 4 W., opposite Broadwater Hotel, near Helena, Lewis and Clark County.

DRAINAGE AREA.—103 square miles (measured on topographic maps).

RECORDS AVAILABLE.—July 8, 1908, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder installed September 18, 1925, in wooden shelter on right bank at location of old staff gage.

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

CHANNEL AND CONTROL.—Bed of stream coarse gravel and boulders; shifts occasionally.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.26 feet at 11 p. m. April 19 (discharge, 340 second-feet); minimum stage, 1.63 feet at 5.15 p. m. August 3 (discharge, 0.8 second-foot).

1908–1926: Maximum stage recorded, 5.60 feet May 28, 1917 (discharge, 865 second-feet); minimum stage, no flow in afternoon of July 10, 1918, June 26 to September 30, 1919, and July 31 to September 16, 1921.

ICE.—Stage-discharge relation affected by ice during extremely cold weather.

DIVERSIONS.—Part of water supply for city of Helena is taken from creek above station. Two irrigation ditches also take water from creek above gage.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during year except when affected by ice. Rating curve well defined above 2 second-feet. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspecting recorder graph. Records good except for estimated periods, for which they are fair.

The following discharge measurements were made:

April 14, 1926: Gage height, 2.73 feet; discharge, 43.8 second-feet.

May 14, 1926: Gage height, 3.58 feet; discharge, 167 second-feet.

June 5, 1926: Gage height, 2.50 feet; discharge, 30.2 second-feet.

Daily discharge, in second-feet, of Tenmile Creek near Helena, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.3		18	10	14	15	163	36	12.0	1.0	1.2
2	15		18	10	14	19	131	34	8.7	.9	1.2
3	15		17	10	14	16	108	36	6.9	.9	1.4
4	18	35	17	15	15	15	98	36	7.2	.9	1.4
5	20		19	15	14	14	97	34	6.0	.9	1.4
6	21		22	15	14	13	88	30	4.8	1.0	1.4
7	19	34	23	18	9.1	13	82	28	4.8	1.0	1.7
8	21		21	21	10	13	78	21	48	1.0	5.2
9	21		20	19	9.9	15	88	20	37	1.1	2.4
10	24	30	21	18	9.9	21	90	18	17	1.4	1.8
11	28		21	18	9.9	27	108	17	12	1.7	1.9
12	27		22	16	9.5	33	111	15	8.3	1.5	1.9
13	28	29	21	15	9.9	43	136	14	6.3	1.4	1.8
14	28	23	19	24	11	52	161	27	5.4	1.3	2.0
15	24	23	18	30	12	78	180	21	4.5	1.4	1.6
16	26	23	18	30	12	123	176	21	3.7	1.4	1.6
17	22	23	17	14	14	169	169	21	3.1	1.4	1.8
18	26		18	12	15	195	157	19	3.5	1.7	1.8
19	27		19	13	15	291	134	36	2.9	1.9	1.8
20	26		14	14	15	283	125	50	2.1	1.6	1.9
21	30		14	14	16	250	116	38	1.9	1.4	1.8
22	35	20	18	14	16	226	100	26	2.1	1.3	2.0
23	40		29	13	18	176	89	21	2.2	1.2	2.1
24	45		30	13	24	147	87	19	2.1	1.2	2.1
25	50		26	12	23	143	82	16	1.9	1.0	2.3
26	48		22	12	22	174	73	15	2.1	1.0	2.9
27	46		18	13	17	187	67	15	1.9	1.1	3.7
28	44	22	17	14	15	197	57	13	2.0	1.1	4.8
29	42	20	13	-------	16	199	48	12	1.5	1.2	5.1
30	40	20	10	-------	19	187	44	12	1.2	1.2	9.5
31	40	-------	10	-------	14	-------	43	-------	1.1	1.2	-------

NOTE.—Stage-discharge relation affected by ice Dec. 30, 31, Feb. 1-3; discharge estimated. Recorder not in operation Oct. 21-30, Nov. 1-6, 8-12, 18 27, Nov. 29 to Dec. 2; discharge estimated.

Monthly discharge of Tenmile Creek near Helena, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	50	8.3	29.2	1,800
November	35	20	25.9	1,540
December	30	10	19.0	1,170
February	30	10	15.8	878
March	24	9.1	14.4	885
April	291	13	111	6,600
May	180	43	106	6,520
June	50	12	24.0	1,430
July	48	1.1	7.23	445
August	1.9	.9	1.24	76
September	9.5	1.2	2.45	146

LITTLE PRICKLY PEAR CREEK BASIN

LITTLE PRICKLY PEAR CREEK NEAR MARYSVILLE, MONT.

LOCATION.—In SW. ¼ sec. 18, T. 12 N., R. 6 W., at highway bridge on ranch of Casper Traufer, one-fourth mile below mouth of Deadman Creek and 6 miles northwest of Marysville, Lewis and Clark County.

DRAINAGE AREA.—69 square miles (measured on topographic map).

RECORDS AVAILABLE.—May 24, 1913, to September 30, 1926, at present site; April 12 to May 23, 1913, about one-fourth mile above present site; May 18, 1909, to December 31, 1911, at station above mouth of Deadman Creek.

GAGE.—Vertical staff spiked to upstream side of left abutment of highway bridge; read by Casper Traufer.

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

CHANNEL AND CONTROL.—Bed composed of sand and gravel; shifts slightly.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.84 feet April 20 (discharge, 149 second-feet); minimum stage, 0.80 foot August 17–28 (discharge, 12 second-feet).

1909–1911; 1913–1926: Maximum stage recorded, 3.8 feet May 25 and 26, 1917 (discharge, 454 second-feet); minimum discharge, 1.2 second-feet March 7–13, 1911.

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

DIVERSIONS.—Two or three small ditches divert water from the stream above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed slightly during winter. Two well-defined rating curves used; one applicable October 1 to December 31, and the other applicable April 1 to September 30. Gage read to even hundredths once or twice daily April 11 to May 21. Daily discharge ascertained by applying daily gage height to rating table. Records good.

The following discharge measurements were made:

May 15, 1926: Gage height, 1.33 feet; discharge, 52 second-feet.

July 23, 1926: Gage height, 0.86 foot; discharge, 14.6 second-feet.

Daily discharge, in second-feet, of Little Prickly Pear Creek near Marysville, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Apr.	May	June	July	Aug.	Sept.
1	16	18	16	16	119	35	20	15	13
2	16	18	16	16	114	33	20	14	13
3	16	18	14	16	94	32	19	14	13
4	16	18	14	16	92	32	18	13	14
5	16	17	14	16	89	30	24	13	14
6	16	17	14	16	84	28	24	13	14
7	16	17	14	16	76	27	22	13	14
8	16	17	14	14	71	27	22	13	15
9	16	17	14	14	66	25	21	13	14
10	16	17	14	14	64	27	20	13	14
11	16	17	14	20	62	27	20	13	14
12	16	17	14	17	56	27	18	13	14
13	16	16	14	20	54	25	18	13	14
14	16	16	14	24	54	25	18	13	14
15	16	16	14	42	54	25	18	13	13
16	16	16	14	79	54	25	18	13	13
17	16	16	14	114	54	25	18	12	13
18	16	16	14	119	54	25	18	12	13
19	16	16	14	138	54	24	17	12	13
20	16	16	14	149	54	27	17	12	13
21	16	16	14	138	54	27	15	12	13
22	17	16	14	119	54	25	15	12	13
23	18	16	14	104	51	24	15	12	13
24	18	16	14	94	51	24	15	12	13
25	19	16	14	84	51	22	15	12	13
26	19	16	14	89	48	21	15	12	14
27	19	16	14	92	44	20	15	12	14
28	19	16	14	104	44	20	15	12	14
29	18	16	14	112	39	18	15	13	14
30	18	16	14	119	39	18	15	14	14
31	18	------	14	------	37	------	15	14	------

Monthly discharge of Little Prickly Pear Creek near Marysville, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	19	16	16.7	1,030
November	18	16	16.5	982
December	16	14	14.1	867
April	149	14	64.4	3,830
May	119	37	62.3	3,830
June	35	18	25.7	1,530
July	24	15	17.9	1,100
August	15	12	12.8	787
September	15	13	13.6	809

SMITH RIVER BASIN

SMITH RIVER NEAR WHITE SULPHUR SPRINGS, MONT.

LOCATION.—In SE. ¼ SW. ¼ sec. 33, T. 11 N., R. 8 E., at Meachem ranch, 14 miles northeast of White Sulphur Springs, Meagher County, and 32 miles northwest of Martinsdale.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—September 20, 1922, to September 30, 1926.

GAGE.—Vertical staff on right bank 500 feet west of ranch house; read by Mrs. Florence Meachem.

DISCHARGE MEASUREMENTS.—Made by wading or from bridge.

CHANNEL AND CONTROL.—Channel composed of coarse gravel. Banks low and subject to overflow at high stages. Control is a gravel bar 30 feet below gage; shifts occasionally.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.30 feet at 6 p. m. April 16 (discharge, 196 second-feet); minimum stage, 0.42 foot August 31 (discharge, 3.6 second-feet).

1922–1926: Maximum stage, 3.05 feet June 21, 1923 (discharge, 224 second-feet); minimum discharge, 3.1 second-feet from discharge measurement of March 8, 1923.

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

DIVERSIONS.—One or two small diversions for irrigation above this station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during winter. Two rating curves used during year; one applicable October 1 to December 31 is well defined, and the other applicable April 1 to September 30 fairly well defined between 8 and 150 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records fair.

The following discharge measurements were made:

April 14, 1926: Gage height, 2.41 feet; discharge, 118 second-feet.

June 8, 1926: Gage height, 0.88 foot; discharge, 20.2 second-feet.

July 30, 1926: Gage height, 0.58 foot; discharge, 7.9 second-feet.

Daily discharge, in second-feet, of Smith River near White Sulphur Springs, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Apr.	May	June	July	Aug.	Sept.
1	15	14	10	11	97	34	26	7.9	5.6
2	15	14	9.6	12	92	32	20	8.9	6.5
3	14	14	21	13	94	26	19	9.6	7.6
4	13	16	14	21	91	26	19	8.2	8.2
5	13	11	10	21	96	26	20	7.2	7.2
6	13	14	8.8	11	104	24	21	7.2	7.6
7	15	12	9.2	12	88	22	18	8.6	8.9
8	13	12	10	13	81	21	28	11	10
9	13	14	8.8	11	91	18	24	9.6	9.6
10	14	10	8.8	13	87	17	20	8.9	10
11	13	11	9.6	36	69	17	13	8.9	11
12	13	11	10	54	59	17	13	8.2	11
13	13	12	11	78	55	32	13	7.9	10
14	13	15	11	105	54	36	13	8.6	10
15	13	13	10	109	55	32	12	8.9	9.6
16	13	11	9.9	167	55	30	12	9.6	13
17	12	10	9.7	161	55	29	12	12	16
18	12	12	9.6	135	57	30	12	12	11
19	12	15		113	54	40	12	11	11
20	12	17		111	57	37	11	8.9	10
21	12	14	12	100	56	29	10	8.6	11
22	12	16		90	55	26	11	8.2	11
23	13	14		87	57	17	12	7.6	11
24	13	10	16	80	56	17	12	7.2	15
25	15	8.0	16	80	56	16	11	6.9	13
26	15	12	16	75	51	26	11	6.2	12
27	15	12	15	72	49	26	11	6.2	9.6
28	15	9.6	15	71	48	22	6.5	6.2	8.9
29	21	9.2	14	81	48	22	6.9	5.6	7.9
30	17	9.6	13	85	42	22	7.2	5.2	15
31	14		12		36		6.5	4.3	

NOTE.—Stage-discharge relation affected by ice Oct. 17, 25–28, Nov. 11, 12, 15, 16, 18, 19, Dec. 16, 17, 19–23, 26–30; discharge estimated. No record Jan. 1 to Mar. 31.

Monthly discharge of Smith River near White Sulphur Springs, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	21	12	13.7	842
November	17	9.2	12.4	738
December	21	8.8	11.9	732
April	167	11	67.6	4,020
May	104	36	66.0	4,060
June	40	16	25.6	1,520
July	28	6.5	14.3	879
August	12	4.3	8.24	507
September	15	5.6	10.3	613

SUN RIVER BASIN

NORTH FORK OF SUN RIVER NEAR AUGUSTA, MONT.

LOCATION.—In unsurveyed tract at Sun River diversion dam, 18 miles northwest of Augusta, Lewis and Clark County.

DRAINAGE AREA.—596 square miles (measured by United States Bureau of Reclamation).

RECORDS AVAILABLE.—January 1, 1916, to September 30, 1926, at present site. August 5, 1889, to December 31, 1890, and October 31, 1903, to December 31, 1915, a station was located in sec. 33, T. 22 N., R. 7 W., at the Henningson ranch, 8 miles downstream from present site. The flow of the stream is practically the same at both points, as there are no diversions or large tributaries.

GAGE.—A sloping staff gage on right abutment of Sun River diversion dam; read by employees of the Bureau of Reclamation.

DISCHARGE MEASUREMENTS.—Made from highway bridge half a mile below gage or by wading.

CHANNEL AND CONTROL.—Control is crest of Sun River diversion dam, which is a concrete structure with an arch section 153.3 feet in length and a gravity section 59.2 feet in length, separated by a pier.

EXTREMES OF DISCHARGE.—Maximum stage recorded during the year, 2.80 feet April 30 (discharge, 3,540 second-feet, including 115 second-feet in canal); minimum stage, 0.40 foot January 1 to April 4 (discharge, 152 second-feet).

1889–1890; 1903–1926: Maximum stage recorded, 11.4 feet June 21, 1916 (discharge, 32,300 second-feet); minimum stage, 0.0 foot April 7 and 8, 1915 (discharge, 15 second-feet).

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

DIVERSIONS.—The intake of Pishkun Canal of United States Bureau of Reclamation is at right end of diversion dam.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined and is based on formula $Q = 3.1\ LH^{1.6}$, which was closely checked by seven discharge measurements. Gage read to half-tenths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

COOPERATION.—Records furnished by United States Bureau of Reclamation.

The following discharge measurements were made:

April 29, 1925: Gage height, 1.38 feet; discharge, 1,070 second-feet.

August 21, 1926: Gage height, 0.15 foot; discharge, 32.1 second-feet.

Daily discharge, in second-feet, of North Fork of Sun River near Augusta, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	291	291	291	152	152	152	152	3,040	767	883	291	124
2	291	291	291	152	152	152	152	2,680	659	883	291	124
3	291	291	291	152	152	152	152	2,330	659	659	254	124
4	291	291	291	152	152	152	152	2,330	557	608	254	217
5	291	291	291	152	152	152	184	2,330	557	557	254	217
6	332	291	291	152	152	152	217	2,000	883	461	254	217
7	332	291	291	152	152	152	217	1,680	883	416	254	291
8	332	291	291	152	152	152	217	1,680	659	416	254	291
9	332	291	291	152	152	152	217	1,260	509	372	254	291
10	332	291	291	152	152	152	254	1,130	372	254	96	332
11	332	291	291	152	152	152	291	1,000	372	217	96	332
12	332	291	291	152	152	152	416	1,000	332	184	96	332
13	372	291	291	152	152	152	557	1,000	332	217	96	291
14	372	291	291	152	152	152	713	1,130	372	217	96	291
15	372	291	291	152	152	152	883	1,260	509	184	96	291
16	332	291	217	152	152	152	1,680	1,260	461	124	73	291
17	332	291	217	152	152	152	2,330	1,260	557	96	73	291
18	332	291	217	152	152	152	2,500	1,680	557	152	73	291
19	332	291	217	152	152	152	3,420	1,680	1,390	332	73	291
20	332	291	217	152	152	152	2,330	2,330	2,160	372	73	291
21	291	291	217	152	152	152	2,330	2,000	1,840	372	34	291
22	291	291	217	152	152	152	2,330	1,680	1,680	372	17	291
23	291	291	217	152	152	152	1,680	1,680	1,390	372	17	291
24	291	291	217	152	152	152	1,390	2,000	1,530	372	17	332
25	291	291	217	152	152	152	1,390	1,680	1,260	332	17	332
26	291	254	217	152	152	152	1,680	1,390	1,130	332	17	332
27	291	254	217	152	152	152	2,000	1,130	944	332	73	291
28	291	254	217	152	152	152	2,330	1,130	883	291	96	291
29	291	254	217	152	-------	152	3,040	883	825	291	124	291
30	291	254	217	152	-------	152	3,420	883	767	291	124	291
31	291	-------	217	152	-------	152	-------	767	-------	291	124	-------

Combined daily discharge, in second-feet, of North Fork of Sun River and Pishkun Canal near Augusta, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	291	291	291	152	152	152	152	3,160	1,290	1,010	291	239
2	291	291	291	152	152	152	152	2,800	1,180	1,010	291	239
3	291	291	291	152	152	152	152	2,520	1,180	824	254	239
4	291	291	291	152	152	152	152	2,520	1,080	773	254	217
5	291	291	291	152	152	152	184	2,520	1,080	722	254	217
6	332	291	291	152	152	152	217	2,180	1,330	676	254	217
7	332	291	291	152	152	152	217	1,860	1,330	616	254	291
8	332	291	291	152	152	152	217	1,860	1,180	666	254	291
9	332	291	291	152	152	152	217	1,620	1,070	622	254	291
10	332	291	291	152	152	152	254	1,530	927	614	206	332
11	332	291	291	152	152	152	291	1,400	852	577	211	332
12	332	291	291	152	152	152	416	1,400	812	544	231	332
13	372	291	291	152	152	152	557	1,400	797	372	241	291
14	372	291	291	152	152	152	713	1,530	837	372	246	291
15	372	291	291	152	152	152	883	1,660	974	524	246	291
16	332	291	217	152	152	152	1,680	1,660	926	464	238	291
17	332	291	217	152	152	152	2,330	1,660	1,020	436	248	291
18	332	291	217	152	152	152	2,500	1,880	982	210	248	291
19	332	291	217	152	152	152	3,420	1,880	1,640	332	248	291
20	332	291	217	152	152	152	2,440	2,520	2,160	372	248	291
21	291	291	217	152	152	152	2,440	2,200	1,920	372	249	291
22	291	291	217	152	152	152	2,440	1,860	1,860	372	232	291
23	291	291	217	152	152	152	1,800	1,860	1,580	372	242	291
24	291	291	217	152	152	152	1,500	2,280	1,600	372	242	332
25	291	291	217	152	152	152	1,500	1,960	1,380	332	242	332
26	291	254	217	152	152	152	1,800	1,770	1,260	332	217	332
27	291	254	217	152	152	152	2,120	1,600	1,070	332	228	291
28	291	254	217	152	152	152	2,440	1,600	1,010	291	236	291
29	291	254	217	152	-------	152	3,160	1,360	950	291	239	291
30	291	254	217	152	-------	152	3,540	1,360	892	291	239	291
31	291	-------	217	152	-------	152	-------	1,290	-------	291	239	-------

Combined monthly discharge of North Fork of Sun River and Pishkun Canal near Augusta, Mont., for the year ending September 30, 1926

[Drainage area, 596 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	372	291	315	0.529	0.61	19,400
November	291	254	285	.478	.53	17,000
December	291	217	253	.424	.49	15,600
January	152	152	152	.255	.29	9,350
February	152	152	152	.255	.26	8,440
March	152	152	152	.255	.29	9,350
April	3,540	152	1,330	2.23	2.49	79,100
May	3,160	1,290	1,890	3.17	3.66	116,000
June	2,160	797	1,210	2.03	2.26	72,000
July	2,010	291	496	.832	.96	30,500
August	291	206	244	.409	.47	15,000
September	332	217	287	.482	.54	17,100
The year	3,540	152	565	.948	12.85	409,000

SUN RIVER AT FORT SHAW, MONT.

LOCATION.—In SW. ¼ sec. 1, T. 20 N., R. 2 W., at highway bridge at Fort Shaw, Cascade County.

DRAINAGE AREA.—1,475 square miles (measured by U. S. Bureau of Reclamation).

RECORDS AVAILABLE.—May 16, 1912, to September 30, 1926. A station on Sun River at Sun River, maintained July 31, 1905, to October 5, 1912, gave results for practically the same drainage area.

GAGE.—Chain gage on highway bridge; read by employees of U. S. Bureau of Reclamation. A Stevens continuous water-stage recorder was installed May 20, 1925, on left bank under bridge.

DISCHARGE MEASUREMENTS.—Made from cable 500 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed of stream composed of gravel and rocks; shifts occasionally.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.9 feet at 11 p. m. April 30 (discharge, 3,280 second-feet); minimum stage, 3.04 feet at 11 a. m. August 27 (discharge, 38 second-feet).

1905–1926: Maximum stage recorded, 13.4 feet June 7, 1908 (discharge, 18,400 second-feet); minimum discharge, that of August 27, 1926.

ICE.—Stage-discharge relation not affected by ice during 1926.

REGULATION.—Willow Creek Reservoir has a capacity of 16,640 acre-feet.

DIVERSIONS.—There are adjudicated rights for diverting 248 second-feet from Sun River direct and 664 second-feet from tributaries above this station. In addition there are the Fort Shaw and Pishkun Canals of the U. S. Bureau of Reclamation and a few small ditches constructed since the adjudication.

ACCURACY.—Stage-discharge relation changed probably during high water in April. Rating curve applicable October 1 to April 30 is well defined above 80 second-feet; curve applicable May 1 to September 30 is well defined above 35 second-feet. Operation of water-stage recorder unsatisfactory except from April 19 to May 4; during remainder of year chain gage was read by observer to half-tenths about four times a week. Daily discharge ascertained by applying mean daily gage height to rating table. Discharge interpolated for days of no gage height. Records poor on account of gaps in records.

Discharge measurements of Sun River at Fort Shaw, Mont., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 27	4.18	364	Aug. 26	3.35	70
July 21	4.07	279	Aug. 27	3.04	38.4

Daily discharge, in second-feet, of Sun River at Fort Shaw, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	463	435	a383	a335	a313	a245	291	2,880	576	1,020	181	a92
2	a449	a440	383	335	a313	a239	a291	2,640	a511	a922	181	a107
3	435	a444	a383	335	a313	233	a291	2,480	446	a825	215	122
4	463	a448	a383	a335	313	a245	a291	2,180	a446	728	181	122
5	a463	452	383	a335	a313	a258	291	a1,960	a446	a666	166	181
6	a463	a458	383	335	a313	271	a302	a1,740	446	a604	150	a218
7	463	463	a383	a335	313	271	a313	1,530	a436	542	150	a255
8	a472	a463	a383	a335	a320	a264	a324	a1,430	a427	a510	150	292
9	a481	a463	383	335	a327	a257	335	a1,330	418	477	150	a299
10	491	463	a383	335	335	251	a351	a1,240	a316	418	181	a307
11	503	a456	a383	a335	a335	a245	a367	1,150	215	272	181	315
12	a480	a449	383	a335	a335	a239	383	a1,120	181	215	122	338
13	a457	a442	a383	a335	335	233	550	a1,090	166	215	122	a351
14	435	435	383	335	a313	a233	612	1,060	a306	292	122	364
15	a417	a435	a377	a327	291	233	a788	a1,070	446	446	122	a377
16	a400	435	a371	a320	a286	a239	a964	a1,080	a514	338	a114	390
17	383	a435	a365	313	a281	a245	1,140	1,100	a582	215	a106	a390
18	335	a435	359	a313	a276	251	a1,930	a1,360	650	272	98	390
19	a331	a435	a347	a313	271	a261	2,720	a1,620	a1,800	292	a98	390
20	a326	a435	335	a313	a271	271	2,400	1,890	2,960	418	a98	a404
21	a322	435	a335	a313	271	291	2,100	a1,840	2,480	272	98	418
22	a317	435	a335	313	a271	a302	1,820	a1,790	a2,260	272	98	a425
23	313	a417	335	a302	a271	a313	1,580	a1,750	a2,040	272	a91	a432
24	a348	a400	a335	291	a271	a324	1,420	a1,690	a1,830	292	a84	a439
25	383	383	a335	a294	271	335	1,480	1,640	a1,620	166	78	446
26	a392	a383	335	a297	a264	a320	1,640	1,390	a1,410	166	70	446
27	a400	383	335	a301	a257	a305	1,820	a1,140	1,200	150	38	a446
28	409	383	a335	a305	251	291	2,260	890	a1,150	252	62	446
29	a418	383	a335	a309	-------	a291	2,640	a811	a1,100	198	62	a462
30	a426	a383	335	313	-------	291	2,960	a732	1,060	181	a75	477
31	435	-------	a335	313	-------	a291	-------	a654	-------	181	78	-------

a Gage not read; discharge interpolated.

Monthly discharge of Sun River at Fort Shaw, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	503	313	415	25,500
November	463	383	430	25,600
December	383	335	361	22,200
January	335	291	321	19,700
February	335	251	296	16,400
March	335	233	269	16,500
April	2,960	291	1,160	69,000
May	2,880	654	1,490	91,600
June	2,960	166	948	56,400
July	1,020	150	390	24,000
August	215	38	120	7,380
September	477	92	338	20,100
The year	2,960	38	545	394,000

MUDDY CREEK AT VAUGHN, MONT.

LOCATION.—In SE. ¼ sec. 24, T. 21 N., R. 1 E., at Great Northern Railway bridge at Vaughn, Cascade County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 21, 1925, to February 8, 1926, when station was discontinued.

GAGE.—Vertical staff on upstream pile of bridge on right bank; read by C. W. Penwell.

DISCHARGE MEASUREMENTS.—Made from highway bridge 500 feet above gage or by wading.

CHANNEL AND CONTROL.—Channel composed of clay and gravel. Control is gravel riffle just below bridge. Banks covered with grass and bushes; high and not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during period October 1 to February 8, 2.08 feet at 8 a. m. November 1 (discharge, 59 second-feet); minimum stage, 1.12 feet at 2 p. m. December 20 (discharge, 9.6 second-feet).

1925–1926: Maximum stage recorded, 8.90 feet at 7.30 a. m. June 5, 1925 (discharge, 602 second-feet); minimum stage, 1.07 feet at 1.30 p. m. July 21, 1925 (discharge, 8.1 second feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—None.

REGULATION.—A small amount of waste from Sun River Canal flows into Muddy Creek above gage.

ACCURACY.—Stage-discharge relation permanent during year except as affected by ice. Rating curve well defined. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good except for estimated periods, for which they are poor.

The following discharge measurements were made:

November 28, 1925: Gage height, 1.70 feet (stage-discharge relation affected by ice); discharge, 27.8 second-feet.

July 21, 1926: Gage height, 1.19 feet; discharge, 11.7 second-feet.

Daily discharge, in second-feet, of Muddy Creek at Vaughn, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Day	Oct.	Nov.	Dec.	Jan.	Feb.
1	34	59	27	10	41	16	34	30	16	56	------
2	28	41	22	12	38	17	27	22	16	37	------
3	28	34	18	14	41	18	24	19	16	31	------
4	25	51	38	16	22	19	25	21	16	28	------
5	22	41	37	28	20	20	24	19	9.6	26	------
6	22	47	23	30	20	21	23	18	10	22	------
7	23	54	18	36	28	22	22	25	10	30	------
8	24	55	16	32	28	23	32	26	10	37	------
9	24	30	16	32	------	24	25	23	12	24	------
10	22	32	16	31	------	25	26	22	16	23	------
11	23	23	16	26	------	26	24	21	18	23	------
12	34	21	16	22	------	27	24	28	16	22	------
13	31	22	15	18	------	28	24	28	14	18	------
14	26	17	16	18	------	29	24	28	12	30	------
15	24	36	15	26	------	30	23	28	10	40	------
						31	43	------	10	46	------

NOTE.—Stage-discharge relation affected by ice Oct. 28, 29, Nov. 27–30, Dec. 16, 21–24, 27–31, Jan. 12, 19–22, 25, 27, 28, Feb. 5, 6; discharge estimated. Gage not read Jan. 1–3; discharge interpolated.

Monthly discharge of Muddy Creek at Vaughn, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	43	22	26.3	1,620
November	59	17	30.7	1,830
December	38	9.6	16.8	1,030
January	46	10	27.3	1,680
February 1–8	41	20	29.8	473
The period				6,630

MARIAS RIVER BASIN

MARIAS RIVER NEAR SHELBY, MONT.

LOCATION.—In sec. 20, T. 31 N., R. 2 W., at highway bridge 7 miles south of Shelby, Toole County.

DRAINAGE AREA.—2,610 square miles.

RECORDS AVAILABLE.—April 4, 1902, to January 12, 1908; April 23, 1911, to September 30, 1922; March 26, 1923, to September 30, 1926.

GAGES.—Stevens water-stage recorder on downstream side of pier on left bank.

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

CHANNEL AND CONTROL.—Bed composed of gravel and boulders; control shifts occasionally. Left bank steep and high; not subject to overflow. Right bank gently sloping; will be overflowed at extremely high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.8 feet at 10 a. m. June 24 (discharge, 2,240 second-feet); minimum stage, 2.19 feet at 5 p. m. August 22 (discharge, 109 second-feet).

1902–1908; 1911–1926: Maximum stage recorded, 14.9 feet June 24, 1907 (discharge, 29,500 second-feet); minimum stage, 1.5 feet August 20, 1919 (discharge, 10 second-feet).

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

DIVERSIONS.—The Valier-Montana Land & Water Co.'s Carey Act project and the Blackfeet project of the United States Bureau of Reclamation divert water from the principal tributaries above this station as do a number of smaller private diversions.

REGULATION.—Water is stored in reservoirs on tributaries above the station, the principal ones being Two Medicine Lake, Four Horns, Swift Dam, and Lake Francis.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined between 120 and 2,000 second-feet. Operation of water-stage recorder unsatisfactory for several periods. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records good except for estimated periods, for which they are fair.

Discharge measurements of Marias River near Shelby, Mont., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 17	2.48	223	May 20	3.40	772	July 24	2.42	199
May 3	4.30	1,620	June 18	3.42	785	Aug. 25	2.27	137

Daily discharge, in second-feet, of Marias River near Shelby, Mont., for the year ending September 30, 1926

Day	Mar.	Apr.	May	June	July	Aug.	Sept.
1		168	1,440	614	1,040	144	250
2		168	1,500	607	980	141	259
3		168	1,620	565	850	137	264
4		150	1,560	520	650	156	269
5		140	1,500	480	580	148	273
6		180	1,440	450	650	134	288
7		160	1,340	420	560	123	365
8		150	1,210	380	520	130	513
9		155	1,100	360	480	160	588
10		160	1,030	350	440	188	582
11		170	985	350	400	176	626
12		190	921	330	360	148	672
13		240	890	310	350	137	685
14		340	845	440	345	130	620
15		531	815	550	330	123	575
16		727	830	685	315	126	562
17	222	1,160	785	830	300	144	594
18	240	1,760	762	762	290	137	601
19	231	1,820	770	884	280	148	594
20	222	1,800	770	1,740	260	152	594
21	205	1,780	815	1,740	250	130	
22	197	1,700	868	1,680	240	123	
23	205	1,470	838	1,740	230	144	
24	218	1,250	830	2,180	210	141	
25	264	1,180	845	1,620	201	137	
26	269	1,100	792	1,440	192	134	
27	231	1,050	734	1,280	180	126	
28	222	1,070	713	1,140	168	119	
29	197	1,120	640	1,100	156	119	
30	164	1,300	620	1,070	148	134	
31	168		620		144	231	

NOTE.—Gage-height record missing or unreliable Apr. 4–14, Apr. 18 to May 2, June 3–15, and July 2–23; discharge estimated by comparison with records for Marias River near Brinkman. No records Oct. 1 to Mar. 16 and Sept. 21–30.

Monthly discharge of Marias River near Shelby, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
March 17–31	269	164	217	6,460
April	1,820	140	779	46,400
May	1,620	620	982	60,400
June	2,180	310	887	52,800
July	1,040	144	390	24,000
August	231	119	143	8,790
September 1–20	685	250	489	19,400
The period				218,000

MARIAS RIVER NEAR BRINKMAN, MONT.

LOCATION.—In NW. ¼ sec. 21, T. 29 N., R. 8 E., at Brinkman ranch, 21 miles south of Inverness on Great Northern Railway and 4 miles from Brinkman post office, Hill County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—October 6, 1921, to September 30, 1926.

GAGE.—Overhanging chain gage on right bank 500 feet downstream from ranch house; read by C. H. Brinkman.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and small boulders. Left bank high and clean. Right bank clean and is overflowed only at extremely high stage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.95 feet April 21 and June 22 (discharge, 1,960 second-feet); minimum stage, 0.68 foot August 26–29 (discharge, 106 second-feet).

1921–1926: Maximum open-water stage recorded, 5.65 feet May 23, 1925 (discharge, 6,480 second-feet); minimum stage, that of August 26–29, 1926.

A stage of about 18.0 feet was reached during flood of 1908, according to levels to high-water marks (discharge not determined).

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

DIVERSIONS.—Numerous diversions are made for irrigation from tributaries above this station, the principal ones being those for the Blackfeet project, and for the Valier Carey Act project.

REGULATION.—The principal storage reservoirs are Two Medicine Reservoir on Two Medicine River, Four Horns Reservoir on Badger Creek, Swift Reservoir on Birch Creek, and Lake Francis Reservoir on Dupuyer Creek.

ACCURACY.—Stage-discharge relation not permanent; affected by ice and by change of control. Two rating curves used are well defined above 150 second-feet; one applicable October 1 to December 3, and the other applicable March 21 to September 30. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

The following discharge measurements were made:

May 21, 1926: Gage height, 1.75 feet; discharge, 710 second-feet.

July 26, 1926: Gage height, 1.07 feet; discharge, 228 second-feet.

Daily discharge, in second-feet, of Marias River near Brinkman, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	432		349		176	1,340	680	938	153	132
2	472		349		168	1,430	630	830	147	159
3	451		354		166	1,520	587	785	141	176
4	432				165	1,580	570	714	141	179
5	397	500			208	1,510	498	596	147	179
6	386				250	1,380	423	570	144	196
7	375				292	1,320	409	655	141	247
8	375				267	1,260	370	506	141	344
9	397	631			262	1,240	357	468	135	453
10	397	648			257	1,100	357	453	135	546
11	397	597			257	1,070	338	423	147	570
12	386	542			257	1,010	334	396	162	538
13	386	512			267	976	321	357	172	498
14	403	542			287	911	309	338	147	562
15	409	478			344	830	338	321	141	546

Daily discharge, in second-feet, of Marias River near Brinkman, Mont., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	421	409			562	803	546	304	135	522
17	421	386			830	803	646	292	135	446
18	415	354			1,210	794	794	292	132	431
19	415	324			1,780	785	785	252	229	446
20	409	324			1,800	758	1,620	252	190	460
21	403	339		213	1,960	706	1,620	262	182	475
22	397	421		208	1,950	698	1,960	252	141	483
23	386	415		208	1,700	803	1,660	242	135	490
24	380	397		208	1,580	812	1,560	242	128	514
25	403	409		221	1,350	866	1,730	238	118	522
26	465	354		247	1,180	839	1,610	225	106	538
27	535	339		267	1,120	812	1,300	204	106	570
28	512	360		272	1,080	758	1,110	190	106	554
29	360	365		262	1,100	740	1,000	182	106	554
30	365	370		213	1,180	758	974	172	115	538
31	375			190		740		156	118	

NOTE.—Stage-discharge relation affected by ice Nov. 1–8, Apr. 3, 5, and 6; discharge estimated. Braced figures give mean discharge for period indicated.

Monthly discharge of Marias River near Brinkman, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	535	360	412	25,300
November	648	324	451	26,800
December 1–3	354	349	351	2,090
March 21–31	272	190	228	4,970
April	1,960	165	800	47,600
May	1,580	698	998	61,400
June	1,960	309	848	50,500
July	938	156	391	24,000
August	229	106	141	8,670
September	570	132	429	25,500

BIRCH CREEK AT SWIFT DAM, NEAR DUPUYER, MONT.

LOCATION.—Near southwest corner of sec. 23, T. 28 N., R. 10 W., just below Swift Dam, 20 miles west of Dupuyer, Pondera County, and 34 miles southwest of Valier.

DRAINAGE AREA.—75 square miles (measured on topographic maps).

RECORDS AVAILABLE.—March 26, 1913, to September 30, 1926.

GAGE.—Vertical iron gage on right bank 800 feet below dam; read by E. G. LaGrande. Overflow from spillway is referred to staff gage set vertically in concrete stilling box at west end of spillway crest. Zero of gage is at elevation of spillway crest, 4,947.00 feet above sea level.

DISCHARGE MEASUREMENTS.—Made from footbridge 300 feet above gage or by wading.

CHANNEL AND CONTROL.—Channel composed of clean, coarse gravel and boulders. Banks high at gage, not subject to overflow. Spillway is a concrete crest 2.0 feet wide and 379 feet long with channel leading from it cut in rock through a small pass north of dam.

EXTREMES OF DISCHARGE.—Maximum discharge during year, 428 second-feet June 23; minimum discharge, 0.6 second-foot October 1.

1913–1926: Maximum discharge, 5,275 second-feet June 21, 1916; no flow October 2, 1918, and January 2 and 3, 1920. Minimum flow is controlled and maximum partly regulated by valves at dam.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Two small ditches divert water just below dam and above gage; known locally as Cote ditch and Jones ditch.

REGULATION.—Flow is regulated by operation of gates at dam, except during extremely high stages, when water flows in overflow channel.

ACCURACY.—Stage-discharge relation permanent during year except as affected by ice. Rating curve well defined. Rating curve for spillway well defined except at extremely low stages. Gage heights are mean of two readings daily to hundredths. Daily discharge determined by applying mean daily gage height to rating table and adding the flow in the spillway channel. Records good except for extremely low stages, for which they are fair.

COOPERATION.—Complete field data furnished by the Valier-Montana Land & Water Co.

Discharge measurements of Birch Creek at Swift Dam, near Dupuyer, Mont., during the year ending September 30, 1926

Outlet channel			Spillway channel		
Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 16	1.68	4.7	May 14	0.29	176
Aug. 2	3.10	291	June 2	.20	93
Aug. 28	2.74	156	June 18	.35	227
Do	2.52	100			

Combined daily discharge, in second-feet, of Birch Creek outlet channel and spillway at Swift Dam, near Dupuyer, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	3.9				5.4	14	101	102	188	300	5.7
2	2.1	3.9				5.4	14	104	102	170	300	6.0
3	5.4	3.9				5.1	14	102	102	152	300	6.0
4	5.4	3.9				5.1	14	188	102	135	300	6.0
5	5.4	3.9				5.1	14	179	94	135	300	6.0
6	5.4	3.9				5.1	14	170	102	135	300	6.0
7	5.7	3.9				5.1	14	151	102	135	300	6.0
8	6.0	3.9				5.1	14	134	94	135	300	6.0
9	6.0	3.9				5.1	14	118	86	127	300	6.0
10	6.4	3.9				5.1	8.8	134	86	119	300	108
11	6.4	3.9				5.1	5.7	126	85	103	300	211
12	6.4	3.9				5.1	5.7	179	119	104	300	235
13	6.4	3.9				5.1	5.7	188	123	104	300	276
14	6.8	3.9				5.1	5.7	188	113	145	300	300
15	7.6	3.9			5	5.1	5.7	188	209	194	300	300
16	7.6	4.2	4	4		5.1	5.7	170	263	221	300	300
17	4.5	4.2				4.8	6.0	170	251	235	300	300
18	3.0	4.2				4.8	6.0	160	251	235	300	300
19	3.0	4.2				4.8	6.0	170	251	258	300	300
20	3.0	4.2				4.8	6.0	179	346	300	300	300
21	3.0	4.2				4.8	6.4	160	334	300	300	300
22	3.3	4.2				9.2	12	142	414	300	300	300
23	3.3	4.2				12	15	151	428	300	300	300
24	3.6	4.2				12	15	170	372	300	300	300
25	3.6	4.2				12	15	142	334	300	291	278
26	3.6	4.2				13	15	134	286	300	291	255
27	3.6	4.2				14	29	118	230	300	300	255
28	3.9	4.2				14	63	118	209	300	173	98
29	3.9	4.2			-------	14	72	118	188	300	5.4	3.0
30	3.9	4.2			-------	14	122	118	188	300	5.4	3.0
31	3.9	-------			-------	14	-------	102	-------	300	5.4	-------

NOTE.—The above table shows flow through outlet valves and over spillway. Water flowing in spillway channel Apr. 27 to July 14. Mean discharge during winter based on valve openings; braced figures give mean discharge for periods indicated.

Combined monthly discharge of Birch Creek outlet channel and spillway at Swift Dam, near Dupuyer, Mont., for the year ending September 30, 1929

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	7.6	0.6	4.60	283
November	4.2	3.9	4.05	241
December	----------	----------	4.0	246
January	----------	----------	4.0	246
February	----------	----------	5.0	278
March	14	4.8	7.56	465
April	122	5.7	18.6	1,110
May	188	101	147	9,040
June	428	85	199	11,800
July	300	103	214	13,200
August	300	5.4	267	16,400
September	300	3.0	169	10,100
The year	428	.6	87.6	63,400

BIRCH CREEK NEAR DUPUYER, MONT.

LOCATION.—In sec. 28, T. 29 N., R. 8 W., at Kepple ranch, half a mile above head gates of B Canal of Valier-Montana Land & Water Co., 12 miles northwest of Dupuyer, Pondera County, and 20 miles above mouth of Dupuyer Creek.

DRAINAGE AREA.—110 square miles (measured on topographic maps).

RECORDS AVAILABLE.—July 25, 1907, to September 30, 1926.

GAGE.—One-inch square steel bar graduated to tenths and driven into bed of stream; also a gage in well in bank at same section. Read by Wade Starleigh.

DISCHARGE MEASUREMENTS.—Made from cable 400 feet below gage or by wading.

CHANNEL AND CONTROL.—Channel composed of clean gravel. Control is gravel bar 250 feet below gage; slightly shifting. Banks of medium height, covered with brush, and subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.02 feet June 23 (discharge, 474 second-feet); minimum stage, 3.72 feet March 19 (discharge, 5 second-feet).

1907–1926: Maximum stage recorded, 10.0 feet June 21, 1916 (discharge estimated, 5,000 second-feet); minimum discharge, 3 second-feet April 7, 1921.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Two or three small ditches divert above station.

REGULATION.—Flow is largely controlled by operation of gates at Swift Dam, 12 miles upstream. This reservoir has a total capacity of 30,000 acre-feet.

ACCURACY.—Stage-discharge relation changed during winter; affected by ice. Two fairly well defined rating curves used; one applicable October 1–24, and the other applicable March 16 to September 30. Gage readings referred to winter gage October 25 to March 15. Gages read to hundredths once or twice daily. Daily discharge ascertained by applying daily gage height to rating tables. Open-water records good; winter records fair.

COOPERATION.—Complete data furnished by the Valier-Montana Land & Water Co.

Discharge measurements of Birch Creek near Dupuyer, Mont., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 22	4.09	18.2	Mar. 16	3.77	6.7	June 18	5.47	263
Dec. 10	[a] 3.66	8.5	May 14	5.26	201	June 21	5.76	368
Jan. 25	[b] 1.88	8.3	May 29	5.01	144	July 22	5.58	293

[a] Stage-discharge relation affected by ice.
[b] Measurement referred to winter gage; stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Birch Creek near Dupuyer, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	23					10	74	127	224	297	33
2	29	23					10	81	117	230	297	32
3	26	22					9	86	123	207	297	32
4	24	22					9	114	121	177	297	31
5	24	24					10	197	119	177	297	30
6	22	26					10	185	119	177	297	36
7	20	36					10	173	119	173	297	36
8	19	33				5	10	165	103	173	297	34
9	18	33					10	139	108	150	294	26
10	18	31					10	139	105	154	294	25
11	22	30					9	154	122	145	294	127
12	18	30					8	152	139	139	294	130
13	20	33					9	205	139	133	294	205
14	19	31					9	205	141	129	294	262
15	18	32			7		9	227	250	203	294	278
16	20	34	9	8		6	8	210	281	238	294	281
17	18	33				6	8	197	284	241	294	291
18	18	30				6	8	185	284	244	294	297
19	18	31				5	8	187	288	241	294	291
20	17	34				6	8	208	396	291	294	291
21	17	36				6	8	205	392	294	291	297
22	18	33				6	8	203	434	297	291	308
23	18	27				6	8	175	474	297	284	304
24	17	19				6	8	197	443	297	278	297
25	23	10				7	8	182	371	297	278	297
26	22					7	8	165	352	297	281	268
27	23					6	9	156	274	297	294	268
28	23	12				8	8	154	268	304	294	265
29	23				-------	8	14	148	244	308	85	80
30	21				-------	8	95	143	230	297	56	42
31	23	-------			-------	8	-------	131	-------	297	44	-------

NOTE.—Stage-discharge relation affected by ice Nov. 26 to Mar. 15 and Mar. 29–31; discharge estimated. Braced figures give mean discharge for periods indicated. Discharge estimated from records at Swift Dam July 3–5, Aug. 29, Sept. 12, 29 on account of missing gage heights.

Monthly discharge of Birch Creek near Dupuyer, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	34	17	21.0	1,290
November	36	10	25.9	1,540
December	----------	----------	[a] 9	553
January	----------	----------	[a] 8	492
February	----------	----------	[a] 7	389
March	8	----------	5.8	357
April	95	8	11.9	708
May	227	74	166	10,200
June	474	103	232	13,800
July	308	129	230	14,100
August	297	44	270	16,600
September	308	25	173	10,300
The year	474	----------	97.3	70,300

[a] Discharge estimated.

DUPUYER CREEK NEAR VALIER, MONT.

LOCATION.—In NE. ¼ NW. ¼ sec. 33, T. 29 N., R. 6 W., at Cowell ranch, 1,000 feet above diversion dam at head of D Canal from Dupuyer Creek to Lake Francis Reservoir and outlet of B Canal, which diverts water from Birch Creek to Dupuyer Creek, 6 miles below Sheep Creek and 11 miles southwest of Valier, Pondera County.

DRAINAGE AREA.—111 square miles (measured by Valier-Montana Land & Water Co.).

RECORDS AVAILABLE.—July 17, 1912, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on right bank; referred to vertical staff at same location.

DISCHARGE MEASUREMENTS.—Made from cable 1,400 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of fine gravel. Control is gravel bar 400 feet below gage; shifts occasionally.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.20 feet at 6 p. m. June 20 (discharge, 359 second-feet); minimum stage, 2.59 feet June 10–12 (discharge, 1 second-foot).

1912–1926: Maximum stage recorded, 6.5 feet June 21, 1916, determined by levels to floodmarks (discharge, 2,180 second-feet); no flow September 19, 1919.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—A number of small ditches divert water from Dupuyer Creek and tributaries for irrigation.

REGULATION.—Operation of head gates along creek controls flow.

ACCURACY.—Stage-discharge relation not permanent; affected by shifting control, by ice, and by growth of moss on control. Three rating curves used during year are fairly well defined. Daily gage heights determined by inspection of recorder graph during open-water periods. Vertical staff read to hundredths once daily during winter. Shifting-control method used October 9–26 and July 2 to September 30. Except for ice-affected periods daily discharge ascertained by applying mean daily gage height to rating table. Records fair.

COOPERATION.—Complete data furnished by Valier-Montana Land & Water Co.

Discharge measurements of Dupuyer Creek near Valier, Mont., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 10	3.22	55.4	Mar. 15	2.96	28.1	June 22	3.83	219
Dec. 9	3.09	39.6	Apr. 13	3.09	45.9	June 29	3.43	101
Dec. 28	[a] 3.18	21.0	June 4	2.74	7.1	July 16	[b] 3.10	36
Jan. 25	[a] 3.30	18.0	June 16	3.57	138	Sept. 9	[b] 3.18	41.7
Feb. 9	[a] 3.18	30.7						

[a] Stage-discharge relation affected by ice.
[b] Stage-discharge relation affected by growth of moss on control.

Daily discharge, in second-feet, of Dupuyer Creek near Valier, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	45	40	30	20	20	20	43	13	102	25	21
2	29	50	40	30	20	20	20	42	12	105	25	17
3	28	50	25	30	20	16	20	41	10	87	28	20
4	27	35	25	30	20	17	20	40	6	76	25	19
5	30	30	52	35	20	15	20	36	6	70	17	16
6	29	40	43	35	25	18	20	33	3	74	18	28
7	27	35	38	35	25	20	20	32	3	97	18	34
8	25	54	38	35	25	20	20	26	2	78	20	53
9	27	49	39	40	31	18	22	25	2	74	22	45
10	30	56	38	35	30	21	20	28	1	68	26	45
11	39	50	38	35	30	23	31	38	1	62	26	60
12	45	65	48	35	25	24	30	42	1	56	24	50
13	45	45	43	35	25	25	46	49	2	50	22	45
14	47	40	40	35	25	20	37	43	4	45	23	41
15	48	52	35	35	25	24	40	40	106	40	26	40
16	60	45	35	35	25	25	49	41	141	38	28	43
17	52	45	32	35	25	26	62	40	127	34	37	45
18	50	53	35	30	25	23	60	40	127	33	33	46
19	48	46	43	25	25	21	57	38	139	33	32	45
20	48	46	25	25	15	17	57	33	342	31	28	42
21	47	35	25	25	15	18	56	31	301	37	26	46
22	53	35	30	25	20	16	56	30	228	34	25	50
23	64	35	30	25	20	18	53	30	217	34	24	53
24	64	40	30	25	20	22	50	32	200	32	21	50
25	62	43	30	18	20	24	47	29	177	31	19	57
26	58	50	30	20	20	22	46	28	159	31	17	57
27	40	40	25	20	20	22	45	26	133	38	16	60
28	40	40	21	20	20	20	43	19	114	33	16	60
29	40	35	20	20	-------	10	42	15	102	32	16	59
30	40	35	25	20	-------	15	42	13	93	30	19	59
31	45	-------	25	20	-------	15	-------	12	-------	28	24	-------

NOTE.—Stage-discharge relation affected by ice Oct. 27 to Nov. 2, Nov. 4–7, 13, 14, 21–24, Nov. 27 to Dec. 4, Dec. 14, 15, Dec. 20 to Mar. 2, Mar. 5, 7, 8, Mar. 28 to Apr. 9; discharge estimated.

Monthly discharge of Dupuyer Creek near Valier, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	64	25	42.4	2,610
November	65	30	44.0	2,620
December	52	20	33.6	2,070
January	40	18	29.0	1,780
February	31	15	22.7	1,260
March	26	10	19.8	1,220
April	62	20	38.4	2,280
May	49	12	32.7	2,010
June	342	1	92.4	5,500
July	105	28	52.0	3,200
August	37	16	23.4	1,440
September	60	16	43.5	2,590
The year	342	1	39.5	28,600

DRY FORK OF MARIAS RIVER AT FOWLER, MONT.

LOCATION.—Near center of sec. 31, T. 30 N., R. 1 W., at highway bridge one-fourth mile northeast of railway depot at Fowler, Pondera County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—March 25 to August 20, 1920 (fragmentary), and March 2, 1921, to September 30, 1926.

GAGE.—Cable gage on downstream guardrail of new highway bridge, one-fourth mile above old bridge, used in 1920; read by Harry Kendall.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel. No definite control; shifts occasionally.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.73 feet at 7 a. m. June 21 (discharge, 315 second-feet); minimum stage, 0.20 foot December 26 (discharge, 0.4 second-foot).

1920–1926: Maximum stage recorded during period, 6.20 feet at 8 a. m. April 14, 1920 (discharge, 1,220 second-feet); no flow during periods in 1920, 1922, 1924, and 1925.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Practically entire normal flow diverted for irrigation.

REGULATION.—Water passing this station is largely seepage and waste from Valier-Montana Land & Water Co.'s irrigation project.

ACCURACY.—Stage-discharge relation not permanent; affected by ice and by shift in control. Rating curve well defined between 3 and 30 second-feet and fairly well defined between 30 and 120 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table except from April 22 to May 25 when shifting-control method was used. Records fair.

The following discharge measurements were made:

May 3, 1926: Gage height, 0.25 foot; discharge, 1.5 second-feet.

May 26, 1926: Gage height, 0.35 foot; discharge estimated, 1.5 second-feet.

Daily discharge, in second-feet, of Dry Fork of Marias River at Fowler, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	11	6.4	0.9	1.3	3.3	1.7	1.0	6.4	7.1	24	3.6
2	11	10	9.6	.8	1.7	4.5	2.1	.9	4.7	9.6	25	7.8
3	15	9.8	4.2	.7	1.8	7.4	1.1	1.4	3.6	9.6	26	5.7
4	10	8.6	3.6	.6	2.0	5.0	1.8	1.3	4.7	6.1	25	3.8
5	10	5.7	7.1	.5	1.7	1.7	2.3	1.7	5.0	4.5	19	3.8
6	8.1	4.2	8.6	.7	1.8	1.6	3.8	1.6	4.7	3.8	19	4.2
7	8.1	6.4	4.0	.6	2.4	2.6	3.1	2.3	3.3	4.2	19	7.8
8	11	8.1	3.3	.9	3.1	5.0	3.6	3.3	4.7	14	22	5.7
9	10	12	3.6	.9	4.7	5.4	5.4	6.7	7.8	5.0	24	8.6
10	9.1	7.8	2.9	1.0	5.4	4.7	5.4	7.8	5.0	5.4	23	19
11	13	8.6	9.6	1.3	4.7	4.0	5.7	11	2.3	5.4	22	37
12	17	7.4	6.4	1.1	4.0	4.2	12	7.4	4.5	5.7	22	33
13	21	5.0	3.3	1.8	4.5	4.0	14	4.2	23	6.7	15	25
14	26	2.6	3.8	1.8	2.1	3.8	12	2.9	102	8.1	16	19
15	33	4.2	2.9	1.7	1.1	3.6	9.1	2.4	33	10	21	11
16	26	10	4.2	1.6	1.3	4.0	8.6	2.3	92	11	33	12
17	16	9.6	4.7	1.8	1.8	5.7	6.4	2.0	69	11	33	10
18	11	4.2	.9	1.3	2.1	4.5	5.7	1.8	42	15	22	9.6
19	8.1	3.3	1.1	1.0	2.6	3.6	4.0	2.0	86	16	14	7.1
20	16	6.4	1.3	1.3	2.9	3.6	3.6	1.8	206	22	8.6	7.4
21	14	4.0	1.5	.8	2.3	2.9	3.1	1.1	217	26	5.7	6.1
22	14	4.5	1.7	.8	2.3	2.6	2.6	1.6	137	22	3.6	6.1
23	15	6.1	2.6	1.0	2.1	2.1	2.3	1.8	73	22	3.1	6.7
24	11	6.4	2.4	1.4	4.5	2.3	6.7	3.3	38	24	3.1	6.1
25	7.8	9.6	1.8	.9	6.1	2.3	3.3	5.0	18	28	2.1	6.1
26	6.1	4.2	.4	.9	7.4	2.4	2.1	2.9	16	26	1.6	7.8
27	4.5	5.4	1.0	1.3	6.1	2.1	1.7	1.8	15	26	1.3	7.4
28	4.5	4.0	1.6	1.1	6.7	2.3	1.3	2.4	8.1	26	.9	7.4
29	5.4	5.0	2.0	1.6	-------	1.0	.9	3.8	6.1	26	.8	6.4
30	6.4	4.7	1.5	1.7	-------	1.6	1.0	2.9	5.4	24	.7	7.1
31	12	-------	1.0	1.0	-------	1.6	-------	6.1	-------	26	4.0	-------

NOTE.—Stage-discharge relation slightly affected by ice Dec. 19–21, 27, Jan. 1–4, Mar. 31; discharge interpolated.

Monthly discharge of Dry Fork of Marias River at Fowler, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	33	4.5	12.7	781
November	12	3.3	6.63	395
December	9.6	.4	3.52	216
January	1.8	.5	1.12	69
February	7.4	1.1	3.23	179
March	7.4	1.0	3.40	209
April	14	.9	4.55	271
May	11	.9	3.18	196
June	217	2.3	41.4	2,460
July	28	3.8	14.7	904
August	33	.7	14.8	910
September	37	3.6	10.3	613
The year	217	.4	9.96	7,200

JUDITH RIVER BASIN

JUDITH RIVER NEAR UTICA, MONT.

LOCATION.—In NW. ¼ sec. 17, T. 13 N., R. 12 E., at private wagon bridge on Noel ranch, 10 miles above Utica, Judith Basin County, and 20 miles from Hobson, the nearest railway station.

DRAINAGE AREA.—326 square miles (measured on topographic maps).

RECORDS AVAILABLE.—October 1, 1919, to September 30, 1926.

GAGE.—Wire gage fastened to downstream handrail of bridge; read by Helen Noel.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Gravel bar forms low-water control; shifting. One channel at all stages. Banks are low, wooded, and subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.95 feet at 4.20 p. m. May 7 (discharge, 434 second-feet); minimum stage, 1.33 feet at 8.30 a. m. March 21 (discharge, 7.7 second-feet).

1919–1926: Maximum stage recorded, 4.60 feet June 9, 1922 (discharge, 568 second-feet); minimum stage, 1.00 foot November 16 to December 1, 1919, and March 31 to April 20, 1922 (discharge, 0.5 second-foot).

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

DIVERSIONS.—Several ditches divert water above station for irrigation.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent; affected by a change in control during winter. Two rating curves used. Curve applicable October 1 to December 31 is well defined between 13 and 115 second-feet; curve applicable March 21 to September 30 is well defined. Gage read to hundredths or half-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

The following discharge measurements were made:

April 15, 1926: Gage height, 2.28 feet; discharge, 77 second-feet.

July 28, 1926: Gage height, 2.27 feet; discharge, 74 second-feet.

Daily discharge, in second-feet, of Judith River near Utica, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	18.4	12.2	------	8.6	217	169	85	70	34
2	22	16.0	12.2	------	9.8	243	160	85	65	34
3	22	11.8	12.6	------	10.4	311	151	79	63	35
4	22	10.6	12.6	------	11.1	332	143	77	62	38
5	20	11.0	12.6	------	11.1	383	129	78	62	38
6	21	11.4	12.6	------	11.7	404	122	82	61	38
7	22	12.2	12.6	------	12.0	426	122	134	59	36
8	22	12.2	12.6	------	12.0	318	120	165	61	42
9	22	11.4	11.8	------	12.4	318	112	192	62	38
10	22	11.0	11.8	------	12.4	301	112	192	65	38
11	22	11.0	11.8	------	21	275	109	180	62	38
12	22	11.4	11.8	------	32	265	86	158	61	38
13	23	11.8	11.8	------	35	252	88	149	57	38
14	23	12.2	11.8	------	50	247	96	138	53	40
15	22	11.8	11.4	------	72	247	89	131	51	42
16	22	11.8	11.4	------	126	247	89	127	54	43
17	24	12.6	11.0	------	229	256	95	119	56	46
18	24	12.6	11.0	------	299	258	106	109	59	47
19	25	11.8	11.0	------	313	252	112	106	59	45
20	24	12.6	11.0	------	299	252	122	101	51	47
21	25	12.6	10.6	8.0	289	258	109	99	47	44
22	25	12.6	9.8	8.6	284	265	109	99	47	42
23	26	12.2	9.8	8.6	258	265	109	98	45	42
24	27	11.8	10.2	8.3	214	270	106	93	42	40
25	26	12.2	10.2	8.6	210	282	104	89	47	38
26	27	12.6	9.4	8.6	186	258	96	88	42	39
27	25	12.6	9.4	8.6	196	258	85	86	40	38
28	24	11.8	9.4	8.3	217	225	82	81	38	39
29	22	12.2	9.4	8.3	217	200	82	82	38	38
30	21	12.6	9.4	8.0	200	184	82	76	34	42
31	20	------	9.4	8.0	------	174	------	74	34	------

Monthly discharge of Judith River near Utica, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	27	20	23.1	1,420
November	18.4	10.6	12.3	732
December	12.6	9.4	11.1	682
March 21-31	8.6	8.0	8.35	182
April	313	8.6	129	7,680
May	426	174	272	16,700
June	169	82	110	6,550
July	192	74	111	6,820
August	70	34	53.1	3,260
September	47	34	39.9	2,370

WOLF CREEK NEAR STANFORD, MONT.

LOCATION.—In SE. ¼ sec. 26, T. 16 N., R. 11 E., at buildings on ranch of A. K. Neubert, 6 miles southwest of Stanford, Judith Basin County.

DRAINAGE AREA.—120 square miles (measured on topographic map).

RECORDS AVAILABLE.—March 16, 1920, to September 30, 1926.

GAGE.—Cantilever chain gage; read by Armin K. Neubert.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel. Banks clean and will be overflowed only at extreme stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.09 feet at 6 a. m. July 8 (discharge, 101 second-feet); minimum discharge, 4.8 second-feet April 15.

1920–1926: Maximum stage recorded, 3.35 feet June 16, 1920 (discharge, 322 second-feet); no flow July 26 to September 30, 1921.

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

DIVERSIONS.—Numerous small diversions for irrigation above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent; affected by shifting control. Standard rating curve fairly well defined. Gage read about 5 times a week to hundredths, with occasionally two readings for one day. Daily discharge ascertained by applying gage height to rating table October 1 to December 20 and by shifting-control method April 14 to September 30. Discharge interpolated for days of missing gage heights. Records poor.

The following discharge measurements were made:

April 14, 1926: Gage height, 1.28 feet; discharge, 5.2 second-feet.

July 28, 1926: Gage height, 1.31 feet; discharge, 8.5 second-feet.

Daily discharge, in second-feet, of Wolf Creek near Stanford, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Apr.	May	June	July	Aug.	Sept.
1	a 6.2	6.2	a 6.2		20	42	14	a 8.6	a 7.0
2	a 6.2	6.2	6.2		25	34	a 14	8.6	a 7.0
3	6.2	a 6.2	a 6.2		29	28	14	8.6	7.0
4	a 6.2	6.2	6.2		71	a 24	12	a 8.6	a 7.0
5	6.2	a 5.9	a 6.2		82	21	a 12	8.6	a 7.0
6	a 6.2	5.6	a 6.2		78	a 20	11	a 8.6	7.0
7	6.2	a 5.6	6.2		68	18	12	8.6	a 7.0
8	a 6.2	a 5.6	6.2		61	17	99	a 8.6	7.0
9	6.2	5.6	a 6.2		55	a 17	a 96	8.6	a 7.0
10	a 6.2	a 5.9	a 6.2		52	17	93	a 9.0	7.0
11	a 6.2	6.2	a 6.2		55	a 16	a 82	9.4	a 7.0
12	6.2	6.2	6.2		a 54	15	71	a 9.7	a 7.0
13	a 6.2	a 6.2	a 6.2		52	a 14	61	10	a 7.0
14	6.2	6.2	6.2	5.1	52	14	58	10	a 7.0
15	a 6.2	a 6.2	a 6.2	4.8	a 52	13	a 54	a 9.8	7.0
16	6.2	6.2	6.2	5.4	a 52	12	49	a 9.6	a 7.0
17	a 6.2	a 6.2	a 6.0	19	52	a 12	41	9.4	a 7.0
18	6.2	6.2	a 5.8	27	49	13	a 35	a 9.0	a 7.0
19	6.2	a 6.2	5.6	27	a 49	16	29	8.6	a 7.0
20	-------	6.2	-------	22	49	a 15	22	a 8.6	a 7.0
21	-------	6.2	-------	a 22	49	14	16	8.6	7.0
22	-------	a 6.2	-------	23	a 49	14	13	a 8.2	7.0
23	-------	6.2	-------	a 22	a 49	a 14	a 12	7.8	a 7.0
24	-------	6.2	-------	22	49	a 14	12	a 7.8	a 7.0
25	-------	6.2	-------	25	55	a 14	a 11	7.8	7.0
26	-------	a 6.2	-------	25	55	14	10	a 7.8	a 7.0
27	-------	6.2	-------	a 24	52	a 14	9.4	7.8	7.0
28	-------	a 6.2	-------	23	52	14	8.6	7.8	a 7.0
29	-------	a 6.2	-------	23	a 50	a 14	a 8.6	a 7.8	a 7.0
30	-------	6.2	-------	23	49	14	8.6	7.8	7.0
31	-------	-------	-------	-------	43	-------	8.6	7.0	-------

a Discharge interpolated on account of missing gage heights.

Monthly discharge of Wolf Creek near Stanford, Mont., for the year ending September, 30 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 1-19	6.2	6.2	6.20	234
November	6.2	5.6	6.10	363
December 1-19	6.2	5.6	6.14	231
April 14-30	27	4.8	20.1	678
May	82	20	51.9	3,190
June	42	12	17.3	1,030
July	99	8.6	32.2	1,980
August	10	7.0	8.60	529
September	7.0	7.0	7.00	417

MUSSELSHELL RIVER BASIN

NORTH FORK OF MUSSELSHELL RIVER AT DELPINE, MONT.

LOCATION.—Near south quarter-section corner of sec. 35, T. 10 N., R. 9 E., at Delpine, Meagher County.

DRAINAGE AREA.—48 square miles (measured on topographic map).

RECORDS AVAILABLE.—May 1, 1909, to October 30, 1911, and March 22, 1922, to September 30, 1926.

GAGE.—Vertical staff, at observer's house one-fourth mile below old gage; read by C. F. Roman.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Channel composed of gravel and small boulders; control is riffle of same material 20 feet below gage. Banks are low at gage and covered with overhanging brush.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.54 feet April 11 (discharge, from extension of rating curve, 266 second-feet); minimum stage, 1.58 feet September 7 (discharge, 4.2 second-feet).

1909–1911; 1922–1926: Maximum discharge, from extension of rating curve, 545 second-feet July 21, 1923; minimum discharge, 2.2 second-feet December 15–17, 1922.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—No data.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during winter; affected by ice. Two rating curves used. Curve applicable October 1–21 is fairly well defined between 7 and 35 second-feet; curve applicable October 22 to September 30 is well defined between 6 and 50 second-feet. Gage read to even hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records fair.

The following discharge measurements were made:

April 19, 1926: Gage height, 2.75 feet; discharge, 42.9 second-feet.

June 8, 1926: Gage height, 1.76 feet; discharge, 7.3 second-feet.

July 30, 1926: Gage height, 1.84 feet; discharge, 8.2 second-feet.

Daily discharge, in second-feet, of North Fork of Musselshell River at Delpine, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.7	15.2	20.0	-------	10	34	18.4	11.1	9.4	5.7
2	7.7	15.2	14.5	-------	10	34	15.9	11.6	9.0	5.7
3	7.7	15.9	14.0	-------	10	36	14.0	10.7	8.6	5.7
4	8.1	17.3	13.5	-------	10	36	10.7	10.2	8.6	5.4
5	8.1	14.5	13.0	-------	10	34	10.2	10.7	8.2	4.8
6	7.7	15.2	13.0	-------	11.6	36	9.8	10.2	8.2	4.5
7	8.1	17.3	13.0	-------	12.0	36	8.6	10.7	8.6	4.2
8	8.6	21	12.0	-------	17.0	38	7.1	11.1	8.2	5.4
9	8.6	21	11.6	-------	38	40	9.0	11.1	8.6	5.1
10	9.0	17.3	11.6	-------	236	38	7.4	11.1	8.2	5.4
11	9.4	15.9	11.1	-------	266	36	7.1	10.7	8.2	5.7
12	9.9	18.4	11.1	-------	197	34	7.4	10.7	8.6	6.4
13	9.4	17.6	11.1	-------	141	36	8.6	10.2	8.6	6.0
14	9.4	17.3	10.7	-------	149	34	9.0	9.8	8.2	7.8
15	9.4	17.3	11.1	-------	55	34	9.4	9.4	8.2	8.6
16	9.9	17.3	11.1	-------	56	36	11.6	9.8	7.8	10.7
17	10.3.	17.6	9.8	-------	50	34	11.1	9.4	8.2	11.1
18	10.8	18.4	9.8	-------	46	32	11.1	9.8	7.8	11.1
19	10.8	18.4	13.5	-------	46	30	11.6	9.4	7.8	9.4
20	11.2	19.2	14.0	-------	52	30	11.1	9.8	7.8	9.8
21	11.2	19.2	14.5	73	48	32	11.6	9.8	7.4	9.4
22	12.0	17.6	14.5	75	49	29	12.0	9.4	7.4	9.0
23	12.0	18.4	15.9	94	50	29	11.6	9.4	7.1	8.2
24	12.5	17.6	17.6	61	52	28	12.5	9.0	7.1	9.4
25	12.5	14.5	19.2	20	44	27	10.7	8.6	6.7	10.7
26	13.0	14.0	19.2	17	38	27	9.8	8.2	6.7	10.7
27	12.5	14.0	19.2	21	36	26	9.0	7.4	6.7	10.2
28	12.5	14.0	20.0	16	36	26	7.8	9.0	6.0	9.8
29	13.0	18.4	20.0	12	34	25	7.4	8.6	6.0	10.2
30	15.2	19.2	14.5	10	34	24	7.1	9.0	5.7	9.8
31	14.5	-------	14.5	10	-------	21	-------	9.0	5.7	-------

NOTE.—Stage-discharge relation affected by ice Mar. 29 to Apr. 5; discharge estimated. No record Jan. 1 to Mar. 20.

Monthly discharge of North Fork of Musselshell River at Delpine, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	15.2	7.7	10.4	640
November	21.0	14.0	17.1	1,020
December	20.0	9.8	14.1	867
March 21–31	94	10	37.2	812
April	266	10	61.4	3,650
May	40	21	32.0	1,970
June	18.4	7.1	10.3	613
July	11.6	7.4	9.84	605
August	9.4	5.7	7.72	475
September	11.1	4.2	7.86	468

MUSSELSHELL RIVER AT HARLOWTON, MONT.

LOCATION.—In sec. 26, T. 8 N., R. 15 E., at highway bridge 1 mile south of Harlowton, Wheatland County.

DRAINAGE AREA.—1,130 square miles (measured on topographic map).

RECORDS AVAILABLE.—July 11, 1907, to September 30, 1926.

GAGE.—Chain gage on upstream side of highway bridge; read by Athan J. Sackopoulos.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel; bar or ridge crosses channel 75 feet below gage; shifts. Banks subject to overflow at high stage. Water confined to one channel under bridge.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.30 feet at 7.30 a. m. May 22 (discharge, 873 second-feet); minimum stage, 2.26 feet August 8 (discharge, 6 second-feet).

1907–1926: Maximum stage recorded, 6.3 feet (corrected to present datum) May 27, 1917 (discharge, 4,020 second-feet); stream dry August 4–11, 1910, and September 11–15, 1919.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Numerous ditches divert from tributaries and from Musselshell River above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation affected by ice and by shifting control. Standard rating curve fairly well defined between 16 and 1,600 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table, using the shifting-control method. Records fair.

The following discharge measurements were made:

April 16, 1926: Gage height, 3.96 feet; discharge, 471 second-feet.

June 7, 1926: Gage height, 3.22 feet; discharge, 114 second-feet.

July 30, 1926: Gage height, 2.57 feet; discharge, 17.8 second-feet.

Daily discharge, in second-feet, of Musselshell River at Harlowton, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	106	101			58	64	670	381	106	12	14
2	69	118	94			61	81	733	298	162	12	14
3	70	116	73			64	64	724	256	122	13	16
4	67	96	67			59	62	697	210	106	13	18
5	67	92	94	60		64	67	733	150	101	12	18
6	72	92	99			58	62	798	125	94	11	19
7	79	90	88			53	59	788	108	92	8	21
8	83	86	86			61	59	724	99	111	6	31
9	81	106	84	83		55	64	706	70	140	7	42
10	84	106	84	101	65	58	77	751	65	118	12	46
11	88	106	81	111		61	108	742	54	94	13	47
12	101	106	79	111		59	244	706	52	88	14	64
13	108	92	81	106		59	304	622	45	79	16	58
14	104	90	86	99		61	313	575	57	73	16	52
15	104	77	48	101		58	321	628	90	61	13	52
16	99	96	111	106		58	426	688	118	48	13	42
17	96	94	83	96		62	556	751	96	45	18	64
18	94	90	79	99		86	604	760	111	38	23	73
19	92	86	77	108	62	83	642	770	111	36	28	67
20	92	86	79	118	70	75	697	817	175	40	33	64
21	92	83	61	113	62	81	670	864	196	40	26	59
22	94	62	73	129	59	86	651	864	188	35	26	67
23	108	84	106	126	52	113	613	826	167	30	26	67
24	104	88	101	124	28	162	604	770	140	27	22	64
25	125	79	104	122	47	154	490	864	158	25	22	67
26	122	86	108	125	52	113	417	808	143	23	20	70
27	62	96	84	111	57	90	471	688	129	21	18	73
28	90	118	79		67	88	490	604	113	23	15	72
29	104	113	79	80	-------	88	518	594	104	18	15	72
30	125	104	60		-------	92	546	462	99	18	15	73
31	147	-------			-------	81	-------	426	-------	14	12	-------

NOTE.—Stage-discharge relation affected by ice Dec. 30 to Jan. 8, Jan. 23, 24, Jan. 28 to Feb. 18; discharge estimated. Braced figures give mean discharge for periods indicated.

Monthly discharge of Musselshell River at Harlowton, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	147	62	93.4	5,740
November	118	62	94.8	5,640
December	111	48	83.5	5,130
January	129		93.2	5,730
February	70	28	61.6	3,420
March	162	53	77.5	4,770
April	697	59	345	20,500
May	864	426	715	44,000
June	381	45	137	8,150
July	162	14	65.4	4,020
August	33	6	16.5	1,010
September	73	14	50.2	2,990
The year	864	6	153	111,000

CHECKERBOARD CREEK AT DELPINE, MONT.

LOCATION.—In NE. ¼ sec. 2, T. 9 N., R. 9 E., at highway bridge one-fourth mile southeast of Delpine, Meagher County, half a mile above its confluence with North Fork of Musselshell River, and 15 miles northwest of Martinsdale.

DRAINAGE AREA.—24.3 square miles (measured on topographic map).

RECORDS AVAILABLE.—March 22, 1922, to September 30, 1926. May 26, 1909, to December 31, 1911, and May 21, 1913, to December 31, 1914, at ranch formerly owned by J. A. Porter 2 miles above present station, where drainage area is 21.3 square miles.

GAGE.—Vertical staff fastened to upstream left abutment of bridge; read by C. F. Roman.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Channel composed chiefly of fine sand. Control composed of boulders at downstream side of bridge; subject to shift. Banks low and covered with overhanging brush, but highway grades at both ends of bridge confine all water to one channel at gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.02 feet at 6 p. m. April 21 (discharge, 49 second-feet); minimum stage, 0.48 foot September 4 (discharge, 2.3 second-foot).

1909–1911; 1913–14; 1922–1926: Maximum stage recorded, 3.1 feet at 5.30 p. m. July 16, 1923 (discharge, 167 second-feet); minimum stage, 0.38 foot September 10, 1924 (discharge, 0.7 second-foot).

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

DIVERSIONS.—No data.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during winter. Rating curve applicable October 1 to December 31 is well defined between 2 and 27 second-feet; curve applicable March 21 to September 30 is fairly well defined between 3.5 and 48 second-feet. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records fair.

The following discharge measurements were made:

April 19, 1926: Gage height, 1.86 feet; discharge, 38.7 second-feet.

June 8, 1926: Gage height, 1.24 feet; discharge, 11.9 second-feet.

July 30, 1926: Gage height, 0.64 foot; discharge, 3.9 second-feet.

Daily discharge, in second-feet, of Checkerboard Creek at Delpine, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.7	5.8	5.8		6.9	37	15	11	4.4	2.7
2	2.7	5.8	4.5		6.9	36	14	11	4.2	2.7
3	2.9	5.5	4.3		6.7	35	14	11	3.9	2.5
4	3.0	5.5	4.1		6.4	37	13	10	3.9	2.3
5	3.0	6.1	4.1		6.9	39	13	10	4.2	2.9
6	3.0	7.3	3.8		5.0	39	13	9.6	4.2	2.9
7	2.9	6.1	3.8		6.7	40	13	10	3.9	2.9
8	3.0	5.5	3.4		7.2	40	12	10	3.9	3.3
9	3.2	5.8	3.4		13	41	11	9.3	4.2	2.9
10	3.2	5.5	3.6		22	42	11	8.5	3.9	3.1
11	3.4	5.5	3.6		26	41	11	8.5	3.9	3.3
12	3.6	5.8	3.4		18	40	11	7.9	4.2	3.3
13	3.6	5.5	3.6		20	39	12	7.7	3.9	3.1
14	3.8	5.5	3.4		19	39	12	7.4	3.9	3.3
15	3.8	5.8	3.4		14	37	12	7.4	4.2	3.7
16	3.6	5.8	3.4		41	39	12	7.7	4.2	4.2
17	3.6	6.1	3.3		40	40	13	7.4	3.9	4.4
18	3.8	6.4	3.3		39	37	13	7.2	3.9	4.4
19	4.1	6.1	3.6		37	33	13	7.2	3.7	4.6
20	4.1	6.4	3.8		41	28	13	7.4	3.7	4.6
21	3.8	6.4	4.3	7.2	49	26	13	7.2	3.7	4.8
22	3.8	6.1	4.5	8.2	47	24	14	7.2	3.9	5.0
23	3.6	5.8	4.8	9.6	42	39	14	6.9	3.7	4.6
24	3.6	4.5	5.0	8.2	41	35	13	6.7	3.7	4.4
25	3.4	4.3	5.3	9.3	40	28	13	6.4	3.5	5.0
26	3.4	4.3	5.3	8.2	37	28	12	6.2	3.3	5.7
27	3.4	4.5	4.5	7.9	36	19	12	5.9	3.3	6.2
28	3.6	4.8	4.5	7.7	35	18	11	5.5	3.3	5.9
29	3.6	5.0	4.3	6.9	35	16	11	4.8	3.3	5.9
30	5.5	5.5	4.3	8.2	40	16	11	3.9	3.1	7.2
31	5.3		4.3	7.2		16		4.2	2.7	

Monthly discharge of Checkerboard Creek at Delpine, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	5.5	2.7	3.55	218
November	7.3	4.3	5.63	335
December	5.8	3.3	4.09	251
March 21-31	9.6	7.2	8.05	176
April	49	5.0	26.2	1,560
May	42	16	33.0	2,030
June	15	11	12.5	744
July	11	3.9	7.78	478
August	4.4	2.7	3.80	234
September	7.2	2.3	4.06	242

AMERICAN FORK NEAR HARLOWTON, MONT.

LOCATION.—In SW. ¼ sec. 12, T. 7 N., R. 15 E., on George Glennie's ranch, half a mile above junction of American Fork and Lebo Creek, and 5 miles southeast of Harlowton, Wheatland County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—July 28, 1907, to December 31, 1911; May 19, 1913, to December 31, 1913; and May 3, 1924, to September 30, 1926.

GAGE.—Chain gage on downstream side of private bridge one-fourth mile from observer's house; read by Marie Glennie.

DISCHARGE MEASUREMENTS.—Made by wading or from bridge.

CHANNEL AND CONTROL.—Stream bed of gravel and clay; subject to shift. Banks high and not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.40 feet at 8.30 a. m. May 26 (discharge, 111 second-feet); creek standing in pools or dry July 20–22 and August 2–16.

1907–1911; 1913; 1924–1926: Maximum stage recorded, 4.40 feet June 1, 1908 (discharge, 870 second-feet); creek dry at various times.

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

DIVERSIONS.—Some diversions for irrigation above the gage.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent; affected by ice and by growth of moss on control. Rating curve fairly well defined. Gage read to even hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table except from May 27 to August 16, when shifting-control method was used on account of growth of grass on control. Records fair except from May 27 to August 16, for which they are poor.

The following discharge measurements were made:

April 16, 1926: Gage height, 0.80 foot; discharge, 2.4 second-feet.

June 7, 1926: Gage height, 0.90 foot; discharge estimated, 1.0 second-foot.

July 30, 1926: Gage height, 0.49 foot; discharge estimated, 0.1 second-foot.

Daily discharge, in second-feet, of American Fork near Harlowton, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.6	5.5	4.3	-------	2.0	39	28	2.6	0.1	1.5
2	2.3	5.5	3.9	-------	2.0	18	24	4.9	.0	1.5
3	2.3	5.1	3.9	-------	2.6	18	20	1.3	.0	1.5
4	2.9	5.1	3.5	-------	3.9	43	6.0	1.1	.0	3.9
5	3.2	5.1	3.5	-------	3.9	63	1.7	1.0	.0	3.2
6	3.5	4.7	3.5	-------	3.5	49	1.4	1.0	.0	2.0
7	3.5	4.7	3.9	-------	3.2	51	1.0	1.0	.0	3.5
8	3.9	4.7	3.9	-------	3.2	51	1.1	.9	.0	4.3
9	3.9	4.7	3.9	-------	3.5	45	1.1	1.0	.0	4.7
10	3.9	4.3	4.3	-------	3.9	63	.6	.8	.0	3.5
11	3.9	4.3	4.3	-------	9.2	51	.7	.6	.0	4.7
12	4.3	4.3	3.9	-------	5.1	40	.7	.6	.0	5.1
13	4.3	4.3	3.9	-------	5.1	63	.7	.6	.0	5.1
14	4.3	3.9	4.3	-------	4.3	55	.7	.8	.0	4.3
15	3.9	4.7	4.3	-------	3.5	59	2.6	.7	.0	3.5
16	3.9	4.3	4.7	-------	2.3	40	1.9	.7	.0	3.5
17	3.5	4.7	4.7	-------	2.6	40	2.2	.5	1.2	5.1
18	3.9	4.3	4.3	-------	2.0	45	1.0	.5	5.5	5.5
19	3.2	3.9	4.3	-------	2.0	60	1.1	.3	6.0	5.1
20	3.2	3.9	4.0	-------	1.8	65	1.1	.0	3.2	4.7
21	3.2	3.9	4.0	2.0	2.3	79	1.2	.0	3.2	4.7
22	3.9	4.3	4.3	2.0	15	86	3.5	.0	2.0	5.5
23	3.9	4.3	4.7	2.0	23	92	2.0	.2	1.8	3.5
24	3.9	4.7	5.1	2.0	23	92	2.0	.2	1.5	3.5
25	4.3	5.5	5.1	2.0	23	98	2.0	1.6	.5	5.1
26	4.3	4.3	5.1	2.3	23	111	3.7	1.6	.5	5.1
27	4.7	4.3	5.1	2.3	18	73	3.7	1.6	.4	5.5
28	4.7	4.3	5.5	2.3	18	69	3.4	.5	.4	5.1
29	5.1	4.3	5.5	2.3	25	53	3.2	.2	.8	5.5
30	5.1	4.3	6.0	2.3	39	34	2.6	.1	1.0	5.5
31	5.5	-------	5.0	2.6	-------	30	-------	.1	1.0	-------

NOTE.—Stage-discharge relation affected by ice Dec. 20, 21, 31, Apr. 1, 2; discharge estimated.

Monthly discharge of American Fork near Harlowton, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	5.5	2.3	3.84	236
November	5.5	3.9	4.54	270
December	6.0	3.5	4.41	271
March 21–31	2.6	2.0	2.19	47.8
April	39	2.0	9.30	553
May	111	18	57.3	3,520
June	28	.6	4.16	248
July	4.9	.0	.87	53.5
August	6.0	.0	.94	57.8
September	5.5	1.5	4.17	248

LEBO CREEK NEAR HARLOWTON, MONT.

LOCATION.—In SW. ¼ sec. 12, T. 7 N., R. 15 E., at farm bridge on the Glennie ranch, half a mile above junction with American Fork, and 5 miles southeast of Harlowton, Wheatland County.

DRAINAGE AREA.—48 square miles.

RECORDS AVAILABLE.—July 28, 1907, to December 31, 1911; May 19 to November 22, 1913; May 3, 1924, to September 30, 1926.

GAGE.—Vertical staff on right bank at farm bridge; read by Marie Glennie. Present datum 0.71 foot lower than that used from 1907 to 1913.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Channel composed of clay with gravel and sand. Control is gravel bar 100 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.35 feet November 1–3 (discharge, 32 second-feet); minimum stage, 1.45 feet August 1–17 (discharge, 2.1 second-feet).

1907–1911; 1913; 1924–1926: Maximum stage recorded, 5.30 feet (old datum) May 31, 1908 (discharge estimated from extension of rating curve, 270 second-feet); minimum stage, 0.43 foot (old datum) July 23–25, 1910 (discharge, 0.4 second-foot).

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

DIVERSIONS.—Numerous ditches divert water for irrigation above gage.

REGULATION.—Operation of small storage reservoir at headwaters of creek affects flow.

ACCURACY.—Stage-discharge relation changed during winter; affected by ice. Two rating curves used. Curve applicable October 1 to December 31 is well defined between 2 and 27 second-feet; curve applicable March 27 to September 30 is well defined between 2 and 20 second-feet. Gage read to half-tenths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

The following discharge measurements were made:

April 16, 1926: Gage height, 1.90 feet; discharge, 13.2 second-feet.

June 7, 1926: Gage height, 1.65 feet; discharge, 5.2 second-feet.

July 30, 1926: Gage height, 1.53 feet; discharge, 3.1 second-feet.

Daily discharge, in second-feet, of Lebo Creek near Harlowton, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.6	32	18		20	11	11	8.0	2.1	11
2	9.6	32	18		20	11	8.0	8.0	2.1	11
3	9.6	32	18		20	11	8.0	8.0	2.1	11
4	13	28	18		20	11	8.0	8.0	2.1	15
5	13	28	18		20	11	8.0	8.0	2.1	15
6	13	28	18		20	11	8.0	8.0	2.1	15
7	13	28	18		20	11	6.5	8.0	2.1	24
8	13	28	20		20	11	5.3	8.0	2.1	24
9	13	22	18		20	11	5.3	8.0	2.1	20
10	13	22	18		20	11	5.3	8.0	2.1	20
11	13	22	18		24	15	5.3	8.0	2.1	22
12	13	22	18		20	20	5.3	8.0	2.1	20
13	18	22	18		15	20	5.3	8.0	2.1	24
14	18	22	18		15	20	5.3	5.3	2.1	22
15	18	22	18		11	20	11	8.0	2.1	22
16	18	28	18		12	20	8.0	5.3	2.1	22
17	18	28	20		15	15	8.0	4.2	2.1	22
18	18	22	20		15	11	5.3	4.2	5.3	30
19	18	22	22		11	11	5.3	4.2	15	24
20	18	22	22		11	11	5.3	3.4	11	24
21	18	22	20		11	11	5.3	3.4	11	20
22	22	22	18		11	11	5.3	3.4	8.0	24
23	22	22	9.6		11	11	8.0	3.4	8.0	20
24	22	20	22		11	11	8.0	3.4	8.0	20
25	28	20	22		11	15	5.3	3.4	8.0	24
26	28	22	22		11	15	5.3	3.4	8.0	24
27	} 25	22	22	20	11	11	5.3	3.4	8.0	20
28		22	28	20	11	11	5.3	3.4	6.5	20
29		20	28	20	11	11	5.3	3.4	6.5	24
30		20	28	20	11	11	5.3	3.4	8.0	24
31			25	20		11		3.4	11	

NOTE.—Discharge estimated Oct. 27–31 and Dec. 31 on account of ice. Braced figure gives mean discharge for period indicated. Discharge interpolated Apr. 4.

Monthly discharge of Lebo Creek near Harlowton, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	28	9.6	17.9	1,100
November	32	20	24.1	1,430
December	28	9.6	20.0	1,230
March 27–31	20	20	20.0	198
April	24	11	15.3	910
May	20	11	13.0	799
June	11	5.3	6.53	389
July	8.0	3.4	5.68	349
August	15	2.1	5.10	314
September	30	11	20.6	1,230

FLATWILLOW CREEK NEAR FLATWILLOW, MONT.

LOCATION.—In NE. ¼ sec. 19, T. 12 N., R. 25 E., at private wagon bridge on Flatwillow Land & Livestock Co.'s ranch, 12 miles above Flatwillow, Petroleum County, and 30 miles north of Roundup.

DRAINAGE AREA.—About 195 square miles (measured on 1916 map of Fergus County).

RECORDS AVAILABLE.—April 17, 1918, to September 30, 1926. May 1, 1911, to April 17, 1918, records were kept at station 4 miles downstream and below headworks of canal of Flatwillow Carey Act project.

GAGE.—Overhanging chain gage on left bank 300 feet above bridge; read by Percy Koerner.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Banks fairly high and covered with willows. Stream bed composed of adobe and gravel. Low-water control is a gravel riffle; shifts occasionally.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.96 feet at 9.10 a. m. July 9 (discharge, 69 second-feet); no flow at various times when all water was diverted for irrigation.

1911–1926: Maximum stage recorded, 9.0 feet, estimated by observer at old location June 4–10, 1917 (discharge, 454 second-feet in creek and 500 second-feet additional in canal); no flow July 14–16, 1925, and at various times in 1926, when all water was diverted for irrigation.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Several small diversions above station which may occasionally divert all the water at low stage.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during year, except as affected by ice. Rating curve well defined between 2 and 55 second-feet. Gage read once daily to hundredths and twice daily for days when there is rapid fluctuation in stage. Daily discharge ascertained by applying daily gage height to rating table. Open-water records good; records for ice-affected periods fair.

The following discharge measurement was made:

April 17, 1926: Gage height, 1.46 feet; discharge, 34.7 second-feet.

Daily discharge, in second-feet, of Flatwillow Creek near Flatwillow, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.5	34	20	-------		13	3.5	1.3	0.0	0.0
2	11.5	34	19	-------		16	2.5	1.6	.0	.0
3	14	33	18	-------		18	1.9	1.6	.0	.0
4	16	34	43	-------		17	1.3	1.9	.0	.2
5	16	35	37	-------	20	18	1.3	1.6	.0	.0
6	17	36	33	-------		16	1.3	1.3	.0	.0
7	17	31	28	-------		12.5	.8	1.0	.0	.0
8	18	29	25	-------	20	12.5	.0	.8	.0	.2
9	17	26	22	-------	20	14	.0	64.0	.0	.0
10	18	25	18	-------	23	14	.0	36.0	.0	.0
11	18	25	17	-------	26	12.5	.0	4.0	.0	.0
12	19	24	18	-------	30	12.5	.0	1.4	.0	.0
13	20	23	19	-------	50	11.5	.4	.8	.0	.0
14	18	23	18	-------	30	11.5	.4	.6	.0	.0
15	17	22	17	-------	25	9.5	.6	.2	.0	.0
16	17	22	23	-------	30	10.5	.8	.2	.0	.0
17	17	20	20	-------	33	10.5	.8	.0	.0	.0
18	19	18	19	-------	34	8.5	.6	.0	.0	.2
19	23	18	20	-------	33	7.5	.4	.0	.6	.2
20	26	20	20	-------	33	6.5	1.0	.0	1.3	.0
21	28	24	22	31	31	6.5	1.9	.0	.8	.0
22	31	28	21	29	15	5.5	1.9	.0	.2	.0
23	36	30	23	28	14	6.5	2.2	.0	.0	.0
24		31	23	26	14	5.5	4.5	.0	.4	1.3
25		29	22	26	14	4.5	4.5	.0	.0	2.2
26		28	22	25	14	5.5	5.5	.0	.0	8.5
27	30	24	23	26	13	5.5	3.5	.0	.0	10.5
28		23	20	25	15	6.5	1.6	.0	.0	11.5
29		24	20		16	5.5	1.6	.0	.0	12.5
30		22	20	20	14	4.5	1.9	.0	.0	13.6
31		-------	20		-------	4.5	-------	.0	.0	-------

NOTE.—Stage-discharge relation affected by ice Oct. 24–31, Dec. 28–31, and Mar. 29 to Apr. 7; discharge estimated. Braced figures give mean discharge for periods indicated.

Monthly discharge of Flatwillow Creek near Flatwillow, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	36	9.5	22.0	1,350
November	36	18	26.5	1,580
December	43	17	22.3	1,370
March 21–31	31	20	25.1	548
April	50	13	22.9	1,360
May	18	4.5	10.1	621
June	5.5	.0	1.56	93
July	64	.0	3.82	235
August	1.3	.0	.11	6.8
September	13.6	.0	2.03	121

FLATWILLOW CREEK AT PETROLIA, MONT.

LOCATION.—In NE. ¼ sec. 25, T. 14 N., R. 28 E., 2 miles above junction with Box Elder Creek, 1 mile south of Petrolia, Petroleum County, and 16 miles southeast of Winnett, the nearest railway point.

DRAINAGE AREA.—650 square miles (measured on county map).

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

GAGE.—Chain gage on left bank; read by Faith R. Beck.

DISCHARGE MEASUREMENTS.—Made by wading or from bridge 1 mile below.

CHANNEL AND CONTROL.—One channel at all stages, straight for 200 feet above but curved sharply to right just below gage. Left bank high; right bank low and covered with thick brush and trees. Control is gravel riffle; shifts occasionally.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.02 feet November 11 (discharge, 45 second-feet); no flow at various times.

1921–1926: Maximum stage recorded, 12.94 feet July 5, 1923 (discharge, estimated 3,700 second-feet); no flow at various times.

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

DIVERSIONS.—Numerous ditches divert water above station for irrigation.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during winter. Rating curve used October 24 to December 21 is well defined above 10 second-feet and poorly defined below; curve used March 21 to July 15 drawn parallel to old curve through one discharge measurement. Gage read to even hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records prior to December 21 are fair; subsequent records poor.

The following discharge measurement was made:

April 17, 1926: Gage height, 1.49 feet; discharge, 16.5 second-feet.

Daily discharge, in second-feet, of Flatwillow Creek at Petrolia, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	July
1		15	14		12	0.8	0.0
2		16	15		14	.8	.0
3		17	5.0		23	.8	.0
4		13	3.5		7.5	.8	.0
5		18	11		4.5	.8	1.0
6		15	16		16	1.0	.4
7		7	17		12	1.0	.0
8		3.0	11		14	1.0	.0
9		23	15		14	.8	36
10		37	9.0		12	1.0	12

Daily discharge, in second-feet, of Flatwillow Creek at Petrolia, Mont., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	July
11		45	15		9.5	1.4	2.8
12		35	13		8.5	1.2	1.8
13		15	17		8.5	1.4	.2
14		13	18		5.5	1.4	.0
15		13	14		24	.4	.0
16		12	14		22	.2	
17		11	7.0		16	.2	
18		11	4.5		16	.2	
19		12	17		16	.1	
20		12	18		16	.1	
21		3.5	19	2.8	16	.0	
22		6.0		9.5	12	.0	
23		11		16	9.5	.0	
24	0.0	12		16	10	.0	
25	6.0	13		16	3.8	.0	
26	7	6.0		16	2.8	.0	
27	10	15		26	2.8	.4	
28	13	18		26	2.2	.4	
29	13	15		14	1.4	.2	
30	13	11		16	.8	.1	
31	13			14		.0	

NOTE.—Creek dry or at pool stage Oct. 1–24, May 21–26, May 31 to July 4, July 7, 8, July 14 to Sept. 30. No record obtained Dec. 22 to Mar. 20 on account of ice.

Monthly discharge of Flatwillow Creek at Petrolia, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	13	0.0	2.42	149
November	45	3.0	15.1	898
December 1–21	19	3.5	13.0	514
March 21–31	26	2.8	15.7	352
April	24	.8	11.1	660
May	1.4	.0	.53	33
July	36	.0	1.75	108

MILK RIVER BASIN

SOUTH FORK OF MILK RIVER NEAR INTERNATIONAL BOUNDARY

LOCATION.—In NW. ¼ sec. 29, T. 37 N., R. 9 W., at Richard Croff ranch, just above Kennedy Coulee, Glacier County, 5 miles south of international boundary and 30 miles northeast of Browning.

DRAINAGE AREA.—288 square miles (measured on topographic map).

RECORDS AVAILABLE.—April 28, 1905, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on left bank.

DISCHARGE MEASUREMENTS.—Made from cable 300 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of clay and small boulders. Banks high and not subject to overflow except during extreme floods.

EXTREMES OF DISCHARGE.—Maximum discharge during year, estimated 250 second-feet April 13; minimum stage, 1.27 feet August 19 (discharge, 0.1 second-foot).

1905–1926: Maximum stage recorded, 15.4 feet June 6, 1908, determined from high-water marks; flood width, 850 feet; flood cross section, about 2,600 square feet (discharge not computed); no flow August 1–8 and August 18 to September 2, 1919.

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

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent, affected by shifting control and by ice. Rating curve used during October is well defined; curve used March 14 to September 30 is well defined between 10 and 60 second-feet. Operation of water-stage recorder satisfactory except from April 11–25. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of recorder graph. Shifting-control method used October 1–31 and April 28 to September 30. Records good except during estimated periods, for which they are fair.

COOPERATION.—Station maintained in cooperation with the Dominion Water Power and Reclamation Service, Department of the Interior, Canada.

Discharge measurements of South Fork of Milk River near international boundary, during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 20	1.88	38.8	May 4	1.66	29.7	July 4	1.58	12.0
Mar. 14	1.56	15.3	May 26	1.56	13.9	July 21	1.36	.8
Mar. 22	1.80	39.5	June 17	1.82	41.4	Aug. 20	1.30	[a].5
Apr. 26	1.76	37.4	June 25	1.65	19.1			

[a] Discharge estimated.

Daily discharge, in second-feet, of South Fork of Milk River near international boundary, for the year ending September 30, 1926

Day	Oct.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31.8		11.0	30.3	8.7	7.2	1.2	0.5
2	34.3		11.0	30.3	8.7	8.7	1.2	.5
3	42.7		11.0	30.3	9.3	9.8	1.7	.8
4	45.7		10.4	30.3	8.1	11.0	1.9	.6
5	53.3		10.4	31.4	7.6	9.3	1.9	1.0
6	61.1		9.8	31.4	6.7	7.2	1.9	1.5
7	53.3	55	8.7	31.4	5.8	6.7	2.2	9.8
8	44.2		8.7	32.6	5.0	13.1	1.9	30.3
9	45.7		6.7	31.4	4.7	7.2	1.9	24.7
10	75.0		5.8	31.4	3.9	6.7	2.2	16.2
11	79.0		60	34.9	4.3	5.4	2.2	25.8
12	70.0		200	43.3	4.3	3.9	2.4	30.3
13	63.0		250	40.9	4.7	3.0	1.9	26.9
14	71.0	26.9	200	34.9	8.7	3.0	1.1	17.0
15	64.0	22.6	80	30.3	15.3	2.7	.8	12.4
16	58.0	28.0	80	23.6	45.7	2.4	.6	11.7
17	58.0	26.9	100	19.7	40.9	1.9	.6	13.8
18	51.7	31.4	90	19.7	34.9	1.9	.5	17.0
19	45.7	30.3	80	18.7	34.9	1.9	.1	17.0
20	39.9	31.4	80	17.0	48.2	1.9	.3	18.7
21	39.9	33.7	80	16.2	53.0	.8	.5	19.7
22	38.4	37.3	70	13.1	48.2	.6	.5	21.6
23	42.7	38.5	60	12.4	31.4	.6	.5	21.6
24	44.2	42.1	50	13.8	24.7	.4	.5	13.8
25	37.0	33.7	50	15.3	19.7	.3	.5	18.7
26	29.3	29.1	36.1	13.8	18.7	.3	.5	22.6
27	28.2	22.6	34.9	12.4	15.3	.4	.6	22.6
28	28.2	14.5	34.9	11.7	11.0	.4	.6	20.7
29	29.3	14.5	32.6	9.8	9.3	.8	.6	21.6
30	28.2	13.1	31.4	9.3	6.7	1.0	.8	19.7
31	26.1	12.4	-------	9.0	-------	1.2	.4	-------

NOTE.—Stage-discharge relation affected by ice Oct. 25–31; discharge estimated. No record Nov. 1 to Feb. 28. Discharge estimated Mar. 1–13; braced figure gives mean discharge for period indicated. Discharge estimated by comparison with flow of adjacent streams Apr. 11–25.

Monthly discharge of South Fork of Milk River near international boundary, for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	79	26.1	47.1	2,900
March	55	12.4	38.8	2,390
April	250	5.8	59.8	3,560
May	43.3	9.0	23.6	1,450
June	53	3.9	18.3	1,090
July	13.1	.3	3.93	242
August	2.4	.1	1.11	68
September	30.3	.5	16.0	952

MILK RIVER AT MILK RIVER, ALBERTA

LOCATION.—In NE. ¼ sec. 21, T. 2 N., R. 16 W. fourth meridian, at Milk River, Alberta.

DRAINAGE AREA.—1,104 square miles (measured by engineers of Department of the Interior, Canada).

RECORDS AVAILABLE.—During open-water season July 1, 1909, to December 31, 1911; complete records January 1, 1912, to September 30, 1926. Prior to October 1, 1920, maintained by Department of the Interior, Canada.

GAGE.—Stevens continuous water-stage recorder on left bank. A chain gage on railroad bridge, 1,000 feet upstream, and set at an independent datum is read during winter when water-stage recorder is not in operation.

DISCHARGE MEASUREMENTS.—Made from traffic bridge above gage or by wading.

CHANNEL AND CONTROL.—Bed of stream composed of sand and gravel. Right bank high, clean, and subject to overflow at extreme stages. Left bank low. Control shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.30 feet at 9 p. m. June 20 (discharge, 770 second-feet); minimum stage, 1.07 feet April 1 (discharge, 23 second-feet, stage-discharge relation affected by ice).

1909–1926: Maximum stage recorded, 8.50 feet February 17, 1916 (discharge, 3,467 second-feet); no flow January 19 to March 8, 1922, and December 12, 1922, to March 15, 1923.

ICE.—Stage-discharge relation affected by ice.

REGULATION.—Flow increased by water from St. Mary Canal during irrigation season.

DIVERSIONS.—Nore of importance.

ACCURACY.—Stage-discharge relation not permanent; affected by ice and by a change in control during winter. Rating curve used October 1–26 is fairly well defined; curve used April 11 to September 30 is well defined below 600 second-feet. Rating curve used for chain gage October 27 to March 26 and March 31 to April 10 is fairly well defined. Operation of water-stage recorder satisfactory October 1–26 and April 11 to September 30. Daily discharge for open-water periods ascertained by applying to rating tables mean daily gage height determined by inspection of recorder graph or by applying daily chain gage readings to rating table. Shifting-control method used October 1–13. Open-water records good; winter records fair.

COOPERATION.—Station maintained in cooperation with the Dominion Water Power and Reclamation Service, Department of the Interior, Canada.

Discharge measurements of Milk River at Milk River, Alberta, during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 2	a 1.47	90	May 6	2.66	424	Aug. 4	1.86	144
Dec. 19	a 1.53	65	May 8	2.68	441	Aug. 13	1.73	116
Jan. 27	a 1.78	34.5	June 12	2.59	387	Sept. 10	2.26	254
Mar. 5	a 1.91	69	June 18	2.80	478	Sept. 28	1.38	45.1
Mar. 26	a 1.26	60	June 19	2.96	557			
Apr. 29	2.50	366	July 22	2.78	495			

a Stage-discharge relation affected by ice. Measurement referred to chain gage.

Daily discharge, in second-feet, of Milk River at Milk River, Alberta, for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	567	84	81	72	34.8	84	23.0	356	412	490	204	110
2	551	90	77	69	38.4	88	24.0	356	417	505	166	119
3	546	81	76	65	42.0	82	37.2	390	422	500	147	115
4	541	74	79	61	47.6	76	34.8	412	422	500	137	128
5	530	70	91	60	52	69	37.2	422	412	490	123	147
6	520	72	77	58	55	88	39.6	426	399	495	117	199
7	510	72	109	56	58	111	44.8	431	390	490	115	222
8	510	74	100	55	61	137	65	431	386	515	119	222
9	480	76	109	53	65	95	89	431	381	510	144	252
10	452	77	120	52	61	145	69	440	381	475	142	259
11	310	86	100	50	58	104	108	440	381	465	126	292
12	258	86	130	49.0	53	91	332	440	394	465	119	365
13	239	95	140	47.6	50	65	480	426	408	460	112	336
14	236	77	109	46.2	49.0	58	300	431	445	455	112	232
15	225	89	46.2	44.8	49.0	58	174	440	475	460	110	190
16	202	102	74	42.0	47.6	106	108	450	490	465	112	176
17	165	104	91	37.2	46.2	72	99	465	495	470	112	159
18	150	104	95	34.8	49.0	63	97	480	500	470	110	142
19	138	102	65	34.8	50	60	86	480	580	475	110	106
20	138	93	49	34.8	53	53	72	475	687	485	104	82
21	129	88	39.6	34.8	55	55	66	465	634	485	104	57
22	122	109	36.0	34.8	56	52	121	465	565	485	137	55
23	118	76	39.6	34.8	60	52	248	465	535	455	90	61
24	113	76	47.6	34.8	61	76	288	480	530	440	84	74
25	110	74	61	34.8	69.0	67	311	495	520	431	95	66
26	90	72	67	34.8	76	60	336	495	510	426	86	53
27	74	72	67	34.5	82	55	352	500	500	426	84	53
28	40	70	67	34.8	88	64	348	455	490	431	86	48.0
29	60	67	72	34.8	-------	49.8	352	422	485	408	82	46.5
30	82	65	77	34.8	-------	23.8	348	408	490	344	88	48.0
31	80	-------	74	34.8	-------	26.2	-------	412	-------	229	101	-------

NOTE.—Stage-discharge relation affected by ice Oct. 25 to Mar. 10 and Mar. 26 to Apr. 9; discharge estimated from a study of gage heights, five discharge measurements, weather records, and observer's notes concerning ice.

Monthly discharge of Milk River at Milk River, Alberta, for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	567	40	267	16,400
November	109	65	82.6	4,920
December	140	36	79.5	4,890
January	72	34.5	45.3	2,790
February	88	34.8	55.9	3,100
March	145	23.8	73.7	4,530
April	480	23.0	170	10,100
May	500	356	441	27,100
June	687	381	471	28,000
July	515	229	458	28,200
August	204	82	115	7,070
September	365	46.5	147	8,750
The year	687	23.0	202	146,000

MILK RIVER AT EASTERN CROSSING OF INTERNATIONAL BOUNDARY

LOCATION.—In NE. ¼ sec. 6, T. 37 N., R. 9 E., at eastern crossing of international boundary, 30 miles north of Rudyard, Hill County, Mont., and 37 miles south of Manyberries, Alberta.

DRAINAGE AREA.—2,514 square miles (measured by engineers of irrigation branch, Department of the Interior, Canada).

RECORDS AVAILABLE.—April 1, 1913, to September 30, 1926. From August 7, 1909 to 1912, maintained by irrigation branch, Department of the Interior, Canada.

GAGE.—Stevens continuous water-stage recorder on left bank; inspected by Robert L. Connor. Zero of gage is 2,698.92 feet above sea level.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—A bar composed of heavy boulders, gravel, and sand makes a decided riffle at medium and low stages; shifts frequently.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 2.71 feet at 2 a. m. June 23 (discharge, 817 second-feet); minimum stage, 0.73 foot April 2 (discharge, from current-meter measurement, 37 second-feet).

1909–1926: Maximum stage recorded, 9.60 feet April 9, 1917 (discharge, 4,860 second-feet); no flow August 3–17, 22, 23, 1914, February 1 to March 13, 1922, and March 1–5, 1923.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—None.

REGULATION.—Natural flow was increased about 96,500 acre-feet by water from St. Mary Canal during the irrigation season of 1926.

ACCURACY.—Stage-discharge relation not permanent, affected by ice and by shifting control. Rating curve applicable October 1–31 is well defined; curve applicable April 9 to September 30 is well defined below 700 second-feet. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Shifting-control method used October 1–26, April 15 to June 17, and July 20 to September 30. Records good except for estimated periods, for which they are fair.

COOPERATION.—Station maintained in cooperation with the Dominion Water Power and Reclamation Service, Department of the Interior, Canada.

Discharge measurements of Milk River at eastern crossing of international boundary, during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 10	[a] 1.82	169	Apr. 14	1.12	114	July 26	2.17	379
Mar. 21	1.08	73	Apr. 18	1.58	187	Aug. 26	1.20	114
Mar. 23	.91	67	June 11	2.12	353	Aug. 28	.97	82
Mar. 25	.92	67	June 18	2.36	585			
Apr. 2	.73	37	July 19	2.22	499			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Milk River at eastern crossing of international boundary, for the year ending September 30, 1926

Day	Oct.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	683			346	382	593	306	87
2	625			330	390	599	205	89
3	594			330	382	605	162	91
4	594			342	382	612	142	91
5	537		69	338	382	605	119	93
6	542			354	368	593	83	96
7	537			377	350	575	83	100
8	531			386	346	551	85	106
9	531		108	386	342	518	126	110
10	542		108	390	346	523	89	190
11	548		121	395	350	587	89	431
12	537		96	404	377	545	96	330
13	461		100	400	390	534	96	326
14	394		110	390	418	518	85	330
15	422		295	395	475	528	72	408
16	422		418	395	496	534	79	445
17	368		287	418	551	523	79	287
18	329		193	450	563	512	93	241
19	265		157	470	605	518	202	229
20	248		128	475	650	485	121	208
21	206		102	490	691	475	96	184
22	189		85	485	740	506	89	157
23	162		72	475	747	470	85	130
24	157		62	465	657	450	95	115
25	145		59	465	664	408	109	101
26	133	75	208	470	677	377	108	87
27	130		272	470	631	346	91	79
28	126		299	455	581	334	83	70
29	122		334	450	557	322	81	70
30	118		346	465	605	334	81	59
31	114		-------	400	-------	334	83	-------

NOTE.—Gage-height record missing Oct. 27-31, Mar. 21 to Apr. 8, Aug. 24–25, and Sept. 25; discharge estimated. Braced figures give mean discharge for periods indicated.

Monthly discharge of Milk River at eastern crossing of international boundary, for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	683	114	365	22,400
March 21-31	-------	-------	[a] 75	1,640
April	418	59	150	8,930
May	490	330	415	25,500
June	747	342	503	29,900
July	612	322	497	30,600
August	306	72	110	6,760
September	445	59	178	10,600

[a] Estimated.

NORTH FORK OF MILK RIVER ABOVE ST. MARY CANAL, NEAR BROWNING, MONT.

LOCATION.—In SW. ¼ sec. 16, T. 37 N., R. 11 W., on Blackfeet Indian Reservation, 1¼ miles above outlet of canal, 3 miles south of international boundary, and 30 miles north of Browning, Glacier County.

DRAINAGE AREA.—60 square miles (measured on topographic maps).

RECORDS AVAILABLE.—June 20, 1921, to September 30, 1926. Records obtained at this station only during period when St. Mary Canal is in operation.

GAGE.—Stevens continuous water-stage recorder installed in box shelter on left bank.

DISCHARGE MEASUREMENTS.—Made by wading near gage.

CHANNEL AND CONTROL.—One channel at all stages. Banks high; not subject to overflow. Control is gravel bar; subject to shift.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 1.06 feet at 10 a. m. June 20 (discharge, 30.4 second-feet); minimum stage, 0.65 foot at 5 p. m. August 4 (discharge, 7.9 second-feet).

1921–1926: Maximum stage recorded, 2.65 feet June 7, 1924 (discharge, 168 second-feet); minimum stage, 0.59 foot September 22, 1922 (discharge, 7.3 second-feet).

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation not permanent; affected by shifting control. Observations discontinued during ice period. Rating curve applicable October 1–11 is well defined; curve applicable April 15 to September 30 is fairly well defined by six discharge measurements and direction of former curve. Operation of water-stage recorder satisfactory October 1–11, April 21 to May 1, May 8–29, June 17–27, July 7–14, August 4–7, 13–24, and September 4–7. Observer's readings to hundredths once daily for remainder of period. Daily discharge ascertained by applying to rating tables daily or mean daily gage height determined by inspection of recorder graph. Shifting-control method used April 15 to May 6 and June 1 to September 11. Records fair.

COOPERATION.—Station maintained in cooperation with the Dominion Water Power and Reclamation Service, Department of the Interior, Canada.

Discharge measurements of North Fork of Milk River above St. Mary Canal, near Browning, Mont., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 19	0.87	17.8	June 17	0.71	10.7	Aug. 13	0.70	9.0
Apr. 27	.75	15.1	June 24	.73	11.6	Sept. 28	.79	15.2
May 8	.73	12.3	July 7	.68	9.4			
May 27	.72	12.1	Aug. 4	0.66	8.3			

Daily discharge, in second-feet, of North Fork of Milk River above St. Mary Canal, near Browning, Mont., for the year ending September 30, 1926

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
1	19.4		13.3	11.5	9.9	9.5	13.3
2	19.4		13.8	11.5	11.5	9.5	14.2
3	19.4		13.8	11.1	11.5	9.5	14.2
4	19.4		13.3	11.1	11.1	8.3	12.9
5	19.4		13.3	11.1	11.1	8.7	12.9
6	19.4		13.3	10.7	10.3	9.1	15.7
7	19.4		12.9	10.7	11.1	9.1	21.2
8	18.8		12.4	10.7	12.9	9.5	20.0
9	18.8		12.4	10.7	12.0	9.5	16.5
10	18.8		14.7	10.7	10.3	11.1	12.9
11	18.8		16.7	10.7	9.9	10.7	12.9
12			14.2	10.3	9.5	9.9	14.0
13			12.9	10.3	9.5	9.1	15.0
14			12.4	10.7	9.5	9.5	16.0
15		20.6	12.0	10.7	9.5	9.9	17.0
16		20.0	12.0	11.5	9.5	10.3	18.0
17		13.0	12.0	11.5	9.5	12.9	19.0
18		10.0	12.4	13.3	9.5	13.3	20.0
19		10.0	12.4	20.0	9.5	12.9	19.0
20		14.0	12.0	29.0	9.9	11.5	17.0

Daily discharge, in second-feet, of North Fork of Milk River above St. Mary Canal, near Browning, Mont., for the year ending September 30, 1926—Continued

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
21		17.8	11.5	29.0	9.9	11.1	17.0
22		16.7	11.5	12.9	9.9	10.3	18.0
23		16.7	11.5	12.9	9.9	10.3	18.0
24		15.7	12.9	11.1	9.9	9.9	21.0
25		15.7	12.4	11.5	9.9	10.3	18.0
26		14.7	12.0	11.5	9.5	10.3	16.0
27		14.7	12.0	9.9	9.5	10.3	15.0
28		15.2	12.0	9.9	9.5	10.7	15.2
29		14.2	11.5	9.9	9.5	10.7	15.0
30		13.8	12.0	9.9	9.5	10.7	15.0
31			12.0		9.5	11.5	

NOTE.—Gage-height record missing Apr 16–20, June 5, Aug. 8, 9, Sept. 9, 12–27, 29, 30; discharge estimated by comparison with flow for station at international boundary Apr. 16–20, by comparison with flow for station on South Fork of Milk River Sept. 12–27 and 29–30, and by interpolation June 5, Aug. 8, 9, Sept. 5.

Monthly discharge of North Fork of Milk River above St. Mary Canal, near Browning, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 1–11	19.4	18.8	19.2	419
April 15–30	20.6	10.0	15.2	482
May	16.7	11.5	12.7	781
June	29.0	9.9	12.5	744
July	12.9	9.5	10.1	621
August	13.3	8.3	10.3	633
September	21.2	12.9	16.3	970

NORTH FORK OF MILK RIVER NEAR INTERNATIONAL BOUNDARY

LOCATION.—In NE. ¼ sec. 11, T. 1, R. 23 W. fourth meridian, 300 yards above highway bridge at Peters ranch, 18 miles east of Kimball, Alberta, and 2 miles north of international boundary.

DRAINAGE AREA.—101 square miles (measured on topographic maps).

RECORDS AVAILABLE.—January 1, 1913, to September 30, 1926. July 21, 1909, to December 31, 1912, station was maintained by irrigation branch of the Department of the Interior, Canada, in NE. ¼ sec. 13, T. 1, R. 23 W. fourth meridian, about 2 miles downstream; May 6, 1911, to December 31, 1912, station was maintained at Alexander Dubray ranch, 2 miles south of international boundary.

GAGE.—Water-stage recorder on left bank; inspected by Charles Barnett. Chain gage read for periods when water-stage recorder was not in operation.

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

CHANNEL AND CONTROL.—Bed of stream at gage and principal control composed of clay and small boulders; shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.15 feet October 1 and 3.07 feet June 20 (discharge, 544 second-feet); minimum stage, 1.17 feet April 3–4 and 18–19 (discharge, 10.6 second-feet).

1909–1926: Maximum stage recorded, 4.14 feet May 8, 1920 (discharge, 1,070 second-feet); minimum discharge, 5.5 second-feet February 11, 1916; (stage-discharge relation affected by ice).

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

DIVERSIONS.—None.

REGULATION.—Discharge partly regulated by flow of St. Mary Canal. During the irrigation season of 1926 a total of 96,500 acre-feet was turned into river above station

ACCURACY.—Stage-discharge relation changed during winter. Rating curves for water-stage recorder and for chain gage are well defined. Mean daily gage heights determined from recorder graph by inspection March 24 to May 10, May 20 to June 9, June 14 to August 15, and September 14–30. Observer's chain-gage readings to hundredths once daily used for remainder of periods. There are numerous gaps in observer's readings. Daily discharge ascertained by applying mean daily gage height to rating table. Records good except for estimated periods, for which they are fair.

COOPERATION.—Station maintained in cooperation with the Dominion Water Power and Reclamation Service, Department of the Interior, Canada.

Discharge measurements of North Fork of Milk River near international boundary, during the year ending September, 30 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 21	1.39	30.0	May 4	2.77	424	July 21	2.97	504
Nov. 11	[a] 1.23	9.1	May 26	3.00	511	Aug. 4	1.93	120
Mar. 14	[a] 1.46	21.6	June 17	2.96	496	Aug. 20	1.90	119
Apr. 24	2.52	322	June 25	2.99	508	Sept. 14	2.06	149
Apr. 26	2.61	346	July 4	2.98	512			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of North Fork of Milk River near international boundary, for the year ending September 30, 1926

Day	Oct.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	544		12.0	[a] 360	435	511	159	115
2	[a] 529		11.6	[a] 385	431	511	151	[a] 130
3	514		10.6	410	431	511	133	[a] 160
4	[a] 514		10.6	418	435	511	122	190
5	514		11.6	418	431	507	124	[a] 200
6	[a] 500		16.9	423	431	507	124	230
7	484		26.2	[a] 420	435	511	122	[a] 240
8	[a] 457		24.6	418	439	523	120	[a] 250
9	430		84	418	439	511	120	[a] 260
10	[a] 300		163	418	432	507	117	[a] 300
11	[a] 180	[a] 18.0	110	[a] 423	[a] 445	507	115	367
12	[a] 100		72	428	[a] 460	507	113	[a] 300
13	[a] 60		33.3	[a] 426	472	502	113	[a] 200
14	[a] 45		24.6	424	490	502	113	151
15	38		23.0	[a] 442	498	502	109	141
16	[a] 38		20.6	460	502	498	[a] 112	124
17	38		13.4	[a] 472	507	498	[a] 113	72
18	[a] 33.3		10.6	[a] 489	515	502	115	23
19	28.7		10.6	484	532	502	110	19.1
20	[a] 28.7		148	494	544	502	[a] 140	17.2
21	28.7	12.7	[a] 180	498	523	502	[a] 130	17.2
22	[a] 28.7	13.4	222	502	511	481	[a] 95	18.1
23	28.7	12.7	307	507	511	469	[a] 110	18.1
24	[a] 24.0	12.7	311	515	511	460	[a] 100	21.1
25	[a] 20.0	12.7	328	519	511	456	93	18.1
26	15.5	12.0	352	515	511	456	[a] 94	15.2
27	[a] 19.4	12.0	348	473	515	452	95	14.8
28	23.2	12.0	344	448	511	423	[a] 94	14.8
29	[a] 24.6	12.0	344	439	511	[a] 324	93	14.8
30	26.0	11.6	352	435	511	227	[a] 100	14.8
31	[a] 26.0	12.7	-------	435	-------	203	[a] 105	-------

[a] Discharge estimated on account of missing gage heights.

NOTE.—Braced figure gives mean discharge for period indicated.

Monthly discharge of North Fork of Milk River near international boundary, for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	544	15.5	182	11,200
March		11.6	16.0	984
April	352	10.6	131	7,800
May	519	360	449	27,600
June	544	431	481	28,600
July	523	203	470	28,900
August	159	93	115	7,070
September	367	14.8	122	7,260

LODGE CREEK AT INTERNATIONAL BOUNDARY

LOCATION.—In SE. ¼ sec. 12, T. 1, R. 29 W., third meridian, at Willow Creek Royal Northwest Mounted Police barracks, 1 mile north of international boundary, in Saskatchewan, Canada, and 30 miles northwest of Havre, Mont.

DRAINAGE AREA.—806 square miles (measured by engineers of Irrigation Branch, Department of the Interior, Canada).

RECORDS AVAILABLE.—April 1, 1917, to September 30, 1926. April 25, 1910, to October 31, 1916, maintained by Irrigation Branch, Department of the Interior, Canada.

GAGE.—Stevens continuous water-stage recorder installed May 6, 1919, on right bank.

DISCHARGE MEASUREMENTS.—Made from cable or by wading. Some low-water measurements made with weir.

CHANNEL AND CONTROL.—Composed of heavy boulders, gravel, and sand; shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.61 feet at noon March 2 (discharge, estimated on account of ice, 650 second-feet); no flow at various times during year.

1917–1926: Maximum stage recorded, 12.90 feet March 31, 1918 (discharge estimated, 2,700 second-feet; stage-discharge relation affected by ice); creek dry at various times.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Several small ditches divert water for irrigation above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during winter; affected by ice. Rating curves well defined. Operation of water-stage recorder satisfactory March 10–13, 23–28, April 9–19, and July 4 to September 30. Observer's readings used for remainder of period. Daily discharge ascertained by applying to rating table daily or mean daily gage height obtained by inspection of recorder graph. Open-water records good. Records for ice-affected periods fair.

COOPERATION.—Station maintained in cooperation with the Dominion Water Power and Reclamation Service, Department of the Interior, Canada.

Discharge measurements of Lodge Creek at international boundary, during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 24	1.15	0.0	Apr. 8	1.51	5.6	June 26		0
Mar. 10	[a] 2.65	70	Apr. 19	2.02	31.7	July 28		0
Mar. 24	2.99	134	May 7	1.34	[b] .6	Sept. 3		0
Mar. 25	2.51	76	May 20	1.22	[c]	Sept. 29		0

[a] Stage-discharge relation affected by ice.
[b] Weir measurement.
[c] Trickle; too small to measure.

Daily discharge, in second-feet, of Lodge Creek at international boundary, for the year ending September 30, 1926

Day	Oct.	Mar.	Apr.	May	July	Day	Oct.	Mar.	Apr.	May	July
1	0.2	422	8.2	2.0	0.0	16	0.0	52	68	0.2	0.1
2	.1	448	7.0	1.6	.0	17	.0	63	49.6	.2	.1
3	.8	422	7.0	1.2	.0	18	.0	181	38.8	.1	.1
4	.5	402	10.8	.9	94.0	19	.0	187	37.2	.1	.1
5	.3	300	5.8	.8	42.0	20	.0	122	32.8	.1	.0
6	.2	234	5.0	.6	21.6	21	.0	99	24.6	.1	.0
7	.2	153	6.2	.6	14.0	22	.0	118	18.0	.1	.0
8	.2	83	6.2	.4	7.8	23	.0	142	14.8	.1	.0
9	.2	76	4.6	.3	4.2	24	.0	117	11.7	.0	.0
10	.2	70	4.2	.3	1.6	25	.0	90	9.4	.0	.0
11	.1	75	4.2	.3	.7	26	.0	73	7.8	.0	.0
12	.1	68	4.2	.3	.3	27	.0	42.8	6.6	.0	.0
13	.1	68	35.8	.2	.2	28	.0	29.2	5.8	.0	.0
14	.0	93	65	.2	.1	29	.0	17.1	4.2	.0	.0
15	.0	70	73	.2	.1	30	.0	11.7	2.7	.0	.0
						31	.0	5.0		.0	.0

NOTE.—Stage-discharge relation affected by ice Mar. 1–10 and Mar. 27 to Apr. 6; discharge estimated from study of discharge measurements, temperature records, and gage-height records. Creek dry during entire months of June, August, and September.

Monthly discharge of Lodge Creek at international boundary, for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	0.8	0.0	0.1	0.6
March	448	5.0	140	8,610
April	73	2.7	19.3	1,150
May	2.0	.0	.35	22
July	94.0	.0	6.03	371

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

BATTLE CREEK AT INTERNATIONAL BOUNDARY

LOCATION.—In SE. ¼ sec. 4, T. 1, R. 26 W. fourth meridian, in Saskatchewan, Canada, one-fourth mile above point where creek crosses international boundary and 35 miles north of Chinook, Mont.

DRAINAGE AREA.—730 square miles.

RECORDS AVAILABLE.—April 17, 1917, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder; inspected by Ed. Peterson.

DISCHARGE MEASUREMENTS.—Made from cable 45 feet below gage or by wading.

CHANNEL AND CONTROL.—Composed of heavy boulders, sand, and gravel; shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.05 feet at midnight April 14 (discharge, 326 second-feet); no flow at various times during the year.

1917–1926: Maximum stage recorded, 8.50 feet April 13, 1917 (discharge, 3,200 second-feet); no flow at various times during period.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Several small ditches divert water for irrigation above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during winter; affected by ice. Rating curve used March 24 to September 30 is well defined between 3 and 300 second-feet. Operation of water-stage recorder satisfactory March 24 to September 30. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records good except for estimated periods, for which they are fair.

COOPERATION.—Station maintained in cooperation with the Dominion Water Power and Reclamation Service, Department of the Interior, Canada.

Discharge measurements of Battle Creek at international boundary, during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 9	2.41	14.3	Mar. 25	3.56	188	May 21	2.28	5.8
Oct. 28	[a] 2.33	4.8	Apr. 9	[a] 2.82	41.3	June 24	2.24	3.7
Mar. 9	[a] 3.48	42.0	Apr. 17	3.12	104	July 29	-------	0
Mar. 24	3.84	257	May 8	2.38	12.7	Sept. 2	-------	0

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Battle Creek at international boundary, for the year ending September 30, 1926

Day	Oct.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.6	-------	59	19.8	1.9	2.7	0.0	0.1
2	10.6	-------	37.8	19.0	1.3	3.1	.0	.0
3	12.3	-------	34.3	18.2	1.2	2.7	.0	.0
4	13.8	-------	31.0	16.6	1.1	12.5	.0	.0
5	13.4	-------	26.1	15.8	1.3	84	.0	.0
6	13.6	-------	24.2	14.2	1.1	56	.0	.0
7	14.0	-------	29.1	13.5	1.1	33.2	.0	.0
8	14.6	-------	25.1	12.0	1.0	21.4	.0	.0
9	14.8	-------	37.8	12.8	.7	15.8	.02	.0
10	15.0	-------	42.4	13.5	.6	11.3	.04	.0
11	14.6	-------	48.6	13.5	.6	7.7	.05	6.4
12	14.0	-------	44.8	12.8	.4	5.3	.05	3.8
13	13.2	-------	87	11.3	.4	3.1	.1	.7
14	12.9	-------	274	11.3	.4	1.7	.1	.4
15	15.2	-------	212	9.2	.7	1.2	.1	.3
16	16.0	-------	129	9.2	1.0	.9	.1	.2
17	15.3	-------	105	9.9	1.1	.7	.1	.2
18	14.4	-------	94	11.3	1.1	.5	.1	.2
19	11.3	-------	81	10.6	3.4	.3	.1	.2
20	9.7	-------	68	9.2	4.2	.3	.2	.2
21	8.7	-------	55	7.0	3.8	.3	.2	.1
22	7.8	-------	48.6	4.8	4.2	.2	.2	.1
23	7.0	-------	43.6	3.8	3.4	.1	.2	.1
24	6.0	274	42.4	3.4	3.4	.1	.2	.1
25	3.6	205	41.3	3.1	4.2	.05	.2	.1
26	3.8	155	37.8	3.1	4.2	.01	.1	.1
27	4.8	111	35.5	3.8	4.2	.0	.1	.05
28	4.8	84	27.1	3.4	7.0	.0	.1	.05
29	3.0	70	23.2	2.1	5.9	.0	.1	.04
30	2.0	68	19.8	2.3	4.2	.0	.1	.03
31	2.2	67	-------	2.3	-------	.0	.1	-------

NOTE.—Daily discharge Oct. 1-31 obtained by comparison with flow at Nash ranch because of missing gage heights. Stage-discharge relation affected by ice Mar. 28 to Apr. 10; discharge estimated.

Monthly discharge of Battle Creek at international boundary for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	16.0	2.0	10.4	640
March 24-31	274	67	129	2,050
April	274	19.8	62.2	3,700
May	19.8	2.1	9.77	601
June	7.0	.4	2.30	137
July	84	.0	8.26	508
August	.2	.0	.086	5.3
September	6.4	.0	.449	26.7

FRENCHMAN RIVER AT INTERNATIONAL BOUNDARY

LOCATION.—In SW. ¼ sec. 4, T. 1, R. 10 W. third meridian, at Hall ranch in Saskatchewan, Canada, and just across the international boundary from eastern side of lot 3, sec. 6, T. 37 N., R. 34 E. Montana principal meridan.

DRAINAGE AREA.—1,875 square miles (measured by engineers of the Department of the Interior, Canada).

RECORDS AVAILABLE.—April 1, 1917, to September 30, 1926.

GAGE.—Stevens water-stage recorder referred to staff gage in well.

DISCHARGE MEASUREMENTS.—Made from cable 20 feet above gage or by wading.

CHANNEL AND CONTROL.—A bar composed of boulders and gravel forms the principal control at low and medium stages. At high stages this bar is drowned out.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.32 feet at 8.30 a. m. March 19 (discharge, 1,440 second-feet); no flow September 2–6. 1917–1926: Maximum stage recorded, 13.12 feet at 2 p. m. March 29, 1925 (discharge, 5,440 second-feet); no flow during periods in 1919, 1920, 1921, 1924, and 1926.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Several ditches divert water for irrigation 60 miles above station in Saskatchewan.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during winter; affected by ice. Rating curves well defined. Operation of water-stage recorder fairly satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph, except as indicated in footnote to table of daily discharge. Records good except for extremely low stages and for estimated periods, for which they are fair.

COOPERATION.—Station maintained in cooperation with the Dominion Water Power and Reclamation Service, Department of the Interior, Canada.

Discharge measurements of Frenchman River at international boundary, during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 19	[a] 6.08	1,320	Mar. 26	5.51	1,100	May 29	2.62	39.4
Do	5.82	1,220	Do	5.60	1,200	June 6	2.50	24.7
Mar. 20	5.54	1,120	Apr. 16	3.67	324	July 14	2.34	11.9
Mar. 24	4.95	868	Apr. 21	3.42	257	Aug. 20	1.87	[b] .1
Mar. 25	5.26	1,010	Apr. 22	3.37	239	Sept. 25	2.27	9.9

[a] Stage-discharge relation affected by ice.
[b] Weir measurement.

Daily discharge, in second-feet, of Frenchman River at international boundary, for the year ending September 30, 1926

Day	Oct.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39.0		121	85	35.3	20.6	3.6	0.01
2	38.0		185	75	34.1	20.6	2.8	.0
3	41.0		172	70	31.8	22.7	2.3	.0
4	38.0		172	64	30.6	29.4	1.9	.0
5	38.0		167	62	27.1	21.6	1.4	.0
6	32.3		149	62	25.9	16.5	1.0	.0
7	30.5		143	59	24.7	57	.8	.04
8	30.5		135	60	24.7	49.5	.8	.02
9	31.4		146	57	22.7	43.8	.3	.02
10	31.4	360	149	57	20.3	29.4	.1	4.9
11	33.2		146	53	17.9	19.6	.1	39.4
12	27.8		138	55	15.5	14.1	.1	57
13	26.0		135	51	17.2	13.0	.04	11.5
14	24.2		127	51	18.9	11.9	.04	8.0
15	24.2		124	49.5	20.6	11.9	.04	8.9
16	24.2		310	48.1	22.6	11.5	.04	9.8
17	24.2		464	46.6	24.7	10.8	.04	10.7
18	18.8		427	45.2	25.9	10.2	.03	11.6
19	20.6	1,370	331	43.8	27.1	9.7	.1	12.5
20	17.9	1,130	279	43.8	72	9.4	.1	13.4
21	15.4	1,140	256	40.8	48.1	8.8	.1	9.7
22	17.0	1,230	227	40.8	38.0	8.6	.1	6.0
23	17.0	871	189	36.5	25.9	8.0	.8	7.3
24	16.2	881	152	34.1	25.9	7.2	1.5	8.6
25	15.4	1,010	132	35.3	34.1	6.9	1.0	10.0
26	14.6	1,140	118	34.1	40.8	6.6	.1	10.2
27	13.8	1,210	111	34.1	33.0	6.3	.1	10.0
28	13.0	1,150	103	36.5	25.9	6.0	.04	9.4
29	13.0	759	95	38.0	20.6	5.5	.03	8.8
30	13.0	380	90	39.4	19.6	4.4	.02	9.1
31	13.8	243	-------	36.5	-------	4.1	.02	-------

NOTE.—Stage-discharge relation affected by ice Oct. 23-31 and Mar. 27 to Apr. 9; discharge estimated from station above. Mean flow estimated for period Mar. 1-18. Gage-height record missing June 10, 11, 13, 14, 16, Aug. 3-5, 15, 16, Sept. 6, 15-19, 21, 23, 24; discharge interpolated or estimated from flow at station above.

Monthly discharge of Frenchman River at international boundary, for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	41.0	13.0	24.3	1,490
March	1,370	243	613	37,700
April	464	90	183	10,900
May	85	34.1	49.8	3,060
June	72	15.5	28.4	1,690
July	57	4.1	16.3	1,000
August	3.6	.02	.627	38.6
September	57	.0	9.23	549

YELLOWSTONE RIVER BASIN

YELLOWSTONE LAKE AT LAKE HOTEL, YELLOWSTONE NATIONAL PARK

LOCATION.—At boat landing directly in front of Lake Hotel, 1½ miles southwest of outlet of Yellowstone Lake.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—October 7, 1921, to September 30, 1926.

GAGE.—Vertical staff on pile at wharf; read by park rangers. Gage datum is 7,729.51 feet above mean sea level.

EXTREMES OF STAGE.—Maximum stage recorded during year, 3.67 feet June 12–15; minimum stage, 0.64 foot December 28. Lower stage occurred during period of no record.

1922–1926: Maximum stage recorded, 6.06 feet July 7, 1925; minimum stage, 0.36 foot December 17, 1921. Lower stage may have occurred during period of no record.

ICE.—Records discontinued during winter on account of severe ice formation.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Gage read to hundredths once daily. Records good. Gage readings for April were unreliable, owing to ice action on gage, and were withheld from publication.

COOPERATION.—Records furnished by officials of Yellowstone Park.

Daily gage height, in feet, of Yellowstone Lake at Lake Hotel, Yellowstone National Park, for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	May	June	July	Aug.	Sept.
1	1.96	1.36	0.88	.....	3.06	3.32	2.32	1.63
2	1.92	.....	.....	.....	3.12	3.32	2.29	1.61
3	1.90	1.34	.86	.....	3.14	3.32	2.26	1.57
4	1.86	.....	.....	.....	3.20	3.32	2.24	1.53
5	1.84	1.34	.86	1.32	3.26	3.32	2.19	1.52
6	.....	.....	.....	.....	3.30	3.22	2.16	1.50
7	1.84	1.30	.84	.....	3.38	3.22	2.13	1.47
8	1.80	.....	.....	1.54	3.42	3.22	2.12	1.46
9	1.76	1.28	.80	.....	3.52	3.22	2.08	1.44
10	1.74	1.24	.....	1.60	3.60	3.20	2.04	1.42
11	1.72	1.22	.78	.....	3.60	3.12	2.02	1.40
12	1.70	.....	.....	.....	3.67	3.12	2.02	1.39
13	1.68	.....	.78	.....	3.67	3.09	2.04	1.37
14	1.66	1.16	.....	.....	3.67	3.06	2.08	1.36
15	1.64	.....	.76	.....	3.67	3.01	2.02	1.34
16	1.62	1.12	.74	.....	3.62	2.92	2.02	1.32
17	1.60	.....	.....	.....	3.62	2.92	1.99	1.30
18	.....	1.08	.74	.....	3.57	2.90	1.97	1.28
19	.....	1.06	.....	.....	3.57	2.82	1.93	1.26
20	.....	.....	.74	.....	3.57	2.74	1.92	1.24
21	.....	.....	.....	.....	3.52	2.74	1.90	1.22
22	1.52	.....	.74	2.02	3.48	2.70	1.88	1.20
23	1.50	.....	.72	2.12	3.45	2.67	1.85	1.16
24	1.48	1.00	.....	2.22	3.42	2.64	1.83	1.12
25	1.46	.....	.....	2.37	3.42	2.62	1.80	1.08
26	1.44	.....	.....	2.52	3.37	2.60	1.79	1.06
27	1.42	.94	.....	2.66	3.37	2.55	1.78	1.06
28	.....	.....	.64	2.72	3.37	2.48	1.76	1.04
29	.....	.90	.....	2.82	3.37	2.43	1.75	1.04
30	1.38	.....	.....	2.92	3.37	2.40	1.72	1.02
31	1.36	.....	.....	3.02	.....	2.34	1.65	.....

YELLOWSTONE RIVER AT YELLOWSTONE LAKE OUTLET, YELLOWSTONE NATIONAL PARK

LOCATION.—At Fishing Bridge, a quarter of a mile below outlet of Yellowstone Lake and 1½ miles northeast of Lake Hotel.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—December 3, 1922, to September 30, 1926.

GAGE.—Vertical staff near left bank attached to upstream pier of Fishing Bridge; read by park rangers. Gage datum is 7,728.90 feet above mean sea level.

Gage-height record shows approximate stages in Yellowstone Lake, but owing to small amount of fall and drawdown between the lake outlet and gage, daily stages vary slightly from those obtained at gage in Yellowstone Lake at the Lake Hotel.

EXTREMES OF STAGE.—Maximum stage recorded during year, 3.95 feet June 13–16; minimum stage 0.98 foot March 14, 16, 18, 20, and April 16. Lower stage may have occurred during periods of no record.

1923–1926: Maximum stage recorded, 6.20 feet July 5, 1925; minimum stage, 0.96 foot April 6–8, 26–28, May 2 and 3, 1924.

ICE.—Gage heights seldom affected by ice formation.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Gage read to hundredths once daily. Records good.

COOPERATION.—Records furnished by officials of Yellowstone Park.

Daily gage height, in feet, of Yellowstone River at Yellowstone Lake outlet, Yellowstone National Park, for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	------	1.82	1.40	1.20	1.08	1.04	1.00	------	------	3.65	2.72	2.06
2	------	------	------	------	------	------	------	------	3.45	3.65	2.69	2.05
3	2.32	------	1.40	1.18	1.08	------	------	1.54	------	3.65	2.65	2.03
4	------	1.80	1.38	------	------	1.02	1.04	------	3.55	3.65	2.62	1.98
5	2.28	------	------	------	1.08	------	------	1.62	------	3.65	2.60	1.98
6	------	------	------	1.14	------	1.02	1.06	------	------	3.60	2.56	1.94
7	2.26	1.78	1.36	------	1.10	------	------	------	3.60	3.55	2.54	1.92
8	2.24	------	------	------	------	1.02	------	2.06	------	3.55	2.51	1.89
9	------	1.74	1.32	1.14	1.10	------	------	------	3.68	3.50	2.50	1.88
10	2.20	------	------	------	------	1.00	1.06	2.10	------	3.40	2.55	1.87
11	------	1.72	1.28	1.14	1.10	------	------	------	3.78	3.30	2.53	1.85
12	2.16	------	------	------	------	1.00	------	------	3.85	3.30	2.51	1.83
13	------	1.66	1.26	1.14	------	------	------	------	3.95	3.28	2.50	------
14	2.14	------	------	------	1.08	.98	------	------	3.95	3.24	2.52	------
15	------	1.64	1.24	1.14	------	------	------	------	3.95	3.20	2.46	------
16	------	------	1.24	------	1.08	.98	.98	------	3.95	3.10	2.44	------
17	2.04	1.58	------	1.14	------	------	1.00	------	3.90	3.05	2.40	------
18	------	------	1.24	------	1.06	.98	------	2.34	3.90	3.05	2.38	1.71
19	------	1.56	------	------	------	------	1.04	------	3.90	3.10	2.37	------
20	------	1.54	1.24	1.14	------	.98	1.06	------	3.90	3.10	2.34	1.68
21	------	------	------	------	1.06	------	1.08	------	3.85	3.08	2.33	------
22	------	1.50	1.22	------	------	------	1.14	------	3.80	3.05	2.30	------
23	------	------	1.22	1.12	1.06	------	------	------	3.78	3.03	2.27	------
24	------	1.52	------	------	------	------	1.22	------	3.75	3.02	2.24	------
25	1.94	------	------	------	------	------	------	------	3.70	2.98	2.22	------
26	------	------	------	1.10	1.04	------	1.26	------	3.70	2.95	2.22	1.63
27	1.86	1.48	------	------	------	------	------	------	3.70	2.92	2.20	------
28	------	------	1.20	1.08	------	------	1.30	------	3.65	2.89	2.18	------
29	------	1.44	------	1.08	------	------	1.36	------	3.65	2.82	2.15	------
30	1.82	------	------	------	------	------	------	------	3.65	2.79	2.10	------
31	------	------	------	1.06	------	------	------	------	------	2.78	2.06	------

YELLOWSTONE RIVER NEAR CANYON HOTEL, YELLOWSTONE NATIONAL PARK

LOCATION.—Half a mile upstream from Upper Falls and Canyon ranger station, 1¼ miles south of Canyon Hotel, and 13 miles below outlet of Lake Yellowstone.

DRAINAGE AREA.—1,280 square miles (measured on topographic maps).

RECORDS AVAILABLE.—June 21, 1913, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on left bank installed July 31, 1920, 450 feet above Chittenden Bridge; inspected by park rangers.

DISCHARGE MEASUREMENTS.—Made from cable one-fifth mile above gage.

CHANNEL AND CONTROL.—One channel at all stages. Bed composed of gravel and boulders. Control formed by upper part of Upper Yellowstone Falls; permanent for long periods.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, from water-stage recorder, 2.6 feet June 11–14 (discharge, 3,520 second-feet); minimum stage, 0.84 foot from 3 to 5 p. m. September 29 (discharge, 765 second-feet).

1913–1926: Maximum stage recorded, 4.50 feet June 27, 1918 (discharge, 8,550 second-feet); minimum stage, 0.72 foot September 6, 1919 (discharge, 664 second-feet).

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

DIVERSIONS.—None above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined between 1,000 and 6,500 second-feet. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records excellent.

Discharge measurements of Yellowstone River near Canyon Hotel, Yellowstone National Park, during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 28	2.12	2,510	June 23	2.40	3,110	July 30	1.68	1,680
May 29	2.14	2,560	June 25	2.36	3,040	Sept. 4	1.18	1,030

Daily discharge, in second-feet, of Yellowstone River near Canyon Hotel, Yellowstone National Park, for the year ending September 30, 1926

Day	Oct.	May	June	July	Aug.	Sept.	Day	Oct.	May	June	July	Aug.	Sept.
1	1,400	-------	2,780	2,980	1,620	1,100	16	1,140	1,410	3,410	2,320	1,350	932
2	1,380	-------	2,780	2,880	1,570	1,080	17	1,120	1,590	3,300	2,280	1,310	907
3	1,360	-------	2,880	2,880	1,560	1,080	18	1,100	1,650	3,300	2,260	1,300	907
4	1,320	-------	2,880	2,780	1,500	1,060	19	1,100	1,620	3,300	2,220	1,310	898
5	1,300	-------	2,980	2,780	1,500	1,060	20	1,080	1,780	3,300	2,180	1,300	890
6	1,310	-------	2,980	2,780	1,460	1,040	21	1,060	1,960	3,200	2,080	1,290	874
7	1,310	1,320	3,090	2,670	1,440	1,050	22	1,060	1,950	3,090	2,040	1,260	866
8	1,290	1,340	3,200	2,650	1,440	1,040	23	1,040	2,020	3,090	2,000	1,230	850
9	1,260	1,360	3,300	2,610	1,430	1,020	24	1,040	2,140	3,090	1,930	1,210	810
10	1,250	1,360	3,410	2,590	1,430	1,020	25	1,040	2,340	2,980	1,850	1,200	802
11	1,240	1,340	3,520	2,550	1,460	993	26	1,030	2,380	2,980	1,840	1,200	795
12	1,220	1,350	3,520	2,510	1,460	975	27	-------	2,420	2,980	1,820	1,190	788
13	1,200	1,350	3,520	2,440	1,430	966	28	-------	2,490	2,980	1,760	1,180	780
14	1,180	1,380	3,520	2,440	1,390	958	29	-------	2,570	2,880	1,710	1,160	780
15	1,160	1,400	3,410	2,380	1,360	941	30	-------	2,650	2,880	1,660	1,140	818
							31	-------	2,670	-------	1,650	1,140	-------

NOTE.—Gage not in operation Aug. 25 and 26; discharge interpolated.

Monthly discharge of Yellowstone River near Canyon Hotel, Yellowstone National Park, for the year ending September 30, 1926

[Drainage area, 1,280 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October 1–26	1,400	1,030	1,190	0.930	0.90	61,400
May 7–31	2,670	1,320	1,830	1.43	1.33	90,700
June	3,520	2,780	3,150	2.46	2.74	187,000
July	2,980	1,650	2,310	1.80	2.08	142,000
August	1,620	1,140	1,350	1.05	1.21	83,000
September	1,100	780	936	.731	.82	55,700

YELLOWSTONE RIVER AT CORWIN SPRINGS, MONT.

LOCATION.—In NE. ¼ sec. 30, T. 8 S., R. 8 E., at highway bridge in canyon at Corwin Springs, Park County, 8 miles north of Gardiner.

DRAINAGE AREA.—2,630 square miles.

RECORDS AVAILABLE.—September 2, 1910, to September 30, 1926.

GAGE.—Chain gage fastened to floor of highway bridge on downstream side near right bank; read by Mrs. Lena Bassett.

DISCHARGE MEASUREMENTS.—Made from downstream side of highway bridge.

CHANNEL AND CONTROL.—Bed of stream composed of small rocks. Current swift at all stages; no definite control but there has been no shift since station was established. Banks high and not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.8 feet at 9 a. m. May 24 and 26 (discharge, 11,600 second-feet); minimum stage, 0.98 foot at 9 a. m. February 25 (discharge, 1,000 second-feet).

1910–1926: Maximum stage recorded, 11.5 feet June 14 and 15, 1918 (discharge computed from extension of rating curve, 26,500 second-feet); minimum discharge, estimated at 720 second-feet January 8–10, 1920.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—No water diverted from Yellowstone River above station.

REGULATION.—Yellowstone Lake furnishes a natural but uncontrolled regulation.

ACCURACY.—Stage-discharge relation probably permanent during year, except when affected by ice. Rating curve well defined between 1,000 and 18,300 second-feet. Gage read to hundredths once daily. Daily discharge ascertained by applying daily gage height to rating table. Records good.

No discharge measurements made at station during year.

Daily discharge, in second-feet, of Yellowstone River at Corwin Springs, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,400	1,800	1,400	1,180	1,070	1,140	1,070	7,220	8,490	5,380	2,400	1,700
2	2,280	1,800	1,400	1,180	1,070	1,140	1,070	7,220	8,760	5,590	2,340	1,700
3	2,280	1,800	1,400	1,180	1,070	1,140	1,070	7,220	8,230	5,380	2,280	1,650
4	2,230	1,750	1,360	1,180	1,070	1,140	1,100	7,220	8,490	5,180	2,280	1,750
5	2,230	1,700	1,360	1,180	1,070	1,100	1,140	8,230	8,760	4,790	2,280	1,700
6	2,180	1,650	1,360	1,100	1,070	1,070	1,140	6,730	9,590	4,600	2,180	1,700
7	2,180	1,600	1,360	1,100	1,140	1,070	1,100	5,380	9,590	4,600	2,120	1,650
8	2,180	1,700	1,310	1,100	1,140	1,070	1,140	5,380	9,310	4,600	2,120	1,700
9	2,180	1,700	1,310	1,140	1,140	1,140	1,140	4,980	8,760	4,420	2,120	1,650
10	2,120	1,700	1,260	1,140	1,140	1,140	1,220	4,600	8,230	4,420	2,060	1,650
11	2,120	1,700	1,260	1,140	1,140	1,140	1,310	4,240	7,970	3,900	2,060	1,600
12	2,120	1,650	1,310	1,140	1,140	1,100	1,360	4,240	7,720	4,240	2,280	1,600
13	2,060	1,650	1,310	1,140	1,140	1,140	1,400	3,900	7,220	3,610	2,450	1,600
14	2,010	1,650	1,310	1,140	1,100	1,140	1,550	4,240	6,970	3,540	2,230	1,600
15	2,010	1,550	1,310	1,140	1,100	1,140	1,750	4,980	6,490	3,540	2,180	1,550
16	2,010	1,600	1,310	1,100	1,070	1,140	2,230	6,490	6,020	3,470	2,120	1,550
17	2,010	1,600	1,310	1,140	1,100	1,140	3,000	6,970	5,590	3,400	2,060	1,500
18	1,960	1,600	1,310	1,140	1,100	1,140	2,930	6,970	5,590	3,190	2,060	1,500
19	1,900	1,550	1,310	1,100	1,070	1,140	3,470	6,730	5,590	3,260	2,280	1,500
20	1,900	1,500	1,310	1,070	1,140	1,140	3,900	8,760	5,800	3,120	2,180	1,500
21	1,900	1,500	1,310	1,070	1,100	1,100	4,070	9,590	5,590	3,060	2,060	1,450
22	1,850	1,500	1,310	1,070	1,100	1,100	4,070	9,870	5,380	2,930	2,010	1,400
23	1,850	1,500	1,310	1,070	1,100	1,070	3,470	10,400	5,180	2,930	1,960	1,400
24	1,850	1,500	1,310	1,070	1,100	1,070	3,400	11,600	4,980	2,800	1,900	1,360
25	1,800	1,500	1,310	1,070	1,000	1,040	3,680	10,400	4,980	2,740	1,850	1,310
26	1,750	1,450	1,260	1,070	1,100	1,040	3,980	11,600	4,980	2,620	1,850	1,310
27	1,800	1,450	1,220	1,070	1,140	1,040	5,180	10,400	4,980	2,680	1,800	1,310
28	1,650	1,450	1,180	1,070	1,140	1,040	4,600	10,200	4,980	2,500	1,800	1,310
29	1,800	1,450	1,140	1,040	-------	1,040	5,800	9,590	4,980	2,560	1,800	1,310
30	1,800	1,450	1,020	1,070	-------	1,070	4,600	9,590	4,980	2,500	1,800	1,450
31	1,800	-------	1,180	1,070	-------	1,070	-------	9,310	-------	2,450	1,750	-------

NOTE.—Stage-discharge relation affected by ice Jan. 3 and 4; discharge interpolated.

Monthly discharge of Yellowstone River at Corwin Springs, Mont., for the year ending September 30, 1926

[Drainage area, 2,630 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	2,400	1,650	2,010	0.764	0.88	124,000
November	1,800	1,450	1,600	.608	.68	95,200
December	1,400	1,020	1,300	.494	.57	79,900
January	1,180	1,040	1,110	.422	.49	68,200
February	1,140	1,000	1,100	.418	.44	61,100
March	1,140	1,040	1,100	.418	.48	67,600
April	5,800	1,070	2,560	.973	1.09	152,000
May	11,600	3,900	7,560	2.87	3.31	465,000
June	9,590	4,980	6,810	2.59	2.89	405,000
July	5,590	2,450	3,680	1.40	1.61	226,000
August	2,450	1,750	2,090	.795	.92	129,000
September	1,750	1,310	1,530	.582	.65	91,000
The year	11,600	1,000	2,710	1.03	14.01	1,960,000

YELLOWSTONE RIVER AT INTAKE, MONT.

LOCATION.—In NW. ¼ sec. 36, T. 18 N., R. 56 E., at Lower Yellowstone diversion dam at Intake, Dawson County, 18 miles below Glendive.

DRAINAGE AREA.—66,800 square miles (measured on maps of Montana and Wyoming).

RECORDS AVAILABLE.—January 1, 1911, to September 30, 1926. At Glendive, 18 miles above, by War Department and Department of Agriculture 1893 to 1903, and by Geological Survey August 1, 1903, to December 31, 1910.

GAGE.—Chain gage on left abutment of dam; read by employees of the United States Bureau of Reclamation. Gage readings represent depth of water on crest of dam.

DISCHARGE MEASUREMENTS.—Made from bridge at Glendive or from ferryboat 100 feet below dam.

CHANNEL AND CONTROL.—Dam forming the principal control is a rock-filled timbercrib structure on pile foundation 700 feet long, crosses the stream at right angles to current, and raises low-water level about 4 feet; specially designed to resist the destructive effects of ice by approach on a slope of 3 to 1; downstream face is ogee-shape and protected by a heavy rock apron.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.35 feet at 6 p. m. May 27 (discharge, 53,000 second-feet); minimum stage, 0.50 foot January 2 (discharge, 2,140 second-feet).

1903–1926: Maximum stage recorded, 12.6 feet June 21, 1921 (discharge, 159,000 second-feet); minimum stage, 0.2 foot December 6–8, 1922, and January 6 and 7, 1923 (discharge estimated because of ice, 1,200 second-feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—The Lower Yellowstone Canal, which diverts water to irrigate 66,000 acres of land, heads at the left abutment of dam. Of the several diversions from the main streams above station the United States Bureau of Reclamation Huntley project and the Billings Carey Act project are the largest. There are also numerous diversions from the tributaries.

REGULATION.—Yellowstone Lake and Shoshone Reservoir form the only important regulation and control only a small part of the flood flow.

ACCURACY.—Stage-discharge relation probably permanent during year, except when affected by ice. Rating curve well defined below 80,000 second-feet. Gage read to tenths or half-tenths twice daily. Daily discharge for open-

water periods ascertained by applying mean daily gage height to rating table. Records good.

No discharge measurements were made at the station during year.

Daily discharge, in second-feet, of Yellowstone River at Intake, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10,800	8,090	8,660	3,450	7,270	12,200	7,270	16,600	36,000	16,600	7,810	6,000
2	10,800	9,550	8,660	2,360	7,270	11,500	6,750	17,400	36,000	18,200	7,270	6,000
3	10,800	10,200	8,090	4,050	6,750	10,800	6,500	21,500	33,800	24,000	7,270	6,250
4	10,200	10,800	10,200	5,740	7,270	10,800	7,270	24,000	30,600	23,200	6,750	6,250
5	10,200	12,200	8,950	7,420	7,270	9,550	8,090	25,800	28,600	23,200	6,750	6,750
6	10,200	11,500	8,950	9,110	6,750	9,550	6,500	24,900	28,600	23,200	6,250	7,810
7	10,200	10,900	7,810	10,800	7,810	10,200	6,500	24,900	28,600	23,200	6,250	7,810
8	9,550	10,200	7,540	10,800	8,090	12,200	6,500	27,600	28,600	23,200	6,000	8,370
9	9,550	10,200	7,540	10,800	8,370	11,600	6,500	29,600	30,600	22,300	6,250	8,370
10	9,550	9,550	7,540	12,200	9,550	11,000	6,500	28,600	31,600	26,700	6,000	9,250
11	9,550	9,250	7,540	13,600	9,550	10,400	6,750	26,700	32,700	30,600	5,760	13,600
12	9,550	8,950	7,270	14,300	10,800	9,840	7,270	30,600	32,700	31,600	6,250	11,500
13	9,550	8,950	7,540	13,600	10,800	9,250	7,810	26,700	32,700	28,600	6,250	10,800
14	10,200	9,250	11,500	13,600	13,600	9,860	8,090	24,900	31,600	25,800	10,800	10,200
15	10,200	9,250	14,300	11,500	15,800	10,200	8,370	24,000	30,600	24,900	12,200	9,550
16	10,200	9,250	8,950	10,800	11,500	10,800	8,950	23,200	29,600	23,200	12,200	9,250
17	10,800	8,950	7,810	10,800	9,550	9,550	9,250	22,300	28,600	19,800	10,800	9,250
18	10,200	8,950	7,810	10,200	9,250	9,550	10,200	23,200	26,700	17,400	10,800	8,950
19	10,200	8,370	7,270	9,550	8,660	9,550	10,800	24,900	24,900	16,600	10,800	8,950
20	10,800	8,370	7,270	8,950	8,660	10,800	10,800	27,600	23,200	15,100	17,400	8,950
21	10,200	8,370	7,810	8,950	8,660	13,600	13,600	28,600	22,300	13,600	13,600	8,950
22	10,200	8,090	8,370	7,540	8,950	12,800	15,100	28,600	21,500	12,800	12,200	8,950
23	10,200	8,090	8,260	5,040	10,200	12,200	16,600	31,600	20,600	12,200	10,200	8,950
24	9,550	8,090	8,150	5,040	9,550	10,200	19,800	36,000	19,800	12,200	10,200	8,370
25	10,200	7,810	8,030	5,280	9,550	9,550	19,800	36,000	18,200	11,500	8,950	8,370
26	10,800	7,810	7,920	5,280	10,200	8,950	20,600	39,600	17,400	10,800	8,370	8,370
27	10,800	7,810	7,810	5,760	9,550	8,090	19,800	47,900	15,800	10,200	7,540	8,370
28	10,800	7,810	6,000	6,000	10,200	7,810	18,200	47,900	15,100	9,550	7,010	8,370
29	10,800	7,810	6,250	5,760	-------	7,810	17,400	39,600	15,100	8,950	6,500	8,370
30	10,800	8,370	6,250	6,250	-------	7,810	17,400	36,000	15,800	8,370	6,250	8,370
31	8,950	-------	4,120	7,270	-------	7,270	-------	36,000	-------	8,370	5,760	-------

NOTE.—Stage-discharge relation affected by ice Oct. 28–29, Nov. 6–7, Dec. 23–26, Jan. 3–6, and Mar. 9–12; discharge interpolated.

Monthly discharge of Yellowstone River at Intake, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	10,800	8,950	10,200	627,000
November	12,200	7,810	9,090	541,000
December	14,300	4,120	8,070	496,000
January	14,300	2,360	8,450	520,000
February	15,800	6,750	9,340	519,000
March	13,600	7,270	10,200	627,000
April	20,600	6,500	11,200	666,000
May	47,900	16,600	29,100	1,790,000
June	36,000	15,100	26,300	1,560,000
July	31,600	8,370	18,600	1,140,000
August	17,400	5,760	8,590	528,000
September	13,600	6,000	8,640	514,000
The year	47,900	2,360	13,200	9,530,000

TOWER CREEK AT TOWER FALLS, YELLOWSTONE NATIONAL PARK

LOCATION.—A short distance above Tower Falls and bridge on highway leading to Camp Roosevelt, a quarter of a mile above confluence with Yellowstone River, and 2 miles southeast of Camp Roosevelt.

DRAINAGE AREA.—51 square miles (measured on topographic maps).

RECORDS AVAILABLE.—September 2, 1922, to September 30, 1926.

GAGE.—Vertical staff on right bank; read by John Bauman and Earl Bowman.

DISCHARGE MEASUREMENTS.—Made by wading or from footbridge.

CHANNEL AND CONTROL.—Bed composed of lava rock, boulders, and gravel. One channel at all stages. Control formed by rock riffle 30 feet below gage; well defined and fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.15 feet May 23–25 and 30 (discharge, 272 second-feet); minimum discharge estimated, 14 second-feet March 28–31.

1923-1926: Maximum stage recorded, 6.16 feet May 30, 1925 (discharge, 642 second-feet); minimum stage, 3.38 feet May 6, 1924 (discharge, 13 second-feet).

ICE.—Stage-discharge relation occasionally affected by ice; inflow from springs above gage and heavy snow cover prevents severe ice formation on control.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined between 25 and 100 second-feet and fairly well defined above. Gage read to hundredths once daily. Gage read about once a week October 1 to March 6 and three to five times a week May 17 to September 30. Daily discharge determined by applying daily gage height to rating table except as indicated in footnote to table of daily discharge. Records fair except during winter and for estimated periods, for which they are poor.

Discharge measurements of Tower Creek at Tower Falls, Yellowstone National Park, during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 27	4.99	202	June 27	4.15	54.6	Aug. 20	3.83	30.9
June 24	4.22	69.6	Aug. 2	3.87	32.0	Sept. 6	3.76	25.2

Daily discharge, in second-feet, of Tower Creek at Tower Falls, Yellowstone National Park, for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33	30	33			20			a219	a54	32	a26
2	a33	a30	a32			a22	16		193	a54	32	26
3	a33	a29	a31			24			a187	53	30	a26
4	33	29	a30			a21			a180	54	a30	26
5	a33	a28	a30		22	a19		130	174	a53	30	26
6	33	a27	a29			16			169	a52	31	26
7	a33	26	a28				25		a166	51	30	35
8	a33	a27	27	28	22				162	a50	a31	28
9	a33	a28	a27		a22	16			a178	a48	32	28
10	33	a29	a28		a22				193	46	32	26
11	a33	30	a28		22				a158	46	33	26
12	a33	a30	a28		a22			80	122	a44	33	26
13	33	a31	a29		22		30		a118	41	32	a26
14	a32	a31	a29			18			113	a41	30	26
15	a32	a32	a30						a107	a40	30	a26
16	a31	a32	30						101	a39	29	25
17	30	a33	a30					167	a95	39	a30	25
18	a30	33	a30					a164	a90	41	a31	26
19	a30	a33	a30					162	84	a40	32	
20	a31	a34	a30				45	a209	80	a40	30	
21	a31	a34	a30		18	22		256	75	39	31	
22	a32	a35	a30					a264	a70	a38	30	26
23	a32	35	a30	22				272	66	37	a29	
24	a32	a35	30					a272	66	a36	28	
25	a33	a36	a30					272	63	36	26	
26	a33	a37	a30			18		a247	60	a35	26	
27	33	a38	a30				70	222	58	34	a26	25
28	a32	38	a30					a239	59	a34	27	
29	a31	a36	30		-------	14		256	a57	a33	28	27
30	30	a35	28		-------			272	55	a32	a27	
31	a30	----	----		-------		-------	a246	-------	32	26	-------

a Gage height missing; discharge interpolated.

NOTE.—Discharge estimated on account of ice or missing gage height: Dec. 30-31, Jan. 1-31, Feb. 1-7, 14-28, Mar. 7-31, Apr. 1 to May 16, Sept. 19-26, 28-31. Braced figures give mean discharge for periods indicated.

Monthly discharge of Tower Creek at Tower Falls, Yellowstone National Park, for the year ending September 30, 1926

[Drainage area, 51 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	33	30	32.1	0.629	0.73	1,970
November	38	26	32.0	.627	.70	1,900
December	33	27	29.5	.578	.67	1,810
January	----------	----------	24.9	.488	.56	1,530
February	----------	----------	19.9	.390	.41	1,110
March	----------	----------	18.7	.367	.42	1,150
April	----------	----------	39.1	.767	.86	2,330
May	272	----------	166	3.25	3.75	10,200
June	219	55	117	2.29	2.56	6,960
July	54	32	42.3	.829	.96	2,600
August	33	26	29.8	.584	.67	1,830
September	35	25	26.4	.518	.58	1,570
The year	272	----------	48.4	.949	12.87	35,000

LAMAR RIVER NEAR TOWER FALLS RANGER STATION, YELLOWSTONE NATIONAL PARK

LOCATION.—Half a mile north of Cooke City road, three-fourths mile above confluence with Yellowstone River, and 2 miles from Tower Falls ranger station.

DRAINAGE AREA.—640 square miles (measured on topographic maps).

RECORDS AVAILABLE.—September 2, 1922, to September 30, 1926.

GAGE.—An continuous water-stage recorder on left bank installed September 16, 1925; inspected by John L. Bauman and Earl S. Bowman. Outside staff gage set to same datum but reading slightly higher at medium and high stages is used for periods when water-stage recorder is not in operation.

DISCHARGE MEASUREMENTS.—Made from cable 50 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of lava rock, boulders, gravel, and sand. One channel at all stages. Control is formed by gravel and boulder riffle 200 feet below gage; well defined and practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.03 feet at 1 a. m. May 24 (discharge, 7,310 second-feet); minimum stage, 0.03 foot from 1 to 4 p. m. September 25 (discharge, 121 second-feet).

1922–1926: Maximum stage recorded, 7.8 feet May 30, 1925 (discharge, 11,500 second-feet); minimum stage, —0.08 foot April 20, 1924 (discharge, 104 second-feet). Lower stages and discharge have occurred during periods of no record.

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

DIVERSIONS.—None above or below station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined between 150 and 5,000 second-feet. Operation of water-stage recorder satisfactory except January 12 to April 25 and June 25 to August 13, when staff gage was read to hundredths once or twice a week. Daily discharge ascertained by applying daily or mean daily gage height to rating table except as indicated in footnote to table of daily discharge. During periods when water-stage recorder was in operation mean daily gage height was determined by inspection of recorder graph. Records from October 1 to November 20 and for August and September are good; others fair, except those from December 21 to April 25 which are poor.

Discharge measurements of Lamar River near Tower Falls ranger station, Yellowstone National Park, during the year ending September 30, 1926

Date	Gage height		Discharge	Date	Gage height		Discharge
	Water-stage recorder	Outside staff			Water-stage recorder	Outside staff	
	Feet	*Feet*	*Sec.-ft.*		*Feet*	*Feet*	*Sec.-ft.*
May 26	4.30	4.42	3,880	Aug. 2	----------	0.60	293
May 27	4.40	4.52	4,160	Aug. 11	----------	.84	377
June 24	----------	2.17	1,240	Aug. 18	0.49	.49	243
June 27	----------	2.34	1,400	Sept. 9	.58	.58	286

Daily discharge, in second-feet, of Lamar River near Tower Falls ranger station, Yellowstone National Park, for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	349	242	220	175	215	300	210	3,640	3,820	1,570	279	186
2	323	257						3,320	3,820	1,740	279	183
3	311	253						3,320	3,640	1,580	268	192
4	295	222						3,480	3,820	1,420	307	235
5	283	222						4,350	4,080	1,260	268	200
6	287	239					455	3,640	4,350	1,100	254	183
7	299	189						2,820	4,170	1,140	239	192
8	295	219						2,320	4,820	1,070	272	291
9	283	268				245		2,020	4,440	1,000	308	260
10	287	272			245			1,740	3,730	935	344	212
11	287	257						1,540	3,250	804	380	192
12	287	216						1,440	2,890	768	442	186
13	283	232					680	1,400	2,500	731	505	192
14	275	239						1,640	2,320	695	291	200
15	249	232						2,320	1,960	642	264	194
16	257	260	215				751	3,250	1,740	588	242	180
17	203	257						3,900	1,540	535	229	175
18	226	246			195	320		3,480	1,490	535	242	175
19	242	219					1,250	3,640	1,440	530	349	180
20	239	203						5,610	1,490	525	307	172
21	246	230	245	165	255	175		5,610	1,400	518	253	168
22	253						1,740	5,210	1,310	512	239	162
23	260						1,780	6,230	1,260	505	226	160
24	239						1,820	6,230	1,220	485	212	155
25	232						1,870	5,410	1,280	465	203	132
26	216						1,910	4,260	1,340	426	197	147
27	229						1,960	4,170	1,400	388	200	151
28	212						2,320	4,350	1,310	349	194	151
29	264		170		-------		3,030	4,540	1,220	338	194	155
30	272				-------		3,640	4,630	1,390	326	186	219
31	264	-------			-------		-------	4,080	-------	315	186	-------

NOTE.—Discharge estimated, based on weather records, Nov. 21 to Apr. 15 and Apr. 17–21; affected by ice Nov. 21 to about Mar. 31. Discharge interpolated Apr. 23–25, June 25, 26, 28, 30, July 1, 3–5, 8, 9, 12, 13, 15, 16, 19, 21, 22, 24, 26, 27, 29, 30, Aug. 6, 9, 10, 12, because of missing gage heights.

Monthly discharge of Lamar River near Tower Falls ranger station, Yellowstone National Park, for the year ending September 30, 1926

[Drainage area, 640 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	349	203	266	0.416	0.48	16,400
November	272	189	235	.367	.41	14,000
December	----------	----------	216	.338	.39	13,300
January	----------	----------	170	.266	.31	10,500
February	----------	----------	224	.350	.36	12,400
March	----------	----------	260	.406	.47	16,000
April	3,640	----------	1,140	1.78	1.99	67,800
May	6,230	1,400	3,660	5.72	6.60	225,000
June	4,820	1,220	2,480	3.88	4.33	148,000
July	1,740	315	768	1.20	1.38	47,200
August	505	186	270	.422	.49	16,600
September	291	132	186	.291	.32	11,100
The year	6,230	132	826	1.29	17.53	598,000

GARDINER RIVER AT MAMMOTH HOTEL, YELLOWSTONE NATIONAL PARK

LOCATION.—At footbridge on trail crossing leading to Mount Everts, 200 yards below inflow from Mammoth Hot Springs, 0.9 mile east of Mammoth Hotel, and 5 miles above junction with Yellowstone River.

DRAINAGE AREA.—201 square miles (measured on topographic map).

RECORDS AVAILABLE.—September 3, 1922, to September 30, 1926.

GAGE.—Vertical staff on left bank; read by park rangers.

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

CHANNEL AND CONTROL.—Bed composed of gravel. One channel at all stages. Control formed by a well-defined gravel and boulder riffle 50 feet below gage.

EXTREMES OF DISCHARGE.—Maximum stage recorded, 6.50 feet at 4.50 p. m. May 24 (discharge, 550 second-feet); minimum flow probably occurred during estimated period March 26–31.

1923–1926: Maximum discharge estimated, 1,500 second-feet June 22, 1925; minimum discharge probably occurred during extremely cold period December 17–26, 1924, when gage was not read.

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

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed slightly between April 21 and May 20 and on August 19. Rating curve well defined between 75 and 600 second-feet used May 21 to August 18, and parallel curves October 1 to April 20 and August 19 to September 30. Gage read once daily to hundredths October 1–24 and to half-tenths December 6 to September 30. Daily discharge ascertained by applying daily gage height to rating table. Records from October to May, fair; June to September, good.]

Discharge measurements of Gardiner River at Mammoth Hotel, Yellowstone National Park, during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 26	6.25	483	June 28	4.88	192	Aug. 22	4.25	100
May 28	6.08	440	July 31	4.21	106	Sept. 12	4.14	90.3
June 24	4.87	191						

Daily discharge, in second-feet, of Gardiner River at Mammoth Hotel, Yellowstone National Park, for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	139			77	86	90		419	371	203	105	90
2	133			82	82	90		419	371	180	105	90
3	127		110	90	86	90	75	419	371	173	105	90
4	127			95	86	100		444	348	180	105	86
5	127			90	82	90	77	419	371	195	105	86
6	122		116	100	86	90	82	395	348	180	100	86
7	122		110	95	86	100	82	348	348	180	105	90
8	127		105	95	90	105	95	348	348	180	110	95
9	127		110	90	90	95	95	326	348	166	105	90
10	127		116	90	95	82	100	285	326	166	105	90
11	127		105	90	90	90	100	265	326	159	110	90
12	127		105	100	86	82	90	246	326	159	116	90
13	122	105	105	82	86	90	110	246	305	146	110	90
14	122		100	77	90	90	122	265	285	146	100	90
15	122		100	90	90	95	122	305	246	152	100	86
16	122		100	110	90	105	133	326	246	139	95	86
17	116		100	73	86	90	173	419	228	133	95	86
18	116		100	90	86	90	228	371	211	127	127	86
19	122		100	86	82	82	285	371	228	127	127	86
20	122		110	77	82	82	305	444	228	127	105	86
21	122		105	82	82		285	523	211	127	100	86
22	116		100	86	82		228	470	203	127	100	86
23	110		100	90	82	80	228	523	195	122	95	86
24	100		100	86	86		211	550	195	122	95	77
25			100	86	86		228	523	188	116	90	77
26			100	82	86		246	470	188	116	90	82
27			100	82	90		285	419	180	116	86	86
28	110	110	100	86	90	70	285	419	188	110	86	86
29			73	86	-------		326	419	195	110	86	86
30			66	86	-------		371	419	211	110	86	95
31		-------	77	86	-------		-------	419	-------	105	90	-------

NOTE.—Discharge estimated on account of missing gage heights Oct. 25 to Dec. 5; on account of questionable gage heights Jan. 16, Mar. 21 to Apr. 4. Discharge interpolated Jan. 31, Feb. 11, 15. Braced figures give mean discharge for periods indicated.

Monthly discharge of Gardiner River at Mammoth Hotel, Yellowstone National Park, for the year ending September 30, 1926

[Drainage area, 201 square miles]

Month	Discharge in second-feet				Run-off	
	Maximum	Minimum	Mean	Per square mile	Inches	Acre-feet
October	139	----------	120	0.597	0.69	7,380
November	----------	----------	106	.527	.59	6,310
December	----------	66	102	.507	.58	6,270
January	----------	----------	87.6	.436	.50	5,390
February	95	82	86.5	.430	.45	4,800
March	----------	----------	85.4	.425	.49	5,250
April	371	----------	173	.861	.96	10,300
May	550	246	395	1.97	2.27	24,300
June	371	180	271	1.35	1.51	16,100
July	203	105	145	.721	.83	8,920
August	----------	86	101	.502	.58	6,210
September	95	77	87.2	.434	.48	5,190
The year	550	----------	147	.731	9.93	106,000

STILLWATER RIVER NEAR NYE, MONT.

LOCATION.—In SE. ¼ sec. 32, T. 5 S., R. 15 E., in Beartooth National Forest, 1,000 feet above mouth of Woodbine Creek and 8 miles southwest of Nye, Stillwater County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 12, 1924, to September 30, 1926.

GAGE.—Stevens 8-day recorder in wooden shelter on left bank; inspected by E. J. Ikerman. Chain gage below mouth of Woodbine Creek is read during winter.

DISCHARGE MEASUREMENTS.—Made from cable below mouth of Woodbine Creek. The flow of Woodbine Creek is subtracted to obtain the discharge at gage.

CHANNEL AND CONTROL.—Channel composed of heavy boulders and cobblestones. Gradient of channel is steep. Control poorly defined.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.00 feet at 11.30 p. m. June 5 (discharge, 3,230 second-feet); minimum discharge, 20 second-feet February 28.

1924–1926: Maximum stage recorded, 5.50 feet at 11 a. m. May 30, 1925. (discharge, 3,930 second-feet); minimum discharge, that of February 28, 1926.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed when gage shelter was moved on December 8; affected by ice. Rating curve well defined below 1,300 second-feet. Water-stage recorder in operation April 24 to September 30, except for several breaks in record. Daily discharge for periods when water-stage recorder was in operation ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. For period November 10 to April 23 discharge was computed from flow at site below Woodbine Creek. Records good for periods when water-stage recorder was in operation; other records poor.

Discharge measurements of Stillwater River near Nye, Mont., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 8	0.22	43	June 23	2.48	602
Apr. 24	1.76	336	Oct. 13	.80	130

NOTE.—Discharge measurements made from cable below mouth of Woodbine Creek and flow of Woodbine Creek subtracted to obtain discharge passing water-stage recorder.

Daily discharge, in second-feet, of Stillwater River near Nye, Mont., for the year ending September 30, 1926

Day	Nov.	Dec.	Jan.	Feb.	Apr.	May	June	July	Aug.	Sept.
1		55		43		1,190	1,490	1,690	278	179
2		78		43		900	1,630	1,670	266	173
3		55	53	43		900	1,770	1,390	262	177
4		55		36		990	1,910	1,240	262	173
5	110	55		21		1,390	2,300	1,090	253	163
6		78	103	21	45	1,090	2,540	1,090	244	
7		55	103	29		705	2,540	1,210	234	
8		43	55	36		560	2,240	1,540	236	
9		58	55	36		515	2,360	1,540	242	
10	100	81	55	29		458	2,480	1,040	248	
11	113	81	55	29		423	2,300	945	248	
12	113	81	55	36		406	2,130	820	255	
13	100	58	35	36	104	390	1,850	740	262	
14	100	58	35	36	130	440	1,570	719	244	
15	100	58	35	36	190	560	1,300	684	234	140
16	100	58	35	36	253	820	1,020	628	223	
17	87	58	35	38	366	990	740	560	217	
18	100	58	35	38	401	820	800	538	234	
19	100	58	35	38	356	900	860	551	290	
20	100		35	55	439	1,390	796	538	278	
21	87		21	55	438	1,440	610	458	234	
22	75		21	55	462	1,440	585	413	223	
23	53		21	35	418	1,910	610	374	217	
24	53		36	35	333	2,360	670	344	213	
25	76	45	36	28	344	2,540	945	344	203	
26	76		36	28	406	2,390	1,240	330	197	126
27	76		56	28	440	2,240	1,440	316	203	122
28	54		56	20	495	2,090	1,490	316	193	118
29	54		56	-------	705	1,940	1,390	316	193	116
30	54		44	-------	990	1,790	1,590	298	193	131
31	-------		44	-------	-------	1,640	-------	285	189	-------

NOTE.—From Nov. 10 to Apr. 23 records were obtained at chain gage site below mouth of Woodbine Creek and flow of Woodbine Creek subtracted to obtain flow at station. Discharge interpolated May 26–31, June 2, 3, 9, 13–16, 18, July 26, Aug. 12 and estimated Sept. 6–25 owing to missing gage heights. Braced figures give mean discharge for periods indicated.

Monthly discharge of Stillwater River near Nye, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	-------	-------	a100	6,150
November	113	53	92.0	5,470
December	81	43	55.5	3,410
January	103	21	46.9	2,880
February	55	20	35.7	1,980
March	-------	-------	a30	1,840
April	990	-------	260	15,500
May	2,540	390	1,210	74,400
June	2,540	585	1,510	89,800
July	1,690	285	774	47,600
August	290	189	234	14,400
September	179	116	143	8,510
The year	2,540	-------	376	272,000

a Mean discharge estimated.

WOODBINE CREEK NEAR NYE, MONT.

LOCATION.—In SW. ¼ sec. 33, T. 5 S., R. 15 E., in Beartooth National Forest, one-quarter mile above mouth and 8 miles southwest of Nye, Stillwater County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 12, 1924, to September 30, 1926.

GAGE.—Stevens 8-day recorder in wooden shelter on right bank; inspected by E. J. Ikerman.

DISCHARGE MEASUREMENTS.—Made from footbridge 10 feet below gage or by wading.

CHANNEL AND CONTROL.—Channel composed of heavy boulders and cobblestones. Control is rock outcrop 15 feet below gage. Current is swift at all stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.57 feet at 1 a. m. July 9 (discharge, 327 second-feet); minimum stage, 1.00 foot December 9 and 16 (discharge, 5.0 second-feet).

1924–1926: Maximum and minimum stages occurred in 1926, as given above.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—None.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during winter; affected by ice. Rating curve applicable October 1 to January 3 is well defined above 7 second-feet; curve applicable January 10 to September 30 is fairly well defined between 15 and 100 second-feet. Gage heights from November 15 to April 17 obtained from observer's readings to hundredths once a week. Operation of water-stage recorder fairly satisfactory April 18 to September 30. Daily discharge ascertained by applying to rating table mean daily gage height determined by inspection of recorder graph. Daily-discharge records April 18 to September 30 are fair; other records poor.

The following discharge measurements were made:

December 8, 1925: Gage height, 1.14 feet; discharge, 7.1 second-feet.

April 25, 1926: Gage height, 1.38 feet; discharge, 16.7 second-feet.

June 23, 1926: Gage height, 2.28 feet; discharge, 62 second-feet.

Daily discharge, in second-feet, of Woodbine Creek near Nye, Mont., for the year ending September 30, 1926

Day	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							45	96	127	44	29
2							41	101	127	42	30
3			6.5	7.6			43	104	115	40	32
4							54	116	104	40	32
5					7.5		66	138	98	41	33
6							56	160	106	38	32
7							46	160	111	36	
8		7.3	7.5				41	160	211	36	
9		5.0				7.5	38	160	202	35	
10							34	160	147	37	
11							32	162	134	41	
12				7.6	7.6		30	147	122	41	
13							30	118	113	41	
14			7.5				34	101	106	42	
15	11						44	87	101	38	
16		5.0					63	76	94	36	25
17							70	70	82	36	
18				7.0	7.5	14	64	72	87	50	
19						17	70	76	87	53	
20			7.5			21	92	70	82	42	
21						22	88	65	73	41	
22	11					22	95	62	67	40	
23		6.5			7.6	20	122	64	63	39	
24						19	141	66	60	37	
25				7.5		18	116	78	56	36	
26						19	101	96	53	36	25
27						18	99	122	50	38	23
28			6.5			21	106	117	51	36	23
29	8.5				7.0	28	118	112	50	32	22
30		6.5				38	118	124	47	32	22
31							87		45	30	

NOTE.—Discharge estimated on account of missing gage heights June 8–9, July 26, Aug. 12, Sept. 7–25; estimated on account of ice Dec. 23, 30, Jan. 3, 28, Feb. 18, and Mar. 29. Braced figures give mean discharge for periods indicated.

Monthly discharge of Woodbine Creek near Nye, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October			[a] 15.0	922
November			[a] 10.0	595
December			[a] 6.5	400
January			[a] 7.0	430
February			[a] 7.5	417
March			[a] 7.5	461
April	38		13.5	803
May	141	30	70.5	4,330
June	162	62	108	6,430
July	211	45	95.8	5,890
August	53	30	38.9	2,390
September	33	22	25.9	1,540
The year	211		34.0	24,600

[a] Mean discharge estimated from weekly gage readings.

CLARK FORK AT CHANCE, MONT.

LOCATION.—In NW. ¼ NW. ¼ sec. 32, T. 9 S., R. 22 E., at highway bridge at former post office of Chance, Carbon County, just above mouth of Sand Coulee, half a mile north of the Wyoming boundary, and 10 miles south of Belfry.

DRAINAGE AREA.—Not measured.

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

GAGE.—Vertical staff nailed to face of left abutment; read by Mrs. H. D. Miller.

DISCHARGE MEASUREMENTS.—Made from highway bridge.

CHANNEL AND CONTROL.—One channel of clean boulders and gravel. Banks high and clean but subject to overflow at extremely high stages.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.50 feet at 8 a. m. June 7 (discharge, 5,550 second-feet); minimum stage, 0.60 foot at 8 a. m. March 29 (discharge, 89 second-feet).

1921–1926: Maximum stage recorded, 5.75 feet June 15, 1922 (discharge, 9,150 second-feet); minimum stage, 0.59 foot April 19, 1922 (discharge, 87 second-feet).

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

DIVERSIONS.—Numerous irrigation ditches divert above and below station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined above 100 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Record good.

The following discharge measurements were made:

April 25, 1926: Gage height, 2.22 feet; discharge, 1,060 second-feet.

June 6, 1926: Gage height, 4.22 feet; discharge, 5,120 second-feet.

Daily discharge, in second-feet, of Clark Fork at Chance, Mont., for the year ending September 30, 1926

Day	Mar.	Apr.	May	June	July	Aug.	Sept.
1		141	2,870	3,730	3,280	559	318
2		136	2,680	3,730	4,740	600	318
3		123	2,680	3,730	3,070	559	396
4		133	2,680	3,970	3,070	559	480
5		131	2,870	4,220	2,870	518	436
6		133	2,870	4,740	2,680	518	318
7		123	2,500	5,280	2,680	518	347
8		146	2,500	4,740	2,500	480	559
9		149	2,170	4,740	2,870	822	480
10		197	1,730	4,740	2,500	600	410
11		298	1,730	4,220	2,170	775	376
12		443	1,520	3,730	2,170	685	370
13		518	1,400	3,280	1,870	1,080	576
14		518	1,520	3,070	1,730	822	364
15		480	1,870	2,680	1,730	685	364
16		870	2,500	2,330	1,660	600	353
17		1,330	3,070	2,170	1,590	559	341
18		1,080	2,870	2,020	1,520	559	341
19		1,200	2,870	2,020	1,460	642	341
20		1,590	3,730	2,170	1,260	600	341
21	157	1,590	5,010	1,940	1,140	518	341
22	157	1,520	4,220	1,800	970	480	318
23	184	1,330	4,480	1,730	870	443	318
24	219	970	5,280	1,730	870	443	318
25	219	1,080	5,010	1,940	775	443	318
26	160	1,400	4,220	2,170	775	436	318
27	160	1,330	3,730	2,500	685	403	298
28	155	1,520	3,730	2,870	685	403	278
29	119	2,020	4,220	2,870	685	403	268
30	157	2,500	4,220	3,070	642	389	430
31	116	------	3,970	------	600	347	------

Monthly discharge of Clark Fork at Chance, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
March 21–31	219	116	164	3,580
April	2,500	123	833	49,600
May	5,280	1,400	3,120	192,000
June	5,280	1,730	3,130	186,000
July	4,740	600	1,810	111,000
August	1,080	347	563	34,600
September	559	268	361	21,500
The period	------	------	------	598,000

CLARK FORK AT EDGAR, MONT.

LOCATION.—In SW. ¼ sec. 24, T. 4 S., R. 23 E., on highway bridge half a mile east of Edgar, Carbon County.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—July 29, 1921, to September 30, 1926.

GAGE.—Chain gage fastened to guardrail on downstream side of bridge; read by Mrs. L. O. Helmey and Mrs. Elsie Kane.

DISCHARGE MEASUREMENTS.—Made from highway bridge.

CHANNEL AND CONTROL.—Channel composed of sand and gravel. Control poorly defined.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.35 feet at 6 p. m. June 7 (discharge, 6,170 second-feet); minimum stage, 2.20 feet at 6 p. m. September 6 (discharge, 230 second-feet).

1921–1926: Maximum stage recorded, 7.90 feet June 16, 1922 (discharge, 9,700 second-feet); minimum stage, 2.18 feet March 18–19, 1923 (discharge, 217 second-feet).

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

DIVERSIONS.—Numerous ditches divert water for irrigation above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined above 400 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

The following discharge measurements were made:

April 25, 1926: Gage height, 3.26 feet; discharge, 990 second-feet.

June 5, 1926: Gage height, 5.40 feet; discharge, 4,250 second-feet.

Daily discharge, in second-feet, of Clark Fork at Edgar, Mont., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Apr.	May	June	July	Aug.	Sept.
1	685	855	527	283	2,730	3,430	4,790	455	390
2	645	812	527	278	2,730	3,430	4,390	455	378
3	685	770	645	289	2,410	3,430	3,250	422	390
4	685	770	527	283	2,410	3,430	3,070	372	422
5	645	770	455	320	2,730	3,800	2,900	390	278
6	645	645	491	294	3,070	4,390	2,570	422	235
7	645	605	455	283	2,730	5,410	2,410	422	855
8	685	605	455	289	2,260	4,590	2,260	390	1,180
9	645	605	491	310	3,070	4,590	2,900	422	422
10	645	605	455	349	1,970	4,590	2,730	605	343
11	685	645	455	455	1,830	4,390	2,260	566	390
12	728	770	455	491	1,460	3,800	1,970	728	390
13	685	645	455	605	1,340	3,430	1,970	685	360
14	685	605	455	605	1,230	3,070	1,640	945	527
15	685	527	455	566	1,340	2,730	1,460	605	527
16	645	527	491	605	2,110	2,260	1,340	685	527
17	645	566	491	1,040	2,730	1,830	1,230	645	527
18	645	566	455	1,180	3,250	1,830	1,230	645	527
19	605	566	455	1,040	2,900	1,700	1,080	605	527
20	685	527	491	1,280	3,070	1,830	1,040	605	527
21	728	566	491	1,640	4,590	1,700	945	566	527
22	728	605	343	1,520	4,390	1,580	900	527	491
23	770	605	566	1,340	4,190	1,460	812	527	455
24	770	566	527	1,130	3,990	1,340	605	491	455
25	728	527	566	1,040	5,200	1,460	605	455	491
26	685	527	491	1,040	4,590	1,700	605	422	455
27	685	566	331	1,230	3,800	2,110	605	372	455
28	685	566		1,340	3,800	2,570	527	390	491
29	605	527	300	1,900	3,800	2,570	491	491	491
30	645	527		2,410	3,990	2,730	455	455	685
31	945	-------		-------	3,800	-------	455	455	-------

Monthly discharge of Clark Fork at Edgar, Mont., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	945	605	686	42,200
November	855	527	619	36,800
December	645	300	458	28,200
April	2,410	278	848	50,500
May	5,200	1,230	3,020	186,000
June	5,410	1,340	2,910	173,000
July	4,790	455	1,730	106,000
August	945	372	523	32,200
September	1,180	235	491	29,200

WIND RIVER AT RIVERTON, WYO.

LOCATION.—In sec. 2, T. 1 S., R. 4 E., at highway bridge three-quarters of a mile east of Riverton, Fremont County. Popo Agie River unites with Wind River to form Big Horn River three-quarters of a mile below.

DRAINAGE AREA.—2,320 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—May 15, 1911, to September 30, 1926. From May 14, 1906, to November 1, 1908, station maintained at Walker's ferry 1 mile above present station. No streams enter between; records directly comparable.

GAGE.—Friez water-stage recorder referred to chain gage on downstream side of first pier bent from left bank; inspected by employees of Bureau of Reclamation.

DISCHARGE MEASUREMENTS.—Made from cable just above bridge.

CHANNEL AND CONTROL.—Bed composed of sand and gravel. Control at gravel bar just below gage; slightly shifting. Right bank will be overflowed at extremely high stages.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 9.32 feet from 10 p. m. July 10 to 2 a. m. July 11 (discharge, 4,570 second-feet); minimum discharge occurred during winter.

1906–1908; 1911–1926: Maximum discharge recorded, 12,300 second-feet June 14, 1906; minimum discharge, 226 second-feet February 27, 1919.

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

DIVERSIONS.—Water is diverted from Wind River and its tributaries for the irrigation of 35,000 acres.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent; affected by ice. Rating curve fairly well defined. Operation of water-stage recorder satisfactory except as indicated in footnote to table of daily discharge. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records good except for estimated periods, for which they are fair.

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

Discharge measurements of Wind River at Riverton, Wyo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 20	[a] 6.25	268	June 25	7.08	915
May 28	8.33	2,510	July 17	8.05	1,960

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Wind River at Riverton, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,030	655	480				327	2,470	2,390	2,160	1,010	1,200
2	953	650	475				324	2,550	2,230	2,390	998	1,120
3	918	645	430				356	2,390	2,160	2,470	1,040	1,080
4	890	585	340				343	2,550	2,230	2,640	1,410	1,200
5	864	550	302				346	2,900	2,390	2,230	1,870	1,120
6	877	540	375	310	340	390	346	2,720	2,900	2,310	1,800	990
7	877	530	440				384	2,310	2,990	2,310	1,730	897
8	870	540	440				374	2,080	2,990	2,550	1,730	844
9	844	560	430				400	1,940	2,900	3,380	1,940	884
10	799	565	425				381	1,730	2,810	4,220	1,940	870

Daily discharge, in second-feet, of Wind River at Riverton, Wyo., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	806	570	420				514	1,530	2,550	4,080	1,940	806
12	858	560	420				608	1,470	2,310	3,280	1,870	773
13	838	550	410				648	1,300	2,230	2,720	1,800	825
14	806	530	390				642	1,200	2,310	2,390	1,660	786
15	773	520	370	300	365	425	530	1,300	2,160	2,230	1,470	786
16	754	520					700	1,730	1,800	2,080	1,360	730
17	780	530					1,040	2,080	1,530	1,940	1,300	688
18	706	535	390				1,180	2,310	1,250	1,870	1,200	671
19	718	510					1,300	2,010	1,110	1,870	1,100	650
20	700	490				366	1,300	2,310	1,040	1,870	1,120	609
21	712	471				380	1,250	3,280	1,000	1,800	1,060	580
22	706	470				390	1,200	3,080	990	1,660	975	560
23	712	465	365			400	1,200	3,180	980	1,410	925	550
24	748	475				400	1,070	3,490	970	1,200	911	540
25	700	495			355	400	960	3,380	975	1,100	918	520
26	683	495		295		395	1,060	2,900	1,190	1,020	911	503
27	636	465				381	1,250	2,550	1,470	975	946	552
28	640	457	360			370	1,250	2,640	1,730	1,030	990	541
29	645	460			-------	343	1,600	2,690	1,870	1,080	1,170	503
30	650	470			------	336	2,080	2,810	1,940	1,050	1,300	519
31	659	-------			-------	327	-------	2,640	-------	1,050	1,300	-------

NOTE.—Stage-discharge relation affected by ice Dec. 16 to Mar. 19; discharge based on one discharge measurement, gage-height and temperature records, and by comparison with flow of Big Horn River at Thermopolis. Braced figures give mean discharge for periods indicated. No gage-height record Oct. 28–30, Nov. 1–6, 8–13, 15–20, 22–27, Nov. 29 to Dec. 4, Dec. 6–11, 13–18, Mar. 21–26, June 21–24, Sept. 19–25; discharge based on comparison with flow of Big Horn River at Thermopolis, Wyo.

Monthly discharge of Wind River at Riverton, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,030	636	779	47,900
November	655	457	529	31,500
December	-------	-------	390	24,000
January	-------	-------	301	18,500
February	-------	-------	353	19,600
March	-------	-------	394	24,200
April	2,080	324	832	49,500
May	3,490	1,200	2,370	146,000
June	2,990	970	1,910	114,000
July	4,220	975	2,080	128,000
August	1,940	911	1,340	82,400
September	1,200	503	763	45,400
The year	-------	-------	1,010	731,000

BIG HORN RIVER AT THERMOPOLIS, WYO.

LOCATION.—In sec. 36, T. 43 N., R. 95 W., at highway bridge between Thermopolis and Hot Springs, Hot Springs County. Nearest tributary, Thermopolis Hot Springs, discharges 9 second-feet into Big Horn River a short distance downstream.

DRAINAGE AREA.—8,080 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—May 28, 1900, to December 31, 1905; June 30, 1910, to September 30, 1926.

GAGE.—Chain gage on downstream handrail of concrete bridge; read by Mrs. N. T. Olson.

DISCHARGE MEASUREMENTS.—Made from two-span highway bridge one-third mile upstream.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and small boulders. Control for low and medium stages a short distance below; shifts at intervals. High-water control is vertical walls of canyon entrance half a mile downstream. Banks high and not subject to overflow except during extreme flood stage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.25 feet at 5.30 p. m. July 11 (discharge, 10,200 second-feet); minimum discharge estimated, 410 second-feet January 22–23, when stage-discharge relation was affected by ice.

1900–1905; 1910–1926: Maximum stage, from high-water mark, 16.2 feet at 11 p. m. July 24, 1923 (discharge, 29,800 second-feet); minimum stage, 0.2 foot at 5 p. m. April 5, 1904 (discharge, 180 second-feet).

ICE.—Stage-discharge relation slightly affected by ice for short periods.

DIVERSIONS.—Adjudicated diversions for irrigation of 1,100 acres from Big Horn River above station and 15,000 acres below. In addition, about 30,000 acres is irrigated by unadjudicated rights.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during August or September; slightly shifting. Rating curves well defined. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating tables using shifting-control method June 7 to July 10. Records good except during periods of shifting control, for which they are fair.

Discharge measurements of Big Horn River at Thermopolis, Wyo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 18	0.84	562	July 17	3.69	3,480
May 25	5.17	6,460	Sept. 30	1.51	1,030
June 23	1.89	1,220			

Daily discharge, in second-feet, of Big Horn River at Thermopolis, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,680	621	894	612	514	710	608	3,360	4,940	2,230	1,450	1,730
2	1,780	1,190	918	531	496	982	680	4,040	4,580	2,970	1,300	1,610
3	1,680	1,210	886	528	517	1,160	680	3,870	4,580	3,130	1,300	1,610
4	1,650	1,250	849	528	520	1,290	740	4,040	5,310	3,970	1,400	1,500
5	1,640	1,220	704	531	524	1,550	740	4,220	4,040	3,630	1,900	1,990
6	1,630	1,010	655	542	581	1,610	740	4,940	3,870	3,160	2,280	1,730
7	1,600	776	728	542	585	1,300	870	4,580	4,360	3,670	2,150	1,500
8	1,610	788	886	549	608	1,040	950	3,870	4,720	3,670	2,150	1,400
9	1,620	842	814	542	612	828	990	4,040	4,900	3,330	2,150	1,350
10	1,580	1,100	782	557	660	849	910	3,530	4,900	6,010	2,570	1,400
11	1,530	1,090	698	553	660	870	870	3,530	4,690	9,750	2,570	1,350
12	1,550	1,160	670	561	675	950	1,080	3,190	4,330	9,380	2,720	1,260
13	1,570	1,130	728	565	640	1,050	1,300	3,030	4,330	7,160	2,570	1,220
14	1,560	1,080	770	545	655	1,180	1,500	2,870	4,330	5,120	2,570	1,350
15	1,550	1,020	686	573	650	1,280	1,540	2,570	4,150	4,400	2,280	1,350
16	1,530	878	640	542	608	1,320	1,400	3,030	3,600	4,220	2,020	1,260
17	1,450	835	612	545	569	1,450	1,540	3,360	3,090	3,360	1,900	1,130
18	1,460	1,010	598	561	557	2,220	2,080	4,040	2,480	3,190	1,900	1,050
19	1,410	974	581	549	585	2,020	2,280	4,040	2,200	2,870	1,690	1,050
20	1,370	886	565	500	675	1,790	2,280	3,870	1,950	2,870	1,590	910

Daily discharge, in second-feet, of Big Horn River at Thermopolis, Wyo., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
21	1,350	776	770	458	612	1,530	2,420	4,580	1,710	2,870	1,500	980
22	1,340	788	686	410	650	1,300	2,420	6,050	1,510	2,720	1,500	980
23	1,340	764	665	410	650	1,230	2,420	5,860	1,280	2,420	1,400	910
24	1,500	746	608	440	645	1,160	2,280	5,860	1,010	2,150	1,350	910
25	1,430	863	621	450	616	1,260	2,020	6,420	1,050	1,790	1,260	910
26	1,350	926	692	461	594	1,240	1,900	6,050	1,110	1,590	1,300	878
27	1,330	910	698	486	569	1,030	1,900	5,860	1,440	1,590	1,260	785
28	1,240	856	716	461	577	902	2,280	4,940	1,730	1,400	1,300	910
29	1,280	807	626	581	-------	807	2,280	5,310	1,950	1,500	1,350	945
30	1,200	788	612	482	-------	758	2,720	5,500	2,070	1,500	1,590	945
31	1,250	-------	565	531	-------	704	-------	5,310	-------	1,500	1,790	-------

NOTE.—Stage-discharge relation affected by ice Jan. 20–25; discharge based on temperature records and observer's notes.

Monthly discharge of Big Horn River at Thermopolis, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,780	1,200	1,490	91,600
November	1,250	621	943	56,100
December	918	565	707	43,500
January	612	410	520	32,000
February	675	496	600	33,300
March	2,220	704	1,210	74,400
April	2,720	608	1,550	92,200
May	6,420	2,570	4,380	269,000
June	5,310	1,010	3,210	191,000
July	9,750	1,400	3,520	216,000
August	2,720	1,260	1,810	111,000
September	1,990	785	1,230	73,200
The year	9,750	410	1,770	1,280,000

DINWOODY CREEK NEAR BURRIS, WYO.

LOCATION.—In sec. 10, T. 5 N., R. 5 W., at highway bridge on road from Riverton to Dubois, 6 miles northwest of Burris, on Wind River Diminished Reservation. No tributary between station and mouth, a quarter of a mile below.

DRAINAGE AREA.—114 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—May 15, 1918, to September 30, 1926. Station maintained at same site from January 16 to October 31, 1909.

GAGE.—Gurley water-stage recorder at left bridge abutment; inspected by Cloyd Miller.

DISCHARGE MEASUREMENTS.—Made from single-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of boulders. Control at large boulders 25 feet downstream; fairly permanent. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 3.38 feet at 8 a. m. July 10 (discharge, 1,020 second-feet); minimum discharge probably occurred during winter.

1918–1926: Maximum discharge during period, 1,710 second-feet at 9 a. m. July 25, 1923; minimum discharge, 8 second-feet April 17, 1922.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—One small ditch diverts water from Dinwoody Creek above station.

REGULATION.—Natural regulation to small extent by Dinwoody Lake and numerous other small lakes on headwaters.

ACCURACY.—Stage-discharge relation probably permanent during year except as affected by ice. Rating curve fairly well defined. Operation of water-stage recorder fairly satisfactory except from November 15 to April 18, when observer's readings three times a week were used. Daily discharge ascertained by applying to rating table daily or mean daily gage height obtained by inspection of recorder graph, except as explained in footnote to table of daily discharge. Records good except for estimated periods, for which they are fair.

The following discharge measurement was made:
May 26, 1926: Gage height, 2.02 feet; discharge, 279 second-feet.

Daily discharge, in second-feet, of Dinwoody Creek near Burris, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	118	79		23	15	16	14	131	225	558	454	398
2	112	81		25	15	16	14	163	222	618	470	326
3	103	73	27	26	14	16	14	171	222	723	508	270
4	98	62		27	14	16	14	180	236	679	800	198
5	94	60		24	14	16	14	177	243	646	767	168
6	89	64		23	14	17	14	186	299	564	668	155
7	84	62		23	14	15	14	177	388	520	602	150
8	79	65		23	14	14	14	174	437	552	624	142
9	76	62	28	20	14	12	14	160	454	740	657	135
10	74	62		20	14	14	14	142	481	970	640	131
11	76	64		19	14	13	14	131	486	860	547	127
12	79	70		19	14	12	14	116	426	740	476	120
13	78	64		20	14	12	14	107	420	706	437	116
14	76	62		20	14	12	14	98	398	690	376	109
15	79	62		20	13	12	14	96	326	630	371	101
16	79	62		18	13	11	14	100	274	552	355	98
17	78	62		16	14	11	15	115	232	580	326	94
18	74	55		15	15	12	15	130	201	608	304	92
19	74	50		14	16	13	16	150	174	624	287	90
20	76	48		14	16	13	27	180	155	652	251	88
21	76	46	24	13	15	12	41	235	150	624	222	86
22	78	43		13	14	12	58	278	135	547	208	84
23	78	40		12	14	12	71	266	124	486	215	82
24	73	35		13	14	12	81	283	127	448	255	81
25	68	34		14	13	12	78	299	145	442	278	80
26	70	33		14	13	12	78	274	212	437	322	78
27	64	32		14	14	12	78	240	308	437	350	76
28	65	32		14	15	12	81	251	393	454	366	74
29	67	30		14	-------	13	87	255	481	448	514	72
30	70	30		14	-------	13	114	251	525	432	492	70
31	74	-------		15	-------	14	-------	243	-------	437	459	-------

NOTE.—Stage-discharge relation affected by ice Oct. 28–31, Nov. 4–5, 14–16, 20–22, Nov. 28 to Jan. 3, Jan. 15–18, 20–28, Feb. 7–16, 23–28, Mar. 7–9; discharge estimated. Gage read three times a week Nov. 15 to Apr. 18; discharge estimated for days of missing gage heights. No gage-height record May16–21 and Sept. 19–30; discharge estimated. Braced figures give mean discharge for periods indicated.

Monthly discharge of Dinwoody Creek near Burris, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	118	64	80.0	4,920
November	81	30	54.1	3,220
December	-------	-------	25.3	1,560
January	27	12	18.0	1,110
February	16	13	14.2	789
March	17	11	13.2	812
April	114	14	35.5	2,110
May	299	96	186	11,400
June	525	124	297	17,700
July	970	432	594	36,500
August	800	208	439	27,000
September	398	70	130	7,740
The year	970	11	159	115,000

DRY CREEK NEAR BURRIS, WYO.

LOCATION.—In SW. ¼ sec. 12, T. 4 N., R. 5 W., half a mile above head of Dry Creek ditch and 2 miles south of Burris on Wind River Diminished Reservation. Little Dry Creek enters 2 miles below.

DRAINAGE AREA.—73 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—May 19, 1921, to September 30, 1926.

GAGE.—Gurley water-stage recorder at left bank; inspected by employee of United States Indian Service.

DISCHARGE MEASUREMENTS.—Made from cable 100 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of boulders, which are fairly permanent. No well-defined control. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 2.71 feet at 2 p. m. July 9 (discharge, 691 second-feet); minimum discharge occurred during winter.

1921–1926: Maximum stage from high-water mark, 3.9 feet about June 12, 1921 (discharge, 1,100 second-feet); minimum discharge recorded, 2 second-feet February 23, 1921.

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

DIVERSIONS.—One small ditch diverts water above station, and Dry Creek ditch diverts water below station.

REGULATION.—Diurnal fluctuation during spring from alternate melting and freezing of mountain snow. No artificial regulation.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined. Operation of water-stage recorder fairly satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records good except for periods of missing gage heights, for which they are fair.

The following discharge measurements were made:

May 26, 1926: Gage height, 1.26 feet; discharge, 102 second-feet.

August 5, 1926; gage height, 1.36 feet; discharge, 113 second-feet.

Daily discharge, in second-feet, of Dry Creek near Burris, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	54	31	------	102	100	151	58	69
2	45	30	------	90	104	141	62	64
3	39	31	------	91	105	130	100	64
4	37	31	------	96	118	137	118	69
5	36	------	------	96	128	126	113	69
6	36	------	------	87	140	121	100	64
7	36	------	------	72	150	111	97	57
8	36	------	------	69	160	135	101	57
9	36	------	------	65	170	432	110	54
10	36	------	------	58	173	346	98	50
11	36	------	------	58	175	232	93	48
12	36	------	------	57	167	176	87	45
13	36	------	------	52	159	149	80	44
14	36	------	------	65	139	145	73	39
15	36	------	------	87	111	130	68	36
16	35	------	------	98	93	119	62	34
17	34	------	------	104	81	111	58	34
18	32	------	------	100	72	107	55	31
19	30	------	------	92	72	107	56	30
20	31	------	------	125	65	110	53	30

Daily discharge, in second-feet, of Dry Creek near Burris, Wyo., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
21	31			145	60	102	50	30
22	31			118	60	92	52	30
23	30			135	62	82	55	30
24	30			149	77	76	56	30
25	30		54	119	88	72	56	30
26	29		52	101	97	69	55	30
27	31		55	134	116	66	57	30
28	31		62	151	113	68	67	30
29	33		72	139	125	68	80	30
30	32		93	134	139	64	84	30
31	32			115		62	79	

NOTE.—No gage-height record Oct. 2, 6–11, 16–18, 25, June 6–11, 20–23; discharge based on comparison with flow of Dinwoody Creek.

Monthly discharge of Dry Creek near Burris, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	54	29	34.6	2,130
April 25–30	93	52	64.7	770
May	151	52	100	6,150
June	175	60	114	6,780
July	432	62	130	7,990
August	118	50	75.3	4,630
September	69	30	42.9	2,550

WILLOW CREEK NEAR CROWHEART, WYO.

LOCATION.—In SW. ¼ sec. 20, T. 3 N., R. 4 W., 2 miles upstream from bridge on main road from Fort Washakie to Dubois and 2 miles southwest of Crowheart, Fremont County, on Wind River Diminished Reservation. No tributary between station and mouth, 12 miles downstream.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—May 15 to October 31, 1909; May 16, 1921, to June 30, 1923; April 25, 1925, to September 30, 1926.

GAGE.—Gurley water-stage recorder on left bank 400 feet above diversion dam; inspected by employee of United States Indian Service.

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

CHANNEL AND CONTROL.—Bed composed of gravel and small boulders. Control at rapids 10 feet downstream; shifts slightly during high water. Left bank subject to overflow at stage of 3.5 feet.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 2.2 feet at noon July 9 (discharge, 126 second-feet); minimum discharge occurred during winter.

1921–1923; 1925–1926: Maximum stage from high-water mark, 4.50 feet (old datum) July 26, 1923 (discharge, 750 second-feet); minimum discharge recorded, 7 second-feet January 14, 1921.

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

DIVERSIONS.—No diversions above station.

REGULATION.—Diurnal fluctuation during spring from alternate melting and freezing of mountain snow. No artificial regulation.

ACCURACY.—Stage-discharge relation changed during winter. Rating curves well defined. Operation of water-stage recorder satisfactory except for short

periods. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records good.

The following discharge measurements were made:
May 26, 1926: Gage height, 1.28 feet; discharge, 38.2 second-feet.
August 5, 1926: Gage height, 0.90 foot; discharge, 14.1 second-feet.

Daily discharge, in second-feet, of Willow Creek near Crowheart, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	15	15	-------	12	41	16	16	14
2	15	15	-------	12	50	15	16	14
3	15	15	-------	12	46	15	17	15
4	15	15	-------	12	52	14	16	16
5	15	14	-------	13	54	14	15	16
6	16	15	-------	14	58	15	15	15
7	16	13	-------	14	53	16	16	15
8	15	-------	-------	16	48	17	16	16
9	15	-------	-------	15	45	83	15	15
10	15	-------	-------	16	40	52	16	14
11	15	-------	-------	16	33	36	16	14
12	15	-------	-------	14	36	29	16	14
13	15	-------	-------	14	32	25	15	14
14	15	-------	-------	14	29	24	16	14
15	15	-------	-------	14	23	21	16	14
16	15	-------	-------	14	21	24	16	14
17	15	-------	-------	24	20	17	15	14
18	15	-------	-------	26	20	17	16	14
19	15	-------	-------	34	20	17	16	14
20	15	-------	-------	60	18	17	15	14
21	15	-------	-------	62	17	16	14	14
22	15	-------	-------	57	16	16	14	14
23	15	-------	-------	58	16	16	14	14
24	15	-------	-------	68	16	16	14	14
25	15	-------	10	58	16	16	14	14
26	14	-------	11	39	16	16	14	14
27	14	-------	11	46	16	16	14	14
28	15	-------	11	58	16	16	16	14
29	15	-------	11	64	15	16	15	14
30	15	-------	11	53	15	16	14	16
31	15	-------	-------	43	-------	16	14	-------

NOTE.—No gage-height record May 23–25 and 27–29; discharge based on comparison with flow of Dry Creek near Burris.

Monthly discharge of Willow Creek near Crowheart, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	16	14	15.0	922
November 1–7	15	13	14.6	203
April 25–30	11	10	10.8	129
May	68	12	31.4	1,930
June	58	15	29.9	1,780
July	83	14	21.3	1,310
August	17	14	15.2	935
September	16	14	14.4	857

BULL LAKE CREEK NEAR LENORE, WYO.

LOCATION.—Near north line of sec. 17, T. 3 N., R. 2 W., at highway bridge 14 miles southeast of Lenore, Fremont County, on Wind River Diminished Reservation. No tributary between station and mouth, a quarter of a mile below.

DRAINAGE AREA.—132 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—May 18, 1918, to September 30, 1926. During 1909 eight discharge measurements made at same site.

GAGE.—Stevens water-stage recorder on left bank just below bridge; inspected by employees of Bureau of Reclamation.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of large boulders; permanent. Control at small rapids just below gage; slightly shifting at long intervals. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 6.5 feet from noon to 2 p. m. July 10 (discharge, 1,910 second-feet); minimum discharge occurred during winter.

1918–1926: Maximum discharge recorded, 3,990 second-feet at 2 p. m. June 16, 1918; minimum discharge, 17.8 second-feet from current-meter measurement, February 1, 1919.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Two ditches divert water above station for irrigation of 200 acres.

REGULATION.—Flow naturally regulated by Bull Lake, which has an area of 4 square miles.

ACCURACY.—Stage-discharge relation practically permanent; affected by ice. Rating curve well defined. Operation of water-stage recorder satisfactory during open-water season. Staff gage read once a week December 15 to March 28. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records excellent except for estimated periods, for which they are fair.

COOPERATION.—Gage-height record furnished by the United States Bureau of Reclamation.

The following discharge measurements were made:

May 26, 1926: Gage height, 5.19 feet; discharge, 785 second-feet.

June 24, 1926: Gage height, 4.40 feet; discharge, 307 second-feet.

August 5, 1926: Gage height, 5.29 feet; discharge, 831 second-feet.

Daily discharge, in second-feet, of Bull Lake Creek near Lenore, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	262	132	79		38	28	36	327	705	790	446	435
2	254	140	77			31	37	387	635	842	452	392
3	250	130	75			34	36	435	635	866	500	368
4	235	132	68			37	36	458	663	835	684	354
5	224	127	70		40	40	36	500	726	798	835	327
6	220	122	75	58		36	34	539	812	775	820	298
7	209	122	75			35	34	520	930	733	761	274
8	206	117	75		38	33	36	482	1,020	719	719	250
9	202	119	77			33	36	435	1,070	1,140	705	247
10	198	122	75			33	37	419	1,070	1,860	705	243
11	195	119	74	43	37	34	38	414	1,090	1,680	677	224
12	198	117	72			34	41	387	1,050	1,320	614	216
13	195	110	70			35	43	349	1,020	1,060	558	206
14	188	107		34		35	46	332	981	890	526	198
15	184	104			37	36	49	336	874	850	494	191
16	181	100				37	52	354	726	805	476	188
17	181	100	54			38	55	398	607	775	452	171
18	158	100		31		38	61	446	513	747	429	165
19	158	98			32	36	72	488	435	775	403	155
20	158	96				34	85	552	392	812	378	152
21	152	94				32	100	719	362	782	345	146
22	146	94		24		30	114	790	336	740	319	141
23	141	96	56		33	33	130	790	306	649	319	132
24	146	92				36	150	820	302	572	323	124
25	146	90				50	160	850	332	526	340	119
26	141	88			30	48	165	798	404	500	368	119
27	138	86				45	184	761	513	494	387	117
28	135	84				40	198	761	607	470	414	114
29	135	81	65	33		37	220	782	656	458	464	112
30	138	79				36	266	790	736	452	488	119
31	135					34		761		446	464	

NOTE.—Stage-discharge relation affected by ice Dec. 3–4, 13, and during most of the periods Dec. 14 to Jan. 10 and Jan. 19–31; discharge estimated. No gage-height record Nov. 15, 25–28, Jan 12–17, Feb. 2–7, 9–14, 16–21, 23–28, Mar. 2–7, 9–14, 16–21, 23–28, and Apr. 23–25; discharge estimated for these periods. Braced figures give mean discharge for periods indicated.

Monthly discharge of Bull Lake Creek near Lenore, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	262	135	181	11,100
November	132	79	106	6,310
December	79		64.8	3,980
January			39.5	2,430
February			35.0	1,940
March	50	28	36.1	2,220
April	266	34	86.2	5,130
May	850	327	554	34,100
June	1,090	302	684	40,700
July	1,860	446	812	49,900
August	835	319	512	31,500
September	435	112	210	12,500
The year	1,860		279	202,000

LITTLE WIND RIVER NEAR FORT WASHAKIE, WYO.

LOCATION.—In SE. ¼ sec. 1, T. 1 S., R. 2 W., near Fort Washakie, Fremont County, on Wind River Diminished Reservation, 2½ miles above mouth of North Fork of Little Wind River.

DRAINAGE AREA.—134 square miles (measured on base map of Wyoming).

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

GAGE.—Gurley water-stage recorder at right bank 500 feet above head gate of Ray ditch; inspected by employees of United States Indian Service.

DISCHARGE MEASUREMENTS.—Made from cable 300 feet below gage.

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

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 7.59 feet at 2 p. m. July 9 (discharge estimated from slope and cross section, 5,220 second-feet); minimum stage occurred during winter.

1921–1926: Maximum stage recorded, that of July 9, 1926; minimum discharge, 14 second-feet February 22, 1921.

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

DIVERSIONS.—A few small ditches divert water above station. Several ditches divert water below station, the largest being Ray ditch which irrigates 6,000 acres.

REGULATION.—Diurnal fluctuation during spring from alternate melting and freezing of mountain snow. No artificial regulation.

ACCURACY.—Stage-discharge relation changed during flood of July 9. Rating curve fairly well defined between 70 and 1,100 second-feet; extended above and below these limits. Operation of water-stage recorder fairly satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph, except for period July 10 to September 30, when shifting-control method was used. Records good.

The following discharge measurements were made:

May 27, 1926: Gage height, 2.42 feet; discharge, 481 second-feet.

August 6, 1926: Gage height, 0.88 foot; discharge, 164 second-feet.

Daily discharge, in second-feet, of Little Wind River near Fort Washakie, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	150	84	------	284	334	263	112	73
2	137	84	------	291	356	263	104	67
3	128	83	------	304	352	248	154	75
4	120	84	------	328	380	237	198	90
5	114	70	------	345	412	304	186	91
6	130	76	------	310	469	284	168	78
7	137	68	------	248	487	263	154	72
8	130	------	------	240	474	370	168	91
9	120	------	------	217	474	2,910	173	84
10	122	------	------	215	469	1,500	188	75
11	122	------	------	223	420	830	257	67
12	120	------	------	193	392	595	220	75
13	118	------	------	186	392	464	198	90
14	114	------	------	240	370	380	180	83
15	104	------	------	284	300	324	159	73
16	108	------	------	331	251	263	145	66
17	88	------	83	342	212	242	132	64
18	102	------	99	310	186	235	122	60
19	91	------	118	324	176	225	112	54
20	93	------	147	440	163	220	102	49
21	90	------	137	536	152	210	99	45
22	90	------	147	412	141	195	104	42
23	93	------	116	452	141	175	100	39
24	83	------	93	505	154	159	97	39
25	84	------	104	416	188	147	90	33
26	84	------	132	384	220	141	81	38
27	91	------	139	440	234	134	75	36
28	81	------	156	444	248	130	73	34
29	90	------	188	444	251	132	86	33
30	86	------	242	408	257	124	84	42
31	88	------	------	370	------	116	80	------

NOTE.—Sudden flood on July 9; mean discharge for the day computed from hydrograph based on slope determination of maximum discharge. No gage-height record Oct. 25, July 18-23, and Sept. 17-20; discharge based on comparison with flow of North Fork of Little Wind River.

Monthly discharge of Little Wind River near Fort Washakie, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	150	81	107	6,580
November 1-7	84	68	78.4	1,090
April 17-30	242	83	136	3,780
May	536	186	338	20,800
June	487	141	302	18,000
July	2,910	116	390	24,000
August	257	73	136	8,360
September	91	33	61.9	3,680

NORTH FORK OF LITTLE WIND RIVER AT FORT WASHAKIE, WYO.

LOCATION.—In SW. ¼ sec. 33, T. 1 N., R. 1 W., at Fort Washakie, Fremont County, on Wind River Diminished Reservation. North Fork enters Little Wind River a quarter of a mile below.

DRAINAGE AREA.—138 square miles (measured on base map of Wyoming).

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

GAGE.—Gurley water-stage recorder at left bank a quarter of a mile above highway bridge; inspected by employee of United States Indian Service.

DISCHARGE MEASUREMENTS.—Made from cable at gage.

CHANNEL AND CONTROL.—Bed composed of gravel and small boulders. Control at small rapids just below gage; shifting. Left bank subject to overflow at stage of 3 feet.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 4.85 feet at noon July 9 (discharge, 2,640 second-feet); minimum stage occurred during winter.

1921–1926: Maximum stage recorded occurred on July 9, 1926; minimum discharge, 16 second-feet, from current-meter measurement made on January 19, 1922.

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

DIVERSIONS.—Several small ditches divert water above station.

REGULATION.—Diurnal fluctuation during spring from alternate melting and freezing of mountain snow. No artificial regulation.

ACCURACY.—Stage-discharge relation not permanent; affected by shifting control. Standard rating curve fairly well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph, except from April 21 to June 20 and July 16 to September 20, when shifting-control method was used. Records fair.

The following discharge measurements were made:

May 27, 1926: Gage height, 1.97 feet; discharge, 404 second-feet.

June 24, 1926: Gage height, 1.04 feet; discharge, 110 second-feet.

August 6, 1926: Gage height, 1.14 feet; discharge, 118 second-feet.

Daily discharge, in second-feet, of North Fork of Little Wind River at Fort Washakie, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	123	60	------	183	308	153	86	74
2	118	60	------	222	283	156	86	76
3	110	61	------	242	264	156	120	84
4	103	60	------	279	268	162	118	98
5	98	61	------	317	283	183	110	91
6	103	65	------	296	308	174	123	86
7	103	60	------	245	325	183	126	88
8	100	------	------	232	334	264	134	108
9	96	------	------	219	338	1,780	136	100
10	96	------	------	212	338	1,700	156	96
11	96	------	------	209	330	1,180	177	96
12	100	------	------	177	317	840	174	98
13	93	------	------	165	317	633	174	98
14	91	------	------	186	321	568	174	93
15	86	------	------	212	304	497	162	88
16	88	------	------	232	260	410	147	81
17	84	------	65	256	219	343	131	79
18	81	------	69	268	196	317	113	72
19	76	------	81	287	171	296	100	70
20	76	------	96	405	153	275	93	67
21	76	------	93	519	145	253	91	63
22	74	------	106	448	128	242	88	58
23	76	------	93	470	116	222	86	55
24	70	------	76	497	108	180	81	52
25	68	------	76	442	106	168	74	50
26	67	------	88	380	98	145	72	50
27	65	------	100	405	106	136	69	47
28	65	------	103	410	120	128	70	46
29	65	------	118	410	134	116	74	44
30	63	------	150	385	139	108	72	53
31	63	------	------	348	------	98	72	------

NOTE.—Discharge July 9-10 computed from hydrograph based on slope determination of maximum discharge.

Monthly discharge of North Fork of Little Wind River at Fort Washakie, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	123	63	86.2	5,300
April 17-30	150	65	93.9	2,610
May	519	165	308	18,900
June	338	98	228	13,600
July	1,780	98	389	23,900
August	177	69	113	6,950
September	108	44	75.4	4,490

NOWOOD CREEK AT BONANZA, WYO.

LOCATION.—In sec. 13, T. 49 N., R. 91 W., at Bonanza, Big Horn County. Nearest tributary, Paintrock Creek, enters some distance above.

DRAINAGE AREA.—1,790 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—July 29, 1910, to September 30, 1926.

GAGE.—Chain gage on left bank, 1,000 feet below store at Bonanza; read by Miss Leona Graves.

DISCHARGE MEASUREMENTS.—Made from two-span highway bridge a quarter of a mile below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel. Control is small rapids 100 feet downstream; slightly shifting at long intervals.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.3 feet at 8 a. m. May 25 (discharge, 2,800 second-feet); minimum discharge occurred during winter.

1910–1912; 1915–1926: Maximum stage recorded, 8.09 feet at 9 a. m. June 15, 1924 (discharge, 5,160 second-feet); minimum stage, 1.55 feet July 27–31, 1919 (discharge, 1.5 second-feet).

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

DIVERSIONS.—Adjudicated diversions for irrigation of 5,700 acres from Nowood Creek above station and 3,400 acres below.

ACCURACY.—Stage-discharge relation changed during winter; affected by ice. Rating curves used October 1 to December 15 and March 4 to September 30 both well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

The following discharge measurements were made:

May 24, 1926: Gage height, 6.20 feet; discharge, 2,680 second-feet.

June 22, 1926: Gage height, 3.50 feet; discharge, 521 second-feet.

August 9, 1926: Gage height, 2.78 feet; discharge, 227 second-feet.

Daily discharge, in second-feet, of Nowood Creek at Bonanza, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	319	290	228	220	219	1,280	1,440	775	206	231
2	302	278	214	380	206	1,210	1,440	715	183	212
3	290	310	160	500	212	1,210	1,520	715	200	323
4	282	263	162	630	212	1,360	1,210	1,140	248	425
5	266	256	191	536	216	1,600	1,440	1,070	271	495
6	270	252	228	407	216	1,680	1,770	865	231	470
7	278	250	238	416	216	1,440	1,950	2,050	219	425
8	282	256	249	315	231	1,140	1,680	1,280	222	425
9	270	319	204	308	228	1,360	1,600	1,950	231	495
10	260	324	173	425	234	1,210	1,680	1,140	1,040	448

Daily discharge in second-feet, of Nowood Creek at Bonanza, Wyo., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	270	302	170	363	238	1,070	1,520	865	575	425
12	270	249	165	425	251	1,140	1,280	715	548	380
13	263	235	160	425	278	1,000	1,280	685	548	402
14	249	235	150	402	289	1,000	1,140	602	470	402
15	242	228	156	363	323	1,210	1,000	575	425	372
16	252	242	155	575	315	1,360	805	520	380	338
17	249	242	155	835	402	1,520	685	470	355	319
18	256	228	150	1,000	470	1,360	575	425	330	308
19	249	218	-------	835	575	1,210	575	402	315	300
20	263	207	-------	548	745	1,360	575	372	304	293
21	278	221	-------	470	865	1,680	520	338	286	271
22	263	191	-------	402	865	1,680	495	300	268	264
23	302	197	-------	330	865	1,950	470	257	248	254
24	310	228	-------	311	715	2,690	470	228	231	268
25	310	282	-------	293	658	2,690	470	212	216	271
26	282	249	-------	268	658	1,950	520	194	212	286
27	282	235	-------	251	630	2,150	685	171	206	282
28	266	224	-------	231	658	2,470	835	166	194	271
29	270	242	-------	219	805	1,950	898	200	311	264
30	266	235	-------	225	1,070	2,050	805	254	315	271
31	302	-------	-------	206	-------	1,770	-------	225	261	-------

NOTE.—Stage-discharge relation affected by ice Nov. 7, Dec. 3, 12–14, 16–18; discharge based on temperature record and observer's notes. Discharge estimated on account of missing gage heights Mar. 1–3.

Monthly discharge of Nowood Creek at Bonanza, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	319	242	275	16,900
November	324	191	250	14,900
December 1–18	249	150	183	6,530
March	1,000	206	423	26,000
April	1,070	206	462	27,500
May	2,690	1,000	1,570	96,500
June	1,950	470	1,040	61,900
July	2,050	166	641	39,400
August	1,040	183	324	19,900
September	495	212	340	20,200

PAINTROCK CREEK NEAR HYATTVILLE, WYO.

LOCATION.—In sec. 25, T. 50 N., R. 89 W., at mouth of canyon, 6 miles above Hyattville, Big Horn County. Nearest tributary, Luman Creek, enters three-quarters of a mile downstream.

DRAINAGE AREA.—164 square miles (measured on topographic map).

RECORDS AVAILABLE.—August 8, 1920, to September 30, 1926.

GAGE.—Gurley water-stage recorder on right bank 1,000 feet upstream from bridge at State fish hatchery; inspected by Bliss Bayne.

DISCHARGE MEASUREMENTS.—Made from cable 300 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of boulders. Control at large boulders 25 feet downstream; shifts occasionally. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 4.94 feet at midnight May 23 (discharge, 1,860 second-feet); minimum discharge occurred during winter.

1921–1926: Maximum stage recorded, 7.2 feet at 1 a. m. July 24, 1923 (discharge, 4,960 second-feet); minimum stage, 0.29 foot from 10 a. m. to 1 p. m. February 17, 1921 (discharge, 14 second-feet).

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

DIVERSIONS.—Above all diversions except that for Rhinehart ditch, which diverts water for irrigation of 12 acres. Below station are adjudicated diversions for irrigation of 4,700 acres.

ACCURACY.—Stage-discharge relation permanent during year except probably at extremely low stages. Rating curve used October 1 to July 31 is fairly well defined above and poorly defined below 60 second-feet; curve used August 1 to September 30 is fairly well defined. Operation of water-stage recorder unsatisfactory for several periods. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records good except for estimated periods and for extremely low stages prior to August 1, for which they are poor.

The following discharge measurements were made:

May 23, 1926: Gage height, 4.16 feet; discharge, 1,100 second-feet.

June 21, 1926: Gage height, 2.22 feet; discharge, 236 second-feet.

August 8, 1926: Gage height, 1.70 feet; discharge, 115 second-feet.

Daily discharge, in second-feet, of Paintrock Creek near Hyattville, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	85	76	47	45		38	415	553	422	109	89
2	79	69	47	45		40	355	632	400	102	84
3	76	65	47	48	32	41	394	606	364	127	125
4	76	64	46	46		43	497	497	446	176	160
5	73	61	48	45		40	592	705	471	153	203
6	71	68	47	44		38	596	876	478	123	208
7	73	62	47	43		37	406	876	876	111	182
8	72	58	47	42	34	37	325	802	624	123	188
9	66	57	46	41		37	302	766	946	139	215
10	65	62	46	41		45	290	749	446	188	186
11	65	62	45	40		52	391	670	337	240	157
12	65	61	46	41	38	52	426	610	282	240	135
13	64	54	46	41		51	394	540	290	203	123
14	62	49	46	------	42	47	373	450	268	174	114
15	60	50	47	------	41	49	337	409	242	153	100
16	56	50	47	------	42	61	460	320	223	133	89
17	52	50	47	------	42	72	700	275	215	121	78
18	60	50	48	------	41	94	690	242	208	111	72
19	54	49	48	------	41	125	600	270	203	103	80
20	64	49	48	------	39	170	620	275	193	100	76
21	63	48	47	------	41	190	660	245	174	93	72
22	64	47	47	------	36	203	710	238	155	83	79
23	65	50	49	------	38	170	1,100	238	135	77	68
24	60	49	48	------	39	141	1,320	235	121	72	67
25	61	49	47	------	38	123	1,100	255	116	68	62
26	59	49	48	------	38	120	784	334	119	66	65
27	64	48	47	------	34	118	883	422	103	70	66
28	54	47	44	------	31	130	778	471	108	75	63
29	56	47	44	------	31	175	732	497	165	149	62
30	60	47	44	------	33	300	841	432	163	131	68
31	76	------	45	------	35	------	632	------	127	102	------

NOTE.—No gage-height record Oct. 14–16, 29–30, Dec. 13–18, Jan. 5–9, Mar. 1–13, 27, Mar. 29 to Apr. 3, Apr. 26–30, May 16–21, June 13, Aug. 27, 28, Sept. 3, 4; discharge based on comparison with flow of Nowood Creek except for Mar. 1–13, which was based on weather records and comparison with flow of Big Horn River at Thermopolis. Braced figures give mean discharge for periods indicated.

Monthly discharge of Paintrock Creek near Hyattville, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	85	52	65.2	4,010
November	76	47	54.9	3,270
December	49	44	46.6	2,870
January 1–13	48	40	43.2	1,110
March	42		36.3	2,230
April	300	37	94.6	5,630
May	1,320	290	603	37,100
June	876	235	483	28,700
July	946	103	304	18,700
August	240	66	126	7,750
September	215	62	111	6,600

GREYBULL RIVER AT MEETEETSE, WYO.

LOCATION.—In sec. 4, T. 48 N., R. 100 W., at Meeteetse, Park County. Nearest tributary, Meeteetse Creek, enters 3 miles downstream.

DRAINAGE AREA.—690 square miles (measured on topographic maps).

RECORDS AVAILABLE.—June 11 to September 30, 1897; April 24 to October 31, 1903; July 18, 1920, to September 30, 1926.

GAGE.—Gurley water-stage recorder on right bank near intake for Meeteetse water supply installed July 26, 1926; inspected by J. E. Hamilton. Prior to that date water-stage recorder on left bank 700 feet upstream, which was washed out during flood of July 9.

DISCHARGE MEASUREMENTS.—Made from cable 200 feet upstream from gage.

CHANNEL AND CONTROL.—Bed composed of boulders and coarse gravel. Control is 35 feet downstream; shifting.

EXTREMES OF DISCHARGE.—Maximum stage during year, from high-water mark, 8.35 feet at about 1.30 a. m. July 9 (discharge estimated from slope and cross section, 6,350 second-feet); minimum stage occurred during winter.

1921–1926: Maximum stage recorded on July 9, 1926; minimum discharge recorded, 63 second-feet March 4, 1922.

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

DIVERSIONS.—Adjudicated diversions for irrigation of 7,100 acres from Greybull River above station, and 10,000 acres from tributaries entering above.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during winter and on July 9, when water-stage recorder was washed out. Stage-discharge relation at new location changed on August 9. Rating curves fairly well defined. Operation of water-stage recorder unsatisfactory for several periods. Daily discharge ascertained by applying to rating tables mean daily gage height obtained by inspection of recorder graph, except as shown in footnote to daily-discharge table, and for August 10–30 when shifting-control method was used. Records fair except for estimated periods, for which they are poor.

Discharge measurements of Greybull River at Meeteetse, Wyo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 20	4.68	1,360	June 20	3.26	513	Aug. 10	3.44	408
Do	4.50	1,240	July 15	3.92	916	Sept. 28	3.09	214

NOTE.—Discharge measurements made after July 9 are referred to datum at new location of gage.

Daily discharge, in second-feet, of Greybull River at Meeteetse, Wyo., for the year ending September 30, 1926

Day	Oct.	May	June	July	Aug.	Sept.	Day	Oct.	May	June	July	Aug.	Sept.
1	229	745	1,010	879	346	224	16	215	950	575	670	355	247
2	229	641	1,070	751	346	229	17	197	1,080	539	600	337	252
3	229	699	1,050	762	420	274	18	205	914	512	605	324	256
4	229	757	1,140	740	392	301	19	215	950	539	610	332	252
5	238	879	1,210	710	369	283	20	220	1,400	508	625	342	247
6	273	710	1,400	690	351	256	21	225	1,310	480	640	319	247
7	234	595	1,360	950	369	278	22	235	1,230	460	590	324	238
8	214	518	1,300	1,300	450	301	23	235	1,510	460	530	314	234
9	209	441	1,220	3,900	810	278	24	225	1,580	490	490	306	229
10	212	426	1,110	2,020	455	260	25	225	1,320	600	460	296	220
11	222	441	968	1,460	440	265	26	220	1,050	745	430	278	224
12	224	422	879	1,190	490	274	27	180	1,160	879	430	270	224
13	214	385	826	1,030	450	283	28	165	1,140	838	430	310	216
14	212	503	838	940	415	270	29	170	1,210	757	405	288	212
15	209	733	693	916	386	256	30	180	1,210	803	382	265	252
							31	170	1,080	------	342	247	------

NOTE.—No gage-height record Oct. 18-31, May 8, June 21-25, July 4-7, 9-14, 16-25; discharge based on comparison with records of Shoshone River above Shoshone Reservoir. Sudden floods on July 9 and Aug. 9; discharge computed from hydrograph based on floodmarks and slope determination of maximum discharge.

Monthly discharge of Greybull River at Meeteetse, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	273	165	215	13,200
May	1,580	385	903	55,500
June	1,400	460	842	50,100
July	3,900	342	853	52,400
August	810	247	368	22,600
September	301	212	253	15,100

SHOSHONE RIVER ABOVE SHOSHONE RESERVOIR, WYO.

LOCATION.—In lot 46, T. 52 N., R. 103 W., 1 mile above high-water line of Shoshone Reservoir and 12 miles from Cody.

DRAINAGE AREA.—674 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—January 1, 1921, to September 30, 1926.

GAGE.—Stevens water-stage recorder at highway bridge.

DISCHARGE MEASUREMENTS.—Made from single-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders, shifts slightly.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 3.87 feet at 6 a. m. June 7 (discharge, 2,430 second-feet); minimum discharge estimated, 45 second-feet January 25.

1921–1926: Maximum discharge, 4,440 second-feet June 12, 1921; minimum discharge, 9 second-feet August 28, 1924.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Adjudicated diversions for irrigation of 14,200 acres from Shoshone River above station and 4,180 acres from tributaries entering above.

REGULATION.—Alternate melting and freezing of mountain snow during spring causes diurnal fluctuation in flow. No artificial regulation.

COOPERATION.—Complete records furnished by United States Bureau of Reclamation.

Daily discharge, in second-feet, of Shoshone River above Shoshone Reservoir, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	224	275	179	120	75	123	126	1,000	1,300	621	124	190
2	218	289	179	120	80	129	121	772	1,300	639	114	190
3	207	293	158	115	85	131	131	831	1,280	639	109	212
4	197	267	165	115	85	136	131	856	1,360	597	119	253
5	197	228	173	110	90	136	129	945	1,590	564	109	272
6	194	221	173	110	90	123	129	848	1,990	525	104	258
7	194	207	173	105	95	131	121	665	2,110	504	97	240
8	191	207	165	105	95	121	129	593	1,950	540	95	268
9	188	214	145	100	100	121	129	533	1,940	840	119	291
10	185	218	145	100	100	123	189	483	1,660	710	162	296
11	182	218	141	95	105	123	233	520	1,580	533	277	286
12	182	214	148	95	105	123	248	483	1,430	454	232	301
13	179	211	143	90	110	123	252	425	1,260	421	244	317
14	173	200	137	90	110	121	252	465	1,080	272	240	327
15	167	182	150	85	115	116	321	593	985	349	208	338
16	204	200	191	85	115	121	371	733	808	355	182	327
17	176	200	188	80	120	136	607	848	648	389	175	333
18	194	197	182	80	125	139	580	756	548	349	175	349
19	231	185	188	75	126	131	621	710	518	360	179	343
20	243	173	188	70	126	126	586	1,270	511	408	208	338
21	259	173	173	65	123	129	520	1,380	441	384	212	338
22	263	167	170	60	126	134	546	1,290	378	307	208	338
23	271	179	176	55	126	151	442	1,730	343	249	200	333
24	231	173	179	50	116	169	356	2,020	378	200	190	338
25	239	173	182	45	131	151	346	1,600	474	172	175	360
26	231	173	182	50	123	145	436	1,470	589	156	165	349
27	235	179	182	55	131	142	414	1,360	692	145	156	327
28	207	179	168	60	134	136	489	1,300	648	197	152	312
29	228	188	158	65	-------	129	679	1,240	657	267	165	317
30	247	182	135	70	-------	126	883	1,190	621	228	193	372
31	247	-------	125	70	-------	123	-------	1,240	-------	162	193	-------

NOTE.—No gage-height record Jan. 1 to Feb. 18 and May 26 to June 2; discharge estimated.

Monthly discharge of Shoshone River above Shoshone Reservoir, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	271	167	212	13,000
November	293	167	206	12,300
December	191	125	166	10,200
January	120	45	83.5	5,130
February	134	75	109	6,050
March	169	116	131	8,060
April	883	121	351	20,900
May	2,020	425	973	59,800
June	2,110	343	1,040	61,900
July	840	145	404	24,800
August	277	95	170	10,500
September	372	190	304	18,100
The year	2,110	45	346	251,000

SHOSHONE RIVER AT WILLWOOD DAM, WYO.

LOCATION.—In lot 69, T. 54 N., R. 100 W., at Willwood diversion dam, 12 miles above Powell, Park County.

DRAINAGE AREA.—1,820 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—August 1, 1925, to September 30, 1926.

GAGE.—Stevens water-stage recorder on right bank of reservoir, 1,000 feet upstream from crest of dam; referred to staff gage at same location. Gage heights represent height of water above crest.

DETERMINATION OF DISCHARGE.—Discharge computed by considering the dam as a weir. The following formula for discharge over the crest was developed: $Q = 694\ H^{1.592}$.

CHANNEL AND CONTROL.—Crest of dam forms a permanent control. The dam is of concrete with gravity sections. Total length between abutments is 320 feet, of which 271 feet is spillway section and 49 feet diversion section. Spillway is ogee shaped and designed to discharge 25,000 second-feet with a depth of water over crest of 9 feet. The dam raises the low-water elevation of river 42.5 feet. A three-span steel highway bridge is located over crest of dam.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.20 feet at noon June 8 (discharge, 4,420 second feet); minimum discharge, 316 second-feet September 1, 1926.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—The Garland Canal diversion at Corbett Dam, 6 miles above, is the principal diversion above station. The water diverted by Willwood Canal is included in the records published for the station.

REGULATION.—Shoshone Reservoir, with a capacity of 456,000 acre-feet, partly regulates the flow.

ACCURACY.—Stage-discharge relation permanent. Rating curve well defined between 400 and 4,500 second-feet. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder-graph and adding the Willwood Canal diversion. Records good.

COOPERATION.—Complete records furnished by United States Bureau of Reclamation. The discharge at Shoshone River at Willwood Dam is comparable with discharge at Corbett Dam, where records were formerly obtained, except for the Garland Canal diversion.

Daily discharge, in second-feet, of Shoshone River at Willwood Dam, Wyo., for the years ending September 30, 1925 and 1926

Day	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1925–26														
1	1,490	621	779	662	606	528	420	359	683	2,210	1,770	2,600	640	316
2	1,450	599	774	657	596	523	416	368	673	2,180	1,860	2,520	619	325
3	1,440	545	763	662	591	518	416	385	673	1,440	1,960	2,440	619	486
4	1,450	493	764	662	587	518	412	376	630	1,280	2,120	2,400	598	557
5	1,430	493	769	662	587	513	407	385	619	1,110	2,580	2,280	557	547
6	1,380	534	760	657	587	500	407	385	694	1,320	3,350	2,130	557	598
7	1,300	556	754	657	587	495	407	385	978	1,310	4,070	2,030	577	619
8	1,230	566	737	652	582	495	403	385	1,090	1,400	4,110	1,980	619	651
9	1,160	599	708	652	577	495	403	376	1,210	1,580	3,840	2,280	608	662
10	1,110	596	841	647	572	486	399	412	1,350	1,500	4,220	2,310	587	651
11	1,080	566	870	647	572	486	399	359	1,340	1,720	4,180	2,080	576	640
12	1,020	566	863	647	572	486	399	359	1,040	1,630	3,940	1,850	608	663
13	1,010	577	1,170	652	572	481	395	359	1,340	1,620	3,650	1,630	673	683
14	1,020	592	1,080	647	572	481	391	350	1,320	1,600	3,490	1,380	619	673
15	1,040	582	1,110	642	567	477	391	350	1,320	1,620	3,190	1,190	619	662
16	992	545	1,070	636	562	477	387	368	1,340	1,620	2,890	1,070	640	608
17	917	649	763	636	562	468	387	385	1,480	1,570	2,580	978	640	557
18	917	671	750	631	562	468	383	376	2,160	1,590	2,350	941	683	547
19	845	671	738	626	567	463	383	359	2,930	1,590	2,240	916	608	557
20	857	638	726	621	562	459	379	359	2,930	1,590	2,210	868	608	577
21	833	671	726	616	557	454	376	359	2,910	1,620	2,020	856	587	577
22	831	750	715	611	562	450	372	368	2,850	1,620	1,930	774	567	587
23	827	745	724	611	572	446	376	376	2,720	1,690	1,770	717	516	557
24	768	750	722	606	567	441	372	421	2,720	1,890	1,690	683	486	587
25	699	731	700	606	562	437	368	516	2,720	1,410	1,710	662	440	630
26	621	709	665	606	562	437	364	557	2,710	1,340	1,790	619	393	640
27	577	697	662	606	557	432	364	740	2,330	1,320	2,010	587	376	619
28	599	709	662	606	552	424	364	728	2,280	1,400	2,240	567	385	608
29	632	731	657	606	548	424	------	705	2,280	1,510	2,330	630	385	598
30	654	755	662	601	543	424	------	705	2,230	1,630	2,360	619	385	717
31	654	------	657	------	534	420	------	694	-------	1,690	-------	640	342	------

NOTE.—Discharge Aug. 1–6, 1925, computed by deducting flow of Garland Canal from that of Shoshone River at Corbett Dam. From Oct. 27, 1925, to Feb. 28, 1926, discharge obtained by adding 100 second-feet to flow at Shoshone Dam.

Daily discharge, in second-feet, of Garland Canal at Corbett Dam, Wyo., for the year ending September 30, 1926

Day	Oct.	Apr.	May	June	July	Aug.	Sept.
1	168		280	807	516	643	622
2	171		267	814	558	642	604
3	171		327	813	487	625	527
4	171		396	840	420	616	406
5	173		421	812	433	624	400
6	171		433	796	454	611	332
7	173		468	806	422	588	312
8	183		471	810	462	534	258
9	206		385	833	424	543	228
10	62		238	833	406	544	233
11			174	808	445	577	223
12			191	750	500	579	195
13			205	720	604	560	185
14			203	629	695	541	188
15			186	560	762	527	185
16			188	534	810	489	229
17			257	482	825	481	262
18			239	486	833	494	263
19			236	462	833	500	248
20			247	409	844	511	226
21			277	391	837	506	214
22		81	328	342	848	516	215
23		194	344	353	846	561	215
24		194	436	385	842	589	191
25		176	492	418	837	627	153
26		168	662	465	837	660	137
27		172	740	463	844	655	141
28		194	750	511	816	643	142
29		211	752	598	726	625	143
30		255	758	602	714	629	134
31			808		674	633	

Monthly discharge of Shoshone River at Willwood Dam, Wyo., for the years ending September 30, 1925 and 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
1925				
August	1,490	577	995	61,200
September	755	493	630	37,500
The period				98,700
1925–26				
October	1,170	657	785	48,300
November	662	601	634	37,700
December	606	534	570	35,000
January	528	420	471	29,000
February	420	364	391	21,700
March	740	350	439	27,000
April	2,930	619	1,720	102,000
May	2,210	1,110	1,560	95,900
June	4,220	1,690	2,680	159,000
July	2,600	567	1,390	85,500
August	683	342	552	33,900
September	717	316	590	35,100
The year	4,220	316	983	710,000

Monthly discharge of Garland Canal at Corbett Dam, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 1–10	206	62	165	3,270
April 22–30	255	81	183	3,270
May	808	174	392	24,100
June	840	342	618	36,800
July	848	406	663	40,800
August	660	481	577	35,500
September	622	134	260	15,500

NORTH FORK OF SHOSHONE RIVER NEAR WAPITI, WYO.

LOCATION.—In sec. 15, T. 52 N., R. 104 W., at Thermond ranch, 6 miles east of Wapiti, Park County. It is below all tributaries entering above Shoshone Reservoir.

DRAINAGE AREA.—800 square miles (measured chiefly on topographic maps).

RECORDS AVAILABLE.—January 1, 1921, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder on right bank; inspected by employee of United States Bureau of Reclamation.

DISCHARGE MEASUREMENTS.—Made from cable 100 feet upstream.

CHANNEL AND CONTROL.—Bed composed of boulders and coarse gravel. Control at rock riffle a short distance downstream; shifts at intervals. Backwater from Shoshone Reservoir reaches a point 2 miles below gage.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 5.56 feet at 3 a. m. June 6 and 7 (discharge, 5,430 second-feet); minimum discharge occurred during winter.

1921–1926: Maximum discharge recorded, 9,250 second-feet at noon June 23, 1925; minimum discharge, 110 second-feet January 4–10, 1925.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Adjudicated diversions for irrigation of 1,800 acres from North Fork above station.

REGULATION.—Diurnal fluctuation during spring caused by alternate melting and freezing of mountain snow.

COOPERATION.—Complete records furnished by United States Bureau of Reclamation.

Daily discharge, in second-feet, of North Fork of Shoshone River near Wapiti, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	412	295	222	-------	109	151	2,300	3,540	2,130	485	353
2	396	290	225	-------	118	148	1,930	3,760	1,940	467	339
3	380	285	212	-------	138	143	1,970	3,650	1,830	467	382
4	370	280	191	-------	154	143	2,010	3,890	1,910	473	450
5	360	278	225	-------	162	138	2,270	4,300	1,720	462	382
6	355	274	222	-------	135	133	2,040	4,820	1,670	429	344
7	370	254	215	-------	121	130	1,660	4,770	1,660	418	339
8	365	250	203	-------	121	140	1,450	4,420	1,860	418	392
9	355	254	182	-------	125	151	1,260	4,720	2,130	514	358
10	365	262	177	-------	133	288	1,110	4,470	1,660	479	326
11	355	254	218	140	133	408	1,020	3,980	1,480	558	300
12	345	240	212	135	128	402	944	3,500	1,450	564	275
13	345	233	200	128	130	392	875	3,200	1,340	603	292
14	340	209	175	113	128	434	953	2,970	1,200	491	326
15	317	206	156	105	123	679	1,220	2,500	1,140	445	353
16	317	225	232	116	146	1,140	1,580	2,240	1,080	424	322
17	286	222	212	130	206	1,320	1,910	2,030	999	402	288
18	299	215	191	116	189	1,200	1,830	1,880	944	392	279
19		200	200	121	165	1,290	1,730	1,880	937	636	283
20		185	177	121	154	1,530	2,930	1,860	875	577	275
21		203	170	113	159	1,470	3,610	1,620	792	485	267
22		203	175	111	195	1,360	3,630	1,470	731	450	263
23		212	188	111	271	1,060	4,450	1,400	686	424	256
24		209	182	107	279	841	4,820	1,500	650	402	248
25	300	219	177	107	226	892	4,300	1,680	629	387	233
26		232	170	103	195	1,140	3,540	1,880	603	377	233
27		215	162	100	180	1,040	3,520	2,100	583	377	237
28		219	150	107	162	1,320	3,560	2,250	577	368	233
29		225	146	-------	148	1,780	3,780	2,140	551	408	233
30		222	140	-------	151	2,180	3,910	2,130	520	413	296
31		-------	158	-------	157	-------	3,760	-------	502	382	------

NOTE.—Figures have been changed slightly to conform to computation rules used by U. S. Geol. Survey. Braced figures give mean discharge for periods indicated.

Monthly discharge of North Fork of Shoshone River near Wapiti, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	412	----------	330	20,300
November	295	185	236	14,000
December	232	140	189	11,600
February 11-28	140	100	116	4,140
March	279	109	159	9,780
April	2,180	130	781	46,500
May	4,820	875	2,450	151,000
June	4,820	1,400	2,880	171,000
July	2,130	502	1,190	73,200
August	636	368	457	28,100
September	450	233	305	18,100

TONGUE RIVER NEAR DAYTON, WYO.

LOCATION.—In SE. ¼ sec. 2, T. 56 N., R. 87 W., at mouth of canyon, 3½ miles southwest of Dayton, Sheridan County. Nearest tributary, Amsden Creek, enters 1½ miles downstream.

DRAINAGE AREA.—204 square miles (measured on topographic map).

RECORDS AVAILABLE.—October 24, 1911, to May 25, 1912 (fragmentary gage-height record); November 18, 1918, to September 30, 1926. From May 1 to October 31, 1903, at Dayton.

GAGE.—Stevens water-stage recorder on left bank 1,000 feet below head gate of Highline Canal; inspected by Hugh Watson.

DISCHARGE MEASUREMENTS.—Made from cable 100 feet downstream or by wading.

CHANNEL AND CONTROL.—Bed composed of boulders and coarse gravel, well compacted. Control 200 feet downstream; shifts slightly at long intervals.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder 4.72 feet at 3 a. m. May 25 (discharge, 1,740 second-feet); minimum stage, 1.46 feet December 14 (discharge, 41 second-feet).

1918–1926: Maximum stage during period, 5.57 feet at 1 a. m. June 15, 1924 (discharge, 2,460 second-feet); minimum stage, 1.00 foot at 9 p. m. November 29, 1919 (discharge, 15 second-feet).

ICE.—Stage-discharge relation slightly affected by ice for short periods.

DIVERSIONS.—Only diversion above station is Highline Canal, which diverts about 3,500 acre-feet annually.

ACCURACY.—Stage-discharge relation slightly shifting; not affected by ice during year. Rating curve well defined. Operation of water-stage recorder satisfactory except for short periods. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph, except from October 1 to November 30 when shifting-control method was used. Records excellent except for periods of shifting control and periods of missing gage heights, for which they are fair.

The following discharge measurements were made:

May 18, 1926: Gage height, 3.68 feet; discharge, 928 second-feet.

August 12, 1926: Gage height, 2.30 feet; discharge, 223 second-feet.

September 26, 1926: Gage height, 1.80 feet; discharge, 89 second-feet.

Daily discharge, in second-feet, of Tongue River near Dayton, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	99	99	85	69	62	66	64	1,080	1,000	304	189	122
2	94	105	84	68	68	66	66	975	1,010	297	186	122
3	99	105	84	70	66	64	69	1,050	954	273	208	174
4	101	97	84	72	66	66	69	1,080	877	310	192	195
5	99	88	83	68	56	68	69	1,120	905	328	177	183
6	103	94	88	68	63	66	70	1,120	912	300	171	152
7	105	90	86	68	66	63	66	940	898	335	177	142
8	99	97	76	69	68	62	66	849	849	461	195	162
9	90	94	72	69	66	60	66	800	814	543	201	162
10	101	97	70	70	64	62	72	711	759	364	204	144
11	110	94	76	69	69	63	90	651	691	328	201	132
12	110	90	81	70	66	63	117	626	677	310	217	127
13	101	86	79	69	64	68	140	626	677	300	189	127
14	90	86	51	69	58	66	147	772	731	293	171	122
15	105	76	62	69	56	62	198	947	594	310	168	117
16	108	88	85	66	63	63	283	996	538	283	162	117
17	66	88	81	69	66	70	338	1,050	516	270	160	117
18	90	88	81	69	62	72	446	975	485	256	157	117
19	94	81	83	68	66	69	583	933	466	249	157	120
20	98	85	72	57	68	69	704	1,120	461	249	150	117
21	102	81	69	62	64	69	779	1,240	437	243	150	114
22	106	80	70	57	68	69	779	1,120	437	240	144	114
23	105	82	74	76	68	79	613	1,280	407	236	142	114
24	104	83	76	69	66	72	490	1,440	383	226	134	99
25	103	85	72	66	62	68	485	1,520	364	230	130	94
26	97	84	72	66	64	57	527	1,360	346	236	127	120
27	112	84	60	64	68	66	549	1,360	331	217	130	122
28	85	84	62	64	69	66	664	1,280	321	217	132	122
29	103	86	60	63	-------	62	933	1,200	321	217	132	120
30	100	85	53	66	-------	63	1,080	1,200	304	208	124	124
31	100	-------	70	63	-------	62	-------	1,080	-------	195	122	-------

NOTE.—No gage-height record Oct. 19-24, 30-31, Nov. 22-24, 26-28, and Nov. 30 to Dec. 4; discharge based on comparison with flow of Clear Creek near Buffalo.

Monthly discharge of Tongue River near Dayton, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	112	66	99.3	6,110
November	105	76	88.7	5,280
December	88	51	74.2	4,560
January	76	57	67.2	4,130
February	69	56	64.7	3,590
March	79	57	65.8	4,050
April	1,080	64	354	21,100
May	1,520	626	1,050	64,600
June	1,010	304	616	36,700
July	543	195	285	17,500
August	217	122	164	10,100
September	195	94	130	7,740
The year	1,520	51	256	185,000

POWDER RIVER AT ARVADA, WYO.

LOCATION.—In sec. 16, T. 54 N., R. 77 W., at highway bridge at Arvada, Sheridan County. Nearest tributary, Wildhorse Creek, an intermittent stream, enters a quarter of a mile downstream.

DRAINAGE AREA.—6,050 square miles (measured on topographic maps and base map of Wyoming).

RECORDS AVAILABLE.—May 4, 1919, to September 30, 1926. From July 22, 1915, to April 29, 1919, station maintained just above mouth of Clear Creek, 16 miles downstream. Discharge at two points fairly comparable, except for run-off following infrequent heavy rains.

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

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

CHANNEL AND CONTROL.—Bed composed of sand and gravel. Control 200 feet downstream at small rapids composed of sand and rock; subject to shifts. Right bank subject to overflow at stage of 7 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 7.0 feet at 7 a. m. July 10 (discharge, 8,700 second-feet); minimum stage, 0.70 foot at 8 a. m. September 2 (discharge, 28 second-feet).

1919–1926: Maximum stage, from high-water mark, 23.7 feet about 8 p. m. September 29, 1923 (discharge estimated from slope measurement, 95,000 second-feet [2]); no flow during part of summers of 1919 and 1921 to 1923.

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

DIVERSIONS.—Practically no diversions from Powder River in Wyoming, but adjudicated diversions for irrigation of 90,000 acres from tributaries entering above.

ACCURACY.—Stage-discharge relation not permanent; affected by shifting control. Rating curve used October 1 to November 25 and September 1–30, and curve used February 18 to August 31 are both fairly well defined. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table except for periods October 1 to November 26, May 21 to June 30, and August 16 to September 30 when shifting-control method was used. Records fair.

Discharge measurements of Powder River at Arvada, Wyo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 16	1.86	846	Aug. 15	1.55	592
June 18	2.06	953	Sept. 24	.98	101
Aug. 14	2.05	1,030			

Daily discharge, in second-feet, of Powder River at Arvada, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	109	477		847	270	649	945	985	230	33
2	117	421		781	315	965	856	1,140	289	28
3	117	376		718	383	965	781	1,830	412	42
4	129	376		649	398	1,210	718	4,360	283	283
5	137	362		709	363	935	624	1,180	185	117
6	150	355		615	369	1,000	583	5,600	140	72
7	154	254		583	369	1,020	559	3,170	88	150
8	158	232		543	342	1,000	527	3,750	84	340
9	171	296		449	356	975	456	3,110	84	413
10	186	321		412	315	965	527	5,870	84	200
11	210	308		456	369	1,150	790	1,470	3,720	260
12	254	296		472	335	975	666	754	2,300	226
13	271	290		441	335	1,060	551	575	1,150	469
14	271	265		434	342	945	1,230	543	985	308
15	369	314		412	369	885	1,260	390	535	166

[2] For description of flood, see Water-Supply Paper 520–G.

Daily discharge, in second-feet, of Powder River at Arvada, Wyo., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	321	283	-------	405	405	838	905	356	363	146
17	271	271	-------	390	398	955	1,220	342	270	158
18	277	254	1,720	369	456	1,020	925	342	217	146
19	327	265	1,720	376	692	1,000	763	286	180	146
20	302	314	1,750	412	754	1,080	543	229	155	98
21	308	296	1,830	427	847	985	434	206	127	90
22	283	302	2,490	472	985	975	349	180	109	98
23	302	190	2,500	420	955	1,000	296	155	96	90
24	362	200	2,020	390	965	1,020	283	175	84	94
25	355	283	2,000	383	925	945	270	1,320	64	102
26	383	340	1,790	398	745	935	234	754	264	106
27	461	300	1,350	383	745	975	223	674	175	113
28	400	280	905	383	632	838	212	527	118	137
29	350	280	-------	369	624	1,650	201	369	84	146
30	400	270	-------	356	640	1,370	201	264	64	150
31	425	-------	-------	322	-------	1,170	-------	175	42	-------

NOTE.—Stage-discharge relation affected by ice Oct. 28, Nov. 23, 24, and 27–30; discharge based on weather record and observer's notes. Discharge estimated on account of missing gage heights Oct. 29–31, Feb. 27, May 8, and July 22.

Monthly discharge of Powder River at Arvada, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	461	109	269	16,500
November	477	190	302	18,000
February 18–28	2,500	905	1,820	39,700
March	847	322	477	29,300
April	985	270	533	31,700
May	1,650	649	1,010	62,100
June	1,260	201	604	35,900
July	5,870	155	1,330	81,800
August	3,720	42	419	25,800
September	469	28	164	9,760

CLEAR CREEK NEAR BUFFALO, WYO.

LOCATION.—In sec. 6, T. 50 N., R. 82 W., just above power house of Buffalo Northwest Electric Co., 4 miles west of Buffalo, Johnson County.

DRAINAGE AREA.—120 square miles (measured on topographic map).

RECORDS AVAILABLE.—June 16, 1917, to September 30, 1926. From June 1 to September 30, 1894, and from May 2, 1896, to February 28, 1900, station maintained at measuring flume 1 mile upstream. Flow at two points comparable.

GAGE.—Chain at left bank, 300 feet above power house; read by M. W. Bell.

DISCHARGE MEASUREMENTS.—Made from cable 50 feet upstream from gage or by wading.

CHANNEL AND CONTROL.—Bed composed of large boulders. Control at large boulders 10 feet downstream which shifts slightly at intervals. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 3.66 feet at 5.30 a. m. May 27 (discharge, 802 second-feet); minimum discharge, estimated 11 second-feet February 15 (stage-discharge relation affected by ice).

1917–1926: Maximum stage recorded, 4.2 feet at 6.30 a. m. June 18, 1917 (discharge, 1,120 second-feet); minimum stage, 0.66 foot at 7 a. m. March 26, 1922 (discharge, 2 second-feet exclusive of flow through pipe line which was 4 second-feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Pipe line of Buffalo Northwest Electric Co. diverts water from Clear Creek 1½ miles upstream. A separate record of flow through pipe line is kept and added to that at gaging station to give total of creek. Four Lakes and French Creek Canal and North Fork and French Creek Canal divert water from Clear Creek above station. During 1926 14,300 acre-feet was diverted between May 20 and September 30.

REGULATION.—Alternate melting and freezing of mountain snow during spring causes diurnal fluctuation in flow. No artificial regulation.

ACCURACY.—Stage-discharge relation practically permanent; affected by ice. Rating curve well defined above 30 second-feet and extended below. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good except for periods affected by ice, for which they are fair.

The following discharge measurements were made:

May 17, 1926: Gage height, 2.69 feet; discharge, 402 second-feet.

August 13, 1926: Gage height, 1.90 feet; discharge, 122 second-feet.

Daily discharge, in second-feet, of Clear Creek near Buffalo, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	79	45	28	19	16	14	13	202	357	160	72	69
2	72	46	28	19	16	12	15	170	345	142	76	64
3	67	43	27	19	15	13	21	170	341	117	95	144
4	65	42	26	19	15	14	14	188	293	167	84	153
5	62	41	25	18	15	13	13	227	312	289	76	130
6	64	40	26	19	14	13	16	360	455	224	70	110
7	65	35	26	19	15	12	16	297	479	376	72	101
8	59	34	26	20	14	12	16	238	443	403	69	117
9	56	35	25	20	16	12	19	231	423	491	76	117
10	56	37	24	20	15	13	46	231	391	338	128	106
11	56	35	26	19	14	15	77	238	368	308	191	97
12	56	33	26	19	13	15	74	234	326	249	150	101
13	54	30	26	19	13	15	67	245	304	188	128	97
14	51	26	23	19	12	16	59	384	286	181	110	90
15	53	32	21	20	11	16	130	380	252	206	110	79
16	54	35	22	20	12	19	213	395	224	167	106	72
17	48	34	23	19	14	17	160	411	184	142	90	70
18	36	31	24	19	15	16	120	372	164	128	74	70
19	48	34	23	19	16	14	128	338	142	115	69	65
20	50	30	22	18	15	16	157	399	136	108	65	63
21	54	30	21	18	14	15	147	483	120	101	65	59
22	55	30	22	17	15	18	139	407	115	91	62	60
23	51	30	23	17	14	21	104	395	108	84	62	56
24	50	30	24	17	12	19	66	528	113	82	58	57
25	50	29	26	17	13	18	79	520	117	90	54	55
26	47	29	26	16	14	18	82	435	110	84	52	51
27	39	26	24	16	14	17	88	784	115	79	51	56
28	38	25	22	18	15	17	90	667	157	82	63	54
29	38	26	21	19	-------	16	99	499	160	88	113	50
30	37	28	21	17	-------	16	144	495	153	90	79	47
31	40	-------	20	17	-------	15	-------	459	-------	79	70	-------

NOTE.—Stage-discharge relation affected by ice Oct. 28–31, Nov. 21, 22, 26–30, Dec. 3–7, 14–24, Dec. 27 to Jan. 13, Jan. 19–26, Feb. 13–18, Mar. 5–8, 13, 25–31, Apr. 7; discharge based on temperature record and observer's notes. Gage not read Mar 10–12; discharge estimated.

Monthly discharge of Clear Creek near Buffalo, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	79	36	53.2	3,270
November	46	25	33.4	1,990
December	28	20	24.1	1,480
January	20	16	18.5	1,140
February	16	11	14.2	789
March	21	12	15.4	947
April	213	13	80.4	4,780
May	784	170	367	22,600
June	479	108	250	14,900
July	491	79	176	10,800
August	191	51	85.2	5,240
September	153	47	82.0	4,880
The year	784	11	100	72,800

Combined monthly discharge of Clear Creek and pipe line near Buffalo, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	87	44	61	3,750
November	53	32	40	2,380
December	35	27	31	1,910
January	26	22	25	1,540
February	22	17	20	1,110
March	27	18	21	1,290
April	219	19	86	5,120
May	791	177	374	23,000
June	486	115	257	15,300
July	499	87	184	11,300
August	200	60	94	5,780
September	161	55	90	5,360
The year	791	17	107	77,800

NOTE.—Discharge of pipe line computed from size of nozzle and number of turns of valve together with measurements of tailrace.

CHEYENNE RIVER BASIN

BELLE FOURCHE RIVER NEAR MOORCROFT, WYO.

LOCATION.—In sec. 36, T. 50 N., R. 68 W., at highway bridge 1½ miles west of Moorcroft, Crook County. Nearest perennial tributary, Donkey Creek, enters 1 mile downstream.

DRAINAGE AREA.—1,380 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—September 1, 1923, to September 30, 1926.

GAGE.—Chain gage on upstream side of highway bridge; read by Otis N. Howell.

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

CHANNEL AND CONTROL.—Bed composed of silt and sand; shifts during high water but is fairly permanent during low water.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 6.7 feet at 6 p. m. July 1 (discharge, 3,200 second-feet); minimum stage, 0.12 foot October 3–5 (discharge, 1 second-foot).

1923–1926: Maximum stage recorded, 12.6 feet April 7, 1924 (discharge estimated from extension of rating curve, 12,500 second-feet); minimum discharge, 0.3 second-foot September 6–30, 1924.

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

DIVERSIONS.—Practically no diversion for irrigation above station. Burlington Railroad pumps 30,000 gallons daily from river just above station.

ACCURACY.—Stage-discharge relation changed during high water in May and July. Rating curves fairly well defined below 25 second-feet and extended above; based on a slope measurement at 3,240 second-feet. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean daily gage-height to rating tables except for period March 21 to May 15 when shifting-control method was used. Records fair for discharge below 25 second-feet and poor for discharge above.

Discharge measurements of Belle Fourche River near Moorcroft, Wyo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 15	0.22	1.8	Aug. 16	0.43	8.9
June 17	.48	19.8	Sept. 23	.12	[a] 1.5

[a] Discharge estimated.

Daily discharge, in second-feet, of Belle Fourche River near Moorcroft, Wyo., for the year ending September 30, 1926

Day	Oct.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1	30	112	5	2	20	1,590	6	2
2	1	30	119	5	3	15	1,020	6	2
3	1	32	124	4	3	16	250	5	2
4	1	33	104	4	2	14	157	13	4
5	1	35	68	5	3	12	707	13	26
6	1	38	35	5	10	11	318	8	12
7	1	40	44	4	4	10	92	6	8
8	1	42	36	5	3	9	155	5	8
9	1	45	36	5	3	9	1,420	5	36
10	1	70	20	6	3	30	218	5	14
11	1	120	16	6	3	14	91	68	8
12	2	135	16	5	3	10	66	26	6
13	2	100	13	5	3	10	53	45	5
14	2	75	18	5	2	8	45	18	4
15	2	74	11	4	2	65	36	10	4
16	2	54	10	4	2	38	32	9	4
17	2	38	9	3	2	22	30	9	3
18	2	30	10	3	2	17	30	9	3
19	1	25	12	3	2	14	30	7	3
20	2	54	12	3	2	13	40	6	3
21	1	129	11	3	3	12	117	5	2
22	1	107	10	3	2	10	27	4	2
23	1	82	10	3	2	8	14	4	2
24	2	61	10	2	2	8	11	3	2
25	2	51	9	2	2	8	10	3	2
26	2	39	7	3	2	8	8	3	2
27	2	78	7	2	2	8	7	2	2
28	2	108	4	2	51	8	8	2	2
29	2	-------	4	2	140	480	15	2	2
30	2	-------	5	2	41	214	9	2	2
31	2	-------	3	-------	25	-------	6	2	-------

NOTE.—No gage-height record Oct. 29–31, Feb. 1–13, and July 17–20; discharge based on comparison with records of flow of Belle Fourche River near Belle Fourche and Powder River at Arvada.

Monthly discharge of Belle Fourche River near Moorcroft, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	2	1	1.5	92
February	135	25	62.7	3,480
March	124	3	29.2	1,800
April	6	2	3.8	226
May	140	2	10.7	658
June	480	8	37.4	2,230
July	1,590	6	213	13,100
August	68	2	10.0	615
September	36	2	5.9	351

BELLE FOURCHE RIVER NEAR BELLE FOURCHE, S. DAK.

LOCATION.—In sec. 2, T. 8 N., R. 2 E., at diversion dam of Belle Fourche irrigation project, 1½ miles below Belle Fourche, Butte County.

DRAINAGE AREA.—4,310 square miles (measured on base maps).

RECORDS AVAILABLE.—May 10 to November 30, 1906; January 1, 1912, to September 30, 1926. May 26, 1903, to June 23, 1906, for station at west edge of Belle Fourche; records at two points are not directly comparable, as Redwater River enters between the two stations and water is diverted from Belle Fourche River.

GAGE.—Inclined staff 100 feet above crest of diversion dam and a gage in canal.

COMPUTATION OF DISCHARGE.—Rating curve for station based on current-meter measurements. Gage read twice daily. Flow over crest obtained by applying mean daily gage height to rating table. Water diverted is determined at a gaging station maintained on Inlet Canal. The sluice gates are seldom used and flow through them is estimated. Discharge over crest and through Inlet Canal and sluice gates is combined to obtain daily discharge at station.

DIVERSIONS.—In Wyoming portion of drainage basin, adjudicated diversions for irrigation of 980 acres from Belle Fourche River and 18,000 acres from tributaries. In South Dakota practically no diversion from Belle Fourche River, but extensive diversions from Redwater River.

ACCURACY.—The Bureau of Reclamation considers the records fair.

COOPERATION.—Complete records furnished by United States Bureau of Reclamation.

Daily discharge, in second-feet, of Belle Fourche River near Belle Fourche, S. Dak., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	164	200	203	326	208	671	524	316	425	131	105	68
2	164	211	93	330	234	388	358	97	329	407	112	64
3	208	224	209	330	208	375	320	157	228	1,930	108	72
4	221	232	204	415	234	1,150	328	154	228	2,070	111	77
5	226	210	93	358	234	1,650	271	154	228	1,360	107	136
6	226	198	199	330	247	1,940	462	158	174	1,060	79	108
7	231	197	203	302	247	2,310	546	235	158	1,180	74	80
8	236	191	206	440	308	886	397	168	151	1,250	76	147
9	236	198	209	326	540	539	403	180	92	1,170	74	66
10	238	206	207	208	480	463	266	162	95	2,030	74	151
11	242	217	206	182	468	430	266	269	98	2,740	109	139
12	242	252	207	182	700	1,020	280	257	97	1,770	114	149
13	236	232	204	195	680	1,660	280	263	741	922	186	153
14	246	220	192	195	390	1,830	412	257	432	554	339	200
15	246	207	170	221	312	1,500	843	247	332	486	281	184

Daily discharge, in second-feet, of Belle Fourche River near Belle Fourche, S. Dak., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
16	248	194	194	221	308	481	721	245	707	386	224	177
17	250	197	198	221	260	533	739	246	244	269	203	164
18	248	197	200	208	247	448	721	272	240	207	160	158
19	236	193	200	208	260	1,260	688	279	580	205	153	162
20	240	191	197	221	260	1,090	591	272	554	195	167	164
21	244	191	200	221	455	1,090	584	270	376	162	203	164
22	246	191	154	260	416	1,250	450	197	278	166	144	139
23	246	191	204	200	468	1,090	449	182	262	112	139	144
24	252	188	167	260	416	1,140	446	159	245	107	102	149
25	197	182	234	234	416	1,030	406	154	217	107	96	159
26	197	193	234	234	415	939	389	124	217	161	88	154
27	184	187	143	234	335	743	390	319	217	174	71	165
28	154	186	172	234	539	614	260	1,520	186	134	67	159
29	179	186	200	208	-------	406	365	888	184	160	67	159
30	221	200	252	208	-------	431	320	438	118	155	67	159
31	224	-------	336	208	-------	584	-------	688	-------	128	67	-------

Monthly discharge of Belle Fourche River near Belle Fourche, S. Dak., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	252	154	223	13,700
November	252	182	202	12,000
December	336	93	196	12,100
January	440	182	255	15,700
February	700	208	367	20,400
March	2,310	375	966	59,400
April	843	260	449	26,700
May	1,520	97	301	18,500
June	741	92	281	16,700
July	2,740	107	706	43,400
August	339	67	128	7,870
September	200	64	139	8,270
The year	2,740	64	352	255,000

PLATTE RIVER BASIN

NORTH PLATTE RIVER NEAR WALDEN, COLO.

LOCATION.—In sec. 5, T. 8 N., R. 80 W., at highway bridge 8 miles southwest of Walden, Jackson County. Nearest tributary, Roaring Fork, enters 2½ miles above.

DRAINAGE AREA.—446 square miles (measured on geologic map in Bulletin 596 and on topographic map).

RECORDS AVAILABLE.—May 13, 1904, to October 31, 1905; October 1, 1923, to September 30, 1926.

GAGE.—Bristol float-type water-stage recorder on downstream side of left pier of bridge referred to chain gage; inspected by Mrs. B. F. Green.

DISCHARGE MEASUREMENTS.—Made from single-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and medium-sized boulders. Control about 200 feet below gage; slightly shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 5.2 feet at 4 p. m. April 9 (discharge, 1,870 second-feet); minimum stage, 0.74 foot September 23 and 24 (discharge, 30 second-feet).

1904–1905; 1924–1926: Maximum discharge recorded, that of April 9, 1926; minimum discharge, 15 second-feet September 13–18, 1905.

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

REGULATION.—Diurnal fluctuation during spring caused by alternate melting and freezing of mountain snow.

ACCURACY.—Stage-discharge relation slightly shifting. Rating curve well defined. Operation of water-stage recorder unsatisfactory for several periods. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph, except from July 16 to August 27 when shifting-control method was used. Records good except for periods of missing gage heights, for which they are fair.

Discharge measurements of North Platte River near Walden, Colo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 1	3.27	798	Aug. 11	1.57	136
June 2	3.74	994	Sept. 13	.92	44.9
July 22	1.45	129			

Daily discharge, in second-feet, of North Platte River near Walden, Colo., for the year ending September 30, 1926

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	84	126	200	780	990	258	103	42
2	80	122	250	780	1,030	218	102	42
3	78	117	300	835	1,030	146	101	42
4	76	104	500	835	1,030	136	100	42
5	88	------	700	835	1,000	258	101	42
6	343	------	1,000	835	972	316	102	42
7	310	------	1,550	705	1,060	278	102	43
8	226	------	1,630	580	1,080	440	115	42
9	184	------	1,570	512	1,060	353	135	41
10	177	------	1,300	403	945	260	145	40
11	177	------	1,190	347	807	225	132	43
12	174	------	1,000	319	807	200	119	44
13	172	------	835	272	730	190	108	44
14	161	------	630	210	730	170	101	41
15	146	------	655	201	680	160	91	40
16	140	------	835	232	580	152	90	37
17	146	------	972	301	448	140	80	37
18	142	------	945	425	392	136	70	38
19	148	------	1,030	448	347	133	60	37
20	154	------	945	418	307	130	50	36
21	159	------	1,000	655	249	126	40	35
22	159	------	1,030	835	215	122	40	36
23	159	------	1,060	835	199	117	40	32
24	157	------	945	918	189	115	40	30
25	128	------	755	1,000	191	113	41	34
26	120	------	780	1,000	191	111	41	36
27	120	------	835	1,110	191	115	41	39
28	134	------	835	890	179	119	41	41
29	146	------	780	880	163	118	41	43
30	138	------	807	920	191	117	41	41
31	130	------	------	950	------	104	41	------

NOTE.—No gage-height record Nov. 2, Apr. 1–7, May 29 to June 1, June 3, July 10–15, 18–21, 24–25, 27, 29, Aug. 1–6, 8–10, 17–20, 22–26, and Aug. 28 to Sept. 5; discharge based on comparison with flow for North Platte River near Northgate and Roaring Fork near Walden.

Monthly discharge of North Platte River near Walden, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	343	76	153	9,410
April	1,630	200	895	53,300
May	1,110	201	654	40,200
June	1,080	163	599	35,600
July	440	104	180	11,100
August	145	40	79.2	4,870
September	44	30	39.4	2,340

NORTH PLATTE RIVER NEAR NORTHGATE, COLO.

LOCATION.—In sec. 11, T. 11 N., R. 80 W., at highway bridge on Interstate Highway, 6 miles south of Colorado-Wyoming line and 6 miles northwest of Northgate, Jackson County. Three small tributaries, Camp, Threemile, and Sixmile Creeks enter North Platte River between station and State line. These streams have very little flow except spring run-off.

DRAINAGE AREA.—1,440 square miles (measured on Colorado topographic map).

RECORDS AVAILABLE.—May 23, 1915, to September 30, 1926.

GAGE.—Gurley water-stage recorder referred to staff gage; inspected by H. H. Quaintance.

DISCHARGE MEASUREMENTS.—Made from two-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand, gravel, and small boulders. Principal control 200 feet downstream at small rapids; shifting at intervals. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage during year from water-stage recorder, 5.52 feet from 6 p. m. to midnight May 28 (discharge, 5,760 second-feet); minimum stage probably occurred during winter.

1915–1926: Maximum stage recorded, 6.24 feet at 3 a. m. June 11, 1923 (discharge, 6,720 second-feet); minimum discharge, 67 second-feet October 7 and 20, 1922.

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

DIVERSIONS.—Water diverted for irrigation of 100,000 acres from North Platte River and tributaries above station. During 1926, 5,060 acre-feet was diverted from a tributary of North Platte River above station to Cache la Poudre River Basin.

REGULATION.—None.

ACCURACY.—Stage-discharge relation permanent during the year. Rating curve well defined. Operation of water-stage recorder unsatisfactory for several periods. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records excellent except for periods of missing gage heights, for which they are fair.

The following discharge measurements were made:

May 2, 1926: Gage height, 3.42 feet; discharge, 1,830 second-feet.

July 22, 1926: Gage height, 2.16 feet; discharge, 565 second-feet.

September 18, 1926: Gage height, 1.15 feet; discharge, 107 second-feet.

Daily discharge, in second-feet, of North Platte River near Northgate, Colo., for the year ending September 30, 1926

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	228	352		1,770	3,380	1,290	438	
2	217	346		1,900	3,110	1,280	374	
3	210	340	360	1,900	3,110	1,080	362	128
4	196	325		1,830	3,110	912	330	
5	217	320		1,830	3,020	1,140	325	
6	890	320		1,820	2,750	1,370	335	
7	837	320		1,800	2,840	1,320	340	
8	640	-------	1,200	1,500	3,110	1,900	362	145
9	480	-------		1,380	3,380	2,250	396	
10	450	-------		1,240	3,200	1,830	492	
11	500	-------		1,060	2,750	1,540	520	131
12	510	-------		969	2,500	1,330	450	128
13	500	-------	2,200	819	2,500	1,200	390	129
14	464	-------		697	2,580	1,100	357	129
15	430	-------		608	2,500	978	310	122
16	400	-------	2,500	552	2,030	922	285	115
17	400	-------	2,800	680	1,700	828	285	110
18	390	-------	2,930	998	1,460	765	269	108
19	390	-------		1,120	1,250	632	253	104
20	390	-------		1,360	1,020	600	245	101
21	390	-------	2,400	1,680	931	584	242	94
22	395	-------		1,830	819	576	220	92
23	398	-------		1,900	722	568	202	90
24	415	-------		2,100	624	536	192	88
25	430	-------	1,610	2,410	616	499	186	86
26	420	-------	1,550	2,580	592	499	176	96
27	400	-------	1,630	3,290	552	471	160	104
28	390	-------	1,680	5,300	528	426	146	111
29	385	-------	1,620	5,300	520	444	134	113
30	370	-------	1,690	4,560	592	528	130	108
31	360	-------	-------	3,960	-------	513	126	-------

NOTE.—No gage-height record Oct. 6, 8–13, 15–20, 22–27, 29–31, Apr. 1–17, 19–24, Aug. 23–28, Aug. 30 to Sept. 13, and Sept. 15–17; discharge based on comparison with flow of North Platte River at Saratoga and near Walden. Braced figures give mean discharge for periods indicated.

Monthly discharge of North Platte River near Northgate, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	890	196	422	25,900
November 1–7	352	320	332	4,610
April	2,930	-------	1,710	102,000
May	5,300	552	1,960	121,000
June	3,380	520	1,930	115,000
July	2,250	426	965	59,300
August	520	126	291	17,900
September	-------	86	117	6,960

NORTH PLATTE RIVER AT SARATOGA, WYO.

LOCATION.—At highway bridge at Saratoga, Carbon County. Nearest tributary, Spring Creek, enters 2 miles above.

DRAINAGE AREA.—2,880 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—June 9, 1903, to October 31, 1906; April 1 to December 17, 1909; April 27, 1911, to September 30, 1926.

GAGE.—Chain on upstream side of bridge; read by Miss Carrie Priquet.

DISCHARGE MEASUREMENTS.—Made from 2-span highway bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and small boulders. Control at rapids, 500 feet downstream; fairly permanent. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 9.5 feet at 5 p. m. May 28 (discharge, 13,900 second-feet); minimum stage, 3.65 feet at 6 p. m. September 27 and 30 (discharge, 205 second-feet).

1903–1906; 1909; 1911–1926: Maximum stage, 11.06 feet (present datum) from high-water mark on June 8, 1909 (discharge from extension of rating curve, 18,000 second-feet); minimum stage, 3.3 feet at 6 p. m. September 7, 1924 (discharge, 87 second-feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Adjudicated diversions for irrigation of 5,800 acres from the North Platte between Saratoga and State line.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent except as affected by ice. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean gage height to rating table. Records excellent except during ice period, for which they are fair.

Discharge measurements of North Platte River at Saratoga, Wyo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Jan. 15	[a] 4.19	367	July 20	4.82	1,060
May 11	6.27	3,490	Aug. 21	4.15	461

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of North Platte River at Saratoga, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	430	830	570			570	610	4,440	9,710	740	570	400
2	430	880	535			570	570	4,730	9,370	2,140	535	370
3	430	880				570	500	5,020	8,380	1,810	500	275
4	430	880				535	430	5,310	8,060	1,660	535	290
5	535	880		385	415	535	430	5,600	7,740	1,390	570	280
6	1,660	830	490			535	535	5,600	7,740	1,520	535	300
7	1,660	880				500	1,040	5,600	8,380	2,500	570	290
8	1,390	830				500	1,520	5,600	9,370	3,110	535	295
9	1,270	785				465	3,870	5,020	9,370	3,350	535	270
10	1,150	740				465	5,160	4,730	9,030	2,890	535	270
11	1,270	740			430	430	4,440	4,150	8,700	2,320	514	270
12	1,520	695			430	430	5,310	3,600	8,060	1,970	535	270
13	1,270	650			400	400	5,020	3,350	8,060	1,660	570	270
14	1,270	650			460	400	4,440	3,350	7,430	1,520	586	270
15	1,150	695	460	365	370	370	4,150	3,110	7,120	1,390	570	270
16	1,150	695			370	370	3,600	3,110	6,500	1,390	578	261
17	1,150	650			370	370	3,870	3,110	5,900	1,390	610	252
18	1,040	650			400	570	4,440	3,350	5,310	1,270	570	252
19	1,040	570			400	610	4,440	3,600	5,020	1,270	570	243
20	930	570			400	610	3,600	3,870	4,730	1,150	535	234
21	930	500			430	650	4,440	5,020	4,150	1,150	535	230
22	930	500			430	695	4,440	6,500	3,350	1,040	570	230
23	930	535	455		465	695	4,440	7,430	2,320	1,040	535	225
24	985	535			500	880	4,150	7,740	1,660	930	500	217
25	985	570			500	1,040	4,150	8,060	1,520	830	500	217
26	985	570		365	500	1,100	4,150	8,060	1,390	830	500	213
27	930	570			570	1,150	4,150	8,380	1,150	785	500	209
28	930	570	370		570	1,040	4,150	11,400	1,040	740	465	217
29	930	570			-------	930	4,440	12,800	930	740	465	217
30	930	610			-------	830	4,440	11,400	830	610	430	213
31	880	-------			-------	650	-------	10,400	-------	570	430	-------

NOTE.—Stage-discharge relation affected by ice Dec. 3 to Feb. 10; discharge based on temperature and gage-height records, one current-meter measurement, and observer's notes. Braced figures give mean discharge for periods indicated.

Monthly discharge of North Platte River at Saratoga, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,660	430	1,020	62,700
November	880	500	684	40,700
December	570	----------	455	28,000
January	----------	----------	371	22,800
February	570	----------	432	24,000
March	1,150	370	628	38,600
April	5,310	430	3,360	200,000
May	12,800	3,110	5,920	364,000
June	9,710	830	5,740	342,000
July	3,350	570	1,470	90,400
August	610	430	532	32,700
September	400	209	261	15,500
The year	12,800	209	1,740	1,260,000

NORTH PLATTE RIVER BELOW PATHFINDER RESERVOIR, WYO.

LOCATION.—In sec. 24, T. 29 N., R. 84 W., a quarter of a mile below Pathfinder Dam, Natrona County. Nearest tributary, Canyon Creek, enters 2 miles above in the reservoir.

DRAINAGE AREA.—10,700 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—May 9, 1905, to September 30, 1926.

GAGE.—Chain on left bank a quarter of a mile below Pathfinder Dam; read by employee of United States Bureau of Reclamation.

DISCHARGE MEASUREMENTS.—Made from cable 50 feet above gage.

EXTREMES OF DISCHARGE.—Since completion of reservoir: Maximum discharge, 18,900 second-feet June 25–27, 1917; minimum discharge, leakage through gate during winter, may be as low as 5 second-feet.

WINTER FLOW.—May be practically cut off by storage in reservoir.

DIVERSIONS.—Adjudicated diversions for irrigation of 7,000 acres from North Platte River between Saratoga and Pathfinder Reservoir and 147,000 acre-feet from tributaries. Near Whalen, 150 miles below, water from Pathfinder Reservoir is diverted by Interstate and Fort Laramie Canals and used to irrigate land in Wyoming and Nebraska.

REGULATION.—Pathfinder Dam forms reservoir having a capacity of 1,070,000 acre-feet, which materially changes natural run-off of river.

COOPERATION.—Complete records furnished by United States Bureau of Reclamation.

Daily discharge, in second-feet, of North Platte River below Pathfinder Reservoir, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	50	50	300	50	50	50	1,010	6,060	5,960	6,020	5,060
2	50	50	50	300	50	50	50	1,010	6,040	6,060	6,060	5,060
3	50	50	50	300	50	50	50	1,010	6,060	6,060	6,040	5,090
4	50	50	50	300	50	50	50	1,010	6,010	6,060	6,020	5,170
5	50	50	180	300	50	50	50	1,010	6,020	6,040	6,040	4,740
6	50	50	200	300	50	50	50	1,010	5,240	6,040	6,090	4,490
7	50	50	200	300	50	50	50	1,020	5,030	6,020	6,090	4,480
8	50	50	200	300	50	50	50	1,010	5,030	6,020	5,800	4,530
9	50	50	200	300	50	50	20	1,010	5,060	6,020	5,710	4,480
10	50	50	200	300	50	50	5	1,010	5,120	6,100	5,710	4,110

Daily discharge, in second-feet, of North Platte River below Pathfinder Reservoir, Wyo., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	50	50	200	300	50	50	5	1,020	5,220	6,060	5,700	4,040
12	50	50	200	300	50	5	5	1,020	5,140	6,060	5,740	4,030
13	50	50	200	300	50	5	5	1,040	5,100	6,060	5,600	4,010
14	50	50	200	300	50	30	5	1,000	5,240	6,060	5,500	4,000
15	50	50	200	300	50	50	5	1,000	5,120	6,060	5,550	3,670
16	50	50	200	300	50	5	5	1,580	5,360	6,040	5,530	3,530
17	50	50	200	200	50	5	5	2,020	5,170	6,040	5,510	3,520
18	50	50	200	200	50	5	5	2,070	5,070	6,010	5,500	3,500
19	50	50	200	200	50	5	5	2,860	5,190	6,040	5,510	3,530
20	50	50	200	200	50	5	5	3,020	5,150	6,040	5,540	3,520
21	50	50	200	200	50	40	5	3,040	4,840	6,090	5,520	3,500
22	50	50	200	200	50	50	5	3,040	5,340	6,070	5,030	3,180
23	50	50	300	200	50	50	5	4,800	5,120	6,070	4,990	3,010
24	50	50	300	200	50	50	5	5,030	5,030	6,060	5,030	3,050
25	50	50	300	200	50	50	5	5,030	5,020	6,040	4,980	3,060
26	50	50	300	200	50	50	5	5,030	5,010	6,020	4,710	2,450
27	50	50	300	200	50	50	5	5,820	5,040	6,060	4,510	2,030
28	50	50	300	200	50	50	1,340	6,040	5,170	6,060	4,530	2,010
29	50	50	300	50	-------	50	1,020	6,040	5,120	6,060	4,510	640
30	50	50	300	50	-------	50	1,010	6,040	5,580	6,040	4,750	90
31	50	-------	300	50	-------	50	-------	6,070	-------	6,040	5,000	-------

Monthly discharge of North Platte River below Pathfinder Reservoir, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	50	50	50.0	3,070
November	50	50	50.0	3,000
December	300	50	209	12,900
January	300	50	237	14,600
February	50	50	50.0	2,800
March	50	5	38.9	2,390
April	1,340	5	129	7,680
May	6,070	1,010	2,670	164,000
June	6,060	4,840	5,290	315,000
July	6,100	5,960	6,050	372,000
August	6,090	4,510	5,450	335,000
September	5,170	90	3,590	214,000
The year	6,100	5	2,000	1,450,000

NORTH PLATTE RIVER ABOVE AND BELOW WHALEN, WYO.

LOCATION.—In sec. 11, T. 26 N., R. 65 W., at diversion dam at Whalen, Goshen County. Nearest large tributary is Cottonwood Canyon Creek, an intermittent stream which enters 1½ miles below.

DRAINAGE AREA.—16,300 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—May 1, 1909, to September 30, 1926. Records above Whalen represent discharge above dam (overflow weir) and those below Whalen, quantity passing over dam. Difference between two records represents amount diverted by Interstate and Fort Laramie Canals.

GAGE.—To determine flow over weir vertical staff is used, its zero being weir crest. The discharge is then computed by a weir formula. There are also four sluice gates in dam, through which discharge is computed. In river, 75 feet downstream from weir gage, is another gage with zero 10 feet lower. Second gage only used in computing discharge through gates when openings are submerged. Discharge through head gates of Interstate and Fort Laramie Canals is computed from gate openings. Vertical staffs located in canals below head gates are used in computing discharge when head-gate openings are submerged.

DISCHARGE MEASUREMENTS.—Made from cable 1 mile below weir as a check of coefficients used in discharge computations.

DIVERSIONS.—Adjudicated diversions for irrigation of 38,200 acres from North Platte River between Pathfinder and the Whalen gaging station, exclusive of the diversions by the Bureau of Reclamation.

REGULATION.—Discharge represents chiefly effect of Pathfinder Reservoir which stores water for use in Interstate and Fort Laramie Canals.

COOPERATION.—Complete records furnished by United States Bureau of Reclamation.

Daily discharge, in second-feet, of North Platte River above Whalen, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,320	305	251	214	346	292	395	2,530	7,750	4,970	5,300	4,220
2	743	366	233	287	346	430	356	3,000	6,600	5,310	5,260	4,380
3	701	617	239	359	340	418	506	3,190	6,240	7,090	5,190	4,430
4	640	509	191	329	316	480	484	3,300	6,270	5,880	5,330	4,640
5	593	396	221	335	310	433	449	2,900	6,200	7,510	5,260	4,940
6	563	329	133	377	304	346	518	3,000	5,980	6,900	5,140	5,260
7	516	311	155	431	328	292	554	3,110	5,850	6,640	5,170	4,480
8	492	306	263	479	400	327	640	3,080	5,330	6,830	5,270	4,380
9	468	294	335	491	484	385	674	2,840	5,090	7,540	5,300	4,330
10	437	276	305	479	532	351	741	2,610	5,360	8,090	5,470	4,320
11	455	311	317	515	538	332	776	2,530	4,900	7,950	5,710	4,280
12	461	299	347	532	460	355	854	2,400	4,870	6,590	5,820	3,890
13	419	299	263	538	538	359	982	2,530	5,220	6,300	5,790	3,860
14	389	287	60	550	412	350	1,170	2,390	5,060	5,930	5,390	3,950
15	377	239	60	532	412	332	1,370	2,230	5,410	5,940	5,170	3,850
16	365	227	82	490	436	327	1,550	1,960	5,710	5,930	5,060	3,830
17	353	251	101	502	442	336	3,120	1,800	5,640	5,840	5,120	3,520
18	365	244	202	508	370	420	3,370	1,700	6,790	5,710	5,130	3,350
19	359	251	243	532	280	330	4,040	2,450	5,660	5,390	5,070	3,400
20	347	203	196	508	430	350	4,260	2,700	5,050	5,440	4,960	3,400
21	353	226	267	508	406	375	4,760	3,050	5,040	5,390	5,010	3,240
22	347	153	359	472	382	400	4,420	3,570	4,960	5,390	5,060	3,130
23	317	237	377	364	448	473	4,200	3,460	4,720	5,320	5,030	3,140
24	257	173	383	292	279	523	3,850	3,340	5,020	5,270	4,750	2,840
25	281	203	383	286	269	527	3,490	4,810	4,880	5,280	4,720	2,650
26	293	317	371	262	193	576	2,800	4,950	4,840	5,290	4,690	2,800
27	287	251	461	298	281	523	2,210	5,080	4,850	5,710	4,600	2,880
28	87	215	497	316	304	533	1,960	5,180	4,550	5,340	4,280	2,620
29	74	215	497	340	-------	506	1,980	8,360	4,470	5,410	4,090	2,090
30	125	233	377	346	-------	492	1,900	8,590	4,440	5,320	4,100	2,400
31	191	-------	269	346	-------	422	-------	7,780	-------	5,350	4,150	-------

Daily discharge, in second-feet, of North Platte River below Whalen, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,100	150	96	0	168	126	60	1,090	5,390	1,950	2,560	939
2	588	222	78	60	168	252	60	1,560	3,910	2,180	2,380	1,080
3	546	462	84	132	162	240	60	1,800	3,660	4,250	2,180	1,120
4	480	354	36	102	138	366	60	1,930	3,650	2,970	2,180	1,480
5	438	252	66	108	132	342	60	1,410	3,530	4,590	2,150	1,970
6	408	174	0	150	126	180	60	1,470	3,310	4,020	1,950	2,350
7	336	162	0	204	150	114	60	1,580	3,090	3,690	1,920	1,650
8	312	162	108	252	222	192	60	1,540	2,510	3,920	2,090	1,750
9	288	150	180	264	306	282	60	1,390	2,240	4,640	2,110	1,890
10	282	132	150	252	354	228	60	1,170	2,460	5,430	2,260	1,940
11	300	156	162	288	360	228	60	1,100	1,990	5,400	2,580	1,900
12	306	144	192	330	282	258	60	1,000	1,940	4,060	2,740	1,430
13	264	144	108	360	360	295	84	1,120	2,320	3,730	2,790	1,440
14	234	132	0	372	246	336	120	987	2,160	3,220	2,510	1,580
15	222	84	0	354	246	276	96	825	2,530	3,180	2,450	1,570
16	210	72	0	312	258	306	252	555	3,760	3,200	2,330	1,570
17	198	96	0	324	264	336	1,870	381	3,820	3,060	2,370	1,290
18	210	84	42	330	192	420	2,540	279	4,960	2,890	2,360	1,200
19	204	96	54	354	102	330	3,060	957	3,860	2,470	2,160	1,260
20	192	48	18	330	252	350	3,200	1,090	3,250	2,430	1,940	1,260
21	198	66	78	330	228	375	3,350	1,440	3,200	2,400	2,020	1,090
22	192	48	204	294	204	400	2,990	1,880	3,130	2,400	2,070	933
23	162	96	222	257	315	293	2,760	1,620	2,880	2,300	2,010	930
24	102	18	228	185	144	120	2,420	1,340	3,130	2,430	1,720	630
25	126	48	228	182	114	60	2,150	2,770	2,910	2,380	1,650	822
26	138	162	216	121	48	60	1,440	2,640	2,800	2,430	1,620	1,090
27	132	96	306	145	114	60	855	2,750	2,520	2,880	1,470	1,150
28	0	60	342	138	126	60	603	2,920	1,740	2,510	1,080	936
29	0	60	348	162	-------	60	627	6,220	1,330	2,580	852	624
30	24	78	186	168	-------	60	489	6,410	1,200	2,630	808	1,820
31	36	-------	42	168	-------	60	-------	5,670	-------	2,670	862	-------

Monthly discharge of North Platte River above Whalen, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,320	74	419	25,800
November	617	153	285	17,000
December	497	60	272	16,700
January	550	214	413	25,400
February	538	193	378	21,000
March	576	292	406	25,000
April	4,760	356	1,950	116,000
May	8,590	1,700	3,560	219,000
June	7,750	4,440	5,420	323,000
July	8,090	4,970	6,030	371,000
August	5,820	4,090	5,040	310,000
September	5,260	2,090	3,680	219,000
The year	8,590	60	2,330	1,690,000

Monthly discharge of North Platte River below Whalen, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,100	0	265	16,300
November	462	18	134	7,970
December	348	0	122	7,500
January	372	0	227	14,000
February	360	48	206	11,400
March	420	60	228	14,000
April	3,350	60	988	58,800
May	6,410	279	1,900	117,000
June	5,390	1,200	2,970	177,000
July	5,430	1,950	3,190	196,000
August	2,790	808	2,010	124,000
September	2,350	624	1,360	80,900
The year	6,410	0	1,140	825,000

NORTH FORK OF NORTH PLATTE RIVER NEAR WALDEN, COLO.

LOCATION.—In sec. 29, T. 9 N., R. 80 W., at Norrell ranch, one-fourth mile above mouth and 7 miles west of Walden, Jackson County.

DRAINAGE AREA.—168 square miles (measured on topographic map and on special map in Bulletin 596).

RECORDS AVAILABLE.—October 1, 1923, to September 30, 1926.

GAGE.—Bristol float-type water-stage recorder on left bank; inspected by Anton Verner. Gage shelter reset and datum lowered 0.34 foot September 11; gage heights referred to old datum until September 30.

DISCHARGE MEASUREMENTS.—Made from footbridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and sand. Control at gravel bar 150 feet below; shifting. Banks subject to overflow during high water.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 2.63 feet at 9 a. m. April 19 (discharge, 694 second-feet); minimum stage −0.02 foot September 29 and 30 (discharge, 19 second-feet).

1924–1926: Maximum stage recorded occurred in 1926; minimum discharge, 19 second-feet September 16, 1924, and September 29 and 30, 1926.

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

REGULATION.—Diurnal fluctuation during spring from alternate melting and freezing of mountain snow.

ACCURACY.—Stage-discharge relation changed during winter. Rating curve used October 1 to November 11 and curve used April 8 to September 30 are both well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records good except for periods of missing gage heights, for which they are fair.

Discharge measurements of North Fork of North Platte River near Walden, Colo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 1	1.27	227	Aug. 11	0.68	96
July 22	.96	152	Sept. 13	.21	36.5

Daily discharge, in second-feet, of North Fork of North Platte River near Walden, Colo., for the year ending September 30, 1926

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	64	77	70	225	214	358	102	45
2	62	76	70	284	220	228	97	42
3	62	76	70	231	242	165	94	41
4	62	70	70	201	250	162	100	49
5	88	70	70	193	242	278	102	45
6	273	70	70	174	247	355	116	37
7	169	70	90	140	299	270	116	38
8	124	70	114	130	339	355	111	44
9	114	66	126	114	345	287	122	38
10	112	66	174	87	305	290	116	32
11	118	68	188	81	264	231	105	34
12	112	------	212	76	290	174	92	40
13	108	------	196	54	270	178	97	39
14	93	------	188	40	314	178	92	39
15	91	------	231	39	250	167	83	37
16	86	------	300	42	209	174	76	35
17	86	------	340	73	174	174	73	35
18	90	------	500	114	153	165	71	34
19	81	------	636	102	138	158	70	34
20	104	------	546	86	124	162	76	33
21	103	------	539	153	113	160	74	33
22	95	------	452	134	100	145	67	33
23	91	------	414	124	94	130	65	28
24	88	------	320	136	98	128	60	24
25	85	------	290	160	107	122	60	24
26	90	------	284	172	113	113	57	24
27	95	------	287	209	122	109	55	24
28	95	------	250	388	126	134	48	21
29	116	------	242	287	128	138	47	19
30	88	------	242	233	172	130	46	19
31	88	------	------	222	------	111	46	------

NOTE.—No gage-height record Oct. 25–27, Apr. 1–7, and 16–18; discharge based on weather records and comparison with flow of Roaring Fork and North Platte Rivers near Walden.

Monthly discharge of North Fork of North Platte River near Walden, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	273	62	101	6,210
November 1–11	77	66	70.8	1,540
April	636	70	253	15,100
May	388	39	152	9,350
June	345	94	202	12,000
July	358	109	191	11,700
August	122	46	81.8	5,030
September	49	19	34.0	2,020

ROARING FORK NEAR WALDEN, COLO.

LOCATION.—In sec. 10, T. 8 N., R. 81 W., at highway bridge 1½ miles above mouth and 11 miles southwest of Walden, Jackson County. Nearest tributary, Beaver Creek, enters 1 mile above.

DRAINAGE AREA.—84 square miles (measured on topographic map and geologic map in Bulletin 596).

RECORDS AVAILABLE.—May 14, 1904, to October, 1905; October 1, 1923, to September 30, 1926.

GAGE.—Bristol float-type water-stage recorder at left abutment of bridge; inspected by Mrs. B. F. Green.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel. Control 50 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 2.93 feet from 8 to 11 p. m. April 16 (discharge, 510 second-feet); minimum discharge, 17 second-feet September 21.

1904–1905; 1924–1926: Maximum stage recorded, 3.73 feet at 6 a. m. June 15, 1924 (discharge, 790 second-feet); minimum stage, 1.02 feet (old datum) August 15, 1904 (discharge, 2 second-feet).

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

REGULATION.—Diurnal fluctuations during spring from alternate melting and freezing of mountain snow.

ACCURACY.—Stage-discharge relation practically permanent. Rating curves used October 1 to November 19 and April 8 to September 30 are both well defined. Operation of water-stage recorder satisfactory except as explained in footnote to daily-discharge table. Daily discharge ascertained by applying to rating tables mean daily gage height obtained by inspection of recorder graph. Records excellent except for periods of missing gage heights, for which they are fair.

Discharge measurements of Roaring Fork near Walden, Colo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
May 1	1.50	160	Aug. 11	1.02	65
June 2	2.49	376	Sept. 13	.69	25.1
July 22	1.01	64			

Daily discharge, in second-feet, of Roaring Fork near Walden, Colo., for the year ending September 30, 1926

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	43	50	50	159	312	157	60	25
2	43	47	50	184	358	106	59	22
3	39	47	50	197	383	96	59	24
4	37	43	50	207	355	94	64	28
5	57	37	50	214	340	182	59	28
6	230	43	50	224	320	201	60	23
7	135	48	60	172	360	170	69	25
8	107	42	64	148	380	240	64	30
9	96	43	146	128	365	138	76	24
10	96	42	201	104	350	120	77	21
11	98	42	205	92	332	100	67	22
12	91	46	205	79	332	94	60	23
13	83	43	170	70	279	87	59	24
14	78	50	153	62	303	72	53	23
15	73	57	195	64	273	62	46	20
16	66	53	292	64	242	65	42	18
17	68	51	321	106	176	65	41	18
18	66	48	310	120	167	67	37	18
19	68	42	297	104	148	65	34	18
20	68	40	251	106	140	64	35	18
21	64	40	255	186	106	64	37	17
22	64	40	214	195	96	62	37	18
23	64	38	201	224	94	59	35	18
24	63	38	155	268	94	59	34	18
25	48	38	151	297	98	58	32	18
26	57	38	157	295	102	50	30	18
27	55	37	170	310	94	47	28	18
28	55	36	146	355	94	58	25	18
29	64	37	144	262	92	60	26	18
30	58	38	159	253	126	58	26	19
31	54			290		58	26	

NOTE.—No gage-height record Nov. 20–30, Apr. 1–7, and June 5–10; discharge based on weather record and comparison with flow of North Platte River near Walden.

Monthly discharge of Roaring Fork near Walden, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	230	37	73.8	4,540
November	57	36	43.1	2,560
April	321	50	164	9,760
May	355	62	179	11,000
June	383	92	230	13,700
July	240	47	92.8	5,710
August	77	25	47.0	2,890
September	30	17	21.1	1,260

MICHIGAN CREEK AT WALDEN, COLO.

LOCATION.—In NW. ¼ sec. 21, T. 9 N., R. 79 W., at highway bridge half a mile north of Walden, Jackson County. Nearest tributary, Illinois Creek, enters 1½ miles downstream.

DRAINAGE AREA.—185 square miles (measured chiefly on topographic maps).

RECORDS AVAILABLE.—May 9, 1904, to October 31, 1905; May 1, 1923, to September 30, 1926.

GAGE.—Gurley water-stage recorder installed July 21, 1925; inspected by Charles Snow.

DISCHARGE MEASUREMENTS.—Made from single-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel. Control at small rapids 50 feet downstream; slightly shifting. Banks not subject to overflow except during ice gorging in spring.

EXTREMES OF DISCHARGE.—Maximum discharge during year, estimated 860 second-feet May 27; minimum stage, 0.82 foot at 9 a. m. September 25 (discharge, 18 second-feet).

1904–1905; 1923–1926: Maximum stage recorded, 3.3 feet at 9 a. m. June 10, 1923 (discharge, 1,070 second-feet); minimum discharge, 4 second-feet August 28–31, 1924.

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

DIVERSIONS.—Water diverted for irrigation of several thousand acres from Michigan Creek and tributaries above station. During 1925, 8,210 acre-feet diverted from Michigan Creek above station to Cache la Poudre Basin.

REGULATION.—Diurnal fluctuation during spring from alternate melting and freezing of mountain snow. No artificial regulation.

ACCURACY.—Stage-discharge relation slightly shifting. Rating curve fairly well defined. Operation of water-stage recorder unsatisfactory for several periods. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Shifting-control method used October 1 to November 2 and April 8–28. Records good except for periods of missing gage heights, for which they are fair.

Discharge measurements of Michigan Creek at Walden, Colo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 13	1.22	58	June 2	2.40	499	Aug. 11	1.41	109
May 2	1.84	256	July 21	1.50	139	Sept. 13	.96	30.3

Daily discharge, in second-feet, of Michigan Creek at Walden, Colo., for the year ending September 30, 1926

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	40	54	90	248	570	338	78	24
2	39	52	100	260	530	415	71	21
3	35	------	110	256	535	312	66	22
4	35	------	130	268	545	260	69	26
5	46	------	160	276	515	298	71	29
6	86	------	200	290	520	302	65	28
7	78	------	290	300	530	352	62	29
8	71	------	361	280	600	490	60	35
9	62	------	302	175	632	485	75	37
10	56	------	284	160	605	395	90	31
11	58	------	284	135	540	334	100	28
12	60	------	260	114	510	240	86	28
13	60	------	218	103	500	218	76	29
14	58	------	186	91	520	190	69	29
15	55	------	166	79	530	180	61	26
16	55	------	176	81	480	166	60	24
17	54	------	233	100	400	162	56	23
18	54	------	240	123	310	145	52	23
19	61	------	229	162	260	129	49	22
20	62	------	211	183	204	129	49	21
21	60	------	222	215	197	135	46	20
22	60	------	218	260	172	129	42	20
23	60	------	260	294	138	123	41	19
24	55	------	218	370	126	129	39	18
25	56	------	176	480	123	111	36	18
26	57	------	162	620	120	100	35	19
27	57	------	183	860	120	100	32	22
28	58	------	190	806	130	126	30	22
29	61	------	204	806	170	81	28	22
30	58	------	233	722	222	81	28	23
31	52	------	------	626	------	79	26	------

NOTE.—No gage-height record Oct. 25-27, Apr. 1-7, May 6-11, 26, 27, June 13-19, 27-29, and Aug. 6-10; discharge based on comparison with flow of Illinois Creek at Walden.

Monthly discharge of Michigan Creek at Walden, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	86	35	56.7	3,490
April	361	90	210	12,500
May	860	79	314	19,300
June	632	120	378	22,500
July	490	79	217	13,300
August	100	26	56.4	3,470
September	37	18	24.6	1,460

ILLINOIS CREEK AT WALDEN, COLO.

LOCATION.—In NW. ¼ sec. 29, T. 9 N., R. 79 W., at highway bridge half a mile southwest of Walden, Jackson County. Illinois Creek enters Michigan Creek 1½ miles downstream.

DRAINAGE AREA.—254 square miles (measured on special map in Bulletin 596).

RECORDS AVAILABLE.—May 1, 1923, to September 30, 1926.

GAGE.—Vertical staff attached to upstream end of bridge abutment; read by Mrs. George Post.

DISCHARGE MEASUREMENTS.—Made from single-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel. Control at small rapids 75 feet downstream; subject to shifts. Banks not subject to overflow except during ice gorging in spring.

EXTREMES OF DISCHARGE.—Maximum stage during year from high-water mark, 6.4 feet at 5 p. m. May 28 (discharge, 2,520 second-feet); minimum discharge occurred during winter.

1923–1926: Maximum stage occurred in 1926; minimum stage, 0.42 foot September 7 and 8, 1924 (discharge, 0.3 second-foot).

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

DIVERSIONS.—Water diverted for irrigation of several thousand acres from Illinois Creek and tributaries above station.

REGULATION.—Diurnal fluctuation during spring from alternate melting and freezing of mountain snow. No artificial regulation.

ACCURACY.—Stage-discharge relation changed during winter. Rating curve used October 1 to November 15 is well defined; curve used April 9 to September 30 is well defined below and extended above 600 second-feet. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating tables. Records good except for periods of missing gage heights, for which they are poor.

Discharge measurements of Illinois Creek at Walden, Colo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 13	0.87	39.6	June 2	2.40	441	Aug. 12 [a]	1.04	53
May 3	1.76	220	July 21	1.10	66	Sept. 13	.60	7.6

[a] Measurement made by State hydrographers.

Daily discharge, in second-feet, of Illinois Creek at Walden, Colo., for the year ending September 30, 1926

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	25	39	75	203	480	142	46	2
2	25	39	80	218	440	158	39	3
3	23	36	90	218	421	158	36	2
4	23	36	100	218	440	173	40	4
5	28	39	200	218	421	140	40	8
6	53	36	300	249	421	153	37	11
7	56	36	500	265	402	203	34	10
8	46	39	600	282	402	348	32	16
9	43	36	622	282	421	365	49	18
10	39	34	600	249	460	249	68	16
11	43	34	580	176	460	249	68	8
12	41	32	402	168	348	190	56	7
13	40	30	314	128	331	158	53	6
14	41	28	265	106	365	166	37	8
15	36	27	233	104	384	132	36	5
16	34	-------	265	100	298	110	34	6
17	32	-------	314	94	233	98	30	7
18	36	-------	331	108	190	90	26	6
19	41	-------	282	138	168	82	26	6
20	43	-------	265	153	119	71	26	4
21	46	-------	314	168	104	66	22	2
22	48	-------	314	203	82	61	20	2
23	48	-------	249	249	64	55	18	2
24	46	-------	203	265	58	50	23	4
25	51	-------	176	282	53	46	14	5
26	51	-------	158	365	50	42	10	6
27	48	-------	145	480	46	40	8	7
28	41	-------	163	1,580	42	56	7	11
29	43	-------	176	830	43	58	5	13
30	36	-------	176	690	49	61	3	14
31	39	-------	-------	622	-------	55	2	-------

NOTE.—No gage-height record Apr. 1-8; discharge estimated from weather records and by comparison with flow of North Platte River at Saratoga.

Monthly discharge of Illinois Creek at Walden, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	56	23	40.2	2,470
November 1-15	39	27	34.7	1,030
April	622	75	283	16,800
May	1,580	94	304	18,700
June	480	42	260	15,500
July	365	40	130	7,990
August	68	2	30.5	1,880
September	18	2	7.3	434

LA PRELE CREEK NEAR DOUGLAS, WYO.

LOCATION.—In sec. 6, T. 31 N., R. 73 W., just above high-water line of La Prele Reservoir, 16 miles southwest of Douglas, Converse County. Nearest tributary, an unnamed stream, 1 mile above.

DRAINAGE AREA.—146 square miles (measured on special map in Bulletin 626).

RECORDS AVAILABLE.—August 25, 1919, to September 30, 1926.

GAGE.—Gurley water-stage recorder on right bank; inspected by F. E. Benway.

DISCHARGE MEASUREMENTS.—Made from private bridge 1 mile upstream or by wading.

CHANNEL AND CONTROL.—Bed composed of well-compacted sand and gravel. Control 150 feet downstream at rapids; subject to shifts. Banks will be overflowed at stage of 6 feet.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 9.35 feet at 6 p. m. May 28 (discharge, 750 second-feet); minimum discharge occurred during winter.

1919–1926: Maximum stage from high-water mark of May 11, 1920, 11.4 feet (discharge, 1,220 second-feet); minimum discharge recorded, 0.4 second-foot October 2, 1919.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Adjudicated diversions for irrigation of 2,840 acres from La Prele Creek and tributaries above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation probably permanent except as affected by ice. Rating curve well defined. Operation of water-stage recorder satisfactory until July 31. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records good except for estimated periods, for which they are poor.

COOPERATION.—Field data furnished by Douglas Reservoirs Co.

Discharge measurements of La Prele Creek near Douglas, Wyo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 7	3.71	10.4	Apr. 17	7.46	426
Mar. 9	3.76	11.4	Aug. 18	3.75	8.1

Daily discharge, in second-feet, of La Prele Creek near Douglas, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.
1	7	9	10	12	42	409	243	42	
2	7	9	10	13	42	409	189	26	
3	7	10	10	14	34	383	157	20	
4	7	10	9	14	35	396	134	38	
5	7	10	10	13	47	422	105	33	
6	8	10	10	15	104	449	90	47	
7	8	10	11	13	92	383	72	61	
8	9	10	11	13	101	338	70	110	
9	9	10	11	14	102	292	60	396	
10	9	10	11	14	130	261	50	225	
11	9	10		15	819	267	42	171	
12	10	10		15	255	249	33	137	
13	10	9		14	312	249	31	118	
14	10	10		15	279	231	49	102	
15	10	9		16	350	201	38	87	
16	10	10		18	477	189	105	70	
17	10	10		20	505	207	83	59	
18	10	9		26	550	225	61	52	8
19	11	9		32	565	213	45	44	
20	11	9		33	565	201	37	37	
21	11	10		34	550	195	31	31	
22	11	9		34	491	183	28	26	
23	12	10		51	477	165	28	20	
24	12	9		82	383	139	26	18	
25	12	9		69	344	123	23	18	
26	11	9		60	338	109	26	18	
27	12	9		55	357	122	26	17	
28	11	10		52	350	535	33	16	
29	10	10		48	370	565	31	16	
30	9	10		48	396	416	47	15	
31	10			44		312		15	

NOTE.—Stage-discharge relation affected by ice Oct. 28 to Nov. 7, Dec. 4, 5, Mar. 1, 2, 7, and 8; discharge estimated from weather records and two discharge measurements.

Monthly discharge of La Prele Creek near Douglas, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	12	7	9.7	596
November	10	9	9.6	571
December			10	615
January			9	553
February			11	611
March	82	12	29.5	1,810
April	565	34	294	17,500
May	565	109	285	17,500
June	243	23	66.4	3,950
July	396	15	67.3	4,140
August			10	615
September			9	536
The year	565		67.7	49,000

NOTE.—Mean discharge for December, January, and February based on temperature record. Mean discharge for August and September based on current-meter measurement made Aug. 18 and discharge for October, 1926.

LARAMIE RIVER NEAR GLENDEVEY, COLO.

LOCATION.—In SW. ¼ sec. 25, T. 10 N., R. 76 W., at highway bridge 3 miles east of Glendevey, Larimer County. Nearest tributary, Nunn Creek, enters just above station.

DRAINAGE AREA.—101 square miles (measured on topographic map).

RECORDS AVAILABLE.—June 24, 1904, to October 31, 1905; August 18, 1910, to September 30, 1926.

GAGE.—Bristol float-type water-stage recorder, at right bridge pier; inspected by R. A. Mosier.

DISCHARGE MEASUREMENTS.—Made from four-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of boulders and sand. Control is boulder riffle 50 feet below bridge; slightly shifting.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 3.19 feet at 9 p. m. May 28 (discharge, 894 second-feet); minimum discharge occurred during winter.

1904–5; 1910–1926: Maximum stage recorded, 4.55 feet (old datum) at 7 p m. June 9, 1923 (discharge, 2,240 second-feet); minimum stage recorded, 1.5 feet February 14–15, 1911 (discharge, 5 second-feet).

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

DIVERSIONS.—Water diverted for irrigation of 200 acres from Laramie River above station. In addition, a total of 25,400 acre-feet was diverted during 1926 from the Laramie Basin to that of the Cache la Poudre.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve used October 1 to November 13 and curve used April 12 to September 30 are both well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records excellent except during estimated period, for which they are fair.

The following discharge measurements were made:

May 31, 1926: Gage height, 2.88 feet; discharge, 712 second-feet.

July 23, 1926: Gage height, 1.14 feet; discharge, 81 second-feet.

September 19, 1926: Gage height, 0.52 foot; discharge, 20.2 second-feet.

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

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	31	46		146	720	203	63	26
2	29	45		166	750	155	59	26
3	28	46	25	182	720	144	60	26
4	28	42		236	720	119	63	30
5	39	42		304	660	99	60	28
6	113	38		327	720	103	61	24
7	71	32		261	750	159	67	30
8	56	30	35	223	750	164	67	34
9	49	29		187	635	220	68	26
10	52	27		166	570	229	66	24
11	58	27	43	166	530	153	61	25
12	56	29	45	155	515	133	54	29
13	51	28	44	140	510	125	49	30
14	53	------	40	138	510	113	45	29
15	48	------	48	168	406	113	42	26
16	46	------	64	206	348	105	42	25
17	47	------	72	214	392	99	40	24
18	46	------	79	195	378	89	39	24
19	46	------	81	214	388	85	41	22
20	46	------	82	323	370	82	41	21
21	45	------	89	485	308	84	36	20
22	47	------	81	560	278	85	34	20
23	50	------	82	630	251	84	34	23
24	47	------	72	655	195	79	33	34
25	40	------	75	660	192	74	31	31
26	43	------	77	690	195	70	31	31
27	42	------	92	750	203	72	30	32
28	45	------	85	780	209	91	30	32
29	52	------	97	720	217	85	29	34
30	48	------	127	690	239	80	27	36
31	47	------	------	690	------	68	26	------

NOTE.—No gage-height record Apr. 1-11; discharge estimate based on temperature record. Braced figures give mean discharge for periods indicated.

Monthly discharge of Laramie River near Glendevey, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	113	28	48.4	2,980
November 1–13	46	27	35.5	915
April	127	----------	59.2	3,520
May	780	138	369	22,700
June	750	192	454	27,000
July	229	68	115	7,070
August	68	26	46.1	2,830
September	36	20	27.4	1,630

LARAMIE RIVER NEAR JELM, WYO.

LOCATION.—In sec. 15, T. 12 N., R. 77 W., just below highway bridge at Boswell ranch, a quarter of a mile below Colorado-Wyoming line, and 4 miles south of old Jelm, Albany County. Stuck Creek enters 1 mile upstream.

DRAINAGE AREA.—297 square miles (measured on topographic maps).

RECORDS AVAILABLE.—May 7, 1911, to September 30, 1926. From June 22, 1904, to October 31, 1905, station maintained at Decker's ranch, half a mile south of State line. Records at two stations comparable, as there are no tributaries or large diversions between them.

GAGE.—Bristol float-type water-stage recorder on right bank 30 feet downstream from bridge; inspected by R. A. Mosier.

DISCHARGE MEASUREMENTS.—Made from two-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel. Control a short distance downstream; slightly shifting at long intervals. Left bank is overflowed at gage height 3.0 feet; flow passes through three well-defined high-water channels.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 3.68 feet from 9 to 11 a. m. May 28 (discharge, 2,230 second-feet); minimum discharge occurred during winter.

1904–5; 1911–1926: Maximum stage recorded, 4.15 feet at 8 p. m. June 9, 1923 (discharge, 4,200 second-feet); minimum stage, 1.8 feet September 22–24, October 4–8, 18–23, and 28–31, 1905 (discharge, 22 second-feet).

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

DIVERSIONS.—Water diverted for irrigation of 3,000 acres between Jelm and Glendevey stations.

REGULATION.—Diurnal fluctuation during spring caused by alternate melting and freezing of mountain snow.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined. Operation of water-stage recorder satisfactory except as explained in footnote to daily-discharge table. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records excellent except for periods of missing gage heights, for which they are fair.

The following discharge measurements were made:

July 23, 1926: Gage height, 1.53 feet; discharge, 169 second-feet.

September 18, 1926: Gage height, 0.95 foot; discharge, 42.7 second-feet.

Daily discharge, in second-feet, of Laramie River near Jelm, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	63	117		336	1,440	622	137	56
2	61	97		412	1,440	456	129	56
3	58	92	75	480	1,340	434	132	58
4	56	88		583	1,260	406	134	60
5	72	92		691	1,170	350	129	60
6	265	120		777	1,260	400	129	54
7	164	108		660	1,410	522	134	54
8	132	115	110	520	1,470	474	129	95
9	115	106		450	1,320	456	132	70
10	106	101		410	1,180	558	127	61
11	115	88		390	1,000	365	120	60
12	132	82	160	370	992	295	110	61
13	112	-------		336	948	274	106	63
14	106	-------		335	1,080	265	99	60
15	108	-------	167	440	761	253	95	58
16	103	-------	204	490	663	238	92	54
17	88	-------	220	510	609	211	88	54
18	97	-------	211	500	596	195	84	46
19	95	-------	208	540	564	189	80	45
20	95	-------	208	642	546	178	86	42
21	90	-------	257	917	486	183	78	44
22	99	-------	224	1,040	450	195	78	45
23	106	-------	231	1,210	417	178	72	46
24	106	-------	183	1,470	385	172	68	48
25	97	-------	175	1,550	375	164	65	60
26	99	-------	189	1,580	355	158	65	61
27	99	-------	220	1,790	340	161	63	63
28	95	-------	224	1,990	345	192	61	61
29	110	-------	250	1,690	350	208	60	61
30	101	-------	295	1,520	350	178	58	63
31	110	-------	-------	1,490	-------	150	56	-------

NOTE.—Gage heights missing Apr. 1–14, May 7–12, 14–19; discharge based on comparison with flow of North Platte River at Saratoga, and of Laramie River near Glendevey. Braced figures give mean discharge for periods indicated.

Monthly discharge of Laramie River near Jelm, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	265	56	105	6,460
November 1–12	120	82	100	2,380
April	295	-------	168	10,000
May	1,990	335	843	51,800
June	1,470	340	830	49,400
July	622	150	293	18,000
August	137	56	96.6	5,940
September	95	42	57.3	3,410

LARAMIE RIVER AT TWO RIVERS, WYO.

LOCATION.—In sec. 5, T. 17 N., R. 74 W., at site of old highway bridge at Two Rivers, Albany County. Nearest tributary, Little Laramie River, enters a quarter of a mile below.

DRAINAGE AREA.—1,290 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—May 1, 1911, to September 30, 1926.

GAGE.—Au fuzee water-stage recorder on left bank, 45 feet downstream from bridge site; inspected by E. K. Nelson.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel; shifting at intervals. No well-defined control. Banks high and not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 6.2 feet from 4 to 6 a. m. May 31 (discharge, 1,900 second-feet); minimum discharge, 14 second-feet September 21.

1911–1926: Maximum stage recorded, 7.48 feet at 3 a. m. June 13, 1923 (discharge, 3,930 second-feet); no flow September 22–25, 1911.

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

DIVERSIONS.—Adjudicated diversions for irrigation of 29,700 acres from Laramie River between Two Rivers and Jelm stations. In addition there were diversions by Pioneer Canal during 1926.

REGULATION.—Operation of ditches above station affects low-water flow.

ACCURACY.—Stage-discharge relation changed during winter. Rating curves used October 1 to November 7 and April 29 to September 30 are both well defined. Operation of water-stage recorder satisfactory except for periods during October and November. Daily discharge ascertained by applying to rating tables mean daily gage height obtained by inspection of recorder graph. Records excellent except for periods of missing gage heights, for which they are fair.

Discharge measurements of Laramie River at Two Rivers, Wyo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 23	[a] 1.71	87	July 25	1.60	116
Apr. 29	2.40	334	Sept. 20	.84	15.7
July 15	2.25	262			

[a] Stage-discharge relation affected by ice.

Daily discharge, in second-feet, of Laramie River at Two Rivers, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	38	92		360	1,700	202	108	22
2	37	84		415	1,550	238	108	21
3	34	83		466	1,460	315	99	21
4	33	81		551	1,420	297	95	22
5	35	94		638	1,390	312	91	22
6	40	76		708	1,390	300	88	22
7	100	38		805	1,350	449	88	22
8	150	50		885	1,280	415	85	22
9	110	55		825	1,280	517	84	21
10	94	60		745	1,320	551	88	19
11	96	75		655	1,320	517	88	16
12	98	80		602	1,190	483	87	19
13	103	75		585	1,030	382	84	20
14	103	70		534	1,030	312	78	23
15	103	65		500	1,060	276	75	22
16	103	70		466	1,080	244	73	19
17	103	75		483	945	218	68	20
18	103	80		534	825	192	64	19
19	102	85		602	725	172	61	18
20	101	85		602	638	158	57	15
21	100	87		602	568	148	55	14
22	100	87		638	517	139	51	15
23	98	87		785	466	128	50	18
24	96	85		865	415	124	42	19
25	95	80		945	379	119	37	18
26	95			1,010	334	116	35	18
27	95			1,120	303	110	32	19
28	95	75		1,320	273	105	29	20
29	96		312	1,580	255	105	27	21
30	100		337	1,720	226	106	24	24
31	101			1,850		112	24	

NOTE.—No gage-height record Oct. 5–9, 18–30, and Nov. 8–30; discharge estimated from weather records, one discharge measurement, and comparison with flow for Laramie River near Jelm. Braced figure gives mean discharge for period indicated.

Monthly discharge of Laramie River at Two Rivers, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	150	33	88.9	5,470
November	94	38	75.8	4,510
May	1,850	360	787	48,400
June	1,700	226	924	55,000
July	551	105	254	15,600
August	108	24	66.9	4,110
September	24	14	19.7	1,170

LARAMIE RIVER AT FORT LARAMIE, WYO.

LOCATION.—In sec. 25, T. 26 N., R. 65 W., at siphon crossing of the Fort Laramie Canal, 3 miles west of Fort Laramie, Goshen County.

DRAINAGE AREA.—4,580 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—April 4, 1915, to September 30, 1926.

GAGE.—Vertical staff; read by Theo. Fintus.

DISCHARGE MEASUREMENTS.—Made from highway bridge at Fort Laramie.

CHANNEL AND CONTROL.—No data.

EXTREMES OF DISCHARGE.—Data not available.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Water diverted for irrigation of 68,000 acres from Laramie River between Two Rivers and Fort Laramie.

REGULATION.—Flow regulated by Wheatland Reservoir, situated 70 miles upstream in main channel of river, having a capacity of 110,000 acre-feet. Stored water from reservoir diverted from river a few miles below reservoir.

COOPERATION.—Complete records furnished by United States Bureau of Reclamation.

Daily discharge, in second-feet, of Laramie River at Fort Laramie, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	157	152	185	160	295	435	985	190	157	93
2	82	115	152	214	156	295	410	822	170	242	82
3	93	130	152	210	140	295	465	1,050	157	170	82
4	82	130	163	250	160	295	465	1,050	225	130	93
5	82	130	145	226	156	399	465	1,080	265	170	104
6	68	130	145	214	160	570	465	1,050	330	157	190
7	80	115	145	214	152	637	465	822	265	115	143
8	82	135	152	250	144	625	530	725	310	115	130
9	82	135	152	170	152	720	530	660	360	265	143
10	82	130	152	150	168	562	530	725	530	170	143
11	85	130	152	130	164	496	530	692	1,120	157	130
12	100	135	152	178	168	633	530	692	725	157	115
13	100	130	152	178	160	637	530	692	530	130	115
14	100	135	------	153	160	641	492	822	410	115	130
15	100	137	------	152	160	564	530	760	385	115	157
16	104	137	------	135	152	529	562	760	360	130	143
17	104	137	------	136	154	633	530	985	330	115	130
18	106	152	------	153	160	714	465	920	285	115	130
19	104	152	------	138	164	746	410	855	310	104	130
20	104	152	------	129	172	660	410	822	242	93	130
21	104	150	------	152	246	695	360	790	225	93	130
22	104	135	------	140	481	660	285	492	206	82	121
23	104	135	------	144	445	660	285	410	170	170	104
24	100	150	------	156	562	660	225	360	170	130	104
25	104	140	------	144	1,090	595	206	360	170	130	104
26	104	140	------	123	672	530	157	310	265	104	117
27	100	150	------	140	433	465	170	265	206	104	143
28	70	152	------	148	408	425	225	285	206	93	143
29	82	152	------	------	376	425	310	225	190	93	130
30	104	152	------	------	340	410	660	190	170	170	130
31	134	------	------	------	300	------	885	------	157	130	------

NOTE.—From Feb. 1 to Apr. 19 a part or all of the flow given was diverted through Fort Laramie Canal and returned to river at Lingle power plant. Stage-discharge relation affected by ice Dec. 14 to Jan. 31; discharge not computed.

Monthly discharge of Laramie River at Fort Laramie, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	134	68	94	5,780
November	157	115	139	8,270
December 1-13	163	145	151	3,890
February	250	123	168	9,330
March	1,090	140	275	16,900
April	746	295	549	32,700
May	885	157	436	26,800
June	1,080	190	689	41,000
July	1,120	157	311	19,100
August	265	82	136	8,360
September	190	82	125	7,440

LITTLE LARAMIE RIVER NEAR FILMORE, WYO.

LOCATION.—In sec. 9, T. 15 N., R. 77 W., at private bridge at May ranch, 1½ miles south of Filmore, Albany County. No large tributary between station and junction of North, Middle, and South Forks, 4 miles above.

DRAINAGE AREA.—155 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—July 5, 1902, to August 15, 1903; May 14, 1911, to October 31, 1912; April 1, 1915, to November 30, 1926, when station was discontinued.

GAGE.—Vertical staff on downstream side of left abutment; read by Claude May.

DISCHARGE MEASUREMENTS.—Made from single-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and small boulders; slightly shifting at long intervals. No well-defined control. During high water there is flow through channel around right end of bridge.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.8 feet at 7 a. m. May 28 (discharge, 1,950 second-feet); minimum discharge occurred during winter.

1902–1903; 1911–1926: Maximum stage recorded, 5.9 feet at 7 a. m. June 1, 1914 (discharge, 2,400 second-feet); minimum stage, 0.25 foot September 19–20, 1913 (discharge, 1 second-foot).

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

DIVERSIONS.—Water diverted for irrigation of 20,000 acres from Little Laramie River and tributaries above station.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent. Rating curve well defined. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good except during estimated period, for which they are fair.

The following discharge measurement was made:

September 20, 1926: Gage height, 0.70 foot; discharge, 27.4 second-feet.

Daily discharge, in second-feet, of Little Laramie River near Filmore, Wyo., for the period April 18, 1926, to November 30, 1926

Day	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.
1		178	760	220	94	29	26	24
2		178	890	209	86	27	27	27
3		188	760	198	80	37	24	27
4		209	890	220	88	44	20	28
5		285	890	209	77	37	25	28
6		315	890	285	80	33	26	29
7		242	960	230	104	31	26	31
8		300	890	370	83	42	26	31
9		220	890	255	92	31	26	
10		209	730	220	104	31	21	
11		209	552	188	83	31	21	
12		230	580	168	73	33	20	
13		209	525	158	77	72	21	
14		188	610	158	64	60	21	
15		188	475	148	64	44	23	
16		209	410	139	64	40	25	30
17		198	332	130	56	33	24	
18	148	285	285	130	52	31	21	
19	139	300	285	121	52	33	20	
20	139	525	242	130	60	29	21	
21	130	610	209	130	46	26	21	
22	130	700	209	121	46	28	20	
23	148	730	188	109	49	26	20	
24	139	820	188	104	46	26	20	31
25	112	890	198	98	46	26	19	30
26	130	1,170	188	95	46	26	18	32
27	130	1,310	188	92	49	26	20	31
28	130	1,790	198	109	44	27	20	30
29	148	960	198	98	44	29	20	30
30	168	760	209	92	40	33	20	30
31		960		83	31		21	

NOTE.—Stage-discharge relation affected by ice Nov. 9-23; discharge based on temperature records and comparison with flow for Laramie River at Two Rivers. Braced figure gives mean discharge for period indicated.

Monthly discharge of Little Laramie River near Filmore, Wyo., for the period April 18, 1926, to November 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April 18–30	168	112	138	3,560
May	1,790	178	502	30,900
June	960	188	494	29,400
July	370	83	162	9,960
August	104	31	65.2	4,010
September	72	26	34.0	2,020
October	27	18	22.0	1,350
November			29.6	1,760
The period				83,000

LITTLE LARAMIE RIVER AT TWO RIVERS, WYO.

LOCATION.—On line between secs. 5 and 6, T. 17 N., R. 74 W., at highway bridge half a mile south of Two Rivers, Albany County. No tributary between station and mouth, half a mile below.

DRAINAGE AREA.—310 square miles (measured on base map of Wyoming).

RECORDS AVAILABLE.—May 6, 1911, to September 30, 1926.

GAGE.—Stevens continuous water-stage recorder just below bridge; inspected by E. K. Nelson.

DISCHARGE MEASUREMENTS.—Made from cable 100 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel; shifting at long intervals. No well-defined control. Banks not subject to overflow except during extremely high water.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 6.32 feet at 12 m. May 29 (discharge, 1,790 second-feet); minimum stage, 1.83 feet September 24 (discharge, 1 second-foot).

1911–1926: Maximum discharge recorded, that of May 29, 1926; river frequently becomes dry in summer owing to irrigation above.

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

DIVERSIONS.—Water diverted for irrigation of 29,000 acres from Little Laramie River between Filmore and Two Rivers stations.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during winter; slightly shifting. Rating curve well defined. Operation of water-stage recorder unsatisfactory for several periods. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph, except from October 10 to November 8 when shifting-control method was used. Records good except for estimated periods and for extremely low stages, for which they are fair.

Discharge measurements of Little Laramie River at Two Rivers, Wyo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 23		29.6	July 25	2.59	68
Apr. 28	2.87	104	Sept. 20	1.88	*1
July 15	2.89	117			

* Discharge estimated.

Daily discharge, in second-feet, of Little Laramie River at Two Rivers, Wyo., for the year ending September 30, 1926

Day	Oct.	Nov.	Apr.	May	June	July	Aug.	Sept.
1	28	83		103	672	29	48	2
2	28	70		111	541	28	44	2
3	28	61		111	518	48	49	1
4	28	55		101	546	65	54	1
5	30	55		104	541	65	51	3
6	35	54		114	497	65	44	7
7	70	53		128	485	79	40	6
8	90	50		128	541	88	53	4
9	75	45		130	590	140	49	2
10	53	45		122	528	294	51	4
11	50			116	410	234	56	4
12	65			120	324	163	49	5
13	72	40		120	335	125	41	6
14	75			104	473	116	34	10
15	80			84	465	108	32	16
16	75			72	359	89	29	14
17	69			69	307	83	28	11
18	69	35		77	250	76	26	7
19	68			90	200	65	23	4
20	67			98	160	66	21	1
21	66	30		96	130	75	19	1
22	65	30		135	100	82	19	1
23	64	30		206	90	75	17	1
24	62	28		259	75	70	16	1
25	60	26		332	65	69	15	1
26	65			397	61	76	12	1
27	70			510	53	69	10	5
28	70	25	108	1,090	43	65	9	9
29	75		103	1,650	36	70	8	10
30	80		103	1,200	31	66	6	9
31	86			820		56	4	

NOTE.—No gage-height record Oct. 1–9, 18–30, Nov. 9–30, and June 18–24; discharge estimated from weather record and one current-meter measurement and by comparison with flow for Laramie River at Two Rivers and Little Laramie River near Filmore. Braced figures give mean discharge for periods indicated.

Monthly discharge of Little Laramie River at Two Rivers, Wyo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	90	28	61.9	3,810
November	83		40.5	2,410
May	1,650	69	284	17,500
June	672	31	314	18,700
July	294	28	90.3	5,550
August	56	4	30.9	1,900
September	16	1	5.0	298

SOUTH PLATTE RIVER AT SOUTH PLATTE, COLO.

LOCATION.—In sec. 25, T. 7 S., R. 70 W., 375 feet below point where North Fork of South Platte River enters at South Platte, Jefferson County.

DRAINAGE AREA.—2,550 square miles (revised; measured on base map of Colorado).

RECORDS AVAILABLE.—March 28, 1902, to September 30, 1926. Records at Platte Canyon and at Deansbury, a few miles below, extend back to 1887, with the exception of 1893 and 1894. Earlier records, 1887–1892, were obtained by State engineer, and records from 1895 to 1896 were collected under direction of Denver Power & Irrigation Co.

GAGE.—Stevens water-stage recorder on right bank; inspected by Mrs. Mata Wallbrecht.

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

CHANNEL AND CONTROL.—Bed composed of coarse sand and fine gravel. Control 35 feet downstream at well-defined rapids; shifting. Banks high and not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum mean daily discharge estimated, 2,310 second-feet June 8; minimum discharge occurred during winter.

1888–1892; 1895–1900; 1902–1926: Maximum gage height during period, 8.95 feet from 5 to 9 p. m. June 7, 1921 (discharge, 6,320 second-feet); minimum discharge recorded, 21 second-feet August 4, 1902.

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

DIVERSIONS.—Water diverted from tributaries of South Platte River above station for irrigation of 46,000 acres.

REGULATION.—Flow regulated chiefly by Cheesman Reservoir, having a capacity of 79,000 acre-feet and situated 20 miles above station.

ACCURACY.—Stage-discharge relation affected by shifting control. Standard rating curve well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph, except from October 16 to November 20, April 1 to May 20, and July 14 to August 17, when shifting-control method was used, and from May 21 to June 17, when discharge was estimated. Records good except during estimated periods, for which they are fair.

Discharge measurements of South Platte River at South Platte, Colo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 3	1.47	178	May 31	4.96	1,850	July 29	3.17	895
Mar. 19	1.21	126	Do	5.12	1,910	Aug. 19	2.43	471
May 5	3.20	764	June 28	2.98	744	Sept. 17	1.48	164
May 12	2.92	670	July 12 [a]	3.53	1,030			

[a] Measurement made by State hydrographer.

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

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	334	155	124		92	760	2,060	820	890	545
2	298	161	121		96	755	2,130	890	820	448
3	286	170	121		108	760	2,080	875	795	456
4	286	162	102		120	750	2,210	1,010	572	492
5	292	140	104		150	730	2,220	1,340	586	480
6	370	142			179	830	2,230	1,390	730	373
7	345	157			177	735	2,300	1,310	820	286
8	317	135			232	720	2,310	1,190	918	241
9	307	137			189	655	2,250	1,090	865	238
10	301	142		110	166	640	2,260	1,120	835	226
11	314	145			193	700	2,080	1,020	815	210
12	331	152			202	670	1,800	1,020	670	212
13	304	140			226	660	1,820	984	630	210
14	314	143			229	695	1,860	940	620	200
15	304	112			259	730	1,670	840	665	190
16	307	129			310	750	1,620	805	581	180
17	310	164			373	810	1,400	755	518	171
18	310	152		129	388	1,040	1,200	705	484	168
19	314	135		122	464	1,090	1,180	630	472	166
20	342	127		126	484	1,130	1,090	586	424	161
21	348	129		124	660	1,320	978	600	428	152
22	352	126		106	690	1,530	870	630	472	145
23	359	150		122	795	1,680	815	650	460	148
24	356	145		148	745	1,850	805	680	452	148
25	342	138		114	695	2,030	765	670	640	152
26	338	130		97	700	2,230	750	660	615	155
27	289	127		97	785	2,180	715	595	581	157
28	253	121		95	770	2,220	710	576	545	162
29	212	124		97	775	2,220	710	885	568	175
30	164	118		92	780	1,870	760	918	670	164
31	157			97		1,880		945	740	

NOTE.—No gage-height record Mar. 1–17 and Sept. 14–16; discharge based on comparison with flow of South Platte River at Platte Canyon. Because of scour of control discharge May 21–30 and June 1–17 is based on comparison with the combined flow of North Fork of South Platte River and South Platte River below Cheeseman Reservoir, allowing for inflow between. Braced figure gives mean discharge for period indicated.

Monthly discharge of South Platte River at South Platte, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	370	157	305	18,800
November	170	112	140	8,330
December			77	4,740
January			66	4,060
February			75	4,160
March	148	92	111	6,820
April	795	92	401	23,900
May	2,230	640	1,180	72,600
June	2,310	710	1,520	90,400
July	1,390	576	875	53,800
August	918	424	641	39,400
September	545	145	240	14,300
The year	2,310		472	341,000

NOTE.—Mean discharge for December, January, and February is based on records of the city of Denver at Platte Canyon, reduced 1.4 per cent to allow for difference in drainage areas.

NORTH FORK OF SOUTH PLATTE RIVER AT SOUTH PLATTE, COLO.

LOCATION.—In sec. 25, T. 7 S., R. 70 W., one-third mile above railroad station at South Platte, Jefferson County. No tributary between station and mouth at South Platte.

DRAINAGE AREA.—484 square miles (revised; measured on base map of Colorado).

RECORDS AVAILABLE.—June 4, 1909, to September 30, 1910; April 1, 1913, to September 30, 1926.

GAGE.—Stevens water-stage recorder installed May 5, 1925, on left bank at site and datum of inclined gage used previously; inspected by Mrs. Mata Wallbrecht.

DISCHARGE MEASUREMENTS.—Made from cable 300 feet above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and sand. Principal control a short distance below gage; shifting. Banks not subject to serious overflow.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 5.02 feet at 7 a. m. June 7 (discharge, 1,520 second-feet); minimum stage probably occurred during winter.

1909–10; 1913–1926: Maximum stage recorded, 5.9 feet at 4 a. m. June 8, 1921 (discharge, 1,910 second-feet); minimum stage, 1.50 feet December 18, 1922 (discharge, 12 second-feet).

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

DIVERSIONS.—Water diverted for irrigation of several hundred acres above station.

REGULATION.—Diurnal fluctuation during spring caused by alternate melting and freezing of mountain snow.

ACCURACY.—Stage-discharge relation shifting. Standard rating curve well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph except for periods October 1 to December 14, May 6–27, and July 1 to September 30, when shifting-control method was used. Records fair.

Discharge measurements of North Fork of South Platte River at South Platte, Colo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 3	2.02	123	May 31	4.33	998	Aug. 19	2.23	194
Mar. 19	1.50	64	June 28	3.16	409	Sept. 17	1.80	86
May 5	3.50	524	July 12	3.12	482			
May 12	3.24	420	July 29	2.70	293			

Daily discharge, in second-feet, of North Fork of South Platte River at South Platte, Colo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	112	112	85	30	56	514	1,160	390	245	187
2	109	111	85	30	58	497	1,200	402	238	175
3	106	118	85	30	59	518	1,080	399	222	175
4	103	107	65	28	71	537	1,170	424	227	185
5	104	85	72	30	99	561	1,100	405	218	181
6	175	89	99	32	129	665	1,130	452	291	158
7	139	111	97	34	119	553	1,260	452	294	112
8	118	93	60	40	139	537	1,190	405	342	108
9	112	92	54	44	116	476	998	387	303	106
10	108	95	73	46	102	444	858	452	288	102

Daily discharge, in second-feet, of North Fork of South Platte River at South Platte, Colo., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	118	97	65	47	126	458	844	414	321	99
12	142	103	76	51	134	427	794	399	238	100
13	126	98	74	50	153	417	844	369	220	99
14	132	99	68	52	144	414	746	348	211	92
15	128	74		53	171	427	695	339	209	88
16	123	85		55	220	452	640	354	209	87
17	126	126		71	262	458	553	318	204	86
18	119	111		66	282	483	545	300	196	83
19	118	87		66	369	486	511	303	185	82
20	120	54		57	378	557	476	288	179	80
21	116	86		66	476	685	455	303	185	80
22	119	86		49	462	758	430	303	236	79
23	120	111		72	553	942	424	309	224	77
24	119	108		85	596	1,090	427	300	220	76
25	108	92		62	630	1,160	424	294	216	77
26	115	92		49	574	1,140	414	279	212	79
27	116	95		56	549	977	408	248	209	81
28	111	85		53	511	830	402	255	206	76
29	120	86		56	522	716	393	294	203	75
30	111	80		47	533	812	396	285	200	74
31	112			59		1,010		252	198	

NOTE.—No gage-height record Mar. 1–3, 5–10, and Aug. 24–29; discharge based on weather records and comparison with records for Clear Creek near Golden.

Monthly discharge of North Fork of South Platte River at South Platte, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	175	103	120	7,380
November	126	54	95.6	5,690
December 1–14	99	54	75.6	2,100
March	85	28	50.5	3,110
April	630	56	286	17,000
May	1,160	414	645	39,700
June	1,260	393	732	43,600
July	452	248	346	21,300
August	342	179	231	14,200
September	187	74	105	6,250

CLEAR CREEK NEAR GOLDEN, COLO.

LOCATION.—In sec. 32, T. 3 S., R. 70 W., in canyon 1½ miles above Golden' Jefferson County. Only important tributary between station and mouth' Ralston Creek, enters 12 miles below.

DRAINAGE AREA.—392 square miles (measured on topographic map).

RECORDS AVAILABLE.—May 4, 1919, to September 30, 1926. From December 4, 1908, to December 31, 1909; June 8, 1911, to May 3, 1919, records available for station half a mile upstream where flow is practically the same.

GAGE.—Bristol float-type water-stage recorder on left bank 200 feet upstream from Colorado & Southern Railway section house; inspected by R. Wahlberg.

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

CHANNEL AND CONTROL.—Bed composed of coarse gravel and sand. Low-water control at small rapids 100 feet downstream; shifting. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage during year. 4.7 feet from 3 to 6 a. m. June 7 (discharge, 2,100 second-feet); minimum discharge occurred during winter.

1909; 1911–1926: Maximum discharge recorded, 4,420 second-feet July 31, 1921; minimum discharge, 18 second-feet January 11, 1918, from current-meter measurement.

ICE.—Stage-discharge relation seriously affected by ice; records discontinued during winter except for occasional discharge measurements.

DIVERSIONS.—Court decree for diversion of 53 second-feet from the headwaters of Fraser River to the West Fork of Clear Creek. Golden ditch, three-fourths mile upstream, is the only large diversion above station. During 1926 this ditch diverted 4,790 acre-feet.

REGULATION.—Alternate melting and freezing of mountain snow causes diurnal fluctuation during spring.

ACCURACY.—Stage-discharge relation shifting. Standard rating curves used October 1 to June 18 and June 19 to September 30 are both fairly well defined. Operation of water-stage recorder satisfactory except for short periods. Daily discharge ascertained by applying to rating tables mean daily gage height obtained by inspection of recorder graph, except for periods March 9–15 and April 20 to July 24 when shifting-control method was used. Records good except for periods of missing gage heights, for which they are fair.

COOPERATION.—Gage-height record furnished by Farmers Reservoir & Irrigation Co.

Discharge measurements of Clear Creek near Golden, Colo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 22	2.18	136	May 11	3.02	552	July 28	3.31	463
Jan. 12		60	June 4	4.19	1,600	Aug. 20	2.70	179
Mar. 9	1.72	42.7	July 13	3.74	684			

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

Day	Oct.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	115	40	69	500	1,320	838	333	157
2	113	40	71	514	1,490	883	352	151
3	113	40	57	556	1,520	865	358	171
4	115	42	62	640	1,560	812	395	193
5	118	45	74	784	1,630	796	406	199
6	171	45	102	872	1,670	847	570	180
7	142	45	121	744	1,950	838	628	170
8	130	45	140	648	1,920	788	496	160
9	125	50	109	535	1,820	812	490	155
10	120	62	100	493	1,680	856	452	150
11	128	52	120	528	1,660	804	417	150
12	115	52	135	507	1,550	740	379	146
13	115	60	148	479	1,600	680	368	141
14	118	59	150	472	1,500	658	318	138
15	120	52	165	514	1,480	650	299	136
16	122	54	192	563	1,400	635	229	136
17	124	64	223	626	1,200	620	299	124
18	126	67	246	704	1,110	642	290	119
19	128	71	254	736	1,090	650	276	114
20	130	67	279	848	1,070	665	196	109
21	132	72	388	1,030	1,010	650	186	104
22	132	59	388	1,170	946	583	229	104
23	142	67	406	1,280	928	563	253	107
24	155	85	382	1,380	955	542	249	104
25	145	67	354	1,430	973	516	225	109
26	135	60	364	1,440	1,010	484	213	112
27	145	64	437	1,430	892	446	217	116
28	158	67	400	1,280	919	471	213	114
29	168	64	424	1,140	928	446	186	109
30	160	60	472	1,130	901	429	193	112
31	150	69		1,190		400	179	

NOTE.—No gage-height record Oct. 13–21, 30, 31, Mar. 1–8, Apr. 7–12, Sept. 6–11; discharge based on comparison with record of flow of North Fork of South Platte River at South Platte.

Monthly discharge of Clear Creek near Golden, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	171	113	133	8,180
March	85	40	57.6	3,540
April	472	57	228	13,600
May	1,440	472	844	51,900
June	1,950	892	1,320	78,600
July	883	400	665	40,900
August	628	179	319	19,600
September	199	104	136	8,090

NORTH ST. VRAIN CREEK NEAR ALLENS PARK, COLO.

LOCATION.—In sec. 14, T. 3 N., R. 73 W., a short distance above bridge on main road from Allens Park to Estes Park and 2½ miles north of Allens Park, Boulder County. Copeland Lake outlet enters a few hundred yards upstream.

DRAINAGE AREA.—33 square miles (measured on topographic map).

RECORDS AVAILABLE.—October 23, 1925, to September 30, 1926.

GAGE.—Bristol float-type water-stage recorder on left bank 100 yards above bridge; inspected by C. J. Ellis.

DISCHARGE MEASUREMENTS.—Made from single-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel. Control 50 feet downstream. Banks not subject to overflow.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 3.05 feet from 8 to 10 p. m. June 8 (discharge, 488 second-feet); minimum stage occurred during winter.

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

DIVERSIONS.—Practically none above station.

ACCURACY.—Stage-discharge relation practically permanent; affected by ice. Rating curve well defined. Operation of water-stage recorder satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records good except for period of missing gage heights and for periods affected by ice, for which they are fair.

Discharge measurements of North St. Vrain Creek near Allens Park, Colo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 27	0.97	30.1	June 14	2.53	352	Aug. 9	1.50	114
May 14	1.06	39.9	July 9	2.22	278	Sept. 2	1.00	36.2
June 2	2.22	269	July 22	1.71	154			

NOTE.—All measurements by State hydrographers.

Daily discharge, in second-feet, of North St. Vrain Creek near Allens Park, Colo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		22	13		10	54	289	306	91	36
2		23	13		9	59	312	286	87	32
3		22			10	84	302	294	87	32
4					10	109	296	279	111	39
5			11		9	134	312	282	117	36
6		16			8	130	374	284	151	30
7			13		9	89	402	282	155	30
8			13		9	76	431	244	128	33
9			12		8	59	407	210	120	30
10			11	8	10	46	358	198	109	26
11			13		10	44	350	187	101	22
12			11		11	43	340	204	80	22
13			12		11	37	349	220	75	22
14		14	11		15	39	358	215	75	24
15			11		12	56	345	191	66	23
16			12		18	71	309	182	59	22
17		18	12		22	75	249	182	56	20
18		17	12		25	73	230	180	54	20
19		15	12	7	28	76	232	178	54	20
20		14	12	8	32	128	232	178	54	19
21		14	13	8	36	232	198	171	49	20
22		15	12	11	30	215	182	153	48	20
23	29	14	12	8	29	240	184	134	46	18
24	29	13	13	9	27	264	210	124	44	17
25	27	14	12	13	28	284	215	113	43	18
26	25	13		11	31	259	242	107	40	18
27	28	13		10	34	234	262	107	38	17
28	26	15		10	37	221	278	113	38	16
29	24	13	11	10	42	208	294	107	38	15
30	23	13		11	49	244	289	101	39	15
31	22			11		266		97	38	

NOTE.—Stage-discharge relation affected by ice Nov. 4–16, Dec. 3–6, 14, 15, 23, 26–31, and Mar. 1–18; discharge estimated from gage heights and temperature record. Discharge estimated Oct. 30–31, May 3, 23, 28, June 7, 13, 28, July 5, 10, and 12, on account of missing gage-height record. Braced figures give mean discharge for periods indicated.

Monthly discharge of North St. Vrain Creek near Allens Park, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October 23–31	29	22	25.9	462
November	23	13	15.5	922
December	13	11	11.8	726
January			[a] 9	553
February			[a] 8	444
March	13		8.7	535
April	49	8	20.6	1,230
May	284	37	134	8,240
June	431	182	294	17,500
July	306	97	191	11,700
August	155	38	73.9	4,540
September	39	15	23.7	1,410
The period				48,300

[a] Mean monthly discharge estimated.

MIDDLE ST. VRAIN CREEK NEAR ALLENS PARK, COLO.

LOCATION.—In NW. ¼ sec. 3, T. 2 N., R. 72 W., at Middle Fork ranch, 9 miles southeast of Allens Park, Boulder County. Nearest tributary, Cave Creek, enters 2 miles upstream.

DRAINAGE AREA.—28 square miles (measured on topographic maps).

RECORDS AVAILABLE.—April 26 to September 30, 1926.

GAGE.—Bristol float-type water-stage recorder on left bank 30 feet below private bridge; inspected by J. D. Bestle.

DISCHARGE MEASUREMENTS.—Made from single-span bridge just above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and boulders. Control at gravel bar 30 feet downstream; shifting during high water.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 2.65 feet at 9 p. m. June 6 (discharge, 322 second-feet); minimum stage, 0.77 foot at 6 a. m. September 29 (discharge, 10 second-feet).

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Practically none above station.

ACCURACY.—Stage-discharge relation shifting. Rating curve fairly well defined. Operation of water-stage recorder satisfactory except for short periods. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph, except for periods April 26 to May 16 and June 1–23 when shifting-control method was used. Records good except for periods when shifting-control method was used and for estimated periods, for which they are fair.

Discharge measurements of Middle St. Vrain Creek near Allens Park, Colo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Apr. 27	1.62	66	June 14	2.21	236	Aug. 9	1.56	86
May 14	1.51	68	July 9	2.08	155	Sept. 2	1.06	29.2
June 2	2.30	210	July 22	1.70	102			

NOTE.—All measurements made by State hydrographers.

Daily discharge, in second-feet, of Middle St. Vrain Creek near Allens Park, Colo., for the year ending September 30, 1926

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1	------	96	243	158	65	29	16	------	85	228	118	48	13
2	------	112	243	158	64	26	17	------	85	181	129	46	14
3	------	130	240	170	66	24	18	------	87	174	116	44	15
4	------	153	255	159	85	25	19	------	118	172	109	46	14
5	------	150	270	150	82	25	20	------	160	170	113	48	14
6	------	123	312	170	97	19	21	------	200	148	116	46	16
7	------	117	291	219	98	18	22	------	210	138	102	44	15
8	------	100	291	170	93	19	23	------	216	127	86	44	12
9	------	84	267	172	90	16	24	------	222	136	81	39	11
10	------	72	237	148	82	15	25	------	225	142	76	37	11
11	------	66	228	123	69	17	26	69	222	153	74	34	12
12	------	62	222	123	59	18	27	69	228	158	71	31	12
13	------	62	280	115	57	17	28	74	210	159	76	32	11
14	------	69	258	115	56	18	29	79	202	165	72	33	10
15	------	75	249	108	52	16	30	84	222	165	69	32	10
							31	------	246	------	68	33	------

NOTE.—No gage-height record May 8–13 and 17–22; discharge based on comparison with flow of North Fork of St. Vrain Creek near Allens Park.

Monthly discharge of Middle St. Vrain Creek near Allens Park, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
April 26–30	84	69	75	744
May	246	62	142	8,730
June	312	127	210	12,500
July	219	68	120	7,380
August	98	31	56.5	3,470
September	29	10	16.4	976
The period				33,800

SOUTH ST. VRAIN CREEK NEAR WARD, COLO.

LOCATION.—On line between secs. 35 and 36, T. 2 N., R. 73 W., at footbridge on trail to Stapp Lake, 2 miles northwest of Ward, Boulder County.

DRAINAGE AREA.—15 square miles (measured on topographic map).

RECORDS AVAILABLE.—May 29 to September 30, 1926.

GAGE.—Bristol float-type water-stage recorder on right bank 10 feet below footbridge; inspected by G. B. Holden.

DISCHARGE MEASUREMENTS.—Made from single-span bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and small boulders; control at gravel bar a short distance downstream; somewhat shifting during high water.

EXTREMES OF DISCHARGE.—Maximum stage during period, from water-stage recorder, 2.48 feet from midnight to 4 a. m. June 7 (discharge, 313 second-feet); minimum discharge, 12 second-feet September 27–30.

ICE.—Creek completely frozen over during winter.

DIVERSIONS.—None above station.

ACCURACY.—Stage-discharge relation probably permanent. Rating curve well defined below 200 second-feet. Operation of water-stage recorder fairly satisfactory. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records good except for discharge above 200 second-feet, for which they are fair.

Discharge measurements of South St. Vrain Creek near Ward, Colo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
July 3	1.88	168	Aug. 26	0.87	31.3
July 28	1.25	68	Oct. 16	.43	8.9

Daily discharge, in second-feet, of South St. Vrain Creek near Ward, Colo., for the year ending September 30, 1926

Day	May	June	July	Aug.	Sept.	Day	May	June	July	Aug.	Sept.
1	------	142	168	56	29	16	------	165	123	40	22
2	------	163	172	55	28	17	------	137	114	36	21
3	------	147	176	69	28	18	------	122	110	34	19
4	------	154	187	73	29	19	------	128	110	37	18
5	------	154	182	91	28	20	------	130	114	35	18
6	------	197	149	123	31	21	------	117	115	34	17
7	------	282	168	104	23	22	------	104	122	33	16
8	------	279	180	102	20	23	------	98	101	33	16
9	------	235	178	93	21	24	------	117	87	34	16
10	------	193	168	91	22	25	------	130	81	32	15
11	------	183	132	75	23	26	------	137	66	32	14
12	------	183	120	62	22	27	------	154	68	33	12
13	------	220	115	55	22	28	------	154	74	32	12
14	------	191	109	47	20	29	114	168	74	30	12
15	------	182	120	41	20	30	120	168	65	31	12
						31	140	------	62	31	------

Monthly discharge of South St. Vrain Creek near Ward, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
June	282	98	164	9,760
July	187	62	123	7,560
August	123	30	54.0	3,320
September	31	12	20.2	1,200
The period				21,800

NORTH BOULDER CREEK AT SILVER LAKE, COLO.

LOCATION.—In NW. ¼ sec. 28, T. 1 N., R. 73 W., at outlet of Silver Lake, Boulder County.

DRAINAGE AREA.—8.7 square miles (measured by special survey).

RECORDS AVAILABLE.—August 20, 1913, to September 30, 1926.

GAGE.—Friez water-stage recorder, which records head on weir.

DISCHARGE MEASUREMENTS.—Made by means of standard sharp-crested weir 10 feet long, having low-water section 5 feet long.

EXTREMES OF DISCHARGE.—No data.

ICE.—Weir kept open during winter.

DIVERSIONS.—None above station.

REGULATION.—Winter flow increased by storage in Silver Lake (capacity, 2,080 acre-feet).

COOPERATION.—Records of daily discharge furnished by city engineer of Boulder.

Daily discharge, in second-feet, of North Boulder Creek at Silver Lake, Colo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24.3	13.7	10.0	5.78	6.65	5.0	5.0	7.2	65.9	99.4	77.2	48.6
2	24.3	13.7	10.0	5.78	7.50	5.0	6.0	14.4	67.5	115	73.1	47.2
3	24.3	13.7	10.0	5.78	7.50	5.0	5.5	24.3	69.1	130	71.5	45.1
4	25.7	13.7	10.0	5.78	8.50	5.0	5.4	26.3	88.1	133	69.9	45.1
5	25.7	13.7	10.0	5.78	9.25	5.0	5.0	27.5	88.1	129	69.1	41.8
6	25.7	13.7	10.0	5.78	9.25	5.0	5.4	27.5	117	123	73.9	41.6
7	25.7	13.7	10.0	5.78	9.25	5.0	5.5	27.5	120	119	91.6	38.5
8	25.7	13.7	10.0	5.78	8.50	5.0	5.5	27.5	119	119	94.2	38.3
9	25.7	14.8	8.5	5.78	8.50	5.0	5.5	28.1	119	119	88.1	37.0
10	25.7	14.8	8.5	4.94	7.50	5.0	6.0	27.5	119	119	83.0	36.3

Daily discharge, in second-feet, of North Boulder Creek at Silver Lake, Colo., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	16.6	13.7	8.5	4.94	7.50	5.0	5.4	26.9	118	115	96.8	35.0
12	17.2	13.7	8.5	4.94	7.50	5.0	5.4	25.7	116	109	92.4	23.1
13	17.2	13.7	7.5	4.94	7.50	5.0	5.5	25.7	113	101	78.0	23.4
14	14.3	14.8	8.5	4.94	6.65	5.0	5.5	24.6	113	94.2	69.9	22.6
15	13.7	18.0	7.5	4.94	6.65	5.0	5.5	25.1	112	92.4	65.1	22.1
16	13.7	12.5	7.5	4.94	6.65	5.0	5.4	25.7	109	92.4	62.0	21.6
17	16.0	12.5	7.5	5.78	6.65	5.0	6.5	25.7	106	92.4	59.0	21.6
18	12.6	12.5	7.5	5.78	6.65	5.0	6.5	25.7	105	92.4	57.4	23.4
19	13.7	12.5	7.5	5.78	6.65	5.0	7.0	25.7	96.8	92.4	55.2	23.4
20	16.0	12.5	6.5	5.78	6.65	5.0	7.0	27.2	92.4	92.4	53.0	22.1
21	13.7	12.5	6.5	5.78	5.78	5.0	7.4	27.5	87.2	90.7	53.0	21.3
22	11.5	11.2	6.5	5.78	5.78	5.0	7.4	28.7	84.7	89.0	52.2	20.8
23	11.5	11.2	6.5	5.78	5.78	5.0	7.4	52.8	78.0	82.2	51.5	20.3
24	13.7	11.2	6.5	6.65	5.78	5.0	7.4	52.7	76.4	83.0	50.1	20.8
25	14.8	11.2	6.5	6.65	5.78	5.0	6.47	52.7	74.7	73.9	48.6	20.8
26	14.8	9.5	6.5	6.65	5.78	5.0	6.47	52.8	73.9	73.9	48.6	20.8
27	14.8	9.5	6.5	6.65	5.78	5.0	6.47	67.5	81.3	69.9	47.2	20.8
28	13.7	11.2	6.5	6.65	5.0	5.0	6.47	66.7	83.8	69.0	47.2	20.8
29	14.8	10.0	6.5	6.65	-------	5.0	6.65	65.9	88.1	71.5	47.2	20.8
30	14.8	10.0	6.5	6.65	-------	5.0	6.65	64.3	94.2	90.7	47.2	20.8
31	14.8	-------	6.5	6.65	-------	5.0	-------	65.1	-------	73.9	47.2	-------

Monthly discharge of North Boulder Creek at Silver Lake, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	25.7	11.5	18.0	1,110
November	18.0	9.5	12.8	762
December	10.0	6.5	7.92	487
January	6.65	4.94	5.81	357
February	9.25	5.0	7.03	390
March	5.0	5.0	5.00	307
April	7.4	5.0	6.11	364
May	67.5	7.2	35.2	2,160
June	120	65.9	95.9	5,710
July	133	69.0	98.3	6,040
August	96.8	47.2	65.2	4,010
September	48.6	20.3	28.9	1,720
The year	133	4.94	32.3	23,400

THOMPSON RIVER NEAR DRAKE, COLO.

LOCATION.—In NW. ¼ sec. 2, T. 5 N., R. 71 W., at Halfway, three-quarters of a mile above Loveland Dam and 1 mile east of Drake, Larimer County. Nearest tributary, North Fork, enters at Drake.

DRAINAGE AREA.—274 square miles (measured on topographic maps).

RECORDS AVAILABLE.—September 18, 1917, to September 30, 1926.

GAGE.—Vertical staff attached to rock cliff on right bank 100 yards above hotel; read by M. A. Ellison. On account of surge at regular gage an auxiliary gage is read during high water.

DISCHARGE MEASUREMENTS.—Made from two-span bridge a third of a mile above gage or by wading.

CHANNEL AND CONTROL.—Bed composed of small boulders and coarse gravel; slightly shifting. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 4.7 feet on auxiliary gage at 6 a. m. June 7 (discharge, 1,970 second-feet); minimum discharge estimated, 16 second-feet for several days during February.

1918–1926: Maximum stage, from high-water mark, 9.5 feet on original gage at 6 p. m. July 31, 1919 (discharge from extension of rating curve, 8,000 second-feet); minimum discharge occurred during winter.

ICE.—Stage-discharge relation affected by ice.

DIVERSIONS.—Water diverted for irrigation of a few hundred acres from Thompson River and tributaries above station.

REGULATION.—Alternate melting and freezing of mountain snow during spring causes diurnal fluctuation of discharge. No artificial regulation.

ACCURACY.—Stage-discharge relation slightly shifting; affected by ice. Rating curve for regular gage used October 1 to May 4, May 9–20, and June 17 to September 30 is well defined; curve for auxiliary gage used May 5–8 and May 21 to June 16 is fairly well defined. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating tables. Records fair.

COOPERATION.—Field data furnished by city of Loveland.

The following discharge measurements were made:

May 27, 1926: Gage height, 4.2 feet; discharge, 985 second-feet.

September 13, 1926: Gage height, 2.08 feet; discharge, 96 second-feet.

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	98	111	58	20	17	19	31	648	1,540	1,260	318	113
2	96	110	61	24	17	21	37	632	1,490	1,200	306	110
3	94	107	58	21	17	20	41	685	1,420	1,020	310	107
4	98	93	35	21	17	18	44	732	1,490	1,140	306	124
5	94	58	36	27	18	20	48	998	1,420	1,260	366	110
6	331	81	38	32	19	20	76	1,140	1,590	1,200	560	101
7	290	80	41	20	19	21	79	1,040	1,920	1,200	502	96
8	188	80	45	25	19	19	110	950	1,800	1,020	531	105
9	166	83	49	22	19	20	107	700	1,620	870	398	123
10	140	81	51	21	19	22	114	612	1,560	798	375	116
11	138	79	53	23	19	20	120	491	1,490	700	290	110
12	158	73	48	31	19	19	132	398	1,420	640	275	100
13	156	67	38	19	18	19	149	352	1,540	612	271	95
14	149	66	29	20	17	18	147	375	1,320	612	260	92
15	134	66	27	20	16	20	132	375	1,240	625	240	87
16	127	69	29	20	16	18	162	475	1,140	685	201	82
17	124	67	32	20	16	23	220	560	852	700	183	79
18	130	64	34	20	17	28	448	554	798	612	174	76
19	130	55	33	23	18	29	413	586	780	685	160	78
20	124	62	29	23	19	29	475	662	780	662	153	72
21	116	67	24	21	18	28	1,020	1,290	740	625	142	75
22	124	68	25	25	17	34	662	1,320	700	573	138	75
23	124	70	27	29	16	38	780	1,340	685	491	135	72
24	124	72	26	24	16	29	618	1,320	678	459	134	71
25	124	69	24	19	18	26	554	1,260	625	475	134	72
26	111	63	26	18	18	26	548	1,340	700	448	124	69
27	110	57	25	19	19	26	560	1,360	798	398	123	66
28	109	58	26	19	19	28	548	1,390	852	423	123	63
29	106	62	22	19	-------	30	566	1,160	920	423	121	62
30	104	58	32	22	-------	24	573	1,240	1,080	352	120	61
31	104	-------	29	20	-------	27	-------	1,390	-------	339	117	-------

NOTE.—Stage-discharge relation affected by ice Oct. 23–24, 27, 29–31, Nov. 2, 7, 8, 14–25, Dec. 5 to Mar. 10, Mar. 12, 13, and Mar. 24 to Apr. 4; discharge for ice-affected periods prior to Dec. 23 based on gage height and weather records, after that date records are based on flow at Loveland Dam and through power plant.

Monthly discharge of Thompson River near Drake, Colo., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	331	94	136	8,360
November	111	55	73.2	4,360
December	61	22	35.8	2,200
January	32	18	22.2	1,360
February	19	16	17.8	989
March	38	18	23.8	1,460
April	1,020	31	317	18,900
May	1,390	352	883	54,300
June	1,920	625	1,170	69,600
July	1,260	339	726	44,600
August	560	117	245	15,100
September	124	61	88.7	5,280
The year	1,920	16	313	227,000

TARKIO RIVER BASIN

TARKIO RIVER AT FAIRFAX, MO.

LOCATION.—On line between SW. ¼ SW. ¼ sec. 22 and NW. ¼ NW. ¼ sec. 27, T. 64 N., R. 40 W., at highway bridge half a mile west of Fairfax, Atchison County, and 8 miles below junction of East Tarkio and West Tarkio Creeks.

DRAINAGE AREA.—508 square miles (measured on base maps of Missouri and Iowa).

RECORDS AVAILABLE.—March 8, 1922, to September 30, 1926.

GAGE.—Chain gage on upstream side of bridge; read by Lee Donelson and Gordon Glanville.

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

CHANNEL AND CONTROL.—Bed composed of silt and sand; clean and shifting. Channel is an artificial ditch section. Banks cultivated; subject to overflow at extremely high stages. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage during year determined by levels to floodmarks, 19.3 feet September 4 (discharge, 7,940 second-feet); minimum discharge, 3 second-feet May 25.

1922–1926: Maximum stage determined, that of September 4, 1926; minimum discharge, 1 second-foot December 21, 1924, to January 4, 1925, while river was frozen.

ACCURACY.—Stage-discharge relation changed in January, June, and September; seriously affected by ice during winter. Rating curve used October 1 to January 31, and June 13 to September 2, is well defined between 10 and 1,500 second-feet; curve used February 1 to June 12 is well defined above 10 second-feet; curve used September 2–30 fairly well defined above and extended below 400 second-feet. Gage read to hundredths once or twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records fair except for period of ice effect, for which they are poor.

Discharge measurements of Tarkio River at Fairfax, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 12	0.99	49	June 15	2.60	314	Sept. 5	12.98	3,660
Mar. 5	.95	34	June 16	1.49	106	Sept. 6	7.38	1,040
Do	.93	32	July 13	.64	21	Do	6.63	825
May 11	1.56	116	Aug. 30	.72	29	Sept. 7	4.95	534
June 14	4.53	793	Sept. 3	18.13	7,120			

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	35	24	72	950	102	8	5	19	25	32	1,960
2	1,220	31	21	107	788	31	11	5	10	24	17	4,460
3	400	37	13	2,800	238	24	16	8	20	60	17	6,960
4	144	38	21	2,850	152	27	23	7	17	43	11	4,890
5	57	38	30	950	50	31	12	10	10	29	10	2,820
6	59	59	40	128	62	60	10	12	8	3,450	9	1,080
7	61	35	44	89	26	17	7	7	6	488	7	382
8	47	33	19	65	68	22	10	8	6	83	6	3,210
9	55	59	40	51	70	53	10	46	6	47	5	2,250
10	44	35	38	25	24	95	10	86	218	61	6	215
11	38	31	38	12	68	34	18	126	258	27	136	126
12	42	34	42	12	95	29	10	40	44	24	23	1,690
13	46	31	13	18	64	17	7	29	2,460	18	13	320
14	44	35	12	25	33	17	10	22	764	18	11	805
15	55	35	12	42	17	12	7	17	208	532	9	1,410
16	42	37	8	51	22	15	12	14	114	121	11	484
17	44	44	8	72	84	12	25	14	248	43	11	230
18	38	46	12	51	68	26	228	22	89	25	12	171
19	42	40	12	51	62	12	28	19	55	14	9	230
20	55	32	12	51	102	15	11	10	46	11	12	538
21	46	25	12	51	356	18	9	55	114	10	8	260
22	44	17	8	42	179	16	7	15	53	9	58	2,880
23	42	21	12	42	95	15	7	10	46	9	18	520
24	59	27	12	42	620	23	6	8	40	8	17	245
25	38	24	12	51	400	21	6	3	33	8	12	178
26	44	27	18	51	161	22	6	6	32	10	10	144
27	57	18	18	51	65	20	5	7	30	10	9	157
28	35	12	25	61	143	18	6	7	28	8	7	126
29	46	33	25	61	-------	28	7	6	27	7	7	120
30	44	27	33	72	-------	21	6	6	30	8	21	138
31	40	-------	51	83	-------	18	-------	53	-------	279	188	-------

NOTE.—Discharge estimated for Nov. 19–21, Apr. 3, and interpolated for Dec. 1, 5, Feb. 13, Mar. 27, Apr. 21, 26, May 5, 10, and Sept. 3 on account of missing gage heights. Stage-discharge relation affected by ice Dec. 14 to Jan. 2 and Jan. 10–31; daily discharge estimated from gage heights, observer's notes, and weather records.

Monthly discharge of Tarkio River at Fairfax, Mo., for the year ending September 30, 1926

[Drainage area, 508 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,220	30	98.6	0.194	0.22
November	59	12	33.2	.065	.07
December	51	8	22.1	.044	.05
January	2,850	12	262	.516	.59
February	950	17	181	.356	.37
March	102	12	28.1	.055	.06
April	228	5	17.9	.035	.04
May	126	3	22.0	.043	.05
June	2,460	6	168	.331	.37
July	3,450	7	178	.350	.40
August	188	5	23.3	.046	.05
September	6,960	120	1,300	2.56	2.86
The year	6,960	3	193	.380	5.13

NODAWAY RIVER BASIN

NODAWAY RIVER NEAR BURLINGTON JUNCTION, MO.

LOCATION.—In NE. ¼ sec. 17, T. 65 N., R. 37 W., at highway bridge one-fourth mile below Wabash Railway bridge, 1½ miles west of Burlington Junction, Nodaway County, and 3 miles above Mill Creek.

DRAINAGE AREA.—1,240 square miles (measured on base maps of Missouri and Iowa).

RECORDS AVAILABLE.—March 4, 1922, to September 30, 1926.

GAGE.—Chain gage on upstream side of bridge; read by C. O. Rundle.

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

CHANNEL AND CONTROL.—Bed composed of sand and silt; clean except for some lodged drift; shifting. Channel is an artificial ditch section. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage during year determined by levels to high-water marks, 19.5 feet September 3 (discharge from extension of rating curve, 18,200 second-feet); minimum stage, 2.48 feet at 6.40 a. m. November 30 (discharge, 12 second-feet).

1922–1926: Maximum stage recorded, that of September 3, 1926; minimum discharge, no flow June 1 and July 26, 1925.

ACCURACY.—Stage-discharge relation changed during ice period and in June; affected by ice. Rating curves used until June 15 are fairly well defined between 50 and 5,000 second-feet; curve used June 16 to September 30 is fairly well defined below 10,000 second-feet. Gage read to hundredths once daily during low stages and twice daily during high stages. Daily discharge ascertained by applying mean daily gage height to rating table except from October 1 to December 14 and September 6–14, when shifting-control method was used. Records fair except for periods of ice effect, for which they are poor.

Discharge measurements of Nodaway River near Burlington Junction, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 12	3.10	89	June 17	7.47	1,800	July 12	3.61	181
Mar. 5	3.41	102	June 18	7.05	1,600	Aug. 30	2.62	21
May 10	4.40	365	June 19	5.89	1,010	Sept. 5	13.08	6,600
June 15	7.34	2,050	Do	5.37	806	Sept. 6	7.52	1,470
June 16	7.12	1,510	Do	5.04	645	Sept. 23	7.98	2,010
June 17	7.94	1,990						

Daily discharge, in second-feet, of Nodaway River near Burlington Junction, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	47	24	65	3,200	216	48	26	178	70	88	140
2	47	58	34	82	9,300	152	57	30	125	64	67	3,750
3	154	60	42	910	6,370	100	60	25	166	220	51	15,600
4	132	67	53	1,270	4,000	94	70	22	76	196	41	2,310
5	154	52	42	1,150	1,820	94	83	21	51	366	31	6,320
6	595	52	34	810	950	110	71	20	21	1,500	31	1,180
7	354	44	23	595	535	78	63	20	28	1,010	29	488
8	143	41	25	354	474	57	66	22	25	334	24	2,000
9	93	54	33	143	413	61	69	43	23	184	22	1,650
10	70	80	41	100	314	94	57	430	1,010	220	22	884

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	62	84	45	82	216	78	49	100	2,090	106	48	604
12	75	86	38	65	203	64	46	47	1,420	79	51	2,120
13	58	60	36	65	190	44	42	37	4,260	924	31	488
14	67	45	22	65	157	53	39	36	6,230	724	29	724
15	84	40	26	65	107	57	35	30	2,180	302	20	4,900
16	53	36	26	65	57	57	36	28	1,500	220	18	1,850
17	45	34	26	65	60	46	34	28	1,900	79	31	1,180
18	42	30	26	65	63	51	31	30	1,600	73	31	884
19	35	26	26	86	63	60	29	34	884	62	22	604
20	32	32	26	212	117	57	26	31	452	62	20	2,680
21	33	26	26	337	203	56	24	33	416	55	20	804
22	34	23	26	306	178	57	28	33	208	130	24	1,950
23	32	22	26	274	159	55	30	27	161	53	67	1,950
24	44	22	17	245	216	52	37	24	140	41	130	1,650
25	58	28	17	245	362	46	34	24	121	38	56	1,140
26	37	34	26	217	286	44	30	21	106	38	51	564
27	36	20	26	190	230	49	25	22	99	36	29	452
28	38	14	26	190	216	46	21	83	88	36	18	383
29	37	13	26	165	-------	41	23	300	82	41	18	350
30	52	12	37	165	-------	34	22	346	70	38	29	488
31	60	-------	50	190	-------	37	-------	132	-------	95	79	-------

NOTE.—Stage-discharge relation affected by ice Dec. 15 to Jan. 2, Jan. 10–18, 23–31; daily discharge estimated from gage heights, observer's notes, and weather records. Daily discharge interpolated Jan. 20, 22, Feb. 8, 10, 12, 15, 17 and estimated Feb. 1 and 4 on account of missing gage heights.

Monthly discharge of Nodaway River near Burlington Junction, Mo., for the year ending September 30, 1926

[Drainage area, 1,240 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	595	32	90.4	0.073	0.08
November	86	12	41.4	.033	.04
December	53	17	30.7	.025	.03
January	1,270	65	285	.230	.27
February	9,300	57	1,090	.879	.92
March	216	34	69.0	.056	.06
April	83	21	42.8	.035	.04
May	430	20	67.9	.055	.06
June	6,230	21	857	.691	.77
July	1,500	36	239	.193	.22
August	130	18	39.6	.032	.04
September	15,600	140	2,000	1.61	1.80
The year	15,600	12	395	.319	4.33

PLATTE RIVER BASIN (IOWA-MO.)

PLATTE RIVER AT AGENCY, MO.

LOCATION.—In NE. ¼ sec. 29, T. 56 N., R. 34 W., at highway bridge in Agency, Buchanan County, 600 feet below Atchison, Topeka & Santa Fe Railway bridge, 8 miles below Third Fork, and 13 miles above Castile Creek.

DRAINAGE AREA.—1,790 square miles (measured on United States soil-survey maps and base maps of Missouri and Iowa).

RECORDS AVAILABLE.—May 22, 1924, to September 30, 1926.

GAGE.—Chain gage on downstream side of bridge; read by Carl Pike.

DISCHARGE MEASUREMENTS.—Made from highway or railway bridges or by wading.

CHANNEL AND CONTROL.—Bed composed of solid rock; permanent. Control is a series of riffles 500 feet below gage; permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 26.83 feet at 6 p. m. September 18 (discharge, 22,600 second-feet); minimum stage, 1.75 feet at 7 a. m. August 9 (discharge, 38 second-feet).

1924–1926: Maximum stage recorded, that of September 18, 1926; minimum discharge, 33 second-feet January 15, 1925.

Flood of July, 1915, reached a stage of 31.4 feet, determined by levels to chiseled high-water mark on bridge.

ACCURACY.—Stage-discharge relation permanent during year except as affected by ice. Rating curve fairly well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good except for periods of ice effect, for which they are poor.

Discharge measurements of Platte River at Agency, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 13	4.38	1,050	Aug. 31	2.71	244	Sept. 14	15.22	[a] 5,880
Do	4.32	1,070	Sept. 7	16.83	8,160	Sept. 16	17.16	[a] 8,640
Mar. 6	2.91	352	Sept. 8	18.26	9,290	Sept. 17	20.95	[a] 13,200
May 11	3.17	430	Sept. 9	19.78	[a] 10,800	Sept. 19	26.39	21,900
Do	3.26	451	Sept. 13	18.48	[a] 8,450	Sept. 22	17.34	7,900
July 14	3.17	417	Sept. 14	16.16	[a] 6,360	Sept. 24	9.62	3,720

[a] Measured during rapidly changing stages; computed discharges for constant stages are: 10,700, 8,580, 6,640, 6,080, 8,470, and 12,500 second-feet, respectively.

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	563	231	202	83	752	752	176	132	154	125	179	860
2	466	282	202	84	860	590	202	132	466	114	88	3,070
3	1,180	320	199	698	1,890	488	231	125	400	103	72	3,340
4	6,400	358	208	2,210	1,940	400	339	118	137	109	67	5,940
5	7,400	379	214	2,860	968	358	752	111	130	154	55	6,630
6	2,910	379	248	3,180	488	339	1,240	111	123	152	43	7,100
7	806	400	157	2,970	400	358	1,240	111	96	806	39	8,000
8	512	400	190	1,670	379	282	1,450	109	75	860	45	9,140
9	536	400	211	752	358	231	1,519	140	72	563	39	10,600
10	466	671	202	444	339	400	1,130	120	68	698	48	11,900
11	379	1,450	208	358	282	968	914	422	60	563	43	11,500
12	358	1,450	202	320	214	860	698	563	339	231	67	10,100
13	379	1,080	196	248	231	536	512	339	2,430	358	379	9,500
14	806	752	214	214	265	422	400	187	2,800	379	211	7,280
15	1,400	590	231	184	248	358	339	152	2,260	671	116	7,160
16	1,180	488	190	157	211	339	301	134	4,640	488	77	8,540
17	752	422	157	132	282	320	265	123	5,610	265	62	11,800
18	644	379	152	132	1,350	301	248	116	4,750	179	70	21,200
19	512	339	162	109	968	301	211	118	2,590	152	301	21,600
20	379	320	157	109	536	282	196	199	1,290	118	320	17,400
21	320	282	157	88	860	282	187	140	4,910	84	214	10,900
22	301	265	157	88	1,830	265	196	107	2,970	214	142	8,220
23	282	248	157	88	1,830	282	205	98	806	265	134	6,220
24	282	231	157	88	1,400	265	231	101	752	170	137	4,050
25	320	231	132	88	1,450	248	214	90	536	96	617	4,960
26	301	231	132	88	1,290	205	214	79	301	81	512	4,260
27	301	231	132	109	968	193	184	79	211	74	282	1,400
28	301	231	109	132	860	181	165	67	176	67	103	1,080
29	265	214	109	157	-------	176	150	70	154	60	67	914
30	248	196	88	176	-------	170	142	66	140	84	53	914
31	208	-------	88	339	-------	165	-------	54	-------	127	179	-------

NOTE.—Stage-discharge relation affected by ice Dec. 20–31 and Jan. 11–29; daily discharge estimated from daily gage heights, observer's notes, and weather records.

Monthly discharge of Platte River at Agency, Mo., for the year ending September 30, 1926

[Drainage area, 1,790 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	7,400	208	1,010	0.564	0.65
November	1,450	196	448	.250	.28
December	248	88	172	.096	.11
January	3,180	83	592	.331	.38
February	1,940	211	837	.468	.49
March	968	165	365	.204	.24
April	1,510	142	475	.265	.30
May	563	54	146	.082	.09
June	5,610	60	1,310	.732	.82
July	860	60	271	.151	.17
August	617	39	154	.086	.10
September	21,600	860	7,850	4.39	4.90
The year	21,600	39	1,120	.626	8.53

KANSAS RIVER BASIN

REPUBLICAN RIVER AT WAKEFIELD, KANS.

LOCATION.—In NE. ¼ sec. 5, T. 10 S., R. 4 E., at highway bridge one-fourth mile north of Union Pacific Railroad station at Wakefield, Clay County, 25 miles above confluence with Smoky Hill River, and 65 miles below Salt Creek, first important tributary above.

DRAINAGE AREA.—24,700 square miles.

RECORDS AVAILABLE.—June 21, 1917, to September 30, 1926.

GAGE.—Chain gage on upstream side of highway bridge at center of middle span; read by S. R. Winsor. An auxiliary high-water vertical staff, ranging from 13.6 to 20.3 feet, is spiked to large cottonwood tree on right bank 25 feet below bridge.

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

CHANNEL AND CONTROL.—Bed composed of clean sand; shifting. No well-defined control. Bank-full stage, 11 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 11.15 feet at 7 a. m. September 15 (discharge, 14,800 second-feet); minimum stage, 2.43 feet at 7 a. m. August 13 (discharge, 87 second-feet).

1917–1926: Maximum stage recorded, 12.86 feet June 4, 1923 (discharge, 20,100 second-feet); minimum discharge, 16 second-feet October 21, 1922.

ICE.—Stage-discharge relation affected by ice.

REGULATION.—Flow is affected by operation of power plant at Clay Center.

ACCURACY.—Stage-discharge relation permanent during year. Rating curve well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good, except during ice-affected period, for which they are fair.

The following discharge measurements were made:

March 9, 1926: Gage height, 3.55 feet; discharge, 565 second-feet.

July 15, 1926: Gage height, 7.02 feet; discharge, 4,900 second-feet.

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	230	249	418			615	555	365	196	206	528	528.
2	181	293	418			585	585	365	245	148	445	500.
3	226	271	445		400	585	555	340	237	144	418	445
4	249	340	445			615	528	365	206	185	316	2, 630.
5	233	316	390			585	555	390	230	1, 060	271	3, 300.
6	271	340	390	350	615	585	528	472	203	855	237	6, 880.
7	271	293	390		890	585	585	528	196	418	206	2, 760
8	237	293	390		785	585	528	445	181	418	199	1, 480
9	199	418	472		855	615	528	500	199	472	134	890
10	196	445	500		1, 020	555	555	555	1, 060	750	148	930.
11	185	390	500		1, 020	615	555	615	680	1, 160	131	930.
12	203	390	500		1, 110	615	528	445	1, 720	1, 260	161	8, 500.
13	199	390	500		930	615	528	500	750	970	90	7, 790.
14	249	418	445		820	615	528	445	585	890	4, 080	4, 560.
15	185	418	472	300	750	615	528	418	1, 600	2, 760	5, 270	12, 800.
16	192	418	365		750	615	528	390	890	4, 560	3, 600	11, 200.
17	237	418	390		715	615	528	365	585	3, 160	3, 600	12, 500.
18	218	418	445		750	585	500	390	555	1, 980	3, 920	10, 200.
19	192	418	340		615	585	500	365	390	1, 370	2, 760	6, 470.
20	230	418	340		680	555	472	340	340	1, 020	2, 630	5, 270.
21	214	390			680	555	500	340	365	855	1, 720	3, 760.
22	271	203			785	555	472	390	340	785	1, 480	2, 760.
23	185	418		250	785	555	472	316	340	680	2, 110	2, 240.
24	218	418			680	528	472	340	390	615	2, 500	1, 850.
25	249	390			680	528	472	316	390	528	1, 160	1, 480.
26	241	418	300		615	528	445	271	648	500	1, 020	1, 160.
27	249	390			648	528	418	293	340	418	930	1, 020.
28	271	365			615	500	390	249	316	365	820	930.
29	241	390		300	-------	500	365	203	293	365	750	855.
30	249	418			-------	500	365	233	222	316	715	785.
31	293	-------			-------	500	-------	203	-------	390	615	-------

NOTE.—Stage-discharge relation affected by ice Dec. 21 to Feb. 5: discharge estimated from gage heights, observer's notes, and weather records. Braced figures give mean discharge for periods indicated.

Monthly discharge of Republican River at Wakefield, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	293	181	228	14, 000.
November	445	203	372	22, 100.
December	500	-------	382	23, 500.
January	-------	-------	308	18, 900
February	1, 110	-------	707	39, 300.
March	615	500	572	35, 200.
April	585	365	502	29, 900.
May	615	203	379	23, 300.
June	1, 720	181	490	29, 200.
July	4, 560	144	955	58, 700.
August	5, 270	90	1, 390	85, 500.
September	12, 800	445	3, 910	233, 000.
The year	12, 800	90	846	613, 000.

KANSAS RIVER AT OGDEN, KANS.

LOCATION.—In SE. ¼ sec. 12, T. 11 S., R. 6 E., at highway bridge three-fourths mile south of Ogden, Riley County, one-fourth mile below Sevenmile Creek, 2 miles below Clark Creek, and 10 miles below point where Smoky Hill and Republican Rivers unite to form Kansas River.

DRAINAGE AREA.—45,200 square miles.

RECORDS AVAILABLE.—June 19, 1917, to September 30, 1926.

GAGE.—Chain gage on upstream side of highway bridge near middle of center span; read by Arthur Estes. A vertical staff from 21.0 to 29.8 feet is spiked to aspen tree on upstream side of road 200 feet from right end of bridge.

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

CHANNEL AND CONTROL.—Bed composed of clean sand; shifting. No well-defined control. Bank-full stage, 18 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 14.59 feet at 5.40 p. m. September 17 (discharge, 16,900 second-feet); minimum stage, 4.79 feet at 6 a. m. August 9 (discharge, 338 second-feet).

1917–1926: Maximum stage recorded, 18.15 feet June 10, 1923 (discharge, 32,600 second-feet); minimum discharge, 103 second-feet October 30, 1922.

ICE.—Stage-discharge relation affected by ice.

REGULATION.—Flow affected by operation of power plants on tributary streams.

ACCURACY.—Stage-discharge relation not permanent; affected by shifting control and by ice. Standard rating curve well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table, except from October 1 to December 20 and July 26 to August 14 when shifting-control method was used. Records good except during ice-affected period, for which they are fair.

Discharge measurements of Kansas River at Ogden, Kans., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 10	5.63	803	July 16	9.50	5,550	Sept. 18	14.14	13,900
July 15	6.58	1,640	Aug. 5	5.24	645	Sept. 20	12.66	11,800

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	565	385	535		965	885	730	565	408	508	695	1,040
2	535	455	480		730	730	768	508	430	455	885	925
3	455	385	480		660	845	805	565	508	408	768	845
4	508	385	535		628	845	730	455	565	364	768	695
5	508	408	595	380	805	885	845	480	508	342	660	2,850
6	535	430	565		845	805	1,040	508	385	885	660	4,730
7	508	430	565		768	768	1,140	595	364	1,140	565	5,890
8	480	430	508		1,140	845	1,040	660	455	628	480	3,730
9	480	508	508		1,040	730	1,140	628	508	508	385	3,860
10	430	535	565		1,040	845	1,230	730	430	595	535	3,730
11	408	660	565		1,230	805	1,530	695	965	805	508	4,140
12	430	628	595		1,230	805	1,940	845	2,160	1,940	1,940	11,700
13	408	660	565		1,230	805	1,530	695	2,050	2,380	1,140	11,300
14	535	628	660		1,230	730	1,330	660	2,050	1,940	508	6,800
15	455	535	595	400	1,040	845	1,230	695	1,630	1,630	4,000	16,400
16	508	595	508		845	768	1,140	565	1,940	5,550	4,580	13,600
17	408	565	455		845	768	885	730	1,230	6,800	3,340	4,890
18	480	535	480		845	768	885	695	885	5,890	4,580	16,100
19	455	535	455		730	730	845	695	1,140	5,380	3,470	14,200
20	430	628	455	450	695	730	845	660	965	4,280	3,470	11,700
21	455	535			730	660	805	565	885	2,730	2,610	10,400
22	408	535			925	845	805	595	845	1,940	1,940	8,940
23	430	535		480	1,040	730	805	535	845	1,530	2,050	7,180
24	430	565			1,040	768	660	535	805	1,230	2,970	4,280
25	408	595			845	768	660	508	925	1,140	2,730	3,340
26	480	508	400		845	730	628	480	925	1,140	1,940	2,850
27	408	628			845	730	595	430	1,040	1,230	1,940	2,490
28	430	565		550	768	660	628	455	768	1,040	1,730	2,380
29	430	535				730	595	455	565	845	1,430	2,160
30	430	595			-------	695	565	430	535	730	1,330	3,210
31	430	-------		730	-------	768	-------	455	-------	730	1,140	-------

NOTE.—Stage-discharge relation affected by ice Dec. 21 to Jan. 30; discharge estimated from gage heights, observer's notes, and weather records. Braced figures give estimated mean discharge for periods indicated.

Monthly discharge of Kansas River at Ogden, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	565	408	460	28,300
November	660	385	532	31,700
December	660		486	29,900
January			443	27,200
February	1,230	628	913	50,700
March	885	660	775	47,700
April	1,940	565	946	56,300
May	845	430	583	35,800
June	2,160	364	924	55,000
July	6,800	342	1,830	113,000
August	4,580	385	1,800	111,000
September	16,400	660	6,210	370,000
The year	16,400	342	1,320	957,000

KANSAS RIVER AT WAMEGO, KANS.

LOCATION.—In SE. ¼ sec. 9, T. 10 S., R. 10 E., at highway bridge on Main Street in Wamego, Pottawatomie County, 3 miles below Antelope Creek and 7 miles above Vermilion River.

DRAINAGE AREA.—54,900 square miles.

RECORDS AVAILABLE.—January 1, 1919, to September 30, 1926. The United States Weather Bureau has intermittent records of stage since June 15, 1914.

GAGE.—Chain gage on downstream side of bridge; read by B. A. Larson.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of clean sand; shifting. No well-defined control. Bank-full stage, 15 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 12.8 feet at 7 a. m. September 16 (discharge, 31,000 second-feet); minimum stage, 1.8 feet August 10 (discharge, 590 second-feet).

1919–1926: Maximum stage recorded, 15.8 feet June 10, 1923 (discharge, 46,600 second-feet); minimum stage, 1.6 feet on days in October, 1922 (discharge, 330 second-feet).

ICE.—Stage-discharge relation affected by ice.

REGULATION.—Low flow may be affected by operation of power plants on tributary streams.

ACCURACY.—Stage-discharge relation shifting. Three fairly well defined rating curves used during year. Gage read to tenths twice daily; gage readings believed to be unreliable at times. Daily discharge ascertained by applying mean daily gage height to rating table. Shifting-control method used September 12–23. Records poor.

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

Discharge measurements of Kansas River at Wamego, Kans., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 11	2.50	1,370	June 17	4.68	5,660	Aug. 5	2.26	980
May 11	3.33	2,920	July 16	3.09	2,180	Sept. 20	8.30	14,100

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,100	660	760		1,080	1,380	1,380	1,660	1,100	1,140	1,140	2,400
2	1,100	660	760		1,260	1,380	1,450	1,660	1,000	970	1,140	2,050
3	1,160	660	715		1,260	1,320	1,450	1,800	950	970	1,020	1,590
4	1,040	660	715		1,200	1,320	1,450	1,600	950	970	915	1,450
5	985	660	670		1,260	1,260	1,590	1,460	950	970	810	3,570
6	930	660	760	830	1,260	1,320	1,660	1,400	950	2,400	810	8,250
7	930	660	860		1,320	1,320	1,660	1,400	950	3,360	760	10,800
8	1,040	830	810		1,260	1,320	1,740	1,460	905	2,400	760	9,200
9	1,040	1,020	760		1,200	1,320	1,740	1,400	780	1,590	670	6,760
10	985	970	760		1,260	1,450	1,740	1,950	780	1,890	590	5,290
11	1,100	915	810		1,140	1,450	1,820	3,010	780	1,740	670	4,630
12	1,040	860	970		1,200	1,380	2,400	2,280	905	2,050	670	11,100
13	985	760	1,020		1,200	1,320	2,400	2,110	1,460	2,770	1,590	16,600
14	930	760	1,200		1,260	1,260	2,280	1,950	3,010	2,770	1,380	14,500
15	930	760	1,260		1,320	1,260	1,950	1,880	3,610	2,050	860	24,800
16	930	810	1,260		1,320	1,200	1,950	1,800	4,900	2,400	1,320	28,700
17	1,360	760	1,080		1,320	1,200	1,950	1,730	4,680	7,330	5,290	25,200
18	1,430	715	1,020	800	1,320	1,200	1,880	1,660	4,680	8,560	4,410	27,100
19	1,220	760	1,020		1,320	1,200	1,600	1,660	2,960	6,230	3,570	21,100
20	700	760	970		1,590	1,320	1,530	1,660	2,050	5,740	4,410	14,900
21	700	760			1,590	1,320	1,530	1,660	1,380	4,410	4,410	13,100
22	660	760			1,520	1,260	1,530	1,600	1,320	2,960	3,360	12,400
23	660	715			1,320	1,260	1,660	1,530	1,740	1,890	2,400	11,100
24	660	760			1,320	1,260	1,600	1,460	2,400	1,740	1,890	7,940
25	700	760			1,320	1,140	1,530	1,400	2,050	1,740	1,740	5,510
26	740	760	850	800	1,260	1,200	1,600	1,400	1,590	1,660	1,820	4,410
27	660	760		850	1,260	1,200	1,600	1,340	1,380	1,520	2,050	4,200
28	660	760		900	1,260	1,200	1,660	1,340	1,260	1,520	2,960	3,990
29	660	760		1,000	-------	1,200	1,730	1,340	1,260	1,450	3,160	3,360
30	660	760		1,200	-------	1,200	1,660	1,220	1,200	1,200	2,960	3,160
31	660	-------		1,200	-------	1,320	-------	1,050	-------	1,260	2,580	-------

NOTE.—Stage-discharge relation affected by ice Dec. 21 to Jan. 29; discharge estimated from observer's notes and climatologic data. Braced figures give mean discharge for periods indicated.

Monthly discharge of Kansas River at Wamego, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,430	660	915	56,300
November	1,020	660	762	45,300
December	1,260	----------	888	54,600
January	1,200	----------	847	52,100
February	1,590	1,080	1,290	71,600
March	1,450	1,140	1,280	78,700
April	2,400	1,380	1,720	102,000
May	3,010	1,050	1,640	101,000
June	4,900	780	1,800	107,000
July	8,560	970	2,570	158,000
August	5,290	590	2,000	123,000
September	28,700	1,450	10,300	613,000
The year	28,700	590	2,160	1,560,000

KANSAS RIVER AT TOPEKA, KANS.

LOCATION.—In Topeka, Shawnee County, midway between Topeka Avenue and Harrison Street, 300 feet below Chicago, Rock Island & Pacific Railway bridge, 1,460 feet above Melan arch highway bridge on Kansas Avenue, and 1½ miles above Soldier Creek.

DRAINAGE AREA.—56,400 square miles.

RECORDS AVAILABLE.—April 24 to August 31, 1904, and June 12, 1917, to September 30, 1926.

GAGE.—Gurley long-distance water-stage recorder on right bank; inspected by J. B. Spiegel. A chain gage on Melan arch highway bridge is read when water-stage recorder is not in operation.

DISCHARGE MEASUREMENTS.—Made from downstream side of Sardou Avenue highway bridge 1 mile below gage, from brickyard highway bridge 3 miles above gage, or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and silt; shifting. No well-defined control; heavy concrete piers of Melan arch bridge affect stage-discharge relation. Banks protected by levees between which the water is confined at all stages.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 15.82 feet at 3 p. m. September 16 (discharge, 37,600 second-feet). Minimum discharge of about 750 second-feet occurred during winter.

1917–1926: Maximum stage recorded, 21.5 feet June 10, 1923 (discharge, 73,700 second-feet). Minimum discharge, about 480 second-feet during January, 1925.

A stage of 26.85 feet referred to present datum occurred July 7, 1904. The United States Weather Bureau has published a maximum stage of 32.7 feet for the flood of May 30, 1903.

ICE.—Stage-discharge relation affected by ice.

REGULATION.—The effect of the operation of power plants on the tributaries is not appreciable.

ACCURACY.—Stage-discharge relation fairly permanent during year except as affected by ice. Rating curve fairly well defined above 1,000 second-feet. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph except for periods October 1 to February 16, February 24, 28, March 2–4, 6–19, 21–23, 25, 26, when discharge was obtained from daily readings of chain gage at Melan bridge. Shifting-control method used September 6–11. Records good.

Discharge measurements of Kansas River at Topeka, Kans., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 24	3.11	1,560	Apr. 12	6.20	6,800	Sept. 8	8.56	11,300
Apr. 7	4.50	3,680	May 27	2.61	1,240	Sept. 21	9.85	14,800
Apr. 9	5.25	5,180	June 10	2.30	1,050			

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	930	775	930		890	2,060	1,470	1,480	1,160	1,260	1,160	3,030
2	970	775	930		890	1,910	1,860	1,440	1,120	1,170	1,160	2,400
3	1,110	830	930		830	1,910	1,740	1,460	1,120	1,140	1,120	2,060
4	1,020	775	930	850	1,110	1,790	1,800	1,470	1,140	1,050	1,190	2,400
5	1,020	775	930		1,300	1,800	2,060	1,460	1,100	1,020	1,190	2,120
6	1,110	750	930		1,300	1,790	3,360	1,420	1,120	1,030	1,120	4,960
7	1,110	800	930		1,300	1,680	3,700	2,260	1,100	2,190	1,110	8,690
8	1,170	775	930		1,300	1,570	4,420	1,990	1,080	3,280	1,100	11,100
9	1,020	830	890		1,470	1,570	4,780	2,190	1,040	2,550	1,100	7,290
10	1,020	830	890		1,470	1,570	4,600	2,260	1,040	1,620	1,080	6,290
11	1,020	930	890		1,470	1,790	5,530	3,620	1,120	1,990	1,080	5,530
12	970	930	930		1,680	1,790	7,090	3,620	1,300	2,120	1,060	6,890
13	930	890	970		1,470	1,790	4,960	2,710	1,680	1,920	1,050	17,100
14	970	930	970		1,470	1,680	4,240	2,550	3,530	2,790	1,990	17,100
15	1,110	930	970		1,470	1,680	3,530	2,400	2,950	2,630	1,500	23,200
16	1,020	970	970	800	1,790	1,570	3,190	2,120	3,620	2,260	1,480	35,900
17	970	930	1,020		2,260	1,570	3,030	1,990	4,600	2,400	4,960	28,600
18	1,150	970	1,020		2,400	1,570	2,710	1,800	5,340	6,690	5,150	28,200
19	1,400	930	1,020		2,400	1,470	2,400	2,120	4,600	6,890	4,600	26,800
20	970	890	1,020		1,990	1,680	2,260	1,990	3,190	6,490	6,100	19,700
21	890	930	1,020		2,190	1,470	2,260	2,060	2,480	5,720	4,420	15,100
22	970	930	900		2,480	1,470	2,190	1,680	1,560	4,600	4,600	14,000
23	900	930	850		2,330	1,570	2,190	1,490	2,480	3,190	3,790	12,400
24	840	930	800		2,180	1,620	2,060	1,370	4,060	2,400	3,030	10,400
25	820	930	800		2,190	1,470	1,990	1,300	2,630	1,920	3,360	7,290
26	850	930	750	840	2,190	1,470	1,800	1,240	2,060	1,620	4,960	5,530
27	890	970	750	860	2,190	1,560	1,740	1,180	1,860	1,440	3,030	4,780
28	800	930	800	900	2,040	1,500	1,620	1,170	2,120	1,380	3,620	4,240
29	800	930	850	1,000	-------	1,560	1,620	1,140	2,190	1,470	3,790	3,880
30	775	930	850	1,110	-------	1,740	1,620	1,130	1,680	1,430	3,530	3,790
31	775	-------	850	1,110	-------	1,560	-------	1,150	-------	1,330	3,190	-------

NOTE.—Stage-discharge relation affected by ice Dec. 22 to Jan. 29; discharge estimated from observer's notes and climatic data. Discharge for Oct. 18–19 and 23–26 estimated on account of erroneous gage readings. Braced figures give mean discharge for periods indicated.

Monthly discharge of Kansas River at Topeka, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	1,400	775	977	60,100
November	970	750	885	52,700
December	1,020	750	910	56,000
January	1,110	----------	843	51,800
February	2,480	830	1,720	95,500
March	2,060	1,470	1,650	101,000
April	7,090	1,470	2,930	174,000
May	3,610	1,130	1,850	114,000
June	5,340	1,040	2,200	131,000
July	6,890	1,020	2,550	157,000
August	6,100	1,050	2,630	162,000
September	35,900	2,060	11,400	678,000
The year	35,900	750	2,530	1,830,000

KANSAS RIVER AT BONNER SPRINGS, KANS.

LOCATION.—In NW. ¼ sec. 32, T. 11 S., R. 23 E., at highway bridge at Bonner Springs, Wyandotte County, half a mile below Wolf Creek, half a mile below Atchison, Topeka & Santa Fe Railway bridge, and 18 miles above mouth of river.

DRAINAGE AREA.—59,600 square miles.

RECORDS AVAILABLE.—July 8, 1917, to September 30, 1926.

GAGE.—Chain gage on upstream side of highway bridge; read by B. L. Rehm.

DISCHARGE MEASUREMENTS.—Made from downstream side of bridge.

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

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 13.82 feet at 7.10 a. m. September 18 (discharge, 39,200 second-feet); minimum stage, 3.09 feet at 7.20 p. m. August 13 (discharge, 841 second-feet).

1917–1926: Maximum stage recorded, 22.2 feet March 17, 1919 (discharge, 109,000 second-feet); minimum stage, 2.92 feet October 28, 1922 (discharge, 670 second-feet).

ICE.—Stage-discharge relation seriously affected by ice for short periods.

REGULATION.—Flow may be slightly affected by operation of mill and power plant at Lawrence.

ACCURACY.—Stage-discharge relation changed in February and September. Rating curve used October 1 to February 20 and September 18–30 is fairly well defined; curve used February 21 to September 17 is poorly defined. Gage read to hundredths twice daily; readings believed to be unreliable at times. Daily discharge ascertained by applying mean daily gage height to rating table. Shifting-control method used February 21–28. Records poor.

Discharge measurements of Kansas River at Bonner Springs, Kans., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Feb. 25	5.90	6,070	Apr. 13	8.95	14,900
Apr. 3	4.22	2,220	Sept. 22	9.02	13,500

Daily discharge, in second-feet, of Kansas River at Bonner Springs, Kans., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,660	1,270	1,510		1,910	3,140	2,190	2,490	1,640	2,050	1,510	3,690
2	1,910	1,210	1,390		1,770	2,970	2,190	2,340	1,640	1,640	1,390	5,730
3	1,640	1,210	1,390		1,770	2,810	2,190	2,490	2,340	1,390	1,270	3,690
4	1,510	1,270	1,390		1,840	4,540	2,340	2,190	1,510	1,390	1,270	2,650
5	1,510	1,270	1,450		1,910	3,890	3,890	2,340	1,510	1,220	1,160	2,650
6	1,640	1,330	1,450		1,910	2,050	5,240	2,190	1,450	1,050	1,220	4,100
7	1,770	1,390	1,450		1,910	2,340	7,290	2,190	1,390	1,100	1,270	4,320
8	1,640	1,640	1,510		1,770	2,340	8,910	2,490	1,330	1,220	1,100	7,290
9	1,510	1,510	1,450	1,100	1,770	2,340	10,600	2,650	1,330	1,220	1,050	10,300
10	1,390	1,640	1,390		1,770	2,340	11,600	4,540	1,270	1,450	1,000	8,910
11	1,330	1,770	1,270		1,770	2,490	10,600	3,690	1,100	2,050	950	5,980
12	1,390	1,770	1,390		2,050	2,810	14,200	4,100	1,160	1,770	900	5,480
13	1,330	1,910	1,450		2,050	2,810	15,000	4,540	1,510	2,050	850	6,500
14	1,390	1,910	1,450		2,050	2,490	11,300	3,500	1,640	2,050	1,000	14,600
15	1,770	1,910	1,450		2,050	2,490	6,500	3,140	2,650	1,910	1,100	18,600
16	1,910	1,640	1,510		2,190	2,340	5,480	2,970	3,500	2,490	1,770	30,400
17	2,190	1,640	1,210		2,340	2,190	4,770	2,810	3,500	2,190	1,270	37,300
18	1,770	1,640	985		2,190	2,190	4,320	2,650	4,540	2,050	2,190	27,100
19	1,640	1,510	1,040		2,050	2,340	3,890	2,490	4,320	4,320	4,100	27,600
20	1,450	1,510	1,100	1,150	2,050	2,190	3,500	2,490	4,770	5,730	3,890	25,000
21	1,390	1,390			3,320	2,190	3,500	2,490	3,690	5,240	5,000	18,700
22	1,390	1,450			4,100	2,190	3,320	2,490	3,500	5,000	3,890	14,300
23	1,390	1,390			5,480	2,190	3,320	2,340	3,690	4,540	3,690	15,100
24	1,510	1,390			5,730	2,190	3,320	2,190	2,810	3,320	3,500	11,000
25	1,510	1,450			6,240	2,190	3,320	1,910	3,500	2,490	2,810	9,010
26	1,390	1,450	1,000	1,200	5,480	2,190	3,140	1,910	3,320	2,190	2,650	7,160
27	1,330	1,510		1,200	4,770	2,050	2,810	1,770	2,490	1,910	3,320	5,630
28	1,270	1,450		1,400	3,690	2,050	2,810	1,640	2,190	1,770	3,690	4,900
29	1,210	1,510		1,500	-------	2,050	2,650	1,510	2,050	1,510	3,140	4,440
30	1,270	1,510		1,600	-------	2,190	2,490	1,510	2,340	1,510	3,140	4,440
31	1,330	-------		1,910	-------	2,190	-------	1,510	-------	1,510	3,140	-------

NOTE.—Stage-discharge relation affected by ice Dec. 21 to Jan. 30; discharge estimated from observer's notes and climatologic data. Braced figures give mean discharge for periods indicated.

Monthly discharge of Kansas River at Bonner Springs, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	2,660	1,210	1,560	95,900
November	1,910	1,210	1,520	90,500
December	1,510		1,230	76,200
January	1,910		1,190	73,200
February	6,240	1,770	2,780	154,000
March	4,540	2,050	2,480	152,000
April	15,000	2,190	5,560	331,000
May	4,540	1,510	2,570	158,000
June	4,770	1,100	2,460	146,000
July	5,730	1,050	2,300	141,000
August	5,000	850	2,200	135,000
September	37,300	2,650	11,600	690,000
The year	37,300	850	3,090	2,240,000

SMOKY HILL RIVER NEAR MENTOR, KANS.

LOCATION.—In SE. ¼ sec. 18, T. 15 S., R. 2 W., at highway bridge 1½ miles east of Mentor, Saline County, and 26 miles above Saline River.

DRAINAGE AREA.—8,210 square miles (measured on topographic map).

RECORDS AVAILABLE.—December 1, 1923, to September 30, 1926.

GAGE.—Chain gage on upstream side of bridge; read by Scott Mongold.

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

CHANNEL AND CONTROL.—Bed composed of sand and silt; shifting. No well-defined control. Bank-full stage, 20 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 19.0 feet at noon September 17 (discharge, 3,770 second-feet); minimum stage, 1.2 feet for several days in August (discharge, 12 second-feet).

ICE.—Stage-discharge relation affected by ice.

REGULATION.—Flow is slightly affected by operation of milldam upstream.

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

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

The following discharge measurements were made:

March 8, 1926: Gage height, 2.30 feet; discharge, 73.8 second-feet.

July 13, 1926: Gage height, 1.57 feet; discharge, 28.4 second-feet.

September 19, 1926: Gage height, 5.19 feet; discharge, 351 second-feet.

Daily discharge, in second-feet, of Smoky Hill River near Mentor, Kans., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	85	35	35		64	71	71	51	93	57	15	26
2	51	35	35		71	64	78	51	71	51	15	40
2	85	35	35		78	64	71	51	64	51	20	51
4	78	40	40		78	78	71	35	109	51	20	51
5	71	57	57		71	78	78	35	254	45	20	30
6	78	40	40		64	78	101	30	203	51	20	35
7	78	35	35		64	71	154	57	109	40	20	30
8	78	35	35		57	71	145	51	93	35	15	25
9	71	30	30		57	71	154	51	93	35	15	64
10	51	30	30		57	71	145	57	101	35	15	71
11	57	35	35		51	71	163	78	93	30	15	57
12	57	40	40		51	71	154	71	85	30	12	57
13	71	40	40		51	71	154	64	85	30	12	51
14	78	35	35		51	71	145	64	64	25	12	529
15	64	71			51	71	93	57	57	25	12	571
16	57	64		20	51	71	78	51	64	25	12	2,350
17	64	71			51	71	154	45	57	25	12	3,500
18	71	64			51	71	109	40	57	20	12	713
19	64	64			57	78	71	51	57	20	20	364
20	64	51			64	78	57	64	64	20	20	265
21	64	45			57	78	57	64	109	20	78	223
22	40	40			51	78	51	64	93	51	45	183
23	45	35	30		64	71	51	57	85	25	30	163
24	45	40			71	64	51	57	78	25	25	154
25	51	35			64	64	51	57	78	20	20	136
26	51	35			64	64	51	173	71	20	20	127
27	78	30			71	64	45	145	71	20	20	109
28	40	71			71	64	45	145	64	20	15	109
29	35	57			-------	57	40	127	64	15	15	101
30	40	40			-------	64	45	109	51	15	12	93
31	40	-------			-------	78	-------	93	-------	15	12	-------

NOTE.—Stage-discharge relation affected by ice Dec. 15 to Jan. 31; discharge estimated from gage heights and weather records. Braced figures give mean discharge for periods indicated.

Monthly discharge of Smoky Hill River near Mentor, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	85	35	61.4	3,780
November	71	30	44.5	2,650
December	57	----------	33.3	2,050
January	----------	----------	20.0	1,230
February	78	51	60.8	3,380
March	78	57	70.6	4,340
April	163	40	91.1	5,420
May	173	30	69.2	4,250
June	254	51	87.9	5,230
July	57	15	30.6	1,880
August	78	12	19.5	1,200
September	3,500	20	343	20,400
The year	3,500	12	77.1	55,800

SMOKY HILL RIVER AT SOLOMON, KANS.

LOCATION.—In SE. ¼ sec. 19, T. 13 S., R. 1 E., at highway bridge one-fourth of a mile below mouth of Solomon River and 1 mile south of Solomon, Lincoln County.

DRAINAGE AREA.—18,700 square miles.

RECORDS AVAILABLE.—April to July, 1904, and October 24, 1922, to September 30, 1926.

GAGE.—Chain gage on upstream handrail of bridge; read by L. Z. Castor.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and silt; shifting. No well-defined control. Bank-full stage, 24 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 19.8 feet at 11 a. m. September 18 (discharge, 6,870 second-feet); minimum discharge estimated, 60 second-feet January 21–28.

1904; 1922–1926: Maximum stage recorded, 27.9 feet (old datum), on July 10 and 11, 1904 (discharge not determined). On June 13, 1923, a stage of 25.96 feet was recorded with a discharge of 14,200 second-feet. Minimum discharge, 25 second-feet October 14, 1925.

The maximum stage during the flood of 1903 was determined by levels to be about 35.0 feet.

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

REGULATION.—Flow is affected by operation of mills and power plants upstream.

ACCURACY.—Stage-discharge relation not permanent; affected by shifting control and by ice. Standard rating curve fairly well defined below and poorly defined above 3,000 second-feet. Gage read to tenths once daily. Daily discharge ascertained by applying daily gage height to rating table except from October 1 to December 21 and July 19 to September 6 when shifting-control method was used. Records for low stages are fair; records for high stages and for estimated periods are poor.

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

Discharge measurements of Smoky Hill River at Solomon, Kans., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 9	3.25	200	Aug. 5	3.59	260
July 14	7.49	1,600	Sept. 19	17.57	5,530
July 15	11.20	2,980			

Daily discharge, in second-feet, of Smoky Hill River at Solomon, Kans., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	216	152	172		133	264	172	133	216	194	288	288
2	216	133	133		152	250	216	114	216	172	288	172
3	216	152	114		152	264	194	114	172	216	388	152
4	152	152	172		172	288	194	76	133	172	313	216
5	172	172	194		216	264	216	152	363	133	250	172
6	172	194	172	80	216	250	216	133	288	114	216	650
7	194	194	133		194	216	216	95	338	194	194	2,580
8	172	172	114		216	250	313	114	216	152	172	2,940
9	152	172	133		194	216	338	133	250	250	114	2,940
10	152	194	152		194	194	338	133	172	1,120	133	2,580
11	152	216	133		216	194	338	194	172	1,220	152	1,880
12	172	194	133		194	216	313	250	1,800	950	133	1,020
13	172	172	152		172	216	442	250	1,220	650	133	680
14	152	172	152		194	194	620	172	442	1,260	133	590
15	172	172	133		152	194	442	414	338	2,730	530	1,260
16	172	194	194	70	172	194	338	500	363	3,560	388	4,370
17	172	216	172		194	194	264	363	442	3,690	250	5,830
18	133	216	133		250	216	250	288	800	3,860	920	6,800
19	152	194	133		216	172	194	250	650	2,410	216	6,190
20	172	172	133		194	194	152	216	620	860	216	5,170
21	152	172	95		172	216	152	250	650	560	710	5,170
22	172	172			194	250	172	250	560	500	770	3,440
23	133	172			216	216	194	172	680	620	680	1,220
24	133	194			216	194	194	172	650	830	560	950
25	114	172		60	250	194	172	172	530	650	950	860
26	133	133	90		250	172	152	172	388	414	830	800
27	133	133			216	172	172	264	338	363	530	710
28	114	152			216	152	194	264	288	338	338	680
29	114	172		133	-------	216	152	414	288	313	288	650
30	133	152		133	-------	194	152	363	264	288	264	620
31	133	-------		133	-------	172	-------	250	-------	288	216	-------

NOTE.—Stage-discharge relation affected by ice Dec. 22 to Jan. 28; discharge estimated from observer's notes and weather records.

Monthly discharge of Smoky Hill River at Solomon, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	216	114	158	9,720
November	216	133	174	10,400
December	194	----------	127	7,810
January	133	----------	76.7	4,720
February	250	133	197	10,900
March	288	152	213	13,100
April	620	152	249	14,800
May	500	76	221	13,600
June	1,800	133	462	27,500
July	3,860	114	938	57,700
August	950	114	373	22,900
September	6,800	152	2,050	122,000
The year	6,800	----------	435	315,000

SALINE RIVER AT TESCOTT, KANS.

LOCATION.—In SE. ¼ sec. 16, T. 12 S., R. 5 W., at highway bridge one-fourth of a mile below an old dam, half a mile south of Tescott, Ottawa County, half a mile above Dry Creek, and 4 miles below Table Rock Creek.

DRAINAGE AREA.—2,800 square miles.

RECORDS AVAILABLE.—September 3, 1919, to September 30, 1926.

GAGE.—Chain gage on downstream side of bridge; read by Leo Diehl.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and silt; shifting. No well-defined control. Bank-full stage, 25 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 15.02 feet at 6.10 p. m. September 15 (discharge, 1,430 second-feet); minimum stage, 2.29 feet at 7.10 a. m. July 8 (discharge, 0.5 second-foot).

1919–1926: Maximum stage recorded, 18.9 feet at 7 p. m. September 1, 1925 (discharge, 2,860 second-feet); minimum discharge, that of July 8, 1926.

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

REGULATION.—Flow is affected by operation of mills at Shady Bend and Lincoln.

ACCURACY.—Stage-discharge relation shifting. Rating curve used October 1 to July 14, and curve used July 15 to September 30 are poorly defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table except from January 30 to March 17, when shifting-control method was used. Records poor.

Discharge measurements of Saline River at Tescott, Kans., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 9	4.21	39	July 14	10.69	874	July 15	7.32	434
July 13	12.49	1,240	do	8.88	603	Aug. 4	2.99	39

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	52	35	19	35	38	32	2	2	31	52	44
2	78	63	42	19	45	48	27	8	3	27	50	56
3	63	60	48	16	50	45	58	4	10	16	52	32
4	63	58	58	15	42	42	52	1	7	8	55	26
5	66	52	48	1	35	40	52	2	5	6	55	50
6	66	58	48	1	38	48	157	3	2	16	52	345
7	63	63	35	}	38	48	52	7	1	9	38	1,050
8	58	58	12	10	33	45	42	15	2	2	19	404
9	78	60	}	}	33	33	48	14	9	6	15	224
10	66	63	}	}	29	42	60	29	4	7	36	140
11	50	63	15	}	35	38	58	9	3	5	52	85
12	55	52	}	}	31	33	58	35	8	78	40	133
13	69	58	}	}	38	42	55	125	19	1,050	24	224
14	58	52	}	}	33	48	58	173	13	763	19	818
15	50	52	}	15	29	42	29	66	5	379	34	1,320
16	60	58	}	}	33	35	10	84	10	302	22	514
17	66	69	}	}	38	42	19	78	55	224	65	106
18	52	63	20	}	38	25	16	58	191	224	100	514
19	60	58	}	}	38	15	11	15	173	163	70	179
20	60	60	}	}	38	16	21	23	355	147	171	140
21	52	60	}	}	35	16	45	29	327	140	112	90
22	60	48	}	}	35	16	38	31	227	197	106	100
23	52	55	}	10	35	15	48	17	141	472	95	90
24	58	38	}	}	40	16	27	17	97	163	90	80
25	60	52	}	1	42	15	16	20	97	140	90	70
26	60	55	15	3	38	18	50	27	84	100	60	55
27	55	55	}	4	38	14	3	25	66	100	55	58
28	58	40	}	5	38	13	3	21	60	100	52	48
29	58	55	}	10	------	13	1	33	55	60	55	52
30	52	58	}	31	------	24	1	14	33	60	48	52
31	52	------	11	33	------	35	------	2	------	85	24	------

NOTE.—Stage-discharge relation affected by ice Dec. 9–30 and Jan. 7–29; discharge estimated from gage heights and climatologic data. Braced figures give mean discharge for periods indicated.

Monthly discharge of Saline River at Tescott, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	78	50	60.3	3,710
November	69	38	56.3	3,350
December	58	----------	22.3	1,370
January	33	1	12.5	769
February	50	29	36.8	2,040
March	48	13	31.0	1,910
April	157	1	38.2	2,270
May	173	1	31.8	1,960
June	355	1	68.8	4,090
July	1,050	2	164	10,100
August	171	15	58.3	3,580
September	1,320	26	236	14,000
The year	1,320	1	67.9	49,100

SOLOMON RIVER AT NILES, KANS.

LOCATION.—In NW. ¼ sec. 31, T. 12 S., R. 1 W., at highway bridge three-fourths mile west of Niles, Ottawa County, and 7 miles above mouth of river.

DRAINAGE AREA.—6,710 square miles.

RECORDS AVAILABLE.—May 6, 1897, to November 30, 1903, and May 15, 1919, to September 30, 1926. October 1, 1917, to June 23, 1919, records were collected near Bennington, Kans.

GAGE.—Chain gage on downstream handrail of bridge; read by Ellsworth Boyle.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and silt; shifting. Bank-full stage, 22 feet. Backwater occurs at this station when Smoky Hill River is at flood stage.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 22.40 feet at 6 a. m. September 21 (discharge, 5,350 second-feet); minimum stage, 3.81 feet at 4.15 p. m. September 4 (discharge, 1 second-foot).

1897–1903; 1919–1926: Maximum discharge recorded, 10,600 second-feet June 3, 1903; minimum discharge, that of September 4, 1926.

ICE.—Stage-discharge relation affected by ice.

REGULATION.—Flow is affected by operation of power plants upstream.

ACCURACY.—Stage-discharge relation changed during July. Rating curve used October 1 to July 14 is fairly well defined; curve used July 15 to September 30 is fairly well defined above 100 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records fair.

Discharge measurements of Solomon River at Niles, Kans., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 9	2.99	51	July 14	13.73	2,180	Aug. 4	5.93	130
July 13	10.00	997	July 15	16.40	2,900	Sept. 19	21.29	4,900
July 14	13.17	1,920						

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	26	38		50	104	75	16	91	23	145	59
2	52	75	52		55	111	125	19	35	125	458	48
3	22	50	65	25	60	155	65	48	20	147	245	14
4	19	50	35		65	118	24	85	19	30	139	1
5	20	42	65		65	80	91	38	18	18	128	850
6	30	35	32		75	91	118	14	18	91	103	2,880
7	20	24	50		91	91	52	32	45	58	80	3,000
8	19	35	70		70	85	85	26	91	17	6	3,030
9	24	97	60		75	75	70	16	35	720	18	1,990
10	19	80	42		75	80	97	125	19	1,280	59	1,680
11	18	75	26	20	70	60	70	132	756	982	45	980
12	35	35	80		60	80	80	111	1,070	666	76	568
13	40	28	75		65	75	111	91	450	1,030	66	440
14	40	52	75		85	60	42	320	210	2,010	323	476
15	42	80	80		97	80	50	255	164	3,030	630	2,840
16	42	80	75		91	75	91	139	450	3,780	245	3,660
17	26	80	75		70	48	91	125	792	4,130	874	4,330
18	48	80	42		80	38	70	111	684	2,920	718	4,620
19	48	52	23		75	80	30	91	545	784	157	4,940
20	23	58	16		111	97	52	80	450	512	406	5,270
21	38	80	15	15	97	85	50	85	334	406	1,150	4,290
22	32	45			91	80	97	26	294	339	762	900
23	20	48	20		91	75	58	40	307	423	440	512
24	17	70			85	75	48	58	210	494	1,320	423
25	65	65			91	70	28	40	164	389	1,040	372
26	38	65			97	91	65	45	132	245	512	323
27	45	60		20	104	55	97	75	139	193	275	291
28	45	30	25	25	91	19	30	91	147	193	157	275
29	22	97		40	-------	14	50	45	132	157	112	275
30	17	91		45	-------	104	52	17	60	133	59	231
31	17	-------		50	-------	70	-------	48	-------	128	145	-------

NOTE.—Stage-discharge relation affected by ice Dec. 22 to Feb. 4; discharge estimated from gage heights, observer's notes, and climatologic data. Braced figures give mean discharge for periods indicated.

Monthly discharge of Solomon River at Niles, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	65	17	31.3	1,920
November	97	24	59.5	3,540
December	80	15	42.6	2,620
January	50	----------	21.6	1,330
February	111	50	79.7	4,430
March	155	14	78.1	4,800
April	125	24	68.8	4,090
May	320	14	78.8	4,850
June	1,070	18	263	15,600
July	4,130	17	821	50,500
August	1,320	6	351	21,600
September	5,270	1	1,650	98,200
The year	5,270	1	295	213,000

BIG BLUE RIVER AT RANDOLPH, KANS.

LOCATION.—In SW. ¼ sec. 12, T. 7 S., R. 6 E., at highway bridge half a mile above Fancy Creek, three-fourths of a mile east of Randolph, Riley County, and 15 miles below Black Vermilion River.

DRAINAGE AREA.—8,860 square miles.

RECORDS AVAILABLE.—April 17, 1918, to September 30, 1926.

GAGE.—Chain gage on upstream handrail of bridge; read by Mrs. Ollie Webb. A vertical staff gage, from 6.0 to 30.9 feet, on right pier, and a vertical staff from 29.0 to 33.5 feet, painted on concrete foundation for old oil tank on right bank 500 feet west of chain gage, are used during floods.

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

CHANNEL AND CONTROL.—Bed composed of sand and gravel. No well-defined control, Bank-full stage, 20 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 17.84 feet at 8 a. m. September 15 (discharge, 16,100 second-feet); minimum stage, 2.26 feet at 7.38 a. m. August 9 (discharge, 175 second-feet).

1918–1926: Maximum discharge recorded, 22,300 second-feet June 11, 1919; minimum discharge, that of August 9, 1926.

On May 31, 1903, a stage equivalent to 31.7 feet on the gage was observed by John Nord, Randolph, Kans.

ICE.—Stage-discharge relation affected by ice for short periods.

REGULATION.—Low flow is affected by operation of power plants upstream.

ACCURACY.—Stage-discharge relation permanent during year except as affected by ice. Rating curve well defined below 10,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good, except during estimated periods, for which they are poor.

Discharge measurements of Big Blue River at Randolph, Kans., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 11	3.52	649	June 17	7.86	3,950
June 16	7.75	3,790	July 16	3.63	708

Daily discharge, in second-feet, of Big Blue River at Randolph, Kans., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	440	380	342		720	620	440	380	380	342	324	940
2	380	360	420		720	572	504	461	360	342	504	830
3	380	360	420		526	526	526	400	400	342	360	440
4	400	380	420		572	572	461	1,060	324	360	342	2,890
5	360	380	380		572	549	440	1,380	308	3,250	324	3,930
6	440	380	400	370	670	482	482	720	342	2,370	277	6,560
7	360	440	248		670	461	482	549	308	1,380	262	3,930
8	342	461	342		775	461	461	549	324	885	262	2,450
9	342	482	420		620	526	482	2,710	308	1,990	221	1,640
10	360	400	380		720	504	482	1,920	324	1,500	308	1,180
11	360	440	380		670	549	482	1,180	1,380	1,120	292	1,000
12	360	440	360		775	504	400	1,060	1,500	885	277	5,100
13	360	440	420		1,000	482	440	1,120	830	670	342	5,540
14	400	440	380		1,000	504	482	885	1,440	775	830	6,800
15	420	461	400	380	885	526	400	720	2,710	775	700	15,100
16	420	360	400		940	526	440	620	2,710	670	500	12,900
17	420	400	350		830	461	420	549	3,340	670	300	12,800
18	440	440	400		720	461	461	830	1,780	620	400	9,440
19	308	400	504	400	830	461	400	830	885	526	500	3,630
20	440	420	461		775	440	380	572	504	440	549	3,070
21	360	400			775	440	420	504	1,640	380	670	3,070
22	360	400		360	720	400	400	482	3,250	440	1,000	2,540
23	342	380			775	420	420	420	1,500	324	1,000	1,710
24	360	380			670	461	440	400	940	292	1,440	1,440
25	400	482			670	420	380	461	1,060	292	1,380	1,120
26	360	380	360	400	526	440	440	440	1,920	360	1,500	1,120
27	380	380		500	572	482	420	360	1,780	360	1,640	1,380
28	360	420		600	620	482	461	440	1,920	342	1,710	1,240
29	380	400		630	-------	420	420	440	1,850	308	1,500	1,120
30	360	360		650	-------	360	360	380	572	324	1,240	1,060
31	342	-------		670	-------	504	-------	461	-------	360	1,120	-------

NOTE.—Stage-discharge relation affected by ice Dec. 17, 18, and Dec. 21 to Jan. 30; discharge based on gage heights, observer's notes, and weather records. Braced figures give mean discharge for periods indicated. No gage-height record Aug. 15–19; discharge estimated.

Monthly discharge of Big Blue River at Randolph, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	440	308	379	23,300
November	482	360	408	24,300
December	504	248	380	23,400
January	670	----------	411	25,300
February	1,000	526	726	40,300
March	620	360	484	29,800
April	526	360	441	26,200
May	2,710	360	751	46,200
June	3,340	308	1,230	73,200
July	3,250	292	764	47,000
August	1,710	221	712	43,800
September	15,100	440	3,870	230,000
The year	15,100	221	873	633,000

DELAWARE RIVER AT VALLEY FALLS, KANS.

LOCATION.—In SW. ¼ sec. 18, T. 8 S., R. 18 E., at highway bridge 300 feet above Atchison, Topeka & Santa Fe Railway bridge, 500 feet below Walnut Creek, one-fourth mile north of Valley Falls, Jefferson County, and 1 mile below Cedar Creek.

DRAINAGE AREA.—922 square miles.

RECORDS AVAILABLE.—June 16, 1922, to September 30, 1926.

GAGE.—Chain gage on upstream side of highway bridge; read by J. M. Piazzek.

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

CHANNEL AND CONTROL.—Bed composed of silt and rock. Low-water control is a rock riffle 200 feet below gage at site of old masonry dam; practically permanent. Bank-full stage, 22 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 10.56 feet 6 p. m. April 11 (discharge, 2,930 second-feet); minimum stage, 1.30 feet at 7 a. m. August 9 (discharge, 6 second-feet).

1922–1926: Maximum stage recorded, 29.72 feet at midnight June 16, 1925 (discharge, from extension of rating curve, 30,000 second-feet); minimum discharge, 1.3 second-feet October 28, 1922.

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

REGULATION.—None.

ACCURACY.—Stage-discharge relation probably permanent during year for low stages; shifting during high stages. Rating curve well defined below and poorly defined above 200 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating tables except for June 14–15, 21, and September 4–7, when shifting-control method was used. Records fair for low stages, and poor for medium and high stages.

Discharge measurements of Delaware River at Valley Falls, Kans., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 4	2.67	164	June 21	7.05	1,810
June 14	4.57	639	Sept. 7	3.57	297

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	82	80	85	32	161	302	81	126	32	23	27	480
2	88	80	83	37	114	231	126	132	52	17	19	80
3	82	83	85	136	86	175	161	134	69	16	13	64
4	148	86	85	900	72	148	316	126	42	16	8	840
5	245	88	83	600	72	175	810	112	39	16	8	600
6	175	93	83	189	98	189	960	106	35	15	8	630
7	96	114	80	126	95	161	992	98	32	15	8	203
8	86	122	82	93	104	108	1,480	124	29	32	8	72
9	74	136	96	82	108	132	1,520	161	26	29	6	42
10	66	570	98	78	93	331	960	148	24	20	8	32
11	62	480	90	76	66	480	2,390	148	22	20	8	27
12	71	390	93	58	76	331	1,180	148	20	14	11	30
13	77	273	88	69	78	288	690	134	20	12	11	31
14	630	189	85	69	82	245	570	104	750	11	11	1,150
15	450	161	77	71	76	245	480	83	375	11	10	1,410
16	331	136	71	78	64	189	420	76	148	10	9	840
17	203	122	65	88	70	161	390	88	86	10	9	148
18	136	118	63	86	136	136	316	114	69	10	8	69
19	100	112	70	86	128	122	259	108	48	10	9	49
20	83	104	68	56	273	120	245	95	43	10	9	45
21	90	98	60	38	630	124	245	81	1,590	11	9	38
22	98	93	56		960	126	245	66	302	9	9	34
23	86	88	47		810	136	245	63	217	29	14	32
24	81	89	43		780	122	231	51	130	37	14	32
25	85	98	40	40	930	108	203	44	76	26	14	31
26	78	98	40		660	93	189	42	49	13	13	33
27	70	95	30		420	82	175	40	35	13	12	32
28	63	88	24	65	375	88	161	37	30	11	9	30
29	65	86	22	76	-------	85	148	34	27	11	9	28
30	76	89	23	112	-------	74	136	34	24	10	9	31
31	77	-------	29	161	-------	69	-------	32	-------	92	1,810	-------

NOTE.—Stage-discharge relation affected by ice Jan. 22–27; discharge estimated. Braced figure gives mean discharge for period indicated.

Monthly discharge of Delaware River at Valley Falls, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	630	62	134	8,240
November	570	80	149	8,870
December	98	22	66.0	4,060
January	900	32	119	7,320
February	960	64	272	15,100
March	480	69	173	10,600
April	2,390	81	544	32,400
May	161	32	94.0	5,780
June	1,590	20	148	8,810
July	37	9	18.7	1,150
August	1,810	6	68.7	4,220
September	1,410	27	239	14,200
The year	2,390	6	167	121,000

GRAND RIVER BASIN

GRAND RIVER NEAR GALLATIN, MO.

LOCATION.—In NW. ¼ sec. 16, T. 59 N., R. 27 W., at highway bridge 1,000 feet above Chicago, Rock Island & Pacific Railway bridge, 2 miles northeast of Gallatin, Daviess County, and 7 miles above Honey Creek.

DRAINAGE AREA.—2,250 square miles (measured on base maps of Missouri and Iowa).

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

GAGE.—Chain gage on downstream side of highway bridge; read by L. C. Rogers.

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

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

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 36.8 feet at 5 p. m. September 17 (discharge, 53,200 second-feet); minimum stage, 2.26 feet August 9 and 31 (discharge, 38 second-feet).

1921–1926: Maximum stage recorded, that of September 17, 1926; minimum stage, 1.55 feet while river was dammed upstream May 15, 1924 (discharge determined from extension of rating curve, 10 second-feet).

The United States Weather Bureau has published a maximum stage of 39.3 feet for the flood of July, 1909.

ACCURACY.—Stage-discharge relation permanent during the year except as affected by ice. Rating curve fairly well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good for open-water periods and poor for periods of ice effect.

Discharge measurements of Grand River near Gallatin, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 11	13.22	[a] 4,440	May 8	3.27	169	July 12	3.48	185
Mar. 4	5.07	568	May 9	3.30	161	Aug. 29	2.40	49

[a] Made during rapidly rising stage; computed discharge for constant stage, 4,260 second-feet.

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,570	531	327	190	2,720	968	244	190	5,450	217	151	264
2	1,550	712	327	208	3,080	840	264	190	968	190	138	3,240
3	4,600	744	350	712	1,430	650	397	182	422	174	82	5,380
4	15,000	776	350	8,000	904	475	531	174	254	174	66	12,100
5	14,200	808	397	7,440	503	475	1,970	158	284	166	100	12,600
6	4,660	712	284	4,180	503	503	3,080	151	208	166	94	10,100
7	1,640	680	284	2,070	531	590	2,620	151	158	166	88	5,320
8	1,310	840	373	1,100	475	397	3,300	151	138	166	42	3,680
9	1,160	744	531	712	531	397	3,520	158	124	174	39	8,450
10	904	2,220	560	503	503	620	2,420	166	118	166	41	10,500
11	712	4,480	475	475	373	2,120	1,510	350	88	144	43	9,500
12	650	3,300	422	475	327	1,730	936	397	590	166	43	5,260
13	680	2,120	422	448	373	870	904	244	2,970	144	88	9,420
14	1,200	1,230	327	422	422	590	680	190	6,950	158	100	5,080
15	4,960	1,060	350	373	373	560	531	166	7,650	174	166	16,400
16	2,720	936	199	373	422	560	448	138	8,520	166	144	26,700
17	2,220	808	373	373	503	531	397	131	11,400	151	106	47,800
18	1,970	712	284	350	5,320	531	373	131	7,930	144	71	49,600
19	1,130	650	284	327	3,840	503	327	124	6,100	118	67	30,100
20	904	590	305	264	1,970	475	284	373	1,550	94	112	15,800
21	712	531	350	244	3,570	448	284	264	4,720	76	144	20,400
22	590	475	448	226	3,960	448	284	208	4,360	244	88	15,600
23	590	448	560	208	2,670	448	305	182	1,730	422	100	5,780
24	560	397	503	208	1,680	422	373	138	744	199	327	5,710
25	650	397	397	208	1,730	397	397	118	620	118	650	4,600
26	650	448	305	208	2,120	373	327	112	448	100	350	2,320
27	650	422	264	208	1,470	327	284	106	350	94	151	1,680
28	590	373	226	226	1,130	264	254	118	305	76	76	1,640
29	560	327	208	264	-------	284	235	144	264	94	49	1,550
30	422	327	190	305	-------	284	208	144	254	82	42	1,640
31	397	-------	174	397	-------	254	-------	744	---------	64	39	-------

NOTE.—Stage-discharge relation affected by ice Dec. 19 to Jan. 2, Jan. 12–15, 21–31; daily discharge estimated from daily gage heights, observer's notes, and weather records.

Monthly discharge of Grand River near Gallatin, Mo., for the year ending September 30, 1926

[Drainage area, 2,250 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	15,000	397	2,290	1.02	1.18
November	4,480	327	960	.427	.48
December	560	174	350	.156	.18
January	8,000	190	1,020	.453	.52
February	5,320	327	1,550	.689	.72
March	2,120	254	591	.263	.30
April	3,520	208	923	.410	.46
May	744	106	200	.089	.10
June	11,400	88	2,520	1.12	1.25
July	422	64	154	.068	.08
August	650	39	122	.054	.06
September	49,600	264	11,600	5.16	5.76
The year	49,600	39	1,840	.818	11.09

GRAND RIVER NEAR SUMNER, MO.

LOCATION.—In NE. ¼ sec. 29, T. 56 N., R. 21 W., at highway bridge 80 feet below Chicago, Burlington & Quincy Railroad bridge, 2 miles southwest of Sumner, Chariton County, 2½ miles below Locust Creek, and 5 miles above Yellow Creek.

DRAINAGE AREA.—6,880 square miles (measured on base maps of Missouri and Iowa).

RECORDS AVAILABLE.—April 19, 1924, to September 30, 1926.

GAGE.—Chain gage on upstream side of highway bridge; read by T. J. Ballew. Prior to July 10 a chain gage set to same datum on Chicago, Burlington & Quincy Railroad bridge was used.

DISCHARGE MEASUREMENTS.—Made from highway or railroad bridge.

CHANNEL AND CONTROL.—Bed composed of sand and mud; fairly permanent. Right bank high. Left bank subject to overflow at stage of about 26 feet. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 32.42 feet at 5 p. m. September 21 (discharge, 56,400 second-feet); minimum stage, 3.20 feet August 13 (discharge, 330 second-feet).

1924–1926: Maximum stage recorded, that of September 21, 1926; minimum discharge, 170 second-feet January 10–19, 1925.

On July 9, 1909, the river reached a stage of 36.7 feet, determined by levels to floodmarks.

ACCURACY.—Stage-discharge relation changed during high water in September; affected by ice. Rating curve fairly well defined. Gage read to hundredths once daily during low stages and twice daily during high stages. Daily discharge ascertained by applying mean daily gage height to rating table except for September 28–30 when shifting-control method was used. Records good except for periods of ice effect, for which they are fair.

Discharge measurements of Grand River near Sumner, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 9	11.18	5,170	July 10	6.90	2,310	Sept. 24	30.31	43,700
Mar. 3	8.04	2,860	July 11	6.44	1,980	Sept. 28	14.39	[a] 6,240
May 7	4.40	750	Aug. 28	3.55	415			

[a] Made during rapidly falling stage; computed discharge for constant stage, 7,300 second-feet.

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,650	1,440	1,060	950	2,810	4,250	1,060	1,110	950	1,110	800	525
2	11,800	1,330	1,060	1,060	4,890	3,470	1,110	1,000	4,570	1,060	700	2,570
3	12,700	1,720	1,110	1,550	4,730	2,940	1,160	1,000	3,330	1,000	565	7,400
4	15,800	2,040	1,110	7,600	3,470	2,510	1,440	900	1,330	900	800	16,600
5	18,700	2,160	2,160	18,700	2,330	2,100	1,990	900	900	850	700	24,500
6	21,000	2,100	1,940	22,500	2,100	1,880	7,000	800	700	800	595	28,000
7	19,800	2,160	1,990	20,100	2,040	1,990	17,800	800	700	800	432	29,900
8	7,700	5,050	2,270	9,740	1,880	1,940	20,900	800	610	1,660	400	29,900
9	4,090	5,210	5,630	4,250	1,880	1,770	23,700	750	525	1,220	370	27,600
10	3,330	5,270	9,020	2,940	1,820	2,810	24,200	700	505	1,880	355	27,000
11	2,510	8,460	8,240	2,100	1,720	6,800	20,100	750	450	1,880	342	28,400
12	2,040	11,000	6,260	1,880	1,720	5,370	16,100	800	415	1,220	342	29,900
13	1,770	9,500	4,410	1,690	1,660	3,610	9,620	1,000	3,540	1,060	330	30,600
14	1,770	6,080	3,770	1,500	1,550	2,880	7,400	1,000	9,380	800	900	29,600
15	5,450	4,170	2,940	1,550	1,500	2,330	3,400	800	15,900	700	1,330	28,600
16	10,400	3,260	1,990	1,550	1,440	2,160	2,570	700	19,400	800	800	31,000
17	10,600	2,810	1,600	1,500	1,330	2,040	2,210	700	25,500	950	1,440	33,900
18	12,000	2,450	1,440	1,330	4,090	1,990	1,990	655	28,300	800	1,110	36,500
19	8,680	2,210	1,600	1,330	17,500	1,880	1,770	610	29,900	610	655	40,900
20	4,570	1,990	2,040	1,330	17,400	1,880	1,550	610	29,600	610	1,110	52,800
21	3,140	1,820	3,200	1,110	12,000	1,880	1,440	610	27,600	525	1,770	56,400
22	2,390	1,770	3,470	1,000	16,500	1,770	1,770	950	21,900	525	1,220	54,000
23	2,040	1,550	2,270	1,000	16,200	1,770	2,100	850	14,400	800	700	48,600
24	1,880	1,440	1,820	1,060	11,700	1,770	2,940	700	7,000	900	505	42,900
25	1,880	1,380	1,600	1,060	14,400	1,770	3,200	610	3,200	1,000	432	38,400
26	1,880	1,330	1,440	1,060	12,300	1,720	2,330	525	2,880	700	505	31,000
27	2,390	1,330	1,330	1,110	10,900	1,720	1,770	505	2,100	610	565	15,900
28	2,510	1,330	1,220	1,160	5,900	1,220	1,550	800	1,720	505	450	7,400
29	1,940	1,220	1,060	1,380	-------	1,160	1,330	700	1,440	432	385	4,170
30	1,660	1,220	950	1,940	-------	1,110	1,160	610	1,220	450	355	7,800
31	1,440	-------	900	1,990	-------	1,110	-------	655	-------	610	415	-------

NOTE.—Stage-discharge relation affected by ice Dec. 26 to Jan. 2 and Jan. 22–30; daily discharge estimated from gage heights, observer's notes, and weather records. Discharge interpolated for Jan. 13 and Sept. 11 on account of missing gage heights.

Monthly discharge of Grand River near Sumner, Mo., for the year ending September 30, 1926

[Drainage area, 6,880 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	21,000	1,440	6,530	0.949	1.09
November	11,000	1,220	3,180	.462	.52
December	9,020	900	2,610	.379	.44
January	22,500	950	3,840	.558	.64
February	17,500	1,330	6,350	.923	.96
March	6,800	1,110	2,370	.344	.40
April	24,200	1,060	6,220	.904	1.01
May	1,100	505	771	.112	.13
June	29,900	415	8,670	1.26	1.41
July	1,880	432	896	.130	.15
August	1,770	330	687	.10	.12
September	56,400	525	28,100	4.08	4.55
The year	56,400	330	5,780	.840	11.42

MEDICINE CREEK NEAR GALT, MO.

LOCATION.—In NW. ¼ sec. 34, T. 62 N., R. 22 W., at Quincy, Omaha & Kansas City Railroad bridge 1 mile above West Medicine Creek and 1½ miles east of Galt, Grundy County.

DRAINAGE AREA.—225 square miles (measured on United States soil-survey maps).

RECORDS AVAILABLE.—July 6, 1921, to September 30, 1926.

GAGE.—Chain gage on upstream side of bridge; read by C. R. Rusk.

DISCHARGE MEASUREMENTS.—Made from downstream side of highway bridge 1,000 feet below gage or by wading.

CHANNEL AND CONTROL.—Bed composed of silt and sand; shifting. Banks of medium height, lightly wooded, and subject to overflow at high stages. Channel was straightened during 1923 by means of a small dredged ditch, which now is rapidly becoming larger through erosion. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 16.0 feet at 10 a. m. September 17 (discharge, 4,640 second-feet); minimum discharge, 2 second-feet August 28 and 29.

1921–1926: Maximum stage recorded, that of September 17, 1926; minimum discharge, less than 1 second-foot August 22 and 29, 1922.

ACCURACY.—Stage-discharge relation changed during high water in September; affected by ice. Rating curve fairly well defined. Gage read to hundredths once daily except Sundays. Daily discharge ascertained by applying daily gage height to rating table. Records fair.

Discharge measurements of Medicine Creek near Galt, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 10	5.20	289	May 8	1.65	15	Sept. 18	12.18	3,190
Mar. 2	3.43	120	July 11	1.52	11	Do	10.27	2,240
Apr. 13	3.55	139	Aug. 29	1.14	2.2	Do	7.05	871
May 8	1.65	16	Sept. 17	15.66	4,310	Do	5.74	572

NOTE.—Measurements of Sept. 17 and 18 were made during rapidly falling stages; computed discharge for constant stage are 4,350, 3,290, 2,380, 923, and 585 second-feet, respectively.

Daily discharge, in second-feet, of Medicine Creek near Galt, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	940	a92	38	43	86	138	38	23	23	18	a20	12
2	1,090	98	38	a399	116	120	43	a23	17	16	33	6
3	970	156	46	755	98	111	48	23	14	15	29	351
4	a1,060	174	174	1,280	65	53	a159	22	12	a16	24	420
5	1,150	147	40	1,360	79	50	270	15	11	16	21	a1,120
6	830	a138	a91	1,090	48	65	306	14	a10	18	18	1,830
7	183	129	a141	384	a49	a56	336	15	8	59	6	483
8	192	a134	192	183	50	46	504	14	7	94	a5	174
9	174	138	282	138	59	65	525	a14	6	138	4	a793
10	94	282	504	a122	48	106	504	13	6	12	4	a1,410
11	a78	483	546	106	38	147	a334	14	a57	12	5	2,030
12	62	546	420	65	43	156	165	15	a108	21	4	a1,130
13	68	294	a350	65	48	120	111	15	a159	15	4	230
14	220	192	a280	79	a40	a92	86	13	210	12	12	230
15	441	a165	210	59	33	65	65	11	504	8	a30	2,790
16	402	138	90	50	38	62	56	a12	174	9	48	2,740
17	504	120	98	a52	43	79	48	12	420	11	43	4,640
18	a377	102	111	53	a252	65	a40	12	1,990	a8	22	2,290
19	250	86	94	59	462	72	33	14	2,940	5	19	a2,040
20	147	79	a100	59	a372	79	33	15	a1,530	10	9	1,790
21	111	72	106	65	282	a80	29	15	124	18	5	1,710
22	86	a64	120	53	260	82	38	16	116	33	a4	1,950
23	76	56	102	38	192	68	46	a14	90	33	4	250
24	72	53	72	29	192	59	68	12	79	33	4	210
25	a183	53	59	17	294	53	a53	10	62	a28	3	98
26	294	50	43	14	270	46	38	9	50	23	3	a136
27	201	a46	33	11	240	38	33	29	a40	13	3	174
28	120	43	29	17	a189	a33	31	19	31	7	2	156
29	82	a42	29	25	-------	28	29	15	23	7	2	147
30	48	40	33	33	-------	29	28	a12	20	6	7	680
31	86	-------	38	50	-------	31	-------	9	--------	6	18	-------

a Gage not read; discharge interpolated.

NOTE.—Stage-discharge relation affected by ice Dec. 25–31 and Jan. 21–31; daily discharge estimated from gage heights, observer's notes, and weather records.

Monthly discharge of Medicine Creek near Galt, Mo., for the year ending September 30, 1926

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,150	48	342	1.52	1.75
November	546	40	140	.622	.69
December	546	29	145	.644	.74
January	1,360	11	218	.969	1.12
February	462	33	142	.631	.66
March	156	28	74.0	.329	.38
April	525	28	137	.609	.68
May	29	9	15.1	.067	.08
June	2,940	6	295	1.31	1.46
July	138	5	23.2	.103	.12
August	48	2	13.4	.060	.07
September	4,640	6	1,070	4.76	5.31
The year	4,640	2	216	.960	13.06

LOCUST CREEK NEAR MILAN, MO.

LOCATION.—In SW. ¼ sec. 8, T. 62 N., R. 20 W., at Booth's bridge on State highway No. 6, 3½ miles southwest of Milan, Sullivan County, and 14 miles above East Locust Creek.

DRAINAGE AREA.—225 square miles (measured on United States soil-survey maps).

RECORDS AVAILABLE.—July 2, 1921, to September 30, 1926.

GAGE.—Chain gage bolted to upstream handrail of bridge; read by Harry McCaughey.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of sand and gravel; shifting. Low-water control is a clean rock and gravel bar 75 feet below gage; subject to occasional changes.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 18.1 feet September 16 and 17 (discharge, 3,260 second-feet); minimum discharge, 2 second-feet August 27–31.

1921–1926: Maximum stage recorded, that of September 16 and 17, 1926. Minimum discharge, 0.8 second-foot October 1, 1922.

ACCURACY.—Stage-discharge relation not permanent: affected by shifting control and by ice. Rating curve fairly well defined. Gage read to hundredths once daily during low stages and twice daily during high stages. Daily discharge ascertained by shifting-control method. Records fair except for periods of ice effect, for which they are poor.

Discharge measurements of Locust Creek near Milan, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 10	5.84	348	July 11	1.87	6.4
Mar. 2	3.51	120	Aug. 29	1.58	1.8
May 8	2.16	16			

Daily discharge, in second-feet, of Locust Creek near Milan, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	802	67	25	20	125	170	55	20	13	8	3	16
2	818	67	24	29	160	116	55	20	14	7	3	9
3	706	106	24	564	111	106	59	19	16	7	3	6
4	818	111	24	922	98	106	190	19	15	6	3	4
5	1,050	111	25	1,190	55	111	466	18	13	6	3	1,170
6	276	116	28	1,190	51	111	690	17	10	6	3	1,510
7	140	111	30	536	51	71	424	17	9	8	3	754
8	120	116	34	354	51	55	674	16	8	8	3	326
9	106	116	674	180	44	55	786	16	7	10	3	1,370
10	55	354	674	160	40	59	690	18	6	8	3	2,090
11	36	642	626	140	40	190	494	20	5	5	3	2,630
12	88	658	564	120	37	200	264	16	5	5	3	976
13	140	240	396	93	37	150	160	15	160	9	3	200
14	264	160	300	84	46	75	71	12	80	5	10	264
15	690	116	240	67	45	75	80	12	340	4	9	2,420
16	396	93	220	59	45	67	80	11	300	4	11	2,940
17	438	71	160	43	44	67	63	12	522	4	17	3,200
18	220	55	130	36	976	63	63	16	1,070	4	14	2,630
19	220	55	93	29	690	67	49	20	1,210	3	6	288
20	210	51	67	29	312	63	40	21	150	3	4	1,050
21	120	42	51	24	424	63	33	20	63	3	4	1,660
22	59	37	36	20	368	80	55	16	41	4	4	2,150
23	51	34	20	20	252	71	98	12	28	4	4	626
24	51	30	13	20	160	71	116	12	55	3	4	200
25	51	29	10	16	535	67	71	10	32	3	3	276
26	51	28	8	20	354	67	63	13	32	3	3	116
27	51	27	8	20	264	63	40	42	19	3	2	84
28	49	27	10	20	180	59	27	20	12	3	2	93
29	51	26	10	20	-------	59	22	16	12	3	2	93
30	51	26	13	24	-------	59	20	10	9	3	2	93
31	51	-------	16	29	-------	55	-------	16	-------	4	2	-------

NOTE.—Stage-discharge relation affected by ice Dec. 16 to Jan. 2, Jan. 5–7, and 10–31; daily discharge estimated from daily gage heights, observer's notes, and weather records. Gage not read; discharge interpolated May 3–7.

Monthly discharge of Locust Creek near Milan, Mo., for the year ending September 30, 1926

[Drainage area, 225 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,050	36	265	1.18	1.36
November	658	26	124	.551	.61
December	674	8	147	.653	.75
January	1,190	16	196	.871	1.00
February	976	37	200	.889	.93
March	200	55	86.8	.386	.45
April	786	20	200	.889	.99
May	42	10	16.8	.075	.09
June	1,210	5	142	.631	.70
July	10	3	5.03	.022	.03
August	17	2	4.58	.020	.02
September	3,200	4	975	4.33	4.83
The year	3,200	2	195	.867	11.76

CHARITON RIVER BASIN

CHARITON RIVER AT ELMER, MO.

LOCATION.—In SW. ¼ SW. ¼ sec. 2, T. 59 N., R. 16 W., at Atchison, Topeka & Santa Fe Railway bridge three-fourths mile southwest of Elmer, Macon County, 1 mile below Walnut Creek, and 3½ miles above Rock Creek.

DRAINAGE AREA.—1,660 square miles (measured on base maps of Missouri and Iowa).

RECORDS AVAILABLE.—July 7, 1921, to September 30, 1926.

GAGE.—Chain gage on downstream side of bridge; read by P. F. Wigal and G. W. Elliott.

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

CHANNEL AND CONTROL.—Bed composed of hardpan and silt; shifting. Banks of medium height, cultivated, and subject to overflow at high stages. Channel was straightened during 1922–23 by means of a small dredged ditch about 1½ miles below gage and just above gage. Channel is now becoming larger through erosion. No well-defined control.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 24.56 feet at 3.50 p. m. September 21 (discharge, 18,700 second-feet); minimum discharge, 27 second-feet June 12.

1921–1926: Maximum stage recorded, that of September 21, 1926. Minimum discharge, 23 second-feet on numerous days during November and December, 1924, and January and September, 1925.

ICE.—Stage-discharge relation affected by ice.

REGULATION.—None.

ACCURACY.—Stage-discharge relation changed during August; affected by ice. Rating curve used until August 27 fairly well defined above 100 second-feet; curve used after that date fairly well defined. Gage read to hundredths once or twice daily. Daily discharge ascertained by applying mean daily gage height to rating table, except from July 13 to August 27 when shifting-control method was used. Records fair except for periods of ice effect, for which they are poor.

Discharge measurements of Chariton River at Elmer, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 8	9.80	1,880	Aug. 27	3.87	198	Sept. 16	21.80	11,000
Mar. 1	8.02	1.460	Aug. 28	3.56	151	Sept. 20	23.91	15,500
Apr. 11	14.11	4,690	Aug. 29	3.23	124	Sept. 21	24.49	18,500
Apr. 12	12.42	3,410	Sept. 13	19.41	8,100	Sept. 29	13.24	4,180
Apr. 14	8.39	1,370	Sept. 14	20.33	8,870	Sept. 30	13.07	4,020
May 7	4.05	175	Sept. 15	20.85	9,290			
July 10	4.11	181	Sept. 16	21.56	10,600			

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,010	427	183	167	301	2,080	83	284	447	353	208	162
2	4,920	371	191	175	353	950	102	267	233	301	267	480
3	3,150	371	199	427	389	730	152	250	152	267	250	580
4	3,450	467	216	4,400	467	565	284	216	108	233	152	1,120
5	4,720	590	353	4,140	490	490	447	216	95	216	67	1,460
6	4,340	615	950	3,450	407	407	2,260	183	83	233	62	3,630
7	4,270	760	640	2,980	371	389	3,390	167	72	199	56	3,330
8	3,210	2,100	985	2,200	353	301	3,690	167	54	191	58	3,510
9	4,920	1,500	1,640	1,900	335	233	5,700	175	47	183	41	5,380
10	1,090	1,770	2,150	1,320	250	250	4,790	233	37	284	37	5,900
11	850	2,760	2,050	1,020	233	820	4,660	216	31	233	37	6,390
12	640	2,980	1,900	850	199	820	3,360	167	27	389	34	7,230
13	565	2,420	1,860	670	216	427	2,050	144	34	850	78	7,980
14	670	1,900	1,640	565	233	447	1,320	130	5,440	670	318	8,830
15	2,810	1,280	1,460	540	371	515	915	122	3,390	590	730	9,500
16	2,260	1,120	790	407	389	467	700	108	4,530	515	267	10,400
17	3,630	790	490	371	427	447	565	108	6,320	427	371	12,400
18	3,210	670	467	353	4,600	407	447	108	6,390	233	407	14,000
19	1,900	515	467	389	3,150	407	371	108	5,970	160	389	14,900
20	1,060	389	467	407	2,150	427	318	108	5,640	122	267	15,900
21	820	389	565	447	2,200	490	284	102	6,040	95	250	18,200
22	670	447	950	389	3,390	540	389	95	6,250	108	950	17,200
23	540	371	790	301	3,210	565	985	83	6,180	167	760	15,500
24	427	335	640	250	3,270	540	2,260	83	5,700	108	615	12,000
25	467	318	490	216	3,510	490	1,820	83	4,920	89	565	9,100
26	760	318	389	199	3,630	427	950	83	3,270	56	407	7,510
27	1,020	301	318	199	3,570	335	565	137	1,410	62	250	5,830
28	880	284	233	183	3,210	284	427	790	760	67	162	4,720
29	760	267	199	183	-------	250	371	880	540	52	123	4,010
30	640	199	183	199	-------	208	318	1,020	427	45	114	3,690
31	467	-------	167	250	-------	167	-------	850	-------	43	118	-------

NOTE.—Stage-discharge relation affected by ice Dec. 24 to Jan. 1, and Jan. 22 to Feb. 3; daily discharge estimated from gage heights, observer's notes, and weather records. Gage not read; discharge interpolated Mar. 1 and Apr. 12.

Monthly discharge of Chariton River at Elmer, Mo., for the year ending September 30, 1926

[Drainage area, 1,660 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	4,920	427	2,040	1.23	1.42
November	2,980	199	901	.543	.61
December	2,150	167	775	.467	.54
January	4,400	167	953	.574	.66
February	4,600	199	1,490	.898	.94
March	2,080	167	512	.308	.36
April	5,700	83	1,470	.886	.99
May	1,020	83	248	.149	.17
June	6,390	27	2,490	1.50	1.67
July	850	43	243	.146	.17
August	950	34	271	.163	.19
September	18,200	162	7,690	4.63	5.17
The year	18,200	27	1,570	.946	12.89

LAMINE RIVER BASIN

LAMINE RIVER AT CLIFTON CITY, MO.

LOCATION.—In NW. ¼ sec. 16, T. 46 N., R. 19 W., at highway bridge 300 feet above Missouri, Kansas & Texas Railway bridge, three-fourths mile east of Clifton City, Cooper County, and 2 miles below Honey Creek.

DRAINAGE AREA.—598 square miles (measured on topographic maps).

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

GAGE.—Chain gage on downstream side of bridge; read by Henry Lorenz.

DISCHARGE MEASUREMENTS.—Made from highway or railway bridges or by wading.

CHANNEL AND CONTROL.—Bed composed of clean, coarse gravel. Control is a coarse gravel bar 200 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 21.64 feet at 6 p. m. September 10 (discharge, 11,300 second-feet); minimum stage, 1.46 feet August 11 (discharge, 5 second-feet).

1922–1926: Maximum stage recorded, that of September 10, 1926; minimum discharge, 1 second-foot September 27, 1924.

ACCURACY.—Stage-discharge relation permanent during year; not affected by ice. Rating curve fairly well defined above 10 second-feet. Gage read to hundredths once daily during low stages and twice daily during high stages. Daily discharge ascertained by applying mean daily gage height to rating table. Records fair.

Discharge measurements of Lamine River at Clifton City, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 8	20.12	[a] 9,710	Mar. 10	2.46	149	Sept. 2	9.31	[a] 3,030
Do	21.07	10,600	May 13	2.51	157			
Nov. 10	4.39	760	July 15	1.77	21			

[a] Made during rapidly changing stages; computed discharges for constant stage, 9,580 and 2,880 second-feet, respectively.

Daily discharge, in second-feet, of Lamine River at Clifton City, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,540	79	111	59	200	320	230	107	1,180	17	12	1,500
2	930	71	97	63	290	260	305	93	380	16	8	2,890
3	510	67	88	365	320	200	2,300	88	615	14	6	1,500
4	175	63	116	1,460	320	175	4,280	84	260	12	22	3,340
5	111	59	410	615	245	160	4,020	79	150	11	16	5,540
6	102	53	615	440	188	150	3,160	71	97	10	12	2,940
7	75	4,580	545	290	175	150	5,970	59	67	11	10	475
8	53	9,640	1,260	245	165	145	1,700	53	50	14	9	305
9	47	3,120	2,060	200	150	135	825	56	42	1,580	8	5,630
10	39	755	2,140	160	135	138	545	93	37	410	6	10,200
11	32	545	1,420	140	116	825	1,260	111	32	135	5	3,660
12	30	410	790	120	111	825	2,220	116	28	75	27	475
13	28	275	545	102	102	410	1,100	152	25	42	135	2,140
14	305	230	510	88	97	290	615	120	23	27	440	1,340
15	63	290	650	84	88	260	440	97	22	14	1,260	545
16	260	510	580	79	79	230	350	93	19	9	825	410
17	1,740	685	380	93	75	188	275	63	28	8	3,340	305
18	825	895	290	165	125	165	230	53	27	14	895	230
19	335	615	230	365	4,680	175	200	61	25	11	200	175
20	200	365	260	320	1,740	545	175	67	25	10	1,000	145

Daily discharge, in second-feet, of Lamine River at Clifton City, Mo., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
21	145	290	380	305	1,300	2,620	155	53	615	10	2,220	135
22	107	230	320	188	615	930	165	44	305	10	380	97
23	88	200	188	245	475	1,380	175	38	111	15	755	79
24	130	175	165	155	365	650	290	32	67	28	2,300	67
25	275	160	150	102	2,380	410	290	28	56	25	410	88
26	230	150	135	88	1,180	320	230	27	34	37	230	107
27	155	188	125	79	615	245	175	20	27	67	135	245
28	125	200	116	79	410	215	150	19	27	30	88	4,580
29	111	165	97	125	-------	188	130	19	28	16	59	3,070
30	102	145	79	130	-------	175	116	23	25	10	67	2,380
31	93	-------	59	135	-------	215	-------	580	-------	20	2,620	-------

Monthly discharge of Lamine River at Clifton City, Mo., for the year ending September 30, 1926

[Drainage area, 598 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,740	28	289	0.483	0.56
November	9,640	53	840	1.40	1.56
December	2,140	59	481	.804	.93
January	1,460	59	229	.383	.44
February	4,680	75	598	1.00	1.04
March	2,620	135	422	.706	.81
April	5,970	116	1,070	1.79	2.00
May	580	19	83.8	.140	.16
June	1,180	19	148	.247	.28
July	1,580	8	87.4	.146	.17
August	3,340	5	565	.945	1.09
September	10,200	67	1,820	3.04	3.39
The year	10,200	5	548	.916	12.43

BLACKWATER RIVER AT BLUE LICK, MO.

LOCATION.—On line between secs. 27 and 34, T. 49 N., R. 21 W., at bridge on State highway No. 65, three-fourths mile below Finney Creek, 1 mile south of Blue Lick, Saline County, and 12 miles above Salt Creek.

DRAINAGE AREA.—1,120 square miles (measured on topographic maps).

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

GAGE.—Chain gage on upstream side of bridge; read by Mrs. Julia Sadewhite.

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

CHANNEL AND CONTROL.—Bed composed of clean hardpan and silt; probably shifting. Right bank high and rocky; never overflowed. Left bank cultivated; subject to overflow at stage of about 30 feet. Control is gravel bar 300 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 28.05 feet at 1.15 p. m. April 8 (discharge, 10,000 second-feet); minimum discharge, 0.8 second-foot July 21.

1922–1926: Maximum discharge recorded, 10,800 second-feet June 30, 1924; minimum discharge, 0.6 second-foot June 12 and September 1, 1925.

ACCURACY.—Stage-discharge relation changed slightly several times during the year; not affected by ice. Rating curve fairly well defined above 15 second-feet. Gage read to hundredths once daily except on Sundays. Daily discharge ascertained by applying daily gage height to rating table. Records fair except for estimated periods and during extremely low stages, for which they are poor.

Discharge measurements of Blackwater River at Blue Lick, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 15	2.24	89	Apr. 10	23.75	[a] 6,580	July 14	1.46	17
Mar. 9	2.92	177	Apr. 11	13.90	3,010	Sept. 24	1.44	20
Apr. 9	28.04	9,980	May 13	2.67	162			

[a] Made during rapidly falling stage; computed discharge for constant stage, 6,860 second-feet.

Daily discharge, in second-feet, of Blackwater River at Blue Lick, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	[a] 10	20	[a] 60	1,280	440	116	[a] 222	504	3	[a] 110	835
2	46	6	18	36	[a] 980	280	[a] 326	[a] 198	166	2	23	3,280
3	985	6	32	[a] 1,260	590	296	536	173	53	4	19	3,920
4	[a] 514	4	23	2,480	280	264	[a] 1,000	188	233	[a] 3	11	2,190
5	44	8	[a] 54	2,040	173	248	5,040	158	75	[a] 2	8	[a] 1,200
6	248	2	[a] 85	536	91	203	6,550	188	[a] 53	1	3	[a] 700
7	264	67	116	392	[a] 124	[a] 180	8,280	150	31	60	3	248
8	78	[a] 1,140	296	264	158	158	9,640	166	24	1,060	[a] 2	188
9	39	2,220	1,470	296	103	136	10,000	[a] 2,000	20	4,720	2	2,900
10	18	536	2,440	[a] 206	110	158	6,850	1,890	17	3,840	2	4,120
11	[a] 15	196	1,500	116	91	328	5,720	488	14	[a] 900	2	2,830
12	12	129	860	116	59	644	4,060	203	[a] 11	91	4	[a] 2,000
13	10	91	[a] 1,390	103	57	376	3,880	166	[a] 7	39	3	1,170
14	50	79	[a] 1,920	79	[a] 68	[a] 282	1,170	129	4	20	7	626
15	218	[a] 94	2,440	66	79	188	644	103	97	17	[a] 1,500	1,300
16	376	110	2,410	65	61	203	488	[a] 91	136	11	3,180	554
17	608	97	960	[a] 196	55	188	456	79	20	8	1,920	328
18	[a] 359	85	810	328	1,360	150	[a] 440	77	36	[a] 6	1,090	150
19	110	50	264	1,590	4,260	143	424	173	21	3	143	[a] 327
20	79	71	[a] 280	1,440	4,520	440	248	91	[a] 50	2	590	504
21	44	41	[a] 600	1,220	[a] 3,830	[a] 524	248	71	79	.8	280	53
22	23	[a] 34	[a] 520	150	[a] 3,130	608	264	53	328	2	[a] 120	29
23	18	28	[a] 300	70	2,440	810	810	[a] 46	110	2	51	23
24	85	25	[a] 287	[a] 71	680	608	2,070	40	72	2	55	19
25	[a] 129	18	[a] 274	72	3,810	344	[a] 800	27	203	[a] 2	456	11
26	136	[a] 19	[a] 261	53	5,040	233	488	26	59	2	116	[a] 10
27	68	20	[a] 247	68	3,040	166	344	23	[a] 36	1	50	9
28	35	27	233	64	[a] 700	[a] 151	296	20	13	1	31	91
29	12	[a] 26	129	203	-------	136	[a] 271	53	16	[a] 1	[a] 50	1,060
30	19	26	[a] 106	188	-------	122	[a] 247	[a] 110	2	1	70	5,080
31	13	-------	[a] 83	[a] 734	-------	[a] 119	-------	166	-------	264	572	-------

[a] Gage not read; discharge interpolated or estimated.

Monthly discharge of Blackwater River at Blue Lick, Mo., for the year ending September 30, 1926

[Drainage area, 1,120 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	985	10	151	0.135	0.16
November	2,220	2	176	.157	.18
December	2,440	18	659	.588	.68
January	2,480	36	470	.420	.48
February	5,040	55	1,330	1.19	1.24
March	810	119	294	.262	.30
April	10,000	116	2,390	2.13	2.38
May	2,000	20	243	.217	.25
June	504	2	83	.074	.08
July	4,720	.8	357	.319	.37
August	3,180	2	338	.302	.35
September	5,080	9	1,190	1.06	1.18
The year	10,000	.8	631	.563	7.65

OSAGE (MARAIS DES CYGNES) RIVER BASIN

OSAGE RIVER NEAR QUENEMO, KANS.

LOCATION.—In NW. ¼ sec. 7, T. 17 S., R. 18 E., on highway bridge 2½ miles below Dragoon Creek, 3 miles below Salt Creek, and 3 miles east of Quenemo, Osage County.

DRAINAGE AREA.—1,030 square miles.

RECORDS AVAILABLE.—June 17, 1922, to September 30, 1926.

GAGE.—Chain gage on upstream handrail of bridge; read by Mrs. T. H. King.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of shale and silt; practically permanent. Control for low and medium stages is short riffle over solid rock 300 feet below gage. Bank-full stage, 27 feet.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 17.18 feet at 5 p. m. September 13 (discharge, 4,230 second-feet); no flow July 27, 29, August 17, and 22.

1922–1926: Maximum stage recorded, 34.65 feet June 11, 1923 (discharge, 17,700 second-feet); no flow for days in July and August, 1926.

ICE.—Stage-discharge relation affected by ice during extremely cold weather.

REGULATION.—None.

ACCURACY.—Stage-discharge relation practically permanent except as affected by ice. Rating curve fairly well defined between 10 and 3,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good except for high and extremely low stages, for which they are poor.

Discharge measurements of Osage River near Quenemo, Kans., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Mar. 2	3.30	75.3	Apr. 10	10.58	1,790
Apr. 10	10.67	1,850	July 9	2.30	.45

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2	2	4	2	10	87	60	56	29	1.8	18	8
2	1	2	4	2	10	64	71	53	1,920	1.7	8	17
3	1	2	4	2	10	49	80	50	1,260	1.5	3.2	8
4	1	2	4		11	44	208	46	178	1.2	2.3	9
5	1	2	4		10	40	2,500	42	130	1.3	1.9	124
6	1	2	4	2	8	35	1,430	36	84	1.0	1.8	58
7	1	14	3		8	30	1,510	33	45	.9	1.5	28
8	1	169	3		8	26	1,590	111	22	.6	.9	18
9	1	89	4		10	24	1,780	384	67	.3	.6	11
10	1	56	4		10	27	1,840	1,510	178	.1	.4	6

Daily discharge, in second-feet, of Osage River near Quenemo, Kans., for the year ending September 30, 1926—Continued

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
11	1	38	4		8	74	1,530	540	169	12	0.2	4
12	1	28	4		6	58	3,140	514	73	1.4	.1	900
13	1	21	4		8	43	1,560	420	14	1.3	.6	3,700
14	1	15	4		6	41	564	230	11	.8	.5	1,860
15	1	14	4		6	41	396	169	8	.8	.3	420
16	2	13	4		5	36	324	108	6	.7	.2	1,040
17	2	14	4		6	33	264	87	151	.6	.0	564
18	1	11	4		9	29	208	126	198	.4	.1	230
19	1	6	4	1	22	31	178	276	83	.4	.3	87
20	1	8	3		24	77	151	142	65	.4	.3	53
21	1	6	3		86	73	133	86	18	.3	.1	33
22	1	4	2		198	70	116	58	12	.6	.0	22
23	1	4	2		230	71	116	43	10	.3	4	16
24	1	4	2		241	73	133	35	8	.2	1.1	11
25	6	4	2		234	86	124	27	6	.2	.7	5
26	13	4	3		169	80	116	20	4	.3	.4	4
27	4	4	3	10	133	62	97	17	3	.0	.2	5
28	4	4	3	8	116	55	86	11	2	.1	.3	6
29	3	4	3	10	-------	43	78	10	2	.0	.7	5
30	3	5	3	11	-------	20	66	6	2	.4	1.1	6
31	3	-------	3	10	-------	28	-------	50	-------	3.0	1.6	-------

NOTE.—Stage-discharge relation affected by ice Dec. 19–28 and Jan. 4–27; discharge estimated. Braced figures give mean discharge for periods indicated.

Monthly discharge of Osage River near Quenemo, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	13	1	2.03	125
November	169	2	18.4	1,090
December	4	2	3.42	210
January	11	1	2.74	168
February	241	5	57.2	3,180
March	87	20	50.0	3,070
April	3,140	60	682	40,600
May	1,510	6	171	10,500
June	1,920	2	159	9,460
July	12	0	1.12	69
August	18	0	1.54	95
September	3,700	4	309	18,400
The year	3,700	0	120	87,000

OSAGE RIVER NEAR OTTAWA, KANS.

LOCATION.—In NW. ¼ sec. 6, T. 17 S., R. 20 E., at highway bridge on East Seventh Street, 1½ miles southeast of Ottawa, Franklin County, three-fourths mile below Skunk Creek, 2¾ miles below Eightmile Creek, and 3¼ miles below water works dam of the city of Ottawa.

DRAINAGE AREA.—1,250 square miles.

RECORDS AVAILABLE.—October 27, 1918, to September 30, 1926. From August 26, 1902, to October 31, 1905, records were obtained at Main Street Bridge in Ottawa.

GAGE.—Stevens water-stage recorder on right bank 100 feet upstream from bridge; inspected by J. M. Lewis.

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

CHANNEL AND CONTROL.—Bed composed of shale; practically permanent. No well-defined control. Bank-full stage, 27 feet.

EXTREMES OF DISCHARGE.—Maximum stage during year, from water-stage recorder, 11.16 feet at 10 p. m. April 12 (discharge, 3,710 second-feet); minimum stage, 1.21 feet August 8 (discharge, 0.6 second-foot).

1918–1926: Maximum stage recorded, 32.9 feet April 10, 1922 (discharge, 17,400 second-feet); no flow June 27 and 28, 1920.

Highest known stage, about 38 feet, referenced by local residents during flood of July, 1909.

ICE.—Stage-discharge relation affected by ice.

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

DIVERSIONS.—The city of Ottawa diverts water from storage dams for the city water supply.

ACCURACY.—Stage-discharge relation changed during high water in June. Rating curves fairly well defined. Operation of water-stage recorder unsatisfactory for a few periods. Daily discharge ascertained by applying to rating table mean daily gage height obtained by inspection of recorder graph. Records good except for estimated periods and for extremely low stages, for which they are poor.

Discharge measurements of Osage River near Ottawa, Kans., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 24	[a] 1.55	10	May 13	4.42	675	Sept. 13	9.16	2,290
Mar. 2	2.37	112	July 6	1.27	.84	Do	9.30	2,520
Apr. 10	7.76	2,000						

[a] Stage-discharge relation affected by ice.

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		54	17		25	162	92	72	95	5.5	1.0	237
2		44	17		26	130	110	65	310	4.0	3.0	56
3		40	18		25	100	137	65	1,860	3.5	3.5	33
4		40	16		24	84	478	62	337	3.0	1.0	37
5	3	35	15		24	72	2,630	56	139	3.0	1.0	87
6			16		23	70	2,230	49	78	1.5	1.0	98
7			15		22	62	1,670	49	54	1.0	.8	56
8	3		15		22	54	1,750	53	36	1.0	.6	35
9	3		15		23	52	1,850	79	35	2.0	.7	25
10	3	125	15		23	58	1,940	693	183	1.0	.9	19
11	3		15	4	22	86	1,760	773	81	1.0	.9	16
12	3		15		22	112	3,180	478	47	19	1.0	76
13	3	35	15		22	98	2,630	680	25	38	1.0	1,930
14	7	36	15		23	81	944	343	19	11	1.0	2,710
15	3	37	15		21	70	583	200	13	5.0	1.0	731
16	8	34	15		20	68	449	150	25	1.5	1.0	908
17	19	33	15		21	61	365	119	49	1.0	1.0	786
18	17	32	15		30	57	302	103	292	.8	1.0	292
19	11	31	14		39	61	236	379	113	.6	12	144
20	8	26	12		44	110	198	246	52	.7	3.5	78
21	6	24	9		97	154	175	122	33	.9	.8	49
22	6	24	8		351	128	175	84	33	1.0	.8	35
23	7	22	9		464	115	212	65	27	.9	1.0	26
24	21	21	10		478	110	220	50	20	1.0	.9	20
25	27	21	10	3	553	98	184	42	16	.9	.8	17
26	32	19	10		435	105	140	35	13	.9	.8	15
27	37	19	10		284	102	119	29	11	.9	.8	20
28	33	18		5	205	84	121	25	10	1.0	.8	18
29	32	17	10	10	-------	76	89	20	7	.9	.8	17
30	144	17		15	-------	79	76	21	6	.9	.9	24
31	84	-------		25	-------	81	-------	337	-------	1.0	27	-------

NOTE.—Stage-discharge relation affected by ice Dec. 20 to Jan. 30; discharge estimated. Water-stage recorder not in operation Oct. 1–7 and Nov. 3–12; discharge based on climatic data. Braced figures give mean discharge for periods indicated.

Monthly discharge of Osage River near Ottawa, Kans., for the year ending September 30, 1926

Month	Discharge in second-feet			Run-off in acre-feet
	Maximum	Minimum	Mean	
October	144	----------	17.5	1,080
November	----------	17	51.8	3,080
December	18	----------	13.3	818
January	25	----------	5.06	311
February	553	20	120	6,660
March	162	52	89.7	5,520
April	3,180	76	835	49,700
May	773	20	179	11,000
June	1,860	6	134	7,980
July	38	.6	3.69	227
August	27	.6	2.33	143
September	2,710	15	286	17,000
The year	3,180	.6	143	104,000

OSAGE RIVER AT OSCEOLA, MO.

LOCATION.—In NW. ¼ sec. 20, T. 38 N., R. 25 W., at highway bridge in Osceola, St. Clair County, one-fourth mile above St. Louis-San Francisco Railway bridge, three-fourths mile above Gallinipper Creek, and 3 miles below Sac River.

DRAINAGE AREA.—8,180 square miles (measured on topographic maps).

RECORDS AVAILABLE.—July 23, 1921, to September 30, 1926. The United States Weather Bureau has obtained records of stage since April 1, 1910.

GAGE.—Chain gage on downstream side of bridge; read by J. T. Fields.

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

CHANNEL AND CONTROL.—Bed composed of silt, sand, and rock. Right bank high and lightly wooded. Left bank cultivated; subject to overflow at stage of about 22 feet. Control is a heavy gravel bar one-fourth mile below gage; fairly permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 16.9 feet at 9.30 a. m. November 9 (discharge, 31,100 second-feet); minimum stage, 0.80 foot August 10–15 (discharge, 76 second-feet).

1921–1926: Maximum stage recorded, 28.8 feet April 10, 1922 (discharge, 65,000 second-feet); minimum stage, 0.60 foot September 4, 1925 (discharge, 40 second-feet).

The flood of December, 1895, reached a stage of 33.27 feet. and flood of 1844 a stage of 45.3 feet (determined by United States Weather Bureau).

REGULATION.—Dams and power plants on headwaters and tributaries have no noticeable effect at the station.

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

Discharge measurements of Osage River at Osceola, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 27	2.22	1,490	May 22	1.68	754
Mar. 11	3.03	2,900	July 23	1.32	333

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,180	1,000	1,490	930	1,930	3,880	2,980	2,080	1,070	580	132	678
2	7,600	930	1,420	930	2,230	3,130	4,940	1,930	2,530	445	258	1,000
3	6,200	804	1,350	1,140	2,230	2,680	8,800	1,780	4,180	380	175	1,490
4	4,940	902	1,560	2,080	2,230	2,380	14,800	1,700	8,800	380	154	1,490
5	3,580	790	2,230	2,830	1,930	2,080	17,300	1,630	9,800	445	117	6,600
6	3,580	818	2,680	3,130	1,630	1,930	18,000	1,490	8,600	258	102	19,400
7	3,130	11,100	2,830	2,830	1,350	1,930	18,800	1,350	3,730	216	108	22,200
8	2,530	27,500	3,580	2,680	1,630	1,700	19,400	1,280	2,080	190	102	15,800
9	2,080	30,000	5,460	2,080	1,630	1,700	18,000	2,230	1,630	277	89	15,800
10	1,780	23,500	6,400	1,700	1,560	1,700	12,700	1,490	1,700	245	76	13,600
11	1,630	18,600	5,100	1,560	1,350	2,380	8,800	1,490	1,780	245	76	11,100
12	1,490	17,300	4,180	1,420	1,350	4,180	12,500	1,490	1,780	216	76	9,400
13	1,350	13,800	3,430	1,490	1,210	3,880	14,000	1,780	1,780	126	76	17,100
14	1,210	7,800	3,130	1,490	1,210	3,580	13,000	2,230	1,210	145	76	21,300
15	1,140	4,630	2,830	1,210	1,210	3,130	10,200	2,080	1,070	126	76	20,500
16	1,070	4,630	2,680	1,210	1,070	2,680	7,800	1,780	1,070	164	154	18,400
17	1,210	4,330	2,380	1,420	1,140	2,380	4,630	1,490	1,140	111	790	18,000
18	1,630	3,730	2,080	2,830	2,080	2,230	3,730	1,350	1,350	145	3,880	17,500
19	2,230	3,280	1,930	4,940	6,600	2,080	3,280	1,140	1,860	164	4,480	14,800
20	2,380	2,980	1,930	5,460	7,400	2,080	2,830	930	1,930	84	3,580	8,800
21	2,080	2,680	1,930	5,100	5,460	2,230	2,680	860	2,080	126	9,000	4,030
22	1,700	2,380	1,930	3,430	3,880	2,380	2,530	860	1,780	164	10,600	2,380
23	1,560	2,230	1,930	2,380	3,280	2,680	2,830	930	1,350	362	5,100	1,930
24	1,350	2,080	1,700	2,080	3,580	2,530	5,640	930	1,860	200	4,180	1,780
25	1,210	1,930	1,490	2,080	4,940	2,380	7,800	720	1,420	175	3,730	1,930
26	1,140	1,930	1,350	2,080	7,400	2,080	6,200	650	1,140	175	2,980	1,930
27	1,490	1,780	1,280	1,930	7,600	1,930	4,940	580	1,420	175	1,930	1,630
28	1,780	1,780	1,000	1,930	5,820	1,630	3,580	445	1,070	117	1,210	1,700
29	1,560	1,780	930	1,930	-------	1,630	2,530	380	930	132	930	11,700
30	1,350	1,560	930	1,930	-------	1,780	2,230	335	720	117	538	16,700
31	1,210	-------	916	1,930	-------	1,930	-------	1,630	-------	117	510	-------

Monthly discharge of Osage River at Osceola, Mo., for the year ending September 30, 1926

[Drainage area, 8,180 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	7,600	1,070	2,300	0.281	0.32
November	30,000	790	6,620	.809	.90
December	6,400	916	2,390	.292	.34
January	5,460	930	2,260	.276	.32
February	7,600	1,070	3,030	.370	.39
March	4,180	1,630	2,420	.296	.34
April	19,400	2,230	8,580	1.05	1.17
May	2,230	335	1,320	.161	.19
June	9,800	720	2,430	.297	.33
July	580	84	219	.027	.03
August	10,600	76	1,780	.218	.25
September	22,200	678	10,000	1.22	1.36
The year	30,000	76	3,580	.438	5.94

OSAGE RIVER AT WARSAW, MO.

LOCATION.—In NE. ¼ SW. ¼ sec. 17, T. 40 N., R. 22 W., at Warsaw, Benton County, 2½ miles below Tebo Creek, and 3 miles below South Grand River.

DRAINAGE AREA.—11,500 square miles (measured on topographic maps).

RECORDS AVAILABLE.—October 1, 1925, to September 30, 1926. The United States Weather Bureau has obtained records of stage since March, 1917.

GAGE.—Inclined staff gage of United States Weather Bureau on left bank; read by Julius Yeager. Zero of gage is 631.54 feet above mean sea level.

DISCHARGE MEASUREMENTS.—Made from highway bridge 1 mile below gage or by wading.

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

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 20.1 feet at 7 a. m. November 9 (discharge, 42,400 second-feet); minimum stage, 1.2 feet at 7 a. m. August 12 (discharge, 90 second-feet).

In December, 1895, the river reached a stage of 38.1 feet and in 1844 a stage of 44.4 feet (determined by United States Weather Bureau).

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

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

Discharge measurements of Osage River at Warsaw, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Dec. 3	3.11	1,830	May 20	2.90	1,690
Mar. 12	5.90	8,110	July 22	1.42	161
Apr. 12	10.56	19,000			

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18,500	1,600	2,080	1,320	3,520	9,020	3,740	3,520	845	845	198	1,460
2	13,200	1,460	2,080	1,320	3,520	6,380	6,160	3,080	1,460	740	198	1,070
3	13,200	1,460	1,920	1,320	3,740	5,500	13,400	2,880	2,080	637	153	955
4	8,580	1,320	1,760	3,740	3,740	4,620	20,400	2,480	5,500	542	312	1,920
5	7,480	1,190	3,300	5,060	3,520	4,620	24,000	2,480	9,940	457	250	7,040
6	5,500	1,190	5,060	5,940	3,300	3,520	24,700	2,280	10,900	457	250	18,500
7	5,500	11,600	5,720	5,500	2,880	3,300	27,400	2,080	8,580	382	198	25,400
8	5,060	39,400	6,600	4,620	2,680	3,080	27,800	1,920	5,060	1,320	153	23,700
9	4,180	42,400	10,400	4,180	2,880	2,880	30,100	2,480	2,880	740	120	25,700
10	3,300	39,800	12,900	3,300	2,280	2,680	29,100	3,960	2,080	457	120	27,800
11	2,680	31,400	12,200	2,680	2,280	4,840	22,100	3,520	2,080	457	120	21,800
12	2,280	23,500	9,480	2,280	2,080	7,260	18,500	2,680	2,080	382	90	14,600
13	2,080	19,700	7,480	2,480	1,920	8,800	20,400	2,480	2,080	312	637	26,600
14	1,920	15,600	6,380	1,920	1,760	7,260	19,900	2,280	1,920	312	312	23,300
15	1,760	12,000	5,720	1,760	1,760	6,160	17,000	3,300	1,460	250	457	24,900
16	1,600	7,700	5,940	1,600	1,760	5,280	13,400	2,880	1,190	198	250	23,500
17	4,840	7,480	5,500	1,600	1,600	4,840	9,940	2,880	1,190	198	2,480	21,100
18	4,840	7,040	4,620	2,080	1,760	4,400	7,260	2,280	1,070	153	1,600	20,400
19	3,300	6,160	3,960	5,280	8,800	3,960	5,940	1,920	1,190	198	13,400	19,400
20	3,960	5,500	3,520	8,360	15,300	5,500	5,280	1,600	1,460	153	8,360	16,800
21	3,960	4,840	3,300	8,580	14,100	5,500	4,620	1,460	3,300	153	7,480	10,400
22	3,300	4,180	3,080	7,040	10,200	5,500	4,180	1,190	2,480	162	15,300	5,720
23	2,680	3,960	2,680	5,500	7,480	5,060	4,180	1,190	2,080	198	13,900	3,740
24	2,280	3,520	2,280	4,180	6,160	5,060	4,400	1,070	1,460	153	13,700	2,680
25	2,080	3,300	2,080	3,300	6,820	4,840	6,160	1,070	1,460	326	6,820	2,480
26	1,760	2,880	1,920	3,300	11,000	4,400	8,360	1,070	1,460	312	4,400	3,300
27	1,920	2,680	1,760	3,300	13,900	3,740	8,580	955	1,190	224	4,620	3,740
28	2,080	2,680	1,460	3,080	12,900	3,080	6,380	845	1,190	198	3,300	9,940
29	2,480	2,480	1,460	3,060	-------	2,680	4,840	740	1,320	198	1,920	14,100
30	2,280	2,280	1,460	3,080	-------	2,680	3,960	740	1,070	208	1,460	19,900
31	1,920	-------	1,320	3,300	-------	2,680	-------	1,190	-------	153	1,460	-------

Monthly discharge of Osage River at Warsaw, Mo., for the year ending September 30, 1926

[Drainage area, 11,500 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	18,500	1,600	4,530	0.394	0.45
November	42,400	1,190	10,300	.896	1.00
December	12,900	1,320	4,500	.391	.45
January	8,580	1,320	3,680	.320	.37
February	15,300	1,600	5,510	.479	.50
March	9,020	2,680	4,810	.418	.48
April	30,100	3,740	13,400	1.17	1.30
May	3,960	740	2,080	.181	.21
June	10,900	845	2,740	.238	.27
July	1,320	153	370	.032	.04
August	15,300	90	3,360	.292	.34
September	27,800	955	14,100	1.23	1.37
The year	42,400	90	5,740	.499	6.78

OSAGE RIVER NEAR BAGNELL, MO.

LOCATION.—In N. ½ SE. ¼ sec. 21, T. 40 N., R. 15 W., 1 mile above Little Gravois Creek and 1½ miles above Bagnell, Miller County.

DRAINAGE AREA.—14,000 square miles (measured on topographic maps and base map of Missouri).

RECORDS AVAILABLE.—May 5, 1925, to September 30, 1926.

GAGE.—Vertical staff gage in six sections fastened to posts or trees on left bank; read by L. E. Strange. Zero of gage is 549.75 feet above mean sea level.

DISCHARGE MEASUREMENTS.—Made from cable or by wading.

CHANNEL AND CONTROL.—Bed composed of mud and gravel. Control is a gravel bar half a mile below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum discharge during year, 52,400 second-feet (measured with current meter), November 10; minimum discharge, 505 second-feet July 27 and 28.

1925–1926: Maximum discharge, that of November 10, 1925; minimum discharge, 324 second-feet September 10–12, 1925.

Flood of December 22, 1895, reached a stage of 38.9 feet, determined by levels to high-water mark.

ACCURACY.—Stage-discharge relation at low stages changed, probably during high water in April; not affected by ice. Rating curves well defined above and fairly well defined below 4,470 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

Discharge measurements of Osage River near Bagnell, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 3	11.75	17,500	Nov. 12	17.55	35,100	Mar. 13	9.78	11,600
Oct. 31	6.26	3,100	Do	16.82	32,000	May 18	6.58	3,460
Nov. 9	21.47	51,300	Nov. 13	14.70	26,800	July 20	4.52	578
Nov. 10	21.81	52,400	Nov. 17	9.16	10,000			
Nov. 11	20.10	44,700	Dec. 2	6.44	3,030			

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13,900	2,470	3,330	2,170	4,010	14,200	5,160	4,930	1,680	1,760	700	2,920
2	21,700	2,270	3,330	2,070	4,010	10,800	6,560	4,240	2,920	1,530	780	3,340
3	17,500	2,070	3,110	2,170	4,240	7,810	13,900	4,010	2,000	1,400	780	2,720
4	15,400	1,980	3,110	2,170	4,470	6,560	21,400	3,550	2,340	1,210	822	3,130
5	11,600	1,800	3,330	4,240	4,470	5,620	25,600	3,340	5,620	1,100	822	12,800
6	8,860	1,630	4,700	5,390	4,240	4,930	27,600	3,130	10,200	1,050	740	19,900
7	6,800	18,700	6,320	6,560	4,010	4,470	29,600	3,130	11,100	955	665	24,600
8	6,320	44,100	7,050	6,080	3,780	4,240	30,900	2,920	8,590	910	665	27,600
9	5,620	49,200	8,860	5,390	3,550	4,010	31,600	2,920	5,620	910	630	26,900
10	4,700	50,200	12,800	4,470	3,330	4,010	32,600	3,340	4,010	1,530	598	32,600
11	4,010	45,800	14,500	4,010	3,110	6,080	30,600	4,930	2,920	1,340	565	31,600
12	3,550	34,900	13,400	3,550	3,110	9,400	24,600	5,620	2,520	1,100	565	24,000
13	3,110	25,600	11,100	3,110	2,890	11,400	22,400	4,010	2,720	955	565	21,400
14	2,680	20,800	8,860	2,890	2,890	11,600	22,700	3,780	2,720	910	700	27,300
15	2,470	16,900	7,300	2,680	2,680	10,000	21,400	3,550	2,520	822	780	26,900
16	2,370	12,200	6,800	2,470	2,580	8,330	18,100	3,780	2,340	740	1,340	27,600
17	2,680	10,000	6,560	2,470	2,580	7,050	14,800	3,780	2,170	740	1,150	25,000
18	5,160	9,700	6,320	2,580	2,680	6,320	11,600	3,550	1,920	700	2,170	22,400
19	6,080	9,130	5,620	3,110	4,700	5,620	8,860	3,340	1,830	630	4,470	21,400
20	4,700	7,810	4,700	5,620	11,100	5,390	7,300	2,920	1,760	598	14,200	19,900
21	4,470	6,800	4,470	9,700	16,600	7,050	6,320	2,520	1,830	565	11,900	16,600
22	4,470	5,850	4,240	9,700	15,100	7,300	5,850	2,340	3,130	565	11,600	11,100
23	4,010	5,390	4,010	8,070	11,400	7,300	5,390	2,170	3,130	565	17,200	6,560
24	3,550	4,930	3,550	6,320	8,860	6,560	5,390	2,000	2,520	565	19,300	4,470
25	3,110	4,470	3,330	5,160	8,860	6,320	5,620	1,920	2,170	565	15,400	3,780
26	2,890	4,240	3,110	4,470	11,600	5,850	7,300	1,830	2,000	535	8,330	3,550
27	2,580	4,010	2,890	4,010	14,800	5,160	9,700	1,830	2,080	505	5,620	4,470
28	2,370	3,780	2,370	4,010	16,300	4,700	9,700	1,760	2,000	505	4,930	9,400
29	2,370	3,550	2,370	3,780	-------	4,240	7,550	1,600	1,600	630	4,240	18,400
30	2,680	3,550	2,370	3,780	-------	4,010	5,850	1,600	1,680	630	3,130	23,000
31	2,680	-------	2,170	3,780	-------	4,470	-------	1,400	-------	598	2,340	-------

Monthly discharge of Osage River near Bagnell, Mo., for the year ending September 30, 1926

[Drainage area, 14,000 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	21,700	2,370	5,950	0.425	0.49
November	50,200	1,630	13,800	.986	1.10
December	14,500	2,170	5,680	.406	.47
January	9,700	2,070	4,390	.314	.36
February	16,600	2,580	6,500	.464	.48
March	14,200	4,010	6,800	.486	.56
April	32,600	5,160	15,900	1.14	1.27
May	5,620	1,400	3,090	.221	.25
June	11,100	1,600	3,320	.237	.26
July	1,760	505	875	.063	.07
August	19,300	565	4,440	.317	.37
September	32,600	2,720	16,800	1.20	1.34
The year	50,200	505	7,240	.517	7.02

SAC RIVER NEAR STOCKTON, MO.

LOCATION.—In W. ½ sec. 11, T. 34 N., R. 26 W., at bridge on State highway No. 54, 1½ miles above Bear Creek, 2½ miles east of Stockton, Cedar County, and 3½ miles below Little Sac River.

DRAINAGE AREA.—1,160 square miles (measured on topographic maps).

RECORDS AVAILABLE.—July 21, 1921, to September 30, 1926.

GAGE.—Chain gage on downstream side of bridge; read by H. H. Dixon.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

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

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 15.4 feet at 5 p. m. November 8 (discharge, 8,600 second-feet); minimum stage, 1.70 feet August 14 (discharge, 33 second-feet).

1921–1926: Maximum stage recorded, 22.3 feet September 22, 1925 (discharge, 23,900 second-feet); minimum stage, 1.62 feet September 10, 1925 (discharge, 25 second-feet).

REGULATION.—Small dams above have no appreciable effect on flow at station.

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

Discharge measurements of Sac River near Stockton, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 28	3.65	595	May 23	2.57	269
Mar. 10	3.82	692	July 24	2.01	84

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a3,000	527	563	440	765	563	1,780	457	2,310	225	a 77	199
2	a2,000	492	527	a 630	720	527	2,310	457	1,780	219	73	181
3	a1,500	457	492	a 820	680	527	2,670	440	1,280	193	69	168
4	a1,000	440	527	1,010	680	527	1,830	423	960	168	61	1,610
5	2,010	440	a 902	810	640	527	1,440	406	860	150	58	7,860
6	1,660	423	1,280	660	600	492	1,120	389	765	132	52	2,370
7	1,390	3,690	2,220	492	563	492	1,610	389	680	121	46	3,170
8	1,170	8,600	1,010	423	527	457	1,220	372	600	116	46	2,670
9	1,010	5,440	960	a 414	527	457	910	356	563	116	43	3,690
10	910	3,240	910	406	492	440	810	356	527	110	41	2,910
11	860	2,370	860	457	457	457	1,280	a 406	440	110	38	1,890
12	765	2,070	a 828	423	457	2,070	1,170	457	423	105	36	a 1,500
13	680	1,780	a 796	389	440	1,780	1,120	440	372	105	36	a 3,700
14	680	a1,640	765	356	423	a1,480	1,010	406	340	105	33	a 3,300
15	600	1,500	720	323	423	1,170	960	389	323	100	a 36	a 1,600
16	a 682	1,330	680	306	423	860	860	389	323	95	38	a 1,000
17	765	1,010	640	a 713	406	720	810	372	290	86	a 200	a 900
18	1,120	765	a 602	1,120	563	640	720	356	290	81	a 150	a 870
19	860	720	563	860	492	600	680	323	274	73	a 700	a 840
20	810	a 680	a 545	810	457	640	640	306	a 315	77	a 500	a 810
21	720	640	527	765	a 440	720	640	290	356	77	4,400	a 780
22	680	a 702	492	765	423	680	600	274	356	105	3,430	a 750
23	680	765	492	720	406	600	600	257	323	91	2,550	720
24	a 666	720	a 474	a 700	406	563	765	225	323	81	1,720	640
25	a 653	680	457	680	720	527	680	219	306	a 81	765	563
26	640	680	457	680	680	527	640	206	290	81	600	a 528
27	600	640	a 708	680	600	492	600	193	274	86	527	492
28	600	a 620	960	680	563	a 474	563	187	257	91	423	680
29	563	600	765	680	-------	457	527	181	241	95	389	860
30	527	563	640	a 770	-------	527	492	a 236	241	86	323	1,390
31	527	-------	527	860	-------	1,170	-------	290	-------	81	274	-------

a Gage not read; discharge interpolated or estimated.

Monthly discharge of Sac River near Stockton, Mo., for the year ending September 30, 1926

[Drainage area, 1,160 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	3,000	527	978	0.843	0.97
November	8,600	423	1,470	1.27	1.42
December	1,280	457	706	.609	.70
January	1,120	306	638	.550	.63
February	765	406	535	.461	.48
March	2,070	440	715	.616	.71
April	2,670	492	1,040	.897	1.00
May	457	181	337	.291	.34
June	2,310	241	556	.479	.53
July	225	73	111	.096	.11
August	4,400	33	572	.493	.57
September	7,860	168	1,620	1.40	1.56
The year	8,600	33	771	.665	9.02

CEDAR CREEK NEAR PLEASANT VIEW, MO.

LOCATION.—In sec. 2, T. 35 N., R. 27 W., 1½ miles below Alder Creek, 2 miles northwest of Pleasant View, Cedar County, and 5 miles above mouth.

DRAINAGE AREA.—411 square miles (measured on topographic maps).

RECORDS AVAILABLE.—April 22, 1923, to September 30, 1926, when station was discontinued.

GAGE.—Chain gage on downstream side of bridge; read by J. T. Hackleman.

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

CHANNEL AND CONTROL.—Bed composed of coarse gravel. Left bank high. Right bank thinly wooded; subject to overflow at stage of about 20 feet. Control is a clean gravel bar 150 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 19.12 feet at 8 a. m. November 8 (discharge, 4,080 second-feet); minimum stage, 0.39 foot August 9–11 (discharge, 0.3 second-foot).

1923–1926: Maximum stage recorded, 24.0 feet July 12, 1924 (discharge determined by extending rating curve for main channel and computing overflow by Kutter's formula, 9,400 second-feet); minimum discharge, that of August 9–11, 1926.

REGULATION.—Dam 2 miles above causes no noticeable fluctuation at gage.

ACCURACY.—Stage-discharge relation permanent during year; not affected by ice. Rating curve fairly well defined below 3,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good.

Discharge measurements of Cedar Creek near Pleasant View, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 28	1.22	43	July 24	0.46	0.9
Apr. 13	4.54	595	Do	.46	.8
May 21	1.15	42			

Daily discharge, in second-feet, of Cedar Creek near Pleasant View, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,550	40	96	45	186	212	428	96	45	25	0.7	22
2	1,080	37	89	53	177	177	910	89	41	22	.7	17
3	501	37	85	119	160	152	1,840	83	60	15	.6	16
4	320	34	96	177	152	135	1,510	74	63	14	.4	212
5	356	33	135	230	135	127	950	67	74	11	.5	1,750
6	558	34	212	186	127	119	672	58	48	9	.6	3,420
7	266	2,140	203	143	119	111	577	54	38	8	.4	930
8	186	3,860	284	127	111	104	482	51	41	7	.5	482
9	143	1,910	374	111	104	90	392	58	85	6	.3	1,180
10	119	710	302	104	96	111	338	75	302	6	.3	1,400
11	104	558	248	96	90	539	558	69	135	7	.5	482
12	104	410	212	88	86	710	790	56	68	6	.7	634
13	85	338	177	79	86	392	520	50	47	5	2	1,310
14	82	284	168	74	83	284	428	47	38	4	1	1,140
15	75	410	160	71	81	248	284	41	31	4	2	464
16	74	653	143	72	75	212	302	38	37	3	4	320
17	96	464	135	93	71	186	266	37	39	3	11	248
18	119	374	127	970	152	160	230	34	33	2	14	177
19	104	302	111	950	356	152	186	33	68	2	59	143
20	93	248	111	539	221	152	160	30	82	2	930	111
21	82	212	111	410	160	152	152	35	81	2	2,700	90
22	75	186	96	338	135	160	160	33	63	2	558	76
23	68	160	88	230	119	203	230	29	143	2	338	65
24	63	152	81	248	111	194	302	28	78	1	230	55
25	58	143	78	186	226	177	248	23	53	.8	152	95
26	56	135	71	177	634	143	194	21	60	.7	85	74
27	60	127	65	177	338	119	160	18	96	.7	55	194
28	43	119	58	194	266	104	143	15	54	.5	43	501
29	44	111	51	186	-------	104	119	14	38	.5	34	930
30	45	104	44	177	-------	119	111	21	30	.6	28	2,220
31	41	-------	45	177	-------	248	-------	135	-------	.5	25	-------

NOTE.—Discharge estimated July 24 and result of discharge measurement used July 25; gage readings for these days probably in error.

Monthly discharge of Cedar Creek near Pleasant View, Mo., for the year ending September 30, 1926

[Drainage area, 411 square miles]

Month	Discharge in second-feet				Run-off in inches.
	Maximum	Minimum	Mean	Per square mile	
October	1,550	41	215	0.523	0.60
November	3,860	33	478	1.16	1.29
December	374	44	137	.333	.38
January	970	45	220	.535	.62
February	634	71	166	.404	.42
March	710	90	197	.479	.55
April	1,840	111	455	1.11	1.24
May	135	14	48.8	.119	.14
June	302	30	69.0	.168	.19
July	25	.5	5.56	.014	.02
August	2,700	.3	170	.414	.48
September	3,420	16	625	1.52	1.70
The year	3,860	.3	231	.562	7.63

POMME DE TERRE RIVER AT HERMITAGE, MO.

LOCATION.—In sec. 23, T. 37 N., R. 22 W., at bridge on State highway No. 64 at Hermitage, Hickory County, and three-fourths mile below Mill Creek.

DRAINAGE AREA.—655 square miles (measured on topographic maps).

RECORDS AVAILABLE.—July 25, 1921, to September 30, 1926.

GAGE.—Chain gage on downstream side of bridge; read by Ross Coon. Prior to October 1, 1925, a chain gage on highway bridge 1 mile upstream was used; new gage set to read the same as old gage at a low stage.

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

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

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 15.84 feet at 8.10 a. m. November 8 (discharge, 11,700 second-feet); minimum discharge, 4 second-feet July 30 and August 12.

1921–1926: Maximum stage recorded, 22.56 feet May 29, 1924 (discharge, 24,600 second-feet); minimum discharge, 1 second-foot September 8–10, 1925.

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

Discharge measurements of Pomme de Terre River at Hermitage, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 29	2.18	162	Apr. 12	4.48	864	May 20	2.16	163
Mar. 12	6.81	1,930	Apr. 14	3.80	684	July 22	1.47	18
Mar. 13	5.16	1,160						

Daily discharge, in second-feet, of Pomme de Terre River at Hermitage, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,040	167	204	298	358	518	1,080	313	126	79	298	135
2	1,160	156	204	298	518	454	1,760	284	328	64	269	116
3	858	139	192	284	454	454	1,810	269	144	56	64	107
4	716	142	192	269	406	406	1,200	269	116	45	103	217
5	518	116	550	256	454	360	968	269	486	41	64	7,140
6	518	114	750	328	422	374	858	256	358	37	64	2,280
7	518	7,980	786	328	406	390	786	242	343	29	41	930
8	518	11,700	648	298	374	242	1,240	230	217	19	27	858
9	328	2,700	648	269	343	204	930	313	204	192	17	4,150
10	298	1,330	614	256	328	256	858	750	422	126	13	3,820
11	298	822	582	256	313	1,860	786	518	358	156	8	1,240
12	269	716	518	242	298	1,710	930	518	204	56	4	716
13	242	614	486	230	269	1,120	930	454	167	41	8	1,000
14	298	486	454	217	406	858	716	422	144	31	13	2,100
15	269	454	406	180	358	716	614	390	98	24	8	1,000
16	256	648	390	156	328	648	518	343	103	19	8	716
17	192	582	374	107	298	582	454	298	94	17	144	582
18	614	550	358	269	313	422	454	253	107	13	94	518
19	582	518	343	422	518	343	422	208	116	10	390	454
20	518	486	328	582	422	313	406	163	156	8	284	390
21	358	422	298	716	406	454	374	147	156	5	3,820	358
22	328	390	284	648	390	454	328	132	144	10	2,420	343
23	242	390	284	582	358	406	269	116	123	11	582	298
24	217	343	230	518	390	390	518	112	107	9	390	269
25	180	284	204	406	1,280	454	518	103	103	7	358	269
26	176	256	192	374	1,160	422	454	98	77	7	374	358
27	171	242	167	269	1,000	390	454	96	217	5	298	343
28	166	230	156	230	614	374	390	94	128	5	269	1,040
29	162	217	139	358	-------	343	358	94	112	5	204	1,610
30	167	217	112	422	-------	328	343	64	98	4	180	6,130
31	144	-------	103	390	-------	486	-------	81	-------	13	167	-------

NOTE.—Gage readings unreliable Oct. 26–29 and May 17–22; discharge interpolated Oct. 26–28, May 17–19, 21, 22, and estimated from results of discharge measurements Oct. 29 and May 20.

Monthly discharge of Pomme de Terre River at Hermitage, Mo., for the year ending September 30, 1926

[Drainage area, 655 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	1,160	144	397	0.606	0.70
November	11,700	114	1,110	1.69	1.89
December	786	103	361	.551	.64
January	716	107	337	.515	.59
February	1,280	269	471	.719	.75
March	1,860	204	541	.826	.95
April	1,810	269	724	1.11	1.24
May	750	64	255	.389	.45
June	486	77	185	.282	.31
July	192	4	36.9	.056	.06
August	3,820	4	354	.540	.62
September	7,140	107	1,320	2.02	2.25
The year	11,700	4	504	.769	10.45

SOUTH GRAND RIVER NEAR BROWNINGTON, MO.

LOCATION.—In NW. ¼ sec. 17, T. 40 N., R. 25 W., at highway bridge 300 feet below St. Louis-San Francisco Railway bridge, 500 feet below Deepwater Creek, and 1 mile north of Brownington, Henry County.

DRAINAGE AREA.—1,660 square miles (measured on topographic maps).

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

GAGE.—Chain gage on upstream side of bridge; read by Letha Jackson.

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

CHANNEL AND CONTROL.—Bed composed of clean sand and gravel. Control is a heavy gravel bar 500 feet below gage; shifting.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 19.0 feet at 7.10 a. m. April 9 (discharge, 12,200 second-feet); minimum stage, 1.10 feet August 11 and 12 (discharge, 0.7 second-foot).

1921–1926: Maximum stage determined by levels to floodmarks, 28.0 feet April 9, 1922 (discharge, 21,100 second-feet); minimum discharge, 0.5 second-foot several days during September, 1925.

ACCURACY.—Stage-discharge relation changed during May and June; not affected by ice. Rating curve fairly well defined above 16 second-feet. Gage read to hundredths once daily during low and medium stages and twice daily during high stages. Daily discharge ascertained by applying mean daily gage height to rating table; shifting-control method used May 12 to September 30. Records good prior to May 1 and fair after that date.

Discharge measurements of South Grand River near Brownington, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 27	2.70	168	May 22	2.10	44
Apr. 14	7.62	2,740	July 23	1.44	10
May 22	2.12	53			

Daily discharge, in second-feet, of South Grand River near Brownington, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,900	47	58	49	315	790	212	298	144	10	16	73
2	3,820	40	65	49	332	510	350	237	200	8	14	33
3	750	22	63	332	315	790	2,190	200	280	5	12	188
4	470	21	200	1,190	250	350	3,820	212	200	3	11	1,550
5	108	18	710	2,190	200	390	4,280	200	115	2	10	1,310
6	63	65	630	1,190	200	332	5,620	188	68	2	8	1,190
7	58	1,610	550	670	200	332	8,400	176	58	11	3	670
8	54	9,160	1,800	510	188	315	11,300	166	43	790	3	237
9	51	7,800	1,800	332	155	315	11,800	188	43	83	1	3,300
10	45	5,540	1,800	176	134	390	8,740	510	36	38	.9	3,080
11	42	2,860	2,380	250	126	990	5,700	315	33	18	.7	1,860
12	42	750	1,190	212	115	1,190	5,620	166	27	17	.7	2,190
13	51	390	890	200	112	990	4,200	130	20	12	28	2,380
14	54	370	710	176	105	630	3,000	115	25	9	92	1,190
15	70	430	940	155	101	550	1,670	101	21	10	32	840
16	1,930	332	1,190	155	101	450	790	89	18	11	126	1,310
17	2,650	200	710	550	89	390	790	75	16	7	315	1,090
18	840	250	890	1,140	4,420	350	670	68	14	4	70	630
19	470	200	750	1,550	6,360	315	550	58	10	2	890	332
20	350	155	550	1,090	4,050	670	450	60	9	1	315	200
21	200	134	410	410	2,860	2,190	350	56	8	1	450	119
22	98	119	224	224	2,000	2,120	410	49	7	2	119	92
23	78	101	155	224	2,220	1,430	430	45	6	10	45	78
24	70	89	176	280	2,450	890	590	38	4	11	940	86
25	58	83	200	98	2,720	630	990	30	25	42	250	112
26	134	78	155	119	2,790	450	890	24	73	30	200	112
27	176	92	130	155	3,150	315	410	18	188	20	176	119
28	115	95	89	134	2,120	224	390	15	108	12	86	2,120
29	80	89	73	200	-------	200	350	13	60	9	56	1,090
30	68	70	101	250	-------	225	332	42	24	8	32	1,140
31	49	-------	89	315	-------	250	--------	200	-------	18	49	-------

NOTE.—Gage not read Dec. 6, 9, Feb. 23, Mar. 30; discharge interpolated.

Monthly discharge of South Grand River near Brownington, Mo., for the year ending September 30, 1926

[Drainage area, 1,660 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	3,900	42	547	0.330	0.38
November	9,160	18	1,040	.627	.70
December	2,380	58	635	.383	.44
January	2,190	49	470	.283	.33
February	6,360	89	1,360	.819	.85
March	2,190	200	644	.388	.45
April	11,800	212	2,840	1.71	1.91
May	510	13	132	.080	.09
June	280	4	62.7	.038	.04
July	790	1	38.9	.023	.03
August	940	.7	140	.084	.10
September	3,300	33	957	.577	.64
The year	11,800	.7	729	.439	5.96

NIANGUA RIVER NEAR ROACH, MO.

LOCATION.—In SW. ¼ sec. 20, T. 38 N., R. 17 W., at highway bridge on Linn Creek-Roach road, 2½ miles above Little Niangua River, 4 miles northeast of Roach, Camden County, and 10 miles below Hahatonka Spring.

DRAINAGE AREA.—About 698 square miles (measured on topographic maps and base map of Missouri); somewhat indefinite on account of large tributary springs.

RECORDS AVAILABLE.—November 18, 1922, to September 30, 1926.

GAGE.—Vertical staff gage fastened to tree on left bank 40 feet downstream from bridge.

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

CHANNEL AND CONTROL.—Bed composed of sand and gravel; probably shifting. Control is a gravel bar 400 feet below gage; shifts at intervals.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 8.52 feet at 3.30 p. m. November 9 (discharge, 7,180 second-feet); minimum stage, 0.69 foot at 7.50 a. m. August 12 (discharge, 193 second-feet).

1923–1926: Maximum stage recorded, 13.3 feet May 30, 1924 (discharge, 15,200 second-feet); minimum discharge, 160 second-feet August 26 to September 2, 1923.

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

Discharge measurements of Niangua River near Roach, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 30	1.32	378	May 19	1.08	339
Mar. 14	2.98	1,350	July 21	.73	197

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,340	389	369	688	493	744	800	409	275	258	196	292
2	1,220	369	369	688	493	638	1,030	389	275	258	211	912
3	1,950	349	369	744	516	638	1,350	389	292	242	211	588
4	1,350	329	369	329	538	538	1,420	369	329	258	196	430
5	1,030	329	472	310	516	516	1,090	369	329	242	211	563
6	800	310	493	329	516	472	970	369	310	226	211	856
7	856	744	493	329	493	472	1,090	349	310	242	196	1,280
8	613	2,100	516	329	472	450	912	349	310	242	196	1,160
9	563	5,870	516	329	450	430	856	349	389	242	196	912
10	538	2,660	493	329	450	450	800	369	292	242	196	2,420
11	538	1,740	472	329	430	912	744	349	292	226	196	2,930
12	472	1,280	450	310	409	1,540	744	450	275	226	193	1,540
13	450	1,030	450	310	409	1,950	744	409	258	258	196	1,160
14	430	912	430	310	389	1,480	744	369	275	258	258	1,090
15	409	912	430	310	389	1,090	688	369	275	258	226	2,660
16	389	800	409	292	369	912	638	349	258	242	211	1,610
17	409	744	409	310	369	800	588	329	292	242	275	1,090
18	409	688	389	329	389	744	563	329	292	211	389	856
19	538	638	389	389	409	638	516	329	292	211	409	688
20	638	588	389	538	409	638	493	310	292	211	409	613
21	588	563	389	688	409	588	472	310	275	211	430	538
22	613	516	369	638	409	563	450	310	292	211	1,540	493
23	493	493	369	588	409	538	450	292	275	211	744	472
24	472	472	369	563	389	516	450	292	275	211	613	472
25	450	450	349	493	472	493	450	292	275	196	493	450
26	409	450	329	493	638	472	450	275	275	196	430	450
27	430	430	329	450	856	450	472	275	275	196	389	450
28	409	409	744	450	912	450	450	258	275	196	369	638
29	409	409	744	430	-------	409	430	258	258	196	369	856
30	369	389	744	430	-------	430	409	258	258	196	310	1,880
31	369	-------	744	493	-------	688	-------	258	-------	196	292	-------

Monthly discharge of Niangua River near Roach, Mo., for the year ending September 30, 1926

[Drainage area, 698 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	2,340	369	676	0.968	1.12
November	5,870	310	912	1.31	1.46
December	744	329	457	.655	.76
January	744	292	437	.626	.72
February	912	369	479	.686	.71
March	1,950	409	698	1.00	1.15
April	1,420	409	709	1.02	1.14
May	450	258	335	.480	.55
June	389	258	288	.413	.46
July	258	196	226	.324	.37
August	1,540	193	347	.497	.57
September	2,930	292	1,010	1.45	1.62
The year	5,870	193	546	.782	10.63

HAHATONKA SPRING AT HAHATONKA, MO.

LOCATION.—In NW. ¼ sec. 2, T. 37 N., R. 17 W., at Hahatonka, Camden County, one-fourth mile below spring outlet and half a mile above mouth of the Spring Branch.

DRAINAGE AREA.—Not measured.

RECORDS AVAILABLE.—November 17, 1922, to September 30, 1926, when station was discontinued.

GAGE.—Vertical staff gage bolted to tree on left bank; read by F. R. Roofener.

DISCHARGE MEASUREMENTS.—Made by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and rocks. Stage-discharge relation is affected by dam across Spring Branch, 2,000 feet below gage; also affected at time by aquatic plants in channel and by backwater from Niangua River.

EXTREMES OF DISCHARGE.—Maximum discharge estimated, 175 second-feet November 9; minimum discharge, 51 second-feet August 5–11.

1923–1926: Maximum discharge not known because of backwater; minimum discharge, 43 second-feet February 23, 1923.

ACCURACY.—Stage-discharge relation changed considerably during the year; not affected by ice. Rating curves poorly defined. Gage read to hundredths once daily until June 7 and three times a week thereafter. Daily discharge ascertained by shifting-control method. Records poor.

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

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 30	0.70	64	May 19	0.68	68
Mar. 14	.81	101	July 21	.72	58

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	170	66	72	70	59	86	103	76	66	58	54	76
2	155	63	72	67	59	84	106	76	66	58	54	78
3	140	66	72	67	57	80	110	76	66	58	54	80
4	128	66	72	67	59	78	110	73	66	55	52	81
5	123	68	78	67	59	72	110	71	63	54	51	84
6	118	66	84	67	61	70	110	71	60	53	51	82
7	108	66	90	67	61	70	103	68	60	56	51	81
8	94	98	86	64	61	72	100	68	60	58	51	84
9	94	175	86	64	61	78	100	68	62	57	51	88
10	91	150	84	61	61	78	106	68	63	56	51	92
11	85	140	80	61	59	93	103	68	62	56	51	96
12	82	135	80	61	59	106	103	68	60	54	52	84
13	79	130	80	61	57	103	100	68	60	55	54	84
14	79	118	80	59	57	100	103	68	60	56	58	84
15	79	101	78	57	57	100	106	68	62	56	63	84
16	79	101	78	57	59	96	100	68	63	56	66	84
17	79	98	78	57	59	90	93	68	63	57	68	82
18	79	98	78	57	61	86	93	68	63	58	71	81
19	76	98	75	57	64	84	93	68	63	58	74	81
20	76	91	72	72	67	84	90	68	63	58	79	81
21	76	88	75	72	67	80	90	68	63	57	84	81
22	79	88	75	72	67	78	86	68	63	56	82	82
23	79	88	72	72	67	75	84	66	62	55	81	83
24	76	88	72	70	67	75	80	64	60	54	81	84
25	76	85	72	67	72	72	80	64	60	55	81	86
26	76	85	70	64	86	70	80	64	60	56	80	88
27	73	85	70	61	93	67	80	64	60	56	78	90
28	68	82	70	61	90	64	80	64	60	56	78	92
29	66	79	70	59	-------	64	78	64	60	55	78	94
30	66	76	70	59	-------	64	78	66	60	54	76	96
31	66	-------	70	59	-------	67	-------	66	-------	54	74	-------

NOTE.—Stage-discharge relation affected by backwater from Niangua River Oct. 1–3 and Nov. 9–12; discharge estimated. Discharge estimated May 7 to June 4 on account of unreliable gage readings. After June 7 gage was read only three times a week; discharge interpolated for days when gage was not read.

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

Month	Discharge in second-feet			Month	Discharge in second-feet		
	Maximum	Minimum	Mean		Maximum	Minimum	Mean
October	170	66	90.8	May	76	64	68.0
November	175	63	94.6	June	66	60	62.0
December	90	70	76.2	July	58	53	56.0
January	72	57	63.7	August	84	51	65.5
February	93	57	64.5	September	96	76	84.8
March	106	64	80.2				
April	110	78	95.3	The year	175	51	75.1

GASCONADE RIVER BASIN

GASCONADE RIVER NEAR WAYNESVILLE, MO.

LOCATION.—In SE. ¼ sec. 3, T. 36 N., R. 12 W., at highway bridge on Waynesville-Crocker road, 2½ miles below Roubidoux Creek, and 4 miles north of Waynesville, Pulaski County.

DRAINAGE AREA.—1,680 square miles (measured on United States soil-survey maps).

RECORDS AVAILABLE.—June 9, 1921, to September 30, 1926. The Missouri Engineering Experiment Station has records of discharge from August 16, 1914, to July 31, 1921.[3]

[3] See Missouri Univ. Eng. Exper. Sta. Bull. 35, ser. 22, vol. 21.

GAGE.—Chain gage on upstream side of bridge; read by Mrs. J. R. Skaggs. Zero of gage is 739.34 feet above mean sea level.

DISCHARGE MEASUREMENTS.—Made from bridge by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and small boulders; clean and fairly permanent. Control is a heavy gravel bar 300 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 9.80 feet at 5 p. m. November 9 (discharge, 10,500 second-feet); minimum stage, 2.12 feet at 8 a. m. July 29 (discharge, 97 second-feet).

1921–1926: Maximum stage recorded, 17.50 feet December 21, 1924 (discharge, 25,900 second-feet); minimum discharge, 77 second-feet September 27, 1922.

On August 22, 1915, river reached a stage of 25.0 feet.

REGULATION.—Natural regulation through large springs.

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

Discharge measurements of Gasconade River near Waynesville, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Oct. 31	3.77	972	June 23	2.60	245
Feb. 20	3.55	800	July 20	2.22	129

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,720	870	955	430	1,140	1,880	830	600	294	180	146	207
2	7,020	790	910	405	1,280	1,640	1,090	570	955	183	140	252
3	5,940	750	870	1,140	1,460	1,280	2,360	540	910	187	125	272
4	3,950	670	870	430	1,460	1,180	2,600	540	790	168	122	272
5	2,840	600	955	455	1,340	1,140	2,360	600	635	158	119	244
6	2,240	570	1,180	455	1,280	955	2,000	670	600	180	131	292
7	2,000	2,360	2,000	455	1,140	910	1,880	600	540	161	137	750
8	1,760	8,920	1,880	455	1,040	870	1,760	600	510	152	119	635
9	1,400	10,300	1,640	455	955	830	1,520	570	455	158	119	750
10	1,180	5,400	1,340	430	910	830	1,400	570	334	149	113	955
11	1,000	3,660	1,280	430	830	1,760	1,340	570	294	146	108	830
12	910	2,840	1,090	405	750	2,840	1,340	1,180	357	152	113	910
13	870	2,480	1,000	405	710	3,950	1,280	1,090	334	152	113	830
14	910	2,000	955	380	710	3,520	2,000	910	357	155	119	1,000
15	710	1,760	910	380	670	2,600	2,120	790	314	143	105	1,700
16	955	1,640	830	380	710	2,840	1,880	710	314	143	134	1,700
17	1,640	1,340	830	357	710	1,880	1,400	600	314	137	910	1,280
18	4,560	1,340	790	380	710	1,760	1,340	600	314	131	334	1,040
19	5,760	1,180	790	430	750	1,520	1,280	540	294	125	313	830
20	3,950	1,140	750	540	870	1,340	1,140	540	275	119	357	710
21	2,360	1,000	750	600	870	1,280	1,000	710	275	122	1,400	600
22	2,240	955	670	540	870	1,140	955	430	256	119	670	510
23	1,640	870	670	830	830	1,090	910	380	256	119	540	455
24	1,580	790	600	870	790	1,000	870	405	239	113	570	430
25	1,400	750	600	830	1,180	1,000	830	380	239	108	710	380
26	1,640	710	570	750	1,760	910	790	357	239	108	380	380
27	1,880	670	380	710	2,000	790	750	334	239	102	334	430
28	1,760	600	357	710	2,120	710	710	314	216	102	292	570
29	1,640	790	430	710	-------	670	670	294	216	97	272	1,280
30	1,140	1,000	480	830	-------	635	635	294	184	119	272	2,600
31	1,000	-------	405	985	-------	750	-------	294	-------	102	218	-------

NOTE.—Gage not read; discharge interpolated Jan. 31.

Monthly discharge of Gasconade River near Waynesville, Mo., for the year ending September 30, 1926

[Drainage area, 1,680 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	7,020	710	2,280	1.36	1.57
November	10,300	570	1,960	1.17	1.30
December	2,000	357	895	.533	.61
January	1,140	357	567	.338	.39
February	2,120	670	1,070	.637	.66
March	3,950	635	1,470	.875	1.01
April	2,600	635	1,370	.815	.91
May	1,180	294	567	.338	.39
June	955	184	385	.229	.26
July	187	97	138	.082	.09
August	1,400	105	308	.183	.21
September	2,600	207	770	.458	.51
The year	10,300	97	978	.582	7.91

GASCONADE RIVER AT JEROME, MO.

LOCATION.—In S. ½ sec. 13, T. 37 N., R. 10 W., 500 feet north of railway station at Jerome, Phelps County, half a mile below St. Louis-San Francisco Railway bridge, and half a mile below Little Piney Creek.

DRAINAGE AREA.—2,840 square miles (revised; measured on United States soil-survey maps).

RECORDS AVAILABLE.—April 12, 1903, to July 21, 1906 (published as "Gasconade River at Arlington, Mo."); January 1, 1923, to September 30, 1926. The United States Weather Bureau has records of stage at railroad bridge from 1885 to 1926.

GAGE.—Staff gage in two sections fastened to trees on left bank; read by C. F. Brockman. Zero of gage is 657.98 feet above mean sea level.

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

CHANNEL AND CONTROL.—Bed composed of gravel and small boulders; clean and fairly permanent. Control is a coarse gravel bar extending diagonally across river 100 feet below gage; practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 9.80 feet at 10 a. m. November 8 (discharge, 13,900 second-feet); minimum stage, 1.44 feet July 26 and 28–30 (discharge, 426 second-feet).

1903–1906: Maximum discharge recorded, 45,000 second-feet July 23, 1905; minimum discharge, 300 second-feet June 15, 1905.

1923–1926: Maximum stage recorded, 18.2 feet December 20, 1924 (discharge, 38,600 second-feet); minimum stage, 1.40 feet September 12 and 13, 1925 (discharge, 400 second-feet).

Flood of January 5, 1897, reached a stage of about 31 feet; determined from records of United States Weather Bureau and relationship between gages.

REGULATION.—Natural regulation due to large springs above station.

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

Discharge measurements of Gasconade River at Jerome, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 21	3.01	1,980	June 23	1.76	637
Feb. 20	2.83	1,730	July 19	1.49	457

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,120	1,570	1,800	1,000	2,160	3,150	2,160	1,350	760	565	465	565
2	8,000	1,460	1,680	1,000	2,640	2,890	2,640	1,350	760	565	530	600
3	8,800	1,460	1,570	1,000	2,640	2,520	3,670	1,250	1,570	530	498	600
4	5,720	1,350	1,920	1,050	2,640	2,400	4,060	1,250	1,350	530	465	720
5	5,260	1,250	3,020	1,000	2,400	2,040	3,930	1,250	1,200	530	452	850
6	4,980	1,200	3,410	1,050	2,280	1,920	3,670	1,350	1,150	530	452	760
7	2,890	5,260	3,150	1,050	2,160	1,920	3,670	1,350	1,050	565	452	720
8	2,640	13,700	3,150	1,000	1,920	1,800	3,280	1,250	1,050	530	452	720
9	2,400	11,600	2,640	1,000	1,800	1,680	3,150	1,250	1,050	530	452	760
10	2,040	9,000	2,520	950	1,680	1,920	2,890	1,250	900	530	439	805
11	1,800	6,260	2,400	950	1,570	2,890	2,640	1,250	900	498	439	1,200
12	1,680	4,450	2,160	950	1,570	4,840	2,640	1,570	850	498	439	1,250
13	1,200	3,670	1,920	900	1,460	5,560	2,890	1,800	805	465	530	1,460
14	1,100	2,760	1,920	900	2,040	5,400	3,150	1,570	805	465	530	1,570
15	1,460	2,640	1,800	850	1,800	4,450	3,410	1,460	805	465	458	1,920
16	2,040	2,520	1,800	850	1,680	3,800	3,150	1,350	760	465	439	2,160
17	6,260	2,520	1,680	850	1,680	3,280	2,890	1,250	760	465	680	1,680
18	5,900	2,400	1,680	950	1,680	2,890	2,640	1,200	760	458	950	1,460
19	7,000	2,280	1,680	950	1,680	2,640	2,280	1,200	760	452	680	1,350
20	3,930	2,040	1,570	950	1,800	2,400	2,160	1,200	720	452	720	1,100
21	3,150	1,920	1,570	1,050	1,800	2,280	2,040	1,100	720	452	1,250	1,000
22	2,640	1,800	1,460	1,200	1,800	2,040	1,920	1,050	680	452	1,200	950
23	2,400	1,570	1,350	1,350	1,680	2,040	1,920	1,000	640	452	1,000	850
24	2,280	1,570	1,350	1,350	1,680	1,920	1,920	900	640	439	1,000	805
25	2,280	1,570	1,250	1,460	2,890	1,800	1,800	900	640	439	950	760
26	2,280	1,460	1,250	1,350	3,410	1,680	1,680	850	600	426	805	760
27	2,400	1,350	1,250	1,350	3,670	1,680	1,680	850	600	439	720	900
28	2,400	1,460	1,100	1,350	3,540	1,570	1,570	805	530	426	680	1,100
29	2,160	1,570	1,200	1,460	-------	1,460	1,460	760	600	426	640	1,250
30	1,920	1,680	1,050	1,570	-------	1,570	1,460	760	600	426	600	3,150
31	1,680	-------	1,000	1,800	-------	1,920	-------	760	-------	458	600	-------

Monthly discharge of Gasconade River at Jerome, Mo., for the year ending September 30, 1926

[Drainage area, 2,840 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	8,800	1,100	3,410	1.20	1.38
November	13,700	1,200	3,180	1.12	1.25
December	3,410	1,000	1,850	.651	.75
January	1,800	850	1,110	.391	.45
February	3,670	1,460	2,130	.750	.78
March	5,560	1,460	2,590	.912	1.05
April	4,060	1,460	2,610	.919	1.03
May	1,800	760	1,180	.415	.48
June	1,570	530	834	.294	.33
July	565	426	481	.169	.19
August	1,250	439	644	.227	.26
September	3,150	565	1,130	.398	.44
The year	13,700	426	1,760	.620	8.39

GASCONADE RIVER NEAR RICH FOUNTAIN, MO.

LOCATION.—In SE. ¼ sec. 16, T. 42 N., R. 8 W., at highway bridge on Belle-Rich Fountain road, just below Brushy Creek, just above Swan Creek, and 4 miles east of Rich Fountain, Osage County.

DRAINAGE AREA.—3,180 square miles (measured on United States soil-survey maps).

RECORDS AVAILABLE.—October 10, 1921, to September 30, 1926.

GAGE.—Chain gage on upstream side of bridge; read by August Mebruer.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of coarse gravel and rock. Control is a heavy gravel bar 800 feet below gage; shifts at intervals.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 10.48 feet at 4 p. m. November 9 (discharge, 13,500 second-feet); minimum stage, 1.25 feet at 8 a. m. July 25 (discharge, 445 second-feet).

1922–1926: Maximum stage recorded, 18.0 feet December 21, 1924 (discharge, 29,600 second-feet); minimum discharge, 410 second-feet September 29 and 30, 1922.

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

ACCURACY.—Stage-discharge relation changed probably in September; not affected by ice. Rating curve well defined above and fairly well defined below 700 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Records good except for very low stages, for which they are fair.

Discharge measurements of Gasconade River near Rich Fountain, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 4	2.50	1,610	July 6	1.45	530
May 14	2.82	1,950	Sept. 25	2.30	1,110
June 15	1.83	874			

Daily discharge, in second-feet, of Gasconade River near Rich Fountain, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,000	2,000	1,890	1,250	2,440	4,110	2,900	1,670	722	605	605	765
2	6,700	1,890	1,890	1,150	2,660	3,620	2,660	1,560	765	572	642	722
3	11,100	1,670	1,890	1,150	2,900	3,140	4,500	1,560	812	572	572	680
4	7,620	1,560	2,110	1,250	3,020	2,660	5,020	1,450	1,050	540	572	722
5	6,120	1,450	3,260	1,200	2,780	2,440	4,760	1,450	1,450	540	540	860
6	4,500	1,350	3,500	1,200	2,660	2,330	4,630	1,450	1,350	540	540	908
7	3,860	9,260	3,740	1,150	2,550	2,330	5,020	1,450	1,200	1,100	540	955
8	3,260	9,980	3,860	1,150	2,330	2,110	4,630	1,450	1,150	642	508	955
9	2,780	13,100	3,620	1,100	2,550	2,000	3,980	1,560	1,100	680	508	1,450
10	2,550	12,100	3,140	1,100	1,890	2,110	3,740	1,450	1,200	642	475	1,560
11	2,330	9,440	2,900	1,100	1,890	4,110	3,500	1,560	1,050	605	475	1,450
12	2,110	6,120	2,550	1,050	1,670	3,980	3,500	1,450	1,000	572	475	1,560
13	1,890	4,890	2,440	1,000	1,670	4,890	3,380	1,560	860	540	540	1,670
14	1,780	3,980	2,220	1,000	1,670	6,120	3,260	1,890	908	540	642	1,670
15	1,780	3,500	2,220	955	2,000	5,560	3,740	1,780	860	540	540	1,670
16	1,780	3,260	2,110	955	1,890	4,760	3,740	1,450	765	540	540	2,110
17	3,980	2,900	2,000	908	1,780	4,110	3,500	1,450	860	508	572	2,550
18	8,420	2,780	2,000	1,050	2,220	3,500	3,020	3,500	860	508	812	2,550
19	7,940	2,660	1,890	1,200	2,220	3,260	2,900	1,780	812	475	1,450	1,670
20	7,940	2,440	1,890	1,200	2,110	3,620	2,660	1,560	812	508	1,560	1,450

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

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
21	5,150	2,220	1,780	1,250	2,000	3,140	2,440	1,450	1,050	508	1,250	1,250
22	4,240	2,110	1,780	1,350	2,000	2,780	2,220	1.450	812	475	1,250	1,100
23	3,500	2,000	1,560	1,450	2,000	2,550	2,550	1,250	680	475	2,000	1,000
24	3,020	1,890	1,560	1,450	1,890	2,330	2,660	1,050	642	475	1,780	908
25	2,780	1,780	1,450	1,560	4,890	2,330	2,440	1,000	680	445	1,350	1,000
26	2,550	1,670	1,350	1,560	4,240	2,220	2,220	955	642	475	1,250	812
27	2,550	1,670	1,350	1,450	4,370	1,890	2,000	908	605	475	1,100	1,050
28	2,900	1,560	1,450	1,450	4,240	1,780	1,890	860	642	475	1,000	1,450
29	2,550	1,560	1,350	1,450	-------	1,780	1,780	812	642	475	908	1,670
30	2,330	1,670	1,250	1,450	-------	1,670	1,780	765	642	475	860	2,660
31	2,110	--------	1,350	1,780	-------	2,220	-------	680	-------	508	860	-------

NOTE.—Discharge estimated July 5 and 6; gage readings probably in error.

Monthly discharge of Gasconade River near Rich Fountain, Mo., for the year ending September 30, 1926

[Drainage area, 3,180 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	11,100	1,780	4,170	1.31	1.51
November	13,100	1,350	3,820	1.20	1.34
December	3,860	1,250	2,170	.682	.79
January	1,780	908	1,240	.390	.45
February	4,890	1,670	2,520	.792	.82
March	6,120	1,670	3,080	.969	1.12
April	5,020	1,780	3,230	1.02	1.14
May	3,500	680	1,430	.450	.52
June	1,450	605	887	.279	.31
July	1,100	445	549	.173	.20
August	2,000	475	862	.271	.31
September	2,660	680	1,360	.428	.48
The year	13,100	445	2,100	.660	8.99

PINEY CREEK NEAR BIG PINEY, MO.

LOCATION.—In NE. ¼ sec. 8, T. 34 N., R. 10 W., at Ross highway bridge, 3 miles east of Big Piney, Pulaski County, and 14 miles above Spring Creek.

DRAINAGE AREA.—560 square miles (measured on United States soil-survey maps).

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

GAGE.—Chain gage on upstream side of bridge; read by E. G. Rowden.

DISCHARGE MEASUREMENTS.—Made from bridge or by wading.

CHANNEL AND CONTROL.—Bed composed of gravel and rock; clean, except where brush grows on bars exposed at low stages. Control is a coarse gravel and rock bar 300 feet below gage; clean and practically permanent.

EXTREMES OF DISCHARGE.—Maximum stage recorded during year, 8.40 feet at 8 a. m. October 17 (discharge, 5,900 second-feet); minimum stage, 1.60 feet July 30 and 31 (discharge, 76 second-feet).

1922–1926: Maximum stage estimated at 12.0 feet December 20, 1924 (discharge, 9,650 second-feet); minimum stage, that of July 30 and 31, 1926.

REGULATION.—Natural regulation through large springs.

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

Discharge measurements of Piney Creek near Big Piney, Mo., during the year ending September 30, 1926

Date	Gage height	Discharge	Date	Gage height	Discharge
	Feet	*Sec.-ft.*		*Feet*	*Sec.-ft.*
Nov. 21	2.68	367	Apr. 20	2.77	436
Apr. 20	2.77	453	Sept. 10	2.05	164

Daily discharge, in second-feet, of Piney Creek near Big Piney, Mo., for the year ending September 30, 1926

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,880	334	275	203	334	740	555	275	145	114	78	108
2	1,240	334	256	203	705	740	740	275	161	118	78	108
3	1,090	314	314	197	670	555	880	275	156	118	88	112
4	555	314	334	191	670	555	950	275	156	114	86	138
5	445	314	1,880	197	610	422	880	256	145	114	87	175
6	445	294	1,400	191	445	422	880	256	145	118	83	181
7	422	445	1,160	206	422	378	845	238	150	118	83	164
8	400	2,440	1,090	197	422	355	810	238	150	112	83	158
9	400	1,640	1,090	197	422	400	880	314	197	110	86	158
10	355	1,400	555	191	275	400	880	294	184	110	86	148
11	355	1,240	555	191	256	1,400	640	275	172	112	88	150
12	334	1,090	445	184	238	1,560	670	256	161	110	88	145
13	314	950	422	178	224	1,400	275	238	167	106	91	161
14	314	880	422	178	400	950	314	231	156	99	91	161
15	445	845	445	184	445	950	334	217	150	96	94	156
16	555	810	472	181	355	810	334	217	145	91	96	150
17	5,900	775	445	191	355	670	314	210	148	88	96	145
18	3,920	705	422	184	355	640	400	210	140	94	94	140
19	1,640	610	400	184	334	582	500	203	140	95	89	136
20	880	555	378	275	355	555	422	203	138	99	89	131
21	775	378	334	238	355	500	314	197	140	98	108	131
22	775	355	324	231	355	472	314	191	140	94	112	127
23	740	355	314	217	334	445	294	184	136	91	116	127
24	705	355	294	238	334	445	294	178	136	91	124	145
25	670	355	294	256	400	445	472	178	131	86	129	150
26	670	334	294	256	1,320	422	334	172	127	83	148	156
27	555	334	275	238	950	422	314	167	127	83	158	172
28	445	314	275	238	740	400	275	161	122	78	161	181
29	378	294	275	400	-------	445	275	156	122	78	120	210
30	355	275	238	334	-------	445	275	150	118	76	116	400
31	334	-------	217	355	-------	500	-------	145	-------	76	112	-------

NOTE.—Gage not read; discharge interpolated Nov. 4 and Dec. 22.

Monthly discharge of Piney Creek near Big Piney, Mo., for the year ending September 30, 1926

[Drainage area, 506 square miles]

Month	Discharge in second-feet				Run-off in inches
	Maximum	Minimum	Mean	Per square mile	
October	5,900	314	913	1.80	2.01
November	2,440	275	655	1.29	1.48
December	1,880	217	513	1.01	1.14
January	400	178	223	.441	.56
February	1,320	224	467	.923	.96
March	1,560	355	627	1.24	1.43
April	950	275	522	1.03	1.15
May	314	145	220	.435	.50
June	197	118	147	.291	.32
July	118	76	99	.196	.23
August	161	78	102	.202	.23
September	400	108	157	.310	.35
The year	5,900	76	387	.765	10.36

MISCELLANEOUS DISCHARGE MEASUREMENTS

Measurements of the flow of streams in the Missouri River Basin at points other than regular gaging stations are recorded in the following table:

Miscellaneous discharge measurements in the Missouri River drainage basin during the year ending September 30, 1926

Date	Stream	Tributary to—	Locality	Gage height	Discharge
				Feet	*Sec-ft.*
Oct. 29	Sac River	Osage River	At former gaging station, 10 miles west of Collins, Mo.	2.70	685
Mar. 11	do	do	do	4.62	2,240
May 20	do	do	do	2.01	302
July 22	do	do	do	1.40	84
Aug. 26	Chesapeake Spring	Goose Creek	At Chesapeake, Lawrence County, Mo.		5.6
Dec. 9	Boylers Mill Spring	Buffalo Creek	At Boylers Mill, Morgan County, Mo.		1.2
May 19	Gravois Mills Spring	Gravois Creek	1 mile west of Gravois Mills, Morgan County, Mo.		8.8
Sept. 10	Falling Spring	Gasconade River	5 miles northwest of Waynesville, Mo.		7.4
10	Creasy Spring	do	do		27
10	Bartlett Mill Spring	do	do		11

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